October 25, 2022

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

Re: Notice of Exempt Modification – AT&T Mobility Site # 13757802
AT&T Wireless Telecommunications Facility @ 15 Dwight Street, North Haven, CT 06473

Dear Ms. Bachman,

New Cingular Wireless ("AT&T") desires to modify an existing wireless telecommunications facility at the above referenced address. Enclosed please find a check in the amount of Six Hundred and Twenty Five Dollars ($625.00); an original and two (2) copies of the following documents: the CSC Exempt Modification letter; a Letter of Authorization from the tower owner; the CSC Decision approving the tower; the GIS property map and owner information; a set of Construction Drawings; a Structural Analysis Report; an Antenna Mount Analysis Report; an EME Study Report; and four (4) Notice Confirmations.

If you have any questions, please feel free to contact me; I can be reached at 443-677-0144 or via email at jmandrews@clinellc.com. Thank you for your kind cooperation in this matter

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

October 19, 2022

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

Re: Notice of Exempt Modification – AT&T Mobility Site # 13757802
AT&T Wireless Telecommunications Facility @ 15 Dwight Street, North Haven, CT 06473

Dear Ms. Bachman,

AT&T Mobility ("AT&T") is proposing to modify a wireless telecommunications facility on an existing monopole tower at 15 Dwight Street, North Haven, CT 06473 (Latitude: 41.4207966, Longitude: -72.84880398). The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by 15 Dwight Street LLC. The tower was approved by the Council in Docket Number 44, dated July 24, 1984. AT&T was most recently approved modification was **EM-CING-101-201005** dated December 14, 2020.

AT&T proposes to remove six (6) antennas, six (6) TMAs and one (1) antenna mount platform and install one (1) Perfect Vision PV-LPPGS-14M-HR25-HWLL Antenna Mount Platform, three (3) P2 (2.375"X60") antenna mounting pipes with three (3) Site Pro 1 SCX7-UCrossover Plate kits, nine (9) antennas, one (1) RRH, AND six (6) Y cables. Groundwork involves removing twelve (12) Diplexers, and installing three RRHs, one (1) 6648 W/ XCEDE cable one six (6) APTDC-BDFDM-DB surge arrestors.

Please accept this application as notification in accordance with 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: American Tower Corporation as Tower Operator/Owner; 15 Dwight Street LLC, as Property Owner; Michael J. Freda, the First Selectman of North Haven; and Laura Magaraci, North Haven Zoning Enforcement Officer.

The applicant's proposal falls squarely within those activities explicitly provided for in R.C.S.A. § § 16-50j-72(b)(2):

1. The proposed modifications will NOT result in an increase in the height of the existing structure.
2. The proposed modifications will NOT require 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 (FCC) safety standard. Please see the RF emissions calculation for AT&T's modified facility enclosed herewith.

Jack Andrews. 10130 Donleigh Dr., Columbia, MD 21046 443-677-0144 jmandrews@clinellc.com
Centerline Communications • 750 W Center Street, Suite 301, W Bridgewater, MA 02379

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 enclosed herewith.

For the foregoing reasons, AT&T respectfully requests that the Council approve this request for the exempt modifications under R.C.S.A. § 16-50j-72(b)(2), for this tower located at 15 Dwight Street, North Haven, CT 06473.

If you have any questions, please feel free to contact me.

Sincerely,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

Enclosures:
Exhibit 1 – Letter of Authorization
Exhibit 2 – GIS Map
Exhibit 3 – Construction/Mount Modification Drawings
Exhibit 4 – Structural Analysis Report
Exhibit 5 – Antenna Mount Analysis Report
Exhibit 6 – EME Study Report
Exhibit 7 – (4) Notice Confirmations
Exhibit 8 – Original Decision CSC Tower Approval

cc: American Tower Corporation - Tower Operator/Owner
15 Dwight Street LLC - Property Owner
Michael J. Freda - First Selectman of the Town of North Haven
Laura Magaraci - North Haven Zoning Enforcement Officer

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION

CENTERLINE COMMUNICATIONS LLC/ AT&T MOBILITY

I, Margaret Robinson, Vice President, US Tower Legal Division on behalf of American Tower*, owner/operator of the tower facility located at the address identified below (the "Tower Facilities"), do hereby authorize AT&T MOBILITY, CENTERLINE COMMUNICATIONS LLC, its successors and assigns, to act as American Tower's non-exclusive agent for the purpose of filing and securing any zoning, land-use, building permit and/or electrical permit application(s) and approvals of the applicable jurisdiction for and to conduct the construction of the installation of antennas and related telecommunications equipment on the Tower Facility located at the above address. This installation shall not affect adjoining lands and will occur only within the area leased by American Tower.

American Tower understands that the application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by American Tower of conditions related to American Tower's installation. Any such conditions of approval or modifications will not be effective unless approved in writing by American Tower.

The above authorization does not permit AT&T MOBILITY, CENTERLINE COMMUNICATIONS LLC to modify or alter any existing permit(s) and/or zoning or land-use conditions or impose any additional conditions unrelated to American Tower's installation of telecommunications equipment without the prior written approval of American Tower.

*American Tower includes all affiliates and subsidiaries of American Tower Corporation.

ATC Asset #	Site Name	Project Number	Site Address
283420	STONEYBROOK RD CT	13682835	23 Stonybrook Road, Stratford, Connecticut
243036	WEST HAVEN & RT 162 CT	13682841	668 Jones Hill Road, West Haven, Connecticut
302479	Rkhl - Rocky Hill	13683394	699 West Street, Rocky Hill, Connecticut
302537	Middletown CT 3	13747862	47 Inwood Road, Rocky Hill, Connecticut
302535	Milford CT 2	13748383	185 Research Drive, Milford, Connecticut
302473	E H F R - Prestige Park	13748397	310 Prestige Park Road, East Hartford, Connecticut
302505	Wshn - West Haven	13748405	204 Burwell Street, West Haven, Connecticut
302489	Enfd - Enfield	13753208	77 Town Farm Road, Enfield, Connecticut
302524	Beacon Falls	13753210	664 Rimmon Hill Road, Seymour, Connecticut
310968	WSPT-WESTPORT REBUILD CT	13753216	180A Bayberry Lane, Westport, Connecticut
302526	Naugatuck (telephone Pole)	13753218	585 South Main St. (soc. Club), Naugatuck, Connecticut
310972	WATERFORD REBUILD CT	13753547	15 Miner Lane, Waterford, Connecticut
302538	Parsonage Hill Aka Wallin	13753549	922 Northrop Road, Wallingford, Connecticut
370624	Mankes Silo	13754283	1338 Highland Ave, Cheshire, Connecticut

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88017	SHELTON-TRUMBULL	13755484	14 OXFORD DRIVE/BOOTH HILL RD, Shelton, Connecticut
414240	Byram Park CT	13755490	48 RITCH AVENUE WEST, Greenwich, Connecticut
283423	NAUGATUCK CT	13755758	880 Andrew Mountain Road, Naugatuck, Connecticut
302480	Woodbridge CT 1	13756843	77 Pease Road, Woodbridge, Connecticut
411183	WATERFORD CT	13756866	53 Dayton Rd. Waterford, Connecticut
302540	Madison CT 6	13757740	8 Old 79, Madison, Connecticut
411259	CT Collinsville CAC 802816 CT	13757764	650 Albany Turnpike, Collinsville, Connecticut
411256	CANTON CT	13757774	14 CANTON SPRINGS ROAD, Canton, Connecticut
302493	Nrwc - Norwich	13757776	225 Rogers Road, Norwich, Connecticut
302476	Wtbr - Waterbury	13757794	352 Garden Circle, Waterbury, Connecticut
302475	Sttn - Southington	13757796	80 Shuttle Meadow Road, Southington, Connecticut
302494	Hddm - Haddam	13757798	139 Morris Hubbard Rd, Higganum, Connecticut
283419	PINE ORCHARD BRANFORD CT	13757800	123 Pine Orchard Road, Brrandford, Connecticut
302482	North Havent CT 1	13757802	15 Dewight Street, North Haven, Connecticut
302485	Mdfd - Middlefield	13757806	134 Kilsyon Road, Middlefield, Connecticut
302500	Brst - Bristol	13757810	790 Willis Street, Bristol, Connecticut
302467	Bilkays Express	13757812	90 North Plains Industrial Rd. Wallingford, Connecticut
302536	Cherry Hill-branford	13759895	4 Beaver Road, Brandford, Connecticut
302482	North Havent CT 1	14050356	15 Dewight Street, North Haven, Connecticut
311305	GLFD-GUILFORD REBUILD CT	14050358	10 Tanner Marsh Road, Guilford, Connecticut
411261	CROMWELLSW CT	14089799	99 Christian Hill Road, Cromwell, Connecticut
302481	Hrfr - South	14090117	289 Mountain Street, Hartford, Connecticut

Signature: _____

Margaret Robinson, Vice President
US Tower Legal Division

See attached Notary Block

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION
CENTERLINE COMMUNICATIONS LLC/ AT&T MOBILITY

NOTARY BLOCK

COMMONWEALTH OF MASSACHUSETTS
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Vice President, UST Legal of American Tower (Tower Facility owner), personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same.

WITNESS my hand and official seal, this 30th day of June, 2022.

NOTARY SEAL

MELISSA ANN METZLER
Notary Public
Commonwealth of Massachusetts
My Commission Expires March 14, 2025

Notary Public
My Commission Expires: March 14, 2025

15 Dwight St. North Haven CT

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 05/31/2022
Data updated daily

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

Map Theme Legends

Aerial Photo, 2019

- TOWN BOUNDARY
- PARCELS

Property Record Card

Property

Address	15 DWIGHT ST
ID	100 001

Ownership

Name	15 DWIGHT STREET LLC
Address	11 SAGAMORE TERR SO WESTBROOK, CT 064982107

Valuation

Total	$6,722,812
Land	$1,080,338
Last Sale	$0 on 1998-09-28
Book/Page	529/0023

Land

Area	11.99 Acres
Zone	IL80

DOCKET NO. 44

AN APPLICATION SUBMITTED BY THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE AND OPERATION OF FACILITIES TO PROVIDE CELLULAR SERVICE IN NEW HAVEN COUNTY	:	CONNECTICUT SITING COUNCIL
	:	July 24, 1984

D E C I S I O N A N D O R D E R

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut, revisions of 1958, revised to 1983, as amended, be issued to the Southern New England Telephone Company for the construction, operation, and maintenance of a telecommunications tower and associated equipment to provide cellular service at each of the following sites:

Jasudowich tract, Brushy Plain Road, Branford, Connecticut;
Town of Guilford tract, Tanner Marsh Road, Guilford, Connecticut;
Bridgeport Avenue, Milford, Connecticut;
Quagliaro tract, Farmdale Drive, Waterbury, Connecticut;
Pease Road, Woodbridge, Connecticut; and
Dwight Street, North Haven, Connecticut.

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

1. The towers including antennas shall be no taller than necessary to provide the proposed service and in no event shall exceed

   a) 167' at the Branford site,
   b) 167' at the Guilford site,
   c) 117' at the Milford site,
   d) 167' at the Waterbury site,
   e) 167' at the Woodbridge site,
   f) 167' at the North Haven site;

2. A fence not lower than eight feet shall surround each tower and its associated equipment;

3. The applicant or its successor shall notify the Council if and when directional antennas or any other equipment is added to any of these facilities;
4. The applicant or its successor shall permit, in accordance with representations made by it during the proceeding, public or private entities to share space on the facilities, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing;
5. Unless necessary to comply with condition number six, below, no lights shall be installed on any of these towers;
6. The facilities shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations;
7. The applicant shall submit a development and management plan (D&M) for the Branford, Milford, Woodbridge, and North Haven sites pursuant to sections 16-50j-85 through 16-50j-87 of the regulations of state agencies, except that irrelevant items in section 16-50j-86 need only be identified as such. The D&M plans shall include appropriate evergreen screening of the sites, erosion control measures, reseeding plans, and tree removal plans. The applicant shall comply with the reporting requirements of section 16-50j-87 for all sites;
8. Construction activities shall take place during daylight working hours;
9. This decision and order shall be void and the towers and associated equipment approved herein shall be dismantled and removed, or reapplication for any new use shall be made to the Connecticut

Siting Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction;

10. This decision and order shall be void if all construction authorized is not completed within three years of the issuance of this decision.

Pursuant to section 16-50p of the General Statutes, we hereby direct that a copy of the opinion and decision and order be served on each person listed below. A notice of the issuance shall be published in the Hartford Courant, New Haven Register, and the Waterbury Republican.

The parties to this proceeding are

The Southern New England Telephone Company
Room 314
227 Church Street
New Haven, Connecticut 06506

(Applicant)

ATTENTION: Mr. Peter J. Tyrrell
Senior Attorney

(its attorney)

Town of Hamden
Peter F. Villano, Mayor
Shirley Gonzales, Town Planner

represented by:

Mr. Hugh Manke, Esquire
Office of the Town Attorney
Memorial Town Hall
2372 Whitney Avenue
Hamden, Connecticut 06518

Inland Wetlands Agency
Town of Woodbridge

represented by:

Robert J. Klancko
Chairman
Town Hall
11 Meeting House Lane
Woodbridge, Connecticut 06525

Town Plan and Zoning Commission
Town of Woodbridge

represented by:

Norman Fineberg
Chairman
Town Hall
11 Meeting House Lane
Woodbridge, Connecticut 06525

The Honorable Peter M. Lerner
State Representative
State of Connecticut
House of Representatives
State Capitol
Hartford, Connecticut 06115

John Menta
Felicia Tencza

represented by:

Ms. Felicia Tencza
580 Gaylord Mountain Road
Hamden, Connecticut 06518

Ms. Renee Robinson
265 Blue Trail
Hamden, Connecticut 06518

(service waived)

Irene L. Wong
Edson H. Mount
Dr. & Mrs. H.M. Fiskio
Dr. & Mrs. Alexander Gottschalk

represented by:

Dr. & Mrs. Alexander Gottschalk
230 Six Rod Highway
Hamden, Connecticut 06518

The Sleeping Giant Park Association

represented by:

Mr. Dag Pfeiffer
President
Box 14
Quinnipiac College
Hamden, Connecticut 06518

West Rock Ridge Park Association

represented by:

Mr. William L. Dohney, Jr., D.D.S.
President
220 Mountain Road
Hamden, Connecticut 06514

Sierra Club

represented by:

Ms. M. Kim Yanoshick
Executive Director
Hartford Chapter
118 Oak Street
Hartford, Connecticut 06106

Quinnipiac College	represented by: Mr. Richard A. Terry President Hamden, Connecticut 06518
Guilford Conservation Commission	represented by: Ms. Carolyn K. Evans Chairman Town Hall Park Street Guilford, Connecticut 06437
Mrs. Barbara R. Peterson Mary & Phil Faust Anita L. & Richard M. Sullivan	represented by: Anita L. & Richard M. Sullivan 315 Chestnut Lane Hamden, Connecticut 06518
Mrs. Pauline H. Hoff	represented by: Herbert L. Emanuelson, Jr. Emanuelson and Wynne 205 Church Street New Haven, Connecticut 06510
Hamden League of Women Voters	represented by: Mrs. Sherrill Zoller 605 West Woods Road Hamden, Connecticut 06518 (service waived)
Joan Rosenberg 230 Ridewood Avenue Hamden, Connecticut 06517	
Mr. & Mrs. Richard Sykes 110 Blue Trail Hamden, Connecticut 06518	
Thomas & Claudia Sullivan, Jr. 100 Blue Trail Hamden, Connecticut 06518	
Mr. William N. Pantalone 27 Pease Road Woodbridge, Connecticut 06525	(service waived)

INTERVENORS

Metromedia TeleCommunications
Nutmeg Telecommunications, Inc.
CSI of New Haven
CSI of Stamford
Cellular Communications, Inc.
LIN Cellular Corp.
Cellular Mobile Services
Maxcell TeleCommunications, Inc.
Mobile Cellular Telephone, Inc.
Cellular Dynamics
Connecticut Corridor Cellular
Chase/Post Cellular

represented by:

Dwight A. Johnson
Murtha, Cullina, Richter
and Pinney
101 Pearl Street
P.O. Box 3197
Hartford, Connecticut 06103-0197

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

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

Dated at New Britain, Connecticut, this 24th day of July, 1984.

Council Members	Vote Cast
_____) Gloria Dibble Pond Chairperson	Absent
_____) Commissioner John Downey Designee: Commissioner Peter G. Boucher	Absent
Brian Emerick _____) Commissioner Stanley Pac Designee: Brian Emerick	~~Yes~~ ~~Absent~~ Abstain
Owen L. Clark _____) Owen L. Clark	Yes
Fred J. Doocy _____) Fred J. Doocy	Yes
Mortimer A. Gelston _____) Mortimer A. Gelston	Yes
James G. Horsfall _____) James G. Horsfall	Yes
_____) Janet Sitty	Absent
Colin C. Tait _____) Colin C. Tait Acting Chairperson	Yes

STATE OF CONNECTICUT)
: ss. New Britain, July 24, 1984
COUNTY OF HARTFORD)

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

ATTEST:

Christopher S. Wood, Executive Director
Connecticut Siting Council

Radio Frequency Exposure Analysis Report

June 28, 2022

American Tower on behalf of AT&T

AT&T Site Name: North Haven CT 1 / North Haven -Dwight St
Site Number: CTL02012
FA#: 10034972
USID: 61156

Site Address: 15 Dwight Street, North Haven, CT 06473

Site Compliance Summary

AT&T Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	13.56304 µW/cm^2
Cumulative General Population % MPE (Ground Level):	1.3563499999999999%

June 28, 2022

Centerline
Attn: John Luca, Associate Project Manager
750 W Center St, Suite 301
West Bridgewater, MA 02379

RF Exposure Analysis for Site: **North Haven CT 1 / North Haven -Dwight St**

Centerline Communications, LLC ("Centerline") was contracted to analyze the proposed AT&T facility at **15 Dwight Street, North Haven, CT 06473** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu W/cm^2$). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm^2) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ($f_{MHz}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of 1 mW/cm^2 (1000 $\mu W/cm^2$). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Wireless carriers use different frequency bands with varying MPE limits; therefore, it is useful to report results in terms of % MPE as opposed to power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the 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.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/ controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Additional details can be found in FCC OET 65.

Calculation Methodology

Centerline Communications, LLC has performed theoretical modeling of the site using a software tool, RoofMaster®, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

In OET 65, a far field model is presented to calculate the spatial peak power density. The RoofMaster® implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0-6') must be conducted. RoofMaster® calculates seven power density values between 0-6' above the specified study plane and performs a linear spatial average.

Data & Results

The following table details the antennas and operating parameters for the AT&T antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at the ground.

The theoretical calculations performed in Roofmaster® determine the cumulative exposure at all sample points at ground level (0-6' spatial average). The results from highest cumulative sample point at ground level surrounding the site are displayed in the table below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table. The cumulative power density and cumulative % MPE are displayed at the bottom of the table.

Maximum Calculated Cumulative Power Density (Location: approximately 340' northwest of site)

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density (μW/cm²)	General Population MPE Limit (μW/cm²)	General Population % MPE
AT&T A 1	QUINTEL QD6616-7 V1	700	11.93	153.00	4.00	30.00	1871.85	0.00002	466.67	0.00001
AT&T A 1	QUINTEL QD6616-7 V1	1900	15.11	153.00	4.00	30.00	3888.22	0.00002	1000.00	0.00000
AT&T A 1	QUINTEL QD6616-7 V1	2100	15.50	153.00	4.00	30.00	4257.96	0.00001	1000.00	0.00000
AT&T A 1	QUINTEL QD6616-7 V1	700	11.93	153.00	2.00	30.00	935.93	0.00001	466.67	0.00000
AT&T A 2	Ericsson AIR6449	3700	23.45	151.33	1.00	108.40	23989.95	0.00035	1000.00	0.00004
AT&T A 3	Ericsson AIR6419	3450	23.45	154.75	1.00	108.40	23989.95	0.00033	1000.00	0.00003
AT&T A 4	CCI DMP65R-BU6D	700	11.35	153.00	4.00	30.00	1637.50	0.00005	466.67	0.00001
AT&T A 4	CCI DMP65R-BU6D	850	11.45	153.00	4.00	30.00	1675.64	0.00002	566.67	0.00000
AT&T A 4	CCI DMP65R-BU6D	2300	15.25	153.00	4.00	18.00	2411.75	0.00002	1000.00	0.00000
AT&T B 5	QUINTEL QD6616-7 V1	700	11.93	153.00	4.00	30.00	1871.85	0.00000	466.67	0.00000
AT&T B 5	QUINTEL QD6616-7 V1	1900	15.11	153.00	4.00	30.00	3888.22	0.00000	1000.00	0.00000
AT&T B 5	QUINTEL QD6616-7 V1	2100	15.50	153.00	4.00	30.00	4257.96	0.00000	1000.00	0.00000
AT&T B 5	QUINTEL QD6616-7 V1	700	11.93	153.00	2.00	30.00	935.93	0.00000	466.67	0.00000
AT&T B 6	Ericsson AIR6449	3700	23.45	151.33	1.00	108.40	23989.95	0.00000	1000.00	0.00000
AT&T B 7	Ericsson AIR6419	3450	23.45	154.75	1.00	108.40	23989.95	0.00000	1000.00	0.00000
AT&T B 8	CCI DMP65R-BU6D	700	11.35	153.00	4.00	30.00	1637.50	0.00000	466.67	0.00000
AT&T B 8	CCI DMP65R-BU6D	850	11.45	153.00	4.00	30.00	1675.64	0.00000	566.67	0.00000
AT&T B 8	CCI DMP65R-BU6D	2300	15.25	153.00	4.00	18.00	2411.75	0.00000	1000.00	0.00000
AT&T C 9	QUINTEL QD6616-7 V1	700	11.93	153.00	4.00	30.00	1871.85	0.00002	466.67	0.00000
AT&T C 9	QUINTEL QD6616-7 V1	1900	15.11	153.00	4.00	30.00	3888.22	0.00002	1000.00	0.00000
AT&T C 9	QUINTEL QD6616-7 V1	2100	15.50	153.00	4.00	30.00	4257.96	0.00003	1000.00	0.00000
AT&T C 9	QUINTEL QD6616-7 V1	700	11.93	153.00	2.00	30.00	935.93	0.00001	466.67	0.00000
AT&T C 10	Ericsson AIR6449	3700	23.45	151.33	1.00	108.40	23989.95	0.00031	1000.00	0.00003
AT&T C 11	Ericsson AIR6419	3450	23.45	154.75	1.00	108.40	23989.95	0.00032	1000.00	0.00003
AT&T C 12	CCI DMP65R-BU6D	700	11.35	153.00	4.00	30.00	1637.50	0.00004	466.67	0.00001
AT&T C 12	CCI DMP65R-BU6D	850	11.45	153.00	4.00	30.00	1675.64	0.00001	566.67	0.00000
AT&T C 12	CCI DMP65R-BU6D	2300	15.25	153.00	4.00	18.00	2411.75	0.00001	1000.00	0.00000
T-Mobile A 13	GENERIC PANEL 6FT	1900	15.84	140.50	2.00	60.00	4604.49	0.00001	1000.00	0.00000
T-Mobile A 14	GENERIC PANEL 6FT	600	12.33	140.50	2.00	60.00	2052.02	0.00002	400.00	0.00001
T-Mobile A 14	GENERIC PANEL 6FT	700	12.33	140.50	2.00	60.00	2052.02	0.00002	466.67	0.00001
T-Mobile A 15	GENERIC PANEL 6FT	2100	16.39	140.50	2.00	60.00	5226.14	0.00002	1000.00	0.00000
T-Mobile A 16	GENERIC MICROWAVE 2FT	18000	36.95	140.50	1.00	0.10	495.45	0.00000	1000.00	0.00000
T-Mobile B 17	GENERIC PANEL 6FT	1900	15.84	140.50	2.00	60.00	4604.49	0.00000	1000.00	0.00000
T-Mobile B 18	GENERIC PANEL 6FT	600	12.33	140.50	2.00	60.00	2052.02	0.00000	400.00	0.00000
T-Mobile B 18	GENERIC PANEL 6FT	700	12.33	140.50	2.00	60.00	2052.02	0.00000	466.67	0.00000

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density (µW/cm²)	General Population MPE Limit (µW/cm²)	General Population % MPE
T-Mobile B 19	GENERIC PANEL 6FT	2100	16.39	140.50	2.00	60.00	5226.14	0.00000	1000.00	0.00000
T-Mobile C 20	GENERIC PANEL 6FT	1900	15.84	140.50	2.00	60.00	4604.49	0.00001	1000.00	0.00000
T-Mobile C 21	GENERIC PANEL 6FT	600	12.33	140.50	2.00	60.00	2052.02	0.00002	400.00	0.00001
T-Mobile C 21	GENERIC PANEL 6FT	700	12.33	140.50	2.00	60.00	2052.02	0.00002	466.67	0.00001
T-Mobile C 22	GENERIC PANEL 6FT	2100	16.39	140.50	2.00	60.00	5226.14	0.00001	1000.00	0.00000
Verizon A 23	GENERIC PANEL 6FT	850	12.62	106.70	4.00	40.00	2924.96	0.00004	566.67	0.00001
Verizon A 24	GENERIC PANEL 6FT	1900	15.84	106.70	4.00	40.00	6139.32	0.00003	1000.00	0.00000
Verizon A 25	GENERIC PANEL 6FT	2100	16.39	106.70	4.00	40.00	6968.19	0.00004	1000.00	0.00000
Verizon A 26	GENERIC PANEL 6FT	700	12.33	106.70	4.00	40.00	2736.02	0.00005	466.67	0.00001
Verizon B 27	GENERIC PANEL 6FT	850	12.62	106.70	4.00	40.00	2924.96	0.00000	566.67	0.00000
Verizon B 28	GENERIC PANEL 6FT	1900	15.84	106.70	4.00	40.00	6139.32	0.00000	1000.00	0.00000
Verizon B 29	GENERIC PANEL 6FT	2100	16.39	106.70	4.00	40.00	6968.19	0.00000	1000.00	0.00000
Verizon B 30	GENERIC PANEL 6FT	700	12.33	106.70	4.00	40.00	2736.02	0.00000	466.67	0.00000
Verizon C 31	GENERIC PANEL 6FT	850	12.62	106.70	4.00	40.00	2924.96	0.00004	566.67	0.00001
Verizon C 32	GENERIC PANEL 6FT	1900	15.84	106.70	4.00	40.00	6139.32	0.00003	1000.00	0.00000
Verizon C 33	GENERIC PANEL 6FT	2100	16.39	106.70	4.00	40.00	6968.19	0.00003	1000.00	0.00000
Verizon C 34	GENERIC PANEL 6FT	700	12.33	106.70	4.00	40.00	2736.02	0.00005	466.67	0.00001
							Cumulative Power Density:	**13.56304 µW/cm²**	**Cumulative % MPE:**	**1.35635%**

Summary

The theoretical calculations performed for this analysis yielded cumulative power density totals in all areas at ground that are within the allowable federal limits for public exposure to RF energy. Therefore, the site is **Compliant** with FCC rules and regulations.

Katrina Styx
RF EME Technical Writer
Centerline Communications, LLC

AMERICAN TOWER®
CORPORATION

Post Modification Structural Analysis Report

Structure	:	150 ft Monopole
ATC Asset Name	:	North Haven CT 1
ATC Asset Number	:	302482
Engineering Number	:	13757802_C4_06
Proposed Carrier	:	AT&T MOBILITY
Carrier Site Name	:	MRCTB055973
Carrier Site Number	:	CTL02012
Site Location	:	15 Dewight Street North Haven, CT 06473-1198 41.4208, -72.8488
County	:	New Haven
Date	:	October 12, 2022
Max Usage	:	97%
Analysis Result	:	Pass

Prepared By:

Christopher Jolly
Structural Engineer III

Reviewed

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a post-modification structural analysis performed on the 150 ft Monopole tower to reflect the change in loading by AT&T MOBILITY.

Supporting Documents

Tower Drawing:	ITT Meyer, Type "B", Spec. AT-8935, dated April 13, 1984
Foundation Drawing:	Southern New England Telephone Job #3C032, dated September 18, 1984
Geotechnical Report:	S&ME Job #1261-08-049O, dated April 24, 2008
Modification:	Spectrasite Communications File #CT-0018-M1, Rev. 4, dated October 15, 2002 ATC Project #41732832, dated June 30, 2008 ATC Project #43874133, dated September 1, 2009 ATC Project #60261734, dated January 19, 2015 ATC Project #13757802_C6_05, dated October 4, 2022 (Pending)

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:	120 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code(s):	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	Ss = 0.20, S_1 = 0.05
Site Class:	D - Stiff Soil - Default

Wind load and Ice thickness have been reduced by applicable existing structure load modification factors in accordance with TIA-222-H, ANNEX-S

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 the pending modifications cited in the Supporting Documents table are not completed, the results of this analysis are no longer valid, and AT&T MOBILITY should contact American Tower's Site Manager for further direction on how to proceed.

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/Reserved Loading

Elev.*	Qty	Equipment	Lines	Carrier
146.0’	3	Stand-Off	- (4) 1 1/4" Hybriflex Cable (3) 1/2" Coax (1) 2" conduit	CLEARWIRE CORPORATION
145.6’	3	Argus LLPX310R		
144.9’	2	12" x 12" Junction Box		
143.5’	3	RRU (Model TBD)		
142.0’	1	Platform with Handrails RMQP-496-HK		
	1	DragonWave A-ANT-11G-2-C		
	1	DragonWave A-ANT-11G-2.5-C		
	1	DragonWave A-ANT-23G-1-C		
	3	Alcatel-Lucent 1900 MHz 4X45 RRH		
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield		
	3	Commscope NNVV-65B-R4		
	3	DragonWave Horizon Compact		
	3	RFS APXVTM14-ALU-I20		
	6	Alcatel-Lucent RRH2x50-08		
108.0’	1	Low Profile Platform	(9) 1 1/4" Coax (2) 1 1/4" Hybriflex Cable (1) 1/2" Coax	VERIZON WIRELESS
	1	Mount Reinforcement		
	1	GPS		
	1	RFS DB-T1-6Z-8AB-0Z		
	3	Commscope LNX-6514DS-VTM		
	3	Nokia B5 RRH4x40-850		
	3	Samsung B2/B66A RRH-BR049		
	3	Samsung B5/B13 RRH-BR04C		
	3	Samsung RT4401-48A		
	5	Commscope CBC78T-DS-43-2X		
	6	Commscope JAHH-65B-R3B		

(If table breaks across pages, please see previous page for data in merged cells)

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

Proposed Carrier Final Loading

Elev.*	Qty	Equipment	Lines	Carrier
153.0’	3	CCI DMP65R-BU6DA	(3) 0.41" (10.3mm) Fiber (4) 0.82" (20.8mm) 8 AWG 6 (2) 0.92" (23.4mm) Cable (12) 1 1/4" Coax	AT&T MOBILITY
	3	Ericsson AIR 6419 B77G		
	3	Ericsson AIR 6449 B77D/ C-Band		
	3	Ericsson RRUS 32 B30		
	3	Ericsson RRUS 4449 B5, B12		
	3	Ericsson RRUS 4478 B14		
	3	Ericsson RRUS 8843 B2, B66A		
	3	Ericsson RRUS E2 B29		
	3	Quintel QD6616-7		
	3	Raycap DC6-48-60-18-8F		
150.0’	1	Platform with Handrails		

(If table breaks across pages, please see previous page for data in merged cells)

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

Install proposed lines inside the pole shaft.

Structure Usages

Structural Component	Usage	Pass/Fail
Anchor Rods	75%	Pass
Base Plate	27%	Pass
Shaft	97%	Pass
Flange Bolts	29%	Pass
Flange Plates	14%	Pass
Reinforcement	91%	Pass

Foundation Reactions & Usages

Reaction Component	Analysis Reactions	Usage
Moment (k-ft)	2861.5	80%
Axial (k)	50.9	65%
Shear (k)	27.3	15%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Antenna Deflection, Twist, and Sway

Elev.	Antenna	Carrier	Deflection	Twist	Sway [Rotation]
153.0’	Ericsson RRUS E2 B29	AT&T MOBILITY	0.000’	N/A	0.000°
	Ericsson AIR 6449 B77D/ C-Band				
	Ericsson AIR 6419 B77G				
142.0’	DragonWave A-ANT-23G-1-C	CLEARWIRE CORPORATION	2.207’	N/A	1.880°
	DragonWave A-ANT-11G-2.5-C				
	DragonWave A-ANT-11G-2-C				

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

Standard Conditions

All engineering services performed by A.T. Engineering Services LLC 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 Services LLC

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

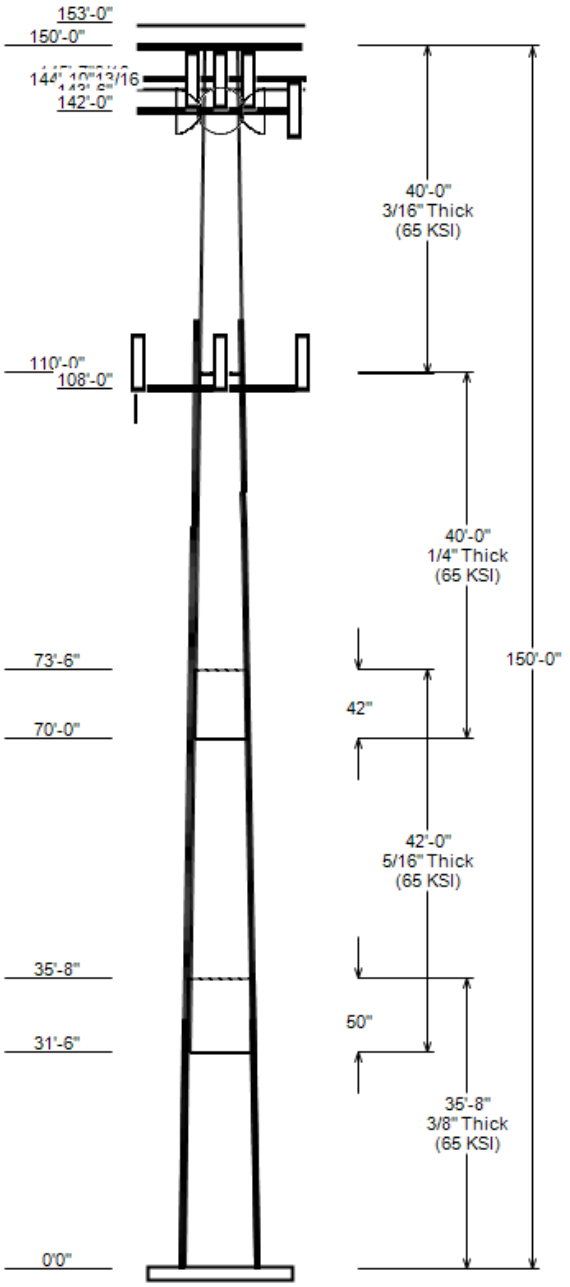
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

Unless explicitly agreed by both the client and A.T. Engineering Services LLC, 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 Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

ANALYSIS PARAMETERS

Nominal Wind:	117 mph	**Ice Wind:**	49 mph w/ 0.85" ice	**Service Wind:**	60 mph
Risk Category:	II	**Exposure:**	B	**S_s:** 0.204	**S_1:** 0.054
Topo Category:	1	**Topo Factor:**	Method 1	**Topo Feature:**	
Structure Height:	150 ft	**Base Elevation:**	0.00 ft	**Structure Type:**	Taper
Base Diameter:	37.38 in	**Base Rotation:**	0°	**Taper:**	0.1570 (in/ft)



GLOBAL BASE REACTIONS

Load Case	Moment (kip-ft)	Axial (kip)	Shear (kip)
1.2D + 1.0W	2861.51	50.86	27.32
0.9D + 1.0W	2805.58	38.13	27.29
1.2D + 1.0Di + 1.0Wi	663.71	64.98	5.72
1.2D + 1.0Ev + 1.0Eh	170.60	50.59	1.28
0.9D - 1.0Ev + 1.0Eh	166.05	34.84	1.28
1.0D + 1.0W	666.30	42.43	6.43

POLE SECTION PROPERTIES

Section	Length (ft)	Flat Diameter (in) Top	Flat Diameter (in) Bottom	Thick (in)	Joint Type	Joint Length (in)	Pole Shape	Yield Strength (ksi)
1	35.667	31.79	37.38	0.375		0.000	12 Sides	65
2	42.000	26.48	33.06	0.312	Slip Joint	50.000	12 Sides	65
3	40.000	21.27	27.53	0.250	Slip Joint	42.000	12 Sides	65
4	40.000	15.00	21.27	0.188	Butt Joint	0.000	12 Sides	65

DISCRETE APPURTENANCE

Elev (ft)	Description
153.0	(3) Raycap DC6-48-60-18-8F
153.0	(3) Ericsson RRUS 8843 B2, B66A
153.0	(3) Ericsson RRUS 4478 B14
153.0	(3) Ericsson RRUS 4449 B5, B12
153.0	(3) Ericsson RRUS 32 B30
153.0	(3) Ericsson RRUS E2 B29
153.0	(3) Ericsson AIR 6419 B77G
153.0	(3) Ericsson AIR 6449 B77D/ C-Band
153.0	(3) CCI DMP65R-BU6DA
153.0	(3) Quintel QD6616-7
150.0	(1) Generic Round Platform with Ha
146.0	(3) Generic Round Stand-Off
145.6	(3) Argus LLPX310R
144.9	(2) Generic 12" x 12" Junction Box
143.5	(3) Generic RRU (Model TBD)
142.0	(3) DragonWave Horizon Compact
142.0	(1) DragonWave A-ANT-23G-1-C
142.0	(6) Alcatel-Lucent RRH2x50-08
142.0	(3) Alcatel-Lucent 1900 MHz 4X45 R
142.0	(3) Alcatel-Lucent TD-RRH8x20-25 w
142.0	(1) DragonWave A-ANT-11G-2-C
142.0	(3) RFS APXVTM14-ALU-I20
142.0	(1) DragonWave A-ANT-11G-2.5-C
142.0	(3) Commscope NNVV-65B-R4
142.0	(1) Platform with Handrails RMQP-4
108.0	(5) Commscope CBC78T-DS-43-2X
108.0	(1) Generic GPS
108.0	(3) Samsung RT4401-48A
108.0	(3) Nokia B5 RRH4x40-850
108.0	(3) Samsung B2/B66A RRH-BR049
108.0	(3) Samsung B5/B13 RRH-BR04C
108.0	(1) RFS DB-T1-6Z-8AB-0Z
108.0	(1) Generic Mount Reinforcement
108.0	(3) Commscope LNX-6514DS-VTM
108.0	(6) Commscope JAHH-65B-R3B
108.0	(1) Generic Round Low Profile Plat

LINEAR APPURTENANCE

Elev To (ft)	Description
153.0	(12) 1 1/4" Coax
153.0	(2) 0.92" (23.4mm) Cable
153.0	(4) 0.82" (20.8mm) 8 AWG 6
153.0	(3) 0.41" (10.3mm) Fiber
142.0	(1) 2" conduit
142.0	(3) 1/2" Coax
142.0	(4) 1 1/4" Hybriflex Cable
121.0	(1) W8 Brackets for #20
121.0	(1) W8 Brackets for #20
121.0	(1) W8 Brackets for #20
121.0	(1) #20 w/ W Brackets
121.0	(1) #20 w/ W Brackets
121.0	(1) #20 w/ W Brackets
108.0	(1) 1/2" Coax
108.0	(2) 1 1/4" Hybriflex Cable
108.0	(9) 1 1/4" Coax
101.0	(1) #20 w/ Angle Brackets
101.0	(1) #20 w/ Angle Brackets
101.0	(1) #20 w/ Angle Brackets
101.0	(1) #20 w/ Angle Brackets
37.5	(1) #20 w/ Angle Brackets
37.5	(1) #20 w/ Angle Brackets
37.5	(1) #20 w/ Angle Brackets
37.5	(1) #20 w/ Angle Brackets

DISH SERVICEABILITY

Load Case	Elevation (ft)	Deflection (in)	Rotation (°)
1.0D + 1.0W	142.00	26.479	1.885
1.0D + 1.0W	142.00	26.479	1.885
1.0D + 1.0W	142.00	26.479	1.885

LOAD CASE KEY

1.2D + 1.0Di + 1.0Wi	48.73 mph Wind with 0.85" Radial I
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice
1.2D + 1.0W	116.96 mph Wind with No Ice
0.9D + 1.0W	116.96 mph Wind with No Ice (Reduc

ANALYSIS PARAMETERS

Location:	New Haven County,CT	**Height:**	150 ft
Type and Shape:	Taper, 12 Sides	**Base Diameter:**	37.38 in
Manufacturer:	ITT Meyer	**Top Diameter:**	15.00 in
K_d (non-service):	0.95	**Taper:**	0.1570 in/ft
K_e:	1.00	**Rotation:**	0.000º

ICE & WIND PARAMETERS

Risk Category:	II	**Design Wind Speed:**	117 mph
Exposure Category:	B	**Design Wind Speed w/ Ice:**	49 mph
Topo Factor Procedure:	Method 1	**Design Ice Thickness:**	0.85 in
Topographic Category:	1	**Service Wind Speed:**	60 mph
Crest Height:	0 ft	**HMSL:**	26.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil		**Period Based on Rayleigh Method (sec):**		3.14
T_L (sec):	6	**P:**	1	**C_s:**	0.030
S_s:	0.204	**S_1:**	0.054	**C_s Max:**	0.030
F_a:	1.600	**F_v:**	2.400	**C_s Min:**	0.030
S_{ds}:	0.218	**S_{d1}:**	0.086		

LOAD CASES

1.2D + 1.0W	116.96 mph Wind with No Ice
0.9D + 1.0W	116.96 mph Wind with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	48.73 mph Wind with 0.85" Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

							Bottom						Top						
Section	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Dia (in)	Elev (ft)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-12	35.67	0.3750	65		0.00	5,013	37.38	0.003	44.68	7,806.9	24.03	99.67	31.79	35.67	37.93	4,777.1	20.03	84.77	0.1567
2-12	42.00	0.3125	65	Slip	50.00	4,237	33.06	31.500	32.96	4,512.6	25.67	105.81	26.48	73.50	26.34	2,302.6	20.03	84.75	0.1567
3-12	40.00	0.2500	65	Slip	42.00	2,646	27.53	70.000	21.96	2,086.8	26.83	110.13	21.27	110.00	16.92	953.8	20.11	85.07	0.1567
4-12	40.00	0.1875	65	Butt	0.00	1,475	21.27	110.000	12.73	721.8	27.71	113.42	15.00	150.00	8.94	250.5	18.76	80.00	0.1567
			Total Shaft Weight			**13,371**													

DISCRETE APPURTENANCE PROPERTIES

					No Ice			Ice		
Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	Weight (lb)	EPAa (sf)	Orientation Factor	Weight (lb)	EPAa (sf)	Orientation Factor
153.00	Ericsson RRUS 4449 B5, B12	3	0.75	-3.000	71.00	1.969	0.50	107.55	2.498	0.50
153.00	Ericsson AIR 6419 B77G	3	0.75	-3.000	66.10	3.797	0.65	121.12	4.544	0.65
153.00	Ericsson AIR 6449 B77D/ C-Band	3	0.75	-3.000	81.60	4.028	0.70	147.65	4.806	0.70
153.00	CCI DMP65R-BU6DA	3	0.75	-3.000	79.40	12.709	0.63	225.48	14.291	0.63
153.00	Ericsson RRUS 32 B30	3	0.75	-3.000	60.00	2.743	0.50	101.72	3.406	0.50
153.00	Raycap DC6-48-60-18-8F	3	0.75	-3.000	20.00	1.260	0.50	49.86	1.633	0.50
153.00	Ericsson RRUS 8843 B2, B66A	3	0.75	-3.000	72.00	1.639	0.50	106.76	2.118	0.50
153.00	Ericsson RRUS 4478 B14	3	0.75	-3.000	59.90	1.842	0.50	91.25	2.351	0.50
153.00	Quintel QD6616-7	3	0.75	-3.000	130.00	15.400	0.64	181.36	21.484	0.64
153.00	Ericsson RRUS E2 B29	3	0.75	-3.000	60.00	3.145	0.50	105.87	3.802	0.50
150.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3418.49	41.062	1.00
146.00	Generic Round Stand-Off	3	1.00	0.000	187.50	5.200	0.67	239.27	6.738	0.67
145.60	Argus LLPX310R	3	0.80	0.000	28.60	4.292	1.00	79.61	5.228	1.00
144.90	Generic 12" x 12" Junction Box	2	0.80	0.000	10.00	1.200	0.50	33.56	1.610	0.50
143.50	Generic RRU (Model TBD)	3	0.80	0.000	55.00	4.563	0.50	115.58	5.348	0.50
142.00	Platform with Handrails RMQP-4	1	1.00	0.000	2448.70	27.200	1.00	3344.00	40.995	1.00
142.00	Commscope NNVV-65B-R4	3	0.75	0.000	77.40	12.271	0.64	219.20	13.853	0.64
142.00	DragonWave A-ANT-11G-2.5-C	1	1.00	0.000	47.60	8.670	0.98	147.59	9.645	0.98
142.00	DragonWave A-ANT-11G-2-C	1	1.00	0.000	27.00	4.688	0.69	82.00	5.407	0.69
142.00	Alcatel-Lucent TD-RRH8x20-25 w	3	0.75	0.000	70.00	4.046	0.50	123.33	4.795	0.50
142.00	Alcatel-Lucent 1900 MHz 4X45 R	3	0.75	0.000	60.00	2.322	0.50	105.48	2.932	0.50
142.00	Alcatel-Lucent RRH2x50-08	6	0.75	0.000	52.90	1.701	0.50	86.34	2.188	0.50
142.00	DragonWave A-ANT-23G-1-C	1	1.00	0.000	15.00	1.610	0.63	34.94	2.037	0.63
142.00	DragonWave Horizon Compact	3	0.75	0.000	10.60	0.721	0.50	23.29	1.042	0.50
142.00	RFS APXVTM14-ALU-I20	3	0.75	0.000	56.20	6.342	0.66	133.91	7.571	0.66
108.00	Commscope JAHH-65B-R3B	6	0.80	1.000	60.60	9.113	0.69	171.61	10.635	0.69
108.00	Commscope LNX-6514DS-VTM	3	0.80	1.000	38.80	8.173	0.69	135.34	9.719	0.69
108.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	306.19	11.608	1.00
108.00	RFS DB-T1-6Z-8AB-0Z	1	0.80	1.000	44.00	4.800	0.50	113.06	5.580	0.50
108.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	119.41	2.370	0.50
108.00	Generic Round Low Profile Plat	1	1.00	0.000	1875.00	21.700	1.00	2319.38	32.235	1.00
108.00	Nokia B5 RRH4x40-850	3	0.80	0.000	48.50	1.322	0.50	71.14	1.739	0.50
108.00	Samsung RT4401-48A	3	0.80	0.000	18.60	0.996	0.50	33.42	1.371	0.50
108.00	Generic GPS	1	0.80	0.000	10.00	0.900	1.00	26.06	1.251	1.00
108.00	Commscope CBC78T-DS-43-2X	5	0.80	0.000	20.70	0.552	0.50	32.82	0.831	0.50
108.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	101.69	2.370	0.50
Totals	**Row Count: 36**	**97**			**12,489.50**			**19,788.50**		

LINEAR APPURTENANCE PROPERTIES

Elev From (ft)	Elev To (ft)	Qty	Description	Diameter (in)	Weight (lb/ft)	Flat	Max/ Row	Distance Between Rows(in)	Distance Between Cols(in)	Azimuth (deg)	Distance From Face (in)	Exposed To Wind	Carrier
0.00	153.00	12	1 1/4" Coax	1.55	0.63	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	153.00	4	0.82" (20.8mm) 8 AWG	0.82	0.62	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	153.00	3	0.41" (10.3mm) Fiber	0.41	0.09	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	153.00	2	0.92" (23.4mm) Cable	0.92	0.89	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	142.00	4	1 1/4" Hybriflex Cabl	1.54	1	N	2	1	1	90	1	Y	CLEARWIRE CORPORATI
0.00	142.00	3	1/2" Coax	0.63	0.15	N	3	1	1	90	1	Y	CLEARWIRE CORPORATI
0.00	142.00	1	2" conduit	2.38	3.65	N	1	1	1	90	1	Y	CLEARWIRE CORPORATI

LINEAR APPURTENANCE PROPERTIES

Elev From (ft)	Elev To (ft)	Qty	Description	Diameter (in)	Weight (lb/ft)	Flat	Max/ Row	Distance Between Rows(in)	Distance Between Cols(in)	Azimuth (deg)	Distance From Face (in)	Exposed To Wind	Carrier
83.50	121.00	1	#20 w/ W Brackets	2.5	0	N	1	0	0	120	8.28	Y	-
83.50	121.00	1	W8 Brackets for #20	2.48	6.3	Y	1	0	0	120	2.9	Y	
83.50	121.00	1	W8 Brackets for #20	2.48	6.3	Y	1	0	0	0	2.9	Y	
83.50	121.00	1	#20 w/ W Brackets	2.5	0	N	1	0	0	240	8.28	Y	-
83.50	121.00	1	W8 Brackets for #20	2.48	6.3	Y	1	0	0	240	2.9	Y	
83.50	121.00	1	#20 w/ W Brackets	2.5	0	N	1	0	0	0	8.28	Y	-
0.00	108.00	9	1 1/4" Coax	1.55	0.63	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	108.00	2	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	108.00	1	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	101.00	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	0	0	Y	-
0.00	101.00	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	270	0	Y	-
0.00	101.00	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	180	0	Y	-
0.00	101.00	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	90	0	Y	-
0.00	37.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	130	0	Y	-
0.00	37.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	40	0	Y	-
0.00	37.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	220	0	Y	-
0.00	37.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	310	0	Y	-

ADDITIONAL STEEL

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Intermediate Connectors Offset (in)	Bracket Type	Spacing (in)	Length (in)	Connectors	Continuation?
0.00	30.48	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	37.00	3.31	5/8" A36 U-Bolt	N
0.00	12.50	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	37.00	3.31	5/8" A36 U-Bolt	N
12.50	91.00	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	30.00	3.31	5/8" Hollo Bolt	Y
91.00	95.33	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	18.00	3.31	5/8" A36 U-Bolt	Y
95.33	116.42	3	SOL #20 All Thread Bar	80	8.28	6" T Bracket	30.00	3.31	5/8" A36 U-Bolt	N

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description *(Max Length: 5 ft)*	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)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.3750	37.375	44.678	7,806.90	24.03	99.67	78.5	403.5	0.0	0.0	39.280	9,631.60	0.0
5.00		0.3750	36.592	43.732	7,321.50	23.47	97.58	79.1	386.5	0.0	752.1	39.280	9,294.20	668.0
10.00		0.3750	35.808	42.786	6,856.60	22.91	95.49	79.7	369.9	0.0	736.0	39.280	8,962.80	668.0
12.50	Reinf. Top Reinf Bottom	0.3750	35.417	42.313	6,631.70	22.63	94.44	80	361.7	0.0	362.0	39.280	8,799.40	334.0
15.00		0.3750	35.025	41.840	6,411.80	22.35	93.40	80.3	353.7	0.0	357.9	39.280	8,637.40	334.0
20.00		0.3750	34.242	40.894	5,986.70	21.79	91.31	81	337.8	0.0	703.8	39.280	8,318.10	668.0
25.00		0.3750	33.458	39.948	5,580.90	21.23	89.22	81.6	322.2	0.0	687.7	39.280	8,004.80	668.0
30.00		0.3750	32.675	39.002	5,193.70	20.67	87.13	81.9	307.1	0.0	671.6	39.280	7,697.50	668.0
30.48	Reinf. Top	0.3750	32.600	38.911	5,157.60	20.61	86.93	81.9	305.6	0.0	63.6	39.280	7,668.30	64.1
31.50	Bot - Section 2	0.3750	32.440	38.718	5,081.20	20.50	86.51	81.9	302.6	0.0	134.7	19.640	3,803.30	68.1
35.00		0.3750	31.892	38.056	4,825.00	20.11	85.04	81.9	292.3	0.0	846.4	19.640	3,818.10	233.8
35.67	Top - Section 1	0.3125	32.412	32.300	4,248.10	25.11	103.72	77.3	253.2	0.0	159.6	19.640	3,797.90	44.5
40.00		0.3125	31.733	31.617	3,984.20	24.53	101.55	78	242.6	0.0	471.2	19.640	3,668.10	289.5
45.00		0.3125	30.950	30.829	3,693.60	23.86	99.04	78.7	230.5	0.0	531.2	19.640	3,521.00	334.0
50.00		0.3125	30.167	30.041	3,417.50	23.19	96.53	79.4	218.9	0.0	517.8	19.640	3,377.10	334.0
55.00		0.3125	29.383	29.253	3,155.50	22.51	94.03	80.2	207.5	0.0	504.4	19.640	3,236.10	334.0
60.00		0.3125	28.600	28.464	2,907.20	21.84	91.52	80.9	196.4	0.0	491.0	19.640	3,098.10	334.0
65.00		0.3125	27.817	27.676	2,672.30	21.17	89.01	81.6	185.6	0.0	477.6	19.640	2,963.10	334.0
70.00	Bot - Section 3	0.3125	27.033	26.888	2,450.40	20.50	86.51	81.9	175.1	0.0	464.2	19.640	2,831.20	334.0
73.50	Top - Section 2	0.2500	26.985	21.522	1,963.50	26.24	107.94	76.1	140.6	0.0	575.9	19.640	2,823.20	233.8
75.00		0.2500	26.750	21.333	1,912.10	25.99	107.00	76.4	138.1	0.0	109.4	19.640	2,784.20	100.2
80.00		0.2500	25.967	20.702	1,747.50	25.15	103.87	77.3	130.0	0.0	357.6	19.640	2,656.40	334.0
85.00		0.2500	25.183	20.071	1,592.70	24.31	100.73	78.2	122.2	0.0	346.9	19.640	2,531.60	334.0
90.00		0.2500	24.400	19.441	1,447.20	23.47	97.60	79.1	114.6	0.0	336.1	19.640	2,409.70	334.0
91.00	Reinf. Top Reinf Bottom	0.2500	24.243	19.315	1,419.20	23.30	96.97	79.3	113.1	0.0	65.9	19.640	2,385.70	66.8
95.00		0.2500	23.617	18.810	1,310.90	22.63	94.47	80	107.2	0.0	259.5	19.640	2,290.90	267.2
95.33	Reinf. Top Reinf Bottom	0.2500	23.565	18.769	1,302.20	22.58	94.26	80.1	106.8	0.0	21.1	19.640	2,283.20	22.0

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description *(Max Length: 5 ft)*	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)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
100.00		0.2500	22.833	18.180	1,183.40	21.79	91.33	80.9	100.1	0.0	293.6	14.730	3,237.20	234.0
105.00		0.2500	22.050	17.549	1,064.50	20.95	88.20	81.9	93.3	0.0	303.9	14.730	3,117.50	250.5
108.00		0.2500	21.580	17.171	997.10	20.45	86.32	81.9	89.3	0.0	177.2	14.730	3,046.80	150.3
110.00	Top - Section 3	0.2500	21.267	16.918	953.80	20.11	85.07	81.9	86.6	0.0	116.0	14.730	3,000.10	100.2
110.00	Bot - Section 4	0.1875	21.267	12.727	721.80	27.71	113.42	74.5	65.6	0.0		14.730	3,000.10	
115.00		0.1875	20.483	12.254	644.30	26.59	109.24	75.7	60.8	0.0	212.5	14.730	2,884.90	250.5
116.42	Reinf. Top	0.1875	20.261	12.119	623.30	26.27	108.06	76.1	59.4	0.0	58.9	14.730	2,852.60	71.1
120.00		0.1875	19.700	11.781	572.50	25.47	105.07	76.9	56.1	0.0	145.6			
125.00		0.1875	18.917	11.308	506.30	24.35	100.89	78.2	51.7	0.0	196.4			
130.00		0.1875	18.133	10.835	445.40	23.23	96.71	79.4	47.4	0.0	188.4			
135.00		0.1875	17.350	10.362	389.60	22.11	92.53	80.6	43.4	0.0	180.3			
140.00		0.1875	16.567	9.889	338.60	21.00	88.36	81.8	39.5	0.0	172.3			
142.00		0.1875	16.253	9.700	319.60	20.55	86.68	81.9	38.0	0.0	66.7			
143.50		0.1875	16.018	9.558	305.70	20.21	85.43	81.9	36.9	0.0	49.1			
144.90		0.1875	15.799	9.425	293.20	19.90	84.26	81.9	35.9	0.0	45.2			
145.00		0.1875	15.783	9.416	292.30	19.88	84.18	81.9	35.8	0.0	3.2			
145.60		0.1875	15.689	9.359	287.10	19.74	83.68	81.9	35.3	0.0	19.2			
146.00		0.1875	15.627	9.321	283.60	19.65	83.34	81.9	35.1	0.0	12.7			
150.00		0.1875	15.000	8.943	250.50	18.76	80.00	81.9	32.3	0.0	124.3			
										Totals:	**13,370.7**			**9,460.6**

CALCULATED FORCES

Load Case: 1.2D + 1.0W — 116.96 mph Wind with No Ice — 28 Iterations

Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.00

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	-50.86	-27.32	0.00	-2,861.5	0.00	2,861.51	3,156.90	784.09	2,737.03	2,376.08	0	0	0.549
5.00	-48.66	-26.91	0.00	-2,724.9	0.00	2,724.92	3,114.09	767.49	2,622.41	2,293.74	0.12	-0.23	0.533
10.00	-46.51	-26.56	0.00	-2,590.4	0.00	2,590.38	3,070.24	750.89	2,510.23	2,212.03	0.48	-0.46	0.517
12.50	-45.42	-26.35	0.00	-2,524.0	0.00	2,523.98	3,047.93	742.59	2,455.06	2,171.42	0.75	-0.57	0.509
15.00	-44.32	-26.07	0.00	-2,458.1	0.00	2,458.11	3,025.35	734.29	2,400.51	2,131.00	1.08	-0.69	0.500
20.00	-42.19	-25.63	0.00	-2,327.8	0.00	2,327.78	2,979.43	717.69	2,293.24	2,050.69	1.92	-0.91	0.484
25.00	-40.08	-25.19	0.00	-2,199.6	0.00	2,199.64	2,932.46	701.09	2,188.42	1,971.17	3	-1.14	0.467
30.00	-38.04	-24.87	0.00	-2,073.7	0.00	2,073.69	2,874.86	684.49	2,086.05	1,886.18	4.31	-1.36	0.451
30.48	-37.84	-24.81	0.00	-2,061.8	0.00	2,061.75	2,868.16	682.90	2,076.35	1,877.36	4.45	-1.38	0.450
30.48	-37.84	-24.81	0.00	-2,061.8	0.00	2,061.75	2,868.16	682.90	2,076.35	1,877.36	4.45	-1.38	0.640
31.50	-37.46	-24.67	0.00	-2,036.4	0.00	2,036.44	2,853.94	679.51	2,055.82	1,858.68	4.75	-1.43	0.637
35.00	-35.84	-24.44	0.00	-1,950.1	0.00	1,950.10	2,805.14	667.89	1,986.14	1,795.29	5.88	-1.65	0.616
35.67	-35.48	-24.29	0.00	-1,933.8	0.00	1,933.80	2,247.90	566.87	1,716.67	1,468.42	6.11	-1.69	0.707
40.00	-34.18	-23.89	0.00	-1,828.6	0.00	1,828.57	2,218.43	554.88	1,644.85	1,418.22	7.78	-1.96	0.683
45.00	-32.75	-23.44	0.00	-1,709.1	0.00	1,709.11	2,183.45	541.05	1,563.88	1,360.71	10.01	-2.29	0.654
50.00	-31.35	-22.97	0.00	-1,591.9	0.00	1,591.89	2,147.43	527.22	1,484.96	1,303.70	12.59	-2.62	0.625
55.00	-29.97	-22.47	0.00	-1,477.0	0.00	1,477.04	2,110.37	513.38	1,408.08	1,247.24	15.5	-2.94	0.595
60.00	-28.61	-21.96	0.00	-1,364.7	0.00	1,364.69	2,072.27	499.55	1,333.25	1,191.37	18.75	-3.26	0.565
65.00	-27.28	-21.43	0.00	-1,254.9	0.00	1,254.91	2,033.13	485.71	1,260.46	1,136.15	22.33	-3.57	0.534
70.00	-25.99	-20.93	0.00	-1,147.8	0.00	1,147.77	1,981.90	471.88	1,189.71	1,075.63	26.23	-3.87	0.505
73.50	-24.79	-20.58	0.00	-1,074.5	0.00	1,074.53	1,473.88	377.71	952.63	802.19	29.14	-4.08	0.561
75.00	-24.41	-20.29	0.00	-1,043.7	0.00	1,043.67	1,466.20	374.39	935.96	790.93	30.44	-4.17	0.549
80.00	-23.25	-19.72	0.00	-942.2	0.00	942.21	1,439.92	363.32	881.46	753.58	34.96	-4.47	0.507
85.00	-22.08	-19.14	0.00	-843.6	0.00	843.59	1,412.60	352.25	828.60	716.55	39.79	-4.76	0.465
90.00	-20.87	-18.67	0.00	-747.9	0.00	747.90	1,384.24	341.19	777.37	679.88	44.92	-5.03	0.423
91.00	-20.61	-18.45	0.00	-729.2	0.00	729.23	1,378.45	338.97	767.32	672.60	45.98	-5.09	0.415
95.00	-19.66	-18.08	0.00	-655.4	0.00	655.43	1,354.85	330.12	727.77	643.64	50.32	-5.29	0.381
95.33	-19.56	-17.89	0.00	-649.5	0.00	649.47	1,352.87	329.39	724.56	641.26	50.69	-5.31	0.294
95.33	-19.56	-17.89	0.00	-649.5	0.00	649.47	1,352.87	329.39	724.56	641.26	50.69	-5.31	0.378
100.00	-18.56	-17.30	0.00	-565.9	0.00	565.90	1,324.41	319.05	679.81	607.87	55.99	-5.54	0.260
105.00	-17.61	-16.75	0.00	-479.4	0.00	479.39	1,292.93	307.98	633.49	572.61	61.87	-5.7	0.223
108.00	-13.34	-12.92	0.00	-427.4	0.00	427.45	1,265.65	301.34	606.48	548.30	65.48	-5.8	0.200

CALCULATED FORCES

110.00	-13.00	-12.56	0.00	-401.6	0.00	401.62	1,247.06	296.92	588.80	532.22	67.92	-5.85	0.189
110.00	-13.00	-12.56	0.00	-401.6	0.00	401.62	853.21	223.35	444.14	366.30	67.92	-5.85	0.223
115.00	-12.24	-12.09	0.00	-338.8	0.00	338.81	834.97	215.05	411.75	345.03	74.11	-5.99	0.189
116.42	-12.03	-11.84	0.00	-321.6	0.00	321.65	829.60	212.69	402.78	339.02	75.9	-6.03	0.180
116.42	-12.03	-11.84	0.00	-321.6	0.00	321.65	829.60	212.69	402.78	339.02	75.9	-6.03	0.966
120.00	-11.67	-11.44	0.00	-279.3	0.00	279.26	815.69	206.75	380.59	323.94	80.44	-6.11	0.879
125.00	-11.24	-10.97	0.00	-222.1	0.00	222.08	795.37	198.45	350.65	303.07	87.17	-6.74	0.750
130.00	-10.85	-10.64	0.00	-167.2	0.00	167.23	774.01	190.15	321.95	282.47	94.51	-7.28	0.609
135.00	-10.49	-10.31	0.00	-114.0	0.00	114.01	751.61	181.85	294.46	262.20	102.37	-7.73	0.452
140.00	-10.17	-10.05	0.00	-62.5	0.00	62.46	728.17	173.55	268.21	242.30	110.63	-8.05	0.275
142.00	-6.12	-6.19	0.00	-42.4	0.00	42.35	714.97	170.23	258.05	233.31	114.01	-8.14	0.191
143.50	-5.88	-5.86	0.00	-33.1	0.00	33.07	704.51	167.74	250.56	226.49	116.57	-8.19	0.156
144.90	-5.80	-5.77	0.00	-24.9	0.00	24.86	694.75	165.42	243.66	220.22	118.97	-8.23	0.122
145.00	-5.79	-5.76	0.00	-24.3	0.00	24.28	694.05	165.25	243.18	219.78	119.15	-8.23	0.120
145.60	-5.72	-5.30	0.00	-20.8	0.00	20.83	689.87	164.25	240.25	217.12	120.18	-8.25	0.105
146.00	-5.11	-4.68	0.00	-18.7	0.00	18.71	687.08	163.59	238.32	215.36	120.87	-8.25	0.095
150.00	0.00	-3.89	0.00	0.0	0.00	0.00	659.19	156.95	219.37	198.13	127.78	-8.29	0.001

CALCULATED FORCES

Load Case: 0.9D + 1.0W — 116.96 mph Wind with No Ice (Reduced DL) — 28 Iterations

Gust Response Factor: 1.10
Dead load Factor: 0.90
Wind Load Factor: 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-38.13	-27.29	0.00	-2,805.6	0.00	2,805.58	3,156.90	784.09	2,737.03	2,376.08	0	0	0.536
5.00	-36.46	-26.83	0.00	-2,669.1	0.00	2,669.13	3,114.09	767.49	2,622.41	2,293.74	0.12	-0.22	0.520
10.00	-34.83	-26.45	0.00	-2,535.0	0.00	2,534.98	3,070.24	750.89	2,510.23	2,212.03	0.47	-0.45	0.504
12.50	-34.00	-26.22	0.00	-2,468.9	0.00	2,468.86	3,047.93	742.59	2,455.06	2,171.42	0.74	-0.56	0.496
15.00	-33.16	-25.90	0.00	-2,403.3	0.00	2,403.32	3,025.35	734.29	2,400.51	2,131.00	1.06	-0.67	0.487
20.00	-31.54	-25.43	0.00	-2,273.8	0.00	2,273.82	2,979.43	717.69	2,293.24	2,050.69	1.88	-0.89	0.471
25.00	-29.94	-24.95	0.00	-2,146.7	0.00	2,146.70	2,932.46	701.09	2,188.42	1,971.17	2.94	-1.11	0.454
30.00	-28.40	-24.63	0.00	-2,021.9	0.00	2,021.92	2,874.86	684.49	2,086.05	1,886.18	4.22	-1.33	0.438
30.48	-28.24	-24.56	0.00	-2,010.1	0.00	2,010.10	2,868.16	682.90	2,076.35	1,877.36	4.35	-1.35	0.437
30.48	-28.24	-24.56	0.00	-2,010.1	0.00	2,010.10	2,868.16	682.90	2,076.35	1,877.36	4.35	-1.35	0.622
31.50	-27.95	-24.40	0.00	-1,985.0	0.00	1,985.05	2,853.94	679.51	2,055.82	1,858.68	4.65	-1.4	0.619
35.00	-26.73	-24.15	0.00	-1,899.7	0.00	1,899.67	2,805.14	667.89	1,986.14	1,795.29	5.75	-1.61	0.598
35.67	-26.45	-23.98	0.00	-1,883.6	0.00	1,883.56	2,247.90	566.87	1,716.67	1,468.42	5.98	-1.66	0.686
40.00	-25.44	-23.54	0.00	-1,779.7	0.00	1,779.67	2,218.43	554.88	1,644.85	1,418.22	7.61	-1.92	0.662
45.00	-24.35	-23.06	0.00	-1,662.0	0.00	1,661.95	2,183.45	541.05	1,563.88	1,360.71	9.79	-2.24	0.634
50.00	-23.28	-22.55	0.00	-1,546.7	0.00	1,546.67	2,147.43	527.22	1,484.96	1,303.70	12.3	-2.56	0.605
55.00	-22.22	-22.02	0.00	-1,433.9	0.00	1,433.92	2,110.37	513.38	1,408.08	1,247.24	15.15	-2.87	0.576
60.00	-21.19	-21.48	0.00	-1,323.8	0.00	1,323.83	2,072.27	499.55	1,333.25	1,191.37	18.31	-3.17	0.546
65.00	-20.18	-20.93	0.00	-1,216.4	0.00	1,216.43	2,033.13	485.71	1,260.46	1,136.15	21.8	-3.47	0.515
70.00	-19.20	-20.42	0.00	-1,111.8	0.00	1,111.79	1,981.90	471.88	1,189.71	1,075.63	25.59	-3.77	0.487
73.50	-18.29	-20.07	0.00	-1,040.3	0.00	1,040.33	1,473.88	377.71	952.63	802.19	28.43	-3.97	0.541
75.00	-18.00	-19.77	0.00	-1,010.2	0.00	1,010.23	1,466.20	374.39	935.96	790.93	29.69	-4.06	0.529
80.00	-17.12	-19.19	0.00	-911.4	0.00	911.39	1,439.92	363.32	881.46	753.58	34.1	-4.35	0.489
85.00	-16.23	-18.60	0.00	-815.4	0.00	815.45	1,412.60	352.25	828.60	716.55	38.8	-4.63	0.448
90.00	-15.32	-18.14	0.00	-722.5	0.00	722.47	1,384.24	341.19	777.37	679.88	43.78	-4.89	0.407
91.00	-15.13	-17.91	0.00	-704.3	0.00	704.33	1,378.45	338.97	767.32	672.60	44.81	-4.94	0.399
95.00	-14.42	-17.56	0.00	-632.7	0.00	632.70	1,354.85	330.12	727.77	643.64	49.04	-5.14	0.366
95.33	-14.34	-17.36	0.00	-626.9	0.00	626.91	1,352.87	329.39	724.56	641.26	49.39	-5.16	0.282
95.33	-14.34	-17.36	0.00	-626.9	0.00	626.91	1,352.87	329.39	724.56	641.26	49.39	-5.16	0.363
100.00	-13.59	-16.77	0.00	-545.8	0.00	545.85	1,324.41	319.05	679.81	607.87	54.55	-5.38	0.249
105.00	-12.88	-16.23	0.00	-462.0	0.00	462.00	1,292.93	307.98	633.49	572.61	60.26	-5.54	0.214
108.00	-9.75	-12.52	0.00	-411.6	0.00	411.62	1,265.65	301.34	606.48	548.30	63.77	-5.63	0.191
110.00	-9.50	-12.17	0.00	-386.6	0.00	386.58	1,247.06	296.92	588.80	532.22	66.14	-5.69	0.181
110.00	-9.50	-12.17	0.00	-386.6	0.00	386.58	853.21	223.35	444.14	366.30	66.14	-5.69	0.213
115.00	-8.94	-11.71	0.00	-325.8	0.00	325.76	834.97	215.05	411.75	345.03	72.15	-5.81	0.180
116.42	-8.78	-11.46	0.00	-309.1	0.00	309.13	829.60	212.69	402.78	339.02	73.88	-5.85	0.171
116.42	-8.78	-11.46	0.00	-309.1	0.00	309.13	829.60	212.69	402.78	339.02	73.88	-5.85	0.925
120.00	-8.50	-11.05	0.00	-268.1	0.00	268.09	815.69	206.75	380.59	323.94	78.3	-5.94	0.841
125.00	-8.18	-10.56	0.00	-212.8	0.00	212.85	795.37	198.45	350.65	303.07	84.83	-6.53	0.715
130.00	-7.88	-10.21	0.00	-160.1	0.00	160.07	774.01	190.15	321.95	282.47	91.94	-7.06	0.580
135.00	-7.61	-9.87	0.00	-109.0	0.00	109.00	751.61	181.85	294.46	262.20	99.56	-7.49	0.429
140.00	-7.37	-9.61	0.00	-59.6	0.00	59.64	728.17	173.55	268.21	242.30	107.55	-7.79	0.259
142.00	-4.43	-5.92	0.00	-40.4	0.00	40.42	714.97	170.23	258.05	233.31	110.83	-7.88	0.181
143.50	-4.26	-5.60	0.00	-31.5	0.00	31.53	704.51	167.74	250.56	226.49	113.3	-7.93	0.146
144.90	-4.20	-5.52	0.00	-23.7	0.00	23.69	694.75	165.42	243.66	220.22	115.63	-7.96	0.115
145.00	-4.20	-5.50	0.00	-23.1	0.00	23.14	694.05	165.25	243.18	219.78	115.79	-7.96	0.112
145.60	-4.16	-5.05	0.00	-19.8	0.00	19.83	689.87	164.25	240.25	217.12	116.79	-7.98	0.098
146.00	-3.71	-4.45	0.00	-17.8	0.00	17.81	687.08	163.59	238.32	215.36	117.46	-7.98	0.089
150.00	0.00	-3.89	0.00	0.0	0.00	0.00	659.19	156.95	219.37	198.13	124.15	-8.02	0.001

CALCULATED FORCES

Load Case: 1.2D + 1.0Di + 1.0Wi — 48.73 mph Wind with 0.85" Radial Ice — 27 Iterations

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

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	-64.98	-5.72	0.00	-663.7	0.00	663.71	3,156.90	784.09	2,737.03	2,376.08	0	0	0.136
5.00	-62.60	-5.69	0.00	-635.1	0.00	635.09	3,114.09	767.49	2,622.41	2,293.74	0.03	-0.05	0.133
10.00	-60.21	-5.66	0.00	-606.6	0.00	606.64	3,070.24	750.89	2,510.23	2,212.03	0.11	-0.11	0.129
12.50	-59.01	-5.64	0.00	-592.5	0.00	592.49	3,047.93	742.59	2,455.06	2,171.42	0.18	-0.13	0.127
15.00	-57.82	-5.61	0.00	-578.4	0.00	578.39	3,025.35	734.29	2,400.51	2,131.00	0.25	-0.16	0.126
20.00	-55.45	-5.57	0.00	-550.3	0.00	550.32	2,979.43	717.69	2,293.24	2,050.69	0.45	-0.21	0.122
25.00	-53.10	-5.52	0.00	-522.5	0.00	522.47	2,932.46	701.09	2,188.42	1,971.17	0.7	-0.27	0.118
30.00	-50.76	-5.49	0.00	-494.8	0.00	494.85	2,874.86	684.49	2,086.05	1,886.18	1.01	-0.32	0.115
30.48	-50.54	-5.48	0.00	-492.2	0.00	492.21	2,868.16	682.90	2,076.35	1,877.36	1.04	-0.33	0.114
30.48	-50.54	-5.48	0.00	-492.2	0.00	492.21	2,868.16	682.90	2,076.35	1,877.36	1.04	-0.33	0.162
31.50	-50.14	-5.47	0.00	-486.6	0.00	486.62	2,853.94	679.51	2,055.82	1,858.68	1.11	-0.34	0.161
35.00	-48.33	-5.45	0.00	-467.5	0.00	467.47	2,805.14	667.89	1,986.14	1,795.29	1.38	-0.39	0.157
35.67	-47.99	-5.44	0.00	-463.8	0.00	463.84	2,247.90	566.87	1,716.67	1,468.42	1.43	-0.4	0.180
40.00	-46.51	-5.40	0.00	-440.3	0.00	440.28	2,218.43	554.88	1,644.85	1,418.22	1.83	-0.46	0.175
45.00	-44.90	-5.36	0.00	-413.3	0.00	413.29	2,183.45	541.05	1,563.88	1,360.71	2.36	-0.54	0.168
50.00	-43.30	-5.31	0.00	-386.5	0.00	386.51	2,147.43	527.22	1,484.96	1,303.70	2.97	-0.62	0.161
55.00	-41.72	-5.25	0.00	-360.0	0.00	359.98	2,110.37	513.38	1,408.08	1,247.24	3.66	-0.7	0.154
60.00	-40.16	-5.19	0.00	-333.7	0.00	333.72	2,072.27	499.55	1,333.25	1,191.37	4.44	-0.78	0.147
65.00	-38.61	-5.12	0.00	-307.8	0.00	307.77	2,033.13	485.71	1,260.46	1,136.15	5.3	-0.85	0.140
70.00	-37.09	-5.06	0.00	-282.1	0.00	282.14	1,981.90	471.88	1,189.71	1,075.63	6.23	-0.93	0.133
73.50	-35.72	-5.01	0.00	-264.4	0.00	264.44	1,473.88	377.71	952.63	802.19	6.93	-0.98	0.148
75.00	-35.30	-4.97	0.00	-256.9	0.00	256.92	1,466.20	374.39	935.96	790.93	7.24	-1	0.145
80.00	-33.91	-4.89	0.00	-232.1	0.00	232.07	1,439.92	363.32	881.46	753.58	8.33	-1.08	0.134
85.00	-32.46	-4.78	0.00	-207.6	0.00	207.63	1,412.60	352.25	828.60	716.55	9.5	-1.15	0.124
90.00	-30.87	-4.65	0.00	-183.7	0.00	183.71	1,384.24	341.19	777.37	679.88	10.74	-1.21	0.113
91.00	-30.56	-4.60	0.00	-179.1	0.00	179.06	1,378.45	338.97	767.32	672.60	10.99	-1.23	0.110
95.00	-29.30	-4.49	0.00	-160.7	0.00	160.67	1,354.85	330.12	727.77	643.64	12.04	-1.28	0.102
95.33	-29.20	-4.45	0.00	-159.2	0.00	159.19	1,352.87	329.39	724.56	641.26	12.13	-1.28	0.082
95.33	-29.20	-4.45	0.00	-159.2	0.00	159.19	1,352.87	329.39	724.56	641.26	12.13	-1.28	0.101
100.00	-27.84	-4.27	0.00	-138.4	0.00	138.42	1,324.41	319.05	679.81	607.87	13.42	-1.34	0.073
105.00	-26.53	-4.10	0.00	-117.1	0.00	117.07	1,292.93	307.98	633.49	572.61	14.84	-1.38	0.063
108.00	-20.28	-3.17	0.00	-104.4	0.00	104.41	1,265.65	301.34	606.48	548.30	15.72	-1.4	0.056
110.00	-19.80	-3.08	0.00	-98.1	0.00	98.07	1,247.06	296.92	588.80	532.22	16.31	-1.42	0.053
110.00	-19.80	-3.08	0.00	-98.1	0.00	98.07	853.21	223.35	444.14	366.30	16.31	-1.42	0.063
115.00	-18.69	-2.93	0.00	-82.7	0.00	82.68	834.97	215.05	411.75	345.03	17.81	-1.45	0.054
116.42	-18.38	-2.86	0.00	-78.5	0.00	78.52	829.60	212.69	402.78	339.02	18.24	-1.46	0.052
116.42	-18.38	-2.86	0.00	-78.5	0.00	78.52	829.60	212.69	402.78	339.02	18.24	-1.46	0.254
120.00	-17.80	-2.74	0.00	-68.3	0.00	68.27	815.69	206.75	380.59	323.94	19.34	-1.48	0.233
125.00	-17.20	-2.67	0.00	-54.6	0.00	54.56	795.37	198.45	350.65	303.07	20.97	-1.63	0.202
130.00	-16.66	-2.61	0.00	-41.2	0.00	41.21	774.01	190.15	321.95	282.47	22.76	-1.77	0.168
135.00	-16.14	-2.54	0.00	-28.2	0.00	28.16	751.61	181.85	294.46	262.20	24.67	-1.88	0.129
140.00	-15.63	-2.47	0.00	-15.5	0.00	15.47	728.17	173.55	268.21	242.30	26.68	-1.96	0.086
142.00	-9.35	-1.53	0.00	-10.5	0.00	10.53	714.97	170.23	258.05	233.31	27.51	-1.98	0.058
143.50	-8.91	-1.45	0.00	-8.2	0.00	8.23	704.51	167.74	250.56	226.49	28.13	-1.99	0.049
144.90	-8.75	-1.43	0.00	-6.2	0.00	6.20	694.75	165.42	243.66	220.22	28.72	-2	0.041
145.00	-8.74	-1.42	0.00	-6.1	0.00	6.06	694.05	165.25	243.18	219.78	28.76	-2	0.040
145.60	-8.48	-1.32	0.00	-5.2	0.00	5.21	689.87	164.25	240.25	217.12	29.01	-2	0.036
146.00	-7.67	-1.17	0.00	-4.7	0.00	4.68	687.08	163.59	238.32	215.36	29.18	-2.01	0.033
150.00	0.00	-0.90	0.00	0.0	0.00	0.00	659.19	156.95	219.37	198.13	30.86	-2.02	0.000

CALCULATED FORCES

Load Case: 1.0D + 1.0W 60 mph Wind with No Ice 26 Iterations

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

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	-42.43	-6.43	0.00	-666.3	0.00	666.30	3,156.90	784.09	2,737.03	2,376.08	0	0	0.133
5.00	-40.67	-6.32	0.00	-634.2	0.00	634.16	3,114.09	767.49	2,622.41	2,293.74	0.03	-0.05	0.129
10.00	-38.94	-6.24	0.00	-602.6	0.00	602.55	3,070.24	750.89	2,510.23	2,212.03	0.11	-0.11	0.125
12.50	-38.08	-6.18	0.00	-587.0	0.00	586.96	3,047.93	742.59	2,455.06	2,171.42	0.18	-0.13	0.123
15.00	-37.22	-6.11	0.00	-571.5	0.00	571.50	3,025.35	734.29	2,400.51	2,131.00	0.25	-0.16	0.121
20.00	-35.51	-6.00	0.00	-541.0	0.00	540.95	2,979.43	717.69	2,293.24	2,050.69	0.45	-0.21	0.117
25.00	-33.83	-5.89	0.00	-510.9	0.00	510.93	2,932.46	701.09	2,188.42	1,971.17	0.7	-0.26	0.112
30.00	-32.16	-5.82	0.00	-481.5	0.00	481.46	2,874.86	684.49	2,086.05	1,886.18	1	-0.32	0.108
30.48	-32.00	-5.80	0.00	-478.7	0.00	478.67	2,868.16	682.90	2,076.35	1,877.36	1.03	-0.32	0.108
30.48	-32.00	-5.80	0.00	-478.7	0.00	478.67	2,868.16	682.90	2,076.35	1,877.36	1.03	-0.32	0.154
31.50	-31.72	-5.77	0.00	-472.8	0.00	472.75	2,853.94	679.51	2,055.82	1,858.68	1.1	-0.33	0.153
35.00	-30.41	-5.71	0.00	-452.6	0.00	452.56	2,805.14	667.89	1,986.14	1,795.29	1.37	-0.38	0.148
35.67	-30.16	-5.67	0.00	-448.8	0.00	448.76	2,247.90	566.87	1,716.67	1,468.42	1.42	-0.39	0.170
40.00	-29.16	-5.57	0.00	-424.2	0.00	424.18	2,218.43	554.88	1,644.85	1,418.22	1.81	-0.46	0.164
45.00	-28.05	-5.46	0.00	-396.3	0.00	396.31	2,183.45	541.05	1,563.88	1,360.71	2.33	-0.53	0.157
50.00	-26.96	-5.35	0.00	-369.0	0.00	369.00	2,147.43	527.22	1,484.96	1,303.70	2.93	-0.61	0.150
55.00	-25.88	-5.23	0.00	-342.3	0.00	342.26	2,110.37	513.38	1,408.08	1,247.24	3.6	-0.68	0.143
60.00	-24.82	-5.10	0.00	-316.1	0.00	316.13	2,072.27	499.55	1,333.25	1,191.37	4.36	-0.76	0.136
65.00	-23.77	-4.98	0.00	-290.6	0.00	290.62	2,033.13	485.71	1,260.46	1,136.15	5.19	-0.83	0.128
70.00	-22.74	-4.86	0.00	-265.7	0.00	265.74	1,981.90	471.88	1,189.71	1,075.63	6.09	-0.9	0.121
73.50	-21.76	-4.78	0.00	-248.7	0.00	248.74	1,473.88	377.71	952.63	802.19	6.77	-0.95	0.135
75.00	-21.48	-4.71	0.00	-241.6	0.00	241.58	1,466.20	374.39	935.96	790.93	7.07	-0.97	0.132
80.00	-20.55	-4.57	0.00	-218.0	0.00	218.04	1,439.92	363.32	881.46	753.58	8.12	-1.04	0.122
85.00	-19.61	-4.43	0.00	-195.2	0.00	195.18	1,412.60	352.25	828.60	716.55	9.24	-1.1	0.112
90.00	-18.61	-4.33	0.00	-173.0	0.00	173.01	1,384.24	341.19	777.37	679.88	10.43	-1.17	0.102
91.00	-18.41	-4.27	0.00	-168.7	0.00	168.68	1,378.45	338.97	767.32	672.60	10.68	-1.18	0.100
95.00	-17.62	-4.19	0.00	-151.6	0.00	151.58	1,354.85	330.12	727.77	643.64	11.69	-1.23	0.092
95.33	-17.55	-4.14	0.00	-150.2	0.00	150.20	1,352.87	329.39	724.56	641.26	11.77	-1.23	0.073
95.33	-17.55	-4.14	0.00	-150.2	0.00	150.20	1,352.87	329.39	724.56	641.26	11.77	-1.23	0.092
100.00	-16.72	-4.01	0.00	-130.8	0.00	130.85	1,324.41	319.05	679.81	607.87	13.01	-1.28	0.065
105.00	-15.91	-3.88	0.00	-110.8	0.00	110.81	1,292.93	307.98	633.49	572.61	14.37	-1.32	0.056
108.00	-12.09	-2.99	0.00	-98.8	0.00	98.78	1,265.65	301.34	606.48	548.30	15.21	-1.34	0.050
110.00	-11.79	-2.91	0.00	-92.8	0.00	92.79	1,247.06	296.92	588.80	532.22	15.78	-1.36	0.047
110.00	-11.79	-2.91	0.00	-92.8	0.00	92.79	853.21	223.35	444.14	366.30	15.78	-1.36	0.056
115.00	-11.14	-2.80	0.00	-78.2	0.00	78.25	834.97	215.05	411.75	345.03	17.21	-1.39	0.048
116.42	-10.95	-2.74	0.00	-74.3	0.00	74.27	829.60	212.69	402.78	339.02	17.63	-1.4	0.045
116.42	-10.95	-2.74	0.00	-74.3	0.00	74.27	829.60	212.69	402.78	339.02	17.63	-1.4	0.232
120.00	-10.66	-2.65	0.00	-64.5	0.00	64.46	815.69	206.75	380.59	323.94	18.68	-1.42	0.212
125.00	-10.35	-2.53	0.00	-51.2	0.00	51.23	795.37	198.45	350.65	303.07	20.25	-1.56	0.182
130.00	-10.05	-2.46	0.00	-38.6	0.00	38.56	774.01	190.15	321.95	282.47	21.95	-1.69	0.150
135.00	-9.77	-2.38	0.00	-26.3	0.00	26.28	751.61	181.85	294.46	262.20	23.78	-1.79	0.113
140.00	-9.50	-2.32	0.00	-14.4	0.00	14.39	728.17	173.55	268.21	242.30	25.69	-1.86	0.073
142.00	-5.74	-1.43	0.00	-9.8	0.00	9.75	714.97	170.23	258.05	233.31	26.48	-1.88	0.050
143.50	-5.51	-1.35	0.00	-7.6	0.00	7.61	704.51	167.74	250.56	226.49	27.07	-1.9	0.041
144.90	-5.43	-1.33	0.00	-5.7	0.00	5.72	694.75	165.42	243.66	220.22	27.63	-1.91	0.034
145.00	-5.42	-1.33	0.00	-5.6	0.00	5.59	694.05	165.25	243.18	219.78	27.67	-1.91	0.033
145.60	-5.31	-1.22	0.00	-4.8	0.00	4.79	689.87	164.25	240.25	217.12	27.91	-1.91	0.030
146.00	-4.74	-1.08	0.00	-4.3	0.00	4.30	687.08	163.59	238.32	215.36	28.07	-1.91	0.027
150.00	0.00	-0.92	0.00	0.0	0.00	0.00	659.19	156.95	219.37	198.13	29.68	-1.92	0.000

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.204
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.054
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a:	1.600
Site Coefficient F_v:	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.218
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.086
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_S:	0.030
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	3.140
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	2.000
Total Unfactored Dead Load:	42.430 k
Seismic Base Shear (E):	1.270 k

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh **Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
44	148	173	3,782	0.010	13	215
43	145.8	18	373	0.001	1	22
42	145.3	26	558	0.002	2	33
41	144.95	4	93	0.000	0	5
40	144.2	62	1,292	0.004	5	77
39	142.75	67	1,371	0.004	5	84
38	141	107	2,128	0.006	7	133
37	137.5	273	5,166	0.014	18	340
36	132.5	281	4,938	0.014	17	350
35	127.5	289	4,703	0.013	16	360
34	122.5	316	4,746	0.013	17	393
33	118.21	286	3,990	0.011	14	355
32	115.71	186	2,484	0.007	9	231
31	112.5	658	8,333	0.023	29	819
30	109	294	3,498	0.010	12	366
29	106.5	468	5,311	0.014	19	582
28	102.5	808	8,486	0.023	30	1,004
27	97.665	834	7,955	0.022	28	1,037
26	95.165	65	587	0.002	2	81
25	93	789	6,826	0.019	24	981
24	90.5	198	1,625	0.004	6	247
23	87.5	998	7,643	0.021	27	1,241
22	82.5	943	6,417	0.018	22	1,172
21	77.5	925	5,557	0.015	19	1,151
20	74.25	280	1,542	0.004	5	348
19	71.75	973	5,010	0.014	17	1,210
18	67.5	1,032	4,701	0.013	16	1,283
17	62.5	1,045	4,083	0.011	14	1,300
16	57.5	1,059	3,500	0.010	12	1,316
15	52.5	1,072	2,955	0.008	10	1,333
14	47.5	1,085	2,449	0.007	9	1,350
13	42.5	1,099	1,985	0.005	7	1,366
12	37.8334	998	1,428	0.004	5	1,240
11	35.3334	248	309	0.001	1	308
10	33.25	1,309	1,447	0.004	5	1,628
9	30.99	270	259	0.001	1	335
8	30.24	159	146	0.000	1	198
7	27.5	1,667	1,261	0.004	4	2,073

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh **Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
6	22.5	1,683	852	0.002	3	2,093
5	17.5	1,699	520	0.001	2	2,113
4	13.75	856	162	0.000	1	1,064
3	11.25	860	109	0.000	0	1,069
2	7.5	1,731	97	0.000	0	2,153
1	2.5	1,747	11	0.000	0	2,173
Raycap DC6-48-60-18-8F	150	60	1,350	0.004	5	75
Ericsson RRUS 8843 B2, B66A	150	216	4,860	0.013	17	269
Ericsson RRUS 4478 B14	150	180	4,043	0.011	14	223
Ericsson RRUS 4449 B5, B12	150	213	4,792	0.013	17	265
Ericsson RRUS 32 B30	150	180	4,050	0.011	14	224
Ericsson RRUS E2 B29	150	180	4,050	0.011	14	224
Ericsson AIR 6419 B77G	150	198	4,462	0.012	16	247
Ericsson AIR 6449 B77D/ C-Band	150	245	5,508	0.015	19	304
CCI DMP65R-BU6DA	150	238	5,360	0.015	19	296
Quintel QD6616-7	150	390	8,775	0.024	31	485
Generic Round Platform with Handrails	150	2,500	56,250	0.154	196	3,109
Generic Round Stand-Off	146	562	11,990	0.033	42	699
Argus LLPX310R	145.6	86	1,819	0.005	6	107
Generic 12" x 12" Junction Box	144.9	20	420	0.001	1	25
Generic RRU (Model TBD)	143.5	165	3,398	0.009	12	205
DragonWave Horizon Compact	142	32	641	0.002	2	40
DragonWave A-ANT-23G-1-C	142	15	302	0.001	1	19
Alcatel-Lucent RRH2x50-08	142	317	6,400	0.018	22	395
Alcatel-Lucent 1900 MHz 4X45 RRH	142	180	3,630	0.010	13	224
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	142	210	4,234	0.012	15	261
DragonWave A-ANT-11G-2-C	142	27	544	0.002	2	34
RFS APXVTM14-ALU-I20	142	169	3,400	0.009	12	210
DragonWave A-ANT-11G-2.5-C	142	48	960	0.003	3	59
Commscope NNVV-65B-R4	142	232	4,682	0.013	16	289
Platform with Handrails RMQP-496-HK	142	2,449	49,376	0.135	172	3,045
Commscope CBC78T-DS-43-2X	108	104	1,207	0.003	4	129
Generic GPS	108	10	117	0.000	0	12
Samsung RT4401-48A	108	56	651	0.002	2	69
Nokia B5 RRH4x40-850	108	146	1,697	0.005	6	181
Samsung B5/B13 RRH-BR04C	108	211	2,460	0.007	9	262
Samsung B2/B66A RRH-BR049	108	253	2,953	0.008	10	315
RFS DB-T1-6Z-8AB-0Z	108	44	513	0.001	2	55
Generic Mount Reinforcement	108	200	2,333	0.006	8	249
Commscope LNX-6514DS-VTM	108	116	1,358	0.004	5	145
Commscope JAHH-65B-R3B	108	364	4,241	0.012	15	452
Generic Round Low Profile Platform	108	1,875	21,870	0.060	76	2,332
	Totals:	**42,431**	**365,383**	**1.000**	**1,273**	**52,763**

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh **Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
44	148	173	3,782	0.010	13	148
43	145.8	18	373	0.001	1	15
42	145.3	26	558	0.002	2	23
41	144.95	4	93	0.000	0	4
40	144.2	62	1,292	0.004	5	53
39	142.75	67	1,371	0.004	5	58
38	141	107	2,128	0.006	7	92
37	137.5	273	5,166	0.014	18	234
36	132.5	281	4,938	0.014	17	241
35	127.5	289	4,703	0.013	16	248
34	122.5	316	4,746	0.013	17	271
33	118.21	286	3,990	0.011	14	245
32	115.71	186	2,484	0.007	9	159

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh **Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
31	112.5	658	8,333	0.023	29	564
30	109	294	3,498	0.010	12	252
29	106.5	468	5,311	0.014	19	401
28	102.5	808	8,486	0.023	30	692
27	97.665	834	7,955	0.022	28	714
26	95.165	65	587	0.002	2	56
25	93	789	6,826	0.019	24	676
24	90.5	198	1,625	0.004	6	170
23	87.5	998	7,643	0.021	27	855
22	82.5	943	6,417	0.018	22	808
21	77.5	925	5,557	0.015	19	792
20	74.25	280	1,542	0.004	5	240
19	71.75	973	5,010	0.014	17	834
18	67.5	1,032	4,701	0.013	16	884
17	62.5	1,045	4,083	0.011	14	895
16	57.5	1,059	3,500	0.010	12	907
15	52.5	1,072	2,955	0.008	10	918
14	47.5	1,085	2,449	0.007	9	930
13	42.5	1,099	1,985	0.005	7	941
12	37.8334	998	1,428	0.004	5	854
11	35.3334	248	309	0.001	1	212
10	33.25	1,309	1,447	0.004	5	1,121
9	30.99	270	259	0.001	1	231
8	30.24	159	146	0.000	1	136
7	27.5	1,667	1,261	0.004	4	1,428
6	22.5	1,683	852	0.002	3	1,441
5	17.5	1,699	520	0.001	2	1,455
4	13.75	856	162	0.000	1	733
3	11.25	860	109	0.000	0	736
2	7.5	1,731	97	0.000	0	1,483
1	2.5	1,747	11	0.000	0	1,497
Raycap DC6-48-60-18-8F	150	60	1,350	0.004	5	51
Ericsson RRUS 8843 B2, B66A	150	216	4,860	0.013	17	185
Ericsson RRUS 4478 B14	150	180	4,043	0.011	14	154
Ericsson RRUS 4449 B5, B12	150	213	4,792	0.013	17	182
Ericsson RRUS 32 B30	150	180	4,050	0.011	14	154
Ericsson RRUS E2 B29	150	180	4,050	0.011	14	154
Ericsson AIR 6419 B77G	150	198	4,462	0.012	16	170
Ericsson AIR 6449 B77D/ C-Band	150	245	5,508	0.015	19	210
CCI DMP65R-BU6DA	150	238	5,360	0.015	19	204
Quintel QD6616-7	150	390	8,775	0.024	31	334
Generic Round Platform with Handrails	150	2,500	56,250	0.154	196	2,141
Generic Round Stand-Off	146	562	11,990	0.033	42	482
Argus LLPX310R	145.6	86	1,819	0.005	6	73
Generic 12" x 12" Junction Box	144.9	20	420	0.001	1	17
Generic RRU (Model TBD)	143.5	165	3,398	0.009	12	141
DragonWave Horizon Compact	142	32	641	0.002	2	27
DragonWave A-ANT-23G-1-C	142	15	302	0.001	1	13
Alcatel-Lucent RRH2x50-08	142	317	6,400	0.018	22	272
Alcatel-Lucent 1900 MHz 4X45 RRH	142	180	3,630	0.010	13	154
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	142	210	4,234	0.012	15	180
DragonWave A-ANT-11G-2-C	142	27	544	0.002	2	23
RFS APXVTM14-ALU-I20	142	169	3,400	0.009	12	144
DragonWave A-ANT-11G-2.5-C	142	48	960	0.003	3	41
Commscope NNVV-65B-R4	142	232	4,682	0.013	16	199
Platform with Handrails RMQP-496-HK	142	2,449	49,376	0.135	172	2,097
Commscope CBC78T-DS-43-2X	108	104	1,207	0.003	4	89
Generic GPS	108	10	117	0.000	0	9
Samsung RT4401-48A	108	56	651	0.002	2	48
Nokia B5 RRH4x40-850	108	146	1,697	0.005	6	125
Samsung B5/B13 RRH-BR04C	108	211	2,460	0.007	9	181

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh **Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
Samsung B2/B66A RRH-BR049	108	253	2,953	0.008	10	217
RFS DB-T1-6Z-8AB-0Z	108	44	513	0.001	2	38
Generic Mount Reinforcement	108	200	2,333	0.006	8	171
Commscope LNX-6514DS-VTM	108	116	1,358	0.004	5	100
Commscope JAHH-65B-R3B	108	364	4,241	0.012	15	311
Generic Round Low Profile Platform	108	1,875	21,870	0.060	76	1,606
	Totals:	**42,431**	**365,383**	**1.000**	**1,273**	**36,341**

1.2D + 1.0Ev + 1.0Eh **Seismic**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-50.59	-1.28	0.00	-170.60	0.00	170.60	3,156.90	784.09	2,737	2,376.08	0.00	0.00	0.04
5.00	-48.44	-1.29	0.00	-164.21	0.00	164.21	3,114.09	767.49	2,622	2,293.74	0.01	-0.01	0.04
10.00	-47.37	-1.30	0.00	-157.76	0.00	157.76	3,070.24	750.89	2,510	2,212.03	0.03	-0.03	0.04
12.50	-46.30	-1.30	0.00	-154.52	0.00	154.52	3,047.93	742.59	2,455	2,171.42	0.05	-0.03	0.04
12.50	-46.30	-1.30	0.00	-154.52	0.00	154.52	3,047.93	742.59	2,455	2,171.42	0.05	-0.03	0.04
15.00	-44.19	-1.31	0.00	-151.27	0.00	151.27	3,025.35	734.29	2,401	2,131.00	0.07	-0.04	0.04
20.00	-42.10	-1.31	0.00	-144.74	0.00	144.74	2,979.43	717.69	2,293	2,050.69	0.12	-0.06	0.04
25.00	-40.02	-1.32	0.00	-138.18	0.00	138.18	2,932.46	701.09	2,188	1,971.17	0.18	-0.07	0.04
30.00	-39.83	-1.32	0.00	-131.60	0.00	131.60	2,874.86	684.49	2,086	1,886.18	0.26	-0.08	0.04
30.48	-39.49	-1.32	0.00	-130.97	0.00	130.97	2,868.16	682.90	2,076	1,877.36	0.27	-0.09	0.04
30.48	-39.49	-1.32	0.00	-130.97	0.00	130.97	2,868.16	682.90	2,076	1,877.36	0.27	-0.09	0.05
31.50	-37.86	-1.32	0.00	-129.62	0.00	129.62	2,853.94	679.51	2,056	1,858.68	0.29	-0.09	0.05
35.00	-37.55	-1.32	0.00	-125.01	0.00	125.01	2,805.14	667.89	1,986	1,795.29	0.36	-0.10	0.05
35.67	-36.31	-1.32	0.00	-124.13	0.00	124.13	2,247.90	566.87	1,717	1,468.42	0.37	-0.11	0.06
40.00	-34.95	-1.32	0.00	-118.40	0.00	118.40	2,218.43	554.88	1,645	1,418.22	0.48	-0.12	0.05
45.00	-33.60	-1.32	0.00	-111.79	0.00	111.79	2,183.45	541.05	1,564	1,360.71	0.62	-0.14	0.05
50.00	-32.26	-1.32	0.00	-105.17	0.00	105.17	2,147.43	527.22	1,485	1,303.70	0.78	-0.17	0.05
55.00	-30.95	-1.32	0.00	-98.55	0.00	98.55	2,110.37	513.38	1,408	1,247.24	0.96	-0.19	0.05
60.00	-29.65	-1.31	0.00	-91.97	0.00	91.97	2,072.27	499.55	1,333	1,191.37	1.17	-0.21	0.05
65.00	-28.36	-1.30	0.00	-85.42	0.00	85.42	2,033.13	485.71	1,260	1,136.15	1.40	-0.23	0.04
70.00	-27.15	-1.28	0.00	-78.92	0.00	78.92	1,981.90	471.88	1,190	1,075.63	1.65	-0.25	0.04
73.50	-26.80	-1.28	0.00	-74.42	0.00	74.42	1,473.88	377.71	953	802.19	1.84	-0.26	0.05
75.00	-25.65	-1.26	0.00	-72.50	0.00	72.50	1,466.20	374.39	936	790.93	1.92	-0.27	0.05
80.00	-24.48	-1.24	0.00	-66.18	0.00	66.18	1,439.92	363.32	881	753.58	2.22	-0.29	0.04
85.00	-23.24	-1.22	0.00	-59.96	0.00	59.96	1,412.60	352.25	829	716.55	2.53	-0.31	0.04
90.00	-22.99	-1.22	0.00	-53.86	0.00	53.86	1,384.24	341.19	777	679.88	2.87	-0.33	0.04
91.00	-22.01	-1.19	0.00	-52.64	0.00	52.64	1,378.45	338.97	767	672.60	2.94	-0.34	0.04
91.00	-22.01	-1.19	0.00	-52.64	0.00	52.64	1,378.45	338.97	767	672.60	2.94	-0.34	0.04
95.00	-21.93	-1.19	0.00	-47.87	0.00	47.87	1,354.85	330.12	728	643.64	3.23	-0.35	0.04
95.33	-20.89	-1.16	0.00	-47.48	0.00	47.48	1,352.87	329.39	725	641.26	3.25	-0.35	0.03
95.33	-20.89	-1.16	0.00	-47.48	0.00	47.48	1,352.87	329.39	725	641.26	3.25	-0.35	0.03
100.00	-19.89	-1.13	0.00	-42.06	0.00	42.06	1,324.41	319.05	680	607.87	3.60	-0.37	0.03
105.00	-19.31	-1.11	0.00	-36.40	0.00	36.40	1,292.93	307.98	633	572.61	4.00	-0.38	0.02
108.00	-14.74	-0.93	0.00	-33.07	0.00	33.07	1,265.65	301.34	606	548.30	4.24	-0.39	0.02
110.00	-13.92	-0.90	0.00	-31.20	0.00	31.20	1,247.06	296.92	589	532.22	4.40	-0.39	0.02
110.00	-13.92	-0.90	0.00	-31.20	0.00	31.20	853.21	223.35	444	366.30	4.40	-0.39	0.02
115.00	-13.69	-0.89	0.00	-26.70	0.00	26.70	834.97	215.05	412	345.03	4.82	-0.40	0.02
116.42	-13.34	-0.88	0.00	-25.43	0.00	25.43	829.60	212.69	403	339.02	4.94	-0.41	0.02
116.42	-13.34	-0.88	0.00	-25.43	0.00	25.43	829.60	212.69	403	339.02	4.94	-0.41	0.09
120.00	-12.94	-0.86	0.00	-22.29	0.00	22.29	815.69	206.75	381	323.94	5.24	-0.41	0.09
125.00	-12.58	-0.86	0.00	-17.97	0.00	17.97	795.37	198.45	351	303.07	5.70	-0.46	0.08
130.00	-12.23	-0.84	0.00	-13.70	0.00	13.70	774.01	190.15	322	282.47	6.21	-0.51	0.06
135.00	-11.89	-0.83	0.00	-9.48	0.00	9.48	751.61	181.85	294	262.20	6.76	-0.54	0.05
140.00	-11.76	-0.82	0.00	-5.33	0.00	5.33	728.17	173.55	268	242.30	7.35	-0.57	0.04
142.00	-7.10	-0.52	0.00	-3.68	0.00	3.68	714.97	170.23	258	233.31	7.59	-0.58	0.03
143.50	-6.82	-0.50	0.00	-2.91	0.00	2.91	704.51	167.74	251	226.49	7.77	-0.58	0.02
144.90	-6.79	-0.49	0.00	-2.22	0.00	2.22	694.75	165.42	244	220.22	7.94	-0.59	0.02

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
145.00	-6.76	-0.49	0.00	-2.17	0.00	2.17	694.05	165.25	243	219.78	7.96	-0.59	0.02
145.60	-6.63	-0.48	0.00	-1.87	0.00	1.87	689.87	164.25	240	217.12	8.03	-0.59	0.02
146.00	-5.72	-0.42	0.00	-1.68	0.00	1.68	687.08	163.59	238	215.36	8.08	-0.59	0.02
150.00	0.00	-0.36	0.00	0.00	0.00	0.00	659.19	156.95	219	198.13	8.57	-0.59	0.00

0.9D - 1.0Ev + 1.0Eh **Seismic (Reduced DL)**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-34.84	-1.28	0.00	-166.05	0.00	166.05	3,156.90	784.09	2,737	2,376.08	0.00	0.00	0.04
5.00	-33.36	-1.28	0.00	-159.67	0.00	159.67	3,114.09	767.49	2,622	2,293.74	0.01	-0.01	0.04
10.00	-32.62	-1.29	0.00	-153.25	0.00	153.25	3,070.24	750.89	2,510	2,212.03	0.03	-0.03	0.04
12.50	-31.89	-1.29	0.00	-150.03	0.00	150.03	3,047.93	742.59	2,455	2,171.42	0.04	-0.03	0.04
12.50	-31.89	-1.29	0.00	-150.03	0.00	150.03	3,047.93	742.59	2,455	2,171.42	0.04	-0.03	0.04
15.00	-30.44	-1.29	0.00	-146.80	0.00	146.80	3,025.35	734.29	2,401	2,131.00	0.06	-0.04	0.04
20.00	-28.99	-1.30	0.00	-140.33	0.00	140.33	2,979.43	717.69	2,293	2,050.69	0.11	-0.05	0.03
25.00	-27.57	-1.30	0.00	-133.85	0.00	133.85	2,932.46	701.09	2,188	1,971.17	0.18	-0.07	0.03
30.00	-27.43	-1.30	0.00	-127.36	0.00	127.36	2,874.86	684.49	2,086	1,886.18	0.25	-0.08	0.03
30.48	-27.20	-1.30	0.00	-126.74	0.00	126.74	2,868.16	682.90	2,076	1,877.36	0.26	-0.08	0.03
30.48	-27.20	-1.30	0.00	-126.74	0.00	126.74	2,868.16	682.90	2,076	1,877.36	0.26	-0.08	0.05
31.50	-26.08	-1.30	0.00	-125.41	0.00	125.41	2,853.94	679.51	2,056	1,858.68	0.28	-0.09	0.05
35.00	-25.87	-1.30	0.00	-120.87	0.00	120.87	2,805.14	667.89	1,986	1,795.29	0.35	-0.10	0.04
35.67	-25.01	-1.30	0.00	-120.00	0.00	120.00	2,247.90	566.87	1,717	1,468.42	0.36	-0.10	0.05
40.00	-24.07	-1.30	0.00	-114.38	0.00	114.38	2,218.43	554.88	1,645	1,418.22	0.46	-0.12	0.05
45.00	-23.14	-1.29	0.00	-107.90	0.00	107.90	2,183.45	541.05	1,564	1,360.71	0.60	-0.14	0.05
50.00	-22.22	-1.29	0.00	-101.43	0.00	101.43	2,147.43	527.22	1,485	1,303.70	0.76	-0.16	0.05
55.00	-21.31	-1.28	0.00	-94.98	0.00	94.98	2,110.37	513.38	1,408	1,247.24	0.93	-0.18	0.04
60.00	-20.42	-1.27	0.00	-88.57	0.00	88.57	2,072.27	499.55	1,333	1,191.37	1.13	-0.20	0.04
65.00	-19.53	-1.26	0.00	-82.21	0.00	82.21	2,033.13	485.71	1,260	1,136.15	1.36	-0.22	0.04
70.00	-18.70	-1.24	0.00	-75.91	0.00	75.91	1,981.90	471.88	1,190	1,075.63	1.60	-0.24	0.04
73.50	-18.46	-1.24	0.00	-71.56	0.00	71.56	1,473.88	377.71	953	802.19	1.78	-0.26	0.04
75.00	-17.67	-1.22	0.00	-69.69	0.00	69.69	1,466.20	374.39	936	790.93	1.86	-0.26	0.04
80.00	-16.86	-1.20	0.00	-63.58	0.00	63.58	1,439.92	363.32	881	753.58	2.15	-0.28	0.04
85.00	-16.00	-1.18	0.00	-57.58	0.00	57.58	1,412.60	352.25	829	716.55	2.45	-0.30	0.04
90.00	-15.83	-1.17	0.00	-51.69	0.00	51.69	1,384.24	341.19	777	679.88	2.78	-0.32	0.03
91.00	-15.16	-1.15	0.00	-50.52	0.00	50.52	1,378.45	338.97	767	672.60	2.84	-0.32	0.03
91.00	-15.16	-1.15	0.00	-50.52	0.00	50.52	1,378.45	338.97	767	672.60	2.84	-0.32	0.03
95.00	-15.10	-1.15	0.00	-45.93	0.00	45.93	1,354.85	330.12	728	643.64	3.12	-0.34	0.03
95.33	-14.39	-1.12	0.00	-45.55	0.00	45.55	1,352.87	329.39	725	641.26	3.14	-0.34	0.03
95.33	-14.39	-1.12	0.00	-45.55	0.00	45.55	1,352.87	329.39	725	641.26	3.14	-0.34	0.03
100.00	-13.70	-1.09	0.00	-40.33	0.00	40.33	1,324.41	319.05	680	607.87	3.48	-0.35	0.02
105.00	-13.30	-1.07	0.00	-34.90	0.00	34.90	1,292.93	307.98	633	572.61	3.86	-0.37	0.02
108.00	-10.15	-0.90	0.00	-31.69	0.00	31.69	1,265.65	301.34	606	548.30	4.09	-0.37	0.02
110.00	-9.59	-0.87	0.00	-29.89	0.00	29.89	1,247.06	296.92	589	532.22	4.25	-0.38	0.02
110.00	-9.59	-0.87	0.00	-29.89	0.00	29.89	853.21	223.35	444	366.30	4.25	-0.38	0.02
115.00	-9.43	-0.86	0.00	-25.55	0.00	25.55	834.97	215.05	412	345.03	4.65	-0.39	0.02
116.42	-9.18	-0.84	0.00	-24.33	0.00	24.33	829.60	212.69	403	339.02	4.77	-0.39	0.02
116.42	-9.18	-0.84	0.00	-24.33	0.00	24.33	829.60	212.69	403	339.02	4.77	-0.39	0.08
120.00	-8.91	-0.83	0.00	-21.31	0.00	21.31	815.69	206.75	381	323.94	5.07	-0.40	0.08
125.00	-8.66	-0.82	0.00	-17.15	0.00	17.15	795.37	198.45	351	303.07	5.51	-0.45	0.07
130.00	-8.42	-0.81	0.00	-13.06	0.00	13.06	774.01	190.15	322	282.47	6.00	-0.49	0.06
135.00	-8.19	-0.79	0.00	-9.03	0.00	9.03	751.61	181.85	294	262.20	6.53	-0.52	0.05
140.00	-8.10	-0.78	0.00	-5.08	0.00	5.08	728.17	173.55	268	242.30	7.09	-0.55	0.03
142.00	-4.89	-0.49	0.00	-3.51	0.00	3.51	714.97	170.23	258	233.31	7.32	-0.56	0.02
143.50	-4.70	-0.47	0.00	-2.77	0.00	2.77	704.51	167.74	251	226.49	7.50	-0.56	0.02
144.90	-4.68	-0.47	0.00	-2.11	0.00	2.11	694.75	165.42	244	220.22	7.66	-0.56	0.02
145.00	-4.65	-0.47	0.00	-2.06	0.00	2.06	694.05	165.25	243	219.78	7.68	-0.56	0.02
145.60	-4.57	-0.46	0.00	-1.78	0.00	1.78	689.87	164.25	240	217.12	7.75	-0.56	0.02
146.00	-3.94	-0.40	0.00	-1.60	0.00	1.60	687.08	163.59	238	215.36	7.79	-0.57	0.01

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
150.00	0.00	-0.36	0.00	0.00	0.00	0.00	659.19	156.95	219	198.13	8.27	-0.57	0.00

ANALYSIS SUMMARY

Load Case	Base Reactions Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage Elev (ft)	Interaction Ratio
1.2D + 1.0W	27.32	0.00	50.86	0.00	0.00	2861.51	116.42	0.97
0.9D + 1.0W	27.29	0.00	38.13	0.00	0.00	2805.58	116.42	0.93
1.2D + 1.0Di + 1.0Wi	5.72	0.00	64.98	0.00	0.00	663.71	116.42	0.25
1.2D + 1.0Ev + 1.0Eh	1.32	0.00	50.59	0.00	0.00	170.60	116.42	0.09
0.9D - 1.0Ev + 1.0Eh	1.30	0.00	34.84	0.00	0.00	166.05	116.42	0.08
1.0D + 1.0W	6.43	0.00	42.43	0.00	0.00	666.30	116.42	0.23

ADDITIONAL STEEL SUMMARY

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (k/in)	Shear Applied (kips)	phiVn (kips)	Ratio	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	12.50	SOL #20 All Thread Bar	177.3	6.6	16.8	0.3903	216.9	319.1	0.6798
0.00	30.48	SOL #20 All Thread Bar	187.5	6.9	16.8	0.4127	216.9	319.1	0.6798
12.50	91.00	SOL #20 All Thread Bar	371.8	11.2	16.8	0.6635	275.1	330.5	0.8324
91.00	95.33	SOL #20 All Thread Bar	375.9	6.8	16.8	0.4025	178.3	345.0	0.5168
95.33	116.42	SOL #20 All Thread Bar	404.2	12.1	16.8	0.7214	178.1	330.5	0.5390

Elev From (ft)	Elev To (ft)	Member	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Number Required	Number Actual	Ratio	Lower Termination Connectors MQ/I (kips)	phiVn (kip)	Number Required	Number Actual	Ratio
0.00	12.50	SOL #20 All Thread Bar	0	12	0	0	0.0000	0	12	0	0	0.0000
0.00	30.48	SOL #20 All Thread Bar	186.963	12	16	20	0.7790	0	12	0	0	0.0000
12.50	91.00	SOL #20 All Thread Bar	0	25.27	0	12	0.0000	0	25.27	0	0	0.0000
91.00	95.33	SOL #20 All Thread Bar	162.4665	12	14	16	0.8462	0	12	0	0	0.0000
95.33	116.42	SOL #20 All Thread Bar	107.1937	12	9	12	0.7444	175.2629	12	15	16	0.9128

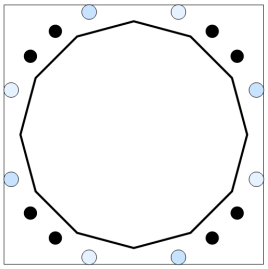
BASE PLATE ANALYSIS @ 0 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
2861.51	50.86	27.32

PLATE PARAMETERS (ID# 21798)

Width:	44	in
Shape:	Square	
Thickness:	2.5	in
Grade:	A633 Gr. E	
Yield Strength:	60	ksi
Tensile Strength:	80	ksi
Clip Length:	0	in
Rod Detail Type:	c	
Clear Distance	-	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Elastic	
Neutral Axis:	217	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F_y (ksi)	F_u (ksi)	Spacing (in)	Offset (°)
Original [ID#22373]	Cluster	8	2.25	44	A615-75	75	100	6	-

DYWIDAG BAR PARAMETERS

Quantity	Bar Size	Bar Diameter (in)	F_y (ksi)	F_u (ksi)	Bracket Type	Bracket Offset (in)	Circle (in)	Offset (°)
4 [ID# 1860]	#20	2.5	80	100	Angle	2.19	44.26	20
4 [ID# 1859]	#20	2.5	80	100	Angle	2.19	44.26	70

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	37.375"ø x 0.375" (12 Sides)	43.0934	-	-	7376.38	-
Bolt Group	Original (8) 2.25"ø	3.9761	3.2477	0.8393	5566.40	4.5
Dywidag Group	(4) #20	4.9087	4.9087	1.9175	4814.56	-
Dywidag Group	(4) #20	4.9087	4.9087	1.9175	4814.56	-

REACTION DISTRIBUTION

Component	ID	Moment M_u (k-ft)	Axial Load P_u (k)	Shear V_u (k)	Moment Factor
Pole	37.375"ø x 0.375" (12 Sides)	1241.2	50.86	27.32	0.434
Bolt Group	Original (8) 2.25"ø	1241.2	-	27.32	0.434
Dywidag Group	(4) #20	810.1	-	-	0.283
Dywidag Group	(4) #20	810.1	-	-	0.283

BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	37.50	in	Flat Width:	10.048	in	**PLATE PROPERTIES**		
Point-to-Point Diameter:	38.82	in	Flat Radians:	0.524	rad	Neutral Axis:	217	°
Orientation Offset:	-	º						

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in^3)	Applied Moment M_u (k-in)	Moment Capacity ΦM_n (k-in)	Flexure Result $M_u/\Phi M_n$	
Flats	24.725	0.00	38.633	556.5	2086.2	26.7%	✓
Corners	23.403	0.00	36.566	319.6	1974.6	16.2%	✓

ELASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load P_u (k)	Applied Shear Load V_u (k)	Compressive Capacity ΦP_n (k)	Compressive Result	Interaction Result	
Original	8	2.25	182.5	0.0	243.6	0.749	56.2%	✓

DYWIDAG BAR ANALYSIS

Group Quantity	Bar Size	Bar Circle (in)	Applied Axial Load P_u (k)	Compressive Capacity ΦP_n (k)	Compressive Result P_u / ΦP_n	
4	#20	44.26	187.5	368.2	50.9%	✓
4	#20	44.26	213.3	368.2	57.9%	✓

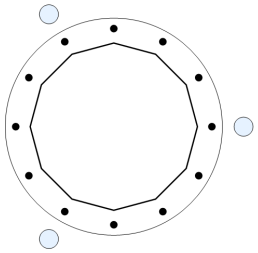
UPPER FLANGE PLATE ANALYSIS @ 110 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
401.62	13	12.56

PLATE PARAMETERS (ID# 21799)

Width:	28.5	in
Shape:	Round	
Thickness:	1	in
Grade:	A572-60	
Yield Strength:	60	ksi
Tensile Strength:	75	ksi
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Elastic	
Neutral Axis:	142	°



FLANGE BOLT PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F_y (ksi)	F_u (ksi)	Spacing (in)	Offset (°)
Original [ID#22374]	Radial	12	1	25.75	A325	92	120	-	-

DYWIDAG BAR PARAMETERS

Quantity	Bar Size	Bar Diameter (in)	F_y (ksi)	F_u (ksi)	Bracket Type	Bracket Offset (in)	Circle (in)	Offset (°)
3 [ID# 1861]	#20	2.5	80	100	W5x19	5.15	34.07	-

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	21.2667"ø x 0.1875" (12 Sides)	12.2753	-	-	681.94	-
Bolt Group	Original (12) 1"ø	0.7854	0.6057	0.0292	545.75	8.0
Dywidag Group	(3) #20	4.9087	4.9087	1.9175	2142.05	-

REACTION DISTRIBUTION

Component	ID	Moment M_u (k-ft)	Axial Load P_u (k)	Shear V_u (k)	Moment Factor
Pole	21.2667"ø x 0.1875" (12 Sides)	97.0	13.00	12.56	0.241
Bolt Group	Original (12) 1"ø	97.0	-	12.56	0.241
Dywidag Group	(3) #20	304.6	-	-	0.759

UPPER FLANGE PLATE BEND LINE ANALYSIS @ 110 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	21.39	in	Flat Width:	5.732	in	Neutral Axis:	142	°
Point-to-Point Diameter:	22.15	in	Flat Radians:	0.524	rad	Bend Line Limits:	3.356 to 4.498	rad
Orientation Offset:	-	º						

PLATE PROPERTIES

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in^3)	Applied Moment M_u (k-in)	Moment Capacity ΦM_n (k-in)	Flexure Result $M_u/\Phi M_n$	
Flats	17.001	0.00	4.250	32.7	229.5	14.3%	✓
Corners	16.006	0.00	4.002	21.1	216.1	9.8%	✓
Circumferential	21.078	0.00	5.270	36.3	284.6	12.8%	✓

ELASTIC FLANGE BOLT ANALYSIS

Class	Group Quantity	Bolt Diameter (in)	Applied Axial Load P_u (k)	Applied Shear Load V_u (k)	Compressive Capacity ΦP_n (k)	Compressive Result	Interaction Result	
Original	12	1	15.9	0.2	54.5	0.292	29.8%	✓

DYWIDAG BAR ANALYSIS

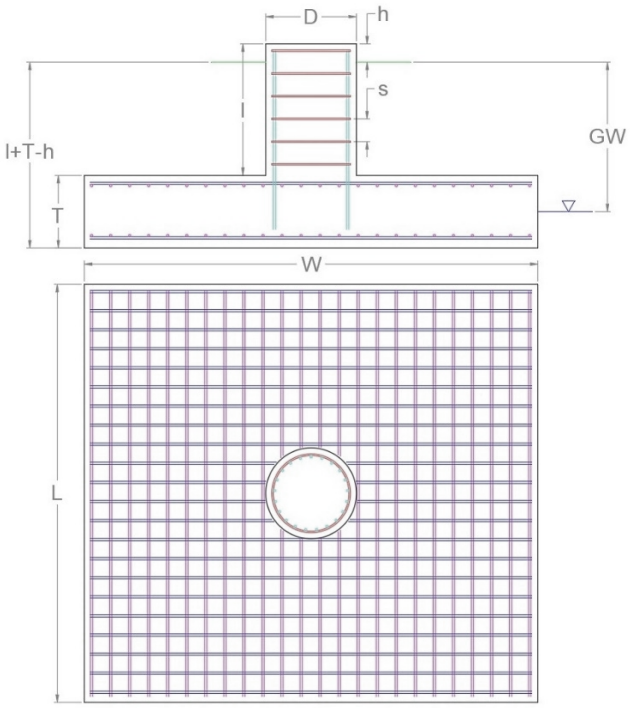
Group Quantity	Bar Size	Bar Circle (in)	Applied Axial Load P_u (k)	Compressive Capacity ΦP_n (k)	Compressive Result P_u / ΦP_n	
3	#20	34.07	144.6	368.2	39.3%	✓

APPLIED GLOBAL REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
2,861.51	50.86	27.32

FOUNDATION PARAMETERS

Mat Length:	L	22	ft
Mat Width:	W	18	ft
Mat Thickness:	T	3	ft
Base Depth:	L+T-h	8	ft
Pier Shape:		Square	
Pier Width:	D	6	ft
Pier Height above Grade:	h	0.5	ft
Concrete Compressive Strength:		3,000	psi
Mat Top Rebar:		(36) #5 bars [60 ksi]	
Mat Bottom Rebar:		(36) #10 bars [60 ksi]	
Pier Vertical Rebar:		(52) #11 bars [60 ksi]	
Pier Rebar Ties:	s	#4 bars @ 12.0" c/c [60 ksi]	
Rebar Clear Cover:		3.0	in
Tower Eccentricity:	ecc	0	ft
Tower Leg Count		1	



SOIL PARAMETERS

Water Table Depth [BGL]:	GW	7	ft
Soil Unit Weight:		116	pcf
Ultimate Skin Friction:		701	psf
Ultimate Bearing Pressure:		9,066	psf
Bearing Pressure Type:		Gross	
Coefficient of Shear Friction:		0.45	

SOIL STRENGTH ANALYSIS

Soil Strength Reduction Factor, Φ_s	Uplift Strength Reduction Factor, Φ_s	Asset Dead Load Factor	Dead Load Factor
0.75	0.75	0.9	1.2

SOIL OVERTURNING ANALYSIS

Design Moment, $M_{u,Design}$ (k-ft)	Nominal Overturning Capacity, $\Phi_m M_n$ (k-ft)	Soil Overturning Usage, $M_{u,Design} / \Phi_m M_n$	
3,093.73	3,881.42	**79.7%**	✓

SOIL BEARING ANALYSIS

Net Bearing Pressure, $P_{u,Net}$ (psf)	Nominal Bearing Capacity, $\Phi_b P_n$ (k-ft)	Bearing Pressure Controlling Load Direction	Soil Bearing Usage, $P_{u,net} / \Phi_b P_n$	
4,411.00	6,800.00	Parallel to Pad Edge	**64.9%**	✓

SOIL SLIDING SHEAR ANALYSIS

Applied Shear Force, V_u (k)	Friction Resistance (k)	Passive Pressure (psf)	Passive Pressure Resistance (k)	Nominal Shear Capacity, $\Phi_s V_n$ (k)	Soil Sliding Shear Usage, $V_u / \Phi_s V_n$	
27.32	168.24	754.0	49.76	183.92	**15.0%**	✓

MAT REINFORCING STEEL STRENGTH ANALYSIS

Steel Elastic Modulus, E (ksi)	Strength Bending/Tension Reduction Factor, Φ_b	Strength Shear Reduction Factor, Φ_v	Strength Compression Reduction Factor, Φ_c
29,000	0.9	0.75	0.65

MAT REINFORCING ONE WAY SHEAR ANALYSIS

One Way Design Shear, V_u (k)	Nominal One Way Shear Capacity, $\Phi_c V_n$ (k)	One Way Shear Controlling Load Direction	Mat One Way Shear Usage, $V_u / \Phi_c V_n$	
254.07	688.65	Parallel to Pad Edge	**36.9%**	✓

MAT REINFORCING PUNCHING SHEAR ANALYSIS

Punching Shear Design Stress, v_u (psi)	Nominal Punching Shear Capacity, $\Phi_c v_n$ (psi)	Mat Punching Shear Usage, $v_u / \Phi_c v_n$	
37.2	164.3	**22.6%**	✓

MAT REINFORCING MOMENT TRANSFER ANALYSIS

Moment Transfer Effective Flexural Width, w_f (in)	Neutral Axis Depth (in)	Pier Moment at Joint, M_{ut} (k-in)	Nominal Moment Transfer Capacity, $\Phi M_{sc,f}$ (k-in)	Mat Moment Transfer Usage, $0.6\ M_{ut} / \Phi M_{sc,f}$	
15.00	4.23	0.00	52,335.0	**0.0%**	✓

MAT REINFORCING FLEXURE ANALYSIS – UPPER STEEL

Factored Moment, M_u (k-ft)	Nominal Flexural Capacity, ΦM_n (k-ft)	Flexural Steel Controlling Load Direction	Mat Upper Rebar Flexure Usage, $M_u / \Phi M_n$	
383.17	1,573.26	Parallel to Pad Edge	**24.4%**	✓

MAT REINFORCING FLEXURE ANALYSIS – LOWER STEEL

Factored Moment, M_u (k-ft)	Nominal Flexural Capacity, ΦM_n (k-ft)	Flexural Steel Controlling Load Direction	Mat Lower Rebar Flexure Usage, $M_u / \Phi M_n$	
1,500.00	6,175.94	Parallel to Pad Edge	**24.3%**	✓

PIER REINFORCING STEEL STRENGTH ANALYSIS

Rebar Cage Diameter (in)	Steel Elastic Modulus, E (ksi)	Strength Bending/Tension Reduction Factor, Φ_b	Strength Shear Reduction Factor, Φ_v	Strength Compression Reduction Factor, Φ_c
63.62	29,000	0.9	0.75	0.65

PIER REINFORCING MOMENT ANALYSIS

Design Moment, M_u (k-ft)	Nominal Moment Capacity, $\Phi_b M_n$ (k-ft)	Bending Reinforcement Ratio	Pier Rebar Flexure Usage, $M_u/\Phi_b M_n$	
3,011.77	11,356.30	0.016	**26.5%**	✓

PIER REINFORCING COMPRESSION ANALYSIS

Design Compression, P_u (k)	Nominal Compressive Capacity, $\Phi_p P_n$ (k)	Pier Rebar Compressive Usage, $P_u / \Phi_p P_n$	
50.86	6,815.09	**0.7%**	✓

PIER REINFORCING SHEAR ANALYSIS

Design Shear, V_u (k)	Nominal Shear Capacity, $\Phi_v V_n$ (k)	Pier Rebar Shear Usage, $V_u / \Phi_v V_n$	
27.32	514.40	**5.3%**	✓

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Mount Analysis Report

ATC Site Name	:	**North Haven CT 1, CT**
ATC Site Number	:	**302482**
Engineering Number	:	**13757802_C8_01**
Mount Elevation	:	**153 ft**
Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**MRCTB055973**
Carrier Site Number	:	**CTL02012**
Site Location	:	**15 Dewight Street** **North Haven, CT 06473-1198** **41.4207966 , -72.84880398**
County	:	**New Haven**
Date	:	**March 21, 2022**
Max Usage	:	**68%**
Result	:	**Contingent Pass**

Prepared By:
Michael Ellis
Structural Engineer I

Reviewed By:

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of the mount analysis performed for AT&T Mobility at 153 ft.

Supporting Documents

Specifications Sheet	Perfect Vision PV-LPPGS-14M-HR25-HWLL, dated November 1, 2019
Radio Frequency Data Sheet	RFDS ID #10034972, dated February 10, 2022
Reference Photos	Site photos from 2021

Analysis

This mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

Basic Wind Speed:	120 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.00'' radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.204, S1 = 0.054
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs

*** Based on experience, it has been determined that the Lv load cases will not control over Lm load cases in platform mount analyses. Therefore, these load cases have been excluded from this analysis.**

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above provided the modifications listed below are completed:

- Install P2 (2.375" x 60") antenna mounting pipe (Mount Pipe M, N and O) with Site Pro 1 SCX7-U (or approved equivalent) crossover plate kits.
- No structural failures were addressed with the noted contingencies. Contingencies address Carrier's antenna spacing requirements.

Analysis based on new Perfect Vision PV-LPPGS-14M-HR25-HWLL (CEQ.53348) platform with handrails.

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.

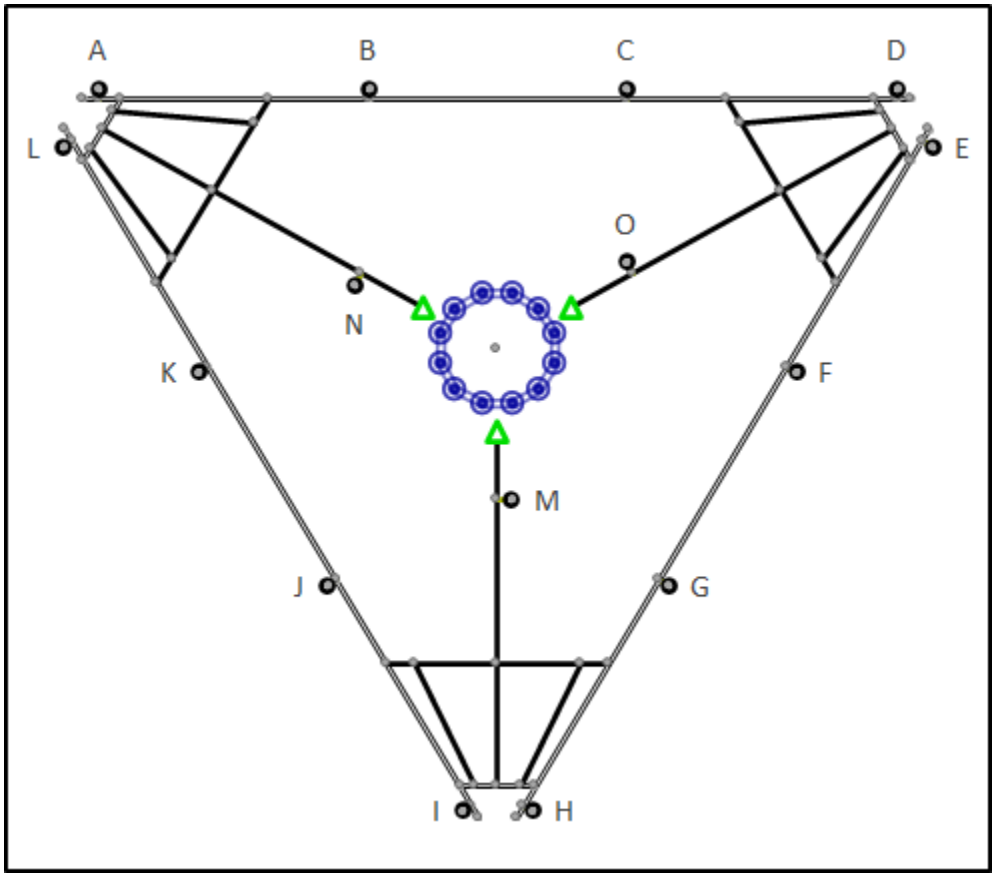
Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
153.0	153.0	3	Quintel QD6616-7
		3	Ericsson AIR 6449 B77D/ C-Band
		3	Ericsson AIR 6419 B77G
		3	CCI DMP65R-BU6DA
		3	Raycap DC6-48-60-18-8F
		3	Ericsson RRUS E2 B29
		3	Ericsson RRUS 8843 B2, B66A
		3	Ericsson RRUS 4478 B14
		3	Ericsson RRUS 4449 B5, B12
		3	Ericsson RRUS 32 B30

Structure Usages

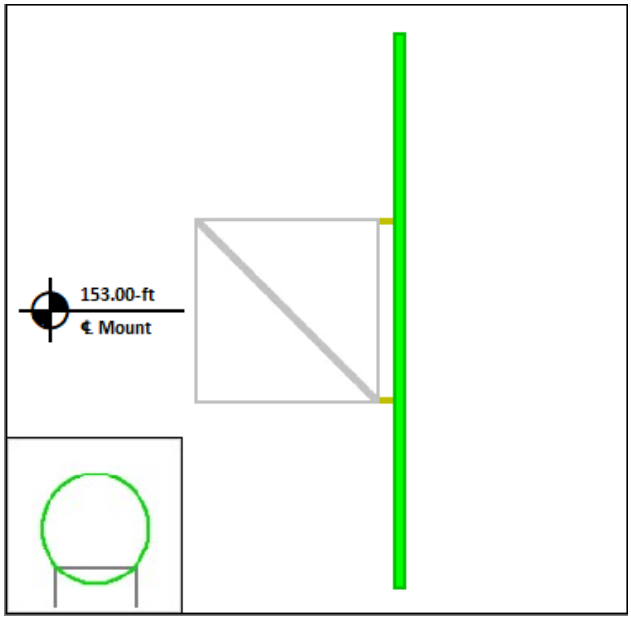
Structural Component	Controlling Usage	Pass/Fail
Horizontals	43%	Pass
Mount Pipes	68%	Pass
Connection Check	17%	Pass

Mount Layout

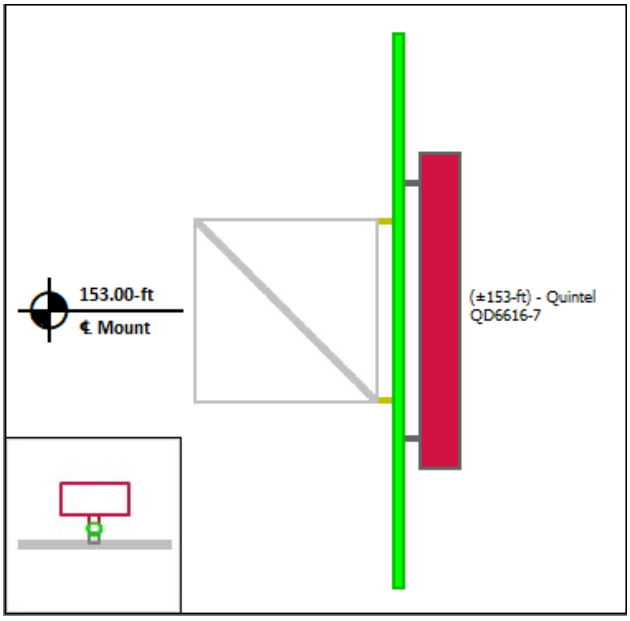


Equipment Layout

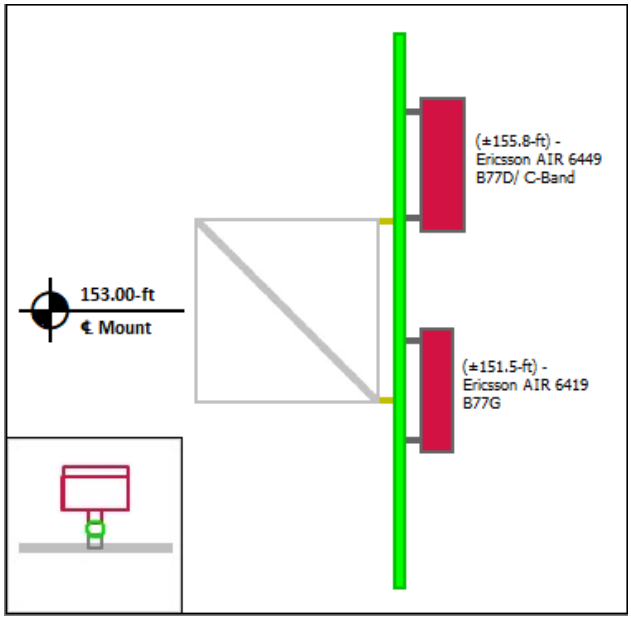
Mount Pipe A



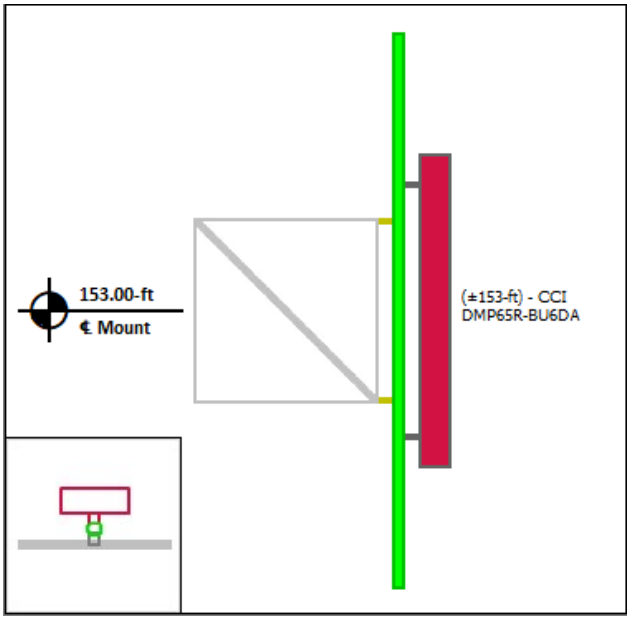
Mount Pipe B



Mount Pipe C

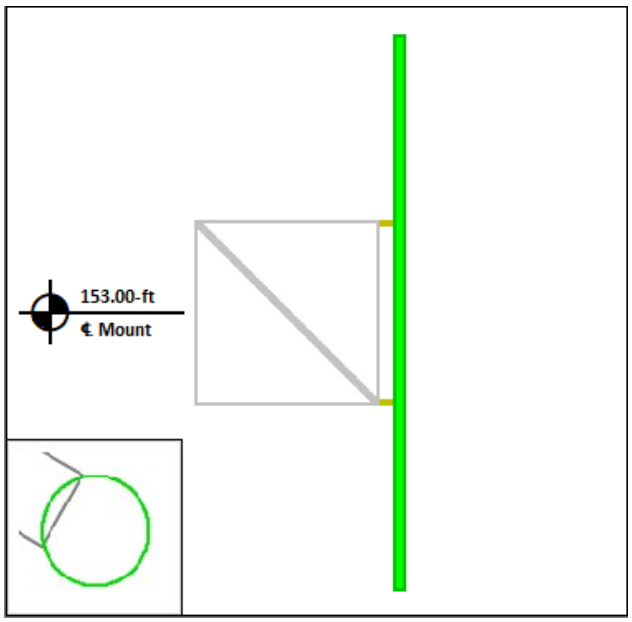


Mount Pipe D

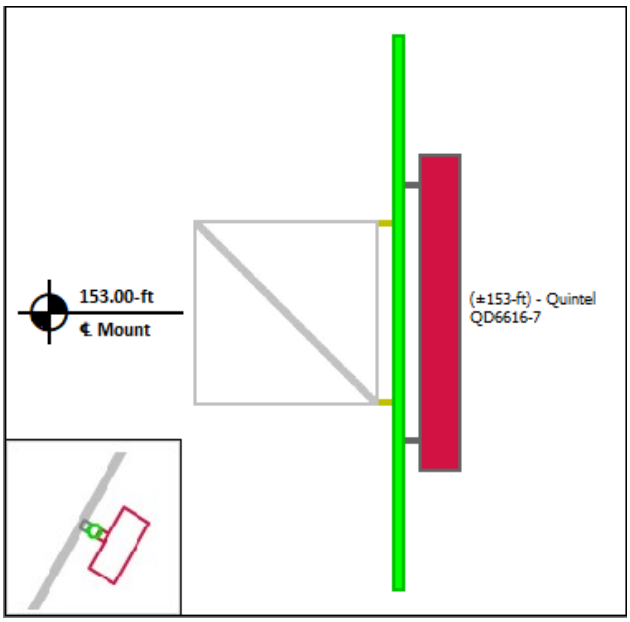


Equipment Layout Cont'd.

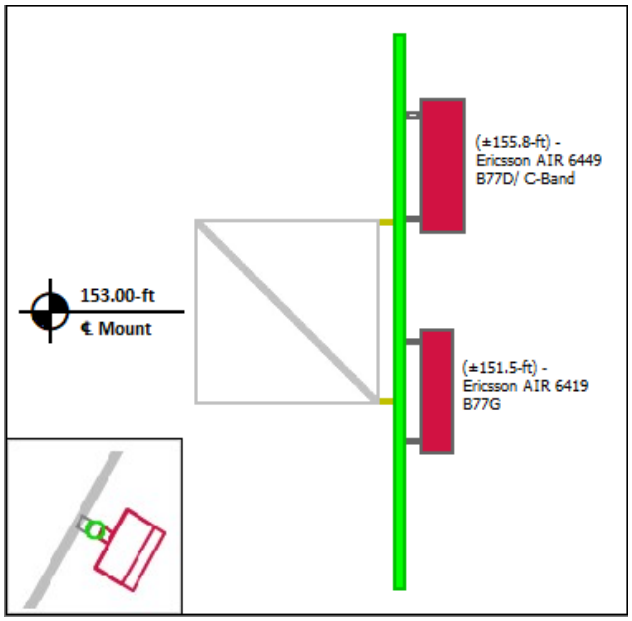
Mount Pipe E



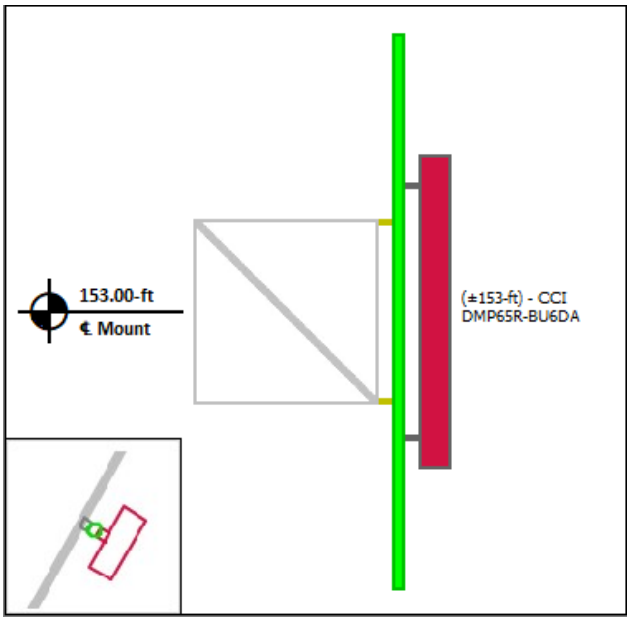
Mount Pipe F



Mount Pipe G

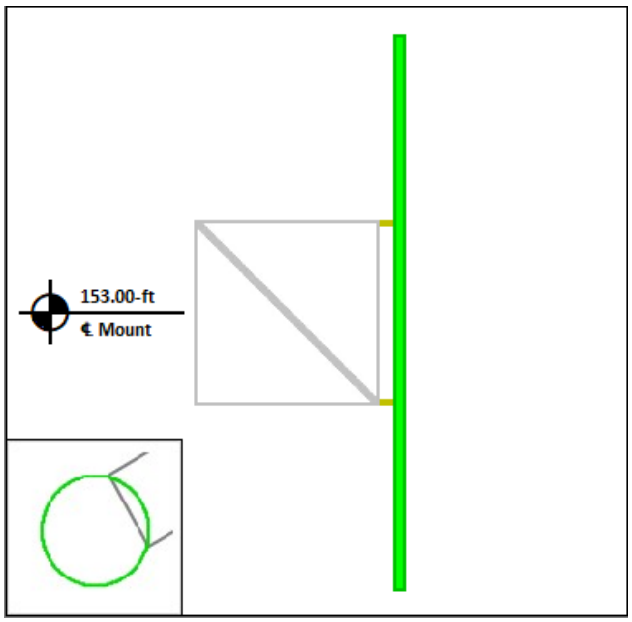


Mount Pipe H

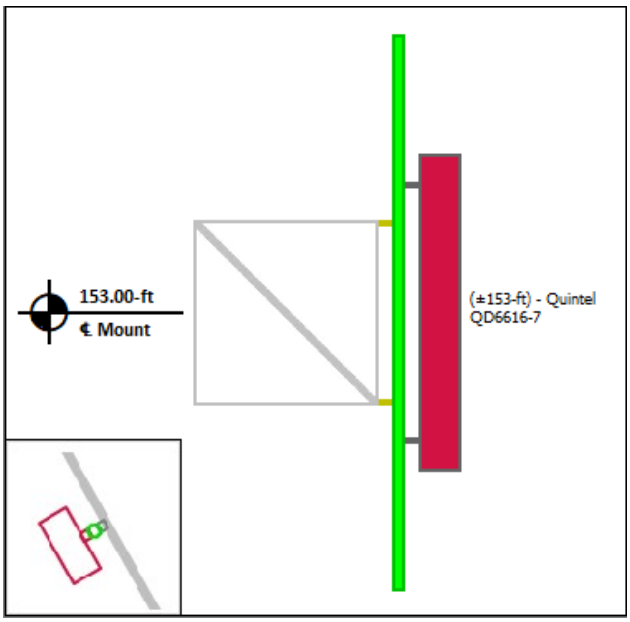


Equipment Layout Cont'd.

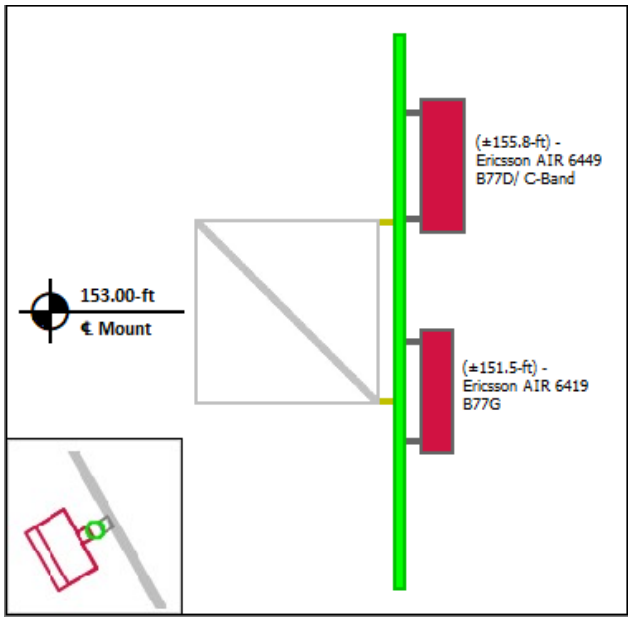
Mount Pipe I



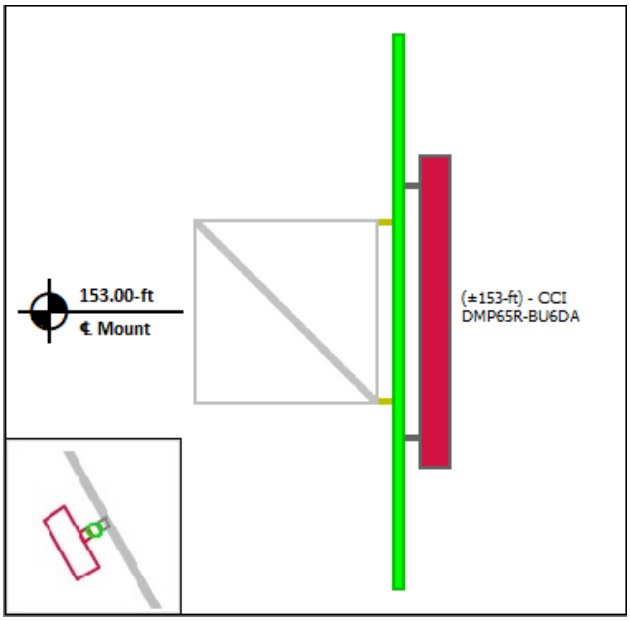
Mount Pipe J



Mount Pipe K

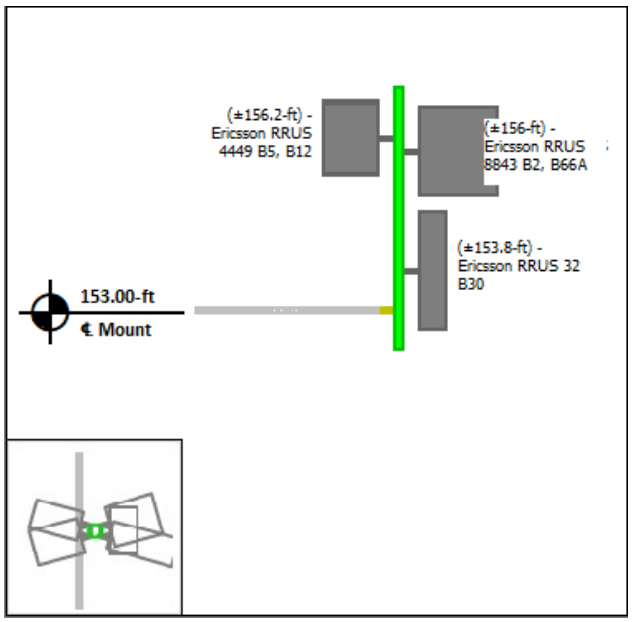


Mount Pipe L

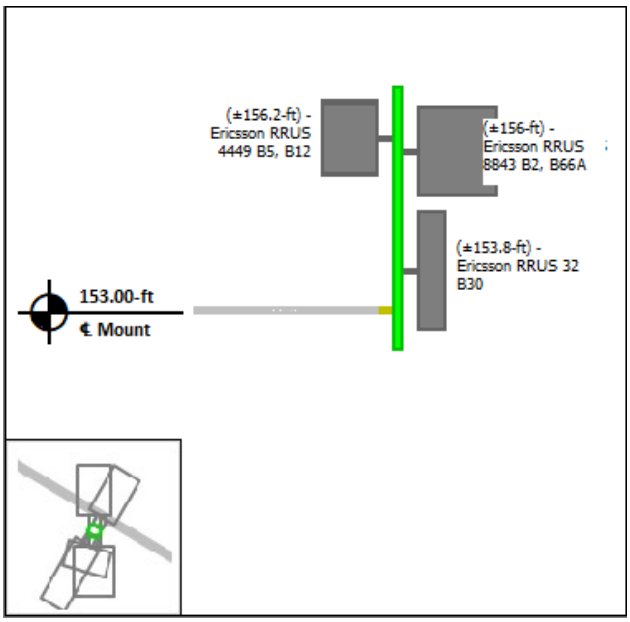


Equipment Layout Cont'd.

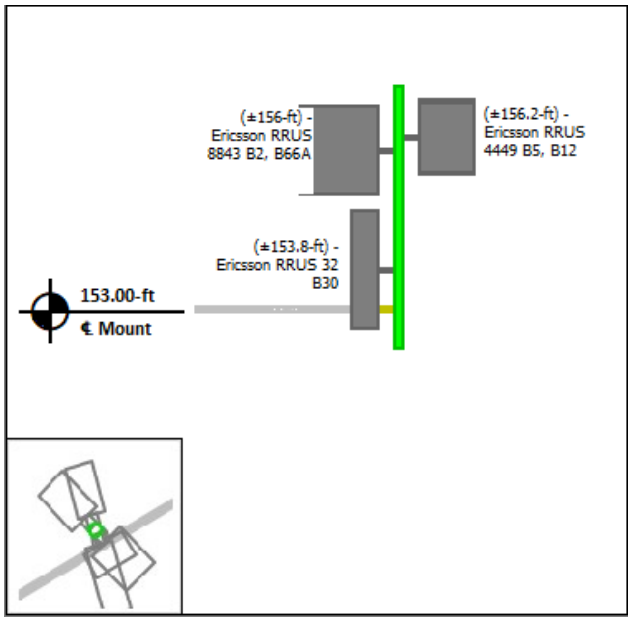
Mount Pipe M



Mount Pipe N



Mount Pipe O



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 equipment, 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.

American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

All connections are to be verified for condition and tightness by the installation contractor preceding any changes to the appurtenance mounting system and/or equipment attached to it.

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.

Installation of all equipment and steel should be confirmed not to cause tower conflicts nor impede the tower climbing pegs.

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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Site Number:	*302482*
Project Number:	*13757802_C8_01*
Carrier:	*AT&T Mobility*
Mount Elevation:	*153 ft*
Date:	3/21/2022

Mount Analysis Force Calculations

Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	1.12	
Topographic Factor	K_{zt}	1.00	
Rooftop Wind Speed-up Factor	K_s	1.00	
Shielding Factor	K_a	0.90	
Ground Elevation Factor	K_e	1.00	
Wind Direction Probability Factor	K_d	0.95	
Basic Wind Speed	V	120	mph
Velocity Pressure	q_z	39.0	psf
Height Escalation Factor	K_{iz}	1.17	
Thickness of Radial Glaze Ice	T_{iz}	1.17	in

Seismic Load Calculations			
Short Period DSRAP	S_{DS}	0.218	
1 Second DSRAP	S_{D1}	0.086	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_S	0.109	
Amplification Factor	A	1.0	
Total Weight	W	3912.3	lbs
Total Shear Force	V_S	425.7	lbs
Horizontal Seismic Load	Eh	425.7	lbs
Vertical Seismic Load	Ev	170.3	lbs

Antenna Calculations (Elevations per Application/RFDS)*

Equipment	Height	Width	Depth	Weight	EPA_N	EPA_T	EPA_{Ni}	EPA_{Ti}
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft
Quintel QD6616-7	72.0	22.0	9.6	130.0	13.58	2.88	15.50	3.70
Ericsson AIR 6449 B77D/ C-Band	30.4	15.9	10.6	81.6	4.03	1.62	4.97	2.13
Ericsson AIR 6419 B77G	28.3	16.1	7.9	66.1	3.80	1.20	4.70	1.68
CCI DMP65R-BU6DA	71.2	20.7	7.7	79.4	12.71	2.28	14.60	3.07
Raycap DC6-48-60-18-8F	23.5	9.7	9.7	20.0	N/A	N/A	N/A	N/A
Ericsson RRUS E2 B29	20.4	18.5	7.5	60.0	3.15	1.29	3.95	1.88
Ericsson RRUS 8843 B2, B66A	14.9	13.2	10.9	72.0	1.64	1.35	2.23	1.90
Ericsson RRUS 4478 B14	16.5	13.4	7.7	59.9	1.84	1.06	2.47	1.57
Ericsson RRUS 4449 B5, B12	17.9	13.2	9.4	71.0	1.97	1.40	2.62	1.98
Ericsson RRUS 32 B30	27.2	12.1	7.0	60.0	2.74	1.67	3.55	2.41

**** Equipment with EPA values N/A were not considered in the mount analysis***

AMERICAN TOWER®
CORPORATION

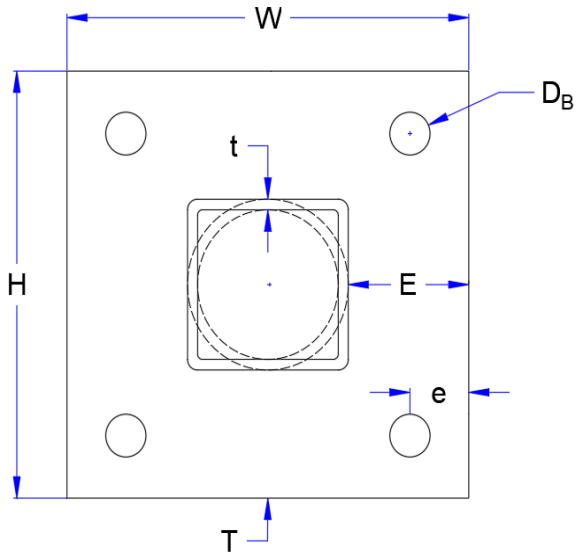
Site Number:	*302482*
Project Number:	*13757802_C8_01*
Carrier:	*AT&T Mobility*
Mount Elevation:	*153 ft*
Date:	3/21/2022

Mount-to-Tower Connection Analysis

Applied Loads from RISA 3D			
Controlling Load Combination		7	
Node Label		N002	
Force in X	Fx	902.3	lbs
Force in Y	Fy	1508.5	lbs
Force in Z	Fz	-1385.7	lbs
Moment about X	Mx	-3717.5	lb-ft
Moment about Y	My	3399.5	lb-ft
Moment about Z	Mz	2711.6	lb-ft

Bolt Shear and Tensile Capacity			
Bolt Quantity	n	4	
Bolt Diameter	D_B	3/4	in
Bolt Edge Distance	e	1	in
Bolt Grade		A325	
Bolt Fy	Fy_B	92	ksi
Bolt Fu	Fu_B	120	ksi
Applied Shear	Vu	0.76	k
Applied Tension	Tu	4.43	k
Tensile Strength	ϕTn	30.1	k
Interaction Capacity	(Tu+Vu)/ϕTn	17%	Pass

Plate Flexural Capacity			
Plate Height	H	10	in
Plate Width	W	12	in
Plate Thickness	T	1	in
Plate Grade		A36	
Plate Fy	Fy_P	36	ksi
Plate Fu	Fu_P	58	ksi
Shear Capacity	ϕVn	73.4	k
Applied Moment	Mu	13.3	k-in
Flexural Strength	ϕMn	130.5	k-in
Flexural Capacity	Mu/ϕMn	10%	Pass

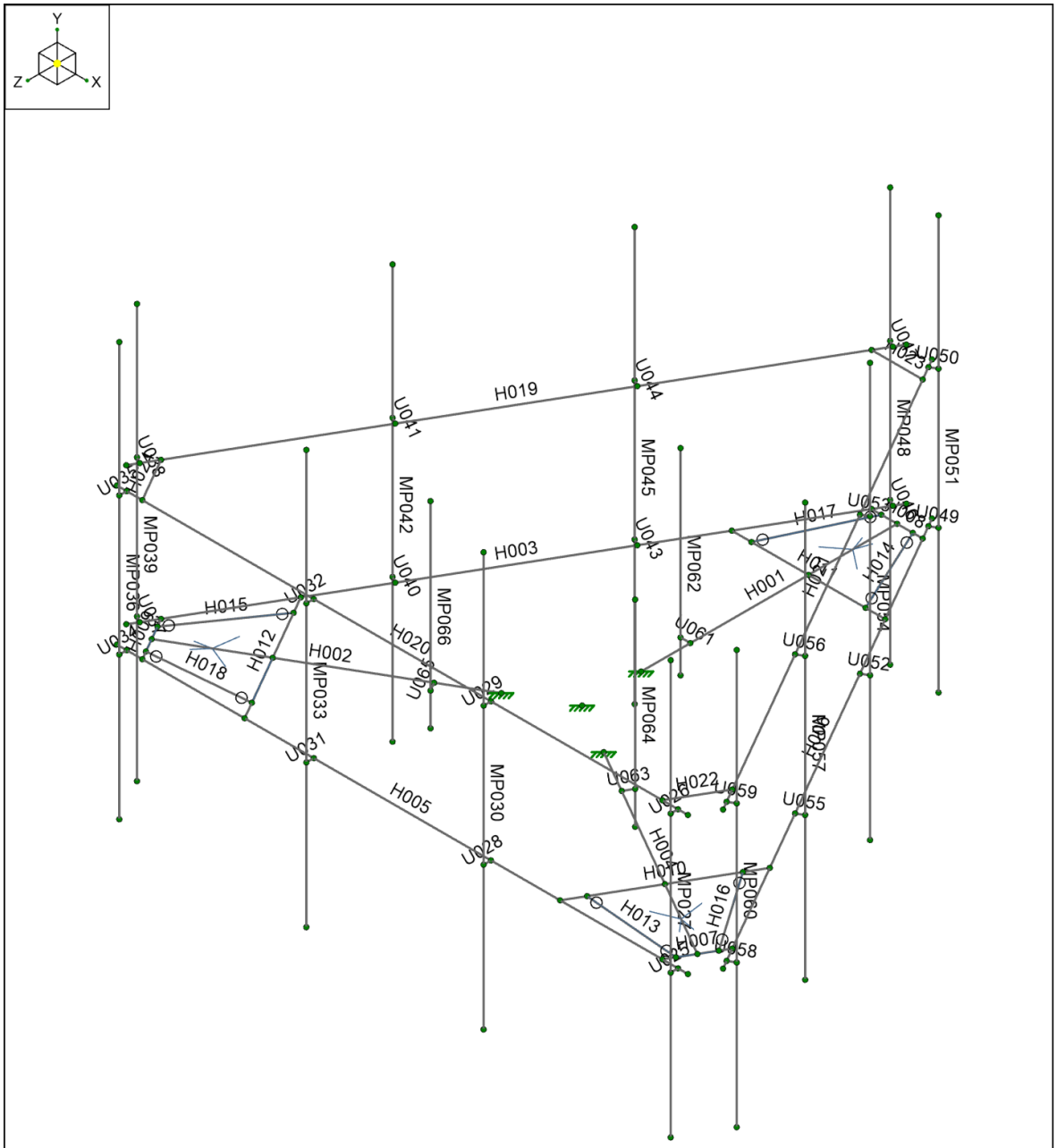


Weld and Base Metal Capacity			
Standoff Type		Tube	
Standoff Member		HSS5x5x5	
Member Edge Distance	E	3.5	in
Member Width	w	5	in
Member Thickness	t	0.313	in
Member Grade		A500 Gr. B	
Member Fy	Fy_M	42	ksi
Member Fu	Fu_M	58	ksi
Weld Size	a	1/4	in
Weld Length	l	20.0	in
Applied Load	Pu	8.9	k
Weld Strength	ϕRn	55.7	k
Weld Capacity	Pu/ϕRn	16%	Pass

Minimum Base Metal Thickness	0.213	in
Controlling Base Metal Thickness	0.313	in
Base Metal Result	Acceptable	

Prying Action Considerations							
Moment Arm	b	1.50	in	Minimum Thickness	t_{min}	0.24	in
Effective Moment Arm	b'	1.13	in	No Prying Thickness	t_{np}	0.32	in
Tributary Length	p	3.63	in	Min Bolt Strength Thickness	t_c	0.85	k-in
Effective Edge Distance	a'	1.38	in	Prying Action Bolt Tension	T_{up}	0.00	k

American Tower Corp.	302482, North Haven CT 1	SK-1
Michael.Ellis		Mar 21, 2022
13757802_C8_01		R3D. AT&T MOBILITY @ 30248…



American Tower Corp.	302482, North Haven CT 1	SK-2
Michael.Ellis		Mar 21, 2022
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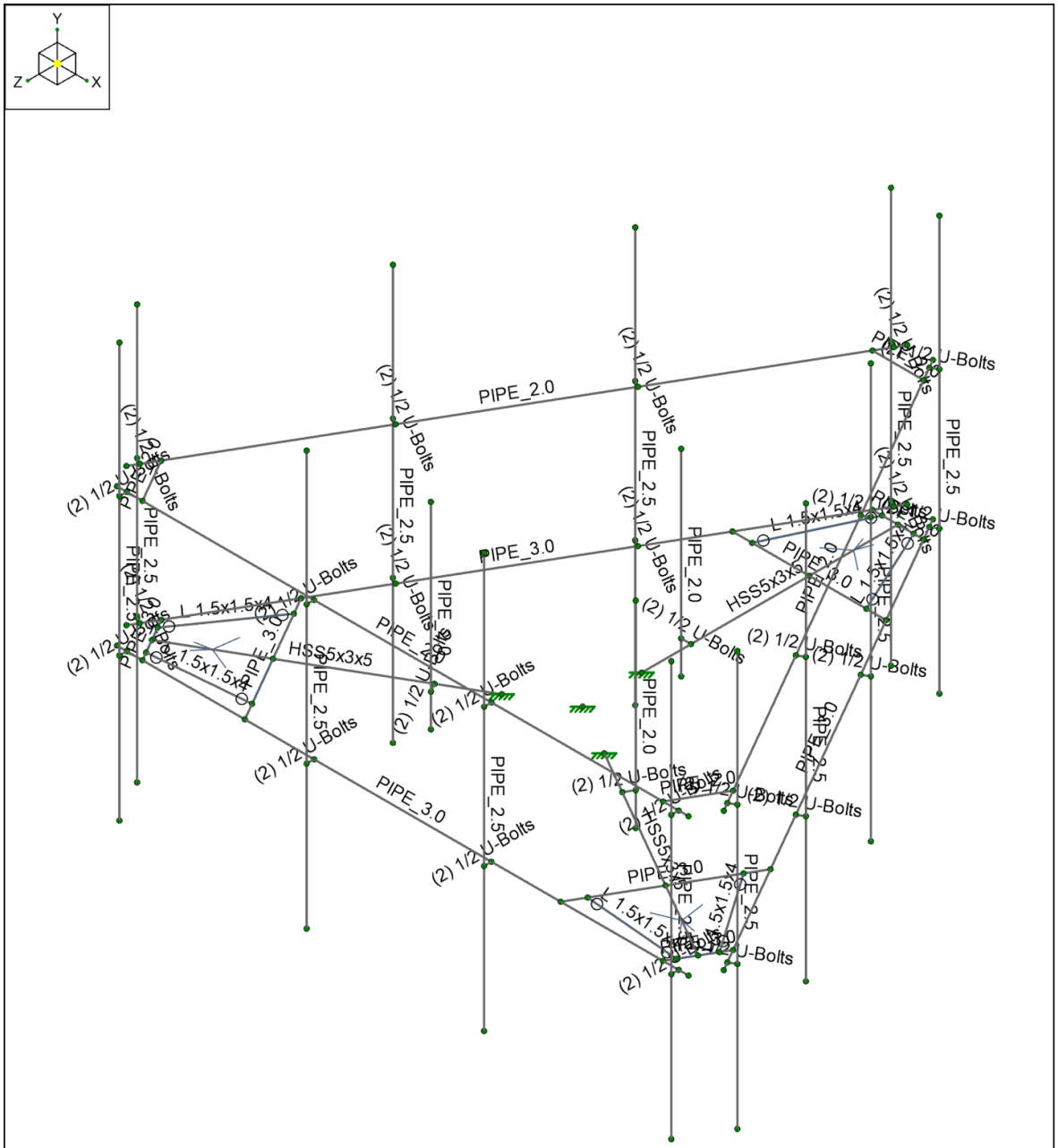

American Tower Corp.	302482, North Haven CT 1	SK-3
Michael.Ellis		Mar 21, 2022
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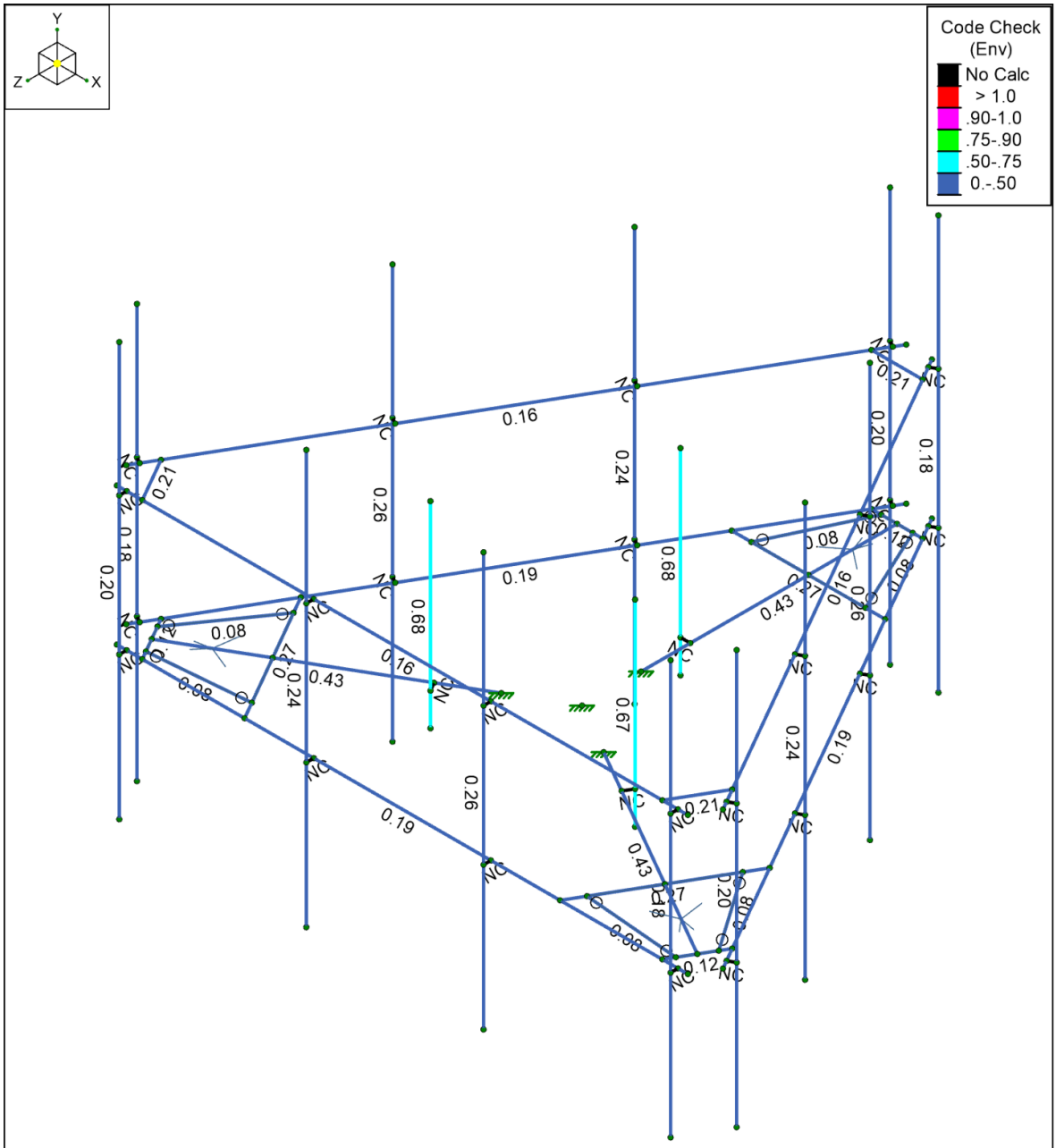
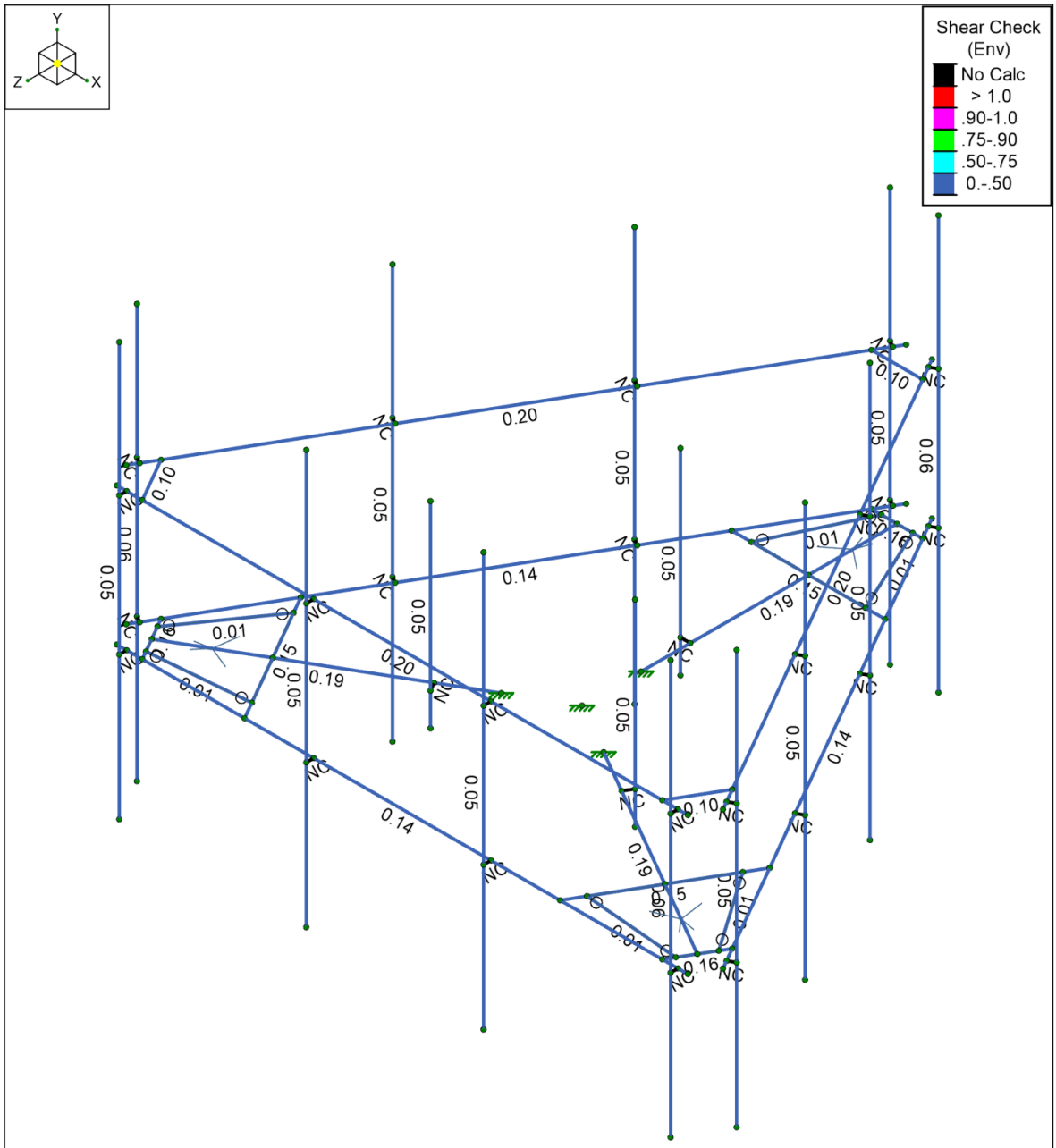


Member Code Checks Displayed (Enveloped)

American Tower Corp.	302482, North Haven CT 1	SK-4
Michael.Ellis		Mar 21, 2022
13757802_C8_01		R3D. AT&T MOBILITY @ 30248…



Member Shear Checks Displayed (Enveloped)

American Tower Corp.	302482, North Haven CT 1	SK-5
Michael.Ellis		Mar 21, 2022
13757802_C8_01		R3D. AT&T MOBILITY @ 30248…

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Surface(Plate/Wall)
1	D	DL	-1		39		
2	Di	IL			39	39	3
3	W 0	WL			39	66	
4	W 30	WL			78	132	
5	W 60	WL			78	132	
6	W 90	WL			39	69	
7	W 120	WL			78	132	
8	W 150	WL			78	132	
9	W 180	WL			39	66	
10	W 210	WL			78	132	
11	W 240	WL			78	132	
12	W 270	WL			39	69	
13	W 300	WL			78	132	
14	W 330	WL			78	132	
15	Wi 0	WL			39	66	
16	Wi 30	WL			78	132	
17	Wi 60	WL			78	132	
18	Wi 90	WL			39	69	
19	Wi 120	WL			78	132	
20	Wi 150	WL			78	132	
21	Wi 180	WL			39	66	
22	Wi 210	WL			78	132	
23	Wi 240	WL			78	132	
24	Wi 270	WL			39	69	
25	Wi 300	WL			78	132	
26	Wi 330	WL			78	132	
27	Ws 0	WL			39	66	
28	Ws 30	WL			78	132	
29	Ws 60	WL			78	132	
30	Ws 90	WL			39	69	
31	Ws 120	WL			78	132	
32	Ws 150	WL			78	132	
33	Ws 180	WL			39	66	
34	Ws 210	WL			78	132	
35	Ws 240	WL			78	132	
36	Ws 270	WL			39	69	
37	Ws 300	WL			78	132	
38	Ws 330	WL			78	132	
39	Ev -Y	ELY				39	
40	Eh -Z	ELZ				39	
41	Eh -X	ELX				39	
42	Lm (1)	LL		1			
43	Lm (2)	LL		1			
44	Lm (3)	LL		1			
45	Lm (4)	LL		1			
46	Lm (5)	LL		1			
47	Lm (6)	LL		1			
48	Lm (7)	LL		1			
49	Lm (8)	LL		1			
50	Lm (9)	LL		1			
51	Lm (10)	LL		1			
52	Lm (11)	LL		1			
53	Lm (12)	LL		1			
54	Lm (13)	LL		1			
55	Lm (14)	LL		1			

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Surface(Plate/Wall)
56	Lm (15)	LL		1			

Node Boundary Conditions

	Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	X Rot [k-in/rad]	Y Rot [k-in/rad]	Z Rot [k-in/rad]
1	N001	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N002	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N003	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N004	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	H001	N003	N005		HSS5x3x5	Beam	None	A500 Gr. B [SQR]	Typical
2	H002	N004	N006		HSS5x3x5	Beam	None	A500 Gr. B [SQR]	Typical
3	H003	N009	N010		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
4	H004	N002	N015		HSS5x3x5	Beam	None	A500 Gr. B [SQR]	Typical
5	H005	N011	N013		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
6	H006	N012	N014		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
7	H007	N019	N017		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
8	H008	N021	N023		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
9	H009	N022	N024		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
10	H010	N018	N020		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
11	H011	N025	N027		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
12	H012	N026	N028		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
13	H013	N037	N029	270	L 1.5x1.5x4	Beam	None	A36	Typical
14	H014	N038	N030	270	L 1.5x1.5x4	Beam	None	A36	Typical
15	H015	N039	N040	270	L 1.5x1.5x4	Beam	None	A36	Typical
16	H016	N034	N031		L 1.5x1.5x4	Beam	None	A36	Typical
17	H017	N035	N032		L 1.5x1.5x4	Beam	None	A36	Typical
18	H018	N036	N033		L 1.5x1.5x4	Beam	None	A36	Typical
19	H019	N041	N042		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
20	H020	N043	N045		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
21	H021	N044	N046		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
22	H022	N048	N047		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
23	H023	N049	N051		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
24	H024	N050	N052		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
25	U025	N054	N055		(2) 1/2 U-Bolts	Beam	None	A36	Typical
26	U026	N056	N057		(2) 1/2 U-Bolts	Beam	None	A36	Typical
27	MP027	N058	N059		PIPE_2.5	Column	None	A53 Gr. B	Typical
28	U028	N053	N062		(2) 1/2 U-Bolts	Beam	None	A36	Typical
29	U029	N063	N064		(2) 1/2 U-Bolts	Beam	None	A36	Typical
30	MP030	N065	N066		PIPE_2.5	Column	None	A53 Gr. B	Typical
31	U031	N060	N067		(2) 1/2 U-Bolts	Beam	None	A36	Typical
32	U032	N068	N069		(2) 1/2 U-Bolts	Beam	None	A36	Typical
33	MP033	N070	N071		PIPE_2.5	Column	None	A53 Gr. B	Typical
34	U034	N061	N072		(2) 1/2 U-Bolts	Beam	None	A36	Typical
35	U035	N073	N074		(2) 1/2 U-Bolts	Beam	None	A36	Typical
36	MP036	N075	N076		PIPE_2.5	Column	None	A53 Gr. B	Typical
37	U037	N078	N085		(2) 1/2 U-Bolts	Beam	None	A36	Typical
38	U038	N086	N087		(2) 1/2 U-Bolts	Beam	None	A36	Typical
39	MP039	N088	N089		PIPE_2.5	Column	None	A53 Gr. B	Typical
40	U040	N080	N090		(2) 1/2 U-Bolts	Beam	None	A36	Typical
41	U041	N091	N092		(2) 1/2 U-Bolts	Beam	None	A36	Typical
42	MP042	N093	N094		PIPE_2.5	Column	None	A53 Gr. B	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
43	U043	N082	N095		(2) 1/2 U-Bolts	Beam	None	A36	Typical
44	U044	N096	N097		(2) 1/2 U-Bolts	Beam	None	A36	Typical
45	MP045	N098	N099		PIPE_2.5	Column	None	A53 Gr. B	Typical
46	U046	N084	N100		(2) 1/2 U-Bolts	Beam	None	A36	Typical
47	U047	N101	N102		(2) 1/2 U-Bolts	Beam	None	A36	Typical
48	MP048	N103	N104		PIPE_2.5	Column	None	A53 Gr. B	Typical
49	U049	N077	N105		(2) 1/2 U-Bolts	Beam	None	A36	Typical
50	U050	N106	N107		(2) 1/2 U-Bolts	Beam	None	A36	Typical
51	MP051	N108	N109		PIPE_2.5	Column	None	A53 Gr. B	Typical
52	U052	N079	N110		(2) 1/2 U-Bolts	Beam	None	A36	Typical
53	U053	N111	N112		(2) 1/2 U-Bolts	Beam	None	A36	Typical
54	MP054	N113	N114		PIPE_2.5	Column	None	A53 Gr. B	Typical
55	U055	N081	N115		(2) 1/2 U-Bolts	Beam	None	A36	Typical
56	U056	N116	N117		(2) 1/2 U-Bolts	Beam	None	A36	Typical
57	MP057	N118	N119		PIPE_2.5	Column	None	A53 Gr. B	Typical
58	U058	N083	N120		(2) 1/2 U-Bolts	Beam	None	A36	Typical
59	U059	N121	N122		(2) 1/2 U-Bolts	Beam	None	A36	Typical
60	MP060	N123	N124		PIPE_2.5	Column	None	A53 Gr. B	Typical
61	U061	N125	N128		(2) 1/2 U-Bolts	Beam	None	A36	Typical
62	MP062	N129	N130		PIPE_2.0	Column	None	A53 Gr. B	Typical
63	U063	N127	N131		(2) 1/2 U-Bolts	Beam	None	A36	Typical
64	MP064	N132	N133		PIPE_2.0	Column	None	A53 Gr. B	Typical
65	U065	N126	N134		(2) 1/2 U-Bolts	Beam	None	A36	Typical
66	MP066	N135	N136		PIPE_2.0	Column	None	A53 Gr. B	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
1	H001			Yes	N/A		None
2	H002			Yes	N/A		None
3	H003			Yes	N/A		None
4	H004			Yes	N/A		None
5	H005			Yes	N/A		None
6	H006			Yes	N/A		None
7	H007			Yes	N/A		None
8	H008			Yes	N/A		None
9	H009			Yes	N/A		None
10	H010			Yes	N/A		None
11	H011			Yes	N/A		None
12	H012			Yes	N/A		None
13	H013	BenPIN	BenPIN	Yes	N/A		None
14	H014	BenPIN	BenPIN	Yes	N/A		None
15	H015	BenPIN	BenPIN	Yes	N/A		None
16	H016	BenPIN	BenPIN	Yes	N/A		None
17	H017	BenPIN	BenPIN	Yes	N/A		None
18	H018	BenPIN	BenPIN	Yes	N/A		None
19	H019			Yes	N/A		None
20	H020			Yes	N/A		None
21	H021			Yes	N/A		None
22	H022			Yes	N/A		None
23	H023			Yes	N/A		None
24	H024			Yes	N/A		None
25	U025			Yes	N/A	Exclude	None
26	U026			Yes	N/A	Exclude	None
27	MP027			Yes	** NA **		None
28	U028			Yes	N/A	Exclude	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
29	U029			Yes	N/A	Exclude	None
30	MP030			Yes	** NA **		None
31	U031			Yes	N/A	Exclude	None
32	U032			Yes	N/A	Exclude	None
33	MP033			Yes	** NA **		None
34	U034			Yes	N/A	Exclude	None
35	U035			Yes	N/A	Exclude	None
36	MP036			Yes	** NA **		None
37	U037			Yes	N/A	Exclude	None
38	U038			Yes	N/A	Exclude	None
39	MP039			Yes	** NA **		None
40	U040			Yes	N/A	Exclude	None
41	U041			Yes	N/A	Exclude	None
42	MP042			Yes	** NA **		None
43	U043			Yes	N/A	Exclude	None
44	U044			Yes	N/A	Exclude	None
45	MP045			Yes	** NA **		None
46	U046			Yes	N/A	Exclude	None
47	U047			Yes	N/A	Exclude	None
48	MP048			Yes	** NA **		None
49	U049			Yes	N/A	Exclude	None
50	U050			Yes	N/A	Exclude	None
51	MP051			Yes	** NA **		None
52	U052			Yes	N/A	Exclude	None
53	U053			Yes	N/A	Exclude	None
54	MP054			Yes	** NA **		None
55	U055			Yes	N/A	Exclude	None
56	U056			Yes	N/A	Exclude	None
57	MP057			Yes	** NA **		None
58	U058			Yes	N/A	Exclude	None
59	U059			Yes	N/A	Exclude	None
60	MP060			Yes	** NA **		None
61	U061			Yes	N/A	Exclude	None
62	MP062			Yes	** NA **		None
63	U063			Yes	N/A	Exclude	None
64	MP064			Yes	** NA **		None
65	U065			Yes	N/A	Exclude	None
66	MP066			Yes	** NA **		None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
1	H001	HSS5x3x5	78			Lbyy		1	1	Lateral
2	H002	HSS5x3x5	78			Lbyy		1	1	Lateral
3	H003	PIPE_3.0	174.001			Lbyy		1	1	Lateral
4	H004	HSS5x3x5	78			Lbyy		1	1	Lateral
5	H005	PIPE_3.0	174.001			Lbyy		1	1	Lateral
6	H006	PIPE_3.0	174.001			Lbyy		1	1	Lateral
7	H007	PIPE_3.0	15.588			Lbyy		0.65	0.65	Lateral
8	H008	PIPE_3.0	15.588			Lbyy		0.65	0.65	Lateral
9	H009	PIPE_3.0	15.588			Lbyy		0.65	0.65	Lateral
10	H010	PIPE_3.0	46.765			Lbyy		0.65	0.65	Lateral
11	H011	PIPE_3.0	46.765			Lbyy		0.65	0.65	Lateral
12	H012	PIPE_3.0	46.765			Lbyy		0.65	0.65	Lateral
13	H013	L 1.5x1.5x4	29.79			Lbyy		1	1	Lateral
14	H014	L 1.5x1.5x4	29.79			Lbyy		1	1	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
15	H015	L 1.5x1.5x4	29.79			Lbyy		1	1	Lateral
16	H016	L 1.5x1.5x4	29.79			Lbyy		1	1	Lateral
17	H017	L 1.5x1.5x4	29.79			Lbyy		1	1	Lateral
18	H018	L 1.5x1.5x4	29.79			Lbyy		1	1	Lateral
19	H019	PIPE_2.0	174.001			Lbyy		1	1	Lateral
20	H020	PIPE_2.0	174.001			Lbyy		1	1	Lateral
21	H021	PIPE_2.0	174.001			Lbyy		1	1	Lateral
22	H022	PIPE_2.0	15.588			Lbyy		0.65	0.65	Lateral
23	H023	PIPE_2.0	15.588			Lbyy		0.65	0.65	Lateral
24	H024	PIPE_2.0	15.588			Lbyy		0.65	0.65	Lateral
25	U025	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
26	U026	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
27	MP027	PIPE_2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
28	U028	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
29	U029	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
30	MP030	PIPE_2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
31	U031	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
32	U032	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
33	MP033	PIPE_2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
34	U034	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
35	U035	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
36	MP036	PIPE_2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
37	U037	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
38	U038	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
39	MP039	PIPE_2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
40	U040	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
41	U041	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
42	MP042	PIPE_2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
43	U043	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
44	U044	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
45	MP045	PIPE_2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
46	U046	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
47	U047	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
48	MP048	PIPE_2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
49	U049	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
50	U050	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
51	MP051	PIPE_2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
52	U052	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
53	U053	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
54	MP054	PIPE_2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
55	U055	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
56	U056	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
57	MP057	PIPE_2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
58	U058	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
59	U059	(2) 1/2 U-Bolts	2.25			Lbyy		0.5	0.5	Lateral
60	MP060	PIPE_2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
61	U061	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
62	MP062	PIPE_2.0	60	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
63	U063	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
64	MP064	PIPE_2.0	60	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
65	U065	(2) 1/2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
66	MP066	PIPE_2.0	60	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [lb/ft³]	Yield [psi]	Ry	Fu [psi]	Rt
1	A500 Gr. B [SQR]	2.9e+07	1.115e+07	0.3	0.65	527	46000	1.4	58000	1.3
2	A500 Gr. B [RND]	2.9e+07	1.115e+07	0.3	0.65	527	42000	1.4	58000	1.3
3	A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2
4	A53 Gr. B	2.9e+07	1.115e+07	0.3	0.65	490	35000	1.6	60000	1.2

Envelope Node Reactions

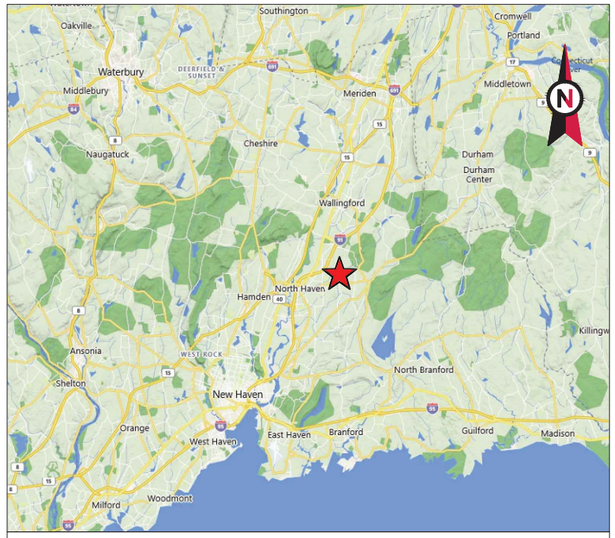
	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N001	max	0	241	0	241	0	241	0	241	0	241	0	241
2		min	0	1	0	1	0	1	0	1	0	1	0	1
3	N002	max	2761.598	4	3035.992	34	1736.552	2	1311.261	15	3399.809	19	8250.368	34
4		min	-2617.804	22	433.138	16	-1653.298	20	-4846.55	9	-3402.554	25	-1286.152	16
5	N003	max	1661.541	17	3035.448	26	3029.661	14	9431.627	26	3410.083	23	1930.672	23
6		min	-1660.84	23	435.802	20	-3194.936	8	-1511.734	20	-3412.821	17	-2106.847	5
7	N004	max	2652.378	18	3036.314	30	1870.746	2	1173.305	25	3409.274	15	1362.317	24
8		min	-2794.835	12	431.492	24	-1789.06	20	-5004.451	7	-3412.01	21	-8090.937	30
9	Totals:	max	6351.688	17	8606.62	31	6613.581	2						
10		min	-6351.688	23	3402.354	25	-6613.581	20						

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1	H001	HSS5x3x5	0.43	0	26	0.191	0	z	5	125792.366	169740	15456	22149	2.83	H1-1b
2	H002	HSS5x3x5	0.43	0	30	0.191	0	z	9	125792.366	169740	15456	22149	2.83	H1-1b
3	H003	PIPE_3.0	0.19	39.875	6	0.138	134.126		10	21265.833	78246	6898.5	6898.5	2.417	H1-1b
4	H004	HSS5x3x5	0.431	0	36	0.188	0	z	13	125792.366	169740	15456	22149	2.839	H1-1b
5	H005	PIPE_3.0	0.19	39.875	10	0.138	134.126		2	21265.833	78246	6898.5	6898.5	2.418	H1-1b
6	H006	PIPE_3.0	0.19	39.875	3	0.138	134.126		6	21265.833	78246	6898.5	6898.5	2.45	H1-1b
7	H007	PIPE_3.0	0.116	7.794	10	0.155	12.666		6	77888.459	78246	6898.5	6898.5	1.05	H1-1b
8	H008	PIPE_3.0	0.115	7.794	2	0.155	12.666		10	77888.459	78246	6898.5	6898.5	1.049	H1-1b
9	H009	PIPE_3.0	0.116	7.794	6	0.155	12.666		2	77888.459	78246	6898.5	6898.5	1.049	H1-1b
10	H010	PIPE_3.0	0.267	23.383	34	0.148	23.383		36	75086.325	78246	6898.5	6898.5	1.371	H1-1b
11	H011	PIPE_3.0	0.267	23.383	26	0.148	23.383		28	75086.325	78246	6898.5	6898.5	1.371	H1-1b
12	H012	PIPE_3.0	0.267	23.383	30	0.148	23.383		32	75086.325	78246	6898.5	6898.5	1.371	H1-1b
13	H013	L 1.5x1.5x4	0.082	15.206	25	0.012	29.79	z	36	8987.293	22469.4	217.337	862.417	1.136	H2-1
14	H014	L 1.5x1.5x4	0.082	15.206	17	0.012	29.79	z	28	8987.293	22469.4	217.337	862.417	1.136	H2-1
15	H015	L 1.5x1.5x4	0.082	15.206	21	0.012	29.79	z	32	8987.293	22469.4	217.337	862.417	1.136	H2-1
16	H016	L 1.5x1.5x4	0.084	15.206	19	0.011	29.79	y	32	8987.293	22469.4	217.337	862.417	1.136	H2-1
17	H017	L 1.5x1.5x4	0.084	15.206	23	0.011	29.79	y	36	8987.293	22469.4	217.337	862.417	1.136	H2-1
18	H018	L 1.5x1.5x4	0.084	15.206	15	0.011	29.79	y	28	8987.293	22469.4	217.337	862.417	1.136	H2-1
19	H019	PIPE_2.0	0.156	166.751	5	0.2	166.751		10	4678.483	38556	2245.95	2245.95	3	H1-1b
20	H020	PIPE_2.0	0.156	166.751	9	0.2	166.751		2	4678.483	38556	2245.95	2245.95	3	H1-1b
21	H021	PIPE_2.0	0.156	166.751	13	0.199	166.751		6	4678.483	38556	2245.95	2245.95	3	H1-1b
22	H022	PIPE_2.0	0.211	15.588	6	0.102	15.588		13	38162.512	38556	2245.95	2245.95	2.089	H1-1b
23	H023	PIPE_2.0	0.211	15.588	10	0.102	15.588		5	38162.512	38556	2245.95	2245.95	2.09	H1-1b
24	H024	PIPE_2.0	0.211	15.588	2	0.102	15.588		9	38162.512	38556	2245.95	2245.95	2.091	H1-1b
25	MP027	PIPE_2.5	0.181	81.375	2	0.06	81.375		13	32594.036	50715	3596.25	3596.25	2.194	H1-1b
26	MP030	PIPE_2.5	0.259	81.375	13	0.053	81.375		9	32594.036	50715	3596.25	3596.25	2.991	H1-1b
27	MP033	PIPE_2.5	0.242	81.375	2	0.052	81.375		7	32594.036	50715	3596.25	3596.25	3	H1-1b
28	MP036	PIPE_2.5	0.204	81.375	2	0.054	81.375		2	32594.036	50715	3596.25	3596.25	3	H1-1b
29	MP039	PIPE_2.5	0.18	81.375	10	0.06	81.375		9	32594.036	50715	3596.25	3596.25	3	H1-1b
30	MP042	PIPE_2.5	0.259	81.375	9	0.053	81.375		5	32594.036	50715	3596.25	3596.25	2.425	H1-1b
31	MP045	PIPE_2.5	0.242	81.375	10	0.052	81.375		3	32594.036	50715	3596.25	3596.25	2.39	H1-1b
32	MP048	PIPE_2.5	0.204	81.375	10	0.054	81.375		10	32594.036	50715	3596.25	3596.25	2.79	H1-1b

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
33	MP051	PIPE_2.5	0.18	81.375	6	0.06	81.375		5	32594.036	50715	3596.25	3596.25	2.206	H1-1b
34	MP054	PIPE_2.5	0.259	81.375	5	0.053	81.375		13	32594.036	50715	3596.25	3596.25	1.803	H1-1b
35	MP057	PIPE_2.5	0.242	81.375	6	0.052	81.375		11	32594.036	50715	3596.25	3596.25	1.763	H1-1b
36	MP060	PIPE_2.5	0.203	81.375	6	0.054	81.375		6	32594.036	50715	3596.25	3596.25	2.182	H1-1b
37	MP062	PIPE_2.0	0.683	50	13	0.051	50		13	12830.416	32130	1871.625	1871.625	1.811	H1-1b
38	MP064	PIPE_2.0	0.673	50	9	0.051	50		9	12830.416	32130	1871.625	1871.625	1.809	H1-1b
39	MP066	PIPE_2.0	0.683	50	5	0.051	50		5	12830.416	32130	1871.625	1871.625	2.211	H1-1b



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: NORTH HAVEN CT 1

ATC SITE NUMBER: 302482

AT&T PACE NUMBERS: MRCTB054078,MRCTB054058, MRCTB055983, MRCTB055973,MRCTB061750, MRCTB062568

AT&T SITE ID: CTL02012

AT&T FA CODE: 10034972

AT&T SITE NAME:NORTH HAVEN-DWIGHT ST

SITE ADDRESS: 15 DWIGHT STREET

NORTH HAVEN, CT 06473-1198

LOCATION MAP

AT&T AMENDMENT PLAN 5G NR 1SR CBAND; RETROFIT, LTE 6C

COMPLIANCE CODE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. INTERNATIONAL BUILDING CODE (IBC)
2. NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

UTILITY COMPANIES

POWER COMPANY: ----
PHONE: ----

TELEPHONE COMPANY: ----
PHONE: ----

811 Know what's below. Call before you dig.

PROJECT SUMMARY

SITE ADDRESS:

15 DWIGHT STREET
NORTH HAVEN, CT 06473-1198
COUNTY: NEW HAVEN

GEOGRAPHIC COORDINATES:

LATITUDE: 41.4207966
LONGITUDE: -72.84880398
GROUND ELEVATION: 26' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

AT&T MOBILITY

ARCHITECT (COORDINATING PROFESSIONAL:

PETER LICHOMSKI, AIA
49030 PONTIAC TRAIL, SUITE 400,
WIXOM, MI 48393
PH: (248) 705-9212

PROPERTY OWNER:

15 DWIGHT ST LLC
15 DWIGHT STREET
NORTH HAVEN, CT 06473-1198

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:
TOWER WORK:
REMOVE (6) ANTENNA(S), (6) TMA(S) AND (1) ANTENNA MOUNTING PLATFORM

INSTALL (1) PERFECT VISION PV-LPPGS-14M-HR25-HWLL ANTENNA MOUNT PLATFORM, (3) P2 (2.375"X60") ANTENNA MOUNTING PIPES WITH (3) SITE PRO 1 SCX7-U CROSSOVER PLATE KITS, (9) ANTENNA(S) (1) RRH(S), AND (6) Y CABLE(s)

EXISTING (3) ANTENNA(S), (9) RRH(S), (3) SQUID(S), (12) 1-1/4" COAX CABLE(S), (4) #8 AWG DC CABLES, (2) #6 AWG DC CABLES, (1) 12 PAIR FIBER TRUNK(S) AND (2) 18 PAIR FIBER TRUNK(S) TO REMAIN
GROUND WORK:
REMOVE (12) DIPLEXER(S)
INSTALL (3) RRH (1) 6648 W/ XCEDE CABLE AND (6) APTDC-BDFDM-DB SURGE ARRESTOR

EXISTING (2) RRU(S) RELOCATED FROM SHELTER TO TOWER TOP

PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.
6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).

PROJECT LOCATION DIRECTIONS

I-91 TO EXIT 13 TO RT 5 SOUTH. TURN RIGHT ONTO DEFCO PARK ROAD. TAKE FIRST RIGHT ONTO DODGE THEN LEFT ONTO DWIGHT. GO TO END OF STREET AND TURN LEFT INTO GATED PARKING LOT. TOWER IS IN BACK TO THE RIGHT.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	0	05/07/22	RC
G-002	GENERAL NOTES	0	05/07/22	RC
C-101	DETAILED SITE PLAN	0	05/07/22	RC
C-102	DETAILED EQUIPMENT LAYOUT	0	05/07/22	RC
C-201	TOWER ELEVATION	0	05/07/22	RC
C-401	RF SCHEDULE AND ANTENNA INSTALLATION	0	05/07/22	RC
C-501	CONSTRUCTION DETAILS	0	05/07/22	RC
E-501	GROUNDING DETAILS	0	05/07/22	RC
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			
R-604	SUPPLEMENTAL			
R-605	SUPPLEMENTAL			
R-606	SUPPLEMENTAL			
R-607	SUPPLEMENTAL			

AMERICAN TOWER®

LAB
49030 Pontiac Trail, Suite 400
Wixom, Michigan 48393
PHONE: (248) 705-9212

REV.	DESCRIPTION	BY	DATE
A	PRELIM	RC	03/24/22
0	FINAL CD	RC	05/07/22

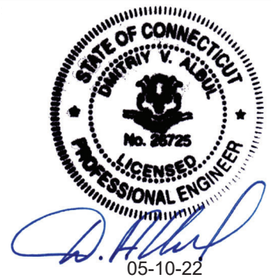
ATC SITE NUMBER:
302482

ATC SITE NAME:
NORTH HAVEN CT 1

AT&T SITE NAME:
NORTH HAVEN-DWIGHT ST

SITE ADDRESS:
15 DWIGHT STREET
NORTH HAVEN, CT 06473-1198

SEAL:



05-10-22

AT&T

DATE DRAWN:	03/24/22
ATC JOB NO:	13757802_D1
CUSTOMER ID:	CTL02012
FA NUMBER:	10034972

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	0

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, AT&T "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
   - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
   - B. AC/TELCO INTERFACE BOX (PPC)
   - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
   - D. TOWERS, MONOPOLES
   - E. TOWER LIGHTING
   - F. GENERATORS & LIQUID PROPANE TANK
   - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
   - H. ANTENNAS (INSTALLED BY OTHERS)
   - I. TRANSMISSION LINE
   - J. TRANSMISSION LINE JUMPERS
   - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
   - L. TRANSMISSION LINE GROUND KITS
   - M. HANGERS
   - N. HOISTING GRIPS
   - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF AT&T TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE AT&T REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE AT&T REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE AT&T REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE AT&T CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE AT&T REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH AT&T AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH AT&T REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH AT&T REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY AT&T MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH AT&T SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO AT&T FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO AT&T SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY AT&T REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE AT&T REP. ANY WORK FOUND BY THE AT&T REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. AT&T FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE AT&T WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. AT&T OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO AT&T OR THEIR ARCHITECT/ENGINEER.

SPECIAL CONSTRUCTION ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
   - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY AT&T UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL.
   - B. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND AT&T SPECIFICATIONS.
   - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.
   - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.
   - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
   - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
   - G. ANTENNA AND COAXIAL CABLE GROUNDING:
2. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.
3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)

ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

AMERICAN TOWER®

LAB
49030 Pontiac Trail, Suite 400
Wixom, Michigan 48393
PHONE: (248) 705-9212

REV.	DESCRIPTION	BY	DATE
A	PRELIM	RC	03/24/22
0	FINAL CD	RC	05/07/22

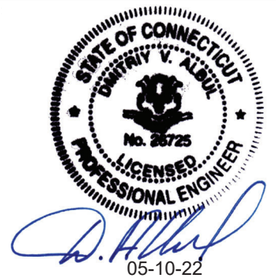
ATC SITE NUMBER:
302482

ATC SITE NAME:
NORTH HAVEN CT 1

AT&T SITE NAME:
NORTH HAVEN-DWIGHT ST

SITE ADDRESS:
15 DWIGHT STREET
NORTH HAVEN, CT 06473-1198

SEAL:



05-10-22

AT&T

DATE DRAWN:	03/24/22
ATC JOB NO:	13757802_D1
CUSTOMER ID:	CTL02012
FA NUMBER:	10034972

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

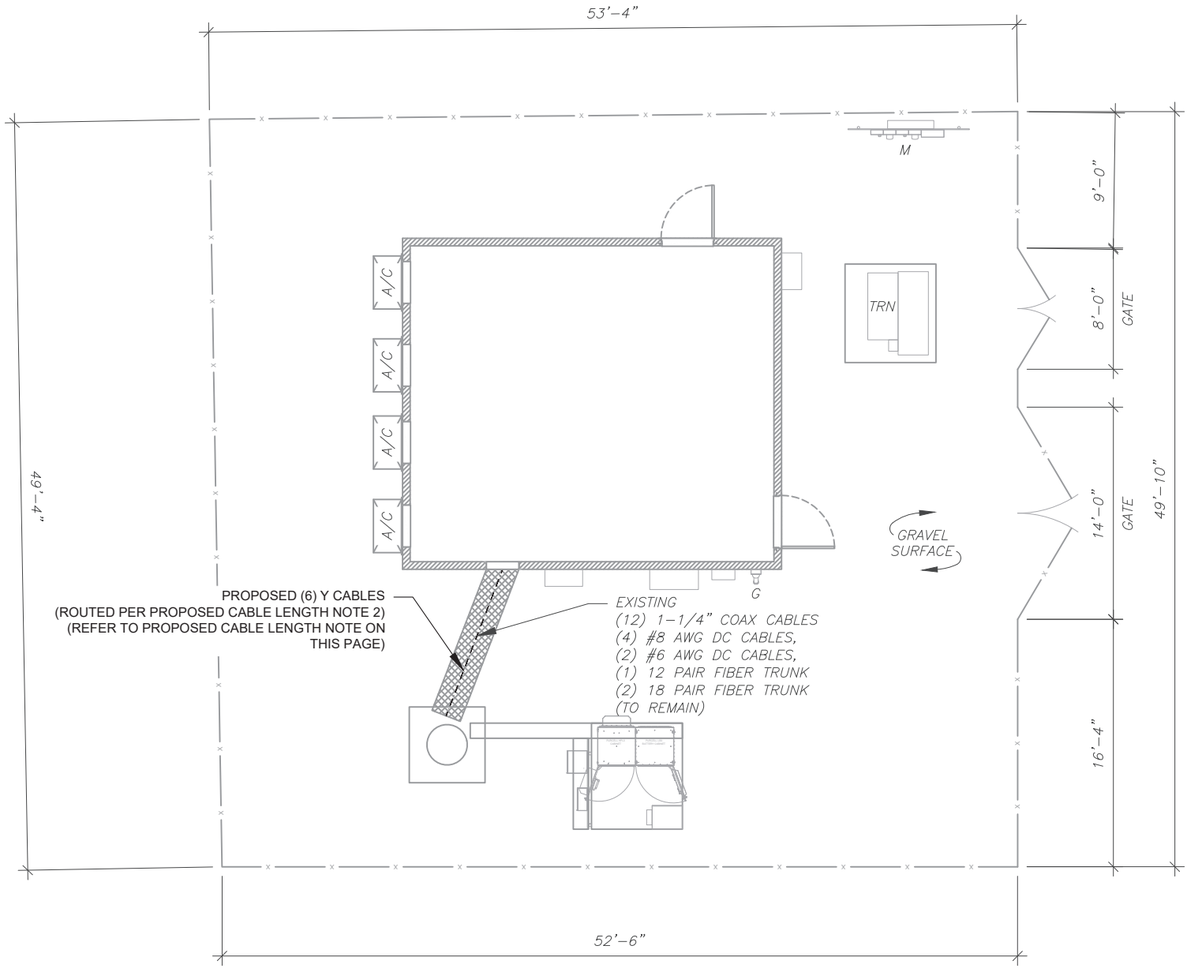
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.

3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE AT&T REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.

LEGEND

⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
—x—	CHAINLINK FENCE



1 DETAILED SITE PLAN

0 10' 20'

SCALE: 1"=10' (11X17)
1"=5' (22X34)

PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **190'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.

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AT&T SITE NAME:
NORTH HAVEN-DWIGHT ST

SITE ADDRESS:
15 DWIGHT STREET
NORTH HAVEN, CT 06473-1198

SEAL:

STATE OF CONNECTICUT
DMITRIY V. ALBUL
No. 26725
LICENSED
PROFESSIONAL ENGINEER

05-10-22

AT&T

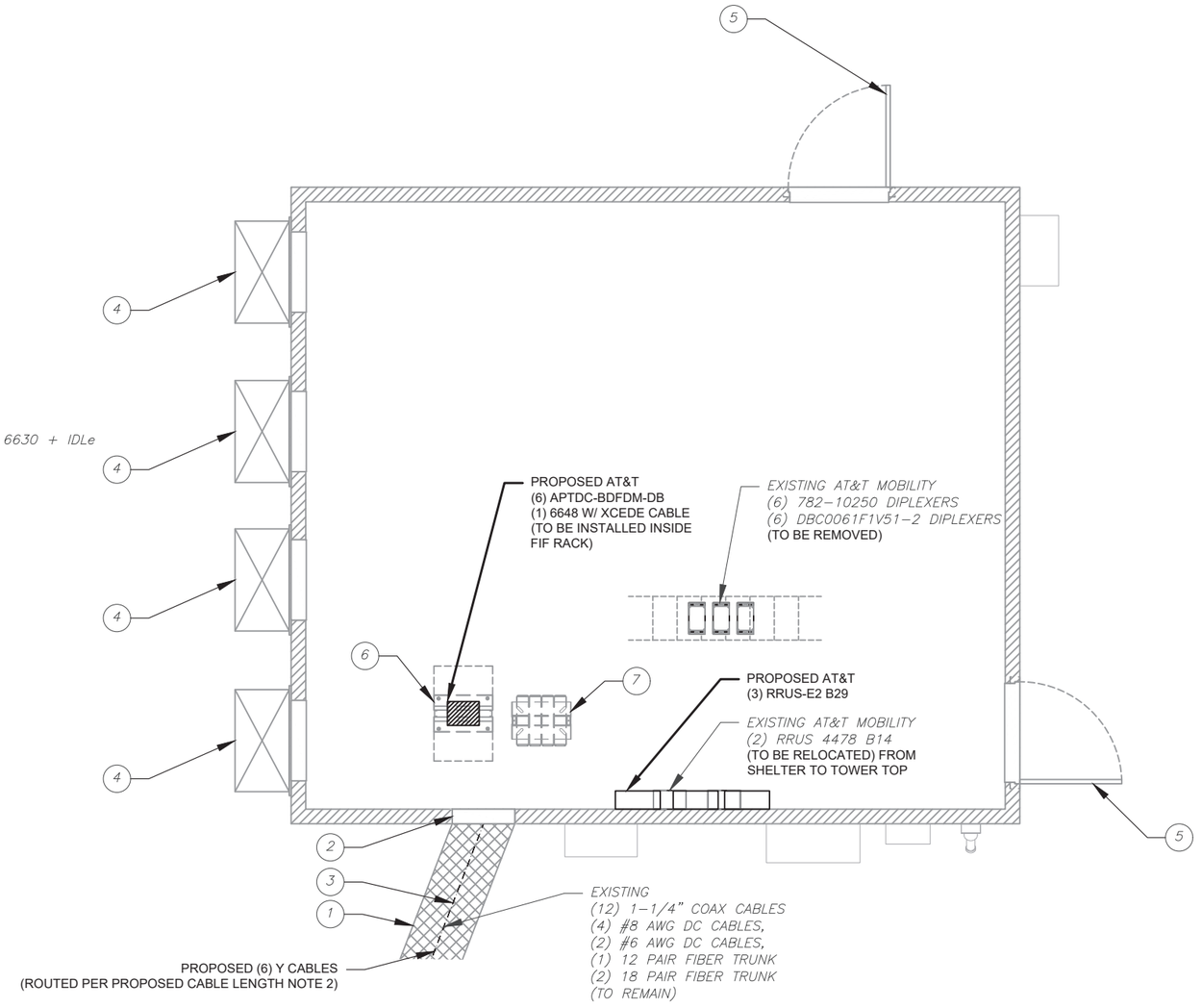
DATE DRAWN:	03/24/22
ATC JOB NO:	13757802_D1
CUSTOMER ID:	CTL02012
FA NUMBER:	10034972

DETAILED SITE PLAN

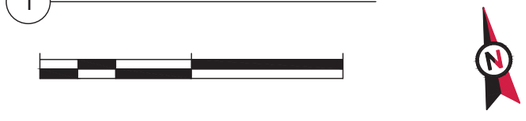
SHEET NUMBER:	REVISION:
C-101	0

EXISTING EQUIPMENT

1. ICE BRIDGE
2. COAX PORT
3. COAX TRUNK CABLE
4. HVAC
5. DOOR
6. FIF RACK
7. BATTERIES
8. (1) 6601, (1) 5216, (1) XMU03 & (1) 6630 + IDLe



1 DETAILED SHELTER PLAN



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SITE ADDRESS:
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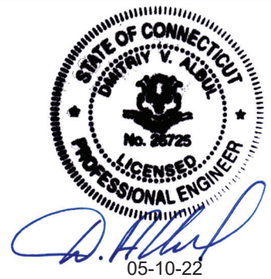
NORTH HAVEN, CT 06473-1198

SEAL:



05-10-22

AT&T

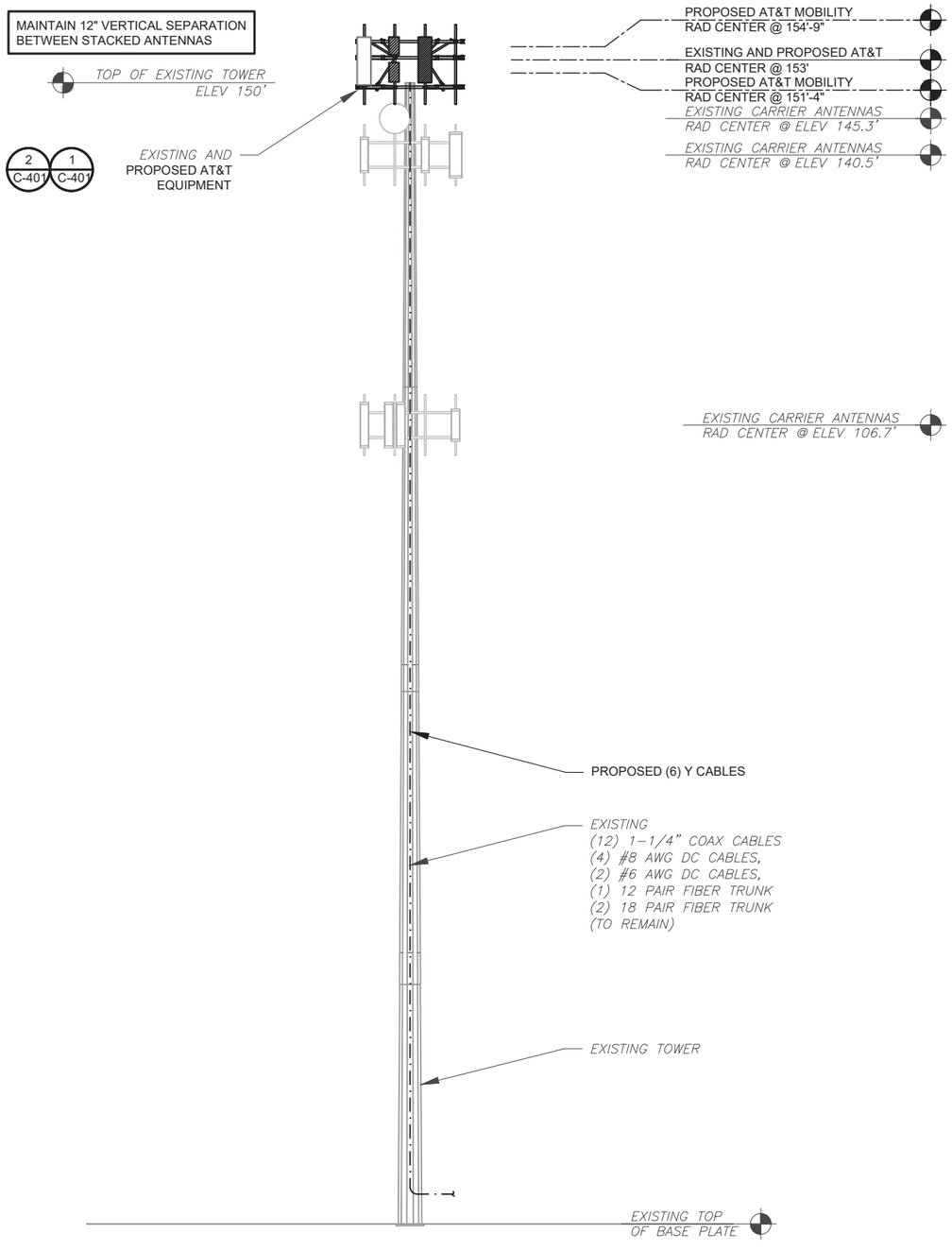
DATE DRAWN:	03/24/22
ATC JOB NO:	13757802_D1
CUSTOMER ID:	CTL02012
FA NUMBER:	10034972

DETAILED EQUIPMENT LAYOUT

SHEET NUMBER:	REVISION:
C-102	0

EXISTING AND FINAL CONFIGURATIONS ARE BASED ON RFDS. CONTRACTOR TO VERIFY EXISTING CONDITIONS.

PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED 03/21/2022, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.



1 TOWER ELEVATION
SCALE: N.T.S.

TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
3. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
4. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)
5. TOWER ELEVATION DEPICTION MAY NOT REFLECT ALL EQUIPMENT INCLUDED IN STRUCTURAL ANALYSIS. REFER TO STRUCTURAL ANALYSIS FOR FULL TOWER LOADING.

AMERICAN TOWER®

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NORTH HAVEN, CT 06473-1198

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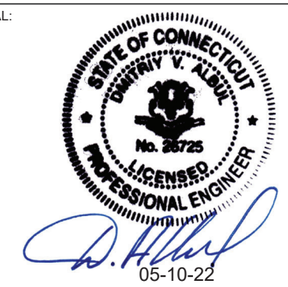

AT&T

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CUSTOMER ID:	CTL02012
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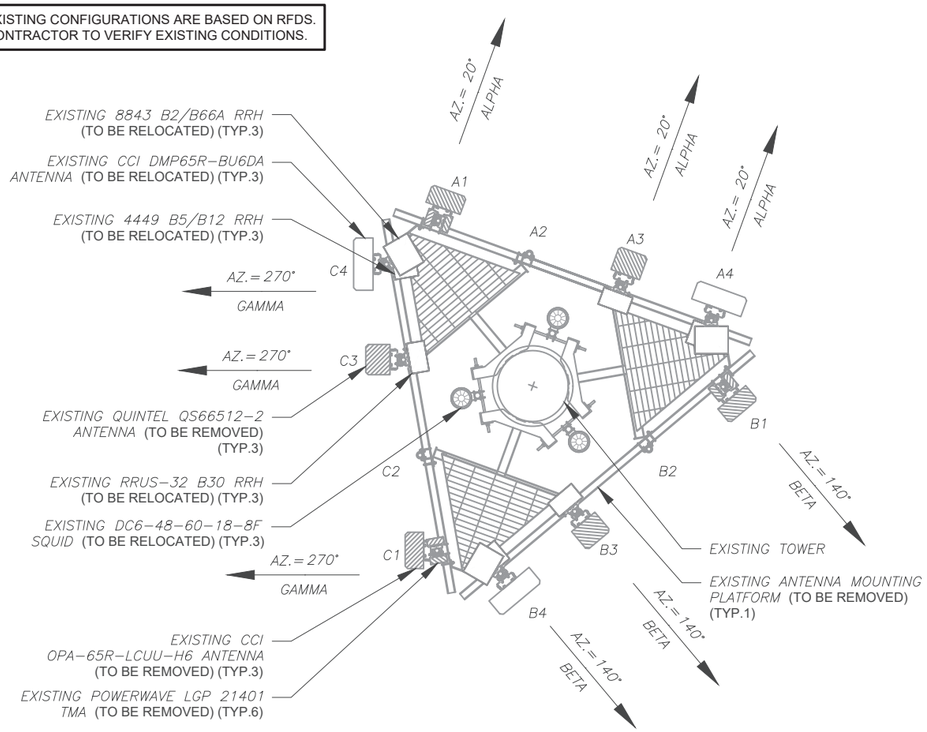
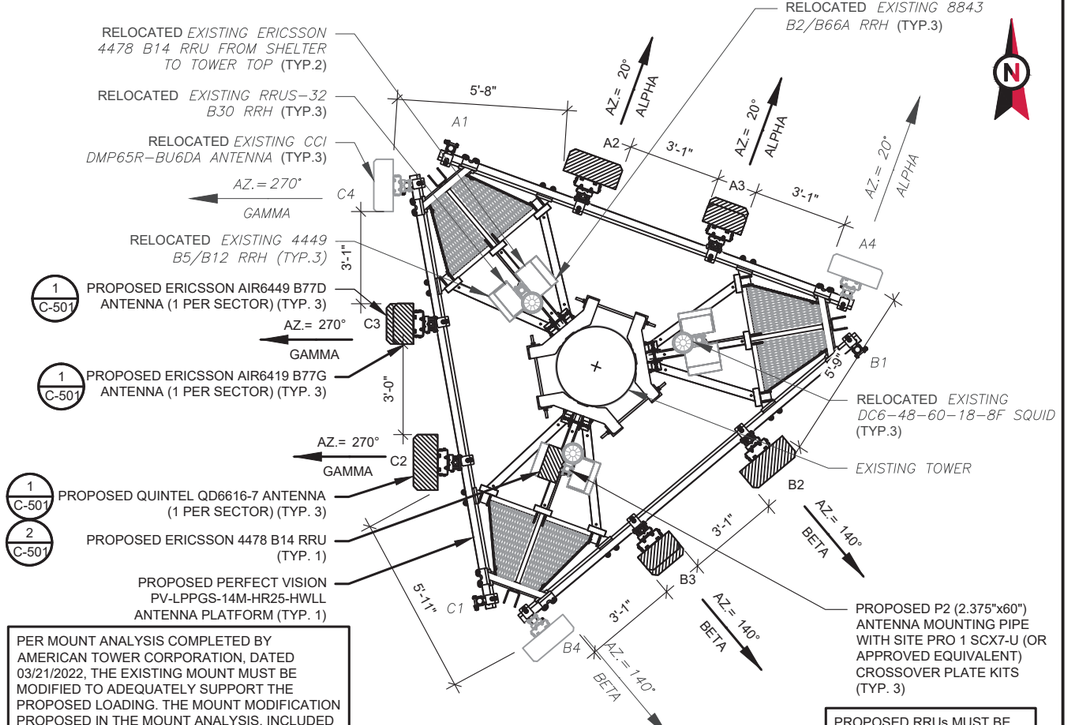
TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	0

EXISTING CONFIGURATIONS ARE BASED ON RFDS.
CONTRACTOR TO VERIFY EXISTING CONDITIONS.



1 CURRENT ANTENNA PLAN
SCALE: N.T.S.



PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED 03/21/2022, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.

PROPOSED RRUs MUST BE INSTALLED A MINIMUM OF 12" AWAY FROM ALL ANTENNAS

2 FINAL ANTENNA PLAN
SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	153'	20°	A1	CCI OPA-65R-LCUU-H6	UMTS 850	RMV	(2) POWERWAVE LGP 21401 TMA	RMV
			A2	–	–	–	–	–
			A3	QUINTEL QS66512-2	LTE 700/LTE WCS/ LTE AWS	RMV	RRUS-32 B30/ RRU 4478 B14 (GROUND)	REL
			A4	CCI DMP65R-BU6DA	LTE 700/LTE 850/LTE PCS/ 5G 850	REL	RRU 4449 B5/B12	REL
							RRU 8843 B2/B66A	REL
BETA	153'	140°	B1	CCI OPA-65R-LCUU-H6	UMTS 850	RMV	(2) POWERWAVE LGP 21401 TMA	RMV
			B2	–	–	–	–	–
			B3	QUINTEL QS66512-2	LTE 700/LTE WCS/ LTE AWS	RMV	RRUS-32 B30/ RRU 4478 B14 (GROUND)	REL
			B4	CCI DMP65R-BU6DA	LTE 700/LTE 850/LTE PCS/ 5G 850	REL	RRU 4449 B5/B12	REL
							RRU 8843 B2/B66A	REL
GAMMA	153'	270°	C1	CCI OPA-65R-LCUU-H6	UMTS 850	RMV	(2) POWERWAVE LGP 21401 TMA	RMV
			C2	–	–	–	–	–
			C3	QUINTEL QS66512-2	LTE 700/LTE WCS/ LTE AWS	RMV	-	REL
			C4	CCI DMP65R-BU6DA	LTE 700/LTE 850/LTE PCS/ 5G 850	REL	RRU 4449 B5/B12	REL
							RRU 8843 B2/B66A	REL

NOTES

1. CONFIRM WITH AT&T REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
3. THE ANTENNA ORIENTATION PLAN IS A SCHEMATIC. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA AZIMUTHS, MOUNT CONFIGURATIONS AND TOWER ORIENTATION. SCALES SHOWN ARE FOR REFERENCE ONLY AND EXISTING DIMENSIONS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO INSTALLATION AND NOTIFY ATC OF ANY DISCREPANCIES.
4. CONTRACTOR TO ENSURE PROPER SEPARATION IN ACCORDANCE WITH AT&T'S FIRSTNET REQUIREMENTS (SEE SHEET R-602)

FINAL ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	-	20°	A1	-	-	-	-	-
	153'		A2	QUINTEL QD6616-7	LTE 700/LTE PCS/LTE AWS/5G PCS/5G AWS	ADD	RRU 8843 B2/B66A, RRU 4478 B14	REL
							RRUS-E2 B29 (GROUND)	ADD
	154'-9"		A3	ERICSSON AIR 6419 B77G	5G DOD	ADD	-	-
	151'-4"			ERICSSON AIR 6449 B77D	5G CBAND	ADD	-	-
	153'		A4	CCI DMP65R-BU6DA	LTE 700/LTE WCS/ 5G 850	REL	RRU 4449 B5/B12	REL
							RRUS-32 B30	REL
BETA	-	140°	B1	-	-	-	-	-
	153'		B2	QUINTEL QD6616-7	LTE 700/LTE PCS/LTE AWS/5G PCS/5G AWS	ADD	RRU 8843 B2/B66A, RRU 4478 B14	REL
							RRUS-E2 B29 (GROUND)	ADD
	154'-9"		B3	ERICSSON AIR 6419 B77G	5G DOD	ADD	-	-
	151'-4"			ERICSSON AIR 6449 B77D	5G CBAND	ADD	-	-
	153'		B4	CCI DMP65R-BU6DA	LTE 700/LTE WCS/ 5G 850	REL	RRU 4449 B5/B12	REL
							RRUS-32 B30	REL
GAMMA	-	270°	C1	-	-	-	-	-
	153'		C2	QUINTEL QD6616-7	LTE 700/LTE PCS/LTE AWS/5G PCS/5G AWS	ADD	RRU 8843 B2/B66A	REL
							RRU 4478 B14, RRUS-E2 B29 (GROUND)	ADD
	154'-9"		C3	ERICSSON AIR 6419 B77G	5G DOD	ADD	-	-
	151'-4"			ERICSSON AIR 6449 B77D	5G CBAND	ADD	-	-
	153'		C4	CCI DMP65R-BU6DA	LTE 700/LTE WCS/ 5G 850	REL	RRU 4449 B5/B12	REL
							RRUS-32 B30	REL

THIS PAGE CONTAINS CONFIDENTIAL, PROPRIETARY OR TRADE SECRET INFORMATION EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW.

EXISTING FIBER DISTRIBUTION/SQUID		EXISTING CABLING SUMMARY			
MODEL NUMBER	STATUS	COAX	DC	FIBER	STATUS
(3) DC6-48-60-18-8F SQUID	RMN	(12) 1-1/4"	(4) #8 AWG CABLES, (2) #6 AWG CABLES	(1) 12 PAIR (2) 18 PAIR	RMN

STATUS ABBREVIATIONS
RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

CABLE LENGTHS FOR JUMPERS
JUNCTION BOX TO RRU: 15'
RRU TO ANTENNA: 10'

3 EQUIPMENT SCHEDULES

FINAL FIBER DISTRIBUTION/SQUID		FINAL CABLING SUMMARY			
MODEL NUMBER	STATUS	COAX	DC	FIBER	STATUS
(3) DC6-48-60-18-8F SQUID	RMN	(12) 1-1/4"	(4) #8 AWG CABLES, (2) #6 AWG CABLES	(1) 12 PAIR (2) 18 PAIR	RMN
				(6) Y-CABLES	ADD

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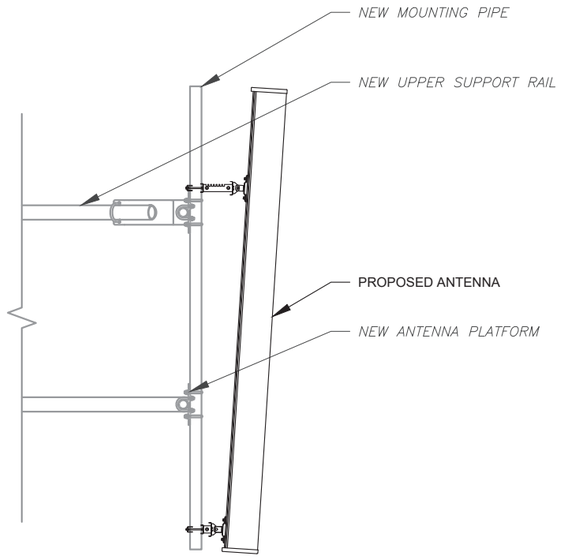
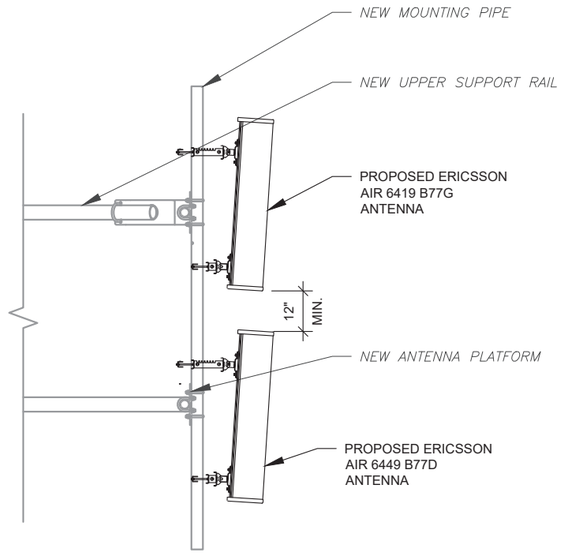
CUSTOMER ID:	CTL02012
FA NUMBER:	10034972

RF SCHEDULE AND ANTENNA INSTALLATION

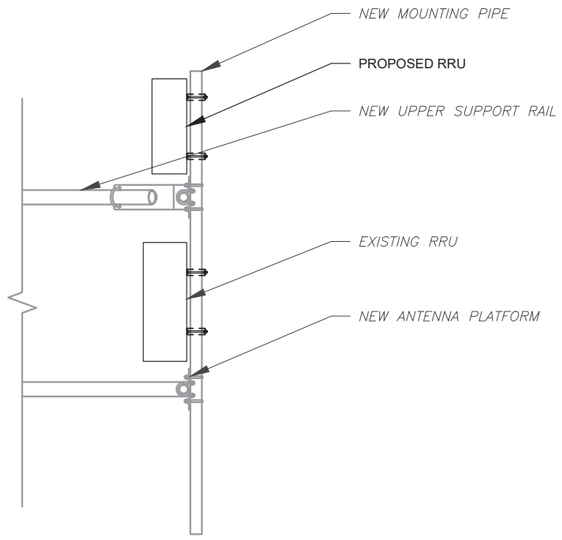
SHEET NUMBER:	REVISION:
C-401	0





1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL

SCALE: NOT TO SCALE



2 PROPOSED RRU MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.

AMERICAN TOWER®

LAB
49030 Pontiac Trail, Suite 400
Wixom, Michigan 48393
PHONE: (248) 705-9212

REV.	DESCRIPTION	BY	DATE
A	PRELIM	RC	03/24/22
0	FINAL CD	RC	05/07/22

ATC SITE NUMBER:
302482

ATC SITE NAME:
NORTH HAVEN CT 1

AT&T SITE NAME:
NORTH HAVEN-DWIGHT ST

SITE ADDRESS:
15 DWIGHT STREET
NORTH HAVEN, CT 06473-1198

SEAL:

STATE OF CONNECTICUT
DMITRIY V. ALBUL
No. 26725
LICENSED
PROFESSIONAL ENGINEER

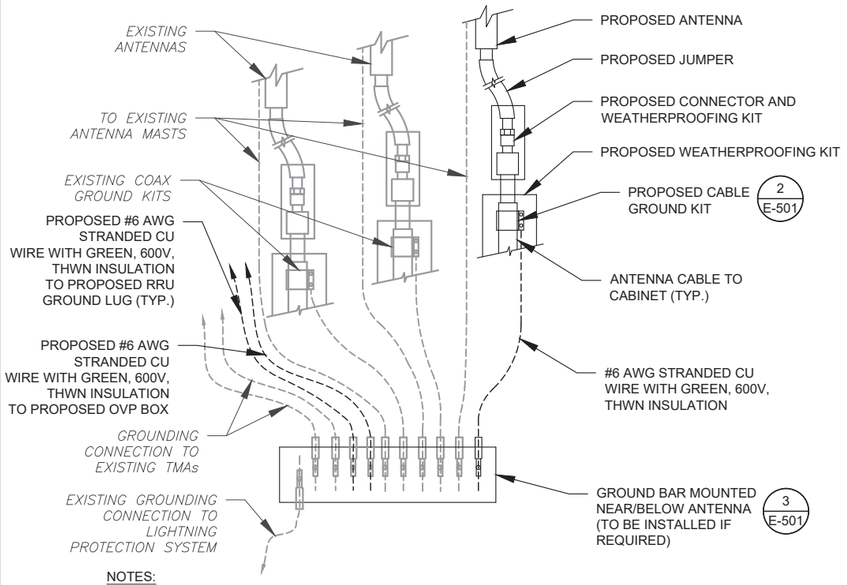
05-10-22

AT&T

DATE DRAWN:	03/24/22
ATC JOB NO:	13757802_D1
CUSTOMER ID:	CTL02012
FA NUMBER:	10034972

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-501	0

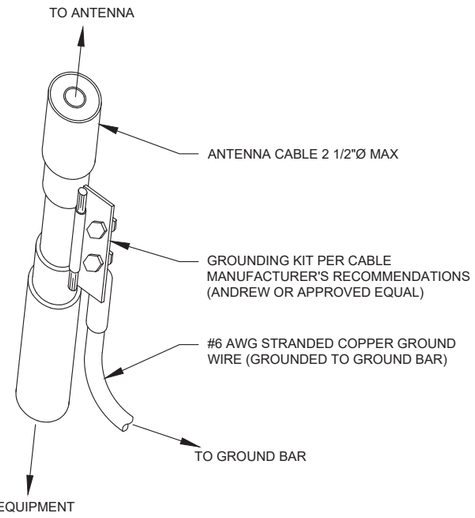


NOTES:

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH AT&T GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH AT&T GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

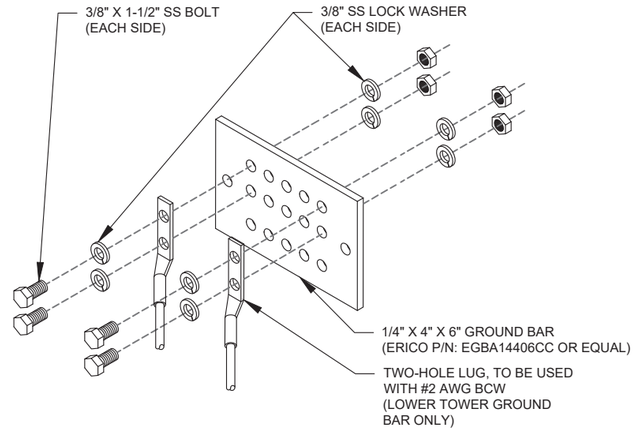


GROUND KIT NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.

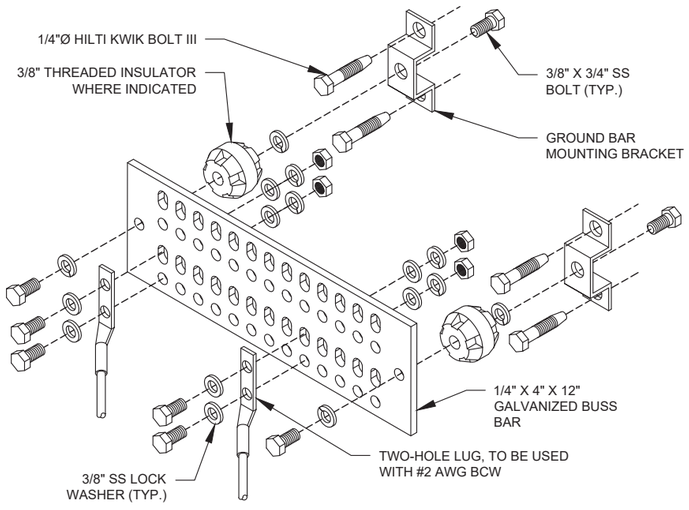


GROUND BAR NOTES:

1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.

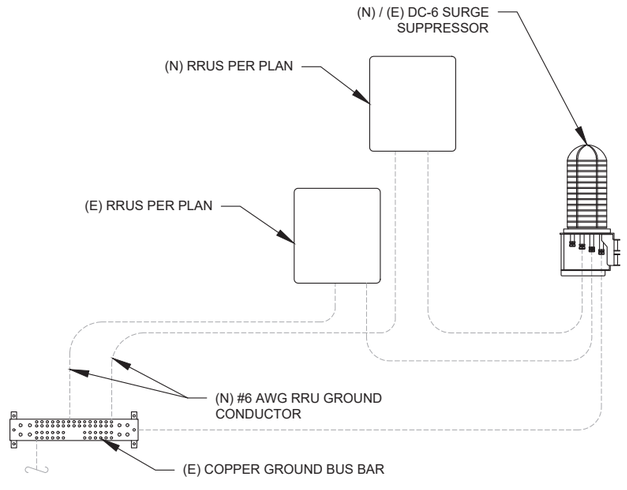


GROUND BAR NOTES

1. GROUND KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR SHALL BE BOLTED TO STRUCTURAL MEMBER OR ANCHORED TO CONCRETE SLAB W/ HILTI KWIK BOLT III.

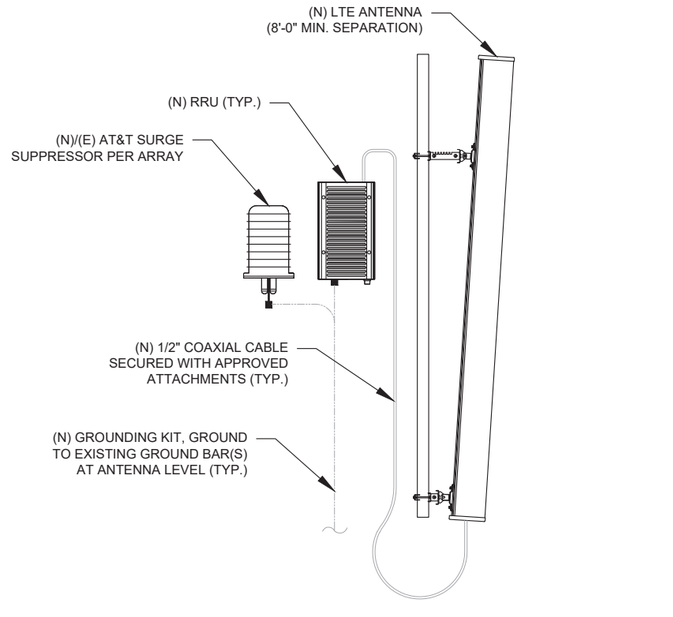
4 MAIN GROUND BAR DETAIL

SCALE: N.T.S.



5 RRU GROUNDING

SCALE: N.T.S.



6 ANTENNA/RRU GROUNDING

SCALE: N.T.S.

AMERICAN TOWER®

LAB

49030 Pontiac Trail, Suite 400
Wixom, Michigan 48393
PHONE: (248) 705-9212

REV.	DESCRIPTION	BY	DATE
A	PRELIM	RC	03/24/22
0	FINAL CD	RC	05/07/22

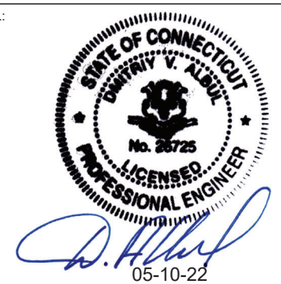
ATC SITE NUMBER:
302482

ATC SITE NAME:
NORTH HAVEN CT 1

AT&T SITE NAME:
NORTH HAVEN-DWIGHT ST

SITE ADDRESS:
15 DWIGHT STREET
NORTH HAVEN, CT 06473-1198

SEAL:

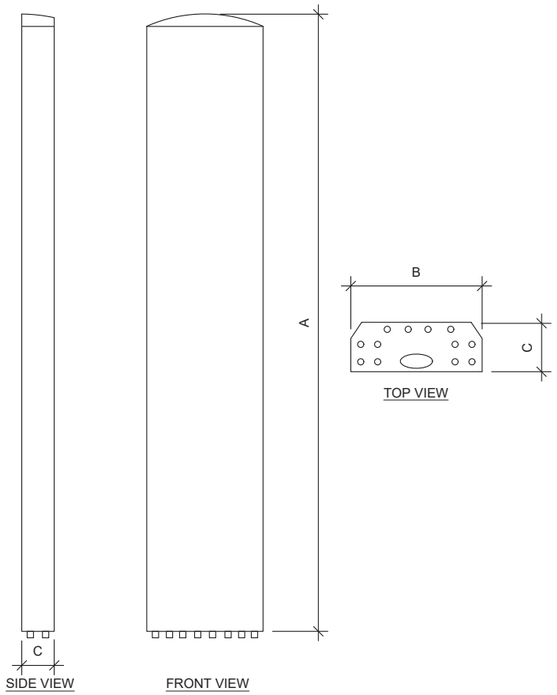


AT&T

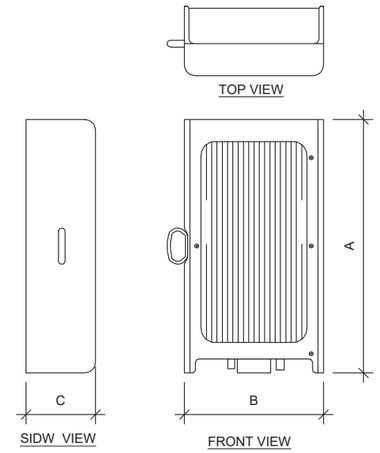
DATE DRAWN:	03/24/22
ATC JOB NO:	13757802_D1
CUSTOMER ID:	CTL02012
FA NUMBER:	10034972

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0



ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
QD6616-7	72.0"	22.0"	9.6"	130.0
ERICSSON AIR 6449 B77D	30.4"	15.9"	10.6"	81.6
ERICSSON AIR 6419 B77G	28.3"	16.1"	7.9"	66.1



RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
2012 B29	20.4"	18.5"	7.5"	60.0
RRUS 4478 B14	16.5"	13.4"	7.7"	59.9

1 EQUIPMENT SPECIFICATIONS

SCALE: N.T.S.

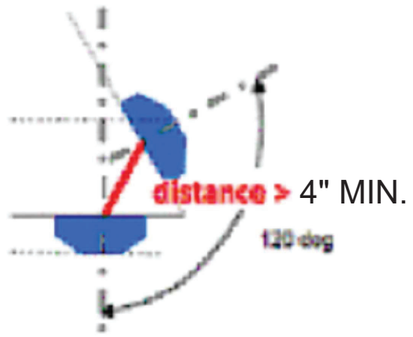
SUPPLEMENTAL

SHEET NUMBER: R-601

REVISION: 0

RF REQUIREMENTS FOR 700 B14 FIRSTNET, 700 B12, 700D B29 ANTENNA SEPARATION

- ❑ Horizontal separation (side to side of antenna): >= 3'
- ❑ Vertical separation (between the tips of the antennas): > 3'



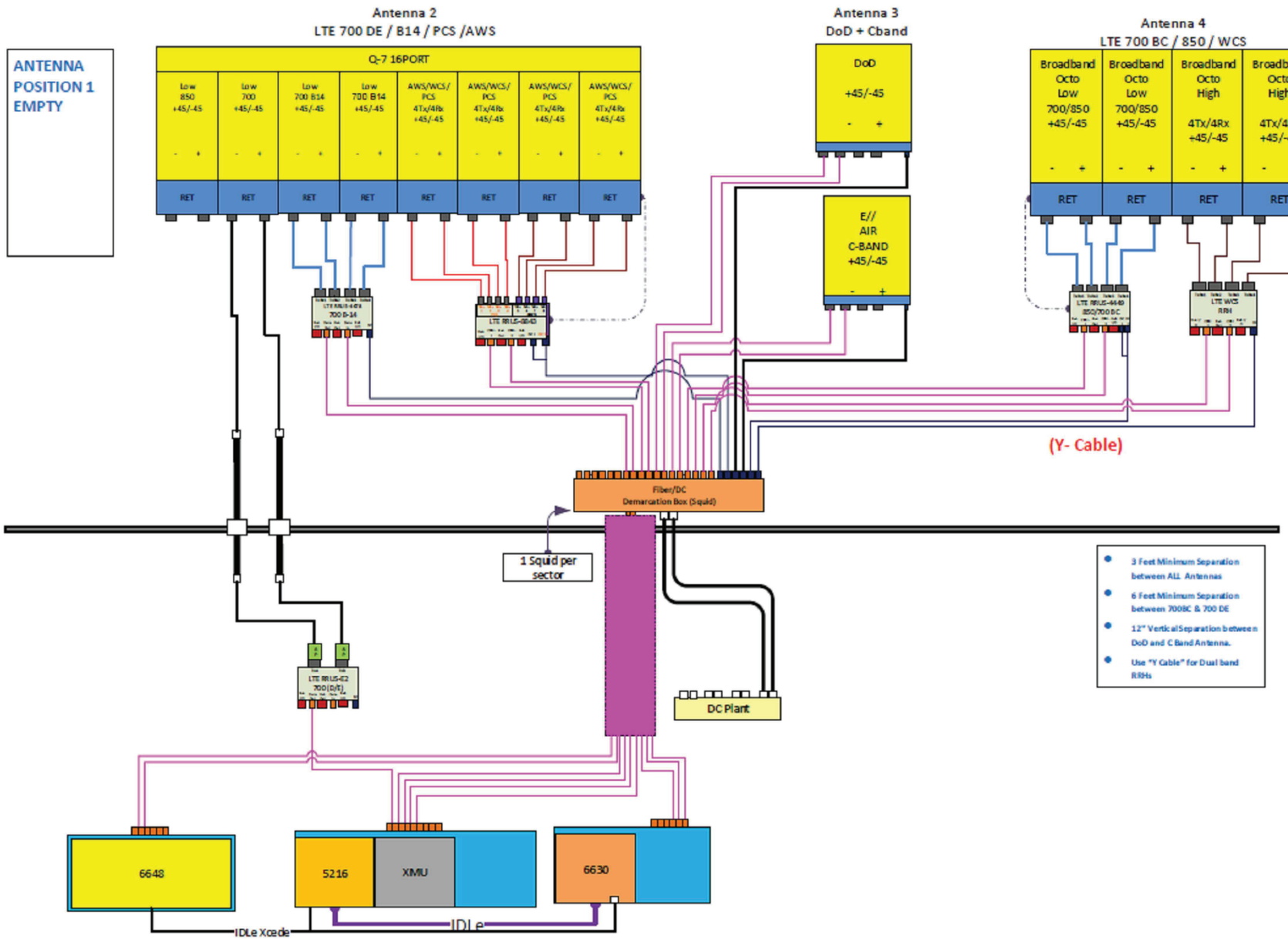
- ❑ Please note additional horizontal separation may be required if B14 antennas azimuth are different from others or antennas are severely angled with respect to the mount.
- ❑ Typical 3' horizontal separation can tolerate skew angle up to 6º.

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-602	0

Diagram - Sector	A	Diagram File Name - Cband_3Ant_Q7DEBOT_DoD_CB_DMP_8843__1DCFIB_1x5216_1XMU_6630_6648.vsd					
Atoll Site Name -	CTL02012	Location Name -	NORTH HAVEN-DWIGHT ST	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments: Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson							



1 RFDS PLUMBING DIAGRAM

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. GENERAL CONTRACTOR IS TO CHECK WITH THE AT&T CM TO ENSURE THIS IS THE MOST RECENT VERSION OF THE RFDS.

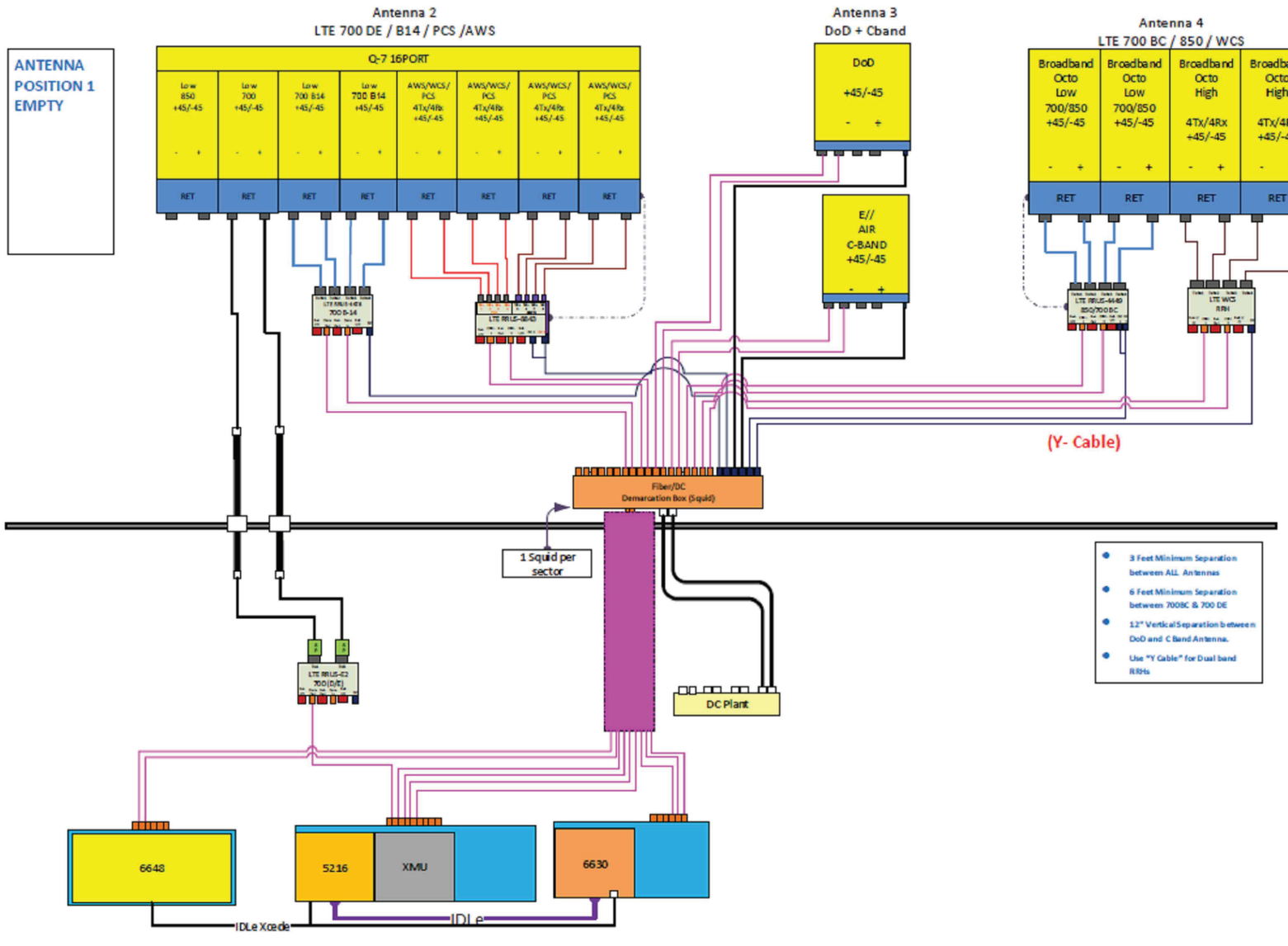
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-603	0

Diagram - Sector B | Diagram File Name - Cband_3Ant_Q7DEBOT_DoD_CB_DMP_8843__1DCFIB_1x5216_1XMU_6630_6648.vsd

Atoll Site Name - CTL02012 | Location Name - NORTH HAVEN-DWIGHT ST | Market - CONNECTICUT | Market Cluster - NEW ENGLAND

Comments: Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson



1 RFDS PLUMBING DIAGRAM

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. GENERAL CONTRACTOR IS TO CHECK WITH THE AT&T CM TO ENSURE THIS IS THE MOST RECENT VERSION OF THE RFDS.

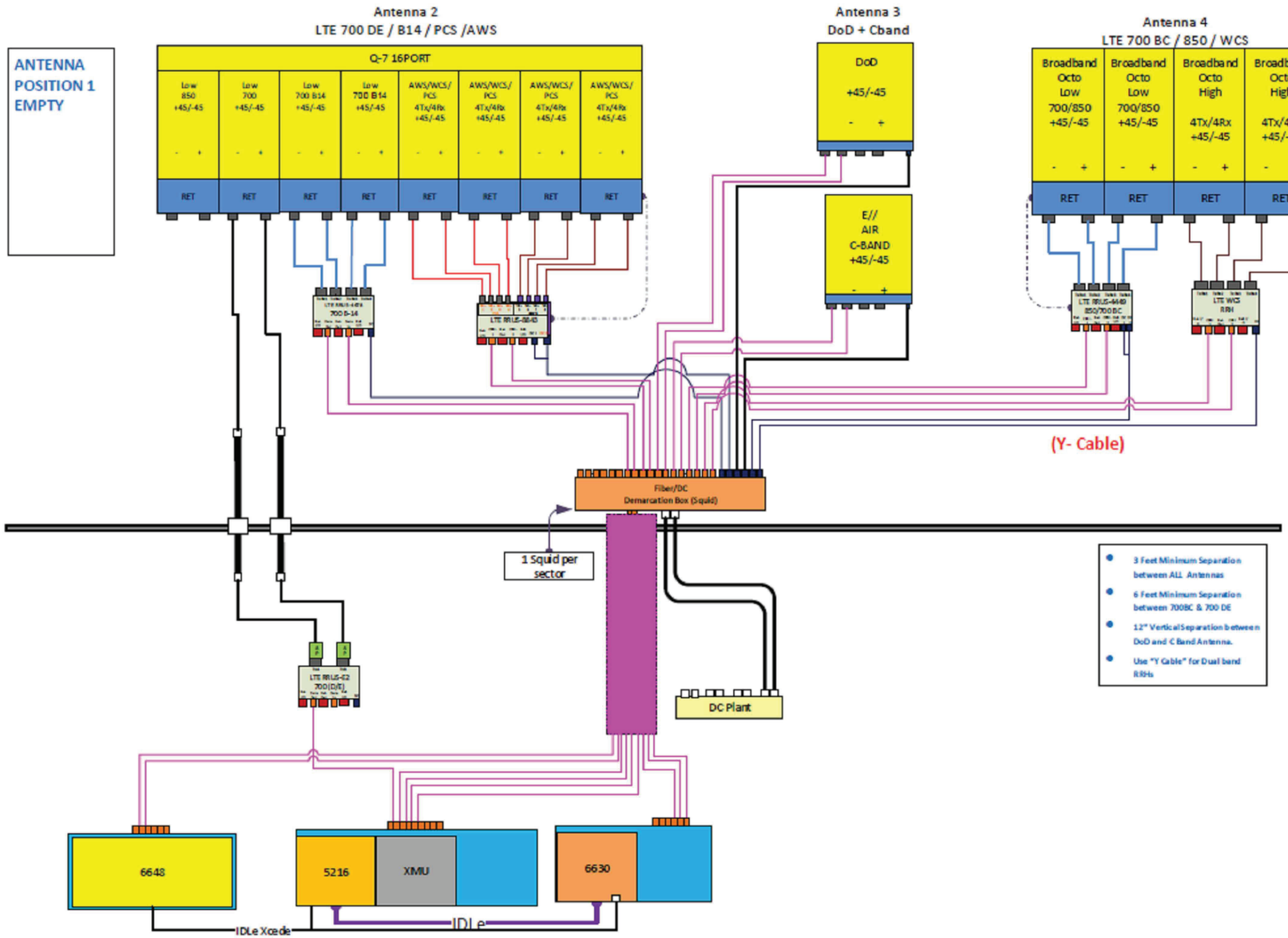
SUPPLEMENTAL

SHEET NUMBER: R-604

REVISION: 0

Diagram - Sector	C	Diagram File Name - Cband_3Ant_Q7DEBOT_DoD_CB_DMP_8843__1DCFIB_1x5216_1XMU_6630_6648.vsd					
Atoll Site Name -	CTL02012	Location Name -	NORTH HAVEN-DWIGHT ST	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

Comments: Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna_Radio Connection Drawings Playbook v6.0_Ericsson



1 RFDS PLUMBING DIAGRAM

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. GENERAL CONTRACTOR IS TO CHECK WITH THE AT&T CM TO ENSURE THIS IS THE MOST RECENT VERSION OF THE RFDS.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-605	0

AMERICAN TOWER®
CORPORATION

Mount Analysis Report

ATC Site Name	:	**North Haven CT 1, CT**
ATC Site Number	:	**302482**
Engineering Number	:	**13757802_C8_01**
Mount Elevation	:	**153 ft**
Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**MRCTB055973**
Carrier Site Number	:	**CTL02012**
Site Location	:	**15 Dewight Street** **North Haven, CT 06473-1198** **41.4207966 , -72.84880398**
County	:	**New Haven**
Date	:	**March 21, 2022**
Max Usage	:	**68%**
Result	:	**Contingent Pass**

Prepared By:
Michael Ellis
Structural Engineer I

Reviewed By:

STATE OF CONNECTICUT · ESHA KAUSHAL MODI · 32593 · LICENSED PROFESSIONAL ENGINEER

Authorized by "EOR"
21 Mar 2022 03:58:17 cosign

COA: PEC.0001553

Introduction

The purpose of this report is to summarize results of the mount analysis performed for AT&T Mobility at 153 ft.

Supporting Documents

Specifications Sheet	Perfect Vision PV-LPPGS-14M-HR25-HWLL, dated November 1, 2019
Radio Frequency Data Sheet	RFDS ID #10034972, dated February 10, 2022
Reference Photos	Site photos from 2021

Analysis

This mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

Basic Wind Speed:	120 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.00" radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.204, S1 = 0.054
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs

*** Based on experience, it has been determined that the Lv load cases will not control over Lm load cases in platform mount analyses. Therefore, these load cases have been excluded from this analysis.**

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above provided the modifications listed below are completed:

- Install P2 (2.375" x 60") antenna mounting pipe (Mount Pipe M, N and O) with Site Pro 1 SCX7-U (or approved equivalent) crossover plate kits.
- No structural failures were addressed with the noted contingencies. Contingencies address Carrier's antenna spacing requirements.

Analysis based on new Perfect Vision PV-LPPGS-14M-HR25-HWLL (CEQ.53348) platform with handrails.

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.

A.T. Engineering Service, PLLC - 3500 Regency Parkway, Suite 100 - Cary, NC 27518 - 919.468.0112 Office - 919.466.5414 Fax - www.americantower.com

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-606	0

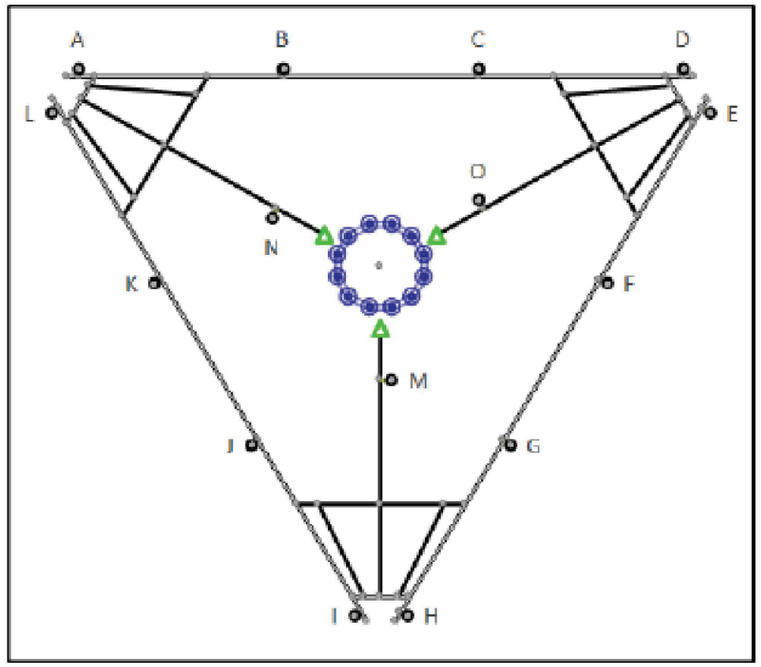
Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
153.0	153.0	3	Quintel QD6616-7
		3	Ericsson AIR 6449 B77D/ C-Band
		3	Ericsson AIR 6419 B77G
		3	CCI DMP65R-BU6DA
		3	Raycap DC6-48-60-18-8F
		3	Ericsson RRUS E2 B29
		3	Ericsson RRUS 8843 B2, B66A
		3	Ericsson RRUS 4478 B14
		3	Ericsson RRUS 4449 B5, B12
		3	Ericsson RRUS 32 B30

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Horizontals	43%	Pass
Mount Pipes	68%	Pass
Connection Check	17%	Pass

Mount Layout



A.T. Engineering Service, PLLC - 3500 Regency Parkway, Suite 100 - Cary, NC 27518 - 919.468.0112 Office - 919.466.5414 Fax - www.americantower.com

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-607	0

USPS Tracking®

FAQs >

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Your item was delivered in or at the mailbox at 10:30 am on October 24, 2022 in NORTH HAVEN, CT 06473.

Delivered

Delivered, In/At Mailbox

NORTH HAVEN, CT 06473
October 24, 2022, 10:30 am

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Latest Update

Your item was delivered in or at the mailbox at 10:30 am on October 24, 2022 in NORTH HAVEN, CT 06473.

Delivered

Delivered, In/At Mailbox

NORTH HAVEN, CT 06473
October 24, 2022, 10:30 am

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Tracking Number:

9505510391972294736964

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Latest Update

Your item was delivered in or at the mailbox at 12:01 pm on October 24, 2022 in WESTBROOK, CT 06498.

Delivered

Delivered, In/At Mailbox

WESTBROOK, CT 06498
October 24, 2022, 12:01 pm

See All Tracking History

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Tracking Number:

9505510391972294736971

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Latest Update

Your item was delivered to the front desk, reception area, or mail room at 12:15 pm on October 24, 2022 in WOBURN, MA 01801.

Delivered

Delivered, Front Desk/Reception/Mail Room

WOBURN, MA 01801
October 24, 2022, 12:15 pm

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FAQs

Feedback

October 19, 2022

First Selectman Michael J. Freda
Memorial Town Hall
18 Church Street
North Haven, CT 06473

Re: Notice of Exempt Modification – AT&T Mobility Site # 13757802
AT&T Wireless Telecommunications Facility @ 15 Dwight Street, North Haven, CT 06473

Dear First Selectman Freda,

AT&T Mobility ("AT&T") is proposing to modify a wireless telecommunications facility on an existing monopole tower at 15 Dwight Street, North Haven, CT 06473 (Latitude: 41.4207966, Longitude: -72.84880398). The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by 15 Dwight Street LLC. The tower was approved by the Council in Docket Number 44, dated July 24, 1984. AT&T was most recently approved modification was EM-CING-101-201005 dated December 14, 2020.

AT&T proposes to remove six (6) antennas, six (6) TMAs and one (1) antenna mount platform and install one (1) Perfect Vision PV-LPPGS-14M-HR25-HWLL Antenna Mount Platform, three (3) P2 (2.375"X60") antenna mounting pipes with three (3) Site Pro 1 SCX7-UCrossover Plate kits, nine (9) antennas, one (1) RRH, AND six (6) Y cables. Groundwork involves removing twelve (12) Diplexers, and installing three RRHs, one (1) 6648 W/ XCEDE cable one six (6) APTDC-BDFDM-DB surge arrestors.

This letter is intended to serve as the required notice to the chief elected official of the municipality. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe AT&T's proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

Enclosures

October 19, 2022

15 Dwight Street LLC
11 Sagamore Terr So
Westbrook, CT 064982107

Re: Notice of Exempt Modification – AT&T Mobility Site # 13757802
AT&T Wireless Telecommunications Facility @ 15 Dwight Street, North Haven, CT 06473

Dear Property Owner,

AT&T Mobility ("AT&T") is proposing to modify a wireless telecommunications facility on an existing monopole tower at 15 Dwight Street, North Haven, CT 06473 (Latitude: 41.4207966, Longitude: -72.84880398). The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by 15 Dwight Street LLC. The tower was approved by the Council in Docket Number 44, dated July 24, 1984. AT&T was most recently approved modification was EM-CING-101-201005 dated December 14, 2020.

AT&T proposes to remove six (6) antennas, six (6) TMAs and one (1) antenna mount platform and install one (1) Perfect Vision PV-LPPGS-14M-HR25-HWLL Antenna Mount Platform, three (3) P2 (2.375"X60") antenna mounting pipes with three (3) Site Pro 1 SCX7-UCrossover Plate kits, nine (9) antennas, one (1) RRH, AND six (6) Y cables. Groundwork involves removing twelve (12) Diplexers, and installing three RRHs, one (1) 6648 W/ XCEDE cable one six (6) APTDC-BDFDM-DB surge arrestors.

This letter is intended to serve as the required notice to the property owner. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe AT&T's proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

Enclosures

October 19, 2022

Blake Paynter
Project Manager, Site Development
American Tower Corporation
10 Presidential Way
Woburn, MA 01801

Dear Mr. Paynter:

AT&T Mobility ("AT&T") is proposing to modify a wireless telecommunications facility on an existing monopole tower at 15 Dwight Street, North Haven, CT 06473 (Latitude: 41.4207966, Longitude: -72.84880398). The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by 15 Dwight Street LLC. The tower was approved by the Council in Docket Number 44, dated July 24, 1984. AT&T was most recently approved modification was EM-CING-101-201005 dated December 14, 2020.

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This letter is intended to serve as the required notice to the tower owner. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe AT&T's proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

Enclosures

October 19, 2022

Laura Magaraci, Zoning Enforcement Officer
Memorial Town Hall
18 Church Street
North Haven, CT 06473

Re: Notice of Exempt Modification – AT&T Mobility Site # 13757802
AT&T Wireless Telecommunications Facility @ 15 Dwight Street, North Haven, CT 06473

Dear Ms. Magaraci,

AT&T Mobility ("AT&T") is proposing to modify a wireless telecommunications facility on an existing monopole tower at 15 Dwight Street, North Haven, CT 06473 (Latitude: 41.4207966, Longitude: -72.84880398). The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by 15 Dwight Street LLC. The tower was approved by the Council in Docket Number 44, dated July 24, 1984. AT&T was most recently approved modification was EM-CING-101-201005 dated December 14, 2020.

AT&T proposes to remove six (6) antennas, six (6) TMAs and one (1) antenna mount platform and install one (1) Perfect Vision PV-LPPGS-14M-HR25-HWLL Antenna Mount Platform, three (3) P2 (2.375"X60") antenna mounting pipes with three (3) Site Pro 1 SCX7-UCrossover Plate kits, nine (9) antennas, one (1) RRH, AND six (6) Y cables. Groundwork involves removing twelve (12) Diplexers, and installing three RRHs, one (1) 6648 W/ XCEDE cable one six (6) APTDC-BDFDM-DB surge arrestors.

This letter is intended to serve as the required notice to the municipal planning agency. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe AT&T's proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
443-677-0144

Enclosures