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Kristen Motel  
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July 12, 2023

VIA ELECTRONIC MAIL & FEDERAL EXPRESS

Members of the Connecticut Siting Council  
Connecticut Siting Council  
10 Franklin Square  
New Britain, Connecticut 06051

Re: Tower Sharing Request by New Cingular Wireless PCS, LLC  
Premises: 40-3 River Street, Old Saybrook, Connecticut

Dear Members of the Connecticut Siting Council:

Pursuant to Connecticut General Statutes (C.G.S.) § 16-50aa, New Cingular Wireless PCS, LLC (“AT&T” or “the Applicant”) hereby requests an order from the Connecticut Siting Council (the “Council”) approving the proposed shared use of a communications tower and associated compound at the parcel identified as 40-3 River Street in the Town of Old Saybrook (the “River Street Facility”). Annexed here as **Attachment 1** is the Letter of Authorization between the Applicant and American Tower Corporation, owner of the tower equipment, authorizing AT&T to prepare and file an application for shared use of the existing tower.

The River Street Facility

The River Street Facility is located on an approximately 6.13-acre parcel located on the southeasterly side of Old Saybrook, approximately 0.5 miles south of Interstate I-95 (the Connecticut Turnpike) at northbound Exit 67, Route 156, Old Saybrook. The property contains office and light industrial buildings as well as an approximately 130’ monopole tower (the “Tower”) and associated equipment in an existing fenced gravel equipment compound located immediately adjacent to the existing structure. The Town’s parcel property card and parcel map are included in **Attachment 2**.

The Council’s records indicate that the Tower includes a Metro PCS facility. Nextel Communications, Inc and Youghioghny Communications-Northeast, LLC d/b/a Pocket Communications previously filed notices of intent to modify the Tower with the Siting Council through EM-NEXTEL-106-027031 and EM-POCKET-106-080922, respectively. AT&T previously filed a notice of intent to modify the River Street Facility with the Siting Council through EM-AT&T-106-020319, however that facility was never constructed on the Tower.



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### AT&T's Proposed Wireless Facility

As depicted on the Site Plans annexed hereto as **Attachment 3** prepared by TEP OPCO, LLC revised through June 21, 2023 including a site plan, compound plan, and tower elevation, AT&T proposes the shared use of the River Street Facility to provide FCC licensed services as well as FirstNet services.<sup>1</sup> AT&T will install 6 panel antennas and 9 remote radiohead (“RRH”) units on a sector frame mount attached to the existing tower at the centerline height of approximately 130’ AGL. As depicted on the Site Plans, AT&T’s approximately 436 square foot lease area is located within the existing fenced equipment compound. Within the lease area, AT&T’s will install a new 20kW diesel generator for emergency back-up power on a 4’x6’ concrete pad. AT&T’s additional supporting equipment will be installed in the existing equipment shelter within the compound area.

Connecticut General Statutes § 16-50aa provides that, upon written request for shared use approval, an order approving such use shall be issued “if the Council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns.” (C.G.S. § 16-50aa(c)(1)). Further, upon approval of such shared use, it is exclusive, and no local zoning or land use approvals are required. (C.G.S. § 16-50x). Shared use of the River Street Facility satisfies the approval criteria set forth in C.G.S. § 16-50aa as follows:

- A. Technical Feasibility: As evidenced in the structural analysis prepared by American Tower Corporation, dated April 20, 2023, annexed hereto as **Attachment 4** and the mount analysis prepared by TEP OPCO, LLC revised through June 20, 2023, annexed hereto as **Attachment 5**, AT&T confirmed that the River Street Facility is capable of supporting the addition of AT&T’s antennas and tower mounted equipment. The proposed shared use of this tower is therefore technically feasible.
  
- B. Legal Feasibility: Pursuant to C.G.S. § 16-50aa, the Council is authorized to issue an order approving shared use of the existing River Street Facility. (C.G.S. § 16-50aa(c)(1)). Under the authority vested in the Council by C.G.S. § 16-50aa, an order by the Council approving the shared use of a tower would permit the Applicant to obtain a building permit for the proposed installation.

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<sup>1</sup> FirstNet is a nationwide broadband public safety network dedicated to the needs of first responders. For more information, see [https://about.att.com/newsroom/2019/fn\\_purpose\\_built\\_cell\\_sites.html](https://about.att.com/newsroom/2019/fn_purpose_built_cell_sites.html) and [http://about.att.com/sites/first\\_net\\_powered\\_by\\_att](http://about.att.com/sites/first_net_powered_by_att).



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- C. Environmental Feasibility: The proposed shared use would have a minimal environmental effect, for the following reasons:
1. Given the height of the existing tower, 130' AGL, and the fact that AT&T is not proposing to extend the height of the tower or increase the size of the existing equipment compound area, AT&T's proposed installation would have no visual impact and would not cause any significant change or alteration in the physical or environmental characteristics of the facility;
  2. The proposed installation will not increase the noise levels at the site boundaries by six decibels or more;
  4. Operation of AT&T's antennas at this site will not exceed the total radio frequency electromagnetic radiation power density level adopted by the FCC and Connecticut Department of Health. AT&T's proposed antenna installation along with the existing equipment is calculated to be within 1.41% of the FCC Standard for General Public/Uncontrolled Maximum Permissible Exposure ("MPE"). Please see the Calculated Radio Frequency Emissions Report dated February 28, 2023, prepared by C Squared Systems, LLC, annexed hereto as **Attachment 6**; and
  5. The proposed shared use of the River Street Facility would not require any water or sanitary facilities or discharges into any waterbodies nor will there be additional air emissions beyond the minimal emissions resulting from the emergency use of the proposed back-up generator. Further, the installation will not generate any traffic other than for periodic maintenance visits.
- D. Economic Feasibility: The Applicant and the tower owner anticipate entering into a mutual agreement to share use of the River Street Facility on terms agreeable to both parties. The proposed tower sharing is therefore economically feasible.
- E. Public Safety: As stated above and evidenced in attachments hereto the tower is structurally capable of supporting AT&T's installation and emissions are well within the maximum permitted by the FCC and the Connecticut Department of Health. Further, the addition of AT&T's telecommunications service and the provision of FirstNet service in the Old Saybrook area through shared use of the River Street Facility will ensure that critical wireless services including emergency services are provided to the community. The installation of AT&T's equipment with the shared use of the River Street Facility will



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enhance the safety and welfare of local residents and travelers through the surrounding area resulting in an improvement to public safety in this area of the State.

#### Notice of Tower Share Filing

Pursuant to R.C.S.A. Section 16-50j-88 and the August 2013 Tower Share Filing Guide, copies of AT&T's tower share filing request were sent to the property owner, as well as the chief elected official of Old Saybrook, as well as the Old Saybrook Planning and Zoning Department. Copies of each notice and their respective Federal Express or Certified Mail labels are included in **Attachment 7**.

#### Conclusion

As explained above, the proposed shared use of the River Street Facility satisfies the criteria set forth in C.G.S. §16-50aa and advances the General Assembly's and the Siting Council's goal of preventing the proliferation of towers in the State of Connecticut. AT&T therefore requests the Siting Council issue an order approving the proposed shared use of the River Street Facility.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Kristen Motel', is written over a light blue horizontal line.

Kristen Motel

#### Attachments

cc: Melanie Bachman, Executive Director  
First Selectman Carl P. Fortuna, Jr., Town of Old Saybrook  
Christina M. Costa, Town Planner, CZEO, Town of Old Saybrook  
SAI Communications  
AT&T  
Lucia Chiochio, Esq.

# **ATTACHMENT 1**



**AMERICAN TOWER®**  
CORPORATION

**LETTER OF AUTHORIZATION**

**ATC SITE#/NAME/PROJECT: 302541 / OLD SAYBROOK CT 2 / OAA773307**  
**SITE ADDRESS: 40-3 RIVER STREET OLD SAYBROOK, CT 06475- 1525**  
**LICENSEE: NEW CINGULAR WIRELESS PCS, LLC DBA AT&T MOBILITY**

I, Margaret Robinson, Vice President, Legal for American Tower\*, owner/operator of the tower facility located at the address identified above (the “Tower Facility”), do hereby authorize **NEW CINGULAR WIRELESS PCS, LLC DBA AT&T MOBILITY**, their successors and assigns, and/or their agent, (collectively, the “Licensee”) to act as American Tower’s non-exclusive agent for the sole purpose of filing and consummating any land-use, building, or electrical permit application(s) as may be required by the applicable permitting authorities for Licensee’s telecommunications’ installation on the Tower Facility.

American Tower understands that this application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by Licensee only of conditions related to Licensee’s installation and any such conditions of approval or modifications will be Licensee’s sole responsibility.

Signature:

Print Name: Margaret Robinson  
Vice President, Legal  
American Tower\*

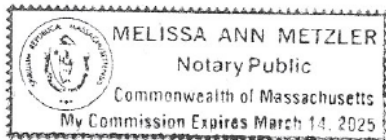
**NOTARY BLOCK**

Commonwealth of MASSACHUSETTS  
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Senior Counsel for American Tower\*, 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 executed the same.

WITNESS my hand and official seal, this 10th day of June 2022

NOTARY SEAL

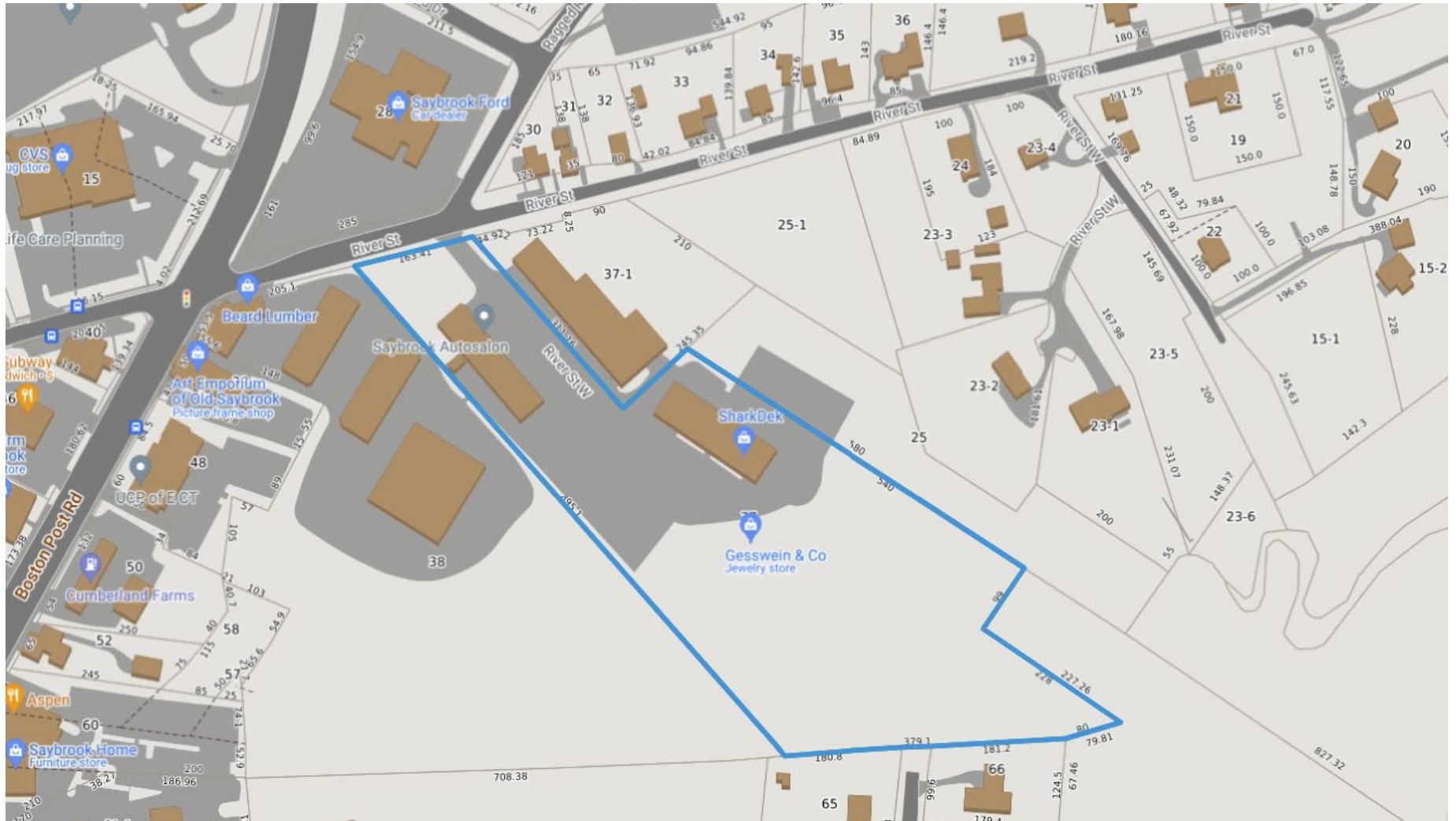


Notary Public   
My Commission Expires: March 14, 2025

\* American Tower is defined as American Tower Corporation and any of its affiliates or subsidiaries.

# **ATTACHMENT 2**

**Parcel Map: 40-3 River Street, Old Saybrook, CT (Parcel ID: 040-037)**





# 40 RIVER ST

**Location** 40 RIVER ST

**MBLU** 040/ 037/ / /

**Acct#** 00471900

**Owner** 144 MILL ROCK RD LLC

**Assessment** \$884,900

**Appraisal** \$1,264,200

**PID** 5447

**Building Count** 2

## Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$964,000	\$300,200	\$1,264,200

Assessment			
Valuation Year	Improvements	Land	Total
2018	\$674,800	\$210,100	\$884,900

## Owner of Record

**Owner** 144 MILL ROCK RD LLC  
**Co-Owner**  
**Address** P O BOX 612  
OLD SAYBROOK, CT 06475

**Sale Price** \$218,750  
**Certificate**  
**Book & Page** 0475/0238  
**Sale Date** 12/16/2004

## Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
LAMAY DAVID L ETAL	\$218,750		0475/0235	12/16/2004
LAMAY IRVING C & DAVID L ETAL	\$437,500		0475/0232	12/16/2004
LAMAY BARBARA C IRVING C DAVID L	\$0		0395/0338	07/12/2001
LAMAY IRVING C & BARBARA B EST ETAL	\$0		0386/0415	12/20/2000

## Building Information

### Building 1 : Section 1

**Year Built:** 1994  
**Living Area:** 6,800

**Building Attributes**

Field	Description
STYLE	Job Shop(s)
MODEL	Ind/Lg Com
Grade	Average
Stories:	1
Occupancy	2.00
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Minim/Masonry
Interior Wall 2	Drywall/Sheet
Interior Floor 1	Concr-Finished
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	IND BLDG -96
Total Rooms	
Total Bedrms	00
Total Baths	0
Usrflid 218	
Usrflid 219	
1st Floor Use:	4000
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & MIN WL
Rooms/Prtns	AVERAGE
Wall Height	16.00
% Comn Wall	0.00

## Building Photo



(<https://images.vgsi.com/photos/OldSaybrookCTPhotos/\00\00\95\36.jpg>)

## Building Layout



([https://images.vgsi.com/photos/OldSaybrookCTPhotos//Sketches/5447\\_5](https://images.vgsi.com/photos/OldSaybrookCTPhotos//Sketches/5447_5))

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	6,800	6,800
		6,800	6,800

## Building 2 : Section 1

Year Built: 1968  
Living Area: 8,200

Building Attributes : Bldg 2 of 2	
Field	Description
STYLE	Job Shop(s)
MODEL	Ind/Lg Com
Grade	Average

Stories:	1
Occupancy	2.00
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	Minim/Masonry
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	Concr-Finished
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	INDUSTRIAL -96
Total Rooms	
Total Bedrms	00
Total Baths	0
Usrflid 218	
Usrflid 219	
1st Floor Use:	4000
Heat/AC	HEAT/AC PKGS
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & MIN WL
Rooms/Prtns	AVERAGE
Wall Height	12.00
% Comn Wall	0.00

### Building Photo



(<https://images.vgsi.com/photos/OldSaybrookCTPhotos//default.jpg>)

### Building Layout



([https://images.vgsi.com/photos/OldSaybrookCTPhotos//Sketches/5447\\_10](https://images.vgsi.com/photos/OldSaybrookCTPhotos//Sketches/5447_10))

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	8,200	8,200
		8,200	8,200

### Extra Features

Extra Features	<u>Legend</u>
No Data for Extra Features	

### Land

Land Use	Land Line Valuation
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**Use Code** 4022  
**Description** IND BLDG -96  
**Zone** I-1

**Size (Acres)** 6.13  
**Depth** 0  
**Assessed Value** \$210,100

Appraised Value \$300,200

### Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FN1	FENCE-4' CHAIN			350.00 L.F.	\$2,600	1
PAV1	PAVING-ASPHALT			24600.00 S.F.	\$55,400	1
SHD5	COMM,WD			280.00 S.F.	\$6,300	1
MSC24	TOWER			125.00 UNIT	\$89,100	1

### Valuation History

Appraisal				
Valuation Year	Improvements	Land	Total	
2021	\$980,300	\$300,200	\$1,280,500	
2020	\$980,300	\$300,200	\$1,280,500	
2018	\$980,300	\$300,200	\$1,280,500	

Assessment				
Valuation Year	Improvements	Land	Total	
2021	\$686,300	\$210,100	\$896,400	
2020	\$686,300	\$210,100	\$896,400	
2018	\$686,300	\$210,200	\$896,500	

# ATTACHMENT 3

**PROJECT INFORMATION**

SCOPE OF WORK: TELECOMMUNICATIONS FACILITY (NSB): A EXISTING 130'-0" A.G.L. TALL MONOPOLE. PROPOSED EQUIPMENT WILL BE INSTALLED INSIDE EXISTING SHELTER, PROPOSED GENERATOR WILL BE INSTALLED AT GRADE INSIDE AN EXISTING FENCED-IN COMPOUND. PROPOSED ANTENNAS & ASSOCIATED EQUIPMENT WILL BE INSTALLED AT A HEIGHT OF 130'-0" A.G.L.

SITE ADDRESS: 40-3 RIVER STREET  
OLD SAYBROOK, CT 06475

APPLICANT: AT&T  
550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

SITE OWNER: 144 MILL ROCK RD LLC  
P.O. BOX 612  
OLD SAYBROOK, CT 06475

LATITUDE: 41.29888 N, 41° 17' 56.0" N

LONGITUDE: 72.37434 W, 72° 22' 27.6" W

TYPE OF SITE: MONOPOLE/ EQUIPMENT SHELTER

EXISTING TOWER HEIGHT: 130'-0"±

RAD CENTER: 130'-0"±



**SITE NUMBER: CT1399**

**SITE NAME: OLD SAYBROOK RIVER STREET**

**FA CODE:15252532**

**PACE ID: MRCTB048243**

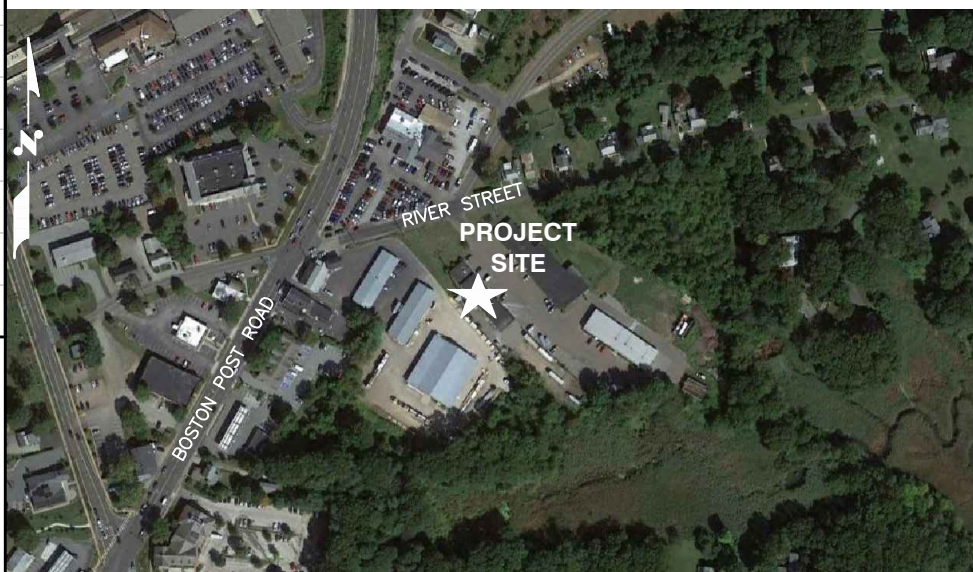
**PROJECT: NSB**

**DRAWING INDEX**

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	10
GN-1	GENERAL NOTES	10
SN-1	STRUCTURAL NOTES	10
C-1	ABUTTERS PLAN	10
A-1	COMPOUND & EQUIPMENT PLANS	10
A-2	ANTENNA LAYOUT & ELEVATION	10
A-3	DETAILS	10
A-4	DETAILS	10
S-1	STRUCTURAL DETAILS	10
E-1	ELECTRICAL NOTES & ONE-LINE DIAGRAM	10
G-1	GROUNDING DETAILS	10
G-2	GROUNDING PLAN	10
RF-1	RF PLUMBING DIAGRAM	10

**VICINITY MAP**

**DIRECTIONS TO SITE:**  
HEAD NORTHWEST TOWARD LEGGATT MCCALL CONN. TURN LEFT ONTO LEGGATT MCCALL CONN CONTINUE ONTO BURR ST. TURN LEFT ONTO COCHITUATE RD. USE THE RIGHT LANE TO MERGE ONTO I-90 W VIA THE RAMP TO SPRINGFIELD. MERGE ONTO I-90 W. TAKE EXIT 10 FOR I-395 S/I-290 E TOWARD WORCESTER. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-395 S/NEW LONDON AND MERGE ONTO I-395 S. MERGE ONTO I-95 S. TAKE EXIT 68 FOR US-1 TOWARD OLD SAYBROOK. CONTINUE ONTO US-1 S. SLIGHT RIGHT TO STAY ON US-1 S. TURN LEFT TO STAY ON US-1 S. TURN LEFT ONTO RIVER ST.



**GENERAL NOTES**

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

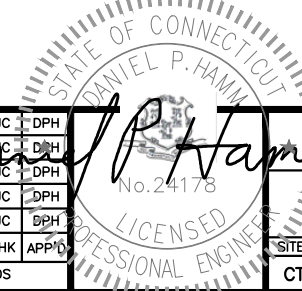
**ATC SITE NAME: OLD SAYBROOK**  
**ATC SITE #: 302541**

**72 HOURS**

**CALL BEFORE YOU DIG**

CALL TOLL FREE 1-800-922-4455  
OR CALL 811

**UNDERGROUND SERVICE ALERT**



**SITE NUMBER: CT1399**  
**SITE NAME: OLD SAYBROOK RIVER STREET**

40-3 RIVER STREET  
OLD SAYBROOK, CT 06475  
MIDDLESEX COUNTY



NO.	DATE	REVISIONS	BY	CHK	APP'D
10	06/21/23	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
9	04/26/23	ISSUED FOR CONSTRUCTION	OS	JC	DPH
8	01/04/23	ISSUED FOR REVIEW	MJ	JC	DPH
7	09/23/22	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
6	07/08/22	ISSUED FOR CONSTRUCTION	MJ	JC	DPH

SCALE: AS SHOWN    DESIGNED BY: JC    DRAWN BY: OS

AT&T	
TITLE SHEET (NSB)	
SITE NUMBER	DRAWING NUMBER
CT1399	T-1
REV	10

**GROUNDING NOTES**

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

**GENERAL NOTES**

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
 CONTRACTOR – SAI  
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)  
 OWNER – AT&T MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. **APPLICABLE BUILDING CODES:**  
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

**BUILDING CODE: IBC 2021 WITH 2022 CT STATE BUILDING CODE AMENDMENTS  
 ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)**

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

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

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

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

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

**ABBREVIATIONS**

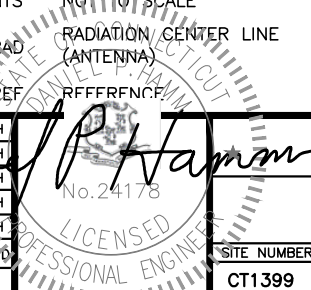
AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO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



**SITE NUMBER: CT1399**  
**SITE NAME: OLD SAYBROOK RIVER STREET**  
 40-3 RIVER STREET  
 OLD SAYBROOK, CT 06475  
 MIDDLESEX COUNTY



10	06/21/23	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
9	04/26/23	ISSUED FOR CONSTRUCTION	OS	JC	DPH
8	01/04/23	ISSUED FOR REVIEW	MJ	JC	DPH
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NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: OS		



AT&T		
GENERAL NOTES (NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT1399	GN-1	10

**STRUCTURAL NOTES:**

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

**SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):**

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

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

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

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

**NOTES:**

- ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"Ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
- VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
- CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
- EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

**NOTES:**

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

**SPECIAL INSPECTION CHECKLIST**

**BEFORE CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	ENGINEER OF RECORD APPROVED SHOP DRAWINGS <sup>1</sup>
REQUIRED	MATERIAL SPECIFICATIONS REPORT <sup>2</sup>
N/A	FABRICATOR NDE INSPECTION
REQUIRED	PACKING SLIPS <sup>3</sup>

ADDITIONAL TESTING AND INSPECTIONS:

**DURING CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS <sup>4</sup>
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION <sup>5</sup>
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT

ADDITIONAL TESTING AND INSPECTIONS:

**AFTER CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS <sup>6</sup>
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS

ADDITIONAL TESTING AND INSPECTIONS:



**SITE NUMBER: CT1399**  
**SITE NAME: OLD SAYBROOK RIVER STREET**

40-3 RIVER STREET  
OLD SAYBROOK, CT 06475  
MIDDLESEX COUNTY



10	06/21/23	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
9	04/26/23	ISSUED FOR CONSTRUCTION	CC	JC	DPH
8	01/04/23	ISSUED FOR REVIEW	MJ	JC	DPH
7	09/23/22	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
6	07/08/22	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: OS		

AT&T

STRUCTURAL NOTES  
(NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1399	SN-1	10



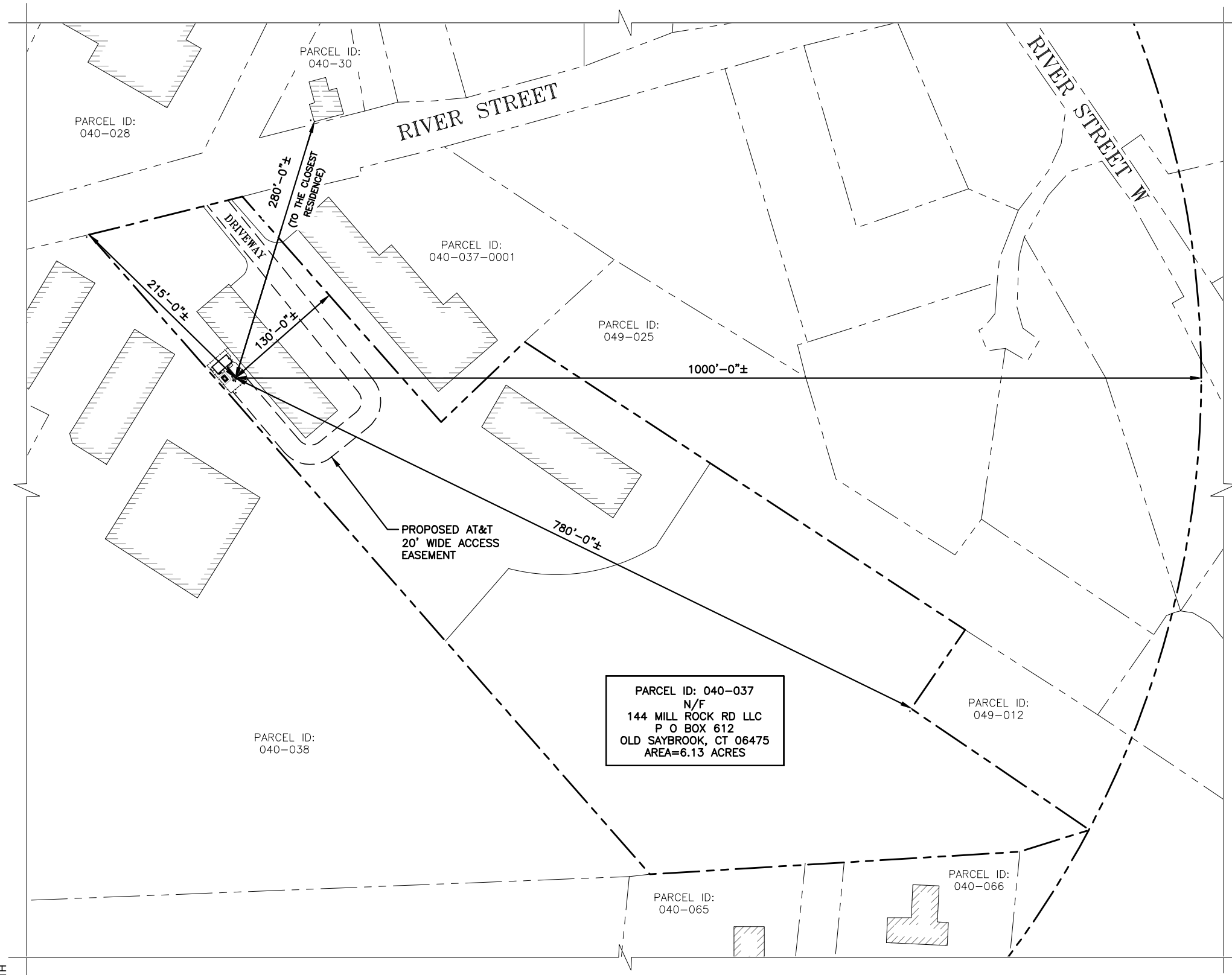
INFORMATION TAKEN FROM PLANS BY CONNECTICUT GIS

**GENERAL NOTES:**

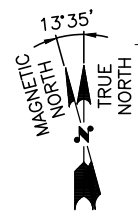
1. PROPERTY LINE INFORMATION (WHEN APPLICABLE) WAS PREPARED USING TAX MAPS, AND PLANS OF RECORD AND SHOULD NOT BE CONSTRUCTED AS A BOUNDARY SURVEY.
2. NO NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
3. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (THERE IS NO HANDICAP ACCESS REQUIRED).
4. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
5. CONNECTION TO ELECTRICAL & TELEPHONE UTILITIES TO BE DETERMINED BY THE APPROPRIATE UTILITY COMPANY.
6. SUBCONTRACTOR TO VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEER PRIOR TO INSTALLATION. SEE ANTENNA CONFIGURATION SHEETS FOR SITE SPECIFIC DETAILS.
7. SUBCONTRACTOR SHALL LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
8. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION.
9. THE MAXIMUM AREA OF DISTURBANCE IS LESS THAN 1 ACRE. THE PROJECT IMPACT AREA IS BELOW THE EXEMPTION THRESHOLD OF 43,560 SQUARE FEET IN 40 CFR PARTS 9, 122-124 AND THEREFORE IS NOT SUBJECT TO REGULATION UNDER THE EPA OR STATE-MANAGED NPDES GENERAL CONSTRUCTION PERMIT PROGRAM. THE PROJECT OWNER'S GENERAL CONTRACTOR SHALL CONDUCT ALL SITE DEVELOPMENT IN ACCORDANCE WITH THE "LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL" ISSUED BY THE VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION. ADDITIONALLY, THE PROJECT OWNERS GENERAL CONTRACTOR SHALL CONDUCT ALL CONSTRUCTION ACTIVITIES IN A MANNER THAT DOES NOT RESULT IN STORM WATER DISCHARGES WITH AN ADVERSE IMPACT ON ANY STORM WATER COLLECTION/CONVEYANCE SYSTEM, WETLAND, WATER BODY, OR OTHER WATER RESOURCE AREAS.

LIST OF HOMES WITHIN 1,000 FEET RADIUS			
PARCEL ID	QTY	PARCEL ID	QTY
040-019	1	040-066	1
040-020	1	040-067	1
040-021	1	040-068	1
040-022	1	049-019	1
040-023	1	049-022	1
040-024	1	049-024	1
040-025	1	049-023-0001	1
040-030	1	049-023-0002	1
040-031	1	049-023-0003	1
040-032	1	049-023-0004	1
040-033	1	049-023-0005	1
040-034	1	049-027	1
040-035	1	049-028	1
040-036	1	037-060	24
040-063	1	037-066-0001	1
040-064	1	037-072	1
040-065	1		1
TOTAL: 56			

LIST OF SCHOOLS/ DAY CARE CENTERS		
PARCEL ID	NAME	DISTANCE, FT
037-006	BRIGHT & EARLY OLD SAYBROOK CT	2560±
039-016	ST JOHN'S CATHOLIC SCHOOL	2690±



PARCEL ID: 040-037  
N/F  
144 MILL ROCK RD LLC  
P O BOX 612  
OLD SAYBROOK, CT 06475  
AREA=6.13 ACRES



**ABUTTERS PLAN**  
22x34 SCALE: 1"=60'  
11x17 SCALE: 1"=120'

1  
C-1

**TEP**  
NORTHEAST  
TEP OPCO, LLC.  
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553

**SAI**  
12 INDUSTRIAL WAY  
SALEM, NH 03079

**SITE NUMBER: CT1399**  
**SITE NAME: OLD SAYBROOK RIVER STREET**

40-3 RIVER STREET  
OLD SAYBROOK, CT 06475  
MIDDLESEX COUNTY

**at&t**  
550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

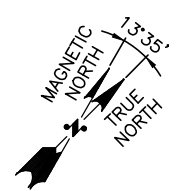
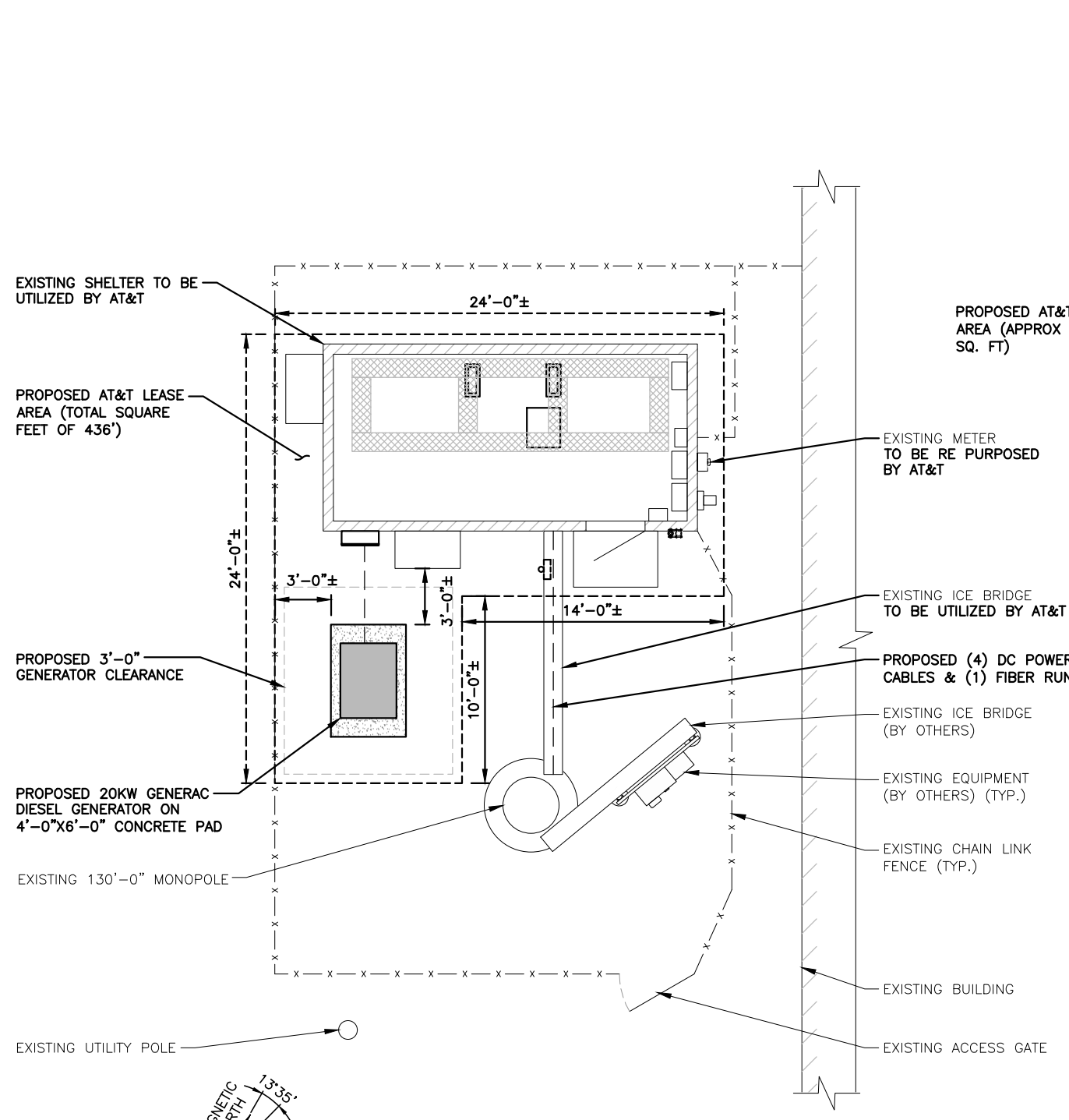
NO.	DATE	REVISIONS	BY	CHK	APP'D
10	06/21/23	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
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6	07/08/22	ISSUED FOR CONSTRUCTION	MJ	JC	DPH

SCALE: AS SHOWN    DESIGNED BY: JC    DRAWN BY: OS

**AT&T**  
**ABUTTERS PLAN (NSB)**

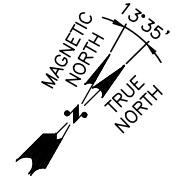
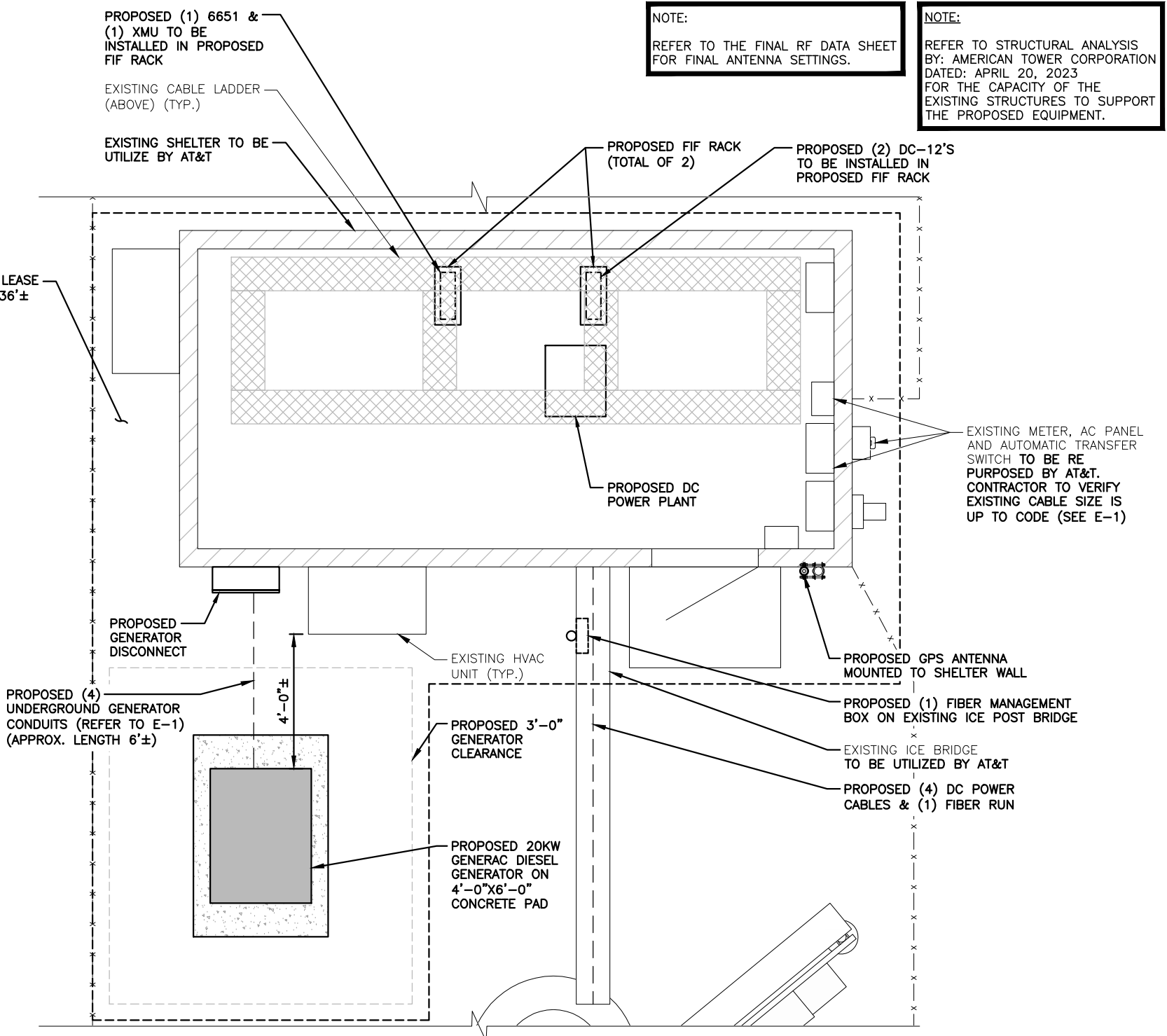
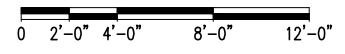
*Professional Engineer Seal: Daniel P. Haman, No. 24178, State of Connecticut*

SITE NUMBER	DRAWING NUMBER	REV
CT1399	C-1	10



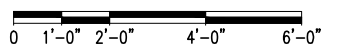
**COMPOUND PLAN**  
 22x34 SCALE: 1/4"=1'-0"  
 11x17 SCALE: 1/8"=1'-0"

1  
A-1



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

2  
A-1



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

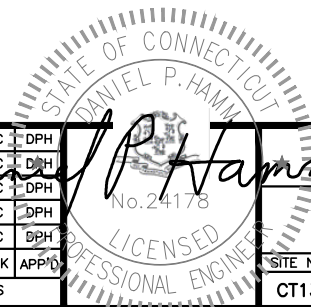
NOTE:  
REFER TO STRUCTURAL ANALYSIS BY: AMERICAN TOWER CORPORATION DATED: APRIL 20, 2023 FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



SITE NUMBER: CT1399  
 SITE NAME: OLD SAYBROOK RIVER STREET  
 40-3 RIVER STREET  
 OLD SAYBROOK, CT 06475  
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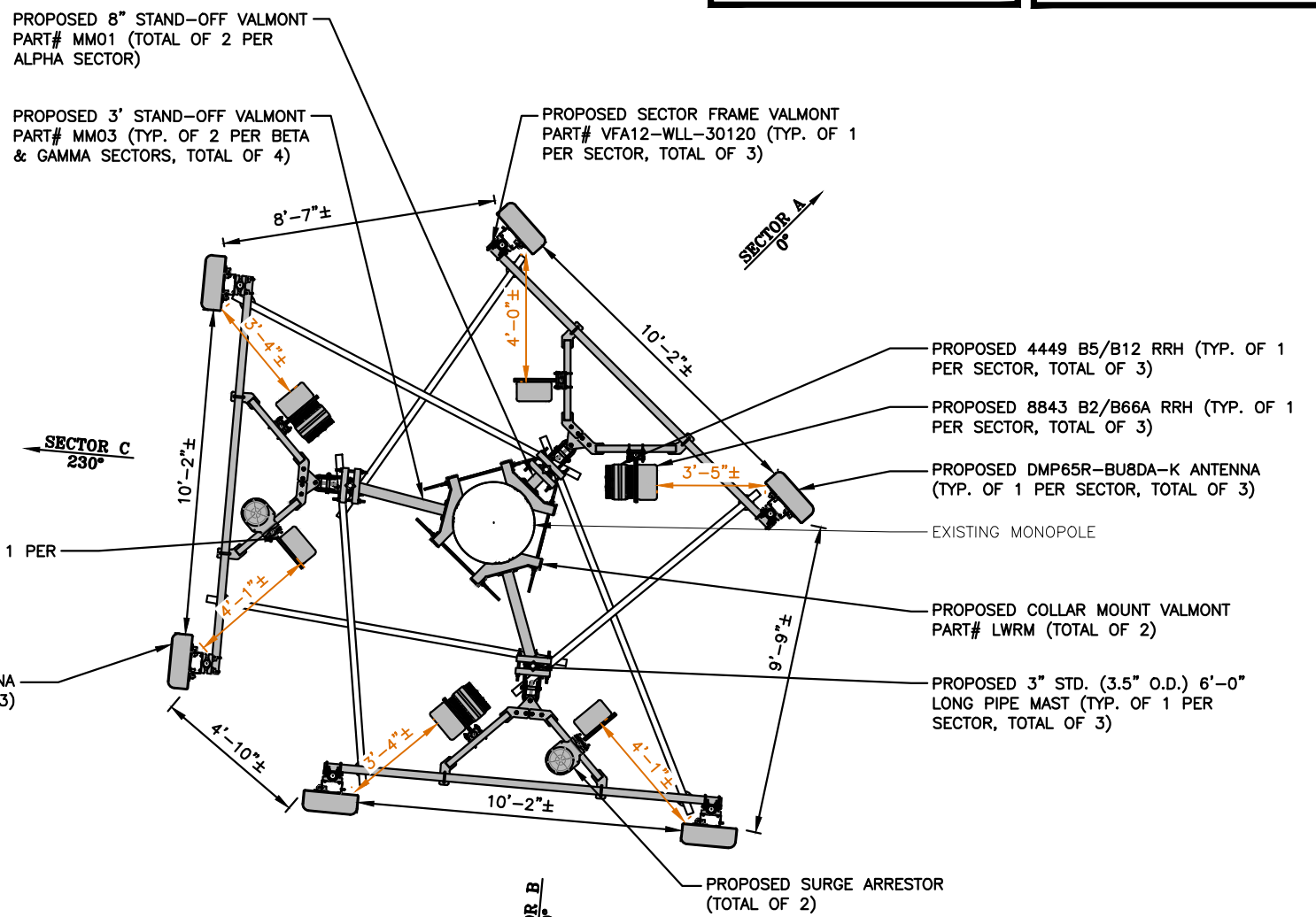
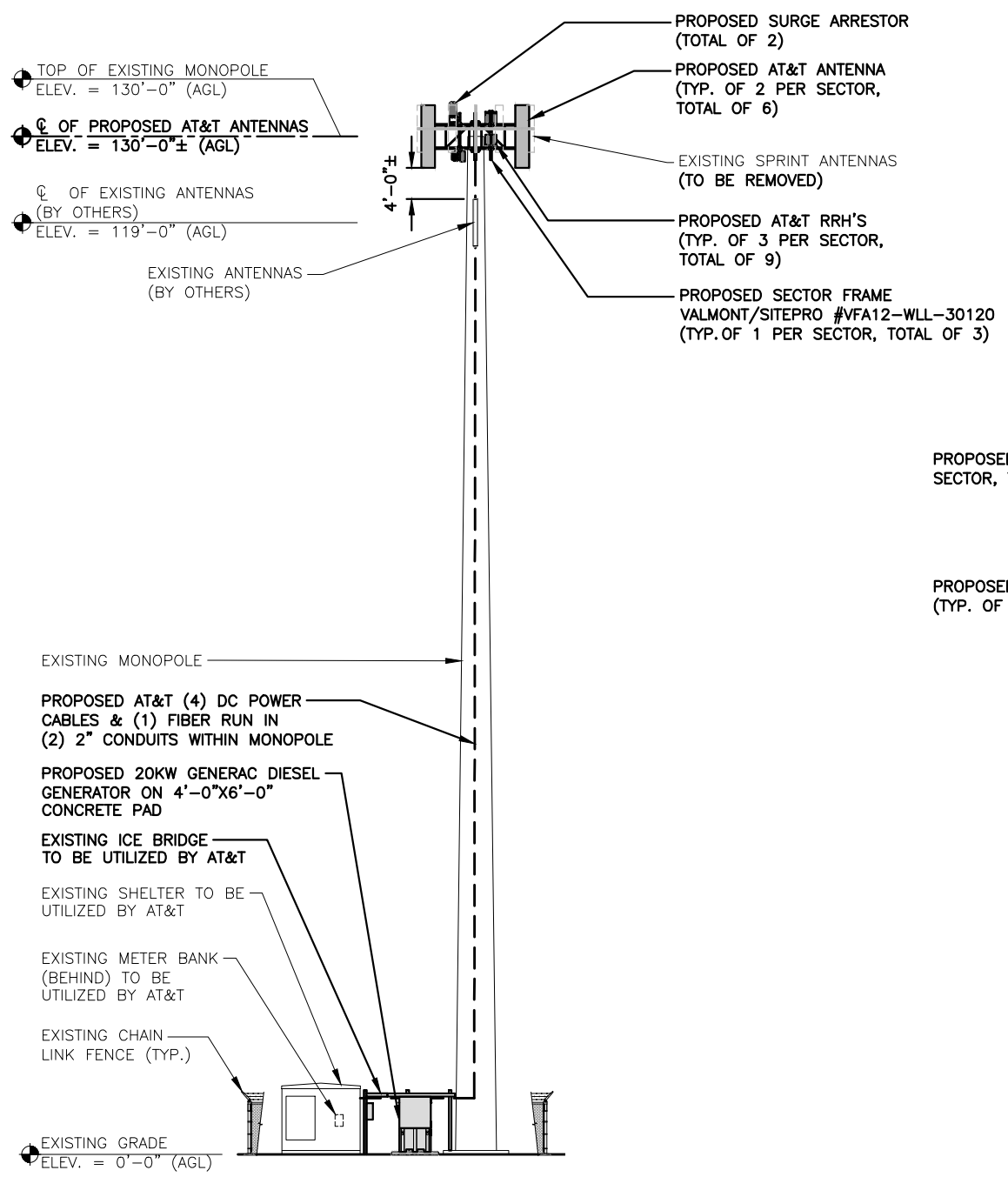


AT&T	
COMPOUND & EQUIPMENT PLANS (NSB)	
SITE NUMBER	DRAWING NUMBER
CT1399	A-1
	REV
	10

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

**NOTE:**  
REFER TO STRUCTURAL ANALYSIS BY: AMERICAN TOWER CORPORATION DATED: APRIL 20, 2023 FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE PROPOSED ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: TEP NORTHEAST, TEP OPCO LLC. DATED: JUNE 20, 2023 (REV.7)



**PROPOSED ANTENNA LAYOUT** 2  
SCALE: N.T.S. A-2

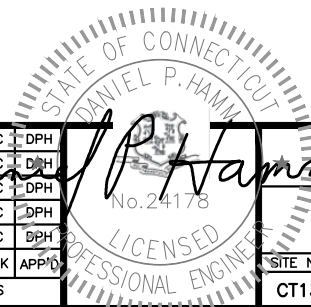
**SOUTHWEST ELEVATION** 1  
22x34 SCALE: 3/32"=1'-0"  
11x17 SCALE: 3/64"=1'-0"  
A-2  
0 5'-4" 10'-8" 21'-4" 32'-0"



**SITE NUMBER: CT1399**  
**SITE NAME: OLD SAYBROOK RIVER STREET**  
  
40-3 RIVER STREET  
OLD SAYBROOK, CT 06475  
MIDDLESEX COUNTY



10	06/21/23	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
9	04/26/23	ISSUED FOR CONSTRUCTION	OS	JC	DPH
8	01/04/23	ISSUED FOR REVIEW	MJ	JC	DPH
7	09/23/22	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
6	07/08/22	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: OS		



AT&T

ANTENNA LAYOUT & ELEVATIONS (NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1399	A-2	10

**ANTENNA SCHEDULE**

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA CL. HEIGHT	AZIMUTH	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	PROPOSED	LTE B14/AWS/WCS	TPA65R-BU8DA-K	96X21X7.8	130'-0"	0°	(P) (1) B14 4478	18.1X13.4X8.3	(P) (1) FIBER CABLES & (P) (1) DC POWER CABLES RUN	(P) (1) RAYCAP DC9-48-60-24-8C-EV (P) (1) RAYCAP DC6-48-60-18-8C-EV
A2	PROPOSED	LTE 700BC/850/PCS	DMP65R-BU8DA-K	96X20.7X7.7	130'-0"	0°	(P) (1) 4449 B5/B12 (P) (1) 8843 B2/B66A	14.9X13.2X10.4 14.9X13.2X10.9		
A3	-	-	-	-	-	-	-	-		
A4	-	-	-	-	-	-	-	-		
B1	PROPOSED	LTE B14/AWS/WCS	TPA65R-BU8DA-K	96X21X7.8	130'-0"	140°	(P) (1) B14 4478	18.1X13.4X8.3	(P) (1) FIBER CABLES & (P) (1) DC POWER CABLES RUN	(P) (1) RAYCAP DC9-48-60-24-8C-EV (P) (1) RAYCAP DC6-48-60-18-8C-EV
B2	PROPOSED	LTE 700BC/850/PCS	DMP65R-BU8DA-K	96X20.7X7.7	130'-0"	140°	(P) (1) 4449 B5/B12 (P) (1) 8843 B2/B66A	14.9X13.2X10.4 14.9X13.2X10.9		
B3	-	-	-	-	-	-	-	-		
B4	-	-	-	-	-	-	-	-		
C1	PROPOSED	LTE B14/AWS/WCS	TPA65R-BU8DA-K	96X21X7.8	130'-0"	230°	(P) (1) B14 4478	18.1X13.4X8.3	(P) (1) FIBER CABLES & (P) (1) DC POWER CABLES RUN	(P) (1) RAYCAP DC9-48-60-24-8C-EV (P) (1) RAYCAP DC6-48-60-18-8C-EV
C2	PROPOSED	LTE 700BC/850/PCS	DMP65R-BU8DA-K	96X20.7X7.7	130'-0"	230°	(P) (1) 4449 B5/B12 (P) (1) 8843 B2/B66A	14.9X13.2X10.4 14.9X13.2X10.9		
C3	-	-	-	-	-	-	-	-		
C4	-	-	-	-	-	-	-	-		

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

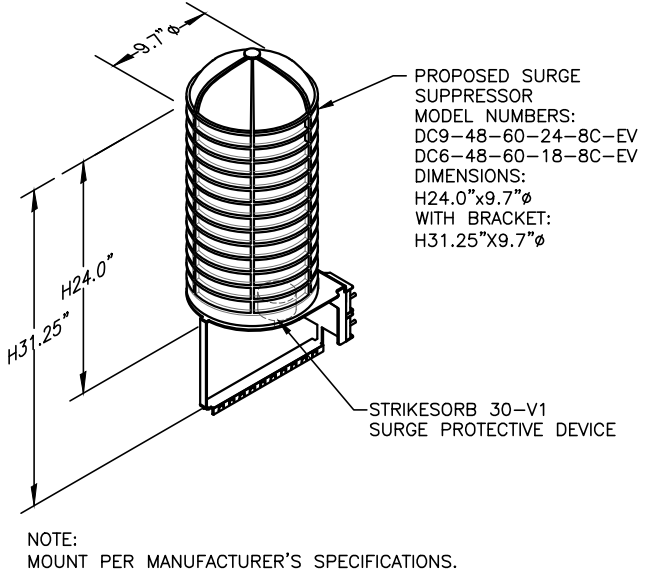
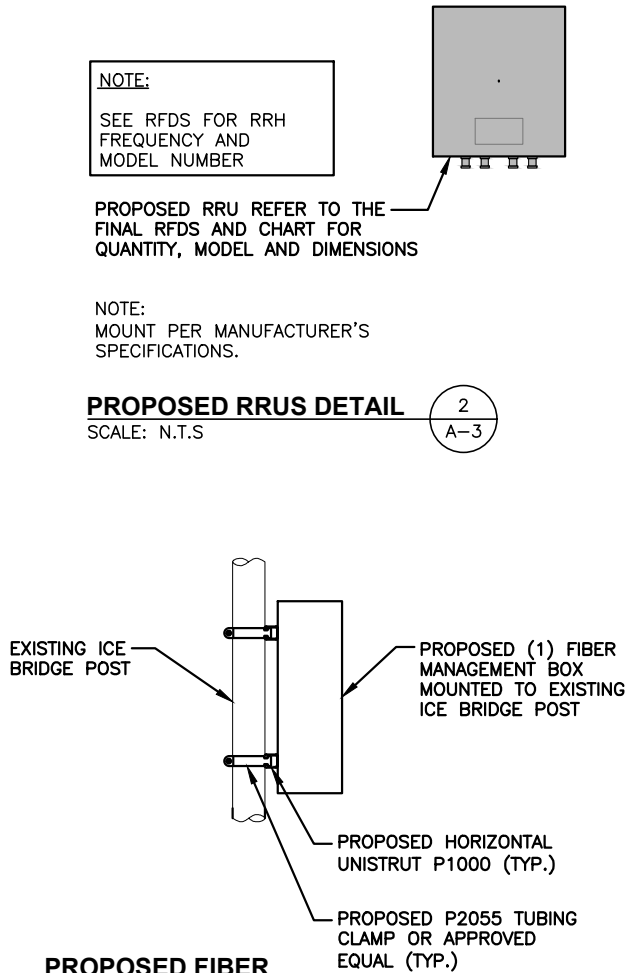
**FINAL ANTENNA SCHEDULE** 1  
SCALE: N.T.S. A-3

**NOTE:**  
SEE RFDS FOR RRU FREQUENCY AND MODEL NUMBER

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

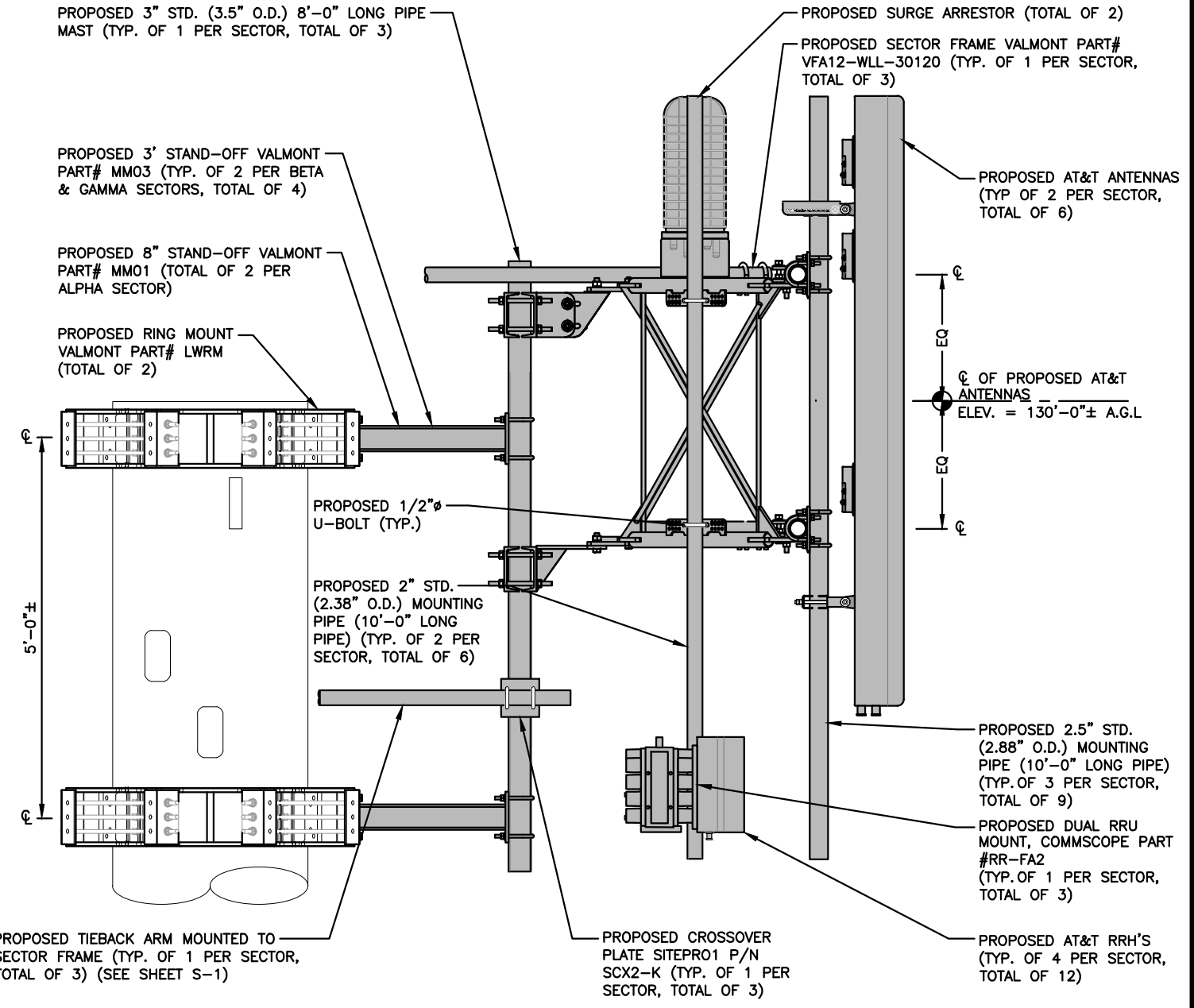
**NOTE:**  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

**PROPOSED RRUS DETAIL** 2  
SCALE: N.T.S. A-3



**NOTE:**  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

**DC SURGE SUPPRESSOR DETAIL** 4  
SCALE: N.T.S. A-3



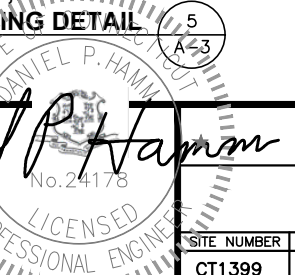
**PROPOSED SECTOR FRAME, ANTENNA, SURGE SUPPRESSOR & RRU'S MOUNTING DETAIL** 5  
SCALE: N.T.S. A-3



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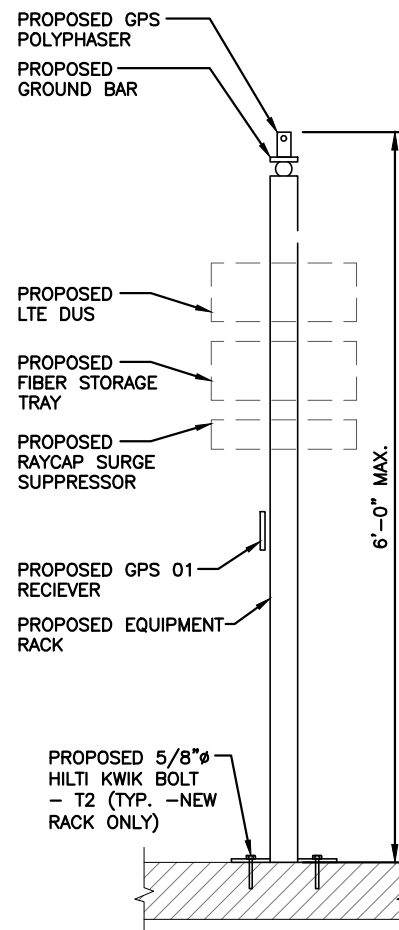
SITE NUMBER	DRAWING NUMBER	REV
CT1399	A-3	10



20 KW GENERATOR DIMENSIONS	
MODEL #	G007098-0
MANUF.	GENERAC
HEIGHT	90"
WIDTH	36"
LENGTH	48"

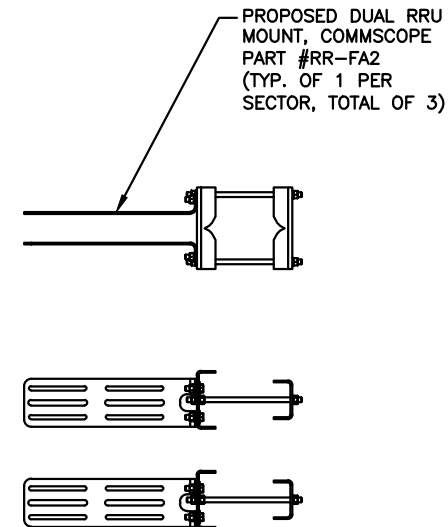
**PROPOSED NETSURE 7100 POWER PLANT**  
SCALE: N.T.S

1  
A-4



**PROPOSED EQUIPMENT RACK DETAIL**  
SCALE: N.T.S

2  
A-4



**BACK TO BACK RRU MOUNT DETAIL**  
SCALE: N.T.S

3  
A-4

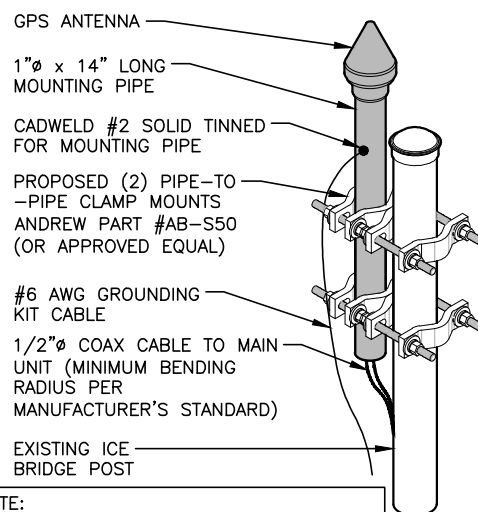
**FOUNDATION NOTES & CONCRETE SPECIFICATIONS:**

- FOUNDATION AREA SHALL BE EXCAVATED TO THE DEPTH AND DIMENSIONS SHOWN ON THE PLANS. EXISTING LEDGE AND ALL OTHER EXISTING UNSUITABLE MATERIAL SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE. THE SUBGRADE SHALL BE ROLLED WITH A 1-TON, VIBRATORY, WALK-BEHIND ROLLER AT A SPEED OF LESS THAN 2 FPS, 6 PASSES MINIMUM, TO PROVIDE UNYIELDING SURFACE.
- UNDERCUT SOFT OR "WEAVING" AREAS A MINIMUM OF 12 INCHES DEEP. BACKFILL UNDERCUT AREA WITH FILL MEETING THE SPECIFICATIONS OF STRUCTURAL FILL.
- CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c)=4000 psi. CONCRETE TO BE AIR ENTRAINED, DESIRED AIR CONTENT TO BE 6% (PLUS OR MINUS 2%)
- REINFORCING BAR TO BE ASTM A615 GRADE 60.
- WELDED WIRE FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A185. WIRES FOR FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A82.
- COORDINATE WITH MANUFACTURER OF PREFABRICATED SHELTER FOR LOCATION OF ATTACHMENTS TO BASE SLAB.
- ALL REINFORCING TO HAVE MINIMUM CONCRETE COVER PER ACI SPECIFICATIONS.
- ALL CONCRETE MATERIALS AND WORKMANSHIP SHALL CONFORM TO LATEST EDITION OF ACI 318 AND APPLICABLE STATE BUILDING CODE.



**GENERATOR DETAIL**  
SCALE: N.T.S

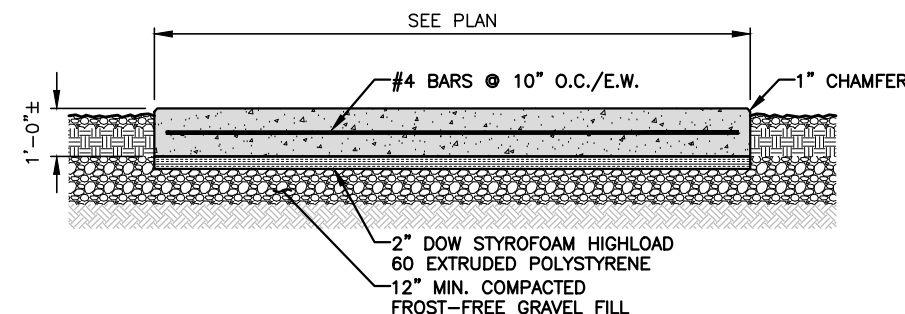
4  
A-4



NOTE:  
GPS TO BE MOUNTED WITH SOUTHWESTERN EXPOSURE. (MIN. OF 10' AWAY FROM EXISTING GPS ANTENNA)

**GPS MOUNTING DETAIL**  
N.T.S

5  
A-4



**CONCRETE PAD DETAIL**  
22x34 SCALE: N.T.S

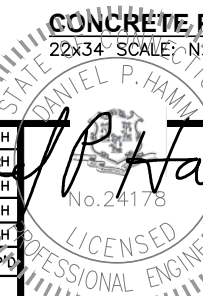
6  
A-4



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SITE NUMBER	DRAWING NUMBER	REV
CT1399	A-4	10

AT&T  
DETAILS  
(NSB)

PROPOSED 8" STAND-OFF VALMONT  
PART# MM01 (TOTAL OF 2 PER  
ALPHA SECTOR)

PROPOSED 3" STAND-OFF VALMONT  
PART# MM03 (TYP. OF 2 PER BETA  
& GAMMA SECTORS, TOTAL OF 4)

PROPOSED SECTOR FRAME VALMONT  
PART# VFA12-WLL-30120 (TYP. OF 1  
PER SECTOR, TOTAL OF 3)

PROPOSED 3" STD. (3.5" O.D.) 8'-0" LONG PIPE  
MAST (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PROPOSED 3' STAND-OFF VALMONT  
PART# MM03 (TYP. OF 2 PER BETA  
& GAMMA SECTORS, TOTAL OF 4)

PROPOSED 8" STAND-OFF VALMONT  
PART# MM01 (TOTAL OF 2 PER  
ALPHA SECTOR)

PROPOSED RING MOUNT  
VALMONT PART# LWRM  
(TOTAL OF 2)

PROPOSED AT&T ANTENNAS  
(TYP. OF 2 PER SECTOR,  
TOTAL OF 6)

☉ OF PROPOSED AT&T  
ANTENNAS  
ELEV. = 130'-0"± A.G.L.

EXISTING MONOPOLE

PROPOSED COLLAR MOUNT VALMONT  
PART# LWRM (TOTAL OF 2)

PROPOSED 3" STD. (3.5" O.D.) 6'-0"  
LONG PIPE MAST (TYP. OF 1 PER  
SECTOR, TOTAL OF 3)

PROPOSED TIEBACK ARM MOUNTED TO  
SECTOR FRAME (TYP. OF 1 PER SECTOR,  
TOTAL OF 3) (SEE SHEET S-1)

PROPOSED 1/2" U-BOLT (TYP.)

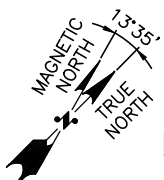
PROPOSED 2" STD. (2.38" O.D.) MOUNTING  
PIPE (10'-0" LONG  
PIPE) (TYP. OF 2 PER  
SECTOR, TOTAL OF 6)

PROPOSED 2.5" STD. (2.88" O.D.) MOUNTING  
PIPE (10'-0" LONG PIPE)  
(TYP. OF 3 PER SECTOR,  
TOTAL OF 9)

PROPOSED DUAL RRU  
MOUNT, COMMSCOPE PART  
#RR-FA2  
(TYP. OF 1 PER SECTOR,  
TOTAL OF 3)

PROPOSED 2.5" STD. (2.88" O.D.) ANTENNA  
PIPE MAST (TYP. OF 1  
PER SECTOR, TOTAL  
OF 3)

PROPOSED CROSSOVER  
PLATE SITEPRO1 P/N  
SCX2-K (TYP. OF 1 PER  
SECTOR, TOTAL OF 3)



**PROPOSED MOUNT MOD PLAN** 1  
SCALE: N.T.S. S-1

PROPOSED TIEBACK ARM MOUNTED TO  
SECTOR FRAME (TYP. OF 1 PER SECTOR,  
TOTAL OF 3) (SEE SHEET S-1)

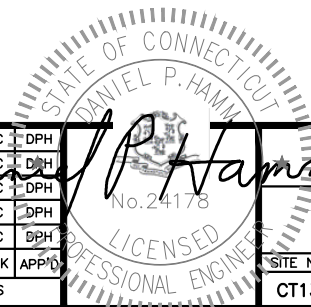
**PROPOSED MOUNT MOD DETAIL** 2  
SCALE: N.T.S. S-1



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SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: OS		



AT&T	
STRUCTURAL DETAILS (NSB)	
SITE NUMBER	DRAWING NUMBER
CT1399	S-1
REV	10

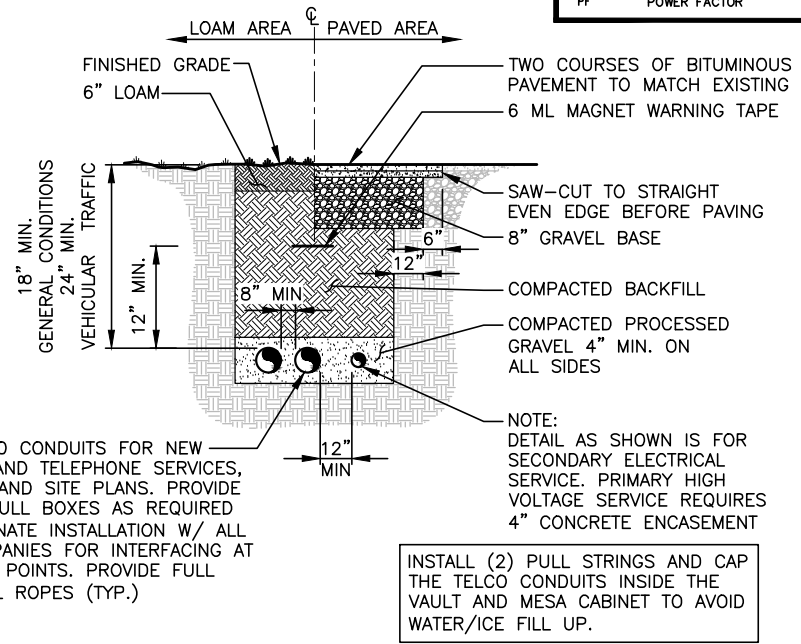
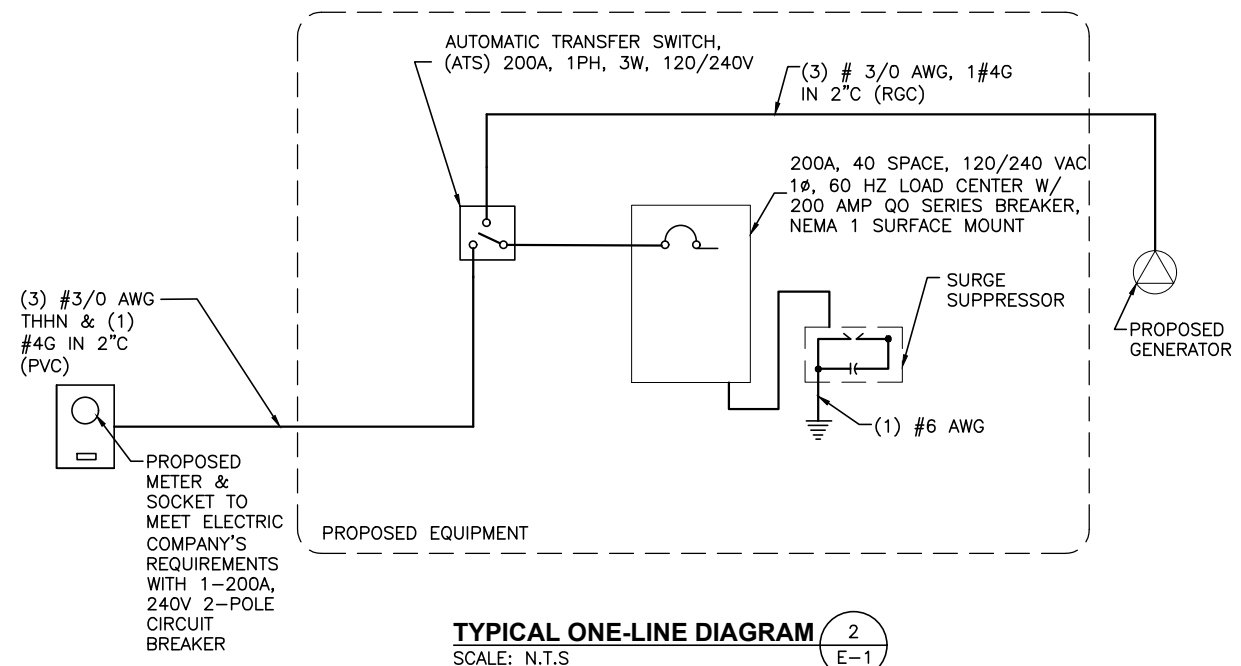
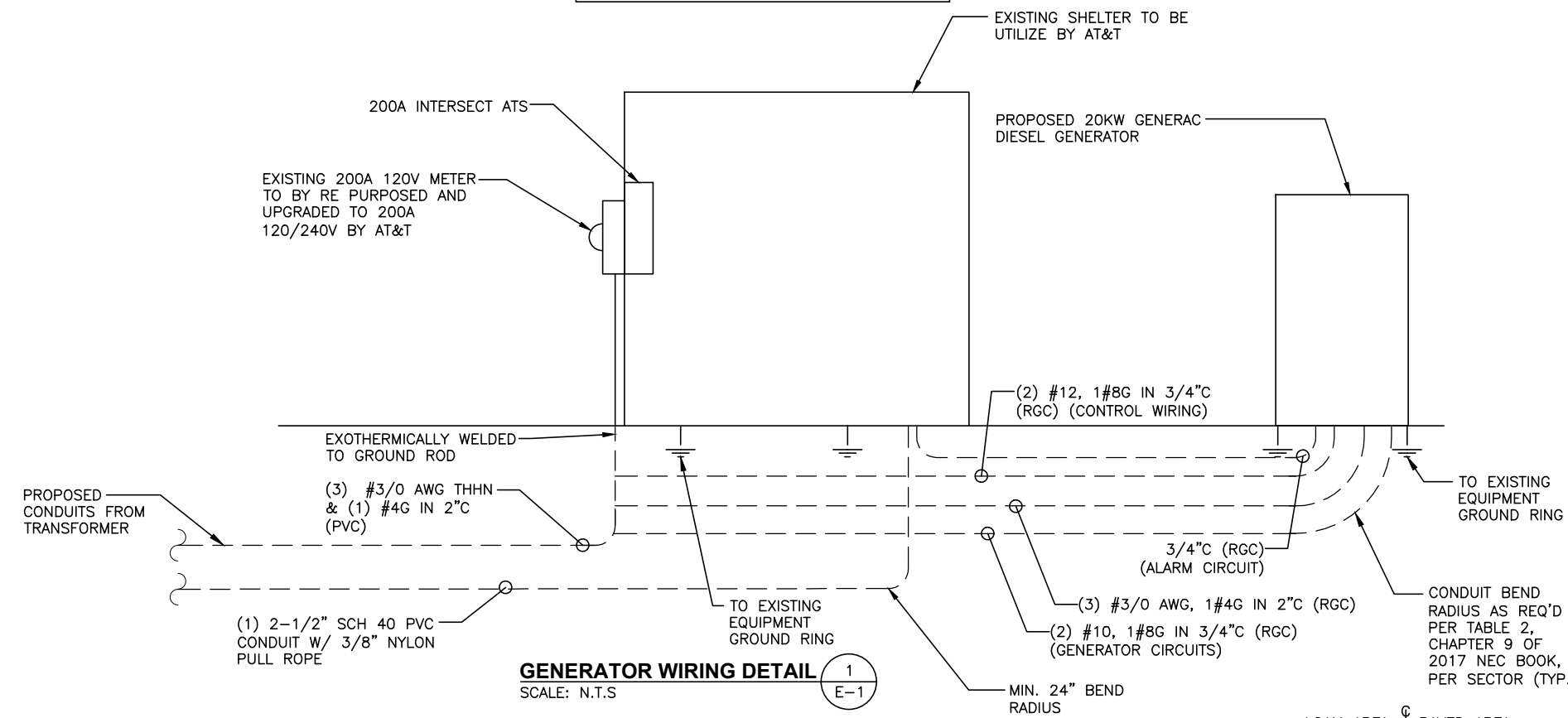
**ELECTRICAL LEGEND & ABBREVIATIONS**

	NEW PANEL BOARD, SURFACE MOUNTED		EXISTING PANEL BOARD, SURFACE MOUNTED
	DRY TYPE TRANSFORMER		METER
	CIRCUIT BREAKER		NON-FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.
	FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.		TRANSIENT VOLTAGE SURGE SUPPRESSOR WITH BUILT-IN FUSES, SURFACE MOUNTED
	DUPLEX OUTLET, SURFACE MOUNTED, 20 AMPS, 125 VOLTS, SINGLE PHASE		JUNCTION BOX, SURFACE MOUNTED 18" A.F.F.
	EXPOSED WIRING		HOME RUNS, MINIMUM 2#10 + 1#8G IN 3/4" CONDUIT U.O.N.
	A.F.F. ABOVE FINISHED FLOOR		U.O.N. UNLESS OTHERWISE NOTED
	WP WEATHERPROOF		GFI GROUND FAULT INTERRUPTER
	A AMPERE		V VOLT
	KWH KILOWATT - HOUR		C CONDUIT
	PVC POLYVINYL CHLORIDE		HZ HERTZ
	PH, # PHASE		W WATTS
	NEC NATIONAL ELECTRIC CODE		PPC POWER PROTECTION CABINET
	UL UNDERWRITER LABORATORIES		PTS POWER TRANSFER SWITCH
	QO QUICK OPEN		GRC GALVANIZED RIGID CONDUIT
	G GROUND		GROUND
	MECHANICAL CONNECTION		MECHANICAL CONNECTION
	MECHANICAL CONNECTION		MECHANICAL CONNECTION
	MECHANICAL CONNECTION		MECHANICAL CONNECTION
	MECHANICAL CONNECTION		MECHANICAL CONNECTION
	MECHANICAL CONNECTION		MECHANICAL CONNECTION
	MECHANICAL CONNECTION		MECHANICAL CONNECTION
	MECHANICAL CONNECTION		MECHANICAL CONNECTION
	MECHANICAL CONNECTION		MECHANICAL CONNECTION

**ELECTRICAL AND GROUNDING NOTES**

- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
- BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THININSULATION.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- PPC SUPPLIED BY PROJECT OWNER.
- GROUNDING SHALL COMPLY WITH NEC ART. 250.
- GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
- USE #6AWG COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2AWG SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
- ALL GROUND CONNECTIONS TO BE BURNDY HYGROWN COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6AWG WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
- BOND ANTENNA EGB'S AND MGB TO GROUND RING.
- CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
- CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE-TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.
- ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL, MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50.

**NOTES:**  
 1. GROUND [ATS] TO EXISTING GROUND BAR  
 2. GROUND GENERATOR TO EXISTING GROUND RING WITH (2) #2 AWG GROUND WIRES.



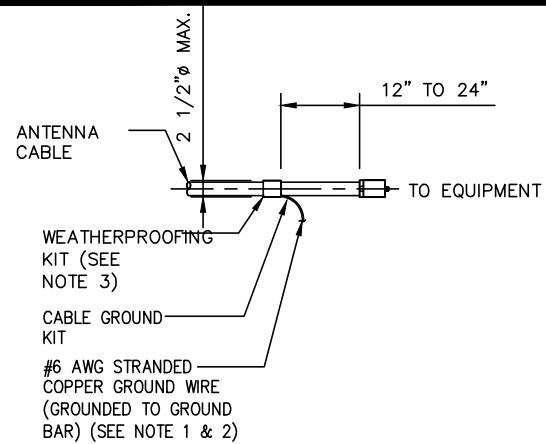
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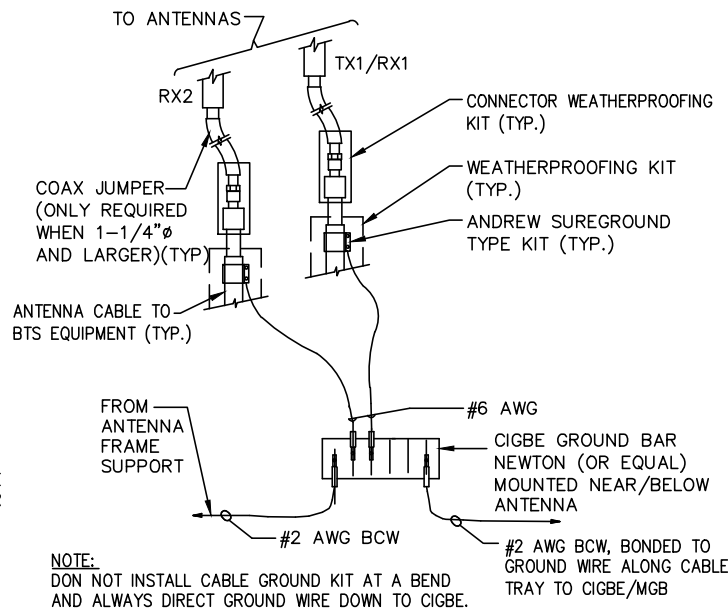
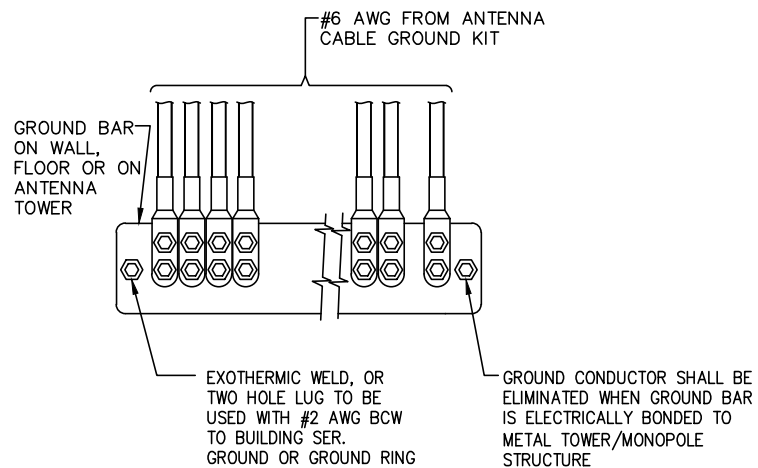


AT&T		
ELECTRICAL NOTES & ONE-LINE DIAGRAM (NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT1399	E-1	10



**NOTES:**

- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
- GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
- WEATHER PROOFING SHALL BE TWO-PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED.



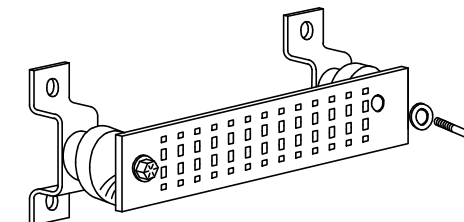
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

**SECTION "P" - SURGE PRODUCERS**

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

**SECTION "A" - SURGE ABSORBERS**

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



**CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE**

SCALE: N.T.S.

1  
G-1

**INSTALLATION OF GROUND WIRE TO GROUND BAR**

SCALE: N.T.S.

2  
G-1

**INSTALLATION OF GROUND WIRE TO GROUNDING BAR TOWER**

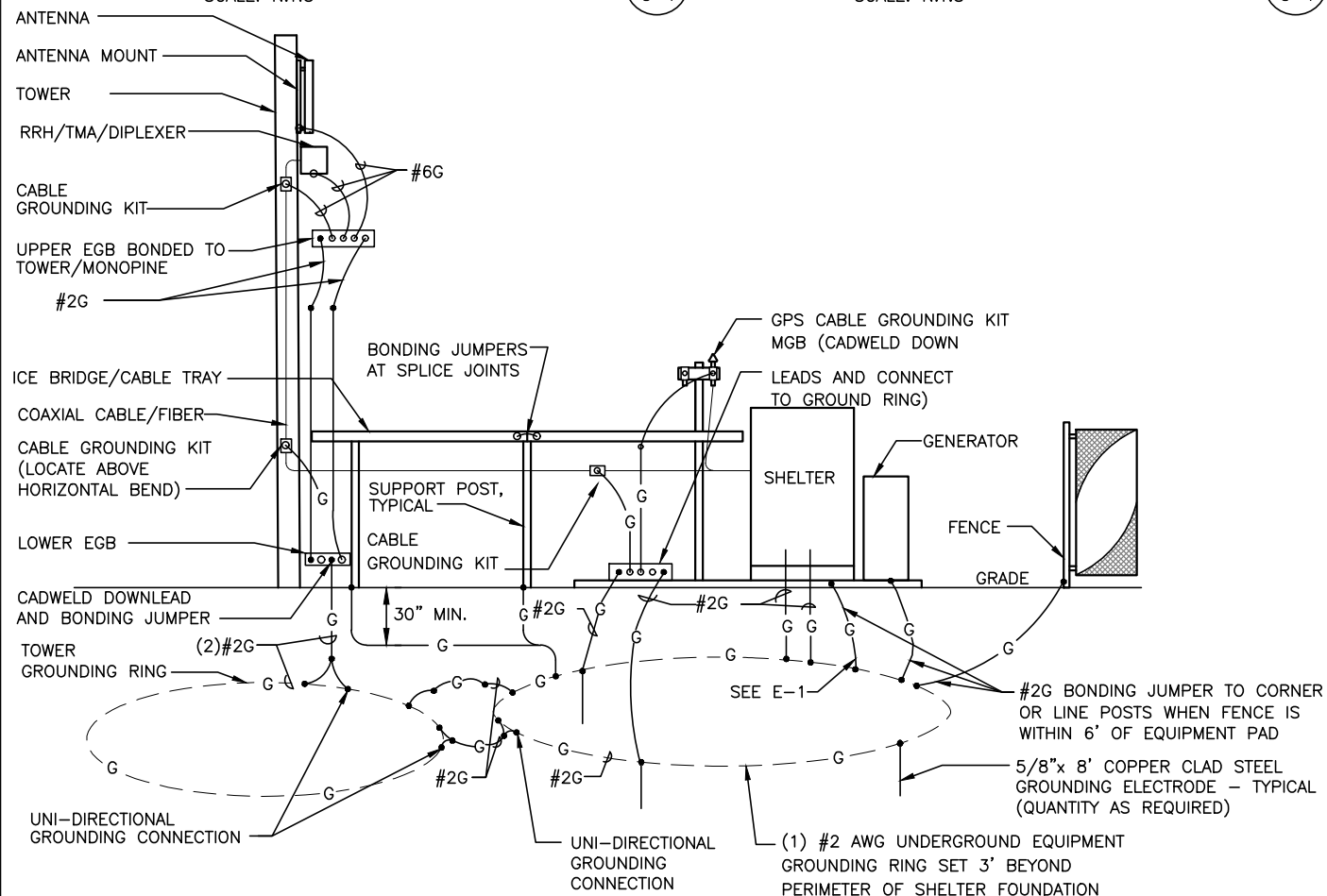
SCALE: N.T.S.

3  
G-1

**GROUND BAR - DETAIL**

SCALE: N.T.S.

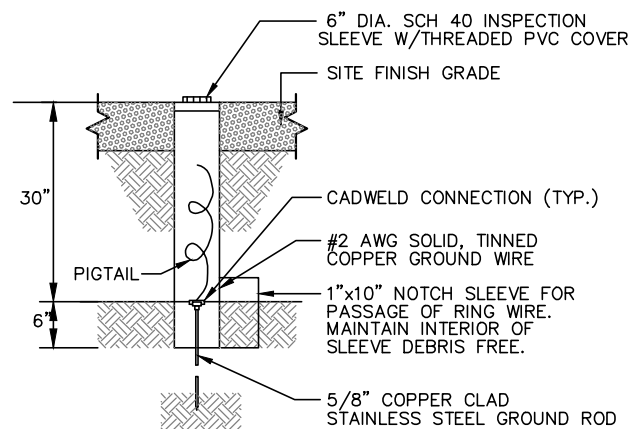
4  
G-1



**GROUNDING ONE-LINE DIAGRAM**

SCALE: N.T.S.

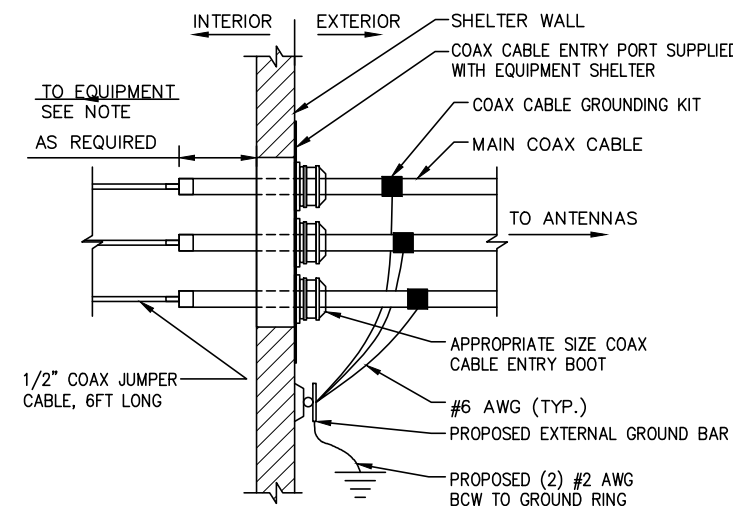
5  
G-1



**GROUND ROD TEST WELL DETAIL**

SCALE: N.T.S.

6  
G-1



**NOTE:** EXTEND MAIN COAXIAL CABLE AS CLOSE AS POSSIBLE TO BTS EQUIPMENT. MAX LENGTH OF BTS JUMPER IS 6 FT.

**INSTALLATION OF GROUND WIRE TO GROUND BAR**

SCALE: N.T.S.

7  
G-1

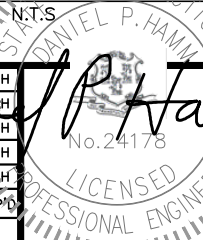


**SITE NUMBER: CT1399**  
**SITE NAME: OLD SAYBROOK RIVER STREET**

40-3 RIVER STREET  
OLD SAYBROOK, CT 06475  
MIDDLESEX COUNTY



10	06/21/23	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
9	04/26/23	ISSUED FOR CONSTRUCTION	CJ	JC	DPH
8	01/04/23	ISSUED FOR REVIEW	MJ	JC	DPH
7	09/23/22	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
6	07/08/22	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: OS		

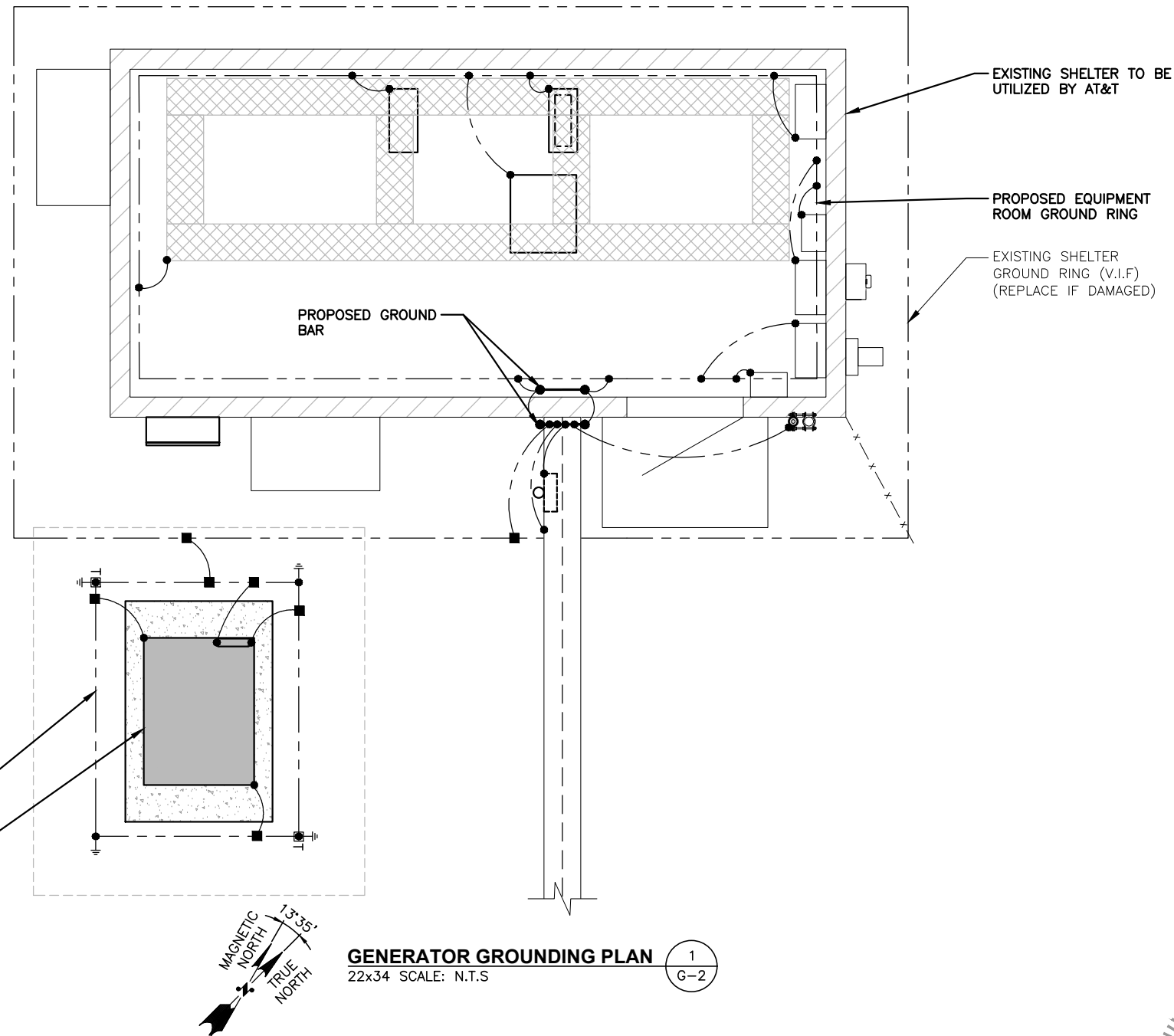


AT&T	
GROUNDING DETAILS (NSB)	
SITE NUMBER	DRAWING NUMBER
CT1399	G-1
REV	10



**GROUNDING NOTES**

1. ALL GROUND WIRE SHALL BE BARE COPPER #2 AWG UNLESS OTHERWISE NOTED.
2. ALL GROUND WIRES SHALL PROVIDE A STRAIGHT, DOWNWARD PATH TO GROUND WITH GRADUAL BENDS AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
3. ELECTRICAL CONTRACTOR SHALL COORDINATE INSTALLATION OF GROUND RODS AND GROUND RING WITH FOUNDATION AND UNDERGROUND CONDUIT.
4. EACH EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MIGB) WITH #2 AWG INSULATED STRANDED COPPER WIRE. EQUIPMENT CABINETS SHALL EACH HAVE (2) CONNECTIONS.
5. PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE (TYPICAL FOR FOUR MOUNTING PIPES PER SECTOR).
6. ANTENNA GROUND KITS SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
7. COORDINATE NEW LICENSEE GROUND SYSTEM WITH EXISTING SITE GROUND SYSTEM.
8. EACH SECTION OF CABLE TRAY, ICE BRIDGE AND ICE SHIELD SHALL BE CONNECTED IN A FASHION TO PROVIDE A CONTINUOUS GROUND.
9. AT ALL TERMINATIONS AT EQUIPMENT ENCLOSURES, PANELS AND FRAMES OF EQUIPMENT, AND WHERE EXPOSED FOR GROUNDING, CONDUCTOR TERMINATION SHALL BE PERFORMED UTILIZING TWO HOLE BOLTED TONGUE COMPRESSION TYPE WITH STAINLESS STEEL SELF-TAPPING SCREWS.
10. ALL CLAMPS AND SUPPORTS USED TO SUPPORT THE GROUNDING SYSTEM CONDUCTORS AND PVC CONDUITS SHALL BE PVC TYPE (NON CONDUCTIVE). DO NOT USE METAL BRACKETS OR SUPPORTS WHICH WOULD FORM A COMPLETE RING AROUND ANY GROUNDING CONDUCTOR.
11. ALL GROUNDING CONNECTIONS SHALL BE COATED WITH A COPPER SHIELD ANTI-CORROSIVE AGENT SUCH AS T&B KOPR SHIELD. VERIFY PRODUCT WITH LICENSEE PROJECT MANAGER.
12. ALL BOLTS, WASHERS, AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
13. INSTALL GROUND BUSHINGS ON ALL METALLIC CONDUITS AND BOND TO THE EQUIPMENT GROUND BUS IN THE PANELBOARD.
14. GROUND ANTENNA BASES, FRAMES, CABLE RACKS AND OTHER METALLIC COMPONENTS WITH #2 AWG GROUNDING CONDUCTORS AND CONNECT TO INSULATED SURFACE MOUNTED GROUND BARS. CONNECTION DETAILS SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS FOR GROUNDING.
15. GROUND COAXIAL SHIELD AT BOTH ENDS USING MANUFACTURER'S GUIDELINES.
16. REINFORCEMENT IN EQUIPMENT SLAB TO BE WELDED AND REINFORCEMENT TO BE BONDED TO GROUNDING RING.
17. CONCRETE-ENCASED ELECTRODES GREATER THAN 20 S.F. OF SURFACE AREA & 1/2" OR GREATER REINFORCING STEEL MUST BE BONDED TO THE GROUNDING RING PER NEC 250.50.
18. ALL GROUND BARS SHALL BE GALVANIZED WITH ANTI-THEFT HARDWARE.



**GENERATOR GROUNDING PLAN** 1  
22x34 SCALE: N.T.S. G-2

**GROUNDING LEGEND**

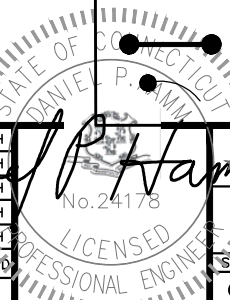
- COMPRESSION TYPE CONNECTION
- EXOTHERMIC
- ⊕ CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
- ||● 5/8" X 10'-0" COPPER CLAD GROUND ROD
- ||●T TEST 5/8" X 10'-0" COPPER CLAD GROUND ROD WITH INSPECTION SLEEVE
- ⊙ EXOTHERMIC WITH INSPECTION SLEEVE
- #2 SOLID TINNED COPPER WIRE UNLESS OTHERWISE NOTED GROUNDING CONDUCTOR
- GROUNDING BAR
- PIGTAIL GROUND CONDUCTOR



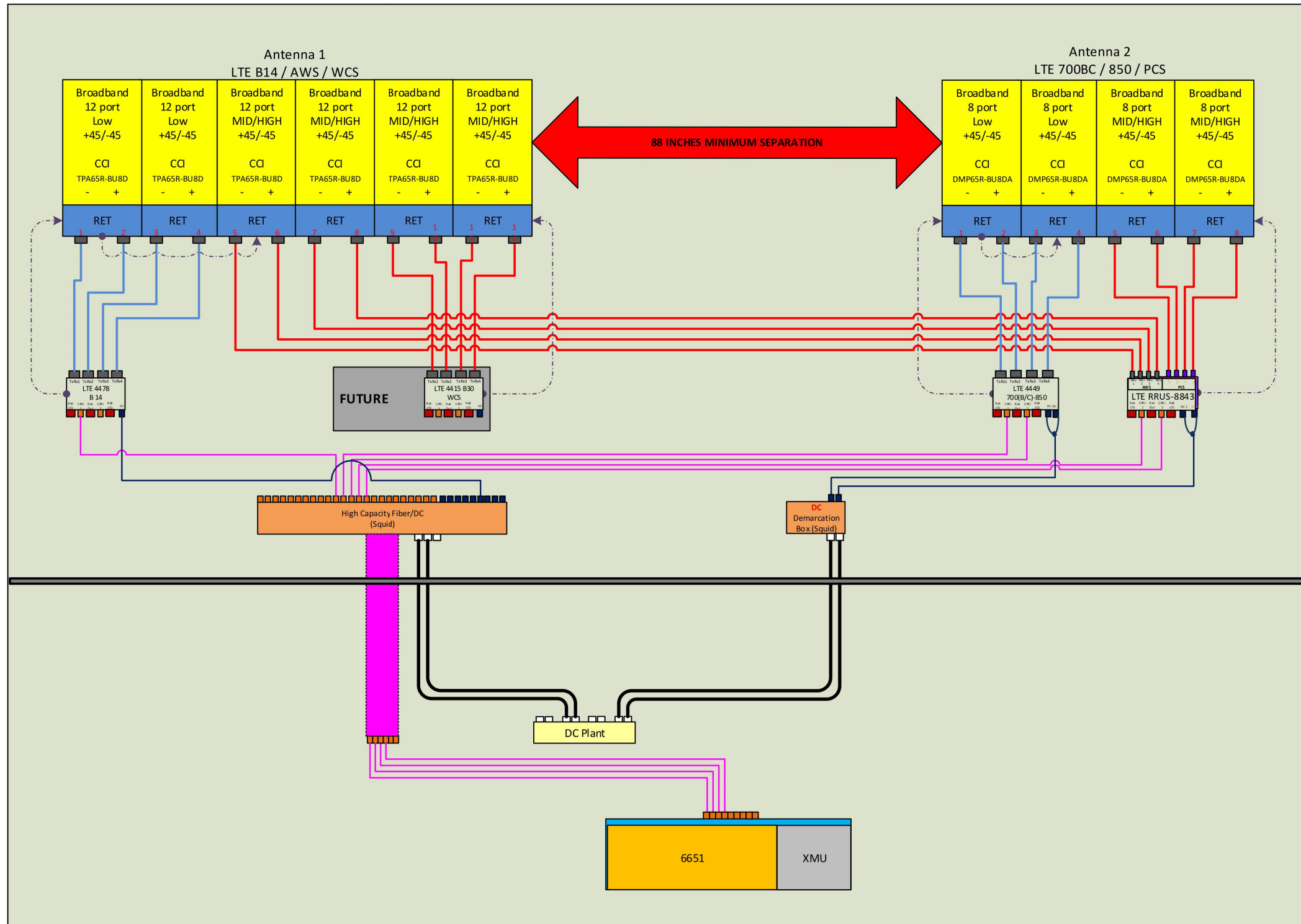
**SITE NUMBER: CT1399**  
**SITE NAME: OLD SAYBROOK RIVER STREET**  
  
40-3 RIVER STREET  
OLD SAYBROOK, CT 06475  
MIDDLESEX COUNTY



10	06/21/23	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
9	04/26/23	ISSUED FOR CONSTRUCTION	OS	JC	DPH
8	01/04/23	ISSUED FOR REVIEW	MJ	JC	DPH
7	09/23/22	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
6	07/08/22	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: OS		



AT&T	
GROUNDING PLAN (NSB)	
SITE NUMBER	DRAWING NUMBER
CT1399	G-2
REV	10



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

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

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



**SITE NUMBER: CT1399**  
**SITE NAME: OLD SAYBROOK RIVER STREET**  
 40-3 RIVER STREET  
 OLD SAYBROOK, CT 06475  
 MIDDLESEX COUNTY



NO.	DATE	REVISIONS	BY	CHK	APP'D
10	06/21/23	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
9	04/26/23	ISSUED FOR CONSTRUCTION	CC	JC	DPH
8	01/04/23	ISSUED FOR REVIEW	MJ	JC	DPH
7	09/23/22	ISSUED FOR CONSTRUCTION	MJ	JC	DPH
6	07/08/22	ISSUED FOR CONSTRUCTION	MJ	JC	DPH

SCALE: AS SHOWN    DESIGNED BY: JC    DRAWN BY: OS

AT&T		
RF PLUMBING DIAGRAM (NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT1399	RF-1	10

# ATTACHMENT 4



**AMERICAN TOWER®**  
CORPORATION

## Structural Analysis Report

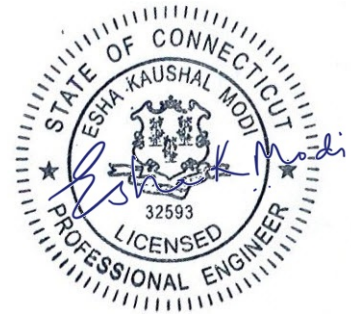
**Structure** : 130 ft Monopole  
**ATC Asset Name** : Old Saybrook CT 2  
**ATC Asset Number** : 302541  
**Engineering Number** : OAA783105\_C3\_04  
**Proposed Carrier** : AT&T MOBILITY  
**Carrier Site Name** : Old Saybrook  
**Carrier Site Number** : CT1399  
**Site Location** : 40-3 River Street  
Old Saybrook, CT 06475-1525  
41.2989, -72.3743  
**County** : Middlesex  
**Date** : April 20, 2023  
**Max Usage** : 94%  
**Analysis Result** : Pass

Prepared By:

Faisal Wakid  
Structural Engineer I

*Faisal Wakid*

Reviewed By:



**COA: PEC.0001553**

## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 130 ft Monopole tower to reflect the change in loading by AT&T MOBILITY.

## Supporting Documents

<b>Tower Drawing:</b>	Valmost Drawing #DC2467Z, dated June 15, 1995
<b>Foundation Drawing:</b>	SAC Drawing #11959-95 dated June 17, 1995
<b>Geotechnical Report:</b>	Applied Earth Technologies Report #92394 dated June 22, 1995

## 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.

<b>Basic Wind Speed:</b>	125 mph (3-second gust)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-second gust) w/ 1.00" radial ice concurrent
<b>Code(s):</b>	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
<b>Exposure Category:</b>	C
<b>Risk Category:</b>	II
<b>Topographic Factor Procedure:</b>	Method 1
<b>Topographic Category:</b>	1
<b>Spectral Response:</b>	$S_s = 0.20$ , $S_i = 0.05$
<b>Site Class:</b>	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 you have any questions or require additional information, please contact American Tower via email at [Engineering@americantower.com](mailto:Engineering@americantower.com) Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

**Proposed Carrier Final Loading**

Elev.*	Qty	Equipment	Lines	Carrier
130.0'	1	Raycap DC6-48-60-18-8C-EV	(1) 0.41" (10.3mm) Fiber (4) 0.92" (23.4mm) Cable (2) 2" conduit	AT&T MOBILITY
	1	Raycap DC9-48-60-24-8C-EV		
	3	SitePro1 VFA12-WLL-30120 Sector Frames		
	4	SitePro1 MM03 Standoffs		
	2	SitePro1 LWRM Collar Mounts		
	2	SitePro1 MM01 Standoffs		
	3	CCI DMP65R-BU8D		
	3	CCI TPA65R-BU8D		
	3	Ericsson RRUS 4415 B30		
	3	Ericsson RRUS 4449 B5, B12		
	3	Ericsson RRUS 4478 B14		
	3	Ericsson Radio 8843 B2 B66A		

*(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.

**Other Existing/Reserved Loading**

Elev.*	Qty	Equipment	Lines	Carrier
118.0'	3	RFS APXV18-206517S-C	(6) 1 5/8" Coax	METRO PCS INC

*(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.*

**Structure Usages**

Structural Component	Usage	Pass/Fail
Anchor Rods	56%	Pass
Base Plate	24%	Pass
Shaft	94%	Pass

**Foundation Reactions & Usages**

Reaction Component	Analysis Reactions	Usage
Moment (k-ft)	1843.8	50%
Axial (k)	23.8	5%
Shear (k)	19.4	53%

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.

## **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: 122 mph	Ice Wind: 49 mph w/ 0.85" ice	Service Wind: 60 mph
Risk Category: II	Exposure: C	S <sub>s</sub> : 0.202 S <sub>i</sub> : 0.053
Topo Category: 1	Topo Factor: Method 1	Topo Feature:
Structure Height: 130 ft	Base Elevation: 0.00 ft	Structure Type: Custom
Base Diameter: 39.1 in	Base Rotation: 0°	Taper: 0.2060 (in/ft)

**POLE SECTION PROPERTIES**

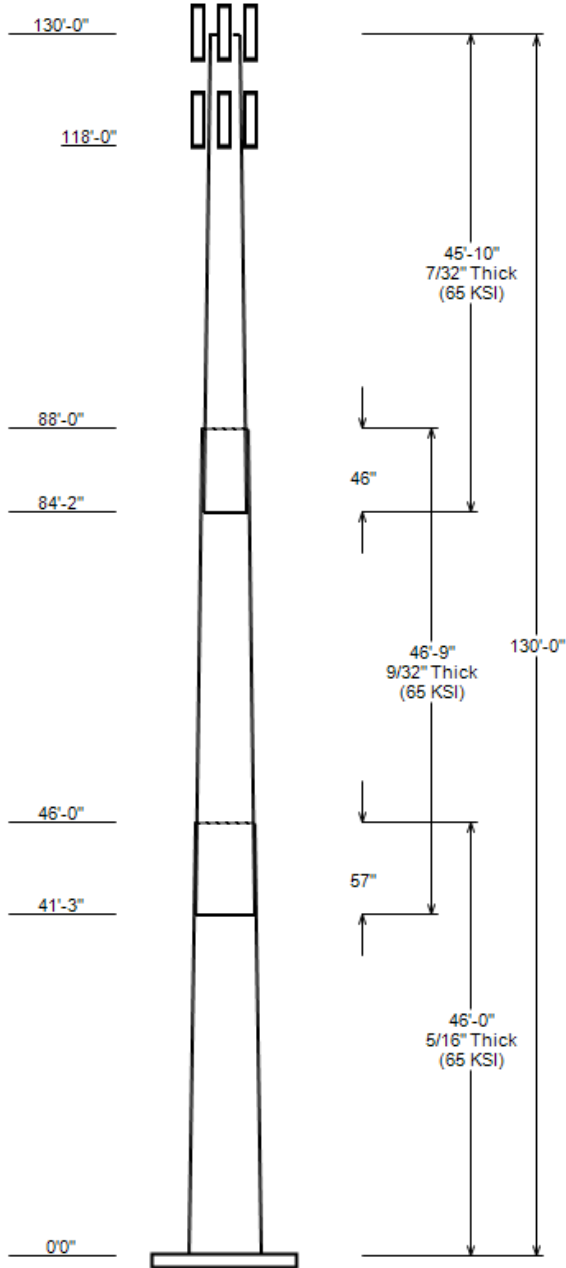
Section	Length (ft)	Flat Diameter (in)		Thick (in)	Joint Type	Joint Length (in)	Pole Shape	Yield Strength (ksi)
		Top	Bottom					
1	46.000	29.62	39.10	0.312		0.000	12 Sides	65
2	46.750	21.54	31.16	0.281	Slip Joint	57.000	12 Sides	65
3	45.833	13.32	22.76	0.219	Slip Joint	46.000	12 Sides	65

**DISCRETE APPURTENANCE**

Elev (ft)	Description
130.0	(1) Raycap DC9-48-60-24-8C-EV
130.0	(3) Ericsson RRUS 4415 B30
130.0	(3) Ericsson RRUS 4449 B5, B12
130.0	(3) Ericsson Radio 8843 B2 B66A
130.0	(3) Ericsson RRUS 4478 B14
130.0	(1) Raycap DC6-48-60-18-8C-EV
130.0	(4) SitePro1 MM03
130.0	(2) SitePro1 MM01
130.0	(2) SitePro1 LWRM Collar Mounts
130.0	(3) SitePro1 VFA12-WLL-30120
130.0	(3) CCI DMP65R-BU8D
130.0	(3) CCI TPA65R-BU8D
118.0	(3) RFS APXV18-206517S-C

**LINEAR APPURTENANCE**

Elev To (ft)	Description
130.0	(2) 2" conduit
130.0	(4) 0.92" (23.4mm) Cable
130.0	(1) 0.41" (10.3mm) Fiber
118.0	(6) 1 5/8" Coax



**GLOBAL BASE REACTIONS**

Load Case	Moment (kip-ft)	Axial (kip)	Shear (kip)
1.2D + 1.0W	1843.84	23.76	19.43
0.9D + 1.0W	1803.64	17.81	19.41
1.2D + 1.0Di + 1.0Wi	399.75	30.61	4.09
1.2D + 1.0Ev + 1.0Eh	76.07	23.76	0.60
0.9D - 1.0Ev + 1.0Eh	73.75	16.38	0.60
1.0D + 1.0W	396.16	19.85	4.21

ANALYSIS PARAMETERS

<b>Location:</b>	Middlesex County,CT	<b>Height:</b>	130 ft
<b>Type and Shape:</b>	Custom, 12 Sides	<b>Base Diameter:</b>	39.10 in
<b>Manufacturer:</b>	Valmont	<b>Top Diameter:</b>	12.75 in
<b>K<sub>d</sub> (non-service):</b>	0.95	<b>Taper:</b>	0.2060 in/ft
<b>K<sub>e</sub>:</b>	1.00	<b>Rotation:</b>	0.000°

ICE & WIND PARAMETERS

<b>Risk Category:</b>	II	<b>Design Wind Speed:</b>	122 mph
<b>Exposure Category:</b>	C	<b>Design Wind Speed w/ Ice:</b>	49 mph
<b>Topo Factor Procedure:</b>	Method 1	<b>Design Ice Thickness:</b>	0.85 in
<b>Topographic Category:</b>	1	<b>Service Wind Speed:</b>	60 mph
<b>Crest Height:</b>	0 ft	<b>HMSL:</b>	18.00 ft

SEISMIC PARAMETERS

<b>Analysis Method:</b>	Equivalent Lateral Force Method		
<b>Site Class:</b>	D - Stiff Soil	<b>Period Based on Rayleigh Method (sec):</b>	3.24
<b>T<sub>L</sub> (sec):</b>	6	<b>P:</b>	1
<b>S<sub>s</sub>:</b>	0.202	<b>S<sub>t</sub>:</b>	0.053
<b>F<sub>a</sub>:</b>	1.600	<b>F<sub>v</sub>:</b>	2.400
<b>S<sub>ds</sub>:</b>	0.215	<b>S<sub>d1</sub>:</b>	0.085
		<b>C<sub>s</sub>:</b>	0.030
		<b>C<sub>s</sub> Max:</b>	0.030
		<b>C<sub>s</sub> Min:</b>	0.030

LOAD CASES

1.2D + 1.0W	121.83 mph Wind with No Ice
0.9D + 1.0W	121.83 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

Section	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper (in/ft)
1-12	46.00	0.3125	65		0.00	5,363	39.10	0.000	39.03	7,494.9	30.85	125.12	29.62	46.00	29.49	3,234.5	22.72	94.80	0.2060
2-12	46.75	0.2813	65	Slip	57.00	3,756	31.16	41.250	27.97	3,405.7	27.01	110.79	21.54	88.00	19.25	1,109.9	17.83	76.56	0.2060
3-12	45.83	0.2188	65	Slip	46.00	1,958	22.76	84.167	15.88	1,030.2	25.20	104.03	13.32	130.00	9.23	202.2	13.63	60.88	0.2060
<b>Total Shaft Weight</b>						<b>11,077</b>													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice				
					Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor		
130.00	Raycap DC6-48-60-18-8C-EV	1	0.80	0.000	16.00	4.788	1.00	88.14	5.610	1.00		
130.00	Raycap DC9-48-60-24-8C-EV	1	0.80	0.000	16.00	1.010	1.00	41.19	1.323	1.00		
130.00	Ericsson RRUS 4415 B30	3	0.80	0.000	46.00	1.842	0.50	73.39	2.343	0.50		
130.00	Ericsson RRUS 4449 B5, B12	3	0.80	0.000	71.00	1.969	0.50	107.01	2.490	0.50		
130.00	Ericsson Radio 8843 B2 B66A	3	0.80	0.000	71.90	1.980	0.50	111.39	2.503	0.50		
130.00	Ericsson RRUS 4478 B14	3	0.80	0.000	59.40	2.021	0.67	93.69	2.548	0.67		
130.00	CCI TPA65R-BU8D	3	0.80	0.000	82.50	18.089	0.63	275.12	20.152	0.63		
130.00	SitePro1 MM03	4	1.00	0.000	187.50	6.300	0.67	260.48	8.752	0.67		
130.00	SitePro1 MM01	2	1.00	0.000	187.50	6.300	0.67	260.48	8.752	0.67		
130.00	SitePro1 LWRM Collar Mounts	2	1.00	0.000	200.00	7.500	1.00	277.84	10.419	1.00		
130.00	SitePro1 VFA12-WLL-30120	3	0.75	0.000	1284.00	14.400	0.75	1783.74	20.005	0.75		
130.00	CCI DMP65R-BU8D	3	0.80	0.000	95.70	17.871	0.63	285.58	19.930	0.63		
118.00	RFS APXV18-206517S-C	3	1.00	1.400	26.40	5.160	0.68	77.70	6.470	0.68		
<b>Totals</b>	<b>Row Count: 13</b>	<b>34</b>				<b>6,767.70</b>				<b>10,670.75</b>		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg): 0.00

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	130.00	4	0.92" (23.4mm) Cable	0.92	0.89	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	130.00	2	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	130.00	1	0.41" (10.3mm) Fiber	0.41	0.09	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	118.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	METRO PCS INC

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)
0.00		0.3125	39.100	39.030	7,494.90	30.85	125.12	71.1	370.3	0.0	0.0
5.00		0.3125	38.070	37.993	6,913.60	29.96	121.82	72	350.8	0.0	655.2
10.00		0.3125	37.040	36.957	6,363.10	29.08	118.53	73	331.9	0.0	637.6
15.00		0.3125	36.010	35.921	5,842.60	28.20	115.23	74	313.4	0.0	620.0
20.00		0.3125	34.980	34.884	5,351.30	27.31	111.94	74.9	295.5	0.0	602.3
25.00		0.3125	33.950	33.848	4,888.40	26.43	108.64	75.9	278.2	0.0	584.7
30.00		0.3125	32.920	32.811	4,452.90	25.55	105.34	76.9	261.3	0.0	567.1
35.00		0.3125	31.890	31.775	4,044.10	24.66	102.05	77.8	245.0	0.0	549.4
40.00		0.3125	30.860	30.738	3,661.20	23.78	98.75	78.8	229.2	0.0	531.8
41.25	Bot - Section 2	0.3125	30.603	30.479	3,569.40	23.56	97.93	79	225.3	0.0	130.2
45.00		0.3125	29.830	29.702	3,303.20	22.90	95.46	79.7	213.9	0.0	736.5
46.00	Top - Section 1	0.2813	30.187	27.088	3,092.10	26.07	107.31	76.3	197.9	0.0	193.2
50.00		0.2813	29.363	26.341	2,843.50	25.29	104.38	77.1	187.1	0.0	363.6
55.00		0.2813	28.333	25.408	2,551.90	24.31	100.72	78.2	174.0	0.0	440.2
60.00		0.2813	27.303	24.476	2,281.00	23.33	97.06	79.3	161.4	0.0	424.4
65.00		0.2813	26.273	23.543	2,030.00	22.35	93.40	80.3	149.3	0.0	408.5
70.00		0.2813	25.243	22.610	1,798.10	21.37	89.74	81.4	137.6	0.0	392.6
75.00		0.2813	24.213	21.677	1,584.60	20.38	86.07	81.9	126.4	0.0	376.7
80.00		0.2813	23.183	20.744	1,388.60	19.40	82.41	81.9	115.7	0.0	360.9
84.17	Bot - Section 3	0.2813	22.324	19.966	1,238.30	18.59	79.36	81.9	107.2	0.0	288.6

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description	(Max Length: 5 ft)	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)
85.00			0.2813	22.153	19.811	1,209.60	18.42	78.75	81.9	105.5	0.0	101.3
88.00	Top - Section 2		0.2188	21.972	15.326	925.70	24.23	100.42	78.3	81.4	0.0	358.1
90.00			0.2188	21.560	15.036	874.10	23.72	98.54	78.8	78.3	0.0	103.3
95.00			0.2188	20.530	14.310	753.50	22.46	93.83	80.2	70.9	0.0	249.6
100.00			0.2188	19.500	13.584	644.60	21.20	89.12	81.6	63.9	0.0	237.3
105.00			0.2188	18.470	12.859	546.70	19.94	84.42	81.9	57.2	0.0	225.0
110.00			0.2188	17.440	12.133	459.30	18.68	79.71	81.9	50.9	0.0	212.6
115.00			0.2188	16.410	11.407	381.70	17.42	75.00	81.9	44.9	0.0	200.3
118.00			0.2188	15.792	10.972	339.70	16.66	72.18	81.9	41.5	0.0	114.2
120.00			0.2188	15.380	10.682	313.40	16.16	70.29	81.9	39.4	0.0	73.7
125.00			0.2188	14.350	9.956	253.80	14.89	65.59	81.9	34.2	0.0	175.6
130.00			0.2188	13.320	9.230	202.20	13.63	60.88	81.9	29.3	0.0	163.2

Total: 11,077.7

CALCULATED FORCES

Load Case: 1.2D + 1.0W 121.83 mph Wind with No Ice 27 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	-23.76	-19.43	0.00	-1,843.8	0.00	1,843.84	2,496.55	684.98	2,506.21	1,973.90	0	0	0.944
5.00	-22.77	-19.04	0.00	-1,746.7	0.00	1,746.69	2,463.19	666.79	2,374.91	1,895.39	0.18	-0.34	0.932
10.00	-21.80	-18.65	0.00	-1,651.5	0.00	1,651.50	2,428.03	648.60	2,247.14	1,816.96	0.73	-0.69	0.919
15.00	-20.85	-18.27	0.00	-1,558.2	0.00	1,558.22	2,391.08	630.41	2,122.90	1,738.70	1.64	-1.05	0.906
20.00	-19.93	-17.87	0.00	-1,466.9	0.00	1,466.88	2,352.33	612.22	2,002.20	1,660.74	2.94	-1.42	0.893
25.00	-19.03	-17.45	0.00	-1,377.5	0.00	1,377.53	2,311.78	594.03	1,885.03	1,583.19	4.62	-1.8	0.879
30.00	-18.15	-17.03	0.00	-1,290.3	0.00	1,290.26	2,269.44	575.84	1,771.39	1,506.16	6.71	-2.18	0.866
35.00	-17.31	-16.59	0.00	-1,205.1	0.00	1,205.13	2,225.30	557.65	1,661.28	1,429.77	9.21	-2.58	0.852
40.00	-16.52	-16.30	0.00	-1,122.2	0.00	1,122.16	2,179.36	539.46	1,554.71	1,354.14	12.13	-2.99	0.837
41.25	-16.29	-16.09	0.00	-1,101.8	0.00	1,101.78	2,167.59	534.91	1,528.62	1,335.36	12.93	-3.1	0.834
45.00	-15.29	-15.84	0.00	-1,041.4	0.00	1,041.44	2,131.63	521.27	1,451.67	1,279.37	15.49	-3.42	0.822
46.00	-15.00	-15.62	0.00	-1,025.6	0.00	1,025.60	1,859.55	475.39	1,341.19	1,132.06	16.21	-3.51	0.915
50.00	-14.41	-15.22	0.00	-963.1	0.00	963.12	1,828.61	462.29	1,268.32	1,082.26	19.3	-3.86	0.899
55.00	-13.71	-14.78	0.00	-887.0	0.00	887.01	1,788.31	445.92	1,180.10	1,020.57	23.59	-4.32	0.878
60.00	-13.02	-14.34	0.00	-813.1	0.00	813.12	1,746.22	429.55	1,095.05	959.59	28.36	-4.8	0.856
65.00	-12.36	-13.90	0.00	-741.4	0.00	741.44	1,702.33	413.17	1,013.19	899.45	33.64	-5.28	0.833
70.00	-11.73	-13.47	0.00	-672.0	0.00	671.95	1,656.64	396.80	934.51	840.25	39.42	-5.78	0.808
75.00	-11.12	-13.04	0.00	-604.6	0.00	604.61	1,597.78	380.42	859.00	776.58	45.73	-6.28	0.787
80.00	-10.54	-12.66	0.00	-539.4	0.00	539.39	1,529.02	364.05	786.68	710.80	52.57	-6.79	0.767
84.17	-10.09	-12.43	0.00	-486.7	0.00	486.66	1,471.71	350.41	728.84	658.21	58.68	-7.23	0.747
85.00	-9.93	-12.28	0.00	-476.3	0.00	476.30	1,460.25	347.68	717.54	647.93	59.95	-7.32	0.743
88.00	-9.42	-12.04	0.00	-439.5	0.00	439.47	1,079.89	268.97	552.01	477.90	64.64	-7.65	0.930
90.00	-9.21	-11.79	0.00	-415.4	0.00	415.39	1,066.88	263.88	531.30	463.12	67.88	-7.87	0.908
95.00	-8.75	-11.41	0.00	-356.4	0.00	356.45	1,033.11	251.14	481.27	426.59	76.43	-8.49	0.846
100.00	-8.32	-11.05	0.00	-299.4	0.00	299.38	997.54	238.41	433.72	390.79	85.62	-9.11	0.777
105.00	-7.92	-10.69	0.00	-244.1	0.00	244.13	947.82	225.67	388.63	351.26	95.45	-9.71	0.706
110.00	-7.54	-10.34	0.00	-190.7	0.00	190.67	894.33	212.94	346.02	312.51	105.88	-10.28	0.621
115.00	-7.19	-10.05	0.00	-139.0	0.00	138.96	840.84	200.20	305.89	276.02	116.86	-10.79	0.515
118.00	-7.01	-9.32	0.00	-108.0	0.00	108.04	808.75	192.56	282.99	255.22	123.69	-11.07	0.434
120.00	-6.90	-9.11	0.00	-89.4	0.00	89.40	787.35	187.46	268.22	241.80	128.34	-11.23	0.381
125.00	-6.66	-8.77	0.00	-43.9	0.00	43.87	733.86	174.73	233.03	209.85	140.2	-11.53	0.221
130.00	0.00	-7.25	0.00	0.0	0.00	0.00	680.37	161.99	200.32	180.16	152.28	-11.66	0.002

CALCULATED FORCES

Load Case: 0.9D + 1.0W 121.83 mph Wind with No Ice (Reduced DL) 27 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	-17.81	-19.41	0.00	-1,803.6	0.00	1,803.64	2,496.55	684.98	2,506.21	1,973.90	0	0	0.922
5.00	-17.04	-18.98	0.00	-1,706.6	0.00	1,706.58	2,463.19	666.79	2,374.91	1,895.39	0.18	-0.33	0.908
10.00	-16.28	-18.57	0.00	-1,611.7	0.00	1,611.66	2,428.03	648.60	2,247.14	1,816.96	0.71	-0.67	0.895
15.00	-15.55	-18.15	0.00	-1,518.8	0.00	1,518.84	2,391.08	630.41	2,122.90	1,738.70	1.6	-1.02	0.881
20.00	-14.83	-17.72	0.00	-1,428.1	0.00	1,428.10	2,352.33	612.22	2,002.20	1,660.74	2.87	-1.38	0.867
25.00	-14.14	-17.27	0.00	-1,339.5	0.00	1,339.52	2,311.78	594.03	1,885.03	1,583.19	4.51	-1.75	0.853
30.00	-13.46	-16.82	0.00	-1,253.2	0.00	1,253.17	2,269.44	575.84	1,771.39	1,506.16	6.55	-2.13	0.839
35.00	-12.81	-16.36	0.00	-1,169.1	0.00	1,169.08	2,225.30	557.65	1,661.28	1,429.77	8.98	-2.52	0.824
40.00	-12.21	-16.06	0.00	-1,087.3	0.00	1,087.30	2,179.36	539.46	1,554.71	1,354.14	11.83	-2.91	0.809
41.25	-12.03	-15.83	0.00	-1,067.2	0.00	1,067.23	2,167.59	534.91	1,528.62	1,335.36	12.6	-3.02	0.806
45.00	-11.27	-15.58	0.00	-1,007.9	0.00	1,007.88	2,131.63	521.27	1,451.67	1,279.37	15.1	-3.33	0.794
46.00	-11.04	-15.34	0.00	-992.3	0.00	992.30	1,859.55	475.39	1,341.19	1,132.06	15.8	-3.41	0.884
50.00	-10.59	-14.93	0.00	-930.9	0.00	930.92	1,828.61	462.29	1,268.32	1,082.26	18.8	-3.75	0.867
55.00	-10.04	-14.46	0.00	-856.3	0.00	856.30	1,788.31	445.92	1,180.10	1,020.57	22.97	-4.2	0.846
60.00	-9.52	-14.00	0.00	-784.0	0.00	784.00	1,746.22	429.55	1,095.05	959.59	27.61	-4.66	0.824
65.00	-9.01	-13.54	0.00	-714.0	0.00	714.01	1,702.33	413.17	1,013.19	899.45	32.73	-5.12	0.800
70.00	-8.52	-13.10	0.00	-646.3	0.00	646.29	1,656.64	396.80	934.51	840.25	38.34	-5.6	0.775
75.00	-8.05	-12.66	0.00	-580.8	0.00	580.80	1,597.78	380.42	859.00	776.58	44.45	-6.08	0.754
80.00	-7.61	-12.26	0.00	-517.5	0.00	517.51	1,529.02	364.05	786.68	710.80	51.08	-6.58	0.734
84.17	-7.26	-12.03	0.00	-466.4	0.00	466.43	1,471.71	350.41	728.84	658.21	56.99	-7	0.715
85.00	-7.14	-11.87	0.00	-456.4	0.00	456.41	1,460.25	347.68	717.54	647.93	58.22	-7.09	0.710
88.00	-6.75	-11.64	0.00	-420.8	0.00	420.79	1,079.89	268.97	552.01	477.90	62.76	-7.4	0.889
90.00	-6.59	-11.37	0.00	-397.5	0.00	397.51	1,066.88	263.88	531.30	463.12	65.89	-7.61	0.866
95.00	-6.24	-10.98	0.00	-340.6	0.00	340.65	1,033.11	251.14	481.27	426.59	74.15	-8.21	0.806
100.00	-5.91	-10.61	0.00	-285.7	0.00	285.73	997.54	238.41	433.72	390.79	83.04	-8.8	0.739
105.00	-5.60	-10.24	0.00	-232.7	0.00	232.70	947.82	225.67	388.63	351.26	92.52	-9.37	0.670
110.00	-5.32	-9.88	0.00	-181.5	0.00	181.52	894.33	212.94	346.02	312.51	102.58	-9.91	0.589
115.00	-5.06	-9.59	0.00	-132.1	0.00	132.11	840.84	200.20	305.89	276.02	113.17	-10.39	0.487
118.00	-4.94	-8.87	0.00	-102.6	0.00	102.57	808.75	192.56	282.99	255.22	119.75	-10.66	0.410
120.00	-4.87	-8.65	0.00	-84.8	0.00	84.84	787.35	187.46	268.22	241.80	124.23	-10.81	0.359
125.00	-4.69	-8.32	0.00	-41.6	0.00	41.60	733.86	174.73	233.03	209.85	135.65	-11.1	0.207
130.00	0.00	-7.25	0.00	0.0	0.00	0.00	680.37	161.99	200.32	180.16	147.29	-11.22	0.002

CALCULATED FORCES

Load Case: 1.2D + 1.0Di + 1.0Wi													48.73 mph Wind with 0.85" Radial Ice		26 Iterations	
Gust Response Factor:		1.10		Ice Dead Load Factor			1.00			Ice Importance Factor			1.00			
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	-30.61	-4.09	0.00	-399.8	0.00	399.75	2,496.55	684.98	2,506.21	1,973.90	0	0	0.215			
5.00	-29.56	-4.02	0.00	-379.3	0.00	379.28	2,463.19	666.79	2,374.91	1,895.39	0.04	-0.07	0.212			
10.00	-28.51	-3.95	0.00	-359.2	0.00	359.18	2,428.03	648.60	2,247.14	1,816.96	0.16	-0.15	0.209			
15.00	-27.49	-3.88	0.00	-339.4	0.00	339.42	2,391.08	630.41	2,122.90	1,738.70	0.36	-0.23	0.207			
20.00	-26.48	-3.80	0.00	-320.0	0.00	320.03	2,352.33	612.22	2,002.20	1,660.74	0.64	-0.31	0.204			
25.00	-25.49	-3.72	0.00	-301.0	0.00	301.02	2,311.78	594.03	1,885.03	1,583.19	1	-0.39	0.201			
30.00	-24.53	-3.64	0.00	-282.4	0.00	282.40	2,269.44	575.84	1,771.39	1,506.16	1.46	-0.48	0.198			
35.00	-23.59	-3.56	0.00	-264.2	0.00	264.18	2,225.30	557.65	1,661.28	1,429.77	2	-0.56	0.195			
40.00	-22.68	-3.50	0.00	-246.4	0.00	246.39	2,179.36	539.46	1,554.71	1,354.14	2.64	-0.65	0.192			
41.25	-22.45	-3.46	0.00	-242.0	0.00	242.01	2,167.59	534.91	1,528.62	1,335.36	2.82	-0.68	0.192			
45.00	-21.36	-3.41	0.00	-229.0	0.00	229.04	2,131.63	521.27	1,451.67	1,279.37	3.38	-0.75	0.189			
46.00	-21.07	-3.37	0.00	-225.6	0.00	225.62	1,859.55	475.39	1,341.19	1,132.06	3.53	-0.77	0.211			
50.00	-20.42	-3.29	0.00	-212.2	0.00	212.15	1,828.61	462.29	1,268.32	1,082.26	4.21	-0.84	0.207			
55.00	-19.62	-3.20	0.00	-195.7	0.00	195.70	1,788.31	445.92	1,180.10	1,020.57	5.15	-0.95	0.203			
60.00	-18.85	-3.12	0.00	-179.7	0.00	179.68	1,746.22	429.55	1,095.05	959.59	6.19	-1.05	0.198			
65.00	-18.10	-3.03	0.00	-164.1	0.00	164.09	1,702.33	413.17	1,013.19	899.45	7.35	-1.16	0.193			
70.00	-17.38	-2.94	0.00	-148.9	0.00	148.94	1,656.64	396.80	934.51	840.25	8.62	-1.27	0.188			
75.00	-16.68	-2.86	0.00	-134.2	0.00	134.22	1,597.78	380.42	859.00	776.58	10.01	-1.38	0.183			
80.00	-16.00	-2.78	0.00	-119.9	0.00	119.92	1,529.02	364.05	786.68	710.80	11.51	-1.49	0.179			
84.17	-15.46	-2.73	0.00	-108.3	0.00	108.33	1,471.71	350.41	728.84	658.21	12.86	-1.59	0.175			
85.00	-15.30	-2.70	0.00	-106.0	0.00	106.05	1,460.25	347.68	717.54	647.93	13.14	-1.61	0.174			
88.00	-14.73	-2.66	0.00	-97.9	0.00	97.94	1,079.89	268.97	552.01	477.90	14.17	-1.68	0.219			
90.00	-14.51	-2.61	0.00	-92.6	0.00	92.63	1,066.88	263.88	531.30	463.12	14.89	-1.73	0.214			
95.00	-13.98	-2.53	0.00	-79.6	0.00	79.59	1,033.11	251.14	481.27	426.59	16.78	-1.87	0.200			
100.00	-13.47	-2.46	0.00	-66.9	0.00	66.93	997.54	238.41	433.72	390.79	18.81	-2.01	0.185			
105.00	-12.98	-2.39	0.00	-54.6	0.00	54.64	947.82	225.67	388.63	351.26	20.99	-2.14	0.169			
110.00	-12.52	-2.31	0.00	-42.7	0.00	42.71	894.33	212.94	346.02	312.51	23.31	-2.27	0.151			
115.00	-12.07	-2.25	0.00	-31.2	0.00	31.15	840.84	200.20	305.89	276.02	25.75	-2.39	0.127			
118.00	-11.61	-2.09	0.00	-24.2	0.00	24.24	808.75	192.56	282.99	255.22	27.27	-2.45	0.109			
120.00	-11.46	-2.04	0.00	-20.1	0.00	20.06	787.35	187.46	268.22	241.80	28.3	-2.48	0.098			
125.00	-11.09	-1.97	0.00	-9.8	0.00	9.84	733.86	174.73	233.03	209.85	30.94	-2.55	0.062			
130.00	0.00	-1.47	0.00	0.0	0.00	0.00	680.37	161.99	200.32	180.16	33.63	-2.58	0.000			

CALCULATED FORCES

Load Case: 1.0D + 1.0W

60 mph Wind with No Ice

25 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	-19.85	-4.21	0.00	-396.2	0.00	396.16	2,496.55	684.98	2,506.21	1,973.90	0	0	0.209
5.00	-19.11	-4.12	0.00	-375.1	0.00	375.10	2,463.19	666.79	2,374.91	1,895.39	0.04	-0.07	0.206
10.00	-18.38	-4.04	0.00	-354.5	0.00	354.48	2,428.03	648.60	2,247.14	1,816.96	0.16	-0.15	0.203
15.00	-17.68	-3.95	0.00	-334.3	0.00	334.30	2,391.08	630.41	2,122.90	1,738.70	0.35	-0.23	0.200
20.00	-16.99	-3.86	0.00	-314.6	0.00	314.57	2,352.33	612.22	2,002.20	1,660.74	0.63	-0.3	0.197
25.00	-16.33	-3.76	0.00	-295.3	0.00	295.29	2,311.78	594.03	1,885.03	1,583.19	0.99	-0.39	0.194
30.00	-15.67	-3.67	0.00	-276.5	0.00	276.47	2,269.44	575.84	1,771.39	1,506.16	1.44	-0.47	0.191
35.00	-15.04	-3.57	0.00	-258.1	0.00	258.14	2,225.30	557.65	1,661.28	1,429.77	1.98	-0.55	0.187
40.00	-14.43	-3.51	0.00	-240.3	0.00	240.28	2,179.36	539.46	1,554.71	1,354.14	2.6	-0.64	0.184
41.25	-14.28	-3.46	0.00	-235.9	0.00	235.90	2,167.59	534.91	1,528.62	1,335.36	2.77	-0.66	0.183
45.00	-13.48	-3.40	0.00	-222.9	0.00	222.93	2,131.63	521.27	1,451.67	1,279.37	3.32	-0.73	0.181
46.00	-13.27	-3.36	0.00	-219.5	0.00	219.53	1,859.55	475.39	1,341.19	1,132.06	3.48	-0.75	0.201
50.00	-12.84	-3.27	0.00	-206.1	0.00	206.10	1,828.61	462.29	1,268.32	1,082.26	4.14	-0.83	0.198
55.00	-12.31	-3.17	0.00	-189.8	0.00	189.76	1,788.31	445.92	1,180.10	1,020.57	5.06	-0.93	0.193
60.00	-11.81	-3.07	0.00	-173.9	0.00	173.91	1,746.22	429.55	1,095.05	959.59	6.09	-1.03	0.188
65.00	-11.31	-2.98	0.00	-158.6	0.00	158.55	1,702.33	413.17	1,013.19	899.45	7.22	-1.13	0.183
70.00	-10.84	-2.88	0.00	-143.7	0.00	143.66	1,656.64	396.80	934.51	840.25	8.46	-1.24	0.178
75.00	-10.38	-2.79	0.00	-129.2	0.00	129.24	1,597.78	380.42	859.00	776.58	9.81	-1.35	0.173
80.00	-9.94	-2.71	0.00	-115.3	0.00	115.29	1,529.02	364.05	786.68	710.80	11.28	-1.45	0.169
84.17	-9.58	-2.66	0.00	-104.0	0.00	104.01	1,471.71	350.41	728.84	658.21	12.59	-1.55	0.165
85.00	-9.47	-2.63	0.00	-101.8	0.00	101.79	1,460.25	347.68	717.54	647.93	12.86	-1.57	0.164
88.00	-9.06	-2.58	0.00	-93.9	0.00	93.92	1,079.89	268.97	552.01	477.90	13.87	-1.64	0.205
90.00	-8.92	-2.52	0.00	-88.8	0.00	88.76	1,066.88	263.88	531.30	463.12	14.57	-1.68	0.200
95.00	-8.59	-2.44	0.00	-76.2	0.00	76.16	1,033.11	251.14	481.27	426.59	16.4	-1.82	0.187
100.00	-8.27	-2.36	0.00	-64.0	0.00	63.96	997.54	238.41	433.72	390.79	18.38	-1.95	0.172
105.00	-7.97	-2.29	0.00	-52.2	0.00	52.15	947.82	225.67	388.63	351.26	20.49	-2.08	0.157
110.00	-7.67	-2.21	0.00	-40.7	0.00	40.72	894.33	212.94	346.02	312.51	22.73	-2.2	0.139
115.00	-7.39	-2.15	0.00	-29.7	0.00	29.67	840.84	200.20	305.89	276.02	25.1	-2.31	0.116
118.00	-7.16	-1.99	0.00	-23.0	0.00	23.05	808.75	192.56	282.99	255.22	26.57	-2.37	0.099
120.00	-7.06	-1.94	0.00	-19.1	0.00	19.08	787.35	187.46	268.22	241.80	27.56	-2.4	0.088
125.00	-6.83	-1.87	0.00	-9.4	0.00	9.36	733.86	174.73	233.03	209.85	30.12	-2.47	0.054
130.00	0.00	-1.57	0.00	0.0	0.00	0.00	680.37	161.99	200.32	180.16	32.72	-2.49	0.000

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

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

Spectral Response Acceleration for Short Period ( $S_S$ ):	0.202
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.053
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 ( $S_{ds}$ ):	0.215
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.085
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):	3.240
Redundancy Factor ( $p$ ):	1.000
Seismic Force Distribution Exponent ( $k$ ):	2.000
Total Unfactored Dead Load:	19.850 k
Seismic Base Shear (E):	0.600 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)
31	127.5	218	3,543	0.021	13	271
30	122.5	230	3,456	0.021	12	286
29	119	96	1,354	0.008	5	119
28	116.5	162	2,197	0.013	8	201
27	112.5	280	3,539	0.021	13	348
26	107.5	292	3,374	0.020	12	363
25	102.5	304	3,197	0.019	11	378
24	97.5	317	3,010	0.018	11	394
23	92.5	329	2,815	0.017	10	409
22	89	135	1,070	0.006	4	168
21	86.5	406	3,035	0.018	11	504
20	84.5833	114	819	0.005	3	142
19	82.0833	355	2,390	0.014	9	441
18	77.5	440	2,644	0.016	9	547
17	72.5	456	2,397	0.014	9	567
16	67.5	472	2,150	0.013	8	587
15	62.5	488	1,906	0.012	7	606
14	57.5	504	1,665	0.010	6	626
13	52.5	520	1,432	0.009	5	646
12	48	427	984	0.006	4	531
11	45.5	209	433	0.003	2	260
10	43.125	796	1,480	0.009	5	989
9	40.625	150	248	0.002	1	187
8	37.5	611	859	0.005	3	760
7	32.5	629	664	0.004	2	782
6	27.5	646	489	0.003	2	804
5	22.5	664	336	0.002	1	825
4	17.5	682	209	0.001	1	847
3	12.5	699	109	0.001	0	869
2	7.5	717	40	0.000	0	891
1	2.5	735	5	0.000	0	913
Raycap DC9-48-60-24-8C-EV	130	16	270	0.002	1	20
Ericsson RRUS 4415 B30	130	138	2,332	0.014	8	172
Ericsson RRUS 4449 B5, B12	130	213	3,600	0.022	13	265
Ericsson Radio 8843 B2 B66A	130	216	3,645	0.022	13	268
Ericsson RRUS 4478 B14	130	178	3,012	0.018	11	222
Raycap DC6-48-60-18-8C-EV	130	16	270	0.002	1	20
SitePro1 MM03	130	750	12,675	0.076	45	932



SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
SitePro1 MM01	130	375	6,338	0.038	23	466
SitePro1 LWRM Collar Mounts	130	400	6,760	0.041	24	497
SitePro1 VFA12-WLL-30120	130	3,852	65,099	0.392	234	4,788
CCI DMP65R-BU8D	130	287	4,852	0.029	17	357
CCI TPA65R-BU8D	130	248	4,183	0.025	15	308
RFS APXV18-206517S-C	118	79	1,103	0.007	4	98
<b>Totals:</b>		<b>19,849</b>	<b>165,988</b>	<b>1.000</b>	<b>595</b>	<b>24,675</b>

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
31	127.5	218	3,543	0.021	13	187
30	122.5	230	3,456	0.021	12	197
29	119	96	1,354	0.008	5	82
28	116.5	162	2,197	0.013	8	139
27	112.5	280	3,539	0.021	13	240
26	107.5	292	3,374	0.020	12	250
25	102.5	304	3,197	0.019	11	261
24	97.5	317	3,010	0.018	11	271
23	92.5	329	2,815	0.017	10	282
22	89	135	1,070	0.006	4	116
21	86.5	406	3,035	0.018	11	348
20	84.5833	114	819	0.005	3	98
19	82.0833	355	2,390	0.014	9	304
18	77.5	440	2,644	0.016	9	377
17	72.5	456	2,397	0.014	9	391
16	67.5	472	2,150	0.013	8	404
15	62.5	488	1,906	0.012	7	418
14	57.5	504	1,665	0.010	6	432
13	52.5	520	1,432	0.009	5	445
12	48	427	984	0.006	4	366
11	45.5	209	433	0.003	2	179
10	43.125	796	1,480	0.009	5	682
9	40.625	150	248	0.002	1	129
8	37.5	611	859	0.005	3	524
7	32.5	629	664	0.004	2	539
6	27.5	646	489	0.003	2	554
5	22.5	664	336	0.002	1	569
4	17.5	682	209	0.001	1	584
3	12.5	699	109	0.001	0	599
2	7.5	717	40	0.000	0	614
1	2.5	735	5	0.000	0	629
Raycap DC9-48-60-24-8C-EV	130	16	270	0.002	1	14
Ericsson RRUS 4415 B30	130	138	2,332	0.014	8	118
Ericsson RRUS 4449 B5, B12	130	213	3,600	0.022	13	183
Ericsson Radio 8843 B2 B66A	130	216	3,645	0.022	13	185
Ericsson RRUS 4478 B14	130	178	3,012	0.018	11	153
Raycap DC6-48-60-18-8C-EV	130	16	270	0.002	1	14
SitePro1 MM03	130	750	12,675	0.076	45	643
SitePro1 MM01	130	375	6,338	0.038	23	321
SitePro1 LWRM Collar Mounts	130	400	6,760	0.041	24	343
SitePro1 VFA12-WLL-30120	130	3,852	65,099	0.392	234	3,301
CCI DMP65R-BU8D	130	287	4,852	0.029	17	246
CCI TPA65R-BU8D	130	248	4,183	0.025	15	212
RFS APXV18-206517S-C	118	79	1,103	0.007	4	68
<b>Totals:</b>		<b>19,849</b>	<b>165,988</b>	<b>1.000</b>	<b>595</b>	<b>17,009</b>

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	-23.76	-0.60	0.00	-76.07	0.00	76.07	2,496.55	684.98	2,506	1,973.90	0.00	0.00	0.05
5.00	-22.87	-0.60	0.00	-73.09	0.00	73.09	2,463.19	666.79	2,375	1,895.39	0.01	-0.01	0.05
10.00	-22.00	-0.61	0.00	-70.07	0.00	70.07	2,428.03	648.60	2,247	1,816.96	0.03	-0.03	0.05
15.00	-21.15	-0.61	0.00	-67.03	0.00	67.03	2,391.08	630.41	2,123	1,738.70	0.07	-0.04	0.05
20.00	-20.33	-0.62	0.00	-63.96	0.00	63.96	2,352.33	612.22	2,002	1,660.74	0.12	-0.06	0.05
25.00	-19.52	-0.62	0.00	-60.88	0.00	60.88	2,311.78	594.03	1,885	1,583.19	0.20	-0.08	0.05
30.00	-18.74	-0.62	0.00	-57.78	0.00	57.78	2,269.44	575.84	1,771	1,506.16	0.28	-0.09	0.05
35.00	-17.98	-0.62	0.00	-54.67	0.00	54.67	2,225.30	557.65	1,661	1,429.77	0.39	-0.11	0.05
40.00	-17.80	-0.63	0.00	-51.56	0.00	51.56	2,179.36	539.46	1,555	1,354.14	0.52	-0.13	0.05
41.25	-16.81	-0.62	0.00	-50.78	0.00	50.78	2,167.59	534.91	1,529	1,335.36	0.55	-0.14	0.05
45.00	-16.55	-0.62	0.00	-48.45	0.00	48.45	2,131.63	521.27	1,452	1,279.37	0.67	-0.15	0.05
46.00	-16.01	-0.62	0.00	-47.83	0.00	47.83	1,859.55	475.39	1,341	1,132.06	0.70	-0.15	0.05
50.00	-15.37	-0.62	0.00	-45.35	0.00	45.35	1,828.61	462.29	1,268	1,082.26	0.84	-0.17	0.05
55.00	-14.74	-0.62	0.00	-42.26	0.00	42.26	1,788.31	445.92	1,180	1,020.57	1.03	-0.19	0.05
60.00	-14.14	-0.61	0.00	-39.18	0.00	39.18	1,746.22	429.55	1,095	959.59	1.24	-0.22	0.05
65.00	-13.55	-0.61	0.00	-36.12	0.00	36.12	1,702.33	413.17	1,013	899.45	1.48	-0.24	0.05
70.00	-12.98	-0.60	0.00	-33.09	0.00	33.09	1,656.64	396.80	935	840.25	1.74	-0.26	0.05
75.00	-12.43	-0.60	0.00	-30.08	0.00	30.08	1,597.78	380.42	859	776.58	2.03	-0.29	0.05
80.00	-11.99	-0.59	0.00	-27.10	0.00	27.10	1,529.02	364.05	787	710.80	2.35	-0.31	0.05
84.17	-11.85	-0.59	0.00	-24.64	0.00	24.64	1,471.71	350.41	729	658.21	2.63	-0.34	0.05
85.00	-11.35	-0.58	0.00	-24.15	0.00	24.15	1,460.25	347.68	718	647.93	2.69	-0.34	0.05
88.00	-11.18	-0.57	0.00	-22.42	0.00	22.42	1,079.89	268.97	552	477.90	2.91	-0.36	0.06
90.00	-10.77	-0.57	0.00	-21.27	0.00	21.27	1,066.88	263.88	531	463.12	3.06	-0.37	0.06
95.00	-10.38	-0.56	0.00	-18.44	0.00	18.44	1,033.11	251.14	481	426.59	3.46	-0.40	0.05
100.00	-10.00	-0.55	0.00	-15.64	0.00	15.64	997.54	238.41	434	390.79	3.90	-0.43	0.05
105.00	-9.63	-0.54	0.00	-12.89	0.00	12.89	947.82	225.67	389	351.26	4.37	-0.46	0.05
110.00	-9.29	-0.53	0.00	-10.19	0.00	10.19	894.33	212.94	346	312.51	4.88	-0.49	0.04
115.00	-9.08	-0.52	0.00	-7.54	0.00	7.54	840.84	200.20	306	276.02	5.41	-0.52	0.04
118.00	-8.87	-0.51	0.00	-5.97	0.00	5.97	808.75	192.56	283	255.22	5.74	-0.54	0.03
120.00	-8.58	-0.50	0.00	-4.95	0.00	4.95	787.35	187.46	268	241.80	5.97	-0.55	0.03
125.00	-8.31	-0.49	0.00	-2.44	0.00	2.44	733.86	174.73	233	209.85	6.55	-0.56	0.02
130.00	0.00	-0.41	0.00	0.00	0.00	0.00	680.37	161.99	200	180.16	7.14	-0.57	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	-16.38	-0.60	0.00	-73.75	0.00	73.75	2,496.55	684.98	2,506	1,973.90	0.00	0.00	0.04
5.00	-15.77	-0.60	0.00	-70.76	0.00	70.76	2,463.19	666.79	2,375	1,895.39	0.01	-0.01	0.04
10.00	-15.17	-0.60	0.00	-67.76	0.00	67.76	2,428.03	648.60	2,247	1,816.96	0.03	-0.03	0.04
15.00	-14.58	-0.61	0.00	-64.74	0.00	64.74	2,391.08	630.41	2,123	1,738.70	0.07	-0.04	0.04
20.00	-14.01	-0.61	0.00	-61.71	0.00	61.71	2,352.33	612.22	2,002	1,660.74	0.12	-0.06	0.04
25.00	-13.46	-0.61	0.00	-58.67	0.00	58.67	2,311.78	594.03	1,885	1,583.19	0.19	-0.07	0.04
30.00	-12.92	-0.61	0.00	-55.62	0.00	55.62	2,269.44	575.84	1,771	1,506.16	0.28	-0.09	0.04
35.00	-12.40	-0.61	0.00	-52.56	0.00	52.56	2,225.30	557.65	1,661	1,429.77	0.38	-0.11	0.04
40.00	-12.27	-0.61	0.00	-49.51	0.00	49.51	2,179.36	539.46	1,555	1,354.14	0.50	-0.13	0.04
41.25	-11.58	-0.61	0.00	-48.75	0.00	48.75	2,167.59	534.91	1,529	1,335.36	0.54	-0.13	0.04
45.00	-11.41	-0.61	0.00	-46.47	0.00	46.47	2,131.63	521.27	1,452	1,279.37	0.64	-0.15	0.04
46.00	-11.04	-0.60	0.00	-45.86	0.00	45.86	1,859.55	475.39	1,341	1,132.06	0.68	-0.15	0.05
50.00	-10.59	-0.60	0.00	-43.45	0.00	43.45	1,828.61	462.29	1,268	1,082.26	0.81	-0.16	0.05
55.00	-10.16	-0.60	0.00	-40.44	0.00	40.44	1,788.31	445.92	1,180	1,020.57	0.99	-0.19	0.05
60.00	-9.74	-0.59	0.00	-37.45	0.00	37.45	1,746.22	429.55	1,095	959.59	1.20	-0.21	0.05
65.00	-9.34	-0.59	0.00	-34.49	0.00	34.49	1,702.33	413.17	1,013	899.45	1.43	-0.23	0.04
70.00	-8.95	-0.58	0.00	-31.55	0.00	31.55	1,656.64	396.80	935	840.25	1.68	-0.25	0.04
75.00	-8.57	-0.57	0.00	-28.64	0.00	28.64	1,597.78	380.42	859	776.58	1.96	-0.28	0.04
80.00	-8.27	-0.57	0.00	-25.77	0.00	25.77	1,529.02	364.05	787	710.80	2.26	-0.30	0.04
84.17	-8.17	-0.57	0.00	-23.41	0.00	23.41	1,471.71	350.41	729	658.21	2.53	-0.32	0.04
85.00	-7.82	-0.55	0.00	-22.94	0.00	22.94	1,460.25	347.68	718	647.93	2.59	-0.33	0.04
88.00	-7.70	-0.55	0.00	-21.28	0.00	21.28	1,079.89	268.97	552	477.90	2.80	-0.34	0.05

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
90.00	-7.42	-0.54	0.00	-20.18	0.00	20.18	1,066.88	263.88	531	463.12	2.94	-0.35	0.05
95.00	-7.15	-0.53	0.00	-17.47	0.00	17.47	1,033.11	251.14	481	426.59	3.33	-0.38	0.05
100.00	-6.89	-0.52	0.00	-14.81	0.00	14.81	997.54	238.41	434	390.79	3.75	-0.41	0.05
105.00	-6.64	-0.51	0.00	-12.19	0.00	12.19	947.82	225.67	389	351.26	4.20	-0.44	0.04
110.00	-6.40	-0.50	0.00	-9.62	0.00	9.62	894.33	212.94	346	312.51	4.68	-0.47	0.04
115.00	-6.26	-0.49	0.00	-7.12	0.00	7.12	840.84	200.20	306	276.02	5.19	-0.50	0.03
118.00	-6.11	-0.49	0.00	-5.63	0.00	5.63	808.75	192.56	283	255.22	5.51	-0.51	0.03
120.00	-5.91	-0.47	0.00	-4.66	0.00	4.66	787.35	187.46	268	241.80	5.72	-0.52	0.03
125.00	-5.73	-0.46	0.00	-2.30	0.00	2.30	733.86	174.73	233	209.85	6.28	-0.54	0.02
130.00	0.00	-0.41	0.00	0.00	0.00	0.00	680.37	161.99	200	180.16	6.84	-0.54	0.00

ANALYSIS SUMMARY

Load Case	Base Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W	19.43	0.00	23.76	0.00	0.00	1843.84	0.00	0.94
0.9D + 1.0W	19.41	0.00	17.81	0.00	0.00	1803.64	0.00	0.92
1.2D + 1.0Di + 1.0Wi	4.09	0.00	30.61	0.00	0.00	399.75	88.00	0.22
1.2D + 1.0Ev + 1.0Eh	0.63	0.00	23.76	0.00	0.00	76.07	88.00	0.06
0.9D - 1.0Ev + 1.0Eh	0.61	0.00	16.38	0.00	0.00	73.75	88.00	0.05
1.0D + 1.0W	4.21	0.00	19.85	0.00	0.00	396.16	0.00	0.21

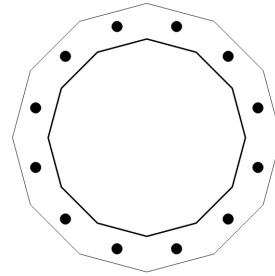
**BASE PLATE ANALYSIS @ 0 FT**

**APPLIED REACTIONS**

Moment (k-ft)	Axial (k)	Shear (k)
1843.84	23.76	19.43

**PLATE PARAMETERS (ID# 24676)**

Width:	52.98	in
Shape:	12	
Thickness:	2.375	in
Grade:	A871-60	
Yield Strength:	60	ksi
Tensile Strength:	75	ksi
Rod Detail Type:	c	
Clear Distance:	-	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	0	°



**ANCHOR ROD PARAMETERS**

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F <sub>y</sub> (ksi)	F <sub>u</sub> (ksi)	Spacing (in)	Offset (°)
Original [ID#25324]	Radial	12	2.25	46.98	A615-75	75	100	-	15

**COMPONENT PROPERTIES**

Component	ID	Gross Area (in <sup>2</sup> )	Net Area (in <sup>2</sup> )	Individual Inertia (in <sup>4</sup> )	Moment of Inertia (in <sup>4</sup> )	Threads/in
Pole	39.1"Ø x 0.3125" (12 Sides)	37.6460	-	-	7080.90	-
Bolt Group	Original (12) 2.25"Ø	3.9761	3.2477	0.8393	9594.16	4.5

**REACTION DISTRIBUTION**

Component	ID	Moment M <sub>u</sub> (k-ft)	Axial Load P <sub>u</sub> (k)	Shear V <sub>u</sub> (k)	Moment Factor
Pole	39.1"Ø x 0.3125" (12 Sides)	1843.8	23.76	19.43	1.000
Bolt Group	Original (12) 2.25"Ø	1843.8	-	19.43	1.000

**BASE PLATE BEND LINE ANALYSIS @ 0 FT**

**POLE PROPERTIES**

Flat-to-Flat Diameter:	39.22	in
Point-to-Point Diameter:	40.61	in
Orientation Offset:	-	°

Flat Width:	10.510	in
Flat Radians:	0.524	rad

**PLATE PROPERTIES**

Neutral Axis:	0	°
Bend Line Limits:	0.990 to 2.152	rad

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in <sup>3</sup> )	Applied Moment M <sub>u</sub> (k-in)	Moment Capacity ΦM <sub>n</sub> (k-in)	Flexure Result M <sub>u</sub> /ΦM <sub>n</sub>
Flats	31.600	0.00	44.560	587.8	2406.3	24.4%
Corners	29.801	0.00	42.023	363.0	2269.3	16.0%
Circumferential	39.267	0.00	55.373	608.5	2990.1	20.4%

**PLASTIC ANCHOR ROD ANALYSIS**

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load P <sub>u</sub> (k)	Applied Shear Load V <sub>u</sub> (k)	Compressive Capacity ΦP <sub>n</sub> (k)	Interaction Result
Original	12	2.25	133.0	2.4	243.6	56.4%

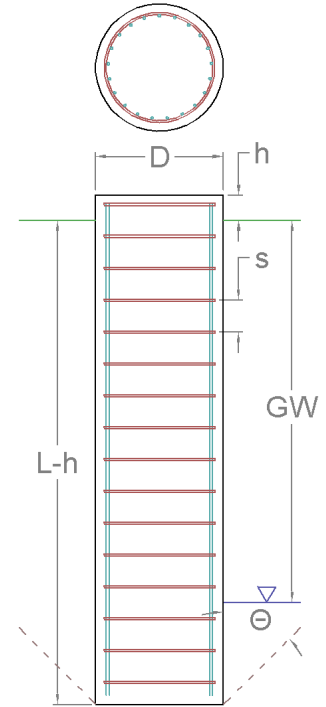
### PIER FOUNDATION ANALYSIS

#### GLOBAL REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
1,843.84	23.76	19.43

#### FOUNDATION PARAMETERS

Pier Diameter:	D	5.50	ft
Pier Embedment Depth:	L-h	24.0	ft
Pier Height above Grade:	h	1.00	ft
Concrete Compressive Strength:		3,000	psi
Vertical Rebar:		(21) #11 bars [60 ksi]	
Tie Rebar:	s	#4 bars @ 12.0" c/c [60 ksi]	
Rebar Clear Cover:		3.00	in



#### SOIL PARAMETERS

Water Table Depth [BGL]: GW 12 ft

Layer Depth (ft)	Unit Weight	Cohesion	Friction Angle	Ultimate Skin Friction	Ultimate Net Bearing	
						Top
0	2	105	0	0	0	
2	3	105	0	29	0	
3	6	106	0	29	0	
6	12	116	0	31	865	
12	15	109	0	29	711	
15	20	117	0	31	1,539	
20	25	125	0	35	1,694	

#### SOIL STRENGTH ANALYSIS

Volume of Concrete (ft³)	Buoyant Weight of Concrete (k)	Skin Friction Resistance (k)	Inflection Point [BGL] (ft)
593.96	71.30	376.57	16.80

#### SOIL MOMENT ANALYSIS

Total Lateral Resistance (k)	Moment at Inflection Point, M <sub>u</sub> (k-ft)	Additional Resistance (k-ft)	Nominal Moment Capacity, ΦM <sub>n</sub> (k-ft)	Soil Moment Usage, M <sub>u</sub> / ΦM <sub>n</sub>
1,241.54	2,189.67	0.00	4,430.78	49.4% <span style="float: right;">✓</span>


#### SOIL COMPRESSION ANALYSIS

Compressive Bearing Resistance (k)	Compressive Force, P <sub>u</sub> (k)	Additional Resistance (k)	Nominal Compressive Capacity, ΦP <sub>n</sub> (k)	Soil Compressive Usage, P <sub>u</sub> / ΦP <sub>n</sub>
940.38	48.25	0.00	987.71	4.9% <span style="float: right;">✓</span>


**REINFORCING STEEL STRENGTH ANALYSIS**

Rebar Cage Diameter (in)	Steel Elastic Modulus, E (ksi)	Strength Bending/Tension Reduction Factor, $\Phi_b$	Strength Shear Reduction Factor, $\Phi_v$	Strength Compression Reduction Factor, $\Phi_c$
57.59	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, $M_u / \Phi_b M_n$
1,866.20	3,761.07	0.01	<b>49.6%</b> 

**PIER REINFORCING COMPRESSION ANALYSIS**

Buoyant Weight of Concrete (k)	Design Compression, $P_u$ (k)	Nominal Compressive Capacity, $\Phi_p P_n$ (k)	Pier Rebar Compressive Usage, $P_u / \Phi_p P_n$
71.30	48.25	5,515.18	<b>0.9%</b> 

**PIER REINFORCING SHEAR ANALYSIS**

Design Shear, $V_u$ (k)	Nominal Shear Capacity, $\Phi_v V_n$ (k)	Pier Rebar Shear Usage, $V_u / \Phi_v V_n$
190.49	361.26	<b>52.7%</b> 

# ATTACHMENT 5



January 26, 2022 (Rev. 2)  
September 13, 2022 (Rev. 3)  
December 13, 2022 (Rev. 4)  
January 31, 2023 (Rev. 5)  
May 1, 2023 (Rev. 6)  
**June 20, 2023 (Rev.7)**



SAI Communications  
12 Industrial Way  
Salem NH, 03079

RE: AT&T Site Number: CT1399 (NSB)  
FA Number: 15252532  
PACE Number: MRCTB048243  
PT Number: 2051A0WBLF  
TEP Project Number: 94026.859524  
AT&T Site Name: OLD SAYBROOK RIVER STREET  
Site Address: 50 River Street  
Old Saybrook, CT 06475

To Whom It May Concern:

TEP Northeast (TEP NE) has been authorized by SAI Communications to perform a mount analysis on the proposed AT&T antenna/RRH mounts to determine their capability of supporting the following loading:

- **(3) TPA65R-BU8DA-K Antennas (96.0"x20.7"x7.7" – Wt. = 87 lbs. /each)**
- **(3) DMP65R-BU8DA-K Antennas (96.0"x20.7"x7.7" – Wt. = 119 lbs. /each)**
- **(3) 4478 B14 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each) (Standoff)**
- **(3) 4449 B5/B12 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each) (Standoff)**
- **(3) 8843 B2/B66A RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each) (Standoff)**
- **(2) Squid Surge Arrestors (31.4"x10.2"Ø – Wt. = 29 lbs.) (Standoff)**

*\*Proposed equipment shown in bold.*

Mount fabrication drawings prepared by SitePro1, P/N VFA12-WLL-30120, dated May 3, 2018; P/N MM01, dated May 10, 2010; P/N MM03, dated December 17, 2012; and P/N LWRM, dated August 24, 2012, were used to perform this analysis.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2021 with 2022 Connecticut State Building Code, and AT&T Mount Technical Directive – R22.
- TEP NE considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix P of the Connecticut State Building Code, the max basic wind speed for this site is equal to 130 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.15 in was used for this analysis.
- TEP NE considers this site to be exposure category C; tower is located near large, flat, open, terrain/grasslands.
- TEP NE considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- TEP NE considers this site to have a spectral response acceleration parameter at short periods,  $S_s$ , of 0.202 and a spectral response acceleration parameter at a period of 1 second,  $S_1$ , of 0.053.
- The mounts have been analyzed with load combinations consisting of 500 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 1.
- The mounts have been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The proposed mounts are to be secured to the existing monopole with ring mounts and threaded rods. TEP NE considers the threaded rods to be the governing connection member.

Based on our evaluation, we have determined that the (3) Proposed SitePro1 VFA12-WLL-30120 mounts, (4) Proposed SitePro1 MM03 standoffs, (2) Proposed SitePro1 MM01 standoffs, and (2) Proposed SitePro1 LWRM collar mounts **ARE CAPABLE** of supporting the proposed installation with the following modifications:

- **Install proposed 2" std. (2.38" O.D.) steel pipe brace secured to the proposed vertical pipes (typ. of 1 per sector, total of 3).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
<b>Proposed (NSB) Mount Rating</b>	171	LC3	92%	<b>PASS</b>

Reference Documents:

- Assembly drawings prepared by SitePro1, P/N VFA12-WLL-30120, dated May 3, 2018.
- Assembly drawings prepared by SitePro1, P/N MM01, dated May 10, 2010.
- Assembly drawings prepared by SitePro1, P/N MM03, December 17, 2012.
- Assembly drawings prepared by SitePro1, P/N LWRM, dated August 24, 2012.

This determination was based on the following limitations and assumptions:

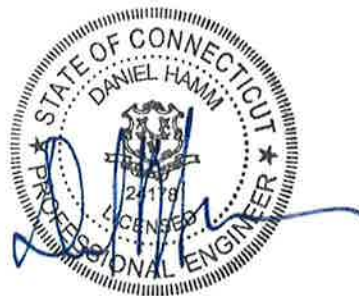
1. TEP NE is not responsible for any modifications completed prior to and hereafter which TEP NE was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. All antennas, coax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

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

Respectfully Submitted,  
TEP Northeast



Michael Cabral  
Director



Daniel P. Hamm, PE  
Vice President



## Wind & Ice Calculations

Date: 6/20/2023  
 Project Name: OLD SAYBROOK RIVER STREET  
 Project No.: CT1399  
 Designed By: KSBM Checked By: MSC



**2.6.5.2 Velocity Pressure Coeff:**

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

$K_z =$  **1.337**

$z =$  130.0 (ft)  
 $z_g =$  900 (ft)  
 $\alpha =$  9.5

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

**Table 2-4**

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

**2.6.6.2 Topographic Factor:**

**Table 2-5**

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

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

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

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

$K_h =$  1

$K_c =$  1.0 (from Table 2-4)

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

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

$z =$  130.0

$z_s =$  19 (Mean elevation of base of structure above sea level)

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

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

$K_e =$  1.00 (from 2.6.8)

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

Category = **1**

**2.6.10 Design Ice Thickness**

Max Ice Thickness =

$t_i =$  1.00 in

Importance Factor =

$I =$  1.00 (from Table 2-3)

$K_{iz} =$  1.15 (from Sec. 2.6.10)

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

$t_{iz} =$  1.15 in

Date: 6/20/2023  
 Project Name: OLD SAYBROOK RIVER STREET  
 Project No.: CT1399  
 Designed By: KSBM Checked By: MSC



**2.6.9 Gust Effect Factor**

2.6.9.1 Self Supporting Lattice Structures

$G_h = 1.0$  Latticed Structures > 600 ft

$G_h = 0.85$  Latticed Structures 450 ft or less

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

$h =$  130.0  $G_h =$  0.85

2.6.9.2 Guyed Masts  $G_h =$  0.85

2.6.9.3 Pole Structures  $G_h =$  1.1

2.6.9 Appurtenances  $G_h =$  1.0

2.6.9.4 Structures Supported on Other Structures

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

$G_h =$  1.35  $G_h =$  1.00

**2.6.11.2 Design Wind Force on Appurtenances**

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

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

$q_z =$	<b>54.93</b>
$q_{z(ice)} =$	<b>8.13</b>
$q_{z(30)} =$	<b>2.93</b>

$K_z =$	1.337 (from 2.6.5.2)
$K_{zt} =$	1.0 (from 2.6.6.2.1)
$K_s =$	1.0 (from 2.6.7)
$K_e =$	1.00 (from 2.6.8)
$K_d =$	<span style="background-color: yellow;">0.95</span> (from Table 2-2)
$V_{max} =$	130 mph (Ultimate Wind Speed)
$V_{max(ice)} =$	<span style="background-color: yellow;">50</span> mph
$V_{30} =$	<span style="background-color: gray;">30</span> mph

**Table 2-2**

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

Date: 6/20/2023  
 Project Name: OLD SAYBROOK RIVER STREET  
 Project No.: CT1399  
 Designed By: KSBM Checked By: MSC



**Determine Ca:**

**Table 2-9**

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

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.  
 (Aspect ratio is independent of the spacing between support points of a linear appurtenance.)

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = **1.15 in**      Angle = **0 (deg)**      Equivalent Angle = **180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	4.64	1.30	982	165	52
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	4.64	1.30	982	165	52
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	2.18	1.20	69	15	4
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.90	1.20	77	16	4
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.20	74	15	4
Surge Arrestor	31.4	10.2	10.2	2.22	3.08	0.70	86	17	5
Plate 3-1/2x5/8	0.6	12.0		0.05	0.05	2.00	6		
Plate 11-1/4x5/8	0.6	12.0		0.05	0.05	2.00	6		
5/8" RoundBar	0.6	12.0		0.05	0.05	1.20	3		
3/4" RoundBar	0.8	12.0		0.06	0.06	1.20	4		
2" Pipe	2.4	12.0		0.20	0.20	1.20	13		
2-1/2" Pipe	2.9	12.0		0.24	0.24	1.20	16		
3" Pipe	3.5	12.0		0.29	0.29	1.20	19		
HSS 4x4	4.0	12.0		0.33	0.33	1.25	23		

Date: 6/20/2023  
 Project Name: OLD SAYBROOK RIVER STREET  
 Project No.: CT1399  
 Designed By: KSBM Checked By: MSC



WIND LOADS

Angle = 30 (deg)

Ice Thickness = 1.15 in.

Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	982	446	848
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	982	446	848
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	69	111	79
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	77	108	85
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	74	90	78

WIND LOADS WITH ICE:

TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	163	83	143
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	163	83	143
4478 B14 RRH (Side)	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	15	22	16
4449 B5/B12 RRH (Side)	20.2	11.7	15.5	1.64	2.17	1.73	1.30	1.20	1.20	16	21	17
8843 B2/B66A RRH (Side)	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	15	18	16

WIND LOADS AT 30 MPH:

TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	45
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	45
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	4
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	6	5
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	4



Date: 6/20/2023  
 Project Name: OLD SAYBROOK RIVER STREET  
 Project No.: CT1399  
 Designed By: KSBM Checked By: MSC



WIND LOADS

Angle = 60 (deg)

Ice Thickness = 1.15 in.

Equivalent Angle = 240 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	982	446	580
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	982	446	580
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	69	111	100
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	77	108	100
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	74	90	86

WIND LOADS WITH ICE:

TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	163	83	103
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	163	83	103
4478 B14 RRH (Side)	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	15	22	20
4449 B5/B12 RRH (Side)	20.2	11.7	15.5	1.64	2.17	1.73	1.30	1.20	1.20	16	21	20
8843 B2/B66A RRH (Side)	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	15	18	17

WIND LOADS AT 30 MPH:

TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	31
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	31
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	5
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	6	5
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	5

Date: 6/20/2023  
 Project Name: OLD SAYBROOK RIVER STREET  
 Project No.: CT1399  
 Designed By: KSBM Checked By: MSC



WIND LOADS

Angle = 90 (deg)      Ice Thickness = 1.15 in.      Equivalent Angle = 270 (deg)

**WIND LOADS WITH NO ICE:**

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	982	446	446
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	982	446	446
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	69	111	111
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	77	108	108
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	74	90	90

**WIND LOADS WITH ICE:**

TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	163	83	83
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	163	83	83
4478 B14 RRH (Side)	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	15	22	22
4449 B5/B12 RRH (Side)	20.2	11.7	15.5	1.64	2.17	1.73	1.30	1.20	1.20	16	21	21
8843 B2/B66A RRH (Side)	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	15	18	18

**WIND LOADS AT 30 MPH:**

TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	24
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	24
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	6
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	6	6
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	5

Date: 6/20/2023  
 Project Name: OLD SAYBROOK RIVER STREET  
 Project No.: CT1399  
 Designed By: KSBM Checked By: MSC



WIND LOADS

Angle = 120 (deg)      Ice Thickness = 1.15 in.      Equivalent Angle = 300 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	982	446	580
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	982	446	580
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	69	111	100
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	77	108	100
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	74	90	86

WIND LOADS WITH ICE:

TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	163	83	103
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	163	83	103
4478 B14 RRH (Side)	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	15	22	20
4449 B5/B12 RRH (Side)	20.2	11.7	15.5	1.64	2.17	1.73	1.30	1.20	1.20	16	21	20
8843 B2/B66A RRH (Side)	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	15	18	17

WIND LOADS AT 30 MPH:

TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	31
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	31
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	5
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	6	5
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	5

Date: 6/20/2023  
 Project Name: OLD SAYBROOK RIVER STREET  
 Project No.: CT1399  
 Designed By: KSBM Checked By: MSC



WIND LOADS

Angle = 150 (deg)      Ice Thickness = 1.15 in.      Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	982	446	848
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	982	446	848
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	69	111	79
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	77	108	85
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	74	90	78

WIND LOADS WITH ICE:

TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	163	83	143
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	163	83	143
4478 B14 RRH (Side)	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	15	22	16
4449 B5/B12 RRH (Side)	20.2	11.7	15.5	1.64	2.17	1.73	1.30	1.20	1.20	16	21	17
8843 B2/B66A RRH (Side)	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	15	18	16

WIND LOADS AT 30 MPH:

TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	45
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	45
4478 B14 RRH (Side)	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	4
4449 B5/B12 RRH (Side)	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	4	6	5
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	4

Date: 6/20/2023

Project Name: OLD SAYBROOK RIVER STREET

Project No.: CT1399

Designed By: KSBM Checked By: MSC



### ICE WEIGHT CALCULATIONS

Thickness of ice: 1.15 in.

Density of ice: 56 pcf

#### TPA65R-BU8DA-K Antenna

Weight of ice based on total radial SF area:

Height (in): 96.0

Width (in): 20.7

Depth (in): 7.7

Total weight of ice on object: 261 lbs

Weight of object: 87.0 lbs

Combined weight of ice and object: 348 lbs

#### DMP65R-BU8DA-K Antenna

Weight of ice based on total radial SF area:

Height (in): 96.0

Width (in): 20.7

Depth (in): 7.7

Total weight of ice on object: 261 lbs

Weight of object: 119.0 lbs

Combined weight of ice and object: 380 lbs

#### 4478 B14 RRH

Weight of ice based on total radial SF area:

Height (in): 18.1

Width (in): 13.4

Depth (in): 8.3

Total weight of ice on object: 36 lbs

Weight of object: 60.0 lbs

Combined weight of ice and object: 96 lbs

#### 4449 B5/B12 RRH

Weight of ice based on total radial SF area:

Height (in): 17.9

Width (in): 13.2

Depth (in): 9.4

Total weight of ice on object: 36 lbs

Weight of object: 73.0 lbs

Combined weight of ice and object: 109 lbs

#### 8843 B2/B66A RRH

Weight of ice based on total radial SF area:

Height (in): 14.9

Width (in): 13.2

Depth (in): 10.9

Total weight of ice on object: 32 lbs

Weight of object: 72.0 lbs

Combined weight of ice and object: 104 lbs

#### Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in): 31.4

Diameter(in): 10.2

Total weight of ice on object: 42 lbs

Weight of object: 29 lbs

Combined weight of ice and object: 71 lbs

#### PL 11-1/4x5/8

Weight of ice based on total radial SF area:

Height (in): 11.25

Width (in): 0.63

Per foot weight of ice on object: 17 plf

#### 5/8" Round Bar

Per foot weight of ice:

diameter (in): 0.63

Per foot weight of ice on object: 2 plf

#### PL 3-1/2x5/8

Weight of ice based on total radial SF area:

Height (in): 3.5

Width (in): 0.63

Per foot weight of ice on object: 7 plf

#### 3/4" Round Bar

Per foot weight of ice:

diameter (in): 0.75

Per foot weight of ice on object: 3 plf

#### HSS 4x4

Weight of ice based on total radial SF area:

Height (in): 4

Width (in): 4

Per foot weight of ice on object: 10 plf

#### 2" pipe

Per foot weight of ice:

diameter (in): 2.38

Per foot weight of ice on object: 5 plf

#### 3" Pipe

Per foot weight of ice:

diameter (in): 3.5

Per foot weight of ice on object: 7 plf

#### 2-1/2" pipe

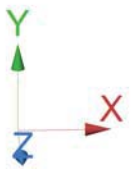
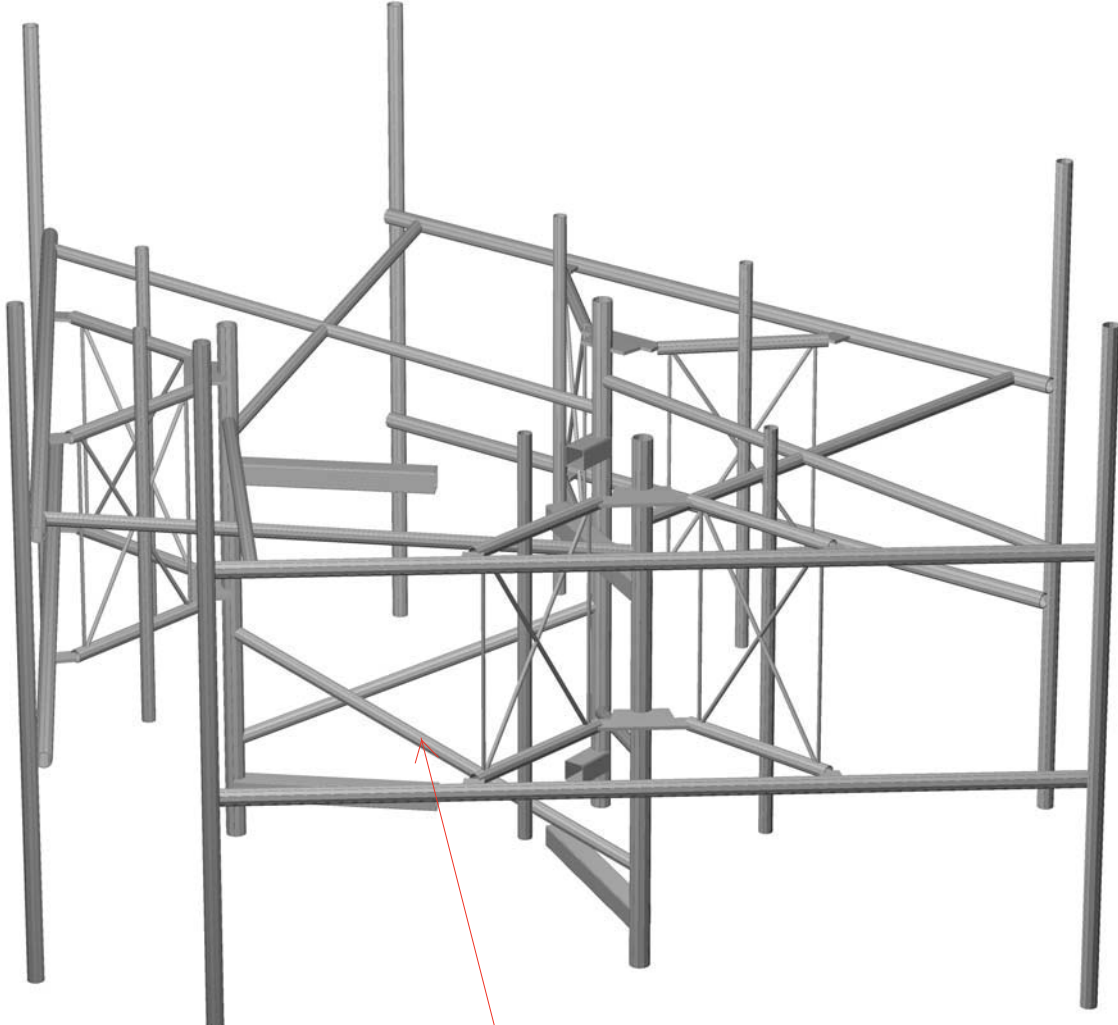
Per foot weight of ice:

diameter (in): 2.88

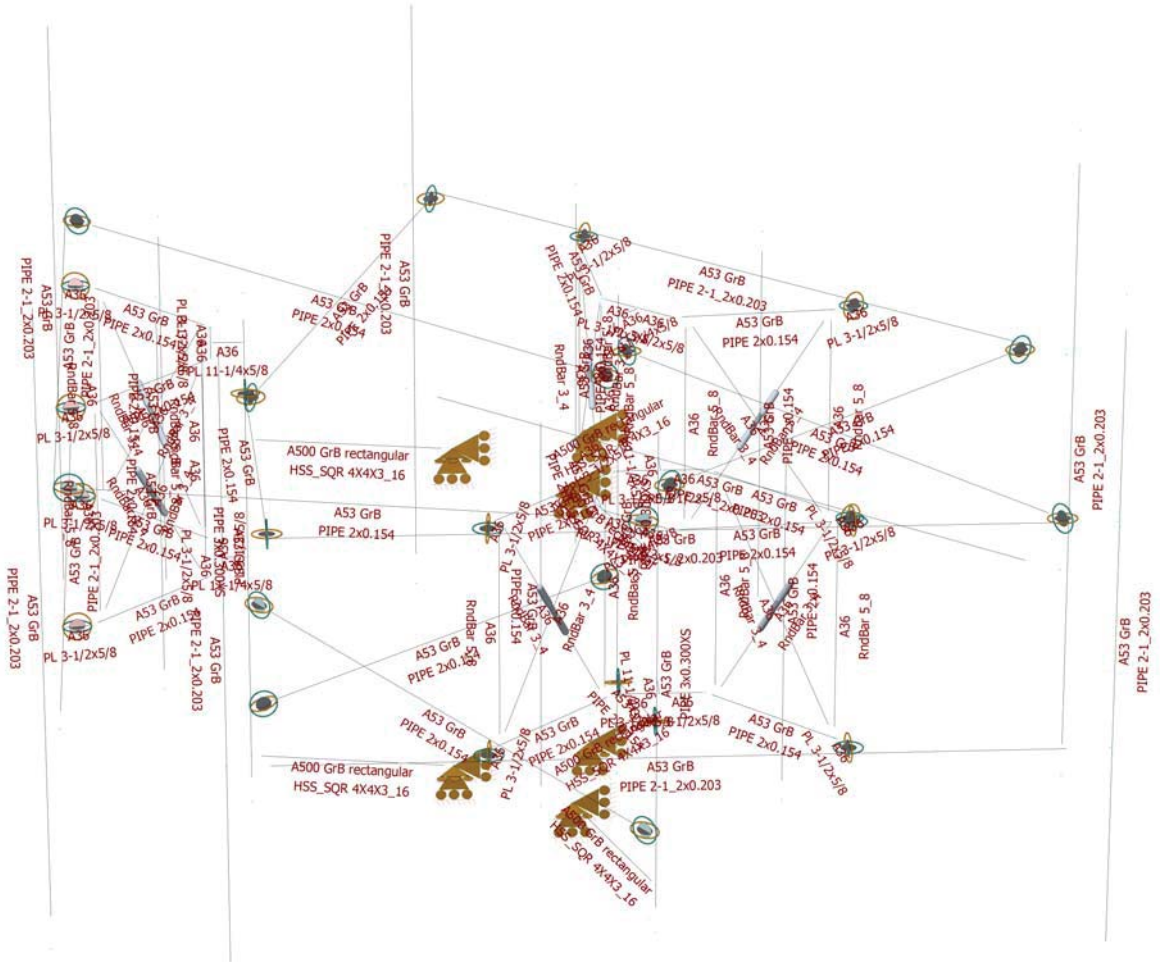
Per foot weight of ice on object: 6 plf



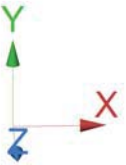
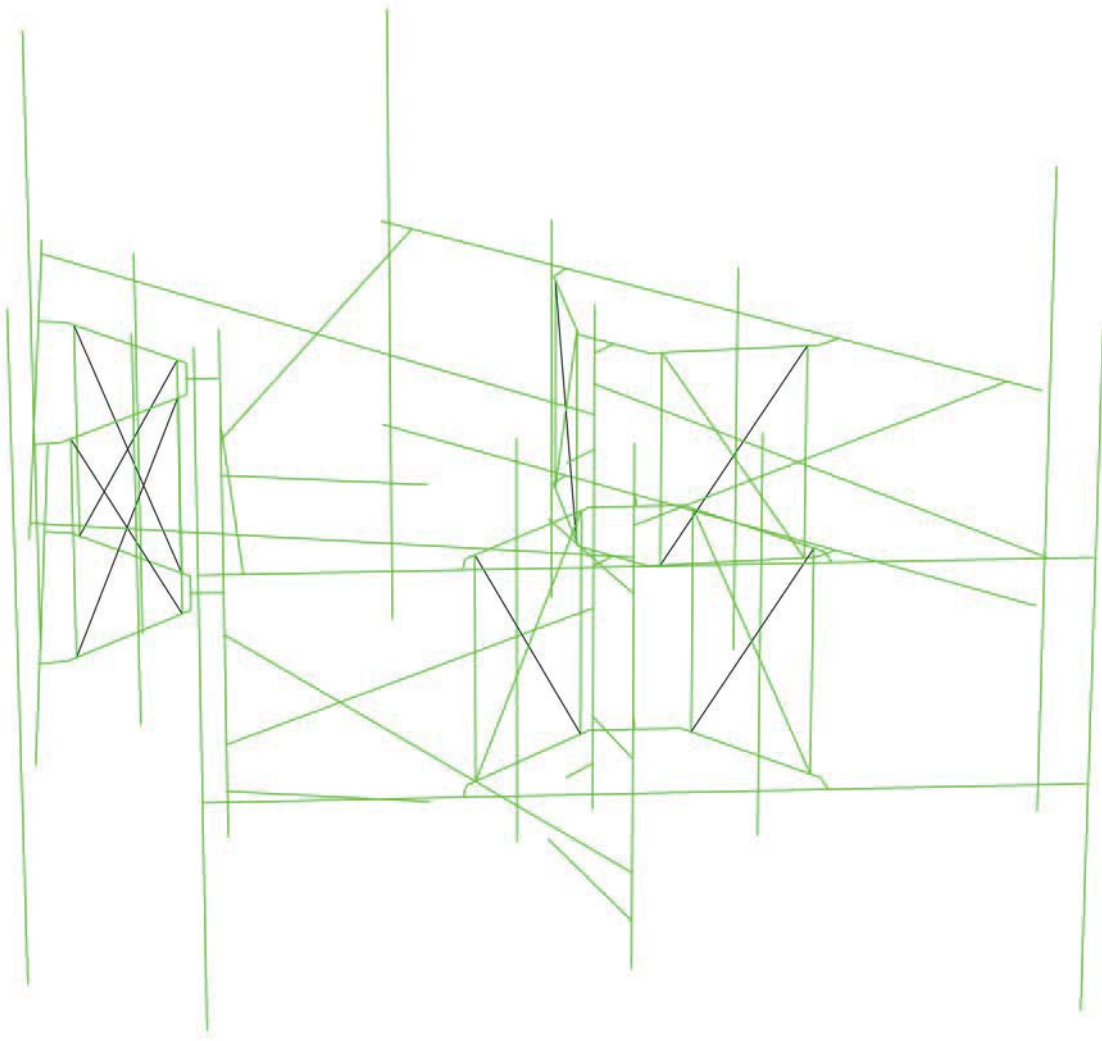
**Mount Calculations  
(Proposed Conditions)**

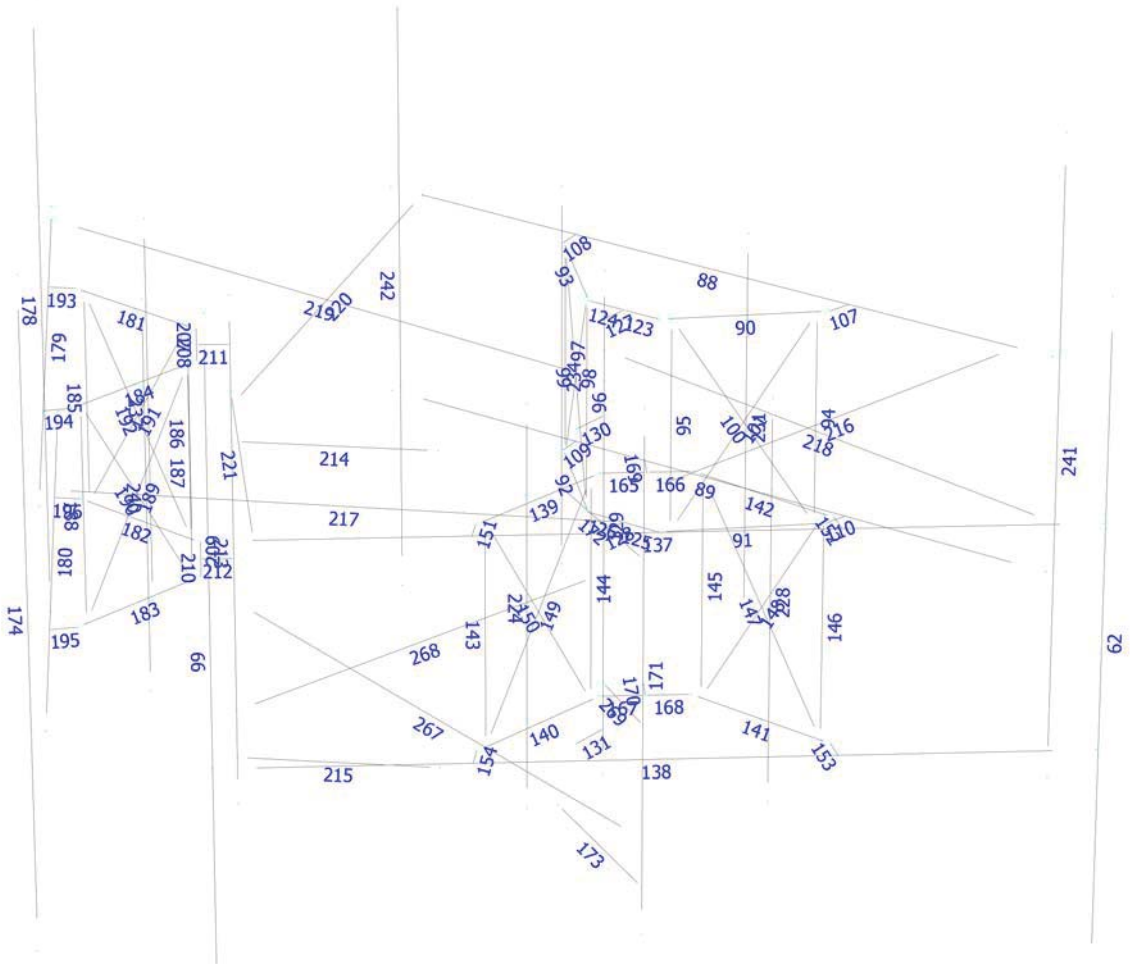


**Install proposed 2" std. (2.38" O.D.) steel pipe brace secured to the proposed vertical pipes (typ. of 1 per sector, total of 3).**









## Load data

### Load Conditions

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

### Distributed force on members

Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
W0	88	z	-0.016	0.00	0.00	No	0.00	No
	89	z	-0.016	0.00	0.00	No	0.00	No
	90	z	-0.013	0.00	0.00	No	0.00	No
	91	z	-0.013	0.00	0.00	No	0.00	No
	92	z	-0.013	0.00	0.00	No	0.00	No
	93	z	-0.013	0.00	0.00	No	0.00	No
	94	z	-0.003	0.00	0.00	No	0.00	No
	95	z	-0.003	0.00	0.00	No	0.00	No
	96	z	-0.003	0.00	0.00	No	0.00	No
	97	z	-0.003	0.00	0.00	No	0.00	No
	98	z	-0.004	0.00	0.00	No	0.00	No
	99	z	-0.004	0.00	0.00	No	0.00	No
	100	z	-0.004	0.00	0.00	No	0.00	No
	101	z	-0.004	0.00	0.00	No	0.00	No
	107	z	-0.006	0.00	0.00	No	0.00	No
	108	z	-0.006	0.00	0.00	No	0.00	No
	109	z	-0.006	0.00	0.00	No	0.00	No
	110	z	-0.006	0.00	0.00	No	0.00	No
	123	z	-0.006	0.00	0.00	No	0.00	No
	124	z	-0.006	0.00	0.00	No	0.00	No
125	z	-0.006	0.00	0.00	No	0.00	No	
126	z	-0.006	0.00	0.00	No	0.00	No	
127	z	-0.006	0.00	0.00	No	0.00	No	
128	z	-0.006	0.00	0.00	No	0.00	No	
129	z	-0.019	0.00	0.00	No	0.00	No	
130	z	-0.023	0.00	0.00	No	0.00	No	
131	z	-0.023	0.00	0.00	No	0.00	No	
137	z	-0.016	0.00	0.00	No	0.00	No	
138	z	-0.016	0.00	0.00	No	0.00	No	
139	z	-0.013	0.00	0.00	No	0.00	No	

140	z	-0.013	0.00	0.00	No	0.00	No
141	z	-0.013	0.00	0.00	No	0.00	No
142	z	-0.013	0.00	0.00	No	0.00	No
143	z	-0.003	0.00	0.00	No	0.00	No
144	z	-0.003	0.00	0.00	No	0.00	No
145	z	-0.003	0.00	0.00	No	0.00	No
146	z	-0.003	0.00	0.00	No	0.00	No
147	z	-0.004	0.00	0.00	No	0.00	No
148	z	-0.004	0.00	0.00	No	0.00	No
149	z	-0.004	0.00	0.00	No	0.00	No
150	z	-0.004	0.00	0.00	No	0.00	No
151	z	-0.006	0.00	0.00	No	0.00	No
152	z	-0.006	0.00	0.00	No	0.00	No
153	z	-0.006	0.00	0.00	No	0.00	No
154	z	-0.006	0.00	0.00	No	0.00	No
165	z	-0.006	0.00	0.00	No	0.00	No
166	z	-0.006	0.00	0.00	No	0.00	No
167	z	-0.006	0.00	0.00	No	0.00	No
168	z	-0.006	0.00	0.00	No	0.00	No
169	z	-0.006	0.00	0.00	No	0.00	No
170	z	-0.006	0.00	0.00	No	0.00	No
171	z	-0.019	0.00	0.00	No	0.00	No
172	z	-0.023	0.00	0.00	No	0.00	No
173	z	-0.023	0.00	0.00	No	0.00	No
174	z	-0.016	0.00	0.00	No	0.00	No
178	z	-0.016	0.00	0.00	No	0.00	No
179	z	-0.016	0.00	0.00	No	0.00	No
180	z	-0.016	0.00	0.00	No	0.00	No
181	z	-0.013	0.00	0.00	No	0.00	No
182	z	-0.013	0.00	0.00	No	0.00	No
183	z	-0.013	0.00	0.00	No	0.00	No
184	z	-0.013	0.00	0.00	No	0.00	No
185	z	-0.003	0.00	0.00	No	0.00	No
186	z	-0.003	0.00	0.00	No	0.00	No
187	z	-0.003	0.00	0.00	No	0.00	No
188	z	-0.003	0.00	0.00	No	0.00	No
189	z	-0.004	0.00	0.00	No	0.00	No
190	z	-0.004	0.00	0.00	No	0.00	No
191	z	-0.004	0.00	0.00	No	0.00	No
192	z	-0.004	0.00	0.00	No	0.00	No
193	z	-0.006	0.00	0.00	No	0.00	No
194	z	-0.006	0.00	0.00	No	0.00	No
195	z	-0.006	0.00	0.00	No	0.00	No
196	z	-0.006	0.00	0.00	No	0.00	No
207	z	-0.006	0.00	0.00	No	0.00	No
208	z	-0.006	0.00	0.00	No	0.00	No
209	z	-0.006	0.00	0.00	No	0.00	No
210	z	-0.006	0.00	0.00	No	0.00	No
211	z	-0.006	0.00	0.00	No	0.00	No
212	z	-0.006	0.00	0.00	No	0.00	No
213	z	-0.019	0.00	0.00	No	0.00	No
214	z	-0.023	0.00	0.00	No	0.00	No
215	z	-0.023	0.00	0.00	No	0.00	No
216	z	-0.013	0.00	0.00	No	0.00	No
217	z	-0.013	0.00	0.00	No	0.00	No
218	z	-0.013	0.00	0.00	No	0.00	No
219	z	-0.013	0.00	0.00	No	0.00	No
220	z	-0.013	0.00	0.00	No	0.00	No
221	z	-0.013	0.00	0.00	No	0.00	No
224	z	-0.013	0.00	0.00	No	0.00	No
228	z	-0.013	0.00	0.00	No	0.00	No
231	z	-0.013	0.00	0.00	No	0.00	No

234	z	-0.013	0.00	0.00	No	0.00	No	
237	z	-0.013	0.00	0.00	No	0.00	No	
240	z	-0.013	0.00	0.00	No	0.00	No	
241	z	-0.016	0.00	0.00	No	0.00	No	
242	z	-0.016	0.00	0.00	No	0.00	No	
267	z	-0.013	0.00	0.00	No	0.00	No	
268	z	-0.013	0.00	0.00	No	0.00	No	
269	z	-0.013	0.00	0.00	No	0.00	No	
W30	62	x	-0.016	0.00	0.00	No	0.00	No
	66	x	-0.016	0.00	0.00	No	0.00	No
	88	x	-0.016	0.00	0.00	No	0.00	No
	89	x	-0.016	0.00	0.00	No	0.00	No
	90	x	-0.013	0.00	0.00	No	0.00	No
	91	x	-0.013	0.00	0.00	No	0.00	No
	92	x	-0.013	0.00	0.00	No	0.00	No
	93	x	-0.013	0.00	0.00	No	0.00	No
	94	x	-0.003	0.00	0.00	No	0.00	No
	95	x	-0.003	0.00	0.00	No	0.00	No
	96	x	-0.003	0.00	0.00	No	0.00	No
	97	x	-0.003	0.00	0.00	No	0.00	No
	98	x	-0.004	0.00	0.00	No	0.00	No
	99	x	-0.004	0.00	0.00	No	0.00	No
	100	x	-0.004	0.00	0.00	No	0.00	No
	101	x	-0.004	0.00	0.00	No	0.00	No
	107	x	-0.006	0.00	0.00	No	0.00	No
	108	x	-0.006	0.00	0.00	No	0.00	No
	109	x	-0.006	0.00	0.00	No	0.00	No
	110	x	-0.006	0.00	0.00	No	0.00	No
	123	x	-0.006	0.00	0.00	No	0.00	No
	124	x	-0.006	0.00	0.00	No	0.00	No
	125	x	-0.006	0.00	0.00	No	0.00	No
	126	x	-0.006	0.00	0.00	No	0.00	No
	127	x	-0.006	0.00	0.00	No	0.00	No
	128	x	-0.006	0.00	0.00	No	0.00	No
	129	x	-0.019	0.00	0.00	No	0.00	No
	130	x	-0.023	0.00	0.00	No	0.00	No
	131	x	-0.023	0.00	0.00	No	0.00	No
	139	x	-0.013	0.00	0.00	No	0.00	No
	140	x	-0.013	0.00	0.00	No	0.00	No
	141	x	-0.013	0.00	0.00	No	0.00	No
	142	x	-0.013	0.00	0.00	No	0.00	No
	143	x	-0.003	0.00	0.00	No	0.00	No
	144	x	-0.003	0.00	0.00	No	0.00	No
	145	x	-0.003	0.00	0.00	No	0.00	No
	146	x	-0.003	0.00	0.00	No	0.00	No
	147	x	-0.004	0.00	0.00	No	0.00	No
	148	x	-0.004	0.00	0.00	No	0.00	No
	149	x	-0.004	0.00	0.00	No	0.00	No
	150	x	-0.004	0.00	0.00	No	0.00	No
	151	x	-0.006	0.00	0.00	No	0.00	No
	152	x	-0.006	0.00	0.00	No	0.00	No
	153	x	-0.006	0.00	0.00	No	0.00	No
	154	x	-0.006	0.00	0.00	No	0.00	No
	165	x	-0.006	0.00	0.00	No	0.00	No
	166	x	-0.006	0.00	0.00	No	0.00	No
	167	x	-0.006	0.00	0.00	No	0.00	No
	168	x	-0.006	0.00	0.00	No	0.00	No
	169	x	-0.006	0.00	0.00	No	0.00	No
	170	x	-0.006	0.00	0.00	No	0.00	No
	171	x	-0.019	0.00	0.00	No	0.00	No
	172	x	-0.023	0.00	0.00	No	0.00	No
	173	x	-0.023	0.00	0.00	No	0.00	No

174	x	-0.016	0.00	0.00	No	0.00	No
178	x	-0.016	0.00	0.00	No	0.00	No
179	x	-0.016	0.00	0.00	No	0.00	No
180	x	-0.016	0.00	0.00	No	0.00	No
181	x	-0.013	0.00	0.00	No	0.00	No
182	x	-0.013	0.00	0.00	No	0.00	No
183	x	-0.013	0.00	0.00	No	0.00	No
184	x	-0.013	0.00	0.00	No	0.00	No
185	x	-0.003	0.00	0.00	No	0.00	No
186	x	-0.003	0.00	0.00	No	0.00	No
187	x	-0.003	0.00	0.00	No	0.00	No
188	x	-0.003	0.00	0.00	No	0.00	No
189	x	-0.004	0.00	0.00	No	0.00	No
190	x	-0.004	0.00	0.00	No	0.00	No
191	x	-0.004	0.00	0.00	No	0.00	No
192	x	-0.004	0.00	0.00	No	0.00	No
193	x	-0.006	0.00	0.00	No	0.00	No
194	x	-0.006	0.00	0.00	No	0.00	No
195	x	-0.006	0.00	0.00	No	0.00	No
196	x	-0.006	0.00	0.00	No	0.00	No
207	x	-0.006	0.00	0.00	No	0.00	No
208	x	-0.006	0.00	0.00	No	0.00	No
209	x	-0.006	0.00	0.00	No	0.00	No
210	x	-0.006	0.00	0.00	No	0.00	No
211	x	-0.006	0.00	0.00	No	0.00	No
212	x	-0.006	0.00	0.00	No	0.00	No
213	x	-0.019	0.00	0.00	No	0.00	No
214	x	-0.023	0.00	0.00	No	0.00	No
215	x	-0.023	0.00	0.00	No	0.00	No
216	x	-0.013	0.00	0.00	No	0.00	No
217	x	-0.013	0.00	0.00	No	0.00	No
218	x	-0.013	0.00	0.00	No	0.00	No
219	x	-0.013	0.00	0.00	No	0.00	No
220	x	-0.013	0.00	0.00	No	0.00	No
221	x	-0.013	0.00	0.00	No	0.00	No
224	x	-0.013	0.00	0.00	No	0.00	No
228	x	-0.013	0.00	0.00	No	0.00	No
231	x	-0.013	0.00	0.00	No	0.00	No
234	x	-0.013	0.00	0.00	No	0.00	No
237	x	-0.013	0.00	0.00	No	0.00	No
240	x	-0.013	0.00	0.00	No	0.00	No
241	x	-0.016	0.00	0.00	No	0.00	No
242	x	-0.016	0.00	0.00	No	0.00	No
267	x	-0.013	0.00	0.00	No	0.00	No
268	x	-0.013	0.00	0.00	No	0.00	No
269	x	-0.013	0.00	0.00	No	0.00	No
Di 62	y	-0.006	0.00	0.00	No	0.00	No
66	y	-0.006	0.00	0.00	No	0.00	No
88	y	-0.006	0.00	0.00	No	0.00	No
89	y	-0.006	0.00	0.00	No	0.00	No
90	y	-0.005	0.00	0.00	No	0.00	No
91	y	-0.005	0.00	0.00	No	0.00	No
92	y	-0.005	0.00	0.00	No	0.00	No
93	y	-0.005	0.00	0.00	No	0.00	No
94	y	-0.002	0.00	0.00	No	0.00	No
95	y	-0.002	0.00	0.00	No	0.00	No
96	y	-0.002	0.00	0.00	No	0.00	No
97	y	-0.002	0.00	0.00	No	0.00	No
98	y	-0.003	0.00	0.00	No	0.00	No
99	y	-0.003	0.00	0.00	No	0.00	No
100	y	-0.003	0.00	0.00	No	0.00	No
101	y	-0.003	0.00	0.00	No	0.00	No

107	y	-0.007	0.00	0.00	No	0.00	No
108	y	-0.007	0.00	0.00	No	0.00	No
109	y	-0.007	0.00	0.00	No	0.00	No
110	y	-0.007	0.00	0.00	No	0.00	No
123	y	-0.007	0.00	0.00	No	0.00	No
124	y	-0.007	0.00	0.00	No	0.00	No
125	y	-0.007	0.00	0.00	No	0.00	No
126	y	-0.007	0.00	0.00	No	0.00	No
127	y	-0.017	0.00	0.00	No	0.00	No
128	y	-0.017	0.00	0.00	No	0.00	No
129	y	-0.007	0.00	0.00	No	0.00	No
130	y	-0.01	0.00	0.00	No	0.00	No
131	y	-0.01	0.00	0.00	No	0.00	No
137	y	-0.006	0.00	0.00	No	0.00	No
138	y	-0.006	0.00	0.00	No	0.00	No
139	y	-0.005	0.00	0.00	No	0.00	No
140	y	-0.005	0.00	0.00	No	0.00	No
141	y	-0.005	0.00	0.00	No	0.00	No
142	y	-0.005	0.00	0.00	No	0.00	No
143	y	-0.002	0.00	0.00	No	0.00	No
144	y	-0.002	0.00	0.00	No	0.00	No
145	y	-0.002	0.00	0.00	No	0.00	No
146	y	-0.002	0.00	0.00	No	0.00	No
147	y	-0.003	0.00	0.00	No	0.00	No
148	y	-0.003	0.00	0.00	No	0.00	No
149	y	-0.003	0.00	0.00	No	0.00	No
150	y	-0.003	0.00	0.00	No	0.00	No
151	y	-0.007	0.00	0.00	No	0.00	No
152	y	-0.007	0.00	0.00	No	0.00	No
153	y	-0.007	0.00	0.00	No	0.00	No
154	y	-0.007	0.00	0.00	No	0.00	No
165	y	-0.007	0.00	0.00	No	0.00	No
166	y	-0.007	0.00	0.00	No	0.00	No
167	y	-0.007	0.00	0.00	No	0.00	No
168	y	-0.007	0.00	0.00	No	0.00	No
169	y	-0.017	0.00	0.00	No	0.00	No
170	y	-0.017	0.00	0.00	No	0.00	No
171	y	-0.007	0.00	0.00	No	0.00	No
172	y	-0.01	0.00	0.00	No	0.00	No
173	y	-0.01	0.00	0.00	No	0.00	No
174	y	-0.006	0.00	0.00	No	0.00	No
178	y	-0.006	0.00	0.00	No	0.00	No
179	y	-0.006	0.00	0.00	No	0.00	No
180	y	-0.006	0.00	0.00	No	0.00	No
181	y	-0.005	0.00	0.00	No	0.00	No
182	y	-0.005	0.00	0.00	No	0.00	No
183	y	-0.005	0.00	0.00	No	0.00	No
184	y	-0.005	0.00	0.00	No	0.00	No
185	y	-0.002	0.00	0.00	No	0.00	No
186	y	-0.002	0.00	0.00	No	0.00	No
187	y	-0.002	0.00	0.00	No	0.00	No
188	y	-0.002	0.00	0.00	No	0.00	No
189	y	-0.003	0.00	0.00	No	0.00	No
190	y	-0.003	0.00	0.00	No	0.00	No
191	y	-0.003	0.00	0.00	No	0.00	No
192	y	-0.003	0.00	0.00	No	0.00	No
193	y	-0.007	0.00	0.00	No	0.00	No
194	y	-0.007	0.00	0.00	No	0.00	No
195	y	-0.007	0.00	0.00	No	0.00	No
196	y	-0.007	0.00	0.00	No	0.00	No
207	y	-0.007	0.00	0.00	No	0.00	No
208	y	-0.007	0.00	0.00	No	0.00	No

209	y	-0.007	0.00	0.00	No	0.00	No
210	y	-0.007	0.00	0.00	No	0.00	No
211	y	-0.017	0.00	0.00	No	0.00	No
212	y	-0.017	0.00	0.00	No	0.00	No
213	y	-0.007	0.00	0.00	No	0.00	No
214	y	-0.01	0.00	0.00	No	0.00	No
215	y	-0.01	0.00	0.00	No	0.00	No
216	y	-0.005	0.00	0.00	No	0.00	No
217	y	-0.005	0.00	0.00	No	0.00	No
218	y	-0.005	0.00	0.00	No	0.00	No
219	y	-0.005	0.00	0.00	No	0.00	No
220	y	-0.005	0.00	0.00	No	0.00	No
221	y	-0.005	0.00	0.00	No	0.00	No
224	y	-0.005	0.00	0.00	No	0.00	No
228	y	-0.005	0.00	0.00	No	0.00	No
231	y	-0.005	0.00	0.00	No	0.00	No
234	y	-0.005	0.00	0.00	No	0.00	No
237	y	-0.005	0.00	0.00	No	0.00	No
240	y	-0.005	0.00	0.00	No	0.00	No
241	y	-0.006	0.00	0.00	No	0.00	No
242	y	-0.006	0.00	0.00	No	0.00	No

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## Concentrated forces on members

Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	62	y	-0.044	1.50	No
		y	-0.044	8.50	No
	66	y	-0.06	1.50	No
		y	-0.06	8.50	No
	174	y	-0.044	1.50	No
		y	-0.044	8.50	No
	178	y	-0.06	1.50	No
		y	-0.06	8.50	No
	224	y	-0.073	3.50	No
		y	-0.072	3.50	No
	228	y	-0.06	3.50	No
		y	-0.029	1.00	No
	231	y	-0.073	3.50	No
		y	-0.072	3.50	No
	234	y	-0.06	3.50	No
		237	y	-0.073	3.50
	240		y	-0.072	3.50
		240	y	-0.06	3.50
	241		y	-0.029	1.00
		241	y	-0.06	1.50
242	y		-0.06	8.50	No
	242	y	-0.044	1.50	No
242		y	-0.044	8.50	No
	W0	62	z	-0.497	1.50
z			-0.497	8.50	No
66		z	-0.491	1.50	No
		z	-0.491	8.50	No
174		z	-0.291	1.50	No
		z	-0.291	8.50	No
178		z	-0.291	1.50	No
		z	-0.291	8.50	No
224	z	-0.077	3.50	No	



	228	z	-0.069	3.50	No
		z	-0.086	1.00	No
	231	z	-0.10	3.50	No
	234	z	-0.10	3.50	No
	237	z	-0.10	3.50	No
	240	z	-0.10	3.50	No
		z	-0.086	1.00	No
	241	z	-0.291	1.50	No
		z	-0.291	8.50	No
	242	z	-0.291	1.50	No
		z	-0.291	8.50	No
W30	62	x	-0.224	1.50	No
		x	-0.224	8.50	No
	66	x	-0.224	1.50	No
		x	-0.224	8.50	No
	174	x	-0.424	1.50	No
		x	-0.424	8.50	No
	178	x	-0.424	1.50	No
		x	-0.424	8.50	No
	224	x	-0.108	3.50	No
	228	x	-0.111	3.50	No
		x	-0.086	1.00	No
	231	x	-0.085	3.50	No
	234	x	-0.079	3.50	No
	237	x	-0.085	3.50	No
	240	x	-0.079	3.50	No
		x	-0.086	1.00	No
	241	x	-0.424	1.50	No
		x	-0.424	8.50	No
	242	x	-0.424	1.50	No
		x	-0.424	8.50	No
Di	62	y	-0.131	1.50	No
		y	-0.131	8.50	No
	66	y	-0.131	1.50	No
		y	-0.131	8.50	No
	174	y	-0.131	1.50	No
		y	-0.131	8.50	No
	178	y	-0.131	1.50	No
		y	-0.131	8.50	No
	224	y	-0.036	3.50	No
		y	-0.032	3.50	No
	228	y	-0.036	3.50	No
		y	-0.042	1.00	No
	231	y	-0.036	3.50	No
		y	-0.032	3.50	No
	234	y	-0.036	3.50	No
	237	y	-0.036	3.50	No
		y	-0.032	3.50	No
	240	y	-0.036	3.50	No
		y	-0.042	1.00	No
	241	y	-0.131	1.50	No
		y	-0.131	8.50	No
	242	y	-0.131	1.50	No
		y	-0.131	8.50	No
Wi0	62	z	-0.083	1.50	No
		z	-0.083	8.50	No
	66	z	-0.083	1.50	No
		z	-0.083	8.50	No
	174	z	-0.052	1.50	No
		z	-0.052	8.50	No
	178	z	-0.052	1.50	No
		z	-0.052	8.50	No

	224	z	-0.016	3.50	No
	228	z	-0.015	3.50	No
		z	-0.017	1.00	No
	231	z	-0.02	3.50	No
	234	z	-0.02	3.50	No
	237	z	-0.02	3.50	No
	240	z	-0.02	3.50	No
		z	-0.017	1.00	No
	241	z	-0.052	1.50	No
		z	-0.052	8.50	No
	242	z	-0.052	1.50	No
		z	-0.052	8.50	No
Wi30	62	x	-0.042	1.50	No
		x	-0.042	8.50	No
	66	x	-0.042	1.50	No
		x	-0.042	8.50	No
	174	x	-0.072	1.50	No
		x	-0.072	8.50	No
	178	x	-0.072	1.50	No
		x	-0.072	8.50	No
	224	x	-0.021	3.50	No
	228	x	-0.022	3.50	No
		x	-0.017	1.00	No
	231	x	-0.017	3.50	No
	234	x	-0.016	3.50	No
	237	x	-0.017	3.50	No
	240	x	-0.016	3.50	No
		x	-0.017	1.00	No
	241	x	-0.072	1.50	No
		x	-0.072	8.50	No
	242	x	-0.072	1.50	No
		x	-0.072	8.50	No
WLO	62	z	-0.027	1.50	No
		z	-0.027	8.50	No
	66	z	-0.027	1.50	No
		z	-0.027	8.50	No
	174	z	-0.016	1.50	No
		z	-0.016	8.50	No
	178	z	-0.016	1.50	No
		z	-0.016	8.50	No
	224	z	-0.004	3.50	No
	228	z	-0.004	3.50	No
		z	-0.005	1.00	No
	231	z	-0.005	3.50	No
	234	z	-0.005	3.50	No
	237	z	-0.005	3.50	No
	240	z	-0.005	3.50	No
		z	-0.005	1.00	No
	241	z	-0.016	1.50	No
		z	-0.016	8.50	No
	242	z	-0.016	1.50	No
		z	-0.016	8.50	No
WL30	62	x	-0.012	1.50	No
		x	-0.012	8.50	No
	66	x	-0.012	1.50	No
		x	-0.012	8.50	No
	174	x	-0.023	1.50	No
		x	-0.023	8.50	No
	178	x	-0.023	1.50	No
		x	-0.023	8.50	No
	224	x	-0.006	3.50	No
	228	x	-0.006	3.50	No

		x	-0.005	1.00	No
	231	x	-0.005	3.50	No
	234	x	-0.004	3.50	No
	237	x	-0.005	3.50	No
	240	x	-0.004	3.50	No
		x	-0.005	1.00	No
	241	x	-0.023	1.50	No
		x	-0.023	8.50	No
	242	x	-0.023	1.50	No
		x	-0.023	8.50	No
LL1	138	y	-0.25	50.00	Yes
LL2	138	y	-0.25	100.00	Yes
LLa1	62	y	-0.50	50.00	Yes
LLa2	66	y	-0.50	50.00	Yes

## Self weight multipliers for load conditions

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

## Glossary

Comb : Indicates if load condition is a load combination

# Steel Code Check Summary - Group by member

**Load conditions to be included in design :**

LC1=1.2DL+W0  
LC2=1.2DL+W30  
LC3=1.2DL-W0  
LC4=1.2DL-W30  
LC5=0.9DL+W0  
LC6=0.9DL+W30  
LC7=0.9DL-W0  
LC8=0.9DL-W30  
LC9=1.2DL+Di+W0  
LC10=1.2DL+Di+W30  
LC11=1.2DL+Di-W0  
LC12=1.2DL+Di-W30  
LC13=1.2DL  
LC14=1.2DL+1.6LL1  
LC15=1.2DL+1.6LL2  
LC16=1.2DL+W0+1.6LLa1  
LC17=1.2DL+W30+1.6LLa1  
LC18=1.2DL-W0+1.6LLa1  
LC19=1.2DL-W30+1.6LLa1  
LC20=1.2DL+W0+1.6LLa2  
LC21=1.2DL+W30+1.6LLa2  
LC22=1.2DL-W0+1.6LLa2  
LC23=1.2DL-W30+1.6LLa2

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	<b>HSS_SQR 4X4X3_16</b>	<b>130</b>	LC4 at 0.00%	0.15	OK	
		<b>131</b>	LC4 at 0.00%	0.21	OK	
		<b>172</b>	LC2 at 0.00%	0.54	OK	
		<b>173</b>	LC2 at 0.00%	0.51	OK	
		<b>214</b>	LC1 at 0.00%	<b>0.63</b>	<b>OK</b>	
		<b>215</b>	LC1 at 0.00%	0.45	OK	
	<b>PIPE 2-1_2x0.203</b>	<b>62</b>	LC16 at 66.67%	0.36	OK	
		<b>66</b>	LC1 at 66.67%	0.33	OK	
		<b>88</b>	LC2 at 29.34%	<b>0.86</b>	<b>OK</b>	
		<b>89</b>	LC2 at 29.34%	0.63	OK	
		<b>137</b>	LC2 at 70.66%	0.60	OK	
		<b>138</b>	LC1 at 70.66%	0.59	OK	
		<b>174</b>	LC2 at 66.67%	0.32	OK	
		<b>178</b>	LC2 at 33.33%	0.36	OK	
		<b>179</b>	LC1 at 70.66%	0.75	OK	
		<b>180</b>	LC2 at 70.66%	0.56	OK	
		<b>241</b>	LC2 at 66.67%	0.37	OK	
		<b>242</b>	LC2 at 33.33%	0.35	OK	
	<b>PIPE 2x0.154</b>	<b>90</b>	LC2 at 92.73%	0.22	OK	
		<b>91</b>	LC2 at 100.00%	0.33	OK	
		<b>92</b>	LC3 at 100.00%	0.41	OK	
		<b>93</b>	LC3 at 92.73%	0.30	OK	
		<b>139</b>	LC2 at 100.00%	0.48	OK	
		<b>140</b>	LC20 at 92.73%	0.43	OK	

	141	LC16 at 92.73%	0.32	OK
	142	LC2 at 100.00%	0.49	OK
	181	LC3 at 92.73%	<b>0.65</b>	<b>OK</b>
	182	LC4 at 92.73%	0.33	OK
	183	LC1 at 92.73%	0.30	OK
	184	LC1 at 100.00%	0.59	OK
	216	LC1 at 50.00%	0.05	OK
	217	LC3 at 50.00%	0.12	OK
	218	LC4 at 50.00%	0.12	OK
	219	LC5 at 49.28%	0.45	OK
	220	LC1 at 51.19%	0.35	OK
	221	LC2 at 50.00%	0.09	OK
	224	LC22 at 77.76%	0.16	OK
	228	LC18 at 77.76%	0.15	OK
	231	LC9 at 77.76%	0.08	OK
	234	LC12 at 77.76%	0.08	OK
	237	LC10 at 77.76%	0.12	OK
	240	LC10 at 77.76%	0.10	OK
	267	LC7 at 100.00%	0.12	OK
	268	LC5 at 0.00%	0.08	OK
	269	LC4 at 100.00%	0.18	OK
<hr/>				
<i>PIPE 3x0.300XS</i>	129	LC4 at 71.87%	0.53	OK
	171	LC3 at 71.87%	<b>0.92</b>	<b>OK</b>
	213	LC9 at 9.38%	0.88	OK
<hr/>				
<i>PL 11-1/4x5/8</i>	127	LC2 at 100.00%	0.15	OK
	128	LC12 at 100.00%	0.24	OK
	169	LC4 at 100.00%	0.11	OK
	170	LC10 at 100.00%	0.31	OK
	211	LC3 at 100.00%	0.12	OK
	212	LC9 at 100.00%	<b>0.33</b>	<b>OK</b>
<hr/>				
<i>PL 3-1/2x5/8</i>	107	LC2 at 100.00%	0.26	OK
	108	LC3 at 100.00%	0.19	OK
	109	LC11 at 100.00%	0.16	OK
	110	LC10 at 100.00%	0.16	OK
	123	LC2 at 100.00%	0.36	OK
	124	LC3 at 0.00%	0.23	OK
	125	LC11 at 100.00%	0.40	OK
	126	LC1 at 0.00%	0.30	OK
	151	LC23 at 100.00%	0.33	OK
	152	LC17 at 100.00%	0.32	OK
	153	LC16 at 100.00%	0.32	OK
	154	LC20 at 100.00%	0.31	OK
	165	LC4 at 100.00%	0.42	OK
	166	LC2 at 0.00%	0.39	OK
	167	LC22 at 100.00%	0.64	OK
	168	LC17 at 0.00%	<b>0.68</b>	<b>OK</b>
	193	LC3 at 100.00%	0.22	OK
	194	LC1 at 100.00%	0.24	OK
	195	LC9 at 100.00%	0.16	OK
	196	LC2 at 100.00%	0.16	OK
	207	LC1 at 100.00%	0.53	OK
	208	LC1 at 0.00%	0.50	OK
	209	LC11 at 100.00%	0.43	OK
	210	LC9 at 0.00%	0.45	OK
<hr/>				
<i>RndBar 3_4</i>	98	LC12 at 100.00%	0.10	OK
	99	LC4 at 0.00%	0.11	With warnings
	100	LC10 at 100.00%	0.10	OK
	101	LC10 at 100.00%	0.10	With warnings
	147	LC17 at 0.00%	0.16	OK
	148	LC17 at 0.00%	0.16	With warnings

<b>149</b>	LC23 at 100.00%	0.16	OK
<b>150</b>	LC20 at 100.00%	<b>0.18</b>	<b>With warnings</b>
<b>189</b>	LC1 at 0.00%	0.12	With warnings
<b>190</b>	LC1 at 0.00%	0.11	With warnings
<b>191</b>	LC3 at 100.00%	0.14	With warnings
<b>192</b>	LC11 at 100.00%	0.12	With warnings

**RndBar 5\_8**

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<b>94</b>	LC10 at 12.50%	0.35	OK
<b>95</b>	LC12 at 12.50%	0.44	OK
<b>96</b>	LC9 at 82.35%	0.38	OK
<b>97</b>	LC12 at 82.35%	0.32	OK
<b>143</b>	LC23 at 12.50%	0.57	OK
<b>144</b>	LC22 at 12.50%	<b>0.86</b>	<b>OK</b>
<b>145</b>	LC18 at 12.50%	0.83	OK
<b>146</b>	LC17 at 12.50%	0.54	OK
<b>185</b>	LC3 at 12.50%	0.35	OK
<b>186</b>	LC10 at 82.35%	0.57	OK
<b>187</b>	LC10 at 82.35%	0.54	OK
<b>188</b>	LC1 at 12.50%	0.33	OK

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# Geometry data

## Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
215	0.8035	-4.8333	-0.9576	0
216	0.8035	0.1667	-0.9576	0
277	0.4275	-4.8333	1.1746	0
278	0.4275	0.1667	1.1746	0
339	-1.231	-4.8333	-0.2171	0
340	-1.231	0.1667	-0.2171	0
142	1.2342	1.6667	-1.4708	0
143	2.029	1.6667	-1.4283	0
144	1.2342	-1.6666	-1.4708	0
145	2.029	-1.6666	-1.4283	0
146	1.0543	-1.6666	-2.2461	0
147	1.0543	1.6667	-2.2461	0
152	-1.543	-5.00	-7.4954	0
153	-1.543	5.00	-7.4954	0
154	7.6495	-5.00	0.218	0
155	7.6495	5.00	0.218	0
156	-1.2088	1.6667	-6.9539	0
158	7.521	1.6667	0.3712	0
159	-1.6716	1.6667	-7.3422	0
160	7.521	-1.6666	0.3712	0
161	-1.6716	-1.6666	-7.3422	0
162	4.5205	1.6667	-1.634	0
163	4.5205	-1.6666	-1.634	0
164	0.8242	-1.6666	-4.7355	0
165	0.8242	1.6667	-4.7355	0
166	4.3394	1.6667	-1.619	0
167	4.3394	-1.6666	-1.619	0
168	2.21	1.6667	-1.4433	0
169	2.21	-1.6666	-1.4433	0
170	1.0376	1.6667	-2.4271	0
171	1.0376	-1.6666	-2.4271	0
172	0.8409	1.6667	-4.5547	0
173	0.8409	-1.6666	-4.5547	0
174	7.0581	1.6667	-0.0171	0
184	4.8238	1.6667	-1.8919	0
185	1.0255	1.6667	-5.0791	0
186	1.0255	-1.6666	-5.0791	0
187	4.8238	-1.6666	-1.8919	0
192	7.6495	1.6667	0.218	0
193	-1.543	1.6667	-7.4954	0
200	7.6495	-1.6666	0.218	0
207	-1.543	-1.6666	-7.4954	0
208	1.5416	1.6667	-1.8372	0
209	1.5416	-1.6666	-1.8372	0
210	1.2342	-5.5833	-1.4708	0
211	1.2342	2.4167	-1.4708	0
212	1.2342	0.1667	-1.4708	0
213	1.2342	-4.8333	-1.4708	0
217	1.4536	1.6667	3.9937	0
218	0.8174	1.6667	4.472	0
219	1.4536	-1.6666	3.9937	0

220	0.8174	-1.6666	4.472	0
221	2.0898	-1.6666	4.472	0
222	2.0898	1.6667	4.472	0
223	7.4536	-5.00	6.8237	0
224	7.4536	5.00	6.8237	0
225	-4.5464	-5.00	6.8237	0
226	-4.5464	5.00	6.8237	0
227	6.8494	1.6667	6.6237	0
228	-4.5464	1.6667	6.6237	0
229	7.4536	1.6667	6.6237	0
230	-4.5464	-1.6666	6.6237	0
231	7.4536	-1.6666	6.6237	0
232	-0.959	1.6667	6.2311	0
233	-0.959	-1.6666	6.2311	0
234	3.8662	-1.6666	6.2311	0
235	3.8662	1.6667	6.2311	0
236	-0.8299	1.6667	6.1033	0
237	-0.8299	-1.6666	6.1033	0
238	0.6883	1.6667	4.5999	0
239	0.6883	-1.6666	4.5999	0
240	2.2188	1.6667	4.5999	0
241	2.2188	-1.6666	4.5999	0
242	3.7371	1.6667	6.1033	0
243	3.7371	-1.6666	6.1033	0
244	-3.9422	1.6667	6.6237	0
249	-1.0256	1.6667	6.6237	0
250	3.9328	1.6667	6.6237	0
251	3.9328	-1.6666	6.6237	0
252	-1.0256	-1.6666	6.6237	0
255	-4.5464	1.6667	6.8237	0
256	7.4536	1.6667	6.8237	0
263	-4.5464	-1.6666	6.8237	0
270	7.4536	-1.6666	6.8237	0
271	1.4536	1.6667	4.472	0
272	1.4536	-1.6666	4.472	0
273	1.4536	-5.5833	3.9937	0
274	1.4536	2.4167	3.9937	0
275	1.4536	0.1667	3.9937	0
276	1.4536	-4.8333	3.9937	0
279	-4.1854	1.6667	-0.738	0
280	-4.6633	1.6667	-1.3795	0
281	-4.1854	-1.6666	-0.738	0
282	-4.6633	-1.6666	-1.3795	0
283	-4.6633	-1.6666	-0.1072	0
284	-4.6633	1.6667	-0.1072	0
285	-7.015	-5.00	5.2566	0
286	-7.015	5.00	5.2566	0
287	-7.015	-5.00	-6.7434	0
288	-7.015	5.00	-6.7434	0
289	-6.815	1.6667	4.6525	0
290	-6.815	1.6667	-6.7434	0
291	-6.815	1.6667	5.2566	0
292	-6.815	-1.6666	-6.7434	0
293	-6.815	-1.6666	5.2566	0
294	-6.4224	1.6667	-3.156	0
295	-6.4224	-1.6666	-3.156	0
296	-6.4224	-1.6666	1.6692	0
297	-6.4224	1.6667	1.6692	0
298	-6.2946	1.6667	-3.0269	0
299	-6.2946	-1.6666	-3.0269	0
300	-4.7911	1.6667	-1.5086	0
301	-4.7911	-1.6666	-1.5086	0



302	-4.7911	1.6667	0.0219	0
303	-4.7911	-1.6666	0.0219	0
304	-6.2946	1.6667	1.5401	0
305	-6.2946	-1.6666	1.5401	0
306	-6.815	1.6667	-6.1392	0
311	-6.815	1.6667	-3.2225	0
312	-6.815	1.6667	1.7358	0
313	-6.815	-1.6666	1.7358	0
314	-6.815	-1.6666	-3.2225	0
317	-7.015	1.6667	-6.7434	0
318	-7.015	1.6667	5.2566	0
325	-7.015	-1.6666	-6.7434	0
332	-7.015	-1.6666	5.2566	0
333	-4.6633	1.6667	-0.7434	0
334	-4.6633	-1.6666	-0.7434	0
335	-4.1854	-5.5833	-0.738	0
336	-4.1854	2.4167	-0.738	0
337	-4.1854	0.1667	-0.738	0
338	-4.1854	-4.8333	-0.738	0
341	1.4536	1.1905	3.9937	0
342	1.4536	0.7143	3.9937	0
347	-4.1854	0.7143	-0.738	0
348	-4.1854	0.9405	-0.738	0
349	1.2342	1.1905	-1.4708	0
350	1.2342	0.7143	-1.4708	0
351	-0.0708	1.6667	5.3516	0
352	-0.0708	-1.6666	5.3516	0
353	-0.224	-1.6666	5.223	0
354	-0.224	1.6667	5.223	0
355	-0.224	3.0017	5.223	0
356	-0.224	-3.0016	5.223	0
357	2.978	1.6667	5.3516	0
358	2.978	-1.6666	5.3516	0
359	3.1065	-1.6666	5.1984	0
360	3.1065	1.6667	5.1984	0
361	3.1065	3.0017	5.1984	0
362	3.1065	-3.0016	5.1984	0
363	3.2747	1.6667	-1.5311	0
364	3.2747	-1.6666	-1.5311	0
365	3.2932	1.6667	-1.3198	0
366	3.2932	-1.6666	-1.3198	0
367	3.2932	3.0017	-1.3198	0
368	3.2932	-3.0016	-1.3198	0
369	0.9392	1.6667	-3.4909	0
370	0.9392	-1.6666	-3.4909	0
371	0.7279	-1.6666	-3.4724	0
372	0.7279	1.6667	-3.4724	0
373	0.7279	-3.0016	-3.4724	0
374	0.7279	3.0017	-3.4724	0
375	-5.5428	1.6667	-2.2677	0
376	-5.5428	-1.6666	-2.2677	0
377	-5.3896	1.6667	-2.3963	0
378	-5.3896	-1.6666	-2.3963	0
379	-5.3896	3.0017	-2.3963	0
380	-5.3896	-3.0016	-2.3963	0
381	-5.5428	1.6667	0.781	0
382	-5.5428	-1.6666	0.781	0
383	-5.4143	-1.6666	0.9342	0
384	-5.4143	1.6667	0.9342	0
385	-5.4143	-3.0016	0.9342	0
386	-5.4143	3.0017	0.9342	0
457	-4.1854	-2.3333	-0.738	0

458	-4.1854	-4.0833	-0.738	0
459	1.4536	-2.3333	3.9937	0
460	1.2342	-4.0833	-1.4708	0
461	1.2342	-2.3333	-1.4708	0
462	1.4536	-4.0833	3.9937	0

## Restraints

Node	TX	TY	TZ	RX	RY	RZ
215	1	1	1	0	0	0
216	1	1	1	0	0	0
277	1	1	1	0	0	0
278	1	1	1	0	0	0
339	1	1	1	0	0	0
340	1	1	1	0	0	0

## Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
62	224	223		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
66	226	225		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
88	158	159		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
89	160	161		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
90	162	143		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
91	163	145		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
92	164	146		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
93	165	147		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
94	166	167		RndBar 5_8	A36	0.00	0.00	0.00
95	168	169		RndBar 5_8	A36	0.00	0.00	0.00
96	170	171		RndBar 5_8	A36	0.00	0.00	0.00
97	172	173		RndBar 5_8	A36	0.00	0.00	0.00
98	170	173		RndBar 3_4	A36	0.00	0.00	0.00
99	171	172		RndBar 3_4	A36	0.00	0.00	0.00
100	167	168		RndBar 3_4	A36	0.00	0.00	0.00
101	166	169		RndBar 3_4	A36	0.00	0.00	0.00
107	162	184		PL 3-1/2x5/8	A36	0.00	0.00	0.00
108	165	185		PL 3-1/2x5/8	A36	0.00	0.00	0.00
109	164	186		PL 3-1/2x5/8	A36	0.00	0.00	0.00
110	163	187		PL 3-1/2x5/8	A36	0.00	0.00	0.00
123	143	208		PL 3-1/2x5/8	A36	0.00	0.00	0.00
124	208	147		PL 3-1/2x5/8	A36	0.00	0.00	0.00
125	145	209		PL 3-1/2x5/8	A36	0.00	0.00	0.00
126	209	146		PL 3-1/2x5/8	A36	0.00	0.00	0.00
127	208	142		PL 11-1/4x5/8	A36	11.25	9.25	0.00
128	209	144		PL 11-1/4x5/8	A36	11.25	9.25	0.00
129	210	211		PIPE 3x0.300XS	A53 GrB	0.00	0.00	0.00
130	212	216		HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
131	213	215		HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
137	228	229		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
138	230	231		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
139	232	218		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
140	233	220		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
141	234	221		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

142	235	222	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
143	236	237	RndBar 5_8	A36	0.00	0.00	0.00
144	238	239	RndBar 5_8	A36	0.00	0.00	0.00
145	240	241	RndBar 5_8	A36	0.00	0.00	0.00
146	242	243	RndBar 5_8	A36	0.00	0.00	0.00
147	240	243	RndBar 3_4	A36	0.00	0.00	0.00
148	241	242	RndBar 3_4	A36	0.00	0.00	0.00
149	237	238	RndBar 3_4	A36	0.00	0.00	0.00
150	236	239	RndBar 3_4	A36	0.00	0.00	0.00
151	232	249	PL 3-1/2x5/8	A36	0.00	0.00	0.00
152	235	250	PL 3-1/2x5/8	A36	0.00	0.00	0.00
153	234	251	PL 3-1/2x5/8	A36	0.00	0.00	0.00
154	233	252	PL 3-1/2x5/8	A36	0.00	0.00	0.00
165	218	271	PL 3-1/2x5/8	A36	0.00	0.00	0.00
166	271	222	PL 3-1/2x5/8	A36	0.00	0.00	0.00
167	220	272	PL 3-1/2x5/8	A36	0.00	0.00	0.00
168	272	221	PL 3-1/2x5/8	A36	0.00	0.00	0.00
169	271	217	PL 11-1/4x5/8	A36	11.25	9.25	0.00
170	272	219	PL 11-1/4x5/8	A36	11.25	9.25	0.00
171	273	274	PIPE 3x0.300XS	A53 GrB	0.00	0.00	0.00
172	275	278	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
173	276	277	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
174	286	285	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
178	288	287	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
179	290	291	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
180	292	293	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
181	294	280	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
182	295	282	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
183	296	283	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
184	297	284	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
185	298	299	RndBar 5_8	A36	0.00	0.00	0.00
186	300	301	RndBar 5_8	A36	0.00	0.00	0.00
187	302	303	RndBar 5_8	A36	0.00	0.00	0.00
188	304	305	RndBar 5_8	A36	0.00	0.00	0.00
189	302	305	RndBar 3_4	A36	0.00	0.00	0.00
190	303	304	RndBar 3_4	A36	0.00	0.00	0.00
191	299	300	RndBar 3_4	A36	0.00	0.00	0.00
192	298	301	RndBar 3_4	A36	0.00	0.00	0.00
193	294	311	PL 3-1/2x5/8	A36	0.00	0.00	0.00
194	297	312	PL 3-1/2x5/8	A36	0.00	0.00	0.00
195	296	313	PL 3-1/2x5/8	A36	0.00	0.00	0.00
196	295	314	PL 3-1/2x5/8	A36	0.00	0.00	0.00
207	280	333	PL 3-1/2x5/8	A36	0.00	0.00	0.00
208	333	284	PL 3-1/2x5/8	A36	0.00	0.00	0.00
209	282	334	PL 3-1/2x5/8	A36	0.00	0.00	0.00
210	334	283	PL 3-1/2x5/8	A36	0.00	0.00	0.00
211	333	279	PL 11-1/4x5/8	A36	11.25	9.25	0.00
212	334	281	PL 11-1/4x5/8	A36	11.25	9.25	0.00
213	335	336	PIPE 3x0.300XS	A53 GrB	0.00	0.00	0.00
214	337	340	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
215	338	339	HSS_SQR 4X4X3_16	A500 GrB rectangular	0.00	0.00	0.00
216	174	341	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
217	289	342	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
218	227	349	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
219	350	306	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
220	156	347	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
221	244	348	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
224	355	356	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
228	361	362	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
231	367	368	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
234	374	373	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
237	379	380	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

240	386	385	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
241	155	154	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
242	153	152	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
267	457	462	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
268	461	458	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
269	459	460	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

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## Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
62	0.00	2	-0.9962	0.00	0.0872
66	0.00	2	-0.9962	0.00	0.0872
94	0.00	2	0.6428	0.00	-0.766
95	0.00	2	0.6428	0.00	-0.766
96	0.00	2	0.6428	0.00	-0.766
97	0.00	2	0.6428	0.00	-0.766
107	90.00	0	0.00	0.00	0.00
108	90.00	0	0.00	0.00	0.00
109	90.00	0	0.00	0.00	0.00
110	90.00	0	0.00	0.00	0.00
123	90.00	0	0.00	0.00	0.00
124	90.00	0	0.00	0.00	0.00
125	90.00	0	0.00	0.00	0.00
126	90.00	0	0.00	0.00	0.00
127	90.00	0	0.00	0.00	0.00
128	90.00	0	0.00	0.00	0.00
129	0.00	2	0.766	0.00	0.6428
143	0.00	2	0.866	0.00	-0.50
144	0.00	2	0.866	0.00	-0.50
145	0.00	2	0.866	0.00	-0.50
146	0.00	2	0.866	0.00	-0.50
151	90.00	0	0.00	0.00	0.00
152	90.00	0	0.00	0.00	0.00
153	90.00	0	0.00	0.00	0.00
154	90.00	0	0.00	0.00	0.00
165	90.00	0	0.00	0.00	0.00
166	90.00	0	0.00	0.00	0.00
167	90.00	0	0.00	0.00	0.00
168	90.00	0	0.00	0.00	0.00
169	90.00	0	0.00	0.00	0.00
170	90.00	0	0.00	0.00	0.00
171	0.00	2	0.766	0.00	0.6428
174	0.00	2	-0.9659	0.00	0.2588
178	0.00	2	-0.9659	0.00	0.2588
185	0.00	2	0.50	0.00	-0.866
186	0.00	2	0.50	0.00	-0.866
187	0.00	2	0.50	0.00	-0.866
188	0.00	2	0.50	0.00	-0.866
193	90.00	0	0.00	0.00	0.00
194	90.00	0	0.00	0.00	0.00
195	90.00	0	0.00	0.00	0.00
196	90.00	0	0.00	0.00	0.00
207	90.00	0	0.00	0.00	0.00
208	90.00	0	0.00	0.00	0.00
209	90.00	0	0.00	0.00	0.00
210	90.00	0	0.00	0.00	0.00
211	90.00	0	0.00	0.00	0.00

212	90.00	0	0.00	0.00	0.00
213	0.00	2	0.766	0.00	0.6428
224	0.00	2	0.0872	0.00	0.9962
228	0.00	2	0.0872	0.00	0.9962
231	0.00	2	0.0872	0.00	0.9962
234	0.00	2	0.0872	0.00	0.9962
237	0.00	2	-0.0872	0.00	0.9962
240	0.00	2	-0.0872	0.00	0.9962
241	0.00	2	-0.9659	0.00	-0.2588
242	0.00	2	-0.9659	0.00	-0.2588

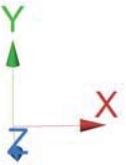
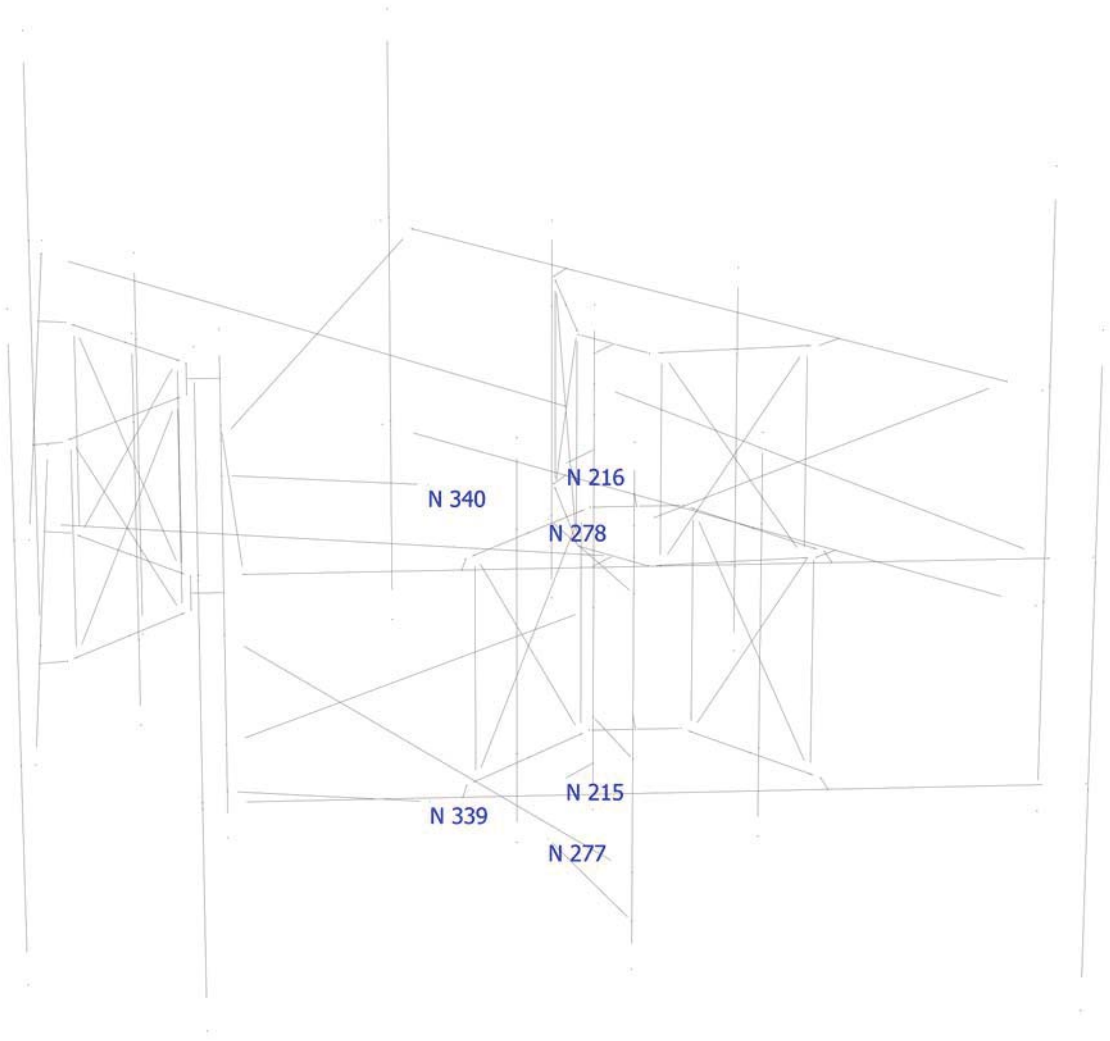
## Hinges

Member	Node-J				Node-K				TOR	AXL	Axial rigidity
	M33	M22	V3	V2	M33	M22	V3	V2			
99	0	0	0	0	0	0	0	0	0	0	Tension only
101	0	0	0	0	0	0	0	0	0	0	Tension only
107	1	1	0	0	0	0	0	0	0	0	Full
108	1	1	0	0	0	0	0	0	0	0	Full
109	1	1	0	0	0	0	0	0	0	0	Full
110	1	1	0	0	0	0	0	0	0	0	Full
148	0	0	0	0	0	0	0	0	0	0	Tension only
150	0	0	0	0	0	0	0	0	0	0	Tension only
151	1	1	0	0	0	0	0	0	0	0	Full
152	1	1	0	0	0	0	0	0	0	0	Full
153	1	1	0	0	0	0	0	0	0	0	Full
154	1	1	0	0	0	0	0	0	0	0	Full
190	0	0	0	0	0	0	0	0	0	0	Tension only
192	0	0	0	0	0	0	0	0	0	0	Tension only
193	1	1	0	0	0	0	0	0	0	0	Full
194	1	1	0	0	0	0	0	0	0	0	Full
195	1	1	0	0	0	0	0	0	0	0	Full
196	1	1	0	0	0	0	0	0	0	0	Full
216	1	1	0	0	1	1	0	0	0	0	Full
217	1	1	0	0	1	1	0	0	0	0	Full
218	1	1	0	0	1	1	0	0	0	0	Full
219	1	1	0	0	1	1	0	0	0	0	Full
220	1	1	0	0	1	1	0	0	0	0	Full
221	1	1	0	0	1	1	0	0	0	0	Full
267	1	1	0	0	1	1	0	0	0	0	Full
268	1	1	0	0	1	1	0	0	0	0	Full
269	1	1	0	0	1	1	0	0	0	0	Full

## Glossary

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member

Ig factor : Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members  
K22 : Effective length factor about axis 2  
K33 : Effective length factor about axis 3  
L22 : Member length for calculation of axial capacity  
L33 : Member length for calculation of axial capacity  
LB pos : Lateral unbraced length of the compression flange in the positive side of local axis 2  
LB neg : Lateral unbraced length of the compression flange in the negative side of local axis 2  
RX : Rotation about X  
RY : Rotation about Y  
RZ : Rotation about Z  
TO : 1 = Tension only member 0 = Normal member  
TX : Translation in X  
TY : Translation in Y  
TZ : Translation in Z

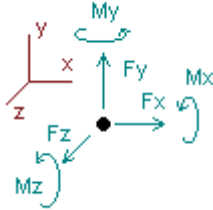


# Analysis result

## Nodes

### Envelope for nodal reactions

Note.-  $I_c$  is the controlling load condition



Direction of positive forces and moments

Envelope of nodal reactions for :

- LC1=1.2DL+W0
- LC2=1.2DL+W30
- LC3=1.2DL-W0
- LC4=1.2DL-W30
- LC5=0.9DL+W0
- LC6=0.9DL+W30
- LC7=0.9DL-W0
- LC8=0.9DL-W30
- LC9=1.2DL+Di+Wi0
- LC10=1.2DL+Di+Wi30
- LC11=1.2DL+Di-Wi0
- LC12=1.2DL+Di-Wi30
- LC13=1.2DL
- LC14=1.2DL+1.6LL1
- LC15=1.2DL+1.6LL2
- LC16=1.2DL+W0+1.6LLa1
- LC17=1.2DL+W30+1.6LLa1
- LC18=1.2DL-W0+1.6LLa1
- LC19=1.2DL-W30+1.6LLa1
- LC20=1.2DL+W0+1.6LLa2
- LC21=1.2DL+W30+1.6LLa2
- LC22=1.2DL-W0+1.6LLa2
- LC23=1.2DL-W30+1.6LLa2

Node		Forces						Moments					
		Fx	$I_c$	Fy	$I_c$	Fz	$I_c$	Mx	$I_c$	My	$I_c$	Mz	$I_c$
		[Kip]		[Kip]		[Kip]		[Kip*ft]		[Kip*ft]		[Kip*ft]	
215	Max	1.330	LC3	2.617	LC12	2.289	LC8	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.527	LC5	0.647	LC6	-2.300	LC6	0.00000	LC1	0.00000	LC1	0.00000	LC1
216	Max	2.742	LC6	1.020	LC3	2.302	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-3.127	LC4	-1.039	LC5	-2.389	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
277	Max	1.439	LC1	1.548	LC2	3.471	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-1.144	LC7	-0.463	LC8	-1.984	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
278	Max	1.877	LC6	0.889	LC11	3.529	LC5	0.00000	LC1	0.00000	LC1	0.00000	LC1



	Min	-2.134	LC4	-0.042	LC5	-4.973	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1
339	Max	-0.058	LC6	1.630	LC9	0.339	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-2.398	LC12	-0.005	LC7	-0.657	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
340	Max	4.210	LC2	0.872	LC1	2.133	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-2.599	LC8	-0.095	LC7	-1.685	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1



## Connection Check

Date: 6/20/2023  
 Project Name: OLD SAYBROOK RIVER STREET  
 Project No.: CT1399  
 Designed By: KSBM Checked By: MSC



**CHECK CONNECTION CAPACITY (Worst Case) - Standoff**

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

**Bolt Type =** A325 5/8" Bolt

**Allowable Tensile Load =**

$F_{Tall} = 13806$  lbs.

**Allowable Shear Load =**

$F_{Vall} = 8283$  lbs.

**TENSILE FORCES**

**Reaction**  $F = 2133$  lbs. (See Bentley Output)

**SHEAR FORCES**

**Reactions in X direction:** 4210 lbs. (See Bentley Output)

**Reactions in Y direction:** 872 lbs. (See Bentley Output)

**Resultant:** 4299 lbs.

**No. of Supports =** 1

**No. of Bolts / Support =** 4

**Tension Design Load /Bolts =**

$f_t = 533.25$  lbs. < 13806 lbs. **Therefore, OK !**

**Shear Design Load / Bolts=**

$f_v = 1074.84$  lbs. < 8283.5 lbs. **Therefore, OK !**

**CHECK COMBINED TENSION AND SHEAR**

$f_t / F_T + f_v / F_V \leq 1.0$   
 0.039 + 0.130 = 0.168 < 1.0 **Therefore, OK !**

Date: 6/20/2023  
 Project Name: OLD SAYBROOK RIVER STREET  
 Project No.: CT1399  
 Designed By: KSBM Checked By: MSC



**CHECK CONNECTION CAPACITY (Worst Case) - Ring Mount**

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

**Bolt Type =** A36 5/8" Threaded Rod

**Allowable Tensile Load =**

$F_{Tall} = 6673$  lbs.

**Allowable Shear Load =**

$F_{Vall} = 4004$  lbs.

**TENSILE FORCES**

**Reaction**  $F = 2133$  lbs. (See Bentley Output)

**SHEAR FORCES**

**Reactions in X direction:** 4210 lbs. (See Bentley Output)

**Reactions in Y direction:** 872 lbs. (See Bentley Output)

**Resultant:** 4299 lbs.

**No. of Supports =** 1

**No. of Bolts / Support =** 3

**Tension Design Load /Bolts =**

$f_t = 711.00$  lbs. < 6672.8 lbs. **Therefore, OK !**

**Shear Design Load / Bolts=**

$f_v = 1433.12$  lbs. < 4003.7 lbs. **Therefore, OK !**

**CHECK COMBINED TENSION AND SHEAR**

$f_t / F_T + f_v / F_V \leq 1.0$   
 0.107 + 0.358 = 0.465 < 1.0 **Therefore, OK !**

# ATTACHMENT 6



C Squared Systems, LLC  
65 Dartmouth Drive  
Auburn, NH 03032  
(603) 644-2800  
[support@csquaredsystems.com](mailto:support@csquaredsystems.com)

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## Calculated Radio Frequency Emissions Report



CT1399

40-3 River Street, Old Saybrook, CT

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February 28, 2023

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## 1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed installation of AT&T antenna arrays to be mounted at 130' AGL on an existing monopole tower located at 40-3 River Street in Old Saybrook, CT. The coordinates of the tower are 41° 17' 55.99" N, 72° 22' 27.63" W.

AT&T is proposing the following:

- 1) Install six (6) multi-band antennas (two per sector) to support its commercial LTE network and the FirstNet National Public Safety Broadband Network ("NPSBN").

This report considers the planned antenna configuration for AT&T<sup>1</sup> to derive the resulting % MPE of its proposed installation.

## 2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm<sup>2</sup>). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment C of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment C contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

---

<sup>1</sup> As referenced to AT&T's Radio Frequency Design Sheet updated 09/08/2022.



### 3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left( \frac{EIRP}{\pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance =  $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

Ground reflection factor of 1.6

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final installations.

#### 4. Antenna Inventory

Table 1 below outlines AT&T’s proposed antenna configuration for the site. The associated data sheets and antenna patterns for these specific antenna models are included in Attachments C.

Operator	Sector / Call Sign	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)
AT&T	Alpha / 0°	763	160	15.6	5809	TPA65R-BU8D	73	0	8.0	130
		2100	240	18.3	16226		66			
		739	160	15.1	5177	DMP65R-BU8D	75			
		885	160	16.0	6370		64			
		1900	160	17.8	9641		68			
	Beta / 140°	763	160	15.6	5809	TPA65R-BU8D	74	0	8.0	130
		2100	240	18.3	16226		67			
		739	160	15.1	5177	DMP65R-BU8D	62			
		885	160	16.0	6370		64			
		1900	160	17.8	9641		68			
	Gamma / 230°	763	160	15.6	5809	TPA65R-BU8D	74	0	8.0	130
		2100	240	18.3	16226		67			
		739	160	15.1	5177	DMP65R-BU8D	62			
		885	160	16.0	6370		64			
		1900	160	17.8	9641		68			

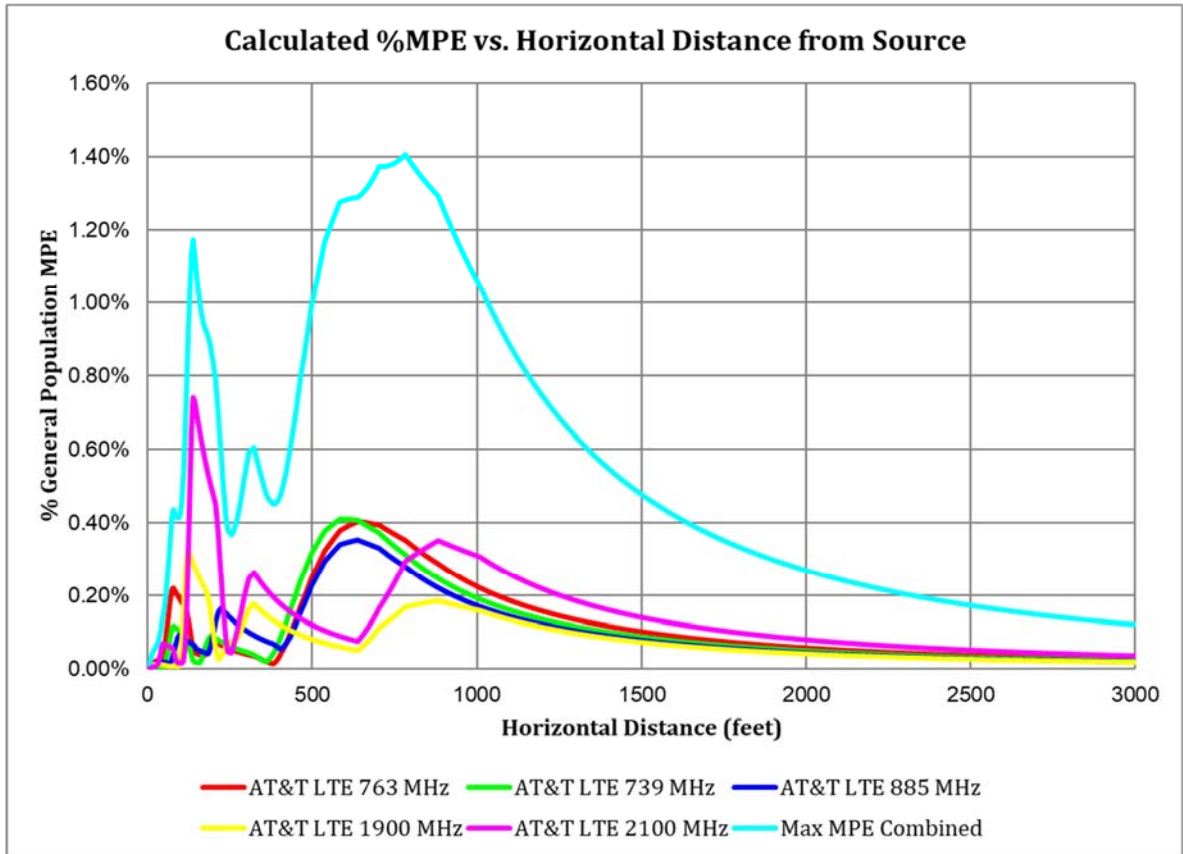
**Table 1: Proposed Antenna Inventory<sup>2 3</sup>**

<sup>2</sup> Antenna heights are in reference to the Hudson Design Group LLC. Construction Drawings, dated 02/14/2023.

<sup>3</sup> Transmit power assumes 0 dB of cable loss.

## 5. Calculation Results

The calculated power density results are shown in Figure 1 below. For completeness, the calculations for this analysis range from 0 feet horizontal distance (directly below the antennas) to a value of 2,000 feet horizontal distance from the site. In addition to the other worst-case scenario considerations that were previously mentioned, the power density calculations to each horizontal distance point away from the antennas was completed using a local maximum off beam antenna gain (within  $\pm 5$  degrees of the true mathematical angle) to incorporate a realistic worst-case scenario.



**Figure 1: Graph of General Population % MPE vs. Distance**

The highest percent of MPE (1.41% of the General Population limit) is calculated to occur at a horizontal distance of 783 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 1000 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. The highest percent of MPE value was calculated to occur at a horizontal distance of 783 feet from the site (reference Figure 1).

As stated in Section 3, all calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. In addition, a six foot height offset was considered in this analysis to account for average human height. As a result, the predicted signal levels are significantly higher than the actual signal levels will be from the final configuration. The results presented in Figure 1 and Table 2 assume level ground elevation from the base of the tower out to the horizontal distances calculated.

Carrier	Number of Transmitters	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	% MPE
AT&T LTE 1900 MHz	1	160.0	130.0	783	0.001683	1.000	0.17%
AT&T LTE 2100 MHz	1	240.0	130.0	783	0.002945	1.000	0.29%
AT&T LTE 739 MHz	1	160.0	130.0	783	0.001538	0.493	0.31%
AT&T LTE 763 MHz	1	160.0	130.0	783	0.001790	0.509	0.35%
AT&T LTE 885 MHz	1	160.0	130.0	783	0.001648	0.590	0.28%
						<b>Total</b>	<b>1.41%</b>

**Table 2: Maximum Percent of General Population Exposure Values**

## 6. Conclusion

The above analysis verifies that RF exposure levels from the site with AT&T's proposed antenna configuration will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE in consideration of all transmitters is calculated to be **1.41% of the FCC limit (General Population/Uncontrolled)**. This maximum cumulative percent of MPE value is calculated to occur 783 feet away from the site.

## 7. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Report Prepared By:

\_\_\_\_\_  
Ram Acharya  
RF Engineer 1  
C Squared Systems, LLC

February 27, 2023

Date



Reviewed/Approved By:

\_\_\_\_\_  
Martin J. Lavin  
Senior RF Engineer  
C Squared Systems, LLC

February 28, 2023

Date

## Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2005, IEEE Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2002 (R2008), IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to Such Fields, 100 kHz-300 GHz IEEE-SA Standards Board

**Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)**

**(A) Limits for Occupational/Controlled Exposure<sup>4</sup>**

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

**(B) Limits for General Population/Uncontrolled Exposure<sup>5</sup>**

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

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

**Table 3: FCC Limits for Maximum Permissible Exposure**

<sup>4</sup> Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

<sup>5</sup> General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

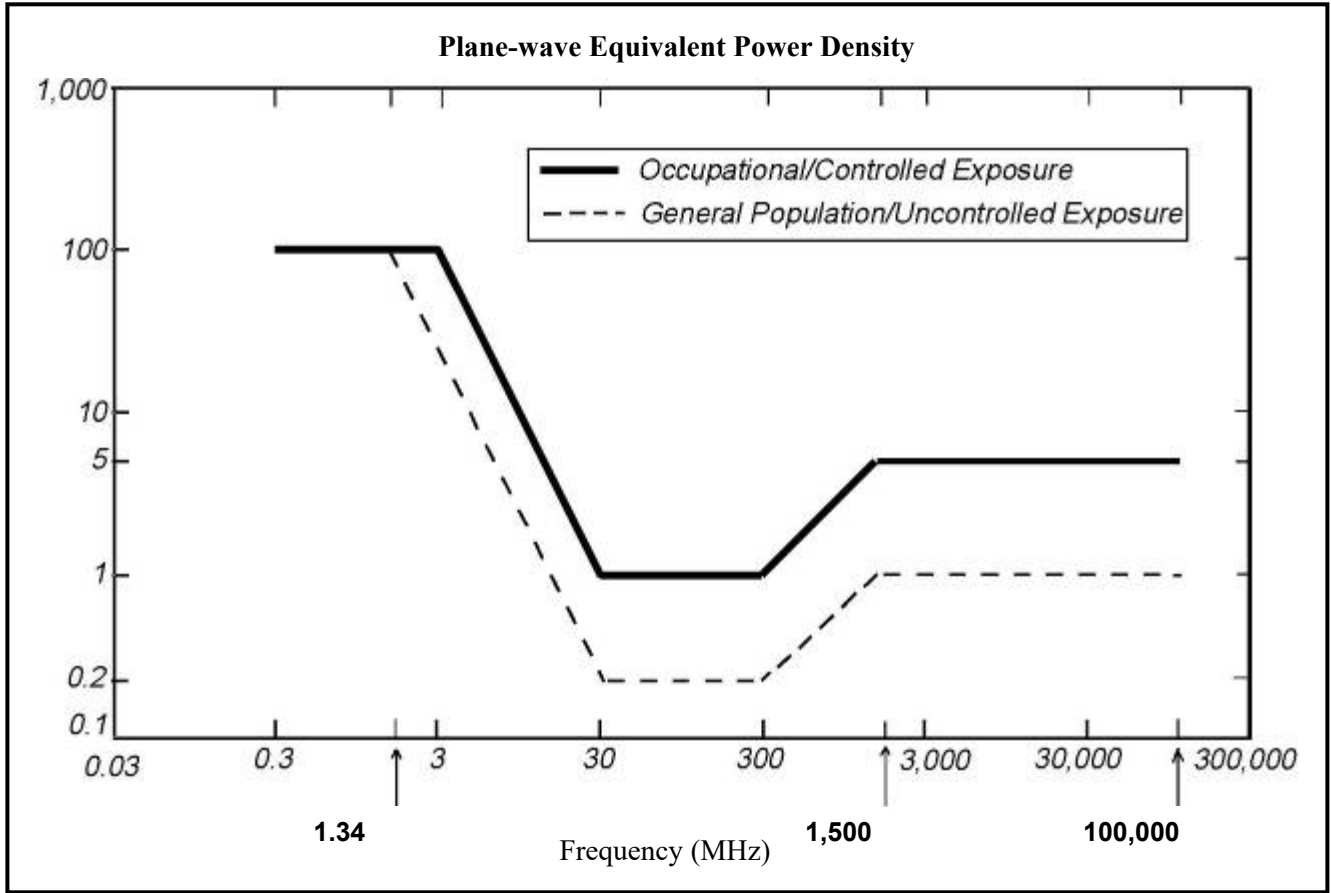
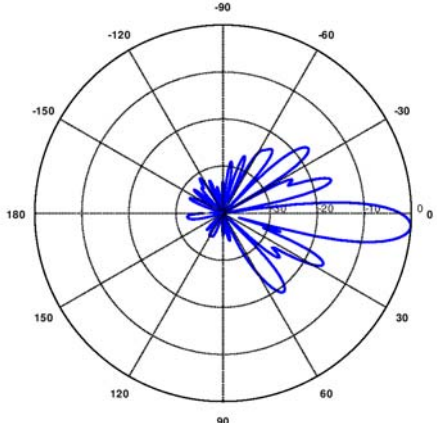
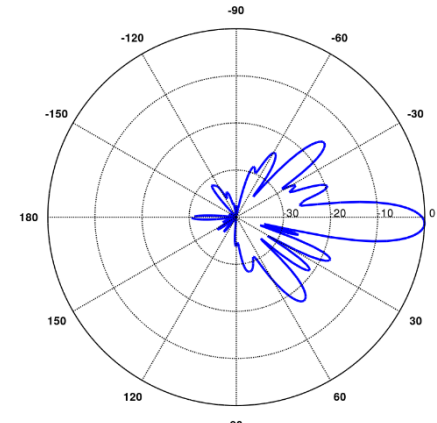
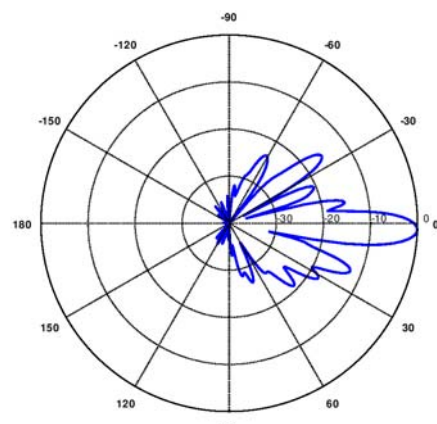
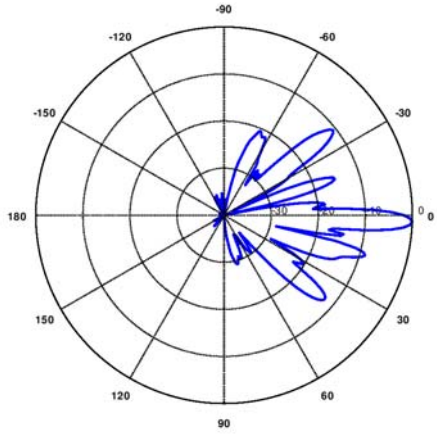
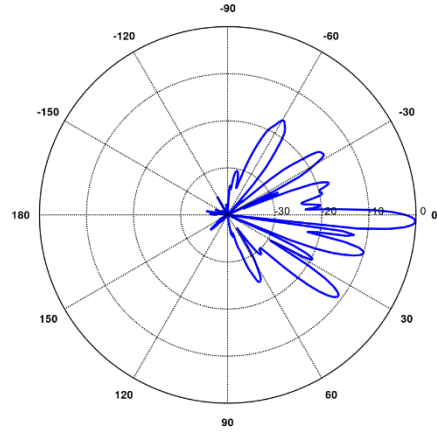


Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)



### Attachment C: AT&T Mobility Antenna Model Data Sheets and Electrical Patterns

<p><b>739 MHz</b></p> <p>Manufacturer: CCI            Model #: DMP65R-BU8DA            Frequency Band: 698-798 MHz            Gain: 15.1 dBi            Vertical Beamwidth: 9.5°            Horizontal Beamwidth: 75°            Polarization: ±45°            Dimensions (L x W x D): 96.0" x 20.7" x 7.7"</p>	
<p><b>763 MHz</b></p> <p>Manufacturer: CCI            Model #: TPA65R-BU8D            Frequency Band: 698-806 MHz            Gain: 15.6 dBi            Vertical Beamwidth: 9.5°            Horizontal Beamwidth: 74°            Polarization: ±45°            Dimensions (L x W x D): 96.0" x 20.7" x 7.7"</p> <p><b>763 MHz</b></p>	
<p><b>885 MHz</b></p> <p>Manufacturer: CCI            Model #: DMP65R-BU8D            Frequency Band: 824-896 MHz            Gain: 16.0 dBi            Vertical Beamwidth: 8.0°            Horizontal Beamwidth: 64°            Polarization: ±45°            Dimensions (L x W x D): 96.0" x 20.7" x 7.7"</p>	

<p><b>1900 MHz</b></p> <p>Manufacturer: CCI  Model #: DMP65R-BU8D  Frequency Band: 1850-1990 MHz  Gain: 17.8 dBi  Vertical Beamwidth: 5.1°  Horizontal Beamwidth: 68°  Polarization: ±45°  Dimensions (L x W x D): 96.0" x 20.7" x 7.7"</p>	 <p>A polar plot showing the radiation pattern for a 1900 MHz antenna. The plot is circular with concentric rings representing gain levels and radial lines representing angles from 0 to 180 degrees. The main lobe is centered at 0 degrees, extending to approximately 180 degrees. The beamwidth is narrow, consistent with the 5.1° vertical beamwidth specification.</p>
<p><b>2100 MHz</b></p> <p>Manufacturer: CCI  Model #: TPA65R-BU8D  Frequency Band: 1920-2180 MHz  Gain: 18.3 dBi  Vertical Beamwidth: 4.7°  Horizontal Beamwidth: 67°  Polarization: ±45°  Dimensions (L x W x D): 96.0" x 20.7" x 7.7"</p>	 <p>A polar plot showing the radiation pattern for a 2100 MHz antenna. The plot is circular with concentric rings representing gain levels and radial lines representing angles from 0 to 180 degrees. The main lobe is centered at 0 degrees, extending to approximately 180 degrees. The beamwidth is narrow, consistent with the 4.7° vertical beamwidth specification.</p>

# ATTACHMENT 7



445 Hamilton Avenue, 14th Floor  
White Plains, New York 10601  
T 914 761 1300  
F 914 761 5372  
cuddyfeder.com

Kristen Motel  
[kmotel@cuddyfeder.com](mailto:kmotel@cuddyfeder.com)

July 12, 2023

**CERTIFIED MAIL**

144 Mill Rock Rd LLC  
PO Box 612  
Old Saybrook, CT 06475

Re: Tower Sharing Request by New Cingular Wireless PCS, LLC  
Premises: 40-3 River Street, Old Saybrook, Connecticut

Dear Sir or Madam:

We are writing to you on behalf of our client New Cingular Wireless PCS, LLC (“AT&T”) with respect to the above referenced request to the Connecticut Siting Council (“Council”) for shared use approval to allow AT&T to install its wireless communications equipment on the existing communications tower and at the associated compound at 40-3 River Street, Old Saybrook, Connecticut. AT&T proposes to install 6 panel antennas and 9 RRHs on a sector frame mount attached to the existing tower at the centerline height of approximately 130’ AGL. AT&T also proposes to install its unmanned equipment within the existing equipment shelter located in the fenced compound. Additionally, AT&T will install a new 20kW diesel generator for emergency back-up power on a 4’x6’ concrete pad within the existing fenced compound.

Enclosed herein is a copy of the submission made to the Council requesting approval of the tower share which includes information regarding the technical, legal, environmental, and economic feasibility of AT&T’s proposed installation.

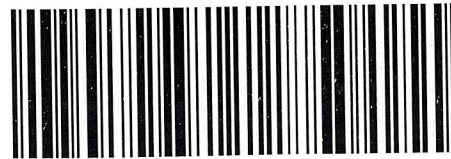
Should you have any questions please feel free to contact me at the address above or the Council at 860.827.2935.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'Kristen Motel', is written over a light blue horizontal line.

Kristen Motel  
Enclosure

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144 Mill Rock Rd LLC  
PO Box 612  
Old Saybrook, CT 06475

Reference Information

PS Form 3800, Facsimile, July 2015

Avenue, 14th Floor  
White Plains, New York 10601

**CUDDY**  
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LLP



144 Mill Rock Rd LLC  
PO Box 612  
Old Saybrook, CT 06475

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445 Hamilton Avenue, 14th Floor  
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cuddyfeder.com

Kristen Motel  
[kmotel@cuddyfeder.com](mailto:kmotel@cuddyfeder.com)

July 12, 2023

**FEDERAL EXPRESS**

American Tower Corporation  
10 Presidential Way  
Woburn, MA 01801

Re: Tower Sharing Request by New Cingular Wireless PCS, LLC  
Premises: 40-3 River Street, Old Saybrook, Connecticut

Dear Sir or Madam,

We are writing to you on behalf of our client New Cingular Wireless PCS, LLC ("AT&T") with respect to the above referenced request to the Connecticut Siting Council ("Council") for shared use approval to allow AT&T to install its wireless communications equipment on the existing communications tower and at the associated compound at 40-3 River Street, Old Saybrook, Connecticut. AT&T proposes to install 6 panel antennas and 9 RRHs on a sector frame mount attached to the existing tower at the centerline height of approximately 130' AGL. AT&T also proposes to install its unmanned equipment within the existing equipment shelter located in the fenced compound. Additionally, AT&T will install a new 20kW diesel generator for emergency back-up power on a 4'x6' concrete pad within the existing fenced compound.

Enclosed herein is a copy of the submission made to the Council requesting approval of the tower share which includes information regarding the technical, legal, environmental, and economic feasibility of AT&T's proposed installation.

Should you have any questions please feel free to contact me at the address above or the Council at 860.827.2935.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Kristen Motel', is written over a light blue horizontal line.

Kristen Motel  
Enclosure

ORIGIN ID: NESA (914) 761-1300  
KRISTEN MOTEL  
CUDDY & FEDER LLP  
445 HAMILTON AVENUE  
SUITE 1400  
WHITE PLAINS, NY 10601  
UNITED STATES US

SHIP DATE: 12 JUL 23  
ACT WT: 1.00 LB  
CAD: 106899673/MNET/4610

BILL SENDER

TO AMERICAN TOWER CORPORATION

10 PRESIDENTIAL WAY

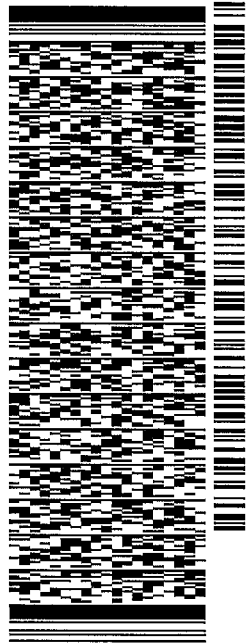
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(781) 928-4500

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PO:

DEPT:



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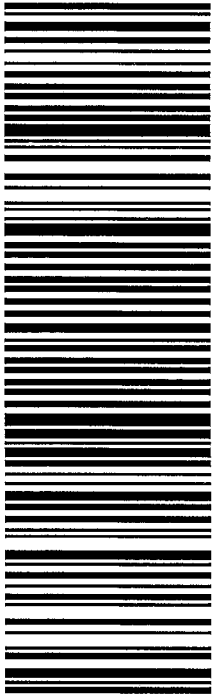
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TRK# 7727 1676 2471  
0201

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PRIORITY OVERNIGHT

EM BEDA

MA-US 01801  
BOS



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cuddyfeder.com

Kristen Motel  
[kmotel@cuddyfeder.com](mailto:kmotel@cuddyfeder.com)

July 12, 2023

**FEDERAL EXPRESS**

Carl P. Fortuna, Jr., First Selectman  
Old Saybrook Town Hall  
302 Main Street  
Old Saybrook, CT 06475

Re: Tower Sharing Request by New Cingular Wireless PCS, LLC  
Premises: 40-3 River Street, Old Saybrook, Connecticut

Dear First Selectman Fortuna:

We are writing to you on behalf of our client New Cingular Wireless PCS, LLC (“AT&T”) with respect to the above referenced request to the Connecticut Siting Council (“Council”) for shared use approval to allow AT&T to install its wireless communications equipment on the existing communications tower and at the associated compound at 40-3 River Street, Old Saybrook, Connecticut. AT&T proposes to install 6 panel antennas and 9 RRHs on a sector frame mount attached to the existing tower at the centerline height of approximately 130’ AGL. AT&T also proposes to install its unmanned equipment within the existing equipment shelter located in the fenced compound. Additionally, AT&T will install a new 20kW diesel generator for emergency back-up power on a 4’x6’ concrete pad within the existing fenced compound.

Enclosed herein is a copy of the submission made to the Council requesting approval of the tower share which includes information regarding the technical, legal, environmental, and economic feasibility of AT&T’s proposed installation.

Should you have any questions please feel free to contact me at the address above or the Council at 860.827.2935.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'Kristen Motel', written in a cursive style.

Kristen Motel  
Enclosure



ORIGIN/D/NESEA (914) 761-1300  
KRISTEN MOTEL  
CUDDY & FEDER LLP  
445 HAMILTON AVENUE  
SUITE 1400  
WHITE PLAINS, NY 10601  
UNITED STATES US

SHIP DATE: 12 JUL 23  
ACTWGT: 1.00 LB  
CAD: 106899673/NET/4610

BILL SENDER

TO **CARL P FORTUNA JR., FIRST SELECTMAN**

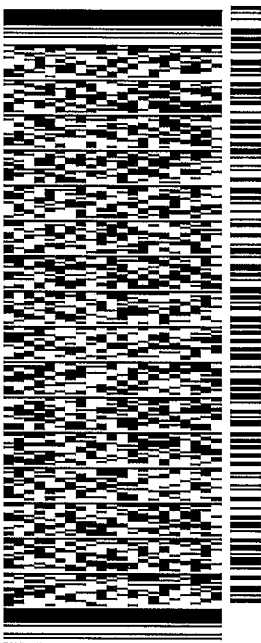
**OLD SAYBROOK TOWN HALL**

**302 MAIN STREET**

**OLD SAYBROOK CT 06475**

(860) 395-3123 REF: 1844-3625

INV: DEPT: PO:



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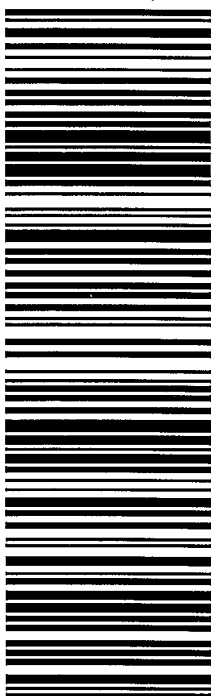
THU - 13 JUL 10:30A

PRIORITY OVERNIGHT

TRK# 7727 1640 2548  
0201

**EB SKKA**

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445 Hamilton Avenue, 14th Floor  
White Plains, New York 10601  
T 914 761 1300  
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Kristen Motel  
[kmotel@cuddyfeder.com](mailto:kmotel@cuddyfeder.com)

July 12, 2023

**FEDERAL EXPRESS**

Christina M. Costa, Town Planner, CZEO  
Old Saybrook Town Hall  
Land Use Department  
302 Main Street  
Old Saybrook, CT 06475

Re: Tower Sharing Request by New Cingular Wireless PCS, LLC  
Premises: 40-3 River Street, Old Saybrook, Connecticut

Dear Ms. Costa:

We are writing to you on behalf of our client New Cingular Wireless PCS, LLC (“AT&T”) with respect to the above referenced request to the Connecticut Siting Council (“Council”) for shared use approval to allow AT&T to install its wireless communications equipment on the existing communications tower and at the associated compound at 40-3 River Street, Old Saybrook, Connecticut. AT&T proposes to install 6 panel antennas and 9 RRHs on a sector frame mount attached to the existing tower at the centerline height of approximately 130’ AGL. AT&T also proposes to install its unmanned equipment within the existing equipment shelter located in the fenced compound. Additionally, AT&T will install a new 20kW diesel generator for emergency back-up power on a 4’x6’ concrete pad within the existing fenced compound.

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Very truly yours,

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Kristen Motel  
Enclosure

ORIGIN:DNESA (914) 761-1300  
KRISTEN MOTEL  
CUDDY & FEDER LLP  
445 HAMILTON AVENUE  
SUITE 1400  
WHITE PLAINS, NY 10601  
UNITED STATES US

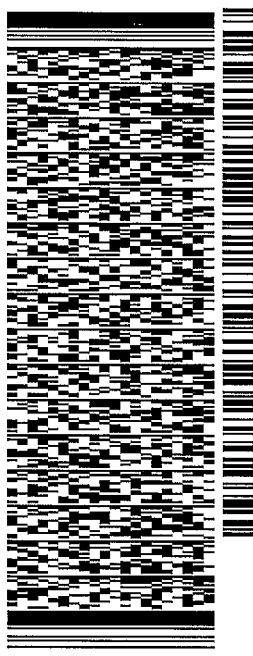
SHIP DATE: 12 JUL 23  
ACTWGT: 1.00 LB  
CAD: 106899673/INET/4610  
BILL SENDER

TO CHRISTINA M. COSTA, TOWN PLANNER

LAND USE DEPARTMENT  
302 MAIN STREET

OLD SAYBROOK CT 06475  
(860) 395-3131  
INV: REF:1844-3625

PO: DEPT:



J232023040501uv

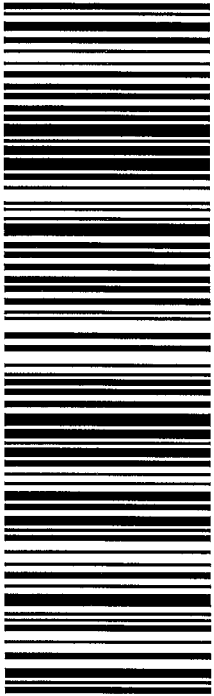
583J46AE49AE3

TRK# 7727 1654 0585  
0201

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PRIORITY OVERNIGHT

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