



August 1, 2022

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

Re: Exempt Modification Request – AT&T Site 13754283  
AT&T Wireless Telecommunications Facility @ 1338 Highland Ave., Cheshire, CT 06410

Dear Ms. Bachman,

AT&T is proposing a wireless telecommunications facility on an existing tower silo at the above referenced address. Enclosed please find a check in the amount of Six Hundred and Twenty Five Dollars (\$625.00); an original and two (2) copies of the following documents: the CSC Exempt Mod letter; a Letter of Authorization from tower owner; a GIS map of the property; a set of Construction Drawings; a Structural Analysis Report; an EME Study Report; and four (4) Notice Confirmations.

Please note that as this site is a “stealth” silo tower, no Mount Analysis has been performed.

I will email a .pdf copy of these documents to the Council.

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

Respectfully Submitted,

A handwritten signature in blue ink, appearing to read 'Jack Andrews', is written over the printed name.

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



July 20, 2022

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

Re: Exempt Modification Request – AT&T Site 13754283  
AT&T Wireless Telecommunications Facility @ 1338 Highland Ave., Cheshire, CT 06410

Dear Ms. Bachman,

New Cingular Wireless, PCS, LLC (dba AT&T) currently maintains antennas on a wireless telecommunications facility owned by American Tower Corporation (ATC) at the above referenced address. The facility is concealed within an existing silo with nine (9) antennas mounted at a fifty four (54) foot centerline. An equipment shelter is located near the base of the silo.

AT&T desires to modify its existing equipment as described in the enclosed Construction Drawings:

- Remove six (6) antennas, three (3) RRHs, three (3) TMAs, six (6) diplexers, two (2) fiber trunk cables four (4) AWG cables, one (1) control cable and twelve (12) coax cables;
- Install nine (9) antennas, six (6) RRHs, one (1) squid, three (3) fiber cables, four (4) 8 AWG DC cables, two (2) 6 AWG cables, six (6) Y cables and twelve (12) 7.8" coax cables.
- Ground work includes installing one (1) 6648 and XCEDE cable.

Please accept this letter as notification pursuant to R.C.S.A §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2), and as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of AT&T's intent to modify a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A §16-50j-73, a copy of this letter is being sent to the following individuals: American Tower Corporation as Tower Operator/Owner; MUDDM LLC as the property owner; Sean M. Kimball, Cheshire Town Manager, and Michael Glidden, the Cheshire Town Planner.

The applicant's proposal falls squarely within those activities explicitly provided for in R.C.S.A. §16-50j-89. Specifically:

1. The proposed modifications will NOT result in an increase in the height of the existing structure.
2. The proposed modifications will NOT require an extension of the site boundary.
3. The proposed modifications will NOT increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

Jack Andrews, Zoning Manager 10130 Donleigh Drive, Columbia, MD 21046 (443) 677-0144  
Centerline Communications • 750 W Center Street, Suite 301, W Bridgewater, MA 02379



4. The operation of the modified facility will NOT increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. Please see the RF emissions calculation for AT&T's modified facility enclosed herewith.
5. The proposed modifications will NOT cause an ineligible change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading. Please see the structural analysis enclosed herewith.

For the foregoing reasons, AT&T respectfully requests that the Council approve this Exempt Modification request for this silo/tower located at 1338 Highland Ave., Cheshire, CT 06410.

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

Respectfully Submitted,

A handwritten signature in blue ink, appearing to read 'Jack Andrews', is written over the printed name.

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

Enclosures: Exhibit 1 – Letter of Authorization from tower owner  
Exhibit 2 – Property Card and GIS  
Exhibit 3 – Construction and Mount Modification Drawings  
Exhibit 4 – Structural Analysis Report  
Exhibit 5 – EME Study Report  
Exhibit 6 – Four (4) Notice Confirmations

cc: American Tower Corporation - Tower Operator/Owner  
MUDDM LLC - Property Owner  
Sean M. Kimball - Cheshire Town Manager  
Michael Glidden - Cheshire Town Planner

Search

House No:  Street:

Example: 84 South Main Street

Name:

Last Name works best

MBL:

Example: 64216 (Map 64 - Lot 216) or 84-77 (Map 84

Unique ID:

Example: 00585400

Scan Location:





# Town of Cheshire, CT

## Property Listing Report

Map Block Lot **28 15**

Building # **1** Unique Identifier **00158400**

### Property Information

Property Location	<b>1338 HIGHLAND AVE</b>
Mailing Address	<b>1338 HIGHLAND AVE CHESHIRE CT 06410</b>
Land Use	<b>Warehouse</b>
Zoning Code	<b>I-2</b>
Neighborhood	<b>I-4D</b>

Owner	<b>MUDDDM LLC</b>
Co-Owner	
Book / Page	<b>1672/0243</b>
Land Class	<b>Commercial</b>
Census Tract	<b>3431</b>
Acreage	<b>3</b>

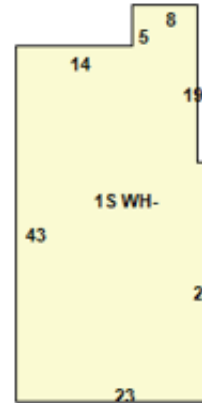
### Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	<b>240474</b>	<b>168330</b>
Outbuildings	<b>66355</b>	<b>46450</b>
Land	<b>445500</b>	<b>2920</b>
<b>Total</b>	<b>752329</b>	<b>217700</b>

### Utility Information

Electric	<b>No</b>
Gas	<b>No</b>
Sewer	<b>No</b>
Public Water	<b>No</b>
Well	<b>No</b>



### Primary Construction Details

Year Built	<b>1952</b>
Building Desc.	<b>Commercial</b>
Building Style	
Stories	<b>1.00</b>
Exterior Walls	<b>Concrete Block</b>
Exterior Walls 2	
Interior Walls	
Interior Walls 2	
Interior Floors 1	<b>Concrete</b>
Interior Floors 2	

Heating Fuel	<b>Oil</b>
Heating Type	<b>FHA</b>
AC Type	
Bedrooms	<b>0</b>
Full Bathrooms	<b>0</b>
Half Bathrooms	<b>0</b>
Extra Fixtures	<b>0</b>
Total Rooms	<b>0</b>
Bath Style	<b>NA</b>
Kitchen Style	
Occupancy	<b>0</b>

Building Use	<b>Warehouse</b>
Building Condition	<b>Average/Fair</b>
Frame Type	<b>Low Cost</b>
Fireplaces	<b>0</b>
Bsmt Gar	<b>0</b>
Fin Bsmt Area	
Fin Bsmt Quality	
Building Grade	<b>20</b>
Roof Style	<b>Flat</b>
Roof Cover	<b>Composite Built Up</b>

Report Created On

**7/20/2022**



# Town of Cheshire, CT

Property Listing Report

Map Block Lot **28 15**

Building # **1**

Unique Identifier

**00158400**

## Detached Outbuildings

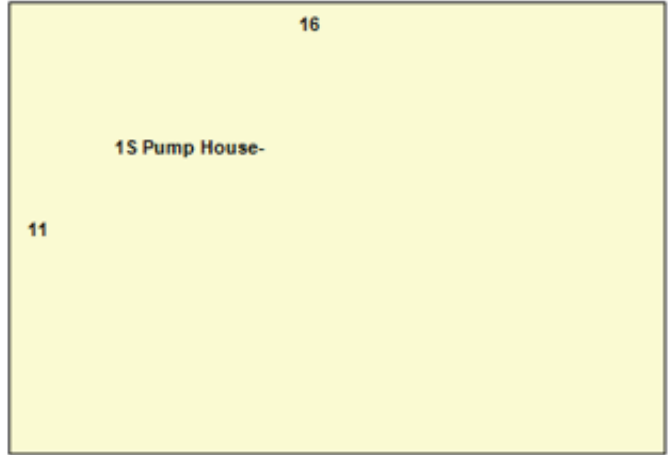
Type	Description	Area (sq ft)	Condition	Year Built
Shed	Frame (3 Car)	768	Average	1990
Greenhouse	Frame (3 Car)	5600	Average	1952
Greenhouse	Frame (3 Car)	6400	Average	1946
Garage	Frame (3 Car)	756	Average	1946
Gazebo	Frame (3 Car)	182	Average	2004
Greenhouse	Frame (3 Car)	5600	Average	1952
Shed	Frame (3 Car)	100	Average	1990

## Attached Extra Features

Type	Description	Area (sq ft)	Condition	Year Built

## Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
MUDDDM LLC	1672_ 243	3/6/2003	0
MANKE JONATHAN D & DEBRAH P	1401_ 21	4/27/2000	320000
PAPANDREA FRANK J & NORMA S	701_ 255	12:00:00 AM	0



### Primary Construction Details

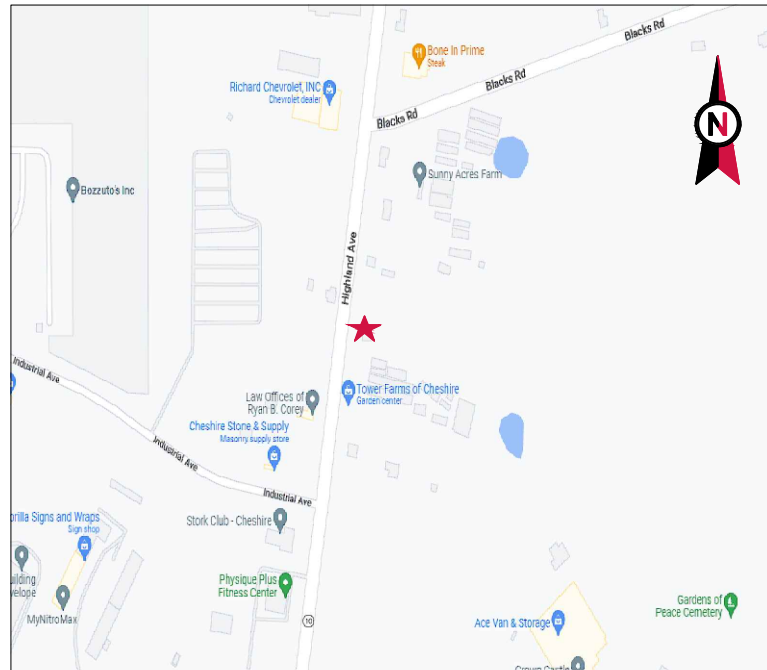
Year Built	<b>2000</b>
Building Desc.	<b>Pump House</b>
Building Style	
Stories	<b>1.00</b>
Exterior Walls	<b>Pre-Cast Concrete</b>
Exterior Walls 2	
Interior Walls	
Interior Walls 2	
Interior Floors 1	<b>Concrete</b>
Interior Floors 2	

Heating Fuel	
Heating Type	
AC Type	
Bedrooms	<b>0</b>
Full Bathrooms	<b>0</b>
Half Bathrooms	<b>0</b>
Extra Fixtures	<b>0</b>
Total Rooms	<b>0</b>
Bath Style	<b>NA</b>
Kitchen Style	
Occupancy	<b>0</b>

Building Use	<b>Commercial</b>
Building Condition	<b>Average</b>
Frame Type	<b>Good</b>
Fireplaces	<b>0</b>
Bsmt Gar	<b>0</b>
Fin Bsmt Area	
Fin Bsmt Quality	
Building Grade	<b>30</b>
Roof Style	<b>Flat</b>
Roof Cover	<b>Composite Built Up</b>

### Attached Extra Features

Type	Description	Area (sq ft)	Condition	Year Built



VICINITY MAP

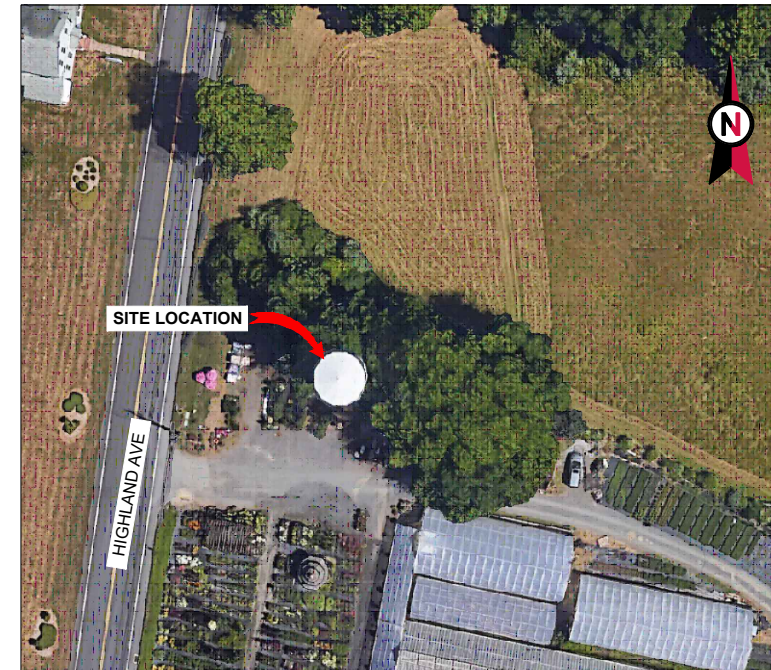


**AMERICAN TOWER®**

ATC SITE NAME: MANKES SILO  
 ATC SITE NUMBER: 370624  
 AT&T PACE NUMBERS: MRCTB054467/ MRCTB054224/  
 MRCTB056344/ MRCTB055193/  
 MRCTB056333

AT&T SITE ID: CTL02038  
 AT&T FA CODE: 10035232  
 AT&T SITE NAME: CHESIRE TOWER FARMS  
 SITE ADDRESS: 1338 HIGHLAND AVE  
 CHESHIRE, CT 06410-0000

**AT&T AMENDMENT PLAN**



LOCATION MAP



45 BEECHWOOD DRIVE TEL: (978) 557-5553  
 N. ANDOVER, MA 01845 FAX: (978) 336-5586

REV.	DESCRIPTION	BY	DATE
A	PRELIM	AB	03/28/22

ATC SITE NUMBER:  
370624

ATC SITE NAME:  
MANKES SILO

AT&T SITE NAME:  
CHESIRE TOWER FARMS

SITE ADDRESS:  
1338 HIGHLAND AVE  
CHESHIRE, CT 06410-0000

SEAL:

PRELIMINARY:  
NOT FOR  
CONSTRUCTION



DATE DRAWN:	03/28/22
ATC JOB NO:	13754283_G5
CUSTOMER ID:	CTL02038
CUSTOMER #:	10035232

TITLE SHEET

SHEET NUMBER: <b>G-001</b>	REVISION: <b>A</b>
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**COMPLIANCE CODE**

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

- INTERNATIONAL BUILDING CODE (IBC)
- NATIONAL ELECTRIC CODE (NEC)
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES

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**UTILITY COMPANIES**

POWER COMPANY: UTILITY COMPANY DIRECT  
PHONE: UNKNOWN

TELEPHONE COMPANY: UNKNOWN  
PHONE: UNKNOWN

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**PROJECT SUMMARY**

SITE ADDRESS:  
1338 HIGHLAND AVE  
CHESHIRE, CT 06410-0000  
COUNTY: NEW HAVEN

GEOGRAPHIC COORDINATES:  
LATITUDE: 41.53694444  
LONGITUDE: -72.89333333  
GROUND ELEVATION: 197' AMSL

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**PROJECT TEAM**

<u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801	<u>APPLICANT:</u> AT&T MOBILITY
<u>ENGINEER:</u> HUDSON DESIGN GROUP, LLC 45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845	
<u>PROPERTY OWNER:</u> MUDDM LLC 1338 HIGHLAND AVE CHESHIRE, CT 06410-0000	

**PROJECT DESCRIPTION**

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:

TOWER WORK:  
REMOVE (6) ANTENNA(S), (3) RRH(S), (3) TMAS, (6) DIPLEXER, (2) 0.39" FIBER TRUNK CABLE(S), (4) 0.78" 8 AWG 6 CABLE(S), (1) 3/8" RET CONTROL CABLE AND (12) 1 5/8" COAX CABLE(S)

INSTALL (9) ANTENNA(S), (6) RRH(S), (3) 0.40" FIBER CABLE(S), (4) 0.82" 8 AWG 6 DC CABLE(S), (2) 0.92" 6 AWG 6 DC CABLE(S), (1) DC-9 SQUID, (6) Y-CABLES AND (12) 7/8" COAX CABLE(S)

EXISTING (3) ANTENNA(S), (6) RRH(S) AND (2) DC-6 SQUID(S) TO REMAIN

GROUND WORK:  
REMOVE NONE  
INSTALL (1) 6648+XCEDE CABLE

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**PROJECT NOTES**

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

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**PROJECT LOCATION DIRECTIONS**

FROM NEW HAVEN DRIVE NORTH ON CHURCH STREET WHICH TURNS INTO WHITNEY AVENUE (CT-10) AT THE HAMDEN/ CHESHIRE LINE IT BECOMES HIGHLAND AVENUE CONTINUE NORTH TO ADDRESS 1338 HIGHLAND AVENUE ON THE RIGHT.

**SHEET INDEX**

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	A	03/28/22	AB
G-002	GENERAL NOTES	A	03/28/22	AB
C-101	DETAILED SITE PLAN	A	03/28/22	AB
C-201	TOWER ELEVATION	A	03/28/22	AB
E-501	GROUNDING DETAILS	A	03/28/22	AB
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			

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**GENERAL CONSTRUCTION NOTES:**

1. OWNER FURNISHED MATERIALS, AT&T "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
  - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
  - B. AC/TELCO INTERFACE BOX (PPC)
  - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
  - D. TOWERS, MONOPOLES
  - E. TOWER LIGHTING
  - F. GENERATORS & LIQUID PROPANE TANK
  - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
  - H. ANTENNAS (INSTALLED BY OTHERS)
  - I. TRANSMISSION LINE
  - J. TRANSMISSION LINE JUMPERS
  - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
  - L. TRANSMISSION LINE GROUND KITS
  - M. HANGERS
  - N. HOISTING GRIPS
  - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF AT&T TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE AT&T REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE AT&T REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE AT&T REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE AT&T CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE AT&T REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH AT&T AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH AT&T REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH AT&T REP TO

DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY AT&T MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.

23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH AT&T SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO AT&T FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO AT&T SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY AT&T REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE AT&T REP. ANY WORK FOUND BY THE AT&T REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. AT&T FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE AT&T WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. AT&T OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO AT&T OR THEIR ARCHITECT/ENGINEER.

**SPECIAL CONSTRUCTION**

**ANTENNA INSTALLATION NOTES:**

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

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



45 BEECHWOOD DRIVE TEL: (978) 557-5553  
N. ANDOVER, MA 01845 FAX: (978) 336-5586

REV.	DESCRIPTION	BY	DATE
A	PRELIM	AB	03/28/22

ATC SITE NUMBER:  
**370624**

ATC SITE NAME:  
**MANKES SILO**

AT&T SITE NAME:  
**CHESIRE TOWER FARMS**

SITE ADDRESS:  
1338 HIGHLAND AVE  
CHESHIRE, CT 06410-0000

SEAL:

PRELIMINARY:  
NOT FOR  
CONSTRUCTION



DATE DRAWN:	03/28/22
ATC JOB NO:	13754283_G5
CUSTOMER ID:	CTL02038
CUSTOMER #:	10035232

**GENERAL NOTES**

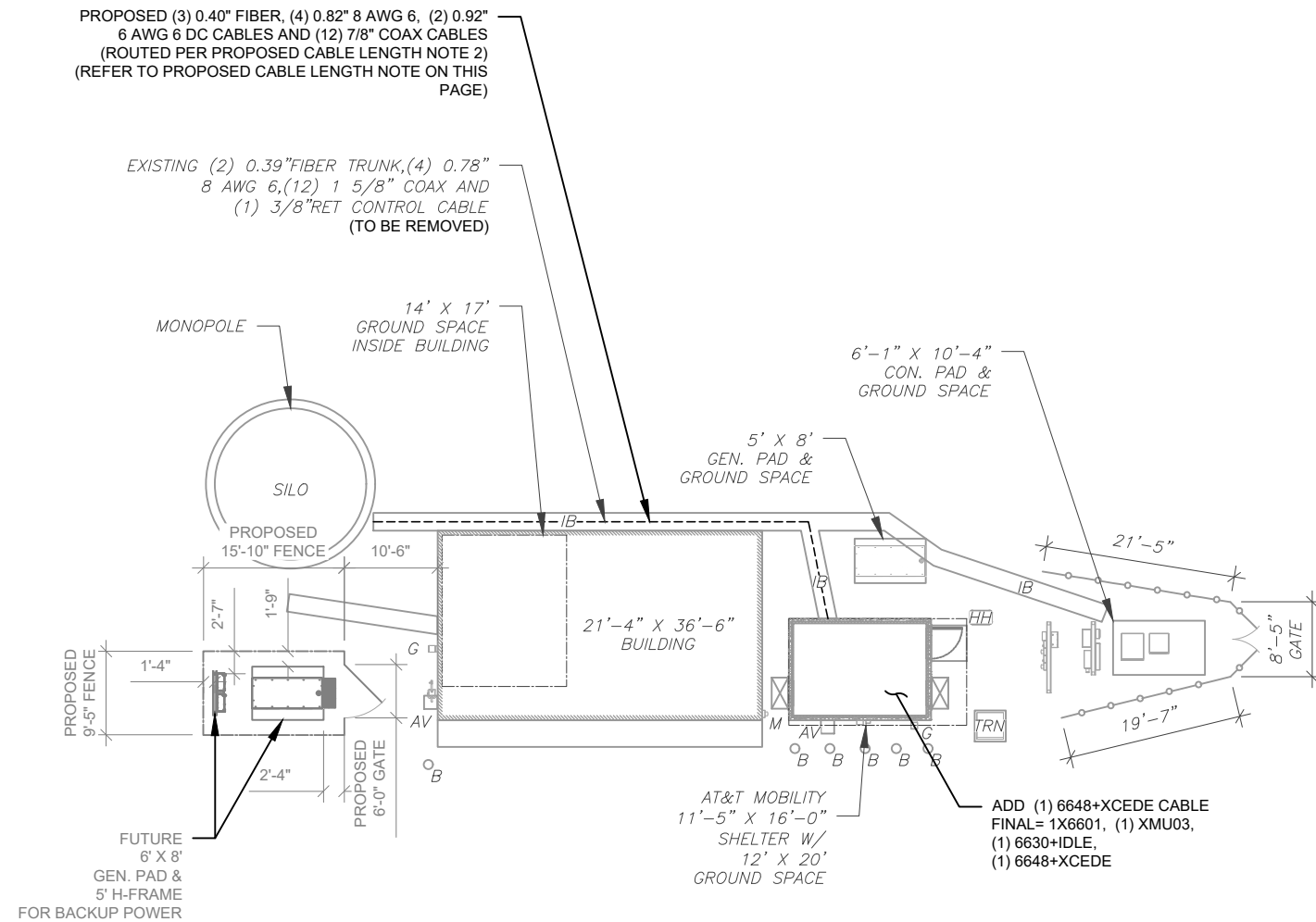
SHEET NUMBER: <b>G-002</b>	REVISION: <b>A</b>
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**SITE PLAN NOTES:**

1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3. THIS PROJECT INCLUDES NO INSTALL OR MODIFICATION AT GRADE.

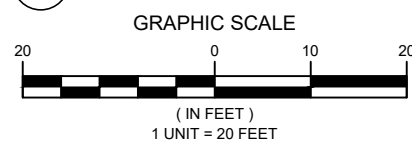
LEGEND	
⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
— x —	CHAINLINK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



**PROPOSED CABLE LENGTH:**

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **140'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.

**1 DETAILED SITE PLAN**



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REV.	DESCRIPTION	BY	DATE
A	PRELIM	AB	03/28/22

ATC SITE NUMBER:  
**370624**

ATC SITE NAME:  
**MANKES SILO**

AT&T SITE NAME:  
**CHESHIRE TOWER FARMS**

SITE ADDRESS:  
1338 HIGHLAND AVE  
CHESHIRE, CT 06410-0000

SEAL:

**PRELIMINARY:  
NOT FOR  
CONSTRUCTION**

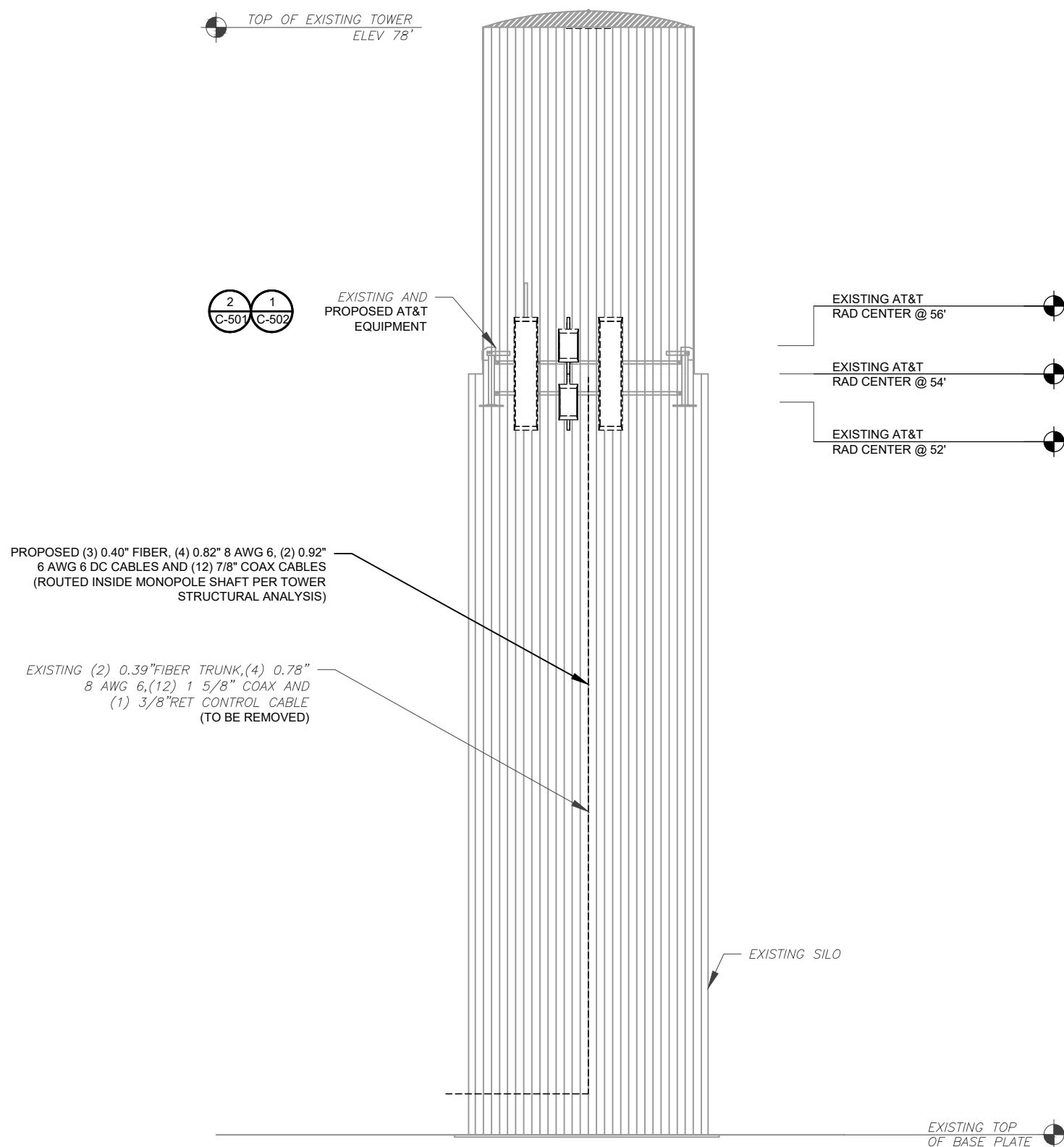


DATE DRAWN:	03/28/22
ATC JOB NO:	13754283_G5
CUSTOMER ID:	CTL02038
CUSTOMER #:	10035232

**DETAILED SITE PLAN**

SHEET NUMBER: <b>C-101</b>	REVISION: <b>A</b>
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ATC HAS NOT ANALYZED THE PROPOSED ANTENNA MOUNT(S) TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR PROPOSED CARRIER LOADING.



PROPOSED (3) 0.40" FIBER, (4) 0.82" 8 AWG 6, (2) 0.92" 6 AWG 6 DC CABLES AND (12) 7/8" COAX CABLES (ROUTED INSIDE MONOPOLE SHAFT PER TOWER STRUCTURAL ANALYSIS)

EXISTING (2) 0.39" FIBER TRUNK, (4) 0.78" 8 AWG 6, (12) 1 5/8" COAX AND (1) 3/8" RET CONTROL CABLE (TO BE REMOVED)

1 TOWER ELEVATION  
SCALE: N.T.S.

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



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REV.	DESCRIPTION	BY	DATE
A	PRELIM	AB	03/28/22

ATC SITE NUMBER:  
**370624**

ATC SITE NAME:  
**MANKES SILO**

AT&T SITE NAME:  
**CHESIRE TOWER FARMS**

SITE ADDRESS:  
1338 HIGHLAND AVE  
CHESHIRE, CT 06410-0000

SEAL:

PRELIMINARY:  
NOT FOR  
CONSTRUCTION

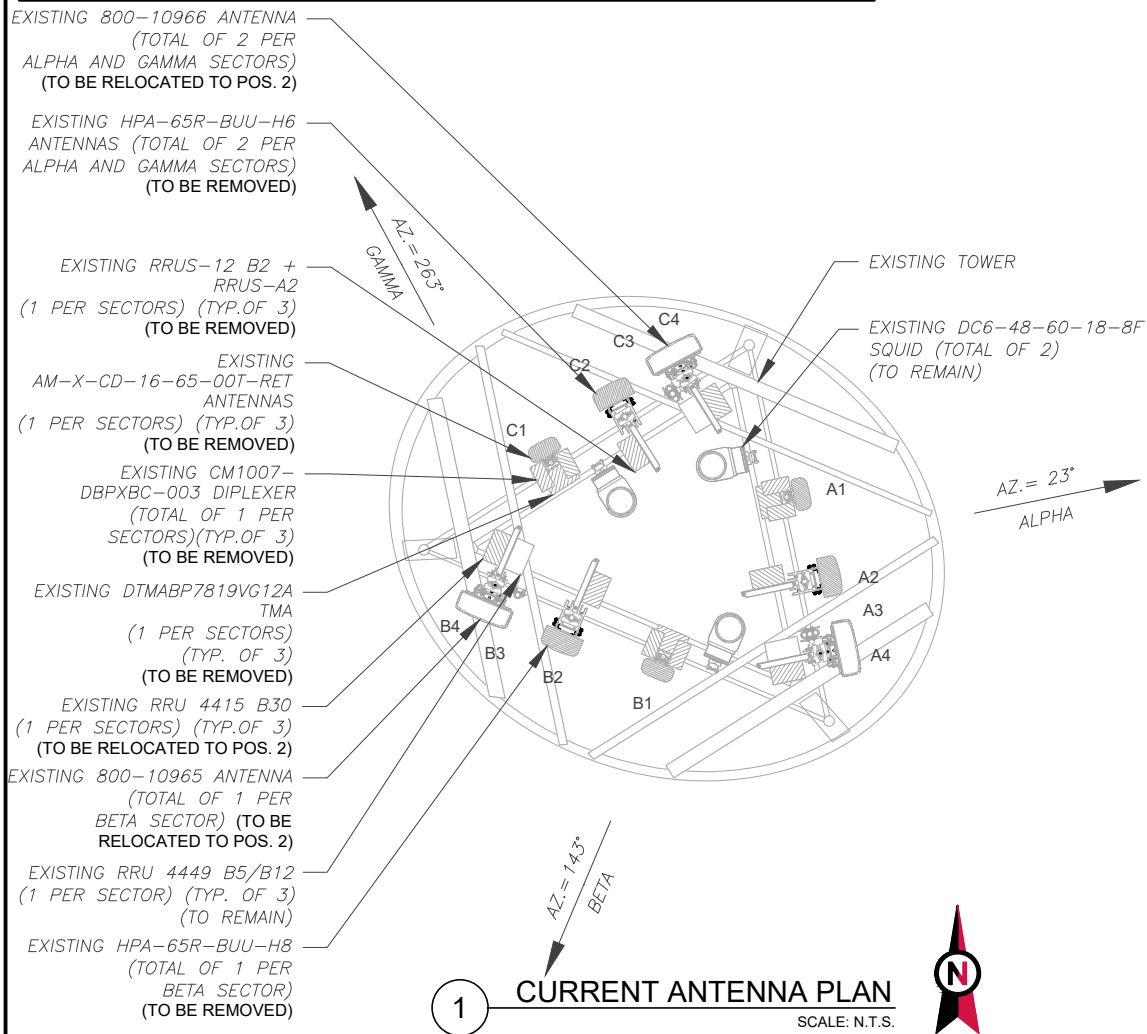


DATE DRAWN:	03/28/22
ATC JOB NO:	13754283_G5
CUSTOMER ID:	CTL02038
CUSTOMER #:	10035232

<b>TOWER ELEVATION</b>	
SHEET NUMBER: <b>C-201</b>	REVISION: <b>A</b>

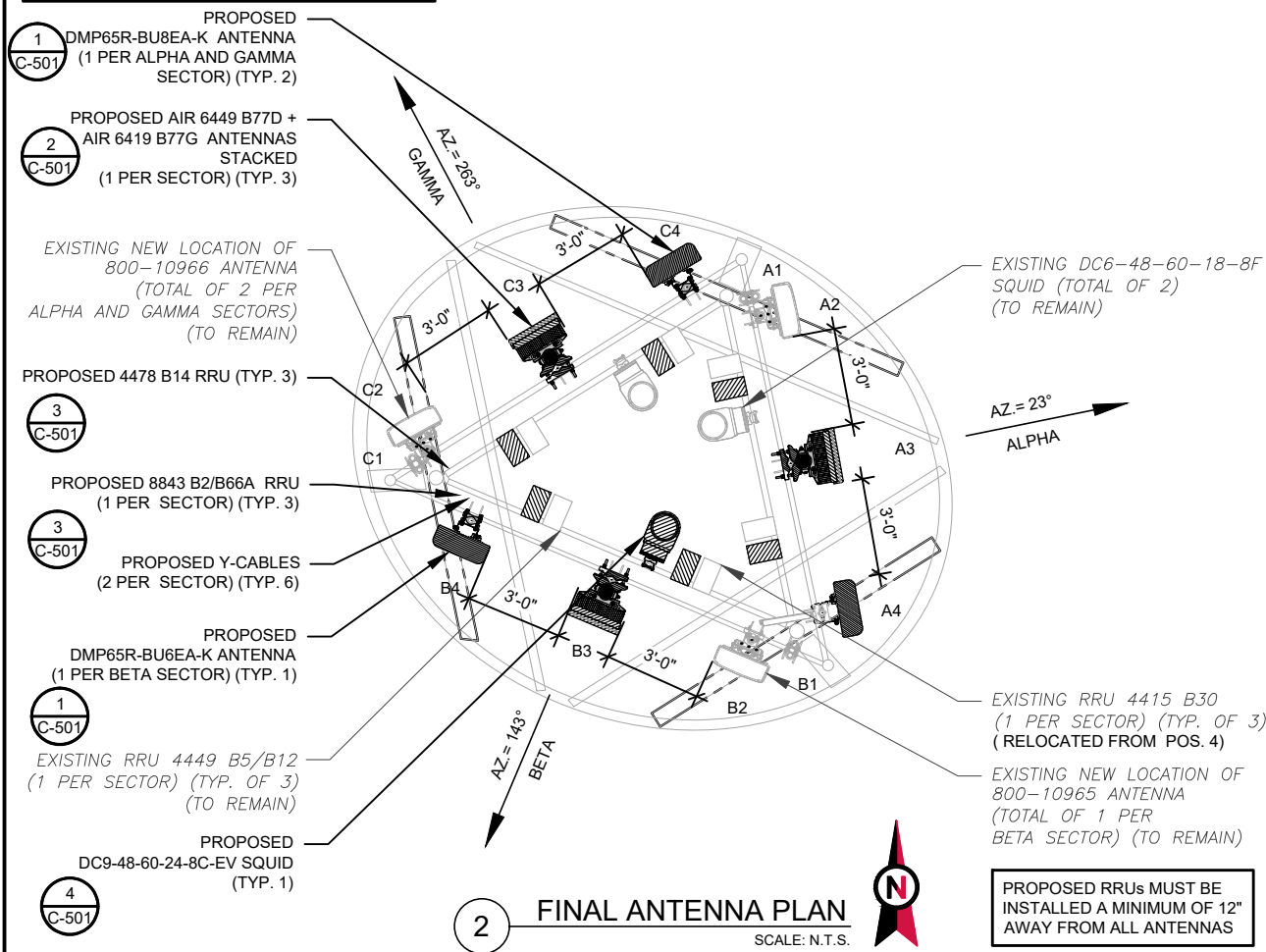
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EXISTING CONFIGURATIONS ARE BASED ON RFDS. CONTRACTOR TO VERIFY EXISTING CONDITIONS.



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

ATC HAS NOT ANALYZED THE PROPOSED ANTENNA MOUNT(S) TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR PROPOSED CARRIER LOADING.



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

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

EXISTING ANTENNA SCHEDULE							
LOCATION		ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	53'	143°	A1	AM-X-CD-16-65-00T-RET	-	RMV	CM1007-DBPXBC-003 DIPLEXER DTMABP7819VG12A TMA
		23°	A2	HPA-65R-BUU-H6	1900	RMV	RRUS-12 B2 + RRUS-A2 B25
		23°	A3	-	-	EMPTY	-
		23°	A4	80010966	700, WCS	REL	RRU 4449 B5/B12 RRU 4415 B30
BETA	53'	263°	B1	AM-X-CD-16-65-00T-RET	-	RMV	CM1007-DBPXBC-003 DIPLEXER DTMABP7819VG12A TMA
		143°	B2	HPA-65R-BUU-H8	1900	RMV	RRUS-12 B2 + RRUS-A2 B25
		143°	B3	-	-	EMPTY	-
		143°	B4	80010965	700, WCS	REL	RRU 4449 B5/B12 RRU 4415 B30
GAMMA	53'	23°	C1	AM-X-CD-16-65-00T-RET	-	RMV	CM1007-DBPXBC-003 DIPLEXER DTMABP7819VG12A TMA
		263°	C2	HPA-65R-BUU-H6	1900	RMV	RRUS-12 B2 + RRUS-A2 B25
		263°	C3	-	-	EMPTY	-
		263°	C4	80010966	700, WCS	REL	RRU 4449 B5/B12 RRU 4415 B30

NOTES

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

FINAL ANTENNA SCHEDULE							
LOCATION		ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	54'	23°	A1	-	-	-	-
			A2	80010966	LTE B14 / WCS	REL	RRU 4478 B14 RRU 4415 B30
			A3UP A3DN	AIR6419 B77G AIR6449 B77D	DOD C-BAND	ADD	-
			A4	DMP65R-BU8EA-K	LTE 700/ BC/ 850/ PCS/ AWS	ADD	RRU 8843 B2/B66A RRU 4449 B5/B12
BETA	54'	143°	B1	-	-	-	-
			B2	80010966	LTE B14 / WCS	REL	RRU 4478 B14 RRU 4415 B30
			B3 UP B3 DN	AIR6419 B77G AIR6449 B77D	DOD C-BAND	ADD	-
			B4	DMP65R-BU8EA-K	LTE 700/ BC/ 850/ PCS/ AWS	ADD	RRU 8843 B2/B66A RRU 4449 B5/B12
GAMMA	54'	263°	C1	-	-	-	-
			C2	80010966	LTE B14 / WCS	REL	RRU 4478 B14 RRU 4415 B30
			C3 UP C3 DN	AIR6419 B77G AIR6449 B77D	DOD C-BAND	ADD	-
			C4	DMP65R-BU8EA-K	LTE 700/ BC/ 850/ PCS/ AWS	ADD	RRU 8843 B2/B66A RRU 4449 B5/B12

EXISTING FIBER DISTRIBUTION/SQUID		EXISTING CABLING SUMMARY				
MODEL NUMBER	STATUS	COAX	CONDUIT	DC	FIBER	STATUS
-	-	-	-	(4) 0.78" 8 AWG6	(2) 0.39"	RMV
(2) DC6-48-60-18-8F	RMN	(12) 1 5/8"	-	(1) 3/8" RET CONTROL	-	RMN

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

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

3 EQUIPMENT SCHEDULES

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

FINAL FIBER DISTRIBUTION/SQUID		FINAL CABLING SUMMARY				
MODEL NUMBER	STATUS	COAX	CONDUIT	DC	FIBER	STATUS
(2) DC6-48-60-18-8F	RMN	-	-	(1) 3/8" RET CONTROL	-	RMN
(1) DC9-48-60-24-8C-EV	ADD	(12) 7/8"	-	(4) 0.82" 8 AWG 6 (2) 0.92"	(3) 0.40"	ADD

**AMERICAN TOWER®**

**HDG HUDSON Design Group LLC**

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REV.	DESCRIPTION	BY	DATE
A	PRELIM	AB	03/28/22

ATC SITE NUMBER: 370624  
 ATC SITE NAME: MANKES SILO  
 AT&T SITE NAME: CHESHIRE TOWER FARMS  
 SITE ADDRESS: 1338 HIGHLAND AVE CHESHIRE, CT 06410-0000

SEAL:

**PRELIMINARY: NOT FOR CONSTRUCTION**

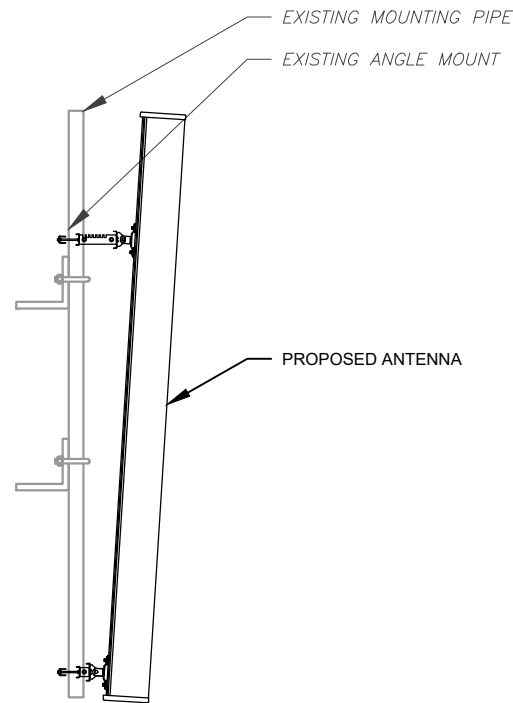
**AT&T**

DATE DRAWN:	03/28/22
ATC JOB NO:	13754283_G5
CUSTOMER ID:	CTL02038
CUSTOMER #:	10035232

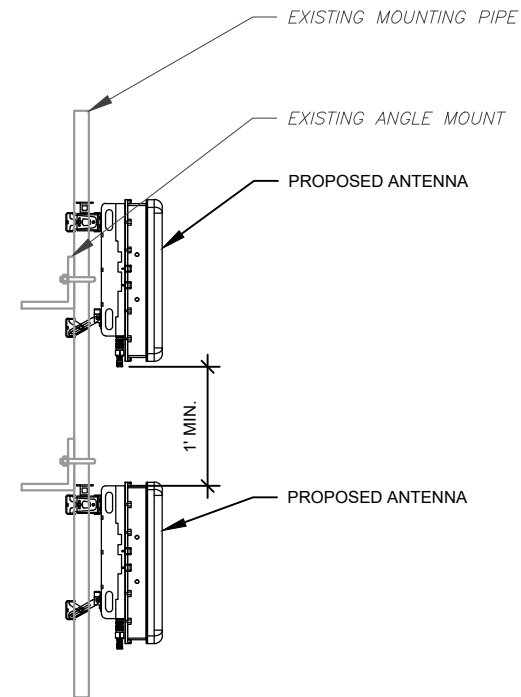
RF SCHEDULE AND ANTENNA INSTALLATION

SHEET NUMBER: C-401 REVISION: A

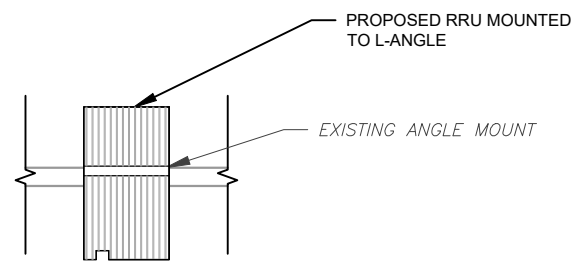
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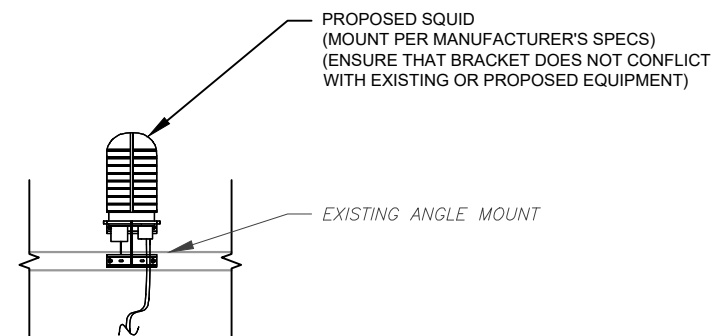
1 ANTENNA DETAIL  
SCALE: N.T.S.



2 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL  
SCALE: N.T.S.



3 PROPOSED RRU MOUNTING DETAIL - TYPICAL  
SCALE: N.T.S.



4 PROPOSED SQUID MOUNTING  
SCALE: N.T.S.



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ATC SITE NUMBER:  
370624

ATC SITE NAME:  
MANKES SILO

AT&T SITE NAME:  
CHESHIRE TOWER FARMS

SITE ADDRESS:  
1338 HIGHLAND AVE  
CHESHIRE, CT 06410-0000

SEAL:

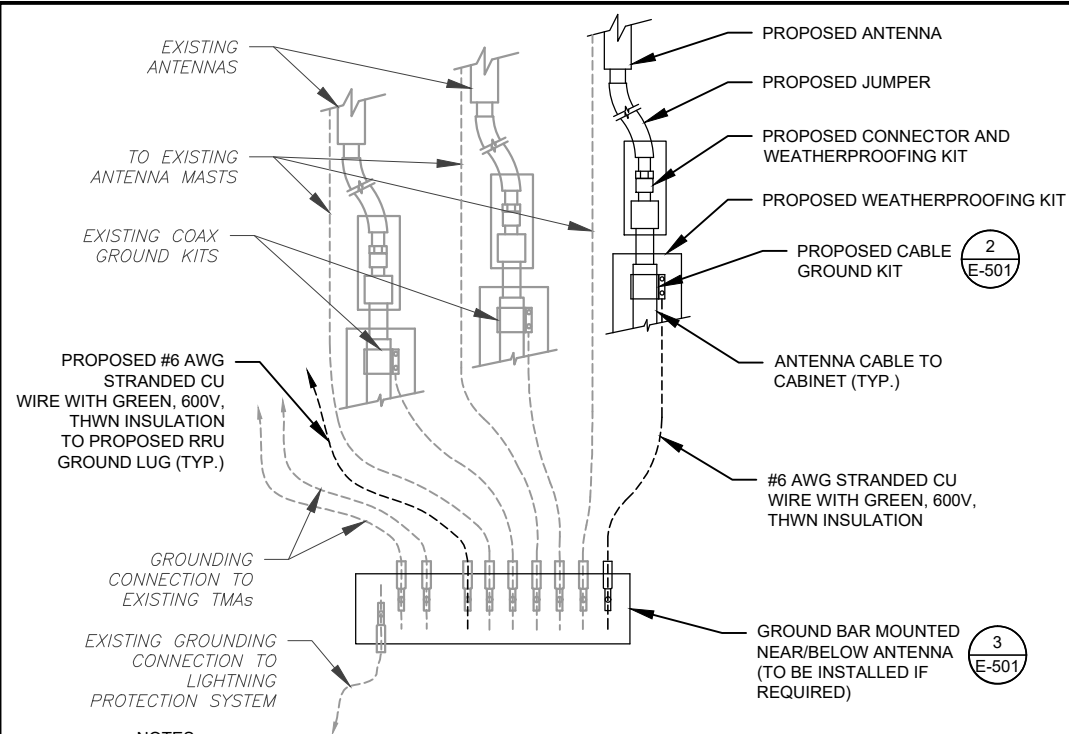
**PRELIMINARY:  
NOT FOR  
CONSTRUCTION**



DATE DRAWN:	03/28/22
ATC JOB NO:	13754283_G5
CUSTOMER ID:	CTL02038
CUSTOMER #:	10035232

CONSTRUCTION  
DETAILS

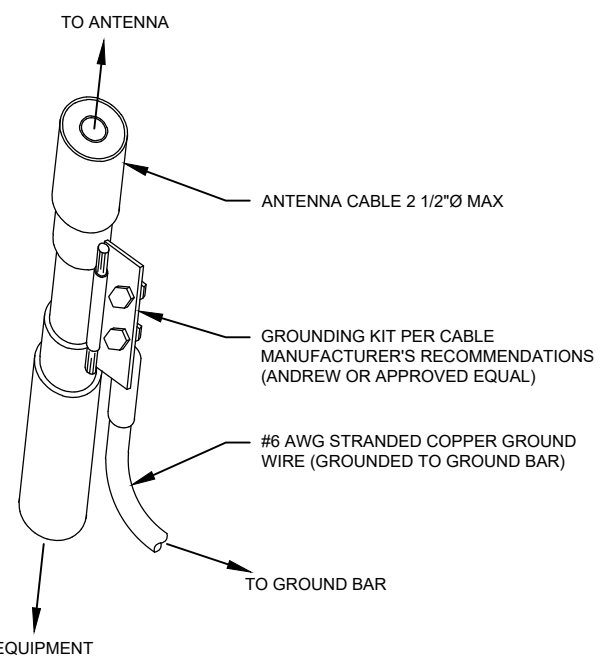
SHEET NUMBER:	REVISION:
C-501	A



**NOTES:**

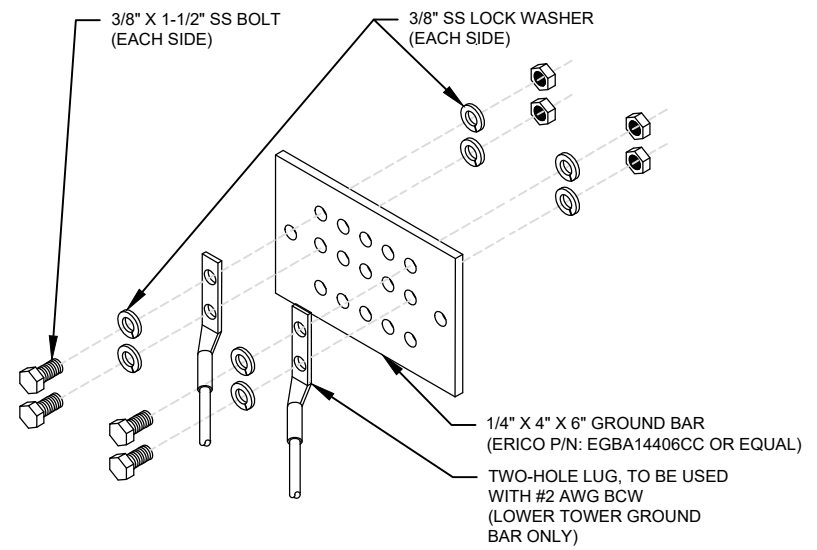
1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH AT&T GROUNDING STANDARDS,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

**1** TYPICAL ANTENNA GROUNDING DIAGRAM  
SCALE: N.T.S.



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

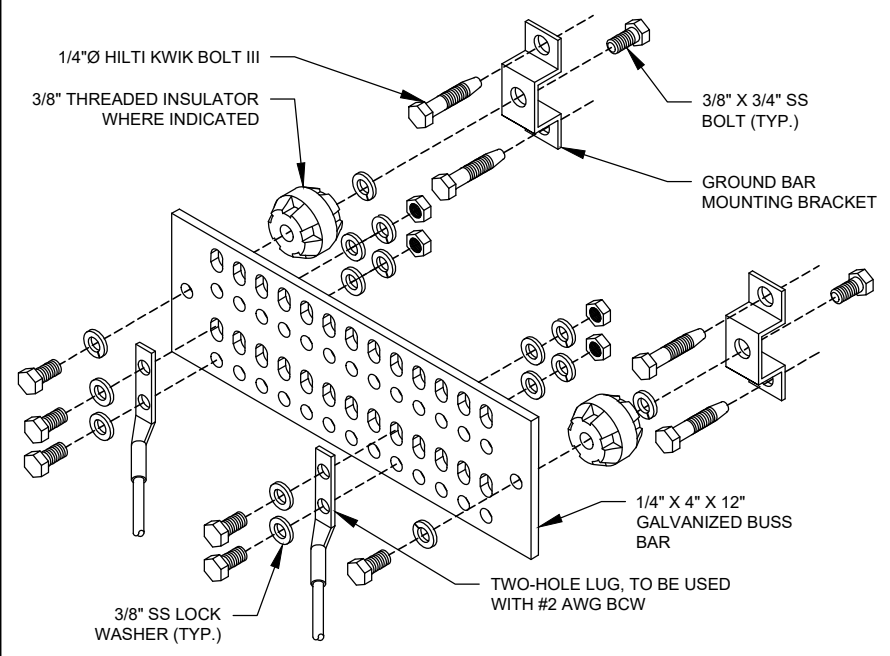
**2** CABLE GROUND KIT CONNECTION DETAIL  
SCALE: N.T.S.



**GROUND BAR NOTES:**

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

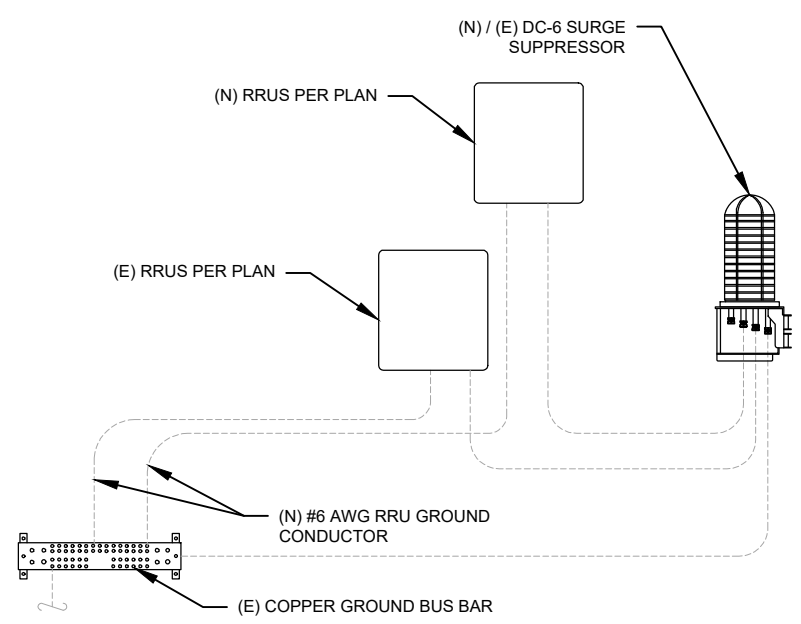
**3** TOWER GROUND BAR DETAIL  
SCALE: N.T.S.



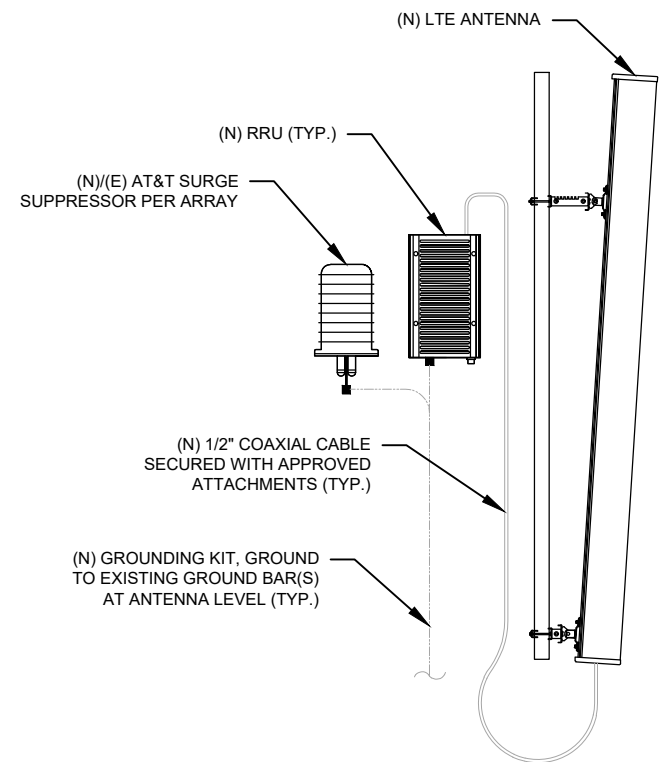
**GROUND BAR NOTES**

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

**4** MAIN GROUND BAR DETAIL  
SCALE: N.T.S.



**5** RRU GROUNDING  
SCALE: N.T.S.



**6** ANTENNA/RRU GROUNDING  
SCALE: N.T.S.



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TEL: (978) 557-5553 FAX: (978) 336-5586

REV.	DESCRIPTION	BY	DATE
A	PRELIM	AB	03/28/22

ATC SITE NUMBER:  
**370624**

ATC SITE NAME:  
**MANKES SILO**

AT&T SITE NAME:  
**CHESHIRE TOWER FARMS**

SITE ADDRESS:  
1338 HIGHLAND AVE  
CHESHIRE, CT 06410-0000

SEAL:

**PRELIMINARY:  
NOT FOR  
CONSTRUCTION**



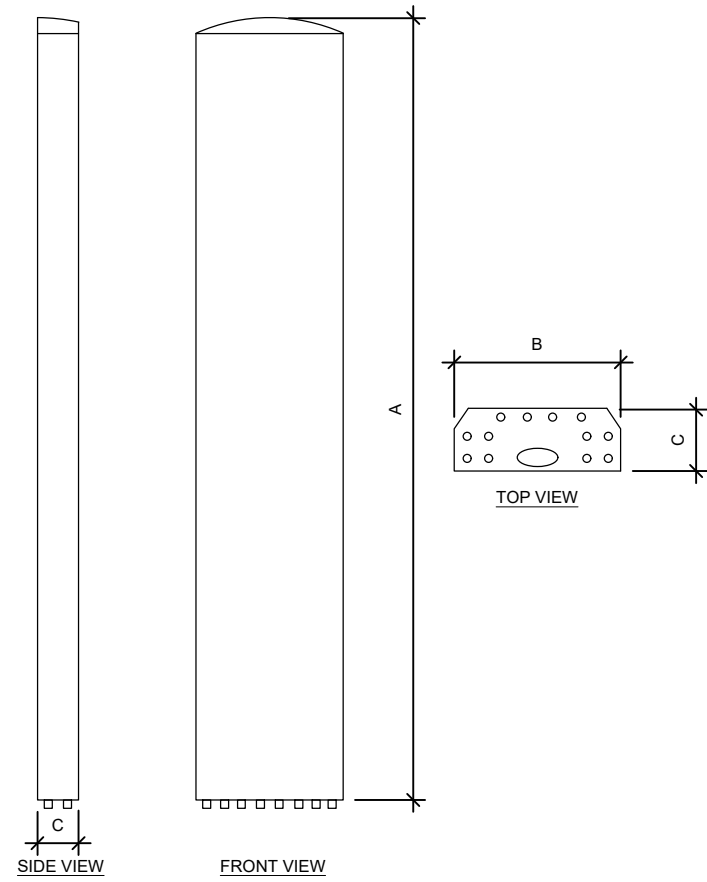
DATE DRAWN:	03/28/22
ATC JOB NO:	13754283_G5
CUSTOMER ID:	CTL02038
CUSTOMER #:	10035232

**GROUNDING DETAILS**

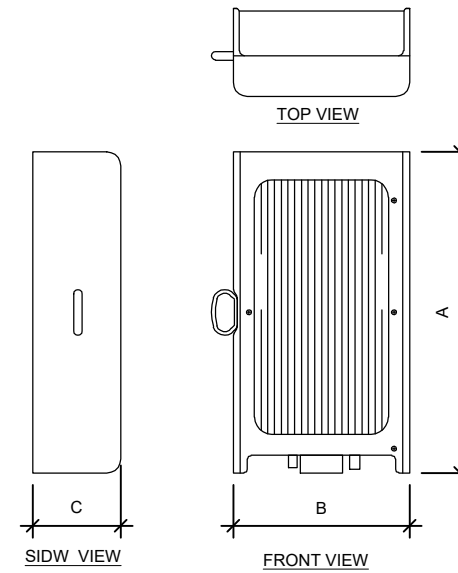
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REVISION:  
**A**

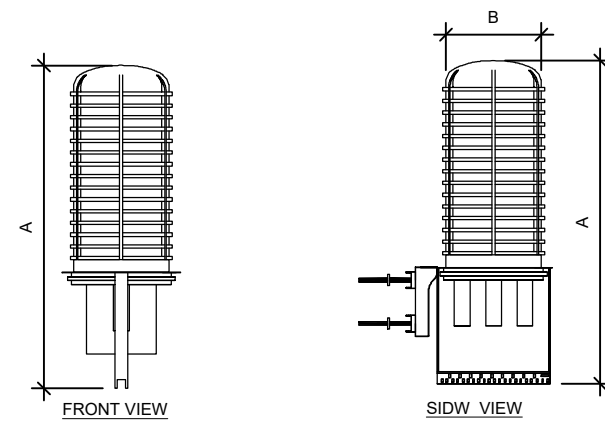
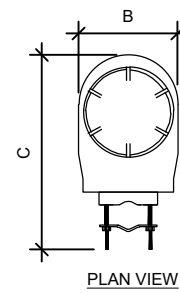
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ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
Air 6449 B77D	30.4"	15.9"	8.1"	81.6
AIR 6419 B77G	28.3"	16.1"	7.9"	66.1
DMP65R-BU8EA-K	96"	20.7"	7.7"	126.8
DMP65R-BU6EA-K	71.2"	20.7"	9.7"	103.8



RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
8843 B2, B66A	14.9"	13.2"	10.9"	72.0
4478 B14	18.1"	13.4"	8.3"	59.4



RAYCAP SPECIFICATIONS				
RAYCAP MODEL	A	B	C	WEIGHT (LBS)
DC9-48-60-24-8C-EV	31.4"	18.3"	10.2"	16.0

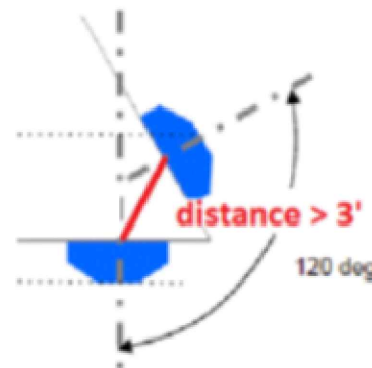
**1** EQUIPMENT SPECIFICATIONS  
SCALE: N.T.S.

SUPPLEMENTAL

SHEET NUMBER: **R-601**  
REVISION: **A**

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

- ❑ Horizontal separation (side to side of antenna):  $\geq 3'$
- ❑ Vertical separation (between the tips of the antennas):  $> 3'$
- ❑ Inter-sector separation:  $> 3'$  between the center of the antenna backplanes.



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



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

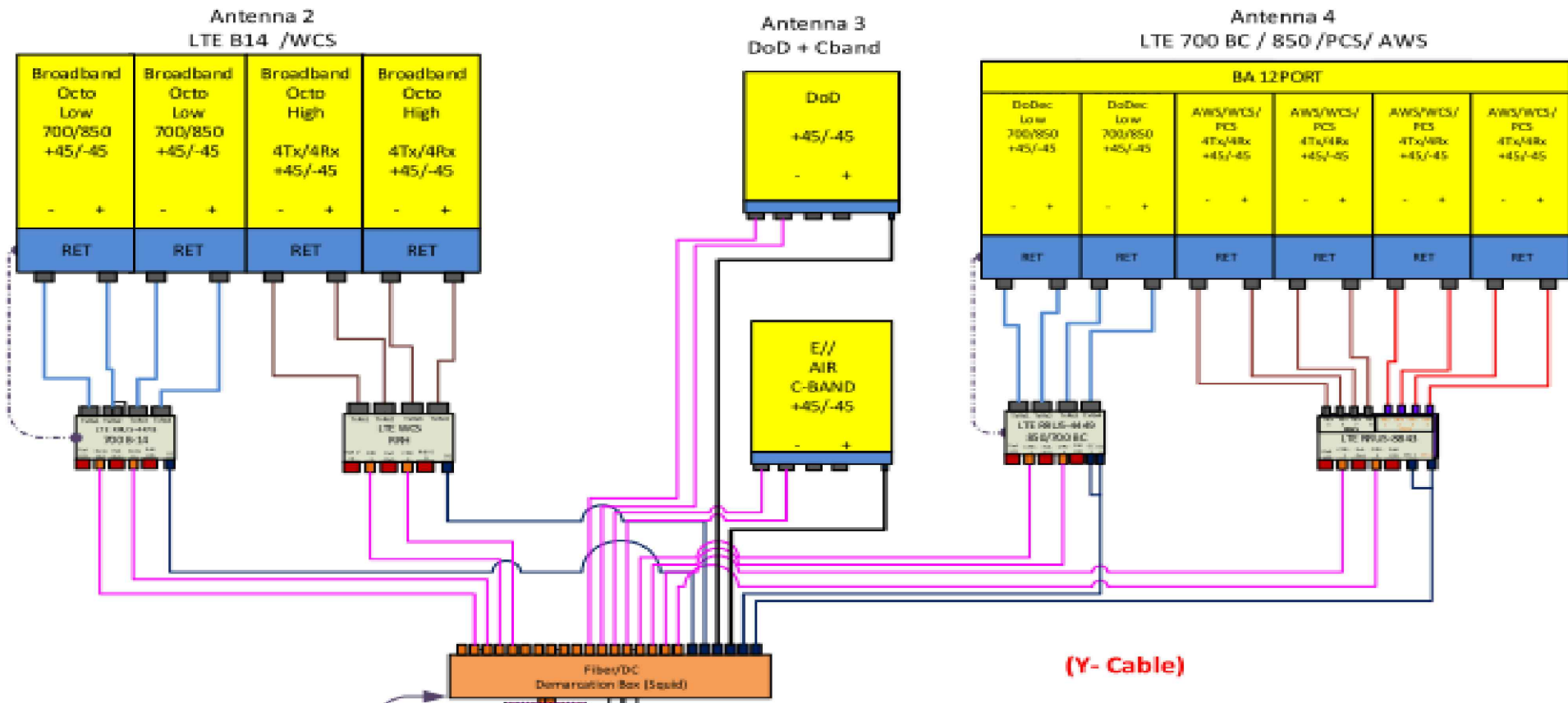
SUPPLEMENTAL

SHEET NUMBER:  
**R-602**

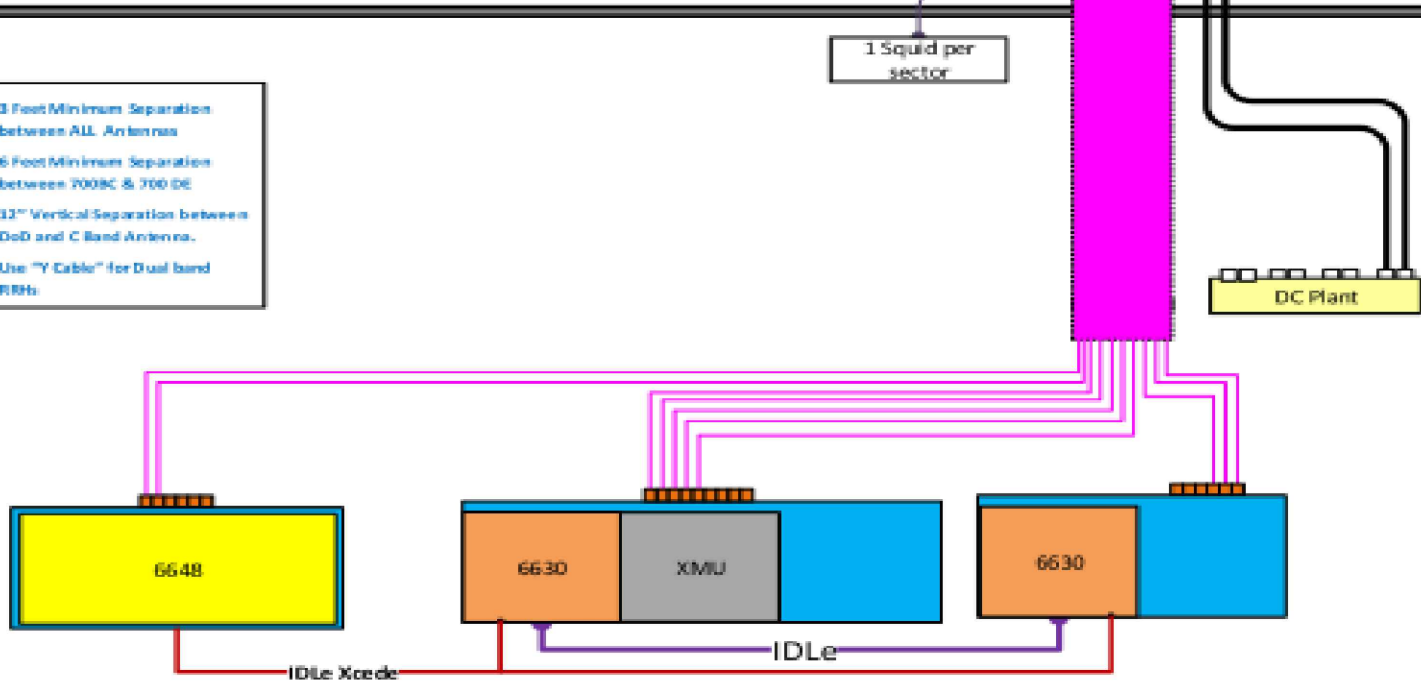
REVISION:  
**A**



ANTENNA POSITION 1  
 EMPTY



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



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

SUPPLEMENTAL	
SHEET NUMBER: <b>R-603</b>	REVISION: <b>A</b>



# Radio Frequency Exposure Analysis Report

July 6, 2022

American Tower on behalf of AT&T  
Centerline Communications Project Number: 950035-008

AT&T Site Name: Mankes Silo  
Site Number: CTL02038/370624  
FA#: 10035232  
USID: 61169

Site Address: 1338 HIGHLAND AVENUE, CHESHIRE, CT 06410

## Site Compliance Summary

---

AT&T Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	99.40805 $\mu\text{W}/\text{cm}^2$
Cumulative General Population % MPE (Ground Level):	9.9453700000000005%



July 6, 2022

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

#### RF Exposure Analysis for Site: **Mankes Silo**

Centerline Communications, LLC ("Centerline") was contracted to analyze the proposed AT&T facility at **1338 HIGHLAND AVENUE, CHESHIRE, CT 06410** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

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

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the MPE limits for General Population/Uncontrolled environments as defined below.

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

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



## **Calculation Methodology**

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

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



## **Data & Results**

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

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

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



**Maximum Calculated Cumulative Power Density (Location: approximately 120' west of site)**

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/Channel (watts)	ERP (watts)	Calculated Power Density ( $\mu\text{W}/\text{cm}^2$ )	General Population MPE Limit ( $\mu\text{W}/\text{cm}^2$ )	General Population % MPE
AT&T A 1	KATHREIN 80010966	700	12.95	54.00	4.00	30.00	2366.91	0.00016	466.67	0.00004
AT&T A 1	KATHREIN 80010966	2300	16.05	54.00	4.00	18.00	2899.56	0.00001	1000.00	0.00000
AT&T A 2	Ericsson AIR6449	3700	23.45	52.00	1.00	108.40	23989.95	0.00054	1000.00	0.00005
AT&T A 3	Ericsson AIR6419	3450	23.45	56.00	1.00	108.40	23989.95	0.00049	1000.00	0.00005
AT&T A 4	CCI DMP65R-BU8E	700	12.45	54.00	4.00	30.00	2109.51	0.00000	466.67	0.00000
AT&T A 4	CCI DMP65R-BU8E	850	13.15	54.00	4.00	30.00	2478.46	0.00001	566.67	0.00000
AT&T A 4	CCI DMP65R-BU8E	1900	15.85	54.00	4.00	30.00	4615.10	0.00002	1000.00	0.00000
AT&T A 4	CCI DMP65R-BU8E	2100	15.85	54.00	4.00	30.00	4615.10	0.00002	1000.00	0.00000
AT&T B 5	KATHREIN 80010965	700	11.85	54.00	4.00	30.00	1837.30	0.00006	466.67	0.00001
AT&T B 5	KATHREIN 80010965	2300	15.75	54.00	4.00	18.00	2706.03	0.00000	1000.00	0.00000
AT&T B 6	Ericsson AIR6449	3700	23.45	52.00	1.00	108.40	23989.95	0.00047	1000.00	0.00005
AT&T B 7	Ericsson AIR6419	3450	23.45	56.00	1.00	108.40	23989.95	0.00043	1000.00	0.00004
AT&T B 8	CCI DMP65R-BU6E	700	11.75	54.00	4.00	30.00	1795.48	0.00001	466.67	0.00000
AT&T B 8	CCI DMP65R-BU6E	850	11.95	54.00	4.00	30.00	1880.10	0.00000	566.67	0.00000
AT&T B 8	CCI DMP65R-BU6E	1900	15.45	54.00	4.00	30.00	4209.02	0.00000	1000.00	0.00000
AT&T B 8	CCI DMP65R-BU6E	2100	15.95	54.00	4.00	30.00	4722.60	0.00001	1000.00	0.00000
AT&T C 9	KATHREIN 80010966	700	12.95	54.00	4.00	30.00	2366.91	0.01931	466.67	0.00414
AT&T C 9	KATHREIN 80010966	2300	16.05	54.00	4.00	18.00	2899.56	0.00745	1000.00	0.00074
AT&T C 10	Ericsson AIR6449	3700	23.45	52.00	1.00	108.40	23989.95	0.06628	1000.00	0.00663
AT&T C 11	Ericsson AIR6419	3450	23.45	56.00	1.00	108.40	23989.95	0.04521	1000.00	0.00452
AT&T C 12	CCI DMP65R-BU8E	700	12.45	54.00	4.00	30.00	2109.51	0.01078	466.67	0.00231
AT&T C 12	CCI DMP65R-BU8E	850	13.15	54.00	4.00	30.00	2478.46	0.01439	566.67	0.00254
AT&T C 12	CCI DMP65R-BU8E	1900	15.85	54.00	4.00	30.00	4615.10	0.01358	1000.00	0.00136
AT&T C 12	CCI DMP65R-BU8E	2100	15.85	54.00	4.00	30.00	4615.10	0.01525	1000.00	0.00153
							<b>Cumulative Power Density:</b>	<b>99.40805 <math>\mu\text{W}/\text{cm}^2</math></b>	<b>Cumulative % MPE:</b>	<b>9.94537%</b>



## Summary

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

Katrina Styx  
RF EME Technical Writer  
Centerline Communications, LLC

A handwritten signature in black ink, appearing to read "Katrina Styx", is positioned below the typed name and title.



**AMERICAN TOWER®**  
CORPORATION

This report was prepared for American Tower Corporation by



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## Structural Analysis Report

**Structure** : **78 ft Concealed Silo Tower**

**ATC Site Name** : **Mankes Silo,CT**

**ATC Site Number** : **370624**

**Engineering Number** : **13754283\_C3\_04**

**Proposed Carrier** : **AT&T MOBILITY**

**Carrier Site Name** : **MRCTB056344**

**Carrier Site Number** : **CTL02038**

**Site Location** : **1338 Highland Ave**  
**Cheshire, CT 06410-0000**  
**41.5369, -72.8933**

**County** : **New Haven**

**Date** : **March 3, 2022**

**Max Usage** : **45%**

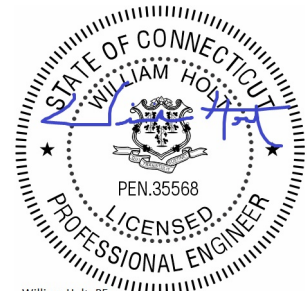
**Result** : **Pass**

Prepared By:

Sean Rock, E.I.  
CLS

Reviewed By:

Digitally signed by  
William Holt  
Date: 2022.03.04  
21:35:54 -05'00'



William Holt, PE  
Director of Engineering  
License No. 35568 Expires: 01/31/2023





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## **Introduction**

The purpose of this report is to summarize results of a structural analysis performed on the 78 ft Concealed Silo Tower to reflect the change in loading by AT&T MOBILITY.

## **Supporting Documents**

<b>Tower Drawings</b>	Mapping by Structural Components Job #140862, dated October 17, 2014
<b>Foundation Drawing</b>	Mapping by Structural Components Job #140862, dated October 17, 2014

## **Analysis**

The tower was analyzed using RISA-3D analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

<b>Basic Wind Speed:</b>	118 mph (3-second gust)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-second gust) w/ 1.00" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	B
<b>Risk Category:</b>	II
<b>Topographic Factor Procedure:</b>	Method 1
<b>Topographic Category:</b>	1
<b>Crest Height (H):</b>	0 ft
<b>Crest Length (L):</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.20$ , $S_i = 0.06$
<b>Site Class:</b>	D - Stiff Soil - Default

## **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.

### Existing and Reserved Equipment

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
70.0	3	Samsung B2/B66A RRH-BR049	Sector Frame	(2) 1 1/4" Hybriflex Cable	VERIZON WIRELESS
	3	Samsung B5/B13 RRH-BR04C			
	1	RFS DB-T1-6Z-8AB-0Z			
	3	Commscope SBNHH-1D65B (40.6 lbs)			
	9	Commscope SBNHH-1D65B (40.6 lbs)			
57.0	3	Ericsson Radio 4449 B71 B85A	Sector Frame	(3) 1 5/8" Hybriflex (3) 7/8" (0.88"-22.2mm) Fiber	T-MOBILE
	3	RFS APXVAALL24 43-U-NA20			
	6	Ericsson AIR 21, 1.3 M, B2A B4P			
54.0	2	Raycap DC6-48-60-18-8F ("Squid")	Sector Frame	-	AT&T MOBILITY
	1	Kathrein Scala 80010965			
	3	Ericsson RRUS 4449 B5, B12			
	2	Kathrein Scala 80010966			

### Equipment to be Removed

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
54.0	6	Kathrein Scala 860 10025	-	(2) 0.39" (10mm) Fiber Trunk (4) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Coax (6) 1/2" Coax (1) 3" conduit (1) 3/8" (0.38"-9.5mm) RET Control Cable	AT&T MOBILITY
	6	Powerwave Allgon LGP21901			
	3	CCI DTMAPB7819VG12A			
	6	Powerwave Allgon LGP21401			
	1	CCI HPA-65R-BUU-H8			
	3	Ericsson RRUS 12 w/ RRUS A2			
	3	KMW AM-X-CD-16-65-00T-RET			
	2	CCI HPA-65R-BUU-H6			
	3	Ericsson Radio 4415 B30			

### Proposed Equipment

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
56.0	3	Ericsson AIR 6419 B77G	Sector Frame	(3) 0.40" (10.3mm) Fiber (4) 0.82" (20.8mm) 8 AWG 6 (2) 0.92" (23.4mm) Cable (12) 7/8" Coax	AT&T MOBILITY
54.0	3	Ericsson RRUS 8843 B2, B66A			
	3	Ericsson RRUS 4415 B30			
	3	Ericsson RRUS 4478 B14			
	1	Raycap DC9-48-60-24-8C-EV			
	1	CCI DMP65R-BU6E			
52.0	3	Ericsson Air 6449 B77D			

<sup>1</sup> Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.



### **Structure Usage**

Structural Component	Controlling Usage	Pass/Fail
Legs	4%	Pass
Diagonals	13%	Pass
Horizontals	20%	Pass
Concrete	18%	Pass

### **Foundation**

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	1392.2	34%
Axial (Kips)	494.5	45%
Shear (Kips)	34.2	25%

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 Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

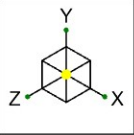
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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

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

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

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



Envelope Only Solution

CLS	370624 - Mankes Silo, CT	SK-1
PSP		Mar 04, 2022
13754283_C3_04		Mankes Silo, 370624-WT1 (13754...

**Basic Load Cases**

	BLC Description	Category	Y Gravity	Nodal	Distributed
1	Dead	DL	-1	16	
2	Wind Load Z	WLZ		8	
3	Wind Load X	WLX		8	
4	Partial Z Wind Load 1	WLZP1		8	
5	Partial Z Wind Load 2	WLZP2		8	
6	Partial X Wind Load 1	WLXP1		8	
7	Partial X Wind Load 2	WLXP2		8	
8	Earthquake Load Z	ELZ		8	
9	Earthquake Load X	ELX		8	
10	Earthquake Load Z Plus X Eccentr	ELZ+X		8	
11	Earthquake Load Z Minus X Eccent	ELZ-X		8	
12	Earthquake Load X Plus Z Eccentr	ELX+Z		8	
13	Earthquake Load X Minus Z Eccent	ELX-Z		8	
14	DA Weight	DL		9	
15	LA Weight	DL			4

**Load Combinations**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.0D	Yes	Y	DL	1						
2	1.4D	Yes	Y	DL	1.4						
3	IBC 16-3 (b) (a)	Yes	Y	DL	1.2	WLX	0.5				
4	IBC 16-3 (b) (b)	Yes	Y	DL	1.2	WLXP1	0.5				
5	IBC 16-3 (b) (c)	Yes	Y	DL	1.2	WLXP2	0.5				
6	IBC 16-3 (b) (d)	Yes	Y	DL	1.2	WLZ	0.5				
7	IBC 16-3 (b) (e)	Yes	Y	DL	1.2	WLZP1	0.5				
8	IBC 16-3 (b) (f)	Yes	Y	DL	1.2	WLZP2	0.5				
9	1.2D + 1.0W AZI 000	Yes	Y	DL	1.2	WLX	1	LL	0.5	LLS	1
10	IBC 16-4 (a) (b)	Yes	Y	DL	1.2	WLXP1	1	LL	0.5	LLS	1
11	IBC 16-4 (a) (c)	Yes	Y	DL	1.2	WLXP2	1	LL	0.5	LLS	1
12	1.2D + 1.0W AZI 090	Yes	Y	DL	1.2	WLZ	1	LL	0.5	LLS	1
13	IBC 16-4 (a) (e)	Yes	Y	DL	1.2	WLZP1	1	LL	0.5	LLS	1
14	IBC 16-4 (a) (f)	Yes	Y	DL	1.2	WLZP2	1	LL	0.5	LLS	1
15	IBC 16-6 (a)	Yes	Y	DL	0.9	WLX	1				
16	IBC 16-6 (b)	Yes	Y	DL	0.9	WLXP1	1				
17	IBC 16-6 (c)	Yes	Y	DL	0.9	WLXP2	1				
18	IBC 16-6 (d)	Yes	Y	DL	0.9	WLZ	1				
19	IBC 16-6 (e)	Yes	Y	DL	0.9	WLZP1	1				
20	IBC 16-6 (f)	Yes	Y	DL	0.9	WLZP2	1				
21	DEFL		Y	DL	1.2	WLX	0.352				

**Hot Rolled Steel Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e <sup>5</sup> F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.49	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.49	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	Link	1e+06		0.3	0.65	0	36	1.5	58	1.2

**Hot Rolled Steel Section Sets**

	Label	Shape	Type	Design List	Material	Design Rule	Area [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]
1	H1	W8X18	Beam	Wide Flange	A992	Typical	5.26	7.97	61.9	0.172
2	H2	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	0.031
3	H3	L4X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.69	1.33	2.75	0.039
4	H4	LL3.5x3.5x5x3	Beam	Double Angle (No Gap)	A36 Gr.36	Typical	4.2	10.6	4.88	0.146
5	H5	L4X4X4	Beam	Single Angle	A36 Gr.36	Typical	1.93	3	3	0.044
6	H6	LL3.5x3.5x5x3	Beam	Single Angle	A36 Gr.36	Typical	4.2	10.6	4.88	0.146
7	Column1	HSS5x0.500	Beam	HSS Pipe	A36 Gr.36	Typical	6.62	17.2	17.2	34.4
8	Column2	HSS5.563X0.375	Beam	HSS Pipe	A36 Gr.36	Typical	5.72	19.5	19.5	39
9	V1	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	0.031

**Hot Rolled Steel Design Parameters**

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	Lcomp top [ft]	K y-y	K z-z	Function
1	M7	H1	5.464			Lbyy	2	2	Lateral
2	M8	H1	5.464			Lbyy	2	2	Lateral
3	M9	H1	5.464			Lbyy	2	2	Lateral
4	M10	H1	5.464			Lbyy	2	2	Lateral
5	M11	H1	5.464			Lbyy	2	2	Lateral
6	M12	H1	5.464			Lbyy	2	2	Lateral
7	M13	Column1	0.802			Lbyy			Lateral
8	M14	Column1	0.255			Lbyy			Lateral
9	M15	Column1	0.802			Lbyy			Lateral
10	M16	Column1	0.255			Lbyy			Lateral
11	M17	Column1	0.802			Lbyy			Lateral
12	M18	Column1	0.255			Lbyy			Lateral
13	M19	Column1	3.792			Lbyy			Lateral
14	M20	Column1	3.792			Lbyy			Lateral
15	M21	Column1	2.313			Lbyy			Lateral
16	M22	Column1	5			Lbyy			Lateral
17	M23	Column1	2.719			Lbyy			Lateral
18	M24	Column1	3.792			Lbyy			Lateral
19	M25	Column1	3.792			Lbyy			Lateral
20	M26	Column1	2.313			Lbyy			Lateral
21	M27	Column1	5			Lbyy			Lateral
22	M28	Column1	2.719			Lbyy			Lateral
23	M29	Column1	3.792			Lbyy			Lateral
24	M30	Column1	2.313			Lbyy			Lateral
25	M31	Column1	5			Lbyy			Lateral
26	M32	Column1	2.719			Lbyy			Lateral
27	M33	Column1	3.792			Lbyy			Lateral
28	M34	H2	13.67			Lbyy			Lateral
29	M35	H2	13.67			Lbyy	0.65	0.65	Lateral
30	M36	H2	13.67			Lbyy	0.65	0.65	Lateral
31	M37	H2	13.67			Lbyy			Lateral
32	M38	H2	13.67			Lbyy	0.9	0.9	Lateral
33	M39	H2	13.67			Lbyy			Lateral
34	M40	H3	11.278			Lbyy	0.9	0.9	Lateral
35	M41	H3	11.278			Lbyy			Lateral
36	M42	H3	11.278			Lbyy			Lateral
37	M43	H3	11.278			Lbyy			Lateral
38	M44	H3	11.278			Lbyy			Lateral
39	M45	H3	11.278			Lbyy			Lateral
40	M46	H3	1			Lbyy			Lateral
41	M47	H3	1			Lbyy			Lateral
42	M48	H3	1			Lbyy			Lateral



**Hot Rolled Steel Design Parameters (Continued)**

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	Lcomp top [ft]	K y-y	K z-z	Function
43	M49	H3	1			Lbyy			Lateral
44	M50	H3	1			Lbyy			Lateral
45	M51	H3	1			Lbyy			Lateral
46	M52	H3	4.5			Lbyy			Lateral
47	M53	H3	4.5			Lbyy			Lateral
48	M54	H3	1.278			Lbyy			Lateral
49	M55	H3	4.5			Lbyy			Lateral
50	M56	H3	4.5			Lbyy			Lateral
51	M57	H3	1.278			Lbyy			Lateral
52	M58	H3	4.5			Lbyy			Lateral
53	M59	H3	4.5			Lbyy			Lateral
54	M60	H3	1.278			Lbyy			Lateral
55	M61	H3	4.5			Lbyy			Lateral
56	M62	H3	4.5			Lbyy			Lateral
57	M63	H3	1.278			Lbyy			Lateral
58	M64	H3	4.5			Lbyy			Lateral
59	M65	H3	4.5			Lbyy			Lateral
60	M66	H3	1.278			Lbyy			Lateral
61	M67	H3	4.5			Lbyy			Lateral
62	M68	H3	4.5			Lbyy			Lateral
63	M69	H3	1.278			Lbyy			Lateral
64	M70	V1	5			Lbyy			Lateral
65	M71	V1	5			Lbyy			Lateral
66	M72	V1	5			Lbyy			Lateral
67	M73	V1	5			Lbyy			Lateral
68	M74	V1	5			Lbyy			Lateral
69	M75	V1	5			Lbyy			Lateral
70	M76	V1	5			Lbyy			Lateral
71	M77	V1	5			Lbyy			Lateral
72	M78	V1	5			Lbyy			Lateral
73	M79	V1	6.727			Lbyy			Lateral
74	M80	V1	6.727			Lbyy			Lateral
75	M81	V1	6.727			Lbyy			Lateral
76	M82	V1	6.727			Lbyy			Lateral
77	M83	V1	6.727			Lbyy			Lateral
78	M84	V1	6.727			Lbyy			Lateral
79	M85	H5	14.722			Lbyy			Lateral
80	M86	H5	14.722			Lbyy			Lateral
81	M87	H5	14.722			Lbyy			Lateral
82	M88	H6	0.742	17.802	17.802	Lbyy			Lateral
83	M89	H6	0.742	17.802	17.802	Lbyy			Lateral
84	M90	H6	0.742	17.802	17.802	Lbyy			Lateral
85	M91	H6	0.742	17.802	17.802	Lbyy			Lateral
86	M92	H6	0.742	17.802	17.802	Lbyy			Lateral
87	M93	H6	0.742	17.802	17.802	Lbyy			Lateral
88	M94	H6	0.742	17.802	17.802	Lbyy			Lateral
89	M95	H6	0.742	17.802	17.802	Lbyy			Lateral
90	M96	H6	0.742	17.802	17.802	Lbyy			Lateral
91	M97	H6	0.742	17.802	17.802	Lbyy			Lateral
92	M98	H6	0.742	17.802	17.802	Lbyy			Lateral
93	M99	H6	0.742	17.802	17.802	Lbyy			Lateral
94	M100	H6	0.742	17.802	17.802	Lbyy			Lateral
95	M101	H6	0.742	17.802	17.802	Lbyy			Lateral
96	M102	H6	0.742	17.802	17.802	Lbyy			Lateral
97	M103	H6	0.742	17.802	17.802	Lbyy			Lateral

**Hot Rolled Steel Design Parameters (Continued)**

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	Lcomp top [ft]	K y-y	K z-z	Function
98	M104	H6	0.742	17.802	17.802	Lbyy			Lateral
99	M105	H6	0.742	17.802	17.802	Lbyy			Lateral
100	M106	H6	0.742	17.802	17.802	Lbyy			Lateral
101	M107	H6	0.742	17.802	17.802	Lbyy			Lateral
102	M108	H6	0.742	17.802	17.802	Lbyy			Lateral
103	M109	H6	0.742	17.802	17.802	Lbyy			Lateral
104	M110	H6	0.742	17.802	17.802	Lbyy			Lateral
105	M111	H6	0.742	17.802	17.802	Lbyy			Lateral
106	M112	H6	0.742	17.802	17.802	Lbyy			Lateral
107	M113	H6	0.742	17.802	17.802	Lbyy			Lateral
108	M114	H6	0.742	17.802	17.802	Lbyy			Lateral
109	M115	H6	0.742	17.802	17.802	Lbyy			Lateral
110	M116	H6	0.742	17.802	17.802	Lbyy			Lateral
111	M117	H6	0.742	17.802	17.802	Lbyy			Lateral
112	M118	H6	0.742	17.802	17.802	Lbyy			Lateral
113	M119	H6	0.742	17.802	17.802	Lbyy			Lateral
114	M120	H6	0.742	17.802	17.802	Lbyy			Lateral
115	M121	H6	0.742	17.802	17.802	Lbyy			Lateral
116	M122	H6	0.742	17.802	17.802	Lbyy			Lateral
117	M123	H6	0.742	17.802	17.802	Lbyy			Lateral
118	M124	H6	0.742	17.802	17.802	Lbyy			Lateral
119	M125	H6	0.742	17.802	17.802	Lbyy			Lateral
120	M126	H6	0.742	17.802	17.802	Lbyy			Lateral
121	M127	H6	0.742	17.802	17.802	Lbyy			Lateral
122	M128	H6	0.742	17.802	17.802	Lbyy			Lateral
123	M129	H6	0.742	17.802	17.802	Lbyy			Lateral
124	M130	H6	0.742	17.802	17.802	Lbyy			Lateral
125	M131	H6	0.742	17.802	17.802	Lbyy			Lateral
126	M132	H6	0.742	17.802	17.802	Lbyy			Lateral
127	M133	H6	0.742	17.802	17.802	Lbyy			Lateral
128	M134	H6	0.742	17.802	17.802	Lbyy			Lateral
129	M135	H6	0.742	17.802	17.802	Lbyy			Lateral
130	M136	H6	0.742	17.802	17.802	Lbyy			Lateral
131	M137	H6	0.742	17.802	17.802	Lbyy			Lateral
132	M138	H6	0.742	17.802	17.802	Lbyy			Lateral
133	M139	H6	0.742	17.802	17.802	Lbyy			Lateral
134	M140	H6	0.742	17.802	17.802	Lbyy			Lateral
135	M141	H6	0.742	17.802	17.802	Lbyy			Lateral
136	M142	H6	0.742	17.802	17.802	Lbyy			Lateral
137	M143	H6	0.742	17.802	17.802	Lbyy			Lateral
138	M144	H6	0.742	17.802	17.802	Lbyy			Lateral
139	M145	H6	0.742	17.802	17.802	Lbyy			Lateral
140	M146	H6	0.742	17.802	17.802	Lbyy			Lateral
141	M147	H6	0.742	17.802	17.802	Lbyy			Lateral
142	M148	H6	0.742	17.802	17.802	Lbyy			Lateral
143	M149	H6	0.742	17.802	17.802	Lbyy			Lateral
144	M150	H6	0.742	17.802	17.802	Lbyy			Lateral
145	M151	H6	0.742	17.802	17.802	Lbyy			Lateral
146	M152	H6	0.742	17.802	17.802	Lbyy			Lateral
147	M153	H6	0.742	17.802	17.802	Lbyy			Lateral
148	M154	H6	0.742	17.802	17.802	Lbyy			Lateral
149	M155	H6	0.742	17.802	17.802	Lbyy			Lateral
150	M156	H6	0.742	17.802	17.802	Lbyy			Lateral
151	M157	H6	0.742	17.802	17.802	Lbyy			Lateral
152	M158	H6	0.742	17.802	17.802	Lbyy			Lateral

**Hot Rolled Steel Design Parameters (Continued)**

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	Lcomp top [ft]	K y-y	K z-z	Function
153	M159	H6	0.742	17.802	17.802	Lbyy			Lateral
154	M160	H2	11.278			Lbyy			Lateral
155	M161	H2	11.278			Lbyy			Lateral
156	M162	H2	11.278			Lbyy			Lateral
157	M163	H5	14.722			Lbyy			Lateral
158	M164	H5	14.722			Lbyy			Lateral
159	M165	H5	14.722			Lbyy			Lateral
160	M166	H6	0.742	17.802	17.802	Lbyy			Lateral
161	M167	H6	0.742	17.802	17.802	Lbyy			Lateral
162	M168	H6	0.742	17.802	17.802	Lbyy			Lateral
163	M169	H6	0.742	17.802	17.802	Lbyy			Lateral
164	M170	H6	0.742	17.802	17.802	Lbyy			Lateral
165	M171	H6	0.742	17.802	17.802	Lbyy			Lateral
166	M172	H6	0.742	17.802	17.802	Lbyy			Lateral
167	M173	H6	0.742	17.802	17.802	Lbyy			Lateral
168	M174	H6	0.742	17.802	17.802	Lbyy			Lateral
169	M175	H6	0.742	17.802	17.802	Lbyy			Lateral
170	M176	H6	0.742	17.802	17.802	Lbyy			Lateral
171	M177	H6	0.742	17.802	17.802	Lbyy			Lateral
172	M178	H6	0.742	17.802	17.802	Lbyy			Lateral
173	M179	H6	0.742	17.802	17.802	Lbyy			Lateral
174	M180	H6	0.742	17.802	17.802	Lbyy			Lateral
175	M181	H6	0.742	17.802	17.802	Lbyy			Lateral
176	M182	H6	0.742	17.802	17.802	Lbyy			Lateral
177	M183	H6	0.742	17.802	17.802	Lbyy			Lateral
178	M184	H6	0.742	17.802	17.802	Lbyy			Lateral
179	M185	H6	0.742	17.802	17.802	Lbyy			Lateral
180	M186	H6	0.742	17.802	17.802	Lbyy			Lateral
181	M187	H6	0.742	17.802	17.802	Lbyy			Lateral
182	M188	H6	0.742	17.802	17.802	Lbyy			Lateral
183	M189	H6	0.742	17.802	17.802	Lbyy			Lateral
184	M190	H6	0.742	17.802	17.802	Lbyy			Lateral
185	M191	H6	0.742	17.802	17.802	Lbyy			Lateral
186	M192	H6	0.742	17.802	17.802	Lbyy			Lateral
187	M193	H6	0.742	17.802	17.802	Lbyy			Lateral
188	M194	H6	0.742	17.802	17.802	Lbyy			Lateral
189	M195	H6	0.742	17.802	17.802	Lbyy			Lateral
190	M196	H6	0.742	17.802	17.802	Lbyy			Lateral
191	M197	H6	0.742	17.802	17.802	Lbyy			Lateral
192	M198	H6	0.742	17.802	17.802	Lbyy			Lateral
193	M199	H6	0.742	17.802	17.802	Lbyy			Lateral
194	M200	H6	0.742	17.802	17.802	Lbyy			Lateral
195	M201	H6	0.742	17.802	17.802	Lbyy			Lateral
196	M202	H6	0.742	17.802	17.802	Lbyy			Lateral
197	M203	H6	0.742	17.802	17.802	Lbyy			Lateral
198	M204	H6	0.742	17.802	17.802	Lbyy			Lateral
199	M205	H6	0.742	17.802	17.802	Lbyy			Lateral
200	M206	H6	0.742	17.802	17.802	Lbyy			Lateral
201	M207	H6	0.742	17.802	17.802	Lbyy			Lateral
202	M208	H6	0.742	17.802	17.802	Lbyy			Lateral
203	M209	H6	0.742	17.802	17.802	Lbyy			Lateral
204	M210	H6	0.742	17.802	17.802	Lbyy			Lateral
205	M211	H6	0.742	17.802	17.802	Lbyy			Lateral
206	M212	H6	0.742	17.802	17.802	Lbyy			Lateral
207	M213	H6	0.742	17.802	17.802	Lbyy			Lateral

**Hot Rolled Steel Design Parameters (Continued)**

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	Lcomp top [ft]	K y-y	K z-z	Function
208	M214	H6	0.742	17.802	17.802	Lbyy			Lateral
209	M215	H6	0.742	17.802	17.802	Lbyy			Lateral
210	M216	H6	0.742	17.802	17.802	Lbyy			Lateral
211	M217	H6	0.742	17.802	17.802	Lbyy			Lateral
212	M218	H6	0.742	17.802	17.802	Lbyy			Lateral
213	M219	H6	0.742	17.802	17.802	Lbyy			Lateral
214	M220	H6	0.742	17.802	17.802	Lbyy			Lateral
215	M221	H6	0.742	17.802	17.802	Lbyy			Lateral
216	M222	H6	0.742	17.802	17.802	Lbyy			Lateral
217	M223	H6	0.742	17.802	17.802	Lbyy			Lateral
218	M224	H6	0.742	17.802	17.802	Lbyy			Lateral
219	M225	H6	0.742	17.802	17.802	Lbyy			Lateral
220	M226	H6	0.742	17.802	17.802	Lbyy			Lateral
221	M227	H6	0.742	17.802	17.802	Lbyy			Lateral
222	M228	H6	0.742	17.802	17.802	Lbyy			Lateral
223	M229	H6	0.742	17.802	17.802	Lbyy			Lateral
224	M230	H6	0.742	17.802	17.802	Lbyy			Lateral
225	M231	H6	0.742	17.802	17.802	Lbyy			Lateral
226	M232	H6	0.742	17.802	17.802	Lbyy			Lateral
227	M233	H6	0.742	17.802	17.802	Lbyy			Lateral
228	M234	H6	0.742	17.802	17.802	Lbyy			Lateral
229	M235	H6	0.742	17.802	17.802	Lbyy			Lateral
230	M236	H6	0.742	17.802	17.802	Lbyy			Lateral
231	M237	H6	0.742	17.802	17.802	Lbyy			Lateral
232	M238	Column2	2.542			Lbyy			Lateral
233	M239	Column2	4.667			Lbyy			Lateral
234	M240	Column2	3.042			Lbyy			Lateral
235	M241	Column2	2.542			Lbyy			Lateral
236	M242	Column2	4.667			Lbyy			Lateral
237	M243	Column2	3.042			Lbyy			Lateral
238	M244	Column2	2.542			Lbyy			Lateral
239	M245	Column2	4.667			Lbyy			Lateral
240	M246	Column2	3.042			Lbyy			Lateral
241	M247	H3	1			Lbyy			Lateral
242	M248	H3	1			Lbyy			Lateral
243	M249	H3	1			Lbyy			Lateral
244	M250	H3	1			Lbyy			Lateral
245	M251	H3	1			Lbyy			Lateral
246	M252	H3	1			Lbyy			Lateral
247	M253	H3	4.5			Lbyy			Lateral
248	M254	H3	4.5			Lbyy			Lateral
249	M255	H3	1.278			Lbyy			Lateral
250	M256	H3	4.5			Lbyy			Lateral
251	M257	H3	4.5			Lbyy			Lateral
252	M258	H3	1.278			Lbyy			Lateral
253	M259	H3	4.5			Lbyy			Lateral
254	M260	H3	4.5			Lbyy			Lateral
255	M261	H3	1.278			Lbyy			Lateral
256	M262	H3	4.5			Lbyy			Lateral
257	M263	H3	4.5			Lbyy			Lateral
258	M264	H3	1.278			Lbyy			Lateral
259	M265	H3	4.5			Lbyy			Lateral
260	M266	H3	4.5			Lbyy			Lateral
261	M267	H3	1.278			Lbyy			Lateral
262	M268	H3	4.5			Lbyy			Lateral

**Hot Rolled Steel Design Parameters (Continued)**

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	Lcomp top [ft]	K y-y	K z-z	Function
263	M269	H3	4.5			Lbyy			Lateral
264	M270	H3	1.278			Lbyy			Lateral
265	M271	V1	4.667			Lbyy			Lateral
266	M272	V1	4.667			Lbyy			Lateral
267	M273	V1	4.667			Lbyy			Lateral
268	M274	V1	4.667			Lbyy			Lateral
269	M275	V1	4.667			Lbyy			Lateral
270	M276	V1	4.667			Lbyy			Lateral
271	M277	V1	4.667			Lbyy			Lateral
272	M278	V1	4.667			Lbyy			Lateral
273	M279	V1	4.667			Lbyy			Lateral
274	M280	V1	6.483			Lbyy			Lateral
275	M281	V1	6.483			Lbyy			Lateral
276	M282	V1	6.483			Lbyy			Lateral
277	M283	V1	6.483			Lbyy			Lateral
278	M284	V1	6.483			Lbyy			Lateral
279	M285	V1	6.483			Lbyy			Lateral
280	M292	H4	6.511			Lbyy			Lateral
281	M293	H4	6.511			Lbyy			Lateral
282	M294	H4	6.511			Lbyy			Lateral
283	M295	H6	0.742	17.802	17.802	Lbyy			Lateral
284	M296	H6	0.742	17.802	17.802	Lbyy			Lateral
285	M297	H6	0.742	17.802	17.802	Lbyy			Lateral
286	M298	H6	0.742	17.802	17.802	Lbyy			Lateral
287	M299	H6	0.742	17.802	17.802	Lbyy			Lateral
288	M300	H6	0.742	17.802	17.802	Lbyy			Lateral
289	M301	H6	0.742	17.802	17.802	Lbyy			Lateral
290	M302	H6	0.742	17.802	17.802	Lbyy			Lateral
291	M303	H6	0.742	17.802	17.802	Lbyy			Lateral
292	M304	H6	0.742	17.802	17.802	Lbyy			Lateral
293	M305	H6	0.742	17.802	17.802	Lbyy			Lateral
294	M306	H6	0.742	17.802	17.802	Lbyy			Lateral
295	M307	H6	0.742	17.802	17.802	Lbyy			Lateral
296	M308	H6	0.742	17.802	17.802	Lbyy			Lateral
297	M309	H6	0.742	17.802	17.802	Lbyy			Lateral
298	M310	H6	0.742	17.802	17.802	Lbyy			Lateral
299	M311	H6	0.742	17.802	17.802	Lbyy			Lateral
300	M312	H6	0.742	17.802	17.802	Lbyy			Lateral
301	M313	H6	0.742	17.802	17.802	Lbyy			Lateral
302	M314	H6	0.742	17.802	17.802	Lbyy			Lateral
303	M315	H6	0.742	17.802	17.802	Lbyy			Lateral
304	M316	H6	0.742	17.802	17.802	Lbyy			Lateral
305	M317	H6	0.742	17.802	17.802	Lbyy			Lateral
306	M318	H6	0.742	17.802	17.802	Lbyy			Lateral
307	M319	H6	0.742	17.802	17.802	Lbyy			Lateral
308	M320	H6	0.742	17.802	17.802	Lbyy			Lateral
309	M321	H6	0.742	17.802	17.802	Lbyy			Lateral
310	M322	H6	0.742	17.802	17.802	Lbyy			Lateral
311	M323	H6	0.742	17.802	17.802	Lbyy			Lateral
312	M324	H6	0.742	17.802	17.802	Lbyy			Lateral
313	M325	H6	0.742	17.802	17.802	Lbyy			Lateral
314	M326	H6	0.742	17.802	17.802	Lbyy			Lateral
315	M327	H6	0.742	17.802	17.802	Lbyy			Lateral
316	M328	H6	0.742	17.802	17.802	Lbyy			Lateral
317	M329	H6	0.742	17.802	17.802	Lbyy			Lateral

**Hot Rolled Steel Design Parameters (Continued)**

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	Lcomp top [ft]	K y-y	K z-z	Function
318	M330	H6	0.742	17.802	17.802	Lbyy			Lateral
319	M331	H6	0.742	17.802	17.802	Lbyy			Lateral
320	M332	H6	0.742	17.802	17.802	Lbyy			Lateral
321	M333	H6	0.742	17.802	17.802	Lbyy			Lateral
322	M334	H6	0.742	17.802	17.802	Lbyy			Lateral
323	M335	H6	0.742	17.802	17.802	Lbyy			Lateral
324	M336	H6	0.742	17.802	17.802	Lbyy			Lateral
325	M337	H6	0.742	17.802	17.802	Lbyy			Lateral
326	M338	H6	0.742	17.802	17.802	Lbyy			Lateral
327	M339	H6	0.742	17.802	17.802	Lbyy			Lateral
328	M340	H6	0.742	17.802	17.802	Lbyy			Lateral
329	M341	H6	0.742	17.802	17.802	Lbyy			Lateral
330	M342	H6	0.742	17.802	17.802	Lbyy			Lateral
331	M343	H6	0.742	17.802	17.802	Lbyy			Lateral
332	M344	H6	0.742	17.802	17.802	Lbyy			Lateral
333	M345	H6	0.742	17.802	17.802	Lbyy			Lateral
334	M346	H6	0.742	17.802	17.802	Lbyy			Lateral
335	M347	H6	0.742	17.802	17.802	Lbyy			Lateral
336	M348	H6	0.742	17.802	17.802	Lbyy			Lateral
337	M349	H6	0.742	17.802	17.802	Lbyy			Lateral
338	M350	H6	0.742	17.802	17.802	Lbyy			Lateral
339	M351	H6	0.742	17.802	17.802	Lbyy			Lateral
340	M352	H6	0.742	17.802	17.802	Lbyy			Lateral
341	M353	H6	0.742	17.802	17.802	Lbyy			Lateral
342	M354	H6	0.742	17.802	17.802	Lbyy			Lateral
343	M355	H6	0.742	17.802	17.802	Lbyy			Lateral
344	M356	H6	0.742	17.802	17.802	Lbyy			Lateral
345	M357	H6	0.742	17.802	17.802	Lbyy			Lateral
346	M358	H6	0.742	17.802	17.802	Lbyy			Lateral
347	M359	H6	0.742	17.802	17.802	Lbyy			Lateral
348	M360	H6	0.742	17.802	17.802	Lbyy			Lateral
349	M361	H6	0.742	17.802	17.802	Lbyy			Lateral
350	M362	H6	0.742	17.802	17.802	Lbyy			Lateral
351	M363	H6	0.742	17.802	17.802	Lbyy			Lateral
352	M364	H6	0.742	17.802	17.802	Lbyy			Lateral
353	M365	H6	0.742	17.802	17.802	Lbyy			Lateral
354	M366	H6	0.742	17.802	17.802	Lbyy			Lateral
355	M370	Column1	5.455			Lbyy			Lateral
356	M371	H4	10.1			Lbyy			Lateral
357	M372	H4	10.1			Lbyy			Lateral
358	M373	H4	10.1			Lbyy			Lateral
359	M374	H4	10.1			Lbyy			Lateral
360	M375	H4	10.1			Lbyy			Lateral
361	M376	H4	10.1			Lbyy			Lateral
362	M377	H4	10.1			Lbyy			Lateral
363	M378	H4	10.1			Lbyy			Lateral
364	M379	H4	10.1			Lbyy			Lateral
365	M380	H4	10.1			Lbyy			Lateral
366	M381	H4	10.1			Lbyy			Lateral
367	M382	H4	10.1			Lbyy			Lateral

**Member Advanced Data**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	M1			Yes	** NA **	None
2	M2			Yes	** NA **	None

**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
3	M3			Yes	** NA **	None
4	M4			Yes	** NA **	None
5	M5			Yes	** NA **	None
6	M6			Yes	** NA **	None
7	M7			Yes	N/A	None
8	M8			Yes	N/A	None
9	M9			Yes	N/A	None
10	M10			Yes	N/A	None
11	M11			Yes	N/A	None
12	M12			Yes	N/A	None
13	M13			Yes	N/A	None
14	M14			Yes	N/A	None
15	M15			Yes	N/A	None
16	M16			Yes	N/A	None
17	M17			Yes	N/A	None
18	M18			Yes	N/A	None
19	M19			Yes	N/A	None
20	M20			Yes	N/A	None
21	M21			Yes	N/A	None
22	M22			Yes	N/A	None
23	M23			Yes	N/A	None
24	M24			Yes	N/A	None
25	M25			Yes	N/A	None
26	M26			Yes	N/A	None
27	M27			Yes	N/A	None
28	M28			Yes	N/A	None
29	M29			Yes	N/A	None
30	M30			Yes	N/A	None
31	M31			Yes	N/A	None
32	M32			Yes	N/A	None
33	M33			Yes	N/A	None
34	M34	BenPIN	BenPIN	Yes	N/A	None
35	M35	BenPIN	BenPIN	Yes	N/A	None
36	M36	BenPIN	BenPIN	Yes	N/A	None
37	M37	BenPIN	BenPIN	Yes	N/A	None
38	M38	BenPIN	BenPIN	Yes	N/A	None
39	M39	BenPIN	BenPIN	Yes	N/A	None
40	M40	BenPIN	BenPIN	Yes	N/A	None
41	M41	BenPIN	BenPIN	Yes	N/A	None
42	M42	BenPIN	BenPIN	Yes	N/A	None
43	M43	BenPIN	BenPIN	Yes	N/A	None
44	M44	BenPIN	BenPIN	Yes	N/A	None
45	M45	BenPIN	BenPIN	Yes	N/A	None
46	M46	BenPIN		Yes	N/A	None
47	M47	BenPIN		Yes	N/A	None
48	M48	BenPIN		Yes	N/A	None
49	M49	BenPIN		Yes	N/A	None
50	M50	BenPIN		Yes	N/A	None
51	M51	BenPIN		Yes	N/A	None
52	M52			Yes	N/A	None
53	M53			Yes	N/A	None
54	M54		BenPIN	Yes	N/A	None
55	M55			Yes	N/A	None
56	M56			Yes	N/A	None
57	M57		BenPIN	Yes	N/A	None

**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
58	M58			Yes	N/A	None
59	M59			Yes	N/A	None
60	M60		BenPIN	Yes	N/A	None
61	M61			Yes	N/A	None
62	M62			Yes	N/A	None
63	M63		BenPIN	Yes	N/A	None
64	M64			Yes	N/A	None
65	M65			Yes	N/A	None
66	M66		BenPIN	Yes	N/A	None
67	M67			Yes	N/A	None
68	M68			Yes	N/A	None
69	M69		BenPIN	Yes	N/A	None
70	M70	BenPIN	BenPIN	Yes	N/A	None
71	M71	BenPIN	BenPIN	Yes	N/A	None
72	M72	BenPIN	BenPIN	Yes	N/A	None
73	M73	BenPIN	BenPIN	Yes	N/A	None
74	M74	BenPIN	BenPIN	Yes	N/A	None
75	M75	BenPIN	BenPIN	Yes	N/A	None
76	M76	BenPIN	BenPIN	Yes	N/A	None
77	M77	BenPIN	BenPIN	Yes	N/A	None
78	M78	BenPIN	BenPIN	Yes	N/A	None
79	M79	BenPIN	BenPIN	Yes	N/A	None
80	M80	BenPIN	BenPIN	Yes	N/A	None
81	M81	BenPIN	BenPIN	Yes	N/A	None
82	M82	BenPIN	BenPIN	Yes	N/A	None
83	M83	BenPIN	BenPIN	Yes	N/A	None
84	M84	BenPIN	BenPIN	Yes	N/A	None
85	M85			Yes	N/A	None
86	M86			Yes	N/A	None
87	M87			Yes	N/A	None
88	M88			Yes	N/A	None
89	M89			Yes	N/A	None
90	M90			Yes	N/A	None
91	M91			Yes	N/A	None
92	M92			Yes	N/A	None
93	M93			Yes	N/A	None
94	M94			Yes	N/A	None
95	M95			Yes	N/A	None
96	M96			Yes	N/A	None
97	M97			Yes	N/A	None
98	M98			Yes	N/A	None
99	M99			Yes	N/A	None
100	M100			Yes	N/A	None
101	M101			Yes	N/A	None
102	M102			Yes	N/A	None
103	M103			Yes	N/A	None
104	M104			Yes	N/A	None
105	M105			Yes	N/A	None
106	M106			Yes	N/A	None
107	M107			Yes	N/A	None
108	M108			Yes	N/A	None
109	M109			Yes	N/A	None
110	M110			Yes	N/A	None
111	M111			Yes	N/A	None
112	M112			Yes	N/A	None



**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
113	M113			Yes	N/A	None
114	M114			Yes	N/A	None
115	M115			Yes	N/A	None
116	M116			Yes	N/A	None
117	M117			Yes	N/A	None
118	M118			Yes	N/A	None
119	M119			Yes	N/A	None
120	M120			Yes	N/A	None
121	M121			Yes	N/A	None
122	M122			Yes	N/A	None
123	M123			Yes	N/A	None
124	M124			Yes	N/A	None
125	M125			Yes	N/A	None
126	M126			Yes	N/A	None
127	M127			Yes	N/A	None
128	M128			Yes	N/A	None
129	M129			Yes	N/A	None
130	M130			Yes	N/A	None
131	M131			Yes	N/A	None
132	M132			Yes	N/A	None
133	M133			Yes	N/A	None
134	M134			Yes	N/A	None
135	M135			Yes	N/A	None
136	M136			Yes	N/A	None
137	M137			Yes	N/A	None
138	M138			Yes	N/A	None
139	M139			Yes	N/A	None
140	M140			Yes	N/A	None
141	M141			Yes	N/A	None
142	M142			Yes	N/A	None
143	M143			Yes	N/A	None
144	M144			Yes	N/A	None
145	M145			Yes	N/A	None
146	M146			Yes	N/A	None
147	M147			Yes	N/A	None
148	M148			Yes	N/A	None
149	M149			Yes	N/A	None
150	M150			Yes	N/A	None
151	M151			Yes	N/A	None
152	M152			Yes	N/A	None
153	M153			Yes	N/A	None
154	M154			Yes	N/A	None
155	M155			Yes	N/A	None
156	M156			Yes	N/A	None
157	M157			Yes	N/A	None
158	M158			Yes	N/A	None
159	M159			Yes	N/A	None
160	M160	BenPIN	BenPIN	Yes	N/A	None
161	M161	BenPIN	BenPIN	Yes	N/A	None
162	M162	BenPIN	BenPIN	Yes	N/A	None
163	M163			Yes	N/A	None
164	M164			Yes	N/A	None
165	M165			Yes	N/A	None
166	M166			Yes	N/A	None
167	M167			Yes	N/A	None

**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
168	M168			Yes	N/A	None
169	M169			Yes	N/A	None
170	M170			Yes	N/A	None
171	M171			Yes	N/A	None
172	M172			Yes	N/A	None
173	M173			Yes	N/A	None
174	M174			Yes	N/A	None
175	M175			Yes	N/A	None
176	M176			Yes	N/A	None
177	M177			Yes	N/A	None
178	M178			Yes	N/A	None
179	M179			Yes	N/A	None
180	M180			Yes	N/A	None
181	M181			Yes	N/A	None
182	M182			Yes	N/A	None
183	M183			Yes	N/A	None
184	M184			Yes	N/A	None
185	M185			Yes	N/A	None
186	M186			Yes	N/A	None
187	M187			Yes	N/A	None
188	M188			Yes	N/A	None
189	M189			Yes	N/A	None
190	M190			Yes	N/A	None
191	M191			Yes	N/A	None
192	M192			Yes	N/A	None
193	M193			Yes	N/A	None
194	M194			Yes	N/A	None
195	M195			Yes	N/A	None
196	M196			Yes	N/A	None
197	M197			Yes	N/A	None
198	M198			Yes	N/A	None
199	M199			Yes	N/A	None
200	M200			Yes	N/A	None
201	M201			Yes	N/A	None
202	M202			Yes	N/A	None
203	M203			Yes	N/A	None
204	M204			Yes	N/A	None
205	M205			Yes	N/A	None
206	M206			Yes	N/A	None
207	M207			Yes	N/A	None
208	M208			Yes	N/A	None
209	M209			Yes	N/A	None
210	M210			Yes	N/A	None
211	M211			Yes	N/A	None
212	M212			Yes	N/A	None
213	M213			Yes	N/A	None
214	M214			Yes	N/A	None
215	M215			Yes	N/A	None
216	M216			Yes	N/A	None
217	M217			Yes	N/A	None
218	M218			Yes	N/A	None
219	M219			Yes	N/A	None
220	M220			Yes	N/A	None
221	M221			Yes	N/A	None
222	M222			Yes	N/A	None

**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
223	M223			Yes	N/A	None
224	M224			Yes	N/A	None
225	M225			Yes	N/A	None
226	M226			Yes	N/A	None
227	M227			Yes	N/A	None
228	M228			Yes	N/A	None
229	M229			Yes	N/A	None
230	M230			Yes	N/A	None
231	M231			Yes	N/A	None
232	M232			Yes	N/A	None
233	M233			Yes	N/A	None
234	M234			Yes	N/A	None
235	M235			Yes	N/A	None
236	M236			Yes	N/A	None
237	M237			Yes	N/A	None
238	M238			Yes	N/A	None
239	M239			Yes	N/A	None
240	M240			Yes	N/A	None
241	M241			Yes	N/A	None
242	M242			Yes	N/A	None
243	M243			Yes	N/A	None
244	M244			Yes	N/A	None
245	M245			Yes	N/A	None
246	M246			Yes	N/A	None
247	M247	BenPIN		Yes	N/A	None
248	M248	BenPIN		Yes	N/A	None
249	M249	BenPIN		Yes	N/A	None
250	M250	BenPIN		Yes	N/A	None
251	M251	BenPIN		Yes	N/A	None
252	M252	BenPIN		Yes	N/A	None
253	M253			Yes	N/A	None
254	M254			Yes	N/A	None
255	M255		BenPIN	Yes	N/A	None
256	M256			Yes	N/A	None
257	M257			Yes	N/A	None
258	M258		BenPIN	Yes	N/A	None
259	M259			Yes	N/A	None
260	M260			Yes	N/A	None
261	M261		BenPIN	Yes	N/A	None
262	M262			Yes	N/A	None
263	M263			Yes	N/A	None
264	M264		BenPIN	Yes	N/A	None
265	M265			Yes	N/A	None
266	M266			Yes	N/A	None
267	M267		BenPIN	Yes	N/A	None
268	M268			Yes	N/A	None
269	M269			Yes	N/A	None
270	M270		BenPIN	Yes	N/A	None
271	M271	BenPIN	BenPIN	Yes	N/A	None
272	M272	BenPIN	BenPIN	Yes	N/A	None
273	M273	BenPIN	BenPIN	Yes	N/A	None
274	M274	BenPIN	BenPIN	Yes	N/A	None
275	M275	BenPIN	BenPIN	Yes	N/A	None
276	M276	BenPIN	BenPIN	Yes	N/A	None
277	M277	BenPIN	BenPIN	Yes	N/A	None

**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
278	M278	BenPIN	BenPIN	Yes	N/A	None
279	M279	BenPIN	BenPIN	Yes	N/A	None
280	M280	BenPIN	BenPIN	Yes	N/A	None
281	M281	BenPIN	BenPIN	Yes	N/A	None
282	M282	BenPIN	BenPIN	Yes	N/A	None
283	M283	BenPIN	BenPIN	Yes	N/A	None
284	M284	BenPIN	BenPIN	Yes	N/A	None
285	M285	BenPIN	BenPIN	Yes	N/A	None
286	M286			Yes	** NA **	None
287	M287			Yes	** NA **	None
288	M288			Yes	** NA **	None
289	M289			Yes	** NA **	None
290	M290			Yes	** NA **	None
291	M291			Yes	** NA **	None
292	M292			Yes	N/A	None
293	M293			Yes	N/A	None
294	M294			Yes	N/A	None
295	M295			Yes	N/A	None
296	M296			Yes	N/A	None
297	M297			Yes	N/A	None
298	M298			Yes	N/A	None
299	M299			Yes	N/A	None
300	M300			Yes	N/A	None
301	M301			Yes	N/A	None
302	M302			Yes	N/A	None
303	M303			Yes	N/A	None
304	M304			Yes	N/A	None
305	M305			Yes	N/A	None
306	M306			Yes	N/A	None
307	M307			Yes	N/A	None
308	M308			Yes	N/A	None
309	M309			Yes	N/A	None
310	M310			Yes	N/A	None
311	M311			Yes	N/A	None
312	M312			Yes	N/A	None
313	M313			Yes	N/A	None
314	M314			Yes	N/A	None
315	M315			Yes	N/A	None
316	M316			Yes	N/A	None
317	M317			Yes	N/A	None
318	M318			Yes	N/A	None
319	M319			Yes	N/A	None
320	M320			Yes	N/A	None
321	M321			Yes	N/A	None
322	M322			Yes	N/A	None
323	M323			Yes	N/A	None
324	M324			Yes	N/A	None
325	M325			Yes	N/A	None
326	M326			Yes	N/A	None
327	M327			Yes	N/A	None
328	M328			Yes	N/A	None
329	M329			Yes	N/A	None
330	M330			Yes	N/A	None
331	M331			Yes	N/A	None
332	M332			Yes	N/A	None

**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
333	M333			Yes	N/A	None
334	M334			Yes	N/A	None
335	M335			Yes	N/A	None
336	M336			Yes	N/A	None
337	M337			Yes	N/A	None
338	M338			Yes	N/A	None
339	M339			Yes	N/A	None
340	M340			Yes	N/A	None
341	M341			Yes	N/A	None
342	M342			Yes	N/A	None
343	M343			Yes	N/A	None
344	M344			Yes	N/A	None
345	M345			Yes	N/A	None
346	M346			Yes	N/A	None
347	M347			Yes	N/A	None
348	M348			Yes	N/A	None
349	M349			Yes	N/A	None
350	M350			Yes	N/A	None
351	M351			Yes	N/A	None
352	M352			Yes	N/A	None
353	M353			Yes	N/A	None
354	M354			Yes	N/A	None
355	M355			Yes	N/A	None
356	M356			Yes	N/A	None
357	M357			Yes	N/A	None
358	M358			Yes	N/A	None
359	M359			Yes	N/A	None
360	M360			Yes	N/A	None
361	M361			Yes	N/A	None
362	M362			Yes	N/A	None
363	M363			Yes	N/A	None
364	M364			Yes	N/A	None
365	M365			Yes	N/A	None
366	M366			Yes	N/A	None
367	M367			Yes	** NA **	None
368	M368			Yes	** NA **	None
369	M369			Yes	** NA **	None
370	M370			Yes	N/A	None
371	M371			Yes	N/A	None
372	M372			Yes	N/A	None
373	M373			Yes	N/A	None
374	M374			Yes	N/A	None
375	M375			Yes	N/A	None
376	M376			Yes	N/A	None
377	M377			Yes	N/A	None
378	M378			Yes	N/A	None
379	M379			Yes	N/A	None
380	M380			Yes	N/A	None
381	M381			Yes	N/A	None
382	M382			Yes	N/A	None
383	M383			Yes	** NA **	None
384	M384			Yes	** NA **	None
385	M385			Yes	** NA **	None
386	M386			Yes	** NA **	None
387	M387			Yes	** NA **	None

**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
388	M388			Yes	** NA **	None
389	M389			Yes	** NA **	None
390	M390			Yes	** NA **	None
391	M391			Yes	** NA **	None
392	M392			Yes	** NA **	None
393	M393			Yes	** NA **	None
394	M394			Yes	** NA **	None
395	M395			Yes	** NA **	None
396	M396			Yes	** NA **	None
397	M397			Yes	** NA **	None
398	M398			Yes	** NA **	None
399	M399			Yes	** NA **	None
400	M400			Yes	** NA **	None
401	M401			Yes	** NA **	None
402	M402			Yes	** NA **	None
403	M403			Yes	** NA **	None
404	M404			Yes	** NA **	None
405	M405			Yes	** NA **	None
406	M406			Yes	** NA **	None
407	M407			Yes	** NA **	None
408	M408			Yes	** NA **	None
409	M409			Yes	** NA **	None
410	M410			Yes	** NA **	None
411	M411			Yes	** NA **	None
412	M412			Yes	** NA **	None
413	M413			Yes	** NA **	None
414	M414			Yes	** NA **	None
415	M415			Yes	** NA **	None
416	M416			Yes	** NA **	None
417	M417			Yes	** NA **	None
418	M418			Yes	** NA **	None
419	M419			Yes	** NA **	None
420	M420			Yes	** NA **	None
421	M421			Yes	** NA **	None
422	M422			Yes	** NA **	None
423	M423			Yes	** NA **	None
424	M424			Yes	** NA **	None
425	M425			Yes	** NA **	None
426	M426			Yes	** NA **	None
427	M427			Yes	** NA **	None
428	M428			Yes	** NA **	None
429	M429			Yes	** NA **	None
430	M430			Yes	** NA **	None
431	M431			Yes	** NA **	None
432	M432			Yes	** NA **	None
433	M433			Yes	** NA **	None
434	M434			Yes	** NA **	None
435	M435			Yes	** NA **	None
436	M436			Yes	** NA **	None
437	M437			Yes	** NA **	None
438	M438			Yes	** NA **	None
439	M439			Yes	** NA **	None
440	M440			Yes	** NA **	None
441	M441			Yes	** NA **	None
442	M442			Yes	** NA **	None

**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
443	M443			Yes	** NA **	None
444	M444			Yes	** NA **	None
445	M445			Yes	** NA **	None
446	M446			Yes	** NA **	None
447	M447			Yes	** NA **	None
448	M448			Yes	** NA **	None
449	M449			Yes	** NA **	None
450	M450			Yes	** NA **	None
451	M451			Yes	** NA **	None
452	M452			Yes	** NA **	None
453	M453			Yes	** NA **	None
454	M454			Yes	** NA **	None
455	M455			Yes	** NA **	None

**Node Boundary Conditions**

	Node Label	X [k/in]	Y [k/in]	Z [k/in]
1	N1	Reaction	Reaction	Reaction
2	N2	Reaction	Reaction	Reaction
3	N3	Reaction	Reaction	Reaction
4	N4	Reaction	Reaction	Reaction
5	N5	Reaction	Reaction	Reaction
6	N6	Reaction	Reaction	Reaction
7	N7	Reaction	Reaction	Reaction
8	N8	Reaction	Reaction	Reaction
9	N9	Reaction	Reaction	Reaction
10	N10	Reaction	Reaction	Reaction
11	N11	Reaction	Reaction	Reaction
12	N12	Reaction	Reaction	Reaction
13	N13	Reaction	Reaction	Reaction
14	N14	Reaction	Reaction	Reaction
15	N15	Reaction	Reaction	Reaction
16	N16	Reaction	Reaction	Reaction
17	N17	Reaction	Reaction	Reaction
18	N18	Reaction	Reaction	Reaction
19	N19	Reaction	Reaction	Reaction
20	N20	Reaction	Reaction	Reaction
21	N21	Reaction	Reaction	Reaction
22	N22	Reaction	Reaction	Reaction
23	N23	Reaction	Reaction	Reaction
24	N24	Reaction	Reaction	Reaction
25	N25	Reaction	Reaction	Reaction
26	N26	Reaction	Reaction	Reaction
27	N27	Reaction	Reaction	Reaction
28	N28	Reaction	Reaction	Reaction
29	N29	Reaction	Reaction	Reaction
30	N30	Reaction	Reaction	Reaction
31	N31	Reaction	Reaction	Reaction
32	N32	Reaction	Reaction	Reaction
33	N33	Reaction	Reaction	Reaction
34	N34	Reaction	Reaction	Reaction
35	N35	Reaction	Reaction	Reaction
36	N36	Reaction	Reaction	Reaction
37	N37	Reaction	Reaction	Reaction
38	N38	Reaction	Reaction	Reaction
39	N39	Reaction	Reaction	Reaction

**Node Boundary Conditions (Continued)**

	Node Label	X [k/in]	Y [k/in]	Z [k/in]
40	N40	Reaction	Reaction	Reaction
41	N41	Reaction	Reaction	Reaction
42	N42	Reaction	Reaction	Reaction
43	N43	Reaction	Reaction	Reaction
44	N44	Reaction	Reaction	Reaction
45	N45	Reaction	Reaction	Reaction
46	N46	Reaction	Reaction	Reaction
47	N47	Reaction	Reaction	Reaction
48	N48	Reaction	Reaction	Reaction
49	N49	Reaction	Reaction	Reaction
50	N50	Reaction	Reaction	Reaction
51	N51	Reaction	Reaction	Reaction
52	N52	Reaction	Reaction	Reaction
53	N53	Reaction	Reaction	Reaction
54	N54	Reaction	Reaction	Reaction
55	N55	Reaction	Reaction	Reaction
56	N56	Reaction	Reaction	Reaction
57	N57	Reaction	Reaction	Reaction
58	N58	Reaction	Reaction	Reaction
59	N59	Reaction	Reaction	Reaction
60	N60	Reaction	Reaction	Reaction
61	N61	Reaction	Reaction	Reaction
62	N62	Reaction	Reaction	Reaction
63	N63	Reaction	Reaction	Reaction
64	N64	Reaction	Reaction	Reaction
65	N65	Reaction	Reaction	Reaction
66	N66	Reaction	Reaction	Reaction
67	N67	Reaction	Reaction	Reaction
68	N68	Reaction	Reaction	Reaction
69	N69	Reaction	Reaction	Reaction
70	N70	Reaction	Reaction	Reaction
71	N71	Reaction	Reaction	Reaction
72	N72	Reaction	Reaction	Reaction
73	N1777			

**Envelope Node Reactions**

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N19	max	-0.3271	18	11.4165	9	0.1045	17	0	20	0	20	0	20
2		min	-0.7502	9	5.1725	18	-0.6398	12	0	1	0	1	0	1
3	N20	max	-0.3379	19	11.4036	9	0.1206	11	0	20	0	20	0	20
4		min	-0.7514	9	4.7815	18	-0.6078	18	0	1	0	1	0	1
5	N18	max	-0.2951	20	11.3946	9	0.0965	17	0	20	0	20	0	20
6		min	-0.7501	9	5.4648	19	-0.6754	12	0	1	0	1	0	1
7	N21	max	-0.3454	19	11.3562	9	0.137	11	0	20	0	20	0	20
8		min	-0.7538	9	4.3934	18	-0.5721	18	0	1	0	1	0	1
9	N1	max	0.1041	20	11.3419	12	-0.3149	15	0	20	0	20	0	20
10		min	-0.6373	9	5.1131	15	-0.745	12	0	1	0	1	0	1
11	N17	max	-0.2611	20	11.3384	9	0.0874	17	0	20	0	20	0	20
12		min	-0.7514	9	5.7398	1	-0.7059	12	0	1	0	1	0	1
13	N2	max	0.1014	20	11.3258	12	-0.2929	17	0	20	0	20	0	20
14		min	-0.6689	9	5.4101	17	-0.7459	12	0	1	0	1	0	1
15	N72	max	0.1298	14	11.3224	12	-0.3405	16	0	20	0	20	0	20
16		min	-0.6014	15	4.7174	15	-0.7452	12	0	1	0	1	0	1
17	N3	max	0.0927	20	11.2774	12	-0.2584	17	0	20	0	20	0	20
18		min	-0.6986	9	5.6862	1	-0.7484	12	0	1	0	1	0	1



**Envelope Node Reactions (Continued)**

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
19	N22	max	-0.3488	19	11.2743	9	0.1529	11	0	20	0	20	0	20
20		min	-0.7564	9	4.0108	18	-0.5323	18	0	1	0	1	0	1
21	N71	max	-0.139	14	11.2673	12	-0.3377	16	0	20	0	20	0	20
22		min	-0.5702	15	4.3243	15	-0.7458	12	0	1	0	1	0	1
23	N16	max	-0.2254	20	11.2479	9	0.077	17	0	20	0	20	0	20
24		min	-0.7534	9	5.7356	1	-0.7306	12	0	1	0	1	0	1
25	N4	max	0.0822	20	11.1955	12	-0.2247	17	0	20	0	20	0	20
26		min	-0.7235	9	5.6891	1	-0.7525	12	0	1	0	1	0	1
27	N70	max	0.1545	14	11.1808	12	-0.3441	16	0	20	0	20	0	20
28		min	-0.5305	15	3.9385	15	-0.75	12	0	1	0	1	0	1
29	N23	max	-0.3415	1	11.1591	9	0.1711	2	0	20	0	20	0	20
30		min	-0.7611	9	3.6371	18	-0.4888	18	0	1	0	1	0	1
31	N15	max	-0.19	20	11.1243	9	0.0645	17	0	20	0	20	0	20
32		min	-0.7573	9	5.7315	1	-0.7505	12	0	1	0	1	0	1
33	N5	max	0.0698	20	11.0807	12	-0.1904	17	0	20	0	20	0	20
34		min	-0.7432	9	5.6923	1	-0.7579	12	0	1	0	1	0	1
35	N69	max	0.1722	2	11.0617	12	-0.3368	1	0	20	0	20	0	20
36		min	-0.4877	15	3.562	15	-0.7559	12	0	1	0	1	0	1
37	N24	max	-0.3307	1	11.0119	9	0.2131	2	0	20	0	20	0	20
38		min	-0.7683	9	3.2752	18	-0.442	18	0	1	0	1	0	1
39	N14	max	-0.1561	20	10.9688	9	0.0494	17	0	20	0	20	0	20
40		min	-0.7633	9	5.7275	1	-0.7658	12	0	1	0	1	0	1
41	N6	max	0.055	20	10.9337	12	-0.1565	17	0	20	0	20	0	20
42		min	-0.7581	9	5.6956	1	-0.7639	12	0	1	0	1	0	1
43	N68	max	0.2124	2	10.9102	12	-0.3249	1	0	20	0	20	0	20
44		min	-0.442	15	3.1973	15	-0.7617	12	0	1	0	1	0	1
45	N25	max	-0.3166	1	10.8327	9	0.2534	2	0	20	0	20	0	20
46		min	-0.7746	9	2.9273	18	-0.3931	18	0	1	0	1	0	1
47	N13	max	-0.1225	20	10.7817	9	0.032	17	0	20	0	20	0	20
48		min	-0.7688	9	5.7234	1	-0.7763	12	0	1	0	1	0	1
49	N7	max	0.0376	20	10.7558	12	-0.1234	17	0	20	0	20	0	20
50		min	-0.7686	9	5.6991	1	-0.7701	12	0	1	0	1	0	1
51	N67	max	0.2509	2	10.728	12	-0.3106	1	0	20	0	20	0	20
52		min	-0.3943	15	2.8474	15	-0.7675	12	0	1	0	1	0	1
53	N26	max	-0.2994	1	10.6232	9	0.2912	2	0	20	0	20	0	20
54		min	-0.7792	9	2.5963	18	-0.3433	18	0	1	0	1	0	1
55	N12	max	-0.0899	20	10.5647	9	0.0123	17	0	20	0	20	0	20
56		min	-0.7731	9	5.7191	1	-0.7822	12	0	1	0	1	0	1
57	N8	max	0.0175	20	10.5483	12	-0.0919	17	0	20	0	20	0	20
58		min	-0.7751	9	5.7029	1	-0.776	12	0	1	0	1	0	1
59	N66	max	0.2876	2	10.5164	12	-0.2939	1	0	20	0	20	0	20
60		min	-0.3453	15	2.5151	15	-0.7729	12	0	1	0	1	0	1
61	N27	max	-0.2798	1	10.385	9	0.3267	2	0	20	0	20	0	20
62		min	-0.7827	9	2.2847	18	-0.2932	18	0	1	0	1	0	1
63	N11	max	-0.0592	20	10.3195	9	-0.0099	17	0	20	0	20	0	20
64		min	-0.7764	9	5.7148	1	-0.7844	12	0	1	0	1	0	1
65	N9	max	-0.0054	20	10.3127	12	-0.0623	17	0	20	0	20	0	20
66		min	-0.7782	9	5.7068	1	-0.7807	12	0	1	0	1	0	1
67	N65	max	0.3222	2	10.277	12	-0.2751	1	0	20	0	20	0	20
68		min	-0.2959	15	2.203	15	-0.7774	12	0	1	0	1	0	1
69	N28	max	-0.2583	1	10.1203	9	0.36	2	0	20	0	20	0	20
70		min	-0.7848	9	1.995	18	-0.2438	18	0	1	0	1	0	1
71	N10	max	-0.0309	20	10.0509	12	-0.0349	17	0	20	0	20	0	20
72		min	-0.7784	9	5.7107	1	-0.7837	12	0	1	0	1	0	1
73	N64	max	0.3535	2	10.0114	12	-0.2537	1	0	20	0	20	0	20

**Envelope Node Reactions (Continued)**

Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
74		min	-0.2478	15	1.9131	15	-0.7794	12	0	1	0	1	0	1
75	N29	max	-0.2348	1	9.8308	9	0.3905	2	0	20	0	20	0	20
76		min	-0.7846	9	1.7294	18	-0.1961	18	0	1	0	1	0	1
77	N63	max	0.3828	2	9.6266	12	-0.2308	1	0	20	0	20	0	20
78		min	-0.2007	15	1.6088	15	-0.7802	12	0	1	0	1	0	1
79	N30	max	-0.2092	1	9.5187	9	0.4176	2	0	20	0	20	0	20
80		min	-0.7811	9	1.4897	18	-0.1517	18	0	1	0	1	0	1
81	N62	max	0.4103	2	9.4114	12	-0.2068	1	0	20	0	20	0	20
82		min	-0.1559	15	1.4095	15	-0.7789	12	0	1	0	1	0	1
83	N31	max	-0.1759	19	9.1864	9	0.4413	2	0	20	0	20	0	20
84		min	-0.774	9	1.2778	18	-0.1111	18	0	1	0	1	0	1
85	N61	max	0.4342	2	9.0811	12	-0.1747	16	0	20	0	20	0	20
86		min	-0.1155	15	1.1995	15	-0.773	12	0	1	0	1	0	1
87	N32	max	-0.1341	19	8.8366	9	0.4624	2	0	20	0	20	0	20
88		min	-0.7631	9	1.0957	18	-0.0744	18	0	1	0	1	0	1
89	N60	max	0.4546	2	8.7339	12	-0.1337	16	0	20	0	20	0	20
90		min	-0.0792	15	1.0195	15	-0.7631	12	0	1	0	1	0	1
91	N33	max	-0.0891	19	8.4718	9	0.4799	2	0	20	0	20	0	20
92		min	-0.7475	9	0.9444	18	-0.0431	18	0	1	0	1	0	1
93	N59	max	0.4716	2	8.3724	12	-0.0894	16	0	20	0	20	0	20
94		min	-0.0483	15	0.871	15	-0.7485	12	0	1	0	1	0	1
95	N34	max	-0.0414	19	8.0947	9	0.4931	2	0	20	0	20	0	20
96		min	-0.7269	9	0.825	18	-0.0185	18	0	1	0	1	0	1
97	N35	max	0.0079	19	8.0771	2	0.5026	2	0	20	0	20	0	20
98		min	-0.7011	9	0.7385	18	-0.0006	18	0	1	0	1	0	1
99	N36	max	0.0582	19	8.075	2	0.5086	2	0	20	0	20	0	20
100		min	-0.6702	9	0.6856	18	0.0104	18	0	1	0	1	0	1
101	N37	max	0.1088	13	8.0725	2	0.5106	2	0	20	0	20	0	20
102		min	-0.6347	15	0.6668	18	0.0139	18	0	1	0	1	0	1
103	N38	max	0.1677	13	8.0693	2	0.5075	2	0	20	0	20	0	20
104		min	-0.6036	15	0.6821	18	0.0097	18	0	1	0	1	0	1
105	N39	max	0.2246	13	8.0653	2	0.4996	2	0	20	0	20	0	20
106		min	-0.5681	15	0.7311	18	-0.0023	18	0	1	0	1	0	1
107	N40	max	0.2791	13	8.0615	2	0.5079	10	0	20	0	20	0	20
108		min	-0.5281	15	0.8141	18	-0.0205	18	0	1	0	1	0	1
109	N41	max	0.3301	13	8.0576	2	0.5235	10	0	20	0	20	0	20
110		min	-0.4845	15	0.9302	18	-0.0449	18	0	1	0	1	0	1
111	N42	max	0.3767	13	8.0529	2	0.5321	10	0	20	0	20	0	20
112		min	-0.4382	15	1.0782	18	-0.0761	18	0	1	0	1	0	1
113	N43	max	0.4182	13	8.048	2	0.5342	10	0	20	0	20	0	20
114		min	-0.39	15	1.2573	18	-0.1127	18	0	1	0	1	0	1
115	N44	max	0.4539	13	8.0428	2	0.5298	10	0	20	0	20	0	20
116		min	-0.3407	15	1.466	18	-0.154	18	0	1	0	1	0	1
117	N45	max	0.4835	13	8.0374	2	0.5188	10	0	20	0	20	0	20
118		min	-0.2912	15	1.7028	18	-0.1989	18	0	1	0	1	0	1
119	N46	max	0.506	13	8.0315	2	0.5009	10	0	20	0	20	0	20
120		min	-0.2428	15	1.9656	18	-0.247	18	0	1	0	1	0	1
121	N47	max	0.5223	13	8.0257	2	0.4769	10	0	20	0	20	0	20
122		min	-0.196	15	1.6973	15	-0.2964	18	0	1	0	1	0	1
123	N48	max	0.5327	13	8.0202	2	0.4472	10	0	20	0	20	0	20
124		min	-0.1516	15	1.4536	15	-0.346	18	0	1	0	1	0	1
125	N49	max	0.5361	13	8.0144	2	0.4111	10	0	20	0	20	0	20
126		min	-0.1112	15	1.2379	15	-0.3955	18	0	1	0	1	0	1
127	N50	max	0.5325	13	8.0084	2	0.3695	10	0	20	0	20	0	20
128		min	-0.0755	15	1.052	15	-0.444	18	0	1	0	1	0	1

**Envelope Node Reactions (Continued)**

Node Label	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC		
129	N51	max	0.5226	13	8.0025	2	0.3229	10	0	20	0	20	0	20
130		min	-0.0453	15	0.8973	15	-0.4903	18	0	1	0	1	0	1
131	N58	max	0.4851	2	7.9996	12	-0.0427	16	0	20	0	20	0	20
132		min	-0.0234	15	0.7551	15	-0.7291	12	0	1	0	1	0	1
133	N52	max	0.5072	13	7.9967	2	0.2723	10	0	20	0	20	0	20
134		min	-0.021	15	0.775	15	-0.5335	18	0	1	0	1	0	1
135	N53	max	0.4976	2	7.9912	2	0.2184	10	0	20	0	20	0	20
136		min	-0.0035	15	0.686	15	-0.5731	18	0	1	0	1	0	1
137	N54	max	0.5025	2	7.9856	2	0.1619	10	0	20	0	20	0	20
138		min	0.0067	15	0.6309	15	-0.6084	18	0	1	0	1	0	1
139	N55	max	0.5035	2	7.9803	2	0.1046	16	0	20	0	20	0	20
140		min	0.0096	15	0.6102	15	-0.6398	12	0	1	0	1	0	1
141	N56	max	0.5012	2	7.9754	2	0.0551	16	0	20	0	20	0	20
142		min	0.0058	15	0.6242	15	-0.6747	12	0	1	0	1	0	1
143	N57	max	0.4951	2	7.9707	2	0.0057	16	0	20	0	20	0	20
144		min	-0.0051	15	0.6727	15	-0.7045	12	0	1	0	1	0	1
145	Totals:	max	0.001	12	576.8699	2	0.0007	15						
146		min	-34.198	15	370.845	15	-34.22	12						

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

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	DirLC	Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn		
1	M64	L4X3X4	0.199	0	2	0.0079	4.5	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
2	M61	L4X3X4	0.1981	0	2	0.0078	4.5	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
3	M50	L4X3X4	0.1934	1	2	0.022	0	y	2	49.9861	54.756	1.795	4.8054	1.5	H2-1
4	M67	L4X3X4	0.1925	0	2	0.0077	4.5	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
5	M55	L4X3X4	0.1897	0	2	0.0081	4.5	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
6	M49	L4X3X4	0.1888	1	2	0.0217	0	y	2	49.9861	54.756	1.795	4.8054	1.5	H2-1
7	M51	L4X3X4	0.1865	1	2	0.0213	0	y	2	49.9861	54.756	1.795	4.8054	1.5	H2-1
8	M52	L4X3X4	0.1858	0	2	0.008	4.5	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
9	M58	L4X3X4	0.1831	0	2	0.0079	4.5	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
10	M47	L4X3X4	0.1816	1	2	0.0209	0	y	2	49.9861	54.756	1.795	4.8054	1.5	H2-1
11	M46	L4X3X4	0.1781	1	2	0.0206	0	y	2	49.9861	54.756	1.795	4.8054	1.5	H2-1
12	M48	L4X3X4	0.1754	1	2	0.0203	0	y	2	49.9861	54.756	1.795	4.8054	1.5	H2-1
13	M68	L4X3X4	0.1753	4.5	2	0.0073	0	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
14	M62	L4X3X4	0.1734	4.5	2	0.0072	0	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
15	M65	L4X3X4	0.167	4.5	2	0.0071	0	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
16	M69	L4X3X4	0.166	0	2	0.0152	1.278	y	2	49.5064	54.756	1.795	4.8054	1.5	H2-1
17	M59	L4X3X4	0.1656	4.5	2	0.0076	0	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
18	M53	L4X3X4	0.1623	4.5	2	0.0075	0	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
19	M63	L4X3X4	0.1605	0	2	0.0149	1.278	y	2	49.5064	54.756	1.795	4.8054	1.5	H2-1
20	M60	L4X3X4	0.1595	0	2	0.0148	1.278	y	2	49.5064	54.756	1.795	4.8054	1.5	H2-1
21	M56	L4X3X4	0.1586	4.5	2	0.0074	0	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
22	M66	L4X3X4	0.1576	0	2	0.0145	1.278	y	2	49.5064	54.756	1.795	4.8054	1.5	H2-1
23	M54	L4X3X4	0.1563	0	2	0.0145	1.278	y	2	49.5064	54.756	1.795	4.8054	1.5	H2-1
24	M57	L4X3X4	0.1528	0	2	0.0142	1.278	y	2	49.5064	54.756	1.795	4.8054	1.5	H2-1
25	M34	L3X3X4	0.1286	6.835	2	0.0032	13.67	y	2	4.1373	46.656	1.6881	2.3539	1.1364	H2-1
26	M265	L4X3X4	0.1244	0	2	0.0053	4.5	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
27	M262	L4X3X4	0.1243	0	2	0.0053	4.5	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
28	M36	L3X3X4	0.124	6.835	2	0.0032	13.67	y	2	9.7924	46.656	1.6881	2.3539	1.1364	H2-1
29	M35	L3X3X4	0.124	6.835	2	0.0032	13.67	y	2	9.7924	46.656	1.6881	2.3539	1.1364	H2-1
30	M256	L4X3X4	0.1215	0	2	0.0054	4.5	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
31	M251	L4X3X4	0.1195	1	2	0.0138	0	y	2	49.9861	54.756	1.795	4.8054	1.5	H2-1
32	M268	L4X3X4	0.1182	0	2	0.0052	4.5	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
33	M259	L4X3X4	0.1174	0	2	0.0053	4.5	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1
34	M253	L4X3X4	0.1162	0	2	0.0053	4.5	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1

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

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	DirL	Cphi*	Pnc [k]	phi*	Pnt [k]	phi*	Mn y-y [k-ft]	phi*	Mn z-z [k-ft]	Cb	Eqn
35	M250	L4X3X4	0.1155	1	2	0.0135	0	y	2	49.9861	54.756	1.795	4.8054	1.5	H2-1		
36	M37	L3X3X4	0.1153	6.835	2	0.0032	13.67	y	2	4.1373	46.656	1.6881	2.3539	1.1364	H2-1		
37	M38	L3X3X4	0.1153	6.835	2	0.0032	13.67	y	2	5.1077	46.656	1.6881	2.3539	1.1364	H2-1		
38	M39	L3X3X4	0.1153	6.835	2	0.0032	13.67	y	2	4.1373	46.656	1.6881	2.3539	1.1364	H2-1		
39	M248	L4X3X4	0.1149	1	2	0.0128	0	y	2	49.9861	54.756	1.795	4.8054	1.5	H2-1		
40	M252	L4X3X4	0.1131	1	2	0.0131	0	y	2	49.9861	54.756	1.795	4.8054	1.5	H2-1		
41	M249	L4X3X4	0.1111	1	2	0.0124	0	y	2	49.9861	54.756	1.795	4.8054	1.5	H2-1		
42	M247	L4X3X4	0.1104	1	2	0.0125	0	y	2	49.9861	54.756	1.795	4.8054	1.5	H2-1		
43	M269	L4X3X4	0.11	4.5	2	0.005	0	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1		
44	M263	L4X3X4	0.1092	4.5	2	0.0049	0	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1		
45	M260	L4X3X4	0.1054	4.5	2	0.0051	0	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1		
46	M266	L4X3X4	0.1028	4.5	2	0.0048	0	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1		
47	M270	L4X3X4	0.1026	0	2	0.0097	1.278	y	2	49.5064	54.756	1.795	4.8054	1.5	H2-1		
48	M264	L4X3X4	0.1011	0	2	0.0094	1.278	y	2	49.5064	54.756	1.795	4.8054	1.5	H2-1		
49	M261	L4X3X4	0.1004	0	2	0.0092	1.278	y	2	49.5064	54.756	1.795	4.8054	1.5	H2-1		
50	M257	L4X3X4	0.0995	4.5	2	0.005	0	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1		
51	M254	L4X3X4	0.0994	4.5	2	0.005	0	y	2	37.163	54.756	1.795	4.3848	1.5	H2-1		
52	M267	L4X3X4	0.0956	0	2	0.009	1.278	y	2	49.5064	54.756	1.795	4.8054	1.5	H2-1		
53	M255	L4X3X4	0.0952	0	2	0.0089	1.278	y	2	49.5064	54.756	1.795	4.8054	1.5	H2-1		
54	M258	L4X3X4	0.0949	0	2	0.0087	1.278	y	2	49.5064	54.756	1.795	4.8054	1.5	H2-1		
55	M162	L3X3X4	0.0756	5.639	2	0.0027	11.278	y	2	6.0783	46.656	1.6881	2.5789	1.1364	H2-1		
56	M160	L3X3X4	0.0756	5.639	2	0.0027	11.278	y	2	6.0783	46.656	1.6881	2.5789	1.1364	H2-1		
57	M161	L3X3X4	0.0756	5.639	2	0.0027	11.278	y	2	6.0783	46.656	1.6881	2.5789	1.1364	H2-1		
58	M41	L4X3X4	0.0705	5.6391	2	0.0023	11.2782	y	2	8.5111	54.756	1.795	3.1406	1.1364	H2-1		
59	M42	L4X3X4	0.0704	5.639	2	0.0023	11.278	y	2	8.5114	54.756	1.795	3.1406	1.1364	H2-1		
60	M40	L4X3X4	0.0703	5.6391	2	0.0023	11.2782	y	2	10.5075	54.756	1.795	3.1406	1.1364	H2-1		
61	M45	L4X3X4	0.0703	5.639	2	0.0024	11.278	y	2	8.5114	54.756	1.795	3.1406	1.1364	H2-1		
62	M43	L4X3X4	0.0703	5.639	2	0.0024	11.278	y	2	8.5114	54.756	1.795	3.1406	1.1364	H2-1		
63	M44	L4X3X4	0.0703	5.639	2	0.0024	11.278	y	2	8.5114	54.756	1.795	3.1406	1.1364	H2-1		
64	M163	L4X4X4	0.0641	14.7224	2	0.0035	14.7224	y	2	8.5644	62.532	3.1376	4.7106	1.5	H2-1		
65	M165	L4X4X4	0.0641	0	2	0.0035	0	y	2	8.5644	62.532	3.1376	4.7106	1.5	H2-1		
66	M85	L4X4X4	0.0633	0	2	0.0035	0	y	2	8.5644	62.532	3.1376	4.7106	1.5	H2-1		
67	M87	L4X4X4	0.0633	14.7224	2	0.0035	14.7224	y	2	8.5644	62.532	3.1376	4.7106	1.5	H2-1		
68	M164	L4X4X4	0.0627	14.7224	2	0.0035	14.7224	y	2	8.5644	62.532	3.1376	4.7106	1.5	H2-1		
69	M86	L4X4X4	0.0616	0	2	0.0035	0	y	2	8.5644	62.532	3.1376	4.7106	1.5	H2-1		
70	M28	HSS5x0.500	0.0394	2.7188	2	0.0057	2.7188		2	209.9117	214.488	25.92	25.92	2.1045	H1-1b		
71	M241	HSS5.563X0.375	0.0369	0	2	0.0072	2.5417		2	182.6847	185.328	25.65	25.65	1.9278	H1-1b		
72	M81	L3X3X4	0.0353	3.328	2	0.0022	6.7268	y	2	17.0857	46.656	1.6881	3.0863	1.1364	H2-1		
73	M79	L3X3X4	0.0349	3.328	2	0.0021	6.7268	y	2	17.0857	46.656	1.6881	3.0863	1.1364	H2-1		
74	M83	L3X3X4	0.0344	3.328	2	0.0021	6.7268	y	2	17.0857	46.656	1.6881	3.0863	1.1364	H2-1		
75	M23	HSS5x0.500	0.0335	2.7188	2	0.0052	2.7188		2	209.9117	214.488	25.92	25.92	1.4336	H1-1b		
76	M32	HSS5x0.500	0.033	2.7188	2	0.0049	2.7188		2	209.9117	214.488	25.92	25.92	1.9896	H1-1b		
77	M9	W8X18	0.0313	5.4637	2	0.0117	0	y	2	103.2396	236.7	17.475	63.75	2.1659	H1-1b		
78	M238	HSS5.563X0.375	0.0308	0	2	0.0061	2.5417		2	182.6847	185.328	25.65	25.65	1.5084	H1-1b		
79	M10	W8X18	0.0308	0	2	0.0116	5.4637	y	2	103.2396	236.7	17.475	63.75	2.1673	H1-1b		
80	M244	HSS5.563X0.375	0.0307	0	2	0.0059	2.5417		2	182.6847	185.328	25.65	25.65	1.9072	H1-1b		
81	M84	L3X3X4	0.0275	3.3988	2	0.0018	6.7268	y	2	17.0857	46.656	1.6881	3.0863	1.1364	H2-1		
82	M80	L3X3X4	0.027	3.3988	2	0.0018	6.7268	y	2	17.0857	46.656	1.6881	3.0863	1.1364	H2-1		
83	M82	L3X3X4	0.0265	3.3988	2	0.0018	6.7268	y	2	17.0857	46.656	1.6881	3.0863	1.1364	H2-1		
84	M282	L3X3X4	0.0259	3.2073	2	0.0018	6.4829	y	2	18.3903	46.656	1.6881	3.1178	1.1364	H2-1		
85	M243	HSS5.563X0.375	0.0258	3.0417	2	0.002	3.0417		2	181.5542	185.328	25.65	25.65	2.1595	H1-1b*		
86	M280	L3X3X4	0.0255	3.2073	2	0.0017	6.4829	y	2	18.3903	46.656	1.6881	3.1178	1.1364	H2-1		
87	M284	L3X3X4	0.0252	3.2073	2	0.0017	6.4829	y	2	18.3903	46.656	1.6881	3.1178	1.1364	H2-1		
88	M371	LL3.5x3.5x5x3	0.0252	10.0999	2	0.002	10.0999	y	2	69.9445	136.08	12.4182	7.2616	2.2363	H1-1b		
89	M12	W8X18	0.0251	0	12	0.0093	5.4637	y	12	103.2396	236.7	17.475	63.75	2.1598	H1-1b		

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

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn	
90	M373	LL3.5x3.5x5x3	0.025	10.0999	2	0.0021	10.0999	y	2	69.9445	136.08	12.4182	7.2616	2.1557	H1-1b
91	M374	LL3.5x3.5x5x3	0.0249	10.0999	2	0.002	10.0999	y	2	69.9445	136.08	12.4182	7.2616	2.1813	H1-1b
92	M381	LL3.5x3.5x5x3	0.0244	10.0999	2	0.002	10.0999	y	2	69.9445	136.08	12.4182	7.2616	2.2619	H1-1b
93	M382	LL3.5x3.5x5x3	0.0244	10.0999	2	0.002	10.0999	y	2	69.9445	136.08	12.4182	7.2616	2.1791	H1-1b
94	M77	L3X3X4	0.0243	0	2	0	5	y	13	26.8164	46.656	1.6881	3.2256	1	H2-1
95	M71	L3X3X4	0.0243	0	2	0	5	y	13	26.8164	46.656	1.6881	3.2256	1	H2-1
96	M74	L3X3X4	0.0243	0	2	0	5	y	11	26.8164	46.656	1.6881	3.2256	1	H2-1
97	M11	W8X18	0.0242	5.4637	12	0.0091	0	y	12	103.2396	236.7	17.475	63.75	2.1588	H1-1b
98	M379	LL3.5x3.5x5x3	0.0241	10.0999	2	0.0021	10.0999	y	2	69.9445	136.08	12.4182	7.2616	2.099	H1-1b
99	M372	LL3.5x3.5x5x3	0.0241	10.0999	2	0.0021	10.0999	y	2	69.9445	136.08	12.4182	7.2616	2.1747	H1-1b
100	M378	LL3.5x3.5x5x3	0.024	10.0999	2	0.0021	10.0999	y	2	69.9445	136.08	12.4182	7.2616	2.1851	H1-1b
101	M7	W8X18	0.0235	5.4637	2	0.0091	0	y	2	103.2396	236.7	17.475	63.75	2.1394	H1-1b
102	M380	LL3.5x3.5x5x3	0.0234	10.0999	2	0.0021	10.0999	y	2	69.9445	136.08	12.4182	7.2616	2.1833	H1-1b
103	M375	LL3.5x3.5x5x3	0.0233	10.0999	2	0.002	10.0999	y	2	69.9445	136.08	12.4182	7.2616	2.2562	H1-1b
104	M8	W8X18	0.0229	0	2	0.0089	5.4637	y	2	103.2396	236.7	17.475	63.75	2.1408	H1-1b
105	M377	LL3.5x3.5x5x3	0.0229	0	2	0.002	10.0999	y	2	69.9445	136.08	12.4182	7.2616	2.2415	H1-1b
106	M285	L3X3X4	0.021	3.2756	2	0.0016	6.4829	y	2	18.3903	46.656	1.6881	3.1178	1.1364	H2-1
107	M281	L3X3X4	0.0206	3.2756	2	0.0015	6.4829	y	2	18.3903	46.656	1.6881	3.1178	1.1364	H2-1
108	M283	L3X3X4	0.0202	3.2756	2	0.0015	6.4829	y	2	18.3903	46.656	1.6881	3.1178	1.1364	H2-1
109	M376	LL3.5x3.5x5x3	0.0193	10.0999	2	0.002	10.0999	y	2	69.9445	136.08	12.4182	7.2616	2.1564	H1-1b
110	M73	L3X3X4	0.0186	0	2	0.0001	5	y	2	26.8164	46.656	1.6881	3.2256	1	H2-1
111	M70	L3X3X4	0.0183	0	2	0.0001	5	y	2	26.8164	46.656	1.6881	3.2256	1	H2-1
112	M76	L3X3X4	0.0181	0	2	0.0001	5	y	2	26.8164	46.656	1.6881	3.2256	1	H2-1
113	M319	LL3.5x3.5x5x3	0.0162	0	2	0.0085	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
114	M324	LL3.5x3.5x5x3	0.0155	0.7415	2	0.0086	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
115	M330	LL3.5x3.5x5x3	0.0155	0.7415	2	0.0083	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
116	M195	LL3.5x3.5x5x3	0.0154	0.7415	9	0.0098	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
117	M240	HSS5.563X0.375	0.0152	3.0417	2	0.0016	3.0417	12	181.5542	185.328	25.65	25.65	2.2461	H1-1b*	
118	M246	HSS5.563X0.375	0.0152	3.0417	2	0.0008	3.0417	2	181.5542	185.328	25.65	25.65	2.2263	H1-1b*	
119	M293	LL3.5x3.5x5x3	0.015	6.5114	2	0.0019	6.5114	y	2	103.1948	136.08	12.4182	7.5081	1	H1-1b
120	M325	LL3.5x3.5x5x3	0.0143	0	2	0.0081	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
121	M171	LL3.5x3.5x5x3	0.014	0.7415	2	0.0076	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
122	M78	L3X3X4	0.0138	0	2	0	5	y	10	26.8164	46.656	1.6881	3.2256	1	H2-1
123	M72	L3X3X4	0.0135	0	2	0	5	y	10	26.8164	46.656	1.6881	3.2256	1	H2-1
124	M24	HSS5x0.500	0.0132	3.7917	2	0.0015	3.7917	10	205.6769	214.488	25.92	25.92	1.8248	H1-1b	
125	M75	L3X3X4	0.0132	0	2	0	5	y	14	26.8164	46.656	1.6881	3.2256	1	H2-1
126	M22	HSS5x0.500	0.0121	5	2	0.0012	5	14	199.3996	214.488	25.92	25.92	2.2045	H1-1b	
127	M239	HSS5.563X0.375	0.0119	0	2	0.0012	4.6667	2	176.5669	185.328	25.65	25.65	2.2109	H1-1b	
128	M348	LL3.5x3.5x5x3	0.0116	0.7415	2	0.0055	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
129	M295	LL3.5x3.5x5x3	0.0113	0	2	0.0052	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
130	M292	LL3.5x3.5x5x3	0.011	0	12	0.0016	0	y	2	103.1948	136.08	12.4182	7.5081	1	H1-1b
131	M294	LL3.5x3.5x5x3	0.0109	0	2	0.0016	0	y	2	103.1948	136.08	12.4182	7.5081	1	H1-1b
132	M301	LL3.5x3.5x5x3	0.0105	0	2	0.005	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
133	M274	L3X3X4	0.0103	0	2	0.0001	4.6667	y	2	28.8004	46.656	1.6881	3.2793	1	H2-1
134	M31	HSS5x0.500	0.0102	5	2	0.0009	5	2	199.3996	214.488	25.92	25.92	2.1493	H1-1b	
135	M354	LL3.5x3.5x5x3	0.0101	0.7415	2	0.0046	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
136	M271	L3X3X4	0.0101	0	2	0.0001	4.6667	y	2	28.8004	46.656	1.6881	3.2793	1	H2-1
137	M277	L3X3X4	0.01	0	2	0.0001	4.6667	y	2	28.8004	46.656	1.6881	3.2793	1	H2-1
138	M245	HSS5.563X0.375	0.0099	4.6667	2	0.0008	4.6667	2	176.5669	185.328	25.65	25.65	2.1781	H1-1b*	
139	M19	HSS5x0.500	0.0096	3.7917	12	0.0012	3.7917	14	205.6769	214.488	25.92	25.92	1.8175	H1-1b	
140	M27	HSS5x0.500	0.009	5	2	0.001	5	10	199.3996	214.488	25.92	25.92	2.2166	H1-1b	
141	M300	LL3.5x3.5x5x3	0.0088	0.7415	2	0.0047	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
142	M313	LL3.5x3.5x5x3	0.0088	0	2	0.0057	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
143	M336	LL3.5x3.5x5x3	0.0087	0.7415	2	0.0055	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
144	M14	HSS5x0.500	0.0084	0	12	0.0009	0.2546	12	214.4474	214.488	25.92	25.92	1.6119	H1-1b	

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

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	L	Cphi*	Pnc [k]	phi*	Pnt [k]	phi*	Mn y-y [k-ft]	phi*	Mn z-z [k-ft]	Cb	Eqn
145	M33	HSS5x0.500	0.0083	3.7917	2	0.001	3.7917	2	205.6769	214.488	25.92	25.92	1.9705	H1-1b				
146	M272	L3X3X4	0.008	0	2	0	4.6667	y	13	28.8004	46.656	1.6881	3.2793	1	H2-1			
147	M278	L3X3X4	0.008	0	2	0	4.6667	y	2	28.8004	46.656	1.6881	3.2793	1	H2-1			
148	M343	LL3.5x3.5x5x3	0.008	0	2	0.0047	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
149	M275	L3X3X4	0.008	0	2	0	4.6667	y	14	28.8004	46.656	1.6881	3.2793	1	H2-1			
150	M21	HSS5x0.500	0.0077	2.3125	12	0.0015	2.3125	12	211.1673	214.488	25.92	25.92	2.0948	H1-1b				
151	M18	HSS5x0.500	0.0077	0	9	0.0008	0.2546	9	214.4474	214.488	25.92	25.92	1.0321	H1-1b				
152	M29	HSS5x0.500	0.0077	0	12	0.001	3.7917	12	205.6769	214.488	25.92	25.92	1.6762	H1-1b				
153	M349	LL3.5x3.5x5x3	0.0077	0	2	0.0041	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
154	M279	L3X3X4	0.0076	0	2	0	4.6667	y	10	28.8004	46.656	1.6881	3.2793	1	H2-1			
155	M273	L3X3X4	0.0073	0	2	0	4.6667	y	2	28.8004	46.656	1.6881	3.2793	1	H2-1			
156	M26	HSS5x0.500	0.0073	2.3125	9	0.0013	2.3125	9	211.1673	214.488	25.92	25.92	2.1434	H1-1b				
157	M219	LL3.5x3.5x5x3	0.0073	0.7415	2	0.0055	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
158	M276	L3X3X4	0.0072	0	2	0	4.6667	y	14	28.8004	46.656	1.6881	3.2793	1	H2-1			
159	M20	HSS5x0.500	0.0071	0	9	0.0008	3.7917	9	205.6769	214.488	25.92	25.92	2.144	H1-1b				
160	M306	LL3.5x3.5x5x3	0.007	0.7415	2	0.0048	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
161	M307	LL3.5x3.5x5x3	0.0067	0	2	0.0045	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
162	M16	HSS5x0.500	0.0067	0	9	0.0003	0.2546	2	214.4474	214.488	25.92	25.92	1.0113	H1-1b				
163	M25	HSS5x0.500	0.0064	0	9	0.0004	3.7917	15	205.6769	214.488	25.92	25.92	1.2361	H1-1b				
164	M370	HSS5x0.500	0.0064	5.455	12	0.0007	5.455	12	196.6511	214.488	25.92	25.92	2.1591	H1-1b				
165	M342	LL3.5x3.5x5x3	0.0062	0.7415	12	0.004	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
166	M220	LL3.5x3.5x5x3	0.006	0	12	0.0043	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
167	M242	HSS5.563X0.375	0.0059	0	2	0.0007	4.6667	9	176.5669	185.328	25.65	25.65	2.2308	H1-1b				
168	M337	LL3.5x3.5x5x3	0.0058	0	2	0.0045	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
169	M312	LL3.5x3.5x5x3	0.0057	0.7415	2	0.0048	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
170	M118	LL3.5x3.5x5x3	0.0057	0	9	0.004	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
171	M30	HSS5x0.500	0.0053	2.3125	2	0.0012	2.3125	2	211.1673	214.488	25.92	25.92	1.6923	H1-1b				
172	M361	LL3.5x3.5x5x3	0.0049	0	2	0.003	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
173	M360	LL3.5x3.5x5x3	0.0048	0.7415	9	0.003	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
174	M93	LL3.5x3.5x5x3	0.0047	0.7415	9	0.002	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
175	M172	LL3.5x3.5x5x3	0.0047	0	12	0.0042	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
176	M141	LL3.5x3.5x5x3	0.0042	0.7415	12	0.0026	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
177	M196	LL3.5x3.5x5x3	0.0038	0	2	0.0058	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
178	M94	LL3.5x3.5x5x3	0.0037	0	12	0.0018	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
179	M317	LL3.5x3.5x5x3	0.0036	0.7415	9	0.0005	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
180	M142	LL3.5x3.5x5x3	0.0035	0	18	0.0022	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
181	M316	LL3.5x3.5x5x3	0.0034	0.7415	9	0.0003	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
182	M318	LL3.5x3.5x5x3	0.0034	0	9	0.0033	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
183	M315	LL3.5x3.5x5x3	0.0034	0.7415	9	0.0004	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
184	M309	LL3.5x3.5x5x3	0.0033	0.7415	9	0.0003	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
185	M310	LL3.5x3.5x5x3	0.0033	0	9	0.0004	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
186	M314	LL3.5x3.5x5x3	0.0033	0.7415	9	0.0009	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
187	M311	LL3.5x3.5x5x3	0.0033	0	9	0.0007	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
188	M321	LL3.5x3.5x5x3	0.0033	0.7415	9	0.0004	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
189	M308	LL3.5x3.5x5x3	0.0033	0.7415	9	0.0007	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
190	M323	LL3.5x3.5x5x3	0.0032	0	9	0.001	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
191	M322	LL3.5x3.5x5x3	0.0032	0	9	0.0006	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
192	M365	LL3.5x3.5x5x3	0.0031	0	12	0.0003	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
193	M364	LL3.5x3.5x5x3	0.0031	0.7415	12	0.0003	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
194	M299	LL3.5x3.5x5x3	0.0031	0	12	0.0005	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
195	M297	LL3.5x3.5x5x3	0.0031	0.7415	12	0.0003	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
196	M363	LL3.5x3.5x5x3	0.0031	0.7415	12	0.0003	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
197	M298	LL3.5x3.5x5x3	0.003	0	12	0.0004	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
198	M320	LL3.5x3.5x5x3	0.003	0.7415	9	0.0013	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
199	M366	LL3.5x3.5x5x3	0.003	0	12	0.0017	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			

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

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn	
200	M326	LL3.5x3.5x5x3	0.003	0.7415	2	0.001	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
201	M296	LL3.5x3.5x5x3	0.0029	0.7415	12	0.0008	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
202	M304	LL3.5x3.5x5x3	0.0029	0	12	0.0003	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
203	M104	LL3.5x3.5x5x3	0.0029	0.7415	9	0.0005	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
204	M328	LL3.5x3.5x5x3	0.0029	0	2	0.0005	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
205	M362	LL3.5x3.5x5x3	0.0029	0.7415	12	0.0006	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
206	M107	LL3.5x3.5x5x3	0.0029	0	9	0.0006	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
207	M305	LL3.5x3.5x5x3	0.0029	0	9	0.0008	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
208	M303	LL3.5x3.5x5x3	0.0029	0.7415	9	0.0004	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
209	M302	LL3.5x3.5x5x3	0.0029	0.7415	12	0.0008	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
210	M332	LL3.5x3.5x5x3	0.0029	0.7415	2	0.0005	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
211	M158	LL3.5x3.5x5x3	0.0028	0	12	0.0003	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
212	M157	LL3.5x3.5x5x3	0.0028	0.7415	12	0.0005	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
213	M333	LL3.5x3.5x5x3	0.0028	0	2	0.0003	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
214	M327	LL3.5x3.5x5x3	0.0028	0.7415	2	0.0006	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
215	M110	LL3.5x3.5x5x3	0.0028	0	9	0.0004	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
216	M159	LL3.5x3.5x5x3	0.0028	0	12	0.0008	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
217	M101	LL3.5x3.5x5x3	0.0028	0.7415	9	0.0004	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
218	M357	LL3.5x3.5x5x3	0.0028	0.7415	12	0.0002	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
219	M356	LL3.5x3.5x5x3	0.0028	0.7415	12	0.0005	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
220	M334	LL3.5x3.5x5x3	0.0028	0	2	0.0004	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
221	M108	LL3.5x3.5x5x3	0.0028	0	9	0.0003	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
222	M103	LL3.5x3.5x5x3	0.0028	0.7415	9	0.0005	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
223	M358	LL3.5x3.5x5x3	0.0027	0	12	0.0002	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
224	M109	LL3.5x3.5x5x3	0.0027	0.7415	9	0.0004	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
225	M102	LL3.5x3.5x5x3	0.0027	0.7415	9	0.0004	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
226	M359	LL3.5x3.5x5x3	0.0027	0	12	0.0005	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
227	M155	LL3.5x3.5x5x3	0.0027	0.7415	12	0.0003	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
228	M156	LL3.5x3.5x5x3	0.0027	0.7415	12	0.0004	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
229	M105	LL3.5x3.5x5x3	0.0027	0	9	0.0023	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
230	M90	LL3.5x3.5x5x3	0.0027	0	12	0.0004	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
231	M111	LL3.5x3.5x5x3	0.0027	0	9	0.0019	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
232	M106	LL3.5x3.5x5x3	0.0027	0.7415	9	0.0023	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
233	M331	LL3.5x3.5x5x3	0.0027	0.7415	2	0.0033	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
234	M89	LL3.5x3.5x5x3	0.0027	0	12	0.0004	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
235	M88	LL3.5x3.5x5x3	0.0027	0.7415	12	0.0008	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
236	M329	LL3.5x3.5x5x3	0.0026	0	2	0.0013	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
237	M340	LL3.5x3.5x5x3	0.0026	0	2	0.0002	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
238	M129	LL3.5x3.5x5x3	0.0026	0.7415	12	0.0019	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
239	M100	LL3.5x3.5x5x3	0.0026	0.7415	9	0.0014	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
240	M339	LL3.5x3.5x5x3	0.0026	0.7415	2	0.0003	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
241	M91	LL3.5x3.5x5x3	0.0026	0	12	0.0004	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
242	M92	LL3.5x3.5x5x3	0.0026	0	12	0.0005	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
243	M190	LL3.5x3.5x5x3	0.0026	0	2	0.0028	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
244	M201	LL3.5x3.5x5x3	0.0026	0.7415	2	0.0025	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
245	M341	LL3.5x3.5x5x3	0.0026	0	2	0.0006	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
246	M335	LL3.5x3.5x5x3	0.0026	0	2	0.0009	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
247	M355	LL3.5x3.5x5x3	0.0026	0.7415	12	0.0014	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
248	M189	LL3.5x3.5x5x3	0.0026	0.7415	2	0.003	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b
249	M202	LL3.5x3.5x5x3	0.0025	0	2	0.0027	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
250	M338	LL3.5x3.5x5x3	0.0025	0.7415	2	0.0007	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b
251	M152	LL3.5x3.5x5x3	0.0025	0.7415	12	0.0005	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
252	M345	LL3.5x3.5x5x3	0.0025	0.7415	2	0.0003	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
253	M154	LL3.5x3.5x5x3	0.0025	0.7415	12	0.0015	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b
254	M95	LL3.5x3.5x5x3	0.0025	0	12	0.0006	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b

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

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	L	Cphi*	Pnc [k]	phi*	Pnt [k]	phi*	Mn y-y [k-ft]	phi*	Mn z-z [k-ft]	Cb	Eqn
255	M347	LL3.5x3.5x5x3	0.0025	0	2	0.0007	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
256	M346	LL3.5x3.5x5x3	0.0025	0	2	0.0004	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
257	M350	LL3.5x3.5x5x3	0.0024	0.7415	2	0.0005	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
258	M197	LL3.5x3.5x5x3	0.0024	0	12	0.002	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
259	M352	LL3.5x3.5x5x3	0.0024	0	2	0.0002	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
260	M344	LL3.5x3.5x5x3	0.0024	0.7415	2	0.0007	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
261	M130	LL3.5x3.5x5x3	0.0024	0	12	0.0019	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
262	M351	LL3.5x3.5x5x3	0.0023	0.7415	2	0.0004	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
263	M98	LL3.5x3.5x5x3	0.0023	0.7415	9	0.0005	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
264	M124	LL3.5x3.5x5x3	0.0023	0	12	0.0016	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
265	M123	LL3.5x3.5x5x3	0.0023	0.7415	12	0.0015	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
266	M99	LL3.5x3.5x5x3	0.0023	0	9	0.0013	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
267	M117	LL3.5x3.5x5x3	0.0023	0.7415	18	0.0028	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
268	M151	LL3.5x3.5x5x3	0.0023	0.7415	12	0.0003	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
269	M113	LL3.5x3.5x5x3	0.0023	0	9	0.0005	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
270	M97	LL3.5x3.5x5x3	0.0023	0.7415	9	0.0004	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
271	M353	LL3.5x3.5x5x3	0.0023	0	12	0.0008	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
272	M112	LL3.5x3.5x5x3	0.0022	0.7415	9	0.0016	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
273	M153	LL3.5x3.5x5x3	0.0022	0	12	0.0013	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
274	M114	LL3.5x3.5x5x3	0.0022	0	9	0.0004	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
275	M150	LL3.5x3.5x5x3	0.0022	0.7415	12	0.0003	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
276	M96	LL3.5x3.5x5x3	0.0022	0	12	0.0004	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
277	M149	LL3.5x3.5x5x3	0.0021	0.7415	12	0.0005	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
278	M115	LL3.5x3.5x5x3	0.002	0	9	0.0003	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
279	M116	LL3.5x3.5x5x3	0.0019	0	9	0.0009	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
280	M17	HSS5x0.500	0.0019	0.8021	12	0.001	0.8021	14	214.0858	214.488	25.92	25.92	1.6702	H1-1b				
281	M148	LL3.5x3.5x5x3	0.0019	0.7415	12	0.0008	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
282	M13	HSS5x0.500	0.0019	0.8021	2	0.0009	0.8021	2	214.0858	214.488	25.92	25.92	1.6702	H1-1b				
283	M214	LL3.5x3.5x5x3	0.0018	0	2	0.0017	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
284	M122	LL3.5x3.5x5x3	0.0018	0.4644	18	0.0004	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
285	M177	LL3.5x3.5x5x3	0.0018	0.7415	2	0.0021	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
286	M213	LL3.5x3.5x5x3	0.0018	0.7415	2	0.0017	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
287	M178	LL3.5x3.5x5x3	0.0018	0	2	0.0021	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
288	M143	LL3.5x3.5x5x3	0.0018	0.2264	15	0.0007	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
289	M140	LL3.5x3.5x5x3	0.0018	0.5074	15	0.0005	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
290	M121	LL3.5x3.5x5x3	0.0018	0.402	18	0.0004	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
291	M120	LL3.5x3.5x5x3	0.0018	0.4644	18	0.0004	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
292	M144	LL3.5x3.5x5x3	0.0018	0.3005	15	0.0004	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
293	M139	LL3.5x3.5x5x3	0.0018	0.4488	15	0.0004	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
294	M135	LL3.5x3.5x5x3	0.0018	0.7415	9	0.001	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
295	M136	LL3.5x3.5x5x3	0.0017	0.121	9	0.0009	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
296	M145	LL3.5x3.5x5x3	0.0017	0.2381	15	0.0004	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
297	M138	LL3.5x3.5x5x3	0.0017	0.5074	15	0.0004	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
298	M125	LL3.5x3.5x5x3	0.0017	0.2459	18	0.0004	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
299	M119	LL3.5x3.5x5x3	0.0017	0	9	0.0006	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
300	M126	LL3.5x3.5x5x3	0.0017	0.3747	18	0.0005	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
301	M127	LL3.5x3.5x5x3	0.0017	0.2576	18	0.0005	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
302	M146	LL3.5x3.5x5x3	0.0017	0.3161	15	0.0004	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
303	M184	LL3.5x3.5x5x3	0.0017	0	2	0.0023	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
304	M137	LL3.5x3.5x5x3	0.0017	0.4566	15	0.0004	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b			
305	M207	LL3.5x3.5x5x3	0.0017	0.7415	2	0.0018	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
306	M15	HSS5x0.500	0.0016	0.8021	2	0.0008	0.8021	11	214.0858	214.488	25.92	25.92	1.6702	H1-1b				
307	M147	LL3.5x3.5x5x3	0.0016	0.1639	15	0.0006	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			
308	M128	LL3.5x3.5x5x3	0.0016	0.2381	18	0.0004	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b			
309	M183	LL3.5x3.5x5x3	0.0015	0.7415	2	0.0023	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b			



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

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	DirL	Cphi*	Pnc [k]	phi*	Pnt [k]	phi*	Mn y-y [k-ft]	phi*	Mn z-z [k-ft]	Cb	Eqn
310	M208	LL3.5x3.5x5x3	0.0015	0	2	0.0017	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b		
311	M134	LL3.5x3.5x5x3	0.0014	0.6791	15	0.0004	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b		
312	M194	LL3.5x3.5x5x3	0.0013	0.7415	12	0.0017	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b		
313	M173	LL3.5x3.5x5x3	0.0013	0	2	0.0014	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b		
314	M131	LL3.5x3.5x5x3	0.0013	0.2068	18	0.0005	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b		
315	M235	LL3.5x3.5x5x3	0.0012	0.4371	12	0.0003	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b		
316	M236	LL3.5x3.5x5x3	0.0012	0.281	12	0.0003	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b		
317	M221	LL3.5x3.5x5x3	0.0012	0	9	0.0012	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b		
318	M169	LL3.5x3.5x5x3	0.0012	0.562	12	0.0004	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b		
319	M132	LL3.5x3.5x5x3	0.0012	0.1483	18	0.0004	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b		
320	M234	LL3.5x3.5x5x3	0.0012	0.3825	12	0.0002	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b		
321	M133	LL3.5x3.5x5x3	0.0012	0.562	15	0.0004	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b		
322	M180	LL3.5x3.5x5x3	0.0012	0.3356	9	0.0002	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b		
323	M181	LL3.5x3.5x5x3	0.0012	0.3356	9	0.0003	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b		
324	M187	LL3.5x3.5x5x3	0.0012	0.4332	9	0.0002	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b		
325	M186	LL3.5x3.5x5x3	0.0012	0.4215	9	0.0003	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b		
326	M188	LL3.5x3.5x5x3	0.0012	0.3395	9	0.0004	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b		
327	M166	LL3.5x3.5x5x3	0.0011	0	2	0.0014	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b		
328	M225	LL3.5x3.5x5x3	0.0011	0.7415	9	0.001	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b		
329	M179	LL3.5x3.5x5x3	0.0011	0.5308	9	0.0004	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b		
330	M193	LL3.5x3.5x5x3	0.0011	0.6947	9	0.0006	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b		
331	M237	LL3.5x3.5x5x3	0.0011	0.7415	2	0.0015	0.7415	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b		
332	M226	LL3.5x3.5x5x3	0.0011	0	2	0.0011	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b		
333	M229	LL3.5x3.5x5x3	0.0011	0.3552	12	0.0002	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b		
334	M168	LL3.5x3.5x5x3	0.0011	0.3473	12	0.0002	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b		
335	M228	LL3.5x3.5x5x3	0.0011	0.3005	12	0.0003	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b		
336	M182	LL3.5x3.5x5x3	0.001	0.1834	9	0.0005	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b		
337	M174	LL3.5x3.5x5x3	0.001	0.3044	12	0.0004	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b		
338	M233	LL3.5x3.5x5x3	0.001	0.5971	12	0.0004	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b		
339	M167	LL3.5x3.5x5x3	0.001	0.5971	12	0.0004	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b		
340	M218	LL3.5x3.5x5x3	0.001	0.7415	9	0.0011	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b		
341	M185	LL3.5x3.5x5x3	0.001	0.6205	9	0.0005	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b		
342	M232	LL3.5x3.5x5x3	0	0.7415	15	0.0009	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
343	M231	LL3.5x3.5x5x3	0	0.7415	20	0.0009	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
344	M170	LL3.5x3.5x5x3	0	0.7415	20	0.0008	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
345	M191	LL3.5x3.5x5x3	0	0.7415	20	0.0006	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
346	M198	LL3.5x3.5x5x3	0	0.7415	20	0.0006	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
347	M200	LL3.5x3.5x5x3	0	0.7415	20	0.0005	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
348	M206	LL3.5x3.5x5x3	0	0.7415	20	0.0005	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
349	M176	LL3.5x3.5x5x3	0	0.7415	20	0.0004	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
350	M209	LL3.5x3.5x5x3	0	0.7415	20	0.0004	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
351	M217	LL3.5x3.5x5x3	0	0.7415	20	0.0004	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
352	M222	LL3.5x3.5x5x3	0	0.7415	20	0.0004	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
353	M203	LL3.5x3.5x5x3	0	0.7415	20	0.0004	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
354	M215	LL3.5x3.5x5x3	0	0.7415	20	0.0004	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
355	M227	LL3.5x3.5x5x3	0	0.7415	20	0.0004	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
356	M230	LL3.5x3.5x5x3	0	0.7415	20	0.0004	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
357	M224	LL3.5x3.5x5x3	0	0.7415	20	0.0004	0.7415	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
358	M212	LL3.5x3.5x5x3	0	0.7415	20	0.0003	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
359	M205	LL3.5x3.5x5x3	0	0.7415	20	0.0003	0.7415	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
360	M210	LL3.5x3.5x5x3	0	0.7415	20	0.0003	0	z	2	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
361	M223	LL3.5x3.5x5x3	0	0.7415	20	0.0002	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
362	M199	LL3.5x3.5x5x3	0	0.7415	20	0.0002	0	z	9	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
363	M211	LL3.5x3.5x5x3	0	0.7415	20	0.0002	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b*		
364	M175	LL3.5x3.5x5x3	0	0.7415	20	0.0002	0	z	12	24.1568	136.08	12.4182	7.9402	1	H1-1b*		

Company :CLS  
 Designer :PSP  
 Job Number :13754283\_C3\_04  
 Model Name:370624 - Mankes Silo, CT

3/4/2022  
 3:59:12 PM  
 Checked By : DWC

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

Member	Shape	Code Check	Loc[ft]	LCShear Check	Loc[ft]	Dir	L	Cphi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn	
365	M204	LL3.5x3.5x5x3	0	0.7415	20	0.0002	0.7415	z 9	24.1568	136.08	12.4182	7.9402	1	H1-1b*
366	M192	LL3.5x3.5x5x3	0	0.7415	20	0.0002	0.7415	z 2	24.1568	136.08	12.4182	7.9402	1	H1-1b*
367	M216	LL3.5x3.5x5x3	0	0.7415	20	0.0002	0.7415	z 12	24.1568	136.08	12.4182	7.9402	1	H1-1b*

**Site Name:** Mankes Silo,CT  
**Site Number:** 370624  
**Tower Type:** MP  
**Design Loads (Factored) - Analysis per TIA-222-H Standards**

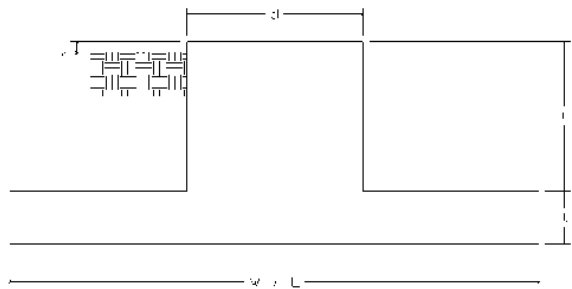
## Monolithic Mat & Pier Foundation Analysis

Foundation Analysis Parameters		
Design / Analysis / Mapping:	Mapping	-
Compression/Leg:	494.5	k
Uplift/Leg:	0.0	k
Total Shear:	34.2	k
Moment:	1,392.2	k-ft
Tower + Appurtenance Weight:	412.1	k
Depth to Base of Foundation (l + t - h):	3.75	ft
Diameter Base Plate (d):	0	ft
Length of Pier (l):	0	ft
Height of Pier above Ground (h):	0	ft
Width of Pad (W):	19	ft
Length of Pad (L):	19	ft
Thickness of Pad (t):	3.75	ft
Tower Leg Center to Center:	0	ft
Number of Tower Legs:	1	-
Tower Center from Mat Center:	0	ft
Depth Below Ground Surface to Water Table:	99	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil Above Water Table:	100	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	37.6	pcf
Friction Angle of Uplift:	15	°
Coefficient of Shear Friction:	0.30	-
Ultimate Compressive Bearing Pressure:	10,000	psf
Ultimate Passive Pressure on Pad Face:	0	psf
$f_{\text{Soil and Concrete Weight}}$ :	0.9	-
$f_{\text{Soil}}$ :	0.75	-

Overturning Moment Usage		
Design OTM:	1520.4	k-ft
OTM Resistance:	4430.4	k-ft
Design OTM / OTM Resistance:	34%	Pass

Soil Bearing Pressure Usage		
Net Bearing Pressure:	3385	psf
Factored Nominal Bearing Pressure:	7500	psf
Factored Nominal (Net) Bearing Pressure:	45%	Pass
Load Direction Controlling Design Bearing Pressure:	Parallel to Pad Edge	

Sliding Factor of Safety		
Ultimate Friction Resistance:	184.4	k
Ultimate Passive Pressure Resistance:	0.0	k
Total Factored Sliding Resistance:	138.3	k
Sliding Design / Sliding Resistance:	25%	Pass





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Data provided by USPS

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Tracking number 9505510391962201642082

**Delivered** ✓  
July 22, 09:23AM  
Cheshire, CT

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Call 1-800-275-8777

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<p>Tracking number 9505510391972210718777</p> <p><b>Delivered</b> ✓</p> <p>August 01, 10:25AM Cheshire, CT</p>	
<p> View details on USPS</p>	
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<p> Track another package</p>	

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**Delivered** 

July 22, 09:23AM  
Cheshire, CT


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**Delivered**

July 23, 11:06AM  
Woburn, MA

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July 19, 2022

Jacqueline Hall  
Project Manager, Site Development  
American Tower Corporation  
10 Presidential Way  
Woburn, MA 01801

Re: Exempt Modification Request – AT&T Site 13754283  
AT&T Wireless Telecommunications Facility @ 1338 Highland Ave., Cheshire, CT 06410

Dear Ms. Hall:

New Cingular Wireless, PCS, LLC (dba AT&T) currently maintains antennas on a wireless telecommunications facility owned by American Tower Corporation (ATC) at the above referenced address. The facility is concealed within an existing silo with nine (9) antennas mounted at a fifty four (54) foot centerline. An equipment shelter is located near the base of the silo.

AT&T desires to modify its existing equipment as described in the enclosed Construction Drawings:

- Remove six (6) antennas, three (3) RRHs, three (3) TMAs, six (6) diplexers, two (2) fiber trunk cables four (4) AWG cables, one (1) control cable and twelve (12) coax cables;
- Install nine (9) antennas, six (6) RRHs, one (1) squid, three (3) fiber cables, four (4) 8 AWG DC cables, two (2) 6 AWG cables, six (6) Y cables and twelve (12) 7.8" coax cables.
- Ground work includes installing one (1) 6648 and XCEDE cable.

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

The enclosed letter and attachments to the CSC fully describe the proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

A handwritten signature in blue ink, appearing to read 'Jack Andrews', is written over a circular stamp or watermark.

Jack Andrews  
Zoning Manager, Centerline Communications  
10130 Donleigh Drive  
Columbia, MD 21046

enclosures





July 20, 2022

Michael Glidden  
Cheshire Town Planner  
84 South Main Street  
Cheshire, CT 06410

Re: Exempt Modification Request – AT&T Site 13757740  
AT&T Wireless Telecommunications Facility @ 8 Old 79, Madison, CT 06443

Dear Mr. Glidden:

New Cingular Wireless, PCS, LLC (dba AT&T) currently maintains antennas on a wireless telecommunications facility owned by American Tower Corporation (ATC) at the above referenced address. The facility is concealed within an existing silo with nine (9) antennas mounted at a fifty four (54) foot centerline. An equipment shelter is located near the base of the silo.

AT&T desires to modify its existing equipment as described in the enclosed Construction Drawings:

- Remove six (6) antennas, three (3) RRHs, three (3) TMAs, six (6) diplexers, two (2) fiber trunk cables four (4) AWG cables, one (1) control cable and twelve (12) coax cables;
- Install nine (9) antennas, six (6) RRHs, one (1) squid, three (3) fiber cables, four (4) 8 AWG DC cables, two (2) 6 AWG cables, six (6) Y cables and twelve (12) 7.8” coax cables.
- Ground work includes installing one (1) 6648 and XCEDE cable.

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

The enclosed letter and attachments to the CSC fully describe the proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

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Jack Andrews  
Zoning Manager, Centerline Communications  
10130 Donleigh Drive  
Columbia, MD 21046

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July 20, 2022

Sean M. Kimball  
Cheshire Town Manager  
84 South Main Street  
Cheshire CT 06410

Re: Exempt Modification Request – AT&T Site 13754283  
AT&T Wireless Telecommunications Facility @ 1338 Highland Ave., Cheshire, CT 06410

Dear Town Manager Kimball:

New Cingular Wireless, PCS, LLC (dba AT&T) currently maintains antennas on a wireless telecommunications facility owned by American Tower Corporation (ATC) at the above referenced address. The facility is concealed within an existing silo with nine (9) antennas mounted at a fifty four (54) foot centerline. An equipment shelter is located near the base of the silo.

AT&T desires to modify its existing equipment as described in the enclosed Construction Drawings:

- Remove six (6) antennas, three (3) RRHs, three (3) TMAs, six (6) diplexers, two (2) fiber trunk cables four (4) AWG cables, one (1) control cable and twelve (12) coax cables;
- Install nine (9) antennas, six (6) RRHs, one (1) squid, three (3) fiber cables, four (4) 8 AWG DC cables, two (2) 6 AWG cables, six (6) Y cables and twelve (12) 7.8" coax cables.
- Ground work includes installing one (1) 6648 and XCEDE cable.

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

The enclosed letter and attachments to the CSC fully describe the proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

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Jack Andrews  
Zoning Manager, Centerline Communications  
10130 Donleigh Drive  
Columbia, MD 21046

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July 20, 2022

MUDDM LLC  
1338 Highland Ave.  
Cheshire, CT 06410

Re: Exempt Modification Request – AT&T Site 13754283  
AT&T Wireless Telecommunications Facility @ 1338 Highland Ave., Cheshire, CT 06410

Dear Property Owner:

New Cingular Wireless, PCS, LLC (dba AT&T) currently maintains antennas on a wireless telecommunications facility owned by American Tower Corporation (ATC) at the above referenced address. The facility is concealed within an existing silo with nine (9) antennas mounted at a fifty four (54) foot centerline. An equipment shelter is located near the base of the silo.

AT&T desires to modify its existing equipment as described in the enclosed Construction Drawings:

- Remove six (6) antennas, three (3) RRHs, three (3) TMAs, six (6) diplexers, two (2) fiber trunk cables four (4) AWG cables, one (1) control cable and twelve (12) coax cables;
- Install nine (9) antennas, six (6) RRHs, one (1) squid, three (3) fiber cables, four (4) 8 AWG DC cables, two (2) 6 AWG cables, six (6) Y cables and twelve (12) 7.8” coax cables.
- Ground work includes installing one (1) 6648 and XCEDE cable.

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

The enclosed letter and attachments to the CSC fully describe the proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

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Jack Andrews  
Zoning Manager, Centerline Communications  
10130 Donleigh Drive  
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