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

   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
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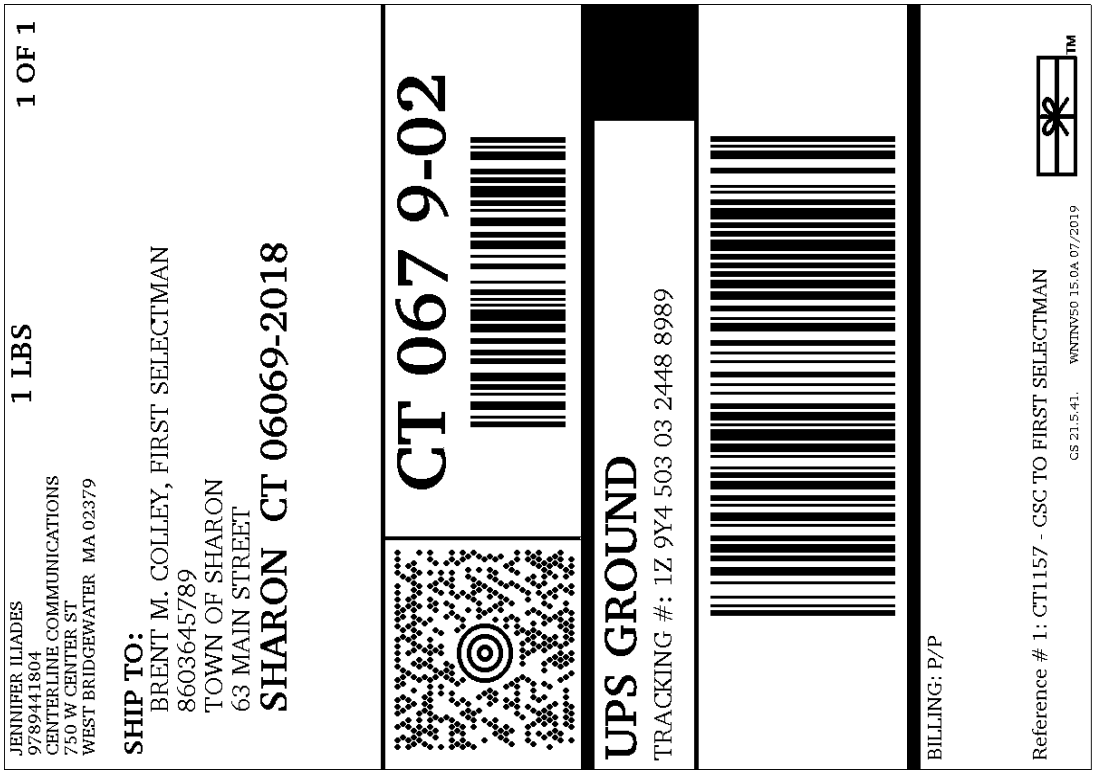

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Thursday, October 17, 2019 12:48 PM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030324488989

Your package has been delivered.

Delivery Date: Thursday, 10/17/2019
Delivery Time: 12:42 PM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030324488989
Ship To:	Brent M. Colley, First Selectman Town of Sharon 63 MAIN ST SHARON, CT 06069 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	OFFICE WOODMAN
Reference Number 1:	CT1157 - CSC to First Selectman

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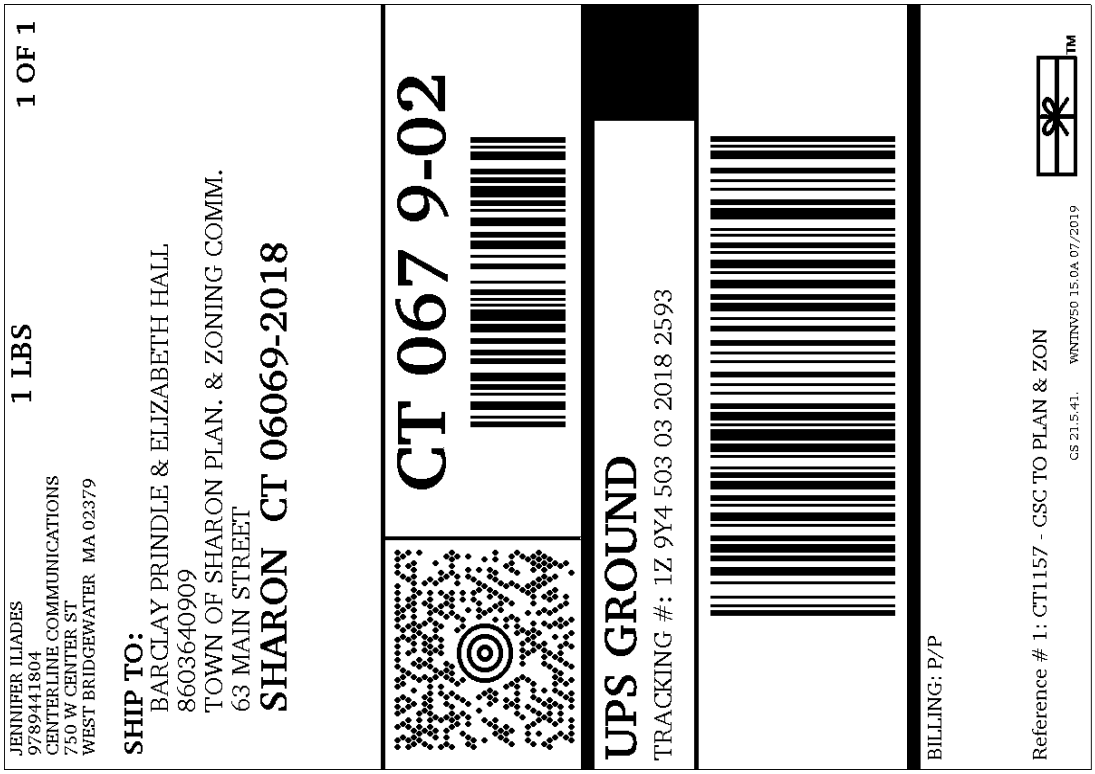

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Thursday, October 17, 2019 12:48 PM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030320182593

Your package has been delivered.

Delivery Date: Thursday, 10/17/2019
Delivery Time: 12:42 PM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030320182593
Ship To:	Barclay Prindle & Elizabeth Hall Town of Sharon Plan. & Zoning Comm. 63 MAIN ST SHARON, CT 06069 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	OFFICE WOODMAN
Reference Number 1:	CT1157 - CSC to Plan & Zon

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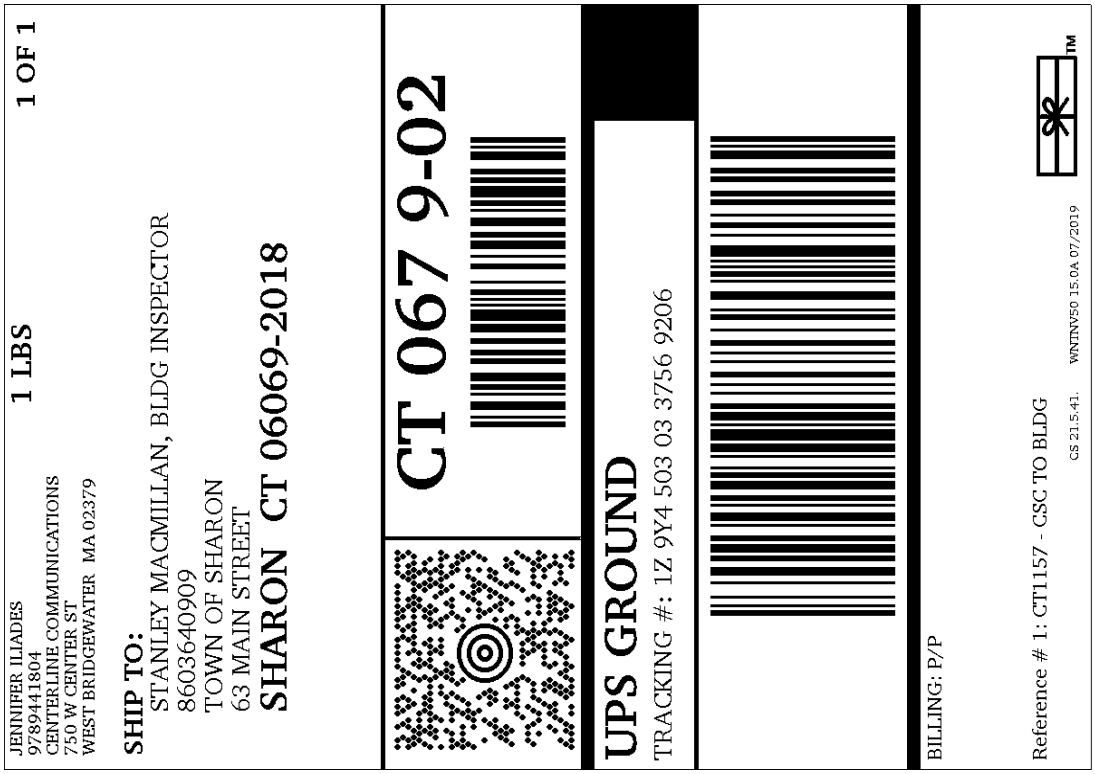

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Thursday, October 17, 2019 12:48 PM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030337569206

Your package has been delivered.

Delivery Date: Thursday, 10/17/2019
Delivery Time: 12:42 PM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030337569206
Ship To:	Stanley MacMillan, Bldg Inspector Town of Sharon 63 MAIN ST SHARON, CT 06069 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	OFFICE WOODMAN
Reference Number 1:	CT1157 - CSC to Bldg

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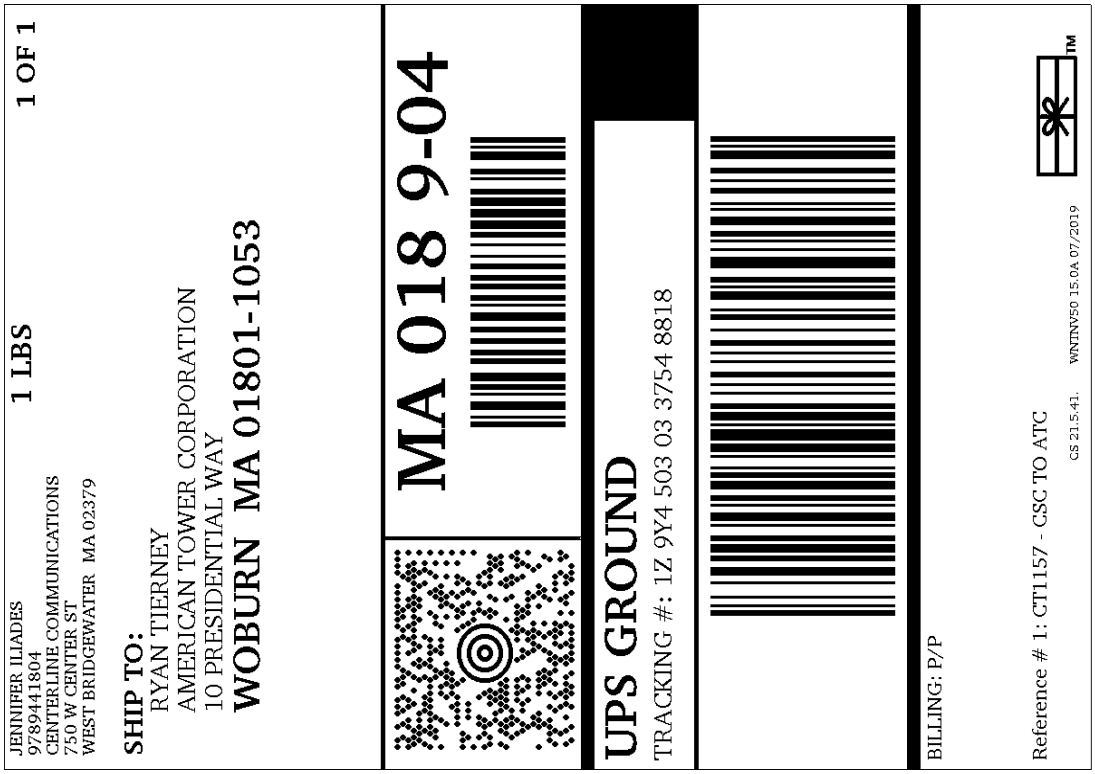

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Thursday, October 17, 2019 10:38 AM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030337548818

Your package has been delivered.

Delivery Date: Thursday, 10/17/2019
Delivery Time: 10:35 AM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030337548818
Ship To:	Ryan Tierney American Tower Corporation 10 PRESIDENTIAL WAY WOBURN, MA 01801 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	OFFICE HAY
Reference Number 1:	CT1157 - CSC to ATC

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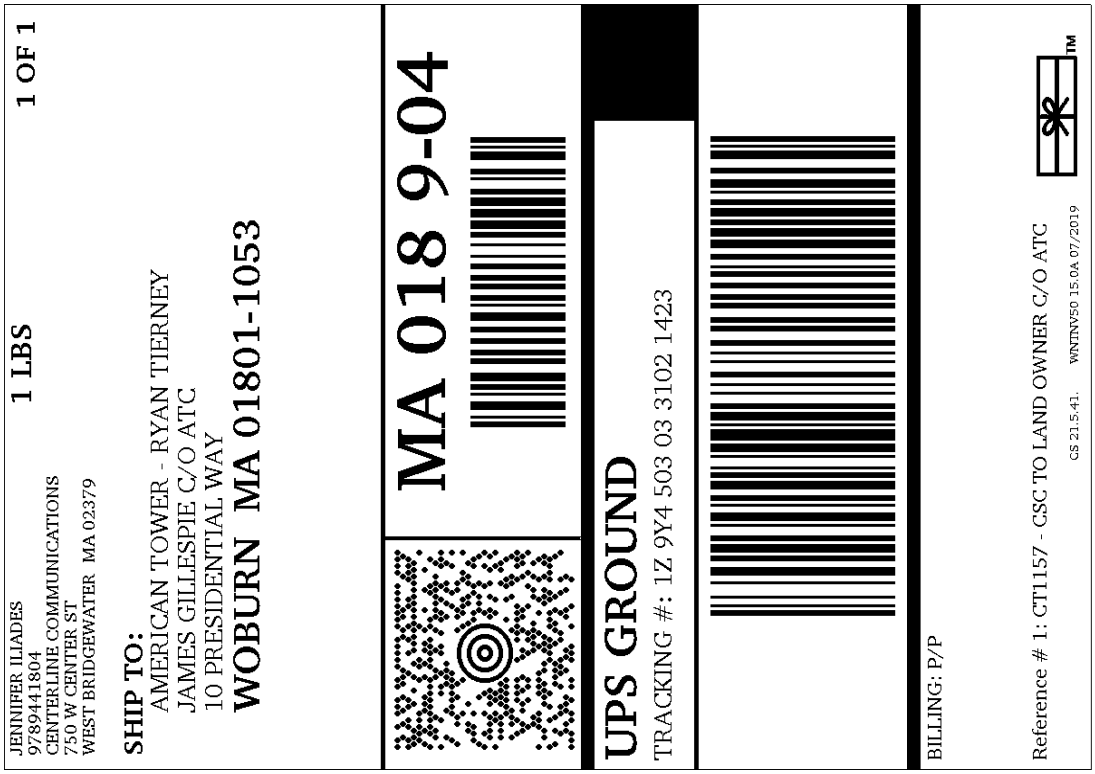

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Thursday, October 17, 2019 10:39 AM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030331021423

Your package has been delivered.

Delivery Date: Thursday, 10/17/2019
Delivery Time: 10:35 AM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030331021423
Ship To:	American Tower - Ryan Tierney James Gillespie c/o ATC 10 PRESIDENTIAL WAY WOBURN, MA 01801 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	OFFICE HAY
Reference Number 1:	CT1157 - CSC to Land Owner c/o ATC

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October 15, 2019

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

Regarding: Notice of Exempt Modification – AT&T Site CT1157
Address: 70 Herb Road, Sharon, CT 06069

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains a wireless telecommunications facility on an existing a +/- 110' monopole tower at the above-referenced address, latitude 41.791100, longitude -73.425600. Said monopole tower is managed by American Tower Corporation.

AT&T desires to modify its existing telecommunications facility by swapping (6) antennas, swapping (3) remote radio heads, adding (6) remote radio heads, adding (1) surge arrestor and accompanying feedlines as more particularly detailed and described on the enclosed Construction Drawings prepared by Hudson Design Group LLC, dated August 16, 2019 and last revised October 3, 2019. The centerline height of the existing antennas is and will remain at 92 feet.

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: Brent M. Colley, First Selectman of the Town of Sharon; Barclay W. Prindle and Elizabeth M. Hall, Chairmen of the Town of Sharon Planning and Zoning Commission, Stanley MacMillan, Building Inspector of the Town of Sharon; American Tower Corporation as manager of the above referenced tower; and James Gillespie, c/o American Tower Corporation, as property owner of the above referenced address.

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

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

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 September 23, 2019 and prepared by American Tower Corporation 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,

Jennifer Iliades
Site Acquisition Consultant
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
jiliades@clinellc.com

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

cc:
Brent M. Colley, First Selectman of the Town of Sharon
Barclay W. Prindle and Elizabeth M. Hall, Chairmen of the Town of Sharon Planning and Zoning Commission
Stanley MacMillan, Building Inspector of the Town of Sharon
American Tower Corporation, as tower manager
James Gillespie, c/o American Tower Corporation, as property owner

EXHIBIT 1

PROJECT INFORMATION

SCOPE OF WORK:	ITEMS TO BE MOUNTED ON THE EXISTING MONOPINE: • NEW AT&T ANTENNAS: DMP65R-BU6DA (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T ANTENNAS: (DMP65R-BU4DA) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T RRUS: B2/B66A 8843 (AWS/PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3) • NEW AT&T RRUS: B5/B12 4449 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T RRUS: 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T DC/FIBER SURGE ARRESTOR: DC9-48-60-24-8C-EV, (TOTAL OF 1) WITH (3) DC POWER & (1) FIBER RUN. • PROPOSED MOUNT MODS (SEE S-1 SHEET). ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION: • SWAP BB FOR (2) 6630. • ADD (1) IDLe. • INSTALL (1) DC12. • REMOVE CSRF. ITEMS TO REMAIN: • (3) ANTENNAS, (6) TMA'S (1) SURGE ARRESTOR, (6) COAX CABLES (ACTIVE), (6) COAX CABLES (FOR FUTURE USE), (2) DC POWER & (1) FIBER RUNS.
SITE ADDRESS:	70 HERB ROAD SHARON, CT 06069
LATITUDE:	41.791320° N, 41° 47' 28.75" N
LONGITUDE:	73.425696° W, 73° 25' 32.50" W
TYPE OF SITE:	MONOPINE / INDOOR
STRUCTURE HEIGHT:	110'-0"±
RAD CENTER:	91'-0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

SITE NUMBER: CT1157

SITE NAME: SHARON CT HERB ROAD

FA CODE: 10107709

PACE ID: MRCTB041365, MRCTB041485, MRCTB041699, MRCTB041550, MRCTB041488

PROJECT: LTE 2C_3C_4C_5C_ RETRO 2019 UPGRADE

FOR ZONING
NOT FOR CONSTRUCTION

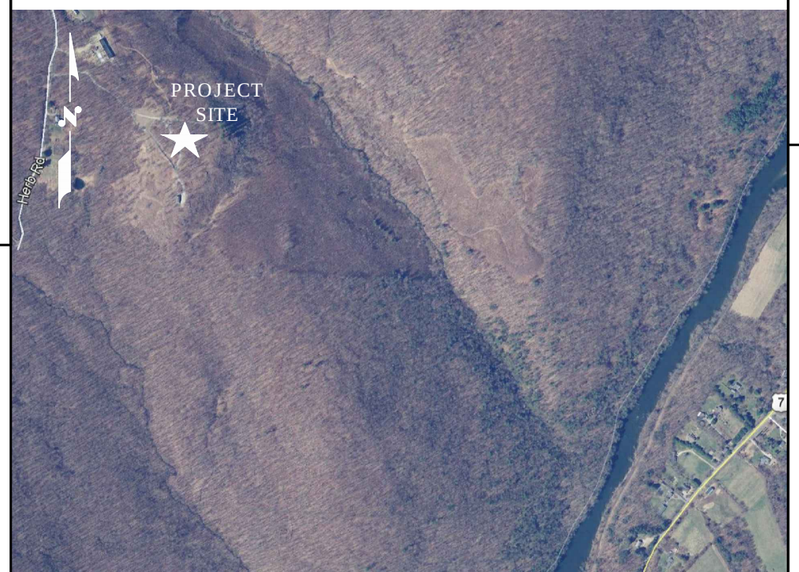
DRAWING INDEX

ATC SITE NAME: SHARON CT
ATC SITE #: 415974

VICINITY MAP

DIRECTIONS TO SITE:

84 WEST TOWARD WATERBURY/DANBURY TAKE EXIT 20 TOWARD TORRINGTON TAKE THE CT202 EXIT EXIT 44 TOWARD CT4 EAST/DOWNTOWN TORRINGTON STAY STRAIGHT TO GO ONTO CHRISTOPHER ROAD TURN LEFT ONTO EAST ELM STREET/CT4 TURN LEFT ONTO CEMETARY HILL ROAD TURN LEFT ONTO NORTHRUP ROAD TURN SLIGHT LEFT ONTO SOUTH ELLSWORTH ROAD TURN RIGHT ONTO HERB ROAD, TAKE A LEFT TURN THROUGH THE UNPAVED ROAD, AND THEN TAKE A RIGHT AT THE FORK TO REACH THE SITE.



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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.

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Daniel P. Hamm

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: CT1157
SITE NAME: SHARON CT HERB ROAD
ATC SITE # ID: 415974

70 HERB ROAD
SHARON, CT 06069
LITCHFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	10/03/19	ISSUED FOR ZONING	ET	AT	DPH
A	08/16/19	ISSUED FOR REVIEW	ET	AT	DPH

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

AT&T

TITLE SHEET
LTE 2C_3C_4C_5C_ RETRO 2019 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1157	T-1	0

GROUNDING NOTES

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

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

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

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

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

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

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

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

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

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

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

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

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

    TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, 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		

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

SITE NUMBER: CT1157
SITE NAME: SHARON CT HERB ROAD
ATC SITE # ID: 415974

70 HERB ROAD
SHARON, CT 06069
LITCHFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	10/03/19	ISSUED FOR ZONING	ET	AT	DPH
A	08/16/19	ISSUED FOR REVIEW	ET	AT	DPH

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

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

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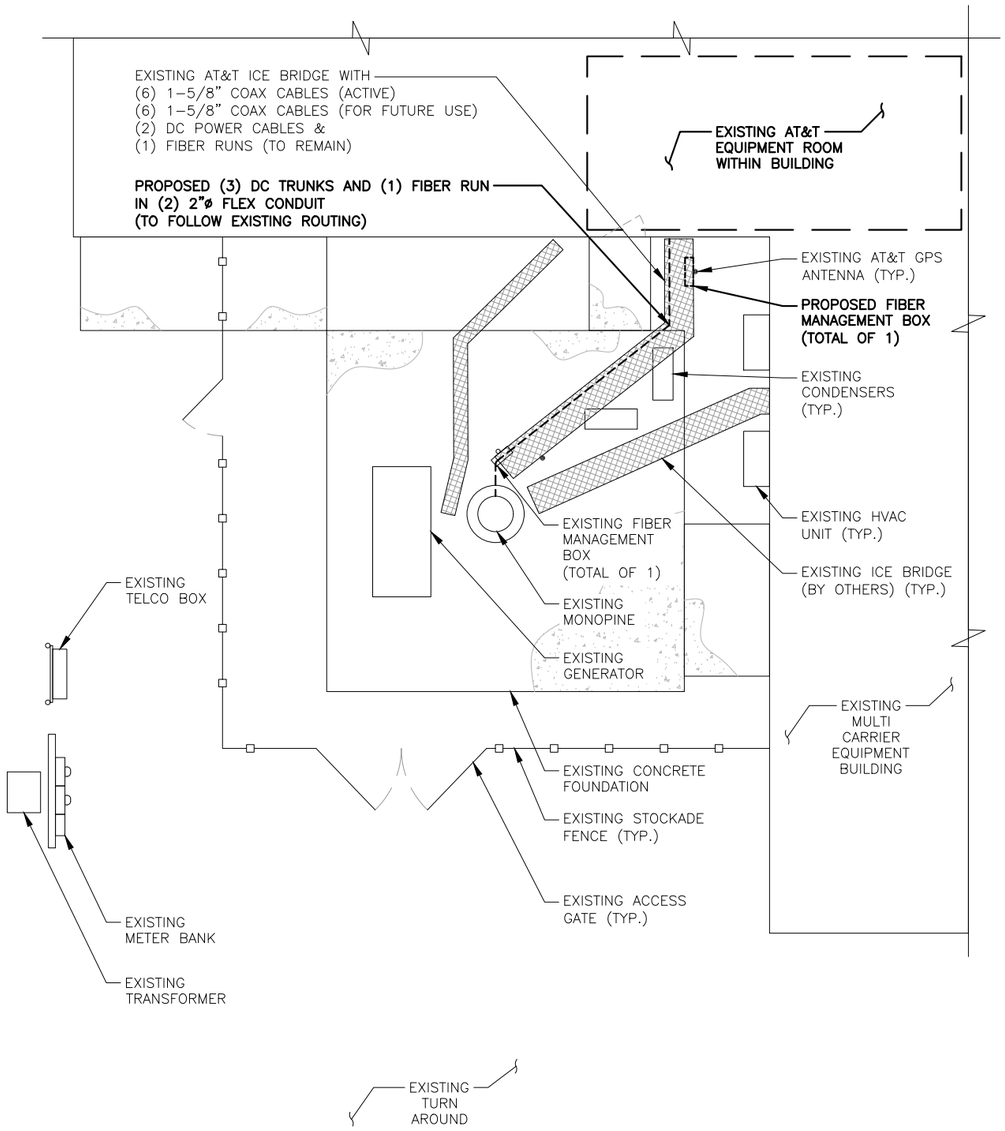
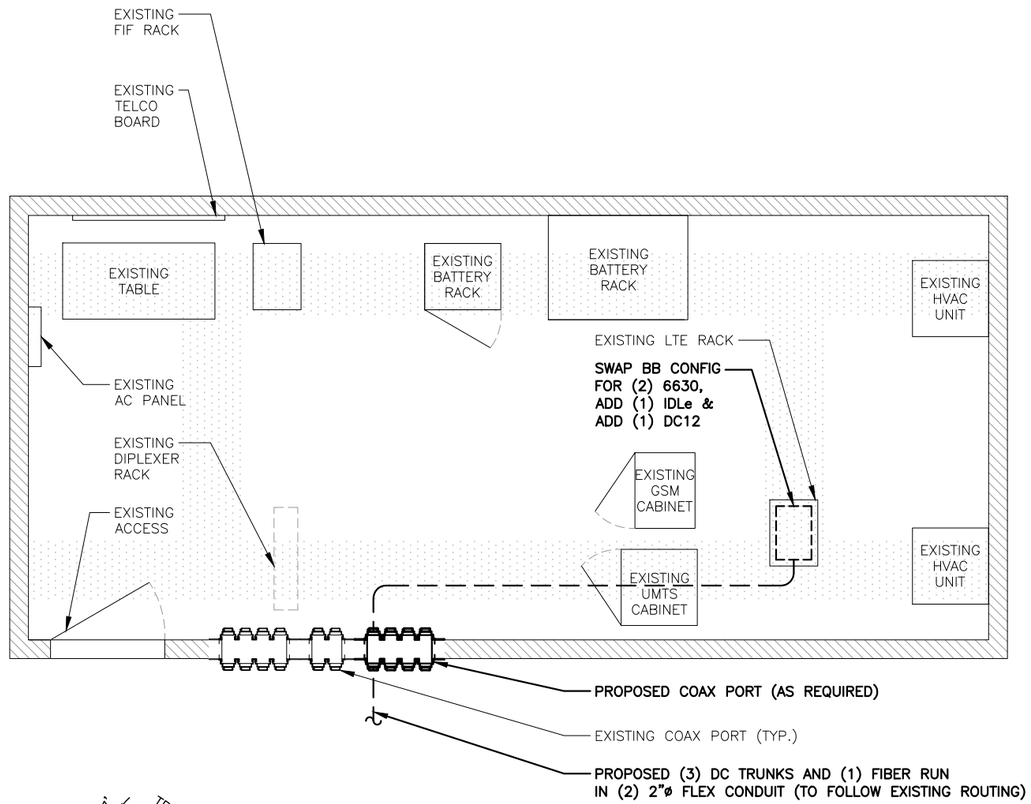
GENERAL NOTES

LTE 2C_3C_4C_5C_ RETRO 2019 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1157	GN-1	0





NOTE:

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

NOTE:

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

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: **AUGUST 15, 2019 (REV.1)**

13°1'7" TRUE NORTH MAGNETIC NORTH

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

0 2'-8" 5'-4" 10'-8" 16'-0"

13°1'7" TRUE NORTH MAGNETIC NORTH

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

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

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at&t
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A	08/16/19	ISSUED FOR REVIEW	ET	AT	DPH

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

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

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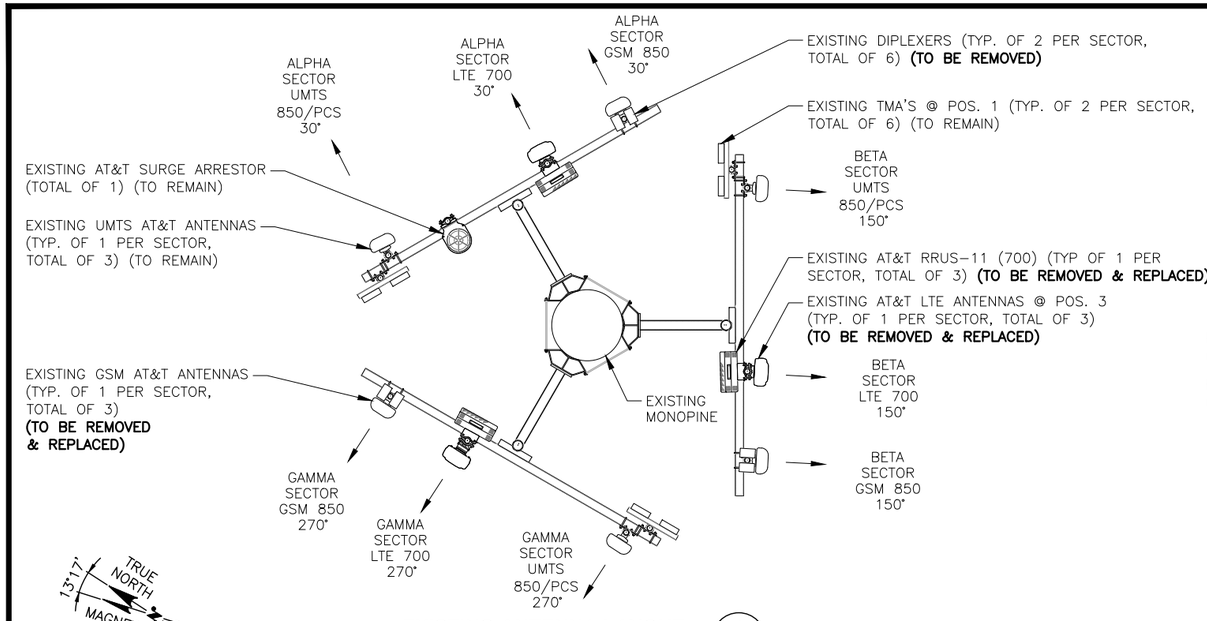
COMPOUND & EQUIPMENT PLANS
LTE 2C_3C_4C_5C_ RETRO 2019 UPGRADE

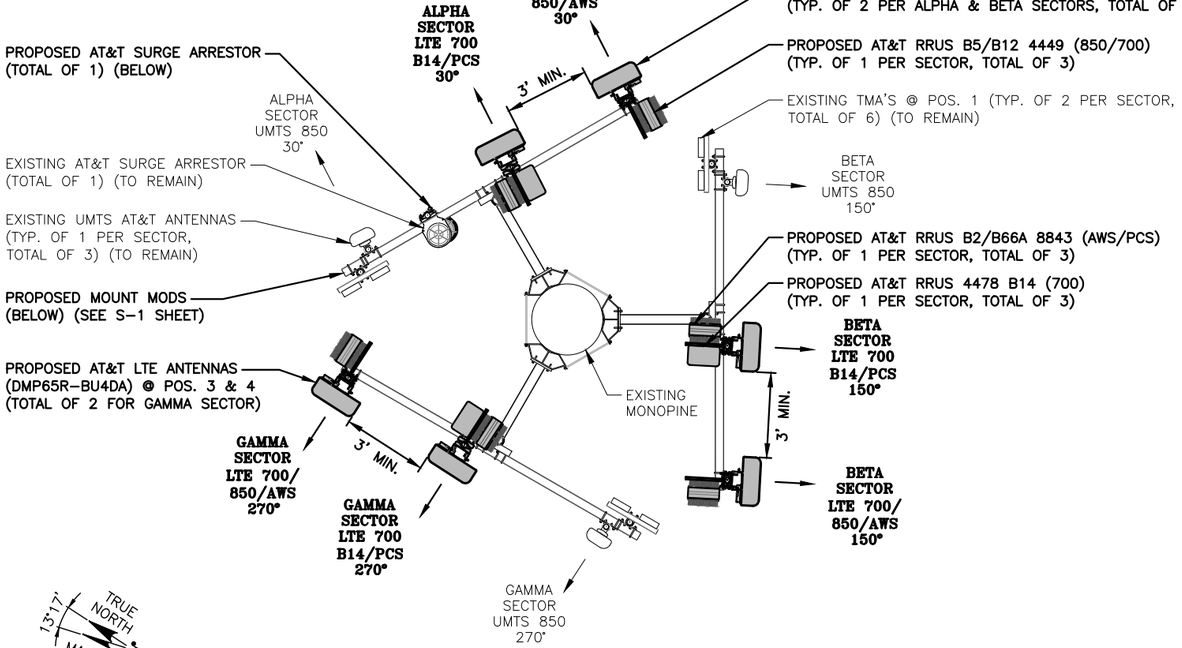
SITE NUMBER	DRAWING NUMBER	REV
CT1157	A-1	0



EXISTING ANTENNA LAYOUT

SCALE: N.T.S

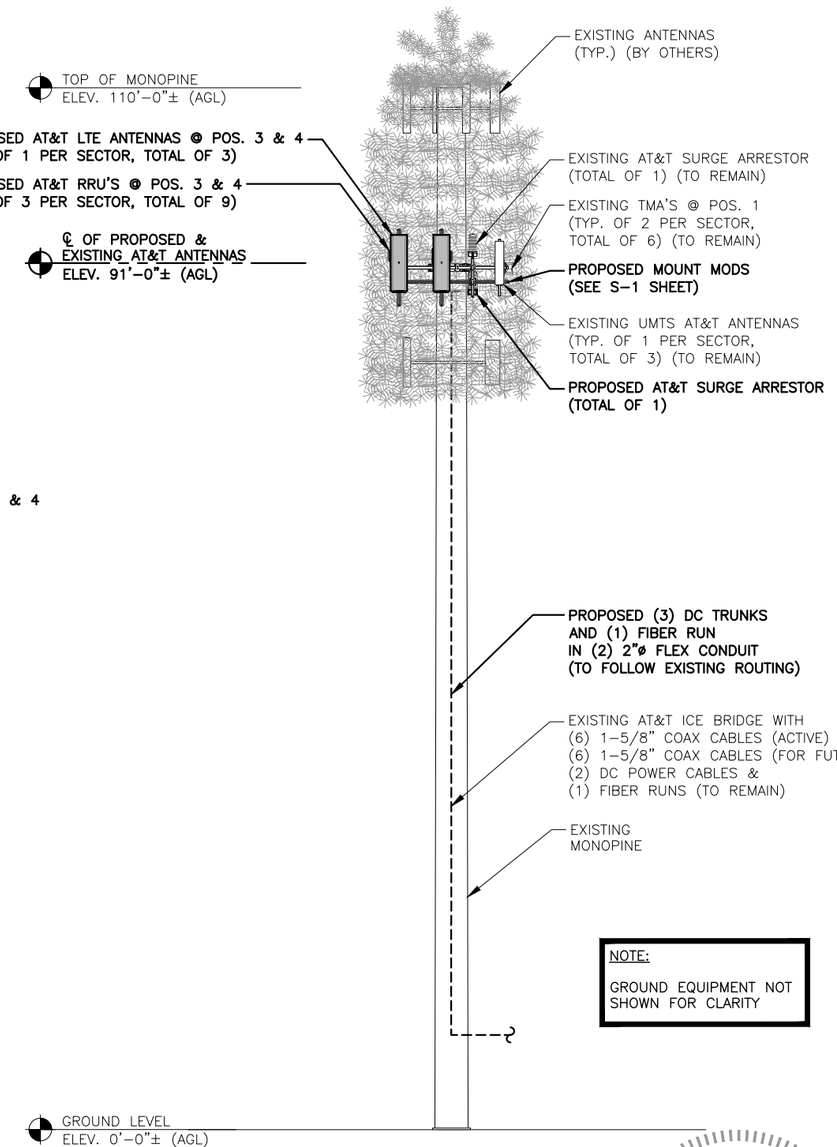
1 / A-2



PROPOSED ANTENNA LAYOUT

SCALE: N.T.S

2 / A-2



NOTE:
GROUND EQUIPMENT NOT SHOWN FOR CLARITY

ELEVATION

22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

3 / A-2

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

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

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

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC.
DATED: **AUGUST 15, 2019 (REV.1)**

NOTE:
ALL PROPOSED EQUIPMENT TO BE PAINTED TO MATCH EXISTING POLE.

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at&t
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NO.	DATE	REVISIONS	BY	CHK	APP'D
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A	08/16/19	ISSUED FOR REVIEW	ET	AT	DPH

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

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

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ANTENNA LAYOUTS & ELEVATION
LTE 2C_3C_4C_5C_ RETRO 2019 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1157	A-2	0

ANTENNA SCHEDULE

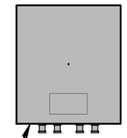
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850	7770	55X11X5	91'-0"±	30°	(2)(E) LGP21401	–	–	(2)1-5/8 COAX (ACTIVE) (2)1-5/8 COAX (FOR FUTURE USE)	(E) (1) RAYCAP DC6-48-60-18-8F
A2	–	–	–	–	–	–	–	–	–	–	
A3	**PROPOSED**	**LTE 700 B14/PCS**	**DMP65R-BU6DA**	**71.2x20.7x7.7**	**91'-0"±**	**30°**	–	**P(1) 4478 B14 (700) P(1) 8843 B2/B66A (AWS/PCS)**	**18.1"x13.4"x8.3" 14.9"x13.2"x10.9"**	–	
A4	**PROPOSED**	**LTE 700/ 850/AWS**	**DMP65R-BU6DA**	**71.2x20.7x7.7**	**91'-0"±**	**30°**	–	**P(1) 4449 B5/B12 (850/700)**	**14.9"x13.2"x10.4"**	–	
B1	EXISTING	UMTS 850	7770	55X11X5	91'-0"±	150°	(2)(E) LGP21401	–	–	(2)1-5/8 COAX (ACTIVE) (2)1-5/8 COAX (FOR FUTURE USE)	(E) (1) RAYCAP DC6-48-60-18-8F
B2	–	–	–	–	–	–	–	–	–	–	
B3	**PROPOSED**	**LTE 700 B14/PCS**	**DMP65R-BU6DA**	**71.2x20.7x7.7**	**91'-0"±**	**150°**	–	**P(1) 4478 B14 (700) P(1) 8843 B2/B66A (AWS/PCS)**	**18.1"x13.4"x8.3" 14.9"x13.2"x10.9"**	–	
B4	**PROPOSED**	**LTE 700/ 850/AWS**	**DMP65R-BU6DA**	**71.2x20.7x7.7**	**91'-0"±**	**150°**	–	**P(1) 4449 B5/B12 (850/700)**	**14.9"x13.2"x10.4"**	–	
C1	EXISTING	UMTS 850	7770	55X11X5	91'-0"±	270°	(2)(E) LGP21401	–	–	(2)1-5/8 COAX (ACTIVE) (2)1-5/8 COAX (FOR FUTURE USE)	(P) (1) RAYCAP DC9-48-60-24-8C-EV
C2	–	–	–	–	–	–	–	–	–	–	
C3	**PROPOSED**	**LTE 700 B14/PCS**	**DMP65R-BU4DA**	**48x20.7x7.7**	**91'-0"±**	**270°**	–	**P(1) 4478 B14 (700) P(1) 8843 B2/B66A (AWS/PCS)**	**18.1"x13.4"x8.3" 14.9"x13.2"x10.9"**	–	
C4	**PROPOSED**	**LTE 700/ 850/AWS**	**DMP65R-BU4DA**	**48x20.7x7.7**	**91'-0"±**	**270°**	–	**P(1) 4449 B5/B12 (850/700)**	**14.9"x13.2"x10.4"**	–	

FINAL ANTENNA SCHEDULE (1 / A-3)
SCALE: N.T.S

RRU CHART		
QUANTITY	**MODEL**	**SIZE (L x W x D)**
P(3)	**4449 (850/700)**	**14.9"x13.2"x10.4"**
P(3)	**8843 (AWS/PCS)**	**14.9"x13.2"x10.9"**
P(3)	**4478 B14 (700)**	**18.1"x13.4"x8.3"**

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

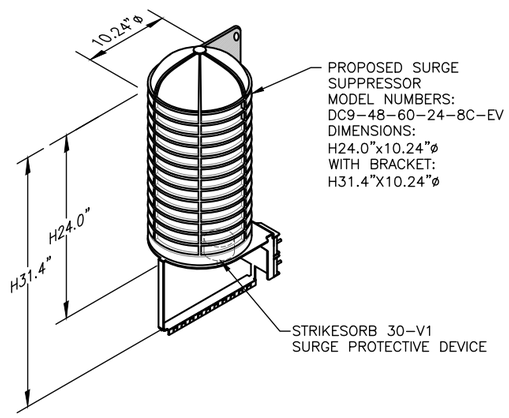
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

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

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

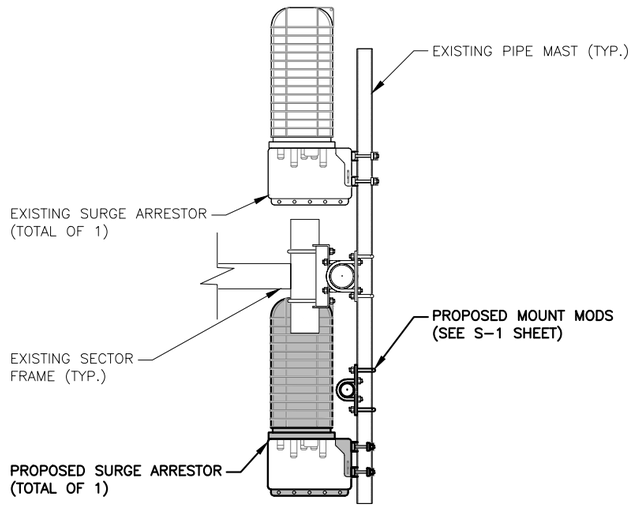
NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: **AUGUST 15, 2019 (REV.1)**



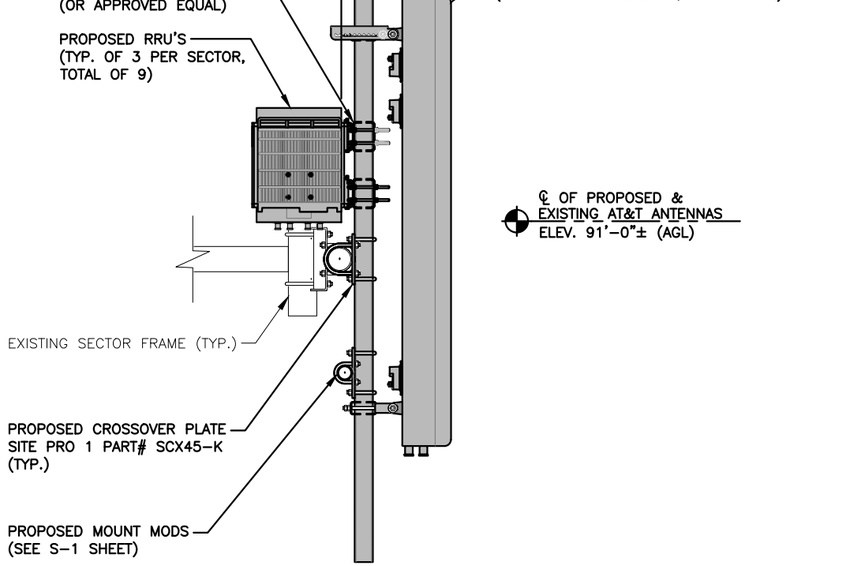
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

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



PROPOSED SURGE ARRESTOR MOUNTING DETAIL (4 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

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



PROPOSED LTE ANTENNA MOUNTING DETAIL (5 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

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

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NO.	DATE	REVISIONS	BY	CHK	APP'D
0	10/03/19	ISSUED FOR ZONING	ET	AT	DPH
A	08/16/19	ISSUED FOR REVIEW	ET	AT	DPH

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

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

AT&T

DETAILS

LTE 2C_3C_4C_5C_ RETRO 2019 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1157	A-3	0

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

NOTES:

1. REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
2. PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
3. PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
4. HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
5. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
6. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

SPECIAL INSPECTION CHECKLIST

BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS [4]
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION [5]
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS [6]
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

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: CT1157
SITE NAME: SHARON CT HERB ROAD
ATC SITE # ID: 415974

70 HERB ROAD
SHARON, CT 06069
LITCHFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	10/03/19	ISSUED FOR ZONING	ET	AT	DPH
A	08/16/19	ISSUED FOR REVIEW	ET	AT	DPH

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

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

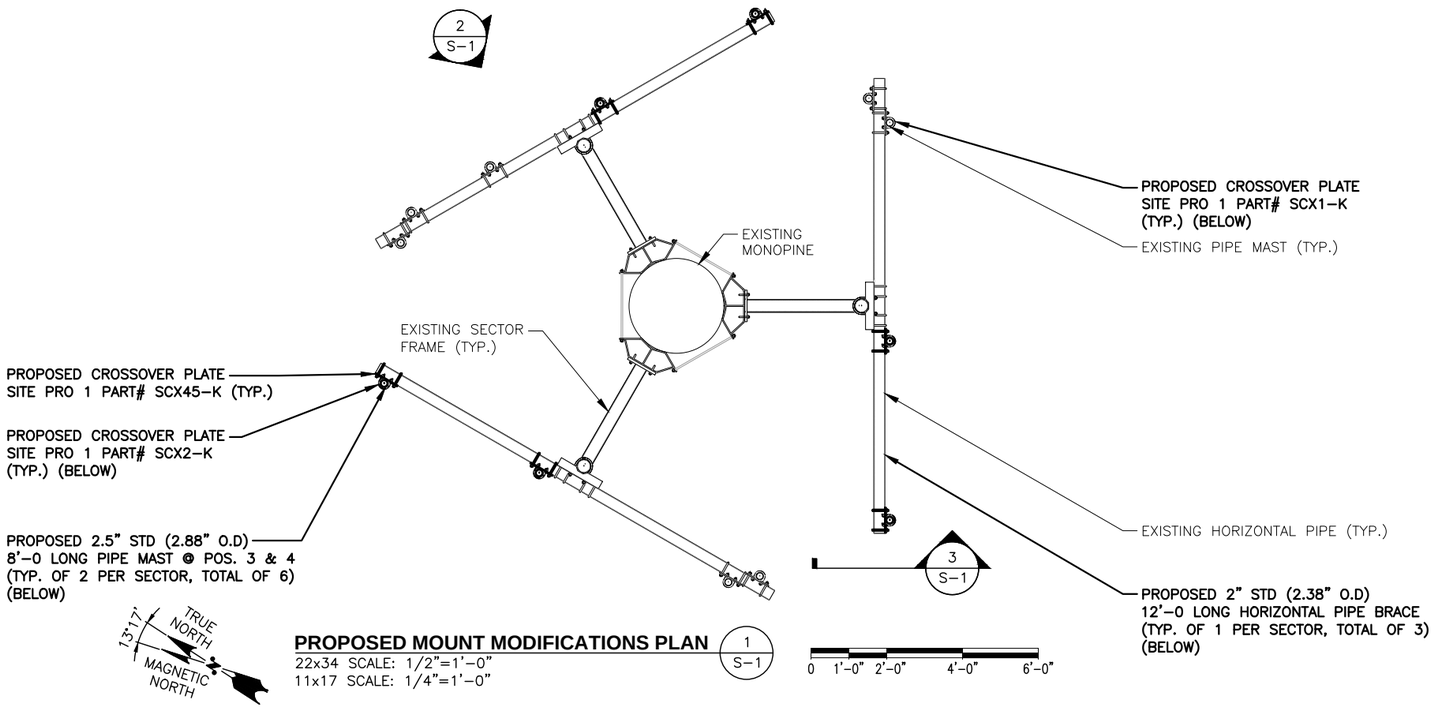
Daniel P. Hamm

AT&T

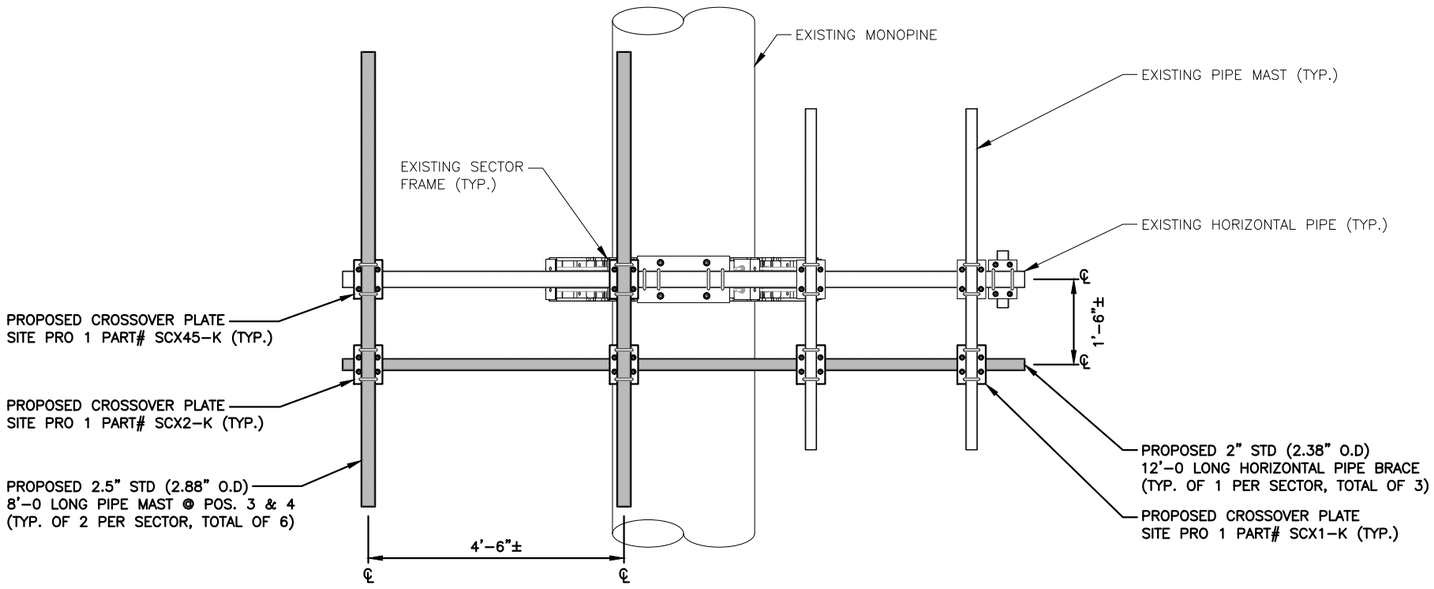
STRUCTURAL NOTES

LTE 2C_3C_4C_5C_ RETRO 2019 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1157	SN-1	0



PROPOSED MOUNT MODIFICATIONS PLAN (1 / S-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"



PROPOSED MOUNT MODIFICATIONS ELEVATION (2 / S-1)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"

NOTE:

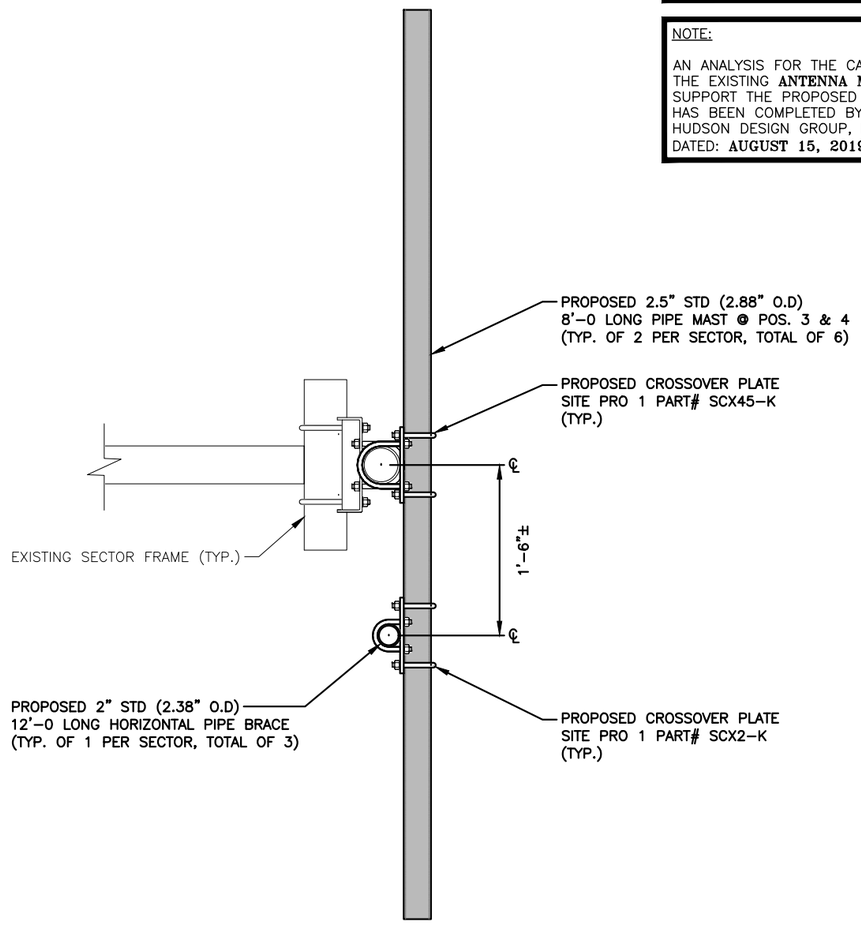
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

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

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: **AUGUST 15, 2019 (REV.1)**



PROPOSED MOUNT MODIFICATIONS DETAIL (3 / S-1)
22x34 SCALE: 1-1/2"=1'-0"
11x17 SCALE: 3/4"=1'-0"
0 0'-4" 0'-8" 1'-4" 2'-0"

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at&t
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ATC SITE # ID: 415974

70 HERB ROAD
SHARON, CT 06069
LITCHFIELD COUNTY

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	10/03/19	ISSUED FOR ZONING	ET	AT	DPH
A	08/16/19	ISSUED FOR REVIEW	ET	AT	DPH

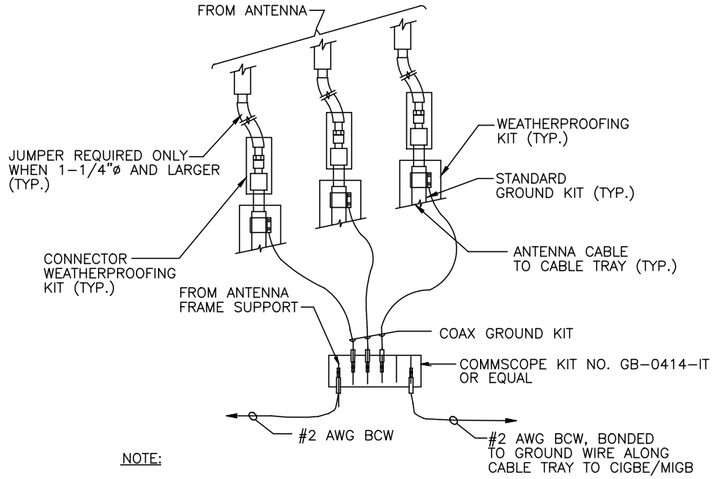
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

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

AT&T

MOUNT MODIFICATION DESIGN
LTE 2C_3C_4C_5C_ RETRO 2019 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1157	S-1	0



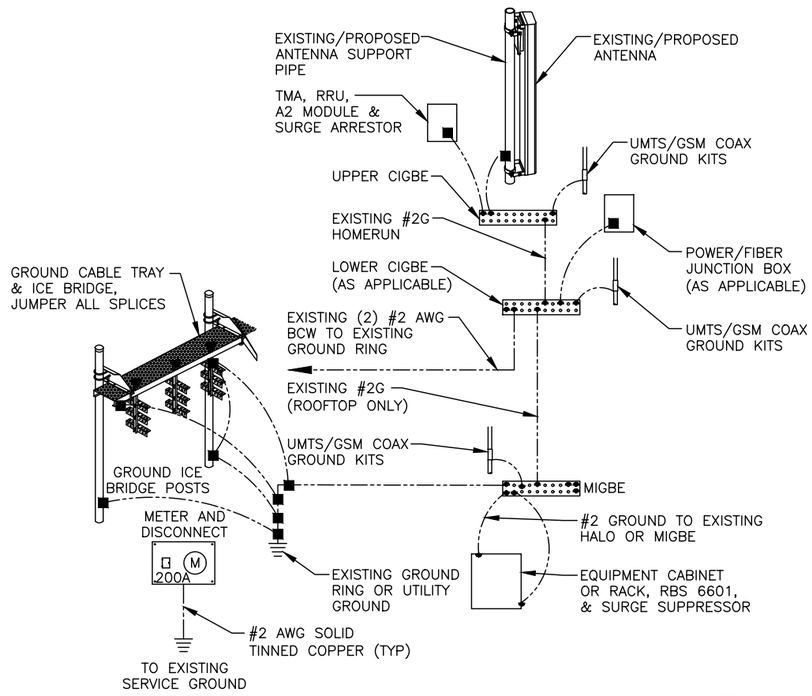
NOTE:

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

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

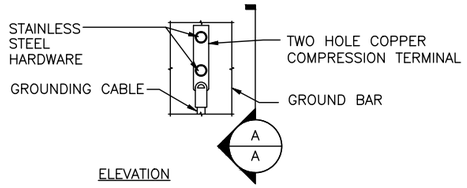
1 / G-1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / 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

SCALE: N.T.S

3 / G-1

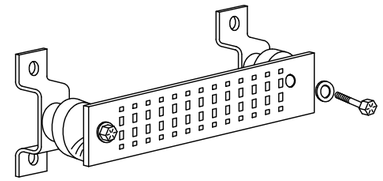
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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

SCALE: N.T.S

4 / G-1

HUDSON Design Group LLC
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70 HERB ROAD
SHARON, CT 06069
LITCHFIELD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
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A	08/16/19	ISSUED FOR REVIEW	ET	AT	DPH

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

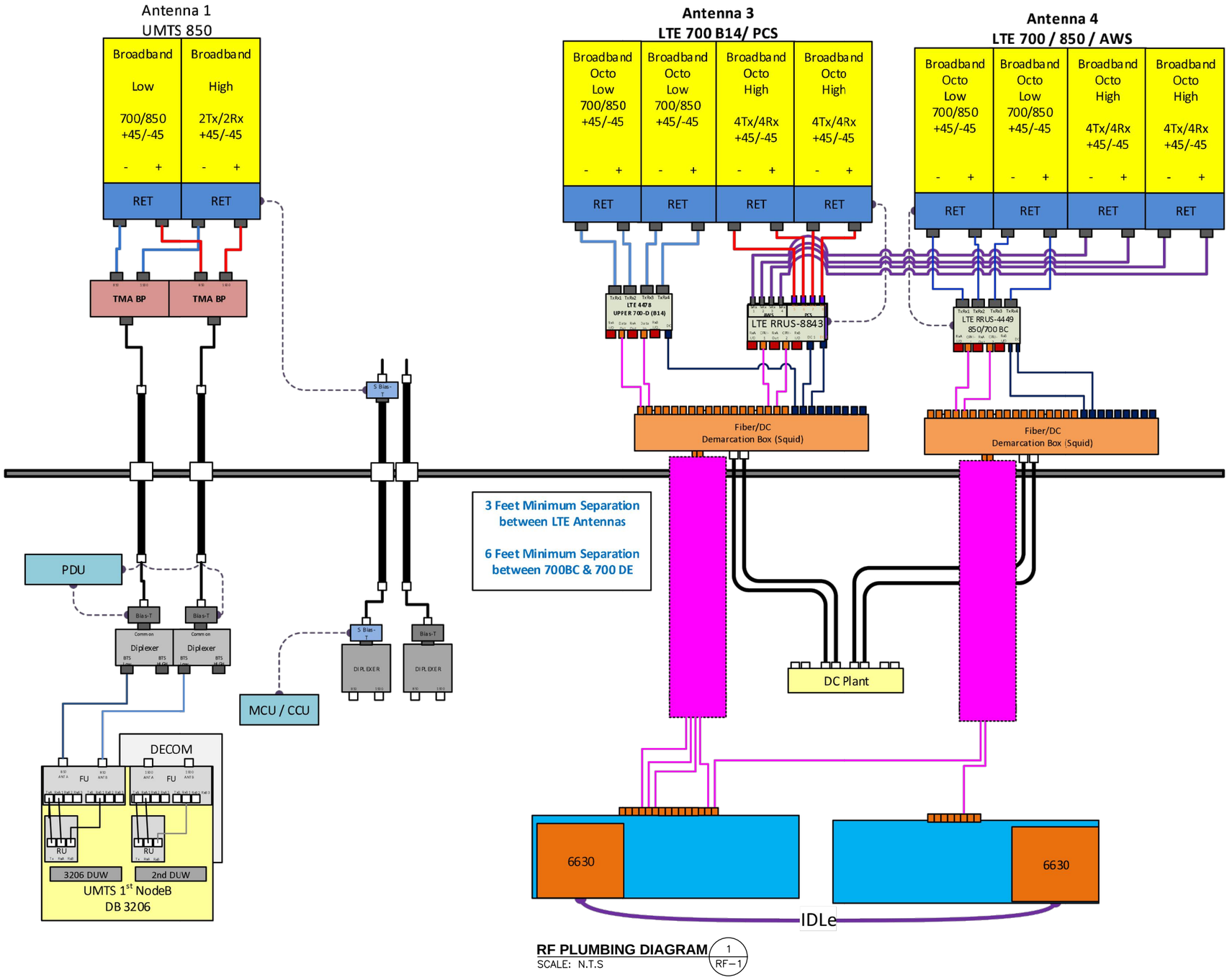
STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

Daniel P. Hamm

AT&T

GROUNDING DETAILS
LTE 2C_3C_4C_5C_ RETRO 2019 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1157	G-1	0



RF PLUMBING DIAGRAM 1 / RF–1
SCALE: N.T.S

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

NOTE:

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

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

AT&T

RF PLUMBING DIAGRAM
LTE 2C_3C_4C_5C_ RETRO 2019 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1157	RF–1	0

EXHIBIT 2

70 HERB RD

Location	70 HERB RD	**Mblu**	3/ 2/X / /
Acct#	00030730	**Owner**	GILLESPIE/ALLTEL NEWCO LLC
Assessment	$285,500	**Appraisal**	$407,900
PID	2843	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$407,900	$0	$407,900
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$285,500	$0	$285,500

Owner of Record

Owner	GILLESPIE/ALLTEL NEWCO LLC	**Sale Price**	$0
Co-Owner	C/O DUFF & PHELPS LLC	**Certificate**	
		Book & Page	136/ 646
		Sale Date	10/12/1999
		Instrument	07

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
GILLESPIE/ALLTEL NEWCO LLC	$0		136/ 646	07	10/12/1999

Building Information

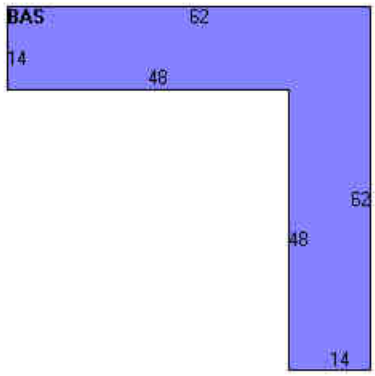
Building 1 : Section 1

Year Built:	2001
Living Area:	1,540
Building Percent Good:	88
Replacement Cost Less Depreciation:	$202,700

Building Attributes	
Field	**Description**

STYLE	Industrial
MODEL	Comm/Ind
Grade	A
Stories:	1
Occupancy	
Exterior Wall 1	Wood on Sheath
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asphalt Shngl.
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Electric
Heating Type	Hot Air-no Duc
AC Type	Unit/AC
Bldg Use	Commercial
Total Rooms	
Total Bedrms	00
Total Baths	0.0
Extra Fix	
Frame	
1st Floor Use:	201
Heat/AC	Heat A/C Split
Frame Type	Wood Frame
Baths/Plumbing	None
Ceiling/Wall	Ceiling Only
Rooms/Prtns	Light
Wall Height	12
% Comn Wall	

Building Layout



(http://images.vgsi.com/photos/SharonCTPhotos//Sketches/2843

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,540	1,540
		1,540	1,540

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 201

Land Line Valuation

Size (Acres) 0

Description	Commercial	**Frontage**	
Zone	RR	**Depth**	
Alt Land Appr	No	**Assessed Value**	$0
Category		**Appraised Value**	$0

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
CELL	Cell Tower site			1 UNITS	$205,200	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$416,400	$0	$416,400
2016	$416,400	$0	$416,400

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$291,400	$0	$291,400
2016	$291,400	$0	$291,400

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Google Maps 70 Herb Rd

Map data ©2019 200 ft

70 Herb Rd

Sharon, CT 06069

Directions Save Nearby Send to your phone Share

QHVG+4C Sharon, Connecticut

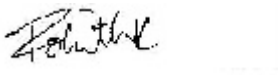
EXHIBIT 3

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**108.2 ft Monopole**
ATC Site Name	:	**Sharon CT, CT**
ATC Asset Number	:	**415974**
Engineering Number	:	**OAA751382_C3_02**
Proposed Carrier	:	**AT&T MOBILITY**
Carrier Site Name	:	**Sharon CT Herb Road**
Carrier Site Number	:	**CT1157**
Site Location	:	**70 Herb Road** **SHARON, CT 06069-2326** **41.791100,-73.425600**
County	:	**Litchfield**
Date	:	**September 19, 2019**
Max Usage	:	**67%**
Result	:	**Pass**

Prepared By:
Rohith Koduru
Structural Engineer



Reviewed By:

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 108.2 ft monopole to reflect the change in loading by AT&T MOBILITY.

Supporting Documents

Tower Drawings	Mapping by TEP Report #05605, dated July 6, 2005
Foundation Drawing	Summit, PJF Project #29200-1298, dated September 29, 2000
Geotechnical Report	Dr. Clarence Welti Report, dated August 30, 2000

Analysis

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

Basic Wind Speed:	90 mph (3-Second Gust, V_{asd}) / 115 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	40 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	C
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.18, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
109.0	6	RFS FD9R6004/2C-3L	T-Arm	(12) 1 5/8" Coax	VERIZON WIRELESS
	3	Amphenol Antel BXA-171085-12BF-EDIN-X			
	3	Amphenol Antel BXA-70063-6CF-EDIN-2			
	6	Antel LPA-80080/6CF ___			
	1	VZW Unused Reserve: 20461 sq in			
92.0	6	Generic 3CC58056AD	T-Arm	(6) 1 5/8" Coax (1) 3" conduit	AT&T MOBILITY
	3	Powerwave Allgon 7770.00			
84.0	3	Ericsson Radio 4449 B12,B71	T-Arm	(3) 1 5/8" (1.63"-41.3mm) Fiber	T-MOBILE
	3	Ericsson RRUS 11 B2			
	3	Ericsson RRUS 11 B4			
	3	RFS APX16DWV-16DWVS-E-A20			
	3	RFS APXVAARR24_43-U-NA20			

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
92.0	6	Generic 10" x 10" TTA	-	(2) 1.49" (37.9mm) Control Cable (1) 1.82" (46.2mm) Composite	AT&T MOBILITY
	6	Generic RRU			
	2	KMW AM-X-CD-16-65-00T-RET			
	1	Generic 30" x 23" BOB			
	1	Kathrein Scala 800 10764			
	3	Powerwave Allgon 7770.00			

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
92.0	1	Raycap DC6-48-60-0-8C-EV	T-Arm	(2) 0.39" (10mm) Fiber Trunk (4) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax (1) 2" conduit	AT&T MOBILITY
	6	Powerwave Allgon LGP21401			
	1	Raycap DC6-48-60-0-8F			
	3	Ericsson RRUS 8843 B2, B66A			
	3	Ericsson RRUS 4478 B14			
	3	Ericsson RRUS 4449 B5, B12			
	2	CCI DMP65R-BU4D			
	4	CCI DMP65R-BU6DA			

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

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	56%	Pass
Shaft	62%	Pass
Base Plate	43%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,300.0	4,455.0	2,974.5	67%
Shear (Kips)	38.0	51.3	34.4	67%
* The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1				

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
92.0	Raycap DC6-48-60-0-8C-EV	AT&T MOBILITY	0.622	0.753
	Powerwave Allgon LGP21401			
	Raycap DC6-48-60-0-8F			
	Ericsson RRUS 8843 B2, B66A			
	Ericsson RRUS 4478 B14			
	Ericsson RRUS 4449 B5, B12			
	CCI DMP65R-BU4D			
	CCI DMP65R-BU6DA			

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

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Standard Conditions

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

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

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

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

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

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

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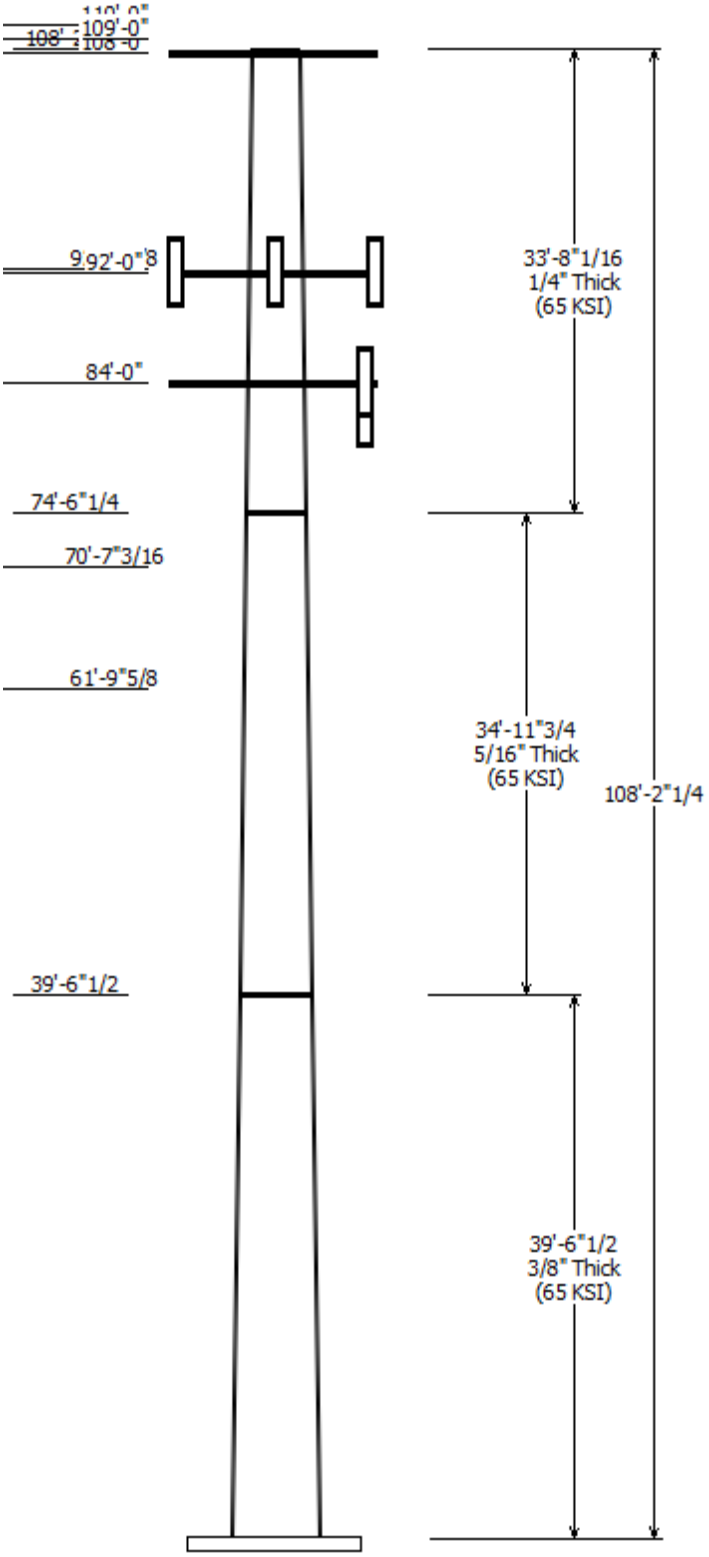


Job Information

Client :	AT&T MOBILITY		
Pole :	415974	Code:	ANSI/TIA-222-G
Location :	Sharon CT, CT		
Description :	108 ft Monopole	Struct Class :	II
Shape :	18 Sides	Exposure :	C
Height :	108.19 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.266753 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	39.540	45.31	55.86	0.375		0.000	18 Sides	65
2	34.980	35.98	45.31	0.313	Butt Joint	0.000	18 Sides	65
3	33.670	27.00	35.98	0.250	Butt Joint	0.000	18 Sides	65

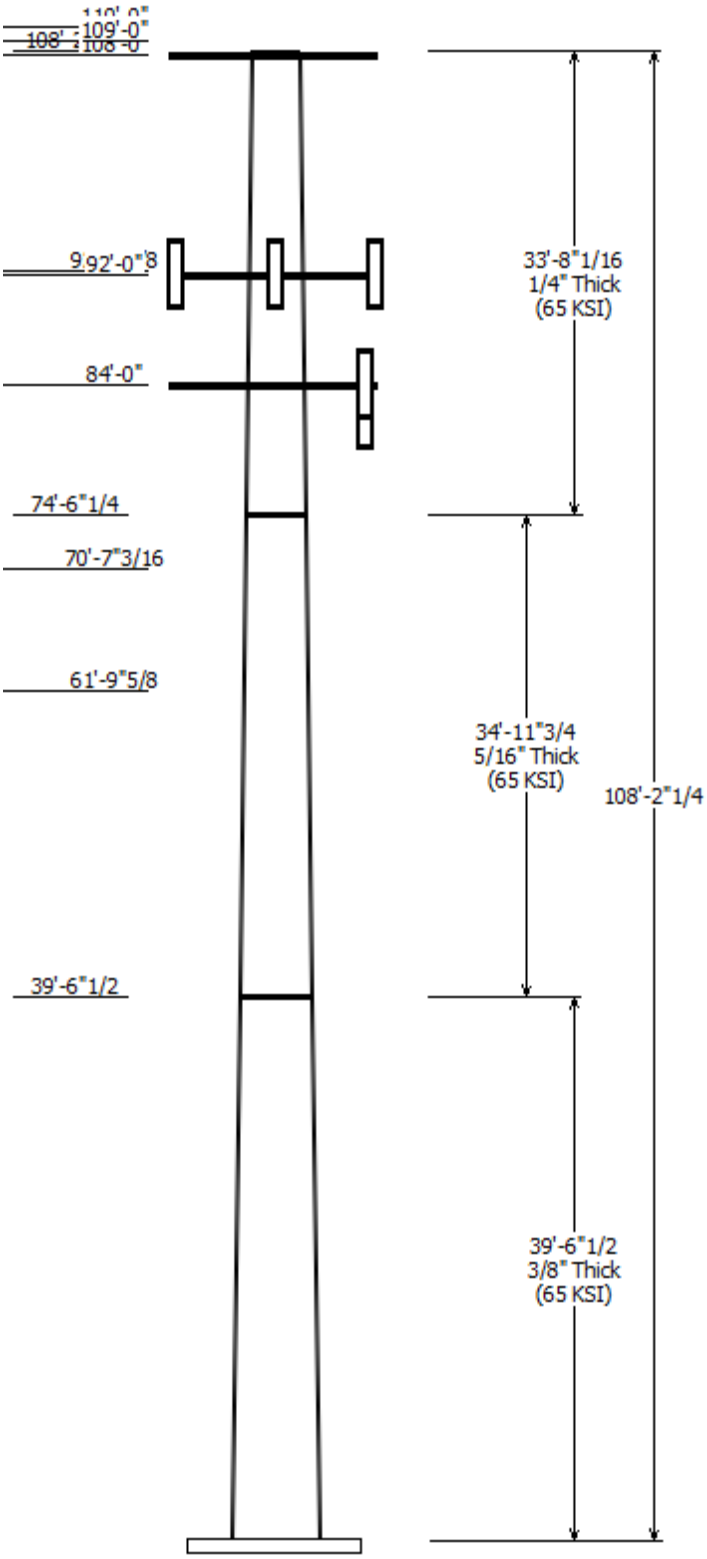
Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
110.000	110.000	1	4' Pine Tree Branch
109.000	109.000	1	VZW Unused Reserve: 20461
109.000	110.000	6	Antel LPA-80080/6CF ___
109.000	110.000	3	Amphenol Antel BXA-70063-
109.000	110.000	3	Amphenol Antel BXA-171085-
109.000	110.000	6	RFS FD9R6004/2C-3L
108.000	108.000	3	Flat T-Arm
92.200	92.200	1	6' Pine Tree Branch
92.000	92.000	3	Powerwave Allgon 7770.00
92.000	92.000	3	Round T-Arm
92.000	92.000	4	CCI DMP65R-BU6DA
92.000	92.000	2	CCI DMP65R-BU4D
92.000	92.000	3	Ericsson RRUS 4449 B5, B12
92.000	92.000	3	Ericsson RRUS 4478 B14
92.000	92.000	3	Ericsson RRUS 8843 B2, B66A
92.000	92.000	6	Generic 3CC58056AD
92.000	92.000	1	Raycap DC6-48-60-0-8F
92.000	92.000	6	Powerwave Allgon LGP21401
92.000	92.000	1	Raycap DC6-48-60-0-8C-EV
84.000	84.000	3	Round T-Arm with Site Pro 1
84.000	84.000	3	RFS APXVAARR24_43-U-NA20
84.000	83.000	3	RFS APX16DWV-16DWVS-E-A20
84.000	83.000	3	Ericsson RRUS 11 B4
84.000	83.000	3	Ericsson RRUS 11 B2
84.000	84.000	3	Ericsson Radio 4449 B12,B71
70.600	70.600	1	8' Pine Tree Branch
61.800	61.800	1	10' Pine Tree Branch

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	84.000	1 5/8" (1.63"-	No
0.000	92.000	0.39" (10mm)	No
0.000	92.000	0.78" (19.7mm) 8	No
0.000	92.000	1 5/8" Coax	No
0.000	92.000	1 5/8" Coax	No
0.000	92.000	2" conduit	No
0.000	92.000	3" conduit	No
0.000	109.0	1 5/8" Coax	No

Load Cases



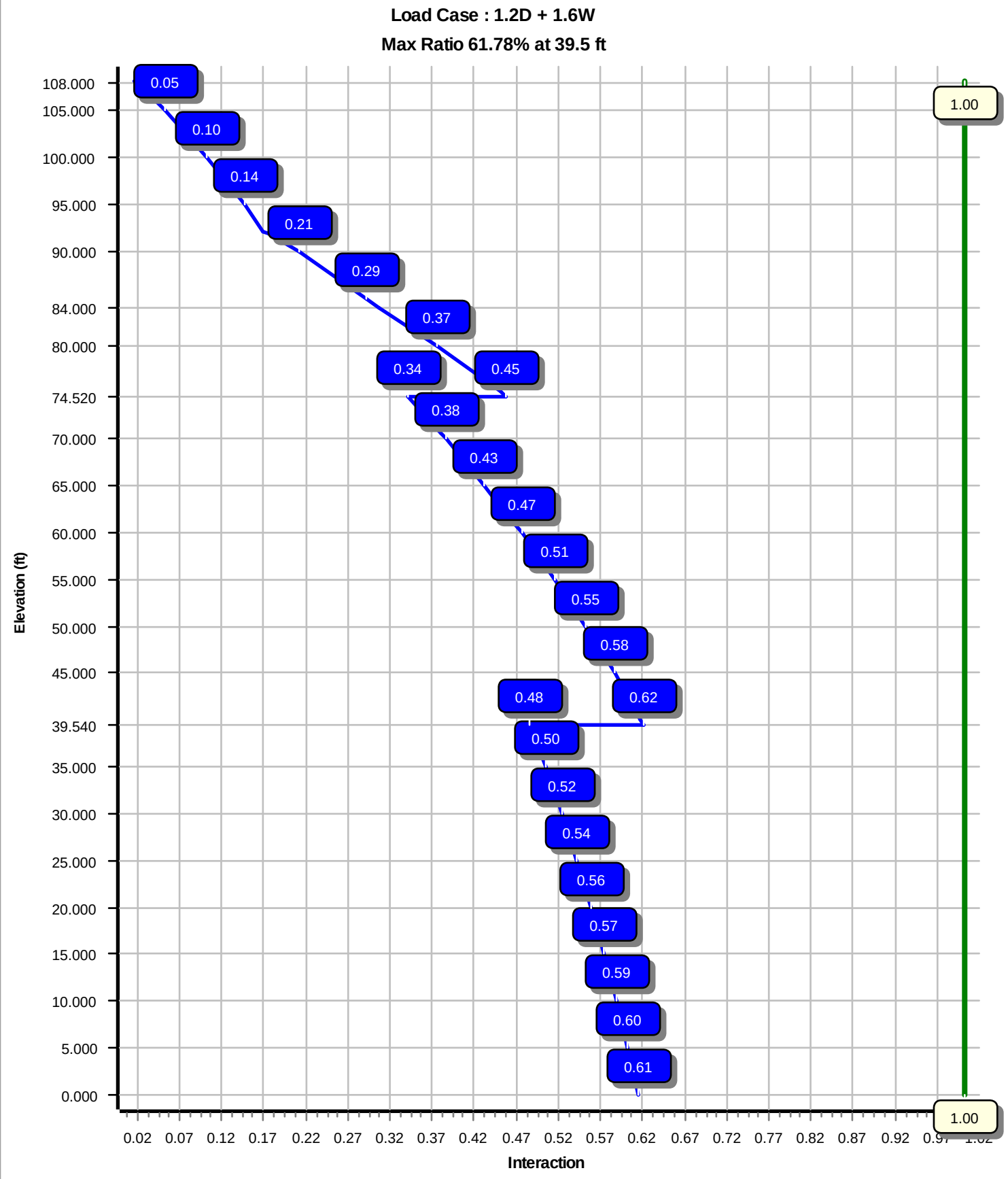
1.2D + 1.6W	90 mph with No Ice
0.9D + 1.6W	90 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2974.47	34.41	39.82
0.9D + 1.6W	2958.62	34.40	29.85
1.2D + 1.0Di + 1.0Wi	672.82	7.74	70.81
(1.2 + 0.2Sds) * DL + E ELFM	133.66	1.56	39.53
(1.2 + 0.2Sds) * DL + E EMAM	178.24	1.94	39.53
(0.9 - 0.2Sds) * DL + E ELFM	132.83	1.56	27.50
(0.9 - 0.2Sds) * DL + E EMAM	177.04	1.94	27.50
1.0D + 1.0W	736.97	8.55	33.22

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000


Load Case : 1.2D + 1.6W
Max Ratio 61.78% at 39.5 ft
Elevation (ft)
108.000
105.000
100.000
95.000
90.000
84.000
80.000
74.520
70.000
65.000
60.000
55.000
50.000
45.000
39.540
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
0.05
0.10
0.14
0.21
0.29
0.37
0.34
0.45
0.38
0.43
0.47
0.51
0.55
0.58
0.48
0.62
0.50
0.52
0.54
0.56
0.57
0.59
0.60
0.61
1.00
1.00
0.02 0.07 0.12 0.17 0.22 0.27 0.32 0.37 0.42 0.47 0.52 0.57 0.62 0.67 0.72 0.77 0.82 0.87 0.92
Interaction

Site Number: 415974 Code: ANSI/TIA-222-G © 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Sharon CT, CT Engineering Number:OAA751382_C3_02 9/20/2019 2:58:18 PM

Customer: AT&T MOBILITY

Analysis Parameters

Location :	Litchfield County, CT	Height (ft) :	108.19
Code :	ANSI/TIA-222-G	Base Diameter (in) :	55.86
Shape :	18 Sides	Top Diameter (in) :	27.00
Pole Type :	Taper	Taper (in/ft) :	0.267
Pole Manfacturer :	Mapped	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	90 mph
Exposure Category:	C	Design Wind Speed With Ice:	40 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	1.36				
T_L (sec):	6	p:	1	C_s:	0.047
S_s:	0.180	S_1:	0.060	C_s Max:	0.047
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.192	S_{d1}:	0.096		

Load Cases

1.2D + 1.6W	90 mph with No Ice
0.9D + 1.6W	90 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 415974 Code: ANSI/TIA-222-G © 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Sharon CT, CT Engineering Number:OAA751382_C3_02 9/20/2019 2:58:18 PM

Customer: AT&T MOBILITY

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	39.540	0.3750	65		0.00	8,041	55.86	0.00	66.04	25686.4	24.50	148.96	45.31	39.54	53.49	13646.0	19.54	120.83	0.266753
2-18	34.980	0.3125	65	Butt	0.00	4,762	45.31	39.54	44.63	11419.2	23.80	145.00	35.98	74.52	35.38	5686.8	18.54	115.14	0.266753
3-18	33.670	0.2500	65	Butt	0.00	2,840	35.98	74.52	28.35	4573.4	23.61	143.93	27.00	108.19	21.23	1918.9	17.28	108.00	0.266753
				Shaft Weight		15,643													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
110.00	4' Pine Tree Branch	1	1.00	0.000	320.00	48.510	1.00	1,275.98	106.321	1.00
109.00	RFS FD9R6004/2C-3L	6	0.80	1.000	2.60	0.310	0.50	10.37	0.679	0.50
109.00	Amphenol Antel BXA-171085-	3	0.80	1.000	15.00	4.730	0.72	106.87	6.999	0.72
109.00	Amphenol Antel BXA-70063-6CF-	3	0.80	1.000	17.00	7.570	0.66	160.52	10.245	0.66
109.00	Antel LPA-80080/6CF ___	6	0.80	1.000	21.00	8.630	0.62	208.47	5.468	0.62
109.00	VZW Unused Reserve: 20461 sq	1	0.80	0.000	2,262.40	142.100	0.90	3,790.84	238.101	0.90
108.00	Flat T-Arm	3	0.75	0.000	250.00	12.900	0.67	452.37	20.819	0.67
92.20	6' Pine Tree Branch	1	1.00	0.000	3,240.00	170.100	1.00	12,765.54	369.593	1.00
92.00	Raycap DC6-48-60-0-8C-EV	1	0.80	0.000	16.00	1.020	1.00	59.17	1.558	1.00
92.00	Powerwave Allgon LGP21401	6	0.80	0.000	14.10	1.100	0.50	37.88	1.778	0.50
92.00	Raycap DC6-48-60-0-8F	1	0.80	0.000	32.80	1.360	1.00	88.21	1.992	1.00
92.00	Generic 3CC58056AD	6	0.80	0.000	14.10	1.520	0.50	53.66	2.361	0.50
92.00	Ericsson RRUS 8843 B2, B66A	3	0.80	0.000	72.00	1.640	0.50	130.43	2.446	0.50
92.00	Ericsson RRUS 4478 B14	3	0.80	0.000	59.90	1.840	0.50	112.60	2.694	0.50
92.00	Ericsson RRUS 4449 B5, B12	3	0.80	0.000	71.00	1.970	0.50	132.43	2.860	0.50
92.00	Powerwave Allgon 7770.00	3	0.80	0.000	35.00	5.880	1.00	162.08	6.505	1.00
92.00	CCI DMP65R-BU4D	2	0.80	0.000	67.90	8.280	0.72	240.05	10.210	0.72
92.00	Round T-Arm	3	0.75	0.000	250.00	9.700	0.67	449.22	17.558	0.67
92.00	CCI DMP65R-BU6DA	4	0.80	0.000	79.40	12.710	0.63	324.94	15.369	0.63
84.00	Ericsson Radio 4449 B12,B71	3	0.80	0.000	74.00	1.640	0.50	126.81	2.436	0.50
84.00	Ericsson RRUS 11 B2	3	0.80	-1.000	50.70	2.790	0.67	119.00	3.824	0.67
84.00	Ericsson RRUS 11 B4	3	0.80	-1.000	50.70	2.790	0.67	119.00	3.824	0.67
84.00	RFS APX16DWV-16DWVS-E-A20	3	0.80	-1.000	40.70	6.590	0.60	150.90	8.634	0.60
84.00	Round T-Arm with Site Pro 1	3	0.75	0.000	765.00	14.700	0.67	1,267.74	24.360	0.67
84.00	RFS APXVAARR24_43-U-NA20	3	0.80	0.000	127.90	20.240	0.63	498.24	23.738	0.63
70.60	8' Pine Tree Branch	1	1.00	0.000	900.00	28.620	1.00	3,475.47	61.291	1.00
61.80	10' Pine Tree Branch	1	1.00	0.000	770.00	22.070	1.00	2,942.06	46.905	1.00
Totals	Num Loadings:27	79			13,942.10			40,004.05		

Linear Appurtenance Properties

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	109.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	92.00	2	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	92.00	4	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	92.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	92.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	92.00	1	2" conduit	2.38	3.65	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	92.00	1	3" conduit	3.50	7.58	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	84.00	3	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0.00	0.00	0	0.00	N	T-MOBILE

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Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3750	55.860	66.039	25,686.4	24.50	148.96	72.6	905.7	0.0	0.0
5.00		0.3750	54.526	64.451	23,878.2	23.88	145.40	73.3	862.5	0.0	1,110.1
10.00		0.3750	53.192	62.864	22,156.9	23.25	141.85	74.1	820.4	0.0	1,083.1
15.00		0.3750	51.859	61.276	20,520.4	22.62	138.29	74.8	779.4	0.0	1,056.1
20.00		0.3750	50.525	59.689	18,966.5	21.99	134.73	75.5	739.4	0.0	1,029.0
25.00		0.3750	49.191	58.101	17,493.1	21.37	131.18	76.3	700.4	0.0	1,002.0
30.00		0.3750	47.857	56.514	16,098.1	20.74	127.62	77.0	662.5	0.0	975.0
35.00		0.3750	46.524	54.926	14,779.3	20.11	124.06	77.7	625.7	0.0	948.0
39.54	Top - Section 1	0.3750	45.313	53.485	13,646.0	19.54	120.83	78.4	593.2	0.0	837.4
39.54	Bot - Section 2	0.3125	45.313	44.633	11,419.2	23.80	145.00	73.4	496.4	0.0	
40.00		0.3125	45.190	44.511	11,326.0	23.73	144.61	73.5	493.6	0.0	69.8
45.00		0.3125	43.856	43.188	10,345.9	22.98	140.34	74.4	464.6	0.0	746.1
50.00		0.3125	42.522	41.865	9,424.0	22.23	136.07	75.3	436.5	0.0	723.5
55.00		0.3125	41.189	40.543	8,558.6	21.48	131.80	76.1	409.3	0.0	701.0
60.00		0.3125	39.855	39.220	7,747.8	20.72	127.54	77.0	382.9	0.0	678.5
61.80		0.3125	39.375	38.743	7,469.0	20.45	126.00	77.3	373.6	0.0	238.8
65.00		0.3125	38.521	37.897	6,990.0	19.97	123.27	77.9	357.4	0.0	417.3
70.00		0.3125	37.187	36.574	6,283.2	19.22	119.00	78.8	332.8	0.0	633.5
70.60		0.3125	37.027	36.415	6,201.8	19.13	118.49	78.9	329.9	0.0	74.5
74.52	Top - Section 2	0.3125	35.982	35.378	5,686.8	18.54	115.14	79.6	311.3	0.0	478.8
74.52	Bot - Section 3	0.2500	35.982	28.352	4,573.4	23.61	143.93	73.6	250.3	0.0	
75.00		0.2500	35.854	28.250	4,524.4	23.52	143.41	73.7	248.5	0.0	46.2
80.00		0.2500	34.520	27.192	4,034.8	22.58	138.08	74.8	230.2	0.0	471.6
84.00		0.2500	33.453	26.345	3,669.5	21.83	133.81	75.7	216.1	0.0	364.4
85.00		0.2500	33.186	26.134	3,581.8	21.64	132.74	75.9	212.6	0.0	89.3
90.00		0.2500	31.852	25.075	3,164.0	20.70	127.41	77.1	195.6	0.0	435.6
92.00		0.2500	31.319	24.652	3,006.5	20.33	125.27	77.5	189.1	0.0	169.2
92.20		0.2500	31.265	24.610	2,991.0	20.29	125.06	77.5	188.4	0.0	16.8
95.00		0.2500	30.518	24.017	2,780.1	19.76	122.07	78.2	179.4	0.0	231.7
100.0		0.2500	29.185	22.959	2,428.5	18.82	116.74	79.3	163.9	0.0	399.6
105.0		0.2500	27.851	21.901	2,107.9	17.88	111.40	80.4	149.1	0.0	381.6
108.0		0.2500	27.051	21.266	1,929.8	17.32	108.20	81.0	140.5	0.0	220.3
108.1		0.2500	27.000	21.225	1,918.9	17.28	108.00	81.1	140.0	0.0	13.7
											15,642.6

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Site Name: Sharon CT, CT Engineering Number:OAA751382_C3_02 9/20/2019 2:58:18 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W 90 mph with No Ice 19 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		223.7	0.0					0.0	0.0	223.7	0.0	0.0	0.0
5.00		441.9	1,332.1					0.0	229.3	441.9	1,561.4	0.0	0.0
10.00		431.1	1,299.7					0.0	229.3	431.1	1,529.0	0.0	0.0
15.00		426.9	1,267.3					0.0	229.3	426.9	1,496.6	0.0	0.0
20.00		433.8	1,234.9					0.0	229.3	433.8	1,464.2	0.0	0.0
25.00		442.9	1,202.4					0.0	229.3	442.9	1,431.8	0.0	0.0
30.00		447.8	1,170.0					0.0	229.3	447.8	1,399.4	0.0	0.0
35.00		429.1	1,137.6					0.0	229.3	429.1	1,366.9	0.0	0.0
39.54	Top - Section 1	225.1	1,004.9					0.0	208.2	225.1	1,213.1	0.0	0.0
40.00		245.0	83.7					0.0	21.1	245.0	104.8	0.0	0.0
45.00		447.1	895.3					0.0	229.3	447.1	1,124.6	0.0	0.0
50.00		443.3	868.3					0.0	229.3	443.3	1,097.6	0.0	0.0
55.00		438.1	841.2					0.0	229.3	438.1	1,070.6	0.0	0.0
60.00		295.1	814.2					0.0	229.3	295.1	1,043.6	0.0	0.0
61.80		214.2	286.5					0.0	82.6	214.2	369.1	0.0	0.0
65.00		346.9	500.7					0.0	146.8	346.9	647.5	0.0	0.0
70.00		235.2	760.2					0.0	229.3	235.2	989.5	0.0	0.0
70.60		186.4	89.4					0.0	27.5	186.4	116.9	0.0	0.0
74.52	Top - Section 2	181.0	574.6					0.0	179.8	181.0	754.4	0.0	0.0
75.00		220.8	55.5					0.0	22.0	220.8	77.5	0.0	0.0
80.00		358.6	566.0					0.0	229.3	358.6	795.3	0.0	0.0
84.00	Appurtenance(s)	196.1	437.2	3,094.0	0.0	-779.0	3,992.4	0.0	183.5	3,290.1	4,613.1	0.0	0.0
85.00		229.6	107.1					0.0	40.1	229.6	147.2	0.0	0.0
90.00		265.5	522.8					0.0	200.3	265.5	723.1	0.0	0.0
92.00	Appurtenance(s)	82.2	203.1	3,390.2	0.0	0.0	2,562.1	0.0	80.1	3,472.3	2,845.3	0.0	0.0
92.20		110.4	20.1					0.0	2.4	110.4	22.5	0.0	0.0
95.00		282.1	278.0					0.0	33.1	282.1	311.0	0.0	0.0
100.00		352.1	479.5					0.0	59.0	352.1	538.6	0.0	0.0
105.00		273.7	457.9					0.0	59.0	273.7	517.0	0.0	0.0
108.00	Appurtenance(s)	107.0	264.4	867.3	0.0	0.0	900.0	0.0	35.4	974.3	1,199.8	0.0	0.0
108.19		6.3	16.5					0.0	2.2	6.3	18.7	0.0	0.0
								Totals:		16,370.1	30,589.9	0.00	0.00

Site Number: 415974 Code: ANSI/TIA-222-G © 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Sharon CT, CT Engineering Number: OAA751382_C3_02 9/20/2019 2:58:20 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W 90 mph with No Ice 19 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Wind Load Factor : 1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-39.82	-34.41	0.00	-2,974.47	0.00	2,974.47	4,313.87	2,156.93	9,845.90	4,930.27	0.00	0.00	0.613
5.00	-38.16	-34.08	0.00	-2,802.41	0.00	2,802.41	4,252.96	2,126.48	9,471.97	4,743.03	0.09	-0.16	0.600
10.00	-36.54	-33.74	0.00	-2,632.03	0.00	2,632.03	4,189.94	2,094.97	9,100.20	4,556.86	0.34	-0.32	0.587
15.00	-34.95	-33.41	0.00	-2,463.33	0.00	2,463.33	4,124.81	2,062.41	8,730.92	4,371.95	0.77	-0.49	0.572
20.00	-33.39	-33.05	0.00	-2,296.30	0.00	2,296.30	4,057.58	2,028.79	8,364.50	4,188.47	1.37	-0.65	0.557
25.00	-31.87	-32.68	0.00	-2,131.04	0.00	2,131.04	3,988.23	1,994.12	8,001.27	4,006.58	2.14	-0.82	0.540
30.00	-30.39	-32.30	0.00	-1,967.62	0.00	1,967.62	3,916.78	1,958.39	7,641.59	3,826.48	3.08	-0.98	0.522
35.00	-28.94	-31.93	0.00	-1,806.10	0.00	1,806.10	3,843.22	1,921.61	7,285.81	3,648.32	4.20	-1.15	0.503
39.54	-27.68	-31.72	0.00	-1,661.14	0.00	1,661.14	3,774.61	1,887.30	6,966.44	3,488.40	5.37	-1.30	0.484
39.54	-27.68	-31.72	0.00	-1,661.14	0.00	1,661.14	2,948.56	1,474.28	5,457.02	2,732.57	5.37	-1.30	0.618
40.00	-27.53	-31.52	0.00	-1,646.55	0.00	1,646.55	2,943.78	1,471.89	5,433.22	2,720.65	5.50	-1.32	0.615
45.00	-26.31	-31.14	0.00	-1,488.94	0.00	1,488.94	2,890.69	1,445.35	5,175.58	2,591.64	6.98	-1.51	0.584
50.00	-25.12	-30.75	0.00	-1,333.25	0.00	1,333.25	2,835.50	1,417.75	4,920.15	2,463.73	8.68	-1.71	0.550
55.00	-23.96	-30.36	0.00	-1,179.51	0.00	1,179.51	2,778.20	1,389.10	4,667.28	2,337.11	10.57	-1.90	0.514
60.00	-22.87	-30.07	0.00	-1,027.73	0.00	1,027.73	2,718.79	1,359.40	4,417.31	2,211.94	12.66	-2.08	0.474
61.80	-21.57	-28.97	0.00	-973.60	0.00	973.60	2,696.89	1,348.45	4,328.10	2,167.27	13.46	-2.15	0.458
65.00	-20.87	-28.65	0.00	-880.90	0.00	880.90	2,657.28	1,328.64	4,170.60	2,088.40	14.93	-2.26	0.430
70.00	-19.84	-28.41	0.00	-737.65	0.00	737.65	2,593.65	1,296.83	3,927.49	1,966.66	17.39	-2.43	0.383
70.60	-18.67	-27.03	0.00	-720.60	0.00	720.60	2,585.88	1,292.94	3,898.57	1,952.18	17.70	-2.44	0.377
74.52	-17.89	-26.83	0.00	-614.66	0.00	614.66	2,534.32	1,267.16	3,711.11	1,858.31	19.76	-2.56	0.338
74.52	-17.89	-26.83	0.00	-614.66	0.00	614.66	1,878.69	939.34	2,760.68	1,382.39	19.76	-2.56	0.455
75.00	-17.78	-26.64	0.00	-601.78	0.00	601.78	1,874.65	937.33	2,744.82	1,374.45	20.02	-2.58	0.448
80.00	-16.94	-26.29	0.00	-468.59	0.00	468.59	1,831.50	915.75	2,580.48	1,292.16	22.81	-2.75	0.373
84.00	-12.47	-22.79	0.00	-363.45	0.00	363.45	1,795.47	897.73	2,450.37	1,227.01	25.17	-2.87	0.304
85.00	-12.30	-22.57	0.00	-340.66	0.00	340.66	1,786.25	893.12	2,418.06	1,210.83	25.77	-2.89	0.289
90.00	-11.56	-22.28	0.00	-227.83	0.00	227.83	1,738.88	869.44	2,257.89	1,130.63	28.87	-3.01	0.209
92.00	-8.90	-18.66	0.00	-183.27	0.00	183.27	1,719.34	859.67	2,194.54	1,098.90	30.13	-3.04	0.172
92.20	-5.39	-11.02	0.00	-179.54	0.00	179.54	1,717.37	858.69	2,188.23	1,095.74	30.26	-3.05	0.167
95.00	-5.08	-10.73	0.00	-148.67	0.00	148.67	1,689.41	844.70	2,100.35	1,051.73	32.06	-3.09	0.145
100.00	-4.55	-10.35	0.00	-95.03	0.00	95.03	1,637.83	818.91	1,945.76	974.33	35.33	-3.15	0.100
105.00	-4.05	-10.05	0.00	-43.28	0.00	43.28	1,584.14	792.07	1,794.48	898.57	38.66	-3.19	0.051
108.00	-2.90	-9.01	0.00	-13.12	0.00	13.12	1,550.91	775.46	1,705.45	853.99	40.67	-3.20	0.017
108.19	0.00	-8.84	0.00	-11.41	0.00	11.41	1,548.78	774.39	1,699.86	851.19	40.79	-3.20	0.014

Site Number: 415974 Code: ANSI/TIA-222-G © 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Sharon CT, CT Engineering Number: OAA751382_C3_02 9/20/2019 2:58:20 PM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W 90 mph with No Ice (Reduced DL) 19 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		223.7	0.0					0.0	0.0	223.7	0.0	0.0	0.0
5.00		441.9	999.1					0.0	172.0	441.9	1,171.1	0.0	0.0
10.00		431.1	974.8					0.0	172.0	431.1	1,146.7	0.0	0.0
15.00		426.9	950.4					0.0	172.0	426.9	1,122.4	0.0	0.0
20.00		433.8	926.1					0.0	172.0	433.8	1,098.1	0.0	0.0
25.00		442.9	901.8					0.0	172.0	442.9	1,073.8	0.0	0.0
30.00		447.8	877.5					0.0	172.0	447.8	1,049.5	0.0	0.0
35.00		429.1	853.2					0.0	172.0	429.1	1,025.2	0.0	0.0
39.54	Top - Section 1	225.1	753.7					0.0	156.2	225.1	909.8	0.0	0.0
40.00		245.0	62.8					0.0	15.8	245.0	78.6	0.0	0.0
45.00		447.1	671.4					0.0	172.0	447.1	843.4	0.0	0.0
50.00		443.3	651.2					0.0	172.0	443.3	823.2	0.0	0.0
55.00		438.1	630.9					0.0	172.0	438.1	802.9	0.0	0.0
60.00		295.1	610.7					0.0	172.0	295.1	782.7	0.0	0.0
61.80		214.2	214.9					0.0	61.9	214.2	276.8	0.0	0.0
65.00		346.9	375.5					0.0	110.1	346.9	485.6	0.0	0.0
70.00		235.2	570.2					0.0	172.0	235.2	742.2	0.0	0.0
70.60		186.4	67.1					0.0	20.6	186.4	87.7	0.0	0.0
74.52	Top - Section 2	181.0	430.9					0.0	134.8	181.0	565.8	0.0	0.0
75.00		220.8	41.6					0.0	16.5	220.8	58.1	0.0	0.0
80.00		358.6	424.5					0.0	172.0	358.6	596.5	0.0	0.0
84.00	Appurtenance(s)	196.1	327.9	3,094.0	0.0	-779.0	2,994.3	0.0	137.6	3,290.1	3,459.8	0.0	0.0
85.00		229.6	80.4					0.0	30.1	229.6	110.4	0.0	0.0
90.00		265.5	392.1					0.0	150.3	265.5	542.3	0.0	0.0
92.00	Appurtenance(s)	82.2	152.3	3,390.2	0.0	0.0	1,921.6	0.0	60.1	3,472.3	2,134.0	0.0	0.0
92.20		110.4	15.1					0.0	1.8	110.4	16.9	0.0	0.0
95.00		282.1	208.5					0.0	24.8	282.1	233.3	0.0	0.0
100.00		352.1	359.7					0.0	44.3	352.1	403.9	0.0	0.0
105.00		273.7	343.5					0.0	44.3	273.7	387.7	0.0	0.0
108.00	Appurtenance(s)	107.0	198.3	867.3	0.0	0.0	675.0	0.0	26.6	974.3	899.9	0.0	0.0
108.19		6.3	12.4					0.0	1.7	6.3	14.0	0.0	0.0
								Totals:		16,370.1	22,942.4	0.00	0.00

Site Number: 415974 Code: ANSI/TIA-222-G © 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Sharon CT, CT Engineering Number: OAA751382_C3_02 9/20/2019 2:58:22 PM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W 90 mph with No Ice (Reduced DL) 19 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 0.90

Wind Load Factor : 1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-29.85	-34.40	0.00	-2,958.62	0.00	2,958.62	4,313.87	2,156.93	9,845.90	4,930.27	0.00	0.00	0.607
5.00	-28.58	-34.03	0.00	-2,786.63	0.00	2,786.63	4,252.96	2,126.48	9,471.97	4,743.03	0.09	-0.16	0.594
10.00	-27.34	-33.68	0.00	-2,616.46	0.00	2,616.46	4,189.94	2,094.97	9,100.20	4,556.86	0.34	-0.32	0.581
15.00	-26.13	-33.32	0.00	-2,448.09	0.00	2,448.09	4,124.81	2,062.41	8,730.92	4,371.95	0.76	-0.48	0.567
20.00	-24.94	-32.94	0.00	-2,281.51	0.00	2,281.51	4,057.58	2,028.79	8,364.50	4,188.47	1.36	-0.65	0.551
25.00	-23.78	-32.56	0.00	-2,116.80	0.00	2,116.80	3,988.23	1,994.12	8,001.27	4,006.58	2.12	-0.81	0.535
30.00	-22.64	-32.16	0.00	-1,954.02	0.00	1,954.02	3,916.78	1,958.39	7,641.59	3,826.48	3.06	-0.98	0.517
35.00	-21.54	-31.77	0.00	-1,793.24	0.00	1,793.24	3,843.22	1,921.61	7,285.81	3,648.32	4.18	-1.14	0.497
39.54	-20.59	-31.55	0.00	-1,649.02	0.00	1,649.02	3,774.61	1,887.30	6,966.44	3,488.40	5.34	-1.29	0.478
39.54	-20.59	-31.55	0.00	-1,649.02	0.00	1,649.02	2,948.56	1,474.28	5,457.02	2,732.57	5.34	-1.29	0.611
40.00	-20.46	-31.34	0.00	-1,634.51	0.00	1,634.51	2,943.78	1,471.89	5,433.22	2,720.65	5.46	-1.31	0.608
45.00	-19.52	-30.94	0.00	-1,477.78	0.00	1,477.78	2,890.69	1,445.35	5,175.58	2,591.64	6.94	-1.50	0.577
50.00	-18.61	-30.54	0.00	-1,323.07	0.00	1,323.07	2,835.50	1,417.75	4,920.15	2,463.73	8.62	-1.70	0.544
55.00	-17.72	-30.13	0.00	-1,170.38	0.00	1,170.38	2,778.20	1,389.10	4,667.28	2,337.11	10.50	-1.88	0.508
60.00	-16.89	-29.85	0.00	-1,019.71	0.00	1,019.71	2,718.79	1,359.40	4,417.31	2,211.94	12.58	-2.07	0.468
61.80	-15.91	-28.75	0.00	-965.98	0.00	965.98	2,696.89	1,348.45	4,328.10	2,167.27	13.37	-2.13	0.452
65.00	-15.37	-28.42	0.00	-873.99	0.00	873.99	2,657.28	1,328.64	4,170.60	2,088.40	14.84	-2.24	0.425
70.00	-14.60	-28.18	0.00	-731.89	0.00	731.89	2,593.65	1,296.83	3,927.49	1,966.66	17.28	-2.41	0.378
70.60	-13.72	-26.81	0.00	-714.98	0.00	714.98	2,585.88	1,292.94	3,898.57	1,952.18	17.58	-2.43	0.372
74.52	-13.14	-26.61	0.00	-609.91	0.00	609.91	2,534.32	1,267.16	3,711.11	1,858.31	19.63	-2.55	0.334
74.52	-13.14	-26.61	0.00	-609.91	0.00	609.91	1,878.69	939.34	2,760.68	1,382.39	19.63	-2.55	0.449
75.00	-13.04	-26.41	0.00	-597.13	0.00	597.13	1,874.65	937.33	2,744.82	1,374.45	19.89	-2.56	0.442
80.00	-12.40	-26.06	0.00	-465.07	0.00	465.07	1,831.50	915.75	2,580.48	1,292.16	22.66	-2.73	0.367
84.00	-9.08	-22.61	0.00	-360.84	0.00	360.84	1,795.47	897.73	2,450.37	1,227.01	25.00	-2.84	0.300
85.00	-8.95	-22.39	0.00	-338.22	0.00	338.22	1,786.25	893.12	2,418.06	1,210.83	25.60	-2.87	0.285
90.00	-8.40	-22.11	0.00	-226.27	0.00	226.27	1,738.88	869.44	2,257.89	1,130.63	28.67	-2.98	0.206
92.00	-6.44	-18.53	0.00	-182.06	0.00	182.06	1,719.34	859.67	2,194.54	1,098.90	29.93	-3.02	0.170
92.20	-3.90	-10.94	0.00	-178.35	0.00	178.35	1,717.37	858.69	2,188.23	1,095.74	30.06	-3.02	0.165
95.00	-3.67	-10.65	0.00	-147.72	0.00	147.72	1,689.41	844.70	2,100.35	1,051.73	31.84	-3.07	0.143
100.00	-3.28	-10.28	0.00	-94.47	0.00	94.47	1,637.83	818.91	1,945.76	974.33	35.09	-3.13	0.099
105.00	-2.90	-9.99	0.00	-43.07	0.00	43.07	1,584.14	792.07	1,794.48	898.57	38.39	-3.17	0.050
108.00	-2.06	-8.96	0.00	-13.11	0.00	13.11	1,550.91	775.46	1,705.45	853.99	40.39	-3.18	0.017
108.19	0.00	-8.84	0.00	-11.41	0.00	11.41	1,548.78	774.39	1,699.86	851.19	40.51	-3.18	0.014

Site Number: 415974 Code: ANSI/TIA-222-G © 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Sharon CT, CT Engineering Number: OAA751382_C3_02 9/20/2019 2:58:22 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph with 0.75 in Radial Ice 18 Iterations

Gust Response Factor : 1.10 Ice Dead Load Factor : 1.00 Wind Importance Factor : 1.00

Dead Load Factor : 1.20 Ice Importance Factor : 1.00

Wind Load Factor : 1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		53.1	0.0					0.0	0.0	53.1	0.0	0.0	0.0
5.00		105.2	1,736.4					0.0	229.3	105.2	1,965.7	0.0	0.0
10.00		103.1	1,741.2					0.0	229.3	103.1	1,970.5	0.0	0.0
15.00		102.4	1,721.1					0.0	229.3	102.4	1,950.4	0.0	0.0
20.00		104.4	1,692.8					0.0	229.3	104.4	1,922.1	0.0	0.0
25.00		106.8	1,660.3					0.0	229.3	106.8	1,889.6	0.0	0.0
30.00		108.3	1,625.2					0.0	229.3	108.3	1,854.5	0.0	0.0
35.00		104.0	1,588.1					0.0	229.3	104.0	1,817.4	0.0	0.0
39.54	Top - Section 1	54.6	1,409.3					0.0	208.2	54.6	1,617.5	0.0	0.0
40.00		59.6	124.9					0.0	21.1	59.6	146.0	0.0	0.0
45.00		109.0	1,332.7					0.0	229.3	109.0	1,562.0	0.0	0.0
50.00		108.4	1,297.7					0.0	229.3	108.4	1,527.0	0.0	0.0
55.00		107.4	1,262.1					0.0	229.3	107.4	1,491.4	0.0	0.0
60.00		72.5	1,225.8					0.0	229.3	72.5	1,455.1	0.0	0.0
61.80		52.7	433.8					0.0	82.6	52.7	516.4	0.0	0.0
65.00		85.6	758.2					0.0	146.8	85.6	905.0	0.0	0.0
70.00		58.1	1,151.7					0.0	229.3	58.1	1,381.1	0.0	0.0
70.60		46.2	136.4					0.0	27.5	46.2	163.9	0.0	0.0
74.52	Top - Section 2	44.9	874.2					0.0	179.8	44.9	1,054.0	0.0	0.0
75.00		54.9	92.2					0.0	22.0	54.9	114.2	0.0	0.0
80.00		89.3	935.9					0.0	229.3	89.3	1,165.2	0.0	0.0
84.00	Appurtenance(s)	49.0	726.1	523.3	0.0	-128.8	6,439.9	0.0	183.5	572.3	7,349.5	0.0	0.0
85.00		57.5	179.0					0.0	40.1	57.5	219.1	0.0	0.0
90.00		66.6	869.7					0.0	200.3	66.6	1,070.1	0.0	0.0
92.00	Appurtenance(s)	20.7	340.2	570.6	0.0	0.0	5,006.1	0.0	80.1	591.3	5,426.5	0.0	0.0
92.20		27.8	33.8					0.0	2.4	27.8	36.2	0.0	0.0
95.00		71.3	465.9					0.0	33.1	71.3	498.9	0.0	0.0
100.00		89.3	802.5					0.0	59.0	89.3	861.6	0.0	0.0
105.00		69.7	768.6					0.0	59.0	69.7	827.6	0.0	0.0
108.00	Appurtenance(s)	27.3	446.5	172.8	0.0	0.0	1,357.1	0.0	35.4	200.1	1,839.0	0.0	0.0
108.19		1.6	28.0					0.0	2.2	1.6	30.3	0.0	0.0
								Totals:		3,478.22	44,627.5	0.00	0.00

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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph with 0.75 in Radial Ice 18 Iterations

Gust Response Factor : 1.10 Ice Dead Load Factor : 1.00 Wind Importance Factor : 1.00
Dead Load Factor : 1.20 Ice Importance Factor : 1.00
Wind Load Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-70.81	-7.74	0.00	-672.82	0.00	672.82	4,313.87	2,156.93	9,845.90	4,930.27	0.00	0.00	0.153
5.00	-68.84	-7.68	0.00	-634.11	0.00	634.11	4,252.96	2,126.48	9,471.97	4,743.03	0.02	-0.04	0.150
10.00	-66.87	-7.62	0.00	-595.70	0.00	595.70	4,189.94	2,094.97	9,100.20	4,556.86	0.08	-0.07	0.147
15.00	-64.91	-7.56	0.00	-557.61	0.00	557.61	4,124.81	2,062.41	8,730.92	4,371.95	0.17	-0.11	0.143
20.00	-62.99	-7.49	0.00	-519.83	0.00	519.83	4,057.58	2,028.79	8,364.50	4,188.47	0.31	-0.15	0.140
25.00	-61.09	-7.42	0.00	-482.39	0.00	482.39	3,988.23	1,994.12	8,001.27	4,006.58	0.48	-0.18	0.136
30.00	-59.23	-7.34	0.00	-445.31	0.00	445.31	3,916.78	1,958.39	7,641.59	3,826.48	0.70	-0.22	0.132
35.00	-57.41	-7.26	0.00	-408.61	0.00	408.61	3,843.22	1,921.61	7,285.81	3,648.32	0.95	-0.26	0.127
39.54	-55.79	-7.22	0.00	-375.63	0.00	375.63	3,774.61	1,887.30	6,966.44	3,488.40	1.22	-0.29	0.122
39.54	-55.79	-7.22	0.00	-375.63	0.00	375.63	2,948.56	1,474.28	5,457.02	2,732.57	1.22	-0.29	0.156
40.00	-55.64	-7.18	0.00	-372.31	0.00	372.31	2,943.78	1,471.89	5,433.22	2,720.65	1.24	-0.30	0.156
45.00	-54.08	-7.11	0.00	-336.39	0.00	336.39	2,890.69	1,445.35	5,175.58	2,591.64	1.58	-0.34	0.149
50.00	-52.55	-7.03	0.00	-300.85	0.00	300.85	2,835.50	1,417.75	4,920.15	2,463.73	1.96	-0.39	0.141
55.00	-51.05	-6.95	0.00	-265.71	0.00	265.71	2,778.20	1,389.10	4,667.28	2,337.11	2.39	-0.43	0.132
60.00	-49.59	-6.89	0.00	-230.97	0.00	230.97	2,718.79	1,359.40	4,417.31	2,211.94	2.86	-0.47	0.123
61.80	-46.13	-6.59	0.00	-218.57	0.00	218.57	2,696.89	1,348.45	4,328.10	2,167.27	3.04	-0.49	0.118
65.00	-45.23	-6.53	0.00	-197.47	0.00	197.47	2,657.28	1,328.64	4,170.60	2,088.40	3.38	-0.51	0.112
70.00	-43.84	-6.47	0.00	-164.84	0.00	164.84	2,593.65	1,296.83	3,927.49	1,966.66	3.93	-0.55	0.101
70.60	-40.21	-6.09	0.00	-160.96	0.00	160.96	2,585.88	1,292.94	3,898.57	1,952.18	4.00	-0.55	0.098
74.52	-39.15	-6.05	0.00	-137.08	0.00	137.08	2,534.32	1,267.16	3,711.11	1,858.31	4.47	-0.58	0.089
74.52	-39.15	-6.05	0.00	-137.08	0.00	137.08	1,878.69	939.34	2,760.68	1,382.39	4.47	-0.58	0.120
75.00	-39.04	-6.00	0.00	-134.18	0.00	134.18	1,874.65	937.33	2,744.82	1,374.45	4.53	-0.58	0.118
80.00	-37.87	-5.92	0.00	-104.16	0.00	104.16	1,831.50	915.75	2,580.48	1,292.16	5.16	-0.62	0.101
84.00	-30.52	-5.28	0.00	-80.47	0.00	80.47	1,795.47	897.73	2,450.37	1,227.01	5.69	-0.65	0.083
85.00	-30.30	-5.23	0.00	-75.19	0.00	75.19	1,786.25	893.12	2,418.06	1,210.83	5.82	-0.65	0.079
90.00	-29.23	-5.16	0.00	-49.05	0.00	49.05	1,738.88	869.44	2,257.89	1,130.63	6.52	-0.68	0.060
92.00	-23.81	-4.50	0.00	-38.74	0.00	38.74	1,719.34	859.67	2,194.54	1,098.90	6.81	-0.68	0.049
92.20	-11.04	-2.35	0.00	-37.84	0.00	37.84	1,717.37	858.69	2,188.23	1,095.74	6.84	-0.68	0.041
95.00	-10.54	-2.28	0.00	-31.25	0.00	31.25	1,689.41	844.70	2,100.35	1,051.73	7.24	-0.69	0.036
100.00	-9.68	-2.18	0.00	-19.86	0.00	19.86	1,637.83	818.91	1,945.76	974.33	7.97	-0.71	0.026
105.00	-8.85	-2.10	0.00	-8.95	0.00	8.95	1,584.14	792.07	1,794.48	898.57	8.72	-0.72	0.016
108.00	-7.01	-1.88	0.00	-2.65	0.00	2.65	1,550.91	775.46	1,705.45	853.99	9.17	-0.72	0.008
108.19	0.00	-1.79	0.00	-2.29	0.00	2.29	1,548.78	774.39	1,699.86	851.19	9.20	-0.72	0.003

Site Number: 415974 Code: ANSI/TIA-222-G © 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Sharon CT, CT Engineering Number: OAA751382_C3_02 9/20/2019 2:58:24 PM

Customer: AT&T MOBILITY

Load Case: 1.0D + 1.0W Serviceability 60 mph 18 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		55.6	0.0					0.0	0.0	55.6	0.0	0.0	0.0
5.00		109.8	1,110.1					0.0	191.1	109.8	1,301.2	0.0	0.0
10.00		107.1	1,083.1					0.0	191.1	107.1	1,274.2	0.0	0.0
15.00		106.1	1,056.1					0.0	191.1	106.1	1,247.2	0.0	0.0
20.00		107.8	1,029.0					0.0	191.1	107.8	1,220.1	0.0	0.0
25.00		110.1	1,002.0					0.0	191.1	110.1	1,193.1	0.0	0.0
30.00		111.3	975.0					0.0	191.1	111.3	1,166.1	0.0	0.0
35.00		106.6	948.0					0.0	191.1	106.6	1,139.1	0.0	0.0
39.54	Top - Section 1	55.9	837.4					0.0	173.5	55.9	1,010.9	0.0	0.0
40.00		60.9	69.8					0.0	17.6	60.9	87.3	0.0	0.0
45.00		111.1	746.1					0.0	191.1	111.1	937.2	0.0	0.0
50.00		110.2	723.5					0.0	191.1	110.2	914.6	0.0	0.0
55.00		108.9	701.0					0.0	191.1	108.9	892.1	0.0	0.0
60.00		73.4	678.5					0.0	191.1	73.4	869.6	0.0	0.0
61.80		53.2	238.8					0.0	68.8	53.2	307.6	0.0	0.0
65.00		86.2	417.3					0.0	122.3	86.2	539.6	0.0	0.0
70.00		58.5	633.5					0.0	191.1	58.5	824.6	0.0	0.0
70.60		46.3	74.5					0.0	22.9	46.3	97.4	0.0	0.0
74.52	Top - Section 2	45.0	478.8					0.0	149.8	45.0	628.6	0.0	0.0
75.00		54.9	46.2					0.0	18.3	54.9	64.6	0.0	0.0
80.00		89.1	471.6					0.0	191.1	89.1	662.7	0.0	0.0
84.00	Appurtenance(s)	48.7	364.4	769.0	0.0	-193.6	3,327.0	0.0	152.9	817.7	3,844.2	0.0	0.0
85.00		57.1	89.3					0.0	33.4	57.1	122.7	0.0	0.0
90.00		66.0	435.6					0.0	167.0	66.0	602.6	0.0	0.0
92.00	Appurtenance(s)	20.4	169.2	842.6	0.0	0.0	2,135.1	0.0	66.8	863.0	2,371.1	0.0	0.0
92.20		27.4	16.8					0.0	2.0	27.4	18.7	0.0	0.0
95.00		70.1	231.7					0.0	27.6	70.1	259.2	0.0	0.0
100.00		87.5	399.6					0.0	49.2	87.5	448.8	0.0	0.0
105.00		68.0	381.6					0.0	49.2	68.0	430.8	0.0	0.0
108.00	Appurtenance(s)	26.6	220.3	215.5	0.0	0.0	750.0	0.0	29.5	242.1	999.8	0.0	0.0
108.19		1.6	13.7					0.0	1.9	1.6	15.6	0.0	0.0
								Totals:		4,068.61	25,491.6	0.00	0.00

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Load Case: 1.0D + 1.0W Serviceability 60 mph 18 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.00
Wind Load Factor : 1.00
Wind Importance Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.22	-8.55	0.00	-736.97	0.00	736.97	4,313.87	2,156.93	9,845.90	4,930.27	0.00	0.00	0.157
5.00	-31.91	-8.46	0.00	-694.22	0.00	694.22	4,252.96	2,126.48	9,471.97	4,743.03	0.02	-0.04	0.154
10.00	-30.63	-8.38	0.00	-651.91	0.00	651.91	4,189.94	2,094.97	9,100.20	4,556.86	0.08	-0.08	0.150
15.00	-29.38	-8.29	0.00	-610.03	0.00	610.03	4,124.81	2,062.41	8,730.92	4,371.95	0.19	-0.12	0.147
20.00	-28.15	-8.20	0.00	-568.59	0.00	568.59	4,057.58	2,028.79	8,364.50	4,188.47	0.34	-0.16	0.143
25.00	-26.95	-8.10	0.00	-527.61	0.00	527.61	3,988.23	1,994.12	8,001.27	4,006.58	0.53	-0.20	0.138
30.00	-25.78	-8.01	0.00	-487.10	0.00	487.10	3,916.78	1,958.39	7,641.59	3,826.48	0.76	-0.24	0.134
35.00	-24.64	-7.91	0.00	-447.07	0.00	447.07	3,843.22	1,921.61	7,285.81	3,648.32	1.04	-0.28	0.129
39.54	-23.63	-7.86	0.00	-411.16	0.00	411.16	3,774.61	1,887.30	6,966.44	3,488.40	1.33	-0.32	0.124
39.54	-23.63	-7.86	0.00	-411.16	0.00	411.16	2,948.56	1,474.28	5,457.02	2,732.57	1.33	-0.32	0.159
40.00	-23.53	-7.81	0.00	-407.54	0.00	407.54	2,943.78	1,471.89	5,433.22	2,720.65	1.36	-0.33	0.158
45.00	-22.59	-7.71	0.00	-368.51	0.00	368.51	2,890.69	1,445.35	5,175.58	2,591.64	1.73	-0.37	0.150
50.00	-21.67	-7.61	0.00	-329.96	0.00	329.96	2,835.50	1,417.75	4,920.15	2,463.73	2.15	-0.42	0.142
55.00	-20.77	-7.51	0.00	-291.91	0.00	291.91	2,778.20	1,389.10	4,667.28	2,337.11	2.62	-0.47	0.132
60.00	-19.90	-7.44	0.00	-254.35	0.00	254.35	2,718.79	1,359.40	4,417.31	2,211.94	3.13	-0.52	0.122
61.80	-18.82	-7.17	0.00	-240.96	0.00	240.96	2,696.89	1,348.45	4,328.10	2,167.27	3.33	-0.53	0.118
65.00	-18.28	-7.09	0.00	-218.02	0.00	218.02	2,657.28	1,328.64	4,170.60	2,088.40	3.70	-0.56	0.111
70.00	-17.45	-7.03	0.00	-182.58	0.00	182.58	2,593.65	1,296.83	3,927.49	1,966.66	4.31	-0.60	0.100
70.60	-16.46	-6.69	0.00	-178.36	0.00	178.36	2,585.88	1,292.94	3,898.57	1,952.18	4.38	-0.61	0.098
74.52	-15.83	-6.64	0.00	-152.15	0.00	152.15	2,534.32	1,267.16	3,711.11	1,858.31	4.89	-0.63	0.088
74.52	-15.83	-6.64	0.00	-152.15	0.00	152.15	1,878.69	939.34	2,760.68	1,382.39	4.89	-0.63	0.119
75.00	-15.76	-6.59	0.00	-148.97	0.00	148.97	1,874.65	937.33	2,744.82	1,374.45	4.96	-0.64	0.117
80.00	-15.10	-6.50	0.00	-116.02	0.00	116.02	1,831.50	915.75	2,580.48	1,292.16	5.65	-0.68	0.098
84.00	-11.26	-5.64	0.00	-90.01	0.00	90.01	1,795.47	897.73	2,450.37	1,227.01	6.23	-0.71	0.080
85.00	-11.14	-5.59	0.00	-84.37	0.00	84.37	1,786.25	893.12	2,418.06	1,210.83	6.38	-0.72	0.076
90.00	-10.53	-5.52	0.00	-56.44	0.00	56.44	1,738.88	869.44	2,257.89	1,130.63	7.15	-0.74	0.056
92.00	-8.17	-4.62	0.00	-45.41	0.00	45.41	1,719.34	859.67	2,194.54	1,098.90	7.46	-0.75	0.046
92.20	-4.94	-2.73	0.00	-44.48	0.00	44.48	1,717.37	858.69	2,188.23	1,095.74	7.49	-0.75	0.043
95.00	-4.68	-2.66	0.00	-36.84	0.00	36.84	1,689.41	844.70	2,100.35	1,051.73	7.94	-0.76	0.038
100.00	-4.23	-2.56	0.00	-23.55	0.00	23.55	1,637.83	818.91	1,945.76	974.33	8.75	-0.78	0.027
105.00	-3.80	-2.49	0.00	-10.73	0.00	10.73	1,584.14	792.07	1,794.48	898.57	9.57	-0.79	0.014
108.00	-2.80	-2.24	0.00	-3.26	0.00	3.26	1,550.91	775.46	1,705.45	853.99	10.07	-0.79	0.006
108.19	0.00	-2.20	0.00	-2.84	0.00	2.84	1,548.78	774.39	1,699.86	851.19	10.10	-0.79	0.003

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Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.18	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.05	
Upper Limit C_s	0.05	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	1.36	
Redundancy Factor (p):	1.00	
Seismic Force Distribution Exponent (k):	1.43	
Total Unfactored Dead Load:	33.22	k
Seismic Base Shear (E):	1.56	k

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
30	108.10	16	13	0.001	1	19
29	106.50	250	200	0.014	22	309
28	102.50	431	326	0.023	36	534
27	97.50	449	316	0.023	35	556
26	93.60	259	172	0.012	19	321
25	92.10	19	12	0.001	1	23
24	91.00	236	151	0.011	17	292
23	87.50	603	363	0.026	41	746
22	84.50	123	70	0.005	8	152
21	82.00	517	284	0.020	32	641
20	77.50	663	336	0.024	38	821
19	74.76	65	31	0.002	3	80
18	72.56	629	290	0.021	32	779
17	70.30	97	43	0.003	5	121
16	67.50	825	343	0.025	38	1,021
15	63.40	540	205	0.015	23	668
14	60.90	308	110	0.008	12	381
13	57.50	870	287	0.021	32	1,077
12	52.50	892	259	0.019	29	1,105
11	47.50	915	230	0.016	26	1,133
10	42.50	937	201	0.014	22	1,161
9	39.77	87	17	0.001	2	108
8	37.27	1,011	180	0.013	20	1,252

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7	32.50	1,139	166	0.012	19	1,411
6	27.50	1,166	134	0.010	15	1,444
5	22.50	1,193	103	0.007	11	1,478
4	17.50	1,220	73	0.005	8	1,511
3	12.50	1,247	46	0.003	5	1,544
2	7.50	1,274	23	0.002	3	1,578
1	2.50	1,301	5	0.000	1	1,611
4' Pine Tree Branch	108.19	320	261	0.019	29	396
RFS FD9R6004/2C-3L	108.19	16	13	0.001	1	19
Amphenol Antel BXA-1	108.19	45	37	0.003	4	56
Amphenol Antel BXA-7	108.19	51	42	0.003	5	63
Antel LPA-80080/6CF	108.19	126	103	0.007	11	156
VZW Unused Reserve:	108.19	2,262	1,848	0.132	206	2,802
Flat T-Arm	108.00	750	611	0.044	68	929
6' Pine Tree Branch	92.20	3,240	2,105	0.151	235	4,012
Raycap DC6-48-60-0-8	92.00	16	10	0.001	1	20
Powerwave Allgon LGP	92.00	85	55	0.004	6	105
Raycap DC6-48-60-0-8	92.00	33	21	0.002	2	41
Generic 3CC58056AD	92.00	85	55	0.004	6	105
Ericsson RRUS 8843 B	92.00	216	140	0.010	16	267
Ericsson RRUS 4478 B	92.00	180	116	0.008	13	223
Ericsson RRUS 4449 B	92.00	213	138	0.010	15	264
Powerwave Allgon 777	92.00	105	68	0.005	8	130
CCI DMP65R-BU4D	92.00	136	88	0.006	10	168
Round T-Arm	92.00	750	486	0.035	54	929
CCI DMP65R-BU6DA	92.00	318	206	0.015	23	393
Ericsson Radio 4449	84.00	222	126	0.009	14	275
Ericsson RRUS 11 B2	84.00	152	87	0.006	10	188
Ericsson RRUS 11 B4	84.00	152	87	0.006	10	188
RFS APX16DWV-16DWVS-	84.00	122	69	0.005	8	151
Round T-Arm with Sit	84.00	2,295	1,305	0.093	146	2,842
RFS APXVAARR24_43-U-	84.00	384	218	0.016	24	475
8' Pine Tree Branch	70.60	900	399	0.029	45	1,115
10' Pine Tree Branch	61.80	770	282	0.020	32	954
		33,222	13,967	1.000	1,560	41,142

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
30	108.10	16	13	0.001	1	13
29	106.50	250	200	0.014	22	215
28	102.50	431	326	0.023	36	371
27	97.50	449	316	0.023	35	387
26	93.60	259	172	0.012	19	223
25	92.10	19	12	0.001	1	16
24	91.00	236	151	0.011	17	203
23	87.50	603	363	0.026	41	519
22	84.50	123	70	0.005	8	106
21	82.00	517	284	0.020	32	446
20	77.50	663	336	0.024	38	571
19	74.76	65	31	0.002	3	56
18	72.56	629	290	0.021	32	542
17	70.30	97	43	0.003	5	84
16	67.50	825	343	0.025	38	710
15	63.40	540	205	0.015	23	465
14	60.90	308	110	0.008	12	265
13	57.50	870	287	0.021	32	749
12	52.50	892	259	0.019	29	769
11	47.50	915	230	0.016	26	788

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10	42.50	937	201	0.014	22	807
9	39.77	87	17	0.001	2	75
8	37.27	1,011	180	0.013	20	871
7	32.50	1,139	166	0.012	19	981
6	27.50	1,166	134	0.010	15	1,005
5	22.50	1,193	103	0.007	11	1,028
4	17.50	1,220	73	0.005	8	1,051
3	12.50	1,247	46	0.003	5	1,075
2	7.50	1,274	23	0.002	3	1,098
1	2.50	1,301	5	0.000	1	1,121
4' Pine Tree Branch	108.19	320	261	0.019	29	276
RFS FD9R6004/2C-3L	108.19	16	13	0.001	1	13
Amphenol Antel BXA-1	108.19	45	37	0.003	4	39
Amphenol Antel BXA-7	108.19	51	42	0.003	5	44
Antel LPA-80080/6CF	108.19	126	103	0.007	11	109
VZW Unused Reserve:	108.19	2,262	1,848	0.132	206	1,949
Flat T-Arm	108.00	750	611	0.044	68	646
6' Pine Tree Branch	92.20	3,240	2,105	0.151	235	2,792
Raycap DC6-48-60-0-8	92.00	16	10	0.001	1	14
Powerwave Allgon LGP	92.00	85	55	0.004	6	73
Raycap DC6-48-60-0-8	92.00	33	21	0.002	2	28
Generic 3CC58056AD	92.00	85	55	0.004	6	73
Ericsson RRUS 8843 B	92.00	216	140	0.010	16	186
Ericsson RRUS 4478 B	92.00	180	116	0.008	13	155
Ericsson RRUS 4449 B	92.00	213	138	0.010	15	184
Powerwave Allgon 777	92.00	105	68	0.005	8	90
CCI DMP65R-BU4D	92.00	136	88	0.006	10	117
Round T-Arm	92.00	750	486	0.035	54	646
CCI DMP65R-BU6DA	92.00	318	206	0.015	23	274
Ericsson Radio 4449	84.00	222	126	0.009	14	191
Ericsson RRUS 11 B2	84.00	152	87	0.006	10	131
Ericsson RRUS 11 B4	84.00	152	87	0.006	10	131
RFS APX16DWV-16DWVS-	84.00	122	69	0.005	8	105
Round T-Arm with Sit	84.00	2,295	1,305	0.093	146	1,977
RFS APXVAARR24_43-U-	84.00	384	218	0.016	24	331
8' Pine Tree Branch	70.60	900	399	0.029	45	775
10' Pine Tree Branch	61.80	770	282	0.020	32	663
		33,222	13,967	1.000	1,560	28,624

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-39.53	-1.56	0.00	-133.66	0.00	133.66	4,313.87	2,156.93	9,845.90	4,930.27	0.00	0.00	0.036
5.00	-37.95	-1.56	0.00	-125.86	0.00	125.86	4,252.96	2,126.48	9,471.97	4,743.03	0.00	-0.01	0.035
10.00	-36.41	-1.56	0.00	-118.04	0.00	118.04	4,189.94	2,094.97	9,100.20	4,556.86	0.02	-0.01	0.035
15.00	-34.90	-1.56	0.00	-110.24	0.00	110.24	4,124.81	2,062.41	8,730.92	4,371.95	0.03	-0.02	0.034
20.00	-33.42	-1.55	0.00	-102.45	0.00	102.45	4,057.58	2,028.79	8,364.50	4,188.47	0.06	-0.03	0.033
25.00	-31.97	-1.54	0.00	-94.70	0.00	94.70	3,988.23	1,994.12	8,001.27	4,006.58	0.10	-0.04	0.032
30.00	-30.56	-1.52	0.00	-87.01	0.00	87.01	3,916.78	1,958.39	7,641.59	3,826.48	0.14	-0.04	0.031
35.00	-29.31	-1.50	0.00	-79.40	0.00	79.40	3,843.22	1,921.61	7,285.81	3,648.32	0.19	-0.05	0.029
39.54	-29.20	-1.50	0.00	-72.57	0.00	72.57	3,774.61	1,887.30	6,966.44	3,488.40	0.24	-0.06	0.029
39.54	-29.20	-1.50	0.00	-72.57	0.00	72.57	2,948.56	1,474.28	5,457.02	2,732.57	0.24	-0.06	0.036
40.00	-28.04	-1.48	0.00	-71.87	0.00	71.87	2,943.78	1,471.89	5,433.22	2,720.65	0.25	-0.06	0.036
45.00	-26.91	-1.46	0.00	-64.46	0.00	64.46	2,890.69	1,445.35	5,175.58	2,591.64	0.31	-0.07	0.034
50.00	-25.80	-1.43	0.00	-57.16	0.00	57.16	2,835.50	1,417.75	4,920.15	2,463.73	0.39	-0.08	0.032
55.00	-24.73	-1.40	0.00	-49.99	0.00	49.99	2,778.20	1,389.10	4,667.28	2,337.11	0.47	-0.08	0.030
60.00	-24.35	-1.39	0.00	-42.97	0.00	42.97	2,718.79	1,359.40	4,417.31	2,211.94	0.56	-0.09	0.028
61.80	-22.72	-1.34	0.00	-40.46	0.00	40.46	2,696.89	1,348.45	4,328.10	2,167.27	0.60	-0.09	0.027
65.00	-21.70	-1.30	0.00	-36.18	0.00	36.18	2,657.28	1,328.64	4,170.60	2,088.40	0.66	-0.10	0.025
70.00	-20.47	-1.25	0.00	-29.68	0.00	29.68	2,593.65	1,296.83	3,927.49	1,966.66	0.77	-0.11	0.023
70.60	-19.69	-1.22	0.00	-28.93	0.00	28.93	2,585.88	1,292.94	3,898.57	1,952.18	0.78	-0.11	0.022
74.52	-19.61	-1.21	0.00	-24.16	0.00	24.16	2,534.32	1,267.16	3,711.11	1,858.31	0.87	-0.11	0.021
74.52	-19.61	-1.21	0.00	-24.16	0.00	24.16	1,878.69	939.34	2,760.68	1,382.39	0.87	-0.11	0.028
75.00	-18.79	-1.18	0.00	-23.58	0.00	23.58	1,874.65	937.33	2,744.82	1,374.45	0.88	-0.11	0.027
80.00	-18.15	-1.14	0.00	-17.70	0.00	17.70	1,831.50	915.75	2,580.48	1,292.16	1.00	-0.12	0.024
84.00	-13.88	-0.92	0.00	-13.12	0.00	13.12	1,795.47	897.73	2,450.37	1,227.01	1.10	-0.12	0.018
85.00	-13.13	-0.88	0.00	-12.20	0.00	12.20	1,786.25	893.12	2,418.06	1,210.83	1.13	-0.12	0.017
90.00	-12.84	-0.86	0.00	-7.82	0.00	7.82	1,738.88	869.44	2,257.89	1,130.63	1.26	-0.13	0.014
92.00	-6.16	-0.45	0.00	-6.10	0.00	6.10	1,719.34	859.67	2,194.54	1,098.90	1.32	-0.13	0.009
92.20	-5.84	-0.43	0.00	-6.01	0.00	6.01	1,717.37	858.69	2,188.23	1,095.74	1.32	-0.13	0.009
95.00	-5.28	-0.40	0.00	-4.80	0.00	4.80	1,689.41	844.70	2,100.35	1,051.73	1.40	-0.13	0.008
100.00	-4.75	-0.36	0.00	-2.81	0.00	2.81	1,637.83	818.91	1,945.76	974.33	1.53	-0.13	0.006
105.00	-4.44	-0.34	0.00	-1.01	0.00	1.01	1,584.14	792.07	1,794.48	898.57	1.67	-0.13	0.004
108.00	0.00	0.00	0.00	0.00	0.00	0.00	1,550.91	775.46	1,705.45	853.99	1.76	-0.13	0.000
108.19	0.00	0.00	0.00	0.00	0.00	0.00	1,548.78	774.39	1,699.86	851.19	1.76	-0.13	0.000

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Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-27.50	-1.56	0.00	-132.83	0.00	132.83	4,313.87	2,156.93	9,845.90	4,930.27	0.00	0.00	0.033
5.00	-26.40	-1.56	0.00	-125.03	0.00	125.03	4,252.96	2,126.48	9,471.97	4,743.03	0.00	-0.01	0.033
10.00	-25.33	-1.56	0.00	-117.23	0.00	117.23	4,189.94	2,094.97	9,100.20	4,556.86	0.02	-0.01	0.032
15.00	-24.28	-1.55	0.00	-109.44	0.00	109.44	4,124.81	2,062.41	8,730.92	4,371.95	0.03	-0.02	0.031
20.00	-23.25	-1.54	0.00	-101.68	0.00	101.68	4,057.58	2,028.79	8,364.50	4,188.47	0.06	-0.03	0.030
25.00	-22.25	-1.53	0.00	-93.96	0.00	93.96	3,988.23	1,994.12	8,001.27	4,006.58	0.10	-0.04	0.029
30.00	-21.26	-1.51	0.00	-86.30	0.00	86.30	3,916.78	1,958.39	7,641.59	3,826.48	0.14	-0.04	0.028
35.00	-20.39	-1.50	0.00	-78.73	0.00	78.73	3,843.22	1,921.61	7,285.81	3,648.32	0.19	-0.05	0.027
39.54	-20.32	-1.50	0.00	-71.94	0.00	71.94	3,774.61	1,887.30	6,966.44	3,488.40	0.24	-0.06	0.026
39.54	-20.32	-1.50	0.00	-71.94	0.00	71.94	2,948.56	1,474.28	5,457.02	2,732.57	0.24	-0.06	0.033
40.00	-19.51	-1.47	0.00	-71.25	0.00	71.25	2,943.78	1,471.89	5,433.22	2,720.65	0.24	-0.06	0.033
45.00	-18.72	-1.45	0.00	-63.88	0.00	63.88	2,890.69	1,445.35	5,175.58	2,591.64	0.31	-0.07	0.031
50.00	-17.95	-1.42	0.00	-56.63	0.00	56.63	2,835.50	1,417.75	4,920.15	2,463.73	0.38	-0.07	0.029
55.00	-17.20	-1.39	0.00	-49.52	0.00	49.52	2,778.20	1,389.10	4,667.28	2,337.11	0.47	-0.08	0.027
60.00	-16.94	-1.38	0.00	-42.55	0.00	42.55	2,718.79	1,359.40	4,417.31	2,211.94	0.56	-0.09	0.025
61.80	-15.81	-1.33	0.00	-40.07	0.00	40.07	2,696.89	1,348.45	4,328.10	2,167.27	0.59	-0.09	0.024
65.00	-15.10	-1.29	0.00	-35.83	0.00	35.83	2,657.28	1,328.64	4,170.60	2,088.40	0.66	-0.10	0.023
70.00	-14.24	-1.24	0.00	-29.39	0.00	29.39	2,593.65	1,296.83	3,927.49	1,966.66	0.76	-0.10	0.020
70.60	-13.70	-1.21	0.00	-28.65	0.00	28.65	2,585.88	1,292.94	3,898.57	1,952.18	0.78	-0.11	0.020
74.52	-13.64	-1.20	0.00	-23.92	0.00	23.92	2,534.32	1,267.16	3,711.11	1,858.31	0.87	-0.11	0.018
74.52	-13.64	-1.20	0.00	-23.92	0.00	23.92	1,878.69	939.34	2,760.68	1,382.39	0.87	-0.11	0.025
75.00	-13.07	-1.16	0.00	-23.34	0.00	23.34	1,874.65	937.33	2,744.82	1,374.45	0.88	-0.11	0.024
80.00	-12.63	-1.13	0.00	-17.52	0.00	17.52	1,831.50	915.75	2,580.48	1,292.16	1.00	-0.12	0.020
84.00	-9.65	-0.91	0.00	-12.99	0.00	12.99	1,795.47	897.73	2,450.37	1,227.01	1.10	-0.12	0.016
85.00	-9.13	-0.87	0.00	-12.08	0.00	12.08	1,786.25	893.12	2,418.06	1,210.83	1.12	-0.12	0.015
90.00	-8.93	-0.85	0.00	-7.75	0.00	7.75	1,738.88	869.44	2,257.89	1,130.63	1.25	-0.13	0.012
92.00	-4.28	-0.45	0.00	-6.05	0.00	6.05	1,719.34	859.67	2,194.54	1,098.90	1.31	-0.13	0.008
92.20	-4.06	-0.43	0.00	-5.96	0.00	5.96	1,717.37	858.69	2,188.23	1,095.74	1.31	-0.13	0.008
95.00	-3.67	-0.39	0.00	-4.75	0.00	4.75	1,689.41	844.70	2,100.35	1,051.73	1.39	-0.13	0.007
100.00	-3.30	-0.36	0.00	-2.78	0.00	2.78	1,637.83	818.91	1,945.76	974.33	1.52	-0.13	0.005
105.00	-3.09	-0.33	0.00	-1.00	0.00	1.00	1,584.14	792.07	1,794.48	898.57	1.66	-0.13	0.003
108.00	0.00	0.00	0.00	0.00	0.00	0.00	1,550.91	775.46	1,705.45	853.99	1.74	-0.13	0.000
108.19	0.00	0.00	0.00	0.00	0.00	0.00	1,548.78	774.39	1,699.86	851.19	1.75	-0.13	0.000

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Equivalent Modal Analysis Method

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

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	1.36
Redundancy Factor (p):	1.00

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
30	108.10	16	1.887	1.963	1.134	0.378	4	19
29	106.50	250	1.831	1.685	1.032	0.343	57	309
28	102.50	431	1.696	1.109	0.809	0.264	76	534
27	97.50	449	1.535	0.591	0.585	0.180	54	556
26	93.60	259	1.415	0.312	0.447	0.126	22	321
25	92.10	19	1.370	0.229	0.401	0.108	1	23
24	91.00	236	1.337	0.175	0.370	0.096	15	292
23	87.50	603	1.236	0.042	0.283	0.062	25	746
22	84.50	123	1.153	-0.035	0.221	0.039	3	152
21	82.00	517	1.086	-0.078	0.178	0.023	8	641
20	77.50	663	0.970	-0.116	0.117	0.005	2	821
19	74.76	65	0.902	-0.122	0.088	0.000	0	80
18	72.56	629	0.850	-0.119	0.069	-0.002	-1	779
17	70.30	97	0.798	-0.112	0.053	-0.002	0	121
16	67.50	825	0.736	-0.097	0.037	0.001	0	1,021
15	63.40	540	0.649	-0.070	0.021	0.008	3	668
14	60.90	308	0.599	-0.053	0.014	0.014	3	381
13	57.50	870	0.534	-0.029	0.009	0.022	13	1,077
12	52.50	892	0.445	0.003	0.006	0.032	19	1,105
11	47.50	915	0.364	0.029	0.008	0.040	24	1,133
10	42.50	937	0.292	0.047	0.013	0.043	27	1,161
9	39.77	87	0.255	0.054	0.017	0.044	3	108
8	37.27	1,011	0.224	0.059	0.020	0.044	29	1,252
7	32.50	1,139	0.171	0.066	0.027	0.042	32	1,411
6	27.50	1,166	0.122	0.070	0.034	0.040	31	1,444
5	22.50	1,193	0.082	0.072	0.039	0.038	30	1,478
4	17.50	1,220	0.049	0.071	0.042	0.036	29	1,511
3	12.50	1,247	0.025	0.067	0.040	0.032	27	1,544
2	7.50	1,274	0.009	0.053	0.031	0.026	22	1,578
1	2.50	1,301	0.001	0.024	0.013	0.012	11	1,611
4' Pine Tree Branch	108.19	320	1.890	1.980	1.140	0.380	81	396
RFS FD9R6004/2C-3L	108.19	16	1.890	1.980	1.140	0.380	4	19
Amphenol Antel BXA-1	108.19	45	1.890	1.980	1.140	0.380	11	56
Amphenol Antel BXA-7	108.19	51	1.890	1.980	1.140	0.380	13	63

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Antel LPA-80080/6CF	108.19	126	1.890	1.980	1.140	0.380	32	156
VZW Unused Reserve:	108.19	2,262	1.890	1.980	1.140	0.380	573	2,802
Flat T-Arm	108.00	750	1.883	1.945	1.127	0.376	188	929
6' Pine Tree Branch	92.20	3,240	1.373	0.234	0.404	0.110	237	4,012
Raycap DC6-48-60-0-8	92.00	16	1.367	0.224	0.398	0.107	1	20
Powerwave Allgon LGP	92.00	85	1.367	0.224	0.398	0.107	6	105
Raycap DC6-48-60-0-8	92.00	33	1.367	0.224	0.398	0.107	2	41
Generic 3CC58056AD	92.00	85	1.367	0.224	0.398	0.107	6	105
Ericsson RRUS 8843 B	92.00	216	1.367	0.224	0.398	0.107	15	267
Ericsson RRUS 4478 B	92.00	180	1.367	0.224	0.398	0.107	13	223
Ericsson RRUS 4449 B	92.00	213	1.367	0.224	0.398	0.107	15	264
Powerwave Allgon 777	92.00	105	1.367	0.224	0.398	0.107	8	130
CCI DMP65R-BU4D	92.00	136	1.367	0.224	0.398	0.107	10	168
Round T-Arm	92.00	750	1.367	0.224	0.398	0.107	54	929
CCI DMP65R-BU6DA	92.00	318	1.367	0.224	0.398	0.107	23	393
Ericsson Radio 4449	84.00	222	1.139	-0.045	0.212	0.035	5	275
Ericsson RRUS 11 B2	84.00	152	1.139	-0.045	0.212	0.035	4	188
Ericsson RRUS 11 B4	84.00	152	1.139	-0.045	0.212	0.035	4	188
RFS APX16DWV-	84.00	122	1.139	-0.045	0.212	0.035	3	151
Round T-Arm with Sit	84.00	2,295	1.139	-0.045	0.212	0.035	54	2,842
RFS APXVAARR24_43-U-	84.00	384	1.139	-0.045	0.212	0.035	9	475
8' Pine Tree Branch	70.60	900	0.805	-0.113	0.055	-0.002	-1	1,115
10' Pine Tree Branch	61.80	770	0.617	-0.059	0.017	0.012	6	954
		33,222	60.510	21.969	20.255	6.262	1,945	41,142

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
30	108.10	16	1.887	1.963	1.134	0.378	4	13
29	106.50	250	1.831	1.685	1.032	0.343	57	215
28	102.50	431	1.696	1.109	0.809	0.264	76	371
27	97.50	449	1.535	0.591	0.585	0.180	54	387
26	93.60	259	1.415	0.312	0.447	0.126	22	223
25	92.10	19	1.370	0.229	0.401	0.108	1	16
24	91.00	236	1.337	0.175	0.370	0.096	15	203
23	87.50	603	1.236	0.042	0.283	0.062	25	519
22	84.50	123	1.153	-0.035	0.221	0.039	3	106
21	82.00	517	1.086	-0.078	0.178	0.023	8	446
20	77.50	663	0.970	-0.116	0.117	0.005	2	571
19	74.76	65	0.902	-0.122	0.088	0.000	0	56
18	72.56	629	0.850	-0.119	0.069	-0.002	-1	542
17	70.30	97	0.798	-0.112	0.053	-0.002	0	84
16	67.50	825	0.736	-0.097	0.037	0.001	0	710
15	63.40	540	0.649	-0.070	0.021	0.008	3	465
14	60.90	308	0.599	-0.053	0.014	0.014	3	265
13	57.50	870	0.534	-0.029	0.009	0.022	13	749
12	52.50	892	0.445	0.003	0.006	0.032	19	769
11	47.50	915	0.364	0.029	0.008	0.040	24	788
10	42.50	937	0.292	0.047	0.013	0.043	27	807
9	39.77	87	0.255	0.054	0.017	0.044	3	75
8	37.27	1,011	0.224	0.059	0.020	0.044	29	871
7	32.50	1,139	0.171	0.066	0.027	0.042	32	981
6	27.50	1,166	0.122	0.070	0.034	0.040	31	1,005
5	22.50	1,193	0.082	0.072	0.039	0.038	30	1,028
4	17.50	1,220	0.049	0.071	0.042	0.036	29	1,051
3	12.50	1,247	0.025	0.067	0.040	0.032	27	1,075
2	7.50	1,274	0.009	0.053	0.031	0.026	22	1,098
1	2.50	1,301	0.001	0.024	0.013	0.012	11	1,121

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4' Pine Tree Branch	108.19	320	1.890	1.980	1.140	0.380	81	276
RFS FD9R6004/2C-3L	108.19	16	1.890	1.980	1.140	0.380	4	13
Amphenol Antel BXA-1	108.19	45	1.890	1.980	1.140	0.380	11	39
Amphenol Antel BXA-7	108.19	51	1.890	1.980	1.140	0.380	13	44
Antel LPA-80080/6CF	108.19	126	1.890	1.980	1.140	0.380	32	109
VZW Unused Reserve:	108.19	2,262	1.890	1.980	1.140	0.380	573	1,949
Flat T-Arm	108.00	750	1.883	1.945	1.127	0.376	188	646
6' Pine Tree Branch	92.20	3,240	1.373	0.234	0.404	0.110	237	2,792
Raycap DC6-48-60-0-8	92.00	16	1.367	0.224	0.398	0.107	1	14
Powerwave Allgon LGP	92.00	85	1.367	0.224	0.398	0.107	6	73
Raycap DC6-48-60-0-8	92.00	33	1.367	0.224	0.398	0.107	2	28
Generic 3CC58056AD	92.00	85	1.367	0.224	0.398	0.107	6	73
Ericsson RRUS 8843 B	92.00	216	1.367	0.224	0.398	0.107	15	186
Ericsson RRUS 4478 B	92.00	180	1.367	0.224	0.398	0.107	13	155
Ericsson RRUS 4449 B	92.00	213	1.367	0.224	0.398	0.107	15	184
Powerwave Allgon 777	92.00	105	1.367	0.224	0.398	0.107	8	90
CCI DMP65R-BU4D	92.00	136	1.367	0.224	0.398	0.107	10	117
Round T-Arm	92.00	750	1.367	0.224	0.398	0.107	54	646
CCI DMP65R-BU6DA	92.00	318	1.367	0.224	0.398	0.107	23	274
Ericsson Radio 4449	84.00	222	1.139	-0.045	0.212	0.035	5	191
Ericsson RRUS 11 B2	84.00	152	1.139	-0.045	0.212	0.035	4	131
Ericsson RRUS 11 B4	84.00	152	1.139	-0.045	0.212	0.035	4	131
RFS APX16DWV-	84.00	122	1.139	-0.045	0.212	0.035	3	105
Round T-Arm with Sit	84.00	2,295	1.139	-0.045	0.212	0.035	54	1,977
RFS APXVAARR24_43-U-	84.00	384	1.139	-0.045	0.212	0.035	9	331
8' Pine Tree Branch	70.60	900	0.805	-0.113	0.055	-0.002	-1	775
10' Pine Tree Branch	61.80	770	0.617	-0.059	0.017	0.012	6	663
		33,222	60.510	21.969	20.255	6.262	1,945	28,624

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-39.53	-1.94	0.00	-178.24	0.00	178.24	4,313.87	2,156.93	9,845.90	4,930.27	0.00	0.00	0.045
5.00	-37.95	-1.92	0.00	-168.55	0.00	168.55	4,252.96	2,126.48	9,471.97	4,743.03	0.01	-0.01	0.044
10.00	-36.41	-1.90	0.00	-158.94	0.00	158.94	4,189.94	2,094.97	9,100.20	4,556.86	0.02	-0.02	0.044
15.00	-34.90	-1.88	0.00	-149.44	0.00	149.44	4,124.81	2,062.41	8,730.92	4,371.95	0.05	-0.03	0.043
20.00	-33.42	-1.85	0.00	-140.05	0.00	140.05	4,057.58	2,028.79	8,364.50	4,188.47	0.08	-0.04	0.042
25.00	-31.97	-1.83	0.00	-130.79	0.00	130.79	3,988.23	1,994.12	8,001.27	4,006.58	0.13	-0.05	0.041
30.00	-30.56	-1.80	0.00	-121.67	0.00	121.67	3,916.78	1,958.39	7,641.59	3,826.48	0.19	-0.06	0.040
35.00	-29.31	-1.77	0.00	-112.68	0.00	112.68	3,843.22	1,921.61	7,285.81	3,648.32	0.25	-0.07	0.039
39.54	-29.20	-1.77	0.00	-104.64	0.00	104.64	3,774.61	1,887.30	6,966.44	3,488.40	0.33	-0.08	0.038
39.54	-29.20	-1.77	0.00	-104.64	0.00	104.64	2,948.56	1,474.28	5,457.02	2,732.57	0.33	-0.08	0.048
40.00	-28.04	-1.75	0.00	-103.83	0.00	103.83	2,943.78	1,471.89	5,433.22	2,720.65	0.33	-0.08	0.048
45.00	-26.91	-1.73	0.00	-95.10	0.00	95.10	2,890.69	1,445.35	5,175.58	2,591.64	0.42	-0.09	0.046
50.00	-25.80	-1.71	0.00	-86.47	0.00	86.47	2,835.50	1,417.75	4,920.15	2,463.73	0.53	-0.11	0.044
55.00	-24.73	-1.70	0.00	-77.91	0.00	77.91	2,778.20	1,389.10	4,667.28	2,337.11	0.65	-0.12	0.042
60.00	-24.34	-1.70	0.00	-69.41	0.00	69.41	2,718.79	1,359.40	4,417.31	2,211.94	0.78	-0.13	0.040
61.80	-22.72	-1.69	0.00	-66.35	0.00	66.35	2,696.89	1,348.45	4,328.10	2,167.27	0.83	-0.13	0.039
65.00	-21.70	-1.69	0.00	-60.94	0.00	60.94	2,657.28	1,328.64	4,170.60	2,088.40	0.92	-0.14	0.037
70.00	-20.47	-1.69	0.00	-52.48	0.00	52.48	2,593.65	1,296.83	3,927.49	1,966.66	1.07	-0.15	0.035
70.60	-19.69	-1.69	0.00	-51.47	0.00	51.47	2,585.88	1,292.94	3,898.57	1,952.18	1.09	-0.16	0.034
74.52	-19.61	-1.69	0.00	-44.83	0.00	44.83	2,534.32	1,267.16	3,711.11	1,858.31	1.23	-0.16	0.032
74.52	-19.61	-1.69	0.00	-44.83	0.00	44.83	1,878.69	939.34	2,760.68	1,382.39	1.23	-0.16	0.043
75.00	-18.79	-1.69	0.00	-44.02	0.00	44.02	1,874.65	937.33	2,744.82	1,374.45	1.24	-0.17	0.042
80.00	-18.15	-1.68	0.00	-35.56	0.00	35.56	1,831.50	915.75	2,580.48	1,292.16	1.42	-0.18	0.037
84.00	-13.87	-1.59	0.00	-28.83	0.00	28.83	1,795.47	897.73	2,450.37	1,227.01	1.58	-0.19	0.031
85.00	-13.13	-1.56	0.00	-27.24	0.00	27.24	1,786.25	893.12	2,418.06	1,210.83	1.61	-0.19	0.030
90.00	-12.83	-1.55	0.00	-19.41	0.00	19.41	1,738.88	869.44	2,257.89	1,130.63	1.82	-0.20	0.025
92.00	-6.16	-1.14	0.00	-16.31	0.00	16.31	1,719.34	859.67	2,194.54	1,098.90	1.90	-0.20	0.018
92.20	-5.84	-1.11	0.00	-16.08	0.00	16.08	1,717.37	858.69	2,188.23	1,095.74	1.91	-0.20	0.018
95.00	-5.28	-1.06	0.00	-12.96	0.00	12.96	1,689.41	844.70	2,100.35	1,051.73	2.03	-0.21	0.015
100.00	-4.75	-0.98	0.00	-7.67	0.00	7.67	1,637.83	818.91	1,945.76	974.33	2.25	-0.21	0.011
105.00	-4.44	-0.92	0.00	-2.77	0.00	2.77	1,584.14	792.07	1,794.48	898.57	2.47	-0.21	0.006
108.00	0.00	0.00	0.00	0.00	0.00	0.00	1,550.91	775.46	1,705.45	853.99	2.61	-0.21	0.000
108.19	0.00	0.00	0.00	0.00	0.00	0.00	1,548.78	774.39	1,699.86	851.19	2.61	-0.21	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-27.50	-1.94	0.00	-177.04	0.00	177.04	4,313.87	2,156.93	9,845.90	4,930.27	0.00	0.00	0.042
5.00	-26.40	-1.92	0.00	-167.36	0.00	167.36	4,252.96	2,126.48	9,471.97	4,743.03	0.01	-0.01	0.041
10.00	-25.33	-1.90	0.00	-157.77	0.00	157.77	4,189.94	2,094.97	9,100.20	4,556.86	0.02	-0.02	0.041
15.00	-24.28	-1.87	0.00	-148.29	0.00	148.29	4,124.81	2,062.41	8,730.92	4,371.95	0.05	-0.03	0.040
20.00	-23.25	-1.84	0.00	-138.93	0.00	138.93	4,057.58	2,028.79	8,364.50	4,188.47	0.08	-0.04	0.039
25.00	-22.24	-1.82	0.00	-129.71	0.00	129.71	3,988.23	1,994.12	8,001.27	4,006.58	0.13	-0.05	0.038
30.00	-21.26	-1.79	0.00	-120.64	0.00	120.64	3,916.78	1,958.39	7,641.59	3,826.48	0.18	-0.06	0.037
35.00	-20.39	-1.76	0.00	-111.70	0.00	111.70	3,843.22	1,921.61	7,285.81	3,648.32	0.25	-0.07	0.036
39.54	-20.32	-1.76	0.00	-103.72	0.00	103.72	3,774.61	1,887.30	6,966.44	3,488.40	0.32	-0.08	0.035
39.54	-20.32	-1.76	0.00	-103.72	0.00	103.72	2,948.56	1,474.28	5,457.02	2,732.57	0.32	-0.08	0.045
40.00	-19.51	-1.73	0.00	-102.91	0.00	102.91	2,943.78	1,471.89	5,433.22	2,720.65	0.33	-0.08	0.044
45.00	-18.72	-1.71	0.00	-94.24	0.00	94.24	2,890.69	1,445.35	5,175.58	2,591.64	0.42	-0.09	0.043
50.00	-17.95	-1.69	0.00	-85.68	0.00	85.68	2,835.50	1,417.75	4,920.15	2,463.73	0.52	-0.10	0.041
55.00	-17.20	-1.68	0.00	-77.21	0.00	77.21	2,778.20	1,389.10	4,667.28	2,337.11	0.64	-0.12	0.039
60.00	-16.94	-1.68	0.00	-68.79	0.00	68.79	2,718.79	1,359.40	4,417.31	2,211.94	0.77	-0.13	0.037
61.80	-15.81	-1.67	0.00	-65.76	0.00	65.76	2,696.89	1,348.45	4,328.10	2,167.27	0.82	-0.13	0.036
65.00	-15.10	-1.67	0.00	-60.40	0.00	60.40	2,657.28	1,328.64	4,170.60	2,088.40	0.91	-0.14	0.035
70.00	-14.24	-1.67	0.00	-52.03	0.00	52.03	2,593.65	1,296.83	3,927.49	1,966.66	1.07	-0.15	0.032
70.60	-13.70	-1.68	0.00	-51.03	0.00	51.03	2,585.88	1,292.94	3,898.57	1,952.18	1.09	-0.15	0.031
74.52	-13.64	-1.68	0.00	-44.46	0.00	44.46	2,534.32	1,267.16	3,711.11	1,858.31	1.22	-0.16	0.029
74.52	-13.64	-1.68	0.00	-44.46	0.00	44.46	1,878.69	939.34	2,760.68	1,382.39	1.22	-0.16	0.039
75.00	-13.07	-1.67	0.00	-43.66	0.00	43.66	1,874.65	937.33	2,744.82	1,374.45	1.23	-0.16	0.039
80.00	-12.62	-1.67	0.00	-35.29	0.00	35.29	1,831.50	915.75	2,580.48	1,292.16	1.41	-0.18	0.034
84.00	-9.65	-1.58	0.00	-28.62	0.00	28.62	1,795.47	897.73	2,450.37	1,227.01	1.56	-0.19	0.029
85.00	-9.13	-1.55	0.00	-27.05	0.00	27.05	1,786.25	893.12	2,418.06	1,210.83	1.60	-0.19	0.027
90.00	-8.93	-1.54	0.00	-19.29	0.00	19.29	1,738.88	869.44	2,257.89	1,130.63	1.80	-0.20	0.022
92.00	-4.28	-1.13	0.00	-16.22	0.00	16.22	1,719.34	859.67	2,194.54	1,098.90	1.89	-0.20	0.017
92.20	-4.06	-1.11	0.00	-15.99	0.00	15.99	1,717.37	858.69	2,188.23	1,095.74	1.89	-0.20	0.017
95.00	-3.67	-1.05	0.00	-12.89	0.00	12.89	1,689.41	844.70	2,100.35	1,051.73	2.01	-0.20	0.014
100.00	-3.30	-0.98	0.00	-7.63	0.00	7.63	1,637.83	818.91	1,945.76	974.33	2.23	-0.21	0.010
105.00	-3.09	-0.92	0.00	-2.75	0.00	2.75	1,584.14	792.07	1,794.48	898.57	2.45	-0.21	0.005
108.00	0.00	0.00	0.00	0.00	0.00	0.00	1,550.91	775.46	1,705.45	853.99	2.58	-0.21	0.000
108.19	0.00	0.00	0.00	0.00	0.00	0.00	1,548.78	774.39	1,699.86	851.19	2.59	-0.21	0.000

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Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	34.41	0.00	39.82	0.00	0.00	2974.47	39.54	0.62
0.9D + 1.6W	34.40	0.00	29.85	0.00	0.00	2958.62	39.54	0.61
1.2D + 1.0Di + 1.0Wi	7.74	0.00	70.81	0.00	0.00	672.82	39.54	0.16
(1.2 + 0.2Sds) * DL + E ELFM	1.56	0.00	39.53	0.00	0.00	133.66	39.54	0.04
(1.2 + 0.2Sds) * DL + E EMAM	1.94	0.00	39.53	0.00	0.00	178.24	39.54	0.05
(0.9 - 0.2Sds) * DL + E ELFM	1.56	0.00	27.50	0.00	0.00	132.83	0.00	0.03
(0.9 - 0.2Sds) * DL + E EMAM	1.94	0.00	27.50	0.00	0.00	177.04	39.54	0.04
1.0D + 1.0W	8.55	0.00	33.22	0.00	0.00	736.97	39.54	0.16

Base Plate & Anchor Rod Analysis

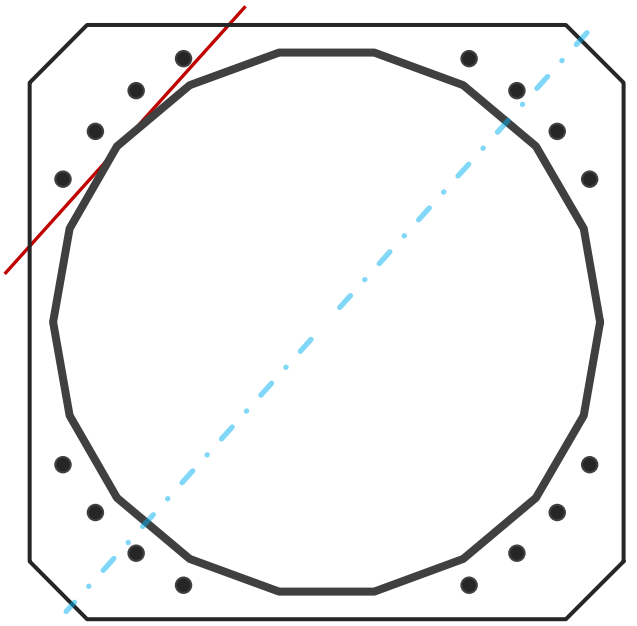
Pole Dimensions		
Number of Sides	18	-
Diameter	55.86	in
Thickness	0.375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	2974.5	k-ft
Axial, Pu	39.8	k
Shear, Vu	34.4	k
Neutral Axis	48	°

Report Capacities		
Component	Capacity	Result
Base Plate	43%	Pass
Anchor Rods	56%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	61.86	in
Thickness	3	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	6	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	1352.5	k
Bending Stress, ϕMn	3176.5	k

Original Anchor Rods		
Arrangement	Cluster	-
Quantity	16	-
Diameter, ø	2 1/4	in
Bolt Circle	62.36	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	145.4	k
Anchor Rods, ϕPn	259.8	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	34.4	2974.5	1.00
Anchor Rod Forces	34.4	2974.5	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	65.0354	3.6131	0.1699		25030.17
Bolt	3.9761	3.2477	0.8393	4.5	25272.46
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	61.86	in
Thickness, t	3	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	26.577	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	62.36	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	145.4	k
Applied Shear, Vu	0.2	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.560	OK
Interaction Capacity	0.561	OK

External Base Plate		
Chord Length AA	31.373	in
Additional AA	0.000	in
Section Modulus, Z	70.590	in^3
Applied Moment, Mu	1352.5	k-ft
Bending Capacity, ϕMn	3176.5	k-ft
Capacity, Mu/ϕMn	0.426	OK
Chord Length AB	30.508	in
Additional AB	0.000	in
Section Modulus, Z	68.642	in^3
Applied Moment, Mu	1106.6	k-ft
Bending Capacity, ϕMn	3088.9	k-ft
Capacity, Mu/ϕMn	0.358	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in^3
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

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

EXHIBIT 4

August 12, 2019

CENTERLINE COMMUNICATIONS at&t

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

RE:		
	Site Number:	CT1157 (LTE 2C/3C/4C/5C)
	FA Number:	10107709
	PACE Number:	MRCTB041488
	PT Number:	2051A0Q87Y
	Site Name:	SHARON CT HERB ROAD
	Site Address:	70 Herb Road Sharon, CT 06069

To Whom It May Concern:

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

- (3) 7770 Antennas (55.0"x11.0"x5.0" - Wt. = 35 lbs. /each)
- (6) LGP21401 TMA's (14.4"x9.0"x2.7" – Wt. = 19 lbs. /each)
- (1) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each)
- **(6) DMP65R-BU4DA Antennas (48.0"x20.7"x7.7" – Wt. = 68 lbs. /each)**
- **(3) B14 4478 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)**
- **(3) B5/B12 4449 RRH's (14.9"x13.2"x10.4" – Wt. = 73 lbs. /each)**
- **(1) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mounts. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mounts on May 14, 2019.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R13.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 115 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 3; tower is located at the upper half of a hill.
- AT&T policy forbids walking on or suspending below T-arm mounts. This Analysis does not include live load conditions for this mount.
- The existing mount is secured to the existing monopine with a ring mount. The connection is considered OK by visual inspection.

Based on our evaluation, we have determined that the existing mounts **ARE CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 2C/3C/4C/5C) Mount Rating	2	LC7	77%	**PASS**

Reference Documents:

- Mount mapping report prepared by ProVertic LLC

This determination was based on the following limitations and assumptions:

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

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

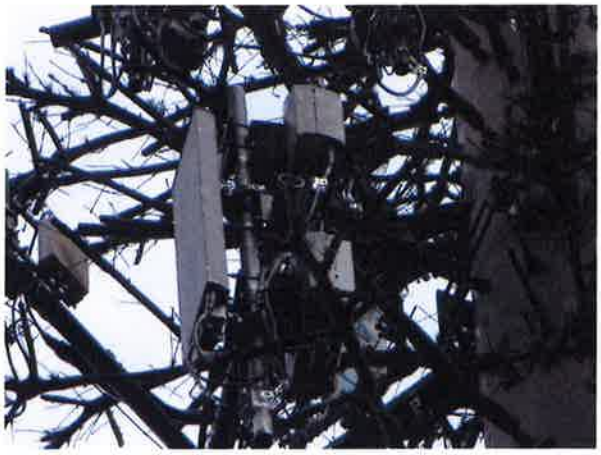
Respectfully Submitted,
Hudson Design Group LLC

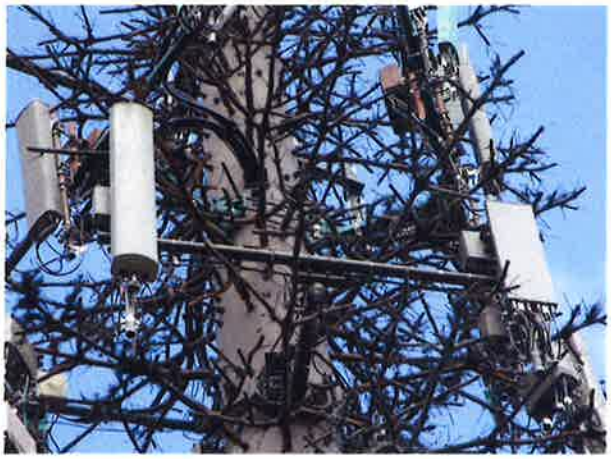
Michael Cabral
Vice President

STATE OF CONNECTICUT
DANIEL HAMM
LICENSED
PROFESSIONAL ENGINEER

Daniel P. Hamm, PE
Principal

FIELD PHOTOS:





p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 203.208.3919 f: 203.234.6398 a: 110 Washington Avenue, 4th Floor, North Haven CT 06473

p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 203.208.3919 f: 203.234.6398 a: 110 Washington Avenue, 4th Floor, North Haven CT 06473

HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 8/12/2019
Project Name: SHARON CT HERB ROAD
Project No.: CT1157
Designed By: LBW **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

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

z=	92 (ft)
z_g=	1200 (ft)
α=	7.0

K_z= 0.965

$Kzmin \leq Kz \leq 2.01$

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

$K_{zt} = [1+(K_c K_t/K_h)]^2$ $K_h = e^{(f*z/H)}$

K_{zt}= 1.608864492

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

Category= **3**

K_h=	1.7771305	
K_c=	0.9	(from Table 2-4)
K_t=	0.53	(from Table 2-5)
f=	2	(from Table 2-5)
z=	92	
z_s=	1100	(Mean elevation of base of structure above sea level)
H=	320	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.61	(from 2.6.6.2.1)
K_e=	0.96	(from 2.6.8)

2.6.10 Design Ice Thickness

Max Ice Thickness = t_i = **1.00** in
Importance Factor = I= **1.0 (from Table 2-3)**
K_{iz} = **1.11 (from Sec. 2.6.10)**

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$ t_{iz} = **1.31** in

Date: 8/12/2019
Project Name: SHARON CT HERB ROAD
Project No.: CT1157
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

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=	112	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

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

G_h=	1.35	Gh=	1.00

2.6.11.2 Design Wind Force on Appurtenances

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

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

		K_z=	0.965	(from 2.6.5.2)
		K_{zt}=	1.6	(from 2.6.6.2.1)
		K_s=	1.0	(from 2.6.7)
q_z=	47.98	K_e=	0.96	(from 2.6.8)
$q_{z\ (Ice)}$=	9.07	K_d=	0.95	(from Table 2-2)
$q_{z\ (30)}$=	3.27	V_{max}=	115	mph (Ultimate Wind Speed)
		$V_{max\ (ice)}$=	50	mph
		V_{30}=	30	mph

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
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

Date: 8/12/2019
Project Name: SHARON CT HERB ROAD
Project No.: CT1157
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

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) ≥ 0.85	1.4 - 4.0(r_s) ≥ 0.90	2.0 - 6.0(r_s) ≥ 1.25
Round	C < 39 (Subcritical)	0.7	0.8	1.2
	39 ≤ C ≤ 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)
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	**264**	**65**	**18**
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.32	1.20	**397**	**89**	**27**
B14 4478 RRH	18.1	13.4	8.3	1.68	1.35	1.20	**97**	**25**	**7**
B14 4478 RRH (Side)	18.1	8.3	13.4	1.04	2.18	1.20	**60**	**17**	**4**
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.20	**79**	**21**	**5**
B2/B66A 8843 RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.20	**65**	**18**	**4**
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.13	1.20	**79**	**21**	**5**
B5/B12 4449 RRH (Shielded)	14.9	0.0	10.4	0.00	0.00	1.20	**0**	**3**	**0**
LGP21401 TMA	14.4	2.7	9.0	0.27	5.33	1.33	**17**	**8**	**1**
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	**54**	**14**	**4**
2" Pipe	2.4	12.0		0.20	0.20	1.20	**11**	**6**	**1**
3" Pipe	3.5	12.0		0.29	0.29	1.20	**17**	**7**	**1**
4" Pipe	4.5	12.0		0.38	0.38	1.20	**22**	**8**	**1**
4x4 HSS	4.0	12.0		0.33	0.33	1.25	**20**	**8**	**1**

Date: 8/12/2019
Project Name: SHARON CT HERB ROAD
Project No.: CT1157
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	264	141	233
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	397	168	340
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	97	60	88
B14 4478 RRH (Side)	18.1	6.7	13.4	0.84	1.68	2.70	1.35	1.21	1.20	49	97	61
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	79	65	75
B2/B66A 8843 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	39	79	49
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	79	62	74
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	39	62	45
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	17	52	26

WIND LOADS WITH ICE:

7770 Antenna	57.6	13.6	7.6	5.45	3.05	4.23	7.56	1.28	1.42	63	39	57
DMP65R-BU4DA Antenna	50.6	23.3	10.3	8.20	3.63	2.17	4.91	1.20	1.31	89	43	78
B14 4478 RRH	20.7	16.0	10.9	2.30	1.57	1.29	1.90	1.20	1.20	25	17	23
B14 4478 RRH (Side)	20.7	8.0	16.0	1.15	2.30	2.59	1.29	1.20	1.20	13	25	16
B2/B66A 8843 RRH	17.5	15.8	13.5	1.92	1.64	1.11	1.30	1.20	1.20	21	18	20
B2/B66A 8843 RRH (Side)	17.5	7.9	15.8	0.96	1.92	2.21	1.11	1.20	1.20	10	21	13
B5/B12 4449 RRH	17.5	15.8	13.0	1.92	1.58	1.11	1.35	1.20	1.20	21	17	20
B5/B12 4449 RRH (Shielded)	17.5	7.9	13.0	0.96	1.58	2.21	1.35	1.20	1.20	10	17	12
LGP21401 TMA	17.0	5.3	11.6	0.63	1.37	3.20	1.46	1.23	1.20	7	15	9

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	18	10	16
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	27	11	23
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	7	4	6
B14 4478 RRH (Side)	18.1	6.7	13.4	0.84	1.68	2.70	1.35	1.21	1.20	3	7	4
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
B2/B66A 8843 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	3	5	3
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	5
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	3	4	3
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	4	2

Date: 8/12/2019
Project Name: SHARON CT HERB ROAD
Project No.: CT1157
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	264	141	171
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	397	168	225
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	97	60	69
B14 4478 RRH (Side)	18.1	10.1	13.4	1.26	1.68	1.80	1.35	1.20	1.20	73	97	91
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	79	65	68
B2/B66A 8843 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	59	79	74
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	79	62	66
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	59	62	61
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	17	52	43

WIND LOADS WITH ICE:

7770 Antenna	57.6	13.6	7.6	5.45	3.05	4.23	7.56	1.28	1.42	63	39	45
DMP65R-BU4DA Antenna	50.6	23.3	10.3	8.20	3.63	2.17	4.91	1.20	1.31	89	43	55
B14 4478 RRH	20.7	16.0	10.9	2.30	1.57	1.29	1.90	1.20	1.20	25	17	19
B14 4478 RRH (Side)	20.7	12.0	16.0	1.73	2.30	1.72	1.29	1.20	1.20	19	25	24
B2/B66A 8843 RRH	17.5	15.8	13.5	1.92	1.64	1.11	1.30	1.20	1.20	21	18	19
B2/B66A 8843 RRH (Side)	17.5	11.9	15.8	1.44	1.92	1.48	1.11	1.20	1.20	16	21	20
B5/B12 4449 RRH	17.5	15.8	13.0	1.92	1.58	1.11	1.35	1.20	1.20	21	17	18
B5/B12 4449 RRH (Shielded)	17.5	11.9	13.0	1.44	1.58	1.48	1.35	1.20	1.20	16	17	17
LGP21401 TMA	17.0	5.3	11.6	0.63	1.37	3.20	1.46	1.23	1.20	7	15	13

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	18	10	12
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	27	11	15
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	7	4	5
B14 4478 RRH (Side)	18.1	10.1	13.4	1.26	1.68	1.80	1.35	1.20	1.20	5	7	6
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
B2/B66A 8843 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	4	5	5
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	5
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	4	4	4
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	4	3

Date: 8/12/2019
Project Name: SHARON CT HERB ROAD
Project No.: CT1157
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	264	141	141
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	397	168	168
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	97	60	60
B14 4478 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	60	97	97
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	79	65	65
B2/B66A 8843 RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	65	79	79
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	79	62	62
B5/B12 4449 RRH (Shielded)	14.9	0.0	10.4	0.00	1.08	0.00	1.43	1.20	1.20	0	62	62
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	17	52	52

WIND LOADS WITH ICE:

7770 Antenna	57.6	13.6	7.6	5.45	3.05	4.23	7.56	1.28	1.42	63	39	39
DMP65R-BU4DA Antenna	50.6	23.3	10.3	8.20	3.63	2.17	4.91	1.20	1.31	89	43	43
B14 4478 RRH	20.7	16.0	10.9	2.30	1.57	1.29	1.90	1.20	1.20	25	17	17
B14 4478 RRH (Side)	20.7	10.9	16.0	1.57	2.30	1.90	1.29	1.20	1.20	17	25	25
B2/B66A 8843 RRH	17.5	15.8	13.5	1.92	1.64	1.11	1.30	1.20	1.20	21	18	18
B2/B66A 8843 RRH (Side)	17.5	13.5	15.8	1.64	1.92	1.30	1.11	1.20	1.20	18	21	21
B5/B12 4449 RRH	17.5	15.8	13.0	1.92	1.58	1.11	1.35	1.20	1.20	21	17	17
B5/B12 4449 RRH (Shielded)	17.5	2.6	13.0	0.32	1.58	6.69	1.35	1.39	1.20	4	17	17
LGP21401 TMA	17.0	5.3	11.6	0.63	1.37	3.20	1.46	1.23	1.20	7	15	15

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	18	10	10
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	27	11	11
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	7	4	4
B14 4478 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	7	7
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4
B2/B66A 8843 RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	5
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	4
B5/B12 4449 RRH (Shielded)	14.9	0.0	10.4	0.00	1.08	0.00	1.43	1.20	1.20	0	4	4
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	4	4

Date: 8/12/2019
Project Name: SHARON CT HERB ROAD
Project No.: CT1157
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	264	141	171
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	397	168	225
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	97	60	69
B14 4478 RRH (Side)	18.1	10.1	13.4	1.26	1.68	1.80	1.35	1.20	1.20	73	97	91
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	79	65	68
B2/B66A 8843 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	59	79	74
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	79	62	66
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	59	62	61
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	17	52	43

WIND LOADS WITH ICE:

7770 Antenna	57.6	13.6	7.6	5.45	3.05	4.23	7.56	1.28	1.42	63	39	45
DMP65R-BU4DA Antenna	50.6	23.3	10.3	8.20	3.63	2.17	4.91	1.20	1.31	89	43	55
B14 4478 RRH	20.7	16.0	10.9	2.30	1.57	1.29	1.90	1.20	1.20	25	17	19
B14 4478 RRH (Side)	20.7	12.0	16.0	1.73	2.30	1.72	1.29	1.20	1.20	19	25	24
B2/B66A 8843 RRH	17.5	15.8	13.5	1.92	1.64	1.11	1.30	1.20	1.20	21	18	19
B2/B66A 8843 RRH (Side)	17.5	11.9	15.8	1.44	1.92	1.48	1.11	1.20	1.20	16	21	20
B5/B12 4449 RRH	17.5	15.8	13.0	1.92	1.58	1.11	1.35	1.20	1.20	21	17	18
B5/B12 4449 RRH (Shielded)	17.5	11.9	13.0	1.44	1.58	1.48	1.35	1.20	1.20	16	17	17
LGP21401 TMA	17.0	5.3	11.6	0.63	1.37	3.20	1.46	1.23	1.20	7	15	13

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	18	10	12
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	27	11	15
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	7	4	5
B14 4478 RRH (Side)	18.1	10.1	13.4	1.26	1.68	1.80	1.35	1.20	1.20	5	7	6
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
B2/B66A 8843 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	4	5	5
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	5
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	4	4	4
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	4	3

Date: 8/12/2019
Project Name: SHARON CT HERB ROAD
Project No.: CT1157
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	264	141	233
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	397	168	340
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	97	60	88
B14 4478 RRH (Side)	18.1	6.7	13.4	0.84	1.68	2.70	1.35	1.21	1.20	49	97	61
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	79	65	75
B2/B66A 8843 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	39	79	49
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	79	62	74
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	39	62	45
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	17	52	26

WIND LOADS WITH ICE:

7770 Antenna	57.6	13.6	7.6	5.45	3.05	4.23	7.56	1.28	1.42	63	39	57
DMP65R-BU4DA Antenna	50.6	23.3	10.3	8.20	3.63	2.17	4.91	1.20	1.31	89	43	78
B14 4478 RRH	20.7	16.0	10.9	2.30	1.57	1.29	1.90	1.20	1.20	25	17	23
B14 4478 RRH (Side)	20.7	8.0	16.0	1.15	2.30	2.59	1.29	1.20	1.20	13	25	16
B2/B66A 8843 RRH	17.5	15.8	13.5	1.92	1.64	1.11	1.30	1.20	1.20	21	18	20
B2/B66A 8843 RRH (Side)	17.5	7.9	15.8	0.96	1.92	2.21	1.11	1.20	1.20	10	21	13
B5/B12 4449 RRH	17.5	15.8	13.0	1.92	1.58	1.11	1.35	1.20	1.20	21	17	20
B5/B12 4449 RRH (Shielded)	17.5	7.9	13.0	0.96	1.58	2.21	1.35	1.20	1.20	10	17	12
LGP21401 TMA	17.0	5.3	11.6	0.63	1.37	3.20	1.46	1.23	1.20	7	15	9

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	18	10	16
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	27	11	23
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	7	4	6
B14 4478 RRH (Side)	18.1	6.7	13.4	0.84	1.68	2.70	1.35	1.21	1.20	3	7	4
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
B2/B66A 8843 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	3	5	3
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	5
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	3	4	3
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	4	2

Date: 8/12/2019
Project Name: SHARON CT HERB ROAD
Project No.: CT1157
Designed By: LBW **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

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

7770 Antenna

Weight of ice based on total radial SF area:

Height (in):	55.0	
Width (in):	11.0	
Depth (in):	5.0	
Total weight of ice on object:		98 lbs
Weight of object:	35.0 lbs	
Combined weight of ice and object:		133 lbs

DMP65R-BU4DA Antenna

Weight of ice based on total radial SF area:

Height (in):	48.0	
Width (in):	20.7	
Depth (in):	7.7	
Total weight of ice on object:		150 lbs
Weight of object:	68.0 lbs	
Combined weight of ice and object:		218 lbs

B14 4478 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

B2/B66A 8843 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.9	
Total weight of ice on object:		37 lbs
Weight of object:	72.0 lbs	
Combined weight of ice and object:		109 lbs

B5/B12 4449 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.4	
Total weight of ice on object:		36 lbs
Weight of object:	73.0 lbs	
Combined weight of ice and object:		109 lbs

LGP21401 TMA

Weight of ice based on total radial SF area:

Height (in):	14.4	
Width (in):	2.7	
Depth (in):	9.0	
Total weight of ice on object:		21 lbs
Weight of object:	19.0 lbs	
Combined weight of ice and object:		40 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	24.0	
Diameter(in):	9.7	
Total weight of ice on object:		35 lbs
Weight of object:	33 lbs	
Combined weight of ice and object:		68 lbs

3/4" Round Bar

Per foot weight of ice:

diameter (in):	0.75	
Per foot weight of ice on object:		3 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

4" Pipe

Per foot weight of ice:

diameter (in):	4.5	
Per foot weight of ice on object:		9 plf

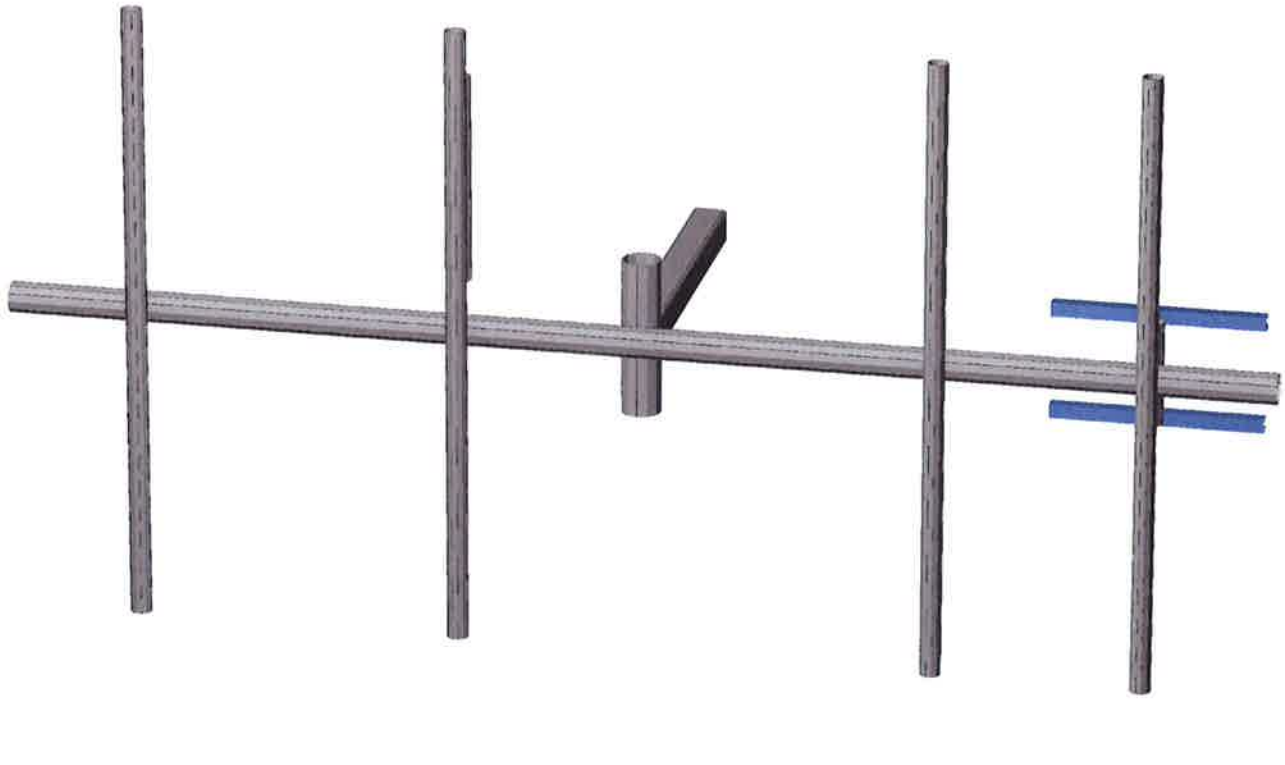
HSS 4x4

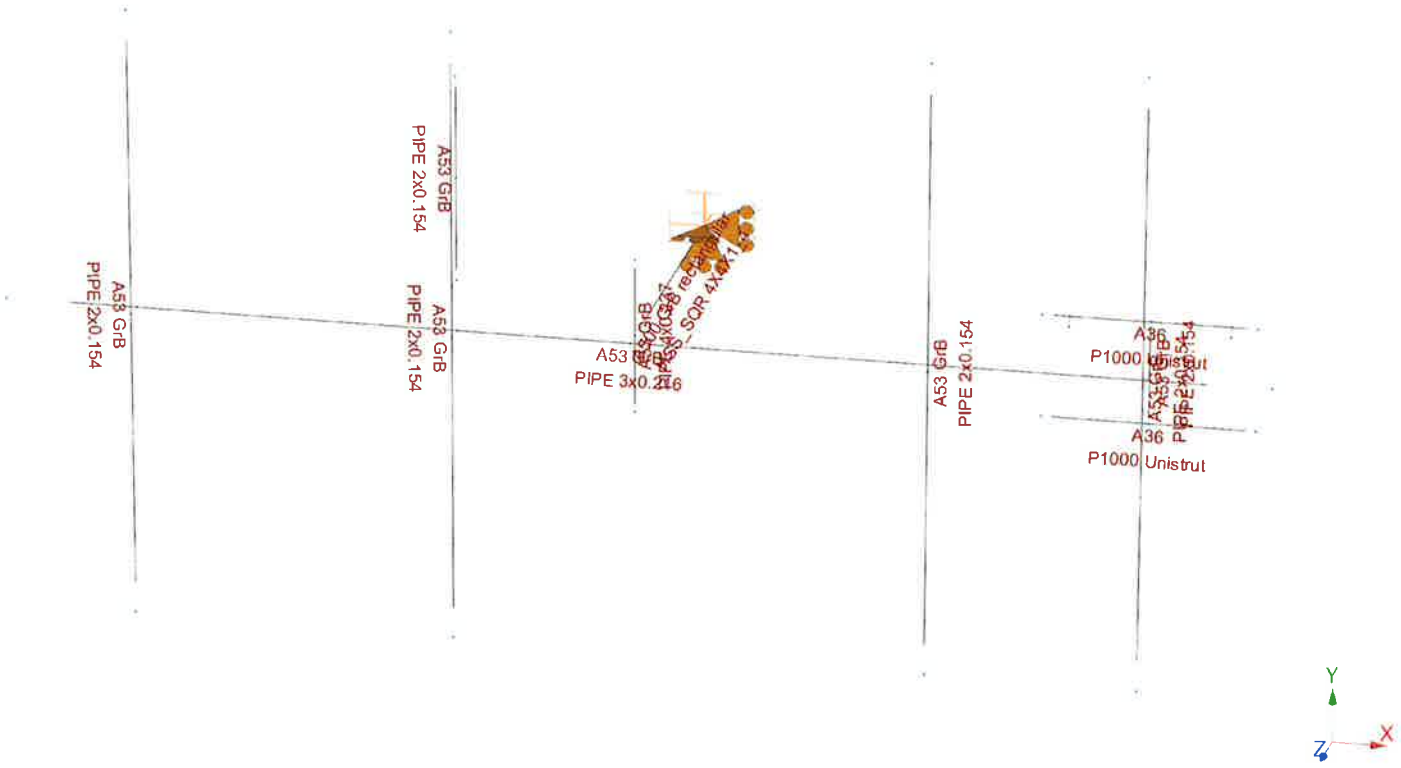
Weight of ice based on total radial SF area:

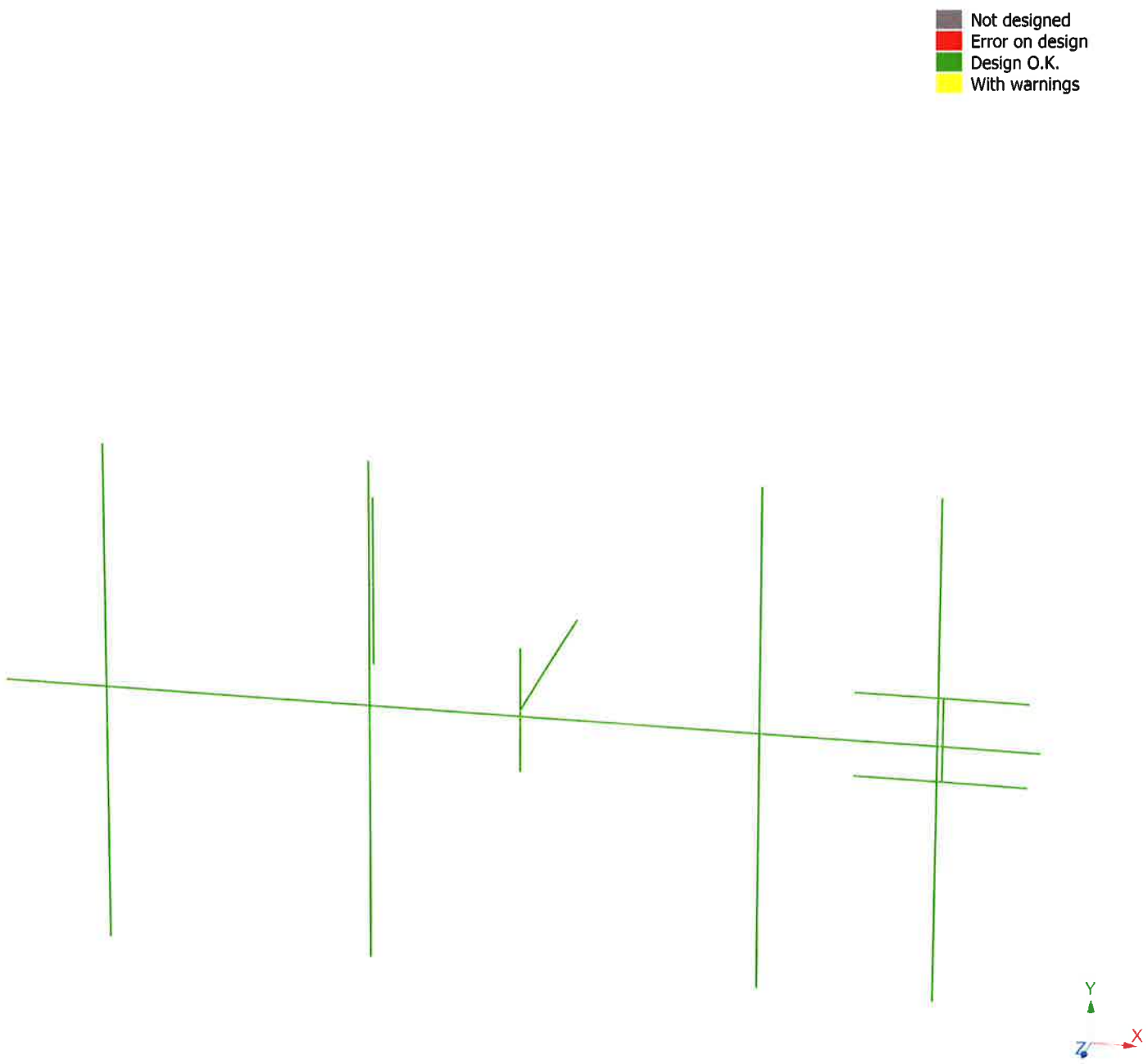
Height (in):	4	
Width (in):	4	
Per foot weight of ice on object:		11 plf

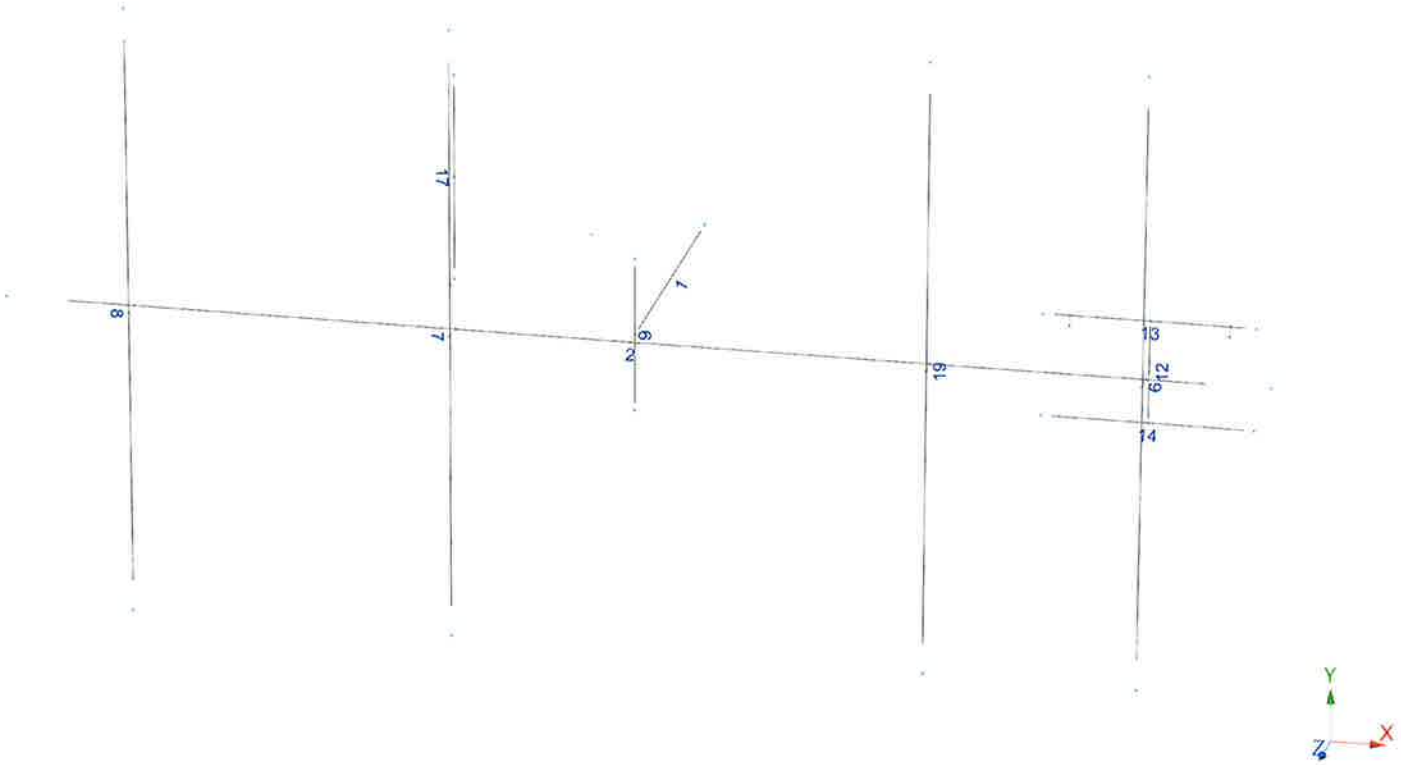
HUDSON
Design Group LLC

Mount Calculations
(Existing Conditions)


Y
X
Z


A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 3x0.216
A53 GrB
PIPE 2x0.154
A36
P1000 Unistrut
A36
P1000 Unistrut
Y
X
Z


Not designed
Error on design
Design O.K.
With warnings
Y
X
Z


11
8
7
9
2
1
19
13
12
14
Y
X
Z

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File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1157\LTE 2C-3C-4C-5C\CT1157 (LT 2C-3C-4C-5C).retx\

Load data

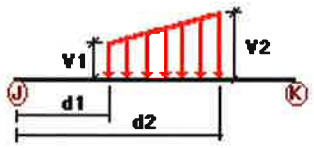
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
D	Dead Load	No	DL
Wo	Wind Load (NO ICE)	No	WIND
W30	WL 30deg	No	WIND
W60	WL 60deg	No	WIND
W90	WL 90deg	No	WIND
W120	WL 120deg	No	WIND
W150	WL 150deg	No	WIND
Di	Ice Load	No	LL
WI0	WL ICE 0deg	No	WIND
WI30	WL ICE 30deg	No	WIND
WI60	WL ICE 60deg	No	WIND
WI90	WL ICE 90deg	No	WIND
WI120	WL ICE 120deg	No	WIND
WI150	WL ICE 150deg	No	WIND
WL0	WL 30 mph 0deg	No	WIND
WL30	WL 30 mph 30deg	No	WIND
WL60	WL 30 mph 60deg	No	WIND
WL90	WL 30 mph 90deg	No	WIND
WL120	WL 30 mph 120deg	No	WIND
WL150	WL 30 mph 150deg	No	WIND

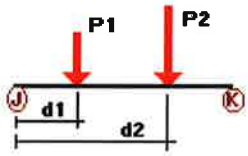
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	1	z	-0.02	0.00	0.00	No	0.00	No
	2	z	-0.017	0.00	0.00	No	0.00	No
	9	z	-0.022	0.00	0.00	No	0.00	No
W30	1	z	-0.02	0.00	0.00	No	0.00	No
	2	z	-0.017	0.00	0.00	No	0.00	No
	9	z	-0.022	0.00	0.00	No	0.00	No
W60	1	x	-0.02	0.00	0.00	No	0.00	No
	2	x	-0.017	0.00	0.00	No	0.00	No

	6	x	-0.011	0.00	0.00	No	0.00	No
	7	x	-0.011	0.00	0.00	No	0.00	No
	8	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.022	0.00	0.00	No	0.00	No
	12	x	-0.011	0.00	0.00	No	0.00	No
	17	x	-0.011	0.00	0.00	No	0.00	No
	19	x	-0.011	0.00	0.00	No	0.00	No
W90	1	x	-0.02	0.00	0.00	No	0.00	No
	6	x	-0.011	0.00	0.00	No	0.00	No
	7	x	-0.011	0.00	0.00	No	0.00	No
	8	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.022	0.00	0.00	No	0.00	No
	12	x	-0.011	0.00	0.00	No	0.00	No
	17	x	-0.011	0.00	0.00	No	0.00	No
	19	x	-0.011	0.00	0.00	No	0.00	No
W120	1	x	-0.02	0.00	0.00	No	0.00	No
	2	x	-0.017	0.00	0.00	No	0.00	No
	6	x	-0.011	0.00	0.00	No	0.00	No
	7	x	-0.011	0.00	0.00	No	0.00	No
	8	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.022	0.00	0.00	No	0.00	No
	12	x	-0.011	0.00	0.00	No	0.00	No
	17	x	-0.011	0.00	0.00	No	0.00	No
	19	x	-0.011	0.00	0.00	No	0.00	No
W150	1	z	0.02	0.00	0.00	No	0.00	No
	2	z	0.017	0.00	0.00	No	0.00	No
	9	z	0.022	0.00	0.00	No	0.00	No
Di	1	y	-0.011	0.00	0.00	No	0.00	No
	2	y	-0.008	0.00	0.00	No	0.00	No
	6	y	-0.006	0.00	0.00	No	0.00	No
	7	y	-0.006	0.00	0.00	No	0.00	No
	8	y	-0.006	0.00	0.00	No	0.00	No
	9	y	-0.009	0.00	0.00	No	0.00	No
	12	y	-0.006	0.00	0.00	No	0.00	No
	17	y	-0.006	0.00	0.00	No	0.00	No
	19	y	-0.006	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	6	y	-0.018	1.00	No
		y	-0.018	4.50	No
	7	y	-0.034	1.50	No
		y	-0.034	4.50	No
	8	y	-0.034	1.50	No
		y	-0.034	4.50	No
		y	-0.073	0.50	No
	17	y	-0.132	0.50	No
	19	y	-0.033	2.00	No

Wo	6	z	-0.133	1.00	No
		z	-0.133	4.50	No
	7	z	-0.199	1.00	No
		z	-0.199	4.00	No
	8	z	-0.199	1.00	No
		z	-0.199	4.00	No
	17	z	-0.125	0.50	No
	19	z	-0.054	2.00	No
W30	6	3	-0.117	1.00	No
		3	-0.117	4.50	No
	7	3	-0.171	1.00	No
		3	-0.171	4.00	No
	8	3	-0.171	1.00	No
		3	-0.171	4.00	No
		3	-0.045	2.00	No
	17	3	-0.061	0.50	No
	19	3	-0.054	2.00	No
W60	6	3	-0.086	1.00	No
		3	-0.086	4.50	No
	7	3	-0.113	1.00	No
		3	-0.113	4.00	No
	8	3	-0.113	1.00	No
		3	-0.113	4.00	No
		3	-0.061	2.00	No
	17	3	-0.091	0.50	No
	19	3	-0.054	2.00	No
W90	6	x	-0.071	1.00	No
		x	-0.071	4.50	No
	7	x	-0.085	1.00	No
		x	-0.085	4.00	No
	8	x	-0.085	1.00	No
		x	-0.085	4.00	No
		x	-0.062	2.00	No
	17	x	-0.097	0.50	No
	19	x	-0.054	2.00	No
W120	6	2	-0.086	1.00	No
		2	-0.086	4.50	No
	7	2	-0.113	1.00	No
		2	-0.113	4.00	No
	8	2	-0.113	1.00	No
		2	-0.113	4.00	No
		2	-0.061	2.00	No
	17	2	-0.091	0.50	No
	19	2	-0.054	2.00	No
W150	6	2	-0.117	1.00	No
		2	-0.117	4.50	No
	7	2	-0.171	1.00	No
		2	-0.171	4.00	No
	8	2	-0.171	1.00	No
		2	-0.171	4.00	No
		2	-0.045	2.00	No
	17	2	-0.061	0.50	No
	19	2	-0.054	2.00	No
Di	6	y	-0.049	1.00	No
		y	-0.049	4.50	No
	7	y	-0.075	1.00	No
		y	-0.075	4.00	No
	8	y	-0.075	1.00	No
		y	-0.075	4.00	No
		y	-0.036	0.50	No

	17	y	-0.078	0.50	No
	19	y	-0.035	2.00	No
WI0	6	z	-0.033	1.00	No
		z	-0.033	4.50	No
	7	z	-0.045	1.00	No
		z	-0.045	4.00	No
	8	z	-0.045	1.00	No
		z	-0.045	4.00	No
		z	-0.003	2.00	No
	17	z	-0.035	0.50	No
	19	z	-0.014	2.00	No
WI30	6	3	-0.029	1.00	No
		3	-0.029	4.50	No
	7	3	-0.039	1.00	No
		3	-0.039	4.00	No
	8	3	-0.039	1.00	No
		3	-0.039	4.00	No
		3	-0.012	2.00	No
	17	3	-0.016	0.50	No
	19	3	-0.014	2.00	No
WI60	6	3	-0.023	1.00	No
		3	-0.023	4.50	No
	7	3	-0.028	1.00	No
		3	-0.028	4.00	No
	8	3	-0.028	1.00	No
		3	-0.028	4.00	No
		3	-0.017	2.00	No
	17	3	-0.024	0.50	No
	19	3	-0.014	2.00	No
WI90	6	x	-0.02	1.00	No
		x	-0.02	4.50	No
	7	x	-0.022	1.00	No
		x	-0.022	4.00	No
	8	x	-0.022	1.00	No
		x	-0.022	4.00	No
		x	-0.017	2.00	No
	17	x	-0.025	0.50	No
	19	x	-0.014	2.00	No
WI120	6	2	-0.023	1.00	No
		2	-0.023	4.50	No
	7	2	-0.028	1.00	No
		2	-0.028	4.00	No
	8	2	-0.028	1.00	No
		2	-0.028	4.00	No
		2	-0.024	0.50	No
	17	2	-0.017	2.00	No
	19	2	-0.014	2.00	No
WI150	6	2	-0.029	1.00	No
		2	-0.029	4.50	No
	7	2	-0.039	1.00	No
		2	-0.039	4.00	No
	8	2	-0.039	1.00	No
		2	-0.039	4.00	No
		2	-0.012	2.00	No
	17	2	-0.016	0.50	No
	19	2	-0.014	2.00	No
WL0	6	z	-0.009	1.00	No
		z	-0.009	4.50	No
	7	z	-0.014	1.00	No
		z	-0.014	4.00	No

	8	z	-0.014	1.00	No
		z	-0.014	4.00	No
	17	z	-0.008	0.50	No
	19	z	-0.004	2.00	No
WL30	6	3	-0.008	1.00	No
		3	-0.008	4.50	No
	7	3	-0.012	1.00	No
		3	-0.012	4.00	No
	8	3	-0.012	1.00	No
		3	-0.012	4.00	No
		3	-0.003	2.00	No
	17	3	-0.004	0.50	No
	19	3	-0.004	2.00	No
WL60	6	3	-0.006	1.00	No
		3	-0.006	4.50	No
	7	3	-0.008	1.00	No
		3	-0.008	4.00	No
	8	3	-0.008	1.00	No
		3	-0.008	4.00	No
		3	-0.004	2.00	No
	17	3	-0.006	0.50	No
	19	3	-0.004	2.00	No
WL90	6	x	-0.005	1.00	No
		x	-0.005	4.50	No
	7	x	-0.006	1.00	No
		x	-0.006	4.00	No
	8	x	-0.006	1.00	No
		x	-0.006	4.00	No
		x	-0.004	2.00	No
	17	x	-0.007	0.50	No
	19	x	-0.004	2.00	No
WL120	6	2	-0.006	1.00	No
		2	-0.006	4.50	No
	7	2	-0.008	1.00	No
		2	-0.008	4.00	No
	8	2	-0.008	1.00	No
		2	-0.008	4.00	No
		2	-0.004	2.00	No
	17	2	-0.006	0.50	No
	19	2	-0.004	2.00	No
WL150	6	2	-0.008	1.00	No
		2	-0.008	4.50	No
	7	2	-0.012	1.00	No
		2	-0.012	4.00	No
	8	2	-0.012	1.00	No
		2	-0.012	4.00	No
		2	-0.003	2.00	No
	17	2	-0.004	0.50	No
	19	2	-0.004	2.00	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
D	Dead Load	No	0.00	-1.00	0.00
Wo	Wind Load (NO ICE)	No	0.00	0.00	0.00
W30	WL 30deg	No	0.00	0.00	0.00
W60	WL 60deg	No	0.00	0.00	0.00
W90	WL 90deg	No	0.00	0.00	0.00
W120	WL 120deg	No	0.00	0.00	0.00
W150	WL 150deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
WI0	WL ICE 0deg	No	0.00	0.00	0.00
WI30	WL ICE 30deg	No	0.00	0.00	0.00
WI60	WL ICE 60deg	No	0.00	0.00	0.00
WI90	WL ICE 90deg	No	0.00	0.00	0.00
WI120	WL ICE 120deg	No	0.00	0.00	0.00
WI150	WL ICE 150deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30deg	No	0.00	0.00	0.00
WL60	WL 30 mph 60deg	No	0.00	0.00	0.00
WL90	WL 30 mph 90deg	No	0.00	0.00	0.00
WL120	WL 30 mph 120deg	No	0.00	0.00	0.00
WL150	WL 30 mph 150deg	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
D	0.00	0.00	0.00
Wo	0.00	0.00	0.00
W30	0.00	0.00	0.00
W60	0.00	0.00	0.00
W90	0.00	0.00	0.00
W120	0.00	0.00	0.00
W150	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
WI60	0.00	0.00	0.00
WI90	0.00	0.00	0.00
WI120	0.00	0.00	0.00
WI150	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
WL60	0.00	0.00	0.00
WL90	0.00	0.00	0.00
WL120	0.00	0.00	0.00
WL150	0.00	0.00	0.00

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Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+Wo
LC2=1.2D+W30
LC3=1.2D+W60
LC4=1.2D+W90
LC5=1.2D+W120
LC6=1.2D+W150
LC7=1.2D-Wo
LC8=1.2D-W30
LC9=1.2D-W60
LC10=1.2D-W90
LC11=1.2D-W120
LC12=1.2D-W150
LC13=0.9D+Wo
LC14=0.9D+W30
LC15=0.9D+W60
LC16=0.9D+W90
LC17=0.9D+W120
LC18=0.9D+W150
LC19=0.9D-Wo
LC20=0.9D-W30
LC21=0.9D-W60
LC22=0.9D-W90
LC23=0.9D-W120
LC24=0.9D-W150
LC25=1.2D+Di+Wl0
LC26=1.2D+Di+Wl30
LC27=1.2D+Di+Wl60
LC28=1.2D+Di+Wl90
LC29=1.2D+Di+Wl120
LC30=1.2D+Di+Wl150
LC31=1.2D+Di-Wl0
LC32=1.2D+Di-Wl30
LC33=1.2D+Di-Wl60
LC34=1.2D+Di-Wl90
LC35=1.2D+Di-Wl120
LC36=1.2D+Di-Wl150

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 4X4X1_4	**1**	LC9 at 0.00%	**0.43**	**OK**	
	P1000 Unistrut	**13**	LC9 at 50.00%	**0.07**	**OK**	Eq. H1.2-1
		14	LC3 at 50.00%	0.00	OK	Sec. G5
	PIPE 2x0.154	**6**	LC7 at 46.88%	0.18	OK	
		7	LC1 at 48.44%	**0.50**	**OK**	
		8	LC1 at 46.88%	0.28	OK	
		12	LC3 at 46.88%	0.04	OK	
		17	LC10 at 100.00%	0.07	OK	
		19	LC10 at 46.88%	0.07	OK	

PIPE 3x0.216	**2**	LC7 at 48.96%	**0.77**	**OK**
PIPE 4x0.237	**9**	LC8 at 50.00%	**0.00**	**OK**

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Geometry data

GLOSSARY

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

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	0.00	0.00	0
3	6.00	0.00	3.325	0
4	-6.00	0.00	3.325	0
11	4.83	-3.00	3.525	0
12	-1.67	-3.00	3.525	0
13	-4.75	-3.00	3.525	0
14	4.83	3.00	3.525	0
15	-1.67	3.00	3.525	0
16	-4.75	3.00	3.525	0
17	0.00	-0.75	3.125	0
18	0.00	0.75	3.125	0
21	4.83	0.50	3.125	0
22	4.83	-0.50	3.125	0
23	5.83	0.50	3.125	0
24	5.83	-0.50	3.125	0
25	3.83	0.50	3.125	0
26	3.83	-0.50	3.125	0
31	-1.67	2.50	3.325	0
34	2.83	3.00	3.525	0
35	2.83	-3.00	3.525	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
1	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	1	2		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
2	4	3		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
6	14	11		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
7	15	12		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
8	16	13		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
9	18	17		PIPE 4x0.237	A53 GrB	0.00	0.00	0.00
12	21	22		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
13	23	25		P1000 Unistrut	A36	0.00	0.00	0.00
14	24	26		P1000 Unistrut	A36	0.00	0.00	0.00
17	31	27		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
19	34	35		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
6	315.00	0	0.00	0.00	0.00
7	315.00	0	0.00	0.00	0.00
8	315.00	0	0.00	0.00	0.00
17	315.00	0	0.00	0.00	0.00
19	315.00	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	0.00	-2.00	0.00	0.00	-2.00
14	0.00	0.00	-2.00	0.00	0.00	-2.00

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

NOTES:

1. REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
2. PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
3. PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
4. HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
5. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
6. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

SPECIAL INSPECTION CHECKLIST

BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS [4]
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION [5]
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS [6]
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

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: CT1157
SITE NAME: SHARON CT HERB ROAD
ATC SITE # ID: 415974

70 HERB ROAD
SHARON, CT 06069
LITCHFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	10/03/19	ISSUED FOR ZONING	ET	AT	DPH
A	08/16/19	ISSUED FOR REVIEW	ET	AT	DPH

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

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

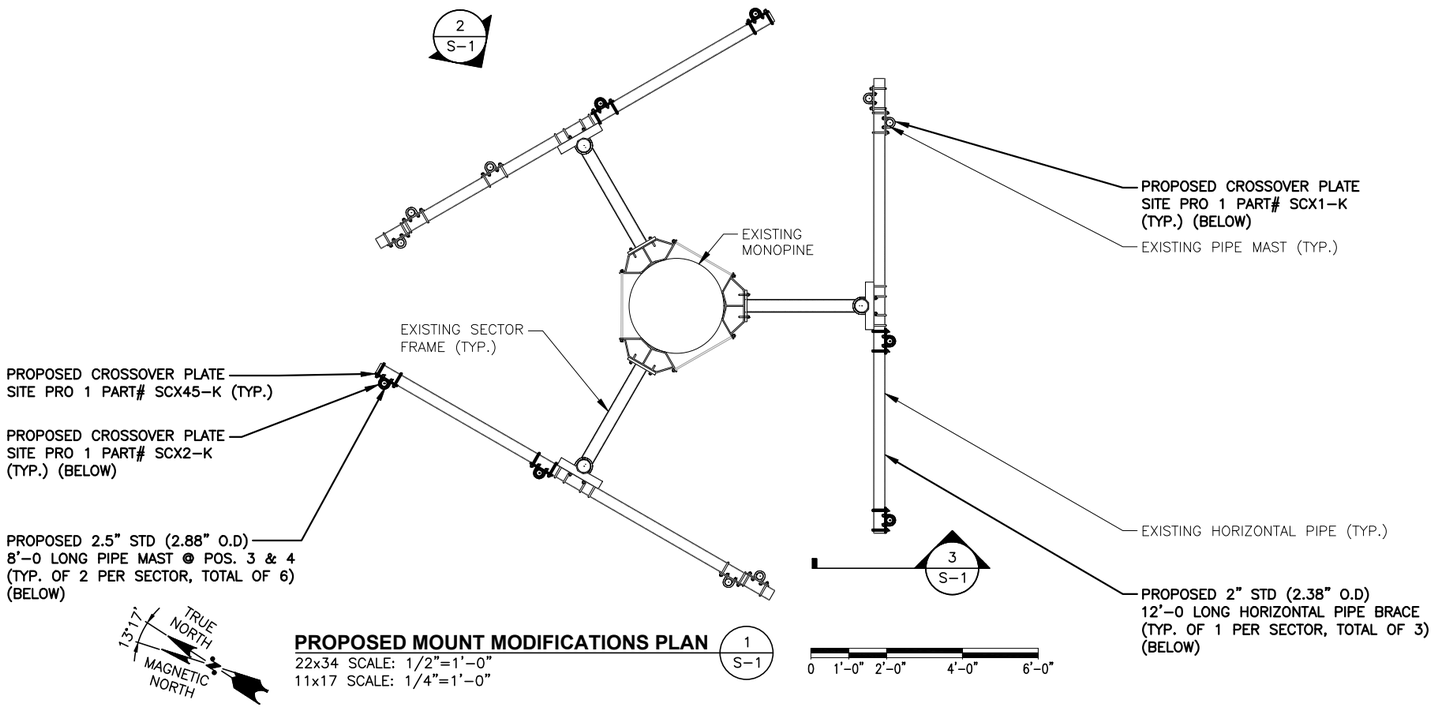
Daniel P. Hamm

AT&T

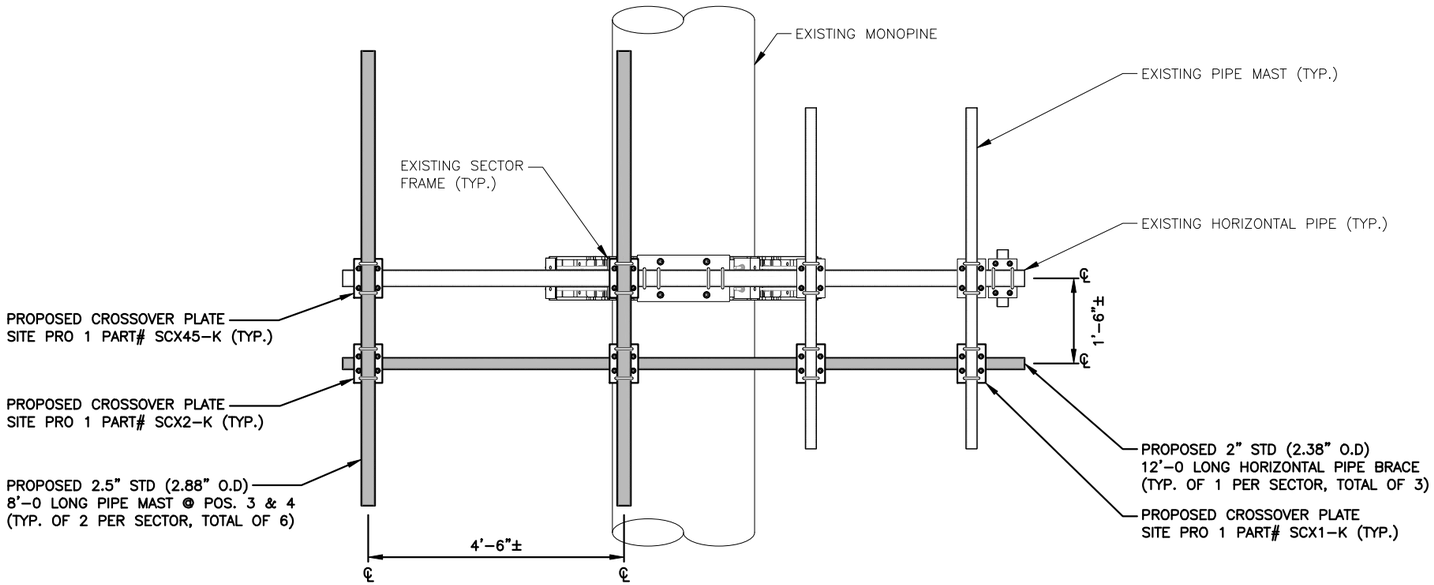
STRUCTURAL NOTES

LTE 2C_3C_4C_5C_ RETRO 2019 UPGRADE

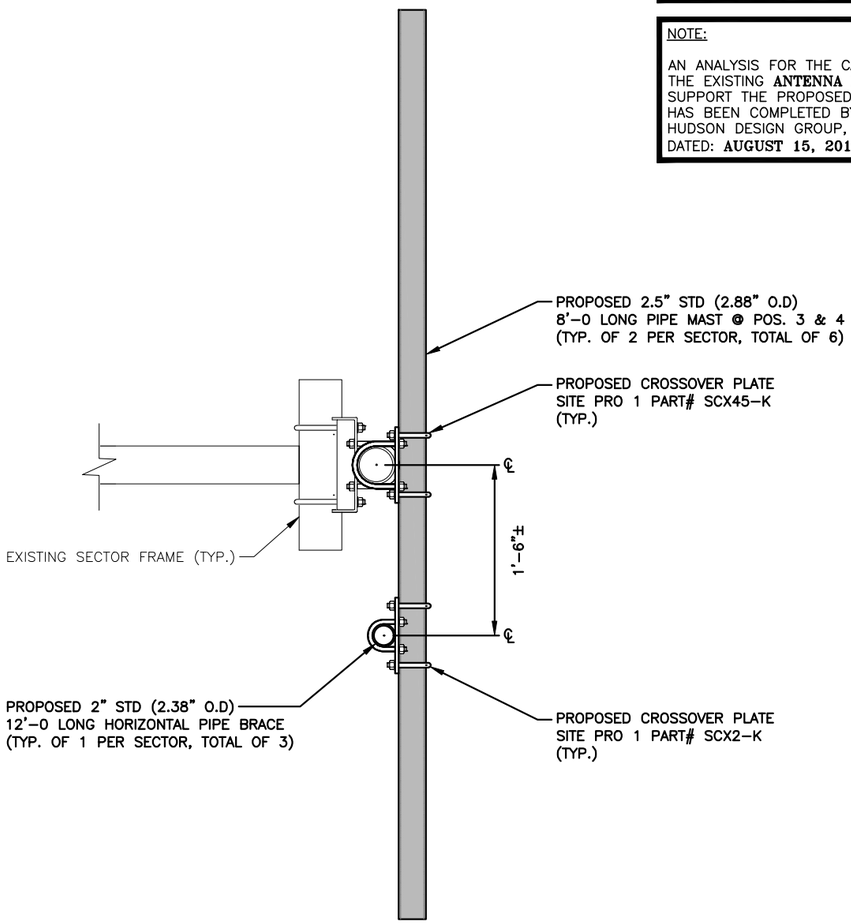
SITE NUMBER	DRAWING NUMBER	REV
CT1157	SN-1	0



PROPOSED MOUNT MODIFICATIONS PLAN (1 / S-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"



PROPOSED MOUNT MODIFICATIONS ELEVATION (2 / S-1)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"



PROPOSED MOUNT MODIFICATIONS DETAIL (3 / S-1)
22x34 SCALE: 1-1/2"=1'-0"
11x17 SCALE: 3/4"=1'-0"
0 0'-4" 0'-8" 1'-4" 2'-0"

NOTE:

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

NOTE:

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

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: **AUGUST 15, 2019 (REV.1)**

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: CT1157
SITE NAME: SHARON CT HERB ROAD
ATC SITE # ID: 415974

70 HERB ROAD
SHARON, CT 06069
LITCHFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	10/03/19	ISSUED FOR ZONING	ET	AT	DPH
A	08/16/19	ISSUED FOR REVIEW	ET	AT	DPH

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

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

AT&T

MOUNT MODIFICATION DESIGN
LTE 2C_3C_4C_5C_ RETRO 2019 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1157	S-1	0

EXHIBIT 5

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT1157

Sharon CT Herb Road
70 Herb Road

Sharon, CT 06069

August 29, 2019

Centerline Communications Project Number: 950012-260

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**21.04 %**

Centerline Communications, LLC 95 Ryan Drive, Suite 1 Raynham MA 02767

August 29, 2019

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

Emissions Analysis for Site: **CT1157 – Sharon CT Herb Road**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **70 Herb Road in Sharon, Connecticut** for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. 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 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 and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **70 Herb Road in Sharon, Connecticut**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

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

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
5G	850 MHz	2	25
LTE	700 MHz	4	40
LTE	2100 MHz (AWS)	4	30
LTE	1900 MHz (PCS)	4	40

Table 1: Channel Data Table

The following antennas listed in Table 2 were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS), and 2100 MHz (AWS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Powerwave 7770	92
A	2	CCI DMP65R-BU6DA	92
A	3	Kathrein 800-10964	92
B	1	Powerwave 7770	92
B	2	CCI DMP65R-BU6DA	92
B	3	Kathrein 800-10964	92
C	1	Powerwave 7770	92
C	2	CCI DMP65R-BU6DA	92
C	3	Kathrein 800-10964	92

Table 2: Antenna Data

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

RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX	ERP (W)	MPE %
Antenna A1	Powerwave 7770	850 MHz	11.5 dBd	2	60	847.52	0.63
Antenna A2	CCI DMP65R-BU6DA	700 MHz / 1900 MHz / 1900 MHz	11.05 dBd / 14.75 dBd / 14.75 dBd	12	480	11,590.83	5.91
Antenna A3	CCI DMP65R-BU6DA	700 MHz / 850 MHz / 2100 MHz	11.05 dBd / 11.55 dBd / 14.95 dBd / 11.55 dBd	10	330	6,627.66	3.91
						Sector A Composite MPE%	**10.46**
Antenna B1	Powerwave 7770	850 MHz	11.5 dBd	2	60	847.52	0.63
Antenna B2	CCI DMP65R-BU6DA	700 MHz / 1900 MHz / 1900 MHz	11.05 dBd / 14.75 dBd / 14.75 dBd	12	480	11,590.83	5.91
Antenna B3	CCI DMP65R-BU6DA	700 MHz / 850 MHz / 2100 MHz	11.05 dBd / 11.55 dBd / 14.95 dBd / 11.55 dBd	10	330	6,627.66	3.91
						Sector B Composite MPE%	**10.46**
Antenna C1	Powerwave 7770	850 MHz	11.5 dBd	2	60	847.52	0.63
Antenna C2	CCI DMP65R-BU6DA	700 MHz / 1900 MHz / 1900 MHz	11.05 dBd / 14.75 dBd / 14.75 dBd	12	480	11,590.83	5.91
Antenna C3	CCI DMP65R-	700 MHz / 850 MHz /	11.05 dBd / 11.55 dBd	10	330	6,627.66	3.91
						Sector C Composite MPE%	**10.46**

Table 3: AT&T Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Per Sector Value	**10.46 %**
T-Mobile	5.63%
Verizon	3.75%
Nextel	0.46%
CSP	0.74%
Site Total MPE %:	**21.04 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	10.46 %
AT&T Sector B Total:	10.46 %
AT&T Sector C Total:	10.46 %
Site Total:	21.04 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($i.tW/cm^2$)	Frequency (MHz)	Allowable MPE ($i.tW/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	423.76	141.0	1.53	850 MHz UMTS	567	0.27%
AT&T 700 MHz LTE	4	509.40	92.0	8.65	700 MHz LTE	467	1.85%
AT&T 1900 MHz LTE	4	1194.15	92.0	20.29	1900 MHz LTE	1000	2.03%
AT&T 1900 MHz LTE	4	1194.15	92.0	20.29	1900 MHz LTE	1000	2.03%
AT&T 700 MHz LTE	2	509.40	92.0	4.33	700 MHz LTE	467	0.93%
AT&T 850 MHz LTE	2	571.56	92.0	4.86	850 MHz LTE	567	0.86%
AT&T 2100 MHz LTE AWS	4	937.82	92.0	15.93	2100 MHz LTE AWS	1000	1.59%
AT&T 850 MHz 5G	2	357.22	92.0	3.03	850 MHz 5G	567	0.54%
						Total:	**10.46%**

Table 6: AT&T Maximum Sector MPE Power Values

Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A:	10.46 %
Sector B:	10.46 %
Sector C:	10.46 %
AT&T Maximum Total (per sector):	10.46 %
Site Total:	21.04 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **21.04 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Ryan McManus
Senior RF EME Compliance Manager
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

EXHIBIT 6

Filing Guides
Meetings & Minutes
Public Participation
Audio Link to New Britain Hearing Rooms
Programs & Services
Telecommunications Database
Maps
Publications
Other Resources
Statutes & Regulations
Electric Transmission Upgrade Projects
Frequently Asked Questions

Melanie Bachman,
Executive Director

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DOCKET NO. 185 - An application by Litchfield Acquisition Corporation d/b/a AT&T Wireless Services for a Certificate of Environmental Compatibility and Public Need for construction, maintenance, and operation of a telecommunications tower and associated equipment located at 70 Herb Road, Sharon, Connecticut.

Connecticut Siting Council

November 12, 1998

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility at the proposed site on Herb Road in Sharon, Connecticut, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Litchfield Acquisition Corporation d/b/a AT&T Wireless Services (AT&T) for the construction, operation, and maintenance of a telecommunications tower, associated equipment, and buildings at the proposed site at 70 Herb Road, in the Town of Sharon, Connecticut.

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

1. The tower shall be constructed no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T, Springwich Cellular Limited Partnership (Springwich), Nextel Communications of the Mid-Atlantic, Inc. (Nextel), the antennas of at least two other wireless providers, and other entities, both public and private, as necessary, but such tower, excluding antennas, shall not exceed a height of 110 feet above ground level (AGL).

2. The tower and antennas shall be camouflaged as an evergreen tree, and the equipment building and compound shall be architecturally treated to resemble agricultural/rustic structures, subject to Council approval through Section 3 of this Decision and Order.

3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include: a final site plan(s) for site development to include the location and specifications for the tower with antennas, designed to resemble a tree; tower foundation; architecturally-treated equipment buildings and security fence; vegetative screening; access road and underground utilities; site clearing and tree trimming; water drainage; and erosion and sedimentation controls consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

4. The Certificate Holder shall maintain all portions of the access road in a condition accessible for emergency access. Any damage to private roads caused by vehicles accessing the site shall be promptly repaired to pre-existing conditions.

5. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

6. The Certificate Holder shall provide a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels originally calculated and provided in the application.

7. Within six months of operation, the Certificate Holder and each carrier shall provide drive test data depicting signal levels along Route 7 between the intersections of Route 7 with Routes 341 and 128, and along Route 4 between the intersections of Route 4 with Route 125 and Northrup Road.

8. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing. No antenna, other than whip antennas, may be modified or added to the tower, unless approved by the Council.

9. If the facility does not initially provide, or permanently ceases to provide cellular services following completion of construction, this Decision and Order shall be void, and the Certificate Holder shall

dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

10. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antenna becomes obsolete and ceases to function, unless such antenna is necessary to maintain the architectural appearance of the tower and is so ordered to remain on the tower by the Council.

11. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the effective date of this Decision and Order or within three years after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant, the Register Citizen, the News Times, and Litchfield County Times.

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

The parties and intervenors to this proceeding are:

Applicant	**Its Representative**
Litchfield Acquisition Corporation d/b/a AT&T Wireless Services Its Representatives	Douglas A. Cohen, Esq. Brown, Rudnick, Freed & Gesmer, P.C. 185 Asylum Street, CityPlace I Hartford, CT 06103-3402 (860) 509-6511 Mitchell Holmgren Site Development Coordinator AT&T Wireless Services 15 East Midland Avenue Paramus, NJ 07652 (203) 967-3130
Party	**Its Representative**
Town of Sharon	Robert Moeller First Selectman P.O. Box 385, 63 Main Street Sharon, CT 06069 (860) 364-5789
Intervenor	**Its Representative**
Springwich Cellular Limited Partnership	Peter J. Tyrrell Senior Counsel Springwich Cellular Limited Partnership 500 Enterprise Drive Rocky Hill, CT 06067-3900 (860) 513-7673
Intervenor	**Its Representative**
Nextel Communications of the Mid-Atlantic, Inc. d/b/a Nextel Communication	Christopher B. Fisher Cuddy, Feder & Worby 90 Maple Avenue White Plains, NY 10601-5196 (914) 761-1300
Intervenors	**Its Representative**
Mary I. Whitehead P.O. Box 1235 Sharon, CT 06069 Hartford, CT 06103	Raymond J. Devlin, Jr. Law Offices of Raymond J. Devlin, Jr. 100 Pearl Street, 14th Floor (860) 249-0691
Laurance and Carol Rand 30 Morey Road **SERVICE WAIVED** Sharon, CT 06069	
Fred and Judith Schwerin 44 Morey Road **SERVICE WAIVED** Sharon, CT 06069	
Toni Tucker 6 Herb Road **SERVICE WAIVED** Sharon, CT 06069	
José and Grace Noyes 12 Herb Road **SERVICE WAIVED**	

Sharon, CT 06069

Melvin Elliott
59 Northrop Road **SERVICE WAIVED**
Sharon, CT 06069

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STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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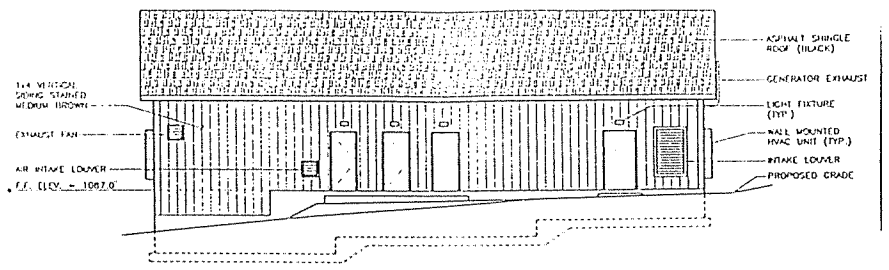
Docket No. 185 and Petition No. 481
AT&T Wireless Services
Sharon, Connecticut
Development and Management Plan
October 2, 2000

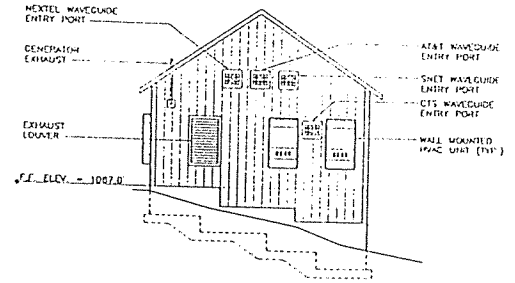
On September 11, 2000, AT&T Wireless Services (AT&T) submitted to the Connecticut Siting Council (Council) a petition for declaratory ruling that no amendment to the Certificate of Environmental Compatibility and Public Need, issued by the Council in Docket No. 185 on November 12, 1998, would be required to allow for the relocation and expansion of the leased parcel. AT&T has also submitted the Development and Management Plan (D&M Plan) for the tower site.

In order to accommodate the proposed co-location of telecommunications carriers, AT&T proposes to increase the leased parcel size. The proposed lease area is located within an approximately 160-acre parcel owned by the James E. Gillespie. There are two alternatives being proposed by AT&T for the design of the equipment building and expansion of the proposed leased parcel. Either proposed equipment building would be constructed with a pitched roof and vertical board siding stained medium brown.

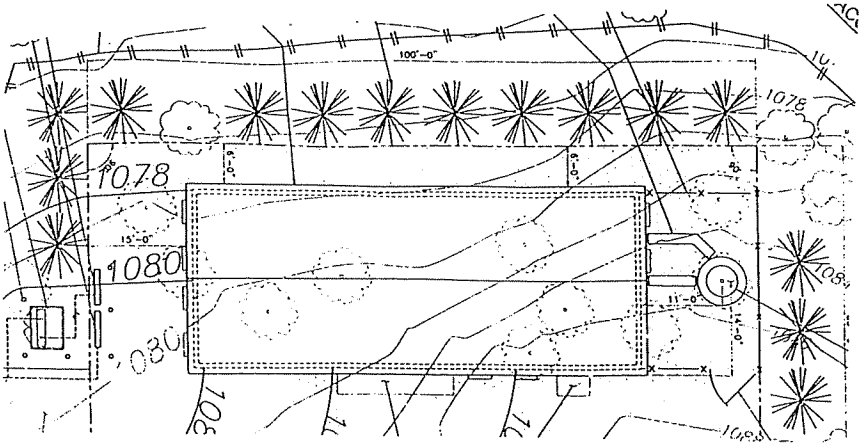
On September 11, 2000, AT&T submitted plans for a barn-like equipment building measuring approximately 26 feet wide by 67 feet long by 21.5 feet tall (1,742 sqft) on a 100-foot by 55-foot (5,500 sqft) lease area, as shown below.



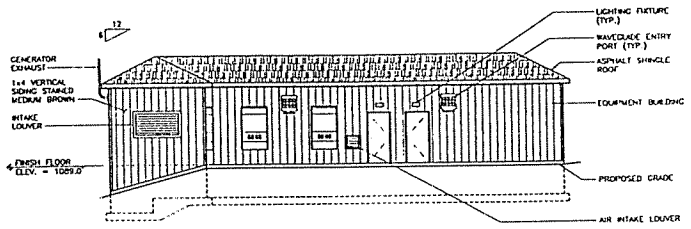
1 / A-3 EQUIPMENT BUILDING NORTH ELEVATION
SCALE: 1/8" = 1'-0"

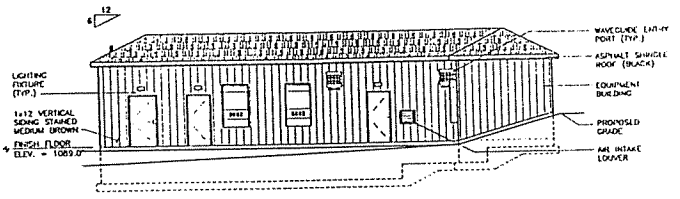


4 / A-3 EQUIPMENT BUILDING WEST ELEVATION
SCALE: 1/8" = 1'-0"



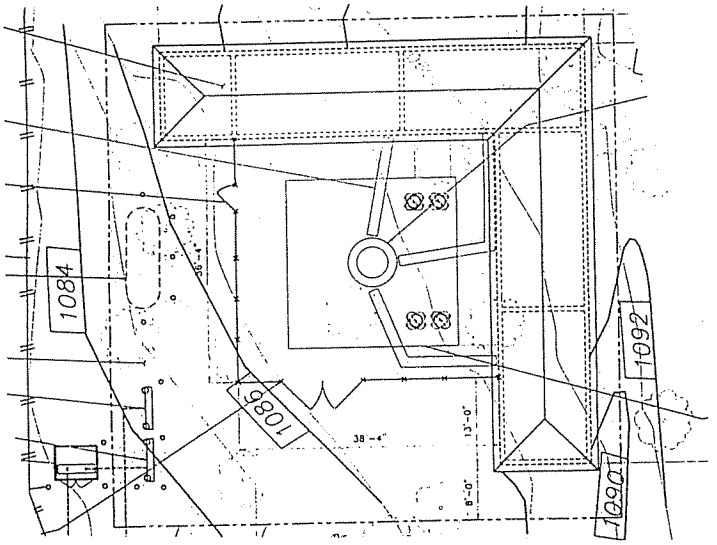
On September 19, 2000, and September 28, 2000, AT&T submitted revised plans for an L-shaped equipment building measuring approximately 13 feet wide by 112 feet long by 16 feet tall (1,456 sqft) on a 75-foot by 75-foot (5,625 sqft) lease area, as shown below.





2 A-3 EQUIPMENT BUILDING WEST ELEVATION
SCALE: 1/8" = 1'-0"

1 A-3 EQUIPMENT BUILDING SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



The D&M plan includes provisions for a 110-foot monopole tower, camouflaged as a tree, as required in the Council's Decision and Order, Conditions 1 and 2. Nextel Communications of the Mid-Atlantic, Inc. (Nextel) would attach three whip antennas, measuring 14.5 feet by three inches, with a centerline height of approximately 117 above ground level (AGL). AT&T would attach an antenna platform and up to 12 panel antennas, measuring 52 inches by 11.4 inches by 11.4 inches at a centerline height of approximately 110 feet AGL. Springwich Cellular Limited Partnership (Springwich) would attach an antenna platform and up to 12 panel antennas, measuring 52 inches by 6.3 inches by 9.8 inches, at a centerline height of 100 feet AGL. The Connecticut State Police (CSP) would attach a whip antenna, measuring 8.83 inches by three inches, at approximately 90 feet AGL. The proposed tree tower has been designed to support an additional antenna platform and antennas at the 80-foot level.

The tower now proposed has been refined from a 114-foot tower to a 110-foot tower with a four-foot mounting extension; however, this extension may still have the appearance and affect of a 114-foot tower.

The CSP would also install a 70-kW emergency generator within the proposed equipment building, and a 1,850-gallon underground propane fuel tank. The proposed emergency generator would not be shared with other telecommunications entities at the site.

The cumulative electromagnetic radiofrequency power density for all the proposed telecommunications entities would be approximately ten percent of the maximum permissible exposure standard for uncontrolled environments.

The Federal Aviation Administration does not require lighting or marking for the proposed 110-foot tree tower.

Site access would extend from Herb Road to the proposed lease area, along a 12-foot wide easement, for a distance of approximately 1,200 feet. Electric and telephone utilities would be placed underground from Herb Road along the proposed access easement. No mature vegetation would be cleared for the installation of the proposed access road, and electric and telephone utilities.

Erosion and sediment controls would be placed along portions of the north and west sides of the proposed lease area, regardless of the design of the proposed equipment building.

AT&T would install an approximately eight-foot high architecturally treated wood fence constructed of 5/4-inch by 6-inch pressure treated decking. For the barn-like equipment building, the proposed fence would enclose the proposed tower at the rear of the building; a total length of approximately 57 feet. For the L-shaped equipment building, the proposed fence would enclose the proposed tower and yard; a total length of approximately 72 feet. AT&T has notified the Council of its intent to begin access work and construction of the facility immediately after approval of the Development and Management Plan. AT&T would install vegetative screening after completion of construction to insure the most appropriate placement and selection.

AT&T contends that the proposed expansion of the leased parcel would not increase the site's visibility, is necessary to accommodate the CSP, and does not require an amendment to a Certificate of Environmental Compatibility and Public Need.