QC Development
PO Box 916
Storrs, CT 06268
860-670-9068
Mark.Roberts@QCDevelopment.net

May 30, 2018

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT1141
179 Shunpike Road, Cromwell, CT 06416
N 41.62323056
W 72.67902778

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 115-foot level of the existing 170-foot Self Support Tower at 179 Shunpike Road, Cromwell, CT. The tower and property are owned by the Cromwell Fire District. AT&T now intends to remove (3) KMW antennas and replace them with (3) CCI HPA-65R-BUU-H6K antennas. AT&T also intends to remove (3) Ericsson RRUS-12 / A2 and replace them with (3) RRUS-12 and install (3) RRUS-32 B66. The new antennas and RRUs will also be installed at the 115-foot level of the tower.

The original CT Siting Council order to approve Tower Sharing by AT&T (Springwich Cellular) was issued on January 25th, 2001.

Please accept this letter as notification pursuant to Regulations 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. § 16-50j-73, a copy of this letter is being sent to the Honorable Enzo Faienza, Mayor of the Town of Cromwell, and the Cromwell Planning & Development Department, as well as the property and tower owner.

The planned modifications to the 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 structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

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

Please feel free to call me at (860) 670-9068 with any questions regarding this matter. Thank you for your consideration.

Sincerely,

Mark Roberts
QC Development
Consultant for AT&T

Attachments

cc: Mayor Enzo Faienza - as Elected Official
Stuart Popper – Director of Planning and Development
Cromwell Fire District – as Tower and Property Owner

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							9.67%
AT&T GSM	2	414	115	0.0251	850	0.5667	0.44%
AT&T UMTS	2	475	115	0.0288	850	0.5667	0.51%
AT&T UMTS	2	656	115	0.0397	1900	1.0000	0.40%
AT&T LTE	2	1298	115	0.0786	700	0.4667	1.68%
AT&T LTE	4	2178	115	0.2637	1900/2300	1.0000	2.64%
Site Total							15.33%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							9.67%
AT&T UMTS	2	475	115	0.0075	850	0.5667	0.26%
AT&T UMTS	2	656	115	0.0095	1900	1.0000	0.19%
AT&T LTE	2	1298	115	0.0447	700	0.4667	1.91%
AT&T LTE	3	2178	115	0.2198	1900	1.0000	2.20%
AT&T LTE	2	2178	115	0.0447	2100	1.0000	0.89%
AT&T LTE	2	2178	115	0.0389	2300	1.0000	0.78%
Site Total							15.91%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE MOUNTED ON THE EXISTING LATTICE TOWER:
- NEW AT&T ANTENNA MOUNT SABRE PART #C10857001C (TOTAL OF 3)
- NEW AT&T ANTENNA: (HPA-65R-BUU-H6) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- NEW AT&T RRUS: RRUS-32 B66 (AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- NEW AT&T RRUS: RRUS-12 (PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- NEW AT&T SURGE ARRESTOR: (DC6-48-60-18-8C) (TOTAL OF 1)
- NEW JUMPER CABLES: COAX JUMPER (2) PER SECTOR FROM EACH RRU (TOTAL OF 6)
- NEW FIBER JUMPERS: FIBER JUMPERS (3) FROM THE SQUID TO EACH RRU (TOTAL OF 9)

ITEMS TO BE MOUNTED INSIDE EXISTING EQUIPMENT SHELTER:
- ADD 2ND XMU IN EXISTING LTE RACK.

ITEMS TO REMAIN:
- (6) ANTENNAS, (9) RRU'S, (12) 1-5/8" COAX CABLES, (2) DC POWER CABLES, & (1) FIBER RUNS.

SQUID ALARMING (NOT TO BE DAISY CHAINED).
- THE 1ST SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED RRH/RRU ON THE ALPHA SECTOR, IN THE EVENT THE ALARM CABLE CANNOT BE CONNECTED TO ALPHA IT WILL BE ACCEPTABLE TO ALARM TO THE CLOSEST PHYSICAL SECTOR ON AN EXCEPTION BASIS.
- 2ND SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED) RRH/RRU ON THE BETA SECTOR.
- 3RD SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED) RRH/RRU ON THE GAMMA SECTOR.

SITE ADDRESS:	179 SHUNPIKE ROAD CROMWELL, CT 06416
LATITUDE:	41.6232231° N 41° 37' 23.60" N
LONGITUDE:	72.6790381° W 72° 42' 44.54" W
TYPE OF SITE:	LATTICE TOWER/INDOOR EQUIPMENT
STRUCTURE HEIGHT:	170'-0"± A.G.L
RAD CENTER:	115'-0"± A.G.L
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

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A-2	ANTENNA LAYOUT & ELEVATION	1
A-3	DETAILS	1
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RF-1	RF PLUMBING DIAGRAM	1

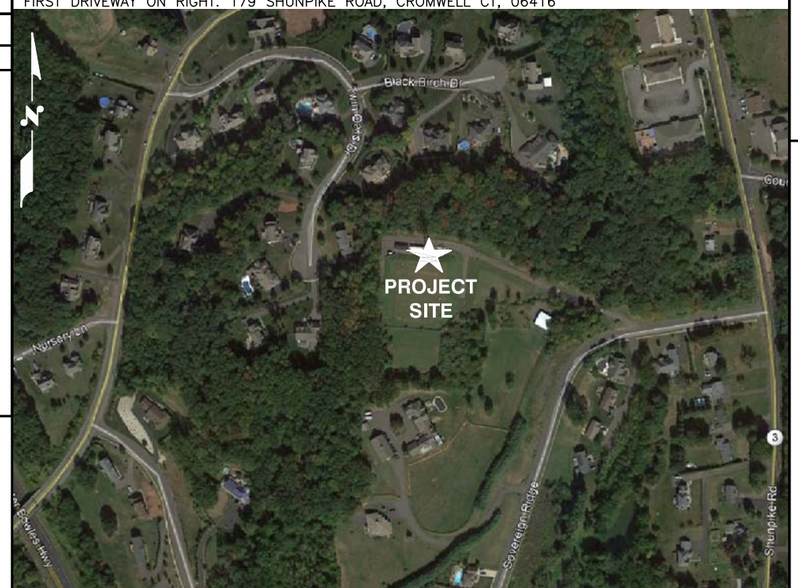
SITE NUMBER: CT1141

SITE NAME: CROMWELL US MIL

PROJECT: LTE 4C & ANTENNA MODIFICATIONS 2018 UPGRADE

VICINITY MAP

DIRECTIONS TO SITE:
TAKE ROUTE 17 NORTH TO RIDGEWOOD AVE. FOLLOW RIDGEWOOD AVENUE TO THE GARDEN STATE PARKWAY GET ON GOING NORTH. STAY ON THE GARDEN STATE PARKWAY NORTH UNTIL YOU GET TO THE NEW YORK STATE THRUWAY (RT. 87 SOUTH) TOWARDS THE TAPPAN ZEE BRIDGE. CROSS THE TAPPAN ZEE BRIDGE AND GET OFF AT EXIT 8 (CROSS WESTCHESTER PARKWAY /RT. 287). TAKE RT. 287 EAST TO I-95 NORTH (NEW ENGLAND THRUWAY). IN NEW HAVEN GET OFF EXIT 48 THIS WILL BE A LEFT-HAND EXIT THAT WILL PUT YOU ON I-91 NORTH. TAKE EXITS 21 (ROUTE 372). AT END OF EXIT GO LEFT ONTO ROUTE 372, FOLLOW ROUTE AND TAKE A LEFT ONTO SHUNPIKE ROAD (ROUTE 3). FOLLOW SHUNPIKE ROAD FOR ABOUT FOUR MILES. TURN LEFT ONTO SOVEREIGN RIDGE AND THEN FIRST DRIVEWAY ON RIGHT. 179 SHUNPIKE ROAD, CROMWELL CT, 06416



GENERAL NOTES

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

72 HOURS

CALL
BEFORE YOU DIG
CALL TOLL FREE 1-800-922-4455
OR CALL 811

UNDERGROUND SERVICE ALERT

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

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SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: GA

STATE OF CONNECTICUT
DEREK J. CREASEY
No. 24055
LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET
(LTE 4C & ANTENNA MODIFICATIONS)

SITE NUMBER	DRAWING NUMBER	REV
CT1141	T-1	1

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

   CONTRACTOR – SAI
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH LTE SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES:
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
    BUILDING CODE: IBC 2012 WITH 2016 CT BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
    LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

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

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

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

    MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

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

    EQUIPMENT AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

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

ABBREVIATIONS

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

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

SAI
12 INDUSTRIAL WAY.
SALEM, NH 03079

SITE NUMBER: CT1141
SITE NAME: CROMWELL US MIL
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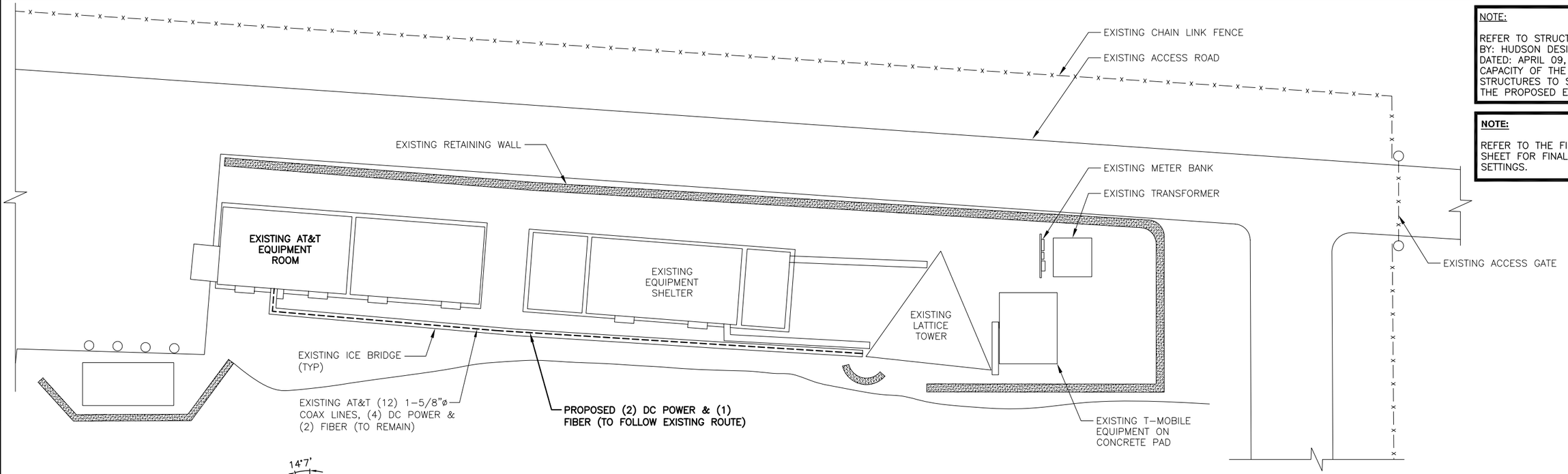
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: GA

STATE OF CONNECTICUT
DEREK J. CREASEY
No. 29455
LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
(LTE 4C & ANTENNA MODIFICATIONS)

SITE NUMBER	DRAWING NUMBER	REV
CT1141	GN-1	1

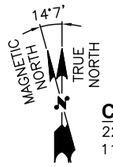


NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: APRIL 09, 2018, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

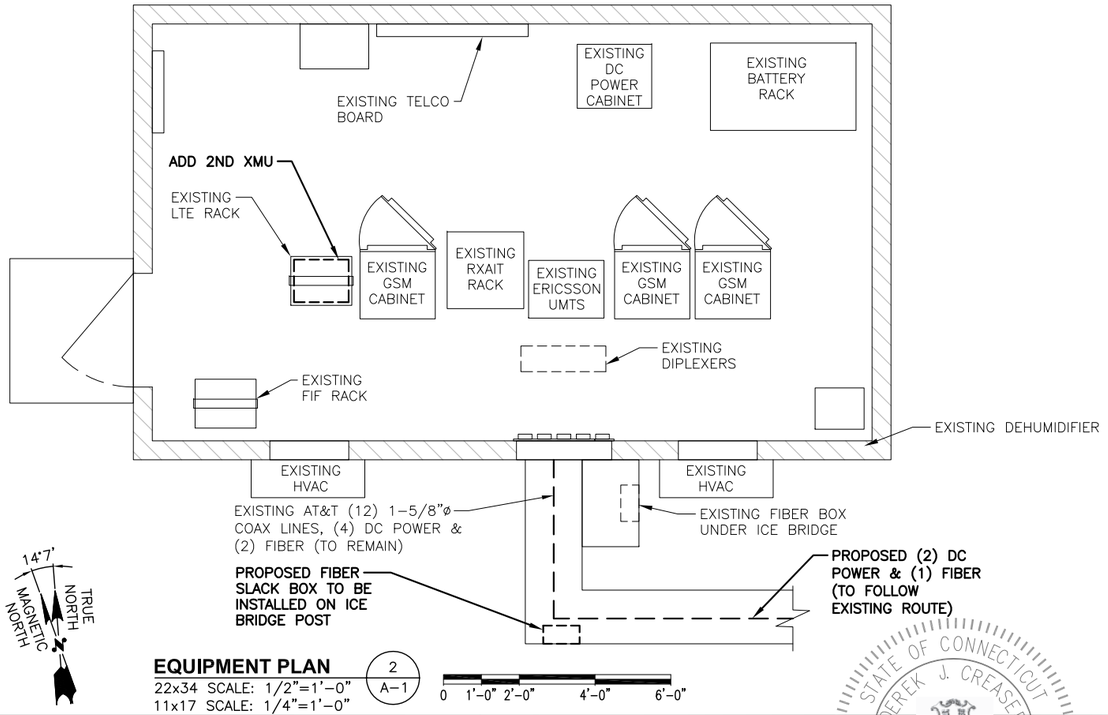
NOTE:

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



COMPOUND PLAN (1 / A-1)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

0 4'-0" 8'-0" 16'-0" 24'-0"



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

0 1'-0" 2'-0" 4'-0" 6'-0"

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STATE OF CONNECTICUT
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AT&T

COMPOUND & EQUIPMENT PLAN
(LTE 4C & ANTENNA MODIFICATIONS)

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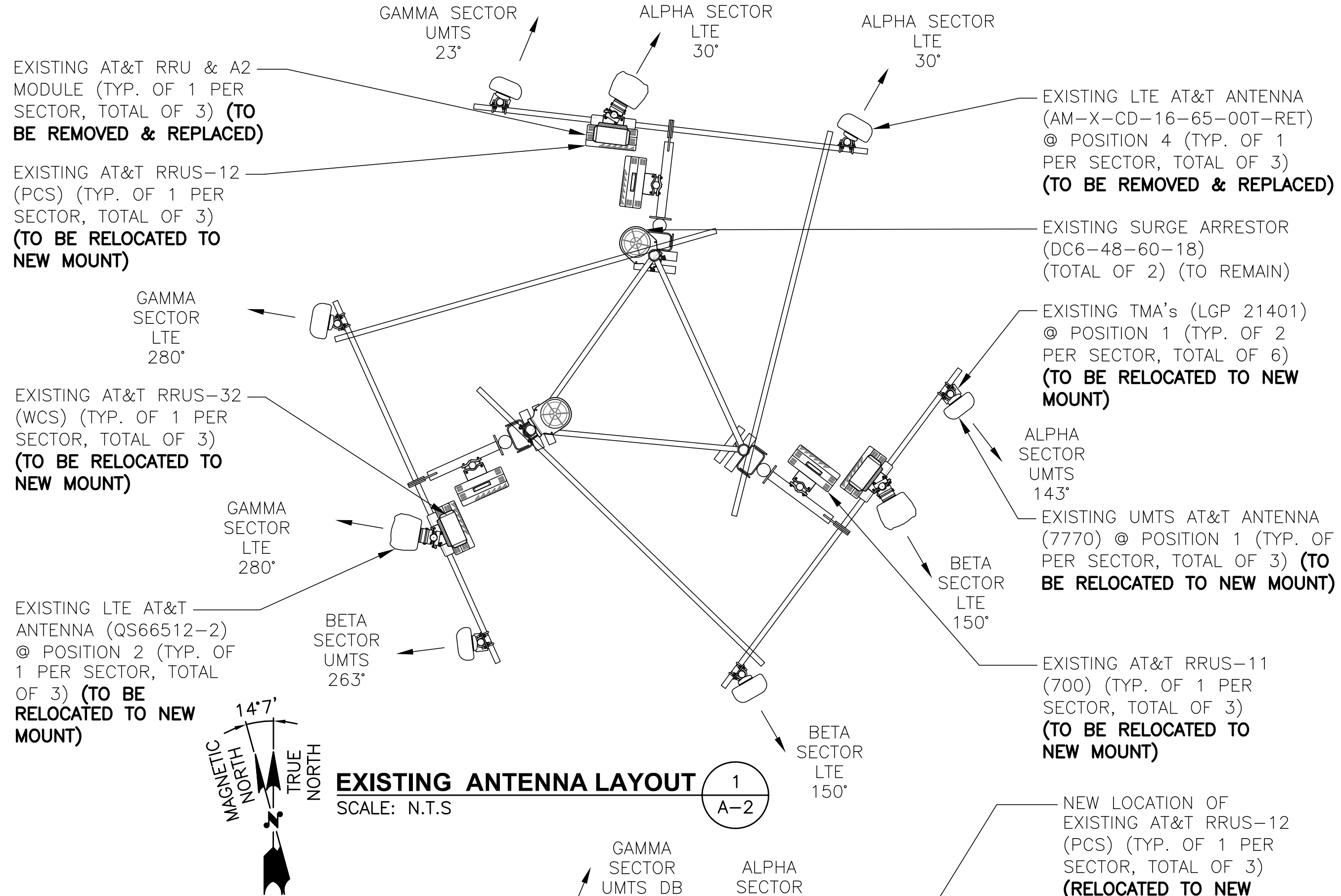
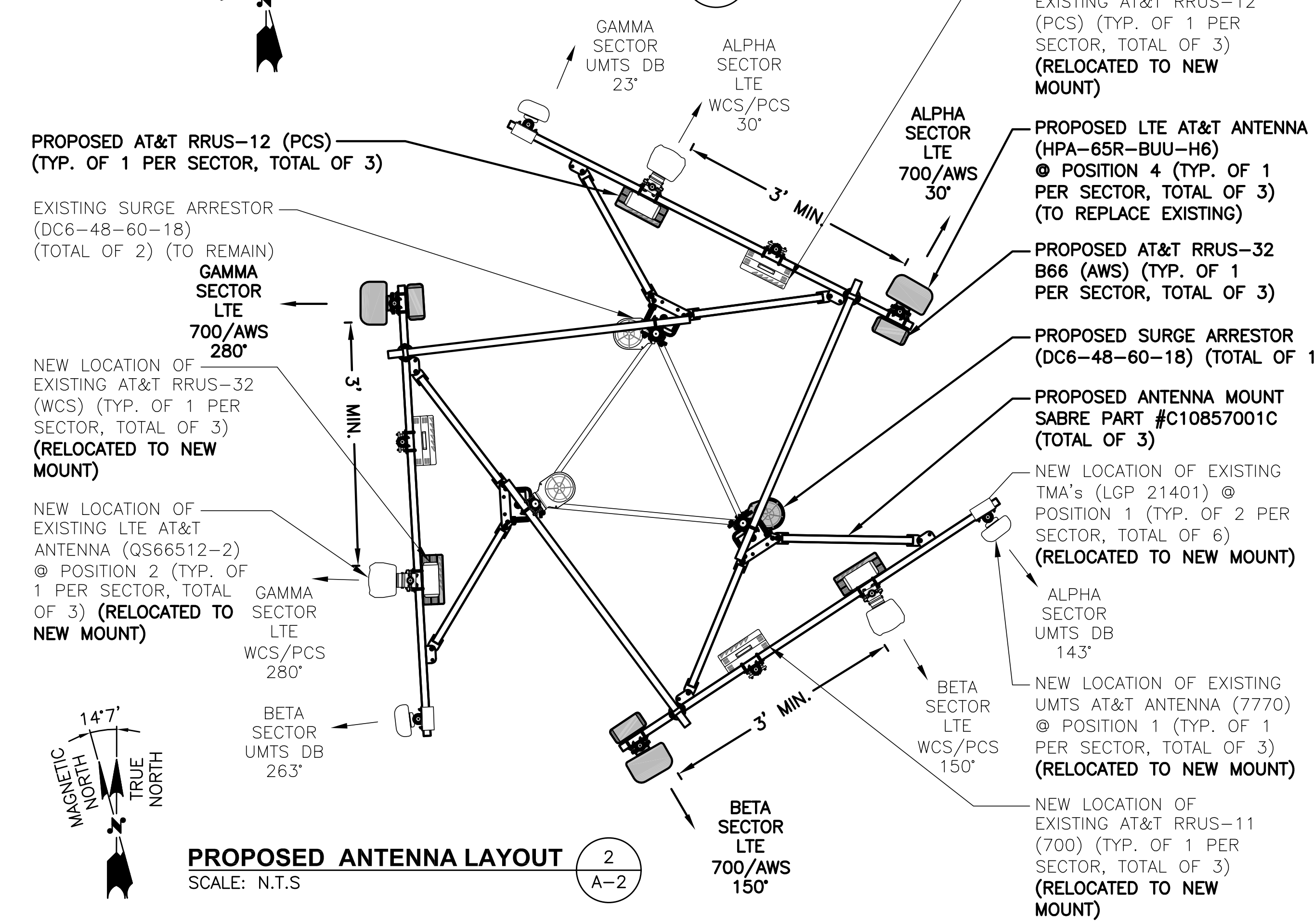


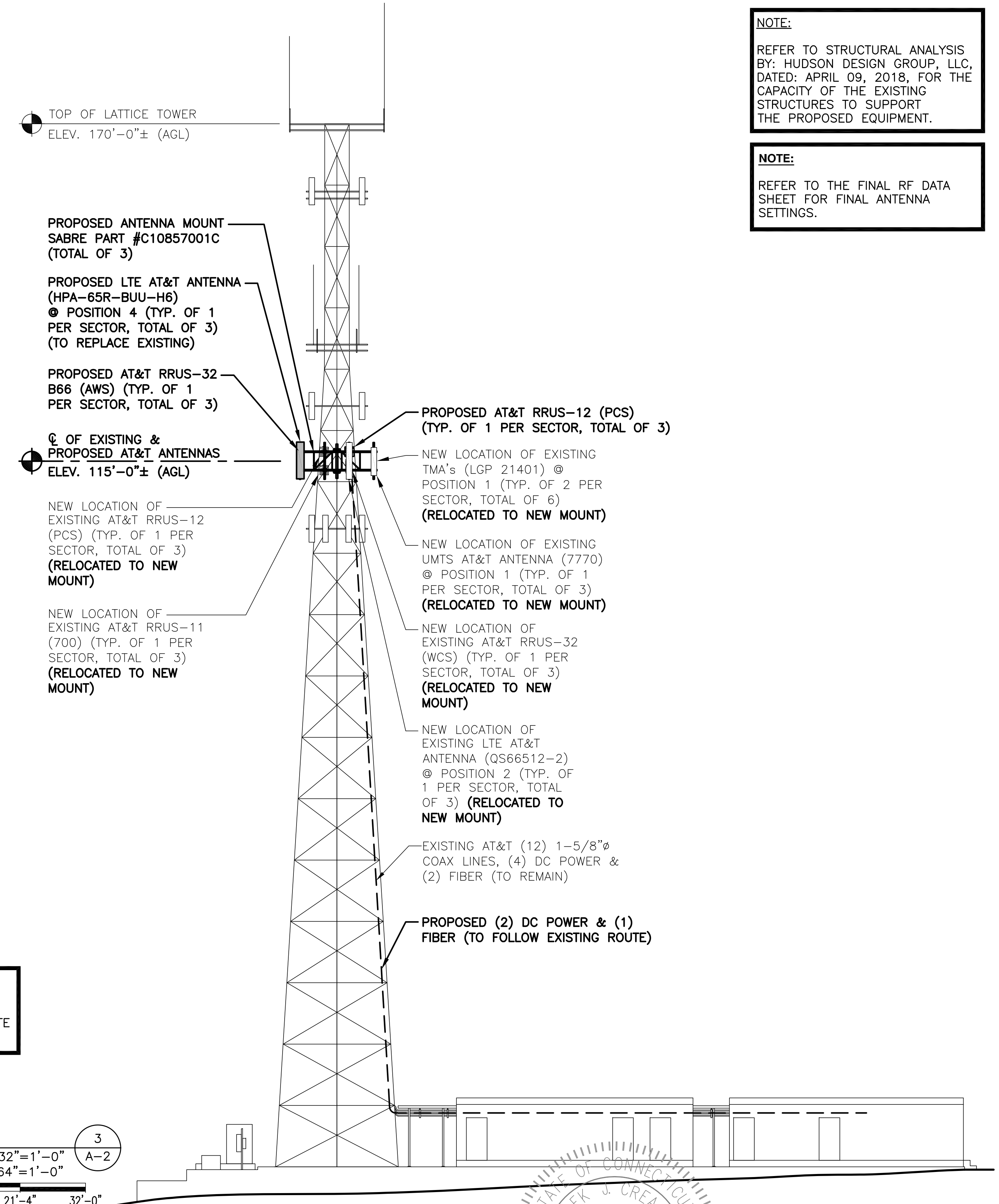
EXISTING ANTENNA LAYOUT (1 / A-2)
SCALE: N.T.S



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

NOTE:

ANTENNA MOUNT TO BE INSTALLED TO MATCH LTE AZIMUTH



ELEVATION (3 / A-2)
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"
0 5'-4" 10'-8" 21'-4" 32'-0"

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: APRIL 09, 2018, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

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

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

SAI
12 INDUSTRIAL WAY. SALEM, NH 03079

SITE NUMBER: CT1141
SITE NAME: CROMWELL US MIL
179 SHUNPIKE ROAD
CROMWELL, CT 06416
MIDDLESEX COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	05/08/18	ISSUED FOR CONSTRUCTION	EB	AT	DJC
A	02/22/18	ISSUED FOR REVIEW	GA	AT	DJC

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: GA

STATE OF CONNECTICUT — DEREK J. CREASER — LICENSED PROFESSIONAL ENGINEER

AT&T
ANTENNA LAYOUT & ELEVATION
(LTE 4C & ANTENNA MODIFICATIONS)

SITE NUMBER	DRAWING NUMBER	REV
CT1141	A-2	1

NOTE:

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NOTE:

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

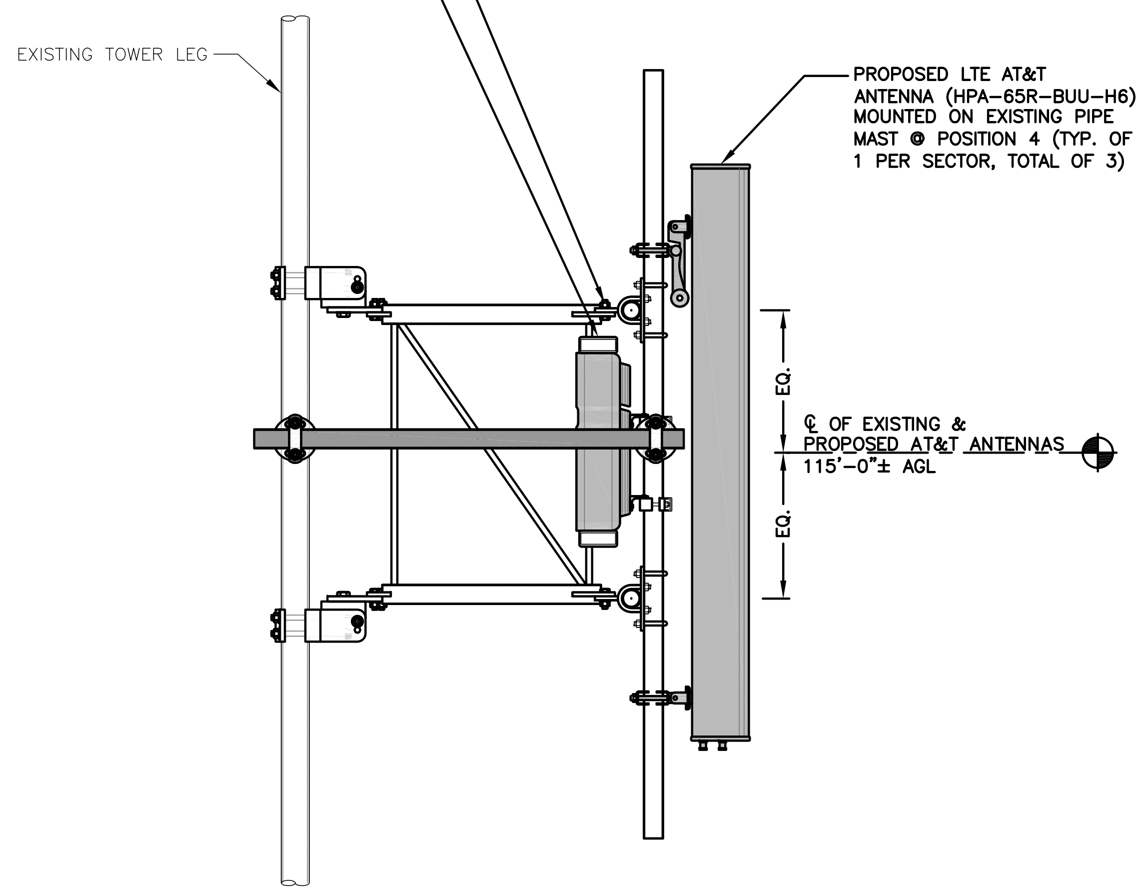
FINAL ANTENNA SCHEDULE

SECTOR	BAND	ANTENNA		SIZE (INCHES) (L X W X D)	RAD CENTER	AZIMUTH	TMA'S		TRIPLEXERS		RRU'S		SIZE (INCHES) (L X W X D)	DC JUMPERS	FIBER JUMPERS	COAX
ALPHA	UMTS DB	EXISTING	7770	55X11X5	115'-0"±	143°	EXISTING	(2) LGP 21401	–	–	–	–	–	–	–	(2)1-5/8
	LTE WCS/PCS	EXISTING	QS66512-2	72X12X9.6	115'-0"±	30°	–	–	EXISTING	782-10250	PROPOSED EXISTING EXISTING	RRUS-12 (PCS) RRUS-12 (PCS) RRUS-32 (WCS)	20.4X18.5X7.5 – –	*1 – –	**1 – –	(2)1-5/8
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	LTE 700/AWS	PROPOSED	HPA-65R-BUU-H6	72X14.8X9	115'-0"±	30°	–	–	–	–	PROPOSED EXISTING	RRUS-32 B66 (AWS) RRUS-11 (700)	27.2X12.1X7.0 –	*1 –	**2 –	–
BETA	UMTS DB	EXISTING	7770	55X11X5	115'-0"±	263°	EXISTING	(2) LGP 21401	–	–	–	–	–	–	–	(2)1-5/8
	LTE WCS/PCS	EXISTING	QS66512-2	72X12X9.6	115'-0"±	150°	–	–	EXISTING	782-10250	PROPOSED EXISTING EXISTING	RRUS-12 (PCS) RRUS-12 (PCS) RRUS-32 (WCS)	20.4X18.5X7.5 – –	*1 – –	**1 – –	(2)1-5/8
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	LTE 700/AWS	PROPOSED	HPA-65R-BUU-H6	72X14.8X9	115'-0"±	150°	–	–	–	–	PROPOSED EXISTING	RRUS-32 B66 (AWS) RRUS-11 (700)	27.2X12.1X7.0 –	*1 –	**2 –	–
GAMMA	UMTS DB	EXISTING	7770	55X11X5	115'-0"±	23°	EXISTING	(2) LGP 21401	–	–	–	–	–	–	–	(2)1-5/8
	LTE WCS/PCS	EXISTING	QS66512-2	72X12X9.6	115'-0"±	280°	–	–	EXISTING	782-10250	PROPOSED EXISTING EXISTING	RRUS-12 (PCS) RRUS-12 (PCS) RRUS-32 (WCS)	20.4X18.5X7.5 – –	*1 – –	**1 – –	(2)1-5/8
	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	LTE 700/AWS	PROPOSED	HPA-65R-BUU-H6	72X14.8X9	115'-0"±	280°	–	–	–	–	PROPOSED EXISTING	RRUS-32 B66 (AWS) RRUS-11 (700)	27.2X12.1X7.0 –	*1 –	**2 –	–

FINAL ANTENNA CONFIGURATION TABLE (3 / A-3)

*DC JUMPER NOTE:
COAX JUMPERS (2) PER SECTOR, FROM EACH RRU (TOTAL OF 6).

**FIBER JUMPER NOTE:
FIBER JUMPERS (3) PER SECTOR, FROM THE SQUID TO EACH RRU (TOTAL OF 9).



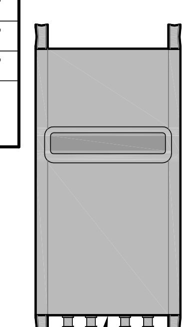
PROPOSED ANTENNA & RRUS MOUNT DETAIL (1 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"

RRU CHART				
QUANTITY	MODEL	L	W	D
3(E)	RRUS-11	19.7"	17.0"	7.2"
3(E)	RRUS-32	27.2"	12.1"	7.0"
3(P) 3(E)	RRUS-12	20.4"	18.5"	7.5"
3(P)	RRUS-32 B66	27.2"	12.1"	7.0"

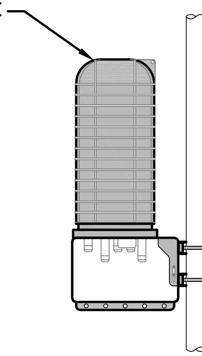
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

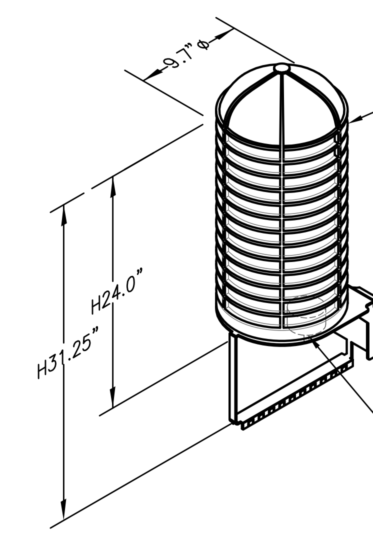


NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL (2 / A-3)
SCALE: N.T.S



PROPOSED SURGE ARRESTOR MOUNTING DETAIL (4 / A-3)
SCALE: N.T.S



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL (5 / A-3)
SCALE: N.T.S

HUDSON Design Group LLC
45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845
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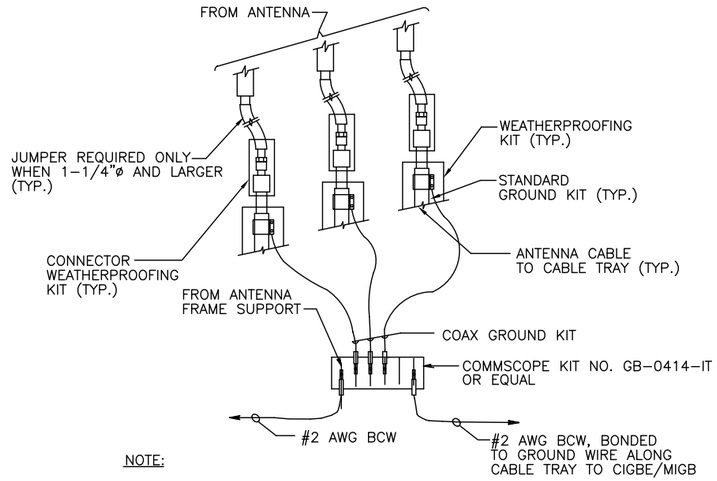
STATE OF CONNECTICUT – DEREK J. CREASER – LICENSED PROFESSIONAL ENGINEER

AT&T
DETAILS
(LTE 4C & ANTENNA MODIFICATIONS)

SITE NUMBER	DRAWING NUMBER	REV
CT1141	A-3	1



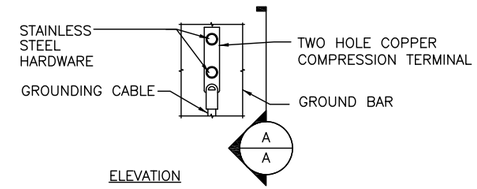
NOTE:

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

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

1 / G–1



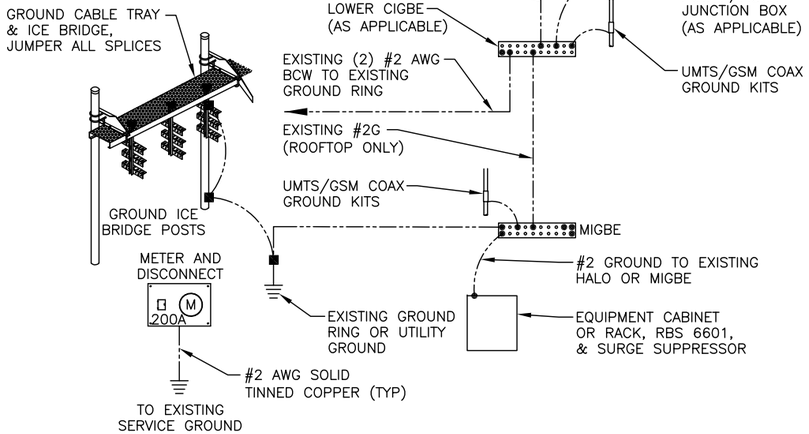
NOTE:

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

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

3 / G–1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G–1

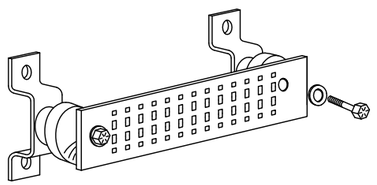
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL

SCALE: N.T.S

4 / G–1

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

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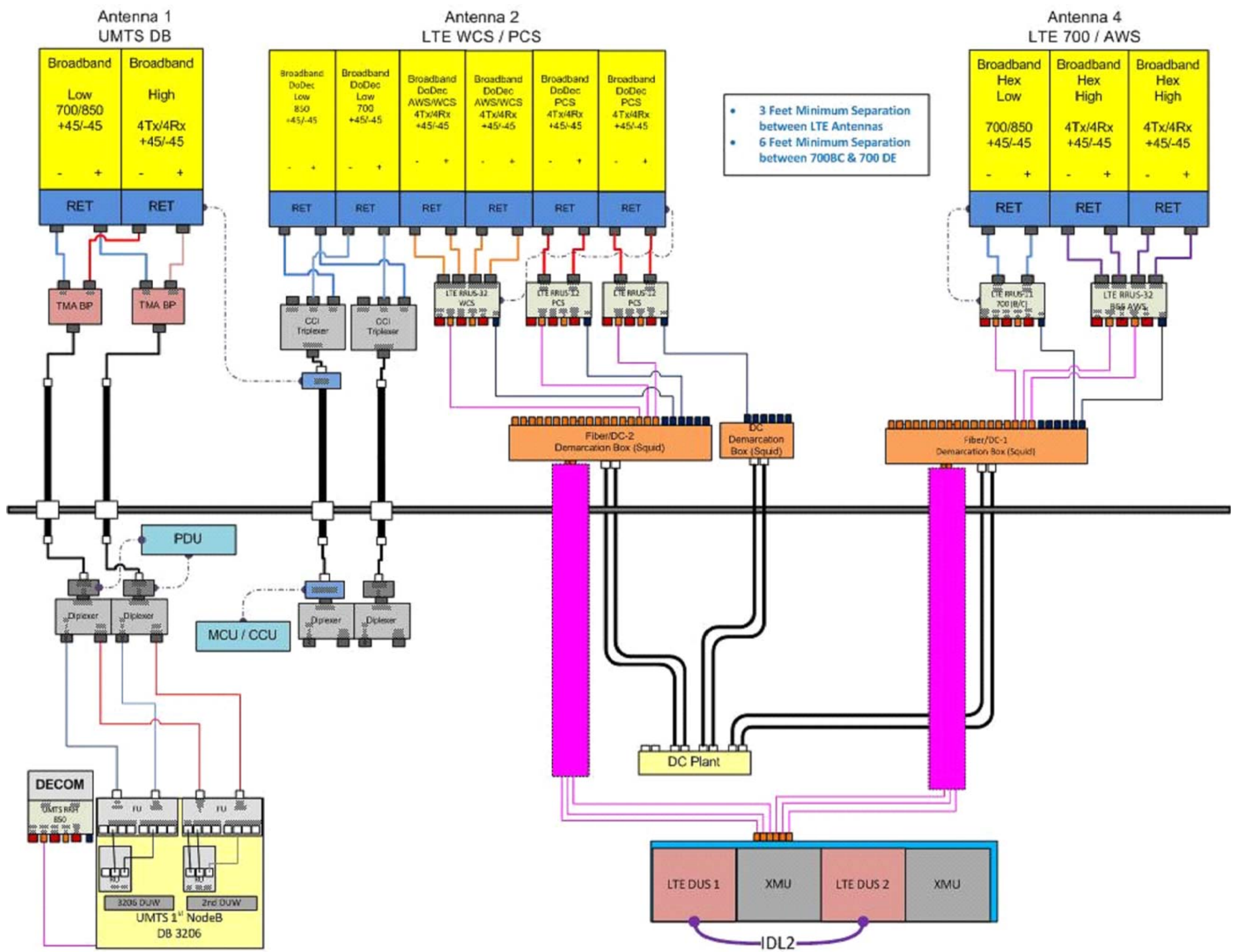
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: GA

STATE OF CONNECTICUT
DEREK J. CREASEY
No. 25355
LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS
(LTE 4C & ANTENNA MODIFICATIONS)

SITE NUMBER	DRAWING NUMBER	REV
CT1141	G–1	1



RF PLUMBING DIAGRAM (1 / RF-1)
SCALE: N.T.S

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

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

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

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: GA

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED PROFESSIONAL ENGINEER

AT&T
RF PLUMBING DIAGRAM
(LTE 4C & ANTENNA MODIFICATIONS)

SITE NUMBER	DRAWING NUMBER	REV
CT1141	RF–1	1

STRUCTURAL ANALYSIS REPORT

For

CT1141

CROMWELL US MIL

179 SHUNPIKE ROAD
CROMWELL, CT 06416

Antennas Mounted to the Tower

Prepared for:

SAI at&t

Dated: April 9, 2018

STATE OF CONNECTICUT
GI KAI WANG
No. 28220
LICENSED
PROFESSIONAL ENGINEER
4/9/2018

Prepared by:

HDG HUDSON Design Group LLC

45 Beechwood Drive
North Andover, MA 01845
(P) 978.557.5553 (F) 978.336.5586
www.hudsondesigngroupllc.com

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the 170' self-supporting tower supporting the proposed AT&T antennas located at elevation 115' above the ground level.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's existing and proposed antennas listed below.

Record drawings of the existing tower were not available for our use. The previous structural analysis report prepared by AECOM, dated July 16, 2016, was available and obtained for our use.

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing tower **is in conformance** with the ANSI/TIA-222-G Standard for the loading considered under the criteria listed in this report. The tower structure is rated at **96.9%** - (Legs at Tower Section T4 from EL.100' to EL.120' Controlling).

HUDSON Design Group LLC

APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
	Tx Rx 101-90-08-0-01	183'	Mount Pipe
	20' Omni	178'	Halo Mount
	20.5' Omni	178'	Halo Mount
	(3) 14' Omni	175'	Halo Mount
	12' Omni	174'	Halo Mount
	(3) APXVSPP18-C Antennas	170'	Halo Mount
	(3) APXV9TM14 Antennas	170'	Halo Mount
	(3) RRH-1900	170'	Halo Mount
	(3) RRH-800	170'	Halo Mount
	(3) RRH 8X20-25	170'	Halo Mount
	SU-RA Antenna	168'	Halo Mount
	PTP49600	168'	Halo Mount
	2' Dish	168'	Halo Mount
	(3) APXV18-206517S-C Antennas	159.5'	Tower Leg
	SC420-HF1LDF	158.5'	Mount Pipe
	(2) 20' Omni	144'	Platform
	20.5' Omni	144'	Platform
	15' Omni	141'	Platform
	10' Omni	139'	Platform
	9' Omni	138.5'	Platform
	(3) LLPX310R Antennas	134'	Platform
	(3) RRH-800	134'	Platform
	(3) VHLP2.5	134'	Platform
	(1) VHLP2	134'	Platform
	(6) AIR21 B2A/B4P Antennas	125.5'	T - Frame
	(3) LNX-6515DS Antennas	125.5'	T - Frame
	(3) TMA	125.5'	T - Frame
	(3) RRUS-11	125.5'	T - Frame
AT&T	(3) 7770 Antennas	115'	***Sabre 12' -V-Boom# C10857001C***
AT&T	(3) QS66512-2 Antennas	115'	***Sabre 12' -V-Boom# C10857001C***
AT&T	(6) LGP21401 TMA	115'	***Sabre 12' -V-Boom# C10857001C***
AT&T	(3) RRUS-11	115'	***Sabre 12' -V-Boom# C10857001C***
AT&T	(3) RRUS-12	115'	***Sabre 12' -V-Boom# C10857001C***
AT&T	(3) RRUS-32	115'	***Sabre 12' -V-Boom# C10857001C***
AT&T	(1) DC6-48-60-18-8F	115'	Tower Leg
AT&T	***(3) HPA-65R-BUU-H6 Antennas***	115'	***Sabre 12' -V-Boom# C10857001C***
AT&T	***(3) RRUS-12***	115'	***Sabre 12' -V-Boom# C10857001C***
AT&T	***(3) RRUS-32***	115'	***Sabre 12' -V-Boom# C10857001C***
AT&T	***(1) DC6-48-60-18-8C***	115'	Tower Leg

APPURTENANCES CONFIGURATION (CONTINUED):

Tenant	Appurtenances	Elev.	Mount
	(3) BXA-171063-12CF Antennas	101'	T - Frame
	(3) HBX-6517DS-A1M Antennas	101'	T - Frame
	(6) LNX-6514DS-VTM Antennas	101'	T - Frame
	(6) Diplexers	101'	T - Frame
	(3) RRHxx40 AWS	101'	T - Frame
	DB-T1-6Z-8AB-0Z	101'	T - Frame
	Panel Antenna	87'	Mount Pipe
	TMA	84.5'	Mount Pipe
	TMA	83'	Side Mount Standoff
	3' Dish	83'	Side Mount Standoff
	TMA	82.5'	Side Mount Standoff
	Panel Antenna	80'	Side Mount Standoff
	Camera	30'	Tower Leg
	PC9013N	24'	Tower Leg

Proposed AT&T Appurtenances shown in Bold.

AT&T EXISTING/PROPOSED COAX CABLES:

Tenant	Coax Cables	Elev.	Mount
AT&T	(12) 1 5/8" Cables	115'	Tower Face
AT&T	(2) DC Power Cables	115'	Tower Face
AT&T	(1) Fiber Cable	115'	Tower Face

Proposed AT&T Coax Cables shown in Bold.

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Notes/Comments
Legs	**96.9 %**	100 – 120	PASS	**Controlling**
Diagonals	91.2 %	60 – 80	PASS	
Top Girts	15.3 %	150 – 170	PASS	
Bottom Girts	6.1 %	150 – 170	PASS	
Mid Girts	34.9 %	100 – 120	PASS	

HUDSON Design Group LLC

DESIGN CRITERIA:

1. EIA/TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

   County: Middlesex
   Wind Load: 120 mph (3 second gust)
   Structural Class: II
   Exposure Category: B
   Topographic Category: 1
   Crest Height: 0 ft.
   Ice Thickness: 0.75 inch

2. Approximate height above grade to proposed antennas: 115'

Calculations and referenced documents are attached

ASSUMPTIONS:

1. The tower dimensions, member sizes and material strength are as indicated in the previous structural analysis report prepared by AECOM, dated July 16, 2016.

2. The appurtenances configuration is as stated in the previous structural analysis report prepared by AECOM, dated July 16, 2016. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.

3. The tower and foundation are properly constructed and maintained. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.

4. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.

5. All prior structural modification, if any, are assumed to be as per the data supplied (if available), and installed properly.

6. The foundation of the tower was not checked due to lack of information. As-built foundation drawings and geotechnical report would be required to determine whether the foundation is capable of supporting the proposed loadings.

SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed antennas and RRUs be mounted on the proposed steel frames supported by the tower; the proposed surge arrestor be mounted on the tower leg.

Reference HDG's Latest Construction Drawings for all component and connection requirements (attached).

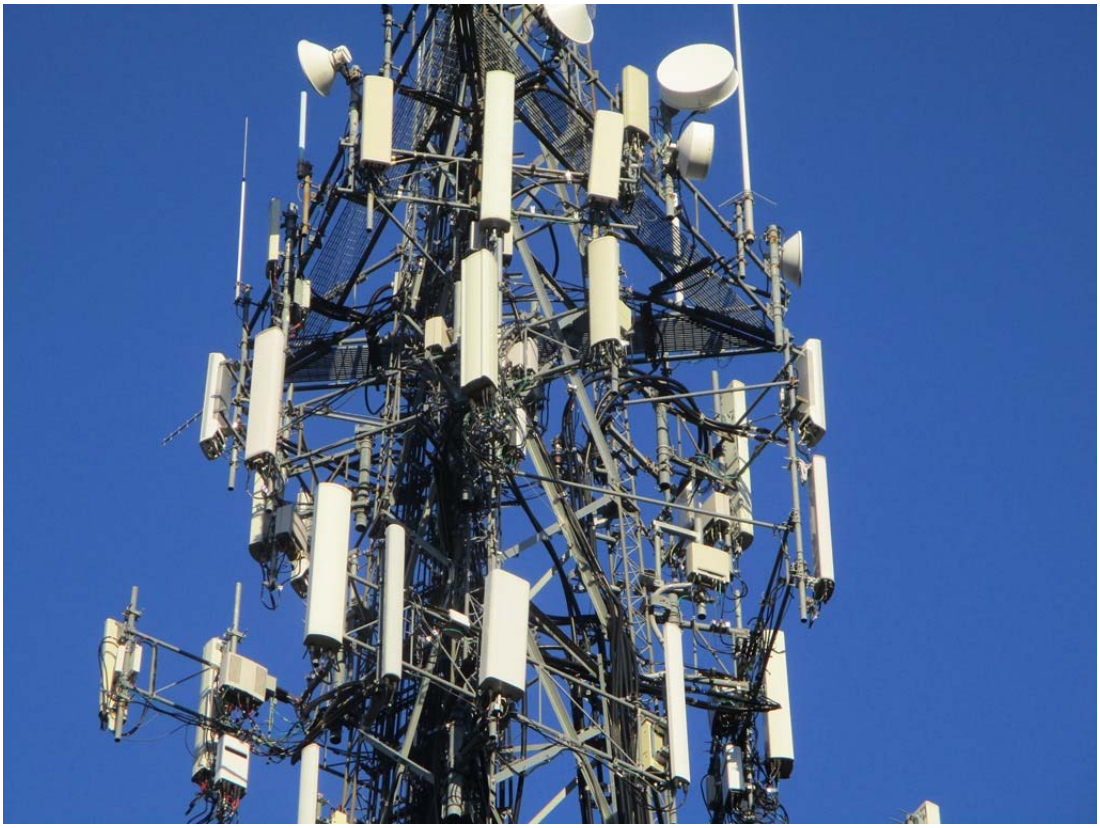
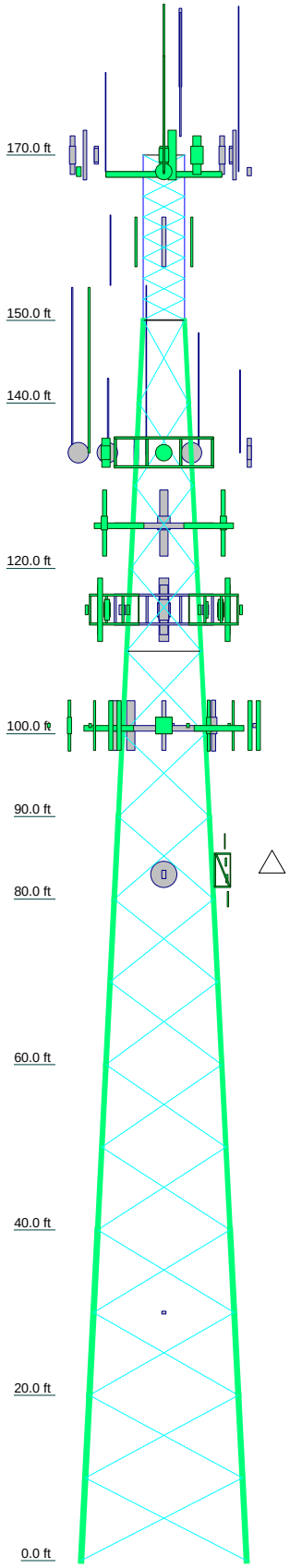


Photo 1: Photo illustrating the Tower with Appurtenances shown.

HUDSON
Design Group LLC

CALCULATIONS

Section		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10		
Legs		SR 1 3/4	A	Pirod 105216	Pirod 105217		B	C	Pirod 105219	D	E		
Leg Grade		A572-50											
Diagonals		SR 7/8	F	L3x3x3/16	L3x3x1/4	L3x3x5/16		L3x3x3/8	L3 1/2x3 1/2x5/16	L3 1/2x3 1/2x3/8	L4x4x5/16		
Diagonal Grade		A572-50						A36					
Top Girts		SR 7/8	L3x3x3/16					N.A.					
Mid Girts			N.A.		L3x3x3/16				N.A.				
Bottom Girts		SR 7/8						N.A.					
Face Width (ft)	20	5		6	8	10	11	12	14	16	18		
# Panels @ (ft)		8 @ 2.48958						15 @ 10					
Weight (lb)	28996.1	1101.1	1071.2	1989.7	2664.2	1413.3	1633.6	4020.0	4241.3	5100.2	5761.5		



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
101-90-08-0-01	183	PiROD 10' Lightweight T-Frame	125.5
2 1/2"x15' pipe	179.75	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	125.5
Omni 3"x20'	178	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	125.5
Omni 2 1/2"x20.5'	178	Quintel QS66512-2 w/mpount pipe	115
Omni 2 1/2"x14'	175	(2) Powerwave TMA LGP21401	115
Omni 2 1/2"x14'	175	(2) Powerwave TMA LGP21401	115
Omni 2 1/2"x14'	175	(2) Powerwave TMA LGP21401	115
Omni 1 1/2"x12'	174	Ericsson RRUS-11	115
APXVSPP18-C	170	Ericsson RRUS-11	115
APXVSPP18-C	170	Ericsson RRUS-11	115
APXVSPP18-C	170	Ericsson RRUS-11	115
RRH-1900	170	Ericsson RRUS-12	115
RRH-1900	170	Ericsson RRUS-12	115
RRH-1900	170	Ericsson RRUS-12	115
RRH-800	170	Ericsson RRUS-32	115
RRH-800	170	Ericsson RRUS-32	115
RRH-800	170	Ericsson RRUS-32	115
APXV9TM14 w/mount pipe	170	DC6-48-60-18-8F	115
APXV9TM14 w/mount pipe	170	Sabre 12' V-Boom (ATI - propsoed)	115
APXV9TM14 w/mount pipe	170	Sabre 12' V-Boom	115
RRH 8x20-25	170	Sabre 12' V-Boom	115
RRH 8x20-25	170	HPA-65R-BUU-H6 w/mount pipe	115
RRH 8x20-25	170	HPA-65R-BUU-H6 w/mount pipe	115
9 Arm Halo Mount	168	HPA-65R-BUU-H6 w/mount pipe	115
SU-RA	168	Ericsson RRUS-12	115
PTP 49600	168	Ericsson RRUS-12	115
HPD2-5.2	168	Ericsson RRUS-12	115
APXV18-206517S-C w/mount pipe	159.5	Ericsson RRUS-32	115
APXV18-206517S-C w/mount pipe	159.5	Ericsson RRUS-32	115
APXV18-206517S-C w/mount pipe	159.5	Ericsson RRUS-32	115
SC420-HF1LDF	158.5	DC6-48-60-18-8C	115
Omni 3"x20'	144	Powerwave 7770 w/mount pipe (ATI - Existing)	115
Omni 2 1/2"x20.5'	144	Powerwave 7770 w/mount pipe	115
Omni 3"x20'	144	Powerwave 7770 w/mount pipe	115
Omni 2"x15'	141	Quintel QS66512-2 w/mpount pipe	115
Omni 1 1/2"x10'	139	Quintel QS66512-2 w/mpount pipe	115
Omni 4"x9'	138.5	BXA-171063-12CF-EDIN	101
LLPX310R	134	(2) FD9R6004 Diplexer	101
LLPX310R	134	(2) FD9R6004 Diplexer	101
LLPX310R	134	(2) FD9R6004 Diplexer	101
RRH-800	134	HBX-6517DS-A1M	101
RRH-800	134	HBX-6517DS-A1M	101
RRH-800	134	HBX-6517DS-A1M	101
VHLP2.5-180	134	RRH2X40 AWS	101
VHLP2.5-180	134	RRH2X40 AWS	101
VHLP2.5-180	134	RRH2X40 AWS	101
VHLP2-180	134	RFS DB-T1-6Z-8AB-0Z	101
PiROD 20' Universal Platform	134	Andrew LNX-6514DS-VTM	101
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	125.5	Andrew LNX-6514DS-VTM	101
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	125.5	Andrew LNX-6514DS-VTM	101
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	125.5	Andrew LNX-6514DS-VTM	101
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	125.5	Andrew LNX-6514DS-VTM	101
KRY 112 71/2	125.5	PiROD 12' Lightweight T-Frame	101
KRY 112 71/2	125.5	PiROD 12' Lightweight T-Frame	101
KRY 112 71/2	125.5	PiROD 12' Lightweight T-Frame	101
Andrew LNX-6515DS-VTM w/mount pipe	125.5	BXA-171063-12CF-EDIN	101
Andrew LNX-6515DS-VTM w/mount pipe	125.5	BXA-171063-12CF-EDIN	101
Andrew LNX-6515DS-VTM w/mount pipe	125.5	Panel Antenna 3"X2"x22"	87
Ericsson RRUS-11	125.5	Gen. TMA	84.5
Ericsson RRUS-11	125.5	3' Side Mount Standoff	83.5
Ericsson RRUS-11	125.5	3' Side Mount Standoff	83.5
PiROD 10' Lightweight T-Frame	125.5	VHLP3-11W	83
PiROD 10' Lightweight T-Frame	125.5	Gen. TMA	83
		Gen. TMA	82.5
		Panel Antenna 3"X2"x22"	80
		Camera	30
		PC9013N	24

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	Pirod 105244	D	Pirod 105219 Mod (CT1141)
B	Pirod 105217 Mod (CT1141)	E	Pirod 105220 Mod (CT1141)
C	Pirod 105218 Mod (CT1141)	F	L2 1/2x2 1/2x3/16

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu

Hudson Design Group LLC
45 Beechwood Drive
North Andover, MA 01845
Phone: (978) 557-5553
FAX: (978) 336-5586

Job: *CT1141*	*CROMWELL, CT*		
Project: *170 ft Self Supporting Tower*			
Client: AT&T	Drawn by: kw		App'd:
Code: TIA-222-G	Date: 04/09/18		Scale: NTS
Path: C:\Users\kwang\Documents\HUDSON DESIGN GROUP\AAA\CT1141 - SST (AT&T SAI)\CT1141\CT1141.eri			Dwg No. E-1

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 170.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 5.00 ft at the top and 20.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Middlesex County, Connecticut.
Basic wind speed of 120 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Tower Section Geometry

Tower Section	*Tower Elevation*	*Assembly Database*	*Description*	*Section Width*	*Number of Sections*	*Section Length*
	ft			*ft*		*ft*
T1	170.00-150.00			5.00	1	20.00
T2	150.00-140.00			5.00	1	10.00
T3	140.00-120.00			6.00	1	20.00
T4	120.00-100.00			8.00	1	20.00
T5	100.00-90.00			10.00	1	10.00
T6	90.00-80.00			11.00	1	10.00
T7	80.00-60.00			12.00	1	20.00
T8	60.00-40.00			14.00	1	20.00
T9	40.00-20.00			16.00	1	20.00
T10	20.00-0.00			18.00	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	*Tower Elevation*	*Diagonal Spacing*	*Bracing Type*	*Has K Brace End Panels*	*Has Horizontals*	*Top Girt Offset*	*Bottom Girt Offset*
	ft	*ft*				*in*	*in*
T1	170.00-150.00	2.49	X Brace	No	No	0.0000	1.0000
T2	150.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T3	140.00-120.00	10.00	X Brace	No	No	0.0000	0.0000

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T4	120.00-100.00	10.00	X Brace	No	No	0.0000	0.0000
T5	100.00-90.00	10.00	X Brace	No	No	0.0000	0.0000
T6	90.00-80.00	10.00	X Brace	No	No	0.0000	0.0000
T7	80.00-60.00	10.00	X Brace	No	No	0.0000	0.0000
T8	60.00-40.00	10.00	X Brace	No	No	0.0000	0.0000
T9	40.00-20.00	10.00	X Brace	No	No	0.0000	0.0000
T10	20.00-0.00	10.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 170.00-150.00	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 150.00-140.00	Truss Leg	Pirod 105244	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T3 140.00-120.00	Truss Leg	Pirod 105216	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T4 120.00-100.00	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T5 100.00-90.00	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T6 90.00-80.00	Truss Leg	Pirod 105217 Mod (CT1141)	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T7 80.00-60.00	Truss Leg	Pirod 105218 Mod (CT1141)	A572-50 (50 ksi)	Equal Angle	L3x3x3/8	A36 (36 ksi)
T8 60.00-40.00	Truss Leg	Pirod 105219	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)
T9 40.00-20.00	Truss Leg	Pirod 105219 Mod (CT1141)	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x3/8	A36 (36 ksi)
T10 20.00-0.00	Truss Leg	Pirod 105220 Mod (CT1141)	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 170.00-150.00	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 150.00-140.00	Equal Angle	L3x3x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T4 120.00-100.00	1	Equal Angle	L3x3x3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
CATEGORY 5e (1 WIRE)	C	No	Ar (CaAa)	87.00 - 7.00	0.0000	0.49	4	2	1.0000	1.0000		0.21
CATEGORY 5e (1 WIRE)	C	No	Ar (CaAa)	83.00 - 7.00	0.0000	0.46	2	1	1.0000	1.0000		0.21
1/2	A	No	Ar (CaAa)	144.00 - 7.00	0.0000	0.125	1	1	0.5800	0.5800		0.25
7/8	A	No	Ar (CaAa)	144.00 - 7.00	0.0000	0.125	2	1	1.1100	1.1100		0.54
1/2	A	No	Ar (CaAa)	140.00 - 7.00	0.0000	0.13	2	1	0.5800	0.5800		0.25
7/8	A	No	Ar (CaAa)	170.00 - 7.00	0.0000	0.14	3	1	1.1100	1.1100		0.54
7/8	A	No	Ar (CaAa)	170.00 - 7.00	0.0000	0.14	1	1	1.1100	1.1100		0.54
FSJ2-50 (3/8 SUPERFLEX. FOAM)	A	No	Ar (CaAa)	168.00 - 7.00	0.0000	0.12	1	1	0.4300	0.4300		0.08
FSJ2-50 (3/8 SUPERFLEX. FOAM)	A	No	Ar (CaAa)	170.00 - 7.00	0.0000	0.12	1	1	0.4300	0.4300		0.08
RG-11 590609 (1 1/2 FOAM)	A	No	Ar (CaAa)	170.00 - 7.00	0.0000	0.12	1	1	1.5900	1.5900		0.94
1 5/8	B	No	Ar (CaAa)	125.50 - 7.00	0.0000	0.1	12	3	1.9800	1.9800		1.04
7/8	C	No	Ar (CaAa)	170.00 - 7.00	0.0000	0.17	2	2	1.1100	1.1100		0.54
1 5/8	A	No	Ar (CaAa)	160.00 - 7.00	0.0000	0.1	6	3	1.9800	1.9800		1.04
CATEGORY 5e (1 WIRE)	B	No	Ar (CaAa)	134.00 - 7.00	-2.0000	-0.3	6	6	1.0000	1.0000		0.21
1/2	B	No	Ar (CaAa)	134.00 - 7.00	-4.0000	-0.3	4	4	0.5800	0.5800		0.25
1/2	A	No	Ar (CaAa)	30.00 - 7.00	0.0000	0.08	3	1	0.5800	0.5800		0.25
AVA7-50 (1-5/8 LOW DENSI. FOAM)	A	No	Ar (CaAa)	170.00 - 7.00	0.0000	0.38	1	1	1.9800	1.9800		0.72
1 5/8 Fiber Cable	B	No	Ar (CaAa)	125.00 - 7.00	0.0000	0.05	1	1	1.9800	1.9800		1.04
LDF6-50A (1-1/4 FOAM)	A	No	Ar (CaAa)	170.00 - 7.00	0.0000	0.16	4	2	1.5500	1.5500		0.66
7/8	A	No	Ar (CaAa)	170.00 - 7.00	0.0000	0.132	1	1	1.1100	1.1100		0.54
7/8 **********	A	No	Ar (CaAa)	170.00 - 7.00	0.0000	0.132	1	1	1.1100	1.1100		0.54
1 5/8	C	No	Ar (CaAa)	101.00 - 7.00	0.0000	0.12	12	6	0.0000	1.9800		1.04
1 5/8 Fiber Cable **********	C	No	Ar (CaAa)	101.00 - 7.00	0.0000	0.1	1	1	1.9800	1.9800		1.04
1 5/8 (AT&T - existing)	C	No	Ar (CaAa)	115.00 - 7.00	0.0000	0.17	12	6	0.0000	1.9800		1.04
FB-L98B-002	C	No	Ar (CaAa)	115.00 - 7.00	0.0000	0.34	1	1	0.0000	0.4000		0.25
WR-VG122ST-BRDA	C	No	Ar (CaAa)	115.00 - 7.00	0.0000	0.35	2	2	0.0000	0.4000		0.25

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
101-90-08-0-01	A	From Leg	9.00	0.0000	183.00	No Ice	2.81	2.81	38.00
			2.00			1/2" Ice	4.31	4.31	61.73
			0.00			1" Ice	4.93	4.93	91.77
2 1/2"x15' pipe	A	From Leg	9.00	0.0000	179.75	No Ice	4.32	4.32	87.00
			2.00			1/2" Ice	5.85	5.85	118.35
			0.00			1" Ice	7.40	7.40	159.32
Omni 3"x20'	B	From Face	9.00	0.0000	178.00	No Ice	5.93	5.93	50.00
			0.00			1/2" Ice	8.03	8.03	93.17
			0.00			1" Ice	10.08	10.08	149.01
Omni 2 1/2"x20.5'	C	From Face	9.00	0.0000	178.00	No Ice	5.13	5.13	40.00
			0.00			1/2" Ice	7.20	7.20	77.88
			0.00			1" Ice	9.30	9.30	128.69
Omni 2 1/2"x14'	C	From Face	9.00	0.0000	175.00	No Ice	3.50	3.50	30.00
			0.00			1/2" Ice	4.93	4.93	55.97
			0.00			1" Ice	6.38	6.38	90.90
Omni 2 1/2"x14'	C	From Face	9.00	0.0000	175.00	No Ice	3.50	3.50	30.00
			0.00			1/2" Ice	4.93	4.93	55.97
			0.00			1" Ice	6.38	6.38	90.90
Omni 2 1/2"x14'	C	From Face	9.00	0.0000	175.00	No Ice	3.50	3.50	30.00
			0.00			1/2" Ice	4.93	4.93	55.97
			0.00			1" Ice	6.38	6.38	90.90
Omni 1 1/2"x12'	A	From Face	9.00	0.0000	174.00	No Ice	1.80	1.80	30.00
			4.00			1/2" Ice	3.02	3.02	44.82
			0.00			1" Ice	4.26	4.26	67.28
APXVSPP18-C	A	From Face	9.00	0.0000	170.00	No Ice	8.02	5.28	57.00
			-1.00			1/2" Ice	8.48	5.74	106.52
			0.00			1" Ice	8.94	6.20	162.12
APXVSPP18-C	B	From Face	9.00	0.0000	170.00	No Ice	8.02	5.28	57.00
			-1.00			1/2" Ice	8.48	5.74	106.52
			0.00			1" Ice	8.94	6.20	162.12
APXVSPP18-C	C	From Face	9.00	0.0000	170.00	No Ice	8.02	5.28	57.00
			-1.00			1/2" Ice	8.48	5.74	106.52
			0.00			1" Ice	8.94	6.20	162.12
RRH-1900	A	From Face	8.00	0.0000	170.00	No Ice	2.32	3.14	60.00
			0.00			1/2" Ice	2.53	3.36	88.32
			0.00			1" Ice	2.74	3.60	120.15
RRH-1900	B	From Face	8.00	0.0000	170.00	No Ice	2.32	3.14	60.00
			0.00			1/2" Ice	2.53	3.36	88.32
			0.00			1" Ice	2.74	3.60	120.15
RRH-1900	C	From Face	8.00	0.0000	170.00	No Ice	2.32	3.14	60.00
			0.00			1/2" Ice	2.53	3.36	88.32
			0.00			1" Ice	2.74	3.60	120.15
RRH-800	A	From Face	8.00	0.0000	170.00	No Ice	2.13	2.76	64.00
			0.00			1/2" Ice	2.32	2.96	91.74
			0.00			1" Ice	2.51	3.18	122.88
RRH-800	B	From Face	8.00	0.0000	170.00	No Ice	2.13	2.76	64.00
			0.00			1/2" Ice	2.32	2.96	91.74
			0.00			1" Ice	2.51	3.18	122.88
RRH-800	C	From Face	8.00	0.0000	170.00	No Ice	2.13	2.76	64.00
			0.00			1/2" Ice	2.32	2.96	91.74
			0.00			1" Ice	2.51	3.18	122.88
APXV9TM14 w/mount pipe	A	From Face	9.00	0.0000	170.00	No Ice	6.65	5.03	91.90

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			-4.00			1/2" Ice	7.14	5.89	147.31
			0.00			1" Ice	7.60	6.63	209.47
APXV9TM14 w/mount pipe	B	From Face	9.00	0.0000	170.00	No Ice	6.65	5.03	91.90
			-4.00			1/2" Ice	7.14	5.89	147.31
			0.00			1" Ice	7.60	6.63	209.47
APXV9TM14 w/mount pipe	C	From Face	9.00	0.0000	170.00	No Ice	6.65	5.03	91.90
			-4.00			1/2" Ice	7.14	5.89	147.31
			0.00			1" Ice	7.60	6.63	209.47
RRH 8x20-25	A	From Face	9.00	0.0000	170.00	No Ice	4.05	1.53	70.00
			-4.00			1/2" Ice	4.30	1.71	97.14
			0.00			1" Ice	4.56	1.90	127.80
RRH 8x20-25	B	From Face	9.00	0.0000	170.00	No Ice	4.05	1.53	70.00
			-4.00			1/2" Ice	4.30	1.71	97.14
			0.00			1" Ice	4.56	1.90	127.80
RRH 8x20-25	C	From Face	9.00	0.0000	170.00	No Ice	4.05	1.53	70.00
			-4.00			1/2" Ice	4.30	1.71	97.14
			0.00			1" Ice	4.56	1.90	127.80
9 Arm Halo Mount	C	None		0.0000	168.00	No Ice	62.60	62.60	3600.00
						1/2" Ice	80.40	80.40	4800.00
						1" Ice	98.20	98.20	6000.00
SU-RA	B	From Face	9.00	0.0000	168.00	No Ice	1.21	0.30	5.50
			2.50			1/2" Ice	1.35	0.38	13.29
			0.00			1" Ice	1.49	0.47	23.01
PTP 49600	C	From Leg	9.00	0.0000	168.00	No Ice	1.75	0.48	12.10
			0.00			1/2" Ice	1.92	0.58	23.53
			0.00			1" Ice	2.09	0.69	37.28
APXV18-206517S-C w/mount pipe	A	From Leg	1.00	0.0000	159.50	No Ice	5.40	4.70	51.95
			0.00			1/2" Ice	5.96	5.86	97.04
			0.00			1" Ice	6.48	6.73	149.52
APXV18-206517S-C w/mount pipe	B	From Leg	1.00	0.0000	159.50	No Ice	5.40	4.70	51.95
			0.00			1/2" Ice	5.96	5.86	97.04
			0.00			1" Ice	6.48	6.73	149.52
APXV18-206517S-C w/mount pipe	C	From Leg	1.00	0.0000	159.50	No Ice	5.40	4.70	51.95
			0.00			1/2" Ice	5.96	5.86	97.04
			0.00			1" Ice	6.48	6.73	149.52
SC420-HF1LDF	A	From Face	6.00	0.0000	158.50	No Ice	2.14	2.14	15.00
			0.00			1/2" Ice	3.02	3.02	30.97
			0.00			1" Ice	3.79	3.79	52.56
**********									
Omni 3"x20'	C	From Face	6.00	0.0000	144.00	No Ice	6.00	6.00	50.00
			9.00			1/2" Ice	8.03	8.03	93.17
			0.00			1" Ice	10.08	10.08	149.01
Omni 3"x20'	A	From Face	6.00	0.0000	144.00	No Ice	6.00	6.00	50.00
			-9.00			1/2" Ice	8.03	8.03	93.17
			0.00			1" Ice	10.08	10.08	149.01
Omni 2 1/2"x20.5'	A	From Face	6.00	0.0000	144.00	No Ice	5.13	5.13	40.00
			9.00			1/2" Ice	7.20	7.20	77.88
			0.00			1" Ice	9.30	9.30	128.69
Omni 2"x15'	B	From Face	6.00	0.0000	141.00	No Ice	3.00	3.00	30.00
			-5.00			1/2" Ice	4.53	4.53	53.14
			0.00			1" Ice	6.07	6.07	85.79
Omni 1 1/2"x10'	B	From Face	6.00	0.0000	139.00	No Ice	1.50	1.50	30.00
			5.00			1/2" Ice	2.52	2.52	42.38
			0.00			1" Ice	3.56	3.56	61.17
Omni 4"x9'	A	From Face	6.00	0.0000	138.50	No Ice	2.70	2.70	20.00
			0.00			1/2" Ice	3.63	3.63	39.65
			0.00			1" Ice	4.33	4.33	65.25

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
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PiROD 20' Universal Platform	C	None		0.0000	134.00	No Ice	33.10	33.10	2270.00
						1/2" Ice	47.10	47.10	2701.00
						1" Ice	61.10	61.10	3132.00
LLPX310R	A	From Face	6.00 7.00 0.00	0.0000	134.00	No Ice 1/2" Ice 1" Ice	4.31 4.60 4.90	1.96 2.23 2.50	28.66 54.63 84.59
LLPX310R	B	From Face	6.00 7.00 0.00	0.0000	134.00	No Ice 1/2" Ice 1" Ice	4.31 4.60 4.90	1.96 2.23 2.50	28.66 54.63 84.59
LLPX310R	C	From Face	6.00 7.00 0.00	0.0000	134.00	No Ice 1/2" Ice 1" Ice	4.31 4.60 4.90	1.96 2.23 2.50	28.66 54.63 84.59
RRH-800	A	From Face	6.00 7.00 0.00	0.0000	134.00	No Ice 1/2" Ice 1" Ice	2.13 2.32 2.51	2.76 2.96 3.18	64.00 91.74 122.88
RRH-800	B	From Face	6.00 7.00 0.00	0.0000	134.00	No Ice 1/2" Ice 1" Ice	2.13 2.32 2.51	2.76 2.96 3.18	64.00 91.74 122.88
RRH-800	C	From Face	6.00 7.00 0.00	0.0000	134.00	No Ice 1/2" Ice 1" Ice	2.13 2.32 2.51	2.76 2.96 3.18	64.00 91.74 122.88
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PiROD 10' Lightweight T-Frame	A	From Leg	2.00 0.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	9.30 14.50 19.70	9.30 14.50 19.70	251.00 344.00 437.00
PiROD 10' Lightweight T-Frame	B	From Leg	2.00 0.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	9.30 14.50 19.70	9.30 14.50 19.70	251.00 344.00 437.00
PiROD 10' Lightweight T-Frame	C	From Leg	2.00 0.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	9.30 14.50 19.70	9.30 14.50 19.70	251.00 344.00 437.00
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00 3.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	6.85 7.41 7.94	5.78 6.70 7.50	104.90 162.69 227.28
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00 3.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	6.85 7.41 7.94	5.78 6.70 7.50	104.90 162.69 227.28
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00 3.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	6.85 7.41 7.94	5.78 6.70 7.50	104.90 162.69 227.28
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00 -3.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	6.85 7.41 7.94	5.78 6.70 7.50	104.90 162.69 227.28
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00 -3.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	6.85 7.41 7.94	5.78 6.70 7.50	104.90 162.69 227.28
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00 -3.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	6.85 7.41 7.94	5.78 6.70 7.50	104.90 162.69 227.28
KRY 112 71/2	A	From Leg	4.00 3.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	0.68 0.80 0.93	0.51 0.62 0.74	13.20 18.69 25.81
KRY 112 71/2	B	From Leg	4.00 3.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	0.68 0.80 0.93	0.51 0.62 0.74	13.20 18.69 25.81
KRY 112 71/2	C	From Leg	4.00	0.0000	125.50	No Ice	0.68	0.51	13.20

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			3.00			1/2" Ice	0.80	0.62	18.69
			0.00			1" Ice	0.93	0.74	25.81
Andrew LNX-6515DS-VTM w/mount pipe	A	From Leg	4.00 0.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	11.72 12.44 13.15	10.28 11.81 13.16	102.41 196.22 301.13
Andrew LNX-6515DS-VTM w/mount pipe	B	From Leg	4.00 0.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	11.72 12.44 13.15	10.28 11.81 13.16	102.41 196.22 301.13
Andrew LNX-6515DS-VTM w/mount pipe	C	From Leg	4.00 0.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	11.72 12.44 13.15	10.28 11.81 13.16	102.41 196.22 301.13
Ericsson RRUS-11	A	From Leg	4.00 0.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	2.79 3.00 3.21	1.19 1.34 1.50	50.70 71.57 95.48
Ericsson RRUS-11	B	From Leg	4.00 0.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	2.79 3.00 3.21	1.19 1.34 1.50	50.70 71.57 95.48
Ericsson RRUS-11	C	From Leg	4.00 0.00 0.00	0.0000	125.50	No Ice 1/2" Ice 1" Ice	2.79 3.00 3.21	1.19 1.34 1.50	50.70 71.57 95.48
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Powerwave 7770 w/mount pipe (AT&T - Existing)	A	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	5.65 6.03 6.42	4.10 4.75 5.42	57.25 103.17 155.38
Powerwave 7770 w/mount pipe	B	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	5.65 6.03 6.42	4.10 4.75 5.42	57.25 103.17 155.38
Powerwave 7770 w/mount pipe	C	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	5.65 6.03 6.42	4.10 4.75 5.42	57.25 103.17 155.38
Quintel QS66512-2 w/mpount pipe	A	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	8.61 9.27 9.90	8.70 9.99 11.12	140.20 218.50 305.14
Quintel QS66512-2 w/mpount pipe	B	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	8.61 9.27 9.90	8.70 9.99 11.12	140.20 218.50 305.14
Quintel QS66512-2 w/mpount pipe	C	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	8.61 9.27 9.90	8.70 9.99 11.12	140.20 218.50 305.14
(2) Powerwave TMA LGP21401	A	From Leg	3.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	1.05 1.18 1.32	0.38 0.47 0.57	14.10 21.29 30.37
(2) Powerwave TMA LGP21401	B	From Leg	3.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	1.05 1.18 1.32	0.38 0.47 0.57	14.10 21.29 30.37
(2) Powerwave TMA LGP21401	C	From Leg	3.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	1.05 1.18 1.32	0.38 0.47 0.57	14.10 21.29 30.37
Ericsson RRUS-11	A	From Leg	3.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	2.79 3.00 3.21	1.19 1.34 1.50	50.70 71.57 95.48
Ericsson RRUS-11	B	From Leg	3.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	2.79 3.00 3.21	1.19 1.34 1.50	50.70 71.57 95.48
Ericsson RRUS-11	C	From Leg	3.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	2.79 3.00 3.21	1.19 1.34 1.50	50.70 71.57 95.48

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Ericsson RRUS-12	A	From Leg	3.00	0.0000	115.00	No Ice	3.15	1.29	58.00
			0.00			1/2" Ice	3.36	1.44	81.22
			0.00			1" Ice	3.59	1.60	107.64
Ericsson RRUS-12	B	From Leg	3.00	0.0000	115.00	No Ice	3.15	1.29	58.00
			0.00			1/2" Ice	3.36	1.44	81.22
			0.00			1" Ice	3.59	1.60	107.64
Ericsson RRUS-12	C	From Leg	3.00	0.0000	115.00	No Ice	3.15	1.29	58.00
			0.00			1/2" Ice	3.36	1.44	81.22
			0.00			1" Ice	3.59	1.60	107.64
Ericsson RRUS-32	A	From Leg	3.00	0.0000	115.00	No Ice	3.31	2.42	77.00
			0.00			1/2" Ice	3.56	2.64	104.93
			0.00			1" Ice	3.81	2.86	136.47
Ericsson RRUS-32	B	From Leg	3.00	0.0000	115.00	No Ice	3.31	2.42	77.00
			0.00			1/2" Ice	3.56	2.64	104.93
			0.00			1" Ice	3.81	2.86	136.47
Ericsson RRUS-32	C	From Leg	3.00	0.0000	115.00	No Ice	3.31	2.42	77.00
			0.00			1/2" Ice	3.56	2.64	104.93
			0.00			1" Ice	3.81	2.86	136.47
DC6-48-60-18-8F	A	From Leg	1.00	0.0000	115.00	No Ice	0.79	0.79	20.00
			0.00			1/2" Ice	1.27	1.27	35.12
			0.00			1" Ice	1.45	1.45	52.57
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Sabre 12' V-Boom (AT&T - propsoed)	A	From Leg	2.00	0.0000	115.00	No Ice	15.40	14.00	558.00
			0.00			1/2" Ice	21.30	20.80	741.00
			0.00			1" Ice	27.20	27.60	924.00
Sabre 12' V-Boom	B	From Leg	2.00	0.0000	115.00	No Ice	15.40	14.00	558.00
			0.00			1/2" Ice	21.30	20.80	741.00
			0.00			1" Ice	27.20	27.60	924.00
Sabre 12' V-Boom	C	From Leg	2.00	0.0000	115.00	No Ice	15.40	14.00	558.00
			0.00			1/2" Ice	21.30	20.80	741.00
			0.00			1" Ice	27.20	27.60	924.00
HPA-65R-BUU-H6 w/mount pipe	A	From Leg	4.00	0.0000	115.00	No Ice	13.28	9.65	100.85
			0.00			1/2" Ice	14.00	11.15	198.33
			0.00			1" Ice	14.73	12.68	305.71
HPA-65R-BUU-H6 w/mount pipe	B	From Leg	4.00	0.0000	115.00	No Ice	13.28	9.65	100.85
			0.00			1/2" Ice	14.00	11.15	198.33
			0.00			1" Ice	14.73	12.68	305.71
HPA-65R-BUU-H6 w/mount pipe	C	From Leg	4.00	0.0000	115.00	No Ice	13.28	9.65	100.85
			0.00			1/2" Ice	14.00	11.15	198.33
			0.00			1" Ice	14.73	12.68	305.71
Ericsson RRUS-12	A	From Leg	3.00	0.0000	115.00	No Ice	3.15	1.29	58.00
			0.00			1/2" Ice	3.36	1.44	81.22
			0.00			1" Ice	3.59	1.60	107.64
Ericsson RRUS-12	B	From Leg	3.00	0.0000	115.00	No Ice	3.15	1.29	58.00
			0.00			1/2" Ice	3.36	1.44	81.22
			0.00			1" Ice	3.59	1.60	107.64
Ericsson RRUS-12	C	From Leg	3.00	0.0000	115.00	No Ice	3.15	1.29	58.00
			0.00			1/2" Ice	3.36	1.44	81.22
			0.00			1" Ice	3.59	1.60	107.64
Ericsson RRUS-32	A	From Leg	3.00	0.0000	115.00	No Ice	3.31	2.42	77.00
			0.00			1/2" Ice	3.56	2.64	104.93
			0.00			1" Ice	3.81	2.86	136.47
Ericsson RRUS-32	B	From Leg	3.00	0.0000	115.00	No Ice	3.31	2.42	77.00
			0.00			1/2" Ice	3.56	2.64	104.93
			0.00			1" Ice	3.81	2.86	136.47
Ericsson RRUS-32	C	From Leg	3.00	0.0000	115.00	No Ice	3.31	2.42	77.00
			0.00			1/2" Ice	3.56	2.64	104.93

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1" Ice	3.81	2.86	136.47
DC6-48-60-18-8C	B	From Leg	1.00	0.0000	115.00	No Ice	0.79	0.79	20.00
			0.00			1/2" Ice	1.27	1.27	35.12
			0.00			1" Ice	1.45	1.45	52.57
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PiROD 12' Lightweight T-Frame	A	From Leg	2.00	0.0000	101.00	No Ice	10.20	10.20	253.00
			0.00			1/2" Ice	16.20	16.20	355.00
			0.00			1" Ice	22.20	22.20	457.00
PiROD 12' Lightweight T-Frame	B	From Leg	2.00	0.0000	101.00	No Ice	10.20	10.20	253.00
			0.00			1/2" Ice	16.20	16.20	355.00
			0.00			1" Ice	22.20	22.20	457.00
PiROD 12' Lightweight T-Frame	C	From Leg	2.00	0.0000	101.00	No Ice	10.20	10.20	253.00
			0.00			1/2" Ice	16.20	16.20	355.00
			0.00			1" Ice	22.20	22.20	457.00
BXA-171063-12CF-EDIN	A	From Leg	4.00	0.0000	101.00	No Ice	4.79	3.62	15.00
			0.00			1/2" Ice	5.24	4.06	42.45
			0.00			1" Ice	5.70	4.50	75.45
BXA-171063-12CF-EDIN	B	From Leg	4.00	0.0000	101.00	No Ice	4.79	3.62	15.00
			0.00			1/2" Ice	5.24	4.06	42.45
			0.00			1" Ice	5.70	4.50	75.45
BXA-171063-12CF-EDIN	C	From Leg	4.00	0.0000	101.00	No Ice	4.79	3.62	15.00
			0.00			1/2" Ice	5.24	4.06	42.45
			0.00			1" Ice	5.70	4.50	75.45
(2) FD9R6004 Diplexer	A	From Leg	4.00	0.0000	101.00	No Ice	0.31	0.08	2.60
			6.00			1/2" Ice	0.39	0.12	4.90
			0.00			1" Ice	0.47	0.17	8.29
(2) FD9R6004 Diplexer	B	From Leg	4.00	0.0000	101.00	No Ice	0.31	0.08	2.60
			6.00			1/2" Ice	0.39	0.12	4.90
			0.00			1" Ice	0.47	0.17	8.29
(2) FD9R6004 Diplexer	C	From Leg	4.00	0.0000	101.00	No Ice	0.31	0.08	2.60
			6.00			1/2" Ice	0.39	0.12	4.90
			0.00			1" Ice	0.47	0.17	8.29
HBX-6517DS-A1M	A	From Leg	4.00	0.0000	101.00	No Ice	5.27	3.30	13.67
			6.00			1/2" Ice	5.73	3.75	41.03
			0.00			1" Ice	6.21	4.21	74.07
HBX-6517DS-A1M	B	From Leg	4.00	0.0000	101.00	No Ice	5.27	3.30	13.67
			6.00			1/2" Ice	5.73	3.75	41.03
			0.00			1" Ice	6.21	4.21	74.07
HBX-6517DS-A1M	C	From Leg	4.00	0.0000	101.00	No Ice	5.27	3.30	13.67
			6.00			1/2" Ice	5.73	3.75	41.03
			0.00			1" Ice	6.21	4.21	74.07
RRH2X40 AWS	A	From Leg	4.00	0.0000	101.00	No Ice	2.16	1.42	44.00
			6.00			1/2" Ice	2.36	1.59	61.40
			0.00			1" Ice	2.57	1.77	81.69
RRH2X40 AWS	B	From Leg	4.00	0.0000	101.00	No Ice	2.16	1.42	44.00
			6.00			1/2" Ice	2.36	1.59	61.40
			0.00			1" Ice	2.57	1.77	81.69
RRH2X40 AWS	C	From Leg	4.00	0.0000	101.00	No Ice	2.16	1.42	44.00
			6.00			1/2" Ice	2.36	1.59	61.40
			0.00			1" Ice	2.57	1.77	81.69
RFS DB-T1-6Z-8AB-0Z	C	None		0.0000	101.00	No Ice	4.80	2.00	44.00
						1/2" Ice	5.07	2.19	80.13
						1" Ice	5.35	2.39	120.22
Andrew LNX-6514DS-VTM	A	From Leg	4.00	0.0000	101.00	No Ice	8.17	5.41	38.40
			-6.00			1/2" Ice	8.63	5.86	88.91
			0.00			1" Ice	9.10	6.33	145.55
Andrew LNX-6514DS-VTM	B	From Leg	4.00	0.0000	101.00	No Ice	8.17	5.41	38.40

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			-6.00			1/2" Ice	8.63	5.86	88.91
			0.00			1" Ice	9.10	6.33	145.55
Andrew LNX-6514DS-VTM	C	From Leg	4.00	0.0000	101.00	No Ice	8.17	5.41	38.40
			-6.00			1/2" Ice	8.63	5.86	88.91
			0.00			1" Ice	9.10	6.33	145.55
Andrew LNX-6514DS-VTM	A	From Leg	4.00	0.0000	101.00	No Ice	8.17	5.41	38.40
			-4.00			1/2" Ice	8.63	5.86	88.91
			0.00			1" Ice	9.10	6.33	145.55
Andrew LNX-6514DS-VTM	B	From Leg	4.00	0.0000	101.00	No Ice	8.17	5.41	38.40
			-4.00			1/2" Ice	8.63	5.86	88.91
			0.00			1" Ice	9.10	6.33	145.55
Andrew LNX-6514DS-VTM	C	From Leg	4.00	0.0000	101.00	No Ice	8.17	5.41	38.40
			-4.00			1/2" Ice	8.63	5.86	88.91
			0.00			1" Ice	9.10	6.33	145.55
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Panel Antenna 3"X2"x22"	B	From Leg	2.00	0.0000	87.00	No Ice	0.65	0.47	50.00
			0.00			1/2" Ice	0.79	0.61	54.67
			0.00			1" Ice	0.93	0.76	61.28
Gen. TMA	B	From Leg	2.00	0.0000	84.50	No Ice	0.58	0.40	13.20
			0.00			1/2" Ice	0.69	0.49	18.38
			0.00			1" Ice	0.80	0.59	25.16
3' Side Mount Standoff	B	From Leg	1.50	0.0000	83.50	No Ice	1.50	1.50	45.00
			0.00			1/2" Ice	2.20	2.20	70.00
			0.00			1" Ice	2.90	2.90	95.00
3' Side Mount Standoff	A	From Leg	1.50	0.0000	83.50	No Ice	1.50	1.50	45.00
			0.00			1/2" Ice	2.20	2.20	70.00
			0.00			1" Ice	2.90	2.90	95.00
Gen. TMA	A	From Leg	2.00	0.0000	83.00	No Ice	0.58	0.40	13.20
			0.00			1/2" Ice	0.69	0.49	18.38
			0.00			1" Ice	0.80	0.59	25.16
Gen. TMA	B	From Leg	2.00	0.0000	82.50	No Ice	0.58	0.40	13.20
			0.00			1/2" Ice	0.69	0.49	18.38
			0.00			1" Ice	0.80	0.59	25.16
Panel Antenna 3"X2"x22"	B	From Leg	2.00	0.0000	80.00	No Ice	0.65	0.47	50.00
			0.00			1/2" Ice	0.79	0.61	54.67
			0.00			1" Ice	0.93	0.76	61.28
Camera	A	From Leg	0.00	0.0000	30.00	No Ice	0.14	0.42	10.00
			0.00			1/2" Ice	0.19	0.52	15.35
			0.00			1" Ice	0.25	0.63	22.39
PC9013N	A	From Leg	1.00	0.0000	24.00	No Ice	0.40	0.15	3.10
			0.00			1/2" Ice	0.71	0.27	42.36
			0.00			1" Ice	1.02	0.40	86.64

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
VHLP3-11W	A	Paraboloid w/Shroud (HP)	From Leg	2.00	0.0000		83.00	3.28	No Ice	8.47	53.00
				0.00					1/2" Ice	8.90	100.00
				0.00					1" Ice	9.34	140.00

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
VHLP2.5-180	A	Paraboloid w/o Radome	From Face	6.00 0.00 0.00	0.0000		134.00	2.50	No Ice 1/2" Ice 1" Ice	4.90 5.24 5.58	69.00 95.89 122.78
VHLP2.5-180	A	Paraboloid w/o Radome	From Face	6.00 -7.00 0.00	0.0000		134.00	2.50	No Ice 1/2" Ice 1" Ice	4.90 5.24 5.58	69.00 95.89 122.78
VHLP2.5-180	B	Paraboloid w/o Radome	From Face	6.00 -7.00 0.00	0.0000		134.00	2.50	No Ice 1/2" Ice 1" Ice	4.90 5.24 5.58	69.00 95.89 122.78
VHLP2-180	C	Paraboloid w/o Radome	From Face	6.00 0.00 0.00	0.0000		134.00	2.00	No Ice 1/2" Ice 1" Ice	3.14 3.41 3.67	25.00 42.49 59.98
HPD2-5.2	C	Paraboloid w/Shroud (HP)	From Face	9.00 0.00 0.00	0.0000		168.00	2.00	No Ice 1/2" Ice 1" Ice	3.14 3.41 3.67	27.00 44.49 61.98

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Tower Mast Reaction Summary

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead Only	51613.99	0.00	0.00	36.99	5103.73	-0.03
1.2 Dead+1.6 Wind 0 deg - No Ice	61936.79	-37.91	-84912.01	-8380346.88	11346.53	-12390.64
0.9 Dead+1.6 Wind 0 deg - No Ice	46452.59	-37.91	-84912.01	-8369612.56	9792.07	-12374.76
1.2 Dead+1.6 Wind 30 deg - No Ice	61936.79	40603.73	-70897.60	-7092810.70	-4048636.47	-13131.53
0.9 Dead+1.6 Wind 30 deg - No Ice	46452.59	40603.73	-70897.60	-7083649.63	-4044943.09	-13112.13
1.2 Dead+1.6 Wind 60 deg - No Ice	61936.79	71470.15	-41068.84	-4086076.89	-7123600.65	-9610.96
0.9 Dead+1.6 Wind 60 deg - No Ice	46452.59	71470.15	-41068.84	-4080809.53	-7115958.06	-9592.39
1.2 Dead+1.6 Wind 90 deg - No Ice	61936.79	81821.56	334.85	47574.43	-8182282.81	-5331.05
0.9 Dead+1.6 Wind 90 deg - No Ice	46452.59	81821.56	334.85	47515.57	-8173255.27	-5318.31
1.2 Dead+1.6 Wind 120 deg - No Ice	61936.79	73513.37	42748.73	4222379.70	-7253898.90	957.65
0.9 Dead+1.6 Wind 120 deg - No Ice	46452.59	73513.37	42748.73	4216977.20	-7246149.69	960.49
1.2 Dead+1.6 Wind 150 deg - No Ice	61936.79	41153.61	70935.87	7092190.85	-4121345.63	7312.91
0.9 Dead+1.6 Wind 150 deg - No Ice	46452.59	41153.61	70935.86	7083034.67	-4117567.31	7305.24
1.2 Dead+1.6 Wind 180 deg - No Ice	61936.79	296.05	82642.69	8238287.72	-33618.39	15283.17
0.9 Dead+1.6 Wind 180 deg - No Ice	46452.59	296.05	82642.69	8227674.62	-35111.61	15267.42
1.2 Dead+1.6 Wind 210 deg - No Ice	61936.79	-40886.23	70831.98	7078124.33	4097778.47	14752.88
0.9 Dead+1.6 Wind 210 deg - No Ice	46452.59	-40886.23	70831.98	7068987.51	4090952.37	14733.40
1.2 Dead+1.6 Wind 240 deg - No Ice	61936.79	-73350.52	42610.94	4203736.31	7244334.72	12930.29
0.9 Dead+1.6 Wind 240 deg - No Ice	46452.59	-73350.52	42610.94	4198359.15	7233518.93	12911.40

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
1.2 Dead+1.6 Wind 270 deg - No Ice	61936.79	-81716.04	141.60	21511.89	8180391.89	8650.00
0.9 Dead+1.6 Wind 270 deg - No Ice	46452.59	-81716.04	141.61	21488.43	8168288.17	8637.03
1.2 Dead+1.6 Wind 300 deg - No Ice	61936.79	-71326.20	-41327.57	-4120897.49	7116544.93	1957.31
0.9 Dead+1.6 Wind 300 deg - No Ice	46452.59	-71326.20	-41327.57	-4115582.28	7105834.64	1954.37
1.2 Dead+1.6 Wind 330 deg - No Ice	61936.79	-40674.61	-70993.10	-7105608.18	4070619.77	-7372.63
0.9 Dead+1.6 Wind 330 deg - No Ice	46452.59	-40674.61	-70993.10	-7096429.92	4063818.23	-7364.81
1.2 Dead+1.0 Ice+1.0 Temp	199591.98	0.00	0.00	-57872.42	41148.61	0.46
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	199591.98	-5.10	-16989.56	-1769644.02	42050.63	-2705.28
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	199591.98	8402.47	-14630.63	-1535068.43	-805737.55	-3479.16
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	199591.98	14546.30	-8372.99	-904517.84	-1431299.76	-3128.98
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	199591.98	16887.31	45.44	-51673.23	-1663554.88	-2134.39
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	199591.98	14710.27	8532.82	801781.78	-1441019.26	-590.76
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	199591.98	8476.57	14634.19	1418388.82	-815645.66	1142.90
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	199591.98	39.82	16811.51	1643065.66	35943.40	3106.06
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	199591.98	-8440.60	14620.21	1416486.15	893482.29	3694.63
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	199591.98	-14688.36	8514.28	799258.51	1520762.34	3575.35
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	199591.98	-16873.12	19.45	-55209.56	1744340.66	2581.03
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	199591.98	-14526.93	-8407.79	-909253.23	1511373.81	969.82
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	199591.98	-8412.00	-14643.47	-1536811.19	889748.73	-1148.70
Dead+Wind 0 deg - Service	51613.99	-5.92	-13267.50	-1308368.60	5930.77	-1934.82
Dead+Wind 30 deg - Service	51613.99	6344.33	-11077.75	-1107336.81	-627923.40	-2062.81
Dead+Wind 60 deg - Service	51613.99	11167.21	-6417.01	-637910.76	-1107992.48	-1500.41
Dead+Wind 90 deg - Service	51613.99	12784.62	52.32	7448.62	-1273276.57	-818.89
Dead+Wind 120 deg - Service	51613.99	11486.46	6679.49	659232.61	-1128346.28	150.54
Dead+Wind 150 deg - Service	51613.99	6430.25	11083.73	1107264.64	-639279.25	1129.18
Dead+Wind 180 deg - Service	51613.99	46.26	12912.92	1286199.50	-1093.63	2386.64
Dead+Wind 210 deg - Service	51613.99	-6388.47	11067.50	1105078.05	643920.58	2316.27
Dead+Wind 240 deg - Service	51613.99	-11461.02	6657.96	656330.82	1135183.30	2018.56
Dead+Wind 270 deg - Service	51613.99	-12768.13	22.13	3383.48	1281319.06	1337.55
Dead+Wind 300 deg - Service	51613.99	-11144.72	-6457.43	-643352.06	1115226.08	305.71
Dead+Wind 330 deg - Service	51613.99	-6355.41	-11092.67	-1109343.83	639677.98	-1138.58

Maximum Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
T1	170 - 150	3.925	39	0.2240	0.0120
T2	150 - 140	2.997	39	0.2024	0.0167

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T3	140 - 120	2.578	39	0.1883	0.0162
T4	120 - 100	1.841	39	0.1535	0.0084
T5	100 - 90	1.237	39	0.1227	0.0048
T6	90 - 80	0.989	39	0.1041	0.0038
T7	80 - 60	0.777	47	0.0894	0.0030
T8	60 - 40	0.434	47	0.0652	0.0020
T9	40 - 20	0.194	47	0.0396	0.0012
T10	20 - 0	0.056	43	0.0177	0.0006

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
183.00	101-90-08-0-01	39	3.925	0.2240	0.0120	122234
179.75	2 1/2"x15' pipe	39	3.925	0.2240	0.0120	122234
178.00	Omni 3"x20'	39	3.925	0.2240	0.0120	122234
175.00	Omni 2 1/2"x14'	39	3.925	0.2240	0.0120	122234
174.00	Omni 1 1/2"x12'	39	3.925	0.2240	0.0120	122234
170.00	APXVSPP18-C	39	3.925	0.2240	0.0120	122234
168.00	HPD2-5.2	39	3.829	0.2221	0.0126	122234
159.50	APXV18-206517S-C w/mount pipe	39	3.428	0.2134	0.0151	58207
158.50	SC420-HF1LDF	39	3.381	0.2123	0.0153	53145
144.00	Omni 3"x20'	39	2.741	0.1944	0.0168	33324
141.00	Omni 2"x15'	39	2.618	0.1899	0.0164	34608
139.00	Omni 1 1/2"x10'	39	2.538	0.1867	0.0160	35210
138.50	Omni 4"x9'	39	2.518	0.1859	0.0158	35317
134.00	VHLP2.5-180	39	2.343	0.1781	0.0143	35868
125.50	PiROD 10' Lightweight T-Frame	39	2.031	0.1629	0.0106	36706
115.00	Powerwave 7770 w/mount pipe	39	1.678	0.1459	0.0069	35917
101.00	PiROD 12' Lightweight T-Frame	39	1.264	0.1244	0.0049	32637
87.00	Panel Antenna 3"X2"x22"	39	0.922	0.0992	0.0035	35216
84.50	Gen. TMA	47	0.869	0.0955	0.0034	38571
83.50	3' Side Mount Standoff	47	0.848	0.0941	0.0033	40100
83.00	VHLP3-11W	47	0.838	0.0934	0.0032	40877
82.50	Gen. TMA	47	0.827	0.0927	0.0032	41648
80.00	Panel Antenna 3"X2"x22"	47	0.777	0.0894	0.0030	44973
30.00	Camera	47	0.113	0.0280	0.0009	48201
24.00	PC9013N	43	0.076	0.0217	0.0007	48864

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	170 - 150	Leg	1 3/4	3	-47839.70	76967.90	62.2	Pass
T2	150 - 140	Leg	Pirod 105244	58	-56496.50	142493.00	51.5	Pass
T3	140 - 120	Leg	Pirod 105216	72	-102247.00	142493.00	71.8	Pass
T4	120 - 100	Leg	Pirod 105217	87	-166873.00	214859.00	96.9	Pass
T5	100 - 90	Leg	Pirod 105217	105	-206754.00	214859.00	96.2	Pass
T6	90 - 80	Leg	Pirod 105217 Mod (CT1141)	113	-244092.00	300681.00	81.2	Pass
T7	80 - 60	Leg	Pirod 105218 Mod (CT1141)	122	-313370.00	399868.00	78.4	Pass
T8	60 - 40	Leg	Pirod 105219	137	-376530.00	399868.00	94.2	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T9	40 - 20	Leg	Pirod 105219 Mod (CT1141)	152	-435720.00	488809.00	89.1	Pass
T10	20 - 0	Leg	Pirod 105220 Mod (CT1141)	167	-490330.00	609444.00	80.5	Pass
T1	170 - 150	Diagonal	7/8	10	-4701.74	7581.20	62.0	Pass
T2	150 - 140	Diagonal	L2 1/2x2 1/2x3/16	65	-6242.81	12697.80	49.2	Pass
T3	140 - 120	Diagonal	L3x3x3/16	78	-10227.70	16781.00	60.9	Pass
T4	120 - 100	Diagonal	L3x3x1/4	96	-14922.30	18521.60	80.6	Pass
T5	100 - 90	Diagonal	L3x3x5/16	111	-16673.50	20310.70	82.1	Pass
T6	90 - 80	Diagonal	L3x3x5/16	120	-15986.20	18229.00	87.7	Pass
T7	80 - 60	Diagonal	L3x3x3/8	129	-15886.30	17426.10	91.2	Pass
T8	60 - 40	Diagonal	L3 1/2x3 1/2x5/16	144	-15932.20	19590.60	81.3	Pass
T9	40 - 20	Diagonal	L3 1/2x3 1/2x3/8	159	-16230.80	19155.40	84.7	Pass
T10	20 - 0	Diagonal	L4x4x5/16	174	-17379.50	20664.10	84.1	Pass
T1	170 - 150	Top Girt	7/8	5	-597.42	3909.80	15.3	Pass
T2	150 - 140	Top Girt	L3x3x3/16	61	-607.03	18672.90	3.3	Pass
T1	170 - 150	Bottom Girt	7/8	7	-240.05	3909.80	6.1	Pass
T4	120 - 100	Mid Girt	L3x3x3/16	88	-4067.97	11670.00	34.9	Pass
							Summary	
						Leg (T4)	96.9	Pass
						Diagonal (T7)	91.2	Pass
						Top Girt (T1)	15.3	Pass
						Bottom Girt (T1)	6.1	Pass
						Mid Girt (T4)	34.9	Pass
						RATING =	**96.9**	**Pass**

TOWN OF CROMWELL

Printed By: Shawna 01/10/2018 1:23:37PM

Parcel ID: **00109100** ***Location:*** 179 SHUNPIKE ROAD ***Map-Lot*** 24-17B ***Last Revaluation -*** ***October 1, 2017***

Patriot
Properties Inc.

Current Owner	***Percent***
CROMWELL FIRE DISTRICT	100

1 WEST ST, CROMWELL, CT 06416-0000

Current Value Information

Mkt Adj Cost

Use Code	Land Value	PA 490 Value	Building Value	Outbuildings	Total Value	Total Assessed	
920	120,300		0	0	0	120,300	84,210
TOTAL	**120,300**		**0**	**0**	**0**	**120,300**	**84,210**

Property Factors

Census	5701
Flood:	
Topo:	
Street:	Paved
Dev. Map	
Dev. Map	

Zoning Data

Desc.	%
R-25	100.00

Utilities

6	Septic
9	Well-Pot Wat

BAA

BAA

Previous Owner

Previous Value Information

TaxYr	Land Value	Bldg Value	Outbuildings	Total Value	Total Assessment	
2017	120,300	0	0	120,300	84,210	
2016	118,140	0	0	118,140	82,700	
2015	118,140	0	0	118,140	82,700	
2014	118,140	0	0	118,140	82,700	
2013	118,140	0	0	118,140	82,700	
2012	118,140	0	0	118,140	82,700	

General Notes

Communication Tower Fire Dept

Sales Information

Grantee	Vol-Page	Type	SaleDate	SalePrice	Sale Verif	GeneralNotes
CROMWELL FIRE DISTRICT	86-469		09/21/1970	0		

Activity Information

Date	Results	Visited By
09/07/2017	Change - Value Change Company	John Valente
05/19/2017	No Change - Field Review	Dave Stannard
11/13/2014	Permit- Miscellaneous	AO
01/31/2013	Permit- Miscellaneous	AO
01/07/2013	Permit- Miscellaneous	AO
09/11/2012	Permit - Measure Exterior	
09/11/2012	Permit- Miscellaneous	AO
10/22/2010	Permit- Miscellaneous	AO
04/12/2010	Permit- Miscellaneous	AO
04/06/2009	Permit- Miscellaneous	AO

Building Permit Information

Date	Permit #	Description	Amount	% Comp	Visit Date	CO Date	GeneralNotes
11/13/2014	23012	Other	15,000	100	11/13/2014	08/11/2015	Modifications to existing
01/31/2013	21434	Other	5,000	100	01/31/2013		Rplc & insll 2 Telecom ca
01/07/2013	21382	Other	15,000	100	01/07/2013	02/21/2013	Swap 12 of 12 existing an
07/31/2012	20958	Other	25,000	100	09/11/2012		Add 3 new antennas to exs
10/22/2010	19434	Electric	8,000	100	10/22/2010		Feed for cell towers
04/12/2010	18982	Electric	0	100	04/12/2010		Disconnect & re-connect c
04/13/2009	18277	Electric	15,000	100	04/06/2009		rep 6 antennas & modifyin
11/17/2008	18085	Electric	15,000	100	11/06/2008		Electric work at cell sit

Land Data

Use	Description	Units	Unit Type	Neigh	Land Adjustments	Special Land Calc	Appraised Value	PA 490 Asmt	Neigh Order	Notes
920	Mun Land Com	43,560	SF	ED			85,000	0	2700	
920	Mun Land Com	3.000	AC	ED			35,300	0	2700	

Total Area: 4.00 **PA 490 Use Asmt: 0** **Total Appraised: 120,300** **Assessed Value: 84,210**

ParcelID: 00109100 **Location:** 179 SHUNPIKE ROAD **Printed By:** Shawna 01/10/2018 1:23:37PM

Bldg Seq 1 **Of** 1

Exterior Information

Building Type:
Story Ht:
Living Units: 0
Foundation:
Prim. Ext. Wall:
Sec. Ext. Wall:
Roof Type:
Roof Cover:
Avg. Wall Ht:
Color:

Condo Information

Name:
Style:
Location:
Tot Units:

General Information

Year Blt:
Grade:
Remodeled Yr:
Rem. Kitchen Yr:
Rem. Bath Yr:

Interior Information

Prime Wall:
Sec. Wall:
Floor Type:
Sec. Floor:
Heat Fuel:
Heat Type:
Sec. Ht Type:
% A/C: 0
% Sprinkled: 0
Bsmt. Gar: 0
Kitchens: 0 **Add. Kit:** 0
Fireplaces: 0 **Gas:** 0
Int. Condition: Typical

Depreciation %

Phys Cond	Average	0.00
Func		
Econ		
Spec		
OV		
Total %Dep:		**0.00**

Calculation

Basic $/SQ	0.00
Replacement Cost	0
Depreciation	0
Depreciated Value	0
Final Total (Rounded)	**0**

Room Count

Total Rooms:
Bedrooms:

Bath Features

Full Baths: 0
Addl. Full Baths: 0
Half Baths: 0
Addl. Half Baths: 0
Full Bths Below: 0
Half Bths Below: 0
Other Fixtures: 0
Total Baths: 0 0

Extra Features / Yard Items (1st 10 Lines Displayed)

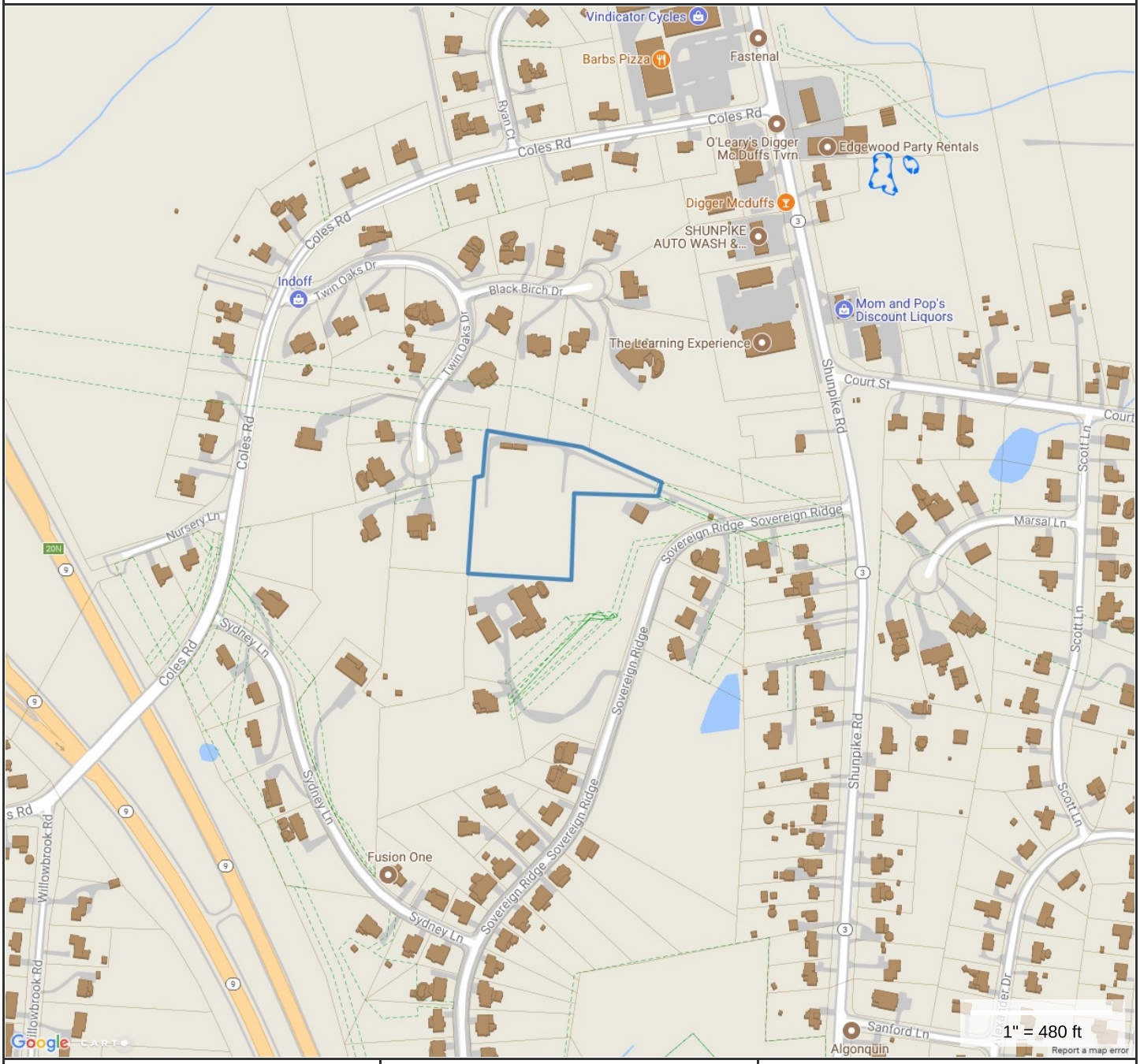
Code	Description	Qty	Size	Cond.	Year	Unit Price	Dep%	UndepValue	Appraised Value	Assessment

Total Sp. Features: **Total Yard Items:** **Total Appraised:** **Total Assessed Value:**

Sub Area Detail

Code	Desc.	Living	Gross Area
Total			

179 SHUNPIKE ROAD, CROMWELL



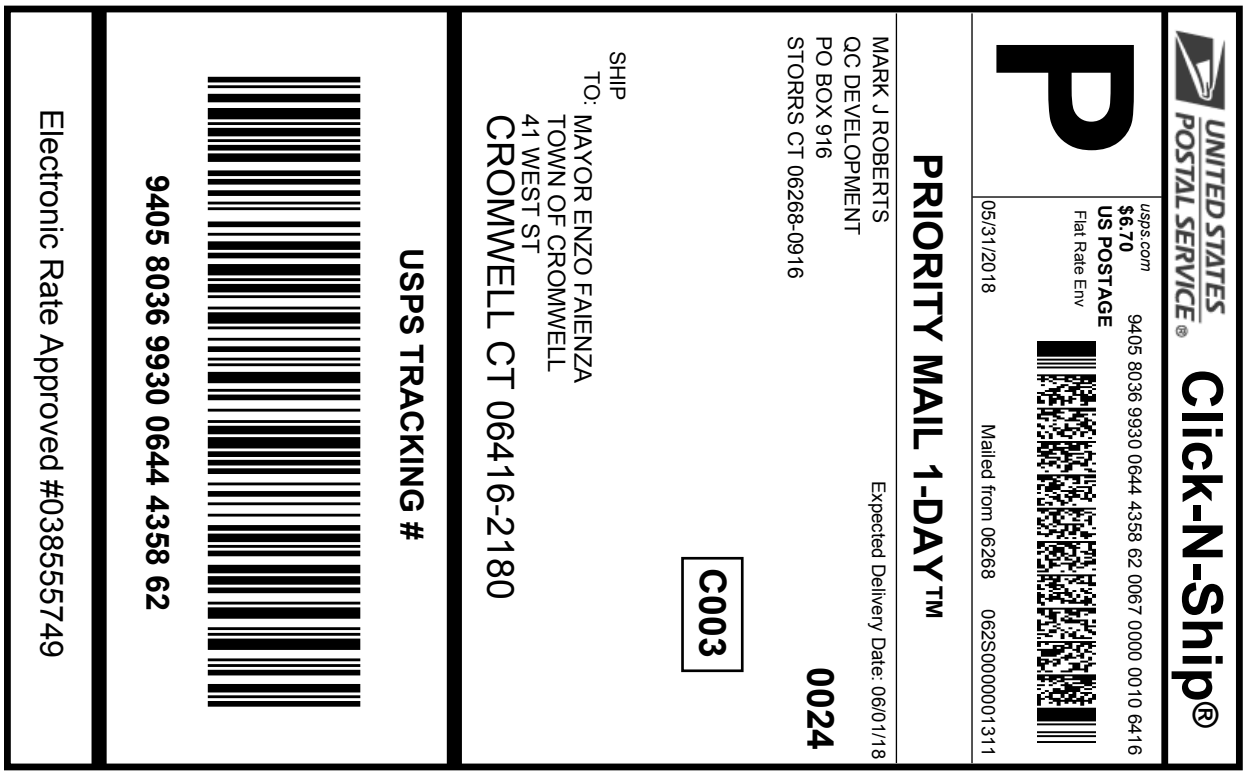
Property Information

Property ID	00109100
Location	179 SHUNPIKE ROAD
Owner	CROMWELL FIRE DISTRICT

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of Cromwell, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated 1/1/2018
Properties updated 03/28/2018



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # / Insurance Number:
9405 8036 9930 0644 4358 62

Trans. #:	436080546
Print Date:	05/30/2018
Ship Date:	05/31/2018
Expected Delivery Date:	06/01/2018
Insured Value:	$50.00

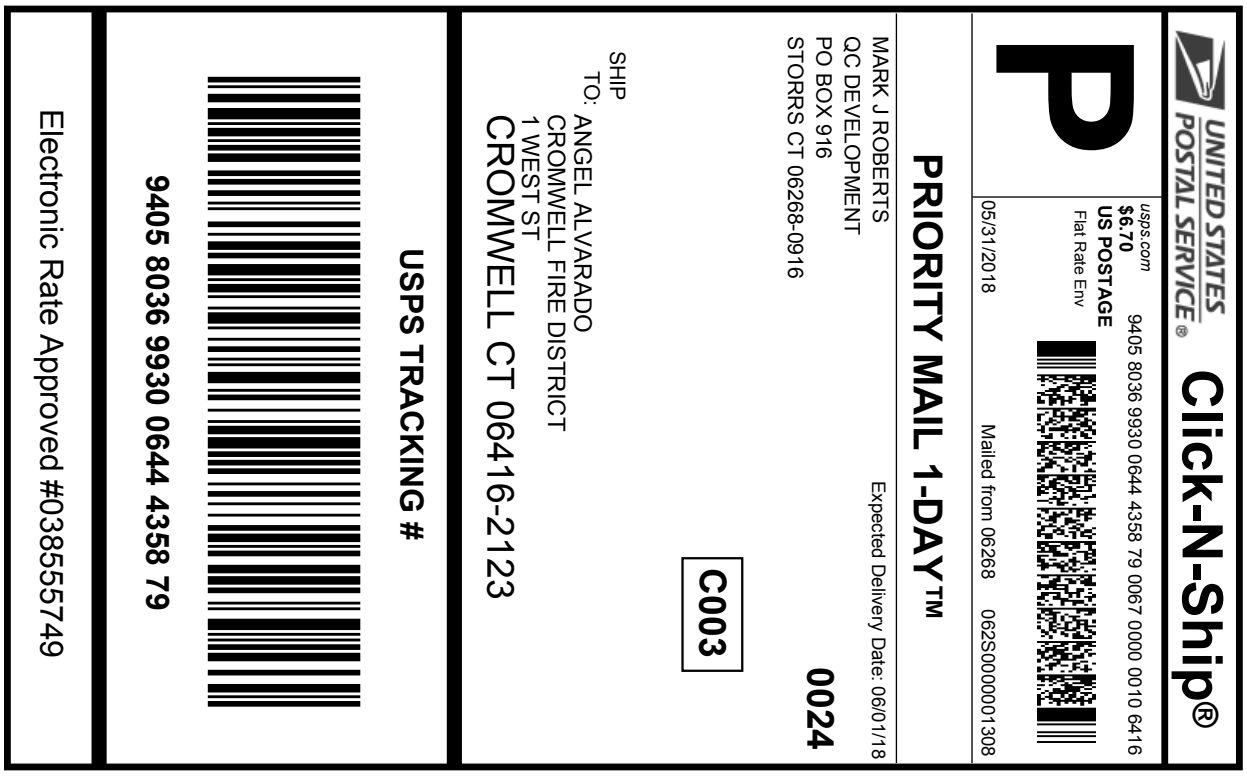
Priority Mail® Postage:	**$6.70**
Insurance Fee	**$0.00**
Total	**$6.70**

From: MARK J ROBERTS
QC DEVELOPMENT
PO BOX 916
STORRS CT 06268-0916

To: MAYOR ENZO FAIENZA
TOWN OF CROMWELL
41 WEST ST
CROMWELL CT 06416-2180

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

Instructions

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5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # / Insurance Number:
9405 8036 9930 0644 4358 79

Trans. #:	436080546
Print Date:	05/30/2018
Ship Date:	05/31/2018
Expected Delivery Date:	06/01/2018
Insured Value:	$50.00

Priority Mail® Postage:	**$6.70**
Insurance Fee	**$0.00**
Total	**$6.70**

From: MARK J ROBERTS
QC DEVELOPMENT
PO BOX 916
STORRS CT 06268-0916

To: ANGEL ALVARADO
CROMWELL FIRE DISTRICT
1 WEST ST
CROMWELL CT 06416-2123

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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