



TOWN OF JACKSON PLANNING & BUILDING DEPARTMENT

TRANSMITTAL MEMO

Town of Jackson

- ☒ Public Works/Engineering
- ☒ Building
- ☐ Title Company
- ☒ Town Attorney
- ☒ Police

Joint Town/County

- ☒ Parks and Recreation
- ☒ Pathways
- ☒ Joint Housing Dept

Teton County

- ☐ Planning Division

- ☐ Engineer
- ☐ Surveyor- Nelson
- ☐ Assessor
- ☐ Clerk and Recorder
- ☐ Road and Levee

State of Wyoming

- ☐ Teton Conservation
- ☐ WYDOT
- ☐ TC School District #1
- ☐ Game and Fish
- ☐ DEQ

Federal Agencies

- ☐ Army Corp of Engineers

Utility Providers

- ☐ Qwest
- ☐ Lower Valley Energy
- ☐ Bresnan Communications

Special Districts

- ☒ START
- ☒ Jackson Hole Fire/EMS
- ☐ Irrigation Company

Date: August 19, 2021 Item #: P21-225 Planner: Katelyn Page Phone: 307-733-0440 ext. 1302 Email: kpape@jacksonwy.gov Owner American Towers PO Box 723597 Atlanta, GA 31139 Applicant: The Derna Group – Rachel Bruin 22431 Antonio Pkwy STE B160-234 Rancho Santa Margarita, CA 92688	REQUESTS: The applicant is submitting a request for a Basic Use Permit to modify existing wireless communication facility located at 1525 Martin Lane, legally known as LOT 7, JACKSON BUSINESS PARK ADDITION, PIDN: 22-40-16-06-1-08-002 For questions, please call Katelyn Page at 307-733-0440, x1302 or email to the address shown below. Thank you.
Please respond by: September 2, 2021 (Sufficiency) September 9, 2021 (with Comments)	

RESPONSE: For Departments not using Trak-it, please send responses via email to: alangley@jacksonwy.gov



PLANNING PERMIT APPLICATION
Planning & Building Department

150 E Pearl Ave. | ph: (307) 733-0440
P.O. Box 1687 | www.townofjackson.com
Jackson, WY 83001

For Office Use Only

Fees Paid _____ Date & Time Received _____
Application #s _____

Please note: Applications received after 3 PM will be processed the next business day.

PROJECT.

Name/Description: _____
Physical Address: _____
Lot, Subdivision: _____ PIDN: _____

PROPERTY OWNER.

Name: _____ Phone: _____
Mailing Address: _____ ZIP: _____
E-mail: _____

APPLICANT/AGENT.

Name: _____ Phone: _____
Mailing Address: _____ ZIP: _____
E-mail: _____

DESIGNATED PRIMARY CONTACT.

_____ Property Owner _____ Applicant/Agent

TYPE OF APPLICATION. Please check all that apply; review the type of application at www.townofjackson/200/Planning

Use Permit

_____ Basic Use
_____ Conditional Use
_____ Special Use

Relief from the LDRs

_____ Administrative Adjustment
_____ Variance
_____ Beneficial Use Determination
_____ Appeal of an Admin. Decision

Physical Development

_____ Sketch Plan
_____ Development Plan
_____ Design Review

Subdivision/Development Option

_____ Subdivision Plat
_____ Boundary Adjustment (replat)
_____ Boundary Adjustment (no plat)
_____ Development Option Plan

Interpretations

_____ Formal Interpretation
_____ Zoning Compliance Verification

Amendments to the LDRs

_____ LDR Text Amendment
_____ Map Amendment

Miscellaneous

_____ Other: _____
_____ Environmental Analysis

PRE-SUBMITTAL STEPS. To see if pre-submittal steps apply to you, go to www.townofjackson.com/200/Planning and select the relevant application type for requirements. Please submit all required pre-submittal steps with application.

Pre-application Conference #: _____ Environmental Analysis #: _____

Original Permit #: _____ Date of Neighborhood Meeting: _____

SUBMITTAL REQUIREMENTS. Please ensure all submittal requirements are included. The Planning Department will not hold or process incomplete applications. Partial or incomplete applications will be returned to the applicant. Go to www.townofjackson.com/200/Planning and select the relevant application type for submittal requirements.

Have you attached the following?

_____ **Application Fee.** Fees are cumulative. Go to www.townofjackson.com/200/Planning and select the relevant application type for the fees.

_____ **Notarized Letter of Authorization.** A notarized letter of consent from the landowner is required if the applicant is not the owner, or if an agent is applying on behalf of the landowner. Please see the Letter of Authorization template at <http://www.townofjackson.com/DocumentCenter/View/845/LetterOfAuthorization-PDF>.

_____ **Response to Submittal Requirements.** The submittal requirements can be found on the TOJ website for the specific application. If a pre-application conference is required, the submittal requirements will be provided to applicant at the conference. The submittal requirements are at www.townofjackson.com/200/Planning under the relevant application type.

Note: Information provided by the applicant or other review agencies during the planning process may identify other requirements that were not evident at the time of application submittal or a Pre-Application Conference, if held. Staff may request additional materials during review as needed to determine compliance with the LDRs.

Under penalty of perjury, I hereby certify that I have read this application and associated checklists and state that, to the best of my knowledge, all information submitted in this request is true and correct. I agree to comply with all county and state laws relating to the subject matter of this application, and hereby authorize representatives of Teton County to enter upon the above-mentioned property during normal business hours, after making a reasonable effort to contact the owner/applicant prior to entering.

Rachel Bruin

Signature of Property Owner or Authorized Applicant/Agent

Date

Name Printed

Title

LETTER OF AUTHORIZATION

American Towers LLC, "Owner" whose address is: 10 Presidential Way

Woburn MA 01801

(NAME OF ALL INDIVIDUALS OR ENTITY OWNING THE PROPERTY)

American Towers LLC

, as the owner of property

more specifically legally described as: LOT 7, JACKSON BUSINESS PARK ADDITION

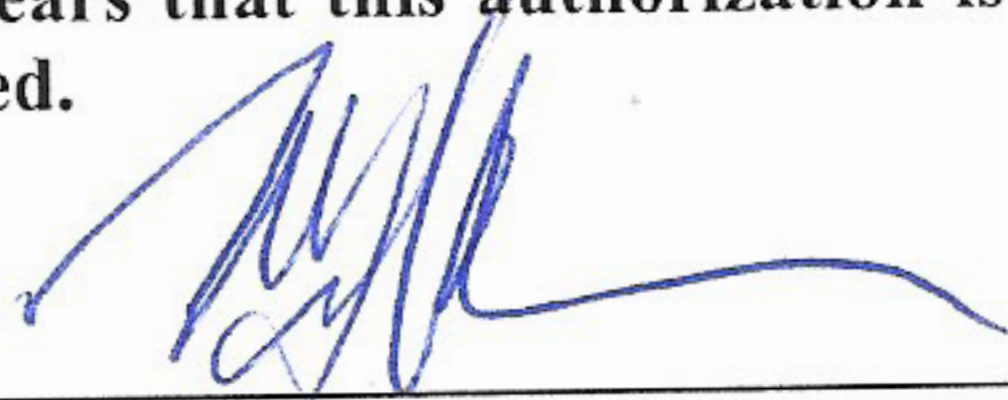
1525 MARTIN LN JACKSON, WY 83001-8569 APN: R0001210

(If too lengthy, attach description)

HEREBY AUTHORIZES The Derna Group, its successors and assigns, as agent to represent and act for Owner in making application for and receiving and accepting on Owners behalf, any permits or other action by the Town of Jackson, or the Town of Jackson Planning, Building, Engineering and/or Environmental Health Departments relating to the modification, development, planning or replatting, improvement, use or occupancy of land in the Town of Jackson. Owner agrees that Owner is or shall be deemed conclusively to be fully aware of and to have authorized and/or made any and all representations or promises contained in said application or any Owner information in support thereof, and shall be deemed to be aware of and to have authorized any subsequent revisions, corrections or modifications to such materials. Owner acknowledges and agrees that Owner shall be bound and shall abide by the written terms or conditions of issuance of any such named representative, whether actually delivered to Owner or not. Owner agrees that no modification, development, platting or replatting, improvement, occupancy or use of any structure or land involved in the application shall take place until approved by the appropriate official of the Town of Jackson, in accordance with applicable codes and regulations. Owner agrees to pay any fines and be liable for any other penalties arising out of the failure to comply with the terms of any permit or arising out of any violation of the applicable laws, codes or regulations applicable to the action sought to be permitted by the application authorized herein.

Under penalty of perjury, the undersigned swears that the foregoing is true and, if signing on behalf of a corporation, partnership, limited liability company or other entity, the undersigned swears that this authorization is given with the appropriate approval of such entity, if required.

OWNER:



(SIGNATURE) (SIGNATURE OF CO-OWNER)

Title: Margaret Robinson, Senior Counsel, American Towers LLC

(if signed by officer, partner or member of corporation, LLC (secretary or corporate owner) partnership or other non-individual Owner)

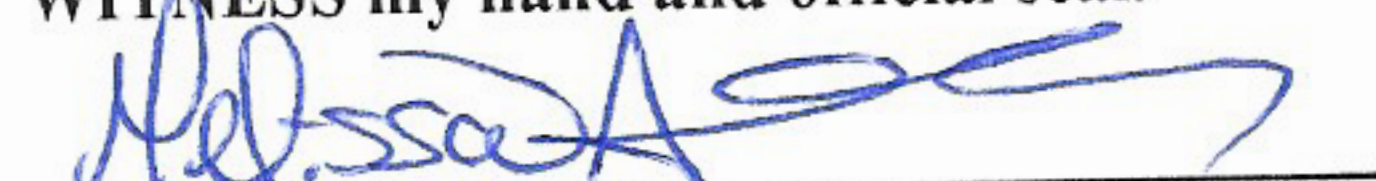
STATE OF Massachusetts)

)SS.

COUNTY OF Middlesex)

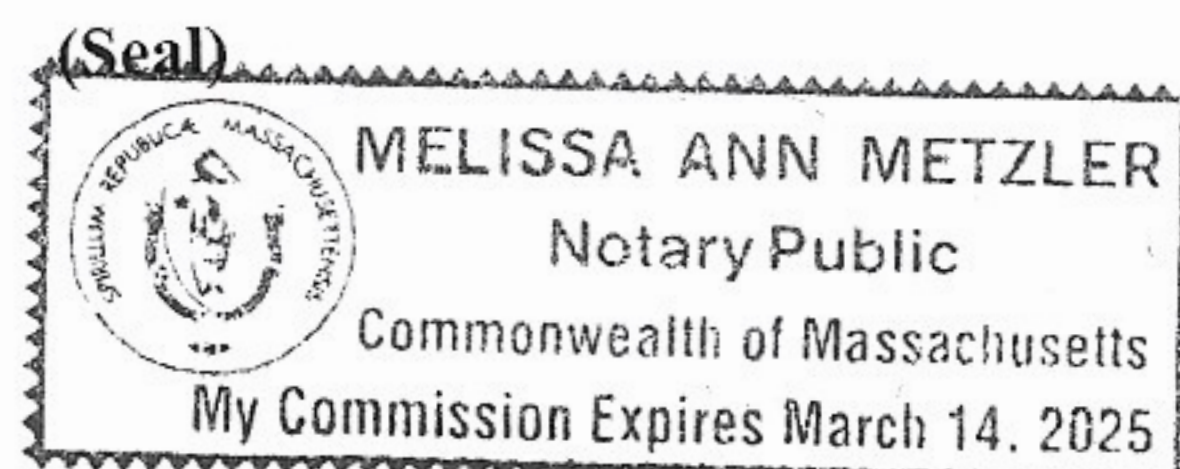
The foregoing instrument was acknowledged before me by Margaret Robinson, Senior Counsel this 30 day of July, 2021.

WITNESS my hand and official seal.



(Notary Public)

My commission expires:



Project Summary
T-Mobile Proposed Modifications to Existing Wireless Telecommunications Facility
SL01204D – 1525 Martin Lane, Jackson, WY 83001; APN: 22-40-16-06-1-08-002

Project Description

This project is an “Eligible Facilities Request” to review the proposed modifications of the above referenced wireless facility and to determine that the proposal conforms to Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012, codified as 47 U.S.C. § 1455(a) (“Section 6409(a)"). Generally, Section 6409(a) requires that local governments “may not deny, and shall approve,” certain requests to collocate with or modify an existing wireless tower or base station so long as that request will not “substantially change the physical dimensions.”

The facility is located at 1525 Martin Lane, Jackson, WY 83001; APN: 22-40-16-06-1-08-002, and consists of an existing 180’ Self-Support Tower located within an existing enclosed equipment compound. T-Mobile has existing equipment cabinets located at grade within the compound in addition to (9) existing panel antennas mounted on the existing tower.

T-Mobile is proposing to remove (9) antennas, (3) radios, (6) coax cables, (1) hybrid cable, and install (9) antennas, (9) radios, (3) diplexers, (2) hybrid cables, (1) baseband, (1) voltage booster, and (1) router. There will be no increase to the height of the existing tower or the footprint of the existing equipment area.

The work is scheduled to take place after all approvals and permits have been received from the Town of Jackson Planning & Building Department. Tentative dates and times are 11/1/2021 thru 11/5/2021 from 8:00 a.m. to 5:00 p.m.

The below Equipment Schedule reflects the T-Mobile equipment existing and proposed.

Equipment Type	Existing/Proposed	Number	Location
Antenna	Existing	9 (to be removed)	See Plans (Sheet C-201 and C-401)
Antenna	Proposed	9	See Plans (Sheet C-201, C-401, & R-604)
RRUs	Existing	3 (to be removed)	See Plans (Sheet C-201 and C-401)
RRUs	Proposed	9	See Plans (Sheet C-201, C-401, & R-604)
Diplexers	Proposed	3	See Plans (Sheet C-201, C-401, & R-604)

Project Purpose

The purpose of this project is to upgrade the existing facility with the latest technology in wireless broadband. This faster network and increased bandwidth will allow for faster

broadband connection speeds for local consumers such as public works, emergency responders, local businesses, residents, and visitors of the Town of Jackson.

Justification Statement

This section will describe how the proposed use is substantially compatible with uses permitted in the same general area, how the proposed use would not be materially detrimental to other properties within the same area, and how the proposed installation will be compliant with federal regulations concerning the modification of existing facilities.

The proposed modifications to the existing facility are compatible with uses permitted in the same general area. This can be evidenced by the fact that as this proposal is for a modification to an already permitted wireless communication facility, this use has already been approved and established at this location and would not be materially detrimental to other properties within the same area.

Section 6409 of the Middle-Class Tax Relief and Job Creation Act of 2012, which was signed into law February 22, 2012, mandates that state and local governments provide a nondiscretionary approval of an eligible facilities request for the modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station. The FCC defines substantial change as the mounting of a proposed antenna that would increase the existing height of the tower by more than 10%. T-Mobile's proposed modifications fall within the scope of this statute. For further clarification on Section 6409 of the Middle-Class Tax Relief and Job Creation Act of 2012, please review the attached explanatory document included with this submittal, which includes links to all necessary materials.

Conclusion

As evidenced by the text above and the supporting documents provided as part of this application, the proposed modifications are in compliance with the existing approvals for this facility, Federal regulations concerning the modification of an existing wireless communication facility, FCC Rules and Regulations concerning RF Emissions, and all non-discretionary structural, electrical, energy, building, and safety codes.

I would like to thank you for your time and efforts in reviewing this application and look forward to any feedback you may have.

Sincerely,

Rachel Bruin

**Rachel Bruin | The Derna Group
On behalf of T-Mobile and American Tower**

22431 Antonio Parkway
Suite B160-234
Rancho Santa Margarita, CA 92688
Email: rbruin@demagrp.com
Phone: (805) 215-9444

Streamlined Wireless Facilities Deployment:

Federal Regulation in the Middle Class Tax Relief and Job Creation Act of 2012

Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012 mandates that state and local governments must approve an eligible facilities request for the modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station. The Act was signed into law February 22, 2012. The section mandating streamlined modification and collocation approval ensures the timely deployment of wireless services.

Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012ⁱ

(a) Facility Modification.—

(1) In general.—Notwithstanding section 704 of the Telecommunications Act of 1996 (Public Law 104–104) or any other provision of law, a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.

(2) Eligible facilities request.—For purposes this subsection, the term “eligible facilities request” means any request for modification of an existing wireless tower or base station that involves –

- (A) collocation of new transmission equipment;
- (B) removal of transmission equipment; or
- (C) replacement of transmission equipment.

(3) Applicability of environmental laws.—nothing in paragraph (1) shall be construed to relieve the Commission from the requirements of the National Historic Preservation Act or the National Environmental Policy Act of 1969.

The Act applies to eligible facilities requests for modification of existing wireless towers and base stations:

- ☞ The Act defines “eligible facilities request” as any request for modification of an existing wireless tower or base station that involves:
 - Collocation of new transmission equipment;
 - Removal of transmission equipment; or
 - Replacement of transmission equipment.
- ☞ The Federal Communications Commission (“FCC”) defines “collocation” as “the mounting or installation of an antenna on an existing tower, building or structure for the purpose of transmitting and/or receiving radio frequency signals for communications purposes.”ⁱⁱ
- ☞ The FCC defines a “substantial change” as:
 - The mounting of a proposed antenna on the tower that would increase the existing height of the tower by more than 10%, or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to avoid interference with existing antennas; or
 - The mounting of a proposed antenna that would involve adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable.ⁱⁱⁱ
- ☞ The FCC defines a “tower” as “any structure built for the sole or primary purpose of supporting FCC-licensed antennas and their associated facilities.”^{iv}
- ☞ The federal regulations define a “base station” as “[a] station at a specified site authorized to communicate with mobile stations;” or “[a] land station in the land mobile service.”^v

For more information, please contact PCIA’s Government Affairs Department: advocacy@pcia.com



Federal Regulation of Wireless Siting in the Middle Class Tax Relief and Job Creation Act of 2012, cont.

The Act requires approval for all eligible facilities requests that do not substantially change the physical dimensions of such tower or base station and:

- ☞ Applies despite section 704 of the Telecommunications Act of 1996, which preserves the authority of a state or local government or instrumentality thereof over decisions regarding the placement, construction, and *modification* of personal wireless service facilities;^{vi}
- ☞ Preempts zoning review and conditional approvals of eligible facilities requests;^{vii}
- ☞ Requires eligible facilities requests only be subject to administrative review processes and not discretionary review processes that allow a state or local government to deny or condition an eligible facilities request.
- ☞ Requires that eligible facilities requests for the modification of legal, non-conforming towers must be approved.

The FCC's Wireless Facility Siting "Shot Clock" applies to eligible facilities request for collocation:

- ☞ State and local governments have 90 days to act on an application to collocate wireless facilities on existing structures.^{viii}
- ☞ Under the Act, state and local governments *must* approve within 60 days any eligible facilities requests for collocation or replacement of transmission equipment on existing towers that do not substantially change the physical dimensions of such tower.

ⁱ For the full text of the Act and its legislative history, see Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, §6409 (2012), available at <http://www.gpo.gov/fdsys/pkg/BILLS-112hr3630enr/pdf/BILLS-112hr3630enr.pdf>; see also H.R. Rep. No. 112-399 at 132-33 (2012) (Conf. Rep.), available at <http://www.gpo.gov/fdsys/pkg/CRPT-112hrpt399/pdf/CRPT-112hrpt399.pdf>.

ⁱⁱ Nationwide Programmatic Agreement for the Collocation of Wireless Antennas (2001), 47 C.F.R. Part I, Appendix B, available at <http://wireless.fcc.gov/releases/da010691a.pdf> ("Collocation Agreement"); see also *Petition for Declaratory Ruling To Clarify Provisions of Section 332(C)(7)(B) To Ensure Timely Siting Review and To Preempt Under Section 253 State and Local Ordinances That Classify All Wireless Siting Proposals as Requiring a Variance*, Declaratory Ruling, 24 FCC Rcd 13994, 14021 ¶ 71 (2009) ("Shot Clock Ruling"), recon. denied, 25 FCC Rcd 11157 (2010), *aff'd*, City of Arlington, Tex., et al. v. FCC, 2012 U.S. App. LEXIS 1252 (5th Cir. 2012), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-09-99A1_Rcd.pdf; see also *Wireless Telecommunications Bureau & Mass Media Bureau Announce the Release of a Fact sheet Regarding the March 16, 2001 Antenna Collocation Programmatic Agreement*, Public Notice, 17 FCC Rcd 508 (2002), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-02-28A1.pdf.

ⁱⁱⁱ Collocation Agreement.

^{iv} *Id.*

^v See, e.g., 47 C.F.R. §§24.5, 90.7.

^{vi} 47 U.S.C. §332(c)(7)(A). The Telecommunications Act of 1996 defines "personal wireless service facilities" as facilities for the provision of personal wireless services, including commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services. 47 U.S.C. §332(c)(7)(C).

^{vii} See 158 CONG. REC. E237-239 (daily ed. Feb. 24, 2012) (statement of Rep. Upton), available at <http://www.gpo.gov/fdsys/pkg/CREC-2012-02-24/pdf/CREC-2012-02-24-pt1-PgE237-5.pdf>. Zoning review and/or conditional approvals of eligible facilities request can have the effect of denying such requests as a conditional approval is not an approval *per se*; therefore it is a denial and a violation of the Act.

^{viii} *Shot Clock Ruling*.

For more information, please contact PCIA's Government Affairs Department: advocacy@pcia.com



Delaware

PAGE 1

The First State

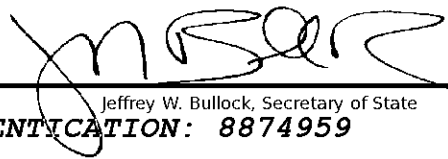
I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE DO HEREBY CERTIFY THAT THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF CONVERSION OF A DELAWARE CORPORATION UNDER THE NAME OF "AMERICAN TOWERS, INC." TO A DELAWARE LIMITED LIABILITY COMPANY, CHANGING ITS NAME FROM "AMERICAN TOWERS, INC." TO "AMERICAN TOWERS LLC", FILED IN THIS OFFICE ON THE THIRTIETH DAY OF JUNE, A.D. 2011, AT 11:54 O'CLOCK A.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE EFFECTIVE DATE OF THE AFORESAID CERTIFICATE OF CONVERSION IS THE THIRTIETH DAY OF JUNE, A.D. 2011, AT 11:59 O'CLOCK P.M.

2525871 8100V

110780451




Jeffrey W. Bullock, Secretary of State
AUTHENTICATION: 8874959

DATE: 06-30-11

STATE OF DELAWARE
CERTIFICATE OF CONVERSION
FROM A CORPORATION TO A
LIMITED LIABILITY COMPANY PURSUANT TO
SECTION 18-214 OF THE LIMITED LIABILITY ACT

- 1.) The jurisdiction where the Corporation first formed is Delaware.
- 2.) The jurisdiction immediately prior to filing this Certificate is Delaware.
- 3.) The date the corporation first formed is July 19, 1995.
- 4.) The name of the Corporation immediately prior to filing this Certificate is American Towers, Inc.
- 5.) The name of the Limited Liability Company as set forth in the Certificate of Formation is American Towers LLC.
- 6.) The effective date of this Certificate of Conversion is the 30th of June, 2011 at 11:59 p.m.

IN WITNESS WHEREOF, the undersigned have executed this Certificate on the 29 day of June, 2011 A.D.

By: 
Authorized Person
Name: Michael John McCormack
Print or Type

Delaware

PAGE 2

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE DO HEREBY CERTIFY THAT THE ATTACHED IS A TRUE AND CORRECT COPY OF CERTIFICATE OF FORMATION OF "AMERICAN TOWERS LLC" FILED IN THIS OFFICE ON THE THIRTIETH DAY OF JUNE, A.D. 2011, AT 11:54 O'CLOCK A.M.

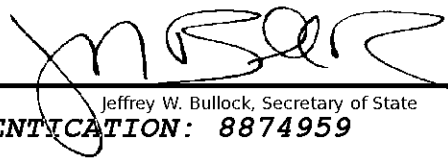
AND I DO HEREBY FURTHER CERTIFY THAT THE EFFECTIVE DATE OF THE AFORESAID CERTIFICATE OF FORMATION IS THE THIRTIETH DAY OF JUNE, A.D. 2011, AT 11:59 O'CLOCK P.M.

2525871 8100V

110780451



You may verify this certificate online
at corp.delaware.gov/authver.shtml


Jeffrey W. Bullock, Secretary of State
AUTHENTICATION: 8874959

DATE: 06-30-11

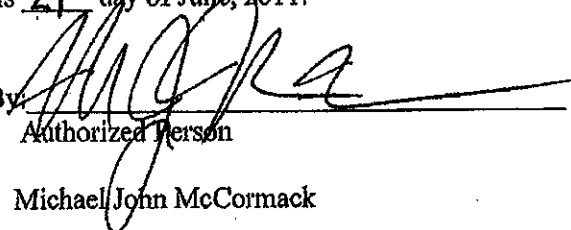
CERTIFICATE OF FORMATION

OF

AMERICAN TOWERS LLC

1. The name of the limited liability company is American Towers LLC.
2. The address of its registered office in the State of Delaware is Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, Delaware 19801. The name of its registered agent at such address is The Corporation Trust Company.
3. The effective date of this Certificate of Formation is June 30, 2011 at 11:59 p.m.

IN WITNESS WHEREOF, the undersigned have executed this Certificate of Formation of American Towers LLC this 29 day of June, 2011.

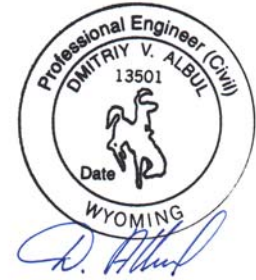
By 
Authorized Person

Michael John McCormack

STRUCTURAL EVALUATION LETTER ANTENNA MOUNT ANALYSIS

SITE INFORMATION:

ATC Site Name: JACKSON HOLE BUS. PK WY, WY
 ATC Site Number: 275199
 ATC Engineering Number: 13677388_C8_01
 Site Type: Self-Supported Tower
 Site Address: 1525 Martin Lane, Jackson, Teton County, WY
 T-Mobile Site Name: ATC Jackson Business Park
 T-Mobile Site Number: SL01204D



06-10-21

CURRENT WIND CRITERIA:

1. ANSI/TIA-222-H Standard
2. 2018 International Building Code

SUPPORTING DOCUMENTS:

1. Preview Exhibit by American Tower Corporation, dated May 13, 2021
2. Radio Frequency Data Sheet by T-Mobile (Version 4), May 6, 2021
3. Mount Photos by American Tower Corporation, dated February 4, 2020

ASSUMPTIONS:

1. Tower mount and connections were built in accordance with the manufacturer's specifications, ANSI/TIA-222 standard, and governing building code.
2. The tower mounting system and connections have been maintained in accordance with the manufacturer's specification.
3. Tower mount connections and attachments are assumed not to control the design of mounting system and have been assumed adequate based on main member capacities.

Table 1 - Final Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Antenna Model	Mount Pipe Position Number (view from behind)	Antenna Mount System
85.0	85.0	(3) RFS APX17DWV-17DWVS-E-A20	1	(3) 10.5' Sector Frames
		(3) RFS APXVAALL24 43-U-NA20	2	
		(3) Ericsson Air6449 B41	3	
		(3) Ericsson KRY 112 144/1	2	
		(3) Ericsson Radio 4415 B2, B66A	1	
		(3) Ericsson Radio 4424 B25	2	
		(3) Ericsson Radio 4449 B71+B85	2	
		(3) Commscope SDX1926Q-43	2	

CONCLUSION:

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed. The mount can support the equipment as described in this report.

Install three (3) 2" STD x 8' long mount pipes to support new equipment on position 2.

If existing conditions in the field differ from those shown on the above referenced documents or the antenna loading is modified to be other than that shown on Table 1, this review letter will be required to be revised.

Table 2 - Mount Analysis Results

Mount Centerline (ft)	Structural Components	Controlling Usage	Pass/Fail	Necessary Modification
85.0	Stabilizer	34%	Pass (80%)	-
	Bracing	68%		
	Arms	49%		
	Mount Pipes	34%		
	Frame Rails	80%		
	Connection Bolts	35%		

We at SMJ International, LLC appreciate the opportunity of providing our continuing professional services. If you have any questions or need further assistance on this or any other projects, please give us a call.

Date:	6/10/2021
Site Name:	JACKSON HOLE BUS. PK WY, WY
Project Engineer:	DVA
Project No:	13677388 C8_01
Customer:	American Tower Corporation
Carrier:	T-Mobile

Building Code:	2018	
ASCE Standard:	ASCE 7-16	
TIA Standard:	H	
Mount Type:	Sector Frame	
Mount Existing?	Existing	
Mount Centerline:	85	ft
Superstructure Height:	184	ft
Structure Type:	Tower	

Factors	
Gh:	1.000
K _{zmin} :	0.850
K _z :	1.223
K _d :	0.950
K _{st} :	1.000
Ke:	0.801
Ka:	0.900
Kes(Wind):	0.950
Kes(Ice):	0.850
I _{wind} :	
I _{ice} :	1.000

q _z :	26.27	psf
Surface Wind Pressure:	0.00	psf

Site Information	
Exposure Category:	C
Risk Category:	II
Ground Elevation	6122.1 ft
Ultimate Wind Speed:	105 mph
Design Wind Speed:	105 mph
Ice Thickness:	0.25 in
Ice Wind Speed:	50.0 mph
Escalated Ice Thickness:	0.23 in
Topographic Method:	2
Topographic Category:	1

Run Seismic?	Yes
Site Soil:	D (Default)
Short-Period Accel. (Ss):	1.054
1-Second Accel. (S1):	0.347
Short-Period Design (SDS):	0.843
1-Second Design (SD1):	0.000
Short-Period Coeff. (Fa):	1.200
1-Second Coeff. (Fv):	0.000
Cs	0.422
Cs min	0.037
Amplification Factor (ap):	1.000
Response Mod. (Rp):	2.500
Overstrength (Do):	1.000

Service Wind:	30.0	mph
Lm (man live load) =	500.0	lb
Lv (man live load) =	250.0	lb

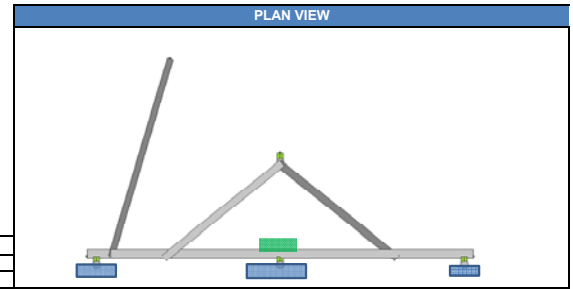
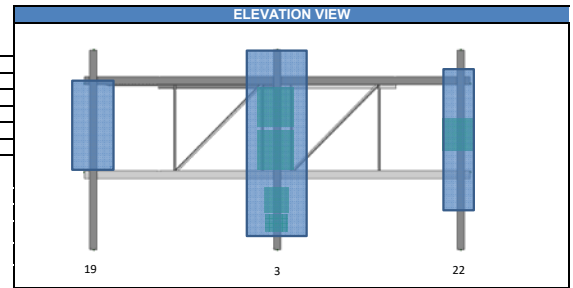


Table 1. Equipment Specifications and Wind Pressure

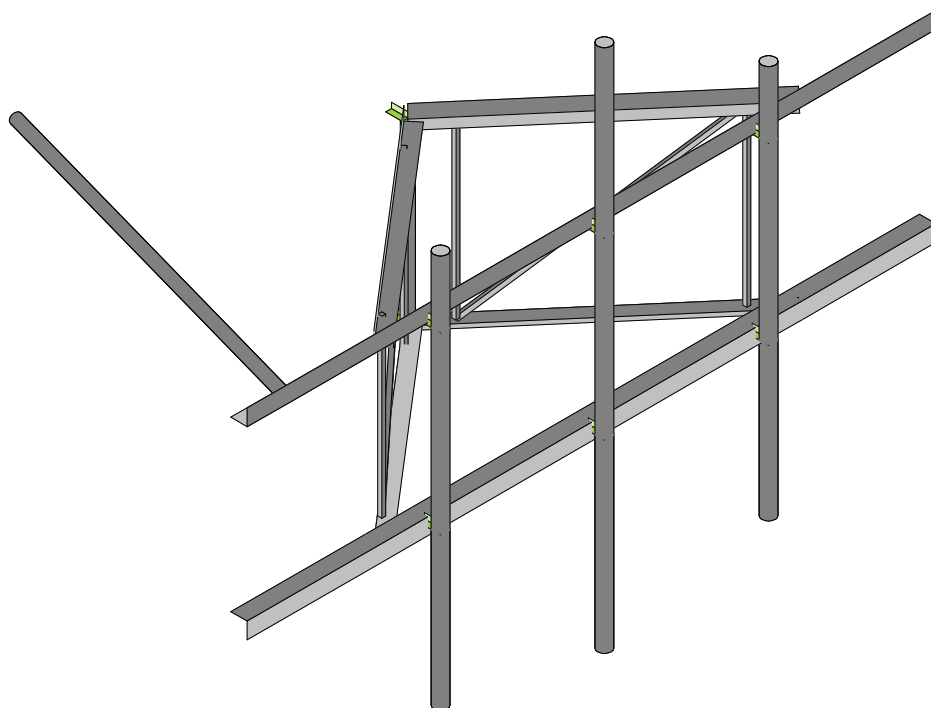
Manufacturer	Model	Elevation	Pipe Label	Weight (lb)	Height (in)	Width (in)	Depth (in)	EPA _N	EPA _T	EPA _{N w/ ice}	EPA _{T w/ ice}	q _z :	q _{z ice} :	q _{z live} :
RFS/CELWAVE	APX17DWV-17DWVS-E-A20	85	22	39.60	75.8	13	3.15	8.39	2.00	8.74	2.31	26.27	5.96	2.14
RFS/CELWAVE	APXVAALL24 43-U-NA20	85	3	122.80	95.9	25	8.5	20.97	8.73	21.42	9.15	26.27	5.96	2.14
ERICSSON	Air6449 B41	85	19	104.00	33.1	20.6	8.6	5.28	2.05	5.46	2.18	26.27	5.96	2.14
ERICSSON	KRY 112 144/1	85	3	11.00	6.9	6.1	2.7	0.33	0.16	0.38	0.19	26.27	5.96	2.14
ERICSSON	Radio 4415 B2, B66A	85	22	47.40	16.5	13.5	6.3	1.77	0.87	1.88	0.96	26.27	5.96	2.14
ERICSSON	Radio 4424 B25	85	3	46.3	14.9	13.2	5.4	1.56	0.68	1.66	0.75	26.27	5.96	2.14
ERICSSON	Radio 4449 B71+B85	85	3	75	15	10.4	10.4	1.57	1.25	1.67	1.34	26.27	5.96	2.14
COMMScope	SDX1926Q-43	85	3	6.2	4.2	6.9	2.9	0.22	0.10	0.27	0.13	26.27	5.96	2.14

Table 2. Equipment Wind and Seismic Loads

Manufacturer	Model	Wind Load (F _A), lb		Wind Load Ice Case (F _A), lb			Wind Load Service Case		Seismic
RFS/CELWAVE	APX17DWV-17DWVS-E-A20	189	45	45	12	25	16	4	16.7
RFS/CELWAVE	APXVAALL24 43-U-NA20	471	196	109	47	62	40	17	51.8
ERICSSON	Air6449 B41	119	46	28	11	18	10	4	43.8
ERICSSON	KRY 112 144/1	7	3	2	1	1	1	0	4.6
ERICSSON	Radio 4415 B2, B66A	40	20	10	5	6	3	2	20.0
ERICSSON	Radio 4424 B25	35	15	8	4	5	3	1	19.5
ERICSSON	Radio 4449 B71+B85	35	28	9	7	6	3	2	31.6
COMMScope	SDX1926Q-43	5	2	1	1	1	0	0	2.6

Table 3. Member Capacities

Member Name	Member Shape	Wind load (plf)	Wind Load Ice (plf)	Weight Ice (plf)	Bending Check	Shear Check	Total Capacity	Controlling Capacity
Stabilizer	PIPE 1.5	4.74	0.96	0.06	34%	1%	34%	80%
Bracing	0.75"	3.12	0.63	0.03	68%	11%	68%	
Arm	L2.5x2.5x3	10.40	2.11	0.07	49%	12%	49%	
Mount Pipe	PIPE 2.0	5.94	1.21	0.07	23%	34%	34%	
Frame Rail	L3x3x3	12.48	2.53	0.08	80%	8%	80%	



Envelope Only Solution

SMJ International, LLC

DVA

13677388_C8_01

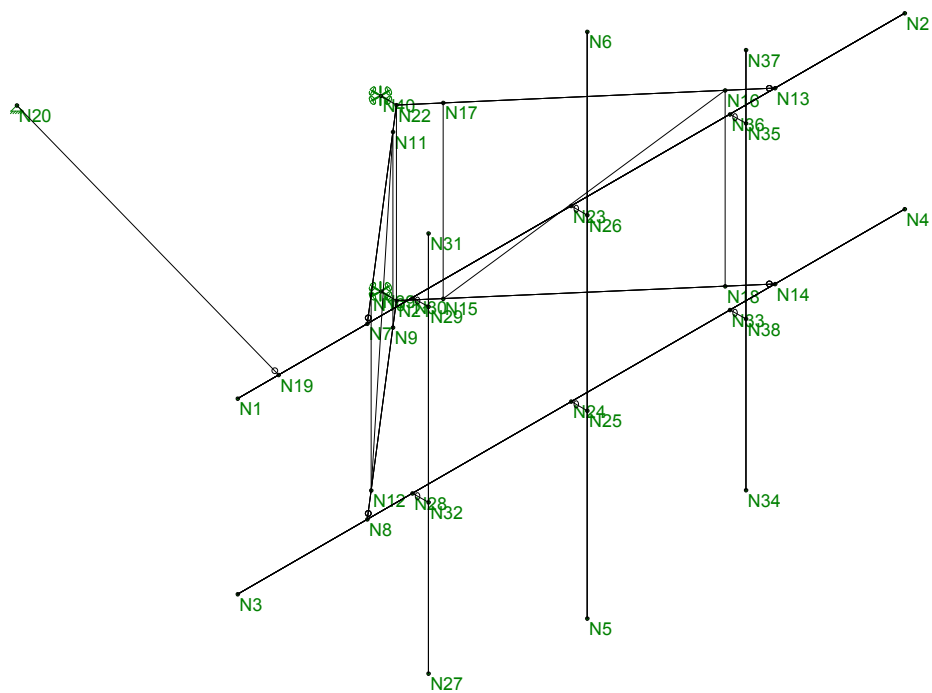
JACKSON HOLE BUS. PK WY, WY

Risa 3D Model

SK - 1

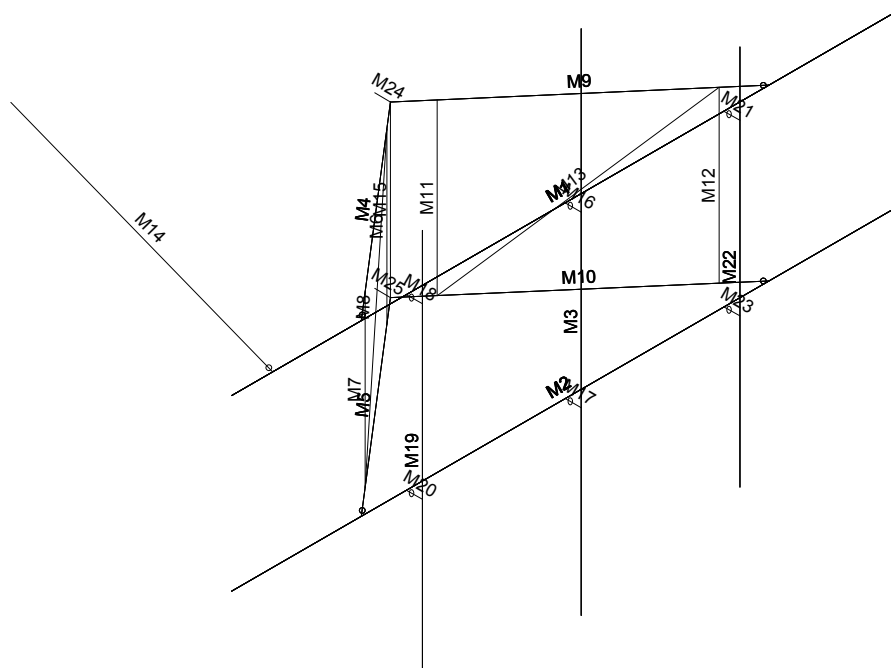
June 10, 2021 at 2:16 PM

275199_13677388_C8_01_T-Mobi...



Envelope Only Solution

SMJ International, LLC	JACKSON HOLE BUS. PK WY, WY Joint Labels	SK - 2
DVA		June 10, 2021 at 2:16 PM
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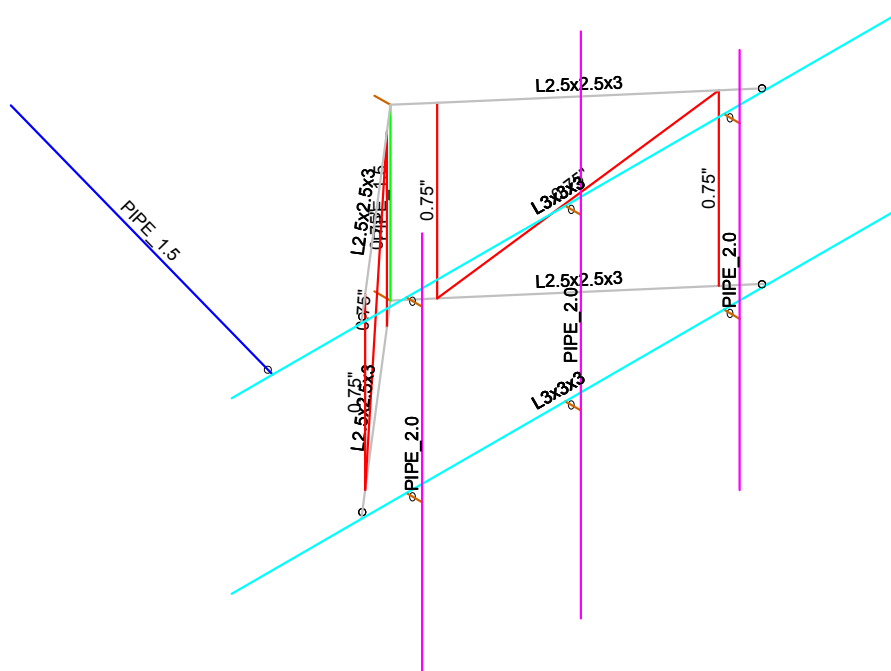


Envelope Only Solution

SMJ International, LLC	JACKSON HOLE BUS. PK WY, WY Member Labels	SK - 3
DVA		June 10, 2021 at 2:16 PM
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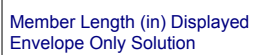


Section Sets	
■	Stabilizer
■	Bracing 2
■	Bracing
■	Arm
■	Mount Pipe
■	Frame Rail
■	RIGID

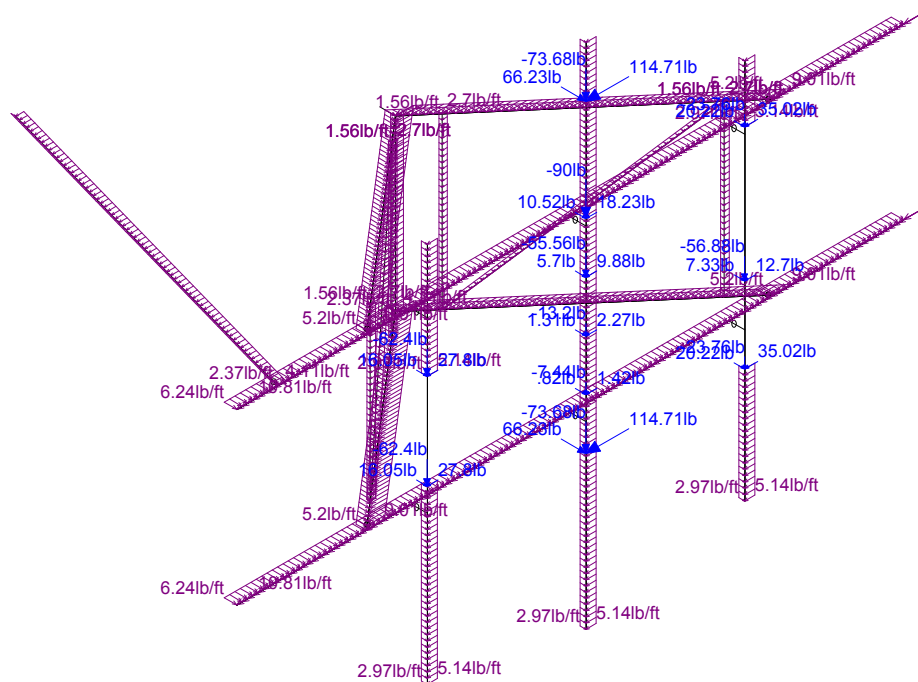


Envelope Only Solution

SMJ International, LLC	JACKSON HOLE BUS. PK WY, WY Member Shapes	SK - 4
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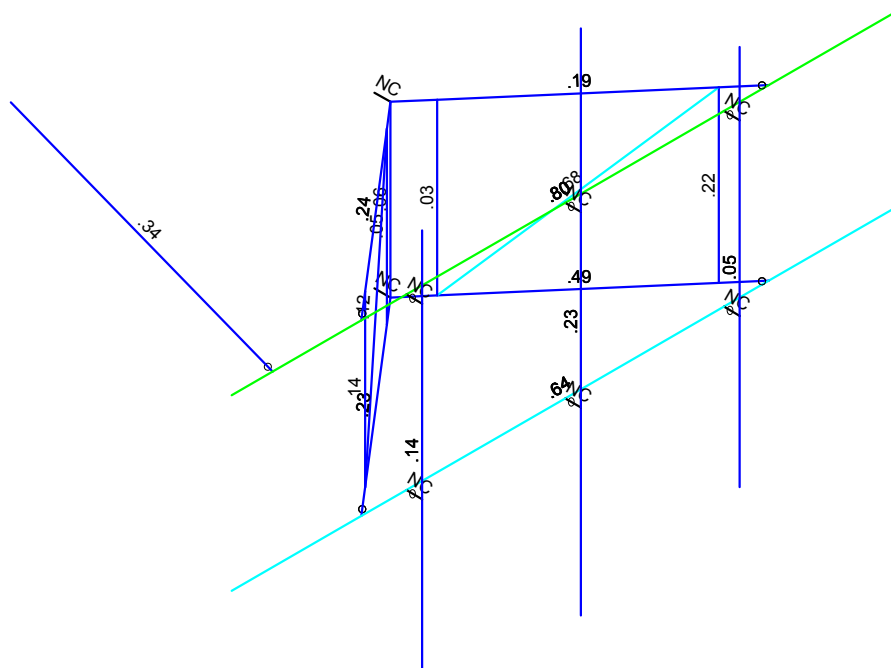
SMJ International, LLC	JACKSON HOLE BUS. PK WY, WY	SK - 5
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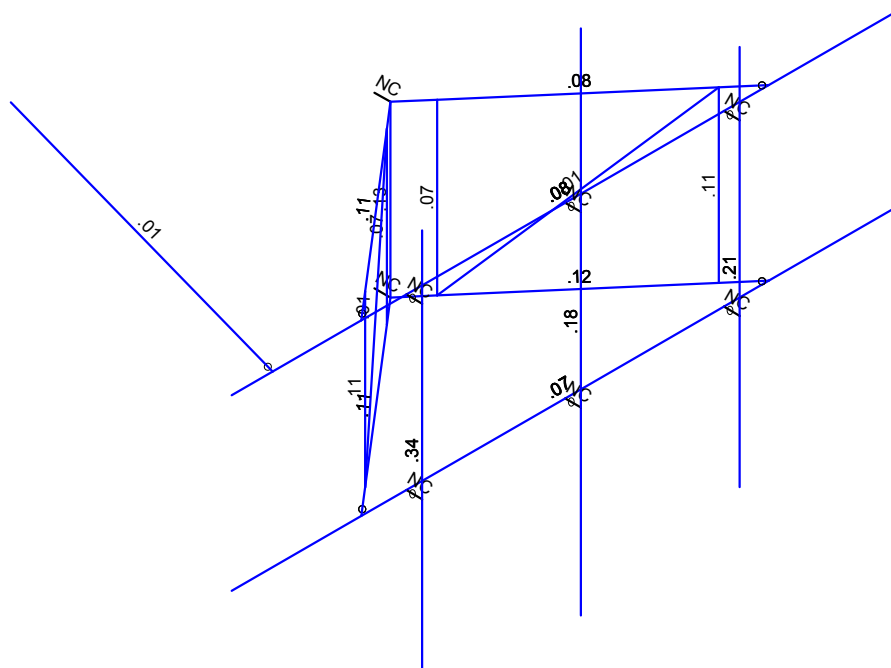
13677388_C8_01

JACKSON HOLE BUS. PK WY, WY
Controlling Load Case

275199_13677388_C8_01_T-Mo...



SMJ International, LLC	JACKSON HOLE BUS. PK WY, WY Member Bending Check	SK - 7
DVA		June 10, 2021 at 2:17 PM
13677388_C8_01		275199_13677388_C8_01_T-Mo...



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

SMJ International, LLC	JACKSON HOLE BUS. PK WY, WY Member Shear Check	SK - 8
DVA		June 10, 2021 at 2:17 PM
13677388_C8_01		275199_13677388_C8_01_T-Mo...

Global

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): LRFD
Cold Formed Steel Code	AISI S100-12: LRFD
Wood Code	AF&PA NDS-12: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	ACI 530-11: Strength
Aluminum Code	AA ADM1-10: LRFD - Building

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parame Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

Global, Continued

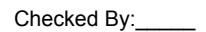
Seismic Code	ASCE 7-10
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Om Z	1
Om X	1
Rho Z	1
Rho X	1

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2		270	Frame Rail	Beam	Single Angle	A36 Gr.36	Typical
2	M2	N3	N4		180	Frame Rail	Beam	Single Angle	A36 Gr.36	Typical
3	M3	N5	N6			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
4	M4	N7	N22			Arm	Beam	Single Angle	A36 Gr.36	Typical
5	M5	N8	N21		90	Arm	Beam	Single Angle	A36 Gr.36	Typical
6	M6	N11	N9			Bracing	Beam	BAR	A36 Gr.36	Typical
7	M7	N10	N12			Bracing	Beam	BAR	A36 Gr.36	Typical
8	M8	N11	N12			Bracing	Beam	BAR	A36 Gr.36	Typical
9	M9	N13	N22		270	Arm	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N14	N21		180	Arm	Beam	Single Angle	A36 Gr.36	Typical
11	M11	N17	N15			Bracing	Beam	BAR	A36 Gr.36	Typical
12	M12	N16	N18			Bracing	Beam	BAR	A36 Gr.36	Typical
13	M13	N16	N15			Bracing	Beam	BAR	A36 Gr.36	Typical
14	M14	N19	N20			Stabilazer	HBrace	Pipe	A53 Gr.B	Typical
15	M15	N21	N22			Bracing 2	Column	Pipe	A53 Gr.B	Typical
16	M16	N23	N26			RIGID	None	None	RIGID	Typical
17	M17	N24	N25			RIGID	None	None	RIGID	Typical
18	M18	N30	N29			RIGID	None	None	RIGID	Typical
19	M19	N27	N31			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
20	M20	N28	N32			RIGID	None	None	RIGID	Typical
21	M21	N36	N35			RIGID	None	None	RIGID	Typical
22	M22	N34	N37			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
23	M23	N33	N38			RIGID	None	None	RIGID	Typical
24	M24	N40	N22			RIGID	None	None	RIGID	Typical
25	M25	N39	N21			RIGID	None	None	RIGID	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	General				
2	RIGID		8	24	0
3	Total General		8	24	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	0.75"	6	227	0
7	A36 Gr.36	L2.5x2.5x3	4	202.8	0
8	A36 Gr.36	L3x3x3	2	252	0
9	A53 Gr.B	PIPE 1.5	2	103.5	0
10	A53 Gr.B	PIPE 2.0	3	240	0
11	Total HR Steel		17	1025.3	.3

Page 3

Load Combinations (Continued)

	Description	Solve	PDe	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
17	0.9DL + 1WL AZI 90	Yes	Y		1	.9	5	1												
18	0.9DL + 1WL AZI 120	Yes	Y		1	.9	6	1												
19	0.9DL + 1WL AZI 150	Yes	Y		1	.9	7	1												
20	0.9DL + 1WL AZI 180	Yes	Y		1	.9	8	1												
21	0.9DL + 1WL AZI 210	Yes	Y		1	.9	9	1												
22	0.9DL + 1WL AZI 240	Yes	Y		1	.9	10	1												
23	0.9DL + 1WL AZI 270	Yes	Y		1	.9	11	1												
24	0.9DL + 1WL AZI 300	Yes	Y		1	.9	12	1												
25	0.9DL + 1WL AZI 330	Yes	Y		1	.9	13	1												
26	1.2D + 1.0Di	Yes	Y		1	1.2	14	1												
27	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		1	1.2	14	1	15	1										
28	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		1	1.2	14	1	16	1										
29	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		1	1.2	14	1	17	1										
30	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		1	1.2	14	1	18	1										
31	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		1	1.2	14	1	19	1										
32	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		1	1.2	14	1	20	1										
33	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		1	1.2	14	1	21	1										
34	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		1	1.2	14	1	22	1										
35	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		1	1.2	14	1	23	1										
36	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		1	1.2	14	1	24	1										
37	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		1	1.2	14	1	25	1										
38	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		1	1.2	14	1	26	1										
39	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.3...	27	1	28											
40	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.3...	27	.866	28	.5										
41	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.3...	27	.5	28	.866										
42	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.3...	27		28	1										
43	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.3...	27	-.5	28	.866										
44	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.3...	27	-.8...	28	.5										
45	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.3...	27	-1	28											
46	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.3...	27	-.8...	28	-.5										
47	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.3...	27	-.5	28	-.8...										
48	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.3...	27		28	-1										
49	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.3...	27	.5	28	-.8...										
50	(1.2 + 0.2Sds)DL + 1.0...	Yes	Y		1	1.3...	27	.866	28	-.5										
51	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.731	27	1	28											
52	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.731	27	.866	28	.5										
53	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.731	27	.5	28	.866										
54	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.731	27		28	1										
55	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.731	27	-.5	28	.866										
56	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.731	27	-.8...	28	.5										
57	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.731	27	-1	28											
58	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.731	27	-.8...	28	-.5										
59	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.731	27	-.5	28	-.8...										
60	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.731	27		28	-1										
61	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.731	27	.5	28	-.8...										
62	(0.9 - 0.2Sds)DL + 1.0...	Yes	Y		1	.731	27	.866	28	-.5										
63	1.0DL + 1.5LL + 1.0S...	Yes	Y		1	1	2	.082	29	1.5										
64	1.0DL + 1.5LL + 1.0S...	Yes	Y		1	1	3	.082	29	1.5										
65	1.0DL + 1.5LL + 1.0S...	Yes	Y		1	1	4	.082	29	1.5										
66	1.0DL + 1.5LL + 1.0S...	Yes	Y		1	1	5	.082	29	1.5										
67	1.0DL + 1.5LL + 1.0S...	Yes	Y		1	1	6	.082	29	1.5										
68	1.0DL + 1.5LL + 1.0S...	Yes	Y		1	1	7	.082	29	1.5										
69	1.0DL + 1.5LL + 1.0S...	Yes	Y		1	1	8	.082	29	1.5										
70	1.0DL + 1.5LL + 1.0S...	Yes	Y		1	1	9	.082	29	1.5										
71	1.0DL + 1.5LL + 1.0S...	Yes	Y		1	1	10	.082	29	1.5										
72	1.0DL + 1.5LL + 1.0S...	Yes	Y		1	1	11	.082	29	1.5										
73	1.0DL + 1.5LL + 1.0S...	Yes	Y		1	1	12	.082	29	1.5										
74	1.0DL + 1.5LL + 1.0S...	Yes	Y		1	1	13	.082	29	1.5										
75	1.2DL + 1.5LM1 + 1S...	Yes	Y		1	1.2	34	1.5	2	.082										
76	1.2DL + 1.5LM1 + 1S...	Yes	Y		1	1.2	34	1.5	3	.082										
77	1.2DL + 1.5LM1 + 1S...	Yes	Y		1	1.2	34	1.5	4	.082										
78	1.2DL + 1.5LM1 + 1S...	Yes	Y		1	1.2	34	1.5	5	.082										
79	1.2DL + 1.5LM1 + 1S...	Yes	Y		1	1.2	34	1.5	6	.082										
80	1.2DL + 1.5LM1 + 1S...	Yes	Y		1	1.2	34	1.5	7	.082										

Load Combinations (Continued)

	Description	Solve	PDe	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
81	1.2DL + 1.5LM1 + 1S...	Yes	Y		1	1.2	34	1.5	8	.082										
82	1.2DL + 1.5LM1 + 1S...	Yes	Y		1	1.2	34	1.5	9	.082										
83	1.2DL + 1.5LM1 + 1S...	Yes	Y		1	1.2	34	1.5	10	.082										
84	1.2DL + 1.5LM1 + 1S...	Yes	Y		1	1.2	34	1.5	11	.082										
85	1.2DL + 1.5LM1 + 1S...	Yes	Y		1	1.2	34	1.5	12	.082										
86	1.2DL + 1.5LM1 + 1S...	Yes	Y		1	1.2	34	1.5	13	.082										
87	1.2DL + 1.5LM2 + 1S...	Yes	Y		1	1.2	35	1.5	2	.082										
88	1.2DL + 1.5LM2 + 1S...	Yes	Y		1	1.2	35	1.5	3	.082										
89	1.2DL + 1.5LM2 + 1S...	Yes	Y		1	1.2	35	1.5	4	.082										
90	1.2DL + 1.5LM2 + 1S...	Yes	Y		1	1.2	35	1.5	5	.082										
91	1.2DL + 1.5LM2 + 1S...	Yes	Y		1	1.2	35	1.5	6	.082										
92	1.2DL + 1.5LM2 + 1S...	Yes	Y		1	1.2	35	1.5	7	.082										
93	1.2DL + 1.5LM2 + 1S...	Yes	Y		1	1.2	35	1.5	8	.082										
94	1.2DL + 1.5LM2 + 1S...	Yes	Y		1	1.2	35	1.5	9	.082										
95	1.2DL + 1.5LM2 + 1S...	Yes	Y		1	1.2	35	1.5	10	.082										
96	1.2DL + 1.5LM2 + 1S...	Yes	Y		1	1.2	35	1.5	11	.082										
97	1.2DL + 1.5LM2 + 1S...	Yes	Y		1	1.2	35	1.5	12	.082										
98	1.2DL + 1.5LM2 + 1S...	Yes	Y		1	1.2	35	1.5	13	.082										
99	1.2DL + 1.5LM3 + 1S...	Yes	Y		1	1.2	36	1.5	2	.082										
100	1.2DL + 1.5LM3 + 1S...	Yes	Y		1	1.2	36	1.5	3	.082										
101	1.2DL + 1.5LM3 + 1S...	Yes	Y		1	1.2	36	1.5	4	.082										
102	1.2DL + 1.5LM3 + 1S...	Yes	Y		1	1.2	36	1.5	5	.082										
103	1.2DL + 1.5LM3 + 1S...	Yes	Y		1	1.2	36	1.5	6	.082										
104	1.2DL + 1.5LM3 + 1S...	Yes	Y		1	1.2	36	1.5	7	.082										
105	1.2DL + 1.5LM3 + 1S...	Yes	Y		1	1.2	36	1.5	8	.082										
106	1.2DL + 1.5LM3 + 1S...	Yes	Y		1	1.2	36	1.5	9	.082										
107	1.2DL + 1.5LM3 + 1S...	Yes	Y		1	1.2	36	1.5	10	.082										
108	1.2DL + 1.5LM3 + 1S...	Yes	Y		1	1.2	36	1.5	11	.082										
109	1.2DL + 1.5LM3 + 1S...	Yes	Y		1	1.2	36	1.5	12	.082										
110	1.2DL + 1.5LM3 + 1S...	Yes	Y		1	1.2	36	1.5	13	.082										
111	1.2DL + 1.5LM4 + 1S...	Yes	Y		1	1.2	37	1.5	2	.082										
112	1.2DL + 1.5LM4 + 1S...	Yes	Y		1	1.2	37	1.5	3	.082										
113	1.2DL + 1.5LM4 + 1S...	Yes	Y		1	1.2	37	1.5	4	.082										
114	1.2DL + 1.5LM4 + 1S...	Yes	Y		1	1.2	37	1.5	5	.082										
115	1.2DL + 1.5LM4 + 1S...	Yes	Y		1	1.2	37	1.5	6	.082										
116	1.2DL + 1.5LM4 + 1S...	Yes	Y		1	1.2	37	1.5	7	.082										
117	1.2DL + 1.5LM4 + 1S...	Yes	Y		1	1.2	37	1.5	8	.082										
118	1.2DL + 1.5LM4 + 1S...	Yes	Y		1	1.2	37	1.5	9	.082										
119	1.2DL + 1.5LM4 + 1S...	Yes	Y		1	1.2	37	1.5	10	.082										
120	1.2DL + 1.5LM4 + 1S...	Yes	Y		1	1.2	37	1.5	11	.082										
121	1.2DL + 1.5LM4 + 1S...	Yes	Y		1	1.2	37	1.5	12	.082										
122	1.2DL + 1.5LM4 + 1S...	Yes	Y		1	1.2	37	1.5	13	.082										
123	1.2DL + 1.5LM5 + 1S...	Yes	Y		1	1.2	38	1.5	2	.082										
124	1.2DL + 1.5LM5 + 1S...	Yes	Y		1	1.2	38	1.5	3	.082										
125	1.2DL + 1.5LM5 + 1S...	Yes	Y		1	1.2	38	1.5	4	.082										
126	1.2DL + 1.5LM5 + 1S...	Yes	Y		1	1.2	38	1.5	5	.082										
127	1.2DL + 1.5LM5 + 1S...	Yes	Y		1	1.2	38	1.5	6	.082										
128	1.2DL + 1.5LM5 + 1S...	Yes	Y		1	1.2	38	1.5	7	.082										
129	1.2DL + 1.5LM5 + 1S...	Yes	Y		1	1.2	38	1.5	8	.082										
130	1.2DL + 1.5LM5 + 1S...	Yes	Y		1	1.2	38	1.5	9	.082										
131	1.2DL + 1.5LM5 + 1S...	Yes	Y		1	1.2	38	1.5	10	.082										
132	1.2DL + 1.5LM5 + 1S...	Yes	Y		1	1.2	38	1.5	11	.082										
133	1.2DL + 1.5LM5 + 1S...	Yes	Y		1	1.2	38	1.5	12	.082										
134	1.2DL + 1.5LM5 + 1S...	Yes	Y		1	1.2	38	1.5	13	.082										
135	1.2DL + 1.5LM6 + 1S...	Yes	Y		1	1.2	39	1.5	2	.082										
136	1.2DL + 1.5LM6 + 1S...	Yes	Y		1	1.2	39	1.5	3	.082										
137	1.2DL + 1.5LM6 + 1S...	Yes	Y		1	1.2	39	1.5	4	.082										
138	1.2DL + 1.5LM6 + 1S...	Yes	Y		1	1.2	39	1.5	5	.082										
139	1.2DL + 1.5LM6 + 1S...	Yes	Y		1	1.2	39	1.5	6	.082										
140	1.2DL + 1.5LM6 + 1S...	Yes	Y		1	1.2	39	1.5	7	.082										
141	1.2DL + 1.5LM6 + 1S...	Yes	Y		1	1.2	39	1.5	8	.082										
142	1.2DL + 1.5LM6 + 1S...	Yes	Y		1	1.2	39	1.5	9	.082										
143	1.2DL + 1.5LM6 + 1S...	Yes	Y		1	1.2	39	1.5	10	.082										
144	1.2DL + 1.5LM6 + 1S...	Yes	Y		1	1.2	39	1.5	11	.082										

Load Combinations (Continued)

	Description	Solve	PDe...	SRSS B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa...	Fa...
145	1.2DL + 1.5LM6 + 1S...	Yes	Y		1	1.2	39	1.5	12	.082								
146	1.2DL + 1.5LM6 + 1S...	Yes	Y		1	1.2	39	1.5	13	.082								

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-in]	LC	MY [lb-in]	LC	MZ [lb-in]	LC
1	N20	max	742.804	24	12.09	37	147.688	10	0	1	0	1	0	1
2		min	-746.165	6	5.471	53	-139.957	16	0	1	0	1	0	1
3	N39	max	1410.469	2	811.106	89	426.241	6	2243.124	95	0	1	4426.923	88
4		min	-28.131	20	238.506	60	-625.676	97	-1104.153	16	0	1	1411.388	60
5	N40	max	551.557	15	626.922	83	665.594	16	1390.394	91	0	1	3602.167	82
6		min	-1919.206	9	246.822	54	-728.329	10	-628.26	12	0	1	1446.889	54
7	Totals:	max	1406.226	14	1226.523	97	943.47	4						
8		min	-1406.23	8	518.999	54	-943.472	10						

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...Cb	Eqn
1	M1	L3x3x3	.802	24.938	10	.083	24.9...	y	6	5326.2...	35316	15841...	25322....1...	H2-1
2	M13	0.75"	.680	49.488	97	.009	49.4...	y	13	2432.2...	18225	3417.1...	3417.1....3...	H1-1a
3	M2	L3x3x3	.638	101.063	92	.074	24.9...	y	4	5326.2...	35316	15841....	27687.7...1...	H2-1
4	M10	L2.5x2.5x3	.489	6.338	95	.119	6.338	y	91	16183....	29192.4	10470....	22811....1...	H2-1
5	M14	PIPE 1.5	.342	0	6	.011	71.4...		6	12094....	23593.5	13261.5	13261.5...1...	H1-1b
6	M4	L2.5x2.5x3	.237	6.338	12	.113	0	z	6	16183....	29192.4	10470....	21684....1...	H2-1
7	M3	PIPE 2.0	.233	66	8	.183	66	4	14916....	32130	22459.5	22459.5...1...	H1-1b	
8	M5	L2.5x2.5x3	.228	6.338	4	.108	6.338	z	4	16183....	29192.4	10470....	22592....1...	H2-1
9	M12	0.75"	.223	32	97	.108	0	y	10	5817.0...	18225	3417.1...	3417.1....2...	H1-1b
10	M9	L2.5x2.5x3	.190	50.707	92	.082	6.338	z	83	16183....	29192.4	10470....	23661....2...	H2-1
11	M19	PIPE 2.0	.145	28.5	4	.338	28.5		6	20866....	32130	22459.5	22459.5...1...	H3-6
12	M7	0.75"	.135	0	83	.111	32	y	4	5817.0...	18225	3417.1...	3417.1....2...	H1-1b
13	M8	0.75"	.124	49.488	6	.010	0	y	9	2432.2...	18225	3417.1...	3417.1....2...	H1-1b
14	M15	PIPE 1.5	.062	32	4	.126	32		4	20635....	23593.5	13261.5	13261.5...2...	H1-1b
15	M22	PIPE 2.0	.051	28.5	2	.208	60		10	20866....	32130	22459.5	22459.5...1...	H1-1b
16	M6	0.75"	.049	8.667	6	.071	0	y	4	5817.0...	18225	3417.1...	3417.1....1...	H1-1b
17	M11	0.75"	.035	0	6	.071	32	y	4	5817.0...	18225	3417.1...	3417.1....1...	H1-1b



SMJ International

BOLT CONNECTION CALCULATION

BOLT PROPERTIES

Date:	6/6/2021
Site:	JACKSON HOLE BUS. PK WY, WY
Engineer:	DVA
Project No:	13677388_C8_01
Connection Location:	Top Connection

Bolt Capacity Equation	TIA-222-H	
Connection Type	Steel	
U-Bolt	No	
Bolt Size, d	5/8	in
Threads per Inch, n	11	
Steel Grade	A307	
Bolt Ultimate Tensile Stress, F_u	60	ksi
Threads Exclusion	N	
Shear Plane	1	
Net Bolt Cross-Sectional Area, A_n	0.226	in ²
Gross Bolt Cross-Sectional Area, A_g	0.307	in ²
Tensile Steel Strength (per bolt), φR_{nt}	10170	lbs
Shear Steel Strength (per bolt), φR_{nv}	6903	lbs

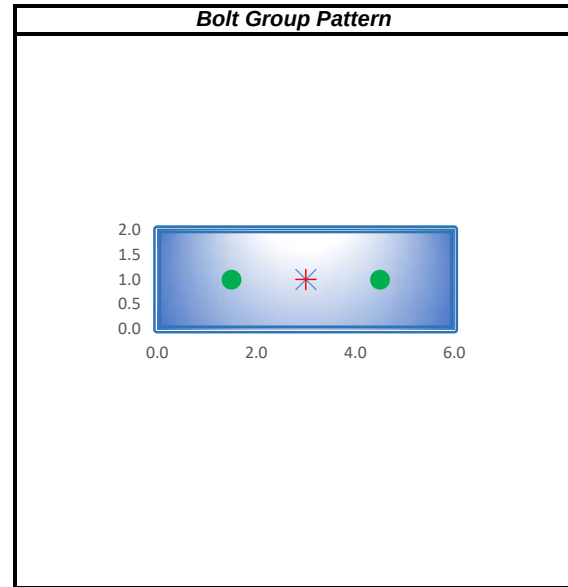
BOLT CONNECTION CALCULATION

BOLT GROUP CHECK

Date: 6/6/2021
Contractor: SMJ International, LLC
Site: JACKSON HOLE BUS. PK WY, WY
Engineer: DVA
Project No: 13677388_C8_01
Connection Location: Top Connection

Loads Properties					
Controlling LC:	77				
Load Point Number:	N40				
X-Coordinate (in.)	3.00				
Y-Coordinate (in.)	1.00				
Z-Coordinate (in.)	4.00				
Shear Load, Px (lbs)	-10.000	0	0	0	0
Shear Load, Py (lbs)	-609.000	0	0	0	0
Axial Load, Pz (lbs)	1058.000	0	0	0	0
Moment, Mx (lb-in)	3500.000	0	0	0	0
Moment, My (lb-in)	0.000	0	0	0	0
Moment, Mz (lb-in)	492.000	0	0	0	0

Member Properties		
	X	Y
Start Coordinates:	0.0	0.0
Dimensions:	6.0	2.0



Number of Bolts

No.	Bolt Type	Bolt Coordinates		Bolt Loads		Tension	Steel Bolt Usage		
		Xo (in)	Yo (in)	Axial (lbs)	Shear (lbs)		Shear	Combined	Max. Capacity
1	Main Type	1.50	1.00	3483.67	140.59	34.3%	2.0%	34.3%	34.3%
2	Main Type	4.50	1.00	3510.33	468.53	34.5%	6.8%	34.5%	34.5%

Bolt Group Properties:

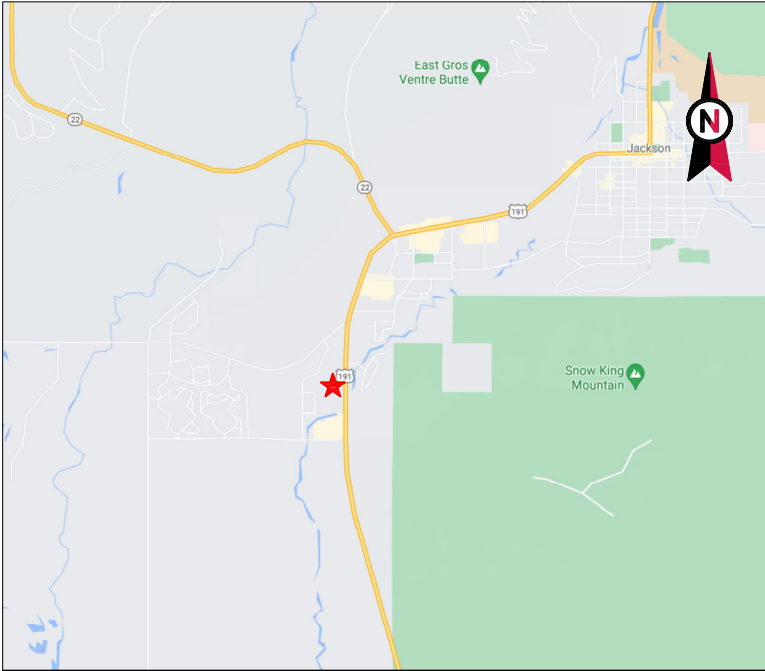
Xc =	3.00	in.
Yc =	1.00	in.
Ic.y =	1.38	in.^2
Ic.x =	0.00	in.^2
Ic.xy =	1.38	in.^2

Loads at Center of Gravity of Bolt Group:

Pz =	1058.00	lbs
Px =	-10.00	lbs
Py =	-609.00	lbs
Mx =	5936.00	lb-in
My =	-40.00	lb-in
Mz =	492.00	lb-in

U-bolt Connection

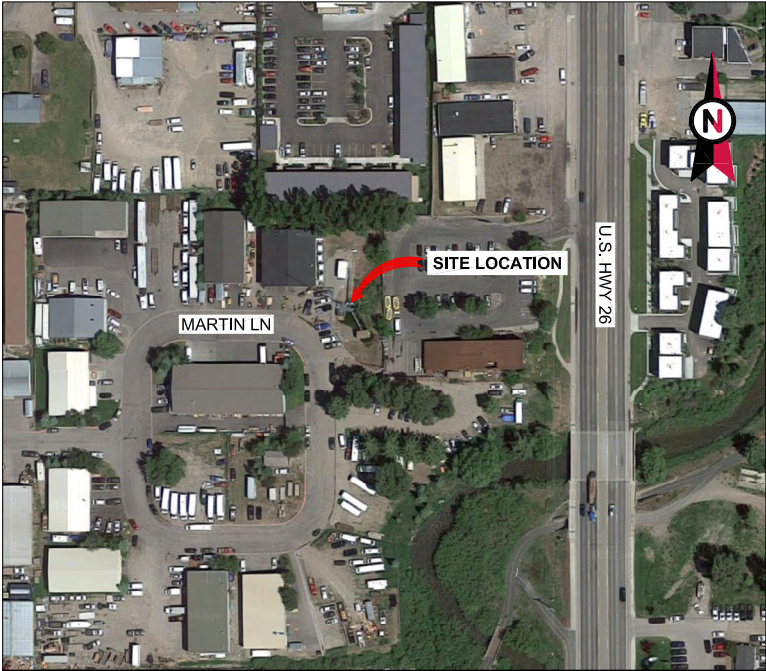
Total Capacity of Bolt Group:



VICINITY MAP



ATC SITE NAME: JACKSON HOLE BUS. PK WY
ATC SITE NUMBER: 275199
T-MOBILE SITE NAME: ATC JACKSON BUSINESS PARK
T-MOBILE SITE NUMBER: SL01204D
SITE ADDRESS: 1525 MARTIN LANE
JACKSON, WY 83001-9921



LOCATION MAP

T-MOBILE ANCHOR_PHASE 3 ANTENNA AMENDMENT PLAN
67D5A998C INDOOR (EVOLVED FROM 3A) CONFIGURATION

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX					
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES. 1. 2018 INTERNATIONAL BUILDING CODE (IBC) 2. 2020 NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 1525 MARTIN LANE JACKSON, WY 83001-9921 COUNTY: TETON <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 43.46222000 LONGITUDE: -110.79465000 GROUND ELEVATION: 6119' AMSL <u>ZONING INFORMATION:</u> JURISDICTION: TOWN OF JACKSON PARCEL #: 22-40-16-06-1-08-002	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: <u>TOWER WORK:</u> REMOVE (9) ANTENNA(s), (3) 4478 RRU(s), (6) 7/8" COAX CABLE(s), AND (1) 9X18 HYBRID CABLE INSTALL (9) ANTENNA(s), (9) RRU(s), (3) DIPLEXER(s) AND (2) 6/24 4AWG HYBRID CABLE(s) EXISTING (3) TTA(s), AND (1) 6X12 4AWG HYBRID CABLE(s) TO REMAIN <u>GROUND WORK:</u> INSTALL (1) BB 6648, (1) CSR IXRe V2 AND (1) PSU 4813 EXISTING (1) RBS 6601, (1) RBS 3206 CABINET, (1) 19" RACK, (1) PBC 6500, (1) POWER 6230, (1) DUW30, (6) RU22, (1) BB 5216, (1) BB 6648, AND (1) XMU TO REMAIN	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:	
	G-001		TITLE SHEET	0	07/02/21	JMM		
	G-002		GENERAL NOTES	0	07/02/21	JMM		
	C-001		OVERALL SITE PLAN	0	07/02/21	JMM		
	C-101		DETAILED SITE PLAN	0	07/02/21	JMM		
	C-102		DETAILED GROUND PLAN	0	07/02/21	JMM		
	C-201		TOWER ELEVATION	0	07/02/21	JMM		
	C-401		RF SCHEDULE AND ANTENNA INSTALLATION	0	07/02/21	JMM		
	C-501		CONSTRUCTION DETAILS	0	07/02/21	JMM		
	E-501		GROUNDING DETAILS	0	07/02/21	JMM		
PROJECT TEAM		PROJECT NOTES	R-601	SUPPLEMENTAL				
<u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801 <u>ENGINEER:</u> POWER OF DESIGN GROUP 11490 BLUEGRASS PARKWAY LOUISVILLE, KY 40299 <u>PROPERTY OWNER:</u> AMERICAN TOWERS, INC PO BOX 723597 ATLANTA, GA 31139 <u>APPLICANT:</u> T-MOBILE WEST LLC 3650 131ST AVE SE BELLEVUE, WA 98006 <u>PLANNING / APPLICANT'S REPRESENTATIVE:</u> THE DERNA GROUP 22431 ANTONIO PARKWAY SUITE B160-234 RANCHO SANTA MARGARITA, CA 92688 CONTACT: RACHEL BRUIN PHONE: (805) 215-9444 EMAIL: RBRUIN@DERNAGR.COM			R-602	SUPPLEMENTAL				
			R-603	SUPPLEMENTAL				
			R-604	SUPPLEMENTAL				
			R-605	SUPPLEMENTAL				
		UTILITY COMPANIES		PROJECT LOCATION DIRECTIONS				
POWER COMPANY: LOWER VALLEY ENERGY								
PHONE: (307) 733-2446								
TELEPHONE COMPANY: CENTURY LINK								
PHONE: (888) 863-9045								
								
		Know what's below. Call before you dig.						



REV.	DESCRIPTION	BY	DATE
A	PRELIM	JMM	06/11/21
B	CONSTRUCTION	JMM	07/02/21

ATC SITE NUMBER:
275199

ATC SITE NAME:
JACKSON HOLE BUS. PK WY

T-MOBILE SITE NAME:
ATC JACKSON BUSINESS PARK

SITE ADDRESS:
1525 MARTIN LANE
JACKSON, WY 83001-9921



DATE DRAWN:	06/11/21
ATC JOB NO:	13677388
CUSTOMER ID:	ATC JACKSON BUSINESS PARK
CUSTOMER #:	SL01204D

TITLE SHEET	
SHEET NUMBER: G-001	REVISION: 0

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, T-MOBILE "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 T-MOBILE 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 T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE 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 T-MOBILE 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 T-MOBILE 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 T-MOBILE 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 T-MOBILE 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 T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE 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 T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE 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. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE 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. T-MOBILE 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 T-MOBILE OR THEIR ARCHITECT/ENGINEER.

SPECIAL CONSTRUCTION

ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
- A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OD COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND

B. INSTALL ANTENNA AS INDICATE ON DRAWINGS AND T-MOBILE 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 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.
3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)

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



AMERICAN TOWER®



POWER OF DESIGN

11490 BLUEGRASS PKWY
LOUISVILLE, KY 40299
502-437-5252

REV.	DESCRIPTION	BY	DATE
A	PRELIM	JMM	06/11/21
0	CONSTRUCTION	JMM	07/02/21

ATC SITE NUMBER:
275199

ATC SITE NAME:
JACKSON HOLE BUS. PK WY

T-MOBILE SITE NAME:
ATC JACKSON BUSINESS PARK

SITE ADDRESS:
1525 MARTIN LANE
JACKSON, WY 83001-9921

SEAL:



07/02/2021

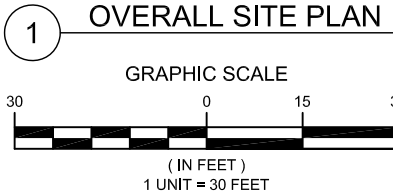
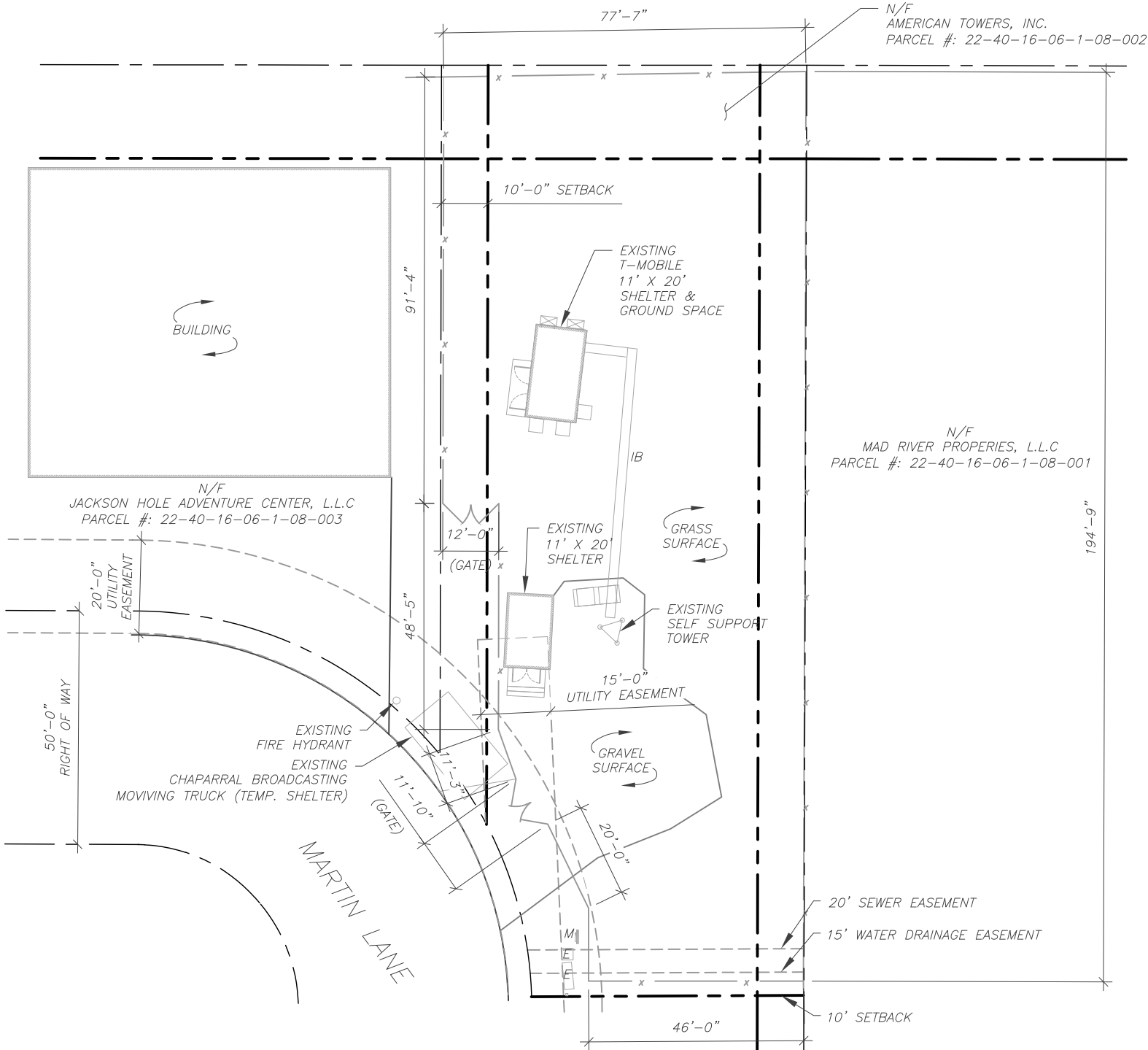
	
DATE DRAWN:	06/11/21
ATC JOB NO:	13677388
CUSTOMER ID:	ATC JACKSON BUSINESS PARK
CUSTOMER #:	SL01204D

GENERAL NOTES	
SHEET NUMBER: G-002	REVISION: 0

- NOTES:
- BOUNDARY LINES OBTAINED FROM TOWN OF JACKSON ONLINE GIS.
 - ZONING INFORMATION OBTAINED FROM BP.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING LEASE AREA
- EXISTING EASEMENT
- EXISTING WOOD FENCE
- EXISTING WIRE FENCE
- EXISTING METAL FENCE
- EXISTING GUARD RAIL
- EXISTING CHAINLINK FENCE
- EXISTING ROAD (DIRT)
- EXISTING ROAD (STONE)
- EXISTING ROAD (PAVED)



REV.	DESCRIPTION	BY	DATE
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B	CONSTRUCTION	JMM	07/02/21

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DATE DRAWN:	06/11/21
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CUSTOMER #:	SL01204D

OVERALL SITE PLAN

SHEET NUMBER:	REVISION:
C-001	0

SITE PLAN NOTES:

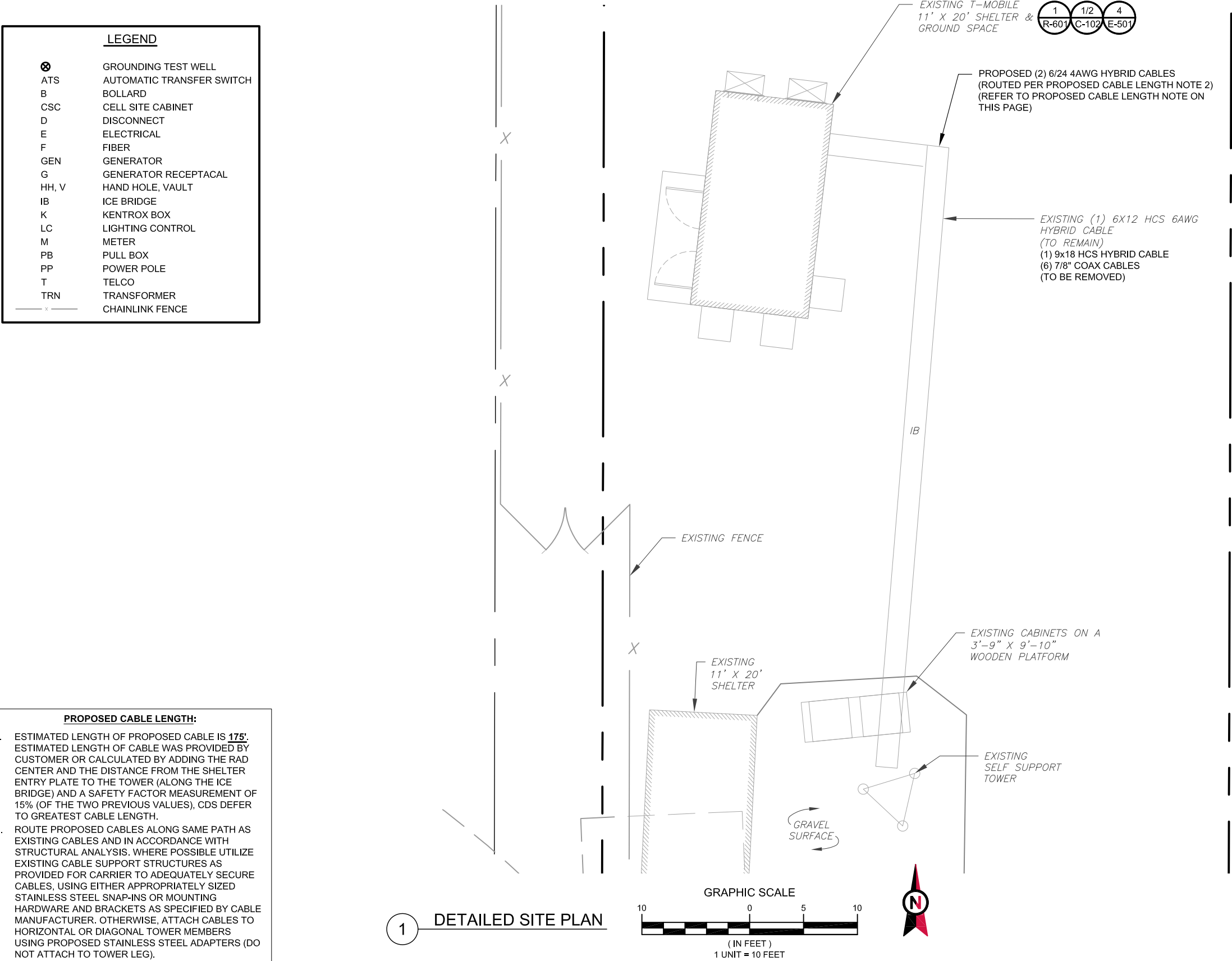
1.

THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2.

ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3.

NO ELECTRICAL SCOPE IS INCLUDED IN THIS PROJECT.

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



- PROPOSED CABLE LENGTH:

1.

ESTIMATED LENGTH OF PROPOSED CABLE IS **175'**. 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. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).



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POWER OF DESIGN

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LOUISVILLE, KY 40299
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REV.	DESCRIPTION	BY	DATE
A	PRELIM	JMM	06/11/21
B	CONSTRUCTION	JMM	07/02/21

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T-MOBILE SITE NAME:
ATC JACKSON BUSINESS PARK

SITE ADDRESS:
1525 MARTIN LANE
JACKSON, WY 83001-9921

SEAL:



07/02/2021

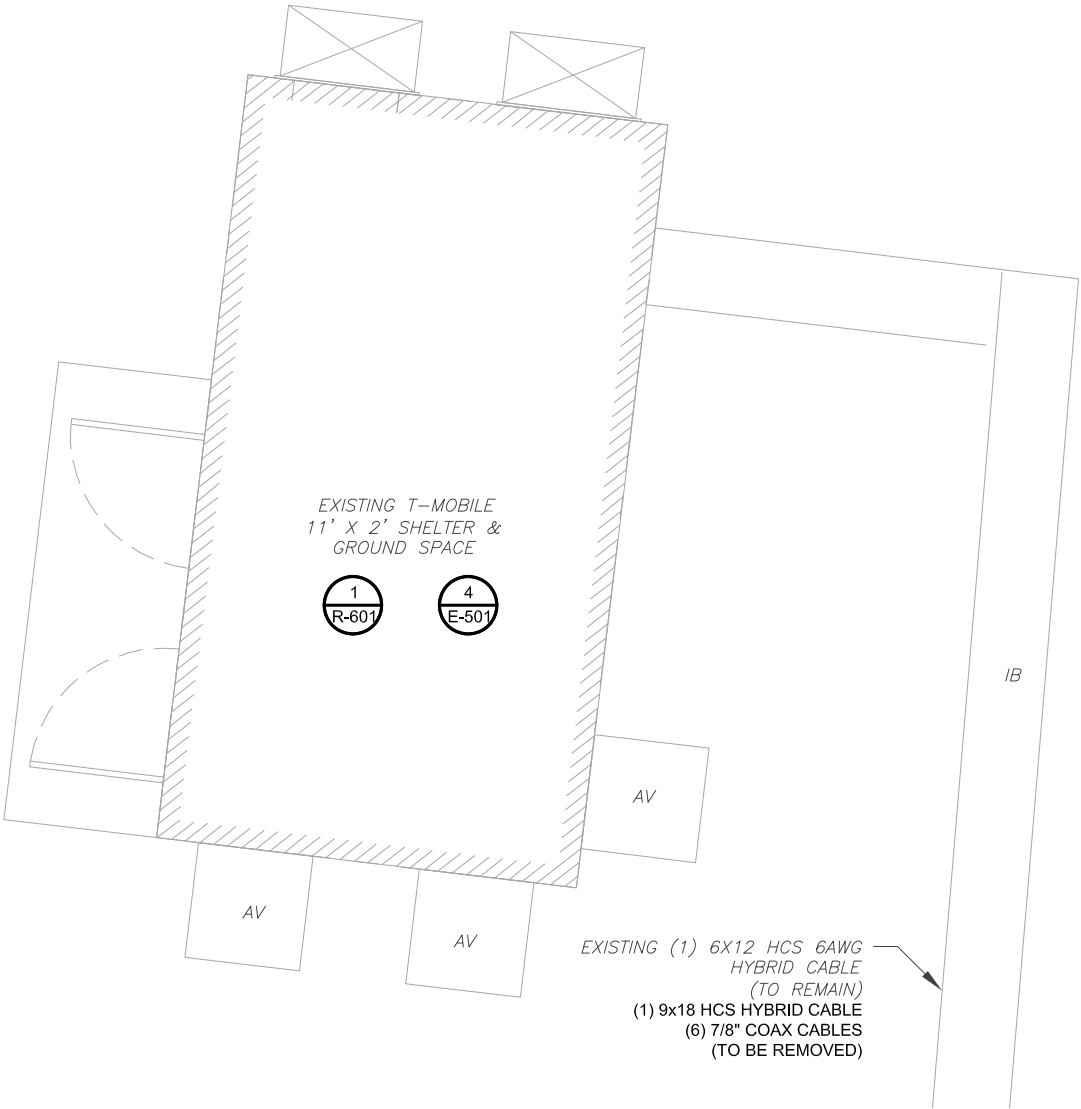
T-Mobile®	
DATE DRAWN:	06/11/21
ATC JOB NO:	13677388
CUSTOMER ID:	ATC JACKSON BUSINESS PARK
CUSTOMER #:	SL01204D

DETAILED SITE PLAN	
SHEET NUMBER: C-101	REVISION: 0

SITE PLAN NOTES:

1.
- CONTRACTOR TO VERIFY THERE IS NO LIVE AAV FIBER RUNNING THROUGH EXISTING DEAD EQUIPMENT. IF SO, THIS WILL NEED TO BE RERUN THROUGH CONDUIT PRIOR TO REMOVING DEAD 2G (6201 CABS) EQUIPMENT.
2.
- REMOVE EXISTING 2G CABINETS, AND POWER / TELCO WHIPS ASSOCIATED WITH THE DEAD EQUIPMENT IF APPLICABLE.
3.
- ALL OPEN PORTS NEED TO BE SEALED / WEATHERPROOFED PROPERLY
4.
- ALL UNNEEDED / EXCESS EQUIPMENT AND GARBAGE TO BE REMOVED FROM EQUIPMENT AREA. DISPOSE OF MATERIALS PROPERLY OFF SITE.

T-MOBILE CM APPROVAL REQUIRED BEFORE INSTALLING CABINETS



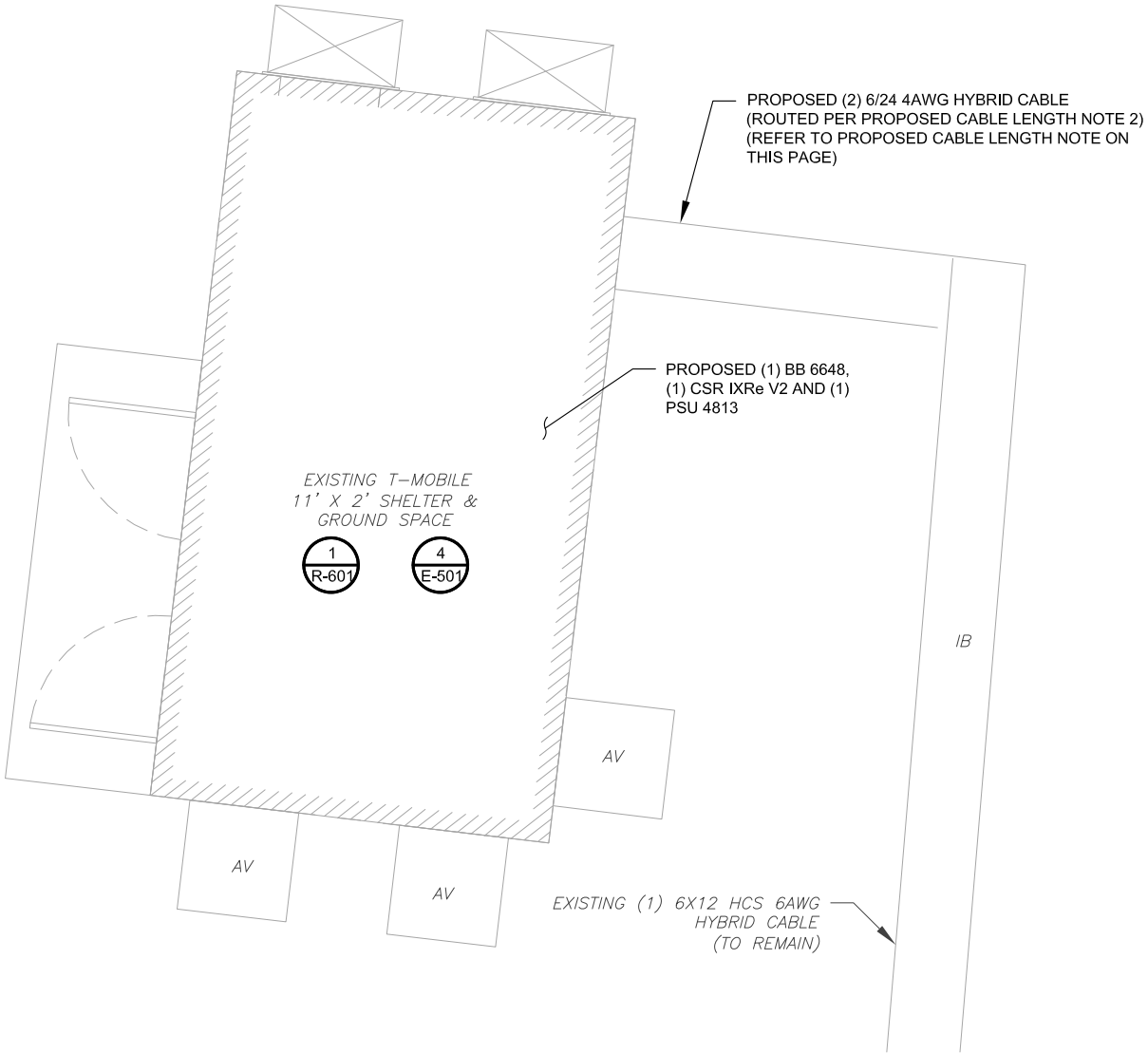
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EXISTING GROUND EQUIPMENT LAYOUT

0510

SCALE: 1"=5' (11X17)
1"=2.5' (22X34)

N



2

PROPOSED GROUND EQUIPMENT LAYOUT

0510

SCALE: 1"=5' (11X17)
1"=2.5' (22X34)

N



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JACKSON, WY 83001-9921



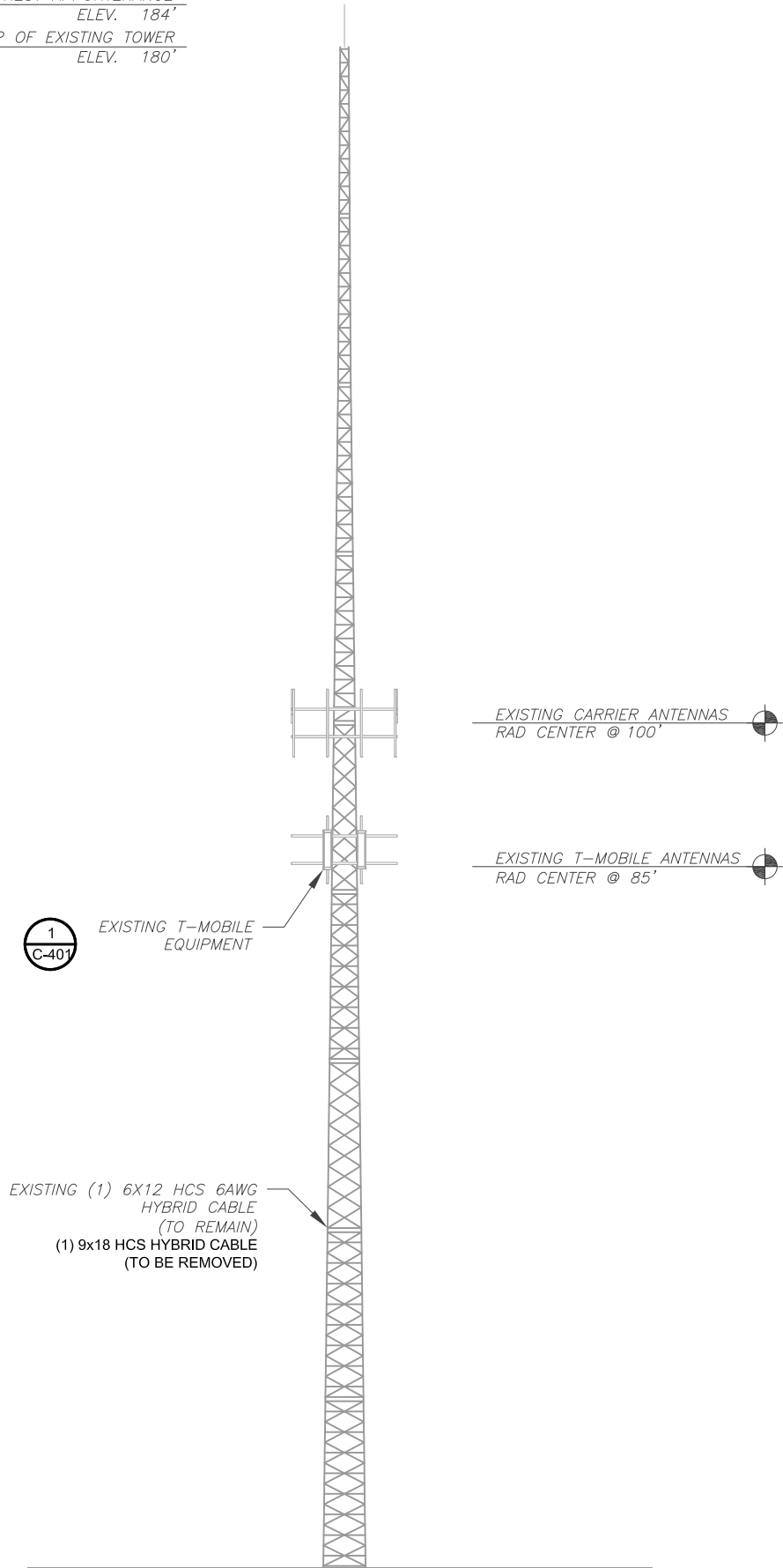
DATE DRAWN:	06/11/21
ATC JOB NO:	13677388
CUSTOMER ID:	ATC JACKSON BUSINESS PARK
CUSTOMER #:	SL01204D

DETAILED GROUND PLAN

SHEET NUMBER:	REVISION:
C-102	0

TOP OF EXISTING
HIGHEST APPURTENANCE
ELEV. 184'

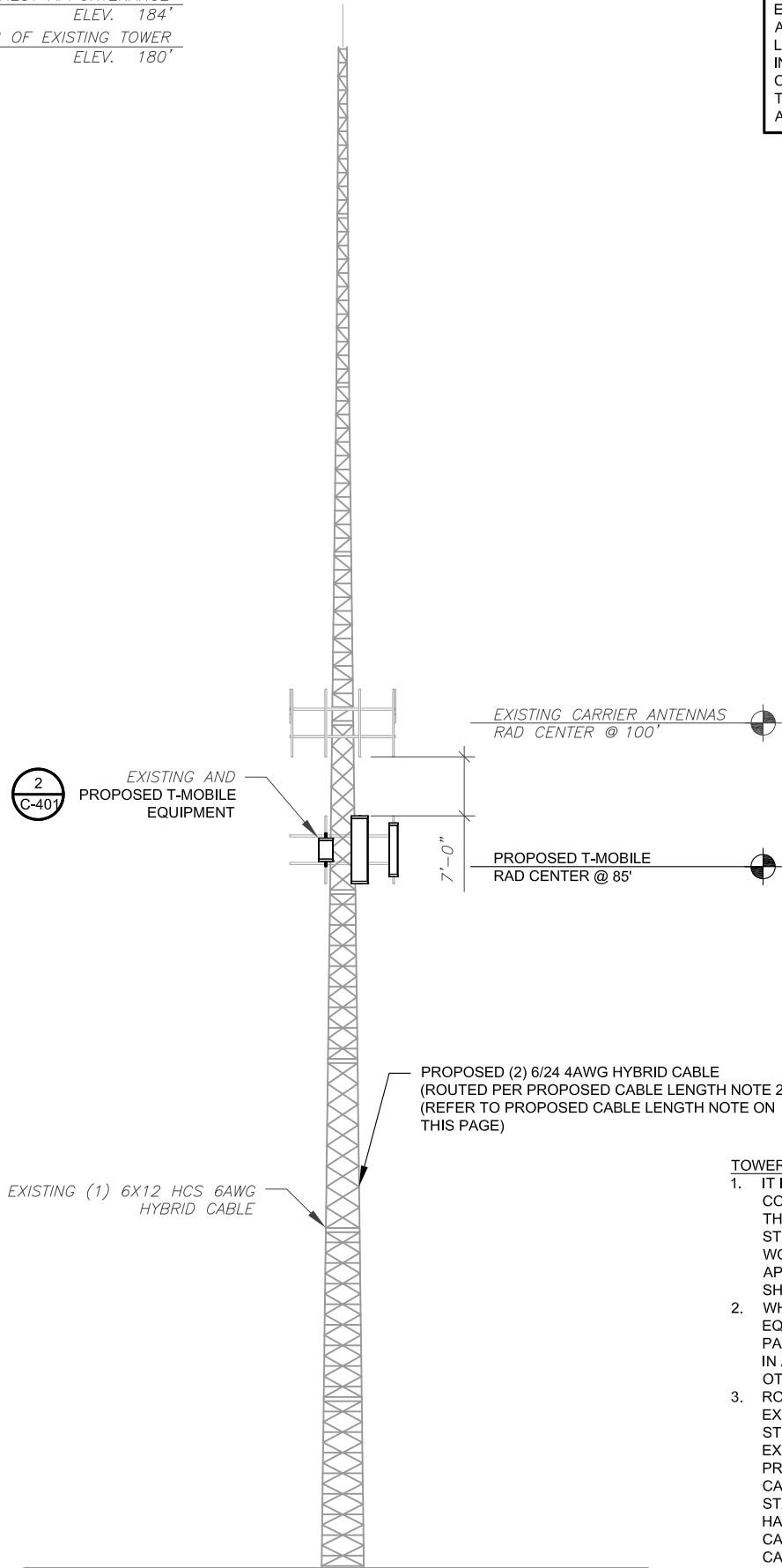
TOP OF EXISTING TOWER
ELEV. 180'



1 EXISTING TOWER ELEVATION
SCALE: N.T.S.

TOP OF EXISTING
HIGHEST APPURTENANCE
ELEV. 184'

TOP OF EXISTING TOWER
ELEV. 180'



2 PROPOSED TOWER ELEVATION
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY SMJ INTERNATIONAL, DATED JUNE 10, 2021, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT

- 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. EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
 - 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. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).
 - TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)



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275199

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JACKSON HOLE BUS. PK WY

T-MOBILE SITE NAME:
ATC JACKSON BUSINESS PARK

SITE ADDRESS:
1525 MARTIN LANE
JACKSON, WY 83001-9921



DATE DRAWN:	06/11/21
ATC JOB NO:	13677388
CUSTOMER ID:	ATC JACKSON BUSINESS PARK
CUSTOMER #:	SL01204D

TOWER ELEVATION

SHEET NUMBER: C-201	REVISION: 0
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FINAL ANTENNA PLAN

SCALE: N.T.S.

Legend:

- 3 C-501 PROPOSED RADIO 4415 B66A RRU (1 PER SECTOR) (TYP. 3)
- 1 C-501 PROPOSED APXVAALL24 43-UNA20 ANTENNA (1 PER SECTOR) (TYP. 3)
- 2 C-501 PROPOSED AIR6449 B41 ANTENNA (1 PER SECTOR) (TYP. 3)
- 4 C-501 PROPOSED RADIO 4424 B25 RRU (1 PER SECTOR) (TYP. 3)
- 1 C-501 PROPOSED APX17DWV-17DWVS-E-A20 ANTENNA (1 PER SECTOR) (TYP. 3)
- 4 C-501 PROPOSED RADIO 4449 B71+B85 RRU (1 PER SECTOR) (TYP. 3)

Antenna Details:

- Gamma:** AZ = 270°
- Beta:** AZ = 180°
- Alpha:** AZ = 35°
- Existing Tower:** EXISTING TOWER
- Existing KRY 112 144/1 TTA:** (1 PER SECTOR) (TYP. 3)
- Proposed 2-3/8" O.D. X 96" ANTENNA MOUNTING PIPE FOR PROPOSED ANTENNA:** (2 PER SECTOR) (TYP. 6)

North Arrow: N

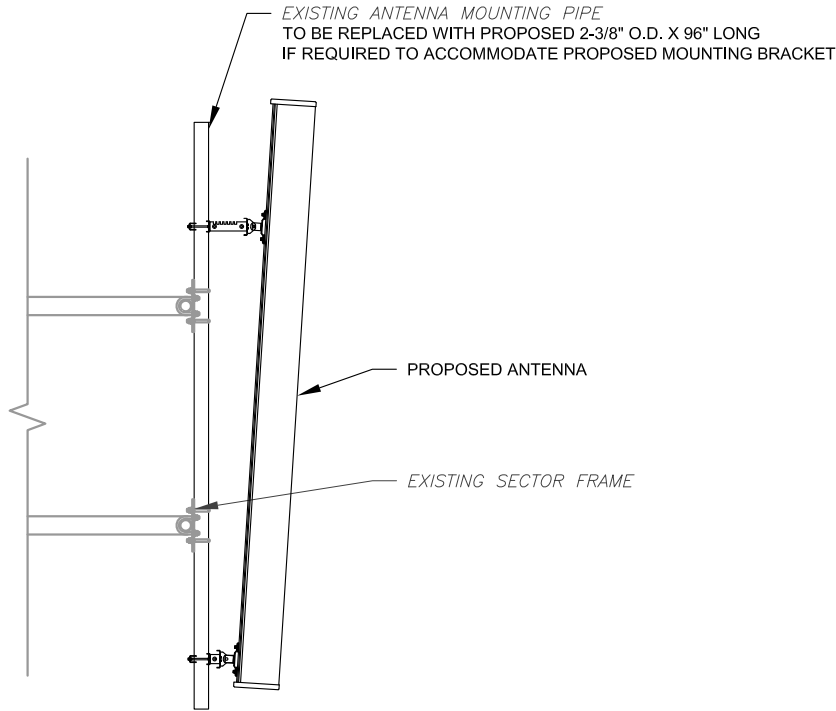
NOTES	
1.	CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG), GC TO CAP ALL UNUSED PORTS.
2.	CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
STATUS ABBREVIATIONS	
	RMV: TO BE REMOVED <i>RMN</i> : TO REMAIN REL: TO BE RELOCATED ADD: TO BE ADDED
CABLE LENGTHS FOR JUMPERS	
	JUNCTION BOX TO RRU: 15' RRU TO ANTENNA: 10'

FINAL ANTENNA SCHEDULE									
LOCATION			ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	85°	35°	A1	APX17DWV-17DWV-S-E-A20	AWS LTE	0°/6°	ADD	(1) RADIO 4415 B66A	ADD
			A2	APXVAALL24_43-U-NA20	700/600/1900 LTE/ AWS UMTS/N600	0°/6°/8°	ADD	(1) KRY 112 144/1 (1) RADIO 4449 B71+B85 (1) RADIO 4424 B25 (1) SDX1926Q-43	RMN ADD ADD ADD
			A3	AIR6449 B41	L2500/N2500	0°/6°	ADD	-	
BETA	85°	180°	B1	APX17DWV-17DWV-S-E-A20	AWS LTE	0°/2°	ADD	(1) RADIO 4415 B66A	ADD
			B2	APXVAALL24_43-U-NA20	700/600/1900 LTE/ AWS UMTS/N600	0°/2°/4°	ADD	(1) KRY 112 144/1 (1) RADIO 4449 B71+B85 (1) RADIO 4424 B25 (1) SDX1926Q-43	RMN ADD ADD ADD
			B3	AIR6449 B41	L2500/N2500	0°/2°	ADD	-	-
GAMMA	85°	270°	C1	APX17DWV-17DWV-S-E-A20	AWS LTE	0°/4°	ADD	(1) RADIO 4415 B66A	ADD
			C2	APXVAALL24_43-U-NA20	700/600/1900 LTE/ AWS UMTS/N600	0°/4°/6°	ADD	(1) KRY 112 144/1 (1) RADIO 4449 B71+B85 (1) RADIO 4424 B25 (1) SDX1926Q-43	RMN ADD ADD ADD
			C3	AIR6449 B41	L2500/N2500	0°/4°	ADD	-	-

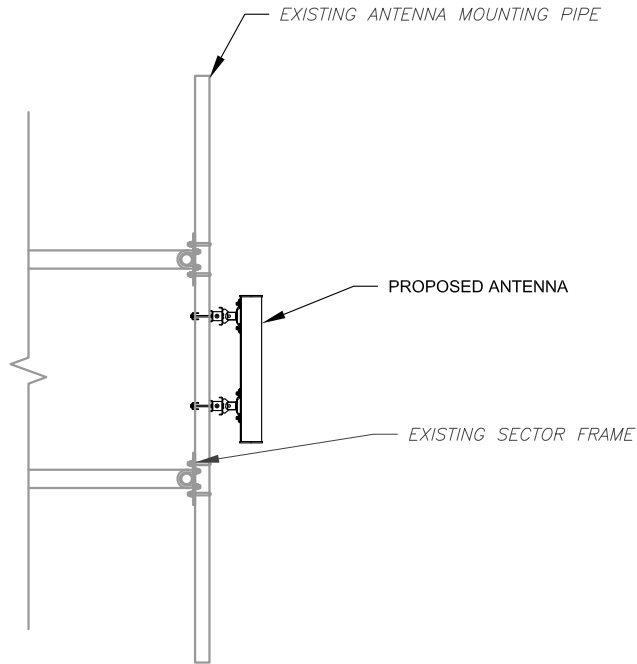
EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
—	-	-	(1) 9X18 HCS	RMV
—	—	(6) 7/8"	—	RMV
—	—	—	(1) 6X12 HCS 6AWG	RMN

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(2) 6/24 4AWG	ADD
—	—	—	(1) 6X12 HCS 6AWG	RMN

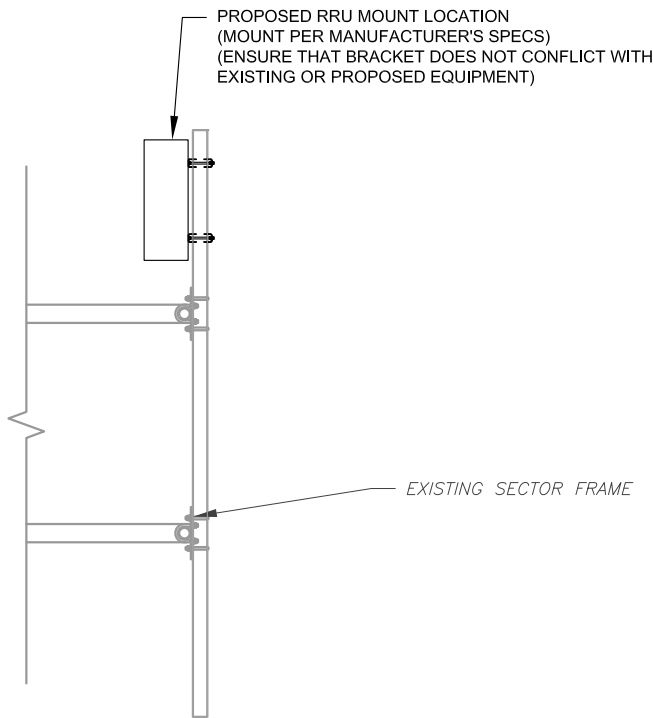
 AMERICAN TOWER®			
 POD POWER OF DESIGN 11490 BLUEGRASS PKWY LOUISVILLE, KY 40299 502-437-5252			
REV.	DESCRIPTION	BY	DATE
A	PRELIM	JMM	06/11/21
0	CONSTRUCTION	JMM	07/02/21
ATC SITE NUMBER: 275199			
ATC SITE NAME: JACKSON HOLE BUS. PK WY			
T-MOBILE SITE NAME: ATC JACKSON BUSINESS PARK			
SITE ADDRESS: 1525 MARTIN LANE JACKSON, WY 83001-9921			
SEAL:			
DATE DRAWN:	06/11/21		
ATC JOB NO:	13677388		
CUSTOMER ID:	ATC JACKSON BUSINESS PARK		
CUSTOMER #:	SL01204D		
RF SCHEDULE AND ANTENNA INSTALLATION			
SHEET NUMBER:		REVISION:	
C-401		0	



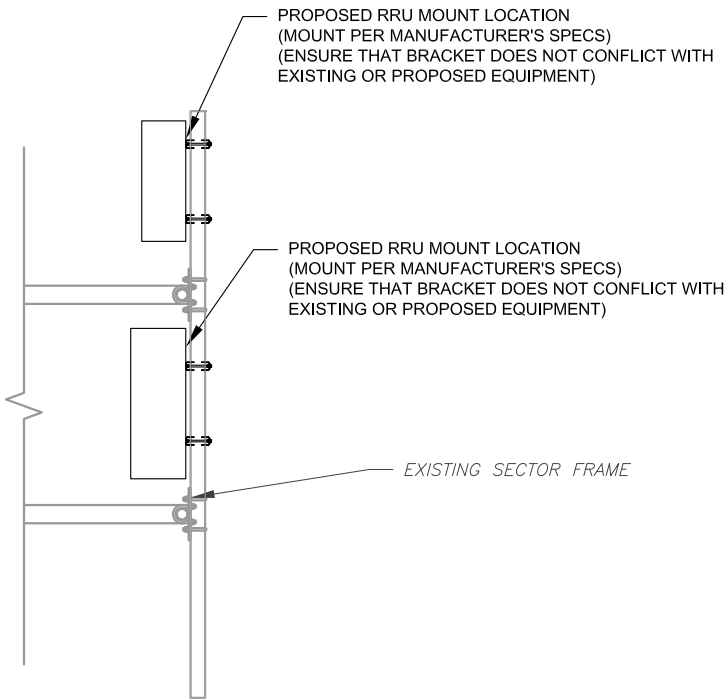
1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL
SCALE: NOT TO SCALE



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



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



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



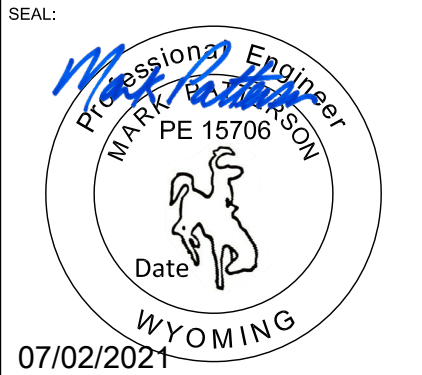
REV.	DESCRIPTION	BY	DATE
A	PRELIM	JMM	06/11/21
0	CONSTRUCTION	JMM	07/02/21

ATC SITE NUMBER:
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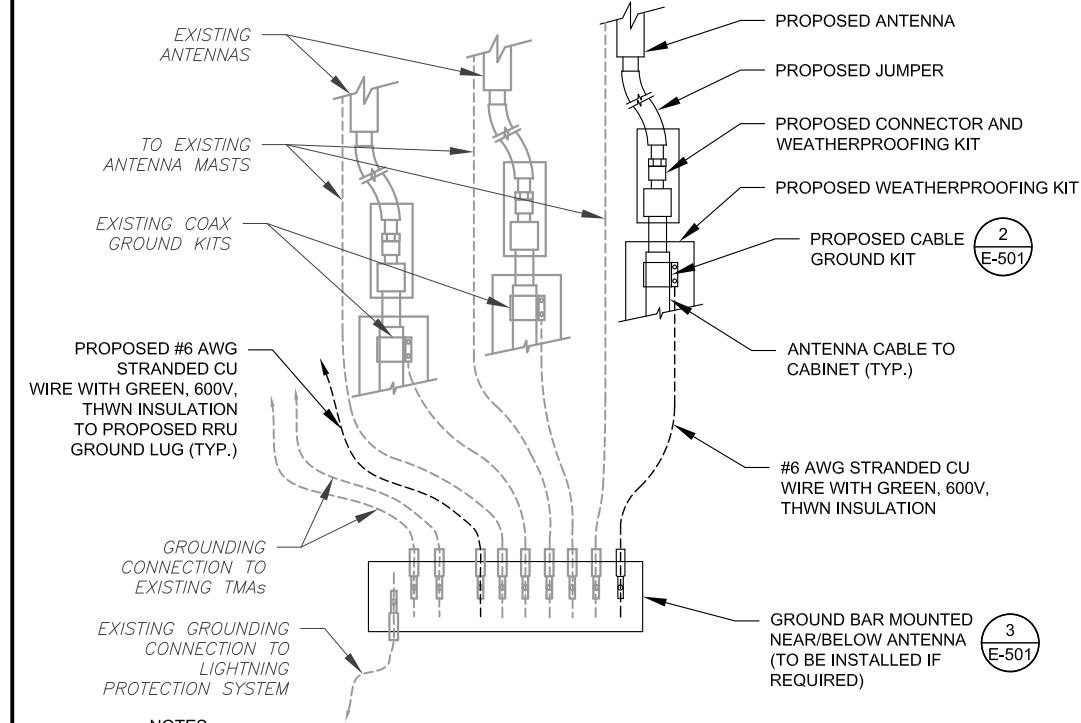
SITE ADDRESS:
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DATE DRAWN:	06/11/21
ATC JOB NO:	13677388
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CUSTOMER #:	SL01204D

CONSTRUCTION
DETAILS

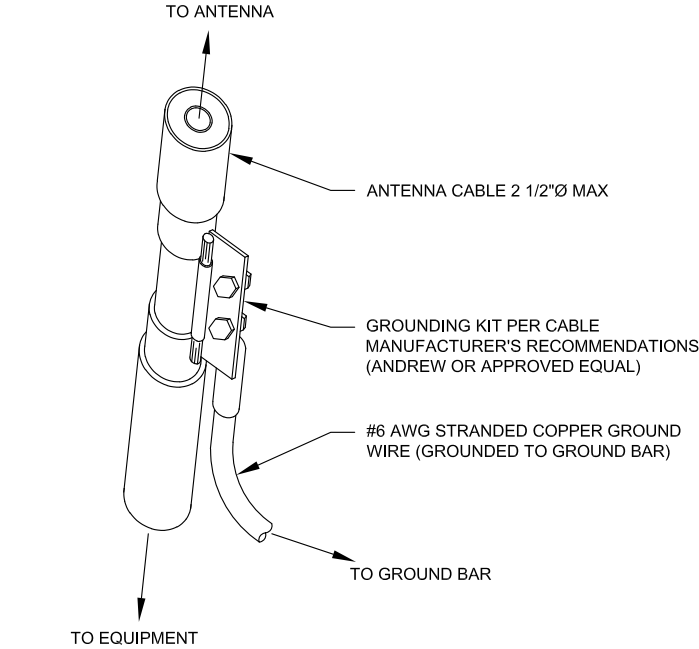
SHEET NUMBER:	REVISION:
C-501	0



NOTES:

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

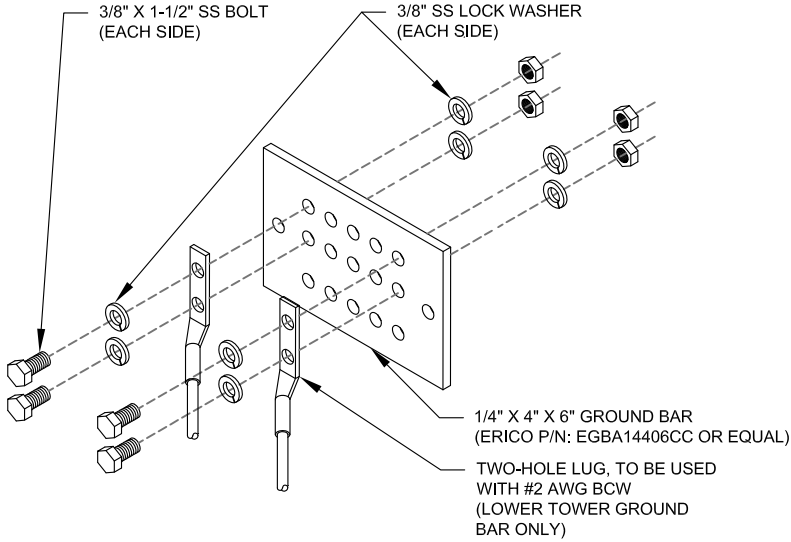
1 TYPICAL ANTENNA GROUNDING DIAGRAM
SCALE: N.T.S.



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.



REV.	DESCRIPTION	BY	DATE
A	PRELIM	JMM	06/11/21
0	CONSTRUCTION	JMM	07/02/21

ATC SITE NUMBER:
275199

ATC SITE NAME:
JACKSON HOLE BUS. PK WY

T-MOBILE SITE NAME:
ATC JACKSON BUSINESS PARK

SITE ADDRESS:
1525 MARTIN LANE
JACKSON, WY 83001-9921

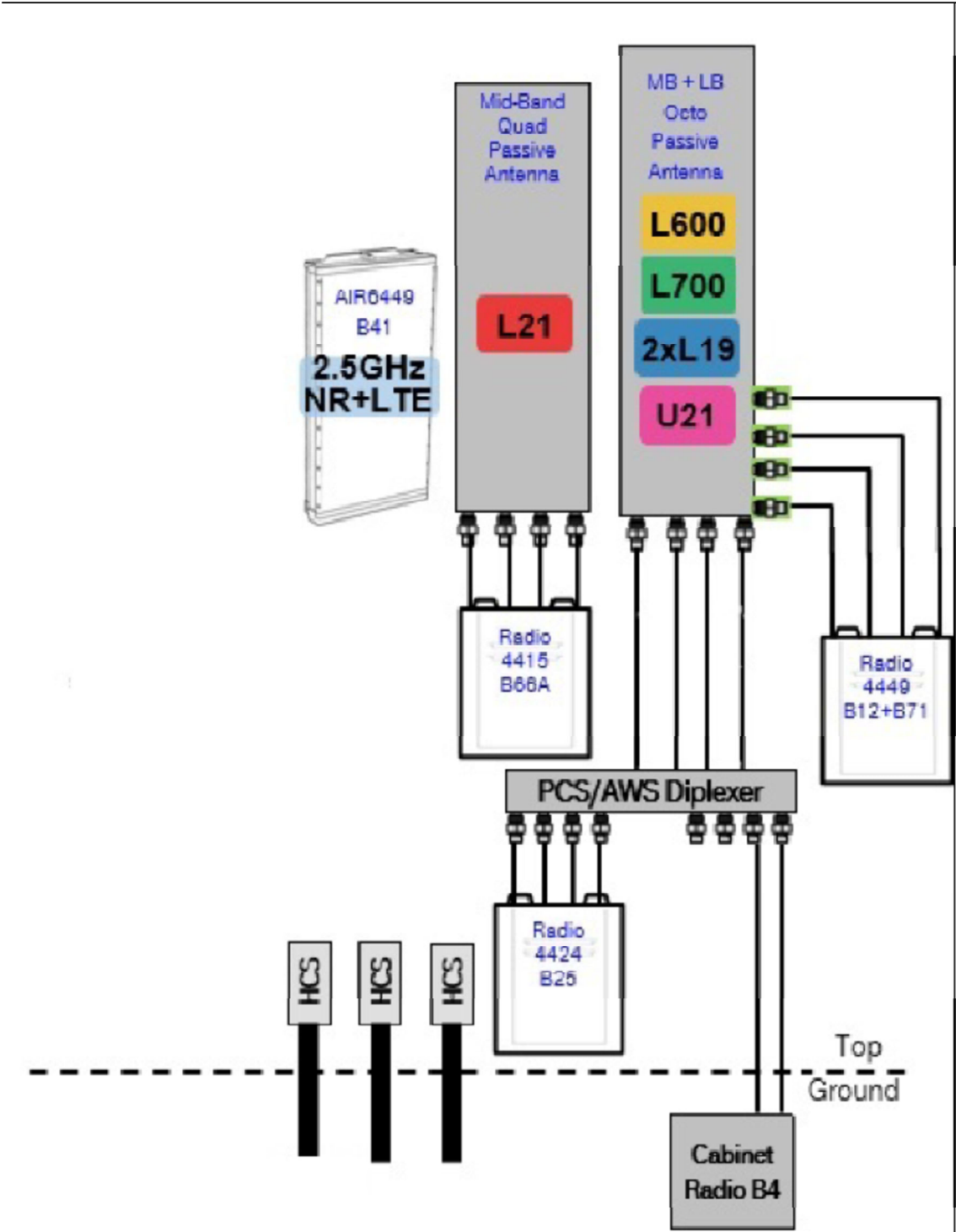


DATE DRAWN:	06/11/21
ATC JOB NO:	13677388
CUSTOMER ID:	ATC JACKSON BUSINESS PARK
CUSTOMER #:	SL01204D

GROUNDING DETAILS	
SHEET NUMBER: E-501	REVISION: 0

Section 5 - RAN Equipment					
Existing RAN Equipment					
Template: 6002C Indoor					
Enclosure	1	2	3	4	5
Enclosure Type	RBS 3206	19 Inch Rack (Ericsson)	Tower Top Mount (Ericsson)	PBC 6500	Power 6230
Baseband	DUM30 U2100	BB 5216 L1900 L2100 RB06601 BB 6648 L800 N800			
Hybrid Cable System			Ericsson 9x18 HCS 40m Ericsson 6x12 HCS 6AWG 40m		
Multiplexer		XMU L1900 L2100			
Radio	RU22 (x 6) U2100				
Transport System	CSR 7705 SAR M				
Proposed RAN Equipment					
Template: 07D5A990C Indoor (evolved from 3A)					
Enclosure	1	2	3	4	5
Enclosure Type	RBS 3206	19 Inch Rack (Ericsson)	Tower Top Mount (Ericsson)	PBC 6500	Power 6230
Baseband	DUM30 U2100	BB 5216 L2100 L1900 RB06601 BB 6648 L700 L800 N800 BB 6648 L2500 N2500			
Hybrid Cable System			Ericsson 6x12 HCS 6AWG 40m Ericsson Hybrid Trunk 5/24 4AWG 40m (x 2) PSU 4813		
Multiplexer		XMU L2100 L1900			
Radio	RU22 (x 6) U2100				
Transport System	CSR 7705 SAR M	CSR 1XRe V2 (Gen2)			
RAN Scope of Work:					
04/29/2021 - 120% SA from 2014. Consider removing (12) 7/8" coax lines to support SA. L700 spectrum is available in Teton, Wyoming.					

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE



Notes:

2 ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

SUPPLEMENTAL

SHEET NUMBER:

R-601

REVISION:

0

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

BASEBAND6648

- Dimensions: 19” x 1U (1.75”) x13.8”
- Powered by dual 48V DC
- Cells:
 - NR Mid Band AAS
 - 12 sector carriers
 - NR Mid Band TDD
 - 12 sector carriers
 - NR Low Band FDD
 - 24 sector carriers



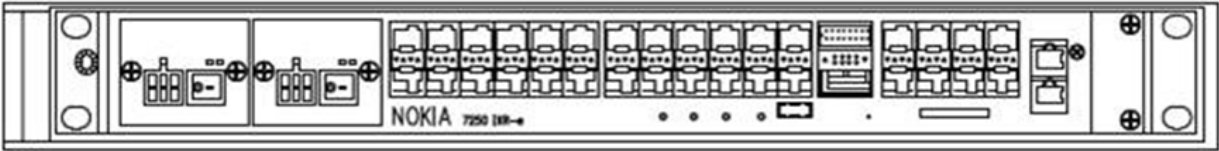
Ports	Quantity	Comments
Power	2	-48V
LMT	1	RJ45
TN/IDL	4	3 x SFP28 (25G) 1 x QSFP28 (4x 25G)
TN	1	1 x 1G (RJ45)
Radio Interface	12	SFP+/SFP28
Sync	1	RJ45
External alarms	8	2 x RJ45
USB 3.0	1	USB C

The general specifications for the PSU 48 13 are as follows:

Electrical Operating Limits	
Input Voltage	-38.0 – -58.5 VDC
Input Voltage, nominal	-48 VDC
Input Current, max	166 A; 30 A total for all four -48V inputs
Output Voltage, fixed	-58 VDC
Output Power, max.	2000 watts each
Environmental Operating Limits	
Temperature, operation	-40 – +60 °C
Temperature, storage	-40 – +55 °C
Temperature, trasport	-40 – +70 °C
Humidity, operation and storage	5% – 95%
Altitude, operation and storage	0 – 4000 m
Cooling	Internal fans
Vibration	ETS300019-2
Shock	ETS300019-2
Drop	ETS300019-2
EMC	FCC Part 15
Safety	UL 62368-1
Noise	< 6.8 bel sound power
Lightning Protection	4 kA; 10/350 μs; 20 kA, 8/20 μs
Fuse Options	30 A, 40 A, 50 A
Mechanical Specification	
Weight	< 7.8 kg (17.2 lb)
Dimensions (H x W x D)	44 x 483 x 363 mm (1.7" x 19.0" x 14.3") (include brackets, cover)



1 VOLTAGE BOOSTER
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE



NOKIA - CSR IXRE V2 ROUTER
WEIGHT: 11.2 LBS
SIZE (HxWxD): 1.25 x 17.25 x 10.0 IN.

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

SUPPLEMENTAL

SHEET NUMBER:

R-602

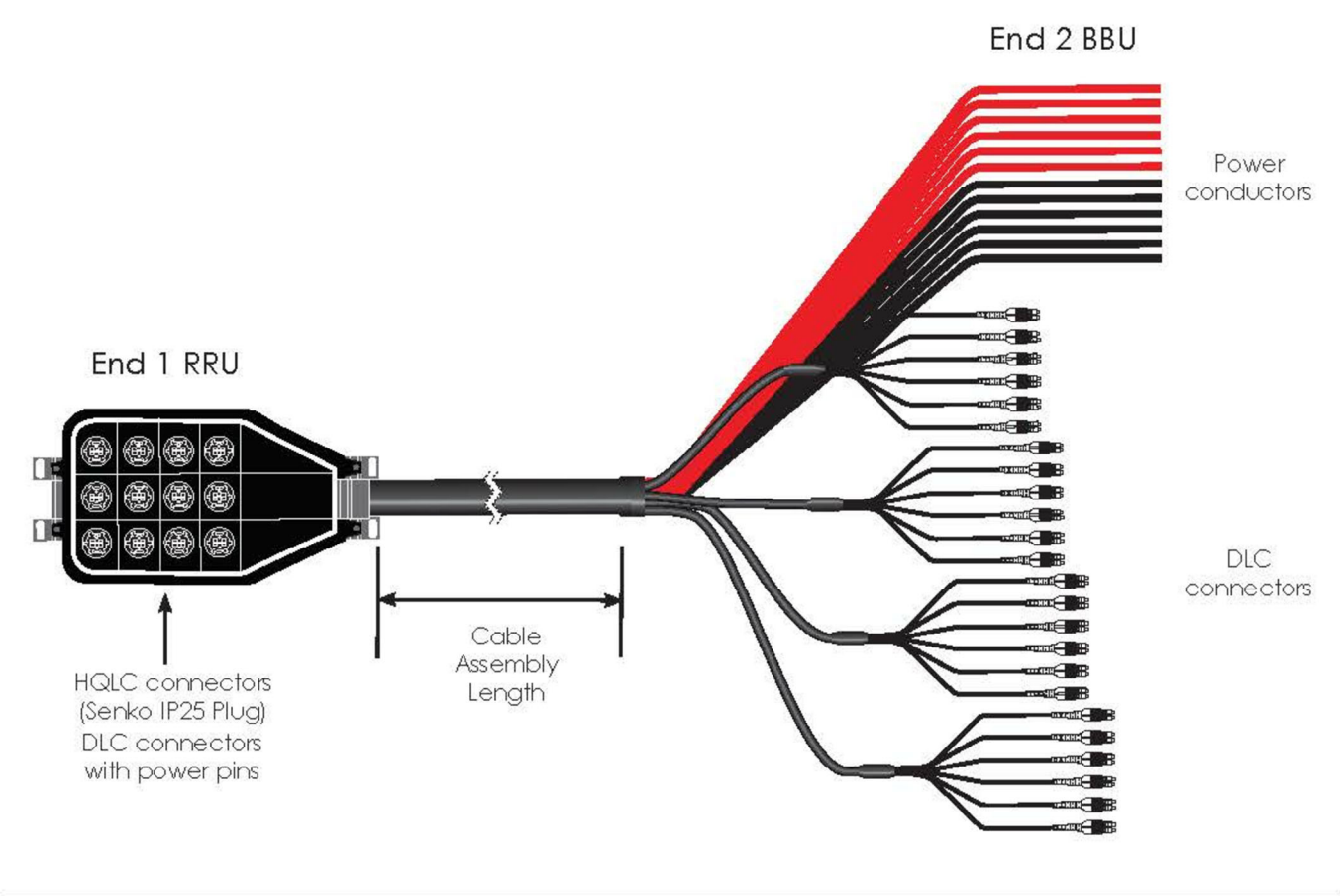
REVISION:

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Section 2: General Specifications

Cable Type	FD21206-48SRC-XXX	FD21204-48SRC-XXX
Center Conductor Gauge	6 AWG (up to 225 ft)	4 AWG (250 - 450 ft)
Conductors, quantity	12	12
Total Fiber Quantity	48	48
Fiber Type	G.657.A2/B2	G.657.A2/B2
Specifications		
Cable Weight	2544.0 kg/km 1710.0 lb/kft	3,576 kg/km 2403 lb/kft
Diameter Over Jacket	39.38 mm 1.55 in	44.70 mm 1.76 in
Breakout Length, Fiber, end 2	775 mm 31 in	775 mm 31 in
	826 mm 33 in	826 mm 33 in
Breakout Length, Power, end 2	610 mm 24 in	610 mm 24 in
Minimum Bend Radius	472.44 mm 18.6 in	360.7 mm 14.2 in

PART NUMBER	DESCRIPTION
FD21206-48SRC-XXX	6AWG or 4AWG 12 RRU Hybrid Trunk Cables End 1: Pendant breakout enclosure with 12 HQLC Senko IP25 Plug connection interface.
FD21204-48SRC-XXX	End 2: 12-6 WG or 12-4AWG DC conductors blunt-cut, 48 single mode fibers (24 pairs) terminated DLC



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

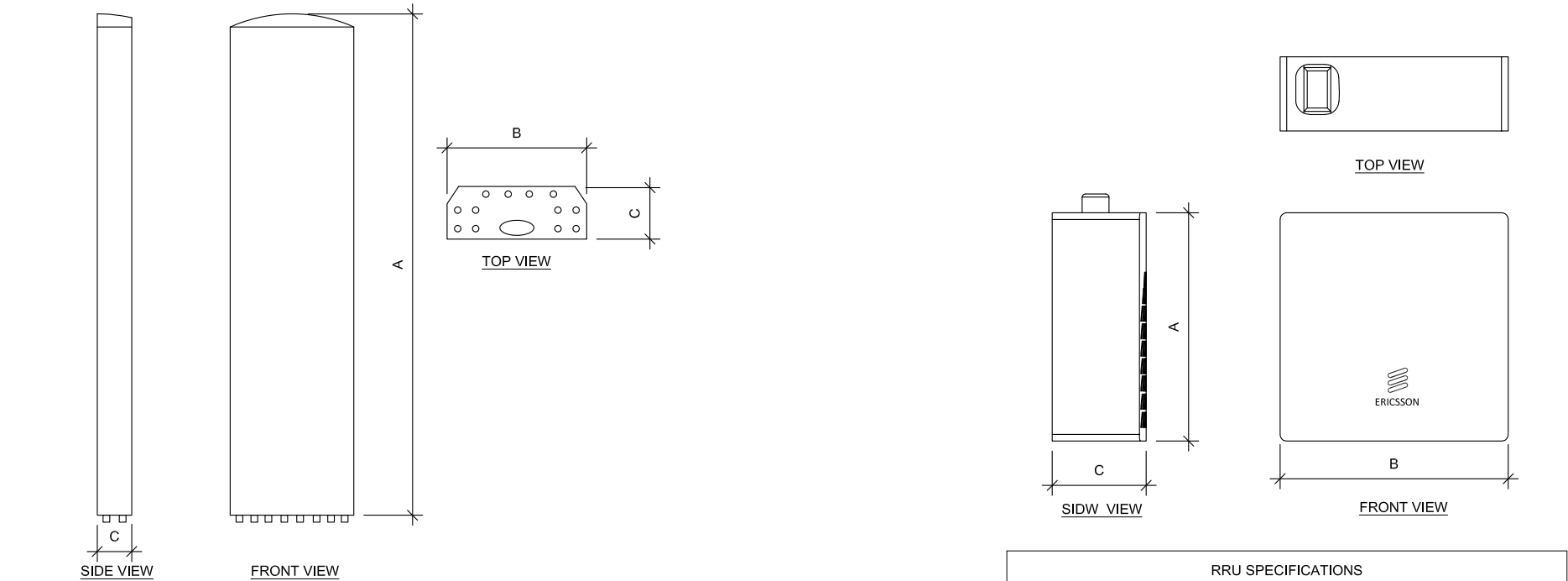
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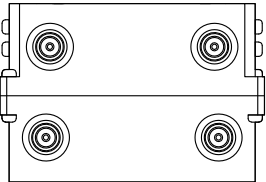
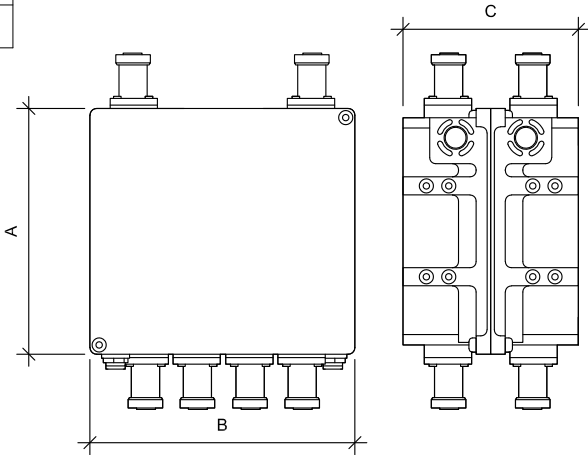
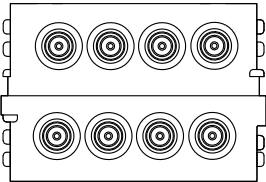
R-603

REVISION:

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ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
APX17DWV-17DWV-S-E-A20	75.8"	13.3"	3.1"	39.6
APXVAALL24_43-U-NA20	95.9"	24"	8.5"	122.8
AIR6449 B41	33.1"	20.6"	8.6"	104.0



DIPLEXER SPECIFICATIONS				
DIPLEXER MODEL	A	B	C	WEIGHT (LBS)
SDX1926Q-43	4.173"	6.929"	2.913"	6.173

RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
RADIO 4415 B66A	16.5"	13.5"	6.3"	47.4
RADIO 4449 B71+B85	15"	13.2"	10.4"	75.0
RADIO 4424 B25	17.1"	14.4"	11.3"	86.0

SUPPLEMENTAL

SHEET NUMBER:

R-604

REVISION:

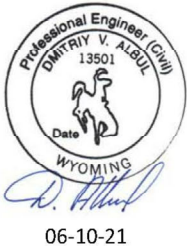
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STRUCTURAL EVALUATION LETTER
ANTENNA MOUNT ANALYSIS

SITE INFORMATION:

ATC Site Name: JACKSON HOLE BUS. PK WY, WY
ATC Site Number: 275199
ATC Engineering Number: 13677388_C8_01
Site Type: Self-Supported Tower
Site Address: 1525 Martin Lane, Jackson, Teton County, WY
T-Mobile Site Name: ATC Jackson Business Park
T-Mobile Site Number: SL01204D



CURRENT WIND CRITERIA:

- 1. ANSI/TIA-222-H Standard
- 2. 2018 International Building Code

SUPPORTING DOCUMENTS:

- 1. Preview Exhibit by American Tower Corporation, dated May 13, 2021
- 2. Radio Frequency Data Sheet by T-Mobile (Version 4), May 6, 2021
- 3. Mount Photos by American Tower Corporation, dated February 4, 2020

ASSUMPTIONS:

- 1. Tower mount and connections were built in accordance with the manufacturer's specifications, ANSI/TIA-222 standard, and governing building code.
- 2. The tower mounting system and connections have been maintained in accordance with the manufacturer's specification.
- 3. Tower mount connections and attachments are assumed not to control the design of mounting system and have been assumed adequate based on main member capacities.

Table 1 - Final Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Antenna Model	Mount Pipe Position Number (view from behind)	Antenna Mount System
85.0	85.0	(3) RFS APX17DWW-17DWWS-E-A20	1	(3) 10.5' Sector Frames
		(3) RFS APXVAALL24 43-U-NA20	2	
		(3) Ericsson Air6449 B41	3	
		(3) Ericsson KRY 112 144/1	2	
		(3) Ericsson Radio 4415 B2, B66A	1	
		(3) Ericsson Radio 4424 B25	2	
		(3) Ericsson Radio 4449 B71+B85	2	
		(3) Commscope SDX1926Q-43	2	

CONCLUSION:

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed. The mount can support the equipment as described in this report.
Install three (3) 2" STD x 8' long mount pipes to support new equipment on position 2.
If existing conditions in the field differ from those shown on the above referenced documents or the antenna loading is modified to be other than that shown on Table 1, this review letter will be required to be revised.

Table 2 - Mount Analysis Results

Mount Centerline (ft)	Structural Components	Controlling Usage	Pass/Fail	Necessary Modification
85.0	Stabilizer	34%	Pass (80%)	-
	Bracing	68%		
	Arms	49%		
	Mount Pipes	34%		
	Frame Rails	80%		
	Connection Bolts	35%		

We at SMJ International, LLC appreciate the opportunity of providing our continuing professional services. If you have any questions or need further assistance on this or any other projects, please give us a call.

SUPPLEMENTAL

SHEET NUMBER:

R-605

REVISION:

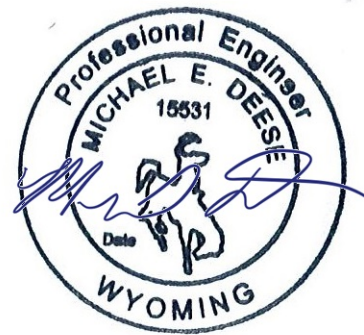
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AMERICAN TOWER®
C O R P O R A T I O N

Structural Analysis Report

Structure : 180 ft Self Supported Tower
ATC Site Name : JACKSON HOLE BUS. PK WY, WY
ATC Asset Number : 275199
Engineering Number : 13677388_C3_05
Proposed Carrier : T-MOBILE
Carrier Site Name : ATC Jackson Business Park
Carrier Site Number : SL01204D
Site Location : 1525 Martin Lane
Jackson, WY 83001-9921
43.462300,-110.794600
County : Teton
Date : July 8, 2021
Max Usage : 96%
Result : Pass



Prepared By:
Sammie Brown
Structural Engineer

Reviewed By:

COA: E-0556



Table of Contents

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Supporting Documents.....	1
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Conclusion.....	1
Existing and Reserved Equipment.....	2
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Proposed Equipment.....	2
Structure Usages.....	3
Foundations	3
Deflection, Twist, and Sway	3
Standard Conditions	4
Calculations.....	Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 180 ft self supported tower to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	PiROD Drawing #202741-B, dated October 22, 1997
Foundation Drawing	PiROD Drawing #202741-B, dated October 22, 1997
Geotechnical Report	Nelson Engineering Job # 94-155-1, dated January 10, 1995
Modifications	ATC Project #56983335, dated June 27, 2014

Analysis

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

Basic Wind Speed:	102.34 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	48.73 mph (3-Second Gust) w/ .21" radial ice concurrent
Code:	ANSI/TIA-222-H / 2018 IBC
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	$S_s = 1.05$, $S_1 = 0.35$
Site Class:	D - Stiff Soil

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

Conclusion

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

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



Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
85.0	3	Ericsson KRY 112 144/1	Sector Frame	(1) 1 5/8" (1.63"-41.3mm) Fiber	T-MOBILE

Equipment to be Removed

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
85.0	6	Ericsson AIR 21 B4A B2P	-	(6) 7/8" Coax	T-MOBILE

Proposed Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
85.0	3	Commscope SDX1926Q-43	Sector Frame	(2) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson Radio 4449 B71+B85			
	3	Ericsson Radio 4415 B2,B66A			
	3	Ericsson 4424 B25			
	3	Ericsson Air6449 B41			
	3	RFS APX17DWV-17DWVS-E-A20			
	3	RFS APXVAALL24 43-U-NA20			

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

Install proposed lines in the place of the existing T-MOBILE lines.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	96%	Pass
Diagonals	62%	Pass
Horizontals	19%	Pass
Anchor Bolts	54%	Pass
Leg Bolts	89%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment	455.9	57%
Uplift (Kips)	100.6	24%
Axial (Kips)	109.8	63%
Total Shear (Kips)	5.6	19%

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.

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
85.0	Commscope SDX1926Q-43	T-MOBILE	0.522	0.010	0.705
	Ericsson 4424 B25				
	Ericsson Air6449 B41				
	Ericsson Radio 4415 B2,B66A				
	Ericsson Radio 4449 B71+B85				
	RFS APX17DWV-17DWVS-E-A20				
	RFS APXVAALL24 43-U-NA20				

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



Standard Conditions

All engineering services performed by ATC Tower Services LLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of ATC Tower Services LLC

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

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

Unless explicitly agreed by both the client and ATC Tower Services LLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Tower Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

Quadrant 1

180.00

Sect 9

160.00

Sect 8

140.00

Sect 7

120.00

Sect 6

100.00

Sect 5

80.00

Sect 4

60.00

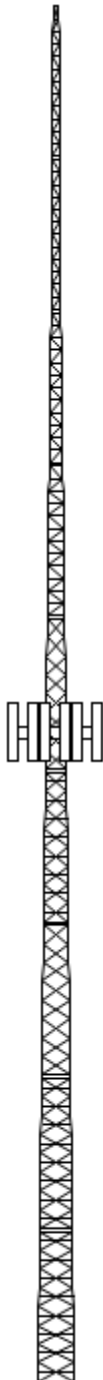
Sect 3

40.00

Sect 2

20.00

Sect 1



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Loads: 102 mph no ice
49 mph w/ 3/16" radial ice
Site Class: D Ss: 1.05 S1: 0.35
60 mph Serviceability

Job Information

Client : T-MOBILE

Tower : 275199

Location : JACKSON HOLE

Base Width : 5.00 ft

Code : ANSI/TIA-222-H

Topo Method: Method 1

Top Width : 1.00 ft

Risk Cat : II

Topo: 1

Tower Ht : 180.00 ft

Exposure : C

Shape : Triangle

Sections Properties

Section	Leg Members	Diagonal Members	Horizontal Members
1	SOL 50 ksi 2" SOLID	SOL 50 ksi 7/8" SOLID	SOL 50 ksi 7/8" SOLID
2	SOL 50 ksi 1 3/4" SOLID	SOL 50 ksi 3/4" SOLID	SOL 50 ksi 7/8" SOLID
3	SOL 50 ksi 1 3/4" SOLID	SOL 50 ksi 3/4" SOLID	SOL 50 ksi 3/4" SOLID
4 - 5	SOL 50 ksi 1 1/2" SOLID	SOL 50 ksi 9/16" SOLID	SOL 50 ksi 3/4" SOLID
6	SOL 50 ksi 1 1/4" SOLID	SOL 50 ksi 5/8" SOLID	SOL 50 ksi 9/16" SOLID
7	SOL 50 ksi 1" SOLID	SOL 50 ksi 9/16" SOLID	SOL 50 ksi 3/4" SOLID
8	SOL 50 ksi 7/8" SOLID	SOL 50 ksi 1/2" SOLID	SOL 50 ksi 1/2" SOLID
9	SOL 50 ksi 3/4" SOLID	SOL 50 ksi 1/2" SOLID	SOL 50 ksi 1/2" SOLID

Discrete Appurtenance

Elev (ft)	Type	Qty	Description
170.00	Straight Arm	3	Generic Round Stand-Off
120.00	Straight Arm	3	Generic Round Stand-Off
85.00	Panel	3	RFS APXVAALL24 43-U-NA20
85.00	Mounting Frame	3	Flat Light Sector Frame
85.00	Panel	3	RFS APX17DWV-17DWVS-E-A20
85.00	Panel	3	Ericsson Air6449 B41
85.00		3	Ericsson 4424 B25
85.00		3	Ericsson Radio 4415 B2,B66A
85.00		3	Ericsson Radio 4449 B71+B85
85.00		3	Ericsson KRY 112 144/1
85.00		3	Commscope SDX1926Q-43
65.00	Straight Arm	3	Generic Round Stand-Off
5.00	Straight Arm	3	Generic Round Stand-Off

Linear Appurtenance

Elev (ft)				
From	To	Qty	Description	
5.00	170.00	3	3/8" Coax	
0.00	85.00	2	1.99" (50.7mm) Hybri	
0.00	85.00	1	1 5/8" (1.63"-41.3mm	

Global Base Foundation Design Loads

Load Case	Moment (k-ft)	Vertical (kip)	Horizontal (kip)
DL + WL	455.85	13.65	5.59
DL + WL + IL	132.20	15.34	1.60

Individual Base Foundation Design Loads

Vertical (kip)	Uplift (kip)	Horizontal (kip)
109.82	100.57	5.05

Site Number: 275199	Code: ANSI/TIA-222-H	© 2007 - 2021 by ATC IP LLC. All rights reserved.
Site Name: JACKSON HOLE BUS. PK WY, WY	Engineering Number: 13677388_C3_05	7/8/2021 10:45:27 PM
Customer: T-MOBILE		

Analysis Parameters

Location:	Teton County, WY	Height (ft):	180
Code:	ANSI/TIA-222-H	Base Elevation (ft):	3.00
Shape:	Triangle	Bottom Face Width (ft):	5.00
Tower Manufacturer:	Pirol	Top Face Width (ft):	1.00
Tower Type:	Self Support	Anchor Bolt Detail Type	d
Kd:	0.85		
Ke:	0.80		

Ice & Wind Parameters

Exposure Category:	C	Design Windspeed Without Ice:	102 mph
Risk Category:	II	Design Windspeed With Ice:	49 mph
Topographic Factor Procedure:	Method 1	Operational Windspeed:	60 mph
Topographic Category:	1	Design Ice Thickness:	0.21 in
Crest Height:	0 ft	HMSL:	6122.00 ft

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.63		
T_L (sec):	8	p:	1
S_S :	1.054	S_1 :	0.347
F_a :	1.200	F_v :	1.953
S_{ds} :	0.843	S_{d1} :	0.452
		C_S :	0.057
		C_S , Max:	0.057
		C_S , Min:	0.037

Load Cases

1.2D + 1.0W Normal	102.339996337891 mph Normal with No Ice
1.2D + 1.0W 60 deg	102.339996337891 mph 60 degree with No Ice
1.2D + 1.0W 90 deg	102.339996337891 mph 90 degree with No Ice
0.9D + 1.0W Normal	102.339996337891 mph Normal with No Ice (Reduced DL)
0.9D + 1.0W 60 deg	102.339996337891 mph 60 deg with No Ice (Reduced DL)
0.9D + 1.0W 90 deg	102.339996337891 mph 90 deg with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi Normal	48.734001159668 mph Normal with 0.21 in Radial Ice
1.2D + 1.0Di + 1.0Wi 60 deg	48.734001159668 mph 60 deg with 0.21 in Radial Ice
1.2D + 1.0Di + 1.0Wi 90 deg	48.734001159668 mph 90 deg with 0.21 in Radial Ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic Normal
1.2D + 1.0Ev + 1.0Eh 60 deg	Seismic 60 deg
1.2D + 1.0Ev + 1.0Eh 90 deg	Seismic 90 deg
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL) Normal
0.9D - 1.0Ev + 1.0Eh 60 deg	Seismic (Reduced DL) 60 deg
0.9D - 1.0Ev + 1.0Eh 90 deg	Seismic (Reduced DL) 90 deg
1.0D + 1.0W Service Normal	Serviceability - 60 mph Wind Normal
1.0D + 1.0W Service 60 deg	Serviceability - 60 mph Wind 60 deg
1.0D + 1.0W Service 90 deg	Serviceability - 60 mph Wind 90 deg

Site Number: 275199

Code:

ANSI/TIA-222-H

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Site Name: JACKSON HOLE BUS. PK WY, WY

Engineering Number: 13677388_C3_05

7/8/2021 10:45:27 PM

Customer: T-MOBILE

Tower Loading**Discrete Appurtenance Properties** 1.2D + 1.0W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
170.0	Generic Round	3	188	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	25.94	230	675
120.0	Generic Round	3	188	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	24.14	214	675
85.00	Commscope	3	6	0.2	0.3	6.9	2.9	0.80	0.50	0.0	0.0	22.50	6	22
85.00	Ericsson 4424 B25	3	86	2.1	1.4	14.4	11.3	0.80	0.67	0.0	0.0	22.50	63	310
85.00	Ericsson Air6449	3	104	5.7	2.8	20.6	8.6	0.80	0.63	0.0	0.0	22.50	164	374
85.00	Ericsson KRY 112	3	11	0.4	0.6	6.1	2.7	0.80	0.50	0.0	0.0	22.50	8	40
85.00	Ericsson Radio 4415	3	47	1.9	1.4	13.5	6.3	0.80	0.50	0.0	0.0	22.50	43	171
85.00	Ericsson Radio 4449	3	75	1.6	1.3	13.2	10.4	0.80	0.50	0.0	0.0	22.50	38	270
85.00	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	22.50	516	1440
85.00	RFS APX17DWV-	3	40	9.4	6.3	13.3	3.1	0.80	0.60	0.0	0.0	22.50	259	143
85.00	RFS APXVAALL24	3	123	20.2	8.0	24.0	8.5	0.80	0.63	0.0	0.0	22.50	585	442
65.00	Generic Round	3	188	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	21.31	189	675
5.00	Generic Round	3	188	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	15.52	138	675
Totals		39	4926	240.5									2454	5911

Discrete Appurtenance Properties 0.9D + 1.0W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
170.0	Generic Round	3	188	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	25.94	230	506
120.0	Generic Round	3	188	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	24.14	214	506
85.00	Commscope	3	6	0.2	0.3	6.9	2.9	0.80	0.50	0.0	0.0	22.50	6	17
85.00	Ericsson 4424 B25	3	86	2.1	1.4	14.4	11.3	0.80	0.67	0.0	0.0	22.50	63	232
85.00	Ericsson Air6449	3	104	5.7	2.8	20.6	8.6	0.80	0.63	0.0	0.0	22.50	164	281
85.00	Ericsson KRY 112	3	11	0.4	0.6	6.1	2.7	0.80	0.50	0.0	0.0	22.50	8	30
85.00	Ericsson Radio 4415	3	47	1.9	1.4	13.5	6.3	0.80	0.50	0.0	0.0	22.50	43	128
85.00	Ericsson Radio 4449	3	75	1.6	1.3	13.2	10.4	0.80	0.50	0.0	0.0	22.50	38	203
85.00	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	22.50	516	1080
85.00	RFS APX17DWV-	3	40	9.4	6.3	13.3	3.1	0.80	0.60	0.0	0.0	22.50	259	107
85.00	RFS APXVAALL24	3	123	20.2	8.0	24.0	8.5	0.80	0.63	0.0	0.0	22.50	585	332
65.00	Generic Round	3	188	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	21.31	189	506
5.00	Generic Round	3	188	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	15.52	138	506
Totals		39	4926	240.5									2454	4433

Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elevation (ft)	Description	Qty	Ice Wt. (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
170.0	Generic Round	3	201	5.6	0.0	0.0	0.0	1.00	0.67	0.0	0.0	5.88	56	714
120.0	Generic Round	3	200	5.6	0.0	0.0	0.0	1.00	0.67	0.0	0.0	5.47	52	713
85.00	Commscope	3	7	0.3	0.3	6.9	2.9	0.80	0.50	0.0	0.0	5.10	2	26
85.00	Ericsson 4424 B25	3	96	2.2	1.4	14.4	11.3	0.80	0.67	0.0	0.0	5.10	15	339
85.00	Ericsson Air6449	3	122	5.9	2.8	20.6	8.6	0.80	0.63	0.0	0.0	5.10	39	430
85.00	Ericsson KRY 112	3	12	0.4	0.6	6.1	2.7	0.80	0.50	0.0	0.0	5.10	2	44
85.00	Ericsson Radio 4415	3	54	2.0	1.4	13.5	6.3	0.80	0.50	0.0	0.0	5.10	10	191
85.00	Ericsson Radio 4449	3	83	1.8	1.3	13.2	10.4	0.80	0.50	0.0	0.0	5.10	9	294
85.00	Flat Light Sector	3	441	19.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	5.10	130	1562
85.00	RFS APX17DWV-	3	61	9.8	6.3	13.3	3.1	0.80	0.60	0.0	0.0	5.10	61	206
85.00	RFS APXVAALL24	3	176	20.7	8.0	24.0	8.5	0.80	0.63	0.0	0.0	5.10	136	600
65.00	Generic Round	3	200	5.6	0.0	0.0	0.0	1.00	0.67	0.0	0.0	4.83	46	711

Site Number: 275199

Code:

ANSI/TIA-222-H

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Site Name: JACKSON HOLE BUS. PK WY, WY

Engineering Number: 13677388_C3_05

7/8/2021 10:45:27 PM

Customer: T-MOBILE

Tower Loading

5.00	Generic Round	3	198	5.5	0.0	0.0	0.0	1.00	0.67	0.0	0.0	3.52	33	705
	Totals	39	5551	255.7									592	6537

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
170.0	Generic Round	3	188	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	8.92	79	563
120.0	Generic Round	3	188	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	8.30	74	563
85.00	Commscope	3	6	0.2	0.3	6.9	2.9	0.80	0.50	0.0	0.0	7.73	2	19
85.00	Ericsson 4424 B25	3	86	2.1	1.4	14.4	11.3	0.80	0.67	0.0	0.0	7.73	22	258
85.00	Ericsson Air6449	3	104	5.7	2.8	20.6	8.6	0.80	0.63	0.0	0.0	7.73	56	312
85.00	Ericsson KRY 112	3	11	0.4	0.6	6.1	2.7	0.80	0.50	0.0	0.0	7.73	3	33
85.00	Ericsson Radio 4415	3	47	1.9	1.4	13.5	6.3	0.80	0.50	0.0	0.0	7.73	15	142
85.00	Ericsson Radio 4449	3	75	1.6	1.3	13.2	10.4	0.80	0.50	0.0	0.0	7.73	13	225
85.00	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	7.73	177	1200
85.00	RFS APX17DWV-	3	40	9.4	6.3	13.3	3.1	0.80	0.60	0.0	0.0	7.73	89	119
85.00	RFS APXVAALL24	3	123	20.2	8.0	24.0	8.5	0.80	0.63	0.0	0.0	7.73	201	368
65.00	Generic Round	3	188	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	7.32	65	563
5.00	Generic Round	3	188	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	5.33	47	563
	Totals	39	4926	240.5									843	4926

Site Number: 275199

Code:

ANSI/TIA-222-H

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Site Name: JACKSON HOLE BUS. PK WY, WY

Engineering Number: 13677388_C3_05

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Customer: T-MOBILE

Tower Loading

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out Of Zone	Spacing (in)	Orientation Factor	Ka Override
5.00	170.0	3/8" Coax	3	0.44	0.08	100	1,2,3	Individual	0.00	N	1.00	1.00	0.00
0.00	85.00	1 5/8" (1.63"-	1	1.63	1.61	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	85.00	1.99" (50.7mm)	2	1.99	1.90	100	None	Individual	0.00	N	1.00	1.00	0.00

Site Number: 275199

Code:

ANSI/TIA-222-H

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Site Name: JACKSON HOLE BUS. PK WY, WY

Engineering Number: 13677388_C3_05

7/8/2021 10:45:27 PM

Customer: T-MOBILE

Section ForcesLoadCase 1.2D + 1.0W Normal

102.339996337891 mph Normal with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)	
9	170.00	25.94	0.000	4.033	0.000	0.170	2.70	1.00	1.00	0.0	2.34	6.31	0.00	203	0	139	17	156	
8	150.00	25.27	0.000	4.650	0.000	0.161	2.73	1.00	1.00	0.0	2.69	7.35	0.00	258	0	158	34	192	
7	130.00	24.54	0.000	5.985	0.000	0.163	2.72	1.00	1.00	0.0	3.47	9.45	0.00	409	0	197	33	230	
6	110.00	23.71	0.000	7.145	0.000	0.152	2.77	1.00	1.00	0.0	4.13	11.42	0.00	521	0	230	32	262	
5	90.00	22.76	0.000	7.992	0.000	0.139	2.81	1.00	1.00	0.0	4.59	12.90	0.00	680	0	250	63	313	
4	70.00	21.63	0.000	9.970	0.000	0.148	2.78	1.00	1.00	0.0	5.72	15.89	0.00	942	0	292	153	445	
3	50.00	20.22	0.000	10.612	0.000	0.136	2.82	1.00	1.00	0.0	6.10	17.23	0.00	1153	0	296	143	439	
2	30.00	18.30	4.250	11.746	0.000	0.182	2.66	1.00	1.00	0.0	11.06	29.40	0.00	1566	0	457	129	587	
1	10.00	15.52	4.750	14.039	0.000	0.191	2.63	1.00	1.00	0.0	12.93	33.94	0.00	2013	0	448	104	552	
														7744	0				3176

LoadCase 1.2D + 1.0W 60 deg

102.339996337891 mph 60 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)	
9	170.00	25.94	0.000	4.033	0.000	0.170	2.70	0.80	1.00	0.0	2.34	6.31	0.00	203	0	139	17	156	
8	150.00	25.27	0.000	4.650	0.000	0.161	2.73	0.80	1.00	0.0	2.69	7.35	0.00	258	0	158	34	192	
7	130.00	24.54	0.000	5.985	0.000	0.163	2.72	0.80	1.00	0.0	3.47	9.45	0.00	409	0	197	33	230	
6	110.00	23.71	0.000	7.145	0.000	0.152	2.77	0.80	1.00	0.0	4.13	11.42	0.00	521	0	230	32	262	
5	90.00	22.76	0.000	7.992	0.000	0.139	2.81	0.80	1.00	0.0	4.59	12.90	0.00	680	0	250	63	313	
4	70.00	21.63	0.000	9.970	0.000	0.148	2.78	0.80	1.00	0.0	5.72	15.89	0.00	942	0	292	153	445	
3	50.00	20.22	0.000	10.612	0.000	0.136	2.82	0.80	1.00	0.0	6.10	17.23	0.00	1153	0	296	143	439	
2	30.00	18.30	4.250	11.746	0.000	0.182	2.66	0.80	1.00	0.0	10.21	27.14	0.00	1566	0	422	129	552	
1	10.00	15.52	4.750	14.039	0.000	0.191	2.63	0.80	1.00	0.0	11.98	31.45	0.00	2013	0	415	104	519	
														7744	0				3108

LoadCase 1.2D + 1.0W 90 deg

102.339996337891 mph 90 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)	
9	170.00	25.94	0.000	4.033	0.000	0.170	2.70	0.85	1.00	0.0	2.34	6.31	0.00	203	0	139	17	156	
8	150.00	25.27	0.000	4.650	0.000	0.161	2.73	0.85	1.00	0.0	2.69	7.35	0.00	258	0	158	34	192	
7	130.00	24.54	0.000	5.985	0.000	0.163	2.72	0.85	1.00	0.0	3.47	9.45	0.00	409	0	197	33	230	
6	110.00	23.71	0.000	7.145	0.000	0.152	2.77	0.85	1.00	0.0	4.13	11.42	0.00	521	0	230	32	262	
5	90.00	22.76	0.000	7.992	0.000	0.139	2.81	0.85	1.00	0.0	4.59	12.90	0.00	680	0	250	63	313	
4	70.00	21.63	0.000	9.970	0.000	0.148	2.78	0.85	1.00	0.0	5.72	15.89	0.00	942	0	292	153	445	
3	50.00	20.22	0.000	10.612	0.000	0.136	2.82	0.85	1.00	0.0	6.10	17.23	0.00	1153	0	296	143	439	
2	30.00	18.30	4.250	11.746	0.000	0.182	2.66	0.85	1.00	0.0	10.43	27.71	0.00	1566	0	431	129	560	
1	10.00	15.52	4.750	14.039	0.000	0.191	2.63	0.85	1.00	0.0	12.21	32.07	0.00	2013	0	423	104	528	
														7744	0				3125

Site Number: 275199 Code: ANSI/TIA-222-H © 2007 - 2021 by ATC IP LLC. All rights reserved.
 Site Name: JACKSON HOLE BUS. PK WY, WY Engineering Number: 13677388_C3_05 7/8/2021 10:45:27 PM
 Customer: T-MOBILE

Section Forces

LoadCase 0.9D + 1.0W Normal

102.339996337891 mph Normal with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
9	170.00	25.94	0.000	4.033	0.000	0.170	2.70	1.00	1.00	0.0	2.34	6.31	0.00	152	0	139	17	156
8	150.00	25.27	0.000	4.650	0.000	0.161	2.73	1.00	1.00	0.0	2.69	7.35	0.00	193	0	158	34	192
7	130.00	24.54	0.000	5.985	0.000	0.163	2.72	1.00	1.00	0.0	3.47	9.45	0.00	306	0	197	33	230
6	110.00	23.71	0.000	7.145	0.000	0.152	2.77	1.00	1.00	0.0	4.13	11.42	0.00	391	0	230	32	262
5	90.00	22.76	0.000	7.992	0.000	0.139	2.81	1.00	1.00	0.0	4.59	12.90	0.00	510	0	250	63	313
4	70.00	21.63	0.000	9.970	0.000	0.148	2.78	1.00	1.00	0.0	5.72	15.89	0.00	707	0	292	153	445
3	50.00	20.22	0.000	10.612	0.000	0.136	2.82	1.00	1.00	0.0	6.10	17.23	0.00	865	0	296	143	439
2	30.00	18.30	4.250	11.746	0.000	0.182	2.66	1.00	1.00	0.0	11.06	29.40	0.00	1175	0	457	129	587
1	10.00	15.52	4.750	14.039	0.000	0.191	2.63	1.00	1.00	0.0	12.93	33.94	0.00	1510	0	448	104	552
														5808	0			3176

LoadCase 0.9D + 1.0W 60 deg

102.339996337891 mph 60 deg with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
9	170.00	25.94	0.000	4.033	0.000	0.170	2.70	0.80	1.00	0.0	2.34	6.31	0.00	152	0	139	17	156
8	150.00	25.27	0.000	4.650	0.000	0.161	2.73	0.80	1.00	0.0	2.69	7.35	0.00	193	0	158	34	192
7	130.00	24.54	0.000	5.985	0.000	0.163	2.72	0.80	1.00	0.0	3.47	9.45	0.00	306	0	197	33	230
6	110.00	23.71	0.000	7.145	0.000	0.152	2.77	0.80	1.00	0.0	4.13	11.42	0.00	391	0	230	32	262
5	90.00	22.76	0.000	7.992	0.000	0.139	2.81	0.80	1.00	0.0	4.59	12.90	0.00	510	0	250	63	313
4	70.00	21.63	0.000	9.970	0.000	0.148	2.78	0.80	1.00	0.0	5.72	15.89	0.00	707	0	292	153	445
3	50.00	20.22	0.000	10.612	0.000	0.136	2.82	0.80	1.00	0.0	6.10	17.23	0.00	865	0	296	143	439
2	30.00	18.30	4.250	11.746	0.000	0.182	2.66	0.80	1.00	0.0	10.21	27.14	0.00	1175	0	422	129	552
1	10.00	15.52	4.750	14.039	0.000	0.191	2.63	0.80	1.00	0.0	11.98	31.45	0.00	1510	0	415	104	519
														5808	0			3108

LoadCase 0.9D + 1.0W 90 deg

102.339996337891 mph 90 deg with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
9	170.00	25.94	0.000	4.033	0.000	0.170	2.70	0.85	1.00	0.0	2.34	6.31	0.00	152	0	139	17	156
8	150.00	25.27	0.000	4.650	0.000	0.161	2.73	0.85	1.00	0.0	2.69	7.35	0.00	193	0	158	34	192
7	130.00	24.54	0.000	5.985	0.000	0.163	2.72	0.85	1.00	0.0	3.47	9.45	0.00	306	0	197	33	230
6	110.00	23.71	0.000	7.145	0.000	0.152	2.77	0.85	1.00	0.0	4.13	11.42	0.00	391	0	230	32	262
5	90.00	22.76	0.000	7.992	0.000	0.139	2.81	0.85	1.00	0.0	4.59	12.90	0.00	510	0	250	63	313
4	70.00	21.63	0.000	9.970	0.000	0.148	2.78	0.85	1.00	0.0	5.72	15.89	0.00	707	0	292	153	445
3	50.00	20.22	0.000	10.612	0.000	0.136	2.82	0.85	1.00	0.0	6.10	17.23	0.00	865	0	296	143	439
2	30.00	18.30	4.250	11.746	0.000	0.182	2.66	0.85	1.00	0.0	10.43	27.71	0.00	1175	0	431	129	560
1	10.00	15.52	4.750	14.039	0.000	0.191	2.63	0.85	1.00	0.0	12.21	32.07	0.00	1510	0	423	104	528
														5808	0			3125

Site Number: 275199 Code: ANSI/TIA-222-H © 2007 - 2021 by ATC IP LLC. All rights reserved.
 Site Name: JACKSON HOLE BUS. PK WY, WY Engineering Number: 13677388_C3_05 7/8/2021 10:45:27 PM
 Customer: T-MOBILE

Section Forces

LoadCase 1.2D + 1.0Di + 1.0Wi Normal

48.734001159668 mph Normal with 0.21 in Radial Ice

Gust Response Factor (Gh): 0.85 Ice Dead Load Factor : 1.00 Ice Importance Factor : 1.00
 Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
9	170.00	5.88	0.000	7.308	3.275	0.297	2.30	1.00	1.00	0.3	4.41	10.16	3.28	255	51	51	10	61
8	150.00	5.73	0.000	8.095	3.445	0.272	2.37	1.00	1.00	0.2	4.83	11.46	3.44	320	62	56	20	76
7	130.00	5.56	0.000	9.708	3.723	0.259	2.41	1.00	1.00	0.2	5.77	13.90	3.72	484	76	66	20	85
6	110.00	5.38	0.000	11.254	4.109	0.235	2.48	1.00	1.00	0.2	6.62	16.43	4.11	605	84	75	19	94
5	90.00	5.16	0.000	12.090	4.098	0.207	2.57	1.00	1.00	0.2	7.02	18.06	4.10	776	96	79	31	110
4	70.00	4.90	0.000	14.246	4.276	0.209	2.57	1.00	1.00	0.2	8.27	21.23	4.28	1089	146	88	64	152
3	50.00	4.58	0.000	15.034	4.422	0.191	2.63	1.00	1.00	0.2	8.71	22.87	4.42	1293	140	89	61	150
2	30.00	4.15	4.250	15.906	4.719	0.227	2.51	1.00	1.00	0.2	13.90	34.84	4.72	1769	203	123	52	175
1	10.00	3.52	4.750	17.942	4.572	0.229	2.50	1.00	1.00	0.2	15.68	39.22	4.57	2216	204	117	40	157
														8807	1062			1060

LoadCase 1.2D + 1.0Di + 1.0Wi 60 deg

48.734001159668 mph 60 deg with 0.21 in Radial Ice

Gust Response Factor (Gh): 0.85 Ice Dead Load Factor : 1.00 Ice Importance Factor : 1.00
 Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
9	170.00	5.88	0.000	7.308	3.275	0.297	2.30	0.80	1.00	0.3	4.41	10.16	3.28	255	51	51	10	61
8	150.00	5.73	0.000	8.095	3.445	0.272	2.37	0.80	1.00	0.2	4.83	11.46	3.44	320	62	56	20	76
7	130.00	5.56	0.000	9.708	3.723	0.259	2.41	0.80	1.00	0.2	5.77	13.90	3.72	484	76	66	20	85
6	110.00	5.38	0.000	11.254	4.109	0.235	2.48	0.80	1.00	0.2	6.62	16.43	4.11	605	84	75	19	94
5	90.00	5.16	0.000	12.090	4.098	0.207	2.57	0.80	1.00	0.2	7.02	18.06	4.10	776	96	79	31	110
4	70.00	4.90	0.000	14.246	4.276	0.209	2.57	0.80	1.00	0.2	8.27	21.23	4.28	1089	146	88	64	152
3	50.00	4.58	0.000	15.034	4.422	0.191	2.63	0.80	1.00	0.2	8.71	22.87	4.42	1293	140	89	61	150
2	30.00	4.15	4.250	15.906	4.719	0.227	2.51	0.80	1.00	0.2	13.05	32.71	4.72	1769	203	115	52	167
1	10.00	3.52	4.750	17.942	4.572	0.229	2.50	0.80	1.00	0.2	14.73	36.85	4.57	2216	204	110	40	150
														8807	1062			1046

LoadCase 1.2D + 1.0Di + 1.0Wi 90 deg

48.734001159668 mph 90 deg with 0.21 in Radial Ice

Gust Response Factor (Gh): 0.85 Ice Dead Load Factor : 1.00 Ice Importance Factor : 1.00
 Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
9	170.00	5.88	0.000	7.308	3.275	0.297	2.30	0.85	1.00	0.3	4.41	10.16	3.28	255	51	51	10	61
8	150.00	5.73	0.000	8.095	3.445	0.272	2.37	0.85	1.00	0.2	4.83	11.46	3.44	320	62	56	20	76
7	130.00	5.56	0.000	9.708	3.723	0.259	2.41	0.85	1.00	0.2	5.77	13.90	3.72	484	76	66	20	85
6	110.00	5.38	0.000	11.254	4.109	0.235	2.48	0.85	1.00	0.2	6.62	16.43	4.11	605	84	75	19	94
5	90.00	5.16	0.000	12.090	4.098	0.207	2.57	0.85	1.00	0.2	7.02	18.06	4.10	776	96	79	31	110
4	70.00	4.90	0.000	14.246	4.276	0.209	2.57	0.85	1.00	0.2	8.27	21.23	4.28	1089	146	88	64	152
3	50.00	4.58	0.000	15.034	4.422	0.191	2.63	0.85	1.00	0.2	8.71	22.87	4.42	1293	140	89	61	150
2	30.00	4.15	4.250	15.906	4.719	0.227	2.51	0.85	1.00	0.2	13.26	33.24	4.72	1769	203	117	52	169
1	10.00	3.52	4.750	17.942	4.572	0.229	2.50	0.85	1.00	0.2	14.97	37.44	4.57	2216	204	112	40	152
														8807	1062			1049

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 Site Name: JACKSON HOLE BUS. PK WY, WY Engineering Number: 13677388_C3_05 7/8/2021 10:45:27 PM
 Customer: T-MOBILE

Section Forces

LoadCase 1.0D + 1.0W Service Normal

Serviceability - 60 mph Wind Normal

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
9	170.00	8.92	0.000	4.033	0.000	0.170	2.70	1.00	1.00	0.0	2.34	6.31	0.00	169	0	48	6	54
8	150.00	8.69	0.000	4.650	0.000	0.161	2.73	1.00	1.00	0.0	2.69	7.35	0.00	215	0	54	12	66
7	130.00	8.44	0.000	5.985	0.000	0.163	2.72	1.00	1.00	0.0	3.47	9.45	0.00	341	0	68	11	79
6	110.00	8.15	0.000	7.145	0.000	0.152	2.77	1.00	1.00	0.0	4.13	11.42	0.00	434	0	79	11	90
5	90.00	7.82	0.000	7.992	0.000	0.139	2.81	1.00	1.00	0.0	4.59	12.90	0.00	567	0	86	22	108
4	70.00	7.43	0.000	9.970	0.000	0.148	2.78	1.00	1.00	0.0	5.72	15.89	0.00	785	0	100	53	153
3	50.00	6.95	0.000	10.612	0.000	0.136	2.82	1.00	1.00	0.0	6.10	17.23	0.00	961	0	102	49	151
2	30.00	6.29	4.250	11.746	0.000	0.182	2.66	1.00	1.00	0.0	11.06	29.40	0.00	1305	0	157	44	202
1	10.00	5.33	4.750	14.039	0.000	0.191	2.63	1.00	1.00	0.0	12.93	33.94	0.00	1677	0	154	36	190
														6454	0			1092

LoadCase 1.0D + 1.0W Service 60 deg

Serviceability - 60 mph Wind 60 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
9	170.00	8.92	0.000	4.033	0.000	0.170	2.70	0.80	1.00	0.0	2.34	6.31	0.00	169	0	48	6	54
8	150.00	8.69	0.000	4.650	0.000	0.161	2.73	0.80	1.00	0.0	2.69	7.35	0.00	215	0	54	12	66
7	130.00	8.44	0.000	5.985	0.000	0.163	2.72	0.80	1.00	0.0	3.47	9.45	0.00	341	0	68	11	79
6	110.00	8.15	0.000	7.145	0.000	0.152	2.77	0.80	1.00	0.0	4.13	11.42	0.00	434	0	79	11	90
5	90.00	7.82	0.000	7.992	0.000	0.139	2.81	0.80	1.00	0.0	4.59	12.90	0.00	567	0	86	22	108
4	70.00	7.43	0.000	9.970	0.000	0.148	2.78	0.80	1.00	0.0	5.72	15.89	0.00	785	0	100	53	153
3	50.00	6.95	0.000	10.612	0.000	0.136	2.82	0.80	1.00	0.0	6.10	17.23	0.00	961	0	102	49	151
2	30.00	6.29	4.250	11.746	0.000	0.182	2.66	0.80	1.00	0.0	10.21	27.14	0.00	1305	0	145	44	190
1	10.00	5.33	4.750	14.039	0.000	0.191	2.63	0.80	1.00	0.0	11.98	31.45	0.00	1677	0	143	36	179
														6454	0			1068

LoadCase 1.0D + 1.0W Service 90 deg

Serviceability - 60 mph Wind 90 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
9	170.00	8.92	0.000	4.033	0.000	0.170	2.70	0.85	1.00	0.0	2.34	6.31	0.00	169	0	48	6	54
8	150.00	8.69	0.000	4.650	0.000	0.161	2.73	0.85	1.00	0.0	2.69	7.35	0.00	215	0	54	12	66
7	130.00	8.44	0.000	5.985	0.000	0.163	2.72	0.85	1.00	0.0	3.47	9.45	0.00	341	0	68	11	79
6	110.00	8.15	0.000	7.145	0.000	0.152	2.77	0.85	1.00	0.0	4.13	11.42	0.00	434	0	79	11	90
5	90.00	7.82	0.000	7.992	0.000	0.139	2.81	0.85	1.00	0.0	4.59	12.90	0.00	567	0	86	22	108
4	70.00	7.43	0.000	9.970	0.000	0.148	2.78	0.85	1.00	0.0	5.72	15.89	0.00	785	0	100	53	153
3	50.00	6.95	0.000	10.612	0.000	0.136	2.82	0.85	1.00	0.0	6.10	17.23	0.00	961	0	102	49	151
2	30.00	6.29	4.250	11.746	0.000	0.182	2.66	0.85	1.00	0.0	10.43	27.71	0.00	1305	0	148	44	193
1	10.00	5.33	4.750	14.039	0.000	0.191	2.63	0.85	1.00	0.0	12.21	32.07	0.00	1677	0	145	36	181
														6454	0			1074

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 Site Name: JACKSON HOLE BUS. PK WY, WY Engineering Number: 13677388_C3_05 7/8/2021 10:45:27 PM
 Customer: T-MOBILE

Equivalent Lateral Force Method

Spectral Response Acceleration for Short Period (S_s): 1.05
 Spectral Response Acceleration at 1.0 Second Period (S_1): 0.35
 Long-Period Transition Period (T_L - Seconds): 8
 Importance Factor (I_e): 1.00
 Site Coefficient F_a : 1.20
 Site Coefficient F_v : 1.95
 Response Modification Coefficient (R): 3.00
 Design Spectral Response Acceleration at Short Period (S_{ds}): 0.84
 Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}): 0.45
 Seismic Response Coefficient (C_s): 0.06
 Upper Limit C_s : 0.06
 Lower Limit C_s : 0.04
 Period based on Rayleigh Method (sec): 2.63
 Redundancy Factor (p): 1.00
 Seismic Force Distribution Exponent (k): 2.00
 Total Unfactored Dead Load: 11.38 k
 Seismic Base Shear (E): 0.65 k

LoadCase 1.2D + 1.0Ev + 1.0Eh

Seismic

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
9	170.00	169	4,896,82	0.062	40	232
8	150.00	215	4,828,30	0.061	40	294
7	130.00	341	5,755,01	0.073	47	466
6	110.00	434	5,250,75	0.066	43	594
5	90.00	567	4,590,03	0.058	38	776
4	70.00	785	3,847,86	0.049	32	1,075
3	50.00	961	2,401,71	0.030	20	1,315
2	30.00	1,305	1,174,73	0.015	10	1,786
1	10.00	1,677	167,723	0.002	1	2,296
Generic Round Stand-Off	170.00	563	16,256,2	0.206	134	770
Generic Round Stand-Off	120.00	563	8,100,00	0.103	67	770
Commscope SDX1926Q-43	85.00	19	134,385	0.002	1	25
Ericsson 4424 B25	85.00	258	1,864,05	0.024	15	353
Ericsson Air6449 B41	85.00	312	2,254,20	0.029	19	427
Ericsson KRY 112 144/1	85.00	33	238,425	0.003	2	45
Ericsson Radio 4415 B2,B66A	85.00	142	1,027,39	0.013	8	195
Ericsson Radio 4449 B71+B85	85.00	225	1,625,62	0.021	13	308
Flat Light Sector Frame	85.00	1,200	8,670,00	0.110	71	1,642
RFS APX17DWV-17DWVS-E-A20	85.00	119	858,330	0.011	7	163
RFS APXVAALL24 43-U-NA20	85.00	368	2,661,69	0.034	22	504
Generic Round Stand-Off	65.00	563	2,376,56	0.030	20	770
Generic Round Stand-Off	5.00	563	14,063	0.000	0	770
		11,380	78,993,954	1.000	650	15,575

Site Number: 275199

Code: ANSI/TIA-222-H

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Site Name: JACKSON HOLE BUS. PK WY, WY

Engineering Number: 13677388_C3_05

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Customer: T-MOBILE

Equivalent Lateral Force MethodLoadCase 0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
9	170.00	169	4,896,82	0.062	40	124
8	150.00	215	4,828,30	0.061	40	157
7	130.00	341	5,755,01	0.073	47	249
6	110.00	434	5,250,75	0.066	43	317
5	90.00	567	4,590,03	0.058	38	414
4	70.00	785	3,847,86	0.049	32	574
3	50.00	961	2,401,71	0.030	20	703
2	30.00	1,305	1,174,73	0.015	10	955
1	10.00	1,677	167,723	0.002	1	1,227
Generic Round Stand-Off	170.00	563	16,256,2	0.206	134	411
Generic Round Stand-Off	120.00	563	8,100,00	0.103	67	411
Commscope SDX1926Q-43	85.00	19	134,385	0.002	1	14
Ericsson 4424 B25	85.00	258	1,864,05	0.024	15	189
Ericsson Air6449 B41	85.00	312	2,254,20	0.029	19	228
Ericsson KRY 112 144/1	85.00	33	238,425	0.003	2	24
Ericsson Radio 4415 B2,B66A	85.00	142	1,027,39	0.013	8	104
Ericsson Radio 4449 B71+B85	85.00	225	1,625,62	0.021	13	165
Flat Light Sector Frame	85.00	1,200	8,670,00	0.110	71	878
RFS APX17DWV-17DWVS-E-A20	85.00	119	858,330	0.011	7	87
RFS APXVAALL24 43-U-NA20	85.00	368	2,661,69	0.034	22	269
Generic Round Stand-Off	65.00	563	2,376,56	0.030	20	411
Generic Round Stand-Off	5.00	563	14,063	0.000	0	411
		11,380	78,993,954	1.000	650	8,323

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 Site Name: JACKSON HOLE BUS. PK WY, WY Engineering Number: 13677388_C3_05 7/8/2021 10:45:27 PM
 Customer: T-MOBILE

Force/Stress Summary

Section: 1		H-5.0		Bot Elev (ft): 0.00				Height (ft): 20.000									
		Pu		Len	Bracing %			F'y	Phic Pn	Num	Num	Shear	Bear	Use			
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%	Controls	
LEG	SOL - 2" SOLID	-108.57	1.2D + 1.0W Normal	2.44	50	50	50	29.3	50.0	132.80	0	0	0.00	0.00	81	Member X	
HORIZ	SOL - 7/8" SOLID	-0.21	1.2D + 1.0W Normal	4.994	100	100	100	178.1	50.0	4.28	0	0	0.00	0.00	4	Member X	
DIAG	SOL - 7/8" SOLID	-1.30	1.2D + 1.0W Normal	5.530	50	50	50	136.5	50.0	7.29	0	0	0.00	0.00	17	Member X	
		Pu		Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear	Use					
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	%	Controls				
LEG	SOL - 2" SOLID	100.66	1.2D + 1.0W 60 deg	50	65	141.37	0	0	0.00	0.00		71	Member				
HORIZ	SOL - 7/8" SOLID	2.28	1.2D + 1.0Di + 1.0Wi	50	65	27.06	0	0	0.00	0.00	0.00	8	Member				
DIAG	SOL - 7/8" SOLID	1.09	1.2D + 1.0W Normal	50	65	27.06	0	0	0.00	0.00	0.00	4	Member				
		Pu		phiRnt	Use	Num											
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type										
Top Tension		86.55	1.2D + 1.0W 60 deg	123.20	70	0											
Top Compression		93.88	1.2D + 1.0W Normal	177.10	53												
Bot Tension		100.66	1.2D + 1.0W 60 deg	247.88	17	3	1.75" A36										
Bot Compression		109.80	1.2D + 1.0W Normal	205.14	54	3	1.75" A36										

Section: 2		H-4.5		Bot Elev (ft): 20.00				Height (ft): 20.000									
		Pu		Len	Bracing %			F'y	Phic Pn	Num	Num	Shear	Bear	Use			
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%	Controls	
LEG	SOL - 1 3/4" SOLID	-92.50	1.2D + 1.0W Normal	2.44	50	50	50	33.4	50.0	99.74	0	0	0.00	0.00	92	Member X	
HORIZ	SOL - 7/8" SOLID	-0.73	1.2D + 1.0W Normal	4.494	100	100	100	160.2	50.0	5.29	0	0	0.00	0.00	13	Member X	
DIAG	SOL - 3/4" SOLID	-1.31	1.2D + 1.0W Normal	5.086	50	50	50	146.4	50.0	4.65	0	0	0.00	0.00	28	Member X	
		Pu		Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear	Use					
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	%	Controls				
LEG	SOL - 1 3/4" SOLID	86.61	1.2D + 1.0W 60 deg	50	65	108.24	0	0	0.00	0.00		80	Member				
HORIZ	SOL - 7/8" SOLID	0.66	1.2D + 1.0W 60 deg	50	65	27.06	0	0	0.00	0.00	0.00	2	Member				
DIAG	SOL - 3/4" SOLID	1.20	1.2D + 1.0W 60 deg	50	65	19.88	0	0	0.00	0.00	0.00	6	Member				
		Pu		phiRnt	Use	Num											
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type										
Top Tension		71.01	1.2D + 1.0W 60 deg	95.90	74	0											
Top Compression		77.16	1.2D + 1.0W Normal	143.90	54												
Bot Tension		86.55	1.2D + 1.0W 60 deg	0.00	0												
Bot Compression		0.00		0.00	0												

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Force/Stress Summary

Section: 3		H-4.0		Bot Elev (ft): 40.00				Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv (kip)	phiRn (kip)	% Controls
LEG	SOL - 1 3/4" SOLID	-75.70	1.2D + 1.0W Normal	2.44	100	100	100	66.9	50.0	78.06	0	0	0.00	0.00	96 Member X
HORIZ	SOL - 3/4" SOLID	-0.72	1.2D + 1.0W Normal	3.994	100	100	100	166.1	50.0	3.62	0	0	0.00	0.00	19 Member X
DIAG	SOL - 3/4" SOLID	-1.30	1.2D + 1.0W Normal	4.653	50	50	50	134.0	50.0	5.56	0	0	0.00	0.00	23 Member X
		Pu		Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear	Use			
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv (kip)	phiRn (kip)	phit Pn (kip)	%	Controls		
LEG	SOL - 1 3/4" SOLID	71.07	1.2D + 1.0W 60 deg	50	65	108.24	0	0	0.00	0.00		65	Member		
HORIZ	SOL - 3/4" SOLID	0.66	1.2D + 1.0W 60 deg	50	65	19.88	0	0	0.00	0.00	0.00	3	Member		
DIAG	SOL - 3/4" SOLID	1.22	1.2D + 1.0W 60 deg	50	65	19.88	0	0	0.00	0.00	0.00	6	Member		
		Pu		phiRnt			Use	Num							
Max Splice Forces		(kip)	Load Case	(kip)			%	Bolts	Bolt Type						
Top Tension		53.50	1.2D + 1.0W 60 deg	60.20			89	0							
Top Compression		58.85	1.2D + 1.0W Normal	108.20			54								
Bot Tension		71.01	1.2D + 1.0W 60 deg	0.00			0								
Bot Compression		0.00		0.00			0								

Section: 4		H-3.5		Bot Elev (ft): 60.00				Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv (kip)	phiRn (kip)	% Controls
LEG	SOL - 1 1/2" SOLID	-57.32	1.2D + 1.0W Normal	2.44	50	50	50	39.0	50.0	71.15	0	0	0.00	0.00	80 Member X
HORIZ	SOL - 3/4" SOLID	-0.66	1.2D + 1.0W Normal	3.494	100	100	100	145.3	50.0	4.73	0	0	0.00	0.00	13 Member X
DIAG	SOL - 9/16" SOLID	-1.33	1.2D + 1.0W 90 deg	4.235	50	50	50	162.6	50.0	2.12	0	0	0.00	0.00	62 Member X
		Pu		Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear	Use			
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv (kip)	phiRn (kip)	phit Pn (kip)	%	Controls		
LEG	SOL - 1 1/2" SOLID	53.54	1.2D + 1.0W 60 deg	50	65	79.52	0	0	0.00	0.00		67	Member		
HORIZ	SOL - 3/4" SOLID	0.58	1.2D + 1.0W 60 deg	50	65	19.88	0	0	0.00	0.00	0.00	2	Member		
DIAG	SOL - 9/16" SOLID	1.24	1.2D + 1.0W 90 deg	50	65	11.18	0	0	0.00	0.00	0.00	11	Member		
		Pu		phiRnt			Use	Num							
Max Splice Forces		(kip)	Load Case	(kip)			%	Bolts	Bolt Type						
Top Tension		34.55	1.2D + 1.0W 60 deg	41.80			83	0							
Top Compression		38.81	1.2D + 1.0W Normal	73.80			53								
Bot Tension		53.50	1.2D + 1.0W 60 deg	0.00			0								
Bot Compression		0.00		0.00			0								

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Force/Stress Summary

Section: 5		H-3.0		Bot Elev (ft): 80.00				Height (ft): 20.000												
				Pu				Len	Bracing %			F'y	Phic Pn	Num	Num	Shear	Bear	Use		
Max Compression Member				(kip)	Load Case			(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%	Controls
LEG	SOL - 1 1/2" SOLID			-37.24	1.2D + 1.0W Normal			2.44	100	100	100	78.0	50.0	50.96	0	0	0.00	0.00	73	Member X
HORIZ	SOL - 3/4" SOLID			-0.59	1.2D + 1.0W Normal			2.994	100	100	100	124.5	50.0	6.44	0	0	0.00	0.00	9	Member X
DIAG	SOL - 9/16" SOLID			-1.35	1.2D + 1.0W 90 deg			3.837	50	50	50	147.4	50.0	2.59	0	0	0.00	0.00	52	Member X
				Pu				Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear			Use	Controls	
Max Tension Member				(kip)	Load Case			(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	(kip)	(kip)	%		
LEG	SOL - 1 1/2" SOLID			34.58	1.2D + 1.0W 60 deg			50	65	79.52	0	0	0.00	0.00				43	Member	
HORIZ	SOL - 3/4" SOLID			0.50	1.2D + 1.0W 60 deg			50	65	19.88	0	0	0.00	0.00		0.00		2	Member	
DIAG	SOL - 9/16" SOLID			1.30	1.2D + 1.0W 90 deg			50	65	11.18	0	0	0.00	0.00		0.00		11	Member	
				Pu				phiRnt			Use	Num								
Max Splice Forces				(kip)	Load Case			(kip)			%	Bolts	Bolt Type							
Top Tension				24.62	1.2D + 1.0W 60 deg			41.80			59	0								
Top Compression				26.34	1.2D + 1.0W Normal			73.80			36									
Bot Tension				34.55	1.2D + 1.0W 60 deg			0.00			0									
Bot Compression				0.00				0.00			0									

Section: 6		H-3.0		Bot Elev (ft): 100.0				Height (ft): 20.000												
				Pu				Len	Bracing %			F'y	Phic Pn	Num	Num	Shear	Bear	Use		
Max Compression Member				(kip)	Load Case			(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%	Controls
LEG	SOL - 1 1/4" SOLID			-25.94	1.2D + 1.0W Normal			1.63	100	100	100	62.4	50.0	41.54	0	0	0.00	0.00	62	Member X
HORIZ	SOL - 9/16" SOLID			-0.28	1.2D + 1.0W 60 deg			2.494	100	100	100	138.3	50.0	2.93	0	0	0.00	0.00	9	Member X
DIAG	SOL - 5/8" SOLID			-0.66	1.2D + 1.0W Normal			2.960	100	100	100	159.3	50.0	2.73	0	0	0.00	0.00	24	Member X
				Pu				Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear			Use	Controls	
Max Tension Member				(kip)	Load Case			(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	(kip)	(kip)	%		
LEG	SOL - 1 1/4" SOLID			24.64	1.2D + 1.0W 60 deg			50	65	55.22	0	0	0.00	0.00				44	Member	
HORIZ	SOL - 9/16" SOLID			0.30	1.2D + 1.0W Normal			50	65	11.18	0	0	0.00	0.00		0.00		2	Member	
DIAG	SOL - 5/8" SOLID			0.69	1.2D + 1.0W 60 deg			50	65	13.81	0	0	0.00	0.00		0.00		5	Member	
				Pu				phiRnt			Use	Num								
Max Splice Forces				(kip)	Load Case			(kip)			%	Bolts	Bolt Type							
Top Tension				16.78	1.2D + 1.0W 60 deg			26.70			63	0								
Top Compression				18.16	1.2D + 1.0W Normal			55.20			33									
Bot Tension				24.62	1.2D + 1.0W 60 deg			0.00			0									
Bot Compression				0.00				0.00			0									

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Force/Stress Summary

Section: 7		H-3.0		Bot Elev (ft): 120.0				Height (ft): 20.000									
		Pu		Len	Bracing %			F'y	Phic Pn	Num	Num	Shear	Bear	Use			
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	% Controls		
LEG	SOL - 1" SOLID	-17.65	1.2D + 1.0W Normal	1.63	100	100	100	78.0	50.0	22.65	0	0	0.00	0.00	77 Member X		
HORIZ	SOL - 3/4" SOLID	-0.22	1.2D + 1.0W Normal	1.506	100	100	100	62.7	50.0	14.92	0	0	0.00	0.00	1 Member X		
DIAG	SOL - 9/16" SOLID	-0.41	1.2D + 1.0W Normal	2.556	100	100	100	152.7	50.0	2.41	0	0	0.00	0.00	17 Member X		
		Pu		Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear	Use					
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	(kip)	%	Controls			
LEG	SOL - 1" SOLID	17.02	1.2D + 1.0W 60 deg	50	65	35.34	0	0	0.00	0.00			48	Member			
HORIZ	SOL - 3/4" SOLID	0.19	1.2D + 1.0W Normal	50	65	19.88	0	0	0.00	0.00	0.00		0	Member			
DIAG	SOL - 9/16" SOLID	0.47	1.2D + 1.0W 90 deg	50	65	11.18	0	0	0.00	0.00	0.00		4	Member			
Max Splice Forces		Pu		phiRnt			Use	Num									
		(kip)	Load Case	(kip)			%	Bolts	Bolt Type								
Top Tension		11.39	1.2D + 1.0W 60 deg	17.70			64	0									
Top Compression		12.08	1.2D + 1.0W Normal	32.80			37										
Bot Tension		16.78	1.2D + 1.0W 60 deg	0.00			0										
Bot Compression		0.00		0.00			0										

Section: 8		H-3.0		Bot Elev (ft): 140.0				Height (ft): 20.000									
		Pu		Len	Bracing %			F'y	Phic Pn	Num	Num	Shear	Bear	Use			
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	% Controls		
LEG	SOL - 7/8" SOLID	-11.71	1.2D + 1.0W Normal	1.63	100	100	100	89.2	50.0	15.13	0	0	0.00	0.00	77 Member X		
HORIZ	SOL - 1/2" SOLID	-0.20	1.2D + 1.0W Normal	1.253	100	100	100	78.2	50.0	5.65	0	0	0.00	0.00	3 Member X		
DIAG	SOL - 1/2" SOLID	-0.56	1.2D + 1.0W 90 deg	2.058	100	100	100	138.3	50.0	2.32	0	0	0.00	0.00	24 Member X		
		Pu		Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear	Use					
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	(kip)	%	Controls			
LEG	SOL - 7/8" SOLID	11.40	1.2D + 1.0W 60 deg	50	65	27.06	0	0	0.00	0.00			42	Member			
HORIZ	SOL - 1/2" SOLID	0.21	1.2D + 1.0W Normal	50	65	8.83	0	0	0.00	0.00	0.00		2	Member			
DIAG	SOL - 1/2" SOLID	0.55	1.2D + 1.0W 90 deg	50	65	8.83	0	0	0.00	0.00	0.00		6	Member			
Max Splice Forces		Pu		phiRnt			Use	Num									
		(kip)	Load Case	(kip)			%	Bolts	Bolt Type								
Top Tension		3.85	1.2D + 1.0W 60 deg	13.80			28	0									
Top Compression		4.41	1.2D + 1.0W Normal	22.80			19										
Bot Tension		11.39	1.2D + 1.0W 60 deg	0.00			0										
Bot Compression		0.00		0.00			0										

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Force/Stress Summary

Section: 9		H-3.0		Bot Elev (ft): 160.0		Height (ft): 20.000											
		Pu			Len	Bracing %			Fy	Phic Pn	Num	Num	Shear	Bear			
		(kip)	Load Case		(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	Use	
Max Compression Member														(kip)	(kip)	%	Controls
LEG	SOL - 3/4" SOLID	-4.05	1.2D + 1.0W Normal		1.63	100	100	100	104.0	50.0	9.01	0	0	0.00	0.00	44	Member X
HORIZ	SOL - 1/2" SOLID	-0.16	1.2D + 1.0W 60 deg		1.247	100	100	100	77.8	50.0	5.67	0	0	0.00	0.00	2	Member X
DIAG	SOL - 1/2" SOLID	-0.43	1.2D + 1.0W Normal		2.042	100	100	100	137.2	50.0	2.36	0	0	0.00	0.00	18	Member X

		Pu			Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear		
		(kip)	Load Case		(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	Use	Controls
Max Tension Member										(kip)	(kip)	(kip)	%	
LEG	SOL - 3/4" SOLID	3.86	1.2D + 1.0W 60 deg		50	65	19.88	0	0	0.00	0.00		19	Member
HORIZ	SOL - 1/2" SOLID	0.18	1.2D + 1.0W Normal		50	65	8.83	0	0	0.00	0.00	0.00	1	Member
DIAG	SOL - 1/2" SOLID	0.49	1.2D + 1.0W 90 deg		50	65	8.83	0	0	0.00	0.00	0.00	5	Member

		Pu			phiRnt	Use	Num		
		(kip)	Load Case		(kip)	%	Bolts	Bolt Type	
Max Splice Forces									
Top Tension		0.00			0.00	0	0		
Top Compression		0.02	1.2D + 1.0Ev + 1.0Eh		0.00	0			
Bot Tension		3.85	1.2D + 1.0W 60 deg		0.00	0			
Bot Compression		0.00			0.00	0			

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Detailed Reactions

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
1.2D + 1.0W Normal	2.89	00.00	0	1	0.00	109.82	-3.34	
	2.89	00.00	120	1a	1.19	-48.09	-1.12	
	2.89	00.00	240	1b	-1.19	-48.09	-1.12	
1.2D + 1.0W 60 deg	2.89	00.00	0	1	-0.38	57.11	-1.67	
	2.89	00.00	120	1a	-1.63	57.11	0.51	
	2.89	00.00	240	1b	-2.77	-100.57	-1.60	
1.2D + 1.0W 90 deg	2.89	00.00	0	1	-0.43	4.55	-0.04	
	2.89	00.00	120	1a	-2.60	95.66	1.24	
	2.89	00.00	240	1b	-2.51	-86.56	-1.20	
0.9D + 1.0W Normal	2.89	00.00	0	1	0.00	107.51	-3.32	
	2.89	00.00	120	1a	1.20	-48.63	-1.14	
	2.89	00.00	240	1b	-1.20	-48.63	-1.14	
0.9D + 1.0W 60 deg	2.89	00.00	0	1	-0.39	55.30	-1.65	
	2.89	00.00	120	1a	-1.62	55.30	0.49	
	2.89	00.00	240	1b	-2.78	-100.35	-1.60	
0.9D + 1.0W 90 deg	2.89	00.00	0	1	-0.44	3.41	-0.02	
	2.89	00.00	120	1a	-2.58	93.35	1.23	
	2.89	00.00	240	1b	-2.52	-86.52	-1.21	
1.2D + 1.0Di + 1.0Wi Normal	2.89	00.00	0	1	0.00	35.35	3.16	
	2.89	00.00	120	1a	3.91	-10.00	-2.38	
	2.89	00.00	240	1b	-3.91	-10.00	-2.38	
1.2D + 1.0Di + 1.0Wi 60 deg	2.89	00.00	0	1	-0.10	20.29	3.64	
	2.89	00.00	120	1a	3.10	20.29	-1.91	
	2.89	00.00	240	1b	-4.37	-25.23	-2.52	
1.2D + 1.0Di + 1.0Wi 90 deg	2.89	00.00	0	1	-0.12	5.11	4.11	
	2.89	00.00	120	1a	2.82	31.55	-1.69	
	2.89	00.00	240	1b	-4.30	-21.33	-2.41	
1.2D + 1.0Ev + 1.0Eh Normal M1	2.89	00.00	0	1	0.00	22.26	-0.48	
	2.89	00.00	120	1a	0.09	-3.48	-0.06	
	2.89	00.00	240	1b	-0.09	-3.48	-0.06	
1.2D + 1.0Ev + 1.0Eh 60 deg M1	2.89	00.00	0	1	-0.01	13.68	-0.29	
	2.89	00.00	120	1a	-0.25	13.68	0.14	
	2.89	00.00	240	1b	-0.26	-12.07	-0.15	
1.2D + 1.0Ev + 1.0Eh 90 deg M1	2.89	00.00	0	1	-0.01	5.10	-0.09	
	2.89	00.00	120	1a	-0.38	20.11	0.21	
	2.89	00.00	240	1b	-0.22	-9.91	-0.12	
0.9D - 1.0Ev + 1.0Eh Normal M1	2.89	00.00	0	1	0.00	19.15	-0.43	
	2.89	00.00	120	1a	0.12	-5.49	-0.08	
	2.89	00.00	240	1b	-0.12	-5.49	-0.08	
0.9D - 1.0Ev + 1.0Eh 60 deg M1	2.89	00.00	0	1	-0.01	11.02	-0.24	
	2.89	00.00	120	1a	-0.21	11.02	0.11	
	2.89	00.00	240	1b	-0.29	-13.87	-0.17	
0.9D - 1.0Ev + 1.0Eh 90 deg M1	2.89	00.00	0	1	-0.01	2.72	-0.05	
	2.89	00.00	120	1a	-0.34	17.24	0.19	

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Customer: T-MOBILE

	2.89	00.00	240	1b	-0.25	-11.79	-0.14
1.0D + 1.0W Service Normal	2.89	00.00	0	1	0.00	38.36	-1.16
	2.89	00.00	120	1a	0.36	-13.49	-0.36
	2.89	00.00	240	1b	-0.36	-13.49	-0.36
1.0D + 1.0W Service 60 deg	2.89	00.00	0	1	-0.13	21.11	-0.61
	2.89	00.00	120	1a	-0.59	21.11	0.19
	2.89	00.00	240	1b	-0.89	-30.83	-0.51
1.0D + 1.0W Service 90 deg	2.89	00.00	0	1	-0.15	3.79	-0.06
	2.89	00.00	120	1a	-0.91	33.81	0.44
	2.89	00.00	240	1b	-0.81	-26.22	-0.38

Max Uplift:	100.57 (kip)	Moment Ice:	132.20 (kip-ft)	Moment:	455.85 (kip-ft)	1.2D + 1.0W Normal
Max Down:	109.82 (kip)	Total Down Ice:	15.34 (kip)	Total Down:	13.65 (kip)	
Max Shear:	5.05 (kip)	Total Shear Ice:	1.60 (kip)	Total Shear:	5.59 (kip)	

Site Number: 275199

Code:

ANSI/TIA-222-H

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Site Name: JACKSON HOLE BUS. PK WY, WY

Engineering Number: 13677388_C3_05

7/8/2021 10:45:27 PM

Customer: T-MOBILE

Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
102.339996337891 mph Normal with No Ice	5.13	0.006	0.0011	0.1298	0.1298
102.339996337891 mph Normal with No Ice	65.13	0.924	0.0126	1.6728	1.6729
102.339996337891 mph Normal with No Ice	85.13	1.599	0.0160	2.1755	2.1755
102.339996337891 mph Normal with No Ice	120.00	3.153	0.0236	3.0950	3.0950
102.339996337891 mph Normal with No Ice	170.00	6.526	0.0331	4.5061	4.5062
102.339996337891 mph 60 degree with No Ice	5.13	0.006	-0.0016	0.1295	0.1295
102.339996337891 mph 60 degree with No Ice	65.13	0.926	-0.0211	1.6767	1.6768
102.339996337891 mph 60 degree with No Ice	85.13	1.603	-0.0279	2.1809	2.1809
102.339996337891 mph 60 degree with No Ice	120.00	3.162	-0.0342	3.1065	3.1067
102.339996337891 mph 60 degree with No Ice	170.00	6.549	-0.0350	4.5226	4.5227
102.339996337891 mph 90 degree with No Ice	5.13	0.006	-0.0018	0.1315	0.1315
102.339996337891 mph 90 degree with No Ice	65.13	0.926	-0.0233	1.6776	1.6778
102.339996337891 mph 90 degree with No Ice	85.13	1.603	-0.0302	2.1808	2.1810
102.339996337891 mph 90 degree with No Ice	120.00	3.161	-0.0368	3.1073	3.1074
102.339996337891 mph 90 degree with No Ice	170.00	6.546	-0.0390	4.5234	4.5236
102.339996337891 mph Normal with No Ice (Reduced DL)	5.13	0.006	0.0011	0.1285	0.1285
102.339996337891 mph Normal with No Ice (Reduced DL)	65.13	0.911	0.0124	1.6463	1.6463
102.339996337891 mph Normal with No Ice (Reduced DL)	85.13	1.575	0.0158	2.1375	2.1376
102.339996337891 mph Normal with No Ice (Reduced DL)	120.00	3.099	0.0232	3.0326	3.0326
102.339996337891 mph Normal with No Ice (Reduced DL)	170.00	6.395	0.0324	4.3933	4.3934
102.339996337891 mph 60 deg with No Ice (Reduced DL)	5.13	0.006	-0.0015	0.1280	0.1280
102.339996337891 mph 60 deg with No Ice (Reduced DL)	65.13	0.911	-0.0207	1.6468	1.6468
102.339996337891 mph 60 deg with No Ice (Reduced DL)	85.13	1.575	-0.0273	2.1378	2.1379
102.339996337891 mph 60 deg with No Ice (Reduced DL)	120.00	3.101	-0.0334	3.0344	3.0346
102.339996337891 mph 60 deg with No Ice (Reduced DL)	170.00	6.398	-0.0338	4.3930	4.3932
102.339996337891 mph 90 deg with No Ice (Reduced DL)	5.13	0.006	-0.0018	0.1299	0.1300
102.339996337891 mph 90 deg with No Ice (Reduced DL)	65.13	0.911	-0.0229	1.6476	1.6478
102.339996337891 mph 90 deg with No Ice (Reduced DL)	85.13	1.575	-0.0297	2.1377	2.1379
102.339996337891 mph 90 deg with No Ice (Reduced DL)	120.00	3.100	-0.0361	3.0356	3.0357
102.339996337891 mph 90 deg with No Ice (Reduced DL)	170.00	6.396	-0.0378	4.3938	4.3940
48.734001159668 mph Normal with 0.21 in Radial Ice	5.13	0.002	0.0003	0.0369	0.0369
48.734001159668 mph Normal with 0.21 in Radial Ice	65.13	0.266	0.0041	0.4811	0.4811
48.734001159668 mph Normal with 0.21 in Radial Ice	85.13	0.460	0.0053	0.6282	0.6282
48.734001159668 mph Normal with 0.21 in Radial Ice	120.00	0.910	0.0077	0.8985	0.8985
48.734001159668 mph Normal with 0.21 in Radial Ice	170.00	1.881	0.0089	1.2902	1.2903
48.734001159668 mph 60 deg with 0.21 in Radial Ice	5.13	0.002	-0.0005	0.0381	0.0381
48.734001159668 mph 60 deg with 0.21 in Radial Ice	65.13	0.268	-0.0062	0.4841	0.4841
48.734001159668 mph 60 deg with 0.21 in Radial Ice	85.13	0.463	-0.0081	0.6336	0.6336
48.734001159668 mph 60 deg with 0.21 in Radial Ice	120.00	0.917	-0.0104	0.9093	0.9094
48.734001159668 mph 60 deg with 0.21 in Radial Ice	170.00	1.901	-0.0096	1.3076	1.3077
48.734001159668 mph 90 deg with 0.21 in Radial Ice	5.13	0.002	-0.0005	0.0382	0.0382
48.734001159668 mph 90 deg with 0.21 in Radial Ice	65.13	0.269	-0.0070	0.4881	0.4882
48.734001159668 mph 90 deg with 0.21 in Radial Ice	85.13	0.466	-0.0092	0.6386	0.6386
48.734001159668 mph 90 deg with 0.21 in Radial Ice	120.00	0.925	-0.0117	0.9181	0.9181
48.734001159668 mph 90 deg with 0.21 in Radial Ice	170.00	1.920	-0.0111	1.3241	1.3241
Seismic Normal M1	5.13	0.001	0.0002	0.0207	0.0207
Seismic Normal M1	65.13	0.166	0.0029	0.3190	0.3190
Seismic Normal M1	85.13	0.300	0.0041	0.4492	0.4492
Seismic Normal M1	120.00	0.643	0.0063	0.7176	0.7176
Seismic Normal M1	170.00	1.533	0.0090	1.2787	1.2787
Seismic 60 deg M1	5.13	0.001	-0.0003	0.0204	0.0204
Seismic 60 deg M1	65.13	0.166	-0.0039	0.3186	0.3186
Seismic 60 deg M1	85.13	0.300	-0.0054	0.4488	0.4488
Seismic 60 deg M1	120.00	0.643	-0.0077	0.7184	0.7185
Seismic 60 deg M1	170.00	1.533	-0.0090	1.2788	1.2788

Site Number: 275199	Code: ANSI/TIA-222-H	© 2007 - 2021 by ATC IP LLC. All rights reserved.
Site Name: JACKSON HOLE BUS. PK WY, WY	Engineering Number: 13677388_C3_05	7/8/2021 10:45:27 PM
Customer: T-MOBILE		

Seismic 90 deg M1	5.13	0.001	-0.0003	0.0211	0.0211
Seismic 90 deg M1	65.13	0.167	-0.0044	0.3226	0.3226
Seismic 90 deg M1	85.13	0.303	-0.0061	0.4544	0.4544
Seismic 90 deg M1	120.00	0.650	-0.0085	0.7274	0.7275
Seismic 90 deg M1	170.00	1.552	-0.0103	1.2949	1.2950
Seismic (Reduced DL) Normal M1	5.13	0.001	0.0002	0.0198	0.0198
Seismic (Reduced DL) Normal M1	65.13	0.158	0.0028	0.3022	0.3022
Seismic (Reduced DL) Normal M1	85.13	0.284	0.0040	0.4245	0.4245
Seismic (Reduced DL) Normal M1	120.00	0.608	0.0062	0.6757	0.6757
Seismic (Reduced DL) Normal M1	170.00	1.443	0.0084	1.1962	1.1962
Seismic (Reduced DL) 60 deg M1	5.13	0.001	-0.0002	0.0198	0.0198
Seismic (Reduced DL) 60 deg M1	65.13	0.159	-0.0037	0.3056	0.3056
Seismic (Reduced DL) 60 deg M1	85.13	0.288	-0.0051	0.4295	0.4295
Seismic (Reduced DL) 60 deg M1	120.00	0.615	-0.0072	0.6856	0.6856
Seismic (Reduced DL) 60 deg M1	170.00	1.462	-0.0084	1.2130	1.2131
Seismic (Reduced DL) 90 deg M1	5.13	0.001	-0.0003	0.0204	0.0204
Seismic (Reduced DL) 90 deg M1	65.13	0.161	-0.0042	0.3093	0.3094
Seismic (Reduced DL) 90 deg M1	85.13	0.291	-0.0058	0.4348	0.4349
Seismic (Reduced DL) 90 deg M1	120.00	0.622	-0.0080	0.6948	0.6948
Seismic (Reduced DL) 90 deg M1	170.00	1.480	-0.0096	1.2286	1.2286
Serviceability - 60 mph Wind Normal	5.13	0.002	0.0004	0.0428	0.0428
Serviceability - 60 mph Wind Normal	65.13	0.301	0.0045	0.5423	0.5423
Serviceability - 60 mph Wind Normal	85.13	0.519	0.0059	0.6996	0.6997
Serviceability - 60 mph Wind Normal	120.00	1.014	0.0084	0.9776	0.9776
Serviceability - 60 mph Wind Normal	170.00	2.067	0.0098	1.3959	1.3960
Serviceability - 60 mph Wind 60 deg	5.13	0.002	-0.0005	0.0426	0.0427
Serviceability - 60 mph Wind 60 deg	65.13	0.303	-0.0070	0.5452	0.5452
Serviceability - 60 mph Wind 60 deg	85.13	0.522	-0.0092	0.7049	0.7049
Serviceability - 60 mph Wind 60 deg	120.00	1.021	-0.0113	0.9877	0.9877
Serviceability - 60 mph Wind 60 deg	170.00	2.086	-0.0104	1.4124	1.4125
Serviceability - 60 mph Wind 90 deg	5.13	0.002	-0.0006	0.0434	0.0434
Serviceability - 60 mph Wind 90 deg	65.13	0.303	-0.0080	0.5459	0.5459
Serviceability - 60 mph Wind 90 deg	85.13	0.522	-0.0104	0.7048	0.7049
Serviceability - 60 mph Wind 90 deg	120.00	1.021	-0.0127	0.9880	0.9880
Serviceability - 60 mph Wind 90 deg	170.00	2.086	-0.0119	1.4129	1.4129

Maximum Reactions Summary

Anchor Group	Vertical (kip)				Horizontal (kip)		Moment (kip-ft)	
	DL+WL	DL+WL+IL	UpLift	Shear	DL+WL	DL+WL+IL	DL+WL	DL+WL+IL
Base	13.65	15.34	109.82	5.05	5.59	1.60	455.85	132.20

Site Name: Jackson Hole Bus. PK WY, WY
Site Number: 275199
Tower Type: SST w/3 Legs
Design Loads (Factored) - Analysis per TIA-222-H Standards

Monolithic Mat & Pier Foundation Analysis

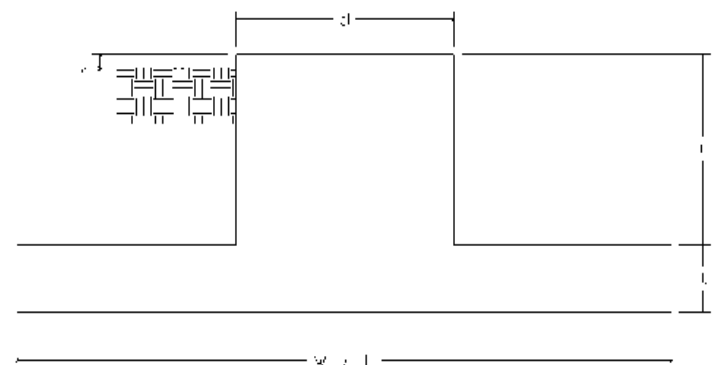
Foundation Analysis Parameters		
Design / Analysis / Mapping:	Analysis	-
Compression/Leg:	109.8	k
Uplift/Leg:	100.6	k
Total Shear:	5.6	k
Moment:	455.9	k-ft
Tower + Appurtenance Weight:	13.7	k
Depth to Base of Foundation (l + t - h):	4.5	ft
Diameter of Pier (d):	2	ft
Length of Pier (l):	2.5	ft
Height of Pier above Ground (h):	0.5	ft
Width of Pad (W):	14	ft
Length of Pad (L):	14	ft
Thickness of Pad (t):	2.5	ft
Tower Leg Center to Center:	5	ft
Number of Tower Legs:	3	-
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:	110	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	47.6	pcf
Friction Angle of Uplift:	15	°
Coefficient of Shear Friction:	0.30	-
Ultimate Compressive Bearing Pressure:	3,000	psf
Ultimate Passive Pressure on Pad Face:	0	psf
$f_{\text{Soil and Concrete Weight}}$:	0.9	-
f_{Soil} :	0.75	-

Overturning Moment Usage		
Design OTM:	483.8	k-ft
OTM Resistance:	853.5	k-ft
Design OTM / OTM Resistance:	57%	Pass

Soil Bearing Pressure Usage		
Net Bearing Pressure:	1414	psf
Factored Nominal Bearing Pressure:	2250	psf
Factored Nominal (Net) Bearing Pressure:	63%	Pass
Load Direction Controlling Design Bearing Pressure:	Diagonal to Pad Edge	

Sliding Factor of Safety		
Ultimate Friction Resistance:	38.8	k
Ultimate Passive Pressure Resistance:	0.0	k
Total Factored Sliding Resistance:	29.1	k
Sliding Design / Sliding Resistance:	19%	Pass

Foundation Steel Parameters		
Shear/Leg (Compression):	4.1	k
Shear/Leg (Uplift):	3.4	k
Concrete Strength (f'_c):	3,000	psi
Pad Tension Steel Depth:	26.63	in
Dead Load Factor:	0.9	-
f_{Shear} :	0.75	-
$f_{\text{Flexure / Tension}}$:	0.9	-
$f_{\text{Compression}}$:	0.65	-
b:	0.85	-
Bottom Pad Rebar Size #:	6	-
# of Bottom Pad Rebar:	19	-
Pad Bottom Steel Area:	8.36	in ²
Pad Steel F_y :	60,000	psi
Top Pad Rebar Size #:	6	-
# of Top Pad Rebar:	19	-
Pad Top Steel Area:	8.36	in ²
Pier Rebar Size #:	6	-
Pier Steel Area (Single Bar):	0.44	in ²
# of Pier Rebar:	18	-
Pier Steel F_y :	60,000	psi
Pier Cage Diameter:	16.3	in
Rebar Strain Limit:	0.008	-
Steel Elastic Modulus:	29,000	ksi
Tie Rebar Size #:	4	-
Tie Steel Area (Single Bar):	0.20	in ²
Tie Spacing:	12	in
Tie Steel F_y :	60,000	psi
Clear Cover:	3	in



Pad Strength Capacity			
Factored One Way Shear (V_u):	40.0	k	ACI 318-14 25.5.5.1
One Way Shear Capacity (fV_c):	279.3	k	
V_u / fV_c :	14%	Pass	
Load Direction Controlling Shear Capacity:	Diagonal to Pad Edge		
Lower Steel Pad Factored Moment (M_u):	154.1	k-ft	ACI 318-14 22.3.1.1
Lower Steel Pad Moment Capacity (fM_n):	1060.0	k-ft	
M_u / fM_n :	15%	Pass	
Load Direction Controlling Flexural Capacity:	Diagonal to Pad Edge		
Upper Steel Pad Factored Moment (M_u):	86.5	k-ft	
Upper Steel Pad Moment Capacity (fM_n):	982.9	k-ft	
M_u / fM_n :	9%	Pass	
Lower Pad Flexural Reinforcement Ratio:	0.0019		OK - ACI 318-14 7.6.1.1 & 8.6.1.1
Upper Pad Flexural Reinforcement Ratio:	0.0019		OK - ACI 318-14 7.6.1.1 & 8.6.1.1
Lower Pad Reinforcement Spacing:	9.0	in	OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3
Upper Pad Reinforcement Spacing:	9.0	in	OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3
Ultimate Punching Shear Stress, v_u :	21.15	psi	ACI 318-14 R8.4.4.2.3
Nominal Punching Shear Capacity ($f_c v_c$):	164.3	psi	ACI 318-14 22.6.5.2
$v_u / f_c v_c$:	13%	Pass	
Pier Moment Pad Flexure Transfer Ratio, γ_f :	0.60		TIA-222-H 9.4.2
Moment Transfer Effective Flexural Width, B_{eff} :	9.50	ft	TIA-222-H 9.4.2
Moment Transfer Through Pad Flexure:	73.80	k-in	TIA-222-H 9.4.2
Moment Transfer Flexural Capacity ($fM_{sc,f}$):	8492.24	k-in	
$g_f M_{sc} / fM_{sc,f}$:	1%	Pass	

Pier Strength Capacity			
Factored Moment in Pier (M_u):	10.3	k-ft	
Pier Moment Capacity (fM_n):	283.5	k-ft	
M_u / fM_n :	4%	Pass	
Factored Shear in Pier (V_u):	3.7	k	ACI 318-14 22.5.1.1
Pier Shear Capacity (fV_n):	49.4	k	
V_u / fV_c :	8%	Pass	
Pier Shear Reinforcement Ratio:	0.0044		OK - No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	100.6	k	
Pier Tension Capacity (fT_n):	427.7	k	
T_u / fT_n :	24%	Pass	
Factored Compression in Pier (P_u):	109.8	k	ACI 318-14 22.4.2.1
Pier Compression Capacity (fP_n):	603.1	k	
P_u / fP_n :	18%	Pass	
Minimum Depth to Develop Vertical Rebar:	15	in	ACI 318-14 25.4.2.3
Minimum Hook Development Length:	17	in	ACI 318-14 25.4.3.1
Minimum Mat Thickness / Edge Distance from Pier:	20.0	in	
Minimum Foundation Depth:	3.18	ft	
$M_u/f_B M_n + T_u/f_T T_n$:	27%	Pass	

From: rbruin@dernagrp.com
To: [Town of Jackson Planning Department](#)
Subject: Basic Use Permit & Building Permit Submittal - T-Mobile Modifications to Existing Wireless Facility - 1525 Martin Lane
Date: Wednesday, August 18, 2021 9:08:20 PM
Attachments: [SL01204D_275199_100% CDs_pdf.msg](#)
[SL01204D_275199_LL LOA_pdf.msg](#)
[SL01204D_275199_MA_pdf.msg](#)
[SL01204D_275199_SA_pdf.msg](#)
[SL01204D_275199_Planning Permit Application_pdf.msg](#)

Good evening,

Please accept this "Eligible Facilities Request" to review the proposed modifications of an existing wireless communication facility at the above referenced address, and to determine that the proposal conforms to Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012, codified as 47 U.S.C. § 1455(a) ("Section 6409(a)"). Generally, Section 6409(a) requires that local governments "may not deny, and shall approve," certain requests to collocate with or modify an existing wireless tower or base station so long as that request will not "substantially change the physical dimensions." The following documents are included with this submittal package:

- Planning Permit Application
- Property Owner Letter of Authorization
- Plans

In addition, the following documents are included in this submittal package for review by the Building Department:

- Plans
- Mount Analysis
- Structural Analysis

Please confirm receipt of this submittal and let me know if any fees are due at this time. I look forward to hearing from you.

Thanks,

Rachel Bruin | The Derna Group

22431 Antonio Parkway

Suite B160-234

Rancho Santa Margarita, CA 92688

(805) 215-9444