

May 5, 2022

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

Regarding: Notice of Exempt Modification – AT&T Site CT2153 / FA# 10035241
Address: 515 Boston Post Rd East, Westport, CT 06880

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC (“AT&T”) currently maintains a wireless telecommunications facility on an existing +/- 148’ monopole tower at the above-referenced address, latitude 41.1401589, longitude -73.3472211. Said monopole tower is owned by the Town of Westport.

AT&T desires to modify its existing telecommunications facility by adding three (3) antennae, swapping six (6) antennae, adding one (1) surge arrestor and accompanying feedlines and swapping mounts as more particularly detailed and described on the enclosed Construction Drawings prepared by Hudson Design Group, LLC, last revised April 28, 2022. The centerline height of the existing antennas is and will remain at 120 feet. This modification may include B2, B5, B17, B14, B29, B30, B66, & n77 hardware that is 4G(LTE) and/or 5GNR capable through remote configuration and either or both services may be turned off at various times.

Please accept this letter as notification pursuant to R.C.S.A §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the following individuals: The Honorable Jennifer Tooker, First Selectwoman of the Town of Westport, as elected official. Laurie Montagna, Zoning Enforcement Officer and Michael Kiselak, Town Planner of the Town of Westport, and the Town of Westport as tower and property 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). Specifically:

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require an 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 modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. *Please see the RF emissions calculation for AT&T's modified facility enclosed herewith.*
5. The proposed modifications will not cause an ineligible change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading. *Please see the structural analysis dated December 10, 2021, and prepared by Hudson Design Group LLC, enclosed herewith.*

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).

Sincerely,

Evan Renwick

Evan Renwick
Site Acquisition Specialist
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
erenwick@clinellc.com

Enclosures: Exhibit 1 – Construction Drawings
Exhibit 2 – Property Card and GIS
Exhibit 3 – Structural Analysis
Exhibit 4 – Mount Analysis
Exhibit 5 – RF Emissions Analysis Report Evaluation
Exhibit 6 – Original Tower Approval
Exhibit 7 – Notice Delivery Confirmations

cc: The Honorable Jennifer Tooker, First Selectwoman, Town of Westport, elected official.
Laurie Montagna, Zoning Enforcement Officer and Michael Kiselak, Town Planner of Town of Westport, and the Town of Westport as tower and property owner.

EXHIBIT 1

PROJECT INFORMATION

SCOPE OF WORK: ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE:

- INSTALL AT&T LOW PROFILE PLATFORM, SITEPRO-1 PART # RMQLP-4210-H10.
- NEW AT&T ANTENNAS: QD6616-7 @ POS. 2 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T LTE ANTENNAS (AIR6449 N77D) @ POS. 3 (TYP. 1 PER SECTOR, TOTAL OF 3)(STACKED).
- NEW AT&T LTE ANTENNAS (AIR6419 N77G) @ POS. 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3)(STACKED).
- PROPOSED SURGE ARRESTOR (DC6-48-60-18-8F)(TOTAL OF 1).
- PROPOSED (2) #6 AWG DC TRUNKS.

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:

- REUSE DC12 IN RACK
- ADD 6648 + XCEDE CABLE

FINAL BBU: 2X6630+1XXMU+IDLE+6648+XCEDE

- INSTALL (4) -48V RECTIFIERS FOR A TOTAL OF (10) -48V RECTIFIERS

ITEMS TO BE REMOVED:

- EXISTING AT&T ANTENNAS: QS66512-2 @ POSITION 1 (TYP. 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T ANTENNAS: OPA-65R-BU6DA @ POSITION 2 (TYP. 1 PER SECTOR, TOTAL OF 3).

ITEMS TO REMAIN:

- (3) ANTENNAS, (18) RRU'S, (3) SURGE ARRESTORS, (6) COAX CABLES, (6) DC POWER & (3) FIBER.

SITE ADDRESS: 515 BOSTON POST ROAD EAST
WESTPORT, CT 06880

LATITUDE: 41.140158° N, 41° 08' 24.57" N

LONGITUDE: 73.347221° W, 73° 20' 49.99" W

TYPE OF SITE: MONOPOLE / INDOOR

STRUCTURE HEIGHT: 151'-0"±

RAD CENTER: 120'-0"±

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: CT2153

SITE NAME: WESTPORT FD

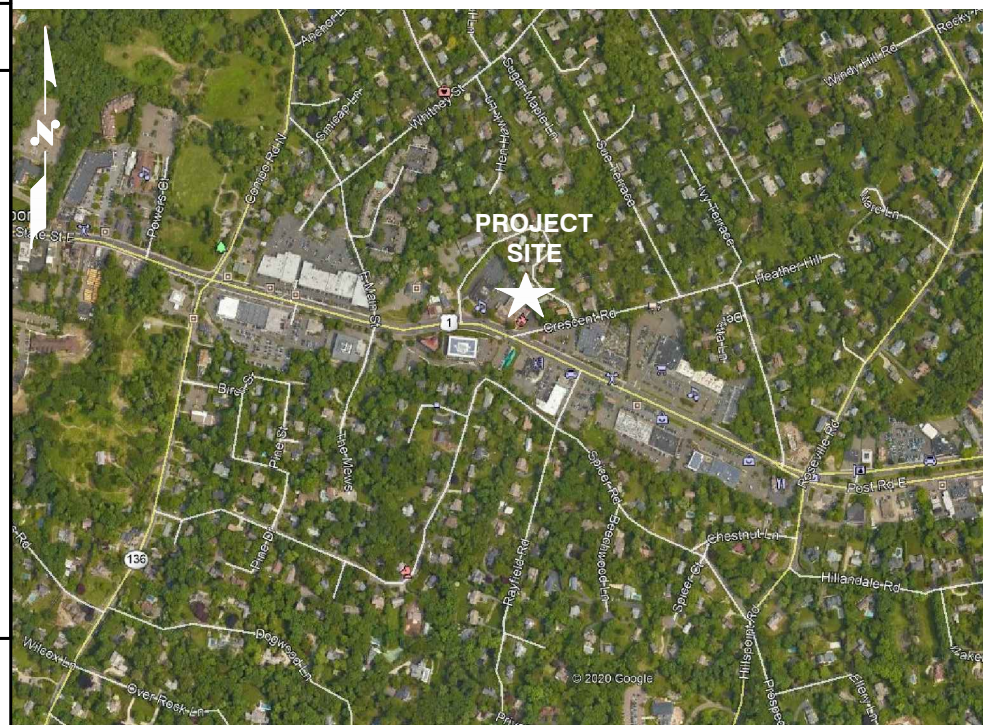
FA CODE: 10035241

PACE ID: MRCTB052202, MRCTB050909

PROJECT: 5G NR RADIO || 5G NR 1SR CBAND UPGRADE

VICINITY MAP

DIRECTIONS TO SITE:
HEAD NORTHEAST ON ENTERPRISE DR TOWARD CAPITAL BLVD (0.36 MI.), TURN LEFT ONTO CAPITAL BLVD (0.27 MI.), TURN LEFT ONTO WEST ST (0.30 MI.) TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN (9.59 MI.), MERGE ONTO CT-15 S VIA EXIT 17 TOWARD E MAIN ST. (43.26 MI.) TAKE THE CT-57 EXIT, EXIT 42, TOWARD WESTPORT/WESTON. (0.17 MI.) TURN RIGHT ONTO WESTON RD/CT-57 (0.21 MI.) TURN SLIGHT RIGHT ONTO MAIN ST/CT-57. (0.37 MI.) TURN LEFT ONTO COMPO RD N/CT-136. (1.30 MI.) TURN LEFT ONTO POST RD E/US-1 N. (0.32 MI.) DESTINATION IS ON THE LEFT.



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.

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

72 HOURS



CALL BEFORE YOU DIG



CALL TOLL FREE 1-800-922-4455

OR CALL 811

UNDERGROUND SERVICE ALERT

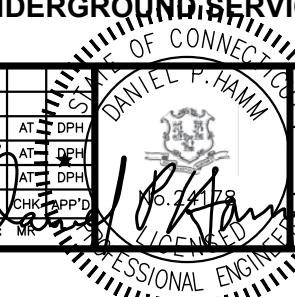
HGD HUDSON Design Group LLC
45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845
TEL: (978) 557-5553 FAX: (978) 336-5586

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

SITE NUMBER: CT2153
SITE NAME: WESTPORT FD
515 BOSTON POST ROAD EAST
WESTPORT, CT 06880
FAIRFIELD COUNTY

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

NO.		DATE	REVISIONS	BY	CHK	APP'D	AT&T		
1	04/28/22		ISSUED FOR CONSTRUCTION	MB	AT	DPH	TITLE SHEET		
0	03/17/22		ISSUED FOR REVIEW	MB	AT	DPH	5G NR RADIO 5G NR 1SR CBAND UPGRADE		
A	11/31/21		ISSUED FOR REVIEW	MR	AT	DPH	DRAWING NUMBER		
SCALE: AS SHOWN							DESIGNED BY: AT	DRAWN BY: MR	REV
							NO. 21178	SITE NUMBER	1
							CT2153	DRAWING NUMBER	T-1
									1



GROUNDING NOTES

- 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) LIGHTNING 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.
- 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.
- THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
- 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.
- EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
- APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
- ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- 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

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR – CENTERLINE
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER – AT&T MOBILITY
- 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.
- 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.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- "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.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- 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.
- 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.
- 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.
- 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.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

- 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.
 - ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
 - CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
 - 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.
 - 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.
 - SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
- 20. APPLICABLE BUILDING CODES:**
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

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

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

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

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

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

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

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



45 BEECHWOOD DRIVE
 NORTH ANDOVER, MA 01845
 TEL: (978) 557-5553
 FAX: (978) 334-5586



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

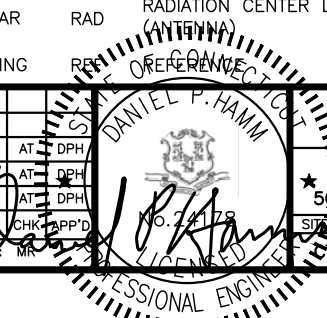
**SITE NUMBER: CT2153
 SITE NAME: WESTPORT FD**

515 BOSTON POST ROAD EAST
 WESTPORT, CT 06880
 FAIRFIELD COUNTY



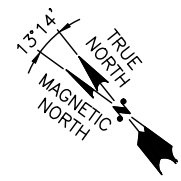
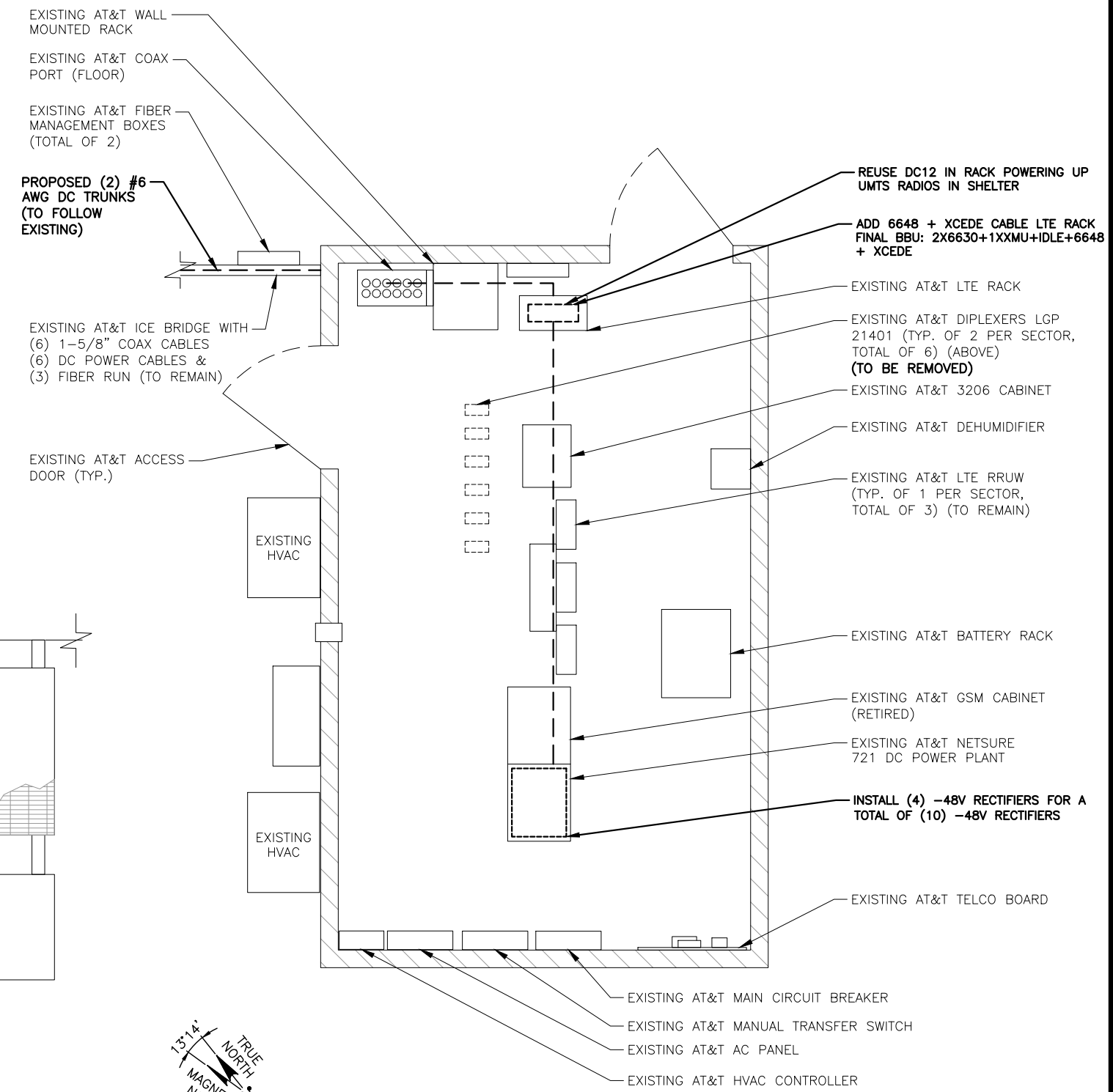
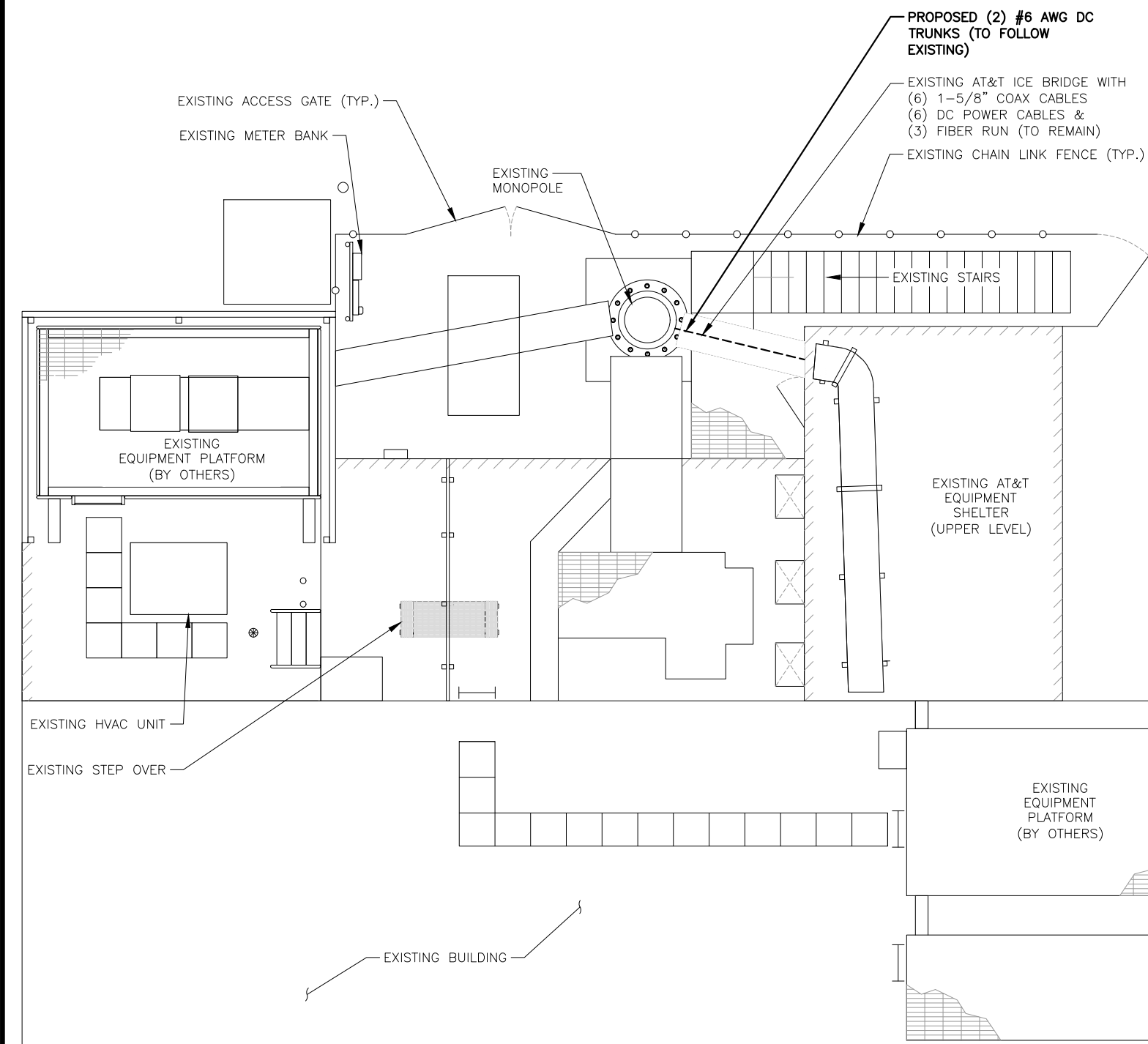
500 ENTERPRISE DRIVE, SUITE 3A
 ROCKY HILL, CT 06067

						AT&T	
1	04/28/22	ISSUED FOR CONSTRUCTION	MB	AT	DPH	GENERAL NOTES	
0	03/17/22	ISSUED FOR REVIEW	MB	AT	DPH	5G NR RADIO 5G NR 1SR CBAND UPGRADE	
A	11/31/21	ISSUED FOR REVIEW	MR	AT	DPH	SITE NUMBER	DRAWING NUMBER
NO.	DATE	REVISIONS	BY	CHK	APP'D	CT2153	GN-1
SCALE: AS SHOWN		DESIGNED BY: AT		DRAWN BY: MR			1

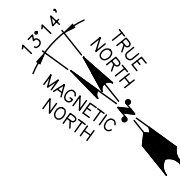


NOTE:
REFER TO THE FINAL RFDS V4.0
DATED: 04/06/2022 FOR FINAL
ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF
THE EXISTING STRUCTURES TO
SUPPORT THE PROPOSED EQUIPMENT
HAS BEEN COMPLETED BY HUDSON
DESIGN GROUP, LLC. DATED:
03/24/2022



COMPOUND PLAN
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"
1
A-1



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

HG HUDSON
Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
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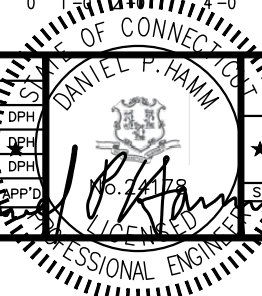
CENTERLINE
COMMUNICATIONS
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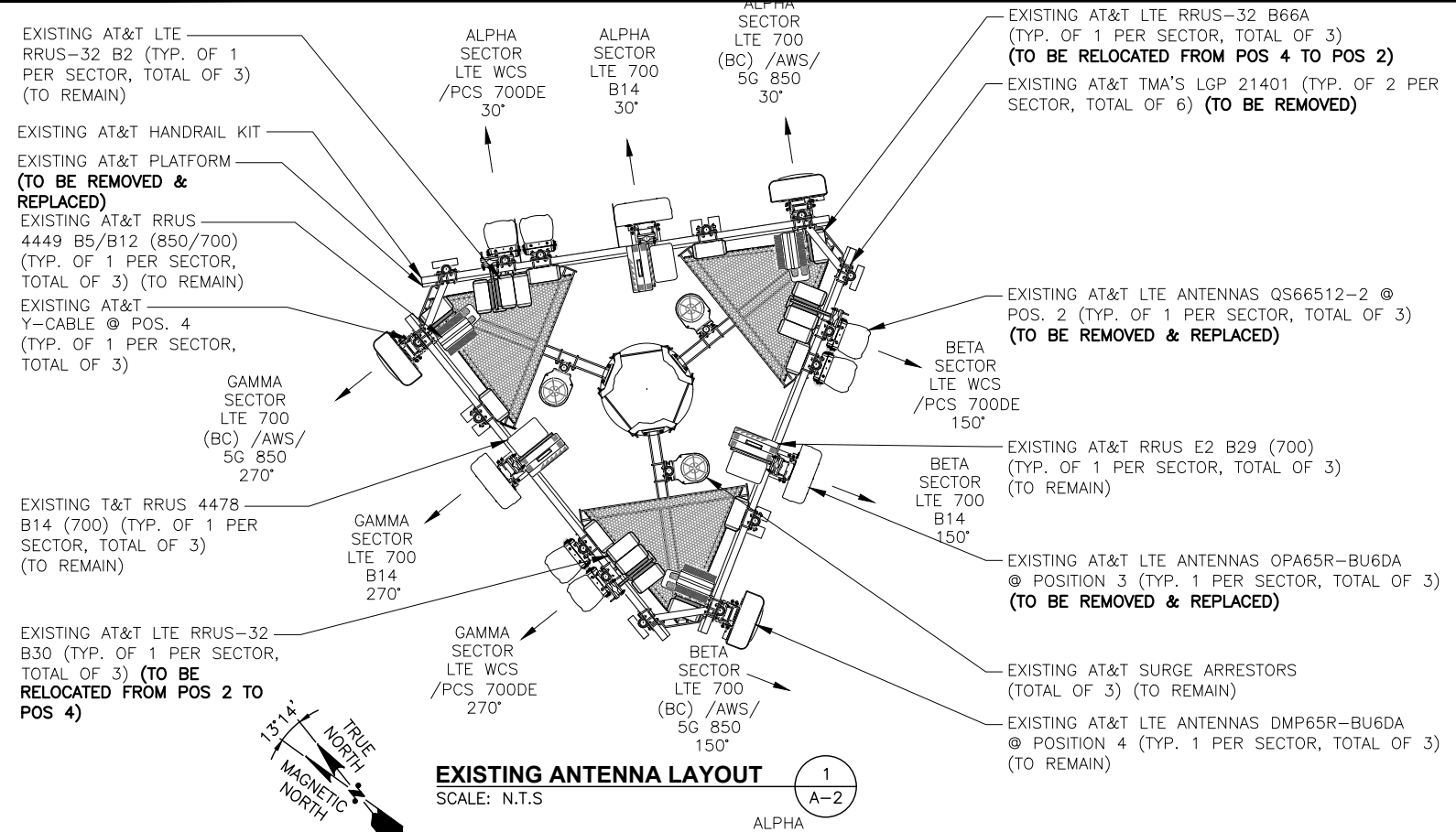
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A	11/31/21	ISSUED FOR REVIEW	MR	AT	DPH

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



AT&T
COMPOUND & EQUIPMENT PLANS
5G NR RADIO || 5G NR 1SR CBAND UPGRADE
SITE NUMBER: CT2153 DRAWING NUMBER: A-1 REV: 1



NOTE:
REFER TO THE FINAL RFDS V4.0 DATED: 04/06/2022 FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT HAS BEEN COMPLETED BY HUDSON DESIGN GROUP, LLC. DATED: 03/24/2022

TOP OF EXISTING APPURTENANCES
ELEV. 151'-0"± (AGL)

CL OF PROPOSED & EXISTING AT&T ANTENNAS
ELEV. 120'-0"± (AGL)

EXISTING AT&T RRUS 4449 B5/B12 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

EXISTING AT&T RRUS (TYP. OF 3 PER SECTOR, TOTAL OF 9) (TO REMAIN)

PROPOSED AT&T LOW PROFILE PLATFORM, SITEPRO-1 PART # RMQLP-4210-H10

EXISTING AT&T RRUS E2 B29 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PROPOSED AT&T LTE ANTENNAS QD6616-7 @ POS. 2 (TYP. OF 1 PER SECTOR, TOTAL OF 3)

EXISTING AT&T SURGE ARRESTOR (DC6-48-60-0-8C-EV) (TOTAL OF 3)

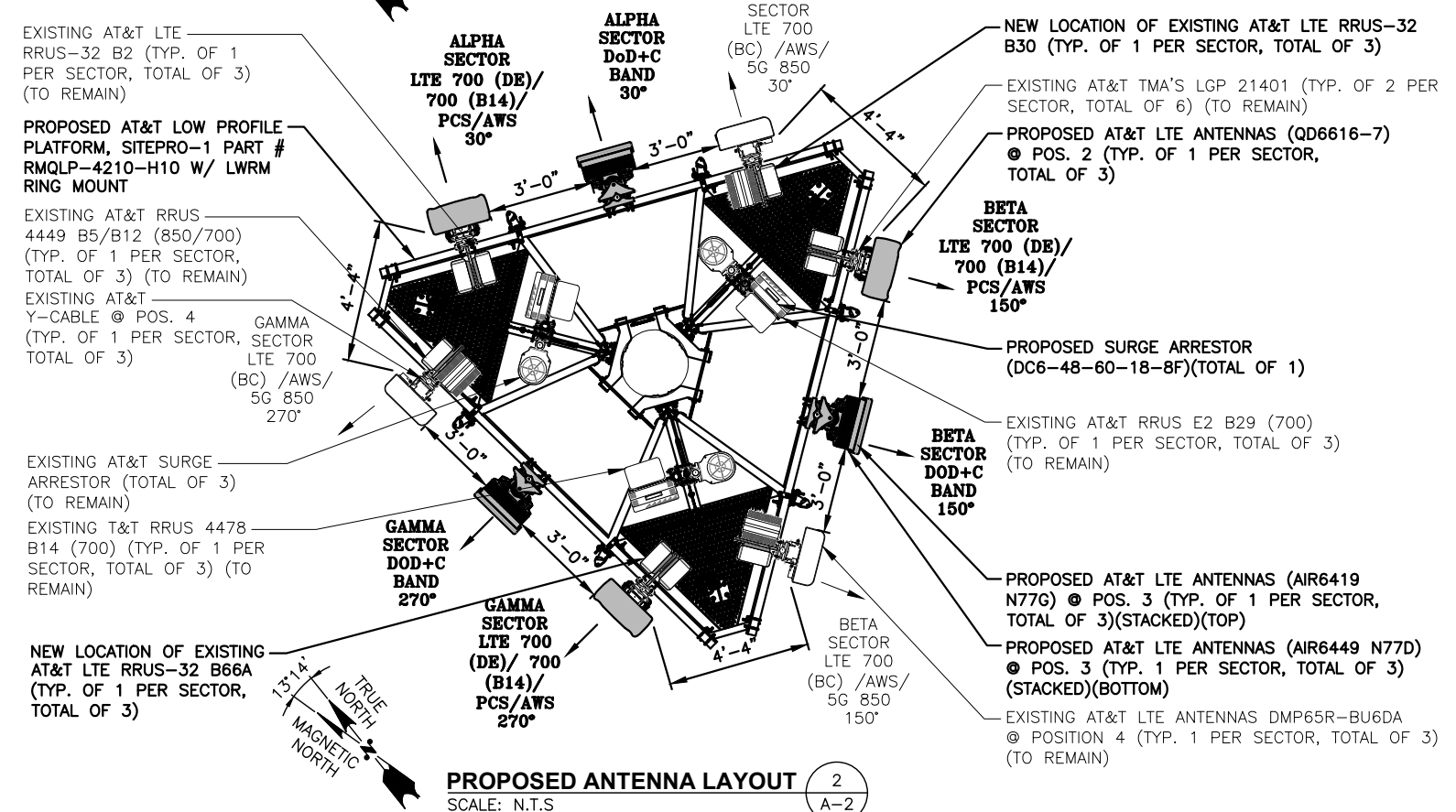
EXISTING AT&T RRUS 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

EXISTING WHIP ANTENNAS (TYP.) (BY OTHERS)

EXISTING AT&T LTE ANTENNAS DMP65R-BU6DA @ POSITION 4 (TYP. 1 PER SECTOR, TOTAL OF 3)

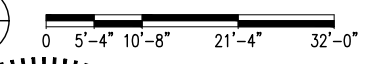
PROPOSED AT&T LTE ANTENNAS (AIR6419 N77G) @ POS. 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3)(STACKED)(TOP)

PROPOSED AT&T LTE ANTENNAS (AIR6449 N77D) @ POS. 3 (TYP. 1 PER SECTOR, TOTAL OF 3) (STACKED)(BOTTOM)



GROUND LEVEL
ELEV. 0'-0"± (AGL)

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



NOTE:
GROUND EQUIPMENT NOT SHOWN FOR CLARITY

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

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

SITE NUMBER: CT2153
SITE NAME: WESTPORT FD
515 BOSTON POST ROAD EAST
WESTPORT, CT 06880
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	04/28/22	ISSUED FOR CONSTRUCTION	MB	AT	DPH
0	03/17/22	ISSUED FOR REVIEW	MB	AT	DPH
A	11/31/21	ISSUED FOR REVIEW	MR	AT	DPH

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: MR. [Signature]

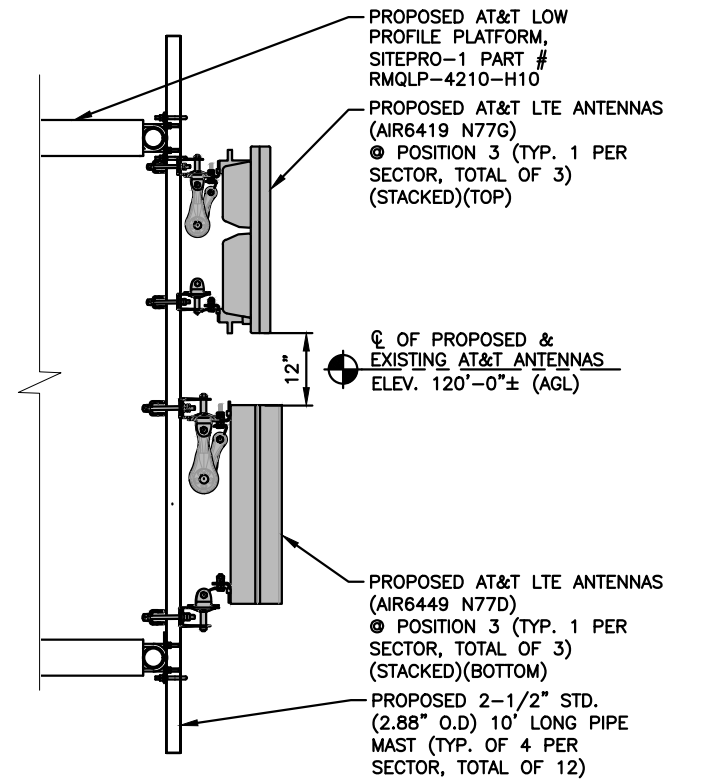
DANIEL P. HAMM
PROFESSIONAL ENGINEER
No. 12178
STATE OF CONNECTICUT

SITE NUMBER	DRAWING NUMBER	REV
CT2153	A-2	1

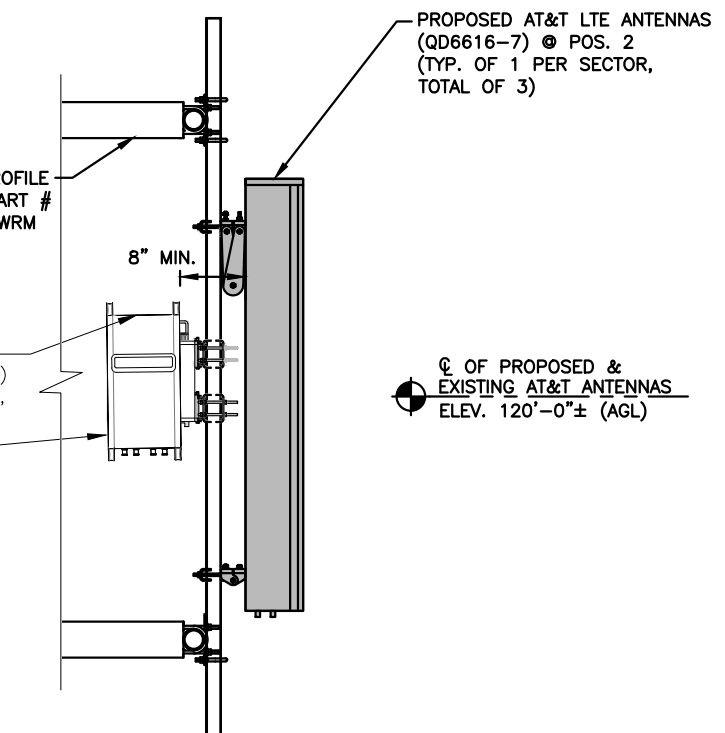
AT&T
ANTENNA LAYOUTS & ELEVATION
5G NR RADIO || 5G NR 1SR CBAND UPGRADE

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ϕ H EIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	-	-	-	-	-	-	-	-	-	(2)1-5/8 COAX	-
A2	PROPOSED	LTE 700 (DE)/ 700 (B14)/ PCS/AWS	QD6616-7	72x22x9.6	120'-0"±	30°	-	(1)(E) RRUS-32 B66A (AWS) (1)(E) RRUS-E2 B29 (700) (1)(E) 4478 B14 (700) (1)(E) RRUS-32 B2 (PCS)	-	-	(E) (1) RAYCAP DC6-48-60-18-8F (P) (1) RAYCAP DC6-48-60-18-8F
A3	PROPOSED	DOD C-BAND	AIR 6419 N77G AIR 6449 N77D	31.1"x16.1"x7.3" 30.4"x15.9"x8.1"	120'-0"±	30°	-	-	-	(P)(2) #6 AWG DC TRUNK (2)(E) DC TRUNKS & (1)(E) FIBER	-
A4	EXISTING	LTE 700 (BC) /AWS/ 5G 850	DMP65R-BU6DA	71.2x20.7x7.7	120'-0"±	30°	-	(1)(E) 4449 B5/B12 (850/700) (1)(E) RRUS-32 B30 (PCS)	-	(1)(E) Y-CABLE	-
B1	-	-	-	-	-	-	-	-	-	(2)1-5/8 COAX	-
B2	PROPOSED	LTE 700 (DE)/ 700 (B14)/ PCS/AWS	QD6616-7	72x22x9.6	120'-0"±	150°	-	(1)(E) RRUS-32 B66A (AWS) (1)(E) RRUS-E2 B29 (700) (1)(E) 4478 B14 (700) (1)(E) RRUS-32 B2 (PCS)	-	-	(E) (1) RAYCAP DC6-48-60-18-8F
B3	PROPOSED	DOD C-BAND	AIR 6419 N77G AIR 6449 N77D	31.1"x16.1"x7.3" 30.4"x15.9"x8.1"	120'-0"±	150°	-	-	-	(2)(E) DC TRUNKS & (1)(E) FIBER	-
B4	EXISTING	LTE 700 (BC) /AWS/ 5G 850	DMP65R-BU6DA	71.2x20.7x7.7	120'-0"±	150°	-	(1)(E) 4449 B5/B12 (850/700) (1)(E) RRUS-32 B30 (PCS)	-	(1)(E) Y-CABLE	-
C1	-	-	-	-	-	-	-	-	-	(2)1-5/8 COAX	-
C2	PROPOSED	LTE 700 (DE)/ 700 (B14)/ PCS/AWS	QD6616-7	72x22x9.6	120'-0"±	270°	-	(1)(E) RRUS-32 B66A (AWS) (1)(E) RRUS-E2 B29 (700) (1)(E) 4478 B14 (700) (1)(E) RRUS-32 B2 (PCS)	-	-	(E) (1) RAYCAP DC6-48-60-0-8C-EV
C3	PROPOSED	DOD C-BAND	AIR 6419 N77G AIR 6449 N77D	31.1"x16.1"x7.3" 30.4"x15.9"x8.1"	120'-0"±	270°	-	-	-	(2)(E) DC TRUNKS & (1)(E) FIBER	-
C4	EXISTING	LTE 700 (BC) /AWS/ 5G 850	DMP65R-BU6DA	71.2x20.7x7.7	120'-0"±	270°	-	(1)(E) 4449 B5/B12 (850/700) (1)(E) RRUS-32 B30 (PCS)	-	(1)(E) Y-CABLE	-



PROPOSED LTE ANTENNA MOUNTING DETAIL
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
A-3



PROPOSED LTE ANTENNA MOUNTING DETAIL
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
A-3

NOTE:
REFER TO THE FINAL RFDS V4.0 DATED: 04/06/2022 FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT HAS BEEN COMPLETED BY HUDSON DESIGN GROUP, LLC. DATED: 03/24/2022

RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
3(E)	RRUS-32 B2 (PCS)	27.2"x12.1"x7.0"
3(E)	RRUS-32 B30 (WCS)	27.2"x12.1"x7.0"
3(E)	4478 B14 (700)	18.1"x13.4"x8.3"
3(E)	4449 (850/700)	17.9"x13.2"x10.4"
3(E)	RRUS-E2 (700)	20.4"x18.5"x7.5"
3(E)	RRUS-32 B66 (AWS)	27.2"x12.1"x7.0"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

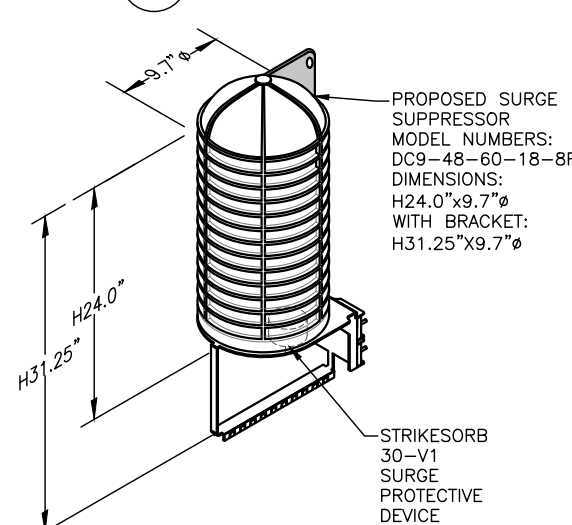
NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRU DETAIL
SCALE: N.T.S.
A-3

FINAL ANTENNA SCHEDULE
SCALE: N.T.S.
A-3



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL
SCALE: N.T.S.
A-4

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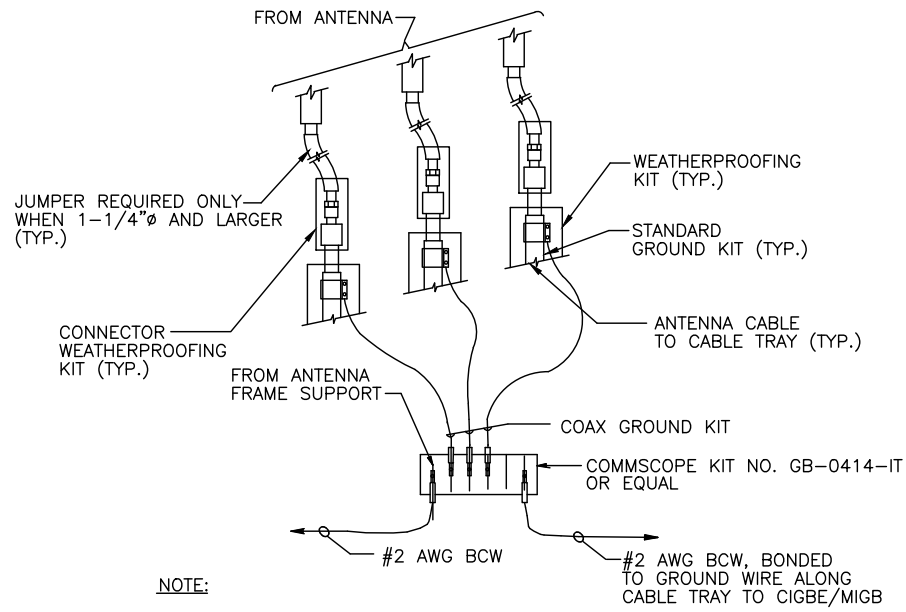
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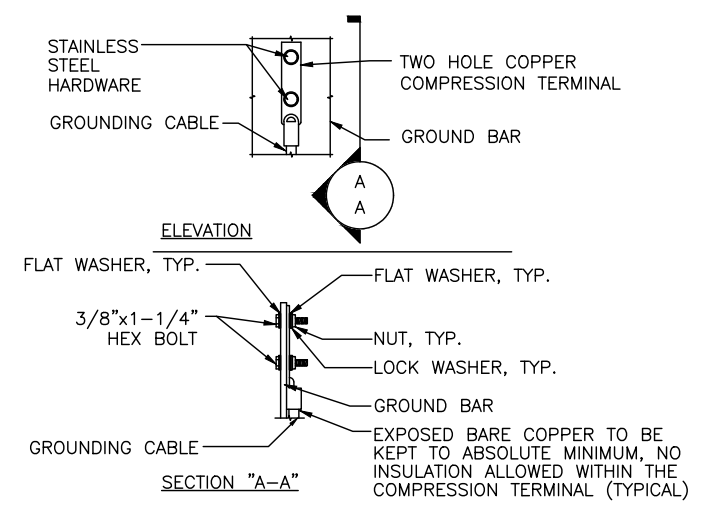
SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: MR. [Signature]

AT&T DETAILS
5G NR RADIO || 5G NR 1SR CBAND UPGRADE
SITE NUMBER: CT2153 DRAWING NUMBER: A-3 REV: 1



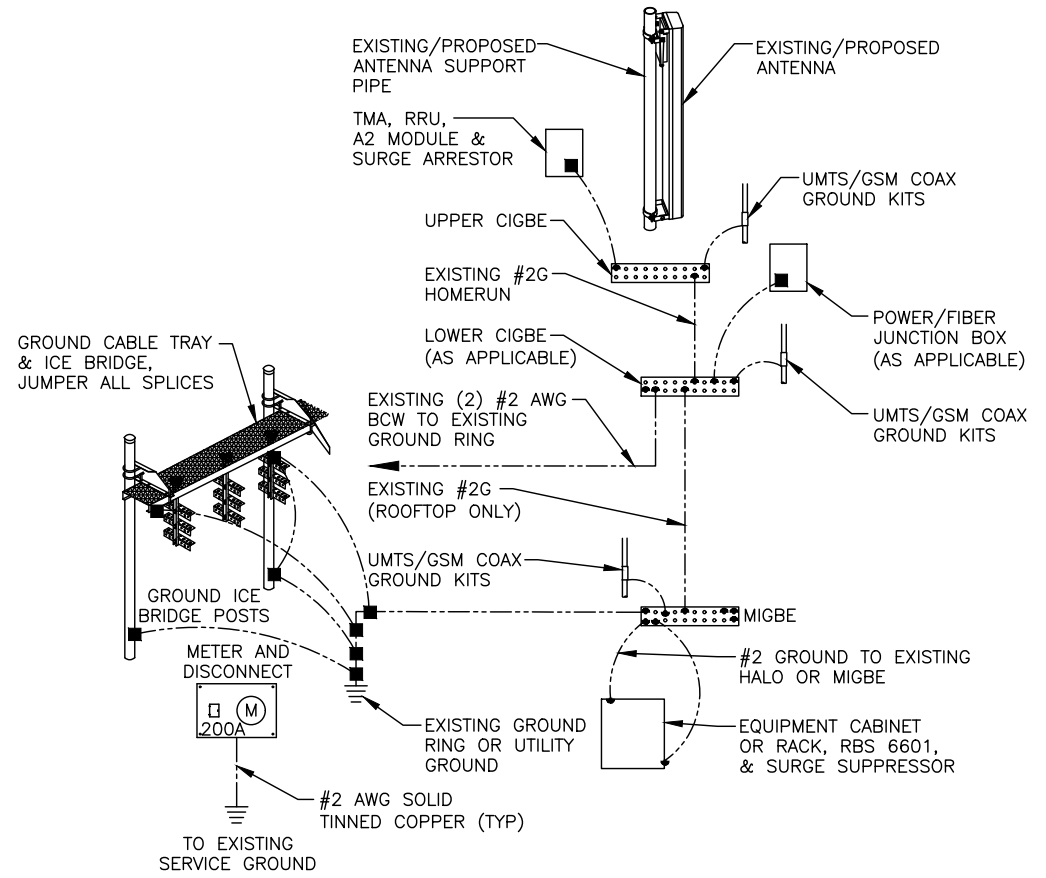
NOTE:
 1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

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



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

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



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

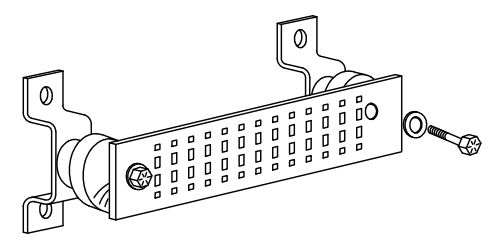
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

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

SECTION "A" - SURGE ABSORBERS

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

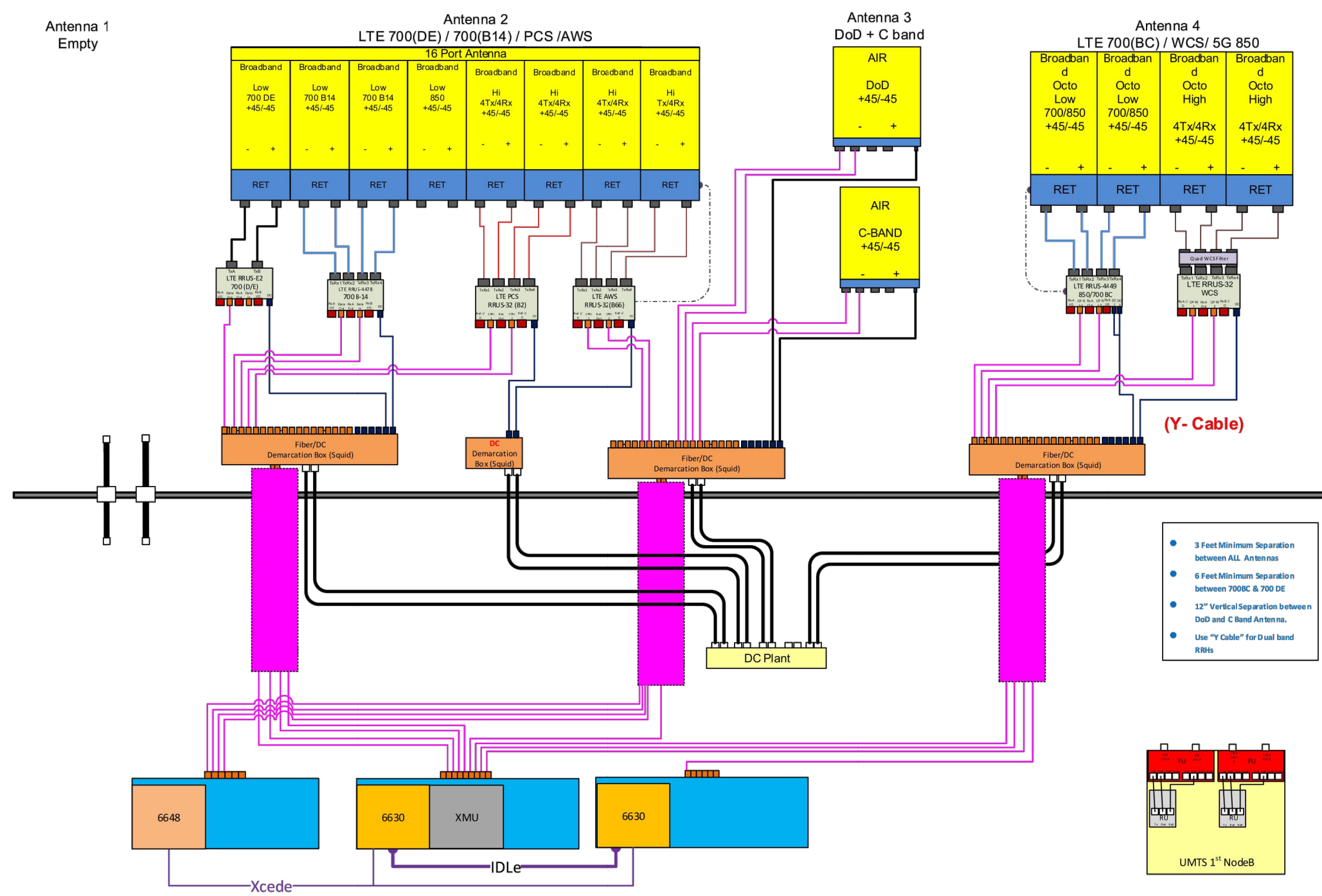


GROUND BAR - DETAIL (AS REQUIRED) 4
 SCALE: N.T.S.

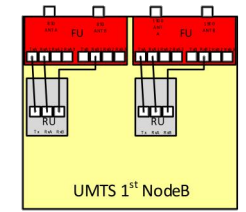
NO.	DATE	REVISIONS	BY	CHK	APP'D
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0	03/17/22	ISSUED FOR REVIEW	MB	AT	DPH
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		REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: MR		



AT&T	
GROUNDING DETAILS	
5G NR RADIO 5G NR 1SR CBAND UPGRADE	
SITE NUMBER CT2153	DRAWING NUMBER G-1
	REV 1



- 3 Feet Minimum Separation between ALL Antennas
- 6 Feet Minimum Separation between 700BC & 700 DE
- 12" Vertical Separation between DoD and C Band Antennas.
- Use "Y-Cable" for Dual band RRHs



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

NOTE:
 REFER TO THE FINAL RFDS V4.0
 DATED: 04/06/2022 FOR FINAL ANTENNA SETTINGS.

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

1	04/28/22	ISSUED FOR CONSTRUCTION	MB	AT	DPH
0	03/17/22	ISSUED FOR REVIEW	MB	AT	DPH
A	11/31/21	ISSUED FOR REVIEW	MR	AT	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: MR		

AT&T		
RF PLUMBING DIAGRAM		
5G NR RADIO 5G NR 1SR CBAND UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CT2153	RF-1	1

EXHIBIT 2

CURRENT OWNER				TOPO	UTILITIES	STRT / ROAD	LOCATION	CURRENT ASSESSMENT				
WESTPORT TOWN OF FIRE HOUSE 110 MYRTLE AVE WESTPORT CT 06880				1 Level	1 All Public	1 Public	4 Bus. District	Description	Code	Appraised	Assessed	6158 WESTPORT, CT VISION
					4 Gas			EX COM LN	21	2,499,100	1,749,400	
								EX COM BL	22	3,074,900	2,152,400	
SUPPLEMENTAL DATA								EX CM OTB	25	1,030,900	721,600	
Alt Prcl ID 531816				Historic ID		Lift Hse Asking \$						
Census 502				WestportC E50		Survey Ma 6970						
GIS ID E09064000				Assoc Pid#								
								Total		6,604,900	4,623,400	

RECORD OF OWNERSHIP				BK-VOL/PAGE	SALE DATE	Q/U	V/I	SALE PRICE	VC	PREVIOUS ASSESSMENTS (HISTORY)									
WESTPORT TOWN OF				0523	0172	09-17-1979	U	I	0	29	Year	Code	Assessed	Year	Code	Assessed	Year	Code	Assessed
											2021	21	1,749,400	2020	21	1,749,400	2020	21	1,749,400
												22	2,152,400		22	2,152,400		22	2,152,400
												25	721,600		25	32,800		25	32,800
											Total		4,623,400	Total		3,934,600	Total		3,934,600

EXEMPTIONS				OTHER ASSESSMENTS				This signature acknowledges a visit by a Data Collector or Assessor												
Year	Code	Description	Amount	Code	Description	Number	Amount	Comm Int												
Total			0.00																	

ASSESSING NEIGHBORHOOD				APPRAISED VALUE SUMMARY												
Nbhd	Nbhd Name	B	Tracing	Batch												
0001																

NOTES												APPRAISED VALUE SUMMARY				
WESTPORT FIRE HQTRS, BLDG DEPT & CELL TOWER						19 ANTENNAS AS OF 4/21/09						Appraised Bldg. Value (Card)				3,074,900
10/10/17 MEMORANDUM OF LEASE						4 CELL SITES						Appraised Xf (B) Value (Bldg)				0
V/3844 PG/18 FILED 2/28/18 NOW						FULL TIME FIRE HOUSE						Appraised Ob (B) Value (Bldg)				1,030,900
INCLUDES CELL TOWER (#14749 DELETED)						PERMITS: 56145, 62861, 64163, 64203,						Appraised Land Value (Bldg)				2,499,100
MONOPOLE: 10 X 10 X 148' HGT =						70501, 70354						Special Land Value				0
												Total Appraised Parcel Value				6,604,900
												Valuation Method				C
												Total Appraised Parcel Value				6,604,900

BUILDING PERMIT RECORD										VISIT / CHANGE HISTORY					
Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments		Date	Id	Type	Is	Cd	Purpost/Result
76561	04-26-2013	NA	Miscellaneous	25,000	09-16-2015	100		UPGRADE ANTENNAS**NEE		09-01-2021	PF	7	5	57	Office review - town record
73210	06-15-2011	NA	Miscellaneous	20,000	10-01-2011	100		ADD 3 ANTENNAS TO EXISTI		06-25-2020	BL.			19	Field Review
70501	04-01-2009	AD	Additions	58,000	03-01-2010	100	01-27-2010	ADD (3) ANTENNAS TO EXIS		09-16-2015	MJF	2		69	Partial Int Inspn (See Perm
62861	12-03-2002		INSTALLATION	56,000		100	02-19-2003	INSTALLATION OF OUTDOO		01-22-2013	TM	2		57	Office review - town record
62233	05-31-2002		ADDITIONS-IN	140		100	07-26-2002	ADDITIONS-INSTALL 12' LON		05-13-2010	J			11	QC - Check/Field Review
59412	01-20-2000		TWO ST BLOC	154,000		100		TWO ST BLOCK ADD APPRO		04-21-2010	TM	6		14	QC - Measure & Inter. Insp
										03-01-2010	TM	2		55	NOAH - Visual

LAND LINE VALUATION SECTION																
B	Use Code	Description	Zone	Land	Land Units	Unit Price	I. Factor	Site Index	Cond.	Nbhd.	Nbhd Adj	Notes	Location Adjustment	Adj Unit Pric	Land Value	
1	928	Fire Dept	GBD		1.280 AC	1,620,000.	0.92708	C	1.00	I	1.300			0	2,499,100	
Total Card Land Units					1 AC	Parcel Total Land Area: 1					Total Land Value					2,499,100



Parcel #: E09064000

515 POST RD E



- [Documents & Links](#)
- [Assessment](#)
- [Properties on Sewer](#)

Zoom to

EXHIBIT 3

STRUCTURAL ANALYSIS REPORT

For

SITE NUMBER: CT2153
SITE NAME: WESTPORT FD

515 POST ROAD EAST
WESTPORT, CT 06880

Antennas Mounted to the Monopole



Prepared for:



Dated: December 10, 2021

Prepared by:



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





HUDSON
Design Group LLC

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the 148' monopole supporting the proposed AT&T's antennas located at elevation 120' 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 monopole were not available for our use. The previous structural analysis report prepared by Ramaker & Associates, Inc., dated May 13, 2019, was available and obtained for our use. Tower mapping report prepared by ProVertic LLC, dated June 22, 2020, was provided to this office. The previous structural analysis report prepared by this office, dated October 2, 2020, was used for tower analysis.

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing monopole and foundation **are in conformance** with the ANSI/TIA-222-H Standard for the loading considered under the criteria listed in this report. **The monopole structure is rated at 73.5%** - (Pole section L2 from EL.58.25' to EL.100.5' Controlling).



APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
SPRINT	DB420-B	158'	Platform w/Handrail & Kickers
SPRINT	2' Dish	152'	Platform w/Handrail & Kickers
SPRINT	3' Dish	152'	Platform w/Handrail & Kickers
SPRINT	(3) NNVV-65B-R4 Antennas	148'	Platform w/Handrail & Kickers
SPRINT	(3) AAHC	148'	Platform w/Handrail & Kickers
SPRINT	(6) RRH-800	151'	Platform w/Handrail & Kickers
SPRINT	(3) RRH-1900	148'	Platform w/Handrail & Kickers
SPRINT	(6) Mount Pipes	148'	Platform w/Handrail & Kickers
	4' Dish	143'	Pipe Mount
AT&T	(3) DMP65R-BU6DA Antennas	120'	RMQP-384
AT&T	(3) RRUS-32 B2	120'	RMQP-384
AT&T	(3) RRUS-32 B30	120'	RMQP-384
AT&T	(3) RRUS-32 B66A	120'	RMQP-384
AT&T	(3) RRUS-E2	120'	RMQP-384
AT&T	(3) 4478 B14	120'	RMQP-384
AT&T	(3) 4449 B5/B12	120'	RMQP-384
AT&T	(2) DC6-48-60-18-8F	120'	RMQP-384
AT&T	(1) DC6-48-60-0-8C-EV	120'	RMQP-384
AT&T	(3) QD6616-7 Antenna	120'	RMQP-384
AT&T	(3) AIR 6419 N77G Antennas	121.8'	RMQP-384
AT&T	(3) AIR 6449 N77D Antennas	118.2'	RMQP-384
AT&T	(1) DC6-48-60-18-8F	120'	RMQP-384
	PD220	106'	Low Profile Platform
	DB205-A	104'	Low Profile Platform
	DB420-B	104'	Low Profile Platform
	DB224	104'	Low Profile Platform
	(2) PD1110	102'	Low Profile Platform
	PD201-1	99'	Low Profile Platform
	DB806-XT	99'	Low Profile Platform
	PD83-1	99'	Low Profile Platform
	(10) Mount Pipes	96'	Low Profile Platform
T-Mobile	(6) TMA	82'	Platform w/Handrail
T-Mobile	(3) APXVAARR24_43-U-NA20 Antennas	82'	Platform w/Handrail
T-Mobile	(3) AIR 32 B66Aa/B2a Antennas	82'	Platform w/Handrail
T-Mobile	(3) Radio 4449	82'	Platform w/Handrail
	(3) 800 10504 Antennas	72'	Pipe Mount
	BSA150B	53'	Side Mount Standoff

***Proposed AT&T Appurtenances shown in Bold.**



AT&T EXISTING/PROPOSED COAX CABLES:

Tenant	Coax Cables	Elev.	Mount
AT&T	(6) 1 5/8" Cables	120'	Inside Monopole
AT&T	(6) DC Power Cables	120'	Inside Monopole
AT&T	(3) Fiber Cables	120'	Inside Monopole
AT&T	(2) DC Power Cables	120'	Inside Monopole

**Proposed AT&T Coax Cables shown in Bold.*

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
Pole Section-L1	61.5 %	100.5 – 148	PASS	
Pole Section-L2	73.5%	58.25 – 100.5	PASS	Controlling
Pole Section-L3	60.6 %	28.25 – 58.25	PASS	
Pole Section-L4	57.4 %	0 – 28.25	PASS	
Base Plate & Anchor Bolts	66.0 %	0	PASS	



HUDSON
Design Group LLC

DESIGN CRITERIA:

1. EIA/TIA-222-H Structural Standard for Antenna Supporting Structures, Antennas and Small Wind Turbine Support Structures
2. 2018 Connecticut State Building Code

City/Town: Westport
County: Fairfield
Basic Wind Speed: 130 mph
Risk Category: III
Exposure Category: B
Topographic Category: 1
Ice Thickness: 1.0 inch

ASSUMPTIONS:

1. The monopole 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.
2. The appurtenances configuration is as stated in this report. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
3. 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.
4. All prior structural modification, if any, are assumed to be as per the data supplied (if available), and installed properly.

SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed antennas and surge arrester be mounted on the existing steel platform supported by the monopole.



HUDSON
Design Group LLC



Photo 1: Photo illustrating the Tower with Appurtenances shown.



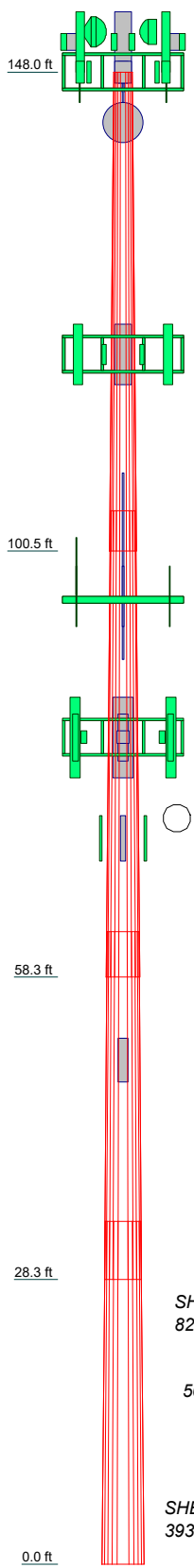
HUDSON
Design Group LLC

CALCULATIONS

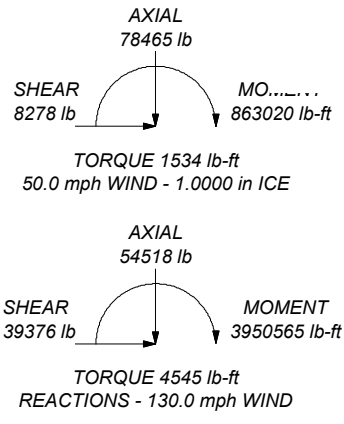
DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
DB420-B	148	RRUS-32 B2	120
2"x6' pipe	148	RRUS-32 B2	120
NNVV-65B-R4 w/ Mount Pipe	148	RRUS-32 B2	120
NNVV-65B-R4 w/ Mount Pipe	148	DC6-48-60-18-8F	120
NNVV-65B-R4 w/ Mount Pipe	148	DMP65R-BU6DA w/mount pipe	120
AAHC	148	DMP65R-BU6DA w/mount pipe (ATI - Existing)	120
AAHC	148	DMP65R-BU6DA w/mount pipe	120
(2) RRH-800	148	AIR 6449 N77D w/mount pipe	118.2
(2) RRH-800	148	AIR 6449 N77D w/mount pipe	118.2
(2) RRH-800	148	AIR 6449 N77D w/mount pipe	118.2
RRH-1900	148	DB224	96
RRH-1900	148	(2) PD1110	96
RRH-1900	148	PD201-1	96
(2) 2"x6' pipe	148	DB806-XT	96
(2) 2"x6' pipe	148	PD83-1	96
(2) 2"x6' pipe	148	(4) 2"x6' pipe	96
PIROD 13' Platform w/handrail	148	(3) 2"x6' pipe	96
Misc NA 507-1	148	(3) 2"x6' pipe	96
Andrew VHLP800-11	148	LP 712-1	96
3' Dish w/Radome	148	PD220	96
PM 601-1	144	DB205-A	96
4 FT DISH	143	DB420-B	96
AIR 6419 N77G w/mount pipe	121.75	ETW190VS12UB	82
AIR 6419 N77G w/mount pipe	121.75	RFS ATMAA1412D-1A20	82
AIR 6419 N77G w/mount pipe	121.75	RFS ATMAA1412D-1A20	82
RRUS-32 B30	120	RFS ATMAA1412D-1A20	82
RRUS-32 B30	120	APXVAARR24_43-U-NA20 w/mount pipe (T-Mobile - proposed)	82
RRUS-32 B30	120	APXVAARR24_43-U-NA20 w/mount pipe	82
RRUS-32 B66A	120	APXVAARR24_43-U-NA20 w/mount pipe	82
RRUS-32 B66A	120	APXVAARR24_43-U-NA20 w/mount pipe	82
RRUS-32 B66A	120	APXVAARR24_43-U-NA20 w/mount pipe	82
RRUS E2	120	AIR 32 B66Aa/B2a w/mount pipe	82
RRUS E2	120	AIR 32 B66Aa/B2a w/mount pipe	82
RRUS E2	120	AIR 32 B66Aa/B2a w/mount pipe	82
4478 B14	120	Radio 4449	82
4478 B14	120	Radio 4449	82
4478 B14	120	Radio 4449	82
4449 B5/B12	120	PIROD 13' Platform w/handrail (T-Mobile - existing)	82
4449 B5/B12	120	ETW190VS12UB	82
4449 B5/B12	120	ETW190VS12UB	82
DC6-48-60-18-8F	120	PM 601-3	72
DC6-48-60-18-8F	120	PM 601-3	72
DC6-48-60-0-8C-EV	120	Kathrein 800 10504 w/mount pipe	72
LP 713-1	120	Kathrein 800 10504 w/mount pipe	72
QS6616-7 w/mount pipe (ATI - Proposed)	120	Kathrein 800 10504 w/mount pipe	72
QS6616-7 w/mount pipe	120	SO 702-1	53
QS6616-7 w/mount pipe	120	BSA150B	53
QS6616-7 w/mount pipe	120		

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (lb)
1	47.50	12	0.2500	4.00	22.0000	31.6430		3457.3
2	46.25	12	0.3750	4.50	30.3310	39.7200	A607-60	6564.8
3	34.50	12	0.5375	5.75	38.0565	44.9590		8324.5
4	34.00	12	0.6500	42.7336	49.9200			11060.6
								29427.2



ALL REACTIONS ARE FACTORED



Hudson Design Group LLC			Job: CT2153
45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586			Project: 148 ft Monopole
Client: AT&T	Drawn by: kw	App'd:	
Code: TIA-222-H	Date: 12/10/21	Scale: NTS	
Path: C:\Users\CT2153\Documents\CT2153.dwg	Dwg No. E-1		

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586	Job CT2153	Page 1 of 15
	Project 148 ft Monopole	Date 09:57:14 12/10/21
	Client AT&T	Designed by kw

Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

Tower is located in Fairfield County, Connecticut.

Tower base elevation above sea level: 120.00 ft.

Basic wind speed of 130.0 mph.

Risk Category III.

Exposure Category B.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56.0 pcf.

A wind speed of 50.0 mph is used in combination with ice.

Temperature drop of 50.0 °F.

Deflections calculated using a wind speed of 60.0 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	148.00-100.50	47.50	4.00	12	22.0000	31.6430	0.2500	1.0000	A607-60 (60 ksi)
L2	100.50-58.25	46.25	4.50	12	30.3310	39.7200	0.3750	1.5000	A607-60 (60 ksi)
L3	58.25-28.25	34.50	5.75	12	38.0565	44.9590	0.5375	2.1500	A607-60 (60 ksi)
L4	28.25-0.00	34.00		12	42.7336	49.9200	0.6500	2.6000	A607-60 (60 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	22.6879	17.5087	1057.2060	7.7865	11.3960	92.7699	2142.1860	8.6173	5.2260	20.904
	32.6711	25.2714	3178.9251	11.2387	16.3911	193.9425	6441.3640	12.4378	7.8103	31.241
L2	32.1093	36.1718	4143.0744	10.7242	15.7114	263.6980	8394.9919	17.8027	7.1237	18.997
	40.9889	47.5091	9387.3225	14.0855	20.5750	456.2499	19021.2604	23.3825	9.6400	25.707
L3	40.1414	64.9360	11667.3730	13.4318	19.7133	591.8543	23641.2609	31.9595	8.7586	16.295
	46.3554	76.8825	19364.2174	15.9029	23.2888	831.4833	39237.1543	37.8392	10.6085	19.737
L4	45.2700	88.0809	19911.0050	15.0659	22.1360	899.4855	40345.0942	43.3508	9.7106	14.939

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586	Job	CT2153	Page	2 of 15
	Project	148 ft Monopole	Date	09:57:14 12/10/21
	Client	AT&T	Designed by	kw

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
	51.4517	103.1221	31952.3545	17.6387	25.8586	1235.6587	64744.1328	50.7536	11.6366	17.902

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
L1 148.00-100.50				1	1	1			
L2 100.50-58.25				1	1	1			
L3 58.25-28.25				1	1	1			
L4 28.25-0.00				1	1	1			

Monopole Base Plate Data

Base Plate Data	
Base plate is square	√
Base plate is grouted	
Anchor bolt grade	A615-75
Anchor bolt size	2.2500 in
Number of bolts	20
Embedment length	72.0000 in
f _c	3.0 ksi
Grout space	3.0000 in
Base plate grade	A572-50
Base plate thickness	2.7500 in
Bolt circle diameter	58.0000 in
Outer diameter	60.0000 in
Inner diameter	30.0000 in
Corner clipped	6.0000 in
Base plate type	Stiffened Plate
Bolts per stiffener	1
Stiffener thickness	1.1250 in
Stiffener height	12.0000 in

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight plf
1 1/4 Fiber Cable	C	No	No	Inside Pole	148.00 - 12.00	3	No Ice	0.00	0.66
							1/2" Ice	0.00	0.66
							1" Ice	0.00	0.66
2.5" Rigid Conduit	C	No	No	Inside Pole	148.00 - 12.00	2	No Ice	0.00	1.00
							1/2" Ice	0.00	1.00
							1" Ice	0.00	1.00
1/2	C	No	No	Inside Pole	148.00 - 12.00	4	No Ice	0.00	0.25
							1/2" Ice	0.00	0.25
							1" Ice	0.00	0.25

EW90	C	No	No	Inside Pole	142.00 - 12.00	1	No Ice	0.00	0.32
							1/2" Ice	0.00	0.32

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight plf
							1" Ice	0.00	0.32

LDF7-50A (1-5/8 FOAM) (AT&T)	C	No	No	Inside Pole	120.00 - 4.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
WR-VG122ST-BRD A	C	No	No	Inside Pole	120.00 - 4.00	6	No Ice	0.00	0.25
							1/2" Ice	0.00	0.25
							1" Ice	0.00	0.25
FB-L98B-002	C	No	No	Inside Pole	120.00 - 4.00	3	No Ice	0.00	0.25
							1/2" Ice	0.00	0.25
							1" Ice	0.00	0.25

WR-VG122ST-BRD A (AT&T)	C	No	No	Inside Pole	120.00 - 4.00	2	No Ice	0.00	0.25
							1/2" Ice	0.00	0.25
							1" Ice	0.00	0.25

LDF4-50A (1/2 FOAM)	C	No	No	Inside Pole	97.00 - 12.00	6	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
LDF5-50A (7/8 FOAM)	C	No	No	Inside Pole	97.00 - 12.00	9	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
LDF2-50A (3/8 FOAM)	C	No	No	Inside Pole	97.00 - 12.00	3	No Ice	0.00	0.08
							1/2" Ice	0.00	0.08
							1" Ice	0.00	0.08
LDF1-50A (1/4 FOAM)	C	No	No	Inside Pole	97.00 - 12.00	2	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06

HJ7-50A (1-5/8 AIR)	C	No	No	Inside Pole	72.00 - 0.00	6	No Ice	0.00	1.04
							1/2" Ice	0.00	1.04
							1" Ice	0.00	1.04

LDF4-50A (1/2 FOAM)	C	No	No	Inside Pole	53.00 - 0.00	2	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15

7/8 (T-Mobile)	A	No	No	Inside Pole	82.00 - 15.00	18	No Ice	0.00	0.54
							1/2" Ice	0.00	0.54
							1" Ice	0.00	0.54
1 1/4 Fiber Cable	A	No	No	Inside Pole	82.00 - 15.00	6	No Ice	0.00	0.66
							1/2" Ice	0.00	0.66
							1" Ice	0.00	0.66

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
DB420-B	A	From Leg	0.00 0.00 10.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	3.33 5.99 8.66	34.00 44.20 54.40

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb	
			Horz ft	Vert ft						
2"x6' pipe	A	From Leg	0.00	0.00	0.0000	148.00	No Ice	1.43	1.43	22.00
			0.00	0.00			1/2" Ice	1.93	1.93	32.85
			1.00	0.00			1" Ice	2.30	2.30	47.75

NNVV-65B-R4 w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	148.00	No Ice	12.51	7.41	102.95
			0.00	0.00			1/2" Ice	13.11	8.60	193.58
			3.00	0.00			1" Ice	13.67	9.50	292.74
NNVV-65B-R4 w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	148.00	No Ice	12.51	7.41	102.95
			0.00	0.00			1/2" Ice	13.11	8.60	193.58
			3.00	0.00			1" Ice	13.67	9.50	292.74
NNVV-65B-R4 w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	148.00	No Ice	12.51	7.41	102.95
			0.00	0.00			1/2" Ice	13.11	8.60	193.58
			3.00	0.00			1" Ice	13.67	9.50	292.74
AAHC	A	From Leg	4.00	0.00	0.0000	148.00	No Ice	4.20	2.06	103.40
			0.00	0.00			1/2" Ice	4.46	2.25	135.65
			0.00	0.00			1" Ice	4.72	2.45	171.65
AAHC	B	From Leg	4.00	0.00	0.0000	148.00	No Ice	4.20	2.06	103.40
			0.00	0.00			1/2" Ice	4.46	2.25	135.65
			0.00	0.00			1" Ice	4.72	2.45	171.65
AAHC	C	From Leg	4.00	0.00	0.0000	148.00	No Ice	4.20	2.06	103.40
			0.00	0.00			1/2" Ice	4.46	2.25	135.65
			0.00	0.00			1" Ice	4.72	2.45	171.65
(2) RRH-800	A	From Leg	3.00	0.00	0.0000	148.00	No Ice	2.13	2.76	64.00
			0.00	0.00			1/2" Ice	2.32	2.96	91.74
			3.00	0.00			1" Ice	2.51	3.18	122.88
(2) RRH-800	B	From Leg	3.00	0.00	0.0000	148.00	No Ice	2.13	2.76	64.00
			0.00	0.00			1/2" Ice	2.32	2.96	91.74
			3.00	0.00			1" Ice	2.51	3.18	122.88
(2) RRH-800	C	From Leg	3.00	0.00	0.0000	148.00	No Ice	2.13	2.76	64.00
			0.00	0.00			1/2" Ice	2.32	2.96	91.74
			3.00	0.00			1" Ice	2.51	3.18	122.88
RRH-1900	A	From Leg	3.00	0.00	0.0000	148.00	No Ice	2.32	3.14	60.00
			0.00	0.00			1/2" Ice	2.53	3.36	88.32
			0.00	0.00			1" Ice	2.74	3.60	120.15
RRH-1900	B	From Leg	3.00	0.00	0.0000	148.00	No Ice	2.32	3.14	60.00
			0.00	0.00			1/2" Ice	2.53	3.36	88.32
			0.00	0.00			1" Ice	2.74	3.60	120.15
RRH-1900	C	From Leg	3.00	0.00	0.0000	148.00	No Ice	2.32	3.14	60.00
			0.00	0.00			1/2" Ice	2.53	3.36	88.32
			0.00	0.00			1" Ice	2.74	3.60	120.15
(2) 2"x6' pipe	A	From Leg	4.00	0.00	0.0000	148.00	No Ice	1.43	1.43	22.00
			0.00	0.00			1/2" Ice	1.93	1.93	32.85
			0.00	0.00			1" Ice	2.30	2.30	47.75
(2) 2"x6' pipe	B	From Leg	4.00	0.00	0.0000	148.00	No Ice	1.43	1.43	22.00
			0.00	0.00			1/2" Ice	1.93	1.93	32.85
			0.00	0.00			1" Ice	2.30	2.30	47.75
(2) 2"x6' pipe	C	From Leg	4.00	0.00	0.0000	148.00	No Ice	1.43	1.43	22.00
			0.00	0.00			1/2" Ice	1.93	1.93	32.85
			0.00	0.00			1" Ice	2.30	2.30	47.75
PiROD 13' Platform w/handrail	C	None		0.0000	0.0000	148.00	No Ice	31.30	31.30	1822.00
							1/2" Ice	40.20	40.20	2452.00
							1" Ice	49.10	49.10	3082.00
Misc NA 507-1	C	None		0.0000	0.0000	148.00	No Ice	4.80	4.80	250.00
							1/2" Ice	6.70	6.70	295.00
							1" Ice	8.60	8.60	340.00

PM 601-1	C	None		0.0000	0.0000	144.00	No Ice	3.00	0.90	65.00

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	Client	AT&T	Designed by	kw

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft ²	ft ²	lb	
						1/2" Ice	3.74	1.12	79.00	
						1" Ice	4.48	1.34	93.00	

DMP65R-BU6DA w/mount pipe (AT&T - Existing)	A	From Leg	4.00	0.00	0.0000	120.00	No Ice	12.96	7.28	104.95
			0.00	0.00			1/2" Ice	13.57	8.46	197.40
			0.00	0.00			1" Ice	14.14	9.35	298.38
DMP65R-BU6DA w/mount pipe	B	From Leg	4.00	0.00	0.0000	120.00	No Ice	12.96	7.28	104.95
			0.00	0.00			1/2" Ice	13.57	8.46	197.40
			0.00	0.00			1" Ice	14.14	9.35	298.38
DMP65R-BU6DA w/mount pipe	C	From Leg	4.00	0.00	0.0000	120.00	No Ice	12.96	7.28	104.95
			0.00	0.00			1/2" Ice	13.57	8.46	197.40
			0.00	0.00			1" Ice	14.14	9.35	298.38
RRUS-32 B2	A	From Leg	3.00	0.00	0.0000	120.00	No Ice	3.15	1.29	53.00
			0.00	0.00			1/2" Ice	3.36	1.44	76.22
			0.00	0.00			1" Ice	3.59	1.60	102.64
RRUS-32 B2	B	From Leg	3.00	0.00	0.0000	120.00	No Ice	3.15	1.29	53.00
			0.00	0.00			1/2" Ice	3.36	1.44	76.22
			0.00	0.00			1" Ice	3.59	1.60	102.64
RRUS-32 B2	C	From Leg	3.00	0.00	0.0000	120.00	No Ice	3.15	1.29	53.00
			0.00	0.00			1/2" Ice	3.36	1.44	76.22
			0.00	0.00			1" Ice	3.59	1.60	102.64
RRUS-32 B30	A	From Leg	3.00	0.00	0.0000	120.00	No Ice	2.72	1.67	53.00
			0.00	0.00			1/2" Ice	2.94	1.86	74.00
			0.00	0.00			1" Ice	3.17	2.05	98.19
RRUS-32 B30	B	From Leg	3.00	0.00	0.0000	120.00	No Ice	2.72	1.67	53.00
			0.00	0.00			1/2" Ice	2.94	1.86	74.00
			0.00	0.00			1" Ice	3.17	2.05	98.19
RRUS-32 B30	C	From Leg	3.00	0.00	0.0000	120.00	No Ice	2.72	1.67	53.00
			0.00	0.00			1/2" Ice	2.94	1.86	74.00
			0.00	0.00			1" Ice	3.17	2.05	98.19
RRUS-32 B66A	A	From Leg	3.00	0.00	0.0000	120.00	No Ice	2.72	1.67	60.00
			0.00	0.00			1/2" Ice	2.94	1.86	81.00
			0.00	0.00			1" Ice	3.17	2.05	105.19
RRUS-32 B66A	B	From Leg	3.00	0.00	0.0000	120.00	No Ice	2.72	1.67	60.00
			0.00	0.00			1/2" Ice	2.94	1.86	81.00
			0.00	0.00			1" Ice	3.17	2.05	105.19
RRUS-32 B66A	C	From Leg	3.00	0.00	0.0000	120.00	No Ice	2.72	1.67	60.00
			0.00	0.00			1/2" Ice	2.94	1.86	81.00
			0.00	0.00			1" Ice	3.17	2.05	105.19
RRUS E2	A	From Leg	3.00	0.00	0.0000	120.00	No Ice	3.15	1.29	60.00
			0.00	0.00			1/2" Ice	3.36	1.44	83.22
			0.00	0.00			1" Ice	3.59	1.60	109.64
RRUS E2	B	From Leg	3.00	0.00	0.0000	120.00	No Ice	3.15	1.29	60.00
			0.00	0.00			1/2" Ice	3.36	1.44	83.22
			0.00	0.00			1" Ice	3.59	1.60	109.64
RRUS E2	C	From Leg	3.00	0.00	0.0000	120.00	No Ice	3.15	1.29	60.00
			0.00	0.00			1/2" Ice	3.36	1.44	83.22
			0.00	0.00			1" Ice	3.59	1.60	109.64
4478 B14	A	From Leg	3.00	0.00	0.0000	120.00	No Ice	2.02	1.25	59.40
			0.00	0.00			1/2" Ice	2.20	1.40	77.06
			0.00	0.00			1" Ice	2.39	1.56	97.48
4478 B14	B	From Leg	3.00	0.00	0.0000	120.00	No Ice	2.02	1.25	59.40
			0.00	0.00			1/2" Ice	2.20	1.40	77.06
			0.00	0.00			1" Ice	2.39	1.56	97.48
4478 B14	C	From Leg	3.00	0.00	0.0000	120.00	No Ice	2.02	1.25	59.40
			0.00	0.00			1/2" Ice	2.20	1.40	77.06
			0.00	0.00			1" Ice	2.39	1.56	97.48

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	lb
4449 B5/B12	A	From Leg	3.00	0.0000	120.00	No Ice	1.97	1.55	71.00
			0.00			1/2" Ice	2.15	1.71	90.52
			0.00			1" Ice	2.33	1.88	112.92
4449 B5/B12	B	From Leg	3.00	0.0000	120.00	No Ice	1.97	1.55	71.00
			0.00			1/2" Ice	2.15	1.71	90.52
			0.00			1" Ice	2.33	1.88	112.92
4449 B5/B12	C	From Leg	3.00	0.0000	120.00	No Ice	1.97	1.55	71.00
			0.00			1/2" Ice	2.15	1.71	90.52
			0.00			1" Ice	2.33	1.88	112.92
DC6-48-60-18-8F	A	From Leg	1.00	0.0000	120.00	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
DC6-48-60-18-8F	B	From Leg	1.00	0.0000	120.00	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
DC6-48-60-0-8C-EV	C	From Leg	1.00	0.0000	120.00	No Ice	0.81	0.81	33.00
			0.00			1/2" Ice	1.30	1.30	48.38
			0.00			1" Ice	1.48	1.48	66.11
LP 713-1	C	None		0.0000	120.00	No Ice	31.27	31.27	1510.00
						1/2" Ice	39.68	39.68	1929.00
						1" Ice	48.09	48.09	2348.00

QS6616-7 w/mount pipe (AT&T - Proposed)	A	From Leg	4.00	0.0000	120.00	No Ice	13.82	8.46	100.55
			0.00			1/2" Ice	14.43	9.66	203.01
			0.00			1" Ice	15.00	10.55	314.26
QS6616-7 w/mount pipe	B	From Leg	4.00	0.0000	120.00	No Ice	13.82	8.46	100.55
			0.00			1/2" Ice	14.43	9.66	203.01
			0.00			1" Ice	15.00	10.55	314.26
QS6616-7 w/mount pipe	C	From Leg	4.00	0.0000	120.00	No Ice	13.82	8.46	100.55
			0.00			1/2" Ice	14.43	9.66	203.01
			0.00			1" Ice	15.00	10.55	314.26
AIR 6419 N77G w/mount pipe	A	From Leg	4.00	0.0000	121.75	No Ice	4.48	2.88	54.60
			0.00			1/2" Ice	4.83	3.34	94.47
			0.00			1" Ice	5.19	3.81	139.34
AIR 6419 N77G w/mount pipe	B	From Leg	4.00	0.0000	121.75	No Ice	4.48	2.88	54.60
			0.00			1/2" Ice	4.83	3.34	94.47
			0.00			1" Ice	5.19	3.81	139.34
AIR 6419 N77G w/mount pipe	C	From Leg	4.00	0.0000	121.75	No Ice	4.48	2.88	54.60
			0.00			1/2" Ice	4.83	3.34	94.47
			0.00			1" Ice	5.19	3.81	139.34
AIR 6449 N77D w/mount pipe	A	From Leg	4.00	0.0000	118.20	No Ice	4.35	3.01	54.60
			0.00			1/2" Ice	4.70	3.47	94.89
			0.00			1" Ice	5.06	3.94	140.17
AIR 6449 N77D w/mount pipe	B	From Leg	4.00	0.0000	118.20	No Ice	4.35	3.01	54.60
			0.00			1/2" Ice	4.70	3.47	94.89
			0.00			1" Ice	5.06	3.94	140.17
AIR 6449 N77D w/mount pipe	C	From Leg	4.00	0.0000	118.20	No Ice	4.35	3.01	54.60
			0.00			1/2" Ice	4.70	3.47	94.89
			0.00			1" Ice	5.06	3.94	140.17
DC6-48-60-18-8F	A	From Leg	1.00	0.0000	120.00	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

PD220	C	From Leg	4.00	0.0000	96.00	No Ice	3.56	3.56	23.00
			0.00			1/2" Ice	7.13	7.13	46.00
			10.00			1" Ice	10.70	10.70	69.00
DB205-A	B	From Leg	4.00	0.0000	96.00	No Ice	1.20	1.20	38.00

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz Lateral	Vert					
			0.00			1/2" Ice	2.16	2.16	49.40
			8.00			1" Ice	3.12	3.12	60.80
DB420-B	A	From Leg	4.00	0.0000	96.00	No Ice	3.33	3.33	34.00
			0.00			1/2" Ice	5.99	5.99	44.20
			8.00			1" Ice	8.66	8.66	54.40
DB224	C	From Leg	4.00	0.0000	96.00	No Ice	3.15	3.15	32.00
			0.00			1/2" Ice	5.67	5.67	41.60
			8.00			1" Ice	8.19	8.19	51.20
(2) PD1110	A	From Leg	4.00	0.0000	96.00	No Ice	3.06	3.06	25.00
			0.00			1/2" Ice	5.10	5.10	60.00
			6.00			1" Ice	7.14	7.14	95.00
PD201-1	A	From Leg	4.00	0.0000	96.00	No Ice	0.63	0.63	4.00
			0.00			1/2" Ice	1.54	1.54	10.65
			3.00			1" Ice	2.47	2.47	23.00
DB806-XT	C	From Leg	4.00	0.0000	96.00	No Ice	1.14	1.14	21.00
			0.00			1/2" Ice	1.68	1.68	29.93
			3.00			1" Ice	2.03	2.03	42.71
PD83-1	A	From Leg	4.00	0.0000	96.00	No Ice	3.70	3.70	17.00
			0.00			1/2" Ice	5.58	5.58	45.48
			3.00			1" Ice	7.47	7.47	85.62
(4) 2"x6' pipe	A	From Leg	4.00	0.0000	96.00	No Ice	1.43	1.43	22.00
			0.00			1/2" Ice	1.93	1.93	32.85
			0.00			1" Ice	2.30	2.30	47.75
(3) 2"x6' pipe	B	From Leg	4.00	0.0000	96.00	No Ice	1.43	1.43	22.00
			0.00			1/2" Ice	1.93	1.93	32.85
			0.00			1" Ice	2.30	2.30	47.75
(3) 2"x6' pipe	C	From Leg	4.00	0.0000	96.00	No Ice	1.43	1.43	22.00
			0.00			1/2" Ice	1.93	1.93	32.85
			0.00			1" Ice	2.30	2.30	47.75
LP 712-1	C	None		0.0000	96.00	No Ice	24.53	24.53	1340.00
						1/2" Ice	29.94	29.94	1650.00
						1" Ice	35.35	35.35	1960.00

PIROD 13' Platform w/handrail	A	None		0.0000	82.00	No Ice	31.30	31.30	1822.00
						1/2" Ice	40.20	40.20	2452.00
(T-Mobile - existing) ETW190VS12UB	A	From Leg	3.00	0.0000	82.00	1" Ice	49.10	49.10	3082.00
			0.00			No Ice	0.57	0.32	14.60
			0.00			1/2" Ice	0.67	0.40	19.54
			0.00			1" Ice	0.77	0.48	26.01
ETW190VS12UB	B	From Leg	3.00	0.0000	82.00	No Ice	0.57	0.32	14.60
			0.00			1/2" Ice	0.67	0.40	19.54
			0.00			1" Ice	0.77	0.48	26.01
ETW190VS12UB	C	From Leg	3.00	0.0000	82.00	No Ice	0.57	0.32	14.60
			0.00			1/2" Ice	0.67	0.40	19.54
			0.00			1" Ice	0.77	0.48	26.01
RFS ATMAA1412D-1A20	A	From Leg	3.00	0.0000	82.00	No Ice	1.00	0.41	13.00
			0.00			1/2" Ice	1.13	0.50	20.62
			0.00			1" Ice	1.26	0.59	30.11
RFS ATMAA1412D-1A20	B	From Leg	3.00	0.0000	82.00	No Ice	1.00	0.41	13.00
			0.00			1/2" Ice	1.13	0.50	20.62
			0.00			1" Ice	1.26	0.59	30.11
RFS ATMAA1412D-1A20	C	From Leg	3.00	0.0000	82.00	No Ice	1.00	0.41	13.00
			0.00			1/2" Ice	1.13	0.50	20.62
			0.00			1" Ice	1.26	0.59	30.11

APXVAARR24_43-U-NA20 w/mount pipe	A	From Leg	4.00	0.0000	82.00	No Ice	20.24	11.19	174.32
			0.00			1/2" Ice	20.89	12.62	311.78

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft ²	ft ²	lb	
(T-Mobile - proposed)			0.00				1" Ice	21.55	13.71	460.89
APXVAARR24_43-U-NA20 w/mount pipe	B	From Leg	4.00		0.0000	82.00	No Ice	20.24	11.19	174.32
			0.00				1/2" Ice	20.89	12.62	311.78
			0.00				1" Ice	21.55	13.71	460.89
APXVAARR24_43-U-NA20 w/mount pipe	C	From Leg	4.00		0.0000	82.00	No Ice	20.24	11.19	174.32
			0.00				1/2" Ice	20.89	12.62	311.78
			0.00				1" Ice	21.55	13.71	460.89
AIR 32 B66Aa/B2a w/mount pipe	A	From Leg	4.00		0.0000	82.00	No Ice	6.81	6.14	153.90
			0.00				1/2" Ice	7.30	6.99	215.61
			0.00				1" Ice	7.76	7.73	284.26
AIR 32 B66Aa/B2a w/mount pipe	B	From Leg	4.00		0.0000	82.00	No Ice	6.81	6.14	153.90
			0.00				1/2" Ice	7.30	6.99	215.61
			0.00				1" Ice	7.76	7.73	284.26
AIR 32 B66Aa/B2a w/mount pipe	C	From Leg	4.00		0.0000	82.00	No Ice	6.81	6.14	153.90
			0.00				1/2" Ice	7.30	6.99	215.61
			0.00				1" Ice	7.76	7.73	284.26
Radio 4449	A	From Leg	3.00		0.0000	82.00	No Ice	1.65	1.16	74.00
			0.00				1/2" Ice	1.81	1.30	90.16
			0.00				1" Ice	1.98	1.45	108.95
Radio 4449	B	From Leg	3.00		0.0000	82.00	No Ice	1.65	1.16	74.00
			0.00				1/2" Ice	1.81	1.30	90.16
			0.00				1" Ice	1.98	1.45	108.95
Radio 4449	C	From Leg	3.00		0.0000	82.00	No Ice	1.65	1.16	74.00
			0.00				1/2" Ice	1.81	1.30	90.16
			0.00				1" Ice	1.98	1.45	108.95

Kathrein 800 10504 w/mount pipe	A	From Leg	1.00		0.0000	72.00	No Ice	3.71	3.29	41.90
			0.00				1/2" Ice	4.18	4.11	75.82
			0.00				1" Ice	4.62	4.82	115.69
Kathrein 800 10504 w/mount pipe	B	From Leg	1.00		0.0000	72.00	No Ice	3.71	3.29	41.90
			0.00				1/2" Ice	4.18	4.11	75.82
			0.00				1" Ice	4.62	4.82	115.69
Kathrein 800 10504 w/mount pipe	C	From Leg	1.00		0.0000	72.00	No Ice	3.71	3.29	41.90
			0.00				1/2" Ice	4.18	4.11	75.82
			0.00				1" Ice	4.62	4.82	115.69
PM 601-3	A	From Leg	1.00		0.0000	72.00	No Ice	4.39	4.39	200.00
			0.00				1/2" Ice	5.48	5.48	240.00
			0.00				1" Ice	6.57	6.57	280.00

BSA150B	A	From Leg	4.00		0.0000	53.00	No Ice	2.33	2.33	15.00
			0.00				1/2" Ice	3.50	3.50	52.23
			-3.00				1" Ice	3.81	3.81	93.47
SO 702-1	A	None			0.0000	53.00	No Ice	1.00	1.43	30.00
							1/2" Ice	1.25	2.05	40.00
							1" Ice	1.50	2.67	50.00

Dishes

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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
Andrew VHLP800-11	B	Paraboloid w/Shroud (HP)	From Leg	1.00	40.0000		148.00	2.50	No Ice	49.00
				0.00					1/2" Ice	77.00
				4.00					1" Ice	105.00
3' Dish w/Radome	C	Paraboloid w/Radome	From Leg	1.00	-20.0000		148.00	3.00	No Ice	50.00
				0.00					1/2" Ice	80.00
				4.00					1" Ice	110.00
4 FT DISH	A	Paraboloid w/o Radome	From Leg	1.00	0.0000		143.00	4.00	No Ice	170.00
				0.00					1/2" Ice	237.19
				0.00					1" Ice	304.38

Load Combinations

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

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Comb. No.	Description
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

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	27	78464.65	9.98	8262.90
	Max. H _x	20	54517.97	38515.22	141.55
	Max. H _z	2	54517.97	60.12	39261.22
	Max. M _x	2	3938670.97	60.12	39261.22
	Max. M _z	8	3841944.69	-38632.64	-62.90
	Max. Torsion	7	4544.74	-33548.58	19547.91
	Min. Vert	19	40888.48	33344.68	-20263.53
	Min. H _x	8	54517.97	-38632.64	-62.90
	Min. H _z	14	54517.97	-47.35	-39375.76
	Min. M _x	14	-3950558.73	-47.35	-39375.76
	Min. M _z	20	-3823942.49	38515.22	141.55
	Min. Torsion	21	-4250.03	38515.21	141.55

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturing Moment, M _x lb-ft	Overturing Moment, M _z lb-ft	Torque lb-ft
Dead Only	45431.64	0.00	0.00	-1284.80	201.50	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	54517.97	-60.12	-39261.22	-3938670.97	9753.26	-1273.86
0.9 Dead+1.0 Wind 0 deg - No Ice	40888.48	-60.12	-39261.21	-3906727.51	9590.43	-1272.86
1.2 Dead+1.0 Wind 30 deg - No Ice	54517.97	19344.43	-33945.97	-3403382.14	-1923908.09	-3552.66
0.9 Dead+1.0 Wind 30 deg - No Ice	40888.48	19344.43	-33945.97	-3375732.47	-1908656.98	-3552.51
1.2 Dead+1.0 Wind 60 deg - No Ice	54517.97	33548.58	-19547.91	-1957573.32	-3340686.56	-4543.25
0.9 Dead+1.0 Wind 60 deg - No Ice	40888.48	33548.58	-19547.91	-1941517.83	-3314128.97	-4544.74
1.2 Dead+1.0 Wind 90 deg - No Ice	54517.97	38632.64	62.90	8418.70	-3841944.69	-4165.68
0.9 Dead+1.0 Wind 90 deg - No Ice	40888.48	38632.63	62.90	8728.97	-3811426.45	-4168.12
1.2 Dead+1.0 Wind 120 deg - No Ice	54517.97	33342.92	20270.79	2061512.85	-3309368.72	-2504.13
0.9 Dead+1.0 Wind 120 deg - No Ice	40888.48	33342.92	20270.79	2045233.67	-3283131.17	-2506.05

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586</p>	Job	CT2153	Page	11 of 15
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Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
1.2 Dead+1.0 Wind 150 deg - No Ice	54517.97	19168.88	34197.36	3435207.75	-1898634.10	-448.34
0.9 Dead+1.0 Wind 150 deg - No Ice	40888.48	19168.88	34197.36	3408065.79	-1883629.87	-449.58
1.2 Dead+1.0 Wind 180 deg - No Ice	54517.97	47.35	39375.76	3950558.73	-7237.56	1293.03
0.9 Dead+1.0 Wind 180 deg - No Ice	40888.48	47.35	39375.75	3919318.29	-7224.74	1292.47
1.2 Dead+1.0 Wind 210 deg - No Ice	54517.97	-19062.39	34310.81	3453126.80	1882286.01	2643.56
0.9 Dead+1.0 Wind 210 deg - No Ice	40888.48	-19062.39	34310.81	3425799.13	1867326.40	2644.09
1.2 Dead+1.0 Wind 240 deg - No Ice	54517.97	-33344.68	20263.53	2060369.11	3310154.52	3533.63
0.9 Dead+1.0 Wind 240 deg - No Ice	40888.48	-33344.68	20263.53	2044100.98	3283782.34	3534.67
1.2 Dead+1.0 Wind 270 deg - No Ice	54517.97	-38515.22	-141.55	-23907.81	3823942.49	4248.39
0.9 Dead+1.0 Wind 270 deg - No Ice	40888.48	-38515.21	-141.55	-23263.44	3793481.60	4250.03
1.2 Dead+1.0 Wind 300 deg - No Ice	54517.97	-33441.36	-19650.78	-1973852.27	3324257.04	3398.80
0.9 Dead+1.0 Wind 300 deg - No Ice	40888.48	-33441.36	-19650.78	-1957627.15	3297742.38	3400.48
1.2 Dead+1.0 Wind 330 deg - No Ice	54517.97	-19425.48	-33876.64	-3392434.13	1937227.20	1454.66
0.9 Dead+1.0 Wind 330 deg - No Ice	40888.48	-19425.48	-33876.64	-3364896.24	1921713.28	1456.24
1.2 Dead+1.0 Ice+1.0 Temp	78464.65	-0.00	-0.00	-4530.60	693.55	0.01
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	78464.65	-9.98	-8262.90	-863017.28	2348.75	-634.87
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	78464.65	4083.42	-7147.42	-746773.40	-420728.47	-1277.25
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	78464.65	7081.17	-4117.84	-431697.03	-730860.52	-1534.13
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	78464.65	8158.86	10.38	-2986.73	-841320.09	-1349.35
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	78464.65	7045.61	4233.24	439942.68	-725267.24	-767.51
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	78464.65	4054.53	7183.64	742499.30	-416438.48	-29.20
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	78464.65	7.92	8278.10	855587.12	-576.25	642.85
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	78464.65	-4036.70	7204.77	745953.54	414962.78	1137.89
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	78464.65	-7046.36	4233.17	439932.39	726828.35	1361.23
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	78464.65	-8136.96	-24.03	-8608.34	839180.91	1353.29
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	78464.65	-7060.16	-4134.50	-434421.44	728866.14	910.43
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	78464.65	-4095.65	-7134.34	-744637.07	424165.19	196.85
Dead+Wind 0 deg - Service	45431.64	-11.46	-7492.97	-749506.84	2012.66	-241.45
Dead+Wind 30 deg - Service	45431.64	3691.94	-6478.57	-647773.97	-365450.26	-683.26
Dead+Wind 60 deg - Service	45431.64	6402.83	-3730.72	-373024.21	-634670.32	-888.08
Dead+Wind 90 deg - Service	45431.64	7373.17	11.99	559.09	-729919.15	-822.70
Dead+Wind 120 deg - Service	45431.64	6363.64	3868.50	390669.39	-628747.39	-492.65
Dead+Wind 150 deg - Service	45431.64	3658.48	6526.49	651749.29	-360663.29	-90.51
Dead+Wind 180 deg - Service	45431.64	9.02	7514.80	749701.51	-1208.42	250.39
Dead+Wind 210 deg - Service	45431.64	-3638.19	6548.11	655149.56	357893.09	518.78

<p>tnxTower</p> <p>Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586</p>	Job	CT2153	Page	12 of 15
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	Client	AT&T	Designed by	kw

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+Wind 240 deg - Service	45431.64	-6363.97	3867.12	390451.98	629221.98	689.56
Dead+Wind 270 deg - Service	45431.64	-7350.79	-26.98	-5568.60	726822.26	829.01
Dead+Wind 300 deg - Service	45431.64	-6382.40	-3750.33	-376107.68	631878.78	661.93
Dead+Wind 330 deg - Service	45431.64	-3707.39	-6465.36	-645696.25	368301.01	285.96

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-45431.64	0.00	0.00	45431.64	0.00	0.000%
2	-60.12	-54517.97	-39261.21	60.12	54517.97	39261.22	0.000%
3	-60.12	-40888.48	-39261.21	60.12	40888.48	39261.21	0.000%
4	19344.43	-54517.97	-33945.97	-19344.43	54517.97	33945.97	0.000%
5	19344.43	-40888.48	-33945.97	-19344.43	40888.48	33945.97	0.000%
6	33548.58	-54517.97	-19547.91	-33548.58	54517.97	19547.91	0.000%
7	33548.58	-40888.48	-19547.91	-33548.58	40888.48	19547.91	0.000%
8	38632.63	-54517.97	62.90	-38632.64	54517.97	-62.90	0.000%
9	38632.63	-40888.48	62.90	-38632.63	40888.48	-62.90	0.000%
10	33342.92	-54517.97	20270.79	-33342.92	54517.97	-20270.79	0.000%
11	33342.92	-40888.48	20270.79	-33342.92	40888.48	-20270.79	0.000%
12	19168.88	-54517.97	34197.36	-19168.88	54517.97	-34197.36	0.000%
13	19168.88	-40888.48	34197.36	-19168.88	40888.48	-34197.36	0.000%
14	47.35	-54517.97	39375.75	-47.35	54517.97	-39375.76	0.000%
15	47.35	-40888.48	39375.75	-47.35	40888.48	-39375.75	0.000%
16	-19062.39	-54517.97	34310.81	19062.39	54517.97	-34310.81	0.000%
17	-19062.39	-40888.48	34310.81	19062.39	40888.48	-34310.81	0.000%
18	-33344.68	-54517.97	20263.53	33344.68	54517.97	-20263.53	0.000%
19	-33344.68	-40888.48	20263.53	33344.68	40888.48	-20263.53	0.000%
20	-38515.21	-54517.97	-141.55	38515.22	54517.97	141.55	0.000%
21	-38515.21	-40888.48	-141.55	38515.21	40888.48	141.55	0.000%
22	-33441.36	-54517.97	-19650.78	33441.36	54517.97	19650.78	0.000%
23	-33441.36	-40888.48	-19650.78	33441.36	40888.48	19650.78	0.000%
24	-19425.48	-54517.97	-33876.64	19425.48	54517.97	33876.64	0.000%
25	-19425.48	-40888.48	-33876.64	19425.48	40888.48	33876.64	0.000%
26	0.00	-78464.65	0.00	0.00	78464.65	0.00	0.000%
27	-9.98	-78464.65	-8262.88	9.98	78464.65	8262.90	0.000%
28	4083.41	-78464.65	-7147.39	-4083.42	78464.65	7147.42	0.000%
29	7081.15	-78464.65	-4117.83	-7081.17	78464.65	4117.84	0.000%
30	8158.84	-78464.65	10.38	-8158.86	78464.65	-10.38	0.000%
31	7045.59	-78464.65	4233.23	-7045.61	78464.65	-4233.24	0.000%
32	4054.52	-78464.65	7183.62	-4054.53	78464.65	-7183.64	0.000%
33	7.92	-78464.65	8278.07	-7.92	78464.65	-8278.10	0.000%
34	-4036.69	-78464.65	7204.75	4036.70	78464.65	-7204.77	0.000%
35	-7046.34	-78464.65	4233.16	7046.36	78464.65	-4233.17	0.000%
36	-8136.94	-78464.65	-24.03	8136.96	78464.65	24.03	0.000%
37	-7060.14	-78464.65	-4134.49	7060.16	78464.65	4134.50	0.000%
38	-4095.64	-78464.65	-7134.31	4095.65	78464.65	7134.34	0.000%
39	-11.46	-45431.64	-7492.97	11.46	45431.64	7492.97	0.000%
40	3691.94	-45431.64	-6478.57	-3691.94	45431.64	6478.57	0.000%
41	6402.83	-45431.64	-3730.72	-6402.83	45431.64	3730.72	0.000%
42	7373.16	-45431.64	11.99	-7373.17	45431.64	-11.99	0.000%
43	6363.63	-45431.64	3868.50	-6363.64	45431.64	-3868.50	0.000%
44	3658.48	-45431.64	6526.49	-3658.48	45431.64	-6526.49	0.000%
45	9.02	-45431.64	7514.80	-9.02	45431.64	-7514.80	0.000%
46	-3638.19	-45431.64	6548.11	3638.19	45431.64	-6548.11	0.000%
47	-6363.97	-45431.64	3867.12	6363.97	45431.64	-3867.12	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
48	-7350.78	-45431.64	-26.98	7350.79	45431.64	26.98	0.000%
49	-6382.40	-45431.64	-3750.33	6382.40	45431.64	3750.33	0.000%
50	-3707.39	-45431.64	-6465.36	3707.39	45431.64	6465.36	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	148 - 100.5	16.9655	39	1.0387	0.0032
L2	104.5 - 58.25	8.3205	39	0.7937	0.0022
L3	62.75 - 28.25	2.8175	39	0.4315	0.0009
L4	34 - 0	0.8212	39	0.2175	0.0004

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
152.00	Andrew VHLP800-11	39	16.9655	1.0387	0.0035	54006
148.00	DB420-B	39	16.9655	1.0387	0.0035	54006
144.00	PM 601-1	39	16.1150	1.0198	0.0034	54006
143.00	4 FT DISH	39	15.9027	1.0151	0.0034	54006
121.75	AIR 6419 N77G w/mount pipe	39	11.5147	0.9063	0.0029	10286
120.00	DMP65R-BU6DA w/mount pipe	39	11.1710	0.8962	0.0029	9643
118.20	AIR 6449 N77D w/mount pipe	39	10.8214	0.8855	0.0028	9061
96.00	PD220	39	6.9389	0.7260	0.0021	6349
82.00	PIROD 13' Platform w/handrail	39	4.9597	0.6027	0.0016	6599
72.00	Kathrein 800 10504 w/mount pipe	39	3.7651	0.5121	0.0012	6789
53.00	BSA150B	39	1.9791	0.3534	0.0007	6907

Base Plate Design Data

Plate Thickness in	Number of Anchor Bolts	Anchor Bolt Size in	Actual Allowable Ratio Bolt Tension lb	Actual Allowable Ratio Bolt Compression lb	Actual Allowable Ratio Plate Stress ksi	Actual Allowable Ratio Stiffener Stress ksi	Controlling Condition	Ratio
2.7500	20	2.2500	160746.67	166196.67	13.810	11.279	Bolt T	0.66
			243576.14	404336.40	45.000	45.000		✓
			0.66	0.41	0.31	0.25		

Compression Checks

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Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
L1	148 - 100.5 (1)	TP31.643x22x0.25	47.50	0.00	0.0	24.6177	-11614.30	1329350.00	0.009
L2	100.5 - 58.25 (2)	TP39.72x30.331x0.375	46.25	0.00	0.0	46.4060	-26690.00	2505920.00	0.011
L3	58.25 - 28.25 (3)	TP44.959x38.0565x0.5375	34.50	0.00	0.0	74.8914	-37626.50	4044140.00	0.009
L4	28.25 - 0 (4)	TP49.92x42.7336x0.65	34.00	0.00	0.0	103.122 0	-54499.90	5568590.00	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} lb-ft	φM _{ux} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} lb-ft	φM _{uy} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	148 - 100.5 (1)	TP31.643x22x0.25	549585.83	910625.00	0.604	0.00	910625.00	0.000
L2	100.5 - 58.25 (2)	TP39.72x30.331x0.375	1676350.00	2321750.00	0.722	0.00	2321750.00	0.000
L3	58.25 - 28.25 (3)	TP44.959x38.0565x0.5375	2666658.33	4472058.33	0.596	0.00	4472058.33	0.000
L4	28.25 - 0 (4)	TP49.92x42.7336x0.65	3950566.67	7006183.33	0.564	0.00	7006183.33	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V _u lb	φV _n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T _u lb-ft	φT _n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	148 - 100.5 (1)	TP31.643x22x0.25	19856.50	398806.00	0.050	84.93	1072783.33	0.000
L2	100.5 - 58.25 (2)	TP39.72x30.331x0.375	32785.00	751777.00	0.044	1295.33	2541416.67	0.001
L3	58.25 - 28.25 (3)	TP44.959x38.0565x0.5375	36020.10	1213240.00	0.030	1293.67	4617900.00	0.000
L4	28.25 - 0 (4)	TP49.92x42.7336x0.65	39400.80	1670580.00	0.024	1293.03	7240174.67	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	Ratio $\frac{M_{uy}}{\phi M_{uy}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	148 - 100.5 (1)	0.009	0.604	0.000	0.050	0.000	0.615	1.000	4.8.2 ✓
L2	100.5 - 58.25 (2)	0.011	0.722	0.000	0.044	0.001	0.735	1.000	4.8.2 ✓
L3	58.25 - 28.25 (3)	0.009	0.596	0.000	0.030	0.000	0.606	1.000	4.8.2 ✓

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Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L4	28.25 - 0 (4)	0.010	0.564	0.000	0.024	0.000	0.574 ✓	1.000	4.8.2 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	148 - 100.5	Pole	TP31.643x22x0.25	1	-11614.30	1329350.00	61.5	Pass
L2	100.5 - 58.25	Pole	TP39.72x30.331x0.375	2	-26690.00	2505920.00	73.5	Pass
L3	58.25 - 28.25	Pole	TP44.959x38.0565x0.5375	3	-37626.50	4044140.00	60.6	Pass
L4	28.25 - 0	Pole	TP49.92x42.7336x0.65	4	-54499.90	5568590.00	57.4	Pass
Summary								
Pole (L2)							73.5	Pass
Base Plate							66.0	Pass
RATING =							73.5	Pass

BU:
 Site Name: CT2153
 App Number:
 Work Order:

Monopole Drilled Pier

Input

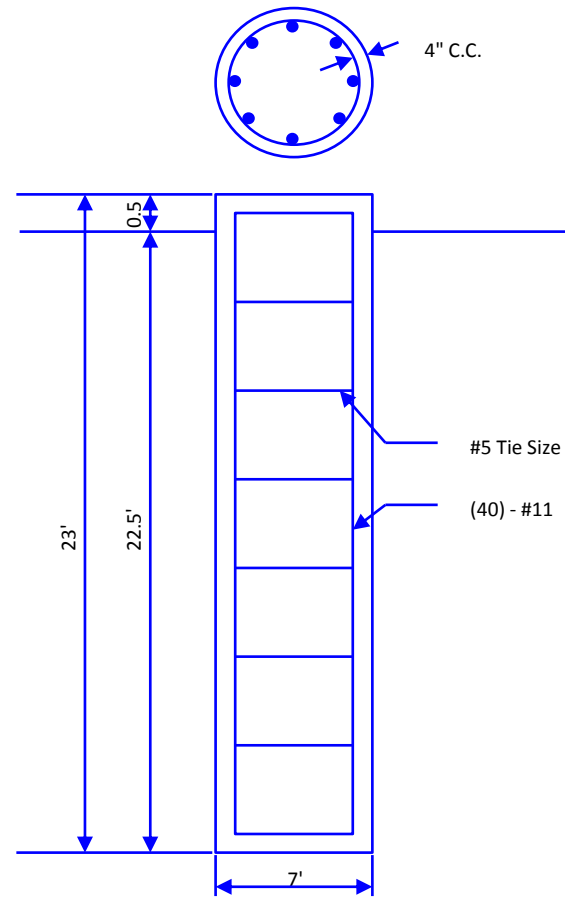
Criteria
 ACI 318 Revision: 2008
 Seismic Category: B

Forces
 Compression: 54.5 kips
 Shear: 39.4 kips
 Moment: 3951 k-ft
 Swelling Force: 0 kips

Foundation Dimensions
 Pier Diameter: 7 ft
 Ext. above grade: 0.5 ft
 Depth below grade: 22.5 ft

Material Properties
 Number of Rebar: 40
 Rebar Size: 11
 Tie Size: 5
 Rebar tensile strength: 60 ksi
 Concrete Strength: 3000 psi
 Ultimate Concrete Strain: 0.003 in/in
 Clear Cover to Ties: 4 in

Soil Profile: Profile 1



Layer	Thickness (ft)	From (ft)	To (ft)	Unit Weight (pcf)	Cohesion (psf)	Friction Angle (deg)	Ultimate Uplift Skin Friction (ksf)	Ultimate Comp. Skin Friction (ksf)	Ultimate Bearing Capacity (ksf)	SPT 'N' Counts
1	8	0	8	100	0	0	0	0	0	0
2	5	8	13	135		45				
3	5	13	18	135		45				
4	4.5	18	22.5	135		45				

Analysis Results

Soil Lateral Capacity
 Depth to Zero Shear: 8.84 ft
 Max Moment, Mu: 4296.73 k-ft
 Soil Safety Factor: 2.25
 Safety Factor Req'd: 1.33
RATING: 59.0%

Soil Axial Capacity
 Skin Friction (k): 297.78 kips
 End Bearing (k): 0.00 kips
 Comp. Capacity (k), φCn: 297.78 kips
 Comp. (k), Cu: 54.50 kips
RATING: 18.3%

Concrete/Steel Check

Mu (from soil analysis): 4296.73 k-ft
 φMn: 9091.52 k-ft
RATING: 47.3%

rho provided: 1.13
 rho required: 0.33 OK

Rebar Spacing: 4.35
 Spacing required: 22.56 OK

Dev. Length required: 13.33
 Dev. Length provided: 61.78 OK

Overall Foundation Rating: 59.0%

EXHIBIT 4

December 29, 2021
March 24, 2022 (Rev.1)



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

RE: Site Number: CT2153
 FA Number: 10035241
 PACE Number: MRCTB052202
 PT Number: 2051A101TR
 Site Name: WESTPORT FD
 Site Address: 515 Boston Post Road East
 Westport, CT 06880

To Whom It May Concern:

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

- (3) DMP65R-BU6DA Antennas (71.2"x20.7"x7.7" – Wt. = 80 lbs. /each)
- (3) RRUS-32 B2 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) RRUS-32 B30 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) RRUS-E2 B29 RRH's (20.4"x18.5"x7.5" – Wt. = 53 lbs. /each)
- (3) 4478 B14 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)
- (3) 4449 B5/B12 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each)
- (3) RRUS-32 B66 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) DC6-48-60-18-8F Surge Arrestors (31.4"x10.2" Ø – Wt. = 33 lbs.)
- **(3) QD6616-7 Antennas (72.0"x22.0"x9.6" – Wt. = 130 lbs. /each)**
- **(3) AIR6449 Antennas (30.6"x15.9"x10.6" – Wt. = 82 lbs. /each)**
- **(3) AIR6419 Antennas (31.0"x16.1"x7.3" – Wt. = 66 lbs. /each)**
- **(1) DC6-48-60-18-8F Surge Arrestors (31.4"x10.2" Ø – Wt. = 33 lbs.)**

*Proposed equipment shown in bold.

Mount fabrication drawings prepared by SitePro1 P/N RMQLP-4120-H10 dated October 18, 2019, were used to perform this analysis. HDG conducted a ground audit of the existing AT&T antenna mount on September 16, 2021.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R16.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 130 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.31 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- HDG considers this site to have a spectral response acceleration parameter at short periods, S_s , of 0.226 and a spectral response acceleration parameter at a period of 1 second, S_1 , of 0.067.
- The mount has been analyzed with load combinations consisting of 500 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The proposed mount is to be secured to the existing monopole with ring mounts and threaded rods. HDG considers the threaded rods to be the governing connection member.

Based on our evaluation, we have determined that the Proposed SitePro1 RMQLP-4120-H10 mount **IS CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Proposed Mount Rating	45	LC2	64%	PASS

Reference Documents:

- Fabrication drawings prepared by SitePro1 P/N RMQLP-4120-H10 dated October 18, 2019

This determination was based on the following limitations and assumptions:

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

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

Respectfully Submitted,
Hudson Design Group LLC



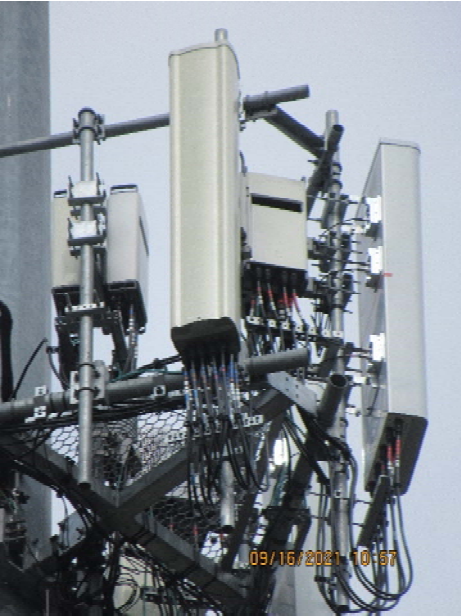
Michael Cabral
Vice President



Daniel P. Hamm, PE
Principal

FIELD PHOTOS:

*Note: Existing mount to be removed.



FIELD PHOTOS (CONT.):

*Note: Existing mount to be removed.





HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 3/24/2022
 Project Name: WESTPORT FD
 Project No.: CT2153
 Designed By: KSBM Checked By: MSC



2.6.5.2 Velocity Pressure Coeff:

$$K_z = 2.01 (z/z_g)^{2/\alpha}$$

$K_z =$ **1.041**

$z =$ 120.0 (ft)
 $z_g =$ 1200 (ft)
 $\alpha =$ 7

$K_{zmin} \leq K_z \leq 2.01$

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_c
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.2 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$$K_{zt} = [1 + (K_c K_t / K_h)]^2$$

$$K_h = e^{(fz/H)}$$

$K_{zt} =$ **1**

$K_h =$ 1

$K_c =$ 0.9 (from Table 2-4)

$K_t =$ 0 (from Table 2-5)

$f =$ 0 (from Table 2-5)

$z =$ 120.0

$z_s =$ 115 (Mean elevation of base of structure above sea level)

$H =$ 0 (Ht. of the crest above surrounding terrain)

$K_{zt} =$ 1.00 (from 2.6.6.2.1)

$K_e =$ 1.00 (from 2.6.8)

(If Category 1 then $K_{zt} = 1.0$)

Category = **1**

2.6.10 Design Ice Thickness

Max Ice Thickness =

$t_i =$ 1.00 in

Importance Factor =

$I =$ 1.15 (from Table 2-3)

$K_{iz} =$ 1.14 (from Sec. 2.6.10)

$$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$$

$t_{iz} =$ 1.31 in

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2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

$G_h = 1.0$ Latticed Structures > 600 ft

$G_h = 0.85$ Latticed Structures 450 ft or less

$G_h = 0.85 + 0.15 [h/150 - 3.0]$ $h =$ ht. of structure

$h =$ 148

$G_h =$ 0.85

2.6.9.2 Guyed Masts

$G_h =$ 0.85

2.6.9.3 Pole Structures

$G_h =$ 1.1

2.6.9 Appurtenances

$G_h =$ 1.0

2.6.9.4 Structures Supported on Other Structures

(Cantilevered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5))

$G_h =$ 1.35

$G_h =$ 1.00

2.6.11.2 Design Wind Force on Appurtenances

$F = q_z * G_h * (EPA)_A$

$q_z = 0.00256 * K_z * K_{zt} * K_s * K_e * K_d * V_{max}^2$

$q_z =$	42.61
$q_{z(ice)} =$	6.30
$q_{z(30)} =$	2.27

$K_z =$	1.041 (from 2.6.5.2)
$K_{zt} =$	1.0 (from 2.6.6.2.1)
$K_s =$	1.0 (from 2.6.7)
$K_e =$	1.00 (from 2.6.8)
$K_d =$	0.95 (from Table 2-2)
$V_{max} =$	130 mph (Ultimate Wind Speed)
$V_{max(ice)} =$	50 mph
$V_{30} =$	30 mph

Table 2-2

Structure Type	Wind Direction Probability Factor, K_d
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95
Tubular pole structures supporting antennas enclosed within a cylindrical shroud	1.00

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Determine Ca:

Table 2-9

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

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
 (Aspect ratio is independent of the spacing between support points of a linear appurtenance,
 Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = 1.31 in Angle = 0 (deg) Equivalent Angle = 180 (deg)

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	3.27	1.23	579	99	31
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.93	1.20	177	33	9
AIR6449 Antenna	30.6	15.9	10.6	3.38	1.92	1.20	173	32	9
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.44	1.24	542	94	29
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	3.89	1.26	71	16	4
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	7.77	1.43	40	11	2
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	3.89	1.26	71	16	4
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	7.77	1.43	40	11	2
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	2.18	1.20	53	12	3
RRUS-E2 B29 RRH (Side)	20.4	7.5	18.5	1.06	2.72	1.21	55	12	3
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.90	1.20	60	13	3
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	3.81	1.26	31	8	2
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	3.89	1.26	71	16	4
RRUS-32 B66 RRH (Shielded)	27.2	3.5	12.1	0.66	7.77	1.43	40	11	2
DC6-48-60-18-8F Surge Arrestor	31.4	10.2	10.2	2.22	3.08	0.70	66	13	4
Plate 6x3/8	6.0	12.0		0.50	0.50	2.00	43		
2x2 Angle	2.0	12.0		0.17	0.17	2.00	14		
2-1/2x2-1/2 Angle	2.5	12.0		0.21	0.21	2.00	18		
2" Pipe	2.4	12.0		0.20	0.20	1.20	10		
2-1/2" Pipe	2.9	12.0		0.24	0.24	1.20	12		
3" Pipe	3.5	12.0		0.29	0.29	1.20	15		
HSS 4x4	4.0	12.0		0.33	0.33	1.25	18		

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WIND LOADS

Angle = 30 (deg)

Ice Thickness = 1.31 in.

Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	579	290	506
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	177	86	154
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	173	117	159
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	542	239	466
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	83
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	59
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	83
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	59
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	53	86	62
RRUS-E2 B29 RRH (Side)	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	55	134	75
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	60	84	66
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	31	84	44
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	83
RRUS-32 B66 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	59

WIND LOADS WITH ICE:

QD6616-7 Antenna	74.6	24.6	12.2	12.76	6.33	3.03	6.11	1.22	1.36	98	54	87
AIR6419 Antenna	33.6	18.7	9.9	4.37	2.32	1.80	3.39	1.20	1.24	33	18	29
AIR6449 Antenna	33.2	18.5	13.2	4.27	3.05	1.79	2.51	1.20	1.20	32	23	30
DMP65R-BU6DA Antenna	73.8	23.3	10.3	11.95	5.29	3.17	7.15	1.23	1.41	93	47	81
RRUS-32 B2 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	17
RRUS-32 B2 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	14
RRUS-32 B30 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	17
RRUS-32 B30 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	14
4478 B14 RRH (Side)	20.7	10.9	16.0	1.57	2.30	1.90	1.29	1.20	1.20	12	17	13
RRUS-E2 B29 RRH (Side)	23.0	10.1	21.1	1.62	3.38	2.28	1.09	1.20	1.20	12	26	16
4449 B5/B12 RRH (Side)	20.5	12.0	15.8	1.71	2.25	1.71	1.30	1.20	1.20	13	17	14
4449 B5/B12 RRH (Shielded)	20.5	7.3	15.8	1.04	2.25	2.80	1.30	1.21	1.20	8	17	10
RRUS-32 B66 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	17
RRUS-32 B66 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	14

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	31	15	27
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	9	5	8
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	9	6	8
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	29	13	25
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	4
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	3
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	4
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	3
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	3
RRUS-E2 B29 RRH (Side)	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	3	7	4
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	4	4
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	4	2
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	4
RRUS-32 B66 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	3

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WIND LOADS

Angle = **60** (deg)

Ice Thickness = **1.31** in.

Equivalent Angle = **240** (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	579	290	362
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	177	86	108
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	173	117	131
DMP65R-BUGDA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	542	239	315
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	105
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	98
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	105
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	98
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	53	86	78
RRUS-E2 B29 RRH (Side)	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	55	134	114
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	60	84	78
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	31	84	71
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	105
RRUS-32 B66 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	98

WIND LOADS WITH ICE:

QD6616-7 Antenna	74.6	24.6	12.2	12.76	6.33	3.03	6.11	1.22	1.36	98	54	65
AIR6419 Antenna	33.6	18.7	9.9	4.37	2.32	1.80	3.39	1.20	1.24	33	18	22
AIR6449 Antenna	33.2	18.5	13.2	4.27	3.05	1.79	2.51	1.20	1.20	32	23	25
DMP65R-BUGDA Antenna	73.8	23.3	10.3	11.95	5.29	3.17	7.15	1.23	1.41	93	47	58
RRUS-32 B2 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	21
RRUS-32 B2 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	20
RRUS-32 B30 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	21
RRUS-32 B30 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	20
4478 B14 RRH (Side)	20.7	10.9	16.0	1.57	2.30	1.90	1.29	1.20	1.20	12	17	16
RRUS-E2 B29 RRH (Side)	23.0	10.1	21.1	1.62	3.38	2.28	1.09	1.20	1.20	12	26	22
4449 B5/B12 RRH (Side)	20.5	12.0	15.8	1.71	2.25	1.71	1.30	1.20	1.20	13	17	16
4449 B5/B12 RRH (Shielded)	20.5	7.3	15.8	1.04	2.25	2.80	1.30	1.21	1.20	8	17	15
RRUS-32 B66 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	21
RRUS-32 B66 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	20

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	31	15	19
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	9	5	6
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	9	6	7
DMP65R-BUGDA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	29	13	17
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	5
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	5
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	4
RRUS-E2 B29 RRH (Side)	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	3	7	6
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	4	4
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	4	4
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
RRUS-32 B66 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	5

Date: 3/24/2022
 Project Name: WESTPORT FD
 Project No.: CT2153
 Designed By: KSBM Checked By: MSC



WIND LOADS

Angle = 90 (deg) Ice Thickness = 1.31 in. Equivalent Angle = 270 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	579	290	290
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	177	86	86
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	173	117	117
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	542	239	239
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	117
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	117
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	117
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	117
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	53	86	86
RRUS-E2 B29 RRH (Side)	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	55	134	134
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	60	84	84
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	31	84	84
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	117
RRUS-32 B66 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	117

WIND LOADS WITH ICE:

QD6616-7 Antenna	74.6	24.6	12.2	12.76	6.33	3.03	6.11	1.22	1.36	98	54	54
AIR6419 Antenna	33.6	18.7	9.9	4.37	2.32	1.80	3.39	1.20	1.24	33	18	18
AIR6449 Antenna	33.2	18.5	13.2	4.27	3.05	1.79	2.51	1.20	1.20	32	23	23
DMP65R-BU6DA Antenna	73.8	23.3	10.3	11.95	5.29	3.17	7.15	1.23	1.41	93	47	47
RRUS-32 B2 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	23
RRUS-32 B2 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	23
RRUS-32 B30 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	23
RRUS-32 B30 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	23
4478 B14 RRH (Side)	20.7	10.9	16.0	1.57	2.30	1.90	1.29	1.20	1.20	12	17	17
RRUS-E2 B29 RRH (Side)	23.0	10.1	21.1	1.62	3.38	2.28	1.09	1.20	1.20	12	26	26
4449 B5/B12 RRH (Side)	20.5	12.0	15.8	1.71	2.25	1.71	1.30	1.20	1.20	13	17	17
4449 B5/B12 RRH (Shielded)	20.5	7.3	15.8	1.04	2.25	2.80	1.30	1.21	1.20	8	17	17
RRUS-32 B66 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	23
RRUS-32 B66 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	23

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	31	15	15
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	9	5	5
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	9	6	6
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	29	13	13
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	6
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	6
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	5
RRUS-E2 B29 RRH (Side)	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	3	7	7
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	4	4
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	4	4
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
RRUS-32 B66 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	6

Date: 3/24/2022
 Project Name: WESTPORT FD
 Project No.: CT2153
 Designed By: KSBM Checked By: MSC



WIND LOADS

Angle = **120** (deg)

Ice Thickness = **1.31** in.

Equivalent Angle = **300** (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	579	290	362
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	177	86	108
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	173	117	131
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	542	239	315
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	105
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	98
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	105
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	98
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	53	86	78
RRUS-E2 B29 RRH (Side)	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	55	134	114
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	60	84	78
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	31	84	71
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	105
RRUS-32 B66 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	98

WIND LOADS WITH ICE:

QD6616-7 Antenna	74.6	24.6	12.2	12.76	6.33	3.03	6.11	1.22	1.36	98	54	65
AIR6419 Antenna	33.6	18.7	9.9	4.37	2.32	1.80	3.39	1.20	1.24	33	18	22
AIR6449 Antenna	33.2	18.5	13.2	4.27	3.05	1.79	2.51	1.20	1.20	32	23	25
DMP65R-BU6DA Antenna	73.8	23.3	10.3	11.95	5.29	3.17	7.15	1.23	1.41	93	47	58
RRUS-32 B2 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	21
RRUS-32 B2 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	20
RRUS-32 B30 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	21
RRUS-32 B30 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	20
4478 B14 RRH (Side)	20.7	10.9	16.0	1.57	2.30	1.90	1.29	1.20	1.20	12	17	16
RRUS-E2 B29 RRH (Side)	23.0	10.1	21.1	1.62	3.38	2.28	1.09	1.20	1.20	12	26	22
4449 B5/B12 RRH (Side)	20.5	12.0	15.8	1.71	2.25	1.71	1.30	1.20	1.20	13	17	16
4449 B5/B12 RRH (Shielded)	20.5	7.3	15.8	1.04	2.25	2.80	1.30	1.21	1.20	8	17	15
RRUS-32 B66 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	21
RRUS-32 B66 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	20

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	31	15	19
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	9	5	6
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	9	6	7
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	29	13	17
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	5
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	5
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	4
RRUS-E2 B29 RRH (Side)	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	3	7	6
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	4	4
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	4	4
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
RRUS-32 B66 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	5

Date: 3/24/2022
 Project Name: WESTPORT FD
 Project No.: CT2153
 Designed By: KSBM Checked By: MSC



WIND LOADS

Angle = **150** (deg) Ice Thickness = **1.31** in. Equivalent Angle = **330** (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	579	290	506
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	177	86	154
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	173	117	159
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	542	239	466
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	83
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	59
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	83
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	59
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	53	86	62
RRUS-E2 B29 RRH (Side)	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	55	134	75
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	60	84	66
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	31	84	44
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	71	117	83
RRUS-32 B66 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	40	117	59

WIND LOADS WITH ICE:

QD6616-7 Antenna	74.6	24.6	12.2	12.76	6.33	3.03	6.11	1.22	1.36	98	54	87
AIR6419 Antenna	33.6	18.7	9.9	4.37	2.32	1.80	3.39	1.20	1.24	33	18	29
AIR6449 Antenna	33.2	18.5	13.2	4.27	3.05	1.79	2.51	1.20	1.20	32	23	30
DMP65R-BU6DA Antenna	73.8	23.3	10.3	11.95	5.29	3.17	7.15	1.23	1.41	93	47	81
RRUS-32 B2 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	17
RRUS-32 B2 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	14
RRUS-32 B30 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	17
RRUS-32 B30 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	14
4478 B14 RRH (Side)	20.7	10.9	16.0	1.57	2.30	1.90	1.29	1.20	1.20	12	17	13
RRUS-E2 B29 RRH (Side)	23.0	10.1	21.1	1.62	3.38	2.28	1.09	1.20	1.20	12	26	16
4449 B5/B12 RRH (Side)	20.5	12.0	15.8	1.71	2.25	1.71	1.30	1.20	1.20	13	17	14
4449 B5/B12 RRH (Shielded)	20.5	7.3	15.8	1.04	2.25	2.80	1.30	1.21	1.20	8	17	10
RRUS-32 B66 RRH (Side)	29.8	9.6	14.7	1.99	3.05	3.10	2.03	1.23	1.20	15	23	17
RRUS-32 B66 RRH (Shielded)	29.8	6.1	14.7	1.27	3.05	4.87	2.03	1.31	1.20	10	23	14

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	31	15	27
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	9	5	8
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	9	6	8
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	29	13	25
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	4
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	3
RRUS-32 B30 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	4
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	3
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	3
RRUS-E2 B29 RRH (Side)	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	3	7	4
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	4	4
4449 B5/B12 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	4	2
RRUS-32 B66 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	4
RRUS-32 B66 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	3

Date: 3/24/2022

Project Name: WESTPORT FD

Project No.: CT2153

Designed By: KSBM Checked By: MSC



ICE WEIGHT CALCULATIONS

Thickness of ice: 1.31 in.
Density of ice: 56 pcf

QD6616-7 Antenna

Weight of ice based on total radial SF area:
Height (in): 72.0
Width (in): 22.0
Depth (in): 9.6
Total weight of ice on object: 243 lbs
Weight of object: 130.0 lbs
Combined weight of ice and object: 373 lbs

AIR6419 Antenna

Weight of ice based on total radial SF area:
Height (in): 31.0
Width (in): 16.1
Depth (in): 7.3
Total weight of ice on object: 79 lbs
Weight of object: 66.0 lbs
Combined weight of ice and object: 145 lbs

AIR6449 Antenna

Weight of ice based on total radial SF area:
Height (in): 30.6
Width (in): 15.9
Depth (in): 10.6
Total weight of ice on object: 83 lbs
Weight of object: 82.0 lbs
Combined weight of ice and object: 165 lbs

DMP65R-BU6DA Antenna

Weight of ice based on total radial SF area:
Height (in): 71.2
Width (in): 20.7
Depth (in): 7.7
Total weight of ice on object: 222 lbs
Weight of object: 80.0 lbs
Combined weight of ice and object: 302 lbs

RRUS-32 B2 RRH

Weight of ice based on total radial SF area:
Height (in): 27.2
Width (in): 12.1
Depth (in): 7.0
Total weight of ice on object: 55 lbs
Weight of object: 60.0 lbs
Combined weight of ice and object: 115 lbs

RRUS-32 B30 RRH

Weight of ice based on total radial SF area:
Height (in): 27.2
Width (in): 12.1
Depth (in): 7.0
Total weight of ice on object: 55 lbs
Weight of object: 60.0 lbs
Combined weight of ice and object: 115 lbs

4478 B14 RRH

Weight of ice based on total radial SF area:
Height (in): 18.1
Width (in): 13.4
Depth (in): 8.3
Total weight of ice on object: 41 lbs
Weight of object: 60.0 lbs
Combined weight of ice and object: 101 lbs

RRUS-E2 B29 RRH

Weight of ice based on total radial SF area:
Height (in): 20.4
Width (in): 18.5
Depth (in): 7.5
Total weight of ice on object: 58 lbs
Weight of object: 53.0 lbs
Combined weight of ice and object: 111 lbs

4449 B5/B12 RRH

Weight of ice based on total radial SF area:
Height (in): 17.9
Width (in): 13.2
Depth (in): 9.4
Total weight of ice on object: 42 lbs
Weight of object: 73.0 lbs
Combined weight of ice and object: 115 lbs

RRUS-32 B66 RRH

Weight of ice based on total radial SF area:
Height (in): 27.2
Width (in): 12.1
Depth (in): 7.0
Total weight of ice on object: 55 lbs
Weight of object: 60.0 lbs
Combined weight of ice and object: 115 lbs

DC6-48-60-18-8F Surge Arrestor

Weight of ice based on total radial SF area:
Depth (in): 31.4
Diameter(in): 10.2
Total weight of ice on object: 48 lbs
Weight of object: 33 lbs
Combined weight of ice and object: 81 lbs

PL 6x3/8

Weight of ice based on total radial SF area:
Height (in): 6
Width (in): 0.38
Per foot weight of ice on object: 12 plf

L 2x2 Angles

Weight of ice based on total radial SF area:
Height (in): 2
Width (in): 2
Per foot weight of ice on object: 7 plf

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

Weight of ice based on total radial SF area:
Height (in): 2.5
Width (in): 2.5
Per foot weight of ice on object: 8 plf

HSS 4x4

Weight of ice based on total radial SF area:
Height (in): 4
Width (in): 4
Per foot weight of ice on object: 11 plf

2" pipe

Per foot weight of ice:
diameter (in): 2.38
Per foot weight of ice on object: 6 plf

3" Pipe

Per foot weight of ice:
diameter (in): 3.5
Per foot weight of ice on object: 8 plf

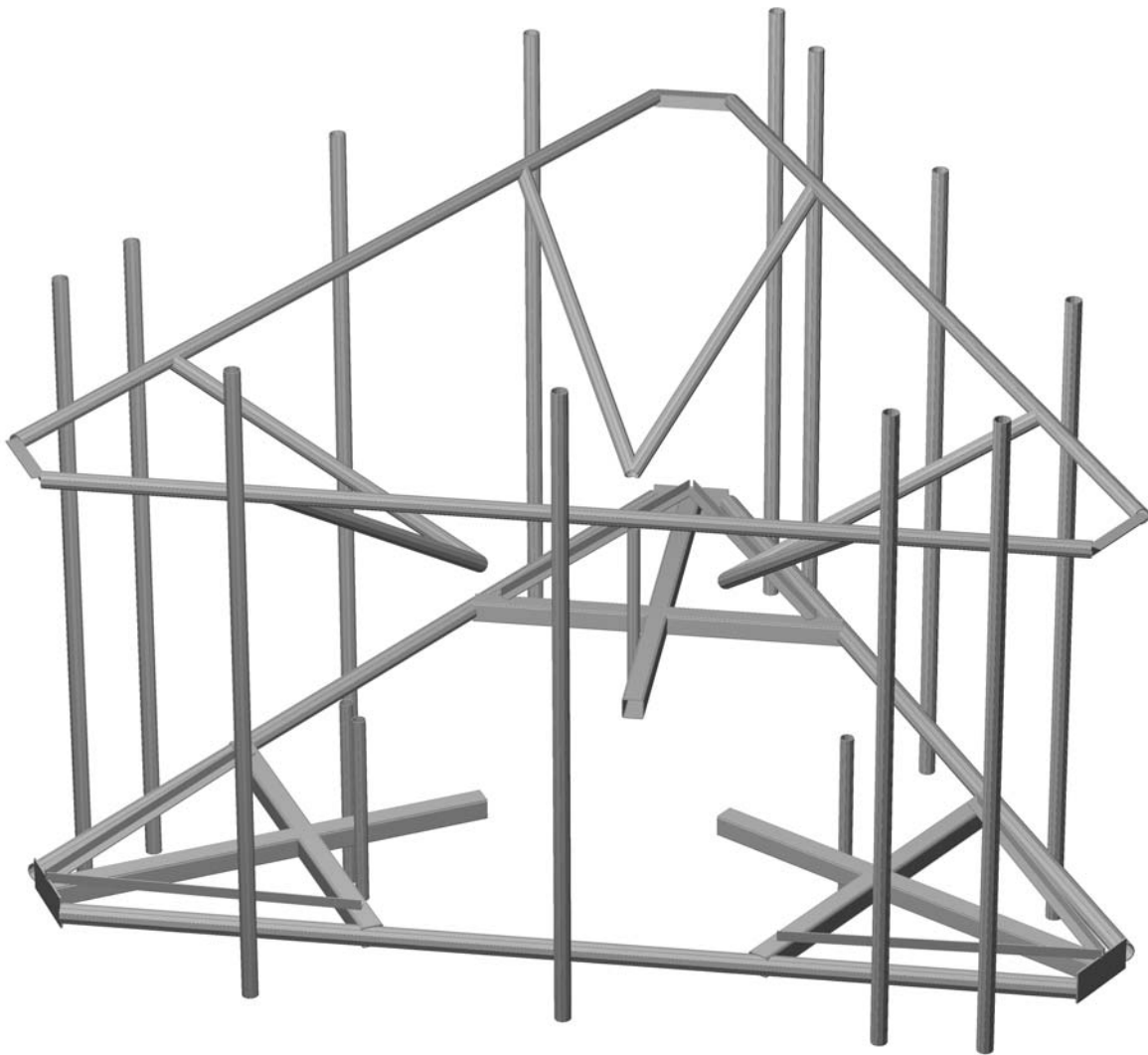
2-1/2" pipe

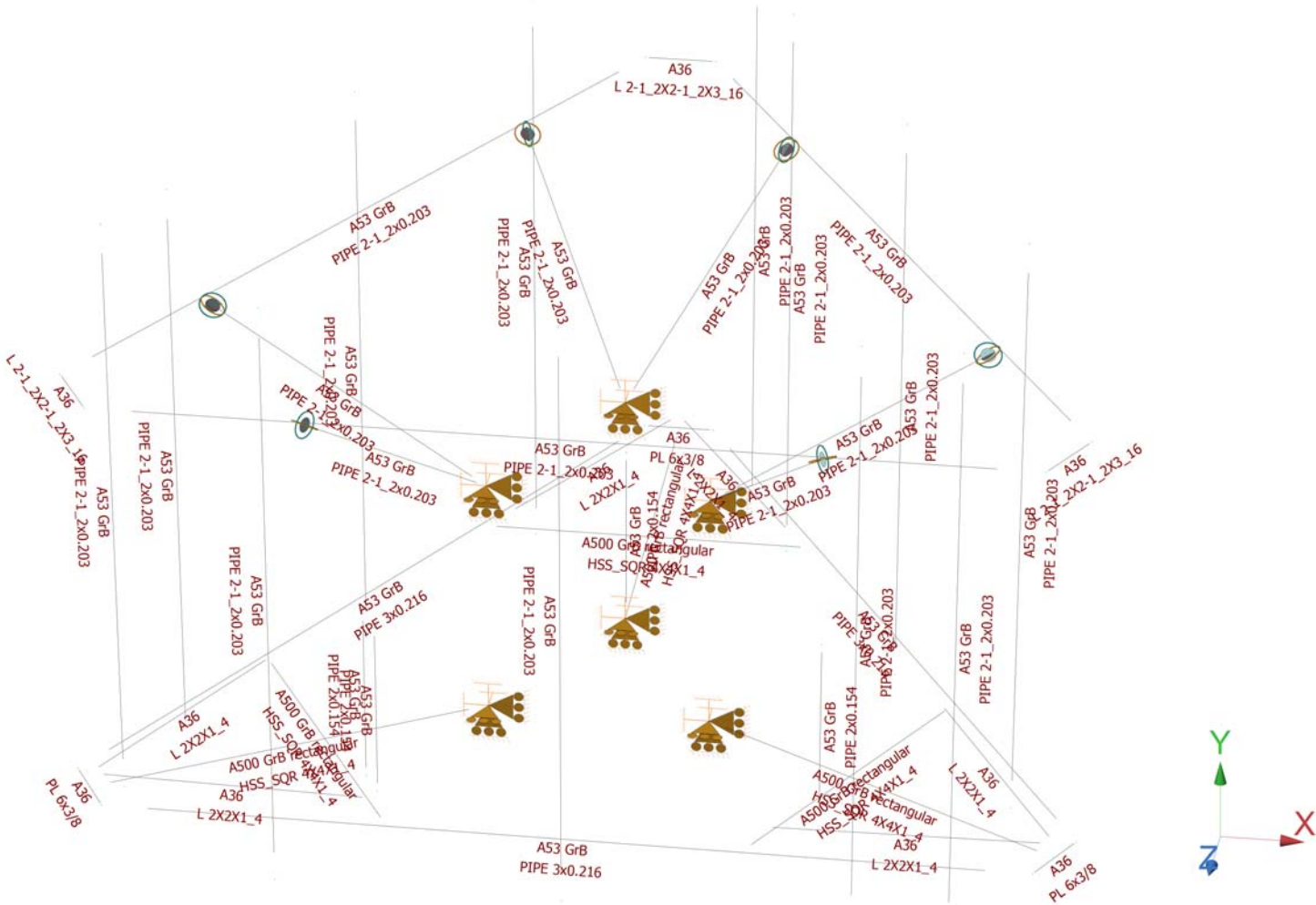
Per foot weight of ice:
diameter (in): 2.88
Per foot weight of ice on object: 7 plf

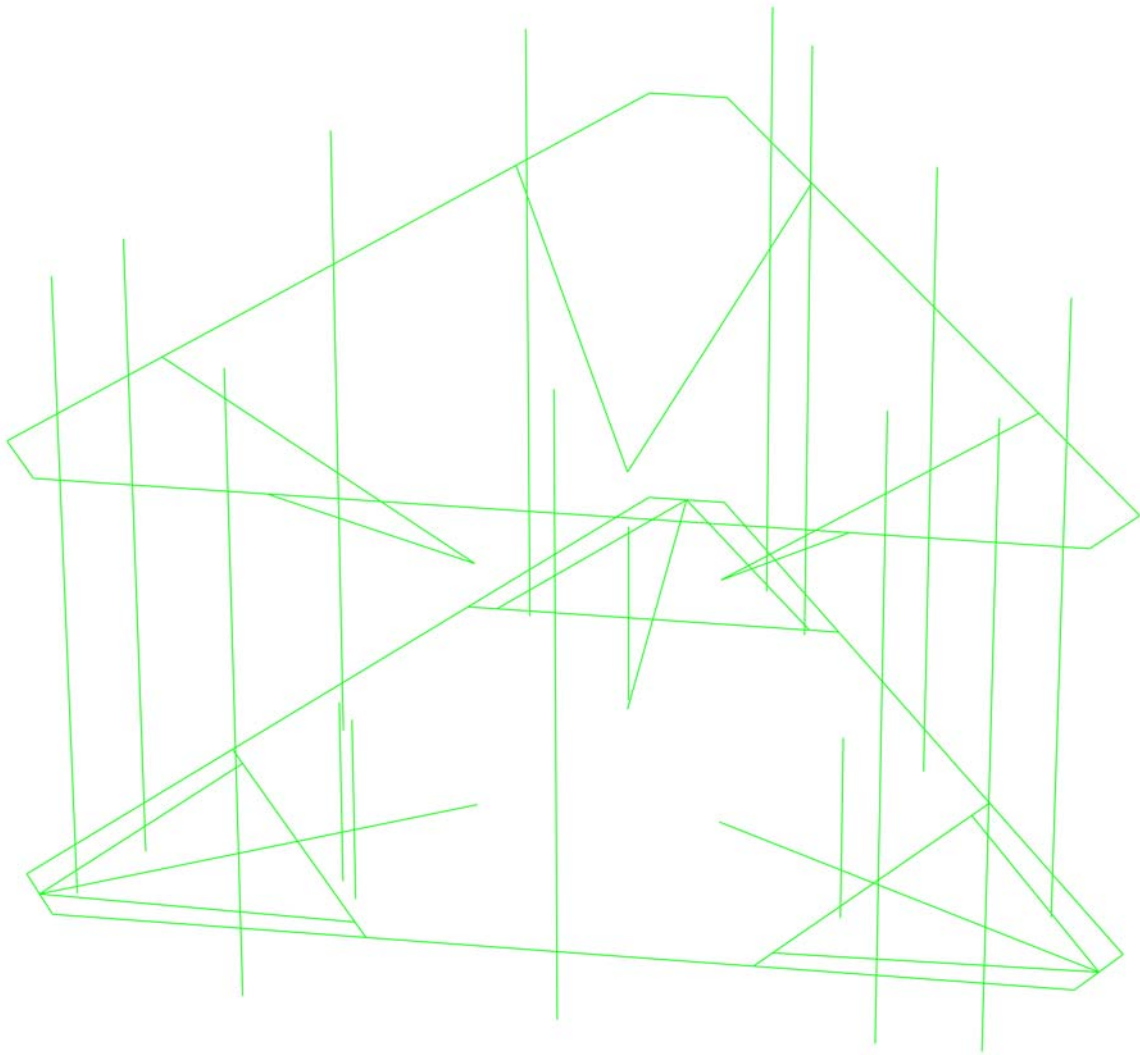


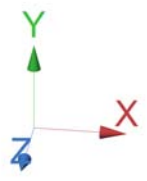
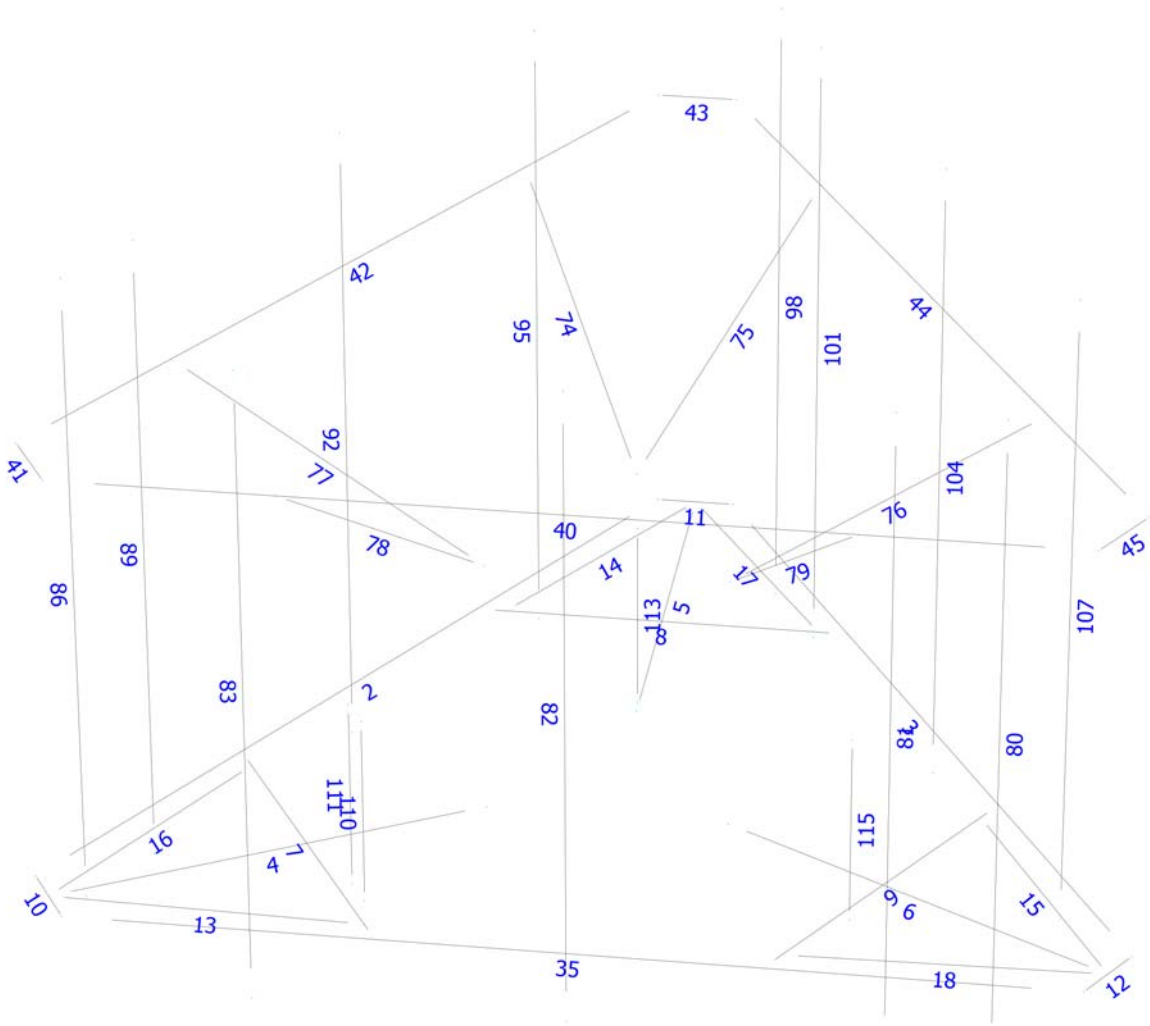
HUDSON
Design Group LLC

**Mount Calculations
(Proposed Conditions)**









Load data

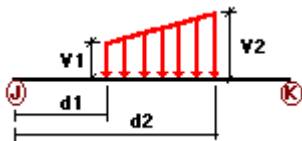
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	500 lb Live Load on Antenna 1	No	LL
LLa2	500 lb Live Load on Antenna 2	No	LL
LLa3	500 lb Live Load on Antenna 3	No	LL
LLa4	500 lb Live Load on Antenna 4	No	LL

Distributed force on members



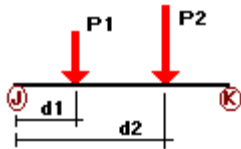
Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%	
DL	4	y	-0.01	-0.01	0.00	No	3.90	No	
	5	y	-0.01	-0.01	0.00	No	3.90	No	
	6	y	-0.01	-0.01	0.00	No	3.90	No	
	7	y	-0.01	0.00	0.00	No	0.00	No	
	8	y	-0.01	0.00	0.00	No	0.00	No	
	9	y	-0.01	0.00	0.00	No	0.00	No	
	13	y	-0.01	0.00	0.00	No	0.00	No	
	14	y	-0.01	0.00	0.00	No	0.00	No	
	15	y	-0.01	0.00	0.00	No	0.00	No	
	16	y	-0.01	0.00	0.00	No	0.00	No	
	17	y	-0.01	0.00	0.00	No	0.00	No	
	18	y	-0.01	0.00	0.00	No	0.00	No	
	W0	2	z	-0.015	0.00	0.00	No	0.00	No
		3	z	-0.015	0.00	0.00	No	0.00	No
		4	z	-0.018	0.00	0.00	No	0.00	No
		5	z	-0.018	0.00	0.00	No	0.00	No

6	z	-0.018	0.00	0.00	No	0.00	No	
7	z	-0.018	0.00	0.00	No	0.00	No	
8	z	-0.018	0.00	0.00	No	0.00	No	
9	z	-0.018	0.00	0.00	No	0.00	No	
10	z	-0.043	0.00	0.00	No	0.00	No	
11	z	-0.043	0.00	0.00	No	0.00	No	
12	z	-0.043	0.00	0.00	No	0.00	No	
13	z	-0.014	0.00	0.00	No	0.00	No	
14	z	-0.014	0.00	0.00	No	0.00	No	
15	z	-0.014	0.00	0.00	No	0.00	No	
16	z	-0.014	0.00	0.00	No	0.00	No	
17	z	-0.014	0.00	0.00	No	0.00	No	
18	z	-0.014	0.00	0.00	No	0.00	No	
35	z	-0.015	0.00	0.00	No	0.00	No	
40	z	-0.012	0.00	0.00	No	0.00	No	
41	z	-0.018	0.00	0.00	No	0.00	No	
42	z	-0.012	0.00	0.00	No	0.00	No	
43	z	-0.018	0.00	0.00	No	0.00	No	
44	z	-0.012	0.00	0.00	No	0.00	No	
45	z	-0.018	0.00	0.00	No	0.00	No	
74	z	-0.012	0.00	0.00	No	0.00	No	
75	z	-0.012	0.00	0.00	No	0.00	No	
76	z	-0.012	0.00	0.00	No	0.00	No	
77	z	-0.012	0.00	0.00	No	0.00	No	
78	z	-0.012	0.00	0.00	No	0.00	No	
79	z	-0.012	0.00	0.00	No	0.00	No	
80	z	-0.012	0.00	0.00	No	0.00	No	
86	z	-0.012	0.00	0.00	No	0.00	No	
89	z	-0.012	0.00	0.00	No	0.00	No	
92	z	-0.012	0.00	0.00	No	0.00	No	
95	z	-0.012	0.00	0.00	No	0.00	No	
98	z	-0.012	0.00	0.00	No	0.00	No	
101	z	-0.012	0.00	0.00	No	0.00	No	
104	z	-0.012	0.00	0.00	No	0.00	No	
107	z	-0.012	0.00	0.00	No	0.00	No	
110	z	-0.01	0.00	0.00	No	0.00	No	
111	z	-0.01	0.00	0.00	No	0.00	No	
113	z	-0.01	0.00	0.00	No	0.00	No	
115	z	-0.01	0.00	0.00	No	0.00	No	
W30	2	x	-0.015	0.00	0.00	No	0.00	No
	3	x	-0.015	0.00	0.00	No	0.00	No
	4	x	-0.018	0.00	0.00	No	0.00	No
	5	x	-0.018	0.00	0.00	No	0.00	No
	6	x	-0.018	0.00	0.00	No	0.00	No
	7	x	-0.018	0.00	0.00	No	0.00	No
	8	x	-0.018	0.00	0.00	No	0.00	No
	9	x	-0.018	0.00	0.00	No	0.00	No
	10	x	-0.043	0.00	0.00	No	0.00	No
	11	x	-0.043	0.00	0.00	No	0.00	No
	12	x	-0.043	0.00	0.00	No	0.00	No
	13	x	-0.014	0.00	0.00	No	0.00	No
	14	x	-0.014	0.00	0.00	No	0.00	No
	15	x	-0.014	0.00	0.00	No	0.00	No
	16	x	-0.014	0.00	0.00	No	0.00	No
	17	x	-0.014	0.00	0.00	No	0.00	No
	18	x	-0.014	0.00	0.00	No	0.00	No
	41	x	-0.018	0.00	0.00	No	0.00	No
	42	x	-0.012	0.00	0.00	No	0.00	No
	43	x	-0.018	0.00	0.00	No	0.00	No
	44	x	-0.012	0.00	0.00	No	0.00	No

	45	x	-0.018	0.00	0.00	No	0.00	No
	74	x	-0.012	0.00	0.00	No	0.00	No
	75	x	-0.012	0.00	0.00	No	0.00	No
	76	x	-0.012	0.00	0.00	No	0.00	No
	77	x	-0.012	0.00	0.00	No	0.00	No
	78	x	-0.012	0.00	0.00	No	0.00	No
	79	x	-0.012	0.00	0.00	No	0.00	No
	80	x	-0.012	0.00	0.00	No	0.00	No
	81	x	-0.012	0.00	0.00	No	0.00	No
	82	x	-0.012	0.00	0.00	No	0.00	No
	83	x	-0.012	0.00	0.00	No	0.00	No
	86	x	-0.012	0.00	0.00	No	0.00	No
	89	x	-0.012	0.00	0.00	No	0.00	No
	92	x	-0.012	0.00	0.00	No	0.00	No
	95	x	-0.012	0.00	0.00	No	0.00	No
	98	x	-0.012	0.00	0.00	No	0.00	No
	101	x	-0.012	0.00	0.00	No	0.00	No
	104	x	-0.012	0.00	0.00	No	0.00	No
	107	x	-0.012	0.00	0.00	No	0.00	No
	110	x	-0.01	0.00	0.00	No	0.00	No
	111	x	-0.01	0.00	0.00	No	0.00	No
	113	x	-0.01	0.00	0.00	No	0.00	No
	115	x	-0.01	0.00	0.00	No	0.00	No
Di	2	y	-0.008	0.00	0.00	No	0.00	No
	3	y	-0.008	0.00	0.00	No	0.00	No
	4	y	-0.011	0.00	0.00	No	0.00	No
	5	y	-0.011	0.00	0.00	No	0.00	No
	6	y	-0.011	0.00	0.00	No	0.00	No
	7	y	-0.011	0.00	0.00	No	0.00	No
	8	y	-0.011	0.00	0.00	No	0.00	No
	9	y	-0.011	0.00	0.00	No	0.00	No
	10	y	-0.012	0.00	0.00	No	0.00	No
	11	y	-0.012	0.00	0.00	No	0.00	No
	12	y	-0.012	0.00	0.00	No	0.00	No
	13	y	-0.007	0.00	0.00	No	0.00	No
	14	y	-0.007	0.00	0.00	No	0.00	No
	15	y	-0.007	0.00	0.00	No	0.00	No
	16	y	-0.007	0.00	0.00	No	0.00	No
	17	y	-0.007	0.00	0.00	No	0.00	No
	18	y	-0.007	0.00	0.00	No	0.00	No
	35	y	-0.008	0.00	0.00	No	0.00	No
	40	y	-0.007	0.00	0.00	No	0.00	No
	41	y	-0.008	0.00	0.00	No	0.00	No
	42	y	-0.007	0.00	0.00	No	0.00	No
	43	y	-0.008	0.00	0.00	No	0.00	No
	44	y	-0.007	0.00	0.00	No	0.00	No
	45	y	-0.008	0.00	0.00	No	0.00	No
	74	y	-0.007	0.00	0.00	No	0.00	No
	75	y	-0.007	0.00	0.00	No	0.00	No
	76	y	-0.007	0.00	0.00	No	0.00	No
	77	y	-0.007	0.00	0.00	No	0.00	No
	78	y	-0.007	0.00	0.00	No	0.00	No
	79	y	-0.007	0.00	0.00	No	0.00	No
	80	y	-0.007	0.00	0.00	No	0.00	No
	81	y	-0.007	0.00	0.00	No	0.00	No
	82	y	-0.007	0.00	0.00	No	0.00	No
	83	y	-0.007	0.00	0.00	No	0.00	No
	86	y	-0.007	0.00	0.00	No	0.00	No
	89	y	-0.007	0.00	0.00	No	0.00	No
	92	y	-0.007	0.00	0.00	No	0.00	No

95	y	-0.007	0.00	0.00	No	0.00	No
98	y	-0.007	0.00	0.00	No	0.00	No
101	y	-0.007	0.00	0.00	No	0.00	No
104	y	-0.007	0.00	0.00	No	0.00	No
107	y	-0.007	0.00	0.00	No	0.00	No
110	y	-0.006	0.00	0.00	No	0.00	No
111	y	-0.006	0.00	0.00	No	0.00	No
113	y	-0.006	0.00	0.00	No	0.00	No
115	y	-0.006	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%	
DL	81	y	-0.065	2.50	No	
		y	-0.065	7.50	No	
		y	-0.06	5.00	No	
	82	y	-0.06	5.00	No	
		y	-0.033	2.25	No	
		y	-0.033	4.00	No	
		y	-0.041	6.00	No	
	83	y	-0.041	7.75	No	
		y	-0.04	2.50	No	
		y	-0.04	7.50	No	
		y	-0.073	5.00	No	
	89	y	-0.06	5.00	No	
		y	-0.065	2.50	No	
		y	-0.065	7.50	No	
		y	-0.06	5.00	No	
	92	y	-0.06	5.00	No	
		y	-0.033	2.25	No	
		y	-0.033	4.00	No	
		y	-0.041	6.00	No	
	95	y	-0.041	7.75	No	
		y	-0.04	2.50	No	
		y	-0.04	7.50	No	
		y	-0.073	5.00	No	
	101	y	-0.06	5.00	No	
		y	-0.065	2.50	No	
		y	-0.065	7.50	No	
		y	-0.06	5.00	No	
	104	y	-0.06	5.00	No	
		y	-0.033	2.25	No	
		y	-0.033	4.00	No	
		y	-0.041	6.00	No	
	107	y	-0.041	7.75	No	
		y	-0.04	2.50	No	
		y	-0.04	7.50	No	
		y	-0.073	5.00	No	
			y	-0.06	5.00	No

	110	y	-0.033	0.50	No
	111	y	-0.033	0.50	No
	113	y	-0.033	0.50	No
	115	y	-0.033	0.50	No
W0	81	z	-0.29	2.50	No
		z	-0.29	7.50	No
		z	-0.04	5.00	No
		z	-0.04	5.00	No
	82	z	-0.089	2.25	No
		z	-0.089	4.00	No
		z	-0.087	6.00	No
		z	-0.087	7.75	No
	83	z	-0.271	2.50	No
		z	-0.271	7.50	No
		z	-0.031	5.00	No
		z	-0.04	5.00	No
	89	z	-0.181	2.50	No
		z	-0.181	7.50	No
		z	-0.098	5.00	No
	92	z	-0.055	2.25	No
		z	-0.055	4.00	No
		z	-0.066	6.00	No
		z	-0.066	7.75	No
	95	z	-0.158	2.50	No
		z	-0.158	7.50	No
		z	-0.098	5.00	No
	101	z	-0.181	2.50	No
		z	-0.181	7.50	No
		z	-0.098	5.00	No
	104	z	-0.055	2.25	No
		z	-0.055	4.00	No
		z	-0.066	6.00	No
		z	-0.066	7.75	No
	107	z	-0.158	2.50	No
		z	-0.158	7.50	No
		z	-0.098	5.00	No
	110	z	-0.066	0.50	No
	111	z	-0.066	0.50	No
	113	z	-0.066	0.50	No
	115	z	-0.066	0.50	No
W30	81	x	-0.145	2.50	No
		x	-0.145	7.50	No
		x	-0.117	5.00	No
	82	x	-0.043	2.25	No
		x	-0.043	4.00	No
		x	-0.059	6.00	No
		x	-0.059	7.75	No
	83	x	-0.12	2.50	No
		x	-0.12	7.50	No
		x	-0.117	5.00	No
	89	x	-0.254	2.50	No
		x	-0.254	7.50	No
		x	-0.059	5.00	No
	92	x	-0.078	2.25	No
		x	-0.078	4.00	No
		x	-0.08	6.00	No
		x	-0.08	7.75	No
	95	x	-0.233	2.50	No
		x	-0.233	7.50	No
		x	-0.059	5.00	No

	101	x	-0.254	2.50	No
		x	-0.254	7.50	No
		x	-0.059	5.00	No
	104	x	-0.078	2.25	No
		x	-0.078	4.00	No
		x	-0.08	6.00	No
		x	-0.08	7.75	No
	107	x	-0.233	2.50	No
		x	-0.233	7.50	No
		x	-0.059	5.00	No
	110	x	-0.066	0.50	No
	111	x	-0.066	0.50	No
	113	x	-0.066	0.50	No
	115	x	-0.066	0.50	No
Di	81	y	-0.122	2.50	No
		y	-0.122	7.50	No
		y	-0.055	5.00	No
		y	-0.055	5.00	No
	82	y	-0.04	2.25	No
		y	-0.04	4.00	No
		y	-0.042	6.00	No
		y	-0.042	7.75	No
	83	y	-0.112	2.50	No
		y	-0.112	7.50	No
		y	-0.042	5.00	No
		y	-0.055	5.00	No
	89	y	-0.122	2.50	No
		y	-0.122	7.50	No
		y	-0.055	5.00	No
		y	-0.055	5.00	No
	92	y	-0.04	2.25	No
		y	-0.04	4.00	No
		y	-0.042	6.00	No
		y	-0.042	7.75	No
	95	y	-0.112	2.50	No
		y	-0.112	7.50	No
		y	-0.042	5.00	No
		y	-0.055	5.00	No
	101	y	-0.122	2.50	No
		y	-0.122	7.50	No
		y	-0.055	5.00	No
		y	-0.055	5.00	No
	104	y	-0.04	2.25	No
		y	-0.04	4.00	No
		y	-0.042	6.00	No
		y	-0.042	7.75	No
	107	y	-0.112	2.50	No
		y	-0.112	7.50	No
		y	-0.042	5.00	No
		y	-0.055	5.00	No
	110	y	-0.048	0.50	No
	111	y	-0.048	0.50	No
	113	y	-0.048	0.50	No
	115	y	-0.048	0.50	No
Wi0	81	z	-0.05	2.50	No
		z	-0.05	7.50	No
		z	-0.011	5.00	No
		z	-0.011	5.00	No
	82	z	-0.017	2.25	No
		z	-0.017	4.00	No

		z	-0.017	6.00	No
		z	-0.017	7.75	No
83		z	-0.047	2.50	No
		z	-0.047	7.50	No
		z	-0.008	5.00	No
		z	-0.011	5.00	No
89		z	-0.033	2.50	No
		z	-0.033	7.50	No
		z	-0.02	5.00	No
92		z	-0.011	2.25	No
		z	-0.011	4.00	No
		z	-0.013	6.00	No
		z	-0.013	7.75	No
95		z	-0.03	2.50	No
		z	-0.03	7.50	No
		z	-0.02	5.00	No
101		z	-0.033	2.50	No
		z	-0.033	7.50	No
		z	-0.02	5.00	No
104		z	-0.011	2.25	No
		z	-0.011	4.00	No
		z	-0.013	6.00	No
		z	-0.013	7.75	No
107		z	-0.03	2.50	No
		z	-0.03	7.50	No
		z	-0.02	5.00	No
110		z	-0.013	0.50	No
111		z	-0.013	0.50	No
113		z	-0.013	0.50	No
115		z	-0.013	0.50	No
Wi30	81	x	-0.028	2.50	No
		x	-0.028	7.50	No
		x	-0.023	5.00	No
82		x	-0.01	2.25	No
		x	-0.01	4.00	No
		x	-0.012	6.00	No
		x	-0.012	7.75	No
83		x	-0.024	2.50	No
		x	-0.024	7.50	No
		x	-0.023	5.00	No
89		x	-0.044	2.50	No
		x	-0.044	7.50	No
		x	-0.014	5.00	No
92		x	-0.015	2.25	No
		x	-0.015	4.00	No
		x	-0.016	6.00	No
		x	-0.016	7.75	No
95		x	-0.041	2.50	No
		x	-0.041	7.50	No
		x	-0.014	5.00	No
101		x	-0.044	2.50	No
		x	-0.044	7.50	No
		x	-0.014	5.00	No
104		x	-0.015	2.25	No
		x	-0.015	4.00	No
		x	-0.016	6.00	No
		x	-0.016	7.75	No
107		x	-0.041	2.50	No
		x	-0.041	7.50	No
		x	-0.014	5.00	No

	110	x	-0.013	0.50	No
	111	x	-0.013	0.50	No
	113	x	-0.013	0.50	No
	115	x	-0.013	0.50	No
WLO	81	z	-0.016	2.50	No
		z	-0.016	7.50	No
		z	-0.002	5.00	No
		z	-0.002	5.00	No
	82	z	-0.005	2.25	No
		z	-0.005	4.00	No
		z	-0.005	6.00	No
		z	-0.005	7.75	No
	83	z	-0.015	2.50	No
		z	-0.015	7.50	No
		z	-0.002	5.00	No
		z	-0.002	5.00	No
	89	z	-0.01	2.50	No
		z	-0.01	7.50	No
		z	-0.005	5.00	No
	92	z	-0.003	2.25	No
		z	-0.003	4.00	No
		z	-0.004	6.00	No
		z	-0.004	7.75	No
	95	z	-0.009	2.50	No
		z	-0.009	7.50	No
		z	-0.005	5.00	No
	101	z	-0.01	2.50	No
		z	-0.01	7.50	No
		z	-0.005	5.00	No
	104	z	-0.003	2.25	No
		z	-0.003	4.00	No
		z	-0.004	6.00	No
		z	-0.004	7.75	No
	107	z	-0.009	2.50	No
		z	-0.009	7.50	No
		z	-0.005	5.00	No
	110	z	-0.004	0.50	No
	111	z	-0.004	0.50	No
	113	z	-0.004	0.50	No
	115	z	-0.004	0.50	No
WL30	81	x	-0.008	2.50	No
		x	-0.008	7.50	No
		x	-0.006	5.00	No
	82	x	-0.003	2.25	No
		x	-0.003	4.00	No
		x	-0.004	6.00	No
		x	-0.004	7.75	No
	83	x	-0.007	2.50	No
		x	-0.007	7.50	No
		x	-0.006	5.00	No
	89	x	-0.014	2.50	No
		x	-0.014	7.50	No
		x	-0.003	5.00	No
	92	x	-0.005	2.25	No
		x	-0.005	4.00	No
		x	-0.005	6.00	No
		x	-0.005	7.75	No
	95	x	-0.013	2.50	No
		x	-0.013	7.50	No
		x	-0.003	5.00	No

	101	x	-0.014	2.50	No
		x	-0.014	7.50	No
		x	-0.003	5.00	No
	104	x	-0.005	2.25	No
		x	-0.005	4.00	No
		x	-0.005	6.00	No
		x	-0.005	7.75	No
	107	x	-0.013	2.50	No
		x	-0.013	7.50	No
		x	-0.003	5.00	No
	110	x	-0.004	0.50	No
	111	x	-0.004	0.50	No
	113	x	-0.004	0.50	No
	115	x	-0.004	0.50	No
LL1	40	y	-0.25	50.00	Yes
LL2	40	y	-0.25	100.00	Yes
LLa1	80	y	-0.50	50.00	Yes
LLa2	81	y	-0.50	50.00	Yes
LLa3	82	y	-0.50	50.00	Yes
LLa4	83	y	-0.50	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	500 lb Live Load on Antenna 1	No	0.00	0.00	0.00
LLa2	500 lb Live Load on Antenna 2	No	0.00	0.00	0.00
LLa3	500 lb Live Load on Antenna 3	No	0.00	0.00	0.00
LLa4	500 lb Live Load on Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00

WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

- LC1=1.2DL+1.6W0
- LC2=1.2DL+1.6W30
- LC3=1.2DL-1.6W0
- LC4=1.2DL-1.6W30
- LC6=0.9DL+1.6W30
- LC7=0.9DL-1.6W0
- LC8=0.9DL-1.6W30
- LC9=1.2DL+Di+Wi0
- LC10=1.2DL+Di+Wi30
- LC11=1.2DL+Di-Wi0
- LC12=1.2DL+Di-Wi30
- LC13=1.2DL
- LC14=0.9DL
- LC15=1.2DL+1.6LL1
- LC16=1.2DL+1.6LL2
- LC17=1.2DL+WL0+LLa1
- LC18=1.2DL+WL30+LLa1
- LC19=1.2DL-WL0+LLa1
- LC20=1.2DL-WL30+LLa1
- LC21=1.2DL+WL0+LLa2
- LC22=1.2DL+WL30+LLa2
- LC23=1.2DL-WL0+LLa2
- LC24=1.2DL-WL30+LLa2
- LC25=1.2DL+WL0+LLa3
- LC26=1.2DL+WL30+LLa3
- LC27=1.2DL-WL0+LLa3
- LC28=1.2DL-WL30+LLa3
- LC29=1.2DL+WL0+LLa4
- LC30=1.2DL+WL30+LLa4
- LC31=1.2DL-WL0+LLa4
- LC32=1.2DL-WL30+LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 4X4X1_4	4	LC3 at 100.00%	0.21	OK	
		5	LC4 at 100.00%	0.24	OK	
		6	LC3 at 100.00%	0.20	OK	
		7	LC2 at 50.00%	0.21	OK	
		8	LC1 at 48.44%	0.19	OK	
		9	LC4 at 48.44%	0.22	OK	
	L 2-1_2X2-1_2X3_16	41	LC4 at 100.00%	0.55	OK	
		43	LC3 at 0.00%	0.63	OK	
		45	LC2 at 100.00%	0.64	OK	
	L 2X2X1_4	13	LC3 at 100.00%	0.22	OK	
		14	LC1 at 100.00%	0.23	OK	
		15	LC4 at 100.00%	0.25	OK	
		16	LC2 at 0.00%	0.24	OK	
		17	LC1 at 0.00%	0.22	OK	
		18	LC3 at 0.00%	0.21	OK	
	PIPE 2-1_2x0.203	40	LC2 at 18.75%	0.31	OK	

42	LC6 at 23.21%	0.34	OK
44	LC8 at 76.79%	0.35	OK
74	LC2 at 0.00%	0.33	OK
75	LC4 at 0.00%	0.36	OK
76	LC4 at 0.00%	0.27	OK
77	LC1 at 0.00%	0.30	OK
78	LC3 at 0.00%	0.20	OK
79	LC3 at 0.00%	0.22	OK
80	LC3 at 20.83%	0.14	OK
81	LC3 at 75.00%	0.18	OK
82	LC3 at 60.42%	0.14	OK
83	LC3 at 75.00%	0.19	OK
86	LC2 at 89.58%	0.19	OK
89	LC2 at 89.58%	0.23	OK
92	LC1 at 89.58%	0.18	OK
95	LC1 at 89.58%	0.25	OK
98	LC1 at 89.58%	0.17	OK
101	LC1 at 89.58%	0.24	OK
104	LC1 at 89.58%	0.17	OK
107	LC4 at 89.58%	0.25	OK

PIPE 2x0.154

110	LC2 at 65.63%	0.10	OK
111	LC1 at 65.63%	0.10	OK
113	LC2 at 65.63%	0.10	OK
115	LC1 at 65.63%	0.10	OK

PIPE 3x0.216

2	LC2 at 18.75%	0.19	OK
3	LC4 at 81.25%	0.22	OK
35	LC3 at 50.00%	0.18	OK

PL 6x3/8

10	LC2 at 50.00%	0.19	OK
11	LC1 at 50.00%	0.22	OK
12	LC4 at 50.00%	0.19	OK

Geometry data

GLOSSARY

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

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
3	0.596	-4.00	-8.7157	0
4	7.846	-4.00	3.8417	0
9	-7.846	-4.00	3.8417	0
10	-0.596	-4.00	-8.7157	0
12	7.25	-4.00	4.874	0
13	-7.25	-4.00	4.874	0
14	7.548	-4.00	4.3578	0
15	1.7716	-4.00	1.0228	0
18	-7.548	-4.00	4.3578	0
19	-1.7716	-4.00	1.0228	0
20	0.00	-4.00	-8.7157	0
21	0.00	-4.00	-2.0457	0
22	2.846	-4.00	-4.8186	0
23	5.596	-4.00	-0.0554	0
26	-2.846	-4.00	-4.8186	0
27	-5.596	-4.00	-0.0554	0
28	-2.75	-4.00	4.874	0
29	2.75	-4.00	4.874	0
30	5.3725	-4.00	0.3317	0
31	2.9735	-4.00	4.4869	0
34	-2.9735	-4.00	4.4869	0
35	-5.3725	-4.00	0.3317	0
36	-2.399	-4.00	-4.8186	0

37	2.399	-4.00	-4.8186	0
108	-7.25	3.00	4.874	0
109	-7.846	3.00	3.8417	0
110	-0.596	3.00	-8.7157	0
111	0.596	3.00	-8.7157	0
112	7.25	3.00	4.874	0
113	7.846	3.00	3.8417	0
114	-1.7716	0.00	1.0228	0
115	0.00	0.00	-2.0457	0
116	1.7716	0.00	1.0228	0
173	6.221	3.00	1.0271	0
174	-4.00	3.00	4.874	0
175	-2.221	3.00	-5.9011	0
176	4.00	3.00	4.874	0
177	-6.221	3.00	1.0271	0
178	2.221	3.00	-5.9011	0
182	6.00	5.00	5.074	0
183	6.00	-5.00	5.074	0
184	4.50	5.00	5.074	0
185	4.50	-5.00	5.074	0
186	0.00	5.00	5.074	0
187	0.00	-5.00	5.074	0
188	-4.50	5.00	5.074	0
189	-4.50	-5.00	5.074	0
198	-7.3942	5.00	2.6592	0
199	1.3942	5.00	-7.7332	0
200	-7.3942	-5.00	2.6592	0
201	1.3942	-5.00	-7.7332	0
210	-6.6442	5.00	1.3601	0
211	2.1442	5.00	-6.4341	0
212	-6.6442	-5.00	1.3601	0
213	2.1442	-5.00	-6.4341	0
222	-4.3942	5.00	-2.537	0
223	4.3942	5.00	-2.537	0
224	-4.3942	-5.00	-2.537	0
225	4.3942	-5.00	-2.537	0
234	-2.1442	5.00	-6.4341	0
235	6.6442	5.00	1.3601	0
236	-2.1442	-5.00	-6.4341	0
237	6.6442	-5.00	1.3601	0
244	-3.3707	-2.00	2.2531	0
245	-3.3707	-5.00	2.2531	0
246	-3.6366	-2.00	1.7926	0
247	-3.6366	-5.00	1.7926	0
250	-0.2658	-2.00	-4.0457	0
251	-0.2658	-5.00	-4.0457	0
254	3.6366	-2.00	1.7926	0
255	3.6366	-5.00	1.7926	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
15	1	1	1	1	1	1
19	1	1	1	1	1	1
21	1	1	1	1	1	1
114	1	1	1	1	1	1
115	1	1	1	1	1	1
116	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
2	9	10		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
3	3	4		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
4	18	19		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
5	20	21		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
6	14	15		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
7	28	27		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
8	26	22		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
9	23	29		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
10	13	9		PL 6x3/8	A36	0.00	0.00	0.00
11	10	3		PL 6x3/8	A36	0.00	0.00	0.00
12	12	4		PL 6x3/8	A36	0.00	0.00	0.00
13	34	18		L 2X2X1_4	A36	0.00	0.00	0.00
14	36	20		L 2X2X1_4	A36	0.00	0.00	0.00
15	30	14		L 2X2X1_4	A36	0.00	0.00	0.00
16	18	35		L 2X2X1_4	A36	0.00	0.00	0.00
17	20	37		L 2X2X1_4	A36	0.00	0.00	0.00
18	14	31		L 2X2X1_4	A36	0.00	0.00	0.00
35	12	13		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
40	112	108		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
41	108	109		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
42	109	110		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
43	110	111		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
44	111	113		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
45	112	113		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
74	115	175		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
75	115	178		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
76	116	173		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
77	114	177		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
78	114	174		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
79	116	176		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
80	182	183		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
81	184	185		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
82	186	187		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
83	188	189		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
86	198	200		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
89	210	212		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
92	222	224		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
95	234	236		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
98	199	201		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
101	211	213		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
104	223	225		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
107	235	237		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
110	244	245		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
111	246	247		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
113	250	251		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

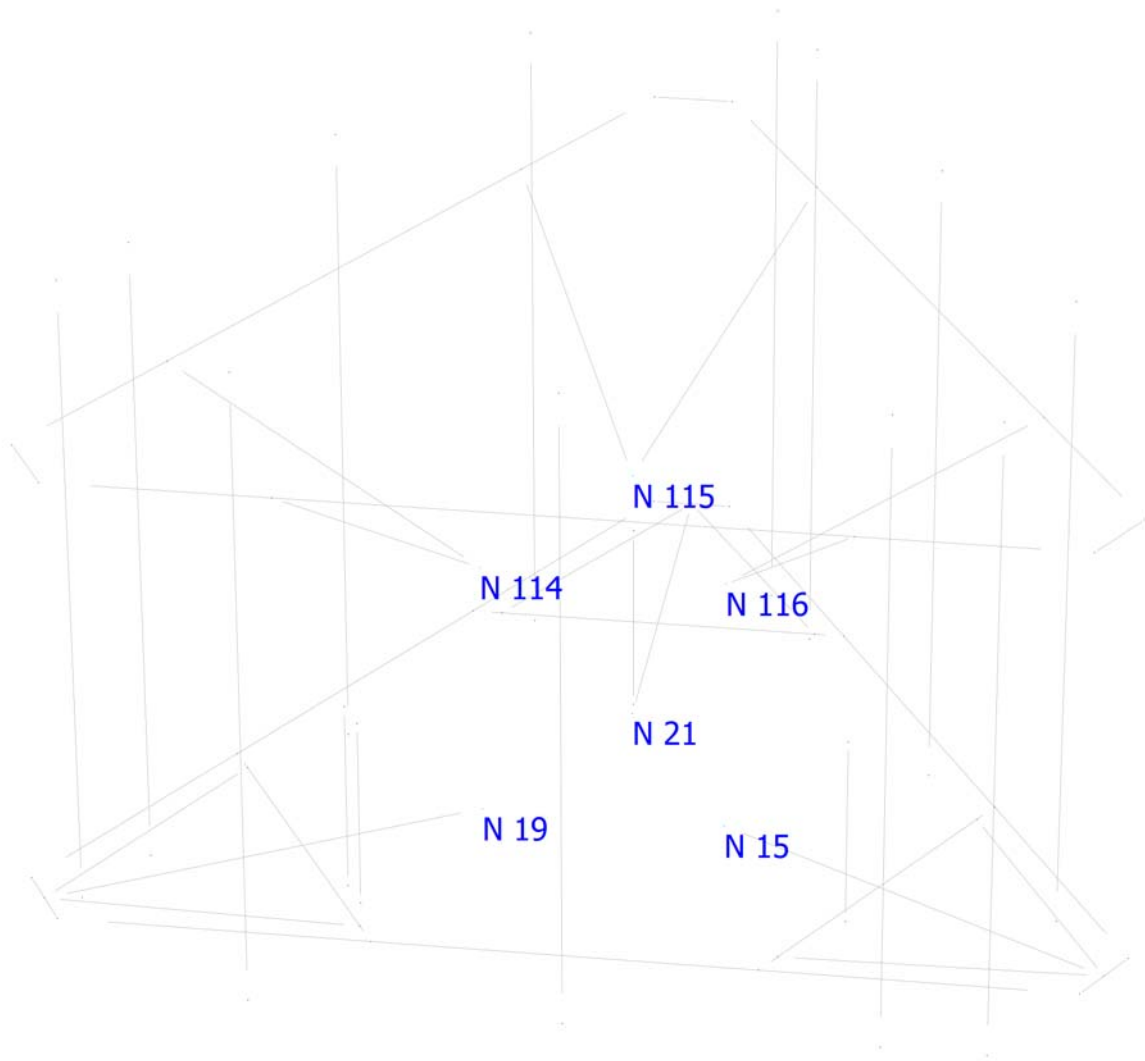
Member	Rotation [Deg]	Axes23	NX	NY	NZ
41	180.00	0	0.00	0.00	0.00
43	180.00	0	0.00	0.00	0.00
45	90.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
13	0.00	3.00	0.00	0.00	3.00	0.00
14	0.00	3.00	0.00	0.00	3.00	0.00
15	0.00	3.00	0.00	0.00	3.00	0.00
16	0.00	3.00	0.00	0.00	3.00	0.00
17	0.00	3.00	0.00	0.00	3.00	0.00
18	0.00	3.00	0.00	0.00	3.00	0.00

Hinges

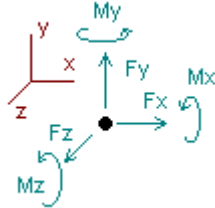
Member	Node-J				Node-K				TOR	AXL	Axial rigidity
	M33	M22	V3	V2	M33	M22	V3	V2			
74	0	0	0	0	1	1	0	0	0	0	Full
75	0	0	0	0	1	1	0	0	0	0	Full
76	0	0	0	0	1	1	0	0	0	0	Full
77	0	0	0	0	1	1	0	0	0	0	Full
78	0	0	0	0	1	1	0	0	0	0	Full
79	0	0	0	0	1	1	0	0	0	0	Full



Analysis result

Envelope for nodal reactions

Note.- **Ic** is the controlling load condition



Direction of positive forces and moments

Envelope of nodal reactions for :

- LC1=1.2DL+1.6W0
- LC2=1.2DL+1.6W30
- LC3=1.2DL-1.6W0
- LC4=1.2DL-1.6W30
- LC6=0.9DL+1.6W30
- LC7=0.9DL-1.6W0
- LC8=0.9DL-1.6W30
- LC9=1.2DL+Di+Wi0
- LC10=1.2DL+Di+Wi30
- LC11=1.2DL+Di-Wi0
- LC12=1.2DL+Di-Wi30
- LC13=1.2DL
- LC14=0.9DL
- LC15=1.2DL+1.6LL1
- LC16=1.2DL+1.6LL2
- LC17=1.2DL+WL0+LLa1
- LC18=1.2DL+WL30+LLa1
- LC19=1.2DL-WL0+LLa1
- LC20=1.2DL-WL30+LLa1
- LC21=1.2DL+WL0+LLa2
- LC22=1.2DL+WL30+LLa2
- LC23=1.2DL-WL0+LLa2
- LC24=1.2DL-WL30+LLa2
- LC25=1.2DL+WL0+LLa3
- LC26=1.2DL+WL30+LLa3
- LC27=1.2DL-WL0+LLa3
- LC28=1.2DL-WL30+LLa3
- LC29=1.2DL+WL0+LLa4
- LC30=1.2DL+WL30+LLa4
- LC31=1.2DL-WL0+LLa4
- LC32=1.2DL-WL30+LLa4

Node		Forces						Moments					
		Fx [Kip]	Ic	Fy [Kip]	Ic	Fz [Kip]	Ic	Mx [Kip*ft]	Ic	My [Kip*ft]	Ic	Mz [Kip*ft]	Ic
15	Max	2.370	LC2	1.250	LC12	1.808	LC1	0.50049	LC1	1.61981	LC7	1.82779	LC4
	Min	-2.336	LC8	0.007	LC6	-1.772	LC7	-1.51982	LC3	-1.66419	LC1	-0.30568	LC6
19	Max	2.506	LC6	1.324	LC10	1.906	LC1	0.56497	LC1	1.81273	LC1	0.24131	LC8
	Min	-2.553	LC4	0.084	LC8	-1.895	LC7	-1.60219	LC3	-1.86257	LC3	-1.85704	LC2

21	Max	1.731	LC2	1.256	LC9	2.856	LC1	1.84558	LC9	2.80617	LC8	1.17045	LC4
	Min	-1.718	LC8	-0.014	LC7	-2.911	LC3	-0.03683	LC7	-2.84907	LC2	-1.16275	LC6
114	Max	2.015	LC6	1.600	LC4	1.336	LC1	0.73464	LC1	0.76860	LC1	0.52479	LC8
	Min	-2.141	LC4	-1.343	LC6	-1.261	LC7	-0.84153	LC3	-0.69986	LC7	-0.78924	LC2
115	Max	1.077	LC6	1.747	LC3	2.268	LC1	0.86498	LC1	1.23656	LC4	1.03286	LC4
	Min	-1.079	LC4	-1.455	LC1	-2.434	LC3	-0.59075	LC7	-1.16852	LC6	-0.98427	LC6
116	Max	2.104	LC2	1.596	LC2	1.389	LC1	0.66154	LC1	0.77511	LC3	0.77990	LC4
	Min	-1.976	LC8	-1.340	LC8	-1.317	LC7	-0.86798	LC3	-0.69667	LC1	-0.56795	LC6



HUDSON
Design Group LLC

Connection Check

Date: 3/24/2022
Project Name: WESTPORT FD
Project No.: CT2153
Designed By: KSBM Checked By: MSC



CHECK CONNECTION CAPACITY (Worst Case)

Reference: AISC Steel Construction Manual 14th Edition (ASD)

Bolt Type = A325 5/8" (Threaded Rod)

Allowable Tensile Load =

$F_{Tall} = 13806$ lbs.

Allowable Shear Load =

$F_{Vall} = 8283$ lbs.

TENSILE FORCES

Reaction $F = 1906$ lbs. (See Bentley Output)

SHEAR FORCES

Reactions in X direction: 2553 lbs. (See Bentley Output)

Reactions in Y direction: 1324 lbs. (See Bentley Output)

Resultant: 2876 lbs.

No. of Supports = 1

No. of Bolts / Support = 3

Tension Design Load /Bolts =

$f_t = 635.33$ lbs. < 13806 lbs. **Therefore, OK !**

Shear Design Load / Bolts=

$f_v = 958.63$ lbs. < 8283 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

$f_t / F_T + f_v / F_V \leq 1.0$
0.046 + 0.116 = 0.162 < 1.0 **Therefore, OK !**

EXHIBIT 5



Radio Frequency Safety Survey Report Prediction (RFSSRP)

AT&T Wireless Monopole Facility

<p><u>Site ID:</u> CT2153 <u>Site Name:</u> WESTPORT FD <u>Address:</u> 515 BOSTON POST ROAD EAST, WESTPORT, CT 06880 <u>Latitude:</u> 41.140159 <u>Longitude:</u> -73.347221 <u>USID:</u> 60434 <u>FA:</u> 10035241</p>	<p><u>Prepared for:</u> Centerline on behalf of AT&T</p> <p><u>Centerline PN:</u> 566545 <u>Pace ID:</u> MRCTB052202-MRCTB050909 <u>Report Writer:</u> Hachem Yousfi <u>Date:</u> March 29, 2022 <u>Report Reviewer:</u> Yasir Alqadhili</p>
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Statement of Compliance

AT&T is compliant with FCC Regulations.

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1.0 GENERAL SUMMARY

Centerline Communications, LLC (“Centerline”) has been contracted to provide a Radio Frequency (RF) Analysis for the following AT&T Mobility wireless monopole facility to determine whether the facility is in compliance with federal standards and regulations regarding RF emissions. This analysis includes theoretical emissions calculations, for all equipment for AT&T Mobility.

1.1 SITE SUMMARY

Analysis Site Data	
Site USID:	60434
Site FA#:	10035241
Site Name:	WESTPORT FD
Site Address:	515 BOSTON POST ROAD EAST, WESTPORT CT 06880
Site Latitude:	41.140159
Site Longitude:	-73.347221
Facility Type:	Monopole
Compliance Summary	
Compliance Status:	Compliant
Maximum Modeled AT&T MPE% on Walking Surface (General Public Limit):	1.01%
Maximum Modeled AT&T MPE% at Ground Level (General Public Limit):	0.38%
Site Survey Data	
Is Access Locked or Controlled? :	Unknown
Lock or Control Measures if Present:	Unknown
Parapet Height:	N/A
Site Data Information	
CD:	10035241.AE201.220317
RFDS:	10035241.PM201.211015



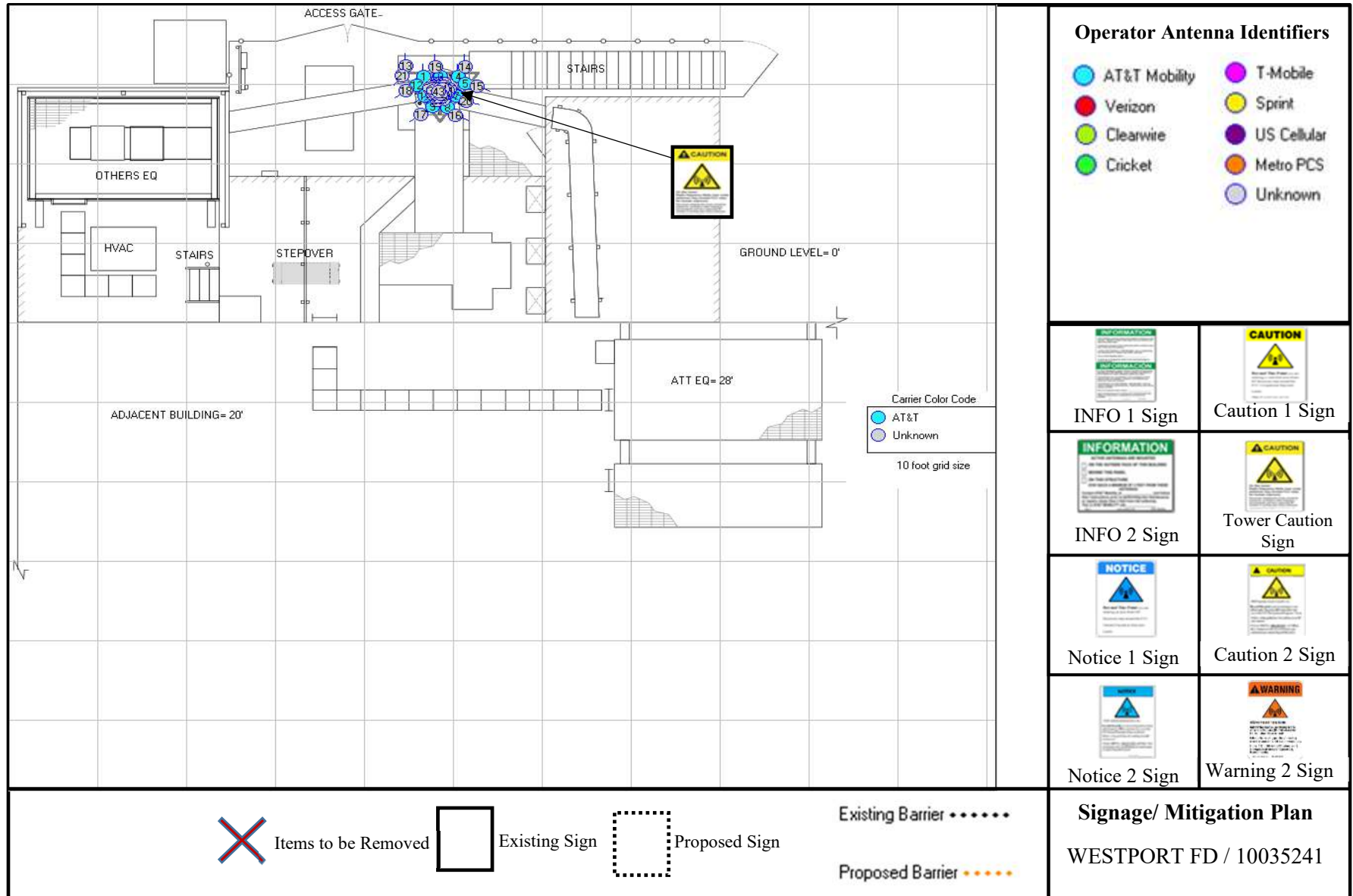
Signage and barriers are the primary means of mitigating access to accessible areas of exposure. Below is a summary of existing and recommended signage at this AT&T facility.

Existing Signage and Barriers (AT&T Sectors)										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Monopole Base	0	0	0	0	0	1	0	0	0	0

Recommended Signage and Barriers (AT&T Sectors) – Actions that MUST be Taken							
Location	Notice 2	Caution 2	Caution 2B	Caution 2C	Warning 2	Barriers	
Monopole Base	0	0	0	0	0	0	

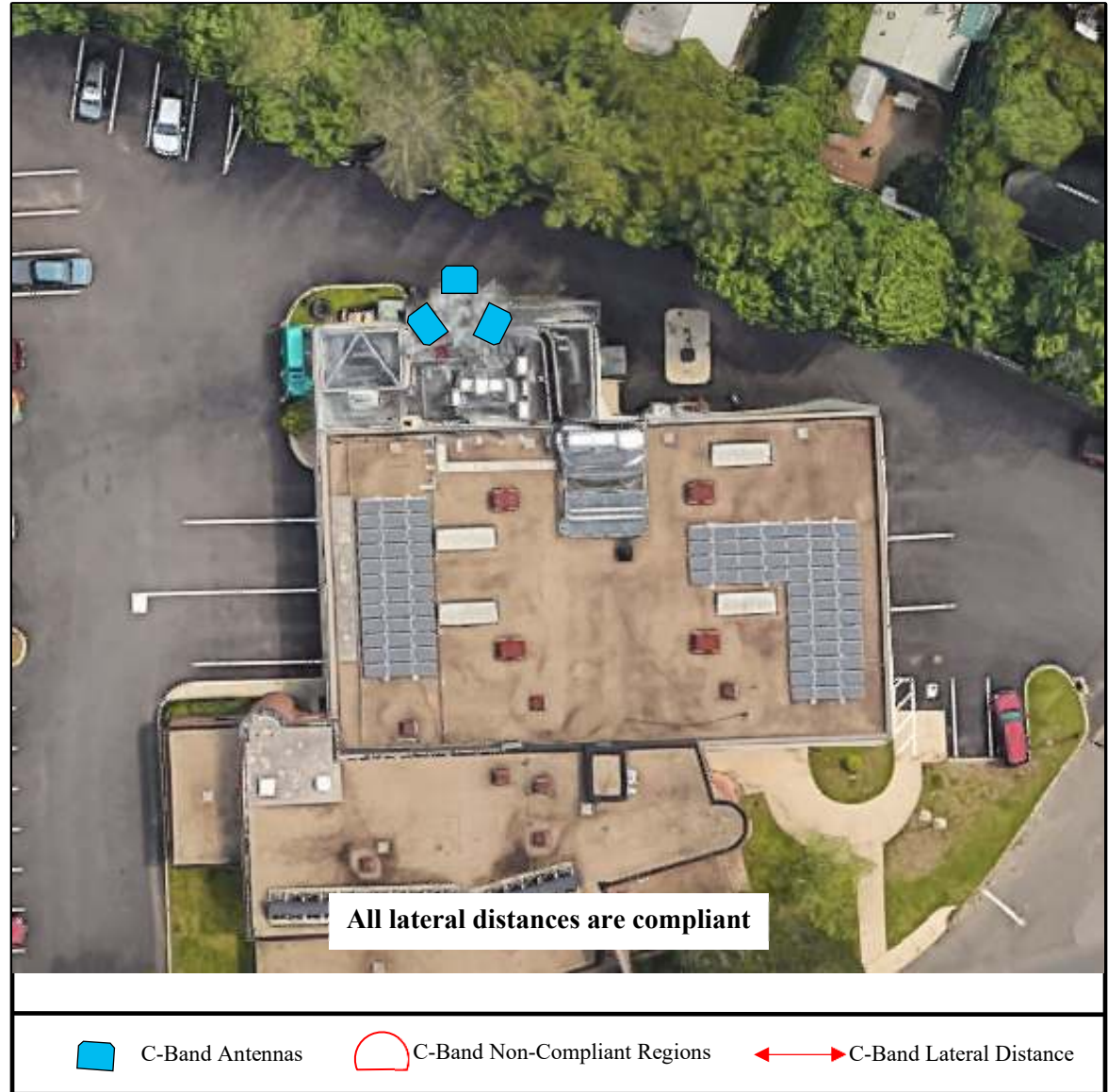
Final Compliant Configuration (AT&T Sectors) – All Mitigation Items that MUST be in Place										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Monopole Base	0	0	0	0	0	1	0	0	0	0

2.0 SITE SCALE MAP



2.1 C-BAND ANALYSIS

- The AIR6449 antennas do not cause excess MPE on any adjacent building. All adjacent buildings are > 84 feet away laterally from the AIR6449 antennas





3.0 ANTENNA INVENTORY

ANT ID	Operator	Antenna Make	Antenna Model	Type	Freq (MHz)	TPO (Watts)	# of TX	Azimuth (°)	BW (°)	Gain (dBd)	Total ERP (Watts)	Length (ft.)	Antenna Z Value (ft.) AGL**
1	AT&T	QUINTEL	QD6616-7 V1	Panel	700	40.00	4	30	66	11.9711	2519.01	6.0	117.0
1	AT&T	QUINTEL	QD6616-7 V1	Panel	700	40.00	4	30	66	11.9309	2495.80	6.0	117.0
1	AT&T	QUINTEL	QD6616-7 V1	Panel	1900	40.00	4	30	63	15.1151	5195.53	6.0	117.0
1	AT&T	QUINTEL	QD6616-7 V1	Panel	2100	40.00	4	30	61	15.624	5841.44	6.0	117.0
2	AT&T	ERICSSON	AIR6419	Panel	3400	54.20	1	30	13	11.85	829.85	6.0	119.0
2	AT&T	ERICSSON	AIR6419	Panel	3400	54.20	1	30	13	12.45	952.79	6.0	119.0
3	AT&T	ERICSSON	AIR6449	Panel	3400	108.40	1	30	11	23.55	24548.74	2.8	116.6
4	AT&T	CCI	DMP65R-BU6D	Panel	850	40.00	4	30	71	11.45	2234.19	5.9	117.0
4	AT&T	CCI	DMP65R-BU6D	Panel	700	40.00	2	30	66	11.75	1196.99	5.9	117.0
4	AT&T	CCI	DMP65R-BU6D	Panel	2300	25.00	4	30	50	14.95	3126.08	5.9	117.0
5	AT&T	QUINTEL	QD6616-7 V1	Panel	700	40.00	4	150	66	11.9711	2519.01	6.0	117.0
5	AT&T	QUINTEL	QD6616-7 V1	Panel	700	40.00	4	150	66	11.9309	2495.80	6.0	117.0
5	AT&T	QUINTEL	QD6616-7 V1	Panel	1900	40.00	4	150	63	15.1151	5195.53	6.0	117.0
5	AT&T	QUINTEL	QD6616-7 V1	Panel	2100	40.00	4	150	61	15.624	5841.44	6.0	117.0
6	AT&T	ERICSSON	AIR6419	Panel	3400	54.20	1	150	13	11.85	829.85	6.0	119.0
6	AT&T	ERICSSON	AIR6419	Panel	3400	54.20	1	150	13	12.45	952.79	6.0	119.0
7	AT&T	ERICSSON	AIR6449	Panel	3400	108.40	1	150	11	23.55	24548.74	2.8	116.6
8	AT&T	CCI	DMP65R-BU6D	Panel	850	40.00	4	150	71	11.45	2234.19	5.9	117.0
8	AT&T	CCI	DMP65R-BU6D	Panel	700	40.00	2	150	66	11.75	1196.99	5.9	117.0
8	AT&T	CCI	DMP65R-BU6D	Panel	2300	25.00	4	150	50	14.95	3126.08	5.9	117.0
9	AT&T	QUINTEL	QD6616-7 V1	Panel	700	40.00	4	270	66	11.9711	2519.01	6.0	117.0
9	AT&T	QUINTEL	QD6616-7 V1	Panel	700	40.00	4	270	66	11.9309	2495.80	6.0	117.0
9	AT&T	QUINTEL	QD6616-7 V1	Panel	1900	40.00	4	270	63	15.1151	5195.53	6.0	117.0
9	AT&T	QUINTEL	QD6616-7 V1	Panel	2100	40.00	4	270	61	15.624	5841.44	6.0	117.0
10	AT&T	ERICSSON	AIR6419	Panel	3400	54.20	1	270	13	11.85	829.85	6.0	119.0



10	AT&T	ERICSSON	AIR6419	Panel	3400	54.20	1	270	13	12.45	952.79	6.0	119.0
11	AT&T	ERICSSON	AIR6449	Panel	3400	108.40	1	270	11	23.55	24548.74	2.8	116.6
12	AT&T	CCI	DMP65R-BU6D	Panel	850	40.00	4	270	71	11.45	2234.19	5.9	117.0
12	AT&T	CCI	DMP65R-BU6D	Panel	700	40.00	2	270	66	11.75	1196.99	5.9	117.0
12	AT&T	CCI	DMP65R-BU6D	Panel	2300	25.00	4	270	50	14.95	3126.08	5.9	117.0
13	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	30	66	12.62	1096.86	6.0	138.0
14	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	30	66	12.62	1096.86	6.0	138.0
15	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	150	66	12.62	1096.86	6.0	138.0
16	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	150	66	12.62	1096.86	6.0	138.0
17	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	270	66	12.62	1096.86	6.0	138.0
18	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	270	66	12.62	1096.86	6.0	138.0
19	Unknown	GENERIC	MICROWAVE	Panel	23000	0.10	1	30	1.7	38.55	716.14	1.0	142.5
20	Unknown	GENERIC	MICROWAVE	Panel	18000	0.10	1	140	2.1	36.95	495.45	2.0	142.0
21	Unknown	GENERIC	MICROWAVE	Panel	80000	0.10	1	250	0.5	47.85	6095.37	2.0	137.0
22	Unknown	GENERIC	OMNI 5FT	Omni	850	25.25	1	0	360	5.96	99.60	5.0	97.5
23	Unknown	GENERIC	OMNI 5FT	Omni	850	25.25	1	0	360	5.96	99.60	5.0	97.5
24	Unknown	GENERIC	OMNI 5FT	Omni	850	25.25	1	0	360	5.96	99.60	5.0	97.5
25	Unknown	GENERIC	OMNI 5FT	Omni	850	25.25	1	100	360	5.96	99.60	5.0	97.5
26	Unknown	GENERIC	OMNI 5FT	Omni	850	25.25	1	100	360	5.96	99.60	5.0	97.5
27	Unknown	GENERIC	OMNI 5FT	Omni	850	25.25	1	100	360	5.96	99.60	5.0	97.5
28	Unknown	GENERIC	OMNI 5FT	Omni	850	25.25	1	220	360	5.96	99.60	5.0	97.5
29	Unknown	GENERIC	OMNI 5FT	Omni	850	25.25	1	220	360	5.96	99.60	5.0	97.5
30	Unknown	GENERIC	OMNI 5FT	Omni	850	25.25	1	220	360	5.96	99.60	5.0	97.5
31	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	30	66	12.62	1096.86	6.0	87.0
32	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	30	66	12.62	1096.86	6.0	87.0
33	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	30	66	12.62	1096.86	6.0	87.0
34	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	150	66	12.62	1096.86	6.0	87.0
35	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	150	66	12.62	1096.86	6.0	87.0
36	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	150	66	12.62	1096.86	6.0	87.0



37	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	270	66	12.62	1096.86	6.0	87.0
38	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	270	66	12.62	1096.86	6.0	87.0
39	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	270	66	12.62	1096.86	6.0	87.0
40	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	0	66	12.62	1096.86	6.0	81.0
41	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	0	66	12.62	1096.86	6.0	81.0
42	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	250	66	12.62	1096.86	6.0	81.0
43	Unknown	GENERIC	PANEL 6FT	Panel	850	60.00	1	250	66	12.62	1096.86	6.0	81.0

*Table 1: Total Site Data Table (*AGL = Above Ground Level)*

Note: Z Value represents the bottom tip height of the antenna

75% TDD Cycle is assumed for all AT&T antennas

C-Band antennas were calculated using AT&T's preferred conservative power reduction factor of 0.32

4.0 PREDICTED EMISSION LEVELS AND DISCUSSION

All calculations performed based upon the data listed for this facility have produced results that are within allowable limits for General Population limits for exposure to RF emissions as specified by federal standards.

AT&T’s RF Exposure: Responsibilities, Procedures & Guidelines document states that microwave dishes are compliant if they are mounted 20 feet or greater above any accessible walking or working surface.

Maximum Predicted MPE* Level on Site:	% of MPE Limit:	Location:
Accessible General Population MPE Limits:	1.01%	Sector A
Accessible Occupational MPE Limits:	0.20%	

Ground Level Assessment:	% of MPE Limit:
Ground Level General Population MPE Limits:	0.38%
Ground Level Occupational MPE Limits:	0.08%

Sector A: Transmitting over Ground Level	% of MPE Limit:	**Distance from Antenna:
Accessible General Population MPE Limits:	1.01%	N/A
Accessible Occupational MPE Limits:	0.20%	N/A

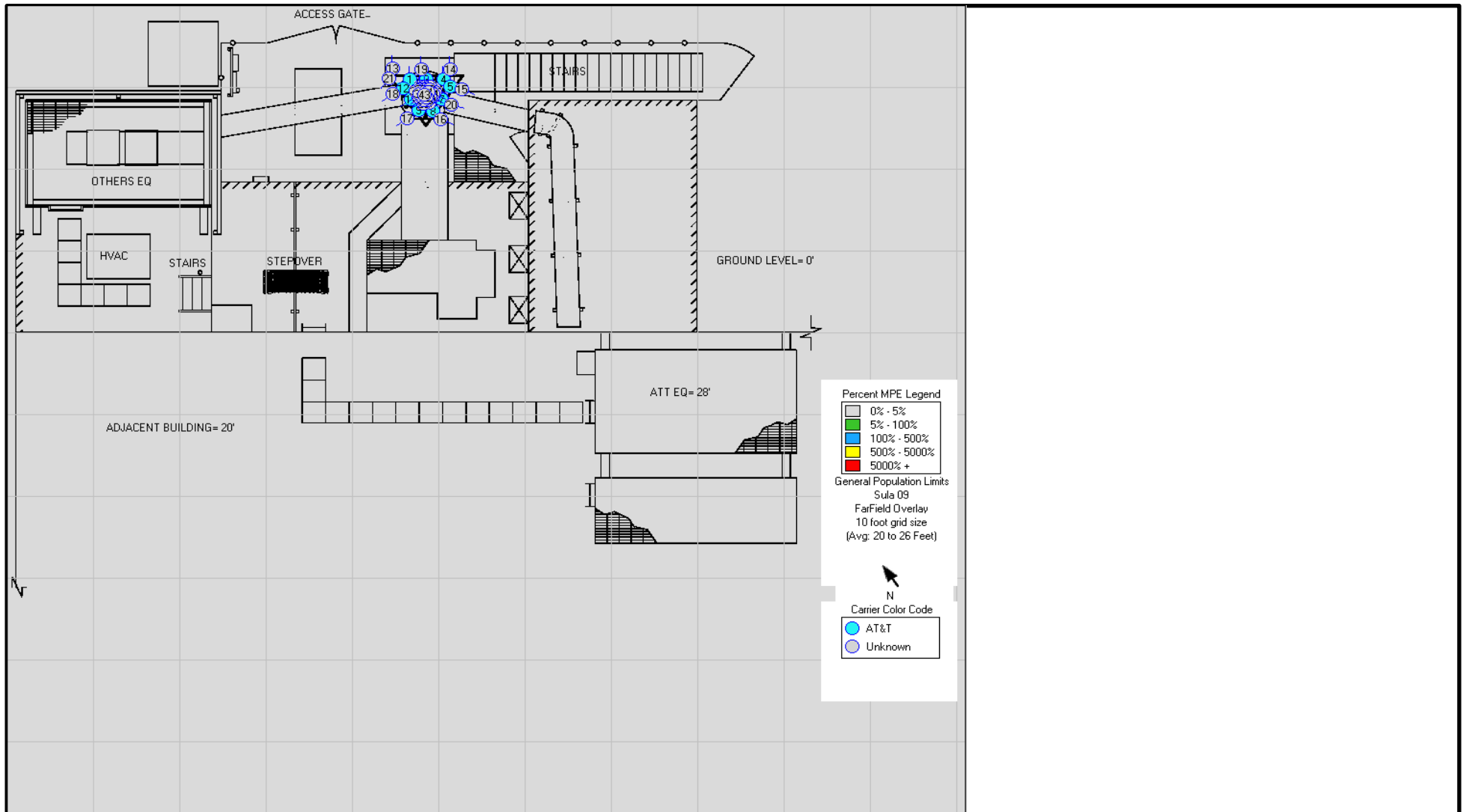
Sector B: Transmitting over Adjacent Building	% of MPE Limit:	**Distance from Antenna:
Accessible General Population MPE Limits:	0.37%	N/A
Accessible Occupational MPE Limits:	0.07%	N/A

Sector C: Transmitting over Adjacent Building	% of MPE Limit:	**Distance from Antenna:
Accessible General Population MPE Limits:	0.32%	N/A
Accessible Occupational MPE Limits:	0.06%	N/A

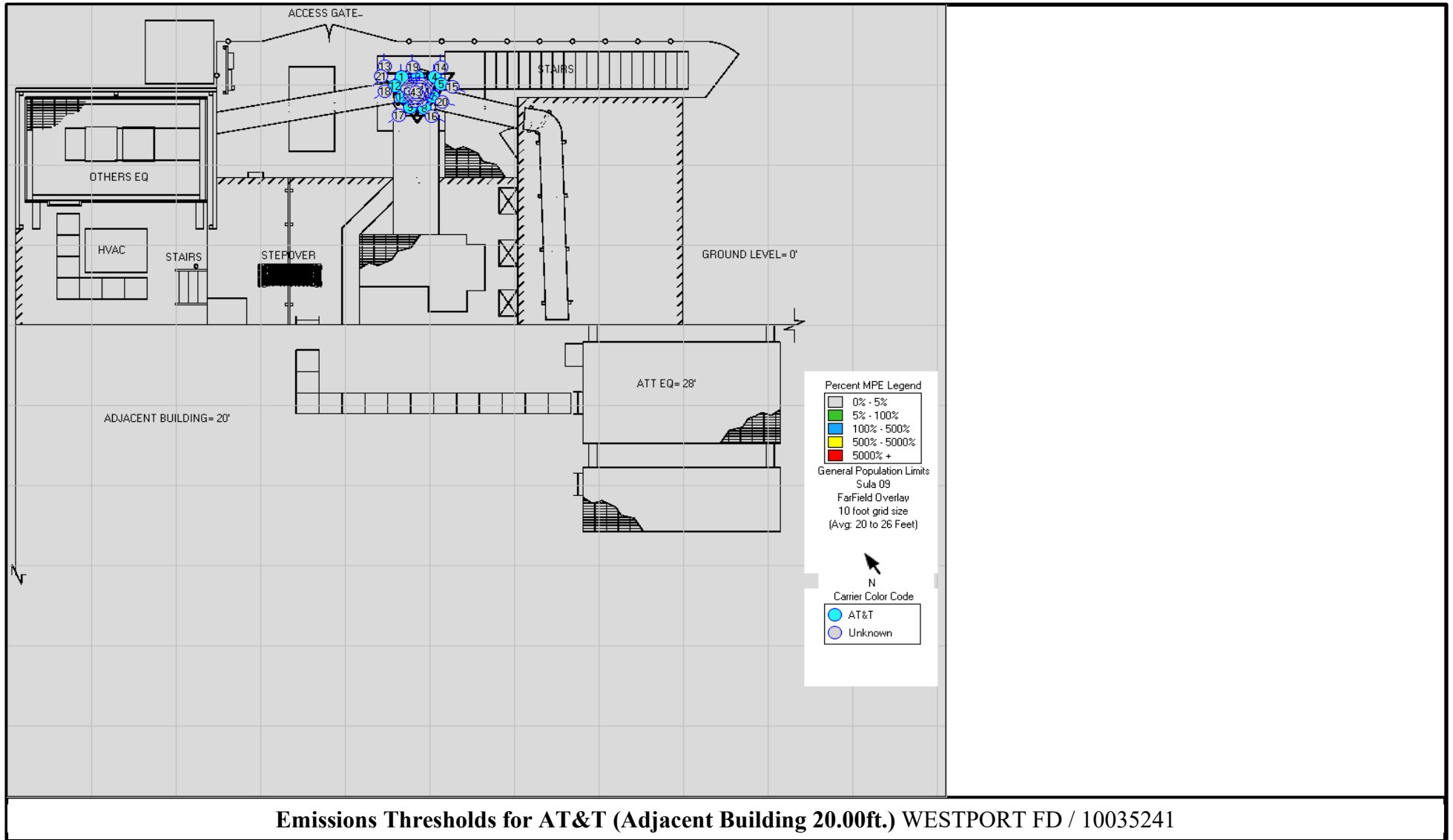
**MPE maximum calculations were based on Non-AIR64XX antennas (C-Band Excluded Sula09)*

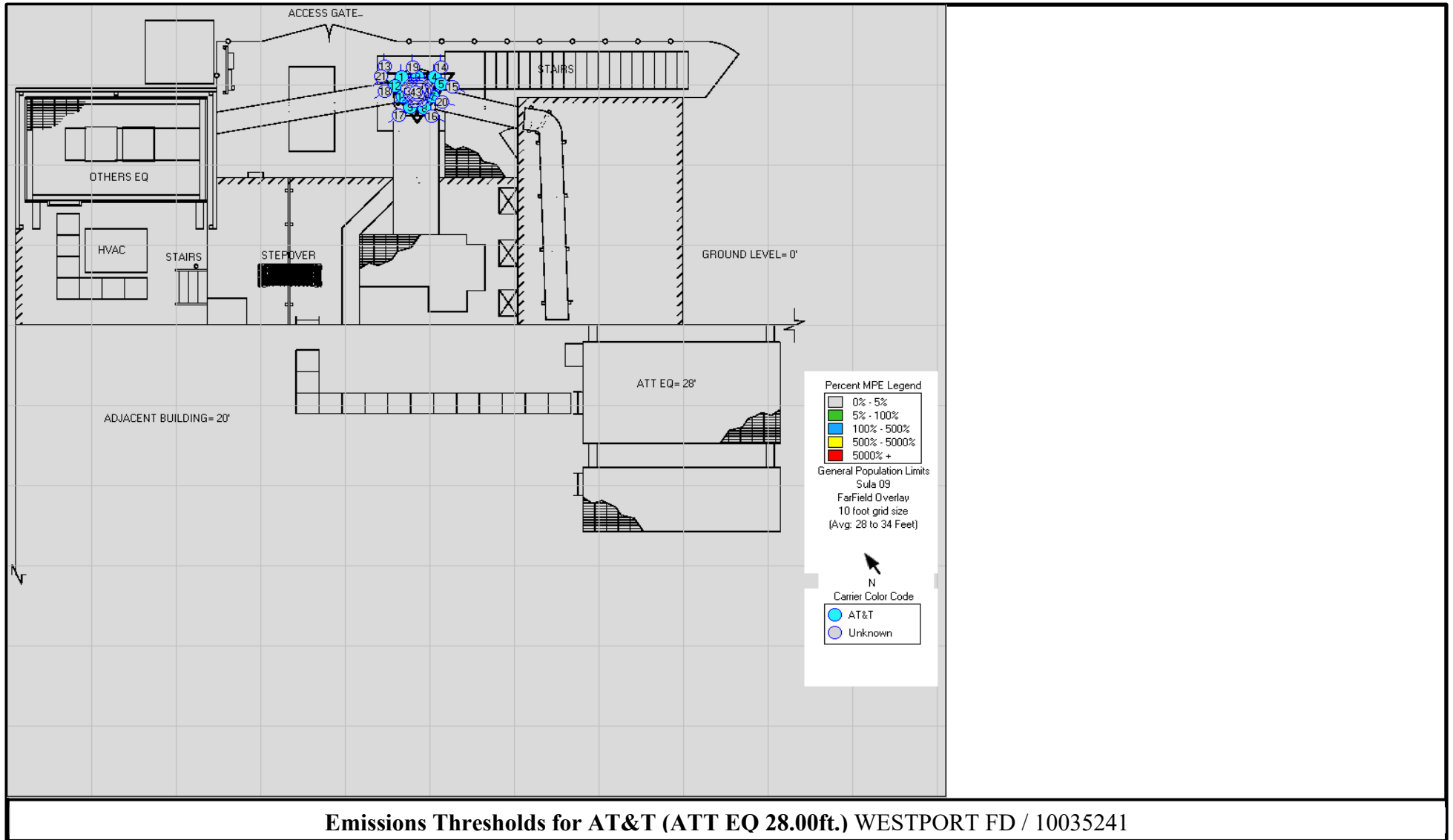
***Distance from Antenna is the distance that the MPE limits are exceeded from the front face of the antenna, outward across an accessible area.*

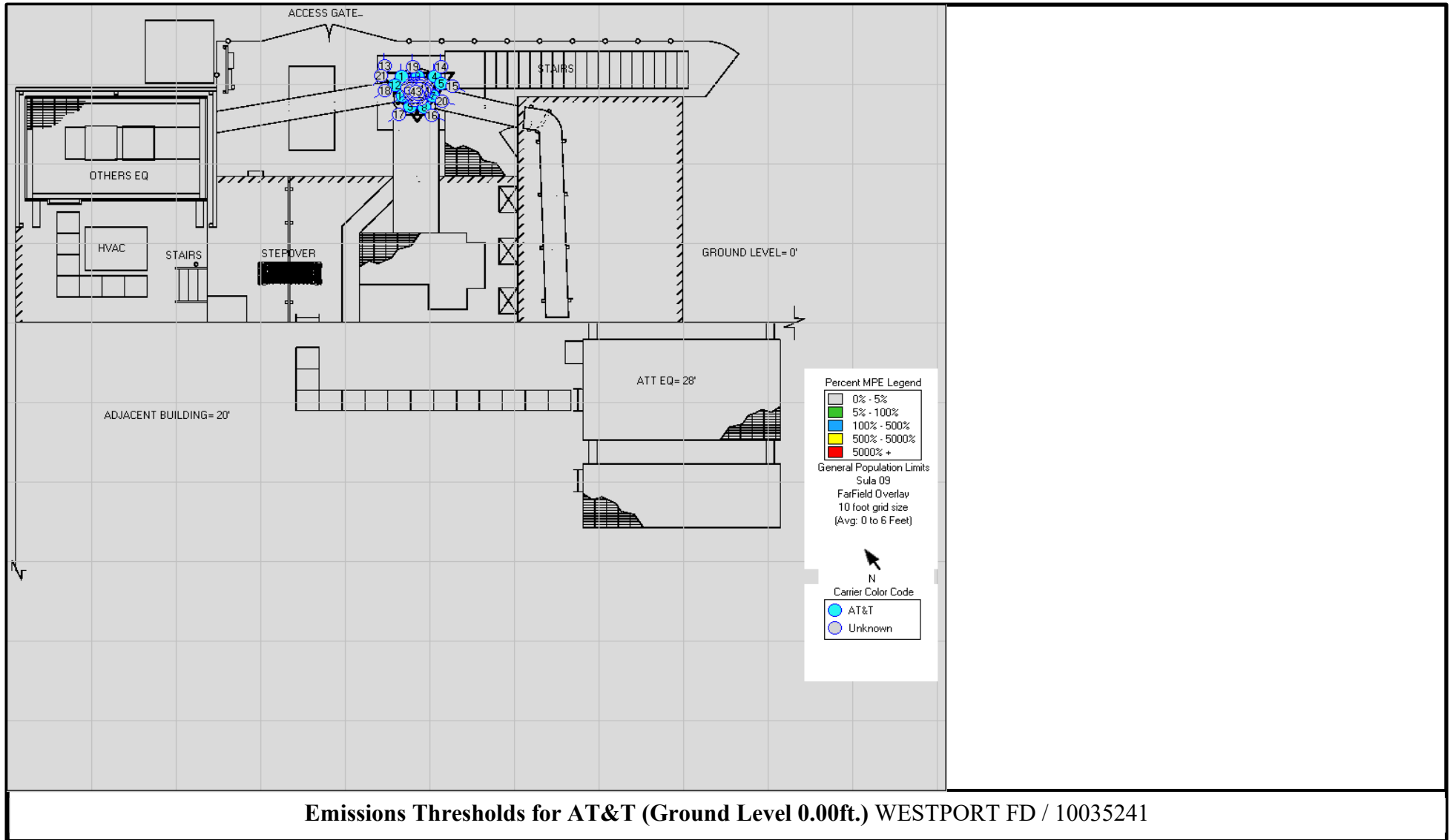
5.0 EMISSIONS DIAGRAMS



Emissions Thresholds for All Carriers (Adjacent Building 20.00ft.) WESTPORT FD / 10035241







6.0 STATEMENT OF COMPLIANCE

Centerline conducted worst case modeling to determine whether the monopole facility located at 515 BOSTON POST ROAD EAST in WESTPORT, Connecticut is in compliance with FCC Regulations.

6.1 STATEMENT OF AT&T MOBILITY COMPLIANCE

Based on the information analyzed, AT&T is in compliance with FCC Regulations. No additional action is required by AT&T.

6.2 RECOMMENDATIONS

Existing Signage and Barriers (AT&T Sectors)										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Monopole Base	0	0	0	0	0	1	0	0	0	0

Recommended Signage and Barriers (AT&T Sectors) – Actions that MUST be Taken						
Location	Notice 2	Caution 2	Caution 2B	Caution 2C	Warning 2	Barriers
Monopole Base	0	0	0	0	0	0

Final Compliant Configuration (AT&T Sectors) – All Mitigation Items that MUST be in Place										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Monopole Base	0	0	0	0	0	1	0	0	0	0

7.0 FALL ARREST AND PARAPET INFORMATION

As per AT&T barrier policy, rooftop edges that are protected with a 39-inch parapet wall or guardrail are safe for work activity within six (6) feet of the edge. OSHA has stated that an existing 39-inch guardrail or parapet provides sufficient protection for employees. The height of the top rail or equivalent component of guardrail systems in new construction shall be at least 42 inches above the walking or working surface. It should also be noted that the height of the parapet or guardrail may be reduced to no less than 30 inches at any point provided the sum of the depth (horizontal distance) of the top edge, and the height of the top edge (vertical distance from the work surface to the top edge of the top member, is at least 48 inches. If there is no reason for working atop the roof, then edge protection is not required. In addition, workers may use personnel lifts or temporary fall protection measures to perform work within 6 feet of the roof edge in place of permanent edge protection. Reference: 29 CFR 1910.28, 29 CFR 1910.23 (NPRM-1990); OSHA Letters of Interpretation 2/9/83 and 3/8/9

APPENDIX A: RF SIGNAGE

AT&T RF Signage

Sign	Description	Sign	Description
	<p>Information 1 Sign Gives guidelines on how to proceed and who to contact regarding areas that may exceed either the FCC’s General Population or Occupational emissions limits.</p>		<p>Caution 2C Sign Gives specific information on how to proceed and who to contact regarding antennas that are façade mounted, concealed or on stand-alone structures.</p>
	<p>Blue Notice 1 Sign Used to alert individuals that they are entering an area that may exceed the FCC’s General Population emissions limit. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.</p>		<p>Blue Notice 2 Sign Used to alert individuals that they are entering an area that may exceed the FCC’s General Population emissions limits. To be used on barriers or antenna sectors as a hybrid of the Information 1 and Blue Notice 1 signs.</p>
	<p>Yellow Caution 1 Sign-Rooftop Used to inform individuals that they are entering an area that may exceed the FCC’s Occupational emissions limit. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.</p>		<p>Yellow Caution 2 Sign-Rooftop Used to alert individuals that they are entering an area that may exceed the FCC’s Occupational emissions limit. To be used on barriers or antenna sectors as a hybrid of the Information 1 and Yellow Caution 1 signs.</p>
	<p>Yellow Caution 2B Sign- Tower Used to inform individuals that they are entering an area that may exceed the FCC’s Occupational emissions limits. Must be placed at the base of the tower to warn tower climbers of potential for exposure.</p>		<p>Warning 2 Sign Used to inform individuals that they are entering an area that may exceed the FCC’s Occupational emissions limit by a factor of 10 or greater. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.</p>

APPENDIX B: FCC GUIDELINES AND EMISSIONS THRESHOLD LIMITS

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 700 and 800 MHz Bands is approximately $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively, and the general population exposure limit for the 1900 MHz PCS and 2100 MHz AWS bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/Controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure, have been properly trained in RF safety and can exercise control over their exposure. Occupational/Controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure, have been trained in RF safety and can exercise control over his or her exposure by leaving the area or by some other appropriate means. The Occupational/Controlled exposure limits all utilized frequency bands is five (5) times the FCC's General Public / Uncontrolled exposure limit.

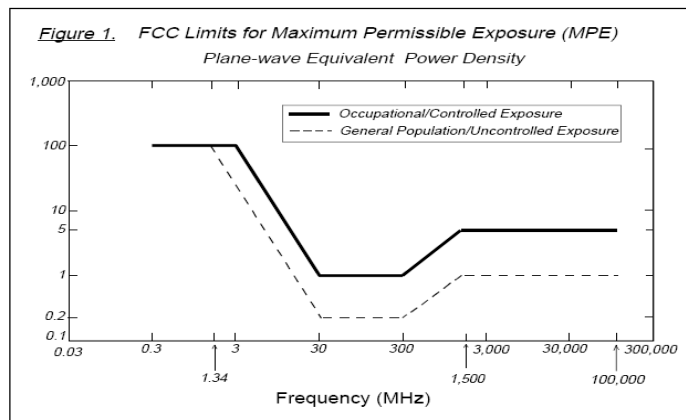
The FCC Mandates that if a site is found to be out of compliance with regard to emissions that any system operator contributing 5% or more to areas exceeding the FCC's allowable limits will be responsible for bringing the site into compliance.

Additional details can be found in FCC OET 65.

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 ²)	Averaging Time [E] ² , [H] ² , or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time [E] ² , [H] ² , or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)

* Plane-wave equivalent power density



APPENDIX C: CALCULATION METHODOLOGY

Centerline Communications, LLC has performed theoretical modeling using Waterford Consultants' RoofMaster™ 2020 Version 31.02.28.22 which uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations the power decreases inversely with the square of the distance. This modeling technique is accurate with low antenna centerlines, such as rooftops, where persons can get close to the antennas and pass through fields in close proximity.

The diagrams listed with "Farfield Overlay" have Sula09 spatial averaging calculations active for all non-C-Band antennas, while simultaneously having Far field calculations active for AT&T C-Band antennas.

The modeling is based on worst-case assumptions for the number of antennas and transmitter power. No losses were included in the power calculations unless they were specifically provided for the project.

FAR FIELD MODEL

In OET-65, a far field model is presented to calculate the spatial peak power density. The RoofMaster™ implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. Power density is calculated as follows:

$$S = \frac{13.05 P_{in} G}{R^2} \frac{\mu W}{cm^2}$$

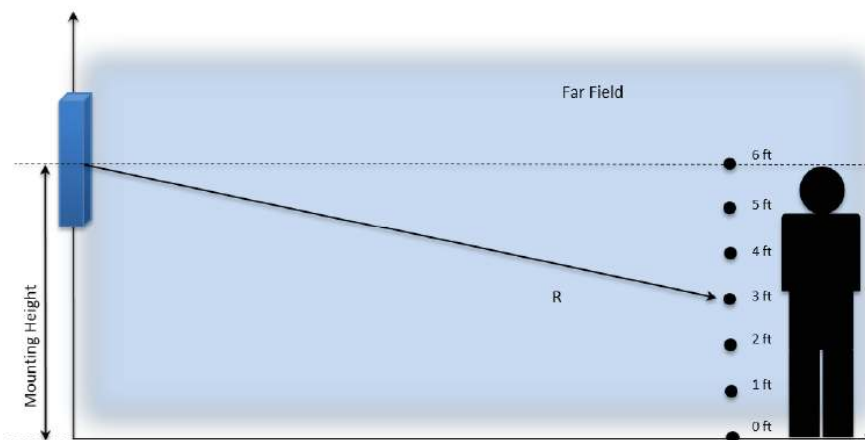
- Does not include 100% reflection factor
- Pin is Watts
- R is meters to study point
- G is gain to study point as specified in manufacturer horizontal and vertical patterns

A worst-case prediction is described in OET-65 where field strength may double due to 100% reflection of the incoming radiation. Considering an EPA recommendation that a multiplier of 1.6 is a more realistically representation of this effect is rewritten as follow:

$$S_{FF} = \frac{33.4 \cdot P_{in} \cdot G_{dBd}}{R^2} \quad (\mu W/cm^2)$$

This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0 to 6 feet) must be conducted.

RoofMaster™ calculates seven power density values between 0 and 6 feet above the specified study plane and performs a linear spatial average.



Predicted power densities are displayed as a percentage of the applicable FCC standards.

APPENDIX D: LATERAL COMPLIANCE MATRICES

AEQX or AEQU Bot. Tip Height	1st Region-Compliant Area from Antenna	Area Exceeding FCC GP Limits- Lateral Distance (ft)	Width of Area Exceeding Limit Lateral Distance (ft)	Power Reduction (dB)
0 - 6 ft	0	0 - 42	40	>15
6 ft	0	0 - 42	39	14
7 ft	0	0 - 42	36	7
8 ft	0 - 8	8 - 40	30	4
9 ft	0 - 15	15 - 35	18	1
10 ft	0 - ∞	NA	N/A	0

Matrix - 1 (0° Mechanical Tilt)

* AEQX & AEQU COMBINED Bot. Tip Height	1st Region-Compliant Area from Antenna	Area Exceeding FCC GP Limits- Lateral Distance (ft)	Width of Area Exceeding Limit Lateral Distance (ft)	Power Reduction (dB)
0 - 6 ft	0	0 - 60	57	>15
6 ft	0	0 - 60	56	14
7 ft	0	0 - 60	54	8
8 ft	0	0 - 56	49	4
9 ft	0 - 14	14 - 56	40	2
10 ft	0 - 28	28 - 51	23	1
11 ft	0 - ∞	N/A	N/A	0

Matrix - 1 (0° Mechanical Tilt)

AIR6449 or AIR6419 Bot. Tip Height	1st Region-Compliant Area from Antenna	Area Exceeding FCC GP Limits- Lateral Distance (ft)	Width of Area Exceeding Limit Lateral Distance (ft)	Power Reduction (dB)
0 - 7.9 ft	0	0 - 59	70	>15
8 ft	0	0 - 59	69	10
9 ft	0	0 - 59	68	7
10 ft	0	0 - 58	67	6
11 ft	0	0 - 56	65	5
12 ft	0 - 13	13 - 57	61	4
13 ft	0 - 17	17 - 55	57	3
14 ft	0 - 23	23 - 53	49	2
15 ft	0 - 29	29 - 50	37	1
> 16 ft	0 - ∞	NA	N/A	0

Matrix - 1 (0° Mechanical Tilt)

* AIR6449 & AIR6416 COMBINED Bot. Tip Height	1st Region-Compliant Area from Antenna	Area Exceeding FCC GP Limits- Lateral Distance (ft)	Width of Area Exceeding Limit Lateral Distance (ft)	Power Reduction (dB)
0 - 7.9 ft	0	0 - 84	98	>15
8 ft	0	0 - 84	98	10
9 ft	0	0 - 84	97	8
10 ft	0	0 - 83	97	7
11 ft	0	0 - 83	96	6
12 ft	0	0 - 83	93	5
13 ft	0 - 7	7 - 81	91	4
14 ft	0 - 19	19 - 81	88	4
15 ft	0 - 22	22 - 79	87	3
16 ft	0 - 27	27 - 77	78	2
17 ft	0 - 33	23 - 75	70	2
18 ft	0 - 39	39 - 72	57	1
19 ft	0 - 47	47 - 67	40	1
20 ft	0 - ∞	N/A	N/A	0

Matrix - 1 (0° Mechanical Tilt)

Power Reduction Formula for Reducing Maximum Safety Distance Length

$$(\mathbf{R}_{\text{reduced}}/\mathbf{R}_{\text{max}}) = 0.99 * (\mathbf{P}_{\text{reduced}}/\mathbf{P}_{\text{max}})$$

\mathbf{P}_{max} = 200W (Nominal Peak power of AEQK)

\mathbf{R}_{max} = Lateral Compliance Distance of AEQK

$\mathbf{P}_{\text{reduced}}$ = ?

$\mathbf{R}_{\text{reduced}}$ = Actual Lateral Distance between AEQK and Bldg. X

APPENDIX E: CERTIFICATIONS

I, Hachem Yousfi, preparer of this report certify that I am fully trained and aware of the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I have been trained in the procedures and requirements outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document.

Hachem Yousfi

3/29/2022

I, Yasir Alqadhili, reviewer and approver of this report certify that I am fully trained and aware of the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I have been trained in the procedures and requirements outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document.

Yasir Alqadhili

3/29/2022

APPENDIX F: PROPRIETARY STATEMENT

This report was prepared for the use of AT&T Mobility, LLC to meet requirements specified in AT&T's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by Centerline Communications, LLC are based solely on the information provided by AT&T Mobility and all observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to Centerline Communications, LLC so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

EXHIBIT 6

ZONING PERMIT
WESTPORT, CONNECTICUT

This permit is hereby applied for in accordance with the requirements of the Westport Zoning Regulations for:

Principal Bldg. - new Swimming Pool Sign: Wall, free standing
 Principal Bldg. - add. Access. Struct. Other.....
 Address..... 575 Post Rd East..... on _____ side of Street
 Tax Map No..... 5318-1..... Tax Lot No..... 6..... WLR Map No.....
 Zoning District..... GBD..... Lot Area.....
 Lot Owner..... Town of Westport - Fire Dept......
 Address..... 110 Myrtle Ave..... Telephone.....
 Applicant..... Chief Richard Gough.....
 Address..... same..... Telephone.....

Proposed Use: 10' x 10' (150' Ht) monopole w/ panel antenna at top, associated antenna to be attached to pole at different Hts., 12' x 9' (22' Ht) mechanical units on 1st fl roof

Proposed Structures: Existing Structures:
 1. Dimensions.....x.....x(hgt.).....Number.....
 2. Dimensions.....x.....x(hgt.).....Present Uses.....
 3. Dimensions.....x.....x(hgt.).....
 4. Parking Spaces Req'd/Provided.....5. Signage Allowed/Proposed.....
 6. Coverage Allowed: _____ Bldg. _____ Total Coverage Proposed _____ Bldg. _____ Total
 7. Setbacks: 25'/25' Ht 6' at roof

Prior Approval Status:
 1. ZBA Variance # 5347 for.....
 2. Health Appr. Date.....
 3. Sewer Permit No. on town.....
 4. Driveway/CT DOT Permit No.....
 5. ARB Appr.....
 6. P&Z/ARC Appr. Date 1/23/97 96-130.....
 7. CAM Appr. Date.....
 8. Subdivision Appr. Date.....
 9. F&ECB Appr.....
 10. Town Engineer Appr.....
 11. WPLO/IWW Approval Date.....
 12. S&E Plan Appr.....
 13. DEP/ARMY COE Permit.....
 14. Flood Elevation.....
 15. Aquifer Zone.....
 16. Other Approvals.....
 17. Building Plans (Titled) Westport Fire Station 575 P.R.E......
 (by) Robert Technologies (dated) 1/3/97 (Revised) 2/12/97 No. of Sheets... 2
pp. YFA355(C1, E1)

Permit hereby ISSUED or DENIED subject to conformance with/to the Westport Zoning Regulations and attached Site or Plot Plan:

Titled:..... see bldg. plan.....
 Prepared by..... Dated..... Revised..... and
 the following conditions (reasons) final inspection req'd for ZCC, P&Z/ZBA conditions to be met for ZCC

Certified Foundation Plan Required NO Final As-Built Plan Required _____
 Zoning Certificate of Compliance Required YES Temporary Z.P. Time Period _____
 Permit void if: a. Work or activity not commenced within 1 year of the date of issuance, or
 b. Construction authorized not completed within 2 years of date of issuance.
 Failure to comply with the conditions of approval of this permit shall constitute a violation of the Westport Zoning Regulations.
 Construction Cost _____ Permit Fee town project
 Signature of Agent or Owner Richard Gough
 Date 4-2-97 ZCC Fee 0 By: Susan Reynolds
 Permit # 27397 Paid Total _____ Zoning Enforcement Office
 Westport Planning & Zoning Commission

ZONING CERTIFICATE OF COMPLIANCE
Planning & Zoning Commission

Westport, Connecticut

This is to certify that property located at 515 Post Road East

Tax Map #5318-1, Tax Lot #6, WLR # , ZBA #5347.

Premises covered by Zoning Permit #27397, Zone GBD


Issued to: Town of Westport

Mailing Address: 110 Myrtle Ave

To verify that a plot plan titled NOT REQ'D certified by FIELD INSPECTION and dated ----- for the above referenced lot and the structures thereon has been presented to the Zoning Enforcement Officer, and such plan indicates that the construction or use is in conformance with:

1. All applicable Zoning Regulations;
2. All conditions and requirements of the Zoning Permit;

Date: July 8, 1997

Inspected by: 

Date: 7-9-97

Issued by: 

Zoning Enforcement Office
Westport P & Z Commission

Property is connected to the Town sewers.

var. 5347 for 150' ht.



TOWN OF WESTPORT
ZONING BOARD OF APPEALS
TOWN HALL, 110 MYRTLE AVENUE
WESTPORT, CT 06880
(203) 341-1081

July 9, 1997

Chief Richard Gough
Fire Chief/Fire Marshall
515 Post Road East
Westport, CT 06880

RE: ZBA CASE # 5347
ADDRESS: 515 POST ROAD EAST
OWNER OF PROPERTY: TOWN OF WESTPORT/FIRE DEPARTMENT

Dear Chief Gough:

This is to certify that at the work session of the Zoning Board of Appeals held on January 21, 1997, the Board voted 5-0 (Leaman, Herman, Altschuh, Ezzes & McCarthy) in favor to **GRANT WITH CONDITIONS** your request for variance. and the following resolution was adopted:

RESOLVED: "That the request of Westport Fire Department/Sprint at 515 Post Road East for Variance of Sec. 24-5 (height) to permit 150' new tower (to replace existing 100' tower) for municipal & commercial purposes with panel type antennas in a GBD zone, (Assessor's Map #5318-1, lot 6), be **GRANTED WITH CONDITION** in accordance with the plans submitted with the application ("TOWN OF WESTPORT CONNECTICUT; CENTRAL FIRE STATION, 515 POST ROAD EAST, WESTPORT CT.; SCALE 1"=20' 0"; DATE 23, MARCH, '81; REVISED 3, AUG., '81; SITE PLAN: LAYOUT & PLANTING; DRAWN BY CHRISTOPHER S. MOOMAW - ARCHITECT, 134 MAIN STREET., NEW CANAAN, CT 06840; DRAWING NO. SL-1; & ATTACHED MONOPOLE DRAWING BY ROHN FOR 150' STEEL POLE DESIGN FOR SPRINT SPECTRUM AND 90 DEGREES, 15 dBd DIRECTIONAL ANTENNA BY DECIBEL PRODUCTS; ALLEN TELECOM GROUP."), and said Plan stamped "APPROVED WITH CONDITIONS" by the Zoning Board of Appeals on January 21, 1997, subject to the following:

CONDITIONS:

- Mindful of the mandate of the Telecommunications Act of 1996, The Town shall not unreasonably discriminate among providers of functionally equivalent services; The Town shall encourage co-location of other commercial providers of such services on this monopole. The Town shall retain the discretion to allow additional commercial users licensed by the FCC on this monopole.
- The proposed tower can not exceed 150' in total height

CASE #5347

Effective Date: Contingent upon applicant filing this resolution with the Town Clerk no later than February 21, 1997.

A Zoning Permit must be obtained within one year of the effective date of this variance, or it becomes null and void.

The project must be built in conformance with the approved plans. The structure cannot be demolished unless it has been specifically requested on the application.

After this variance has been filed with the Town Clerk you must then file an application for a Site Plan Review by the Planning and Zoning Commission. This may also include a review by the Architectural Review Board. The required Zoning Permit and Building Permit can only be obtained after a review of the project by the Planning and Zoning Commission.

Execution of this variance by filing with the Town Clerk authorizes you to obtain the necessary permits. Before you can proceed with your project you must obtain a Zoning and Building Permit.

Yours Truly,

Joanne Leaman, Chairman
Zoning Board of Appeals

JL:RZ
Certified Mail:RRR
cc: ZEO
enc.

Hearing: January 23, 1997
Decision: January 23, 1997

January 27, 1997

Richard Gough, Fire Chief/Fire Marshall
Town of Westport Fire Department
515 Post Road East
Westport, CT 06880

Re: 515 Post Road East, Appl. #96-130

Dear Mr. Gough:

This is to certify that at a meeting of the Westport Planning and Zoning Commission held on January 23, 1997 it was moved by Bill Crowther and seconded by David Marks to adopt the following resolution.

RESOLUTION #96-130

WHEREAS, the Planning and Zoning Commission met on January 23, 1997 and made the following findings:

1. The Communications Tower will provide enhanced transmission service to the citizens of this town, and the region.
2. The Town of Westport will be able to locate its own transmission equipment on the Tower.
3. The tower will be constructed at no cost to the Town.
4. The tower has received a height variance from the Zoning Board of Appeals.

NOW THEREFORE, BE IT RESOLVED that Application #96-130 by the Westport Fire Department & Sprint for property owned by the Town of Westport for a Special Permit and Site Plan review to replace existing 100' monopole tower with new 150' monopole tower to improve communications; in a GBD,

Map 5318-1, Lot 6 be Granted for the following reasons and subject to the conditions listed below:

Reasons:

Whereas, the proposed use has been found to be in conformance with the Town Plan of Development; and it will

1. be in conformance with the applicable zoning regulations of the Town of Westport; and
2. not prevent or inhibit the orderly growth and development of the area; and
3. not have a significant adverse affect on adjacent areas located within the close proximity to the use, and
4. not obstruct significant views which are important elements in maintaining the character of the Town or neighborhood for the purpose of promoting the general welfare and conserving the value of buildings; and
5. be in scale with and compatible with surrounding uses, buildings, streets and open spaces.

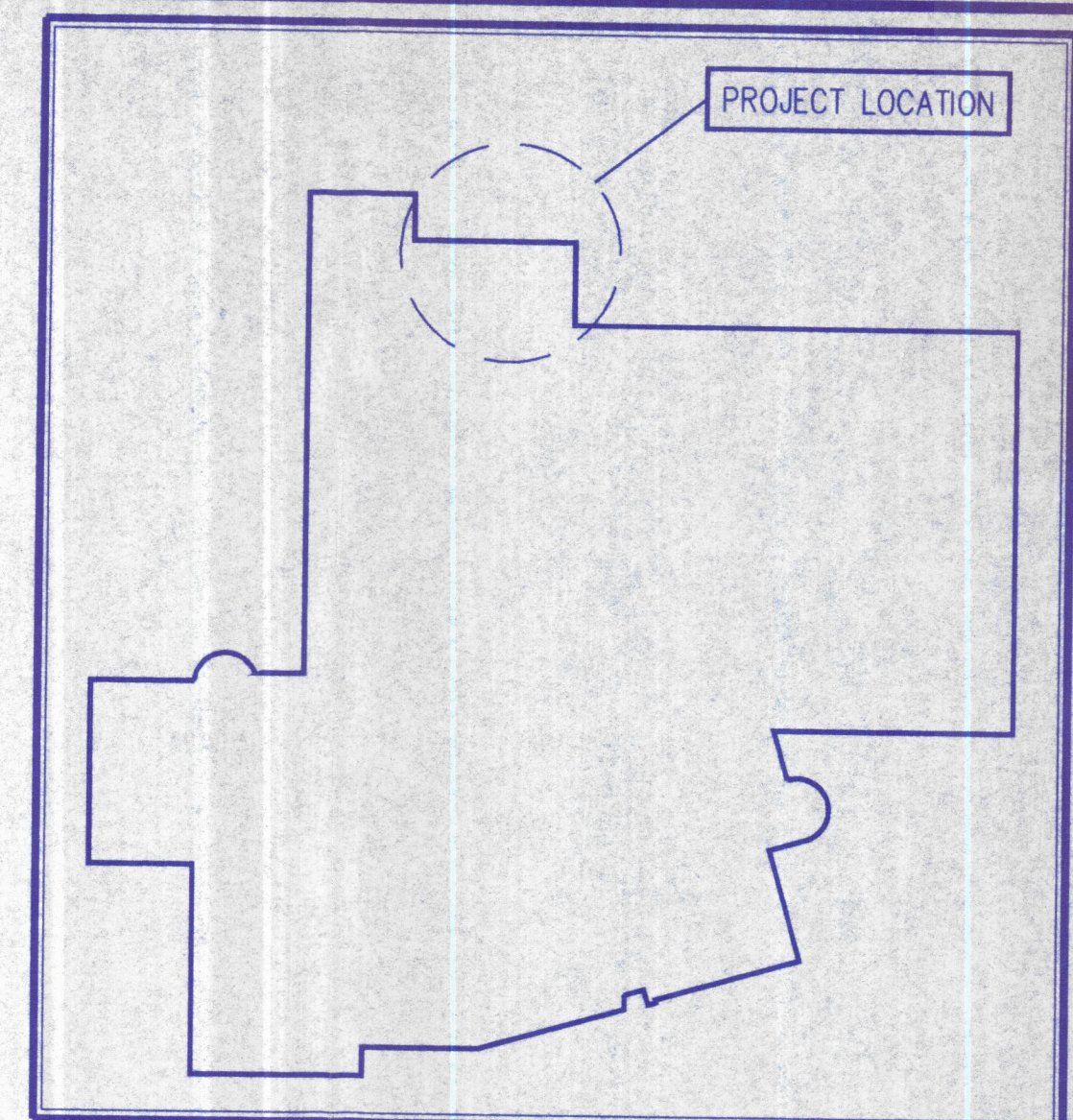
Conditions:

1. Conformance to ZBA Variance #5347 which states:
 - Mindful of the mandate of the Telecommunications Act of 1996, The Town shall not unreasonably discriminate among providers of functionally equivalent services; The Town shall encourage co-location of other commercial providers of such services on this monopole. The Town shall retain the discretion to allow additional commercial users licensed by the FCC on this monopole.
 - The proposed tower can not exceed 150' in total height
2. Conformance to Existing Conditions Map prepared by Christopher Moomaw, dated 3/23/81, revised to 8/3/81 and received by P&Z on 11/22/96.
3. Conformance to Preliminary Site Plan and Base Equipment, prepared by Jerry Gore, dated 9/27, and

THIRD PARTY BILL OF MATERIALS

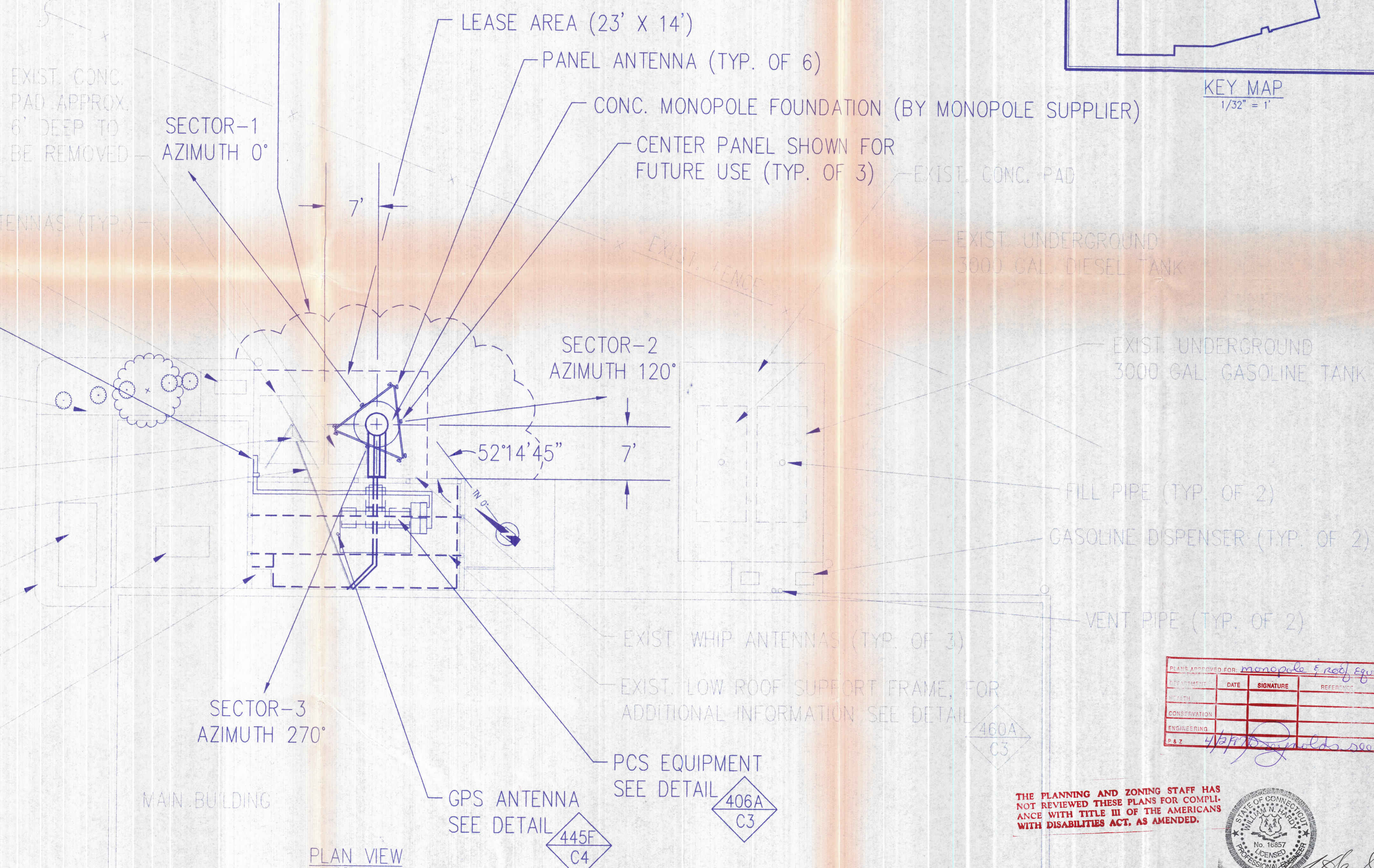
ITEM#	DESCRIPTION	QUANTITY (each)	LENGTH (feet each)	TOTAL LENGTH (feet ordered)
1	ANTENNAS: DECIBEL DB980H90E)-M W/ TILT MOUNTING BRACKETS & HEAVY DUTY CLAMPS GPS - LUCENT #407517669	6 1	N/A N/A	N/A N/A
2	JUMPER CABLES: 1/2" DIA. HELIAX COAXIAL (ANDREWS LDF4-50A) FITTED W/ CONNECTORS MALE - 7/16" DIN (ANDREWS #L4PDM INSTALLED BY SUPPLIER) MALE - N (ANDREWS #L4PNM INSTALLED BY SUPPLIER)	6 6	5 N/A	N/A N/A
3	MAIN CABLES: 1/2" DIA. HELIAX COAXIAL (ANDREWS LDF4-50A) 7/8" DIA. HELIAX COAXIAL (ANDREWS LDF5-50A) 1 1/4" DIA. HELIAX COAXIAL (ANDREWS LDF6-50) 1 5/8" DIA. HELIAX COAXIAL (ANDREWS LDF7-50A)	1 N/A N/A 6	FIELD CUT TO LENGTH	15 N/A N/A 960
4	GROUNDING KITS W/ 24" GROUND CABLE & 2-HOLE LUGS FOR: 1/2" CABLE (ANDREWS #241088-1) 7/8" CABLE (ANDREWS #241088-2) 1 1/4" CABLE (ANDREWS #241088-3) 1 5/8" CABLE (ANDREWS #241088-4)	3 N/A N/A 18	N/A N/A N/A N/A	N/A N/A N/A N/A
5	CONNECTORS-UNATTACHED FOR GPS & MAIN CABLES: MALE "N" 1/2" (ANDREWS L4PDM) FEMALE "N" 1/2" (ANDREWS L4PNM) FEMALE "N" 7/8" (ANDREWS L5PNM) FEMALE "N" 1 1/4" (ANDREWS L6PNM) FEMALE "N" 1 5/8" (ANDREWS L7PNM)	1 1 N/A N/A 12	N/A N/A N/A N/A N/A	N/A N/A N/A N/A N/A
6	MONOPOLE INCLUDING ALL ACCESSORIES AS REQUIRED BY SPRINT SPECTRUM TOWER SPECIFICATION (CABLE ACCESS @ 12,500,100,150')	1	150	N/A
7	PPC MINI, IN LINE TYPE MANUFACTURED BY NORTHERN TECHNOLOGIES MODEL # L1101-W01 NOTE: REPLACE ONE DOUBLE POLE 60 AMP BREAKER WITH TWO SINGLE POLE 20 AMP BREAKERS	1	N/A	N/A
8	PCS EQUIPMENT SUPPORT FRAME - BECHTEL DETAIL 406A	1	N/A	N/A
9	PPC MINI SUPPORT FRAME - BECHTEL DETAIL 461	1	N/A	N/A
10	GPS ANTENNA MOUNTING BRACKET - BECHTEL DETAIL 806	1	N/A	N/A

NOTE: ITEMS 3 & 5 ARE FIELD FABRICATED BY THE CONTRACTOR



KEY MAP
1/32" = 1'

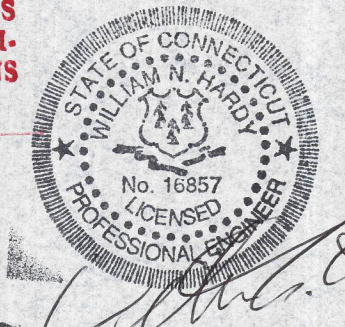
ALL DISTURBED AREAS ARE TO BE REPAIRED AS NECESSARY



CORE THROUGH EXIST. CMU WALL, SEE DETAIL
EXACT ELEVATION/LOCATION TO BE FIELD DETERMINED

DATE	SIGNATURE	REFERENCE
4/27/98	[Signature]	CP

THE PLANNING AND ZONING STAFF HAS NOT REVIEWED THESE PLANS FOR COMPLIANCE WITH TITLE III OF THE AMERICANS WITH DISABILITIES ACT, AS AMENDED.

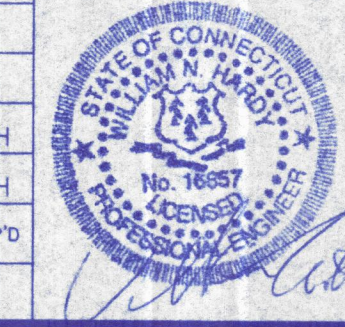


SEA SEA Consultants Inc.
Engineers/Architects
CAMBRIDGE, MASSACHUSETTS ROCKY HILL, CONNECTICUT
LONDONDERRY, NEW HAMPSHIRE

WESTPORT FIRE STATION
515 POST ROAD EAST
WESTPORT, CT 06880

Sprint PCS
HARTFORD MTA
SITE NO. CT03XC355C

NO.	DATE	REVISIONS	BY	CHK	APPD
1	2/12/97	MOVE GPS, REVISE BOM	STC	GMP	WNH
2	1/3/97	ISSUED FOR CONSTRUCTION	STC	GMP	WNH

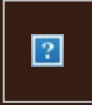


JOB NO.	DRAWING NUMBER	REV
23224	YFA355C1	1

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EXHIBIT 7

From: [UPS](#)
To: [Evan Renwick](#)
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030337191006
Date: Monday, May 9, 2022 2:17:21 PM



Hello, your package has been delivered.

Delivery Date: Monday, 05/09/2022

Delivery Time: 2:15 PM

Left At: INSIDE DELIV

Signed by: PAUL

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030337191006
Ship To:	TOWN OF WESTPORT 110 MYRTLE AVENUE ROOM 310 WESTPORT, CT 068803514 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT2153-CSC FIRST SELECTWOMAN

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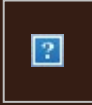
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From: [UPS](#)
To: [Evan Renwick](#)
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030329323227
Date: Monday, May 9, 2022 2:17:17 PM



Hello, your package has been delivered.

Delivery Date: Monday, 05/09/2022

Delivery Time: 2:15 PM

Left At: INSIDE DELIV

Signed by: PAUL

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030329323227
Ship To:	PLANNING & ZONING DEPARTMENT 110 MYRTLE AVENUE ROOM 203 WESTPORT, CT 068803514 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT2153-CSC TOWN PLANNER

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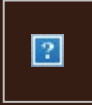
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From: [UPS](#)
To: [Evan Renwick](#)
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030329528837
Date: Monday, May 9, 2022 2:17:16 PM



Hello, your package has been delivered.

Delivery Date: Monday, 05/09/2022

Delivery Time: 2:15 PM

Left At: INSIDE DELIV

Signed by: PAUL

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030329528837
Ship To:	PLANNING & ZONING DEPARTMENT 110 MYRTLE AVENUE ROOM 203 WESTPORT, CT 068803514 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT2153-CSC ZEO

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