



May 27, 2020

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

**Re:** Notice of Exempt Modification – Antenna and RRU Add  
**Property Address:** 323 ROUTE 81, Killingworth, CT 06419  
**Applicant:** AT&T Mobility, LLC

Dear Ms. Bachman:

On behalf of AT&T, please accept this application 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).

AT&T currently maintains a wireless telecommunications facility consisting of nine (9) wireless telecommunication antennas at an antenna center line height of 133-feet on an existing 140-foot Self Support tower, owned by Valley Shore Emergency Communications Inc. at 315 Spencer Plains Road, Westbrook, CT 06498. AT&T now intends to remove three (3) 4' Kathrein 7770 Panel Antennas, each currently installed in position [1], one (1) 8' Powerwave P65-17-XLH-RR Panel Antenna installed in position [3], one (1) 6' Powerwave AM-X-CD-16-65-00T-RET Panel Antenna installed in position [3], and one (1) 4'5" Powerwave SBNH-1D4646A Panel Antenna installed in position [3], and swap these for one (1) 8' Kathrein 840-370799K Panel Antenna, two (2) 6' Kathrein 800-10991K Panel antennas, each to be installed in position [3], all sectors. As well as adding one (1) 8' Kathrein 800-10966 Panel Antenna, one (1) 8' Kathrein 800-10965 Panel Antenna, and one (1) 5' Kathrein 800-10964 Panel antenna, all to be installed in position [4] all sectors. In addition, AT&T intends to remove (3) RRUS-11, and add one (1) RRUS-4415 B25, (1) RRUS-8843 B2/B66A, and (1) RRUS-4449 B5/B12, in positions [3+4], all sectors, for a total of nine (9) new RRUs. AT&T is also proposing to add (2) Raycap Squid, as well as one (1) fiber line and (4) DC Power Cables to their equipment configuration. All of the changes will take place on a new antenna mount.

Attached is a summary of the planned modifications including power density calculations reflecting the change in AT&T's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

Please accept this letter pursuant to Regulation of Connecticut State Agencies §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., a copy of this letter is being sent to Richard Pleines- Building Official, Town of Killington, CT at 323 Route 81, Killingworth, CT 06419 and Catherine Iino – First Selectwoman, Town of Killingworth, CT at 323 Route 81, Killingworth, CT 06419. A copy of this letter is being sent to the property owner, Town of Killingworth, CT at 323 Route 81, Killingworth, CT 06419 and to the tower owner, Valley Shore Emergency Communications Inc. at 315 Spencer Plains Road, Westbrook, CT 06498.

The following is a list of subsequent decisions by the Connecticut Siting Council:

- **EM-CING-070-081203-** New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 323 Route 81, Killingworth, Connecticut.
- **EM-AT&T-070-121211** – AT&T Mobility notice of intent to modify an existing telecommunications facility located at 323 Route 81, Killingworth, Connecticut.
- **EM-AT&T-070-190319** - AT&T notice of intent to modify an existing telecommunications facility located at 323 Route 81, Killingworth, Connecticut.

The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. §16-50j-72(b) (2).

1. The proposed modifications will not result in an increase in the height of the existing tower. AT&T's



- replacement antennas will be installed at the 133-foot level of the 140-foot self-support tower.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require an extension of the site boundary.
  3. The proposed modifications will not increase the noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
  4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative worst-case RF emissions calculation for AT&T's modified facility is provided in the RF Emissions Compliance Report, included in Tab 2.
  5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
  6. The tower and its foundation can support AT&T's proposed modifications. (See Structural Analysis Report included in Tab 3).

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above referenced telecommunications facility constitutes an exempt modification under R.C.S.A. §16-50j-72(b) (2).

Sincerely,

Kristina Cottone

CC w/enclosures:

Richard Pleines- Building Official, Town of Killington, CT

Catherine Iino – First Selectwoman, Town of Killingworth, CT

Town of Killington – Property Owner

Valley Shore Emergency Communications Inc.– Tower Owner

AN APPLICATION OF METRO MOBILE CTS OF : CONNECTICUT SITING  
HARTFORD, INC., FOR A CERTIFICATE OF :  
ENVIRONMENTAL COMPATIBILITY AND PUBLIC : COUNCIL  
NEED FOR THE CONSTRUCTION, MAINTENANCE,  
AND OPERATION OF FACILITIES TO PROVIDE  
CELLULAR SERVICE IN THE TOWNS OF  
KILLINGWORTH, MIDDLETOWN, AND  
OLD SAYBROOK, CONNECTICUT. : February 18, 1987

D E C I S I O N   A N D   O R D E R

Pursuant to the foregoing opinion, the Connecticut Siting Council (Council) hereby directs that a Certificate of Environmental Compatibility and Public Need as provided by Section 16-50k of the General Statutes of Connecticut (CGS) be issued to Metro Mobile CTS of Hartford, Inc., for the construction, operation, and maintenance of a cellular mobile phone telecommunication tower and associated equipment in the town of Killingworth, Connecticut. The proposed Middletown and Old Saybrook sites are rejected without prejudice.

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

1. The tower, including antennas, shall be no taller than necessary to provide the proposed service, and in no event shall exceed 173 feet.
2. A fence not lower than eight feet shall surround the tower and its associated equipment building.
3. Unless necessary to comply with condition number four, below, no lights shall be installed on the tower.
4. The facility shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations.

5. The certificate holder shall comply with sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies, providing for development and management (D&M) plans and reporting. The D&M plan shall provide plans for evergreen screening around the fenced perimeter.
6. No construction activities shall take place outside the hours of 7:00 A.M. to 7:00 P.M., Monday through Saturday.
7. The certificate holder or its successor shall notify the Council if and when directional antennas or any equipment other than that listed in the D&M plan is added to the facility.
8. The certificate holder or its successor shall permit public or private entities to share space on the tower, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
9. If the tower does not provide or permanently cease to provide cellular service following completion of construction, this Decision and Order shall be void and the tower and all associated equipment shall be dismantled and removed or reapplication for any new use shall be made to the Council before any such new use is made.
10. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the issuance of this Decision and Order, or within three years of the completion of any appeal taken in this Decision.



11. The certificate holder shall comply with any future radiofrequency (RF) standards promulgated by state or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facilities granted in this Decision shall continue to be in compliance with such standards.

Pursuant to CGS section 16-50p, we hereby direct that a copy of the Decision and Order be served on each person listed below. A notice of the issuance shall be published in the Hartford Courant, the New Haven Register, the Middletown Press, and the Clinton Recorder.

C E R T I F I C A T I O N

The undersigned members of the Connecticut Siting Council hereby  
certify that they have heard this case or read the record thereof, and  
that we voted as follows:

Dated at New Britain, Connecticut, this 18th day of February 1987.

<u>Council Members</u>	<u>Vote Cast</u>		
	<u>Middletown</u>	<u>Killingworth</u>	<u>Old Saybrook</u>
<u>Gloria Dibble Pond</u> ) Gloria Dibble Pond Chairperson	No	Yes	No
<u>Peter G. Boucher</u> ) Commissioner John Downey Designee: Commissioner Peter G. Boucher	No	Yes	Yes
<u>Brian J. Emerick</u> ) Commissioner Stanley Pac Designee: Brian Emerick	No	Yes	Yes
<u>Owen L. Clark 2/18/87</u> ) Owen L. Clark	No	Yes	Yes
<u>Fred J. Doocy</u> ) Fred J. Doocy	No	Yes	No
<u>Mortimer A. Gelston</u> ) Mortimer A. Gelston	No	Yes	No
<u>James G. Horsfall</u> ) James G. Horsfall	No	Yes	No
<u>William Smith</u> ) William Smith		Absent	
<u>Colin C. Tait</u> ) Colin C. Tait	No	No	No

STATE OF CONNECTICUT )  
COUNTY OF HARTFORD )

: ss. New Britain, February 18, 1987  
)

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

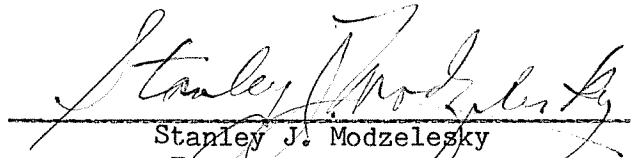
ATTEST:



John C. Kelly  
Executive Director  
Connecticut Siting Council

I certify that a copy of the opinion and decision and order have been forwarded by mail to all parties of record on 2-19-87.

ATTEST:



Stanley J. Modzelesky  
Executive Assistant  
Connecticut Siting Council

323

Search Results

Parcel Details

[Return To Search Results](#)

323 ROUTE 81



KILLINGWORTH TOWN OF

323 ROUTE 81  
KILLINGWORTH, CT 06419

Parcel ID: 24-07  
Lot Size (ac): 42.5  
Sale Price: \$0

Links

- [Parcel Details](#)
- [Photo](#)
- [Google Map](#)

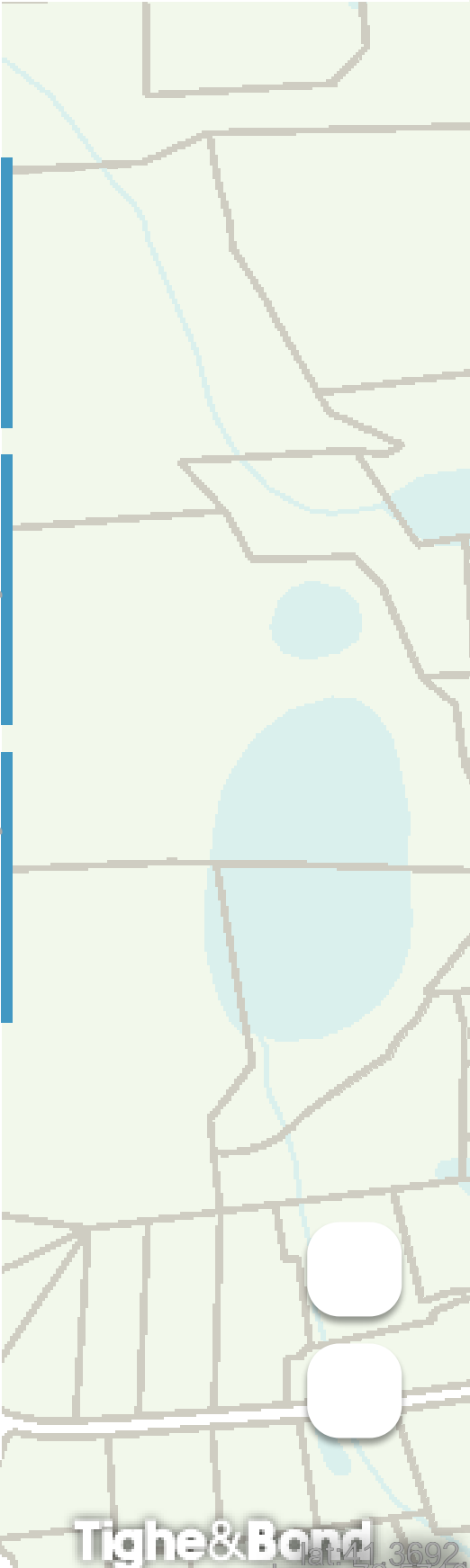
Abutters

- [Scrolling Bird's Eye](#)
- [Parcel](#)
- [Remove Parcel](#)

About

Layers

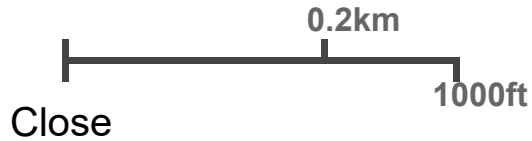
Identify



Tighe & Bond  
lat: 41.3692  
long: -72.5718

Email Map Link

Copy and paste the following string into an email to link to the current map view



## Print Map

Size:

Scale: 1" =  ft. Title:

Print



**Tighe&Bond**  
lat: 41.3692  
long: -72.5718



August 22, 2019

Smartlink, LLC  
85 Rangeway Road, Bldg. #3, Suite 102  
North Billerica, MA 01862-2105

Attn: David Barbagallo  
Re: 140' Self-Supporting Tower, Killingworth, Connecticut  
AT&T Site #CTL02045, Killingworth

Dear David,

All-Points Technology Corporation, P.C. (APT) performed a structural analysis of the 140' self-supporting tower located on Route 81 in Killingworth, Connecticut for equipment changes proposed by AT&T. APT's structural analysis, dated July 25, 2019, found the tower required reinforcement to accommodate the proposed equipment changes.

Reinforcement design was performed in accordance with the Connecticut State Building Code and TIA-222, revision G, Structural Standard for Antenna Supporting Structures and Antennas using a 3-second gust wind speed of 130-mph (ultimate) with no ice and 50-mph with 3/4" radial ice.

Reinforcement design was conducted for the following antenna inventory (proposed equipment shown in **bold** text, equipment to be removed shown with ~~strikethrough~~):

Antenna	Elev.	Mount	Feed lines
(3) Telewave ANT450F6 omnidirectional whips	142'	(3) 3' sidearms w/pipe ext.	(3) 1-1/4"
(2) 10' 4-bay dipoles	140'	Pipe extension	7/8", 1-5/8"
3' omnidirectional whip	140'	8' x 2" pipe on bracing	7/8"
12' omnidirectional whip	139'	Same pipe as above	7/8"
<b>(3) 7770.00, (1) 840-370799K, (2) 800-10991, (1) 800-10964, (1) 800-10965, (1) 800-10966 panels, (6) TMAs, (6) duplexers, (3) 4415 RRHs, (3) 4449 RRHs, (3) 8843 RRHs, (3) 7020 RETs, (3) 'squid' D-boxes<sup>1</sup></b>	133'	<b>(3) VFA12-WLL 12' sector mounts</b>	(12) 1-5/8", <b>(2) fiber,</b> <b>(6) power</b>
<del>Single 8' dipole</del>	130'	<del>Pipe on above mount</del>	7/8"
1' square panel	127'	Leg	(2) 3/8"
12' omnidirectional whip	124'	1' sidearm	1/2"
Scala Paraflector grid	122'	Leg	7/8"

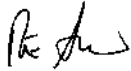
Empty mount	98'	2' standoff	None
1' square panel	85'	2' standoff	1/2"
Single 8' dipole	75'	1' sidearm	7/8"
<del>12' &amp; 20' omnidirectional whips, Telewave</del> <b>ANT150F2 omnidirectional whip</b>	63'	4' sidearm, 4' standoff	<b>(1) 7/8"</b>

<sup>1</sup> Currently installed – six 7770.00, two KMW AM-X-CD-17-65 & one SBNHH-1D1545A panel antennas, six TMAs, six diplexers, three RRHs and one 'squid' D-box, fed by twelve 1-5/8" lines, two 3/4" power cables and one 3/8" fiber line.

The attached reinforcement drawing shows modifications required to support the proposed equipment changes. Completion of the attached modifications will result in a tower structure suitable for installation of AT&T's proposed loading.

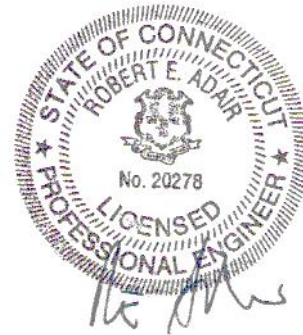
Please feel free to call if you have any questions.

Sincerely,  
**All-Points Technology Corporation, P.C.**

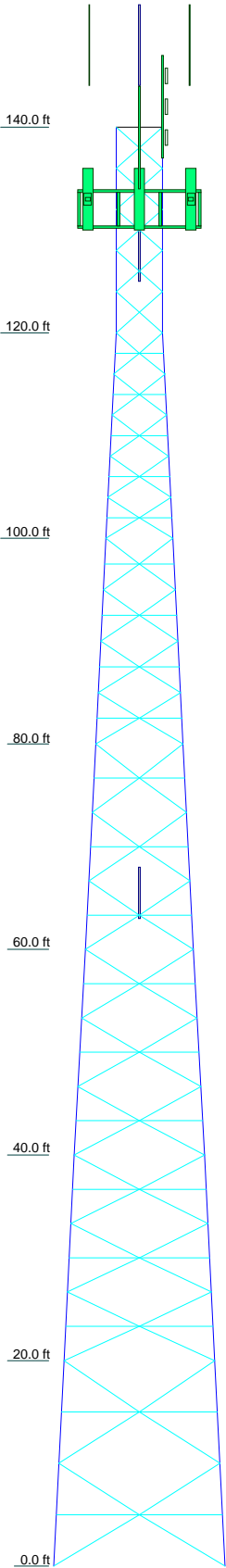


Robert E. Adair, P.E.  
Principal

CT415431 Killingworth APT reinf ltr 8-22-19



Section	T1	T2	T3	T4	T5	T6	T7	
Legs	ROHN 2 STD	ROHN 2 X-STR	ROHN 2.5 EH	ROHN 3 EH	A	4" EH with 1/3 split pipe .258 thk	ROHN 5 EH	
Leg Grade				A572-50				
Diagonals	L1 1/2x1 1/2x1/8		L2x2x1/8			L2 1/2x2 1/2x5/16	L3x3x3/8	
Diagonal Grade				A36				
Top Girts	L1 1/2x1 1/2x1/8			N.A.				
Horizontals	N.A.	L1 1/2x1 1/2x1/8	L2x2x1/8	L2 1/2x2 1/2x3/16		L2 1/2x2 1/2x5/16	L3x3x1/8	
Face Width (ft)	4.52083	4.5208	6.5625	8.5625	10.5625	12.6042	14.6563	16.6979
# Panels @ (ft)	5 @ 4	10 @ 2	8 @ 2.5	18 @ 3.33333			4 @ 5	
Weight (lb)	457.4	664.9	969.4	1525.4	2027.5	3161.7	3307.7	11884.0



# DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Telewave ANT450F6	144	(2) LGP13519 Diplexer (AT existing)	133
Telewave ANT450F6	144	(2) LGP13519 Diplexer (AT existing)	133
Telewave ANT450F6	144	(2) LGP13519 Diplexer (AT existing)	133
3' sidearm	142	Ericsson Radio 4415 (AT existing)	133
3' sidearm	142	Ericsson Radio 4415 (AT existing)	133
3' sidearm	142	Ericsson Radio 4415 (AT existing)	133
6'x2 3/8" Pipe Mount	142	Ericsson Radio 4449 (AT existing)	133
6'x2 3/8" Pipe Mount	142	Ericsson Radio 4449 (AT existing)	133
6'x2 3/8" Pipe Mount	142	Ericsson Radio 4449 (AT existing)	133
10' 4-bay dipole	140	Ericsson Radio 8843 (AT existing)	133
10' 4-bay dipole	140	Ericsson Radio 8843 (AT existing)	133
3' x 1" omni whip	140	Ericsson Radio 8843 (AT existing)	133
12' x 1.5" omni whip	139	Raycap DC6-48-60-18-8F squid (AT)	133
12' x 1.5" omni whip	136 - 124	Raycap DC6-48-60-18-8F squid (AT)	133
7770.00 (AT)	133	Raycap DC6-48-60-18-8F squid (AT existing)	133
7770.00 (AT)	133	7770.00 (AT)	133
800-10966 (AT)	133	SitePro1 VFA12-M3-WLL (AT)	132
800-10965 (AT)	133	SitePro1 VFA12-M3-WLL (AT)	132
800-10964 (AT)	133	SitePro1 VFA12-M3-WLL (AT)	132
840-370799K (AT)	133	SitePro1 VFA12-M3-WLL (AT)	132
800-10991 (AT)	133	1' square panel	127
800-10991 (AT)	133	1' sidearm	124
7020.00 RET-RCU (AT)	133	Paraflector grid	122
7020.00 RET-RCU (AT)	133	2' standoff (Empty Mount)	98
7020.00 RET-RCU (AT)	133	1' square panel	85
(2) LGP2140X TMA (AT existing)	133	2' standoff	85
(2) LGP2140X TMA (AT existing)	133	Telewave ANT150F2	68 - 63
(2) LGP2140X TMA (AT existing)	133	4' sidearm	63

# SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	3.5" EH with 1/3 split pipe .237 thk		

# MATERIAL STRENGTH

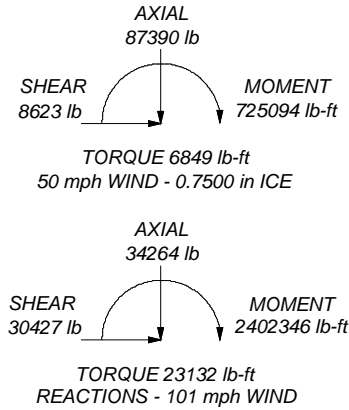
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

ALL REACTIONS  
ARE FACTORED

MAX. CORNER REACTIONS AT BASE:

DOWN: 177403 lb  
SHEAR: 19431 lb

UPLIFT: -150392 lb  
SHEAR: 16583 lb



<b>All-Points Technology</b> 116 Grandview Rd. Conway, NH 03018 Phone: (603) 496-5853 FAX: (603) 447-2124				<b>Job: 140' Self-Supporting Tower</b> Project: <b>CT415431 Killingworth reinf.</b> Client: Smartlink, LLC; AT&T# CT2045 Code: TIA-222-G Path: C:\Users\User\Documents\Jobs\3 AT&T Smartlink\CT415431 Killingworth reinf\CT415431 Killingworth reinf.dwg			
		Drawn by: REA Date: 08/21/19		App'd: Scale: NTS		Dwg No. E-1	





## All-Points Technology Corp., P.C.

116 Grandview Road  
Conway, NH 03818  
(603) 496-5853

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Client: **Smartlink, LLC**  
Job: **Killingworth, CT**  
Calculated By: **R. Adair**

Site: **CTL02045**  
Job No.: **CT425431**  
Date: **22-Aug-19**

References: TIA-222, Structural Standards for Towers  
Wang & Salmon, Reinforced Concrete Design, Chapter 20

### TOWER PIER/FOOTING DESIGN

#### Program assumes:

Footing is square in plan view.  
Pier above footing is cylindrical in shape.  
Unit weight of concrete = 150 pcf  
Submerged unit wt of concrete = 87.6 pcf  
Unit weight of soil = 100 pcf  
Submerged unit weight of soil = 37.6 pcf  
Concrete strength = 3000 psi  
Reinforcing strength = 60000 psi

#### Information to be provided:

C = Compression force to be resisted	C = 177.4 kips
T = Uplift force to be resisted	T = 150.4 kips
q = Allowable bearing capacity	q = 4.50 ksf
H = Height from ground surface to bottom of footing	H = 12.2 feet
w = depth from ground surface to water table	w = 12.2 feet
y = Height of footing	y = 3.1 feet
x = Width of footing	x = 8.50 feet
d = Diameter of pier	d = 3.00 feet
S.F. = Safety factor	S.F. = 1.0

#### Input satisfactory

#### OUTPUT:

Depth of footing =	d = 33.2 in.	
Net Allowable Soil Pressure =	3.13 ksf	
Factored Live & Dead Loads=	223.93 kips	
Total Uplift Resistance =	222.77 kips	
Uplift Factor of Safety =	1.48	<u>SATISFACTORY</u>
Net Bearing Pressure=	3.10 ksf	<u>SATISFACTORY</u>
Concrete Quantity =	10.7 c.y. per foundation	
Tension Reinf. Req'd =	4.18 in <sup>2</sup>	

**All-Points Technology Corp., P.C.**

116 Grandview Road  
Conway, NH 03818  
(603) 496-5853

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Client: Smartlink, LLC  
Job: Killingworth, CT  
Calculated By: R. Adair

Site: CTL02045  
Job No.: CT425431  
Date: 8/22/2019

**FOOTING REINFORCEMENT DESIGN:****Shear Reinforcement - Two Way**

Ultimate shear =  $V_U = 202.02$  kips  
 $v_n = 25.86$  psi  
 $v_c = 219.09$  psi **No shear reinf. needed**

**Shear Reinforcement - One Way**

Ultimate shear =  $V_U = -0.44$  kips  
 $v_n = -0.15$  psi  
 $v_c = 109.54$  psi **No shear reinf. needed**

**Transfer of Load at Base of Column**

Compressive design strength =  $1816.91$  kips **No dowels needed**  
Area of Dowels Req'd = **None Required**

**Calculate Required Footing Steel**

Ultimate moment =  $M_U = 100$  ft-kips  
 $R_U = 33$  psi  
Reinforcement ratio =  $\rho = 0.00055$   
Area of Steel Req'd =  $A_s = 1.86$  in<sup>2</sup> or  $0.22$  in<sup>2</sup>/ft of width  
  
 $C/a = 260$  kips/in.  
 $T = 111$  kips  
 $a = 0.43$  in.  
 $M_n = 276$  ft-kips **O.K.**

GENERAL NOTES:

1. Reinforcement based on structural analysis by All-Points Technology dated 25 July 2019, File No. CT415430.
2. "D" dimensions shown are calculated values. Verify dimensions and existing conditions prior to fabrication. Bring discrepancies to the attention of the Engineer before proceeding with the affected portion of the work.
3. Work is to be accomplished on an existing in-service tower. Coordinate work to minimize disruption of existing facilities.
4. Design assumes experienced, competent and qualified personnel will be performing the work.
5. Work shown is typical for three tower faces and may require relocation of utilities/hangers.
6. Work to be accomplished on one bracing bay at a time in light (<15 mph) wind conditions. Provide shoring or temporary bracing as required to complete the work.
7. Details shown are considered typical for all similar conditions unless otherwise noted.

STRUCTURAL STEEL:

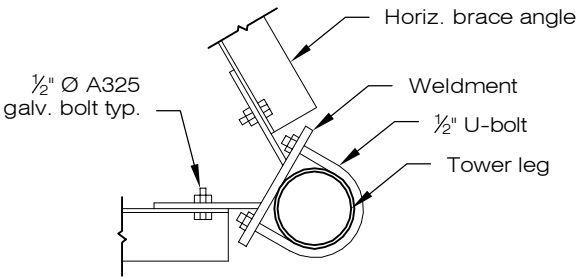
1. All structural steel work shall conform to the requirements of the American Institute of Steel Construction (AISC) and all applicable building codes.
2. Structural steel angles to be ASTM A36 steel.
3. All bolts shall be ASTM Grade A325, hot-dip galvanized per ASTM D153. Do not re-use existing bolts.
4. All bolts shall have galvanized lock washer or pal nut.
5. Bolts shall be tightened using the "turn of the nut" method as specified by AISC.
6. Weld in accordance with AWS D1.1 using certified welders and E70XX electrodes.
7. Hot-dip galvanize angles and weldments per ASTM D123 after fabrication.
8. Apply a minimum of two coats of cold galvanizing to any field cut, welded or drilled surfaces.

Brace No.	~"D" Dim.*	Size
6U	3'-11"	L1-1/2 x 1-1/2 x 1/8
6UM	4'-4"	L1-1/2 x 1-1/2 x 1/8
6M	4'-9"	L1-1/2 x 1-1/2 x 1/8
6LM	5'-2"	L1-1/2 x 1-1/2 x 1/8
6L	5'-6"	L1-1/2 x 1-1/2 x 1/8
5U	5'-11"	L2 x 2 x 1/8
5UM	6'-5"	L2 x 2 x 1/8
5LM	6'-11"	L2 x 2 x 1/8
5L	7'-5"	L2 x 2 x 1/8

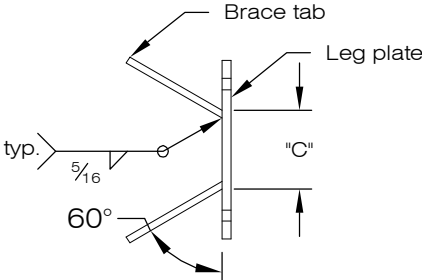
\*See General Note 2.

Assy Qty	Leg Size	U-Bolt	"A" Dim.	"B" Dim.	"C" Dim.
15	2" X-str.	JR 83A	3"	6"	1 1/2"
12	2.5" X-str.	JR 84A	3 1/2"	6"	2"

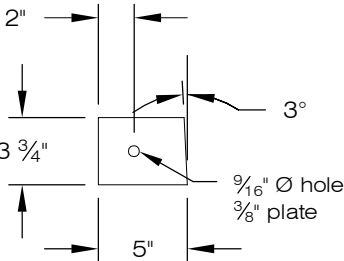
U-Bolt number refers to ROHN part number; 2 required per assy.



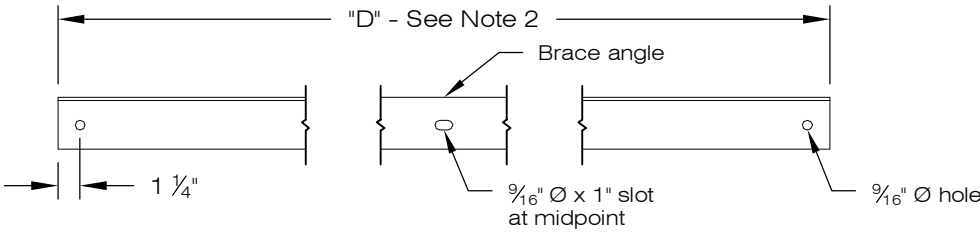
Assembly  
(27 required)



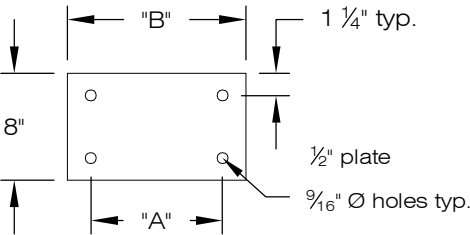
Bracket Weldment  
(27 required)



Brace Tab  
(54 required)

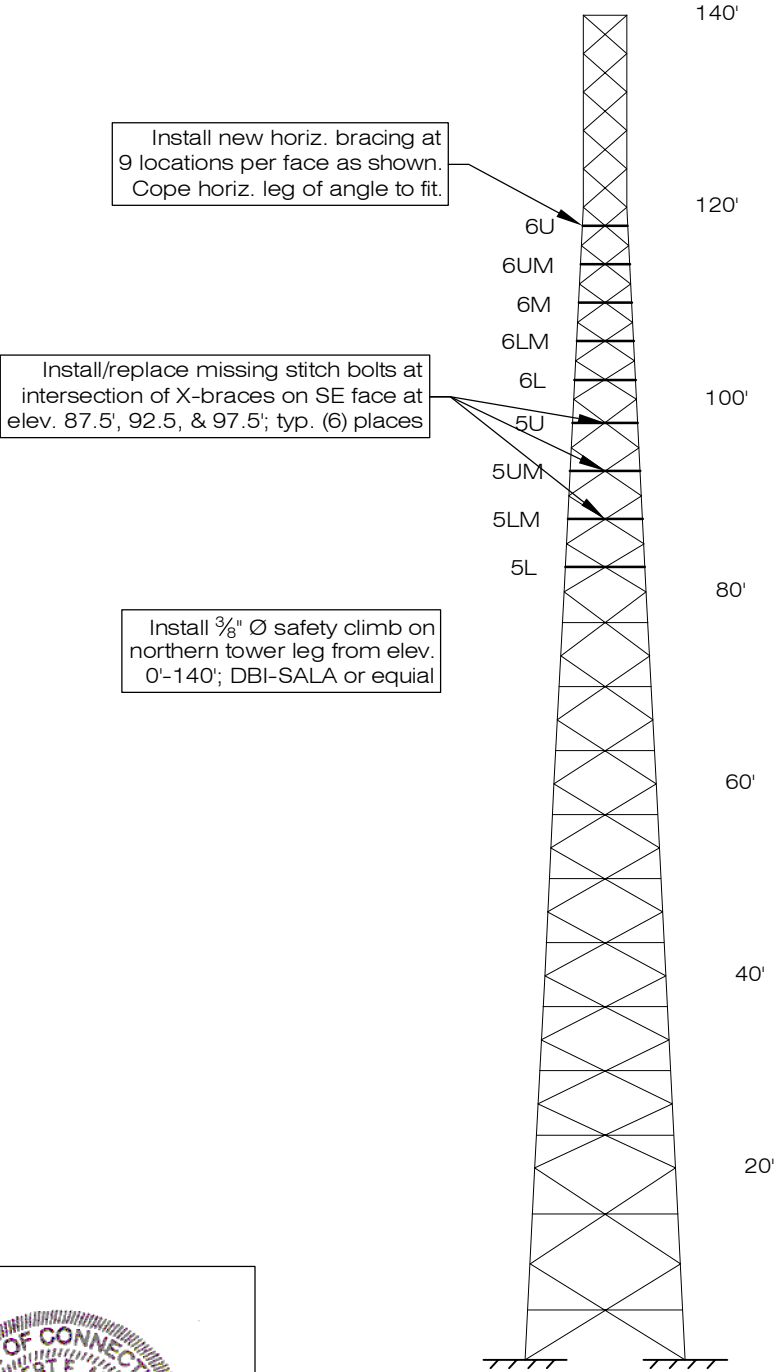


Horizontal Brace  
(27 required)

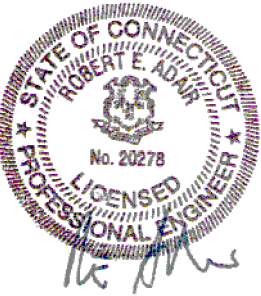


Leg Plate  
(27 required)

Mid-Bay Horizontal Brace Details



Tower Elevation  
Scale: 1" = 20'



ALL-POINTS  
TECHNOLOGY CORPORATION  
116 GRANDVIEW ROAD  
CONWAY, NH 03818  
PHONE: (603) 496-5853  
FAX: (603) 447-2124  
www.allpointstech.com

TOWER REINFORCEMENT

SHEET: 1 OF 1

SCALE: AS NOTED

DRAWN BY: TPA

DATE: 22 AUG 2019

APT JOB #CT415431

Smartlink, LLC

85 Rangeway Road  
Bldg. #3, Suite 102  
North Billerica, MA 01862-2105

AT&T SITE #CTL02045

140' SELF-SUPPORTING TOWE  
KILLINGWORTH, CONNECTICU



FROM ZERO TO INFINIGY  
the solutions are endless

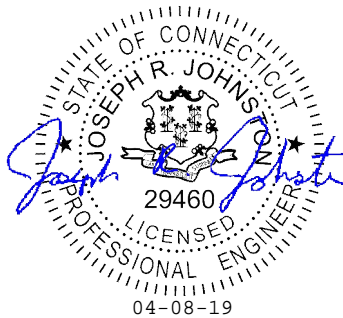
1033 WATERVLiet SHAKER RD, ALBANY, NY 12205

## Mount Analysis Report

April 7, 2019

Site Name	Killingworth – RTE 81
Site Number	CTL02045
FA Number	10034999
PACE Number	MRCTB035091/ MRCTB035254/ MRCTB035289/ MRCTB035122
Client	Smartlink
Carrier	AT&T
Infinigy Job Number	499-006
Site Location	323 Route 81 Killingworth, CT 06419 41° 22' 10.07" N NAD83 72° 33' 51.20" W NAD83
Mount Type	Sector Frame
Mount Centerline E.L.	133.0 ft
Passing Mount Usage	<b>72.8%</b>
Overall Result	<b>Pass</b>
Note	<b>Replace existing mounts with (3) SitePro1 VFA12-WLL mounts prior to installation of proposed appurtenances.</b>

Upon reviewing the results of this analysis, it is our opinion that the proposed mount meets the specified TIA code requirements. The proposed antenna mounts and connections are therefore deemed adequate to support the final loading configuration as listed in this report.



Brenden Archer  
Project Engineer II

AZ CA CO FL GA MD NC NH NJ NY TX WA



**Contents**

Introduction.....	3
Supporting Documentation.....	3
Analysis Code Requirements.....	3
Conclusion.....	3
Final Configuration Loading.....	4
Structure Usages.....	4
Mount Connections Reactions.....	4
Assumptions and Limitations.....	5
Calculations.....	Appended

## **Introduction**

Infinigy Engineering has been requested to perform a mount analysis on the existing AT&T mounts. All supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using RISA-3D Version 17.0.2 analysis software.

## **Supporting Documentation**

<b>Construction Drawings</b>	Infinigy Engineering, Job #499-006, dated January 31, 2019
<b>RFDS</b>	AT&T RFDS ID #2572167, dated January 23, 2019
<b>Previous Tower Analysis</b>	Hudson Design Group, dated November 30, 2012
<b>As-Built Drawings</b>	Hudson Design Group, dated December 7, 2012

## **Analysis Code Requirements**

Wind Speed	101 mph (3-Second Gust, $V_{ASD}$ ) / 130 mph (3-Second Gust, $V_{ULT}$ )
Wind Speed w/ ice	40 mph (3-Second Gust, $V_{ASD}$ ) w/ 1.275" ice
TIA Revision	ANSI/TIA-222-H
Adopted IBC	2015 IBC/ 2018 Connecticut State Building Code
Structure Class	II
Exposure Category	B
Topographic Category	1
Calculated Crest Height	0

## **Conclusion**

Upon reviewing the results of this analysis, it is our opinion that the proposed mount meets the specified TIA code requirements. The proposed antenna mounts and connections are therefore deemed adequate to support the final loading configuration as listed in this report.

If you have any questions, require additional information, or actual conditions differ from those as detailed in this report please contact me via the information below:

Brenden Archer  
Project Engineer II | Infinigy  
1033 Watervliet Shaker Road, Albany, NY 12205  
(O) (518) 690-0790  
[barcher@infinigy.com](mailto:barcher@infinigy.com) | [www.infinigy.com](http://www.infinigy.com)

**Final Configuration Loading**

Mount CL (ft)	Rad. HT (ft)	Verti. O/S (ft)	Hori. O/S (ft) <sup>(1)</sup>	Qty.	Appurtenance <sup>(2)(3)</sup>	Carrier
133.0	133.0	0.0	8.0	1	Decibel DB225-A	AT&T
			12.0	3	Powerwave 7770	
			4.0	1	Kathrein 840-370799K	
			4.0	2	Kathrein 800-10991K	
			0.0	1	Kathrein 800-10966	
			0.0	2	Kathrein 800-10965	
			4.0	3	Ericsson RRUS-4415 B25	
			0.0	3	Ericsson RRUS-8843 B2/B66A	
			0.0	3	Ericsson RRUS-4449 B5/B12	
			12.0	6	Powerwave LGP-21401	
			--	3	Raycap DC6-48-60-18-8F	

(1) Horizontal Offset is defined as the distance from the left most edge of the mount face horizontal when viewed facing the tower.

(2) Radios are mounted behind antennas at respective locations see appended documents for vertical locations.

(3) Raycaps are mounted on the tower legs.

**Structure Usages**

Stand-off	61.6%	Pass
Horizontal	72.8%	Pass
Mount Pipe	43.3%	Pass
<b>Results</b>	<b>72.8%</b>	<b>Pass</b>

**Mount Connections**

Reaction Data	Design Capacity*	Analysis Reactions	Results
Max Tension (Kips.)	12.34	2.51	20.3%
Max Shear (Kips.)	7.70	1.11	14.4%
Unity Check	--	--	34.7%

\*Assumed (2) 1/2" A307 anchors. Contractor to field verify anchors diameter prior to proposed installation.

- Anchors reactions are acceptable when compare to code calculated capacities.

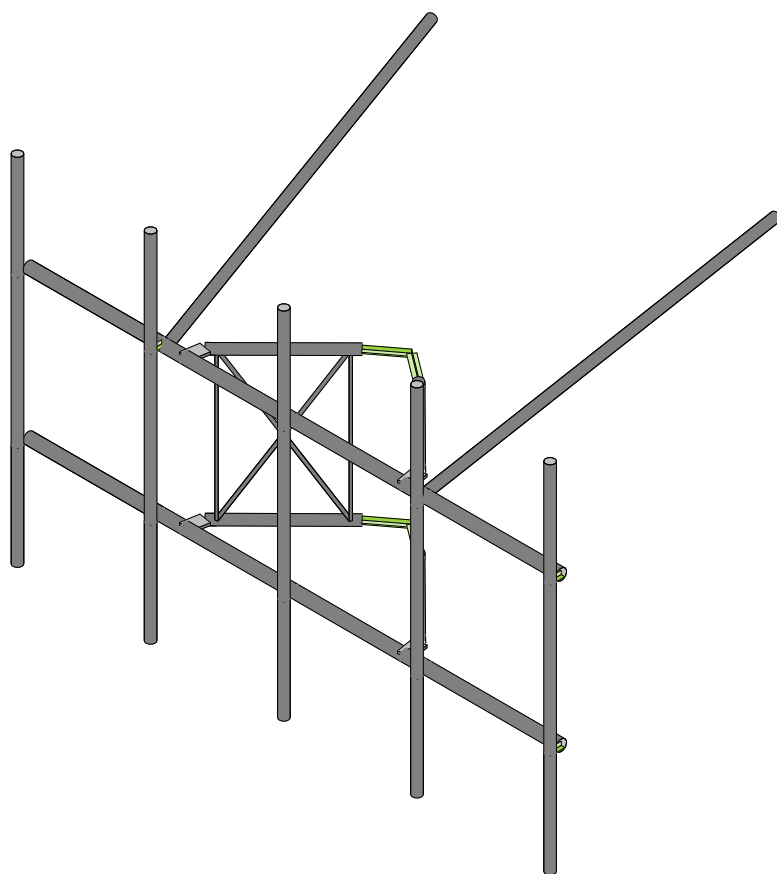
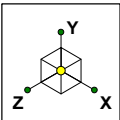


### **Assumptions and Limitations**

Our structural calculations are completed assuming all information provided to Infinigy Engineering is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of “like new” and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure’s condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report Infinigy Engineering should be notified immediately to complete a revised evaluation.

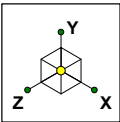
Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

This report is an evaluation of the proposed carriers mount structure only and does not reflect adequacy of the existing tower, other mounts, or coax mounting attachments. These elements are assumed to be adequate for the purposes of this analysis and are assumed to have been installed per their manufacturer requirements.

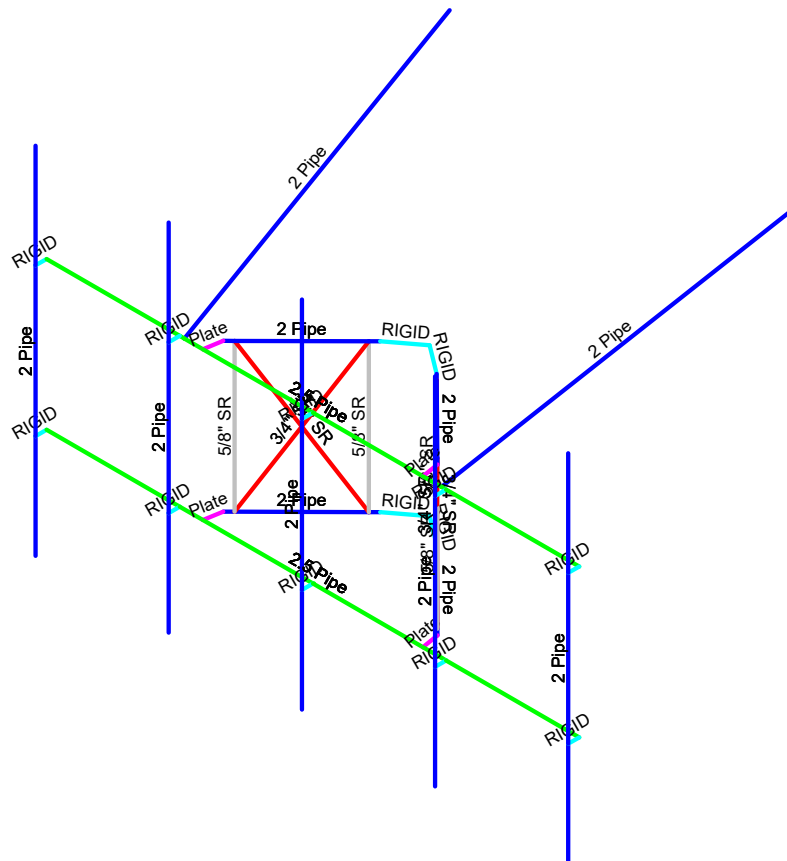


Envelope Only Solution

Infinigy Engineering, PLLC	CTL02045	Final Configuration
BDA		Apr 7, 2019 at 10:17 AM
499-006		Heavy WLL VFA12-HD (TB1).r3d

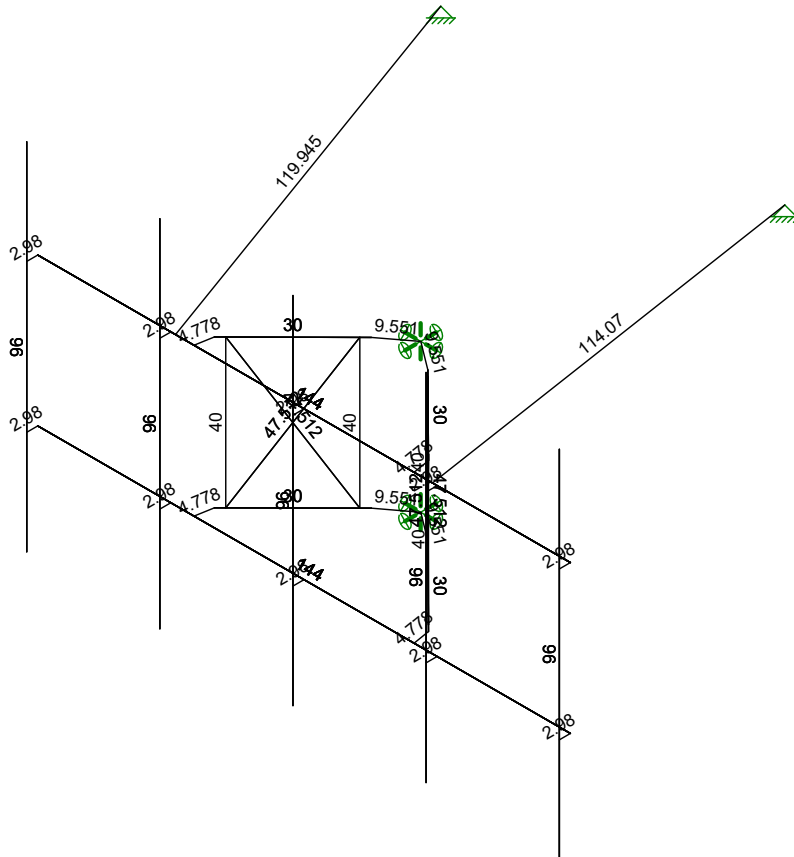


Section Sets	
<span style="color: blue;">■</span>	2 Pipe
<span style="color: green;">■</span>	2.5 Pipe
<span style="color: red;">■</span>	3/4" SR
<span style="color: gray;">■</span>	5/8" SR
<span style="color: magenta;">■</span>	Plate
<span style="color: cyan;">■</span>	RIGID

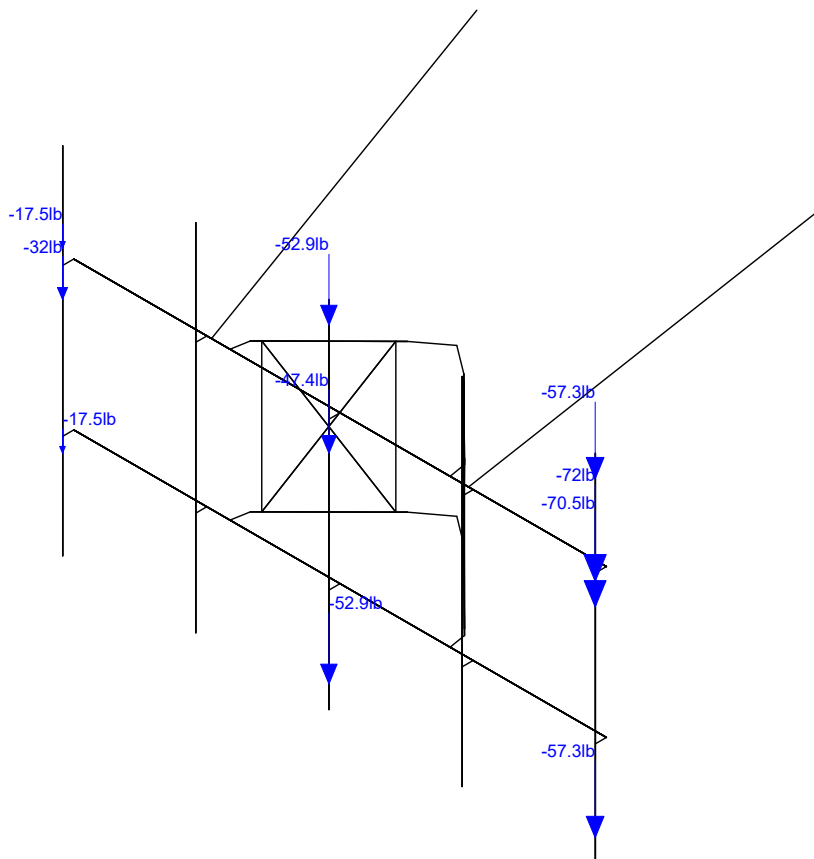
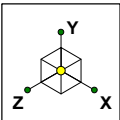


Envelope Only Solution

Infinigy Engineering, PLLC	CTL02045	Final Configuration
BDA		Apr 7, 2019 at 10:17 AM
499-006		Heavy WLL VFA12-HD (TB1).r3d

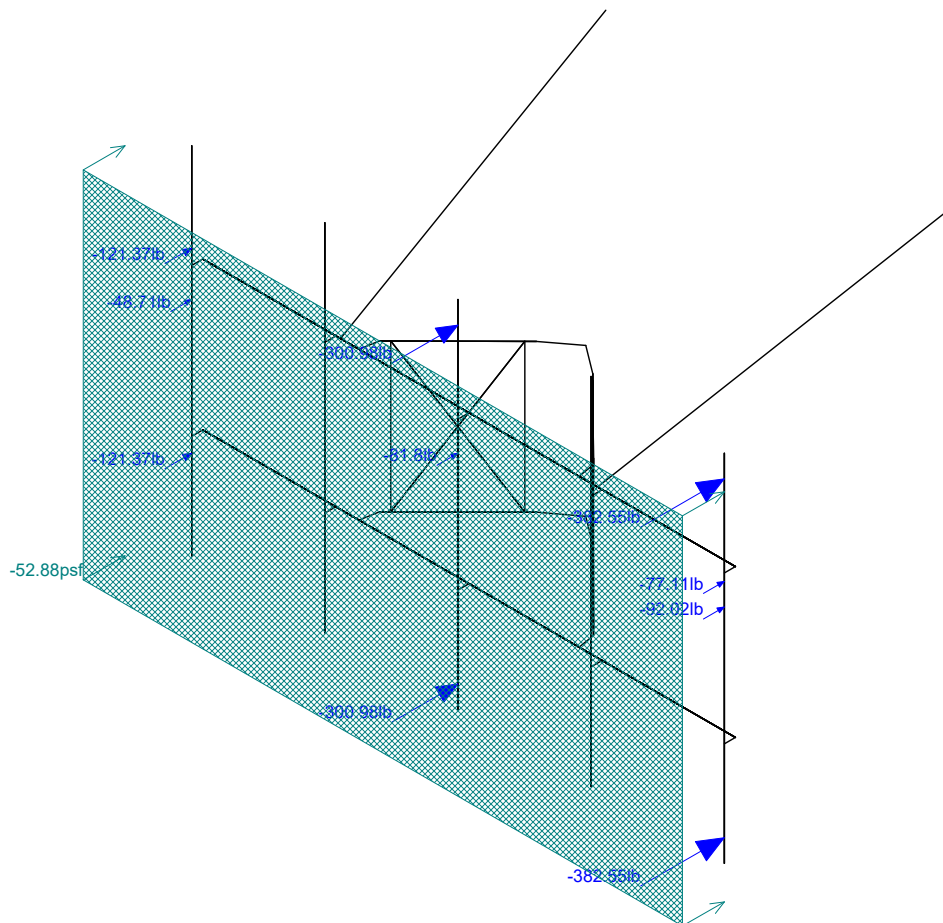
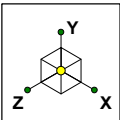


Heavy WLL VFA12-HD (TB1).r3d



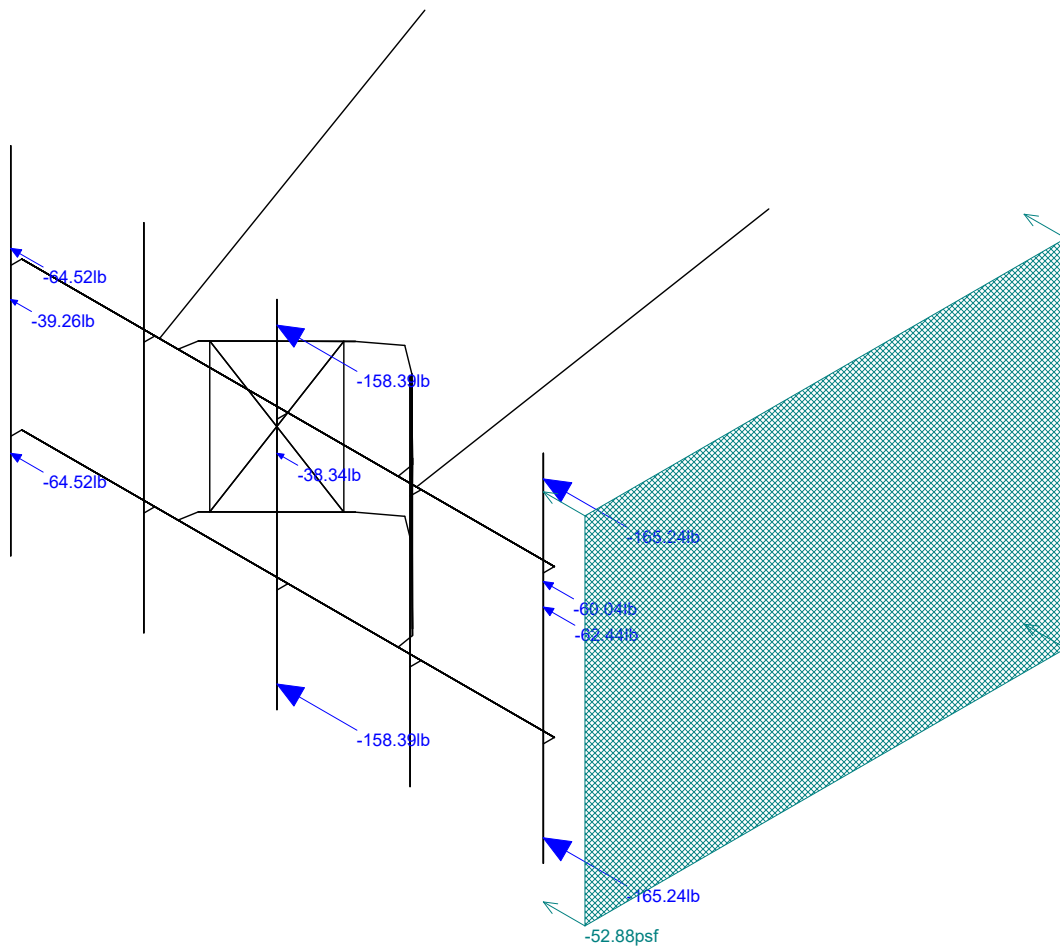
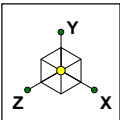
Loads: BLC 1, Self Weight  
Envelope Only Solution

Infinigy Engineering, PLLC	CTL02045	Final Configuration
BDA		Apr 7, 2019 at 10:18 AM
499-006		Heavy WLL VFA12-HD (TB1).r3d



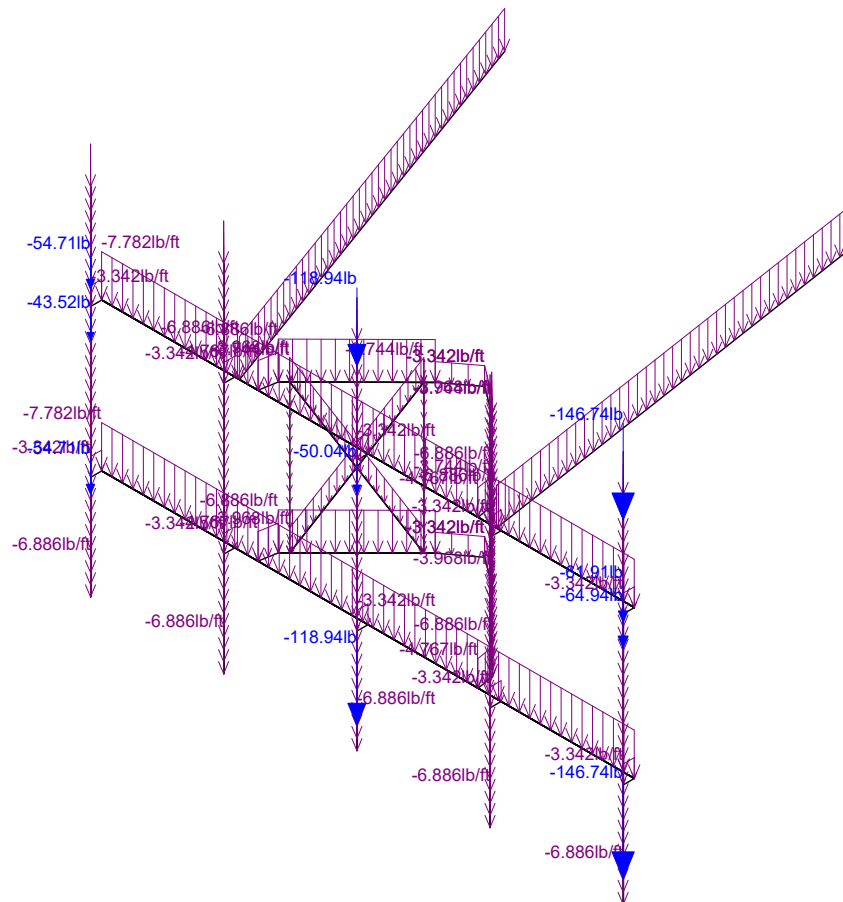
Loads: BLC 2, Wind Load AZI 000  
Envelope Only Solution

Infinigy Engineering, PLLC	CTL02045	Final Configuration
BDA		Apr 7, 2019 at 10:18 AM
499-006		Heavy WLL VFA12-HD (TB1).r3d



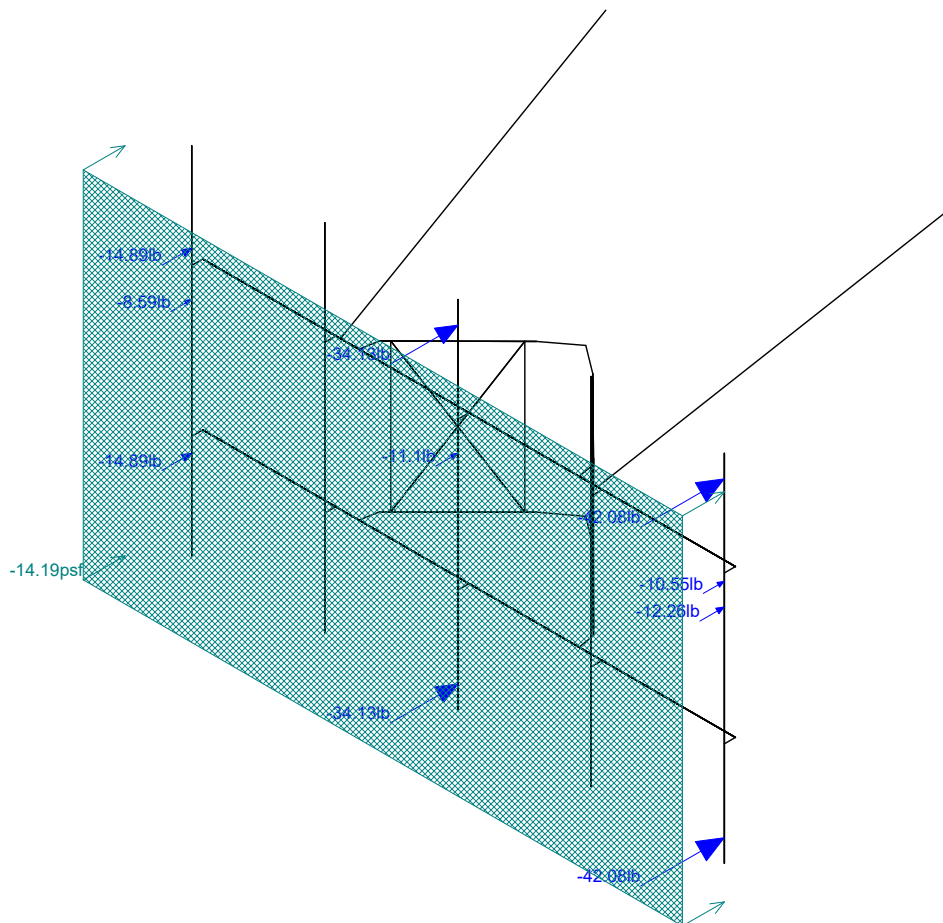
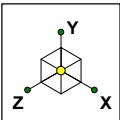
Loads: BLC 3, Wind Load AZI 090  
Envelope Only Solution

Infinigy Engineering, PLLC	CTL02045	Final Configuration
BDA		Apr 7, 2019 at 10:18 AM
499-006		Heavy WLL VFA12-HD (TB1).r3d



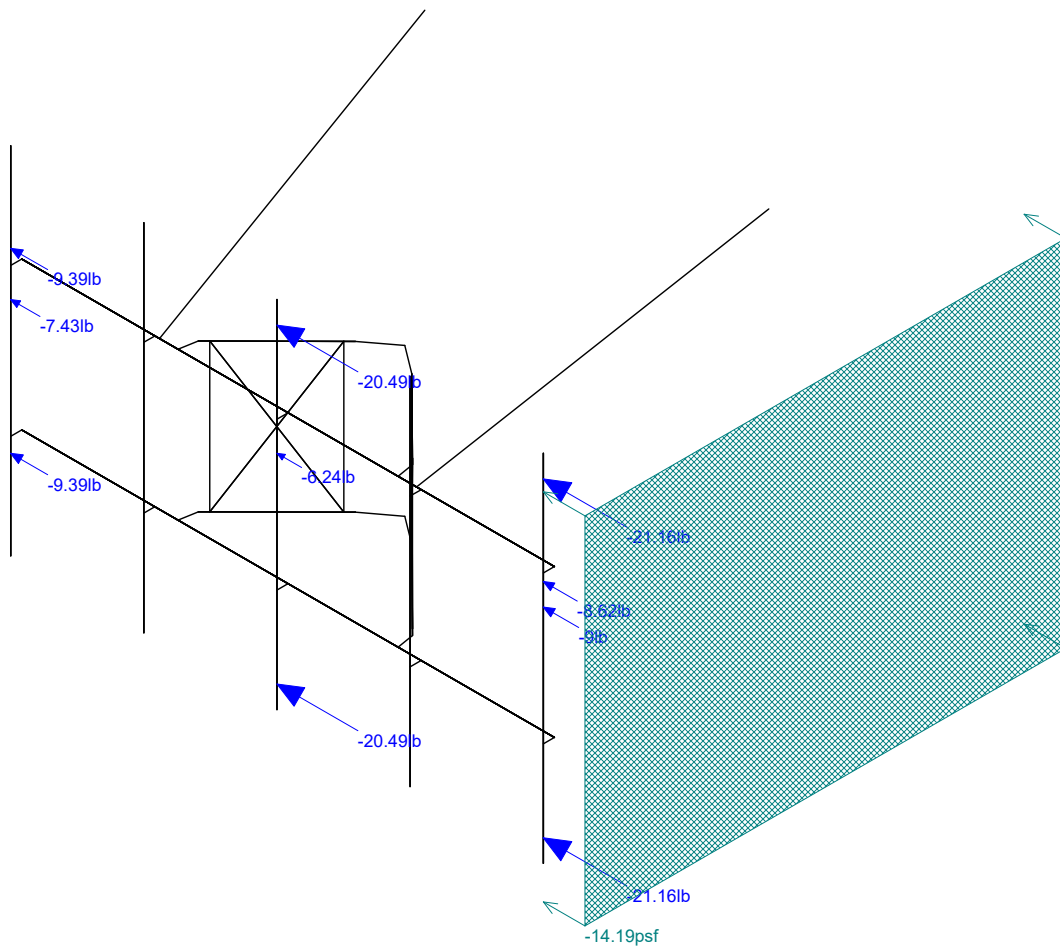
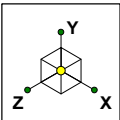
Heavy WLL VFA12-HD (TB1).r3d





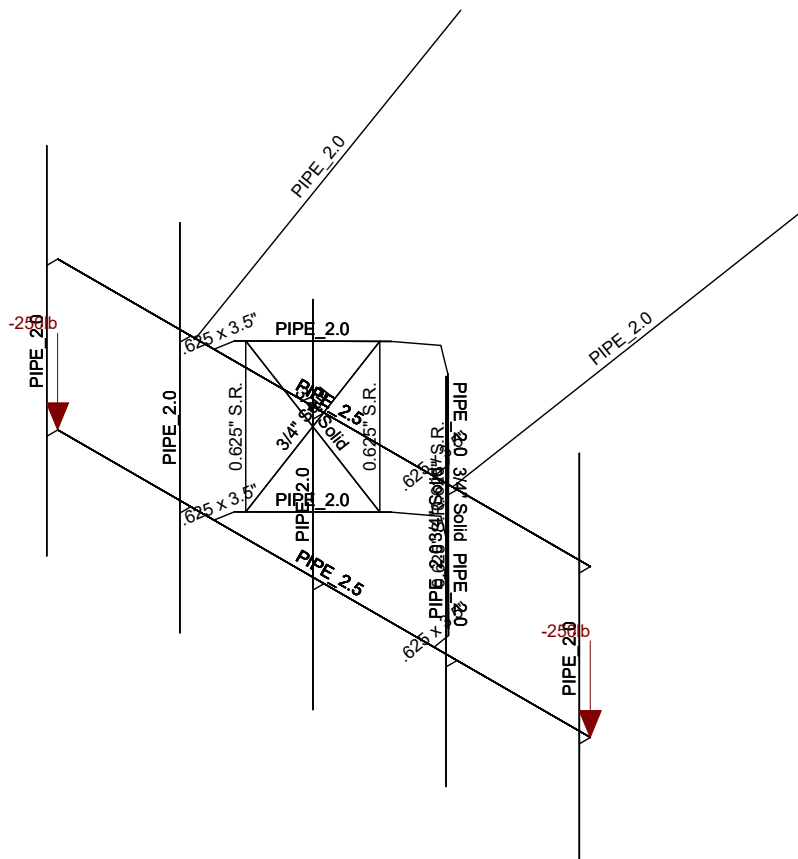
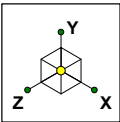
Loads: BLC 5, Wind + Ice Load AZI 000  
Envelope Only Solution

Infinigy Engineering, PLLC	CTL02045	Final Configuration
BDA		Apr 7, 2019 at 10:18 AM
499-006		Heavy WLL VFA12-HD (TB1).r3d



Loads: BLC 6, Wind + Ice Load AZI 090  
Envelope Only Solution

Infinigy Engineering, PLLC	CTL02045	Final Configuration
BDA		Apr 7, 2019 at 10:18 AM
499-006		Heavy WLL VFA12-HD (TB1).r3d



Loads: BLC 7, Service Live 1  
Envelope Only Solution

Infinigy Engineering, PLLC	CTL02045	Final Configuration
BDA		Apr 7, 2019 at 10:18 AM
499-006		Heavy WLL VFA12-HD (TB1).r3d

Site Name: **CTL02045**  
 Client: **Smartlink**  
 Carrier: **AT&T**  
 Engineer: **BDA**  
 Date: **4/7/2019**



INFINIGY WIND LOAD CALCULATOR 3.0.2

Site Information Inputs:

Adopted Building Code: **2015 IBC**  
 Structure Load Standard: **TIA-222-H**  
 Antenna Load Standard: **TIA-222-H**  
 Structure Risk Category: **II**  
 Structure Type: **Mount - Sector**  
 Number of Sectors: **3**  
 Structure Shape 1: **Round**

Rooftop Inputs:

Rooftop Wind Speed-Up?: **No**

Wind Loading Inputs:

Design Wind Velocity: **130** mph (ultimate 3-second gust)  
 Wind Centerline 1 ( $z_1$ ): **133.0** ft  
 Side Face Angle ( $\theta$ ): **60** degrees  
 Exposure Category: **B**  
 Topographic Category: **1**

Wind with No Ice		
$q_z$ (psf)	Gh	$F_{ST}$ (psf)
44.07	1.00	<b>52.88</b>

Wind with Ice		
$q_z$ (psf)	Gh	$F_{ST}$ (psf)
4.17	1.00	<b>14.19</b>

Ice Loading Inputs:

Is Ice Loading Needed?: **Yes**  
 Ice Wind Velocity: **40** mph (ultimate 3-second gust)  
 Base Ice Thickness: **1.275** in

Input Appurtenance Information and Load Placements:

Appurtenance Name	Elevation (ft)	Total Quantity	$K_a$	Front Shape	Side Shape	$Q_z$ (psf)	EPA ( $ft^2$ )	$F_z$ (lbs)	$F_x$ (lbs)	$F_z(60)$ (lbs)	$F_x(30)$ (lbs)
Powerwave 7770	133.0	3	1.00	Flat	Flat	44.07	5.51	242.73	129.03	157.46	214.31
Kathrein 840-370799K	133.0	1	1.00	Flat	Flat	44.07	13.66	601.96	316.78	388.08	530.67
Kathrein 800-10991K	133.0	2	1.00	Flat	Flat	44.07	13.81	608.71	257.04	344.96	520.79
Kathrein 800-10966	133.0	1	1.00	Flat	Flat	44.07	17.36	765.10	330.49	439.14	656.45
Kathrein 800-10965	133.0	2	1.00	Flat	Flat	44.07	13.81	608.71	257.04	344.96	520.79
Ericsson RRUS-4415 B25	133.0	3	1.00	Flat	Flat	44.07	1.86	81.80	38.34	49.20	70.93
Ericsson RRUS-4449 B5/B12	133.0	3	1.00	Flat	Flat	44.07	2.09	92.02	62.44	69.84	84.63
Ericsson RRUS-8843 B2/B66A	133.0	3	1.00	Flat	Flat	44.07	1.75	77.11	60.04	64.31	72.85
Powerwave LGP-21401	133.0	6	1.00	Flat	Flat	44.07	0.55	24.36	19.63	20.81	23.18
Raycap DC6-48-60-18-8F	133.0	3	1.00	Round	Round	44.07	1.21	53.39	53.39	53.39	53.39
Decibel DB225-A	133.0	1	1.00	Round	Round	44.07	2.85	125.71	125.71	125.71	125.71

## Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
1	M1	N6	N2		90	RIGID	None	None	RIGID	Typical
2	M3	N5	N3		90	RIGID	None	None	RIGID	Typical
3	M5	N5	N8		90	RIGID	None	None	RIGID	Typical
4	M7	N6	N9		90	RIGID	None	None	RIGID	Typical
5	M2	N12	N1		90	Plate	Beam	None	A36 Gr.36	Typical
6	M4	N17	N4		90	Plate	Beam	None	A36 Gr.36	Typical
7	M6	N16	N7		90	Plate	Beam	None	A36 Gr.36	Typical
8	M8	N13	N10		90	Plate	Beam	None	A36 Gr.36	Typical
9	TB1	TF5	TL5			2 Pipe	Beam	Pipe	A53-b	Typical
10	M14	N11	N14			2.5 Pipe	Beam	Pipe	A53-b	Typical
11	M15	N18	N15			2.5 Pipe	Beam	Pipe	A53-b	Typical
12	M16	N1	N2			2 Pipe	Beam	Pipe	A53-b	Typical
13	M17	N4	N3			2 Pipe	Beam	Pipe	A53-b	Typical
14	M18	N7	N8			2 Pipe	Beam	Pipe	A53-b	Typical
15	M19	N10	N9			2 Pipe	Beam	Pipe	A53-b	Typical
16	M24	N50	N51			5/8" SR	Beam	BAR	A36 Gr.36	Typical
17	M25	N54A	N55A			5/8" SR	Beam	BAR	A36 Gr.36	Typical
18	M26	N57A	N56A			5/8" SR	Beam	BAR	A36 Gr.36	Typical
19	M27	N53	N52			5/8" SR	Beam	BAR	A36 Gr.36	Typical
20	M28	N57A	N52			3/4" SR	Beam	BAR	A36 Gr.36	Typical
21	M29	N56A	N53			3/4" SR	Beam	BAR	A36 Gr.36	Typical
22	M30	N51	N54A			3/4" SR	Beam	BAR	A36 Gr.36	Typical
23	M31	N50	N55A			3/4" SR	Beam	BAR	A36 Gr.36	Typical
24	TB2	TF6	TL4			2 Pipe	Beam	Pipe	A53-b	Typical
25	MP1	N60	N56			2 Pipe	Beam	Pipe	A53-b	Typical
26	MP2	N61	N57			2 Pipe	Beam	Pipe	A53-b	Typical
27	MP4	N59	N55B			2 Pipe	Beam	Pipe	A53-b	Typical
28	MP5	N58	N54B			2 Pipe	Beam	Pipe	A53-b	Typical
29	M33	N51A	N11			RIGID	None	None	RIGID	Typical
30	M34	N48	N18			RIGID	None	None	RIGID	Typical
31	M35	N52B	N52A			RIGID	None	None	RIGID	Typical
32	M36	N53B	N53A			RIGID	None	None	RIGID	Typical
33	M37A	N46	N55			RIGID	None	None	RIGID	Typical
34	M38	N47	N54			RIGID	None	None	RIGID	Typical
35	M39A	N50A	N14			RIGID	None	None	RIGID	Typical
36	M40A	N49	N15			RIGID	None	None	RIGID	Typical
37	MP3	N59A	N58A			2 Pipe	Beam	Pipe	A53-b	Typical
38	M38A	N61A	N57B			RIGID	None	None	RIGID	Typical
39	M39	N60A	N56B			RIGID	None	None	RIGID	Typical

## Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	General				
2	RIGID		14	68	0
3	Total General		14	68	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	.625 x 3.5"	4	19.1	0
7	A36 Gr.36	3/4" Solid	4	190	0
8	A36 Gr.36	0.625" S.R.	4	160	0
9	A53-b	PIPE 2.0	11	834	.2
10	A53-b	PIPE 2.5	2	288	.1
11	Total HR Steel		25	1491.2	.4

## Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(...
1	Self Weight	DL		-1			10		
2	Wind Load AZI 000	WLZ					10	1	
3	Wind Load AZI 090	WLX					10	1	
4	Ice Weight	OL1					10	39	
5	Wind + Ice Load AZI 000	OL2					10	1	
6	Wind + Ice Load AZI 090	OL3					10	1	
7	Service Live 1	LL				2			
8	Seismic Load AZI 000	ELZ							
9	Seismic Load AZI 090	ELX							
10	BLC 2 Transient Area Loads	None						27	
11	BLC 3 Transient Area Loads	None						35	
12	BLC 5 Transient Area Loads	None						27	
13	BLC 6 Transient Area Loads	None						35	

## Load Combinations

	Description	S...P...	S...B...Fa...	BLC	Fac...	BLC Fa...	B...F...	B...F...	B...F...	B...F...	B...F...	B...F...	B...F...	B...F...	B...F...
1	1.4D	Y...Y	DL 1.4												
2	1.2D + 1W AZI 000	Y...Y	DL 1.2 WLZ 1												
3	1.2D + 1W AZI 030	Y...Y	DL 1.2 WLZ .866 W...			.5									
4	1.2D + 1W AZI 060	Y...Y	DL 1.2 WLZ .5 W...			.866									
5	1.2D + 1W AZI 090	Y...Y	DL 1.2 W...			1									
6	1.2D + 1W AZI 120	Y...Y	DL 1.2 WLZ -.5 W...			.866									
7	1.2D + 1W AZI 150	Y...Y	DL 1.2 WLZ -.866 W...			.5									
8	1.2D + 1W AZI 180	Y...Y	DL 1.2 WLZ -1												
9	1.2D + 1W AZI 210	Y...Y	DL 1.2 WLZ -.866 W...			-.5									
10	1.2D + 1W AZI 240	Y...Y	DL 1.2 WLZ -.5 W...			-.866									
11	1.2D + 1W AZI 270	Y...Y	DL 1.2 W...			-1									
12	1.2D + 1W AZI 300	Y...Y	DL 1.2 WLZ .5 W...			-.866									
13	1.2D + 1W AZI 330	Y...Y	DL 1.2 WLZ .866 W...			-.5									
14	0.9D + 1W AZI 000	Y...Y	DL .9 WLZ 1												
15	0.9D + 1W AZI 030	Y...Y	DL .9 WLZ .866 W...			.5									
16	0.9D + 1W AZI 060	Y...Y	DL .9 WLZ .5 W...			.866									
17	0.9D + 1W AZI 090	Y...Y	DL .9 W...			1									
18	0.9D + 1W AZI 120	Y...Y	DL .9 WLZ -.5 W...			.866									
19	0.9D + 1W AZI 150	Y...Y	DL .9 WLZ -.866 W...			.5									
20	0.9D + 1W AZI 180	Y...Y	DL .9 WLZ -1												
21	0.9D + 1W AZI 210	Y...Y	DL .9 WLZ -.866 W...			-.5									
22	0.9D + 1W AZI 240	Y...Y	DL .9 WLZ -.5 W...			-.866									
23	0.9D + 1W AZI 270	Y...Y	DL .9 W...			-1									
24	0.9D + 1W AZI 300	Y...Y	DL .9 WLZ .5 W...			-.866									
25	0.9D + 1W AZI 330	Y...Y	DL .9 WLZ .866 W...			-.5									
26	1.2D + 1.0Di	Y...Y	DL 1.2 OL1 1												
27	1.2D + 1.0Di + 1.0Wi AZI 000	Y...Y	DL 1.2 OL1 1 OL2 1												
28	1.2D + 1.0Di + 1.0Wi AZI 030	Y...Y	DL 1.2 OL1 1 OL2 .866 ...			.5									
29	1.2D + 1.0Di + 1.0Wi AZI 060	Y...Y	DL 1.2 OL1 1 OL2 .5 ...			.8...									
30	1.2D + 1.0Di + 1.0Wi AZI 090	Y...Y	DL 1.2 OL1 1 OL2 ...			1									
31	1.2D + 1.0Di + 1.0Wi AZI 120	Y...Y	DL 1.2 OL1 1 OL2 -.5 ...			.8...									
32	1.2D + 1.0Di + 1.0Wi AZI 150	Y...Y	DL 1.2 OL1 1 OL2 -.866 ...			.5									
33	1.2D + 1.0Di + 1.0Wi AZI 180	Y...Y	DL 1.2 OL1 1 OL2 -1												
34	1.2D + 1.0Di + 1.0Wi AZI 210	Y...Y	DL 1.2 OL1 1 OL2 -.866 ...			-.5									
35	1.2D + 1.0Di + 1.0Wi AZI 240	Y...Y	DL 1.2 OL1 1 OL2 -.5 ...			----									
36	1.2D + 1.0Di + 1.0Wi AZI 270	Y...Y	DL 1.2 OL1 1 OL2 ...			-1									
37	1.2D + 1.0Di + 1.0Wi AZI 300	Y...Y	DL 1.2 OL1 1 OL2 .5 ...			----									
38	1.2D + 1.0Di + 1.0Wi AZI 330	Y...Y	DL 1.2 OL1 1 OL2 .866 ...			-.5									

## Load Combinations (Continued)

	Description	S...P...	S...B...Fa...	BLC	Fac...	BLCFa...	B...F...	B...F...	B...F...	B...F...	B...F...	B...F...	B...F...	B...F...
39	1.2D + 1.5L + 1.0WL (30 mph) AZI 000	Y...Y	DL 1.2	LL 1.5	WLZ .053									
40	1.2D + 1.5L + 1.0WL (30 mph) AZI 030	Y...Y	DL 1.2	LL 1.5	WLZ .046		.0...							
41	1.2D + 1.5L + 1.0WL (30 mph) AZI 060	Y...Y	DL 1.2	LL 1.5	WLZ .027		.0...							
42	1.2D + 1.5L + 1.0WL (30 mph) AZI 090	Y...Y	DL 1.2	LL 1.5			.0...							
43	1.2D + 1.5L + 1.0WL (30 mph) AZI 120	Y...Y	DL 1.2	LL 1.5	WLZ -.027		.0...							
44	1.2D + 1.5L + 1.0WL (30 mph) AZI 150	Y...Y	DL 1.2	LL 1.5	WLZ -.046		.0...							
45	1.2D + 1.5L + 1.0WL (30 mph) AZI 180	Y...Y	DL 1.2	LL 1.5	WLZ -.053									
46	1.2D + 1.5L + 1.0WL (30 mph) AZI 210	Y...Y	DL 1.2	LL 1.5	WLZ -.046		-.0...							
47	1.2D + 1.5L + 1.0WL (30 mph) AZI 240	Y...Y	DL 1.2	LL 1.5	WLZ -.027		-.0...							
48	1.2D + 1.5L + 1.0WL (30 mph) AZI 270	Y...Y	DL 1.2	LL 1.5			-.0...							
49	1.2D + 1.5L + 1.0WL (30 mph) AZI 300	Y...Y	DL 1.2	LL 1.5	WLZ .027		-.0...							
50	1.2D + 1.5L + 1.0WL (30 mph) AZI 330	Y...Y	DL 1.2	LL 1.5	WLZ .046		-.0...							

## Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N6	max	1112.608	18	2512.679	34	1110.941	19	-325.676	20	0	50	643.064	5
2		min	-1714.839	12	708.687	15	-2459.863	13	-1486.838	27	0	1	-207.506	23
3	N5	max	868.479	5	155.089	28	1823.54	27	270.204	8	0	50	108.976	32
4		min	-311.801	23	-18.685	21	-632.639	20	-268.868	14	0	1	-30.689	25
5	TL4	max	278.628	3	47.928	35	746.794	3	0	50	0	50	0	50
6		min	-248.253	21	2.328	16	-666.275	21	0	1	0	1	0	1
7	TL5	max	445.031	13	48.338	32	2816.483	13	0	50	0	50	0	50
8		min	-428.879	19	-2.499	25	-2689.707	19	0	1	0	1	0	1
9	Totals:	max	1730.488	5	2745.367	38	2818.974	2						
10		min	-1730.488	11	809.642	19	-2818.934	20						

## Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code	Che...	Loc[in]	LC	Shear Ch...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*P...	phi*M...	phi*M.....	Eqn
1	M14	PIPE 2.5	.728	106.105	8	.269	106.105			7	30825.381	50715	3596....	3596.....	H1-1b
2	M18	PIPE 2.0	.616	30	8	.229	1.579			8	31128.673	32130	1871....	1871.....	H1-1b
3	M19	PIPE 2.0	.495	0	8	.188	30			32	31128.673	32130	1871....	1871.....	H1-1b
4	M17	PIPE 2.0	.469	30	8	.099	1.579			9	31128.673	32130	1871....	1871.....	H1-1b
5	M6	.625 x 3.5"	.461	0	8	.416	4.778		y	8	69777.888	70875	922.8...	5167.....	H1-1b
6	MP5	PIPE 2.0	.433	65.684	8	.067	65.684			8	14916.096	32130	1871....	1871.....	H1-1b
7	M8	.625 x 3.5"	.397	0	32	.202	4.778		y	8	69777.888	70875	922.8...	5167.....	H1-1b
8	M27	0.625" S.R.	.388	0	30	.068	0			8	4134.294	9946.8	96.768	96.768	1 H1-1a
9	MP3	PIPE 2.0	.313	65.684	4	.050	65.684			3	14916.096	32130	1871....	1871.....	H1-1b
10	MP4	PIPE 2.0	.295	65.684	13	.200	65.684			8	14916.096	32130	1871....	1871.....	H1-1b
11	M15	PIPE 2.5	.279	109.895	2	.188	109.895			8	30825.381	50715	3596....	3596.....	H1-1b
12	TB1	PIPE 2.0	.278	0	25	.008	0			12	16061.133	32130	1871....	1871.....	H1-1b
13	M16	PIPE 2.0	.273	30	8	.110	30			35	31128.673	32130	1871....	1871.....	H1-1b
14	M4	.625 x 3.5"	.267	0	9	.120	4.778		y	46	69777.888	70875	922.8...	5167.....	H1-1b
15	MP1	PIPE 2.0	.187	30.316	50	.040	65.684			44	14916.096	32130	1871....	1871.....	H1-1b
16	MP2	PIPE 2.0	.187	65.684	41	.053	30.316			46	14916.096	32130	1871....	1871.....	H1-1b
17	M2	.625 x 3.5"	.166	0	13	.128	0		y	47	69777.888	70875	922.8...	5167.....	H1-1b
18	M28	3/4" Solid	.156	0	7	.060	47.512			8	3789.856	1432...	184.32	184.32	H1-1b
19	TB2	PIPE 2.0	.126	0	4	.007	0			30	14926.593	32130	1871....	1871.....	H1-1b
20	M24	0.625" S.R.	.108	40	38	.020	0			9	4134.294	9946.8	96.768	96.768	H1-...
21	M30	3/4" Solid	.100	0	37	.014	47.512			10	3789.856	1432...	184.32	184.32	H1-1b
22	M26	0.625" S.R.	.069	0	6	.028	0			7	4134.294	9946.8	96.768	96.768	1 H1-1b
23	M25	0.625" S.R.	.052	40	8	.018	0			5	4134.294	9946.8	96.768	96.768	H1-1b
24	M31	3/4" Solid	.003	23.756	18	.015	0			17	3789.856	1432...	184.32	184.32	H1-...
25	M29	3/4" Solid	.000	0	50	.000	0			50	3789.856	1432...	184.32	184.32	1 H1-1a

## Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	2 Pipe	PIPE 2.0	Beam	Pipe	A53-b	Typical	1.02	.627	.627	1.25
2	2.5 Pipe	PIPE 2.5	Beam	Pipe	A53-b	Typical	1.61	1.45	1.45	2.89
3	3/4" SR	3/4" Solid	Beam	BAR	A36 Gr.36	Typical	.442	.016	.016	.031
4	5/8" SR	0.625" S.R.	Beam	BAR	A36 Gr.36	Typical	.307	.007	.007	.015
5	Plate	.625 x 3.5"	Beam	None	A36 Gr.36	Typical	2.188	.071	2.233	.253

## Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N6	Reaction	Reaction	Reaction	Reaction		Reaction
2	N5	Reaction	Reaction	Reaction	Reaction		Reaction
3	TL4	Reaction	Reaction	Reaction			
4	TL5	Reaction	Reaction	Reaction			

## Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes	** NA **			None
2	M3						Yes	** NA **			None
3	M5						Yes	** NA **			None
4	M7						Yes	** NA **			None
5	M2						Yes				None
6	M4						Yes				None
7	M6						Yes				None
8	M8						Yes				None
9	TB1						Yes				None
10	M14						Yes				None
11	M15						Yes				None
12	M16						Yes				None
13	M17						Yes				None
14	M18						Yes				None
15	M19						Yes				None
16	M24						Yes				None
17	M25						Yes				None
18	M26						Yes				None
19	M27						Yes				None
20	M28						Yes				None
21	M29					Tension ...	Yes				None
22	M30						Yes				None
23	M31					Tension ...	Yes				None
24	TB2						Yes				None
25	MP1						Yes				None
26	MP2						Yes				None
27	MP4						Yes				None
28	MP5						Yes				None
29	M33						Yes	** NA **			None
30	M34						Yes	** NA **			None
31	M35						Yes	** NA **			None
32	M36						Yes	** NA **			None
33	M37A						Yes	** NA **			None
34	M38						Yes	** NA **			None
35	M39A						Yes	** NA **			None
36	M40A						Yes	** NA **			None
37	MP3						Yes				None
38	M38A						Yes	** NA **			None



## Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
39	M39						Yes	** NA **			None

## Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M2	Plate	4.778			Lbyy			.65	.65		Lateral
2	M4	Plate	4.778			Lbyy			.65	.65		Lateral
3	M6	Plate	4.778			Lbyy			.65	.65		Lateral
4	M8	Plate	4.778			Lbyy			.65	.65		Lateral
5	TB1	2 Pipe	114.07			Lbyy			.8	.8		Lateral
6	M14	2.5 Pipe	144			Lbyy			.65	.65		Lateral
7	M15	2.5 Pipe	144			Lbyy			.65	.65		Lateral
8	M16	2 Pipe	30			Lbyy			.65	.65		Lateral
9	M17	2 Pipe	30			Lbyy			.65	.65		Lateral
10	M18	2 Pipe	30			Lbyy			.65	.65		Lateral
11	M19	2 Pipe	30			Lbyy			.65	.65		Lateral
12	M24	5/8" SR	40	30	30	Lbyy			.65	.65		Lateral
13	M25	5/8" SR	40	30	30	Lbyy			.65	.65		Lateral
14	M26	5/8" SR	40	30	30	Lbyy			.65	.65		Lateral
15	M27	5/8" SR	40	30	30	Lbyy			.65	.65		Lateral
16	M28	3/4" SR	47.512			Lbyy			.65	.65		Lateral
17	M29	3/4" SR	47.512			Lbyy			.65	.65		Lateral
18	M30	3/4" SR	47.512			Lbyy			.65	.65		Lateral
19	M31	3/4" SR	47.512			Lbyy			.65	.65		Lateral
20	TB2	2 Pipe	119.945			Lbyy			.8	.8		Lateral
21	MP1	2 Pipe	96			Lbyy						Lateral
22	MP2	2 Pipe	96			Lbyy						Lateral
23	MP4	2 Pipe	96			Lbyy						Lateral
24	MP5	2 Pipe	96			Lbyy						Lateral
25	MP3	2 Pipe	96			Lbyy						Lateral

## Joint Loads and Enforced Displacements (BLC 7 : Service Live 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2/i...
1	N18	L	Y	-250
2	N15	L	Y	-250

## Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-17.5	24
2	MP3	Y	-52.9	6
3	MP5	Y	-57.3	6
4	MP3	Y	-47.4	60
5	MP5	Y	-70.5	60
6	MP5	Y	-72	66
7	MP1	Y	-32	60
8	MP1	Y	-17.5	72
9	MP3	Y	-52.9	90
10	MP5	Y	-57.3	90

## Member Point Loads (BLC 2 : Wind Load AZI 000)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-121.37	24
2	MP3	Z	-300.98	6

## Member Point Loads (BLC 2 : Wind Load AZI 000) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
3	MP5	Z	-382.55	6
4	MP3	Z	-81.8	60
5	MP5	Z	-92.02	60
6	MP5	Z	-77.11	66
7	MP1	Z	-48.71	60
8	MP1	Z	-121.37	72
9	MP3	Z	-300.98	90
10	MP5	Z	-382.55	90

## Member Point Loads (BLC 3 : Wind Load AZI 090)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-64.52	24
2	MP3	X	-158.39	6
3	MP5	X	-165.24	6
4	MP3	X	-38.34	60
5	MP5	X	-62.44	60
6	MP5	X	-60.04	66
7	MP1	X	-39.26	60
8	MP1	X	-64.52	72
9	MP3	X	-158.39	90
10	MP5	X	-165.24	90

## Member Point Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-54.71	24
2	MP3	Y	-118.94	6
3	MP5	Y	-146.74	6
4	MP3	Y	-50.04	60
5	MP5	Y	-64.94	60
6	MP5	Y	-61.91	66
7	MP1	Y	-43.52	60
8	MP1	Y	-54.71	72
9	MP3	Y	-118.94	90
10	MP5	Y	-146.74	90

## Member Point Loads (BLC 5 : Wind + Ice Load AZI 000)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-14.89	24
2	MP3	Z	-34.13	6
3	MP5	Z	-42.08	6
4	MP3	Z	-11.1	60
5	MP5	Z	-12.26	60
6	MP5	Z	-10.55	66
7	MP1	Z	-8.59	60
8	MP1	Z	-14.89	72
9	MP3	Z	-34.13	90
10	MP5	Z	-42.08	90

## Member Point Loads (BLC 6 : Wind + Ice Load AZI 090)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-9.39	24
2	MP3	X	-20.49	6
3	MP5	X	-21.16	6
4	MP3	X	-6.24	60
5	MP5	X	-9	60

## Member Point Loads (BLC 6 : Wind + Ice Load AZI 090) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
6	MP5	X	-8.62	66
7	MP1	X	-7.43	60
8	MP1	X	-9.39	72
9	MP3	X	-20.49	90
10	MP5	X	-21.16	90

## Member Distributed Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Location[in...]	End Location[in...]
1	M1	Y	-3.342	-3.342	0	%100
2	M3	Y	-3.342	-3.342	0	%100
3	M5	Y	-3.342	-3.342	0	%100
4	M7	Y	-3.342	-3.342	0	%100
5	M2	Y	-4.767	-4.767	0	%100
6	M4	Y	-4.767	-4.767	0	%100
7	M6	Y	-4.767	-4.767	0	%100
8	M8	Y	-4.767	-4.767	0	%100
9	TB1	Y	-6.886	-6.886	0	%100
10	M14	Y	-7.782	-7.782	0	%100
11	M15	Y	-7.782	-7.782	0	%100
12	M16	Y	-6.886	-6.886	0	%100
13	M17	Y	-6.886	-6.886	0	%100
14	M18	Y	-6.886	-6.886	0	%100
15	M19	Y	-6.886	-6.886	0	%100
16	M24	Y	-3.744	-3.744	0	%100
17	M25	Y	-3.744	-3.744	0	%100
18	M26	Y	-3.744	-3.744	0	%100
19	M27	Y	-3.744	-3.744	0	%100
20	M28	Y	-3.968	-3.968	0	%100
21	M29	Y	-3.968	-3.968	0	%100
22	M30	Y	-3.968	-3.968	0	%100
23	M31	Y	-3.968	-3.968	0	%100
24	TB2	Y	-6.886	-6.886	0	%100
25	MP1	Y	-6.886	-6.886	0	%100
26	MP2	Y	-6.886	-6.886	0	%100
27	MP4	Y	-6.886	-6.886	0	%100
28	MP5	Y	-6.886	-6.886	0	%100
29	M33	Y	-3.342	-3.342	0	%100
30	M34	Y	-3.342	-3.342	0	%100
31	M35	Y	-3.342	-3.342	0	%100
32	M36	Y	-3.342	-3.342	0	%100
33	M37A	Y	-3.342	-3.342	0	%100
34	M38	Y	-3.342	-3.342	0	%100
35	M39A	Y	-3.342	-3.342	0	%100
36	M40A	Y	-3.342	-3.342	0	%100
37	MP3	Y	-6.886	-6.886	0	%100
38	M38A	Y	-3.342	-3.342	0	%100
39	M39	Y	-3.342	-3.342	0	%100

## Member Distributed Loads (BLC 10 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Location[in...]	End Location[in...]
1	M1	Z	0	0	0	9.551
2	M3	Z	0	0	0	9.551
3	M5	Z	0	0	0	9.551
4	M7	Z	0	0	0	9.551
5	M2	Z	-4.461	-4.461	0	4.778

## Member Distributed Loads (BLC 10 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Location[in...	End Location[in...
6	M4	Z	-461	-461	0	4.778
7	M6	Z	-461	-461	0	4.778
8	M8	Z	-461	-461	0	4.778
9	TB1	Z	-1.606	-1.606	0	114.07
10	M14	Z	-12.669	-12.669	0	144
11	M15	Z	-12.669	-12.669	0	144
12	M16	Z	-7.437	-7.437	0	30
13	M17	Z	-7.437	-7.437	0	30
14	M18	Z	-7.437	-7.437	0	30
15	M19	Z	-7.437	-7.437	0	30
16	M24	Z	-2.754	-2.754	0	40
17	M25	Z	-2.754	-2.754	0	40
18	M26	Z	-2.754	-2.754	0	40
19	M27	Z	-2.754	-2.754	0	40
20	M28	Z	-3.057	-3.057	0	47.512
21	M30	Z	-3.057	-3.057	0	47.512
22	TB2	Z	-3.577	-3.577	0	119.945
23	MP1	Z	-10.466	-10.466	0	96
24	MP2	Z	-10.466	-10.466	0	96
25	MP4	Z	-10.466	-10.466	0	96
26	MP5	Z	-10.466	-10.466	0	96
27	MP3	Z	-10.466	-10.466	0	96

## Member Distributed Loads (BLC 11 : BLC 3 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Location[in...	End Location[in...
1	M1	X	0	0	0	9.551
2	M3	X	0	0	0	9.551
3	M5	X	0	0	0	9.551
4	M7	X	0	0	0	9.551
5	M2	X	-2.715	-2.715	0	4.778
6	M4	X	-2.715	-2.715	0	4.778
7	M6	X	-2.715	-2.715	0	4.778
8	M8	X	-2.715	-2.715	0	4.778
9	TB1	X	-10.342	-10.342	0	114.07
10	M16	X	-7.364	-7.364	0	30
11	M17	X	-7.364	-7.364	0	30
12	M18	X	-7.364	-7.364	0	30
13	M19	X	-7.364	-7.364	0	30
14	M24	X	-2.754	-2.754	0	40
15	M25	X	-2.754	-2.754	0	40
16	M26	X	-2.754	-2.754	0	40
17	M27	X	-2.754	-2.754	0	40
18	M28	X	-3.052	-3.052	0	47.512
19	M30	X	-3.052	-3.052	0	47.512
20	TB2	X	-9.835	-9.835	0	119.945
21	MP1	X	-10.466	-10.466	0	96
22	MP2	X	-10.466	-10.466	0	96
23	MP4	X	-10.466	-10.466	0	96
24	MP5	X	-10.466	-10.466	0	96
25	M33	X	0	0	0	2.98
26	M34	X	0	0	0	2.98
27	M35	X	0	0	0	2.98
28	M36	X	0	0	0	2.98
29	M37A	X	0	0	0	2.98
30	M38	X	0	0	0	2.98
31	M39A	X	0	0	0	2.98

## Member Distributed Loads (BLC 11 : BLC 3 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft.F,psf]	End Magnitude[lb/ft.F,psf]	Start Location[in...	End Location[in...
32	M40A	X	0	0	0	2.98
33	MP3	X	-10.466	-10.466	0	96
34	M38A	X	0	0	0	2.98
35	M39	X	0	0	0	2.98

## Member Distributed Loads (BLC 12 : BLC 5 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft.F,psf]	End Magnitude[lb/ft.F,psf]	Start Location[in...	End Location[in...
1	M1	Z	0	0	0	9.551
2	M3	Z	0	0	0	9.551
3	M5	Z	0	0	0	9.551
4	M7	Z	0	0	0	9.551
5	M2	Z	-.124	-.124	0	4.778
6	M4	Z	-.124	-.124	0	4.778
7	M6	Z	-.124	-.124	0	4.778
8	M8	Z	-.124	-.124	0	4.778
9	TB1	Z	-.431	-.431	0	114.07
10	M14	Z	-3.4	-3.4	0	144
11	M15	Z	-3.4	-3.4	0	144
12	M16	Z	-1.996	-1.996	0	30
13	M17	Z	-1.996	-1.996	0	30
14	M18	Z	-1.996	-1.996	0	30
15	M19	Z	-1.996	-1.996	0	30
16	M24	Z	-.739	-.739	0	40
17	M25	Z	-.739	-.739	0	40
18	M26	Z	-.739	-.739	0	40
19	M27	Z	-.739	-.739	0	40
20	M28	Z	-.82	-.82	0	47.512
21	M30	Z	-.82	-.82	0	47.512
22	TB2	Z	-.96	-.96	0	119.945
23	MP1	Z	-2.808	-2.808	0	96
24	MP2	Z	-2.808	-2.808	0	96
25	MP4	Z	-2.808	-2.808	0	96
26	MP5	Z	-2.808	-2.808	0	96
27	MP3	Z	-2.808	-2.808	0	96

## Member Distributed Loads (BLC 13 : BLC 6 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft.F,psf]	End Magnitude[lb/ft.F,psf]	Start Location[in...	End Location[in...
1	M1	X	0	0	0	9.551
2	M3	X	0	0	0	9.551
3	M5	X	0	0	0	9.551
4	M7	X	0	0	0	9.551
5	M2	X	-.729	-.729	0	4.778
6	M4	X	-.729	-.729	0	4.778
7	M6	X	-.729	-.729	0	4.778
8	M8	X	-.729	-.729	0	4.778
9	TB1	X	-2.775	-2.775	0	114.07
10	M16	X	-1.976	-1.976	0	30
11	M17	X	-1.976	-1.976	0	30
12	M18	X	-1.976	-1.976	0	30
13	M19	X	-1.976	-1.976	0	30
14	M24	X	-.739	-.739	0	40
15	M25	X	-.739	-.739	0	40
16	M26	X	-.739	-.739	0	40
17	M27	X	-.739	-.739	0	40
18	M28	X	-.819	-.819	0	47.512
19	M30	X	-.819	-.819	0	47.512

## Member Distributed Loads (BLC 13 : BLC 6 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft.F,psf]	End Magnitude[lb/ft.F,psf]	Start Location[in...	End Location[in...
20	TB2	X	-2.639	-2.639	0	119.945
21	MP1	X	-2.808	-2.808	0	96
22	MP2	X	-2.808	-2.808	0	96
23	MP4	X	-2.808	-2.808	0	96
24	MP5	X	-2.808	-2.808	0	96
25	M33	X	0	0	0	2.98
26	M34	X	0	0	0	2.98
27	M35	X	0	0	0	2.98
28	M36	X	0	0	0	2.98
29	M37A	X	0	0	0	2.98
30	M38	X	0	0	0	2.98
31	M39A	X	0	0	0	2.98
32	M40A	X	0	0	0	2.98
33	MP3	X	-2.808	-2.808	0	96
34	M38A	X	0	0	0	2.98
35	M39	X	0	0	0	2.98

## Member Area Loads (BLC 2 : Wind Load AZI 000)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N63	N62	N64	N65	Z	Open Structure	-52.88

## Member Area Loads (BLC 3 : Wind Load AZI 090)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N65	N64	N66	N67	X	Open Structure	-52.88

## Member Area Loads (BLC 5 : Wind + Ice Load AZI 000)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N63	N62	N64	N65	Z	Open Structure	-14.19

## Member Area Loads (BLC 6 : Wind + Ice Load AZI 090)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N65	N64	N66	N67	X	Open Structure	-14.19

# INFINIGY®

## Non-Ionizing Radiation Report

Compiled For: Smartlink on behalf of AT&T

Site Name: Killingworth-RTE 81

Site FA: 10034999

Site ID/USID: 59409

323 Route 81, Killingworth, CT 6419

Latitude: 41.3694639 Longitude: -72.5642211

Structure Type: Self Support Tower

Report Date: May 22, 2020



Status: AT&T will be compliant with FCC rules on RF Exposure.

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## 1. Executive Summary:

Smartlink on behalf of AT&T has contracted Infinigy Solutions, LLC to determine whether the site Killingworth-RTE 81 located at 323 Route 81 in Killingworth, CT Will Be Compliant with all Federal Communications Commission (FCC) rules and regulations for radio frequency (RF) exposure as indicated in **47CFR§1.1310**.

The report incorporates a theoretical RF field analysis in accordance with the FCC Rules and Regulations for all individuals classified as “Occupational or Controlled” and “General Public or Uncontrolled” (see Appendix A and B).

This document and the conclusions herein are based on information provided by AT&T.

As a result of the analysis, **AT&T Will Be Compliant with FCC rules.**

AT&T, All Bands Cumulative Exposure %		
Uncontrolled / General Population	Exposure values at the site (mW/cm <sup>2</sup> )	0.100
	% Exposure	1.35%
Controlled / Occupational	Exposure values at the site (mW/cm <sup>2</sup> )	0.100
	% Exposure	0.28%

## 2. Site Summary:

Site Information	
Site Name: Killingworth-RTE 81	
Site Address: 323 Route 81, Killingworth, CT 6419	
Site Type: Self Support Tower	
Compliance Status	Will Be Compliant
Mitigation Required	No
Signage Required	Yes (If not already installed)
Barriers Required	No
Access Locked	No
Area Controlled or Uncontrolled	Uncontrolled

## 3. Site Compliance

This report also incorporates overview of the site information:

- Antenna Inventory Table
- Calculation Tables showing exposure for each carrier transmit frequency
- Total exposure for all carriers existing and proposed at ground level considering the centerline of all antennas and horizontal distance from the tower.
- Maximum Effective Radiated Power Assumed as Worst Case for Calculations used in this study
- Calculations based on flat ground around base of the structure

## 4. Site Compliance Recommendations

Infinigy recommends the following upon the installation of antennas at the site:

### **Base of tower**

Install a yellow caution 2 sign at the base of the tower if none currently exists.

## 5. Antenna Inventory Table

Ant ID	Sector	Operator	Antenna manufacturer	Antenna Model	Operating Frequency/Technology	Rad Ctr (Ft)	Total ERP Power (Watts)
1	Alpha	AT&T	Powerwave	7770-850	850/UMTS	133	1276
2	Alpha	AT&T	Kathrein-Scala	840370799-1900	1900/LTE	133	4469
3a	Alpha	AT&T	Kathrein-Scala	800-10966K-700	700/LTE	133	1449
3b	Alpha	AT&T	Kathrein-Scala	800-10966K-850	850/LTE	133	1664
3c	Alpha	AT&T	Kathrein-Scala	800-10966K-2100	2100/LTE	133	2134
3d	Alpha	AT&T	Kathrein-Scala	800-10966K-850	850/5G	133	1664
4	Beta	AT&T	Powerwave	7770-850	850/UMTS	133	1276
5	Beta	AT&T	Kathrein-Scala	800-10991-1900	1900/LTE	133	3717
6a	Beta	AT&T	Kathrein-Scala	800-10965-700	700/LTE	133	1178
6b	Beta	AT&T	Kathrein-Scala	800-10965-850	850/LTE	133	1384
6c	Beta	AT&T	Kathrein-Scala	800-10965-2100	2100/LTE	133	2038
6d	Beta	AT&T	Kathrein-Scala	800-10965-850	850/5G	133	1384
7	Gamma	AT&T	Powerwave	7770-850	850/UMTS	133	1276
8	Gamma	AT&T	Kathrein-Scala	800-10991-1900	1900/LTE	133	3717
9a	Gamma	AT&T	Kathrein-Scala	800-10964-700	700/LTE	133	893
9b	Gamma	AT&T	Kathrein-Scala	800-10964-850	850/LTE	133	1003
9c	Gamma	AT&T	Kathrein-Scala	800-10964-2100	2100/LTE	133	1775
9d	Gamma	AT&T	Kathrein-Scala	800-10964-850	850/5G	133	1003

## 6. RF Guidelines

To ensure safety of company workers, the following points need to be taken into consideration and implemented at wireless sites in accordance with the Carriers policies:

- a) **Worksite:** Any employee at the site should avoid working directly in front of the antenna or in areas predicted to exceed general population exposure limits by 100%. Workers should insist that the transmitters be switched off during the work period.
- b) **RF Safety Training and Awareness:** All employees working in areas exceeding the general population limits should have a basic awareness of RF safety measures. Videos, classroom lectures and online courses are all appropriate training methods on these topics.
- c) **Site Access:** Restricting access to transmitting antenna locations is one of the most important elements of RF safety. This can be done with:
  - Locked doors/gates/ladder access
  - Alarmed doors
  - Restrictive barriers
- d) **Three-foot Buffer:** There is an inverse relationship between the strength of the field and the distance from the antenna. The RF field diminishes with distance from the antenna. Workers should maintain a three-foot distance from the antennas.
- e) **Antennas:** Workers should always assume that the antenna is transmitting and should never stop right in front of the antenna. If someone must pass by an antenna, he/she should move quickly, thus reducing RF exposure.

## Attachment 1: AT&amp;T Exposure Analysis Per Band

AT&T 700 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm <sup>2</sup> )	<b>0.5</b>
	Exposure values at the site (mW/cm <sup>2</sup> )	<b>0.0011</b>
	% Exposure	<b>0.21%</b>
Controlled / Occupational	FCC's Exposure limits(mW/cm <sup>2</sup> )	<b>2.3</b>
	Exposure values at the site (mW/cm <sup>2</sup> )	<b>0.0011</b>
	% Exposure	<b>0.05%</b>

AT&T 850 MHz UMTS		
Uncontrolled / General Population	FCC's exposure limits (mW/cm <sup>2</sup> )	<b>0.6</b>
	Exposure values at the site (mW/cm <sup>2</sup> )	<b>0.0012</b>
	% Exposure	<b>0.19%</b>
Controlled / Occupational	FCC's Exposure limits(mW/cm <sup>2</sup> )	<b>2.8</b>
	Exposure values at the site (mW/cm <sup>2</sup> )	<b>0.0012</b>
	% Exposure	<b>0.04%</b>

AT&T 850 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm <sup>2</sup> )	<b>0.6</b>
	Exposure values at the site (mW/cm <sup>2</sup> )	<b>0.0012</b>
	% Exposure	<b>0.20%</b>
Controlled / Occupational	FCC's Exposure limits(mW/cm <sup>2</sup> )	<b>2.8</b>
	Exposure values at the site (mW/cm <sup>2</sup> )	<b>0.0012</b>
	% Exposure	<b>0.04%</b>

AT&T 850 MHz 5G		
Uncontrolled / General Population	FCC's exposure limits (mW/cm <sup>2</sup> )	<b>0.6</b>
	Exposure values at the site (mW/cm <sup>2</sup> )	<b>0.0012</b>
	% Exposure	<b>0.20%</b>
Controlled / Occupational	FCC's Exposure limits(mW/cm <sup>2</sup> )	<b>2.8</b>
	Exposure values at the site (mW/cm <sup>2</sup> )	<b>0.0012</b>
	% Exposure	<b>0.04%</b>

AT&T 1900 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm <sup>2</sup> )	<b>1.0</b>
	Exposure values at the site (mW/cm <sup>2</sup> )	<b>0.0036</b>
	% Exposure	<b>0.36%</b>
Controlled / Occupational	FCC's Exposure limits(mW/cm <sup>2</sup> )	<b>5.0</b>
	Exposure values at the site (mW/cm <sup>2</sup> )	<b>0.0036</b>
	% Exposure	<b>0.07%</b>

AT&T 2100 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm <sup>2</sup> )	<b>1.0</b>
	Exposure values at the site (mW/cm <sup>2</sup> )	<b>0.0018</b>
	% Exposure	<b>0.18%</b>
Controlled / Occupational	FCC's Exposure limits(mW/cm <sup>2</sup> )	<b>5.0</b>
	Exposure values at the site (mW/cm <sup>2</sup> )	<b>0.0018</b>
	% Exposure	<b>0.04%</b>

## 7. Appendix A: FCC Guidelines

### FCC Policies

The Federal Communications Commission (FCC) in 1996 implemented regulations and policies for analysis of RF propagation to evaluate RF emissions. All the analysis and results of this report are compared with FCC's (Federal Communications Commission) rules to determine whether a site is compliant for Occupational/Controlled or General Public/Uncontrolled exposure. All the analysis of RF propagation is done in terms of a percentage. The limits primarily indicate the power density and are generally expressed in terms of milliwatts per centimeter square, mW/cm<sup>2</sup>.

FCC guidelines incorporate two separate tiers of exposure limits that are dependent on the scenario/ situation in which that exposure takes place or the status of the individuals who are subjected to that exposure. The decision as to which tier is applied to a scenario is based on the following definitions:

#### Occupational / Controlled

These limits apply in situations when someone is exposed to RF energy through his/her occupation, is fully aware of the harmful effects of the RF exposure and has an ability to exercise control over this exposure. Occupational / controlled exposure limits also apply when 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 (see below), 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. limits for Occupational/Controlled exposure can be found on Table 1(A).

#### General Population / Uncontrolled

These limits apply to situations in which the general public may be exposed or in which persons who are exposed because of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure to RF. Therefore, members of the general public would always be considered under this category, for example, in the case of a telecommunications tower that exposes people in a nearby residential area. Exposure limits for General Population/Uncontrolled can be found on Table 1(B).



**Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)****(A) Limits for Occupational/Controlled Exposure**

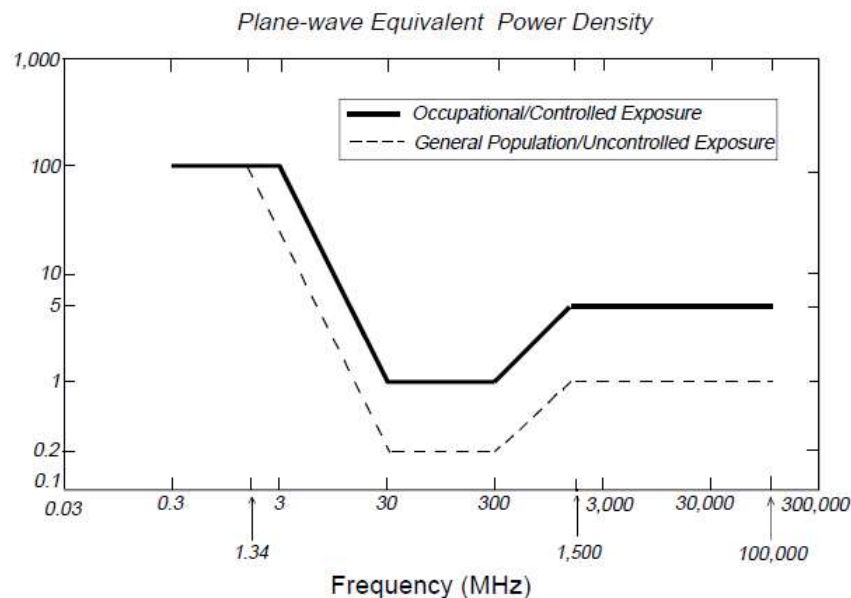
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f <sup>2</sup> )*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

**(B) Limits for General Population/Uncontrolled Exposure**

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz                      \*Plane-wave equivalent power density

**Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)**



OSHA Statement:

The objective of the OSHA Act is to ensure the safety and health of the working men and women by enforcing certain standards. The act also assists and encourages the states in their efforts to ensure safe and healthy working conditions through means of research, information, education and training in the field of occupational safety and health and for other purposes.

According to OSHA Act section 5, important duties to be considered are:

(a) Each employer

- 1) Shall furnish to each of his employees' employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious harm to his employees
- 2) Shall comply with occupational safety and health standards promulgated under this act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

## Appendix B: Preparer Certification

I, Tim Harris, preparer of this report, certify that I am fully trained and aware of the rules and regulations of both the Federal Communications Commission and the Occupational Safety and Health Administration regarding Human Exposure to Radio Frequency Radiation. In addition, I have been trained in 1) RF safety and 2) RF modeling using RoofView modeling software.

I certify that the information contained in this report is true and correct to the best of my knowledge.

*Timothy A. Harris*

*5/22/2020*

---

Signature

Date



## Kristina Cottone

**From:** TrackingUpdates@fedex.com  
**Sent:** Friday, May 29, 2020 2:13 PM  
**To:** Kristina Cottone  
**Subject:** FedEx Shipment 770559986229 Delivered

# Your package has been delivered

Tracking # 770559986229

Ship date:  
**Thu, 5/28/2020**

**Kristina Cottone**  
Smartlink LLC  
NORTH BILLERICA, MA 01862  
US



Delivered

Delivery date:  
**Fri, 5/29/2020 2:12 pm**

**ATTN: Richard Darin**  
VALLEY SHORE  
EMERGENCY  
COMMUNICATIO  
315 SPENCER PLAINS RD  
WESTBROOK, CT  
06498350915  
US

## Shipment Facts

Our records indicate that the following package has been delivered.

**Tracking number:** [770559986229](#)

**Status:** Delivered: 05/29/2020 2:12 PM  
Signed for By: Signature Not Req

**Reference:** CTL02045 - Killingworth

**Signed for by:** Signature Not Req


**Service type:** FedEx Ground

**Packaging type:** Package

**Number of pieces:** 1

**Weight:** 1.00 lb.

**Standard transit:** 5/29/2020

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 1:13 PM CDT on 05/29/2020.

All weights are estimated.

## Kristina Cottone

**From:** TrackingUpdates@fedex.com  
**Sent:** Friday, May 29, 2020 6:19 PM  
**To:** Kristina Cottone  
**Subject:** FedEx Shipment 770559927068 Delivered

# Your package has been delivered

Tracking # 770559927068

Ship date:  
**Thu, 5/28/2020**

**Kristina Cottone**  
Smartlink LLC  
NORTH BILLERICA, MA 01862  
US



Delivered

Delivery date:  
**Fri, 5/29/2020 6:18 pm**

**ATTN: Catherine lino - First  
Select**  
TOWN OF KILLINGWORTH  
323 ROUTE 81  
KILLINGWORTH, CT  
06419121823  
US

## Shipment Facts

Our records indicate that the following package has been delivered.

**Tracking number:** [770559927068](#)

**Status:** Delivered: 05/29/2020 6:18  
PM Signed for By: Signature  
on File

**Reference:** CTL02045 - Killingworth

**Signed for by:** Signature on File

**Delivery location:** Killingworth, CT


**Service type:** FedEx Ground

**Packaging type:** Package

**Number of pieces:** 1

**Weight:** 1.00 lb.

**Standard transit:** 5/29/2020

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 5:19 PM CDT on 05/29/2020.

All weights are estimated.

## Kristina Cottone

**From:** TrackingUpdates@fedex.com  
**Sent:** Friday, May 29, 2020 6:19 PM  
**To:** Kristina Cottone  
**Subject:** FedEx Shipment 770559939212 Delivered

# Your package has been delivered

Tracking # 770559939212

Ship date:  
**Thu, 5/28/2020**

**Kristina Cottone**  
Smartlink LLC  
NORTH BILLERICA, MA 01862  
US



**Delivered**

Delivery date:  
**Fri, 5/29/2020 6:18 pm**

**ATTN: Assessor**  
TOWN OF KILLINGWORTH  
323 ROUTE 81  
KILLINGWORTH, CT  
06419121823  
US

## Shipment Facts

Our records indicate that the following package has been delivered.

**Tracking number:** [770559939212](#)

**Status:** Delivered: 05/29/2020 6:18 PM

**Reference:** CTL02045 - Killingworth

**Delivery location:** Killingworth, CT

**Service type:** FedEx Ground

**Packaging type:** Package

**Number of pieces:** 1

**Weight:** 1.00 lb.

**Standard transit:** 5/29/2020

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 5:19 PM CDT on 05/29/2020.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date the package should be delivered by, based on the selected service, destination, and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

## Kristina Cottone

**From:** TrackingUpdates@fedex.com  
**Sent:** Friday, May 29, 2020 6:19 PM  
**To:** Kristina Cottone  
**Subject:** FedEx Shipment 770559850453 Delivered

# Your package has been delivered

Tracking # 770559850453

Ship date:  
**Thu, 5/28/2020**

**Kristina Cottone**  
Smartlink LLC  
NORTH BILLERICA, MA 01862  
US



Delivered

Delivery date:  
**Fri, 5/29/2020 6:18 pm**

**ATTN: Building Department**  
**Richard P**  
TOWN OF KILLINGWORTH  
323 ROUTE 81  
KILLINGWORTH, CT  
06419121823  
US

## Shipment Facts

Our records indicate that the following package has been delivered.

**Tracking number:** [770559850453](#)

**Status:** Delivered: 05/29/2020 6:18 PM  
Signed for By: Signature on File

**Reference:** CTL02045 - Killingworth

**Signed for by:** Signature on File

**Delivery location:** Killingworth, CT


**Service type:** FedEx Ground

**Packaging type:** Package

**Number of pieces:** 1

**Weight:** 1.00 lb.

**Standard transit:** 5/29/2020

 Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 5:19 PM CDT on 05/29/2020.

All weights are estimated.

SHEET INDEX

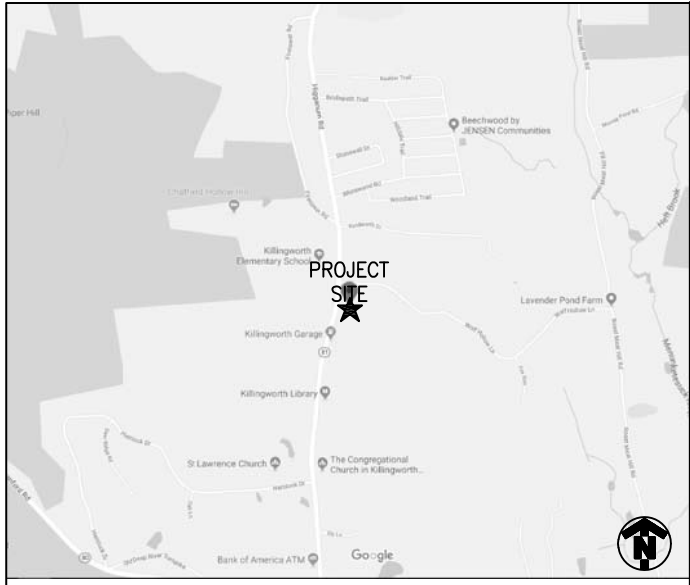
NO.	DESCRIPTION
T1	TITLE SHEET
C1	GENERAL NOTES
C2	OVERALL & ENLARGED SITE PLAN
C3	ELEVATION VIEW
C4	ANTENNA ORIENTATION PLAN
C5	EQUIPMENT DETAILS
C5A	EQUIPMENT DETAILS
C6	PLUMBING DIAGRAM
C7	GROUNDING DETAILS

DRIVING DIRECTIONS

FROM 550 COCHITUATE RD.:

GET ON I-90 WEST/MASSACHUSETTS TURNPIKE FROM SPEEN STREET. HEAD NORTHEAST TOWARD SPEEN STREET. TURN RIGHT TOWARD SPEEN STREET. TURN RIGHT ONTO COCHITUATE ROAD. USE THE RIGHT LANE TO TAKE THE RAMP TO I-90/MASSPIKE/SPRINGFIELD/BOSTON. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-90 WEST/MASSACHUSETTS TURNPIKE/WORCESTER/SPRINGFIELD AND MERGE ONTO I-90 WEST/MASSACHUSETTS TURNPIKE. CONTINUE ON I-90 WEST/MASSACHUSETTS TURNPIKE TO YOUR DESTINATION IN HADDAM. TAKE EXIT CT-9 SOUTH. MERGE ONTO I-90 WEST/MASSACHUETTS TURNPIKE. USE THE RIGHT 2 LANES TO TAKE EXIT 9 FOR I-84 TOWARD US-20/HARTFORD/NEW YORK CITY. CONTINUE ONTO I-84. USE THE LEFT 2 LANES TO TAKE EXIT 57 FOR CT-15 SOUTH TOWARD I-91 SOUTH/CHARTER OAK BRIDGE/NEW YORK CITY. CONTINUE ONTO CT-15 SOUTH. CONTINUE ONTO CT-15 SOUTH/US-5 SOUTH. TAKE EXIT 86 TO MERGE ONTO I-91 SOUTH TOWARD NEW HAVEN/NEW YORK CITY. USE THE LEFT LANE TO TAKE EXIT 22S TO MERGE ONTO CT-9 SOUTH TOWARD MIDDLETOWN/OLD SAYBROOK. TAKE EXIT 9 FOR CT-81 TOWARD KILLINGWORTH/CLINTON. TURN RIGHT ONTO CT-81 SOUTH/KILLINGWORTH ROAD.

LOCATION MAP





PROJECT

# LTE 2C/3C/4C/RETROFIT

SITE NAME

## KILLINGWORTH-RTE 81

CELL SITE ID

### CTL02045

FA SITE NUMBER

### 10034999

PAGE ID

MRCTB035091/MRCTB035254  
MRCTB035289/MRCTB035122


SITE ADDRESS

323 ROUTE 81  
KILLINGWORTH, CT 06419


STRUCTURE TYPE

### SELF SUPPORT

PROJECT TEAM



PROJECT MANAGER



1033 Watervliet Shaker Rd  
Albany, NY 12205  
Office # (518) 690-0790  
Fax # (518) 690-0793

ENGINEER

SCOPE OF WORK (PER LTE RFDS, DATED: 01/23/2019, V4.00):

- HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED.
- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
- FACILITY HAS NO PLUMBING OR REFRIGERANTS.
- THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS.
- ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. EQUIPMENT, ANTENNAS/RRU AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.

**TOWER SCOPE**

- REMOVE (6) PANEL ANTENNAS
- INSTALL (6) PANEL ANTENNAS
- REMOVE (3) RRUS-11
- INSTALL (3) 4415 B25
- INSTALL (3) B2/B66A 8843
- INSTALL (3) B5/12 4449
- INSTALL (1) DC/FIBER DC6-48-60-18-8C-EV AND (1) DC ONLY DC6-48-60-0-8C-EV W/ (1) FIBER AND (4) DC CABLES
- REPLACE EXISTING SECTOR FRAME MOUNTS

**GROUND SCOPE**

- SWAP DUS WITH 6630
- ADD 2ND 6630 FOR 5G
- ADD (1) DC12 W/(24) TELCO FLEX
- ADD (1) FIBER BOX
- HOME RUN FOR UMTS RETS

PROJECT SUMMARY

SITE NAME: KILLINGWORTH-RET 81

CELL SITE ID: CTL02045

FA SITE #: 10034999

SITE ADDRESS: 323 ROUTE 81  
KILLINGWORTH, CT 06419

COUNTY: MIDDLESEX

SITE COORDINATES:  
LATITUDE: 41.3694639° N (NAD 83)  
LONGITUDE: 72.5642211° W (NAD 83)  
ELEVATION: ±448' (AMSL)

RAD CENTER ±133' (AGL)

LANDLORD: VALLEY SHORE COMMUNICATIONS INC.  
P.O. BOX 497  
WESTBROOK, CT 06498  
(203) 399-2435

APPLICANT: AT&T MOBILITY  
550 COCHITUATE RD.  
FRAMINGHAM, MA 01701

CLIENT REPRESENTATIVE: SMARTLINK, LLC  
85 RANGEWAY RD. SUITE 102  
NORTH BILLERICA, MA 01862

CONTACT: ED WEISSMAN  
(917) 528-1857

ENGINEER: INFINIGY  
1033 WATERVLIET SHAKER ROAD  
ALBANY, NY 12205

CONTACT: ALEX WELLER  
(518) 690-0790

BUILDING CODE: 2015 IBC/2018 CONNECTICUT STATE BUILDING CODE (ANSI/TIA-222-G)  
UNIFORM BUILDING CODE  
BUILDING OFFICIALS & CODE ADMINISTRATORS  
UNIFORM MECHANICAL CODE  
UNIFORM PLUMBING CODE  
LOCAL BUILDING CODE  
CITY/COUNTY ORDINANCES


ELECTRICAL CODE: NATIONAL ELECTRICAL CODE (LATEST EDITION)




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CONNECTICUT STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE



INFINIGY ENGINEERING, PLLC  
1033 Watervliet Shaker Rd  
Albany, NY 12205  
Office # (518) 690-0790  
Fax # (518) 690-0793



04/09/2019

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No.	Submission / Revision	App'd	Date
3	ISSUED FOR PERMIT	BMM	04/09/19
2	ISSUED FOR PERMIT	BMM	03/07/19
1	ISSUED FOR PERMIT	BMM	02/26/19
0	ISSUED FOR REVIEW	BMM	01/31/19

Drawn: BMM Date: 01/31/19  
Designed: ASW Date: 01/31/19  
Checked: AD Date: 01/31/19

Project Number: 1106-A0001-C

Project Title: KILLINGWORTH-RTE 81  
CTL02045  
FA# 10034999  
323 ROUTE 81  
KILLINGWORTH, CT 06419

Prepared For: smartlink











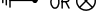
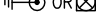





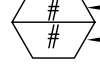

Drawing Scale: AS NOTED


Date: 04/09/19

Drawing Title: TITLE PAGE


Drawing Number: T1

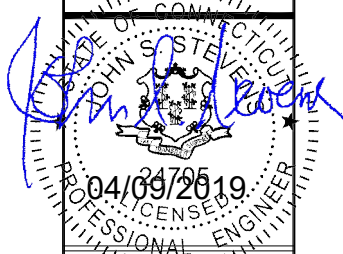


GENERAL NOTES					
<p><u>PART 1 – GENERAL REQUIREMENTS</u></p> <p>1.1 THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:</p> <p>A. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION</p> <p>B. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.</p> <p>C. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC").</p> <p>D. AND NFPA 101 (LIFE SAFETY CODE).</p> <p>E. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM).</p> <p>F. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE).</p>		<p>2.4 COMPANY FURNISHED MATERIAL AND EQUIPMENT: ALL HANDLING, STORAGE AND INSTALLATION OF COMPANY FURNISHED MATERIAL AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.</p> <p>A. CONTRACTOR SHALL PROCURE ALL OTHER REQUIRED WORK RELATED MATERIALS NOT PROVIDED BY AT&amp;T TO SUCCESSFULLY CONSTRUCT A WIRELESS FACILITY.</p>		<p>F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.</p> <p>G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.</p>	
<p>1.2 DEFINITIONS:</p> <p>A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.</p> <p>B. COMPANY: AT&amp;T CORPORATION</p> <p>C. ENGINEER: SYNONYMOUS WITH ARCHITECT &amp; ENGINEER AND "A&amp;E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.</p> <p>D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.</p> <p>E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&amp;E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.</p>		<p>2.5 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.</p>		<p><u>PART 6 – TRENCHING AND BACKFILLING</u></p> <p>6.1 TRENCHING AND BACKFILLING: THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES ENCOUNTERED, TO THE DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS OTHERWISE SPECIFIED.</p>	
<p>1.3 POINT OF CONTACT: COMMUNICATION BETWEEN THE COMPANY AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE COMPANY SITE DEVELOPMENT SPECIALIST OR OTHER PROJECT COORDINATOR APPOINTED TO MANAGE THE PROJECT FOR THE COMPANY.</p>		<p>2.6 EXISTING CONDITIONS: NOTIFY THE COMPANY REPRESENTATIVE OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.</p>		<p>A. PROTECTION OF EXISTING UTILITIES: THE CONTRACTOR SHALL CHECK WITH THE LOCAL UTILITIES AND THE RESPECTIVE UTILITY LOCATOR COMPANIES PRIOR TO STARTING EXCAVATION OPERATIONS IN EACH RESPECTIVE AREA TO ASCERTAIN THE LOCATIONS OF KNOWN UTILITY LINES. THE LOCATIONS, NUMBER AND TYPES OF EXISTING UTILITY LINES DETAILED ON THE CONSTRUCTION DRAWINGS ARE APPROXIMATE AND DO NOT REPRESENT EXACT INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL LINES DAMAGED DURING EXCAVATION AND ALL ASSOCIATED OPERATIONS. ALL UTILITY LINES UNCOVERED DURING THE EXCAVATION OPERATIONS, SHALL BE PROTECTED FROM DAMAGE DURING EXCAVATION AND ASSOCIATED OPERATIONS. ALL REPAIRS SHALL BE APPROVED BY THE UTILITY COMPANY.</p>	
<p>1.4 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.</p>		<p><u>PART 3 – RECEIPT OF MATERIAL &amp; EQUIPMENT</u></p> <p>3.1 RECEIPT OF MATERIAL AND EQUIPMENT: CONTRACTOR IS RESPONSIBLE FOR AT&amp;T PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:</p> <p>A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.</p> <p>B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.</p> <p>C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.</p> <p>D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO AT&amp;T OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.</p> <p>E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.</p> <p>F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.</p>		<p>B. HAND DIGGING: UNLESS APPROVED IN WRITING OTHERWISE, ALL DIGGING WITHIN AN EXISTING CELL SITE COMPOUND IS TO BE DONE BY HAND.</p>	
<p>1.5 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES, AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.</p> <p>A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&amp;E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.</p>		<p><u>PART 4 – GENERAL REQUIREMENTS FOR CONSTRUCTION</u></p> <p>4.1 CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.</p>		<p>C. DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF THE TRENCH TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS. ALL EXCAVATED MATERIALS NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.</p>	
<p>1.6 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.</p>		<p>4.2 EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.</p>		<p>D. GRADING SHALL BE DONE AS MAY BE NECESSARY TO PREVENT SURFACE WATER FROM FLOWING INTO TRENCHES OR OTHER EXCAVATIONS, AND ANY WATER ACCUMULATING THEREIN SHALL BE REMOVED BY PUMPING OR BY OTHER APPROVED METHOD.</p>	
<p>1.7 NOTICE TO PROCEED:</p> <p>A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED.</p> <p>B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE AT&amp;T WITH AN OPERATIONAL WIRELESS FACILITY.</p>		<p>4.3 CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.</p> <p>A. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.</p> <p>B. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.</p>		<p>E. SHEETING AND SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. UNLESS OTHERWISE INDICATED, EXCAVATION SHALL BE BY OPEN CUT, EXCEPT THAT SHORT SECTIONS OF A TRENCH MAY BE TUNNELED IF, THE CONDUIT CAN BE SAFELY AND PROPERLY INSTALLED AND BACKFILL CAN BE PROPERLY TAMPED IN SUCH TUNNEL SECTIONS. EARTH EXCAVATION SHALL COMPRISE ALL MATERIALS AND SHALL INCLUDE CLAY, SILT, SAND, MUCK, GRAVEL, HARDPAN, LOOSE SHALE, AND LOOSE STONE.</p>	
<p><u>PART 2 – EXECUTION</u></p>		<p>4.4 CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION.</p>		<p>F. TRENCHES SHALL BE OF NECESSARY WIDTH FOR THE PROPER LAYING OF THE CONDUIT OR CABLE, AND THE BANKS SHALL BE AS NEARLY VERTICAL AS PRACTICABLE. THE BOTTOM OF THE TRENCHES SHALL BE ACCURATELY GRADED TO PROVIDE UNIFORM BEARING AND SUPPORT FOR EACH SECTION OF THE CONDUIT OR CABLE ON UNDISTURBED SOIL AT EVERY POINT ALONG ITS ENTIRE LENGTH. EXCEPT WHERE ROCK IS ENCOUNTERED, CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED. WHERE ROCK EXCAVATIONS ARE NECESSARY, THE ROCK SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF 6 INCHES BELOW THE TRENCH DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR SPECIFIED. OVER DEPTHS IN THE ROCK EXCAVATION AND UNAUTHORIZED OVER DEPTHS SHALL BE THOROUGHLY BACK FILLED AND TAMPED TO THE APPROPRIATE GRADE. WHENEVER WET OR OTHERWISE UNSTABLE SOIL THAT IS INCAPABLE OF PROPERLY SUPPORTING THE CONDUIT OR CABLE IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH, SUCH SOLID SHALL BE REMOVED TO A MINIMUM OVER DEPTH OF 6 INCHES AND THE TRENCH BACKFILLED TO THE PROPER GRADE WITH EARTH OF OTHER SUITABLE MATERIAL, AS HEREINAFTER SPECIFIED.</p>	
<p>2.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE, POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.</p>		<p>4.5 CONDUCT TESTING AS REQUIRED HEREIN.</p>		<p>G. BACKFILLING OF TRENCHES. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL SPECIFIED TESTS HAVE BEEN PERFORMED AND ACCEPTED. WHERE COMPACTED BACKFILL IS NOT INDICATED THE TRENCHES SHALL BE CAREFULLY BACKFILLED WITH SELECT MATERIAL SUCH AS EXCAVATED SOILS THAT ARE FREE OF ROOTS, SOD, RUBBISH OR STONES, DEPOSITED IN 6 INCH LAYERS AND THOROUGHLY AND CAREFULLY RAMMED UNTIL THE CONDUIT OR CABLE HAS A COVER OF NOT LESS THAN 1 FOOT. THE REMAINDER OF THE BACKFILL MATERIAL SHALL BE GRANULAR IN NATURE AND SHALL NOT CONTAIN ROOTS, SOD, RUBBING, OR STONES OF 2-1/2 INCH MAXIMUM DIMENSION. BACKFILL SHALL BE CAREFULLY PLACED IN THE TRENCH AND IN 1 FOOT LAYERS AND EACH LAYER TAMPED. SETTLING THE BACKFILL WITH WATER WILL BE PERMITTED. THE SURFACE SHALL BE GRADED TO A REASONABLE UNIFORMITY AND THE MOUNDING OVER THE TRENCHES LEFT IN A UNIFORM AND NEAT CONDITION.</p>	
<p>2.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.</p>		<p><u>PART 5 – TESTS AND INSPECTIONS</u></p> <p>5.1 TESTS AND INSPECTIONS:</p> <p>A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.</p>		<p>SYMBOL DESCRIPTION</p> <p> CIRCUIT BREAKER</p> <p> NON-FUSIBLE DISCONNECT SWITCH</p> <p> FUSIBLE DISCONNECT SWITCH</p> <p> SURFACE MOUNTED PANEL BOARD</p> <p> TRANSFORMER</p> <p> KILOWATT HOUR METER</p> <p> JUNCTION BOX</p> <p> PULL BOX TO NEC/TELCO STANDARDS</p> <p>----- UNDERGROUND UTILITIES</p> <p> EXOTHERMIC WELD CONNECTION</p> <p> MECHANICAL CONNECTION</p> <p> GROUND ROD</p> <p> GROUND ROD WITH INSPECTION SLEEVE</p> <p> GROUND BAR</p> <p> 120AC DUPLEX RECEPTACLE</p> <p> GROUND CONDUCTOR</p> <p> DC POWER AND FIBER OPTIC TRUNK CABLES</p> <p> DC POWER CABLES</p> <p> REPRESENTS DETAIL NUMBER</p> <p> REF. DRAWING NUMBER</p>	
				<p>ABBREVIATIONS</p>	
				<p>CIGBE COAX ISOLATED GROUND BAR EXTERNAL</p> <p>MIGB MASTER ISOLATED GROUND BAR</p> <p>SST SELF SUPPORTING TOWER</p> <p>GPS GLOBAL POSITIONING SYSTEM</p> <p>TYP. TYPICAL</p> <p>DWG. DRAWING</p> <p>BCW BARE COPPER WIRE</p> <p>BFG BELOW FINISH GRADE</p> <p>PVC POLYVINYL CHLORIDE</p> <p>CAB CABINET</p> <p>C CONDUIT</p> <p>SS STAINLESS STEEL</p> <p>G GROUND</p> <p>AWG AMERICAN WIRE GAUGE</p> <p>RGS RIGID GALVANIZED STEEL</p> <p>AHJ AUTHORITY HAVING JURISDICTION</p> <p>TTLNA TOWER TOP LOW NOISE AMPLIFIER</p> <p>UNO UNLESS NOTED OTHERWISE</p> <p>EMT ELECTRICAL METALLIC TUBING</p> <p>AGL ABOVE GROUND LEVEL</p>	





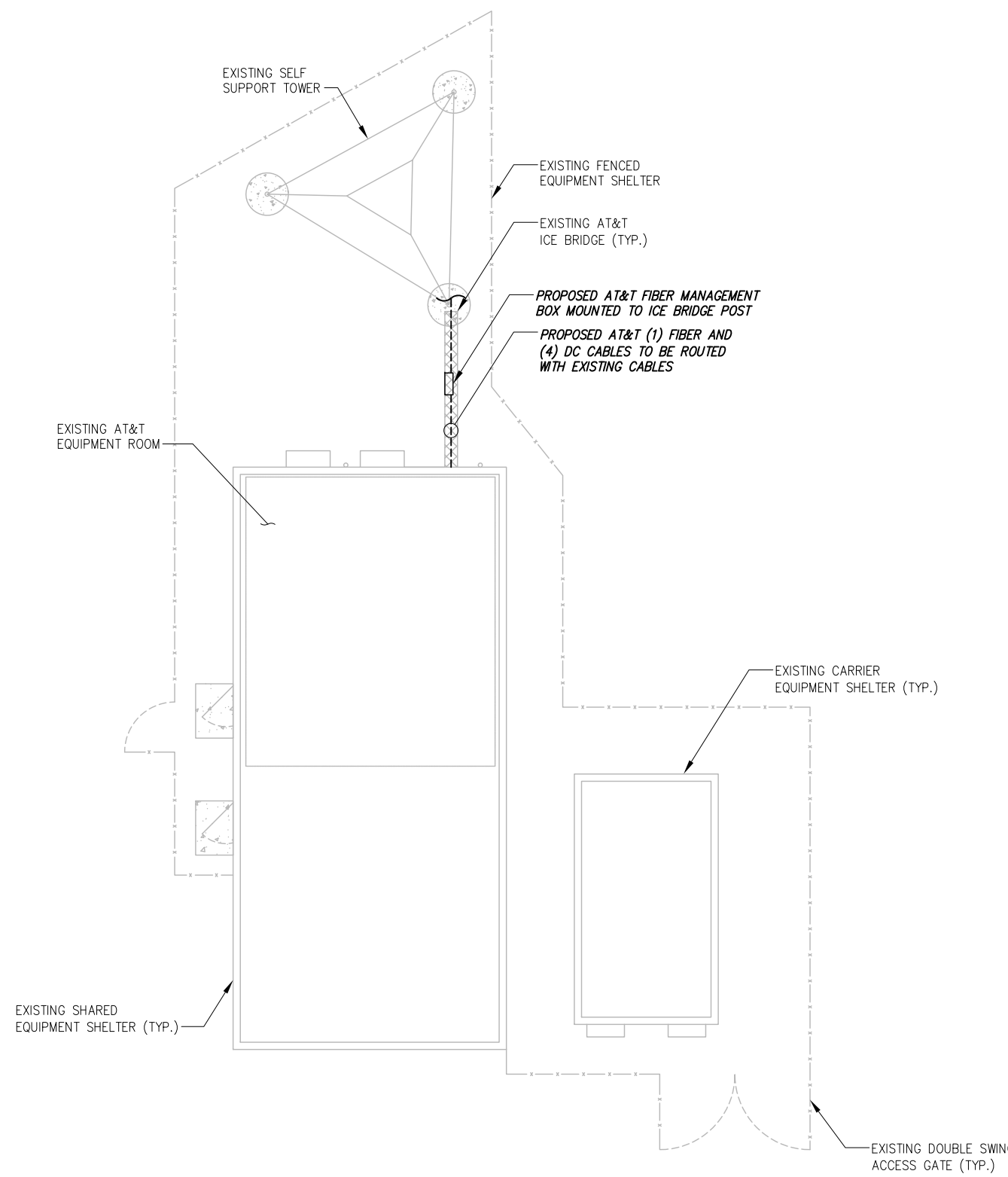
INFINIGY ENGINEERING, PLLC  
1033 Watervliet Shaker Rd  
Albany, NY 12205  
Office # (518) 690-0790  
Fax # (518) 690-0793



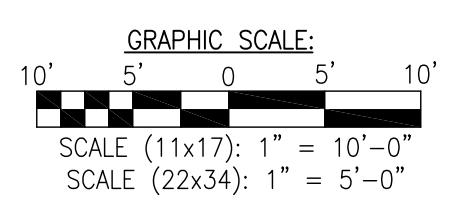


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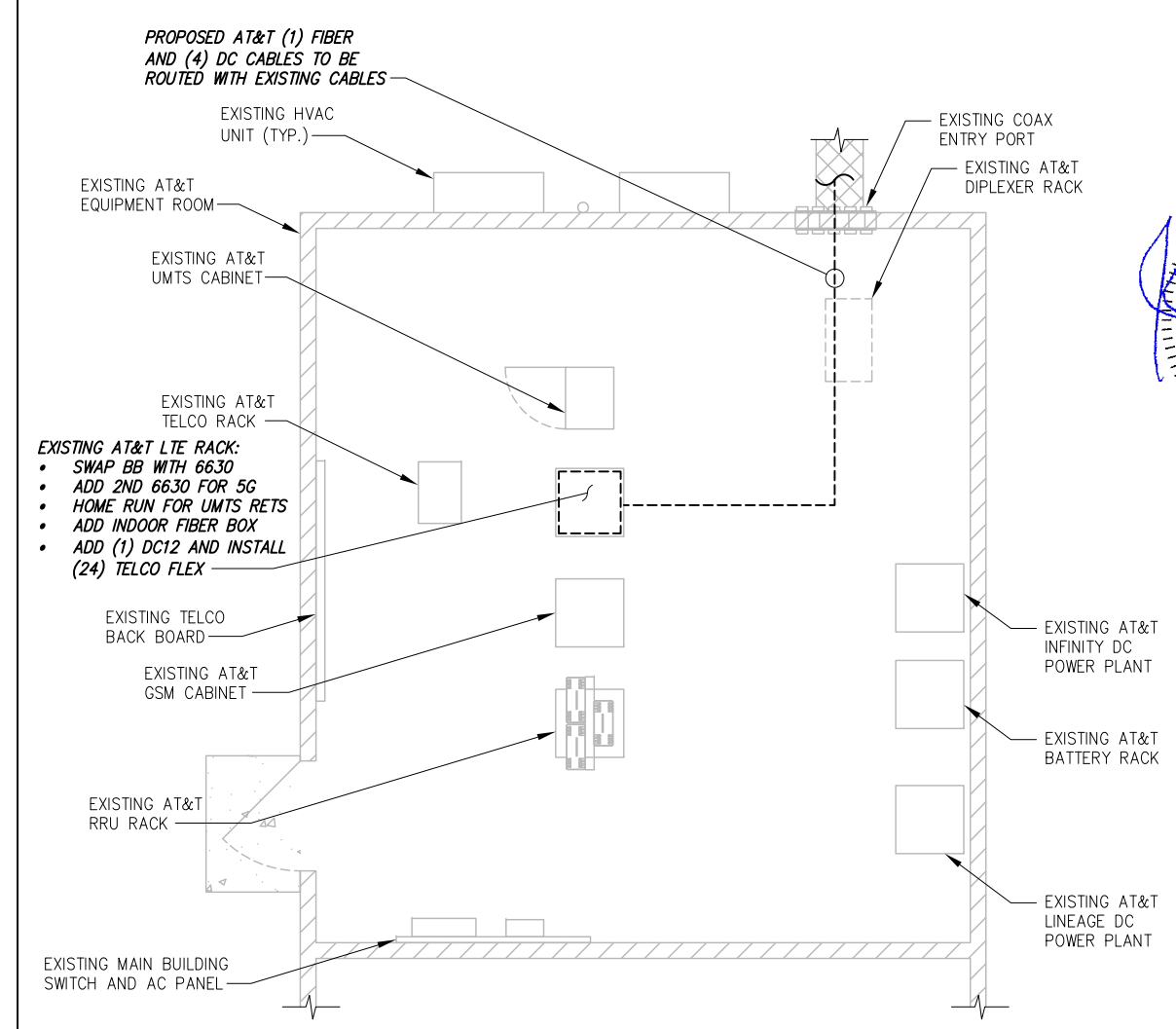
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Checked: <u>AD</u> Date: <u>01/31/19</u>			
Project Number: <u>1106-A0001-C</u>			
Project Title: <b>KILLINGWORTH-RTE 81</b> <b>CTL02045</b> <b>FA# 10034999</b> 323 ROUTE 81 KILLINGWORTH, CT 06419			
Prepared For: 			
Drawing Scale: <u>AS NOTED</u>			
Date: <u>04/09/19</u>			
Drawing Title <b>GENERAL NOTES</b>			
Drawing Number <b>C1</b>			



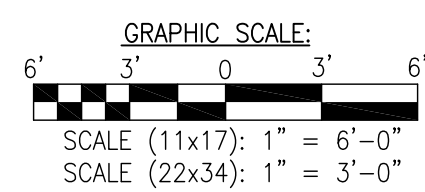
1 SITE PLAN  
SCALE: AS NOTED



BASEMAPPING PREPARED FROM A SITE WALK PERFORMED BY INFINIGY ENGINEERING ON 11/17/18 AND PROVIDED INFORMATION, AND DOES NOT REPRESENT AN ACTUAL FIELD SURVEY.



2 ENLARGED EQUIPMENT PLAN  
SCALE: AS NOTED



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Albany, NY 12205  
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FA# 10034999  
323 ROUTE 81  
KILLINGWORTH, CT 06419

Prepared For: smartlink

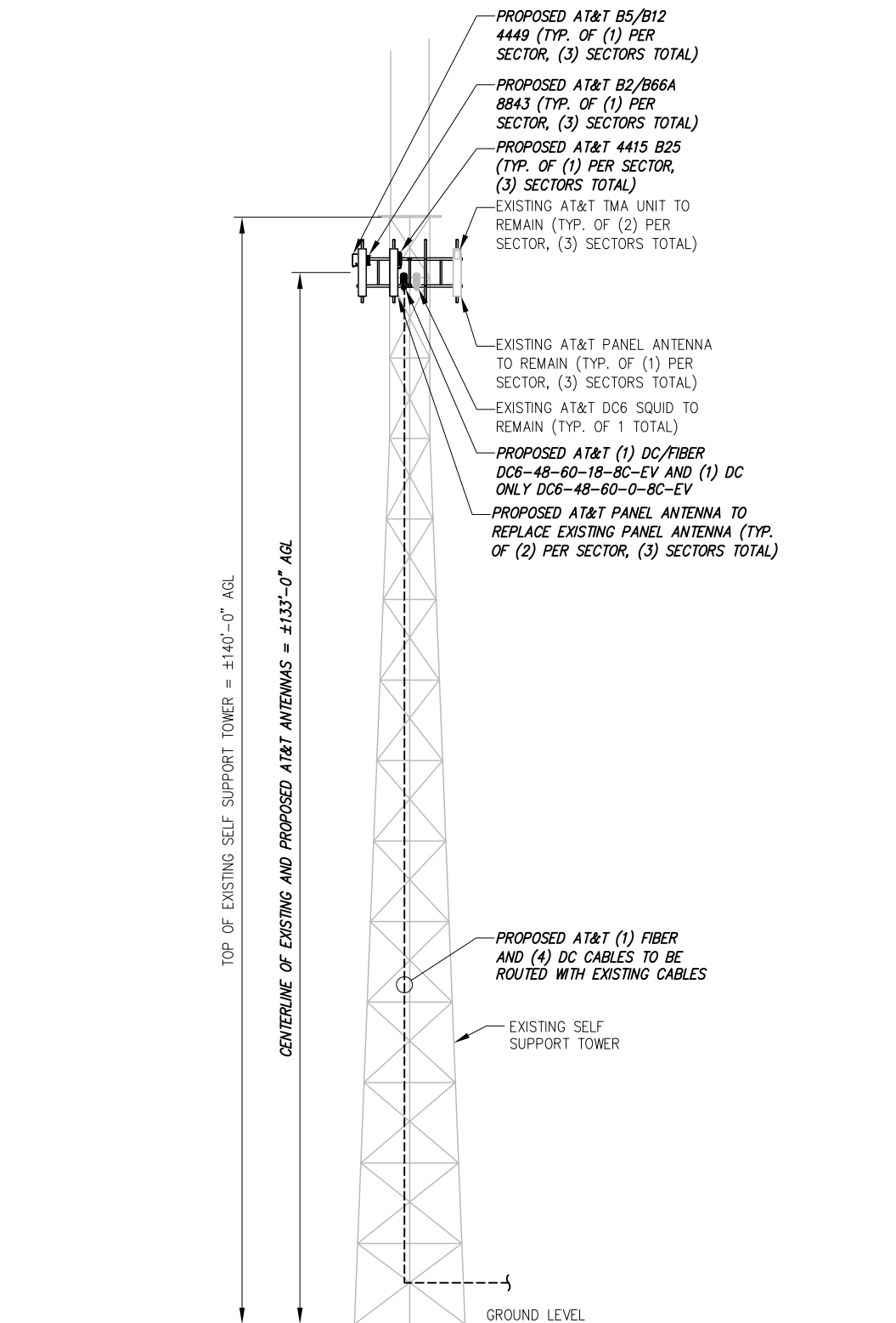
Drawing Scale: AS NOTED

Date: 04/09/19

CD

Drawing Title: OVERALL & ENLARGED SITE PLAN

Drawing Number: C2



**NOTE:**

- FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE TOWER STRUCTURE, SEE 'STRUCTURAL ANALYSIS REPORT' COMPLETED BY INFINIGY, DATED 03/21/19.
- FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNT, SEE 'MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY, DATED 04/07/19. MOUNT MUST BE REPLACED PRIOR TO INSTALLATION OF THE PROPOSED EQUIPMENT.

**SEPARATION NOTE:**

- 3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNA
- 6 FEET MINIMUM SEPARATION BETWEEN 700BC & 700 DE

FINAL ANTENNA CONFIGURATION & CABLE SCHEDULE BASED ON LTE RFDS DATED 01/23/19, V 4.00										
SECTOR	ANTENNA POSITION	ANTENNA STATUS & TECHNOLOGY	ANTENNA MANF/MODEL	TMA/DIPLEXER	RRUS	AZIMUTH	ANTENNA CL HEIGHT	CABLE FEEDER		RAYCAP UNIT
								TYPE	LENGTH	
ALPHA	A-1	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	143°	±133'	(2) (E) 1-5/8" COAX	±180'	(1) (E) DC6 'SQUID' (1) (P) DC6-48-60-18-8C-EV (1) (P) DC6-48-60-0-8C-EV
	A-2	--	--	--	--	--	--	(2) (E) 1-5/8" COAX	--	
	A-3	(P) LTE 1900	KATHREIN 840-370799K	--	(1) (P) 4415 B25	20°	±133'	(1) (E) FIBER CABLE (2) (E) DC CABLES	--	
	A-4	(P) LTE 700/850/AWS /5G 850	KATHREIN 800-10966	--	(1) (P) B5/B12 4449 (1) (P) B2/B66A 8843	20°	±133'	SEE A-3 FOR CABLE INFORMATION	--	
BETA	B-1	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	260°	±133'	(2) (E) 1-5/8" COAX	±180'	
	B-2	--	--	--	--	--	--	(2) (E) 1-5/8" COAX	--	
	B-3	(P) LTE 1900	KATHREIN 800-10991K	--	(1) (P) 4415 B25	143°	±133'	(1) (P) FIBER CABLE (4) (P) DC CABLES	--	
	B-4	(P) LTE 700/850/AWS /5G 850	KATHREIN 800-10965	--	(1) (P) B5/B12 4449 (1) (P) B2/B66A 8843	143°	±133'	SEE A-3 FOR CABLE INFORMATION	--	
GAMMA	G-1	(E) UMTS 850	POWERWAVE 7770	(2) (E) LGP21401	--	20°	±133'	(2) (E) 1-5/8" COAX	±180'	
	G-2	--	--	--	--	--	--	(2) (E) 1-5/8" COAX	--	
	G-3	(P) LTE 1900	KATHREIN 800-10991K	--	(1) (P) 4415 B25	260°	±133'	SEE A-3 FOR CABLE INFORMATION	--	
	G-4	(P) LTE 700/850/AWS /5G 850	KATHREIN 800-10964	--	(1) (P) B5/B12 4449 (1) (P) B2/B66A 8843	260°	±133'	SEE A-3 FOR CABLE INFORMATION	--	

1 ELEVATION VIEW  
NOT TO SCALE

2 AT&T ANTENNA SCHEDULE  
NOT TO SCALE

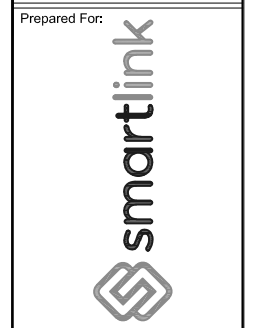
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Project Title:  
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CTL02045  
FA# 10034999  
323 ROUTE 81  
KILLINGWORTH, CT 06419



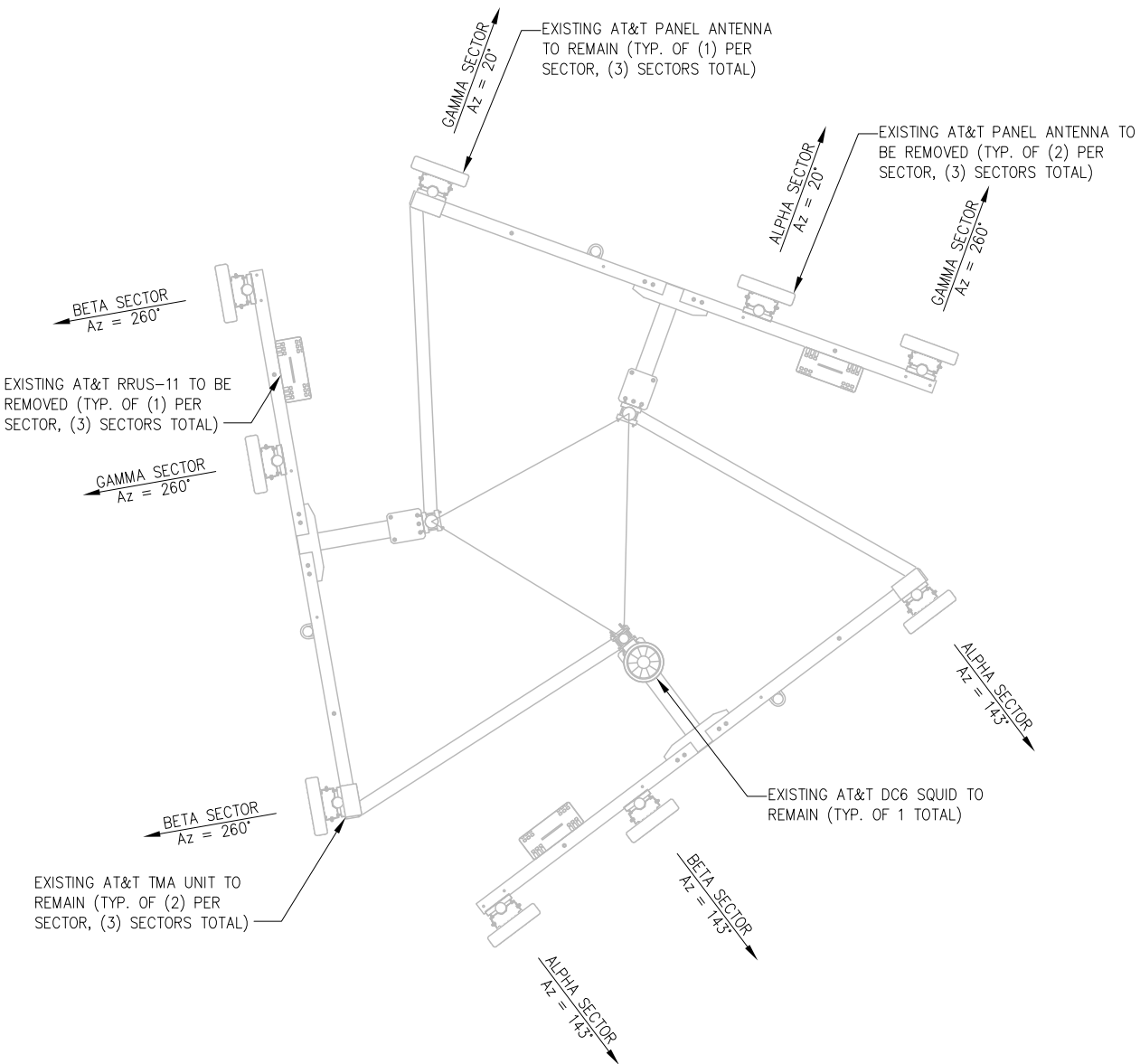
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Date:  
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Drawing Title  
**ELEVATION VIEW**

Drawing Number  
**C3**

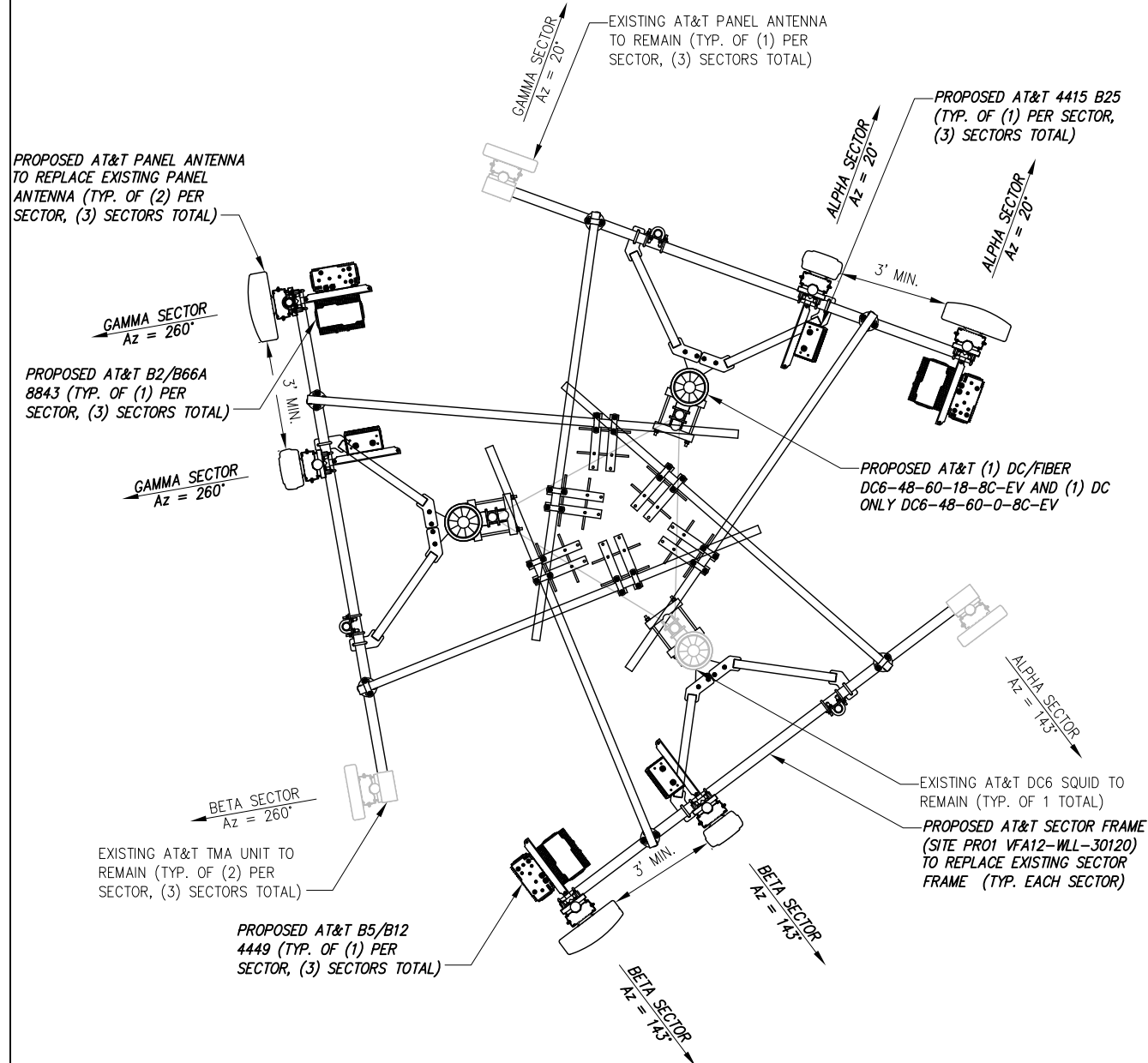




1 ANTENNA ORIENTATION PLAN (EXISTING)  
NOT TO SCALE

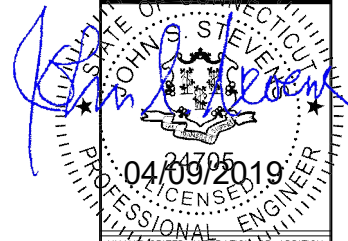
SEPARATION NOTE:  
• 3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNA  
• 6 FEET MINIMUM SEPARATION BETWEEN 700BC & 700 DE

NOTE:  
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• FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNT, SEE 'MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY, DATED 04/07/19. MOUNT MUST BE REPLACED PRIOR TO INSTALLATION OF THE PROPOSED EQUIPMENT.



2 PROPOSED ANTENNA ORIENTATION PLAN  
NOT TO SCALE

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Checked:	AJD	Date:	01/31/19
Project Number:			
1106-A0001-C			

Project Title:

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FA# 10034999  
323 ROUTE 81  
KILLINGWORTH, CT 06419

Prepared For:

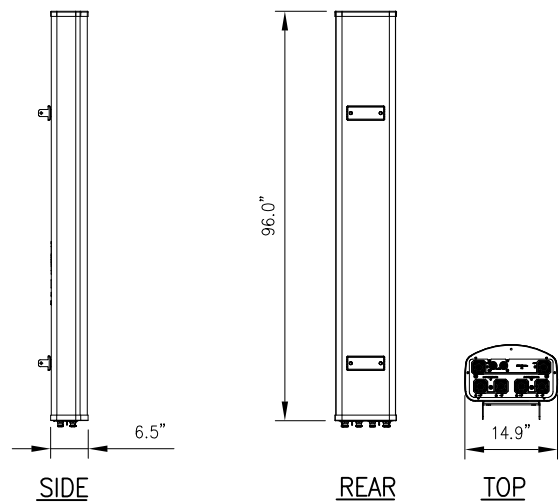


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Date:  
04/09/19

CD

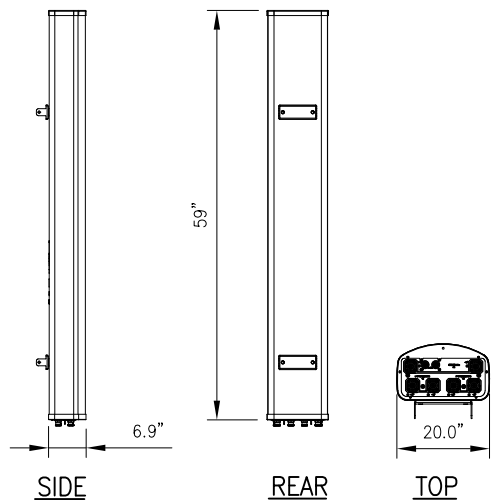
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**ANTENNA ORIENTATION PLAN**

Drawing Number  
**C4**



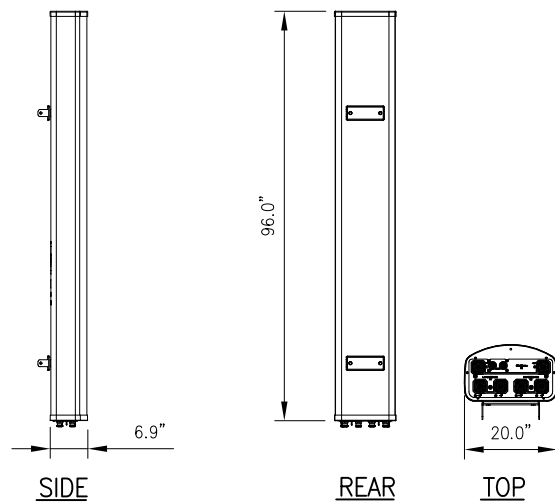
KATHREIN MODEL NO.: 840-370799K	
RADOME MATERIAL:	FIBERGLASS,
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	96.0"x14.9"x6.5"
WEIGHT, W/	
PRE-MOUNTED BRACKETS:	105.8 LBS
CONNECTOR:	7-16 DIN FEMALE

1 ANTENNA DETAIL  
-- NOT TO SCALE



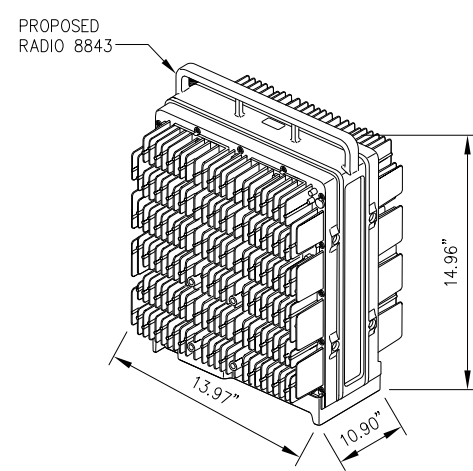
KATHREIN MODEL NO.: 800-10964	
RADOME MATERIAL:	FIBERGLASS,
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	59"x20.0"x6.9"
WEIGHT, W/	
PRE-MOUNTED BRACKETS:	83.8 LBS
CONNECTOR:	7-16 DIN FEMALE

5 ANTENNA DETAIL  
-- NOT TO SCALE



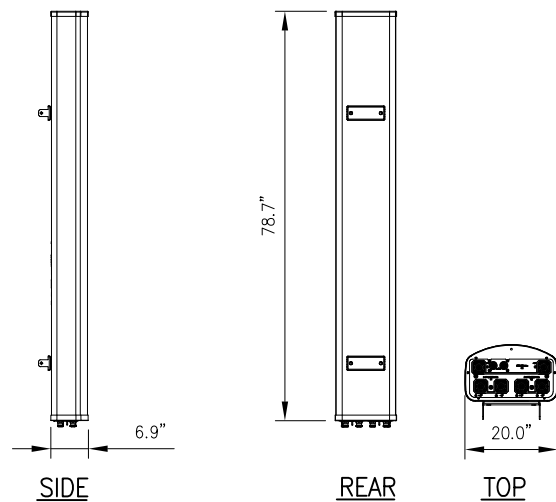
KATHREIN MODEL NO.: 800-10966	
RADOME MATERIAL:	FIBERGLASS,
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	96.0"x20.0"x6.9"
WEIGHT, W/	
PRE-MOUNTED BRACKETS:	114.6 LBS
CONNECTOR:	7-16 DIN FEMALE

2 ANTENNA DETAIL  
-- NOT TO SCALE



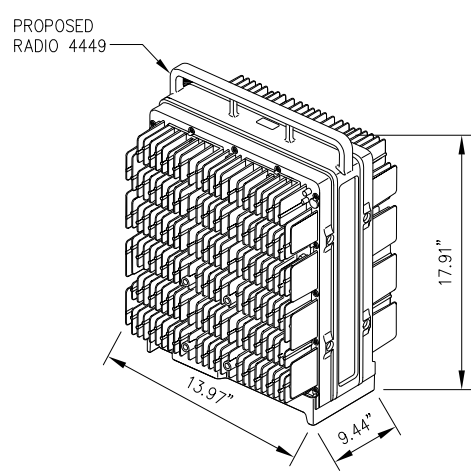
RADIO 8843 SPECIFICATIONS	
• HxWxD, (INCHES) :	14.96"x13.97"x10.90"
• WEIGHT (LBS) :	71.87
• COLOR :	GRAY

6 ERICSSON RADIO 8843 DETAIL  
-- NOT TO SCALE



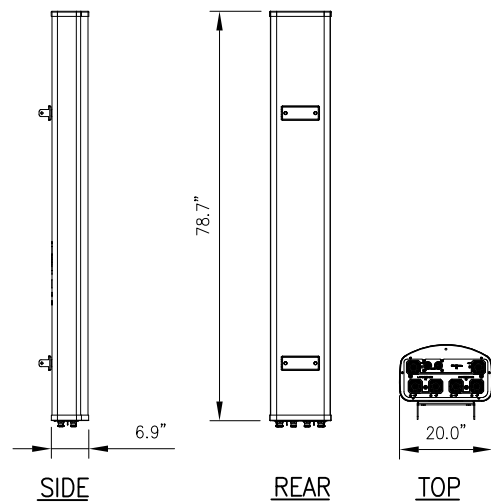
KATHREIN MODEL NO.: 800-10991K	
RADOME MATERIAL:	FIBERGLASS,
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	78.7"x20.0"x6.9"
WEIGHT, W/	
PRE-MOUNTED BRACKETS:	100.9 LBS
CONNECTOR:	7-16 DIN FEMALE

3 ANTENNA DETAIL  
-- NOT TO SCALE



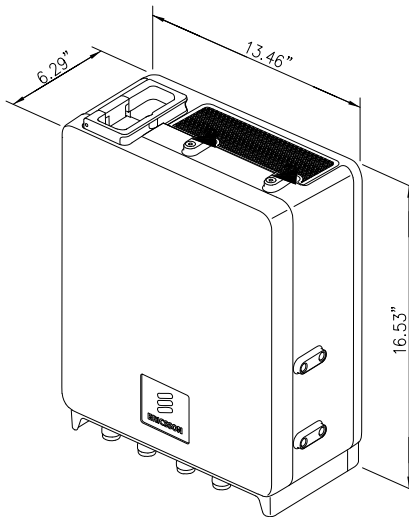
RADIO 4449 SPECIFICATIONS	
• HxWxD, (INCHES) :	17.91"x13.97"x9.44"
• WEIGHT (LBS) :	70.54
• COLOR :	GRAY

7 ERICSSON RADIO 4449 DETAIL  
-- NOT TO SCALE



KATHREIN MODEL NO.: 800-10965	
RADOME MATERIAL:	FIBERGLASS,
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	78.7"x20.0"x6.9"
WEIGHT, W/	
PRE-MOUNTED BRACKETS:	108.6 LBS
CONNECTOR:	7-16 DIN FEMALE

4 ANTENNA DETAIL  
-- NOT TO SCALE



RADIO 4415 SPECIFICATIONS	
• HxWxD, (INCHES):	16.53"x13.46"x6.29"
• WEIGHT (LBS):	47.4
• COLOR:	NCS S 1002-B/NCS S 6502-B

8 ERICSSON RADIO 4415 DETAIL  
-- NOT TO SCALE

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1106-A0001-C			

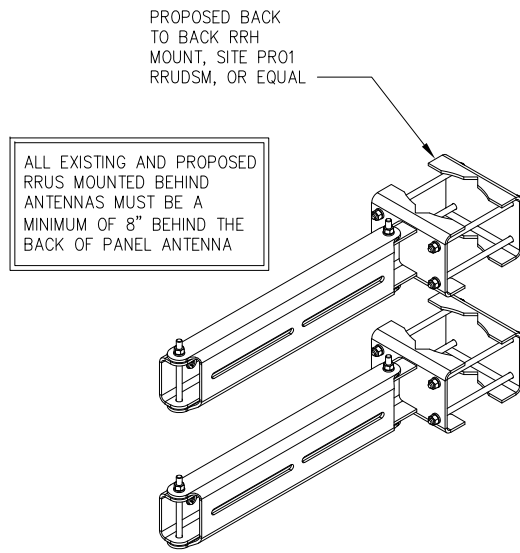
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CTL02045  
FA# 10034999  
323 ROUTE 81  
KILLINGWORTH, CT 06419

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smartlink

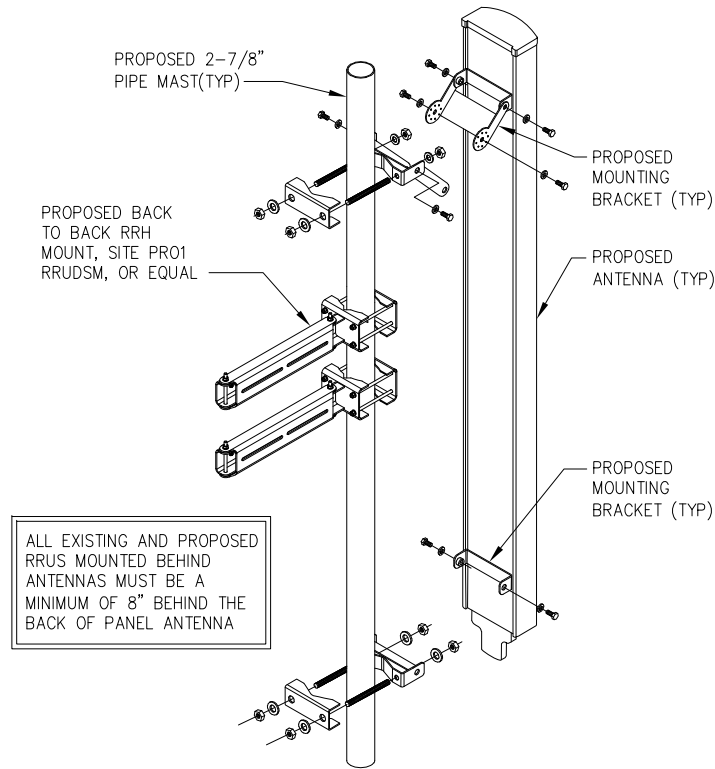
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Date:  
04/09/19  
CD

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EQUIPMENT  
DETAILS

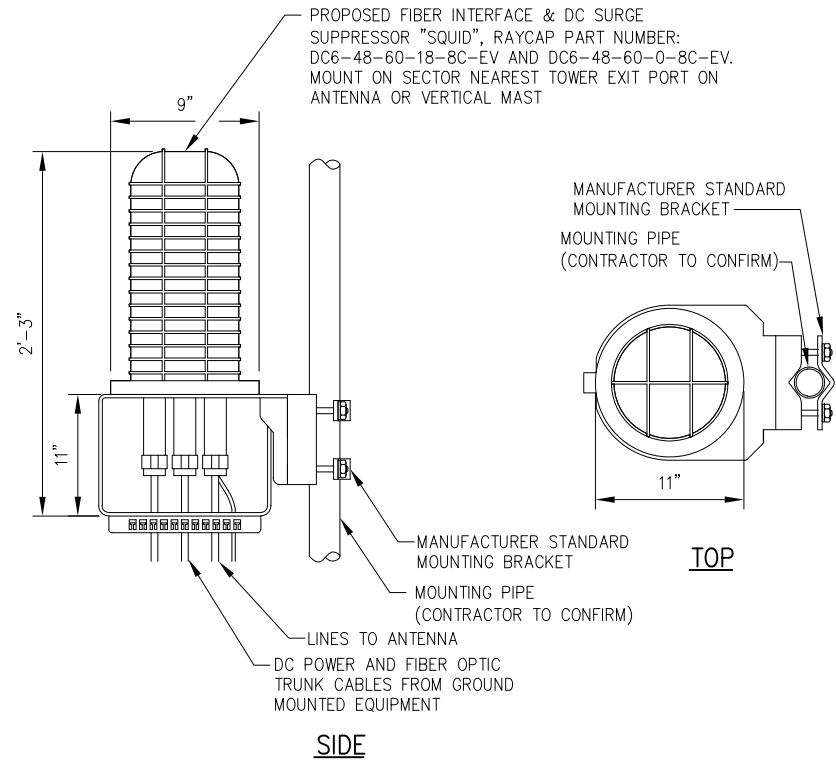
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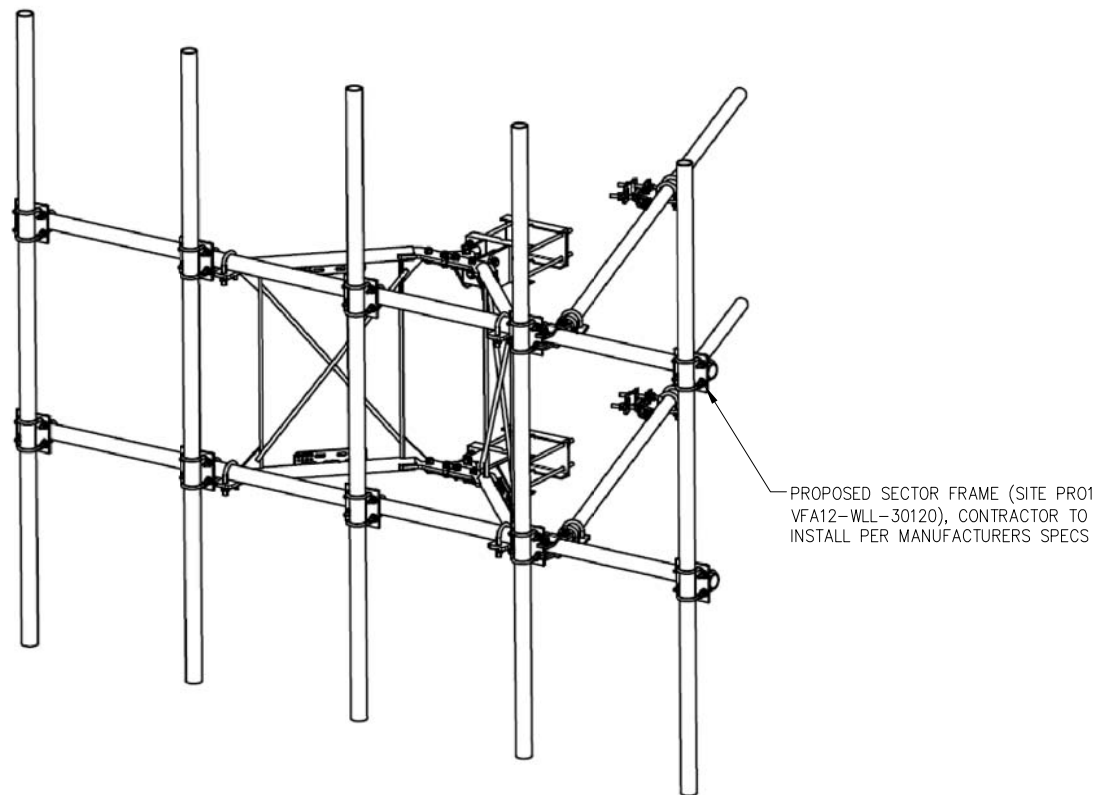
1 BACK TO BACK PIPE MOUNT DETAIL  
-- NOT TO SCALE



2 MOUNTING DETAIL  
-- NOT TO SCALE



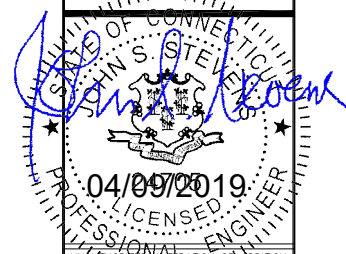
3 SQUID DETAIL  
-- NOT TO SCALE



4 SECTOR FRAME DETAIL  
-- NOT TO SCALE

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FA# 10034999

323 ROUTE 81  
KILLINGWORTH, CT 06419

Prepared For:



Drawing Scale:

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Date:

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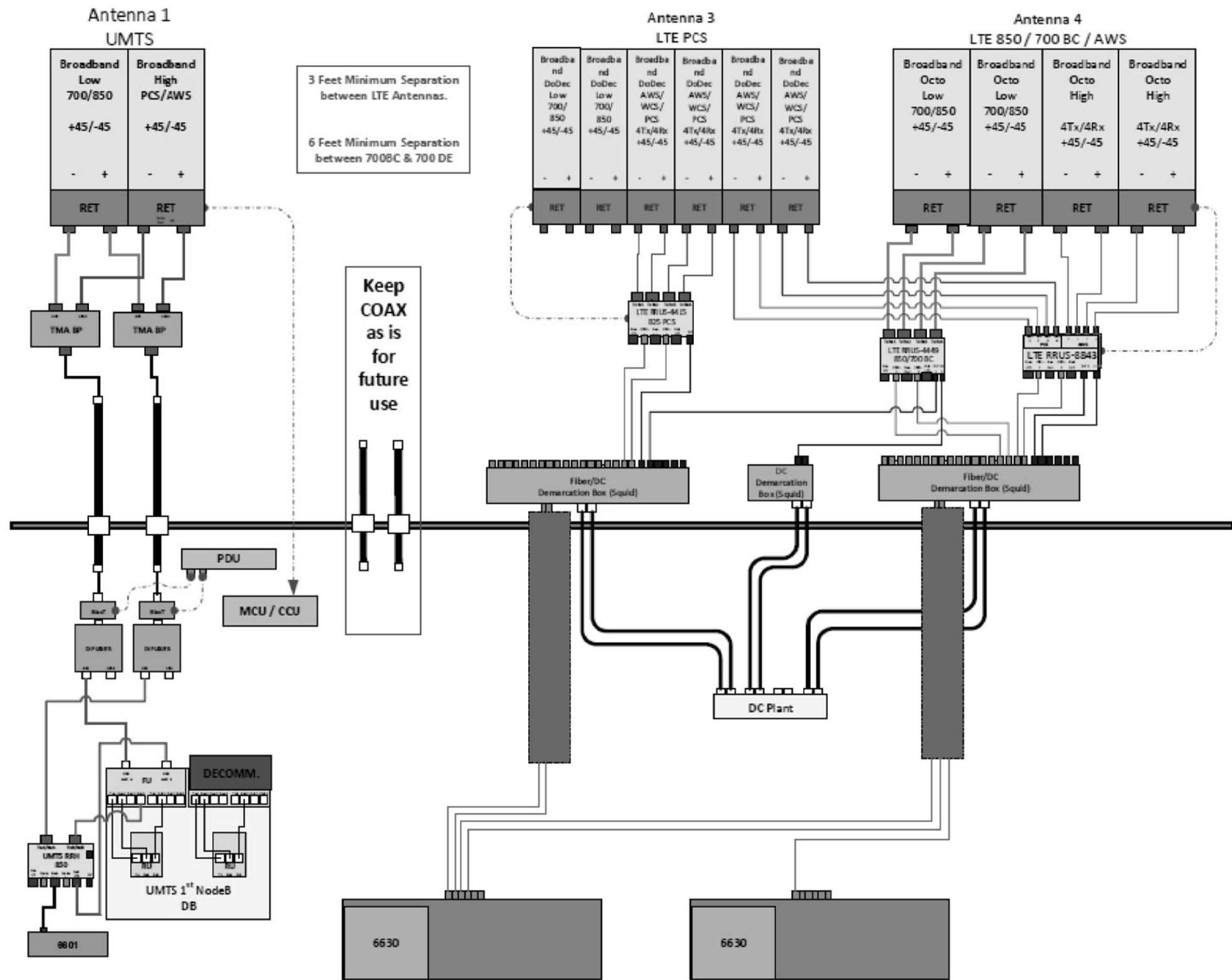
**CD**

Drawing Title

**EQUIPMENT  
DETAILS**

Drawing Number

**C5A**



ALPHA/BETA/GAMMA

1 PLUMBING DIAGRAM (FINAL CONFIGURATION)  
-- NOT TO SCALE

\*BASED ON LTE RFDS, V. 4.0, DATED 01/23/19

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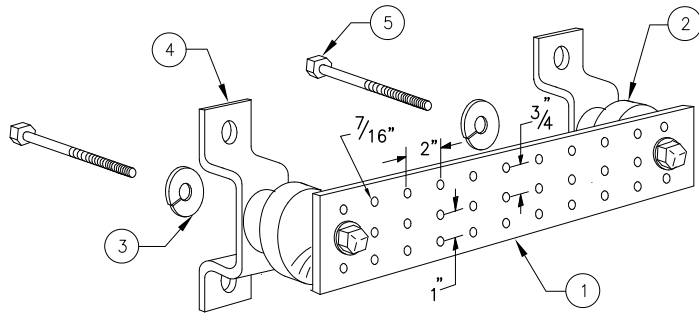
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Drawing Scale:  
AS NOTED  
Date:  
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CD

Drawing Title:  
PLUMBING  
DIAGRAM

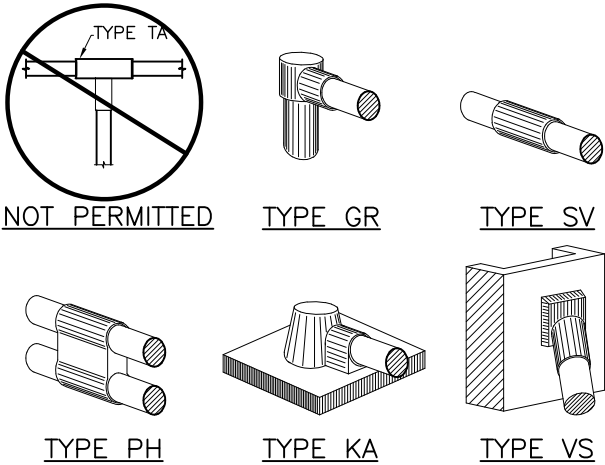
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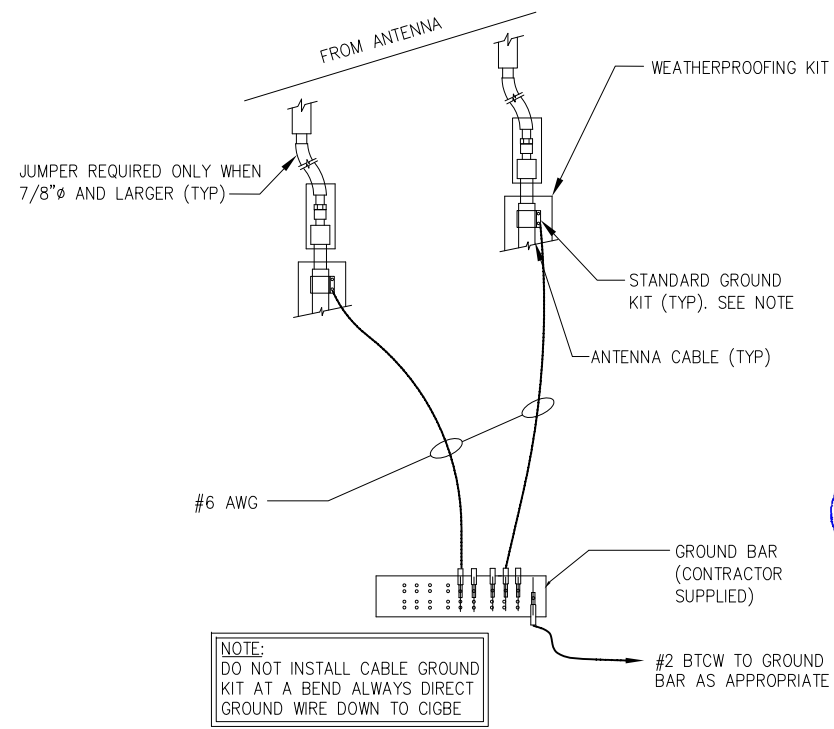


- LEGEND
- 1 - SOLID TINNED COPPER GROUND BAR, 1/4"x 4"x 20" MIN., NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION
  - 2 - INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4
  - 3 - 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8
  - 4 - WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056
  - 5 - 5/8-11 X 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1
  - 6 - GROUND BAR SHALL BE SIZED TO ACCOMODATE ALL GROUNDING CONNECTIONS REQUIRED PLUS PROVIDE 50% SPARE CAPACITY
  - 7 - GROUND BARS SHALL NEITHER BE FIELD FABRICATED NOR NEW HOLES DRILLED
  - 8 - GROUND LUGS SHALL MATCH THE HOLE SPACING ON THE BAR
  - 9 - HARDWARE DIAMETER SHALL BE MINIMUM 3/8"

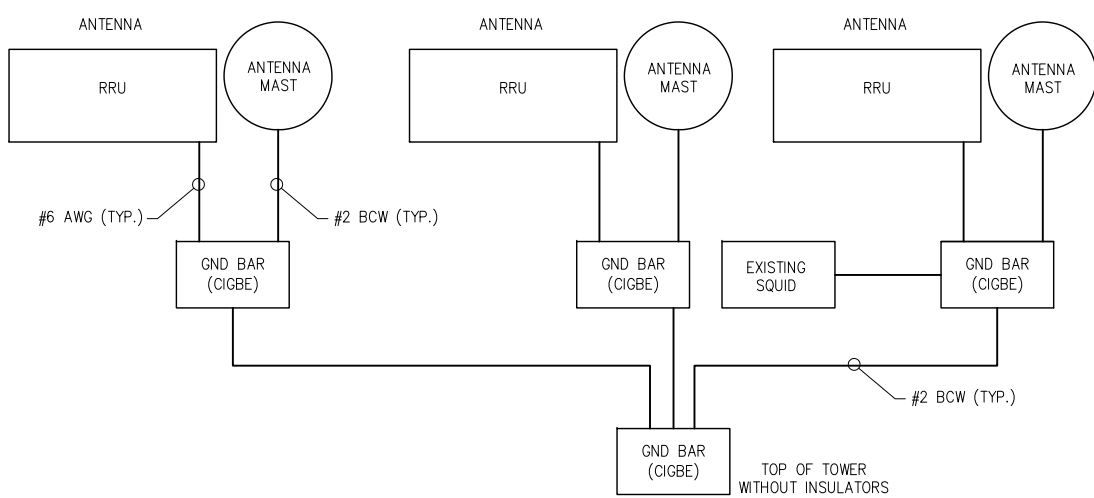
1 GROUND BAR  
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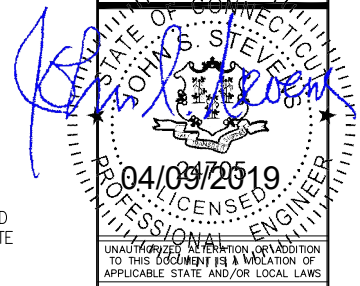
2 CADWELDS (TYPICAL)  
-- NOT TO SCALE



3 CONNECTION OF GROUND WIRES TO GROUNDING BARS @ ANTENNAS  
-- NOT TO SCALE



4 SCHEMATIC DIAGRAM GROUNDING SYSTEM  
-- NOT TO SCALE



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Prepared For:

Drawing Scale:  
AS NOTED

Date:  
04/09/19

**CD**

Drawing Title  
**GROUNDING DETAILS**

Drawing Number  
**C7**