



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: July 1, 2025	REQUESTS: The applicant is submitting a request for a Basic Use Permit to modify existing wireless communication facility located at 275 N Willow Street, legally known PT. SW1/4SW1/4 SEC. 27, TWP. 41, RNG. 116 (CHURCH) PIDN: 22-41-16-27-3-00-022 For questions, please call Andrew Bowen at 307-733-0440, x1306 or email to the address shown below. Thank you.
Item #: P25-125	
Planner: Andrew Bowen Phone: 307-733-0440 ext. 1306 Email: abowen@jacksonwy.gov	
Owner Crown Castle Stealth Tower Operator 3025 Highland Parkway, Suite 400 Downers Grove, IL 60515 Applicant: Christy Stout Authorized Agent for AT&T 1220 Old Alpharetta Road, Suite 380 Alpharetta, GA 30005	
Please respond by: July 22, 2025 (with Comments)	

RESPONSE: For Departments not using SmartGov, please send responses via email to planning@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.

C Stout

Signature of Property Owner or Authorized Applicant/Agent

Date

Name Printed

Title



June 26, 2025

Via Email

Town of Jackson, WY
Attn: Planning Department
150 E Pearl Ave
Jackson, WY 83001

RE: New Cingular Wireless PCS, LLC ("AT&T") Telecom Permit Application ("Application") for equipment installation at the existing wireless telecommunications facility ("Facility") located at **275 North Willow Street, Jackson, WY 83001**

AT&T Site: WSUTH0042145 / 15433582 / IDL04525 / Jackson North

Dear Town of Jackson, WY Planning Department:

AT&T submits the enclosed associated documents as an eligible facilities request under Section 6409 of the Federal Middle Class Tax Relief and Job Creation Act of 2012 and related regulations and orders ("Section 6409").

The purpose of our letter is to outline the applicable federal timing and review requirements for AT&T's permit application as an EFR under Section 6409. Notably, this project includes work necessary to improve wireless service quality.

Background on Federal Law

Section 6409 was adopted over a decade ago to streamline municipal permit processes for modifications to existing wireless facilities and provides the following:

"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." 47 U.S.C. §1455(a)(1)

The law defines an "eligible facilities request" as: "(A) collocation of new transmission equipment; (B) removal of transmission equipment; or (C) replacement of transmission equipment."

After the adoption of Section 6409 in 2012, the Federal Communications Commission issued two Wireless Infrastructure Reports and Orders¹ to establish federal regulations and clarify the procedural requirements for local municipal approval of projects involving eligible facilities requests under Section 6409 ("FCC Orders"). The FCC Orders state that



municipal review of an eligible facilities request is **limited to determining whether the request falls within Section 6409:**

“a State or local government may require the applicant to provide documentation or information **only to the extent reasonably related to determining whether the request meets the requirements of this section** [Section 6409]. A State or local government **may not require an applicant to submit any other documentation**, including but not limited to documentation intended to illustrate the need for such wireless facilities or to justify the business decision to modify such wireless facilities.”⁴⁷ C.F.R. 1.6100(c)(1) (Emphasis added).

AT&T’s Application is an Eligible Facilities Request under Section 6409

AT&T’s Application qualifies as an eligible facilities request under Section 6409 because the proposed installation involves “a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.” Since this structure already supports communications equipment, it is considered an existing Tower under Section 6409.

As shown on the plans prepared by Ansco & Associates dated 06/20/2025 AT&T’s proposed installation consist principally of the following elements:

Stealth Tower Work: Remove (8) existing Antennas, (12) existing RRHs, and (1) existing Coax Cable. Install (8) proposed Antennas, (12) proposed RRHs, and (16) proposed Coax Cables.

Ground Work: Install (2) proposed Generic BBUs.

There will be no increase in height or footprint of the existing telecommunications facility.

Accordingly, AT&T’s installation involves the “**collocation of new transmission equipment**” / “**replacement of transmission equipment**” / “**removal of transmission equipment**” that will not substantially change the dimensions of the facility. Therefore, the proposed project constitutes an “eligible facilities request” under Section 6409, and must be approved.

Timeline for Review and Approval

We would like to highlight an important timing requirement for processing AT&T’s permit application. The FCC Orders and regulations require that **a municipality must act on an eligible facilities request within sixty (60) days of receiving the application.** ⁴⁷ C.F.R. 1.6100(c)(2). The sixty (60)-day period is also known as the “Shot Clock.” Thus, the municipality must approve this application within sixty (60) days of its receipt.



The FCC Orders and regulations also provide that upon a municipality's failure to act prior to expiration of the Shot Clock, the **"request shall be deemed granted"** and AT&T will be legally entitled to proceed with construction. 47 C.F.R. 1.6100(c)(4).

Note that the FCC Orders and regulations do allow the Shot Clock to be tolled if an application is incomplete. However, in order to do so, a municipality must provide written notice that the application is incomplete within thirty (30) days of the submittal. 47 C.F.R. 1.6100(c)(3)(i). Further, any such notice must "clearly and specifically" describe the missing documents or information, 47 C.F.R. 1.6100(c)(3)(i), and, as previously mentioned, such documentation must be necessary to the determination of whether the application qualifies as an eligible facilities request regardless of whether such local requirements are set forth in a code, ordinance or submission guidelines.

If the municipality requests additional information after the first thirty (30) days have passed, we will still provide any "reasonably related" information allowed under the FCC Orders and regulations, but the Shot Clock will not be tolled.

If you have any questions regarding this application, please contact me. Thank you for your cooperation.

Sincerely,

A handwritten signature in black ink that reads "C Stout".

Christy Stout

Coordinator Site Acquisition, Ansko & Associates, LLC

470-913-7595 (CST)

✉ christy.stout@anscollc.com

🌐 anscollc.com

PROJECT DESCRIPTION

AT&T WIRELESS PROPOSES TO MODIFY AN EXISTING WIRELESS INSTALLATION. THE SCOPE WILL CONSIST OF THE FOLLOWING:

STEALTH TOWER WORK:

- REMOVE (12) RRRs
- REMOVE (8) ANTENNAS
- REMOVE (1) COAX CABLE
- INSTALL (8) ANTENNAS
- INSTALL (12) RRRs
- INSTALL (16) COAX CABLES

GROUND WORK:

- INSTALL (2) GENERIC BBU

SITE NAME:JACKSON NORTH
SITE NUMBER:IDL04525



NOKIA MARKETS MODERNIZATION
IWM NUMBER: WSUTH0042145
FA #: 15433582
STEALTH TOWER

ENGINEERING

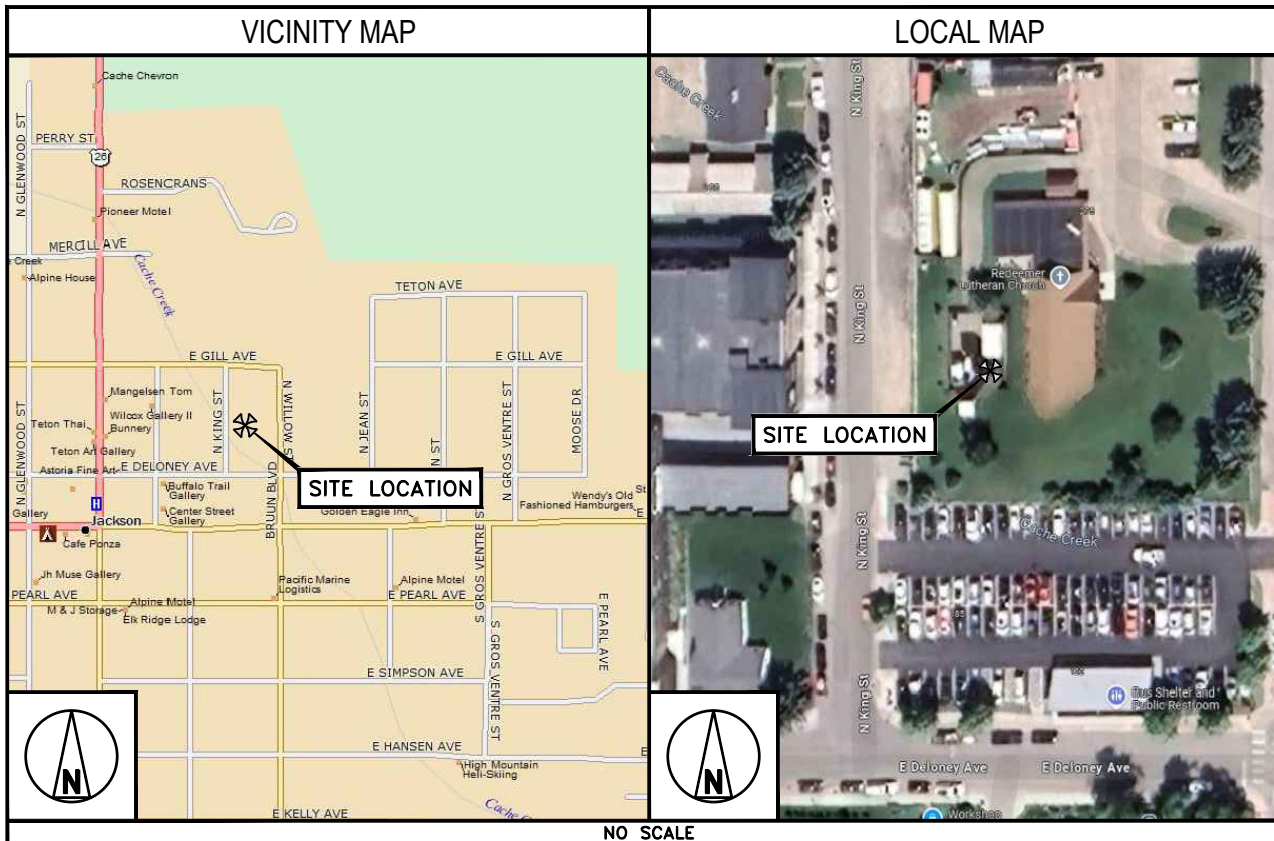
2021 INTERNATIONAL FIRE CODE
2021 INTERNATIONAL BUILDING CODE OR LATEST ADOPTED EDITION
2020 NATIONAL ELECTRIC CODE OR LATEST ADOPTED EDITION
TIA/EIA-222-H OR LATEST EDITION

SITE INFORMATION

PROPERTY OWNER: REDEEMER LUTHERAN CHURCH OF JACKSON, WY
ADDRESS: PO BOX 1016, JACKSON, WY 83001-1016
SITE ADDRESS: 275 NORTH WILLOW STREET JACKSON, WY 83001
FA: 15433582
STEALTH TOWER OWNER: ATLAS TOWER HOLDINGS
COUNTY: TETON COUNTY
LATITUDE (NAD83): 43° 28' 51.5" N
LONGITUDE (NAD83): 110° 45' 34.6" W
GROUND ELEVATION: 6240' AMSL
ZONING JURISDICTION: CITY OF JACKSON
ZONING DISTRICT: A
PARCEL NUMBER: 22-41-16-27-3-00-022
OCCUPANCY GROUP: U
CONSTRUCTION TYPE: V-B
SITE ACQUISITION MANAGER: CORY HAMMEN
CORY.HAMMEN@ANSCOLL.COM
CONSTRUCTION MANAGER: JOHN RUTKOWITZ
JOHN.RUTKOWITZ@ANSCOLL.COM
RF ENGINEER: RON BLEDSOE
RONALD.BLEDSE@ANSCOLL.COM

CONTACT INFORMATION

ENGINEER: ANSCO & ASSOCIATES, LLC
1220 OLD ALPHARETTA ROAD, SUITE 380
ALPHARETTA, GA 30005
CONTACT: CORY HAMMEN
EMAIL: CORY.HAMMEN@ANSCOLL.COM



DRIVING DIRECTIONS

DIRECTIONS FROM NORTH BIG HORN COUNTY AIRPORT

TAKE COUNTY RD 7 1/2 TO US-310 W/MAIN ST IN COMLEY, HEAD SOUTHWEST ON COUNTY RD 7 J, CONTINUE ONTO DIVISION ST, FOLLOW US-14 ALT W, US-20 W AND US-191 S/US-89 S TO E GILL AVE IN JACKSON, TURN RIGHT ONTO US-310 W/MAIN ST, CONTINUE TO FOLLOW US-310 W, TURN LEFT ONTO WY-114 S, CONTINUE ONTO US-14 ALT W, TURN RIGHT ONTO SHERIDAN AVE, CONTINUE ONTO 8TH ST, CONTINUE ONTO US-310 W/YELLOWSTONE AVE, CONTINUE TO FOLLOW US-20 W, TURN LEFT ONTO US-191 S/US-287 S/US-89 S, TURN RIGHT ONTO US-191 S/US-26 W/US-89 S, AT THE ROUNDABOUT, CONTINUE STRAIGHT TO STAY ON US-191 S/US-26 W/US-89 S, CONTINUE ON E GILL AVE, DRIVE TO N KING ST, TURN LEFT ONTO E GILL AVE, TURN RIGHT ONTO N KING ST.

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE, NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

DRAWING INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
C-1	SITE PLAN
C-1.1	ENLARGED SITE PLAN
C-2	EQUIPMENT LAYOUTS
C-3	ELEVATIONS
C-4	ANTENNA LAYOUTS
C-5	ANTENNA SCHEDULE
C-6	EQUIPMENT DETAILS
C-6.1	MACRO BUILD STANDARDS
E-1	ELECTRICAL DC ONE-LINE DIAGRAM
G-1	GROUNDING ONE-LINE DIAGRAM
G-2	GROUNDING DETAILS
GN-1	LEGEND & ABBREVIATIONS
GN-2	GENERAL CONSTRUCTION NOTES
GN-3	GENERAL SITE WORK & DRAINAGE NOTES
GN-4	GENERAL CONCRETE WORK NOTES
GN-5	GENERAL STRUCTURAL STEEL NOTES
GN-6	GENERAL ELECTRICAL NOTES

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.



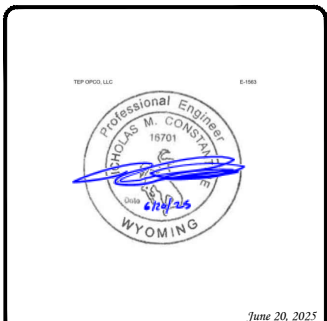
UNDERGROUND SERVICE ALERT
UTILITY NOTIFICATION CENTER OF WYOMING
(800) 849-2476
WWW.ONECALLOFWYOMING.COM

3 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION



PROJECT:	56952
DRAWN BY:	AKP
CHECKED BY:	KOO
RFDS:	N/A

REV	DATE	DESCRIPTION
0	06/20/2025	ISSUED FOR CONSTRUCTION

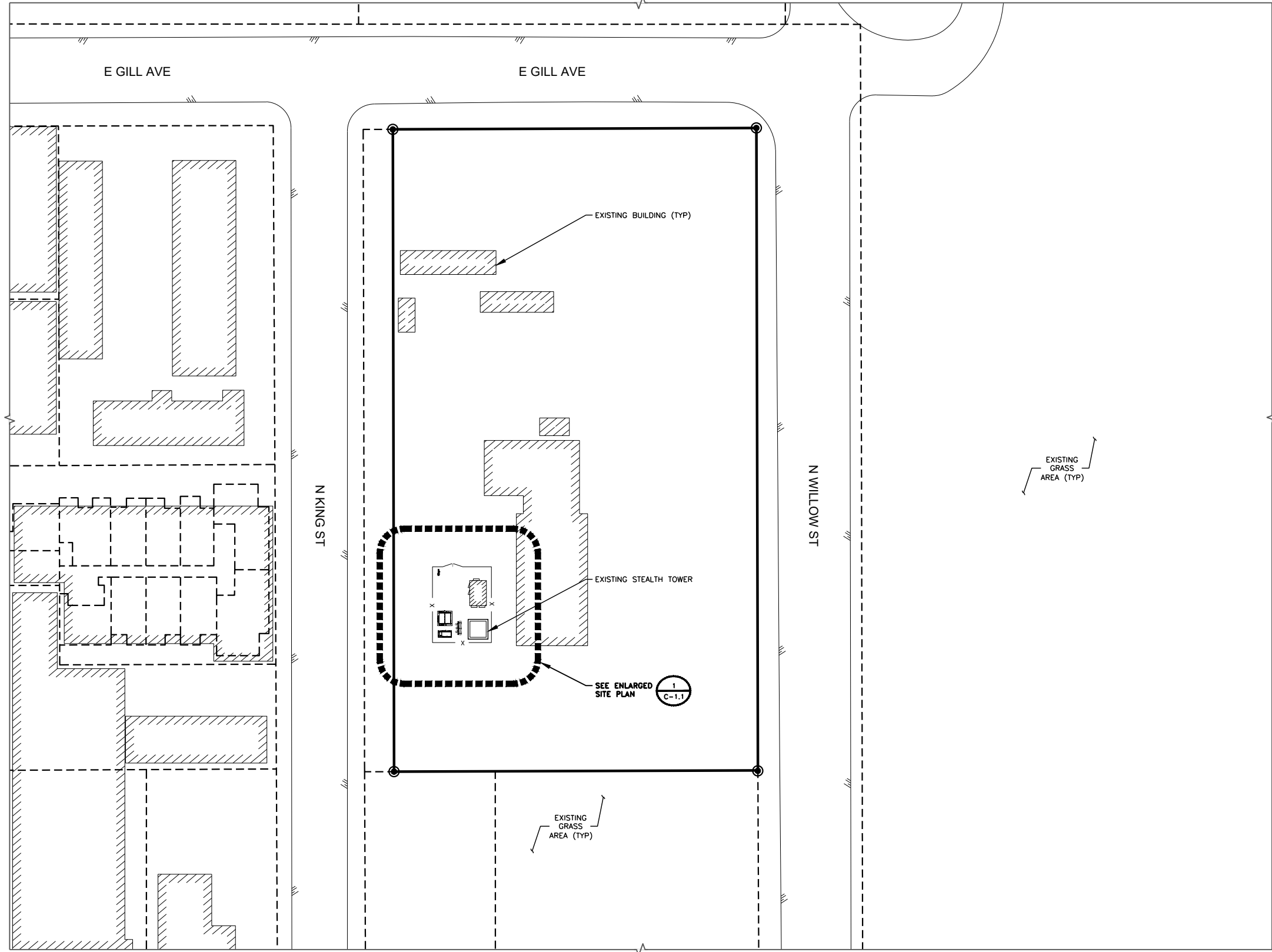


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

JACKSON NORTH
IDL04525
275 NORTH WILLOW STREET
JACKSON, WY 83001
NOKIA MARKETS MODERNIZATION

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



NOTES

- 1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
- 2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
- 3. SITE PLAN DISCLAIMER: THE EXISTING INFORMATION SHOWN IN THESE PLANS HAVE BEEN BASED ON EXISTING SITE INFORMATION PROVIDED BY OTHERS. TEP HAS NOT COMPLETED A SITE SURVEY AND THEREFORE MAKES NO CLAIMS AS TO THE ACCURACY OF INFORMATION DEPICTED ON THIS SHEET.



188 INVERNESS DRIVE WEST
SUITE 400
ENGLEWOOD, CO 80112



1220 OLD ALPHARETTA ROAD
SUITE 380
ALPHARETTA, GA 30005



326 TRYON RD, RALEIGH, NC
27603 OFFICE: (919) 661-6351

PROJECT:	56952
DRAWN BY:	AKP
CHECKED BY:	KOO
RFDS:	N/A

0	06/20/2025	ISSUED FOR CONSTRUCTION
REV	DATE	DESCRIPTION



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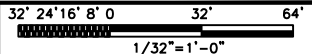
JACKSON NORTH
IDLO4525
275 NORTH WILLOW STREET
JACKSON, WY 83001
NOKIA MARKETS MODERNIZATION

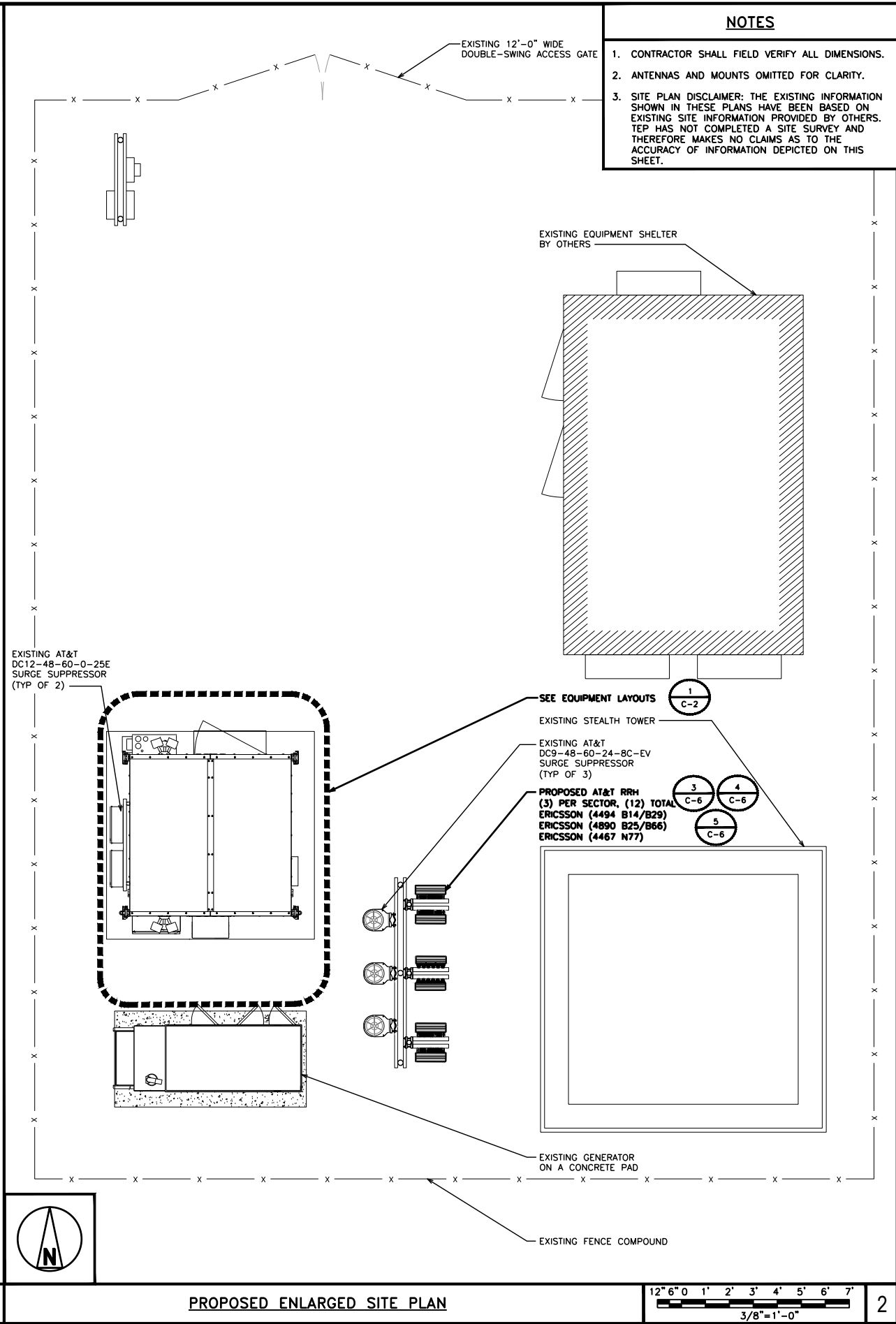
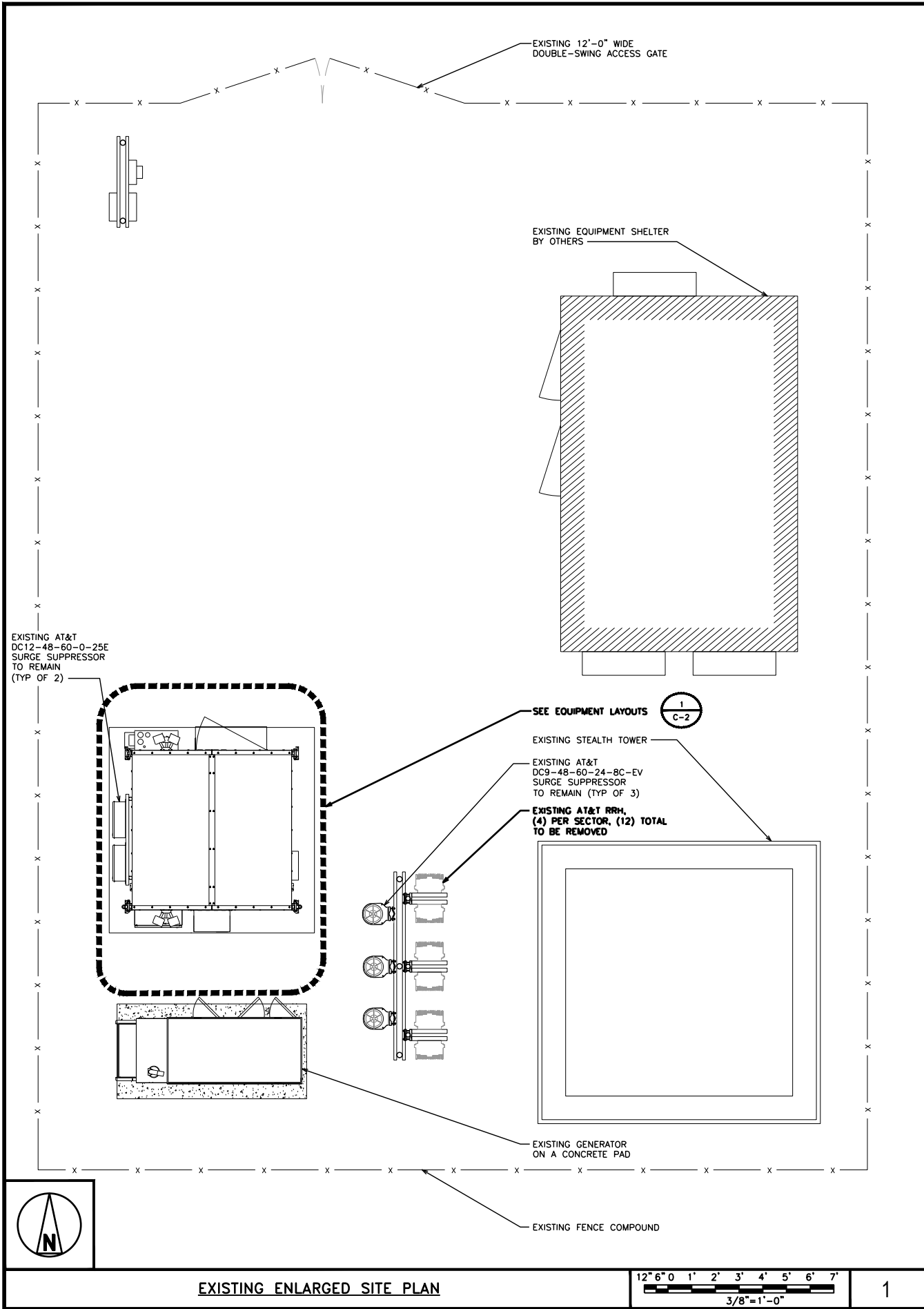
SHEET TITLE
SITE PLAN

SHEET NUMBER
C-1



SITE PLAN





NOTES

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 **at&t**

188 INVERNESS DRIVE WEST
SUITE 400
ENGLEWOOD, CO 80112

 **ANSCO**

1220 OLD ALPHARETTA ROAD
SUITE 380
ALPHARETTA, GA 30005

 **TEP**

326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351

PROJECT:	56952
DRAWN BY:	AKP
CHECKED BY:	KOO
RFDS:	N/A

REV	DATE	DESCRIPTION
0	06/20/2025	ISSUED FOR CONSTRUCTION



June 20, 2025

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JACKSON NORTH
IDLO4525
275 NORTH WILLOW STREET
JACKSON, WY 83001
NOKIA MARKETS MODERNIZATION

SHEET TITLE
ENLARGED SITE PLAN

SHEET NUMBER
C-1.1

NOTES

- 1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
- 2. TEP DID NOT PERFORM ANY HVAC ANALYSIS.



at&t

188 INVERNESS DRIVE WEST
SUITE 400
ENGLEWOOD, CO 80112



ANSCO

1220 OLD ALPHARETTA ROAD
SUITE 380
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TEP

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27603 OFFICE: (919) 661-6351

PROJECT:	56952
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TEP OPFCL, LLC

June 20, 2025

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JACKSON, WY 83001
NOKIA MARKETS MODERNIZATION

SHEET TITLE
EQUIPMENT LAYOUTS

SHEET NUMBER
C-2

EXISTING AT&T ILC WITH ATS

EXISTING AT&T EQUIPMENT IN EXISTING
VERTIV 7100 POWER PLANT
(12) R48-2000E3 RECTIFIERS
(8) SBS 170F BATTERIES

EXISTING AT&T
DC12-48-60-0-25E
SURGE SUPPRESSOR
TO REMAIN (TYP OF 2)

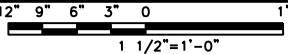
EXISTING ACCESS DOOR

EXISTING AT&T FIF RACK WITH
(2) PROPOSED GENERIC BBU

EXISTING AT&T FIF RACK



FINAL EQUIPMENT LAYOUT



NOTES

1. THE EXISTING STEALTH TOWER IS CURRENTLY BEING ANALYZED BY OTHERS TO DETERMINE ITS STRUCTURAL CAPACITY TO CARRY THE PROPOSED NEW COAX & ANTENNAS. THESE DRAWINGS HAVE BEEN CREATED BASED ON THE ASSUMPTION THAT THE STRUCTURAL ANALYSIS WILL SHOW THAT THE STEALTH TOWER HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED NEW LOADS. INSTALLATION OF THE COAX & ANTENNAS SHALL NOT COMMENCE UNTIL AN APPROVED STRUCTURAL ANALYSIS HAS BEEN RECEIVED BY THE OWNER OR AT&T, & HAS BEEN REVIEWED BY ANSCO.
2. A PASSING ANTENNA MOUNT ANALYSIS (CONFORMING TO TIA-222-H) FOR THE EXISTING MOUNT WAS COMPLETED BY TEP ON 06/20/2025. ACCORDING TO THIS ANALYSIS, THE EXISTING MOUNT HAS SUFFICIENT CAPACITY TO SUPPORT THE LOADING INDICATED.

COAX & CABLE INFORMATION

- ALL EXISTING CABLES/COAX TO REMAIN UNLESS NOTED OTHERWISE
- (3) EXISTING 24 PAIR FIBER TRUNKS
- (6) EXISTING 6AWG DC TRUNKS
- (40) EXISTING 1/2" COAX CABLES
- (8) REMOVED 1/2" COAX CABLES
- (16) PROPOSED 1/2" LDF4P CBAND RATED COAX



PROJECT:	56952
DRAWN BY:	AKP
CHECKED BY:	KOO
RFDS:	N/A

0	06/20/2025	ISSUED FOR CONSTRUCTION
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ne 20, 2025

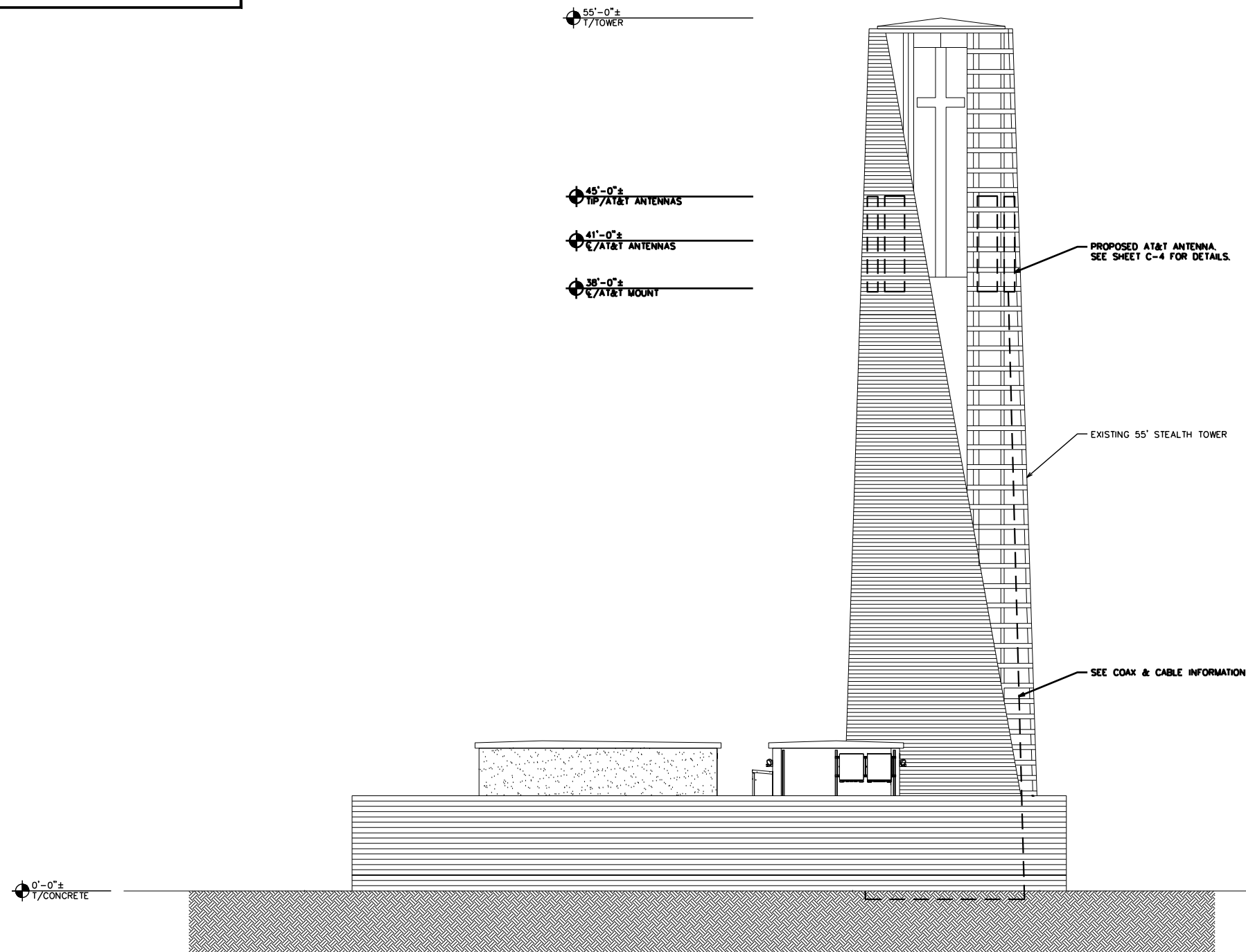
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NOKIA MARKETS MODERNIZATION**

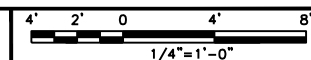
SHEET TITLE
ELEVATIONS

SHEET NUMBER

C-3



FINAL WEST ELEVATION



1

SHEET NUMBER

C-4

1

1

SECTOR	TECH.	ANTENNA MODEL	AZIMUTH	RAD CENTER	TMAS/FILTERS/COMBINERS	RRH/RRU MODEL & RELATED EQUIPMENT	SURGE SUPRESSION MODEL
	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL	FINAL
A1	LTE	NHHSS-45B-R2BT4	0°	41'-0"	—	4467 N77 4494 B14/B29	DC9-48-60-24-8C-EV
A2	LTE	NHHSS-45B-R2BT4	0°	41'-0"	—	4890 B25/B66	—
B1	LTE	NHHSS-45B-R2BT4	90°	41'-0"	—	4467 N77 4494 B14/B29	DC9-48-60-24-8C-EV
B2	LTE	NHHSS-45B-R2BT4	90°	41'-0"	—	4890 B25/B66	—
C1	LTE	NHHSS-45B-R2BT4	180°	41'-0"	—	4467 N77 4494 B14/B29	DC9-48-60-24-8C-EV
C2	LTE	NHHSS-45B-R2BT4	180°	41'-0"	—	4890 B25/B66	—
D1	LTE	NHHSS-45B-R2BT4	270°	41'-0"	—	4467 N77 4494 B14/B29	—
D2	LTE	NHHSS-45B-R2BT4	270°	41'-0"	—	4890 B25/B66	—



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326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351

PROJECT:	56952
DRAWN BY:	AKP
CHECKED BY:	KOO
RFDS:	N/A

0	06/20/2025	ISSUED FOR CONSTRUCTION
REV	DATE	DESCRIPTION



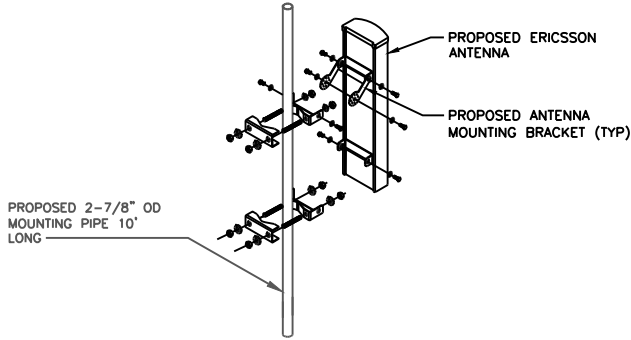
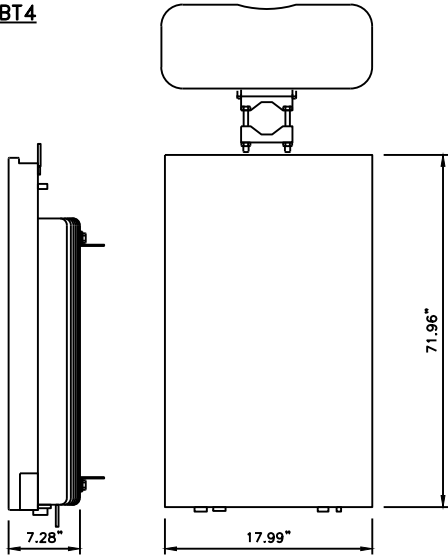
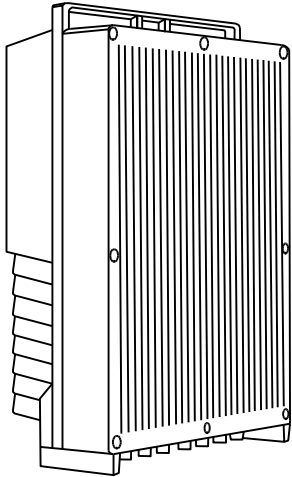
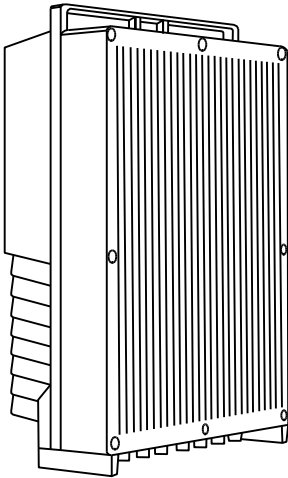
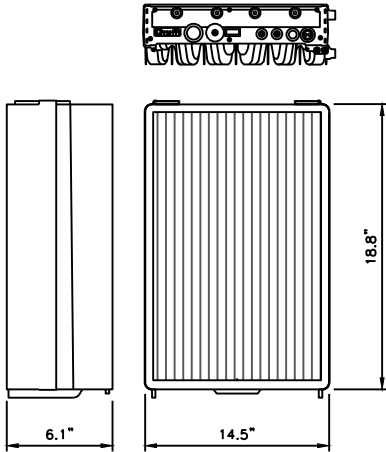
June 20, 2025

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

JACKSON NORTH
IDLO4525
275 NORTH WILLOW STREET
JACKSON, WY 83001
NOKIA MARKETS MODERNIZATION

SHEET TITLE
FINAL ANTENNA
SCHEDULE

SHEET NUMBER
C-5

			COMMSCOPE NHHSS-45B-R2BT4 DIMENSIONS, WxDxH: 71.96"x17.99"x7.28" (mm) 1828x457x185MM 			ERICSSON RADIO 4494 B14/B29 DIMENSIONS, WxDxH: 17.5"x15.1"x6.9" (mm) 361x261x129mm 		
ANTENNA PIPE MOUNTING DETAIL	NO SCALE	1	PROPOSED ANTENNA SPECIFICATIONS	NO SCALE	2	RRU SPECIFICATIONS	NO SCALE	3
ERICSSON RADIO 4890 B25/B66 DIMENSIONS, HxWxD: 17.48"x15.12"x6.9" (mm) 444x384x176mm POWER CONSUMPTION: 480 WATTS TOTAL WEIGHT: 68.37 lbs 			ERICSSON RADIO 4467 N77 DIMENSIONS, HxWxD: 18.8"x14.5"x6.1" (mm) 470x368x155mm POWER CONSUMPTION: 480W TOTAL WEIGHT: 65 lbs 					
RRU SPECIFICATIONS	NO SCALE	4	RRU SPECIFICATIONS	NO SCALE	5	NOT USED	NO SCALE	6
NOT USED	NO SCALE	7	NOT USED	NO SCALE	8	NOT USED	NO SCALE	9



at&t

188 INVERNESS DRIVE WEST
SUITE 400
ENGLEWOOD, CO 80112



ANSCO

1220 OLD ALPHARETTA ROAD
SUITE 380
ALPHARETTA, GA 30005



TEP

326 TRYON RD, RALEIGH, NC
27603 OFFICE: (919) 661-6351

PROJECT:	56952
DRAWN BY:	AKP
CHECKED BY:	KOO
RFDS:	N/A

0	06/20/2025	ISSUED FOR CONSTRUCTION
REV	DATE	DESCRIPTION



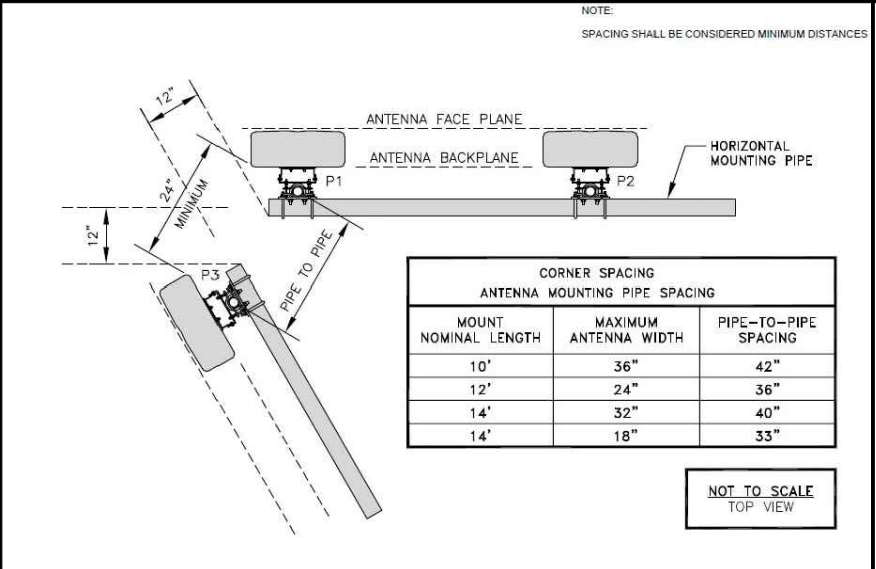
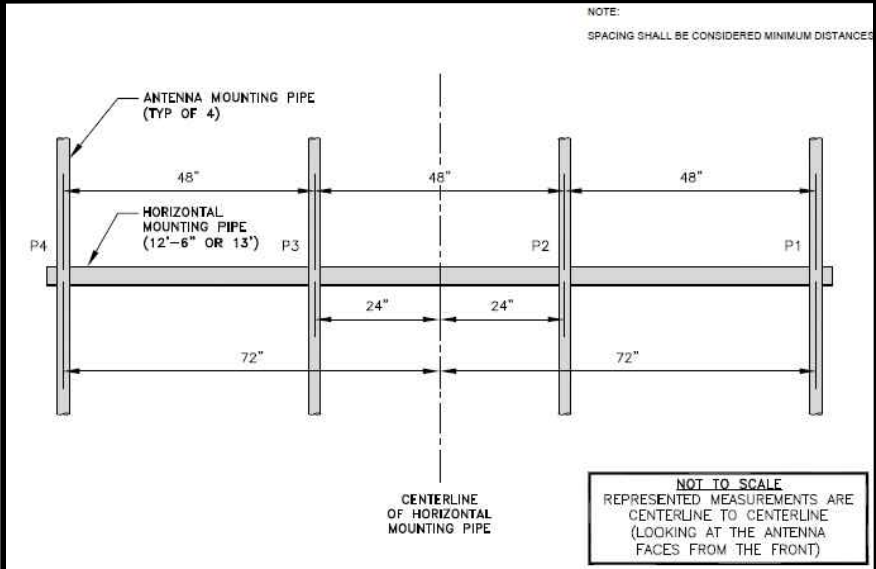
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NOKIA MARKETS MODERNIZATION

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
C-6



MAST PIPE DETAIL

NO SCALE

1

MAST PIPE CORNER SPACING DETAIL

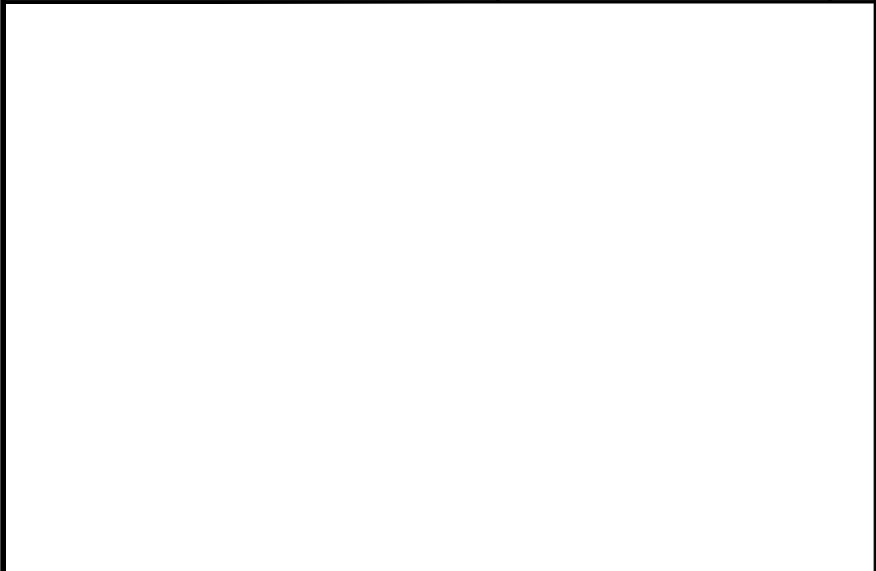
NO SCALE

2

NOT USED

NO SCALE

3



NOT USED

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6



NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9

188 INVERNESS DRIVE WEST
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1220 OLD ALPHARETTA ROAD
SUITE 380
ALPHARETTA, GA 30005

326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351

PROJECT: 56952

DRAWN BY: AKP

CHECKED BY: KOO

RFDS: N/A

REV	DATE	DESCRIPTION
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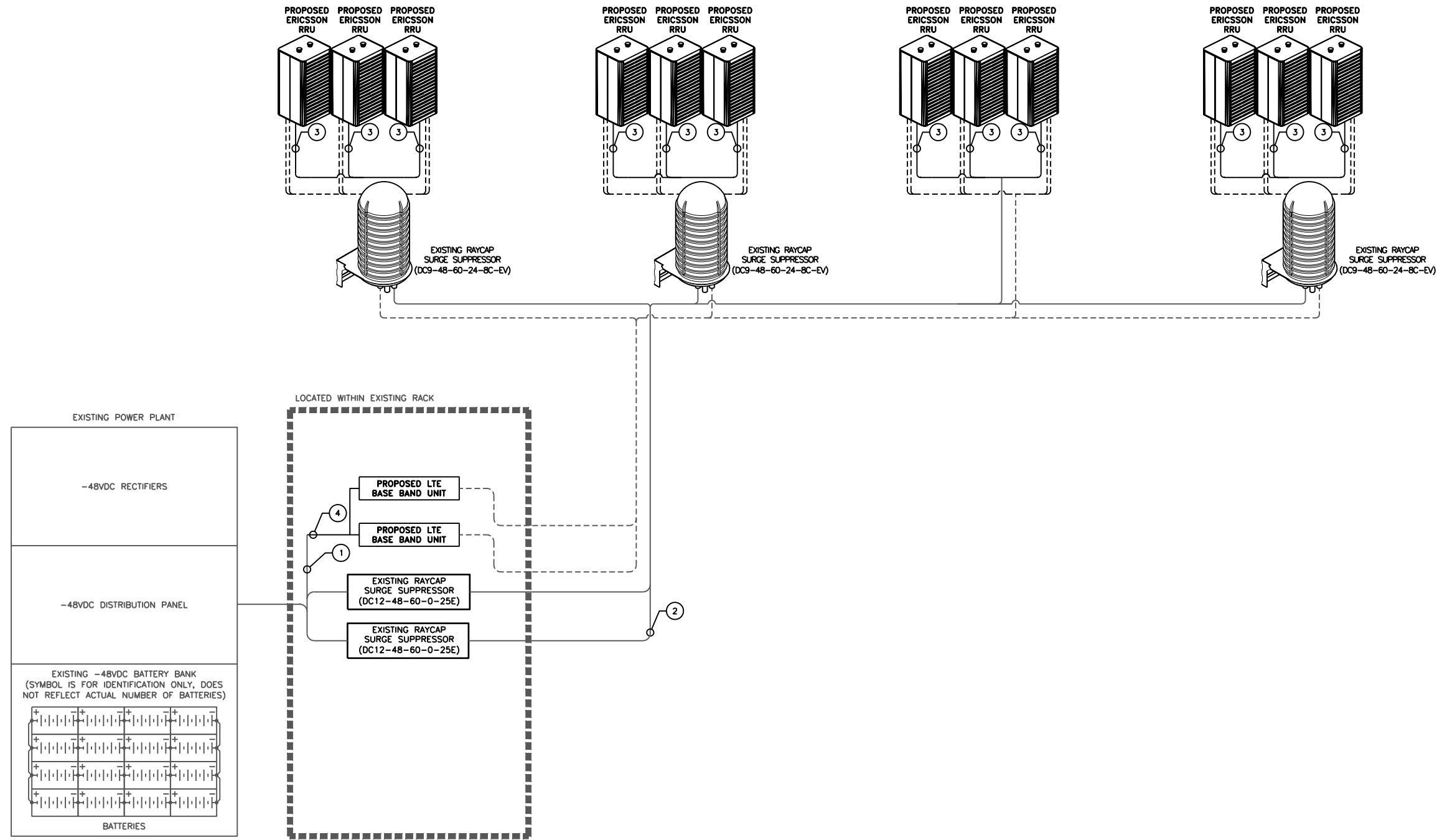
SHEET TITLE
MACRO BUILD STANDARDS

SHEET NUMBER
C-6.1

DC CIRCUIT SCHEDULE			
NO.	FROM	TO	CONFIGURATION
①	DISTRIBUTION PANEL	RACK MOUNTED SURGE SUPPRESSOR	(2) 1-#8 TELCOFLEX IV DC CABLE
②	RACK MOUNTED SURGE SUPPRESSOR	TOWER MOUNTED SURGE SUPPRESSOR	(3) 6-#6 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
③	TOWER MOUNTED SURGE SUPPRESSOR	PROPOSED REMOTE RADIO UNIT (RRU)	(12) 2-#8 THHN/THWN/VW-1 TYPE TC-ER DC CABLE
④	DISTRIBUTION PANEL	PROPOSED BASE BAND UNIT	(2) 1-#12 TELCOFLEX III DC CABLE

NOTES

- DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V. REFER TO ATT-002-290-701.
- NON-LTE DC POWER WIRING SIZE 14 AWG TO 10 AWG SHALL BE TELCOFLEX III. DC POWER WIRING 8 AWG AND LARGER SHALL BE TELCOFLEX IV.
- LTE POWER WIRING SHALL BE IN ACCORDANCE WITH ATT-002-290-531.
- DC ELECTRICAL DEMAND FOR THE PROPOSED ADDITIONS WERE INCLUDED IN AC LOAD CALCULATIONS.
- CONNECT ALL PROPOSED AIRSCALE RRU SECOND CPRI TO SURGE SUPPRESSOR FOR FUTURE USE.
- CONTRACTOR TO RECONNECT ALL EXISTING EQUIPMENT TO PROPOSED POWER PLANT.



ELECTRICAL DC ONE-LINE DIAGRAM

NO SCALE

188 INVERNESS DRIVE WEST
SUITE 400
ENGLEWOOD, CO 80112

1220 OLD ALPHARETTA ROAD
SUITE 380
ALPHARETTA, GA 30005

326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351

PROJECT:	56952
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JACKSON NORTH
IDLO4525
275 NORTH WILLOW STREET
JACKSON, WY 83001
NOKIA MARKETS MODERNIZATION

SHEET TITLE
ELECTRICAL DC ONE-LINE
DIAGRAM

SHEET NUMBER
E-1



NO SCALE

- ### LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND AT&T GROUNDING AND BONDING REQUIREMENTS (ATT-TP-76416) AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

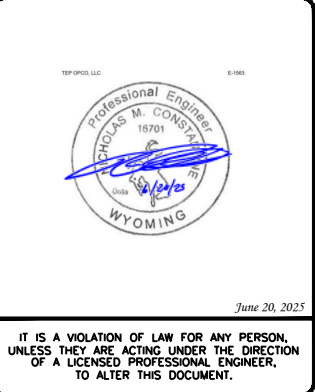
NOTES

- (A) **EXTERIOR GROUND RING:** #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING. (ATT-TP-76416 2.2.3.5 / 7.5.1)
- (B) **TOWER GROUND RING:** THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS, WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS. (ATT-TP-76416 / 7.5.1)
- (C) **INTERIOR GROUND RING:** #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDING TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR. (ATT-TP-76416 / 7.6.4)
- (D) **BOND TO INTERIOR GROUND RING:** #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING. (ATT-TP-76416 7.5.2.2)
- (E) **GROUND ROD:** UL LISTED COPPER CLAD STEEL, MINIMUM 5/8" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR. (ATT-TP-76416)
- (F) **CELL REFERENCE GROUND BAR:** POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS. (ATT-TP-76416 / 7.6.7)
- (G) **HATCH PLATE GROUND BAR:** BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- (H) **EXTERIOR CABLE ENTRY PORT GROUND BARS:** LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE. (ATT-TP-76416 / 7.6.7.2)
- (I) **TOWER EXIT GROUND BAR:** #2 AWG SOLID TINNED COPPER BOND TO THE TOWER GROUND RING. (ATT-TP-76416 / 7.4.2.6)
- (J) **TELCO GROUND BAR:** BOND TO BOTH CELL REFERENCE GROUND BAR AND EXTERIOR GROUND RING. (ATT-TP-76416 / 7.6.8)
- (K) **FRAMING BONDING:** THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND IS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK. BOND THE FRAME GROUND TO THE "T" SECTION OF THE CELL REFERENCE GROUND BAR OR SUPPLEMENTARY CONDUCTOR. (ATT-TP-76416 6.5.3 AND 7.8)
- (L) **INTERIOR UNIT BONDS:** METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING. (ATT-TP-76416 / 7.12.3.1)
- (M) **FENCE AND GATE GROUNDING:** METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS. (ATT-TP-76416 / 7.12.2.2)
- (N) **EXTERIOR UNIT BONDS:** METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. (ATT-TP-76416 7.12.2)
- (O) **ICE BRIDGE SUPPORTS:** EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING. (ATT-TP-76416 / 7.4.2.6)
- (P) **DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR (CRGB) PER TP76300 SECTION H 6 AND TP76416 FIGURE 7-11 REQUIREMENTS.**
- (Q) **OUTDOOR GROUNDING CONDUCTORS:** GROUNDING CONDUCTORS INSTALLED OUTDOORS AND RUN ENTIRELY ABOVE GRADE SHALL BE TINNED STRANDED COPPER AND BE SUNLIGHT RESISTANT.



PROJECT:	56952
DRAWN BY:	AKP
CHECKED BY:	KOO
RFDS:	N/A

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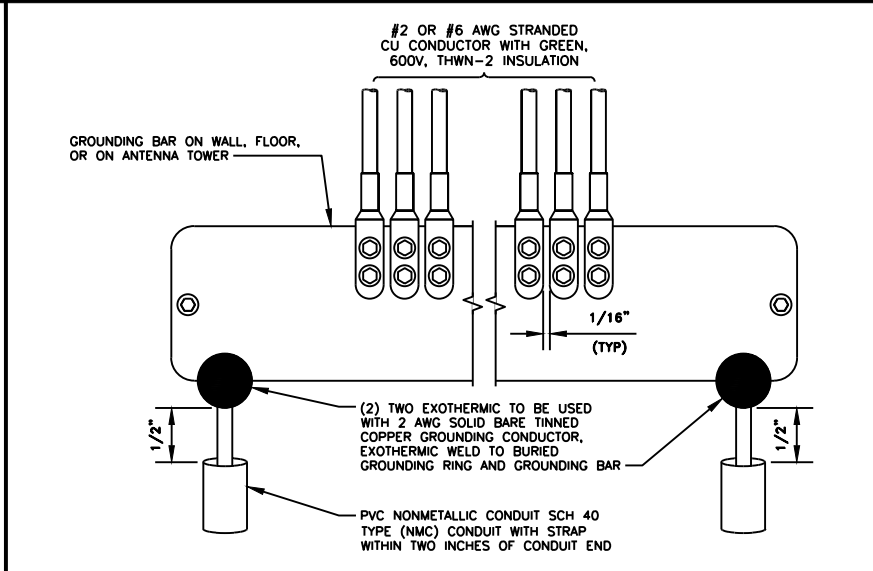
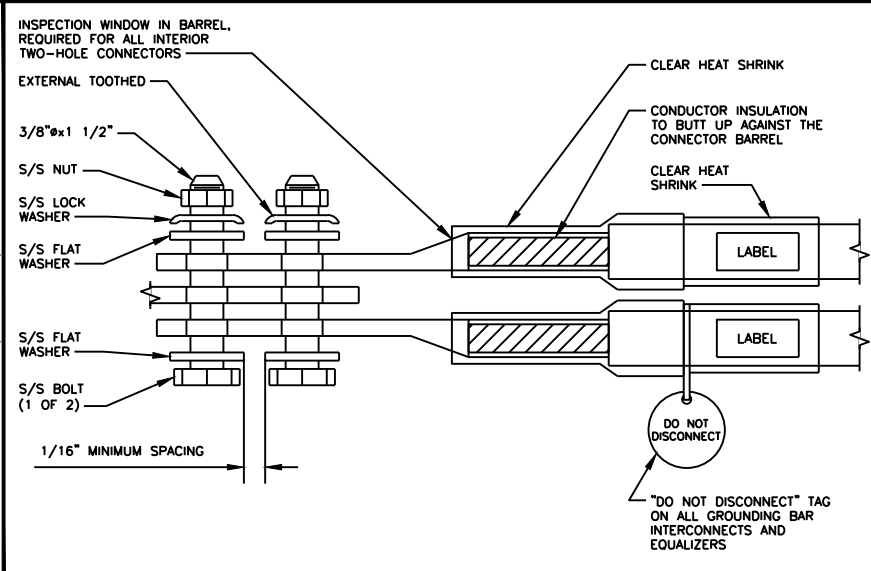
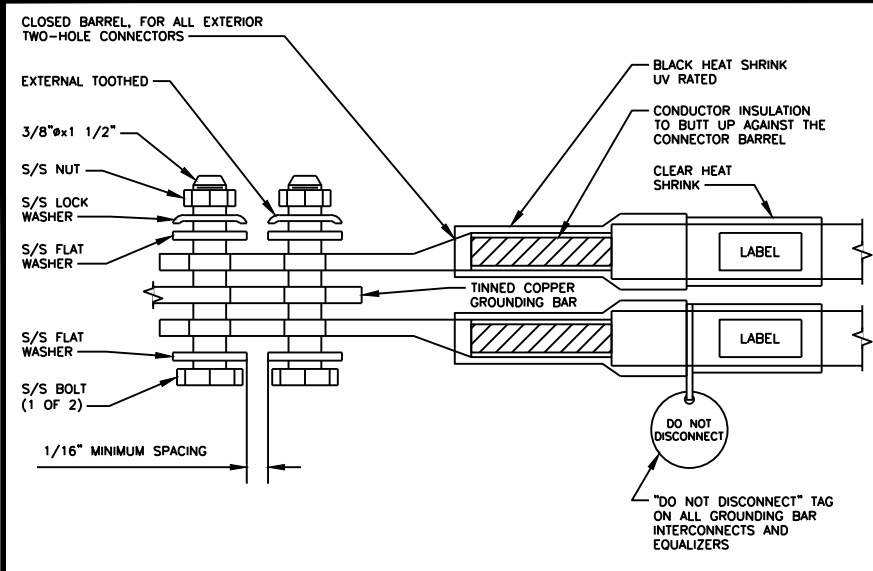


JACKSON NORTH
IDL04525
275 NORTH WILLOW STREET
JACKSON, WY 83001
NOKIA MARKETS MODERNIZATION

SHEET TITLE
GROUNDING ONE-LINE
DIAGRAM

SHEET NUMBER

G-1



INTERIOR TWO HOLE LUG	NO SCALE	1	EXTERIOR TWO HOLE LUG	NO SCALE	2	INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR	NO SCALE	3
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NEWTON INSTRUMENT COMPANY, INC. BUTNER, NC			
NO	REQUIRED	PART NUMBER	DESCRIPTION
①	1	1/4"x4"x30"	SOLID GROUND BAR
②	2	A-6056	WALL MOUNTING BRACKET
③	2	3061-4	INSULATORS
④	4	3012-1	5/8"-11X1" H.H.C.S.
⑤	4	3015-8	5/8" LOCKWASHER

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

SECTION "P" - SURGE PROTECTORS

- (EC) CABLE ENTRY PORTS (HATCH PLATES) (#2)
- (EC) TELCO GROUND BAR (#2)
- (EC) COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- (AT&T) CELL SITE +24V POWER SUPPLY RETURN BAR (#2)
- (AT&T) CELL SITE -48V POWER SUPPLY RETURN BAR (#2)
- (EC) GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- (AT&T) RECTIFIER FRAMES
- (AT&T) ANTENNA SUPPRESSION

SECTION "A" - SURGE ABSORBERS

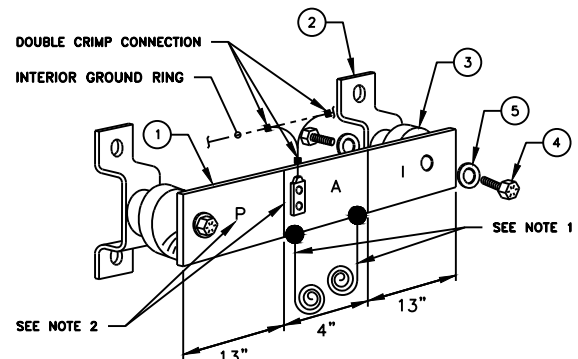
- (EC) INTERIOR GROUND RING (#2)
- (EC) EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- (EC) METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- (EC) BUILDING STEEL (IF AVAILABLE) (#2)

SECTION "I" - ISOLATED GROUNDING ZONE

- (AT&T) ALL CELL SITE COMMUNICATIONS EQUIPMENT FRAMES

DETAIL NOTES

- EXOTHERMICALLY WELD #2 AWG BARE TINNED SOLID COPPER CONDUCTOR TO GROUND BAR. ROUTE CONDUCTOR TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
- EC SHALL PERMANENTLY MARK THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "I") WITH 1" HIGH LETTERS.
- GROUND BAR SHALL BE ENGRAVED PER AT&T SPECIFICATIONS TO PREVENT THEFT.



- ALL MAIN CABLES WILL BE GROUNDED W/ COAXIAL CABLE GROUND KITS AT:
 - A. THE ANTENNA LEVEL.
 - B. MID LEVEL IF TOWER IS OVER 200'.
 - C. BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
 - D. OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
 - E. INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.
- ALL PROPOSED GROUND BAR DOWNLOADS ARE TO BE CADWELDED TO THE EXISTING ADJACENT GROUND BAR DOWNLOADS A MINIMUM DISTANCE OF FOUR FEET BELOW GROUND BAR.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ANTENNA AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.
- DO NOT ALLOW THE COPPER CONDUCTOR TO TOUCH THE GALVANIZED GUY WIRE AT THE CONNECTION POINT OR AT ANY OTHER POINT. NO EXOTHERMICALLY WELDED CONNECTION SHALL BE MADE TO THE GUY WIRE.
- SUBCONTRACTOR SHALL GROUND ALL EQUIPMENT INCLUDING ANTENNAS, RET MOTORS, TMA'S, COAX CABLES, AND RET CONTROL CABLES AS A COMPLETE SYSTEM. GROUNDING SHALL BE EXECUTED BY QUALIFIED PERSONEL IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
- DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUNDING CONDUCTOR DOWN TO GROUNDING BAR.
- GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
- WEATHERPROOFING SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
- ALL EXTERIOR HEAT SHRINK OR HEAT SHRINK EXPOSED TO U/V LIGHT SHALL BE BLACK. ALL INTERIOR HEAT SHRINK SHALL BE CLEAR.
- NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION, AND CONNECTION ORIENTATION. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUNDING BAR AS REQUIRED, PROVIDING 50% SPARE CONNECTION POINTS.
- PROVIDE GROUNDING KIT 6" BEFORE TURN TRANSITION FROM TOWER TO ICE BRIDGE.

(MGB) REFERENCE GROUNDING BAR	NO SCALE	4	NOTES	NO SCALE	5
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NOT USED	NO SCALE	6	NOT USED	NO SCALE	7	NOT USED	NO SCALE	8
----------	----------	---	----------	----------	---	----------	----------	---

188 INVERNESS DRIVE WEST
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326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351

PROJECT:	56952
DRAWN BY:	AKP
CHECKED BY:	KOO
RFDS:	N/A

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JACKSON NORTH
IDLO4525
275 NORTH WILLOW STREET
JACKSON, WY 83001
NOKIA MARKETS MODERNIZATION

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-2

EXOThERMIC CONNECTION	
MECHANICAL CONNECTION	
CHEMICAL ELECTROLYTIC GROUNDING SYSTEM	
TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM	
EXOThERMIC WITH INSPECTION SLEEVE	
GROUNDING BAR	
GROUND ROD	
TEST GROUND ROD WITH INSPECTION SLEEVE	
SINGLE POLE SWITCH	
DUPLEX RECEPTACLE	
DUPLEX GFCI RECEPTACLE	
FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48-T8	
SMOKE DETECTION (DC)	
EMERGENCY LIGHTING (DC)	
SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW LED-1-25A400/51K-SR4-120-PE-DOBXTXD	
CHAIN LINK FENCE	
WOOD/WROUGHT IRON FENCE	
WALL STRUCTURE	
LEASE AREA	
PROPERTY LINE (PL)	
SETBACKS	
ICE BRIDGE	
CABLE TRAY	
WATER LINE	
UNDERGROUND POWER	
UNDERGROUND TELCO	
OVERHEAD POWER	
OVERHEAD TELCO	
UNDERGROUND TELCO/POWER	
ABOVE GROUND POWER	
ABOVE GROUND TELCO	
ABOVE GROUND TELCO/POWER	
WORKPOINT	
SECTION REFERENCE	
DETAIL REFERENCE	

ANCHOR BOLT	IN	INCH
ABV	INT	INTERIOR
AC	LB(S)	POUND(S)
ADDL	LF	LINEAR FEET
AFF	LTE	LONG TERM EVOLUTION
AFG	MAS	MASONRY
AGL	MAX	MAXIMUM
AIC	MB	MACHINE BOLT
ALUM	MECH	MECHANICAL
ALT	MFR	MANUFACTURER
ANT	MGB	MASTER GROUND BAR
APPROX	MIN	MINIMUM
ARCH	MISC	MISCELLANEOUS
ATS	MTL	METAL
AWG	MTS	MANUAL TRANSFER SWITCH
BATT	MW	MICROWAVE
BLDG	NEC	NATIONAL ELECTRIC CODE
BLK	NM	NEWTON METERS
BLKG	NO.	NUMBER
BM	#	NUMBER
BTC	NTS	NOT TO SCALE
BOF	OC	ON-CENTER
CAB	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CANT	OPNG	OPENING
CHG	P/C	PRECAST CONCRETE
CLG	PCS	PERSONAL COMMUNICATION SERVICES
CLR	PCU	PRIMARY CONTROL UNIT
COL	PRC	PRIMARY RADIO CABINET
COMM	PP	POLARIZING PRESERVING
CONC	PSF	POUNDS PER SQUARE FOOT
CONSTR	PSI	POUNDS PER SQUARE INCH
DBL	PT	PRESSURE TREATED
DC	PWR	POWER CABINET
DEPT	QTY	QUANTITY
DF	RAD	RADIUS
DIA	RECT	RECTIFIER
DIAG	REF	REFERENCE
DIM	REINF	REINFORCEMENT
DWG	REQ'D	REQUIRED
DWL	RET	REMOTE ELECTRIC TILT
EA	RF	RADIO FREQUENCY
EC	RMC	RIGID METALLIC CONDUIT
EL.	RRH	REMOTE RADIO HEAD
ELEC	RRU	REMOTE RADIO UNIT
EMT	RWY	RACEWAY
ENG	SCH	SCHEDULE
EQ	SHT	SHEET
EXP	SIAD	SMART INTEGRATED ACCESS DEVICE
EXT	SIM	SIMILAR
EW	SPEC	SPECIFICATION
FAB	SQ	SQUARE
FF	SS	STAINLESS STEEL
FG	STD	STANDARD
FIF	STL	STEEL
FIN	TEMP	TEMPORARY
FLR	THK	THICKNESS
FDN	TMA	TOWER MOUNTED AMPLIFIER
FOC	TN	TOE NAIL
FOM	TOA	TOP OF ANTENNA
FOS	TOC	TOP OF CURB
FOW	TOF	TOP OF FOUNDATION
FS	TOP	TOP OF PLATE (PARAPET)
FT	TOS	TOP OF STEEL
FTG	TOW	TOP OF WALL
GA	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
GEN	TYP	TYPICAL
GFCI	UG	UNDERGROUND
GLB	UL	UNDERWRITERS LABORATORY
GLV	UNO	UNLESS NOTED OTHERWISE
GPS	UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
GND	UPS	UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
GSM	VIF	VERIFIED IN FIELD
HDG	W	WIDE
HDR	W/	WITH
HGR	WD	WOOD
HVAC	WP	WEATHERPROOF
HT	WT	WEIGHT
IGR		

[illegible]

GENERAL CONSTRUCTION NOTES

GENERAL CONSTRUCTION

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
GENERAL CONTRACTOR: OVERLAND CONTRACTING INC. (B&V)
CONTRACTOR: (CONSTRUCTION)
OWNER: AT&T
2. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND AT&T PROJECT SPECIFICATIONS.
3. GENERAL CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE NECESSARY PROVISIONS. PRIOR TO PROCEEDING, WITH CONSTRUCTION, GENERAL CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH ALL CONTRACT DOCUMENTS, SITE CONDITIONS, DIMENSIONS, AND CONFIRMING THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON PLAN. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
4. MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.
5. ALL WORK CARRIED OUT SHALL COMPLY WITH APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS IN ADDITION TO LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS SHOWN ON THE DRAWINGS.
7. PLANS SHALL NOT BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY, UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES, UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. IT IS CRITICAL TO FIELD VERIFY ALL DIMENSIONS. SHOULD THERE BE ANY QUESTIONS REGARDING THE PLAN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS. SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND APPROVED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THE PLAN, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE ENGINEER PRIOR TO PROCEEDING.
10. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS, AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.
11. GENERAL CONTRACTOR SHALL COORDINATE AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.
12. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT, EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
13. SEAL PENETRATIONS THROUGH FIRE RATED AREAS, SHALL BE MADE WITH UL LISTED MATERIALS, APPROVED BY THE LOCAL JURISDICTION. CONTRACTOR SHALL KEEP AREA CLEAN AND HAZARD FREE, AND DISPOSE OF ALL DEBRIS DAILY.
14. AS-BUILT CONDITIONS ARE REPRESENTED BY LIGHT SHADED LINES AND NOTES. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
15. CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER, 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
16. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING, AND STRUCTURES DURING CONSTRUCTION OPERATIONS. ANY DAMAGED AREAS/ SITE ELEMENTS SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
17. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR IS ALSO RESPONSIBLE FOR THE NOTIFICATION OF TIER-TWO FACILITY/UTILITY OWNERS.
18. GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.
19. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.
20. THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS, ON THE PREMISES, AT ALL TIMES.
21. THE CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2-A OT 2-A:10-B:C LOCATED WITHIN 25 FEET OF TRAVEL DISTANCE TO WORK ALL AREAS OR WHERE WORK IS BEING PERFORMED DURING CONSTRUCTION.
22. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. TRAINING SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.
23. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED, OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
24. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT, OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND PROPERLY STABILIZED TO PREVENT EROSION.
25. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE SITE DURING CONSTRUCTION. EROSION CONTROL AND SEDIMENT CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH FEDERAL AND/OR LOCAL JURISDICTIONS.
26. FILL OR EMBANKMENT MATERIAL SHALL NOT BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW, OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
27. THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR IN OPEN SPACE. ALL TRENCHES IN THE PUBLIC RIGHT-OF-WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL, PRE-APPROVED BY THE LOCAL JURISDICTION.
28. ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.
29. ALL BROCHURES, OPERATION MANUALS, MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.

30. CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS-BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.
31. THE PROPOSED FACILITY WILL BE UNMANNED, DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).
32. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION OF APPROXIMATELY TWO TIMES PER MONTH BY AT&T TECHNICIANS.
33. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.
34. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST REVISION AT&T MOBILITY GROUNDING STANDARD "TECHNICAL SPECIFICATION FOR CONSTRUCTION OF GSM WIRELESS SITES" AND "TECHNICAL SPECIFICATION FOR FACILITY GROUNDING". IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATIONS AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.
35. CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE GENERAL CONTRACTOR IMMEDIATELY.
36. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
37. CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.
38. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE OBSERVATIONS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
39. WHITE STROBE LIGHTS ARE NOT PERMITTED. IF LIGHTING IS REQUIRED, IT SHALL MEET FAA STANDARDS AND REQUIREMENTS.
40. ALL COAXIAL CABLE CONTRACTOR SHALL INSTALL PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

ANTENNA MOUNTING

41. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO CURRENT ANSI/TIA-222 OR APPLICABLE LOCAL CODES.
42. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS NOTED OTHERWISE.
43. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS NOTED OTHERWISE.
44. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
45. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK WASHERS AND/OR DOUBLE NUTS, AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.
46. CONTRACTOR SHALL INSTALL ANTENNA AND ASSOCIATED GROUNDING PER MANUFACTURER'S RECOMMENDATIONS.
47. ALL UNUSED PORTS ON ANY ANTENNA OR TMA, SHALL BE COVERED BY CONCEALOR CAP WITH PROPER WEATHER PROOFING OR BE TERMINATED WITH A 50 Ω LOAD.
48. PRIOR TO SETTING ANTENNA AZIMUTHS AND DOWNTILTS, ANTENNA CONTRACTOR SHALL CHECK THE ANTENNA MOUNT FOR TIGHTNESS AND ENSURE THAT THEY ARE PLUMB. ANTENNA AZIMUTHS SHALL BE SET FROM TRUE NORTH AND BE ORIENTED WITHIN +/- 3 DEGREES AS DEFINED BY THE RFDS. ANTENNA DOWNTILTS SHALL BE WITHIN +/- 0.5 DEGREES AS DEFINED BY THE RFDS. REFER TO ATT-002-290-210.
49. JUMPERS FROM THE TOWER MOUNTED AMPLIFIERS MUST TERMINATE TO OPPOSITE POLARIZATIONS IN EACH SECTOR.
50. CONTRACTOR SHALL RECORD THE SERIAL NUMBER, SECTOR, AND POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND PROVIDE THE INFORMATION TO AT&T.
51. TOWER MOUNTED AMPLIFIERS SHALL BE MOUNTED ON PIPE DIRECTLY BEHIND ANTENNAS AS CLOSE TO ANTENNA AS FEASIBLE IN A VERTICAL POSITION.
52. ANTENNAS SHALL HAVE A 4'-0" MINIMUM CENTER-TO-CENTER HORIZONTAL SEPARATION.

TORQUE REQUIREMENTS

53. ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
54. A TORQUE MARK FORMING A CONTINUOUS STRAIGHT LINE IS TO BE MADE IN THE FOLLOWING APPLICATIONS:

A. RF CONNECTIONS – MARK BOTH SIDES OF THE CONNECTOR

B. GROUNDING AND ANTENNA HARDWARE – MARK ON THE NUT SIDE OF THE BOLT, STARTING FROM THE THREADS TO THE SOLID SURFACE. SOLID SURFACE EXAMPLES INCLUDE A GROUND BAR OR ANTENNA BRACKET METAL.
55. ALL 8M ANTENNA HARDWARE SHALL BE TIGHTENED TO 9 LB-FT (12 NM).
56. ALL 12M ANTENNA HARDWARE SHALL BE TIGHTENED TO 43 LB-FT (58 NM).
57. ALL GROUNDING HARDWARE SHALL BE TIGHTENED UNTIL THE LOCK WASHER COLLAPSES AND THE GROUNDING HARDWARE IS NO LONGER LOOSE.
58. ALL DIN TYPE CONNECTIONS SHALL BE TIGHTENED TO 18-22 LB-FT (24.4 – 29.8 NM).
59. ALL N TYPE CONNECTIONS SHALL BE TIGHTENED TO 15-20 LB-IN (1.7 – 2.3 NM).

FIBER & POWER CABLE MOUNTING

60. THE FIBER OPTIC TRUNK CABLES SHALL BE INSTALLED IN CONDUITS OR INNERDUCT. WHEN UTILIZING A CABLE TRAY SYSTEM, PLACE FIBER OPTIC TRUNK CABLE INTO AN INTER-DUCT. A PARTITION BARRIER SHALL BE INSTALLED BETWEEN THE 600 VOLT CABLES AND THE INTER-DUCT IN ORDER TO SEGREGATE CABLE TYPES. OPTIC FIBER TRUNK CABLES SHALL HAVE APPROVED CABLE RESTRAINTS EVERY (6) SIX FEET AND SHALL BE SECURELY FASTENED TO THE CABLE TRAY SYSTEM. NFPA 70 (NEC) ARTICLE 770 RULES SHALL APPLY.
61. TYPE TC-ER CABLES SHALL BE INSTALLED INTO CONDUITS OR CABLE TRAYS, AND SHALL BE SECURED AT INTERVALS NOT EXCEEDING (6) FEET. WHERE TYPE TC-ER CABLES ARE NOT SUBJECT TO PHYSICAL DAMAGE, CABLES SHALL BE PERMITTED TO MAKE A TRANSITION BETWEEN CONDUITS OR CABLE TRAYS THAT ARE SERVICING UTILIZATION EQUIPMENT OR DEVICES. A TRANSITION DISTACE EXCEEDING (6) FEET REQUIRES CONTINUOUS SUPPORTING. NFPA 70 (NEC) ARTICLES 336 AND 392 RULES SHALL APPLY.
62. WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC-ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.

COAXIAL CABLE NOTES

63. TYPES AND SIZES OF THE ANTENNA CABLES ARE BASED ON ESTIMATED LENGTHS. PRIOR TO ORDERING CABLE, CONTRACTOR SHALL VERIFY ACTUAL LENGTH BASED ON CONSTRUCTION LAYOUT AND NOTIFY THE PROJECT MANAGER IF ACTUAL LENGTHS EXCEED ESTIMATED LENGTHS.
64. CONTRACTOR SHALL VERIFY THAT THE DOWNTILT OF EACH ANTENNA IS WITHIN +/- 0.5 DEGREES OF SPECIFICATION WITH AN OCI APPROVED DIGITAL LEVEL.
65. CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION. REFER TO LASTEST REVISION OF THE "ANTENNA SYSTEM LABELING STANDARD."
66. ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE IN AN APPROVED MANNER, NOT TO EXCEED MANUFACTURER'S RECOMMENDATIONS.
67. COAXIAL CABLE SHALL BE SECURED TO THE DESIGNATED SUPPORT STRUCTURE(S) PER MANUFACTURER'S SPECIFICATIONS.

GENERAL CABLE AND EQUIPMENT NOTES

68. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMAS, DIPLEXERS, COAX CONFIGURATION, MAKES, AND MODELS PRIOR TO INSTALLATION.
69. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S RECOMMENDATIONS.
70. CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.
71. AFTER INSTALLATION AND FINAL CONNECTIONS ARE MADE, ALL OUTDOOR RF CONNECTORS/CONNECTIONS SHALL BE WEATHERPROOFED, EXCEPT THE RET CONNECTORS, USING BUTYL TAPE. BUTYL TAPE SHALL HAVE A MINIMUM OF ONE-HALF TAPE WIDTH OVERLAP ON EACH TURN AND EACH LAYER SHALL BE WRAPPED THREE TIMES. WEATHERPROOFING SHALL BE SMOOTH WITHOUT BUCKLING. BUTYL BLEEDING IS NOT ALLOWED. SELF BONDING TAPE AND PLASTIC ENCLOSURES ARE PERMITTED PER ATT-002-290-041, SECTION 7.
72. IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:

A. TEMPERATURE SHALL BE ABOVE 50 DEGREES FAHRENHEIT.

B. PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.

C. FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.

D. DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS.

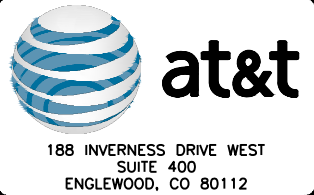
73. ALL CABLES SHALL BE GROUNDED WITH COAXIAL CABLE GROUND KITS. AT THE FOLLOWING LOCATIONS PER MANUFACTURER'S RECOMMENDATIONS:

A. THE ANTENNA LEVEL.

B. THE MID LEVEL, TOWERS WHICH ARE OVER 200'-0", ADDITIONAL CABLE GROUNDING REQUIRED.

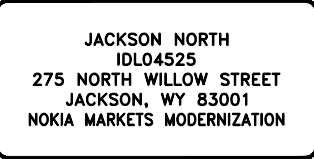
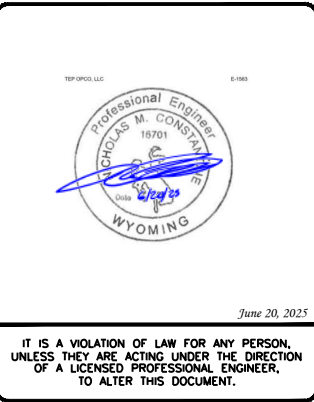
C. BASE OF TOWER PRIOR TO TURNING HORIZONTAL.

D. OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
74. ANTENNA CONTRACTOR SHALL FURNISH AND INSTALL A 12'-0" T-BOOM SECTOR ANTENNA MOUNT INCLUDING ALL HARDWARE, IF APPLICABLE.



PROJECT:	56952
DRAWN BY:	AKP
CHECKED BY:	KOO
RFDS:	N/A

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REV	DATE	DESCRIPTION



GENERAL SITE WORK AND DRAINAGE NOTES

PART 1 – GENERAL

CONTRACTOR SHALL PROVIDE CLEARING, GRUBBING, STRIPPING, EROSION CONTROL, SURVEY, LAYOUT, SUBGRADE PREPARATION, AND FINISH GRADING AS REQUIRED TO COMPLETE THE PROPOSED WORK SHOWN IN THESE PLANS.

1.1 REFERENCES:

- A. DOT (STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, CURRENT EDITION)
- B. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
- C. OSHA (OCCUPATION SAFETY AND HEALTH ADMINISTRATION)

1.2 INSPECTION AND TESTING:

- A. FIELD TESTING OF EARTHWORK COMPACTION AND CONCRETE CYLINDERS SHALL BE PERFORMED BY AN INDEPENDENT TESTING LAB. THIS WORK SHALL BE COORDINATED BY THE SUBCONTRACTOR.
- B. ALL WORK SHALL BE INSPECTED AND RELEASED BY THE GENERAL CONTRACTOR. THE INSPECTIONS SHALL BE CARRIED OUT WITH SPECIFIC CONCERN FOR PROPER PERFORMANCE OF THE WORK AS SPECIFIED AND/OR CALLED FOR ON THE PLAN. IT IS THE SUBCONTRACTOR'S RESPONSIBILITY TO REQUEST THE REQUIRED INSPECTIONS PRIOR TO PROCEEDING WITH FURTHER WORK THAT WOULD MAKE PARTS OF WORK INACCESSIBLE OR DIFFICULT TO INSPECT.

1.3 SITE MAINTENANCE AND PROTECTION:

- A. PROVIDE ALL NECESSARY JOB SITE MAINTENANCE FROM COMMENCEMENT OF WORK UNTIL COMPLETION OF THE SUBCONTRACT.
- B. AVOID DAMAGE TO THE SITE AND TO EXISTING FACILITIES, STRUCTURES, TREES, AND SHRUBS DESIGNATED TO REMAIN. TAKE PROTECTIVE MEASURES TO PREVENT DAMAGED TO EXISTING FACILITIES THAT ARE NOT DESIGNATED FOR MODIFICATION OR REMOVAL.
- C. KEEP SITE FREE OF PONDING WATER.
- D. PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH STATE DOT AND EPA REQUIREMENTS.
- E. PROVIDE AND MAINTAIN ALL TEMPORARY FENCING, BARRICADES, WARNING SIGNS, AND SIMILAR DEVICES NECESSARY TO PROTECT AGAINST THEFT FROM PROPERTY DURING THE ENTIRE DURATION OF CONSTRUCTION. REMOVE ALL SUCH DEVICES UPON COMPLETION OF THE WORK.
- F. DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY THE OWNER OR OTHERS, EXCEPT WHEN PERMITTED IN WRITING BY THE ENGINEER AND THEN ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICES HAVE BEEN PROVIDED.

- 1. NOTICE TO ENGINEER SHALL BE PROVIDED A MINIMUM OF 48 HOURS PRIOR TO OUTAGE.

PART 2 – PRODUCTS

- 2.1 SUITABLE BACKFILL: ASTM D2321 (CLASS I, II, III OR IVA) FREE FROM FROZEN LUMPS, REFUSE, STONES OR ROCKS LARGER THAN THREE (3) INCHES IN ANY DIMENSION.
- 2.2 NON-POROUS GRANULAR EMBANKMENT AND BACKFILL: ASTM D2321 (CLASS III, IVA OR IVB) COARSE AGGREGATE. FREE FROM FROZEN LUMPS, REFUSE, STONES OR ROCKS LARGER THAN THREE (3) INCHES IN ANY DIMENSION.
- 2.3 POROUS GRANULAR EMBANKMENT AND BACKFILL: ASTM D2321 (CLASS IA, IB OR II) COARSE AGGREGATE FREE FROM FROZEN LUMPS, REFUSE, STONES, OR ROCKS LARGER THAN THREE (3) INCHES IN DIAMETER, OR OTHER MATERIAL THAT MAY MAKE THE INORGANIC MATERIAL UNSUITABLE FOR BACKFILL.
- 2.4 SELECT STRUCTURAL FILL: GRANULAR FILL MATERIAL MEETING THE REQUIREMENTS OF ASTM E850-95. FOR USE AROUND AND UNDER STRUCTURES WHERE STRUCTURAL FILL MATERIAL IS REQUIRED.
- 2.5 GRANULAR BEDDING AND TRENCH BACKFILL: WELL-GRADED SAND MEETING THE GRADATION REQUIREMENTS OF ASTM D2487 (CLASSIFIED AS SE OR SW-SM SOILS).
- 2.6 COARSE AGGREGATE FOR ACCESS ROAD SUBBASE COURSE SHALL CONFORM TO ASTM D2940.
- 2.7 UNSUITABLE MATERIAL: HIGH AND MODERATELY PLASTIC SILTS AND CLAYS (LL>45). MATERIAL CONTAINING REFUSE, FROZEN LUMPS, DEMOLISHED BITUMINOUS MATERIAL, VEGETATIVE MATTER, WOOD, STONES IN EXCESS OF 3 INCHES IN DIAMETER, AND DEBRIS. THESE WILL BE SOILS CLASSIFIED BY ASTM AS PT, MH, CH, OH, ML, AND OL.
- 2.8 GEOTEXTILE FABRIC: MIRAFI 500X OR APPROVED EQUIVALENT.
- 2.9 PLASTIC MARKING TAPE SHALL BE ACID AND ALKALI RESISTANT POLYETHYLENE FILM SPECIFICALLY MANUFACTURED FOR MARKING AND LOCATING UNDERGROUND UTILITIES, SIX (6) INCHES WIDE WITH A MINIMUM THICKNESS OF 0.004" TAPE SHALL HAVE MINIMUM STRENGTH OF 1,500 PSI IN BOTH DIRECTIONS AND MANUFACTURED WITH INTEGRAL CONDUCTORS, FOIL BACKING OR OTHER MEANS TO ENABLE DETECTION BY A METAL DETECTOR WHEN BURIED UP TO 3 FEET DEEP. THE METALLIC CORE OF THE TAPE SHALL BE ENCASED IN A PROTECTIVE JACKET OR PROVIDED WITH OTHER MEANS TO PROTECT IT FROM CORROSION. TAPE COLOR SHALL BE RED FOR ELECTRIC UTILITIES AND ORANGE FOR TELECOMMUNICATION UTILITIES.

PART 3 – EXECUTION

3.1 GENERAL:

- A. BEFORE STARTING GENERAL SITE PREPARATION ACTIVITIES. INSTALL EROSION AND SEDIMENT CONTROL MEASURES. THE WORK AREA SHALL BE CONSTRUCTED AND MAINTAINED IN SUCH CONDITION THAT IN THE EVENT OF A RAIN EVENT, THE SITE CAN PROPERLY DRAIN AT ANY TIME.
- B. PRIOR TO SURVEY, LAYOUT, STAKING, AND MARKING, ESTABLISH AND MAINTAIN ALL LINES, GRADES, ELEVATIONS, AND BENCHMARKS NEEDED FOR EXECUTION OF THE WORK.
- C. CLEAR AND GRUB THE AREA WITHIN THE LIMITS OF THE SITE. REMOVE TREES, BRUSH, STUMPS, RUBBISH, OTHER DEBRIS, AND VEGETATION RESTING ON OR PROTRUDING THROUGH THE GROUND SURFACE.
 - 1. REMOVE THE FOLLOWING MATERIALS TO A DEPTH OF NO LESS THAN 12 INCHES BELOW THE ORIGINAL GROUND SURFACE: ROOTS, STUMPS, BRUSH, REFUSE, AND OTHER DEBRIS EMBEDDED IN OR PROTRUDING THROUGH THE GROUND SURFACE. RAKE, DISK, OR PLOW THE AREA TO A DEPTH OF NO LESS THAN 6 INCHES, AND REMOVE MATERIAL TO A DEPTH OF 12 INCHES BELOW THE BOTTOM DEPTH OF ROOTS AND OTHER DEBRIS.
 - 2. REMOVE TOPSOIL MATERIAL COMPLETELY FROM THE SURFACE UNTIL THE SOIL NO LONGER MEETS THE DEFINITION OF TOPSOIL. AVOID MIXING TOPSOIL WITH SUBSOIL OR OTHER UNDESIRABLE MATERIALS.
 - 3. EXCEPT WHERE EXCAVATION TO GREATER DEPTH IS INDICATED, FILL DEPRESSIONS RESULTING FROM CLEARING, GRUBBING, AND DEMOLITION WORK COMPLETELY WITH SUITABLE FILL.
- D. ALL DEBRIS RESULTING FROM CLEARING AND GRUBBING OPERATIONS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN AN AUTHORIZED LANDFILL. BURNING OF DEBRIS WILL NOT BE PERMITTED.
- E. PRIOR TO EXCAVATING, THOROUGHLY EXAMINE THE AREA TO BE EXCAVATED AND/OR TRENCHED TO VERIFY THE LOCATIONS OF FEATURES INDICATED ON THE DRAWINGS AND TO ASCERTAIN THE EXISTENCE AND LOCATION OF ANY STRUCTURE, UNDERGROUND STRUCTURE, OR OTHER ITEM NOT SHOWN THAT MIGHT INTERFERE WITH THE PROPOSED CONSTRUCTION. NOTIFY THE CONSTRUCTION MANAGER OF ANY OBSTRUCTIONS THAT WILL PREVENT ACCOMPLISHMENT OF THE WORK AS INDICATED ON THE PLANS.
- F. SEPARATE AND STOCKPILE ALL EXCAVATED MATERIALS SUITABLE FOR BACKFILL. ALL EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF OFF-SITE IN A LEGAL MANNER.

3.2 BACKFILL:

- A. AFTER COMPLETING CONSTRUCTION OF A STRUCTURE, INCLUDING EXPIRATION OF THE SPECIFIED MINIMUM CURING PERIOD FOR CAST-IN-PLACE CONCRETE, BACKFILL THE EXCAVATION WITH APPROVED MATERIAL TO RESTORE THE REQUIRED FINISHED GRADE.
 - 1. PRIOR TO PLACING BACKFILL AROUND STRUCTURES, ALL FORMS SHALL BE REMOVED AND THE EXCAVATION CLEANED OF ALL TRASH, DEBRIS, AND UNSUITABLE MATERIALS.
 - 2. BACKFILL BY PLACING AND COMPACTING SUITABLE BACKFILL MATERIAL IN UNIFORM HORIZONTAL LAYERS OF NO GREATER THAN 8-INCHES LOOSE THICKNESS. WHERE HAND OPERATED COMPACTORS ARE USED, THE FILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 4 INCHES IN LOOSE DEPTH.
 - 3. IF THE DENSITY TESTING INDICATES THAT THE CONTRACTOR HAS NOT OBTAINED THE SPECIFIED DENSITY, THE SUCCEEDING LAYER SHALL NOT BE PLACED UNTIL THE SPECIFICATION REQUIREMENTS ARE MET UNLESS OTHERWISE AUTHORIZED BY THE GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL TAKE WHATEVER APPROPRIATE ACTION IS NECESSARY, SUCH AS DISKING AND DRYING, ADDING WATER, OR INCREASING THE COMPACTIVE EFFORT TO MEET THE MINIMUM COMPACTION REQUIREMENTS.
- B. THOROUGHLY COMPACT EACH LAYER OF BACKFILL TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D698.

3.3 TRENCH EXCAVATION:

- A. UTILITY TRENCHES SHALL BE EXCAVATED AT LOCATIONS, DEPTHS, AND WIDTHS SHOWN ON PLAN, OR AS DIRECTED BY THE GENERAL CONTRACTOR. EXCAVATION CONTRACTOR SHALL PROVIDE SHORING, SHEETING, AND BRACING AS REQUIRED TO PREVENT CAVING OR SLOUGHING OF THE TRENCH WALLS.
- B. THE TRENCH WIDTH SHALL EXTEND A MINIMUM OF 6 INCHES BEYOND THE OUTSIDE EDGE OF THE OUTERMOST CONDUIT.

3.4 TRENCH BACKFILL:

- A. NOTIFY THE GENERAL CONTRACTOR 24 HOURS IN ADVANCE OF BACKFILLING.
- B. PROVIDE GRANULAR BEDDING MATERIAL IN ACCORDANCE WITH THE PLAN AND THE UTILITY REQUIREMENTS.
- C. CONDUCT UTILITY CHECK TESTS BEFORE BACKFILLING. BACKFILL AND COMPACT TRENCH BEFORE ACCEPTANCE TESTING.
- D. PLACE GRANULAR TRENCH BACKFILL UNIFORMLY ON BOTH SIDES OF THE CONDUITS IN 6-INCH UNCOMPACTED LIFTS AND TO 12 INCHES OVER THE CONDUITS. SOLIDLY RAM AND TAMP BACKFILL INTO SPACE AROUND CONDUITS.
- E. PROTECT CONDUIT FROM LATERAL MOVEMENT, IMPACT DAMAGE, OR UNBALANCED LOADING.
- F. ABOVE THE CONDUIT EMBEDMENT ZONE, PLACE AND COMPACT THE BACKFILL MATERIAL IN MAXIMUM 8-INCH THICK LOOSE LIFTS TO RESTORE THE REQUIRED FINISHED SURFACE GRADE.
- G. COMPACT THE TRENCH BACKFILL A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE STANDARD PROCTOR TEST, ASTM D698.

3.5 AGGREGATE ACCESS ROAD:

- A. CLEAR, GRUB, STRIP, AND EXCAVATE FOR THE ACCESS ROAD AS SHOWN ON PLAN. SCARIFY TO A DEPTH OF 6 INCHES AND PROOF-ROLL. ALL HOLES, RUTS, SOFT PLACES, AND OTHER DEFECTS SHALL BE CORRECTED.
- B. THE SUBGRADE OF THE DISTURBED AREA SHALL BE COMPACTED TO NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PROVIDED BY THE MODIFIED PROCTOR TEST, ASTM D1557.
- C. AFTER PREPARATION OF THE ROAD SUBGRADE IS COMPLETE, INSTALL THE GEOTEXTILE FABRIC (MIRAFI 500X) AT LOCATIONS INDICATED ON THE PLAN BY ROLLING THE FABRIC OUT LONGITUDINALLY ALONG THE ROADWAY. THE FABRIC SHALL NOT BE DRAGGED ACROSS THE SUBGRADE. PLACE THE ENTIRE ROLL IN A SINGLE OPERATION AND ROLL IT OUT AS SMOOTHLY AS POSSIBLE.
 - 1. GEOTEXTILE FABRIC OVERLAPS THAT ARE PARALLEL TO THE ROADWAY WILL BE PERMITTED ALONG THE CENTERLINE OF THE ROAD AND AT LOCATIONS BEYOND THE ROADWAY SURFACE WIDTH (I.E. WITHIN THE SHOULDER WIDTH) ONLY. NO LONGITUDINAL OVERLAPS SHALL BE LOCATED BETWEEN THE CENTERLINE AND THE SHOULDER. PARALLEL OVERLAPS SHALL BE A MINIMUM OF 3 FEET WIDE.
 - 2. TRANSVERSE (PERPENDICULAR TO THE ROADWAY) GEOTEXTILE FABRIC OVERLAPS AT THE END OF A ROLL SHALL OVERLAP IN THE DIRECTION OF THE AGGREGATE PLACEMENT WITH THE PREVIOUS ROLL ON TOP OF THE NEW ROLL, AND SHALL HAVE A MINIMUM LENGTH OF 3 FEET.
 - 3. ALL GEOTEXTILE FABRIC OVERLAPS SHALL BE PINNED WITH STAPLES OR NAILS A MINIMUM OF 10 INCHES LONG TO INSURE PROPER POSITIONING DURING PLACEMENT OF AGGREGATE. PIN LONGITUDINAL SEAMS AT A MINIMUM OF 25-FOOT INTERVALS AND TRANSVERSE SEAMS AT A MINIMUM OF 5-FOOT INTERVALS.
- D. THE AGGREGATE BASE AND SURFACE AGGREGATE SHALL BE CONSTRUCTED IN LAYERS NOT MORE THAN 4 INCHES (COMPACTED) IN THICKNESS. AGGREGATE TO BE PLACED ON GEOTEXTILE FABRIC SHALL BE END-DUMPED ON THE FABRIC FROM THE FREE END OF THE FABRIC OR OVER PREVIOUSLY PLACED AGGREGATE. THE FIRST LIFT SHALL BE BLADED DOWN TO A THICKNESS OF 8 INCHES PRIOR TO COMPACTION. AT NO TIME SHALL EQUIPMENT, EITHER TRANSPORTING THE AGGREGATE OR GRADING THE AGGREGATE, BE PERMITTED ON THE ROADWAY WITH LESS THAN 4 INCHES OF MATERIAL COVERING THE GEOTEXTILE FABRIC.
- E. THE AGGREGATE SHALL BE IMMEDIATELY COMPACTED TO NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST, ASTM D1557. A TAMPING ROLLER, PNEUMATIC-TIRED ROLLER, OR VIBRATORY MACHINE, OR ANY COMBINATION THEREOF MAY BE USED FOR COMPACTION PROCEDURES. THE TOP LAYER SHALL BE GIVEN A FINAL ROLLING WITH A THREE-WHEEL OR TANDEM ROLLER.

3.6 FINISH GRADING:

- A. PERFORM ALL GRADING TO PROVIDE POSITIVE DRAINAGE AWAY FROM STRUCTURES AND SMOOTH SURFACE DRAINAGE OF THE ENTIRE AREA WITHIN THE LIMITS OF CONSTRUCTION. GRADING SHALL PROPERLY BLEND WITH SURROUNDING TOPOGRAPHY AND STRUCTURES.
- B. IF DEEMED SUITABLE PER GEOTECHNICAL ENGINEER, UTILIZE FILL MATERIAL RESULTING FROM EXCAVATION FOR THE CONSTRUCTION OF FILLS, EMBANKMENTS, AND FOR REPLACEMENT OF REMOVED UNSUITABLE MATERIALS.
- C. ACHIEVE FINISHED GRADE BY PLACING A MINIMUM OF 4 INCHES OF 1/2" – 3/4" CRUSHED STONE ON IF APPLICABLE, TOP OF SOIL STABILIZER FABRIC.
- D. REPAIR ALL ACCESS ROADS AND SURROUNDING AREAS DISTURBED DURING THE COURSE OF THIS WORK TO THEIR ORIGINAL CONDITION.

- 3.7 ASPHALT PAVING: SHALL BE PERFORMED PER COLORADO DEPARTMENT OF TRANSPORTATION (CDOT), DIVISION 400 – CDOT PAVEMENT STANDARDS AND SPECIFICATIONS.



188 INVERNESS DRIVE WEST
SUITE 400
ENGLEWOOD, CO 80112



1220 OLD ALPHARETTA ROAD
SUITE 380
ALPHARETTA, GA 30005



326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351

PROJECT:	56952
DRAWN BY:	AKP
CHECKED BY:	KOO
RFDS:	N/A

0	06/20/2025	ISSUED FOR CONSTRUCTION
REV	DATE	DESCRIPTION



June 20, 2025

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

JACKSON NORTH
IDLO4525
275 NORTH WILLOW STREET
JACKSON, WY 83001
NOKIA MARKETS MODERNIZATION

SHEET TITLE
GENERAL SITE WORK &
DRAINAGE NOTES

SHEET NUMBER
GN-3

GENERAL CONCRETE WORK NOTES

PART 1 – GENERAL

- 1.1 SCOPE:
- A. FORM WORK, REINFORCING STEEL, ACCESSORIES, CAST-IN PLACE CONCRETE, FINISHING, CURING, AND TESTING FOR STRUCTURAL CONCRETE FOUNDATIONS.
- 1.2 REFERENCES:
- A. ACI (AMERICAN CONCRETE INSTITUTE)
1. ACI 301 SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS.
2. ACI 304 RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE.
3. ACI 305 RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING.
4. ACI 306 RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING.
5. ACI 308 STANDARD PRACTICE FOR CURING CONCRETING.
6. ACI 309 STANDARD PRACTICE FOR CONSOLIDATION OF CONCRETE.
7. ACI 318 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
8. ACI 347 RECOMMENDED PRACTICE FOR CONCRETE FORMWORK.
- B. THE APPLICABLE STANDARDS OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) ARE REFERENCED IN THE ACI STANDARDS AND ARE A PART OF THIS SPECIFICATION.

PART 2 – PRODUCTS

- 2.1 REINFORCING MATERIALS:
- B. REINFORCING BARS: ASTM A615, GRADE 60, PROPOSED DEFORMED BILLET-STEEL BARS, PLAIN FINISH.
- C. CONTRACTOR SHALL FURNISH CHAIRS, BOLSTERS, BAR SUPPORTS, SPACERS AS REQUIRED FOR SUPPORT OF REINFORCING STEEL AND WIRE FABRIC.
- 2.2 CONCRETE MATERIALS:
- A. PORTLAND CEMENT SHALL BE TYPE II, CONFORMING TO ASTM C-150.
- B. AGGREGATE SHALL CONFORM TO ASTM C-33.
1. FINE AGGREGATE SHALL BE UNIFORMLY GRADED, CLEAN, SHARP, AND WASHED NATURAL OR CRUSHED SAND, FREE FROM ORGANIC IMPURITIES.
2. COARSE AGGREGATE SHALL BE NATURAL WASHED GRAVEL OR CRUSHED ROCK CONSISTING HARD, STRONG, DURABLE PIECES, FREE FROM ADHERENT COATINGS.
3. MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE 3/4 INCH IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C-33 GRADATION SIZE NO. 67.
- C. WATER USED IN CONCRETE MIX SHALL BE POTABLE, CLEAN, AND FREE FROM OILS, ACIDS, SALTS, CHLORIDES, ALKALI, SUGAR, VEGETABLE, OR OTHER DELETARIOUS SUBSTANCES.
- D. THE CONCRETE SHALL CONTAIN AN AIR-ENTRAINING ADMIXTURE COMPLYING WITH THE REQUIREMENTS OF ASTM C-260 AND ACI 212.1R AND A WATER-REDUCING ADMIXTURE COMPLYING WITH THE REQUIREMENTS OF ASTM C-494 AND ACI 212.1R. ADMIXTURES SHALL BE PURCHASED AND BATCHED IN LIQUID SOLUTION. THE USE OF CALCIUM CHLORIDE OR AN ADMIXTURE CONTAINING CALCIUM CHLORIDE IS PROHIBITED. ADMIXTURES SHALL BE OF THE SAME MANUFACTURER TO ASSURE COMPATIBILITY. ACCEPTABLE MANUFACTURERS ARE:
1. W.R. GRACE
2. SIKA CORPORATION
3. MASTER BUILDERS
4. EUCLID CHEMICAL COMPANY
- E. CURING COMPOUND SHALL CONFORM TO ASTM C309, TYPE I, ID, CLASS A AND B, AND ASTM C171 AS APPLICABLE.
- 2.3 CONCRETE MIX:
- A. PROPORTION CONCRETE MIX IN ACCORDANCE WITH REQUIREMENTS OF ACI 301. THE STRENGTH OF CONCRETE SHALL BE AS INDICATED ON THE DRAWINGS. WHERE STRENGTH IS NOT CLEARLY INDICATED, CONCRETE OF MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI SHALL BE USED.
- B. THE CONCRETE MIX SHALL BE DESIGNED FOR A MAXIMUM SLUMP OF THREE INCHES AT THE POINT OF DISCHARGE. MIXES OF THE STIFFEST CONSISTENCY THAT CAN BE EFFICIENTLY PLACED SHALL BE USED.
- C. ALL CONCRETE SHALL HAVE THREE (3) TO FIVE (5) PERCENT ENTRAINED AIR.
- D. ALL STRUCTURAL CONCRETE SHALL CONTAIN A WATER-REDUCING AGENT.

PART 3 – EXECUTION

- 3.1 GENERAL:
- A. CONSTRUCT AND ERECT THE FORM WORK IN ACCORDANCE WITH ACI 301 AND ACI 347.
- B. COLD-WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 306.
- C. HOT-WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 305.
- 3.2 INSERTS, EMBEDDED COMPONENTS, AND OPENINGS:
- A. CONTRACTOR SHALL CHECK ALL CIVIL, ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, ANCHOR BOLTS, INSERTS, AND OTHER ITEMS TO BE INCORPORATED INTO THE CONCRETE WORK.
- B. COORDINATE THE WORK OF OTHER SECTION IN FORMING AND SETTING OPENINGS, RECESSES, SLOTS, CHASES, ANCHORS, INSERTS, AND OTHER ITEMS TO BE EMBEDDED.
- C. EMBEDDED ITEMS SHALL BE SET ACCURATELY IN LOCATION, ALIGNMENT, ELEVATION AND PLUMBNESS, LOCATED AND MEASURED FROM ESTABLISHED SURVEYED REFERENCE BENCHMARKS.

- D. EMBEDDED ITEMS SHALL BE ANCHORED INTO PLACE IN A MANNER TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT AND CONSOLIDATION. COMPONENTS FORMING A PART OF A COMPLETE ASSEMBLY SHALL BE ALIGNED BEFORE ANCHORING INTO PLACE. PROVIDE TEMPORARY BRACING, ANCHORAGE, AND TEMPLATES AS REQUIRED TO MAINTAIN THE SETTING AND ALIGNMENT.

3.3 REINFORCEMENT PLACEMENT:

- A. PLACE REINFORCEMENT ACCORDING TO CONSTRUCTION PLAN SET DRAWINGS AND IN ACCORDANCE WITH ACI 301 AND ACI 318.
- B. ACCURATELY POSITION, SUPPORT, AND SECURE REINFORCEMENT AGAINST DISPLACEMENT FROM FORM WORK CONSTRUCTION OR CONCRETE PLACEMENT AND CONSOLIDATION. SUPPORT REINFORCING ON METAL CHAIRS, RUNNERS, BOLSTERS, SPACERS AND HANGERS.
- C. SPLICES OF REINFORCING BARS SHALL BE CLASS B UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS. SPLICES SHALL BE STAGGERED AND FULL DEVELOPMENT LENGTH SHALL BE PROVIDED ACROSS JOINTS.
- D. LOCATE REINFORCING TO PROVIDE CONCRETE COVER AND SPACING SHOWN ON THE DRAWINGS. MINIMUM COVER SHALL BE AS REQUIRED BY ACI 318.
- E. WELDING OF AND TO ANY REINFORCING MATERIALS, INCLUDING TACK WELDING OF CROSSING BARS, IS STRICTLY PROHIBITED.

3.4 CONCRETE PLACEMENT:

- A. PRIOR TO PLACING CONCRETE, THE FORMS AND REINFORCEMENT SHALL BE THOROUGHLY INSPECTED; ALL TEMPORARY BRACING, TIES, AND CLEATS REMOVED; ALL OPENINGS FOR UTILITIES PROPERLY BOXED; ALL FORMS PROPERLY SECURED IN THEIR CORRECT POSITION AND MADE TIGHT. ALL REINFORCEMENT AND EMBEDDED ITEMS SHALL BE SECURED IN THEIR PROPER LOCATIONS. ALL OLD AND DRY CONCRETE AND DIRT SHALL BE CLEANED OFF AND ALL STANDING WATER AND OTHER FOREIGN MATERIAL REMOVED.
- B. CONCRETE SHALL BE IN ACCORDANCE WITH ACI 301 AND ACI 304 AND SHALL BE PLACED AT SUCH A RATE THAT THE CONCRETE PREVIOUSLY PLACED IS STILL PLASTIC AND INTEGRATED WITH THE FRESH CONCRETE. CONCRETE PLACEMENT, ONCE STARTED, SHALL BE CARRIED ON AS A CONTINUOUS OPERATION UNTIL THE SECTION IS COMPLETED. COLD JOINTS ARE NOT ALLOWED UNLESS PRE-APPROVED BY ENGINEER.
- C. ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED AND COMPACTED BY VIBRATION SPACING, RODDING, OR FORKING DURING THE OPERATION OF PLACING IN ACCORDANCE WITH ACI 309. THE CONCRETE SHALL BE THOROUGHLY WORKED AROUND REINFORCEMENT, EMBEDDED ITEMS, AND INTO THE CORNER OF THE FORMS SO AS TO ELIMINATE ALL AIR POCKETS AND VOIDS.

3.5 FINISHING:

- A. FINISHING OF THE FLOOR SLABS SHALL BE IN ACCORDANCE WITH ACI 302.1 SECTION 7.2 AND SHALL INCLUDE A MINIMUM OF THREE TROWELINGS. IN ACCORDANCE WITH ASTM E 1155 THE SLAB FINISH TOLERANCE AS MEASURED SHALL HAVE AN OVERALL TEST NUMBER FOR FLATNESS OF Ff= 20 AND Ff = 15. THE MINIMUM LOCAL NUMBER FOR FLATNESS, Ff= 15 AND Ff=10.
- B. SURFACE OF FLOOR SLAB SHALL RECEIVE TWO COATS OF CLEAR SEALER/HARDNER.
- C. ABOVE GRADE WALL SURFACES SHALL HAVE A SMOOTH FORM FINISH AS DEFINED IN CHAPTER 10 OF ACI 301.

3.6 CURING:

- A. FRESHLY DEPOSITED CONCRETE SHALL BE PROTECTED FROM PREMATURE DRYING AND EXCESSIVELY HOT AND COLD TEMPERATURES, AND SHALL BE MAINTAINED WITH MINIMUM MOISTURE LOSS AT A RELATIVELY CONSTANT TEMPERATURE FOR A PERIOD OF TIME NECESSARY FOR THE HYDRATION OF THE CEMENT AND PROPER CURING OF THE CONCRETE.
- B. CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST AT LEAST OVERNIGHT, IMMEDIATELY FOLLOWING THE INITIAL CURING. BEFORE THE CONCRETE HAS DRIED. ADDITIONAL CURING SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING MATERIALS OR METHODS:
1. PONDING OR CONTINUOUS SPRINKLING.
2. ABSORPTIVE MAT OR FABRIC KEPT CONTINUOUSLY WET.
3. NON-ABSORPTIVE FILM (POLYETHYLENE) OVER PREVIOUSLY SPRINKLED SURFACE.
4. SAND OR OTHER COVERING KEPT CONTINUOUSLY WET.
5. CONTINUOUS STEAM (NOT EXCEEDING 150 DEGREES FAHRENHEIT OR VAPOR MIST BATH.
6. CURING COMPOUND APPLIED IN TWO COATS, SPRAYED IN PERPENDICULAR DIRECTION
- C. THE FINAL CURING SHALL CONTINUE UNTIL THE CUMULATIVE NUMBER OF DAYS OR FRACTION THEREOF, NOT NECESSARILY CONSECUTIVE, DURING WHICH TEMPERATURE OF THE AIR IN CONTACT WITH CONCRETE IS ABOVE 50 DEGREES FAHRENHEIT HAS TOTALED SEVEN (7) DAYS. CONCRETE SHALL NOT BE PERMITTED TO FREEZE DURING THE CURING PERIOD. RAPID DRYING AT THE END OF THE CURING PERIOD SHALL BE PREVENTED.



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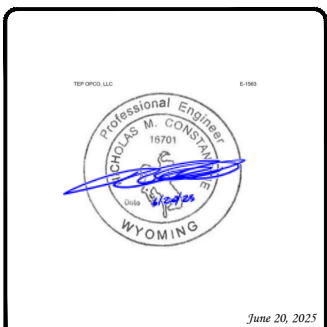
1220 OLD ALPHARETTA ROAD
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PROJECT:	56952
DRAWN BY:	AKP
CHECKED BY:	KOO
RFDS:	N/A

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JACKSON NORTH
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275 NORTH WILLOW STREET
JACKSON, WY 83001
NOKIA MARKETS MODERNIZATION

SHEET TITLE
GENERAL CONCRETE WORK
NOTES

SHEET NUMBER
GN-4

GENERAL STRUCTURAL STEEL NOTES

PART 1 – GENERAL

- 1.1 SCOPE:
- A. PROVIDE FABRICATION AND ERECTION OF STRUCTURAL STEEL AND OTHER ELEMENTS AS SHOWN ON THE DRAWINGS OR REQUIRED BY OTHER SECTIONS OF THESE SPECIFICATIONS.
- 1.2 REFERENCES:
- A. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC). MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN (ASD).
- B. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
- ASTM A36: STRUCTURAL STEEL
- ASTM A53: PIPE, STEEL BLACK AND HOT DIPPED, ZINC-COATED WELDED AND SEAMLESS.
- ASTM A108: STEEL BARS, CARBON, COLD FINISHED, STANDARD QUALITY.
- ASTM A123: ZINC (HOT-DIPPED GALVANIZED) COATING ON IRON AND STEEL PRODUCTS.
- ASTM A307: CARBON STEEL BOLTS AND STUD, 60,000 P.S.I. TENSILE STRENGTH.
- ASTM A325: HIGH-STRENGTH BOLT FOR STRUCTURAL STEEL JOINTS.
- ASTM A490: HEAT-TREATED, STRUCTURAL STEEL BOLTS, 150 (KSI) (1035MPA) TENSILE STRENGTH.
- ASTM A500: COLD-FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING IN ROUNDS AND SHAPES.
- ASTM A563: CARBON AND ALLOY STEEL NUTS.
- ASTM B695: COATINGS OF ZINC MECHANICALLY DEPOSITED ON IRON AND STEEL.
- ASTM F436: HARDENED STEEL WASHERS.
- ASTM F959: COMPRESSIBLE-WASHER-TYPE DIRECT TENSION INDICATOR FOR USE WITH STRUCTURAL FASTENERS.
- C. AMERICAN WELDING SOCIETY (AWS):
- AWS A5.1: COVERED CARBON STEEL ARC WELDING ELECTRODES.
- AWS A5.5: LOW ALLOY STEEL COVERED ARC WELDING ELECTRODES.
- AWS D1.1: STRUCTURAL WELDING CODE – STEEL.
- D. RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC): "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS OR ASTM A490 BOLTS," AS ENDORSED BY AISC.
- E. STEEL STRUCTURES PAINTING COUNCIL (SSPC):
- SSPC-SP3: POWER TOOL CLEANING.
- SSPC-PAINT 11: RED IRON OXIDE, ZINC CHROME, RAW LINSEED OIL OR ALKYD PAINT.
- 1.3 SUBMITTALS:
- A. SUBMIT THE FOLLOWING FOR APPROVAL:
1. FABRICATION AND ERECTION DRAWINGS SHOWING ALL DETAILS, CONNECTIONS, MATERIAL DESIGNATIONS, AND ALL TOP STEEL ELEVATIONS.
- B. WELDERS SHALL BE QUALIFIED AS PRESCRIBED IN AWS D1.1.

PART 2 – PRODUCTS

- 2.1 STRUCTURAL STEEL:
- A. SHAPES, PLATES, AND BARS SHALL CONFORM TO ASTM A36.
- B. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B. STEEL PIPE SHALL CONFIRM TO ASTM A53, TYPE E OR S, GRADE B.
- 2.2 ANCHOR BOLTS:
- A. ANCHOR BOLTS SHALL CONFORM TO ASTM A307 WITH HEAVY HEXAGONAL NUTS.
- 2.3 BOLTS:
- A. COMMON (MACHINE) BOLTS SHALL CONFORM TO ASTM A307 GRADE A AND NUTS TO ASTM A563. ONE COMMON BOLT ASSEMBLY SHALL CONSIST OF A BOLT, A HEAVY HEX NUT, AND A HARDENED WASHER.
- B. HIGH-STRENGTH BOLTS SHALL CONFORM TO ASTM A325 ONE HIGH. STRENGTH BOLT ASSEMBLY SHALL CONSIST OF A HEAVY HEX STRUCTURAL BOLT, A HEAVY HEX NUT, AND A HARDENED WASHER CONFORMING TO ASTM F436. THE HARDENED WASHER SHALL BE INSTALLED AGAINST THE ELEMENT TURNED IN TIGHTENING. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL CONNECTIONS SHALL BE BEARING TYPE CONNECTIONS.
- 2.4 WELDING ELECTRODES:
- A. WELDING ELECTRODES SHALL COMPLY WITH AWS D1.1 USING A5.1 OR A5.5 E70XX AND SHALL BE COMPATIBLE WITH THE WELDING PROCESS SELECTED.
- 2.5 PRIMER:
- A. PRIMER SHALL BE RED OXIDE-CHROMATE PRIMER COMPLYING WITH SSPC PAINT SPECIFICATION NO. 11.

PART 3 – EXECUTION

- 3.1 FABRICATION:
- A. SHOP FABRICATE AND ASSEMBLY MATERIALS AS SPECIFIED HEREIN.
1. FABRICATE ITEMS OF STRUCTURAL STEEL IN ACCORDANCE WITH THE AISC-ASD SPECIFICATIONS, AND AS INDICATED ON THE APPROVED SHOP DRAWINGS.
2. ALL EXPOSED STRUCTURAL STEEL SHALL BE HOT DIP GALVANIZED PER ASTM.
3. PROPERLY MARK AND MATCH-MARK MATERIALS FOR FIELD ASSEMBLY AND FOR IDENTIFICATION AS TO INTENDED LOCATION.
4. FABRICATE AND DELIVER IN A SEQUENCE WHICH WILL EXPEDITE ERECTION AND MINIMIZE FIELD HANDLING OF MATERIALS.
5. WHERE FINISHING IS REQUIRED, COMPLETE THE ASSEMBLY, INCLUDING THE WELDING OF UNITS, BEFORE START OF FINISHING OPERATIONS.
6. THE FINISH SURFACE OF MEMBERS EXPOSED IN THE FINISHED STRUCTURE SHALL BE FREE FROM MARKINGS, BURNS, AND OTHER DEFECTS.
- B. PROVIDE CONNECTIONS AS SPECIFIED HEREIN:
1. PROVIDE BOLTS AND WASHERS OF TYPES AND SIZE REQUIRED FOR COMPLETION OF FIELD ERECTION. USE 3/4" DIAMETER A325 BOLTS UNLESS NOTED OTHERWISE.
2. INSTALL HIGH STRENGTH THREADED FASTENERS IN ACCORDANCE WITH "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS."

3. WELDED CONSTRUCTION SHALL COMPLY WITH AWS D1.1 FOR PROCEDURES, APPEARANCE, QUALITY OF WELD, AND METHODS USED IN CORRECTING WELDED WORK.
4. THE FABRICATOR SHALL FURNISH AND INSTALL ERECTION CLIPS FOR FIT-UP OF WELDED CONNECTIONS.
5. DOUBLE ANGLE MEMBERS SHALL HAVE WELDED FILLERS SPACED IN ACCORDANCE WITH CHAPTER E4 OF THE AISC-ASD SPECIFICATION.
6. GUSSET AND STIFFENER PLATES SHALL BE 3/8" THICK MINIMUM.
- 3.2 PRIMING:
- A. STRUCTURAL STEEL SHALL BE PRIMED AS SPECIFIED HEREIN, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
- B. STRUCTURAL STEEL SURFACE PREPARATION SHALL CONFIRM TO SSPC-SP3, "POWER TOOL CLEANING."
- C. SURFACE PREPARATION AND PRIMER SHALL BE IN ACCORDANCE WITH AISC CODE OF STANDARD PRACTICE IN THE ASD MANUAL OF STEEL CONSTRUCTION.
- D. MATERIALS SHALL REMAIN CLOSED UNTIL REQUIRED FOR USE. MANUFACTURER’S POT-LIFE REQUIREMENTS SHALL BE STRICTLY ADHERED TO.
- E. PRIMER SHALL BE APPLIED TO DRY, CLEAN, PREPARED SURFACE AND UNDER FAVORABLE CONDITIONS IN ACCORDANCE WITH MANUFACTURER’S INSTRUCTIONS. UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER, PRIMING SHALL NOT BE DONE WHEN AMBIENT TEMPERATURE IS LESS THAN 50 DEGREES FAHRENHEIT, THE RELATIVE HUMIDITY IS MORE THAN 90 PERCENT, OR THE SURFACE TEMPERATURE IS LESS THAN 5 DEGREES FAHRENHEIT ABOVE THE DEW POINT.
- F. GENERALLY ALL PRIMER SHALL BE SPRAY APPLIED. BRUSH OR ROLLER APPLICATION SHALL BE LIMITED TO TOUCHUP AND TO AREAS NOT ACCESSIBLE BY SPRAY GUN.
- G. PRIMER SHALL BE UNIFORMLY APPLIED WITHOUT RUNS, SAGS, SOLVENT BLISTERS, DRY SPRAY, OR OTHER BLEMISHES. ALL BLEMISHES AND OTHER IRREGULARITIES SHALL BE REPAIRED OR REMOVED AND THE AREA RE-COATED. SPECIAL ATTENTION SHALL BE PAID TO CREVICES, WELD LINES, BOLT HEADS, CORNERS, EDGES, ETC., TO OBTAIN THE REQUIRED NOMINAL FILM THICKNESS.
- H. DRY COAT FILM THICKNESS OF THE PRIMER SHALL BE 2.0 MILLIMETERS
- I. IF THE PRIMER IS DAMAGED BY WELDING OR IN ANY OTHER MANNER, THE AREA SHALL BE TOUCHED UP AND REPAIRED. THE TOUCHUP PAINT SHALL BE COMPATIBLE WITH THE PREVIOUS APPLIED PRIMER COAT WITH MINIMUM DRY FILM THICKNESS OF 1.5 MILLIMETERS.

- 3.3 INSTALLATION:
- A. INSTALLATION OF STRUCTURAL STEEL SHALL COMPLY WITH AISC "CODE OF STANDARD PRACTICE."
- B. STRUCTURAL FIELD WELDING SHALL BE DONE BY THE ELECTRIC SUBMERGED OR SHIELDED METAL ARC PROCESS. WELDED CONSTRUCTION METHODS SHALL COMPLY WITH AWS D1.1.
- C. PROVIDE ANCHOR BOLTS AND OTHER CONNECTORS REQUIRED FOR SECURING STRUCTURAL STEEL TO MASONARY WALLS AND TO OTHER IN-PLACE WORK. PROVIDE TEMPLATES AND OTHER DEVICES NECESSARY FOR PRESETTING BOLTS AND ANCHORS TO ACCURATE LOCATIONS.
- D. SPLICE MEMBERS ONLY WHERE INDICATED ON THE DRAWINGS.
- E. PROVIDE TEMPORARY SHORING BRACING WITH CONNECTIONS OF SUFFICIENT STRENGTH TO BEAR IMPOSED LOADS. REMOVE TEMPORARY CONNECTIONS AND MEMBERS WHEN PERMANENT MEMBERS ARE IN PLACE AND THE FINAL CONNECTIONS HAVE BEEN MADE.
- F. BEFORE ASSEMBLY ALIGN AND ADJUST MEMBERS AND OTHER SURFACES WHICH WILL BE IN THE PERMANENT CONTACT, BEFORE ASSEMBLY.
- G. AS A MINIMUM, HIGH-STRENGTH BOLTS, SHALL BE TIGHTENED TO A "SNUG-TIGHT" CONDITION AS DEFINED IN THE LATEST AISC SPECIFICATIONS. ALL HIGH-STRENGTH BOLTS SPECIFIED ON THE DESIGN DRAWINGS TO BE USED IN PRETENSIONED OR SLIP-CRITICAL JOINTS SHALL BE TIGHTENED TO A BOLT TENSION NOT LESS THAN SPECIFIED IN AISC TABLE J3.1. INSTALLATION SHALL BE BY ANY OF THE FOLLOWING METHODS: TURN-OF NUT METHOD, A DIRECT-TENSION-INDICATOR, TWIST-OFF-TYPE TENSION-CONTROL BOLT, CALIBRATED WRENCH, OR ALTERNATIVE DESIGN BOLT.



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326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351

PROJECT:	56952
DRAWN BY:	AKP
CHECKED BY:	KOO
RFDS:	N/A

0	06/20/2025	ISSUED FOR CONSTRUCTION
REV	DATE	DESCRIPTION



June 20, 2025

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JACKSON NORTH
IDLO4525
275 NORTH WILLOW STREET
JACKSON, WY 83001
NOKIA MARKETS MODERNIZATION

SHEET TITLE
GENERAL STRUCTURAL
STEEL NOTES

SHEET NUMBER
GN-5

GENERAL ELECTRICAL NOTES

PART 1 – GENERAL

1.1 GENERAL CONDITIONS:

- A. CONTRACTOR SHALL INSPECT THE EXISTING SITE CONDITIONS PRIOR TO PERFORMING WORK. ANY QUESTIONS ARISING DURING THE BID PERIOD REGARDING THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, PRIOR TO THE AWARD OF THE CONTRACT.
- B. THE CONTRACTOR SHALL OBTAIN PERMITS, LICENSES, MAKE ALL DEPOSITS, AND PAY ALL FEES REQUIRED FOR THE CONSTRUCTION PERFORMANCE OF THE WORK UNDER THIS SECTION.
- C. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. DRAWING SHALL NOT BE SCALED TO DETERMINE DIMENSIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL SYSTEMS AND COMPONENTS COVERED UNDER THIS SECTION.

1.2 LAWS, REGULATIONS, ORDINANCES, STATUTES, AND CODES:

- A. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, AND ALL APPLICABLE LOCAL LAWS, REGULATIONS, ORDINANCES, STATUTES, AND CODES. CONDUIT BENDS SHALL BE THE RADIUS BEND FOR THE TRADE SIZE OF CONDUIT IN COMPLIANCE WITH THE LATEST EDITIONS OF NEC.

1.3 REFERENCES:

- A. THE PUBLICATIONS LISTED BELOW ARE PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE OF CONSTRUCTION. EXCEPT AS MODIFIED BY THE REQUIREMENT SPECIFIED HEREIN OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISION OF THESE PUBLICATIONS.

- 1. ANSI/IEEE (AMERICAN NATIONAL STANDARDS INSTITUTE)
- 2. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
- 3. ICE (INSULATED CABLE ENGINEERS ASSOCIATION)
- 4. NEMA (NATIONAL ELECTRICAL MANUFACTURER’S ASSOCIATION)
- 5. NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)
- 6. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
- 7. UL (UNDERWRITERS LABORATORIES. INC.)
- 8. AT&T GROUNDING AND BONDING STANDARDS TP-76416

1.4 SCOPE OF WORK:

- A. WORK UNDER THIS SECTION SHALL CONSIST OF FURNISHING ALL LABOR, MATERIAL, AND ASSOCIATED SERVICES REQUIRED TO COMPLETE REQUIRED CONSTRUCTION AND TO ACHIEVE OPERATIONAL STATUS.
- B. ALL ELECTRICAL EQUIPMENT UNDER THIS CONTRACT SHALL BE PROPERLY TESTED, ADJUSTED, AND ALIGNED BY THE CONTRACTOR.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING, DRAINING, TRENCHING, BACKFILLING, AND REMOVAL OF EXCESS SOIL, FILL, AND DEBRIS.
- D. THE CONTRACTOR SHALL FURNISH THE OWNER WITH CERTIFICATES OF A FINAL INSPECTION AND APPROVAL FROM THE JURISDICTIONAL AUTHORITIES.
- E. IF APPLICABLE, THE CONTRACTOR SHALL PREPARE A COMPLETE SET OF AS-BUILT DRAWINGS TO DOCUMENT ALL WIRING EQUIPMENT CONDITIONS AND CHANGES WHILE COMPLETING THIS CONTRACT. THE AS-BUILT DRAWINGS SHALL BE SUBMITTED AT COMPLETION OF THE PROJECT TO THE APPROPRIATE PARTY.

PART 2 – PRODUCTS

2.1 GENERAL:

- A. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, UL LISTED, AND FREE FROM DEFECTS.
- B. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES (UL) LABEL OF APPROVAL AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- C. ALL ITEMS, MATERIALS, AND EQUIPMENT SHALL BE ACCEPTABLE TO THE JURISDICTIONAL AUTHORITY AND SUITABLE FOR THE USE INTENDED.
- D. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING OF GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED (10,000 AIC MINIMUM). CONTRACTOR SHALL VERIFY THAT AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PER THE GOVERNING JURISDICTION.

2.2 MATERIALS AND EQUIPMENT:

A. CONDUIT:

- 1. RIGID METAL CONDUIT (RMC) SHALL BE HOT-DIPPED GALVANIZED INSIDE AND OUTSIDE INCLUDING ENDS AND THREADS, AND ENAMELED OR LACQUERED INSIDE IN ADDITION TO GALVANIZING.
- 2. LIQUIDTIGHT FLEXIBLE METAL CONDUIT SHALL BE UL LISTED.
- 3. CONDUIT CLAMPS, STRAPS, AND SUPPORTS SHALL BE STEEL OR MALLEABLE IRON. ALL FITTINGS SHALL BE COMPRESSION AND CONCRETE-TIGHT TYPE. GROUNDING BUSHINGS WITH INSULATED THROATS SHALL BE INSTALLED ON ALL CONDUIT TERMINATIONS.
- 4. NONMETALLIC CONDUIT AND FITTINGS SHALL BE SCHEDULE 40 PVC AND INSTALLED USING SOLVENT-CEMENT-TYPE JOINTS AS RECOMMENDED BY THE MANUFACTURER.

B. CONDUCTORS AND CABLE:

- 1. CONDUCTORS AND CABLE SHALL BE FLAME-RETARDANT, MOISTURE AND HEAT RESISTANT THERMOPLASTIC, SINGLE CONDUCTOR, COPPER, TYPE THHN/THWN-2, 600 VOLT, SIZE AS INDICATED, ON PLANS THE MINIMUM SIZE CONDUCTOR USED SHALL BE #12 AWG.
- 2. #10 AWG AND SMALLER CONDUCTOR SHALL BE SOLID OR STRANDED. #8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED.
- 3. SOLDERLESS COMPRESSION TYPE CONNECTORS SHALL BE USED FOR TERMINATION OF ALL STRANDED CONDUCTORS.
- 4. STRAIN-RELIEF SUPPORTS GRIPS SHALL BE HUBBELL KELLEMS OR APPROVED EQUAL. CABLES SHALL BE SUPPORTED IN ACCORDANCE WITH THE NEC AND CABLE MANUFACTURER’S RECOMMENDATIONS.
- 5. ALL CONDUCTORS SHALL BE TAGGED AT BOTH ENDS OF THE CONDUCTOR, AT ALL PULL BOXES, J-BOXES, EQUIPMENT, CABINETS SHALL BE IDENTIFIED WITH APPROVED PLASTIC TAGS (ACTION CRAFT, BRADY, OR APPROVED EQUAL).

C. DISCONNECT SWITCHES:

- 1. DISCONNECT SWITCHES SHALL BE HEAVY DUTY, DEAD-FRONT, QUICK-MAKE, QUICK-BREAK, EXTERNALLY OPERABLE, HANDLE LOCKABLE, INTERLOCK WITH COVER IN CLOSED POSITION, RATING AS INDICATED, UL LABELED, FURNISHED IN NEMA 3R ENCLOSURE, SQUARE-D, OR ENGINEERED APPROVED EQUAL.

D. CHEMICAL ELECTROLYTIC GROUNDING SYSTEM:

- 1. INSTALL CHEMICAL GROUNDING AS REQUIRED. THE SYSTEM SHALL BE ELECTROLYTIC MAINTENANCE FREE ELECTRODE CONSISTING OF RODS WITH A MINIMUM #2 AWG CU EXOTHERMALLY WELDED PIGTAIL, PROTECTIVE BOXES, AND BACKFILL MATERIAL. MANUFACTURER SHALL BE LYNCOLE XIT GROUNDING ROD TYPES K2-(*)CS OR K2L-(*)CS (*) LENGTH AS REQUIRED.
- 2. GROUND ACCESS BOX SHALL BE A POLYPLASTIC BOX FOR NON-TRAFFIC APPLICATIONS, INCLUDING BOLT DOWN FLUSH COVER WITH "BREATHER" HOLES, XIT MODEL #XB-22. ALL DISCONNECT SWITCHES AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS IDENTIFICATION NUMBERING, AND THE ELECTRICAL POWER SOURCE.
- 3. BACKFILL MATERIAL SHALL BE LYNCONITE AND LYNCOLE GROUNDING GRAVEL.

E. SYSTEM GROUNDING:

- 1. ALL GROUNDING COMPONENTS SHALL BE TINNED AND GROUNDING CONDUCTOR SHALL BE #2 AWG BARE, SOLID, TINNED COPPER. ABOVE-GRADE GROUNDING CONDUCTORS SHALL BE INSULATED WHERE NOTED.
- 2. GROUNDING BUSES SHALL BE BARE, TINNED, ANNEALED COPPER BARS OF RECTANGULAR CROSS SECTION. STANDARD BUS BARS MGB SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AND THEY SHALL NOT BE FABRICATED OR MODIFIED IN THE FIELD. ALL GROUNDING BUSES SHALL BE IDENTIFIED WITH MINIMUM 3/4" LETTERS BY STENCILING OR DESIGNATION PLATE.
- 3. CONNECTORS SHALL BE HIGH CONDUCTIVITY, HEAVY DUTY, LISTED AND LABELED AS GROUNDING CONNECTORS FOR THE MATERIALS USED. USE TWO-HOLE COMPRESSION LUGS WITH CLEAR HEAT SHRINK FOR MECHANICAL CONNECTIONS. USE TWO-HOLE COMPRESSION LUGS WITH INSPECTION WINDOW AND CLEAR HEAT SHRINK FOR INTERIOR AND BLACK HEAT SHRINK FOR EXTERIOR.
- 4. EXOTHERMIC WELDED CONNECTIONS SHALL BE PROVIDED IN KIT FORM AND SELECTED FOR THE SPECIFIC TYPES, SIZES, AND COMBINATIONS OF CONDUCTORS AND OTHER ITEMS TO BE CONNECTED.
- 5. GROUND RODS SHALL BE ERICO #615800, COPPER-CLAD STEEL WITH HIGH STRENGTH STEEL CORE AND ELECTROLYTIC GRADE COPPER OUTER SHEATH, MOLTEN WELDED TO CORE, AND 5/8"x10'-0". ALL GROUNDING RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES AS SHOWN ON DRAWINGS.
- 6. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS IN COMPLIANCE WITH THE AT&T SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULLBOXES, DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.

F. OTHER MATERIALS:

- 1. THE CONTRACTOR SHALL PROVIDE OTHER MATERIALS, THOUGH NOT SPECIFICALLY DESCRIBED, WHICH ARE REQUIRED FOR A COMPLETELY OPERATIONAL SYSTEM AND PROPER INSTALLATION OF THE WORK.
- 2. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.

G. PANELS AND LOAD CENTERS:

- 1. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN.

PART 3 – EXECUTION

3.1 GENERAL:

- A. ALL MATERIAL AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER’S RECOMMENDATIONS.
- B. DURING INSTALLATION AND CONSTRUCTION PERIODS EQUIPMENT SHALL BE TIGHTLY COVERED AND PROTECTED AGAINST DIRT, WATER, AND CHEMICAL OR MECHANICAL INJURY.

3.2 LABOR AND WORKMANSHIP:

- A. ALL LABOR FOR THE INSTALLATION OF MATERIALS AND EQUIPMENT FURNISHED FOR THE ELECTRICAL SYSTEM SHALL BE INSTALLED BY EXPERIENCED WIREMEN IN A NEAT AND WORKMAN-LIKE MANNER.
- B. ALL ELECTRICAL EQUIPMENT SHALL BE ADJUSTED, ALIGNED, AND TESTED BY THE CONTRACTOR AS REQUIRED TO CONFIRM THE INTENDED PERFORMANCE.
- C. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, REMOVE ALL NECESSARY LABELS, DEBRIS, CRATING, OR CARTONS, AND LEAVE THE INSTALLATION FINISHED AND READY FOR OPERATION.

3.3 COORDINATION:

- A. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE OWNER-FURNISHED EQUIPMENT DELIVERY SCHEDULE TO PREVENT UNNECESSARY DELAYS IN THE SCHEDULED WORK.

3.4 INSTALLATION:

B. CONDUIT:

- 1. ALL ELECTRICAL WIRING SHALL BE INSTALLED IN CONDUIT AS SPECIFIED. NO CONDUIT OR TUBING OF LESS THAN 3/4" TRADE SIZE SHALL BE UTILIZED.
- 2. PROVIDE RIGID PVC SCHEDULE 80 CONDUITS FOR ALL RISERS UNLESS OTHERWISE NOTED. EMT MAY BE INSTALLED FOR EXTERIOR CONDUITS WHERE NOT SUBJECT TO PHYSICAL DAMAGE.
- 3. INSTALL SCHEDULE 40 PVC CONDUIT WITH A MINIMUM COVER OF 24" UNDER ROADWAYS, PARKING LOTS, STREETS, AND ALLEYS. CONDUIT SHALL HAVE A MINIMUM COVER OF 18" IN ALL NON-TRAFFIC APPLICATIONS (REFER TO 2020 OR LATEST NEC, TABLE 300.5).
- 4. USE GALVANIZED FLEXIBLE STEEL CONDUIT AT LOCATIONS OF DIRECT CONNECTION TO EQUIPMENT THAT MOVES OR VIBRATES, OR FOR EASE OF MAINTENANCE. USE LIQUID TIGHT, FLEXIBLE METAL CONDUIT FOR OUTDOOR APPLICATIONS. INSTALL GALVANIZED FLEXIBLE STEEL CONDUIT AT ALL POINTS OF CONNECTION TO EQUIPMENT MOUNTED ON SUPPORTS TO ALLOW FOR EXPANSION AND CONTRACTION.
- 5. A RUN OF CONDUIT BETWEEN BOXES OR EQUIPMENT SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF THREE QUARTER-BENDS. CONDUIT BEND SHALL BE MADE WITH THE UL LISTED BENDER OR FACTORY 90 DEGREE ELBOWS MAY BE USED.
- 6. FIELD FABRICATED CONDUITS SHALL BE CUT SQUARE WITH A CONDUIT CUTTING TOOL AND REAMED TO PROVIDE A SMOOTH INSIDE SURFACE.
- 7. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL CONDUITS DURING CONSTRUCTION. TEMPORARY OPENINGS IN THE CONDUIT SYSTEM SHALL BE PLUGGED OR CAPPED TO PREVENT ENTRANCE OF MOISTURE OR FOREIGN MATTER. CONTRACTOR SHALL REPLACE ANY CONDUITS CONTAINING FOREIGN MATERIALS THAT CANNOT BE REMOVED.
- 8. ALL CONDUITS SHALL BE SWABBED CLEAN BY PULLING AN APPROPRIATE SIZE MANDREL THROUGH THE CONDUIT BEFORE INSTALLATION OF CONDUCTORS OR CABLES. CONDUIT SHALL BE FREE OF DIRT AND DEBRIS.
- 9. INSTALL PULL STRINGS IN ALL CLEAN EMPTY CONDUITS. IDENTIFY PULL STRINGS AT EACH END.
- 10. INSTALL 2" HIGHLY VISIBLE AND DETECTABLE TAPE 12" ABOVE ALL UNDERGROUND CONDUITS AND CONDUCTORS.
- 11. CONDUITS SHALL BE INSTALLED IN SUCH A MANNER AS TO INSURE AGAINST COLLECTION OF TRAPPED CONDENSATION.

- 12. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS TO ALLOW FOR RACEWAYS AND CABLES TO BE ROUTED THROUGH THE BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE EFFECTIVELY SEALED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FIRE STOPS AT FLOOR PENETRATIONS SHALL BE INSTALLED TO PREVENT PASSAGE OF WATER, SMOKE, FIRE, AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.

B. CONDUCTORS AND CABLE:

- 1. ALL POWER WIRING SHALL BE COLOR CODED AS FOLLOWS:

DESCRIPTION	208/240/120 VOLT SYSTEMS
PHASE A	BLACK
PHASE B	RED
PHASE C	BLUE
NEUTRAL	WHITE
GROUNDING	GREEN

- 2. SPLICES SHALL BE MADE ONLY AT OUTLETS, JUNCTION BOXES, OR ACCESSIBLE RACEWAY CONDULETS APPROVED FOR THIS PURPOSE.
- 3. PULLING LUBRICANTS SHALL BE UL APPROVED. CONTRACTOR SHALL USE NYLON OR HEMP ROPE FOR PULLING CONDUCTOR OR CABLES INTO THE CONDUIT.
- 4. CABLES SHALL BE NEATLY TRAINED, WITHOUT INTERLACING, AND BE OF SUFFICIENT LENGTH IN ALL BOXES AND EQUIPMENT TO ALLOW FOR A NEAT ARRANGEMENT. CABLES SHALL BE SECURED IN A MANNER TO AVOID TENSION ON CONDUCTORS AND/OR TERMINALS. CONDUCTORS SHALL BE PROTECTED FROM MECHANICAL INJURY AND MOISTURE. SHARP BENDS OVER CONDUIT BUSHINGS ARE PROHIBITED. DAMAGED CABLES SHALL BE REPLACED AT THE CONTRACTOR’S EXPENSE.

C. DISCONNECT SWITCHES:

- 1. INSTALL DISCONNECT SWITCHES LEVEL AND PLUMB, AND CONNECT TO WIRING SYSTEM AND GROUNDING SYSTEM AS REQUIRED.

D. GROUNDING:

- 1. ALL METALLIC PARTS OF ELECTRICAL EQUIPMENT WHICH DO NOT CARRY CURRENT SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING MANUFACTURER, AT&T GROUNDING AND BONDING STANDARDS TP-76416, TP-76300, AND THE NATIONAL ELECTRICAL CODE.
- 2. PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEM WITH ASSEMBLY OF MATERIALS, INCLUDING GROUNDING ELECTRODES, BONDING JUMPERS, AND ADDITIONAL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
- 3. ALL GROUNDING CONDUCTORS SHALL PROVIDE A STRAIGHT DOWNWARD PATH TO GROUND. GROUNDING CONDUCTORS SHALL NOT BE LOOPED OR SHARPLY BENT. ROUTE GROUNDING CONNECTIONS AND CONDUCTORS TO GROUND IN THE SHORTEST AND STRAIGHTEST PATHS POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES.
- 4. AT BUILDINGS AND/OR NEW TOWERS GREATER THAN 75 FEET IN HEIGHT AND WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWER GROUND RING, TO THE EXISTING GROUNDING SYSTEM. THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN #2 AWG COPPER. ROOFTOP GROUND RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, THE LIGHTNING PROTECTION SYSTEM, AND/OR THE BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). SEE STANDARD 6.3.2.2.
- 5. TIGHTEN GROUNDING AND BONDING CONNECTORS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER’S PUBLISHED TORQUE TIGHTENING SPECIFICATIONS. WHERE MANUFACTURER’S TORQUE REQUIREMENTS ARE NOT AVAILABLE, TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUE VALUES SPECIFIED IN UL TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
- 6. CONTRACTOR SHALL VERIFY THE LOCATIONS OF GROUNDING TIE-IN POINTS TO THE EXISTING GROUNDING SYSTEM. ALL UNDERGROUND GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER’S INSTRUCTIONS.
- 7. ALL GROUNDING CONNECTIONS SHALL BE INSPECTED FOR TIGHTNESS. EXOTHERMIC WELDED CONNECTIONS SHALL BE APPROVED BY THE INSPECTOR HAVING JURISDICTION PRIOR TO PERMANENT CONCEALMENT.
- 8. APPLY CORROSION-RESISTANCE FINISH TO FIELD CONNECTIONS AND AREAS/COMPONENTS WHERE FACTORY APPLIED PROTECTIVE COATINGS HAVE BEEN DESTROYED.
- 9. A SEPARATE, CONTINUOUS, INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL FEEDER AND BRANCH CIRCUITS.
- 10. BOND ALL INSULATED GROUNDING BUSHINGS WITH A BARE #6 AWG GROUNDING CONDUCTOR TO A GROUND BUS.
- 11. DIRECT-BURIED GROUNDING CONDUCTORS SHALL BE INSTALLED AT A NOMINAL DEPTH OF 30" MINIMUM BELOW GRADE, OR 6" MINIMUM BELOW THE FROST LINE, USING THE GREATER OF THE TWO DISTANCES.
- 12. ALL GROUNDING CONDUCTORS EMBEDDED IN OR PENETRATING CONCRETE SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT.
- 13. THE INSTALLATION OF A CHEMICAL ELECTROLYTIC GROUNDING SYSTEM IN STRICT ACCORDANCE WITH MANUFACTURER’S INSTRUCTIONS. REMOVE SEALING TAPE FROM LEACHING AND BREATHER HOLES. INSTALL THE PROTECTIVE BOX FLUSH WITH GRADE.
- 14. IF COAX ON THE ICE BRIDGE IS MORE THAN 6 FEET FROM THE GROUND BAR AT THE BASE OF THE TOWER, INSTALL A SECOND GROUND BAR AT THE END OF THE ICE BRIDGE TO GROUND THE COAX CABLE GROUNDING KITS AND IN-LINE ARRESTORS.
- 15. CONTRACTOR SHALL REPAIR, AND/OR REPLACE, EXISTING GROUNDING SYSTEM COMPONENTS DAMAGED DURING CONSTRUCTION AT THE CONTRACTORS EXPENSE.

3.5 ACCEPTANCE TESTING:

- A. CERTIFIED PERSONNEL USING CERTIFIED EQUIPMENT SHALL PERFORM REQUIRED TESTS AND SUBMIT WRITTEN TEST REPORTS UPON COMPLETION.
- B. WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND TO BE NON-COMPLIANT WITH THE SPECIFIED REQUIREMENTS, THE NON-COMPLIANT ITEMS/ELEMENTS SHALL BE PROMPTLY REMOVED FROM THE PROJECT SITE AND REPLACED WITH ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS.
- C. TEST PROCEDURES:
 - 1. ALL FEEDERS SHALL HAVE INSULATION TESTED AFTER INSTALLATION, BEFORE CONNECTION TO DEVICES. THE CONDUCTORS SHALL TEST FREE FROM SHORT CIRCUITS AND GROUNDS. TESTING SHALL BE FOR ONE MINUTE USING 1,000VOLT DC.
 - 2. PRIOR TO ENERGIZING CIRCUITRY, TEST WIRING DEVICES FOR ELECTRICAL CONTINUITY AND PROPER POLARITY CONNECTIONS.
 - 3. MEASURE AND RECORD VOLTAGES BETWEEN PHASES AND BETWEEN PHASE CONDUCTORS AND NEUTRALS. SUBMIT A REPORT OF MAXIMUM AND MINIMUM VOLTAGES TO APPROPRIATE PARTS.
 - 4. PERFORM GROUNDING TEST TO MEASURE RESISTANCE OF GROUNDING SYSTEM USING THE IEEE STANDARD 3-POINT "FALL-OF-POTENTIAL" METHOD. PROVIDE PLOTTED TEST VALUES AND LOCATION SKETCH. NOTIFY THE ENGINEER IMMEDIATELY IF MEASURED VALUE IS OVER 5 OHMS.



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326 TRYON RD. RALEIGH, NC
27603 OFFICE: (919) 661-6351

PROJECT:	56952
DRAWN BY:	AKP
CHECKED BY:	KOO
RFDS:	N/A

0	06/20/2025	ISSUED FOR CONSTRUCTION
REV	DATE	DESCRIPTION



June 20, 2025

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JACKSON NORTH
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JACKSON, WY 83001
NOKIA MARKETS MODERNIZATION

SHEET TITLE
GENERAL ELECTRICAL
NOTES

SHEET NUMBER
GN-6

Date: **February 28, 2025**

 **WY COA# E-1563**
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351

Subject: Structural Analysis Report

Carrier Designation: **AT&T Mobility Co-Locate**
Site Number: IDL04525
Site Name: IDL04525
FA Number: 15433582

Crown Castle Designation: **BU Number:** 831885
Site Name: Jackson DT
JDE Job Number: 2134451
Work Order Number: 2370592
Order Number: 689386 Rev. 1

Engineering Firm Designation: **TEP Project Number:** 309257.1072627

Site Data: **275 North Willow St., Jackson, Teton County, WY 83001**
Latitude 43° 28' 51.55", Longitude -110° 45' 34.62"
55 Foot - Bell Tower

TEP is pleased to submit this “**Structural Analysis Report**” to determine the structural integrity of the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration

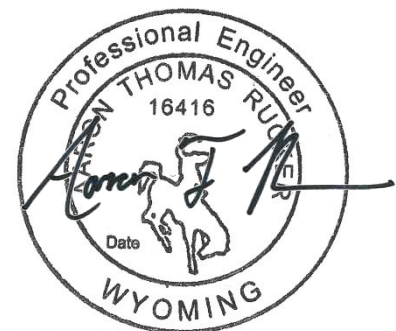
Sufficient Capacity

This analysis has been performed in accordance with the 2021 International Building Code based upon an ultimate 3-second gust wind speed of 105 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: PRS / SMS

Respectfully submitted by:

Aaron T. Rucker, P.E.



Electronic Copy

02/28/2025

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1) INTRODUCTION

This tower is a 55-ft bell tower designed by Vector Engineers.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	105 mph
Exposure Category:	C
Topographic Factor:	1.0
Seismic Ss:	1.034
Seismic S1:	0.341
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
38.0	41.0	8	Commscope	NNHSS-45B-R2BT4	56	1/2

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
49.0	50.0	3	Ericsson	AIR 32 B66AA B2P_T-Mobile	3	1-1/4
24.0	27.0	3	Ericsson	AIR 6419	2	1-5/8
	24.0	3	Commscope	NNH4SS-65C-R3BT8		
		3	Ericsson	Radio 4490HP 44B5 44B13 C		
		3	Ericsson	Radio 4890HP B2/B25 B66		
		2	Raycap	RCMDC-6627-PF-48		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Geotechnical Report	10142711	CCISites
Tower Foundation Drawings	10142716	CCISites
Tower Manufacturer Drawings	10142715	CCISites

3.1) Analysis Method

RISA-3D, a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 Standard.

3.2) Assumptions

- 1) The tower and structures were maintained in accordance with the TIA-222 Standard.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2, and the referenced drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. TEP should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)¹

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
53.92 - 31.25	Inner Leg	HSS6X6X6	-	41.0	Pass
31.25 - 0.0	Inner Leg	HSS10X10X6	-	23.6	Pass
53.33 - 0.0	Horizontal	W12X22	-	10.5	Pass
53.67 - 0.0	Outer Girt	L4x4x4	-	18.6	Pass
53.92 - 0.0	Mount Pipe	PIPE_2.0NOMINAL	-	43.0	Pass
53.33 - 29.83	Outer Leg	FRP HSS4x4x6	-	25.0	Pass
29.83 - 15.0	Outer Leg	FRP HSS4x4x6	-	32.2	Pass
15.0 - 0.0	Outer Leg	FRP HSS4x4x6	-	22.4	Pass
53.33	Outer Horizontal	FRP HSS3x3x4	-	11.6	Pass
42.25	Outer Horizontal	FRP HSS3x3x4	-	13.1	Pass
29.83	Outer Horizontal	FRP HSS3x3x4	-	13.0	Pass
15.0	Outer Horizontal	FRP HSS3x3x4	-	16.0	Pass
6.08 - 0.0	Outer Horizontal	FRP HSS3x3x4	-	20.0	Pass
53.33	Outrigger	FRP HSS4x4x6	-	14.9	Pass
42.25	Outrigger	FRP HSS4x4x6	-	17.6	Pass
29.83	Outrigger	FRP HSS4x4x6	-	10.5	Pass
15.0	Outrigger	FRP HSS4x4x6	-	8.7	Pass
6.08	Outrigger	FRP HSS4x4x6	-	6.7	Pass
				Summary	
			Inner Leg	41.0	Pass
			Horizontal	10.5	Pass
			Outer Girt	18.6	Pass
			Mount Pipe	43.0	Pass
			FRP	32.2	Pass
			Rating =	43.0	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	-	25.6	Pass
1,2	Base Plate	-	12.4	Pass
1,2	Base Foundation Structural	-	15.0	Pass
1,2	Base Foundation Soil Interaction	-	36.7	Pass

Structure Rating (max from all components) =	43.0%
---	--------------

Notes:

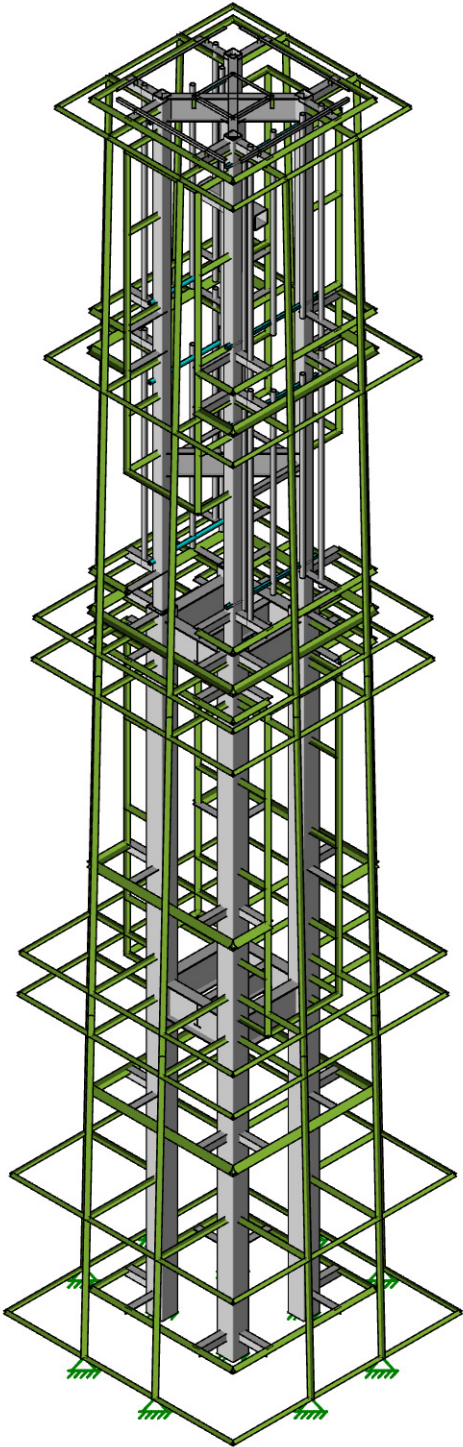
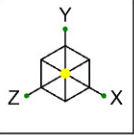
- 1) Rating per TIA-222-H Section 15.5
- 2) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity listed.

4.1) Recommendations

- 1) The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A

RISA-3D OUTPUT



TEP
PRS
TEP No. 309257.1072627

Jackson DT (BU 831885)

SK-1
Feb 28, 2025 at 08:48 AM
831885_2337146_LC5.r3d

Model Settings

Number of Reported Sections	5
Number of Internal Sections	100
Member Area Load Mesh Size (in ²)	144
Consider Shear Deformation	Yes
Consider Torsional Warping	Yes
Approximate Mesh Size (in)	12
Transfer Forces Between Intersecting Wood Walls	Yes
Increase Wood Wall Nailing Capacity for Wind Loads	Yes
Include P-Delta for Walls	Yes
Optimize Masonry and Wood Walls	Yes
Maximum Number of Iterations	3
Single	No
Multiple (Optimum)	Yes
Maximum	No

Global Axis corresponding to vertical direction	Y
Convert Existing Data	Yes
Default Global Plane for z-axis	XZ
Plate Local Axis Orientation	Nodal

Hot Rolled Steel	AISC 15th (360-16): ASD
Stiffness Adjustment	No
Notional Annex	None
Connections	None
Cold Formed Steel	AISI S100-16: ASD
Stiffness Adjustment	Yes (Iterative)
Wood	None
Temperature	< 100F
Concrete	None
Masonry	None
Aluminum	None
Structure Type	Building
Stiffness Adjustment	No
Stainless	None
Stiffness Adjustment	Yes (Iterative)

Compression Stress Block	Rectangular Stress Block
Analyze using Cracked Sections	Yes
Leave room for horizontal rebar splices (2*d bar spacing)	Yes
List forces which were ignored for design in the Detail Report	Yes

Column Min Steel	1
Column Max Steel	8
Rebar Material Spec	ASTM A615
Warn if beam-column framing arrangement is not understood	No
Number of Shear Regions	4
Region 2 & 3 Spacing Increase Increment (in)	4

Code	ASCE 7-16
Risk Category	I or II
Drift Cat	Other

Company :TEP
 Designer :PRS
 Job Number :TEP No. 309257.1072627
 Model Name:Jackson DT (BU 831885)

2/28/2025
 8:52:57 AM
 Checked By : SMS

Model Settings (Continued)

Base Elevation (ft)	
Include the weight of the structure in base shear calcs	Yes
S_1 (g)	1
SD_1 (g)	1
SD_s (g)	1
T_1 (sec)	5
T Z (sec)	
T X (sec)	
C_z	0.02
C_x	0.02
$C_{Exp. Z}$	0.75
$C_{Exp. X}$	0.75
R Z	3
R X	3
$\Omega_0 Z$	1
$\Omega_0 X$	1
$C_0 Z$	1
$C_0 X$	1
ρZ	1
ρX	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [$10^{-6}F^{-1}$]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.42	29000	11154	0.3	0.65	0.49	42	1.4	58	1.3
5	A500 Gr.46	29000	11154	0.3	0.65	0.49	46	1.4	58	1.3
6	FRP	2600	450	0.35	0.44	0.13	10	0	0	0
7	A53-B-35	29000	11154	0.3	0.65	0.49	35	1.5	60	1.2

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [$10^{-6}F^{-1}$]	Density [k/ft ³]	Yield [ksi]	Fu [ksi]
1	A570 Gr.33	29500	11346	0.3	0.65	0.49	33	52
2	A607 C1 Gr.55	29500	11346	0.3	0.65	0.49	55	70

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	Mount Pipe	PIPE 2.0NOMINAL	None	None	A53-B-35	Typical	1.075	0.666	0.666	1.331
2	TWR_LEG T1	HSS10X10X6	Column	Tube	A500 Gr.42	Typical	13.2	202	202	320
3	Inner Girt 1	W18X35	Beam	Wide Flange	A992	Typical	10.3	15.3	510	0.506
4	Inner Girt 2	W12X22	Beam	Wide Flange	A992	Typical	6.48	4.66	156	0.293
5	Inner Girt 3	L3X3X5	HBrace	Single Angle	A36 Gr.36	Typical	1.78	1.5	1.5	0.06
6	Outer Girt 1	HSS4X4X6	Beam	Tube	A500 Gr.42	Typical	4.78	10.3	10.3	17.5
7	TWR_LEG T2	HSS6X6X6	Column	Tube	A500 Gr.42	Typical	7.58	39.5	39.5	64.6
8	Outer Girt 2	L4X4X4	HBrace	Single Angle	A36 Gr.36	Typical	1.93	3	3	0.044
9	TWR_LEG OUTER	HSS4X4X6	Column	Tube	A500 Gr.42	Typical	4.78	10.3	10.3	17.5
10	Cross	HSS8X8X6	None	None	A500 Gr.42	Typical	10.4	100	100	160

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	UNI	Unistrut 1.625	Beam	None	A570 Gr.33	Typical	0.464	0.121	0.201	0.002
2	CF1A	1.5CU1.25X035	Beam	None	A570 Gr.33	Typical	0.131	0.022	0.052	5.4e-5

Material Take-Off

	Material	Size	Pieces	Length[ft]	Weight[K]
0	General Members				
1	FRP Structural Shape	FRPHSS4X4X6 GMA	80	612.6	3.03
2	FRP Structural Shape	FRP-L4X4X3/8	82	336.5	0.863
3	FRP Structural Shape	FRP-L6X6X3/8	20	100.7	0.394
4	RIGID		66	11.5	0
5	FRP Structural Shape	FRPHSS3X3X4	32	333.6	0.825
6	Total General		280	1394.8	5.113
7					
8	Hot Rolled Steel				
9	A36 Gr.36	L3X3X5	3	10.9	0.066
10	A36 Gr.36	L4X4X4	72	128.6	0.845
11	A500 Gr.42	HSS10X10X6	4	125	5.615
12	A500 Gr.42	HSS6X6X6	4	90.7	2.339
13	A500 Gr.42	L11/2X11/2X3	8	30	0.054
14	A500 Gr.42	HSS8X8X6	2	17.6	0.623
15	A53-B-35	PIPE 2.0NOMINAL	26	246	0.899

Material Take-Off (Continued)

	Material	Size	Pieces	Length[ft]	Weight[K]
16	A992	W12X22	6	27.8	0.612
17	A992	W18X35	8	29	1.016
18	Total HR Steel		133	705.5	12.068
19					
20	Cold Formed Steel				
21	A570 Gr.33	Unistrut 1.625	8	37	0.058
22	Total CF Steel		8	37	0.058

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N4	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N3	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N11	Reaction	Reaction	Reaction			
6	N12	Reaction	Reaction	Reaction			
7	N5	Reaction	Reaction	Reaction			
8	N6	Reaction	Reaction	Reaction			
9	N10	Reaction	Reaction	Reaction			
10	N9	Reaction	Reaction	Reaction			
11	N8	Reaction	Reaction	Reaction			
12	N7	Reaction	Reaction	Reaction			

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N1	N29		TWR LEG T1	Column	Tube	A500 Gr.42	Typical
2	M2	N2	N30		TWR LEG T1	Column	Tube	A500 Gr.42	Typical
3	M3	N4	N32		TWR LEG T1	Column	Tube	A500 Gr.42	Typical
4	M4	N3	N31		TWR LEG T1	Column	Tube	A500 Gr.42	Typical
5	M5	N29	N25		TWR LEG T2	Column	Tube	A500 Gr.42	Typical
6	M6	N30	N26		TWR LEG T2	Column	Tube	A500 Gr.42	Typical
7	M7	N32	N28		TWR LEG T2	Column	Tube	A500 Gr.42	Typical
8	M8	N31	N27		TWR LEG T2	Column	Tube	A500 Gr.42	Typical
9	M9	N45	N46		Inner Girt 1	Beam	Wide Flange	A992	Typical
10	M10	N46	N48		Inner Girt 1	Beam	Wide Flange	A992	Typical
11	M11	N48	N47		Inner Girt 1	Beam	Wide Flange	A992	Typical
12	M12	N47	N45		Inner Girt 1	Beam	Wide Flange	A992	Typical
13	M13	N49A	N50A		Inner Girt 1	Beam	Wide Flange	A992	Typical
14	M14	N50A	N52A		Inner Girt 1	Beam	Wide Flange	A992	Typical
15	M15	N52A	N51A		Inner Girt 1	Beam	Wide Flange	A992	Typical
16	M16	N51A	N49A		Inner Girt 1	Beam	Wide Flange	A992	Typical
17	M17	N53A	N56A		Inner Girt 2	Beam	Wide Flange	A992	Typical
18	M18	N54A	N55A		Inner Girt 2	Beam	Wide Flange	A992	Typical
19	M19	N57	N60		Inner Girt 2	Beam	Wide Flange	A992	Typical
20	M20	N58	N59		Inner Girt 2	Beam	Wide Flange	A992	Typical
21	M21	N55A	N53A	90	Inner Girt 3	HBrace	Single Angle	A36 Gr.36	Typical
22	M22	N53A	N54A	90	Inner Girt 3	HBrace	Single Angle	A36 Gr.36	Typical
23	M23	N54A	N56A	90	Inner Girt 3	HBrace	Single Angle	A36 Gr.36	Typical
24	M26	N40	N91		Outrigger	Beam	None	FRP Structural Shape	DR1 2
25	M28	N48	N97		Outrigger	Beam	None	FRP Structural Shape	DR1 2
26	M30	N16	N99		Outrigger	Beam	None	FRP Structural Shape	DR1 2
27	M30A	N70	N97A		Outrigger	Beam	None	FRP Structural Shape	DR1 2
28	M31	N74	N98		Outrigger	Beam	None	FRP Structural Shape	DR1 2

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
29	M32	N100	N102		Outrigger	Beam	None	FRP Structural Shape	DR1 2
30	M33	N38	N94		Outrigger	Beam	None	FRP Structural Shape	DR1 2
31	M34	N46	N106		Outrigger	Beam	None	FRP Structural Shape	DR1 2
32	M35	N14	N107		Outrigger	Beam	None	FRP Structural Shape	DR1 2
33	M36	N68	N108		Outrigger	Beam	None	FRP Structural Shape	DR1 2
34	M37	N72	N109		Outrigger	Beam	None	FRP Structural Shape	DR1 2
35	M38	N60	N50		Outrigger	Beam	None	FRP Structural Shape	DR1 2
36	M38A	N98A	N111		Outrigger	Beam	None	FRP Structural Shape	DR1 2
37	M38B	N6	N107A		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
38	M39	N58	N49		Outrigger	Beam	None	FRP Structural Shape	DR1 2
39	M39A	N107A	N108A		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
40	M40	N108A	N50		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
41	M41	N5	N111A		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
42	M42	N111A	N112		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
43	M43	N112	N49		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
44	M44	N36	N111B	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
45	M45	N44	N113	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
46	M46	N66	N114	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
47	M47	N114A	N115	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
48	M48	N116	N117	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
49	M49	N78	N119	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
50	M50	N82	N120	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
51	M51	N86	N121	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
52	M52	N90	N122	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
53	M53	N34	N129	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
54	M54	N42	N130	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
55	M55	N64	N131	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
56	M56	N132	N133	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
57	M57	N134	N135	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
58	M58	N76	N136	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
59	M59	N80	N137	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
60	M60	N84	N138	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
61	M61	N88	N139	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
62	M78	N34	N147	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
63	M79	N42	N148	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
64	M80	N64	N149	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
65	M81	N132	N151	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
66	M82	N134	N153	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
67	M83	N76	N154	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
68	M84	N80	N155	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
69	M85	N84	N156	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
70	M86	N88	N157	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
71	M87	N33	N158	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
72	M88	N41	N159	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
73	M89	N63	N160	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
74	M90	N161	N162	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
75	M91	N163	N164	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
76	M92	N75	N165	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
77	M93	N79	N166	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
78	M94	N83	N167	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
79	M95	N87	N168	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
80	M96	N33	N183	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
81	M97	N41	N184	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
82	M98	N63	N185	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
83	M99	N161	N187	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
84	M100	N163	N189	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
85	M101	N75	N190	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
86	M102	N79	N191	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
87	M103	N83	N192	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
88	M104	N87	N193	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
89	M105	N35	N194	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
90	M106	N43	N195	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
91	M107	N65	N196	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
92	M108	N197	N198	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
93	M109	N199	N200	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
94	M110	N77	N201	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
95	M111	N81	N202	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
96	M112	N85	N203	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
97	M113	N89	N204	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
98	M114	N35	N219	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
99	M115	N43	N220	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
100	M116	N191A	N192A	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
101	M116A	N65	N221	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
102	M117	N193A	N194A	180	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
103	M117A	N197	N223	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
104	M118	N192A	N196A	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
105	M118A	N199	N225	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
106	M119	N194A	N198A	180	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
107	M119A	N77	N226	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
108	M120	N196A	N200A	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
109	M120A	N81	N227	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
110	M121	N198A	N202A	180	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
111	M121A	N85	N228	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
112	M122	N200A	N191A	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
113	M122A	N89	N229	180	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
114	M123	N202A	N193A	180	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
115	M123A	N36	N230	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
116	M124	N199A	N200B		Inner Girt 2	Beam	Wide Flange	A992	Typical
117	M124A	N44	N231	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
118	M125	N201A	N202B		Inner Girt 2	Beam	Wide Flange	A992	Typical
119	M125A	N66	N232	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
120	M126	N114A	N234	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
121	M127	N204A	N205	180	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
122	M127A	N116	N236	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
123	M128	N204A	N131	90	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
124	M128A	N78	N237	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
125	M129	N206	N203A	180	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
126	M129A	N203A	N114	180	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
127	M129B	N82	N238	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
128	M130	N205	N185	180	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
129	M130A	N86	N239	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
130	M131	N206	N196	90	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
131	M131A	N90	N240	90	Outer Girt 2	HBrace	Single Angle	A36 Gr.36	Typical
132	M132	N212	N213	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
133	M133	N214	N211	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
134	M134	N212	N133	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
135	M135	N211	N115	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
136	M136	N213	N187	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
137	M137	N214	N198	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
138	M138	N211A	N212A	270	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
139	M139	N212A	N213A	270	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
140	M140	N213A	N214A	270	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
141	M141	N214A	N211A	270	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
142	M142	N215	N216	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
143	M143	N217	N218		FRP Angle	Beam	None	FRP Structural Shape	DR1 1
144	M144	N215	N237	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
145	M145	N218	N226	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
146	M146	N217	N165	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
147	M147	N216	N154	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
148	M148	N219A	N220A	270	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
149	M149	N221A	N222	270	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
150	M150	N219A	N238		Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
151	M151	N222	N227	270	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
152	M152	N221A	N166		Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
153	M153	N220A	N155	270	Big FRP Angle	Beam	None	FRP Structural Shape	DR1 1
154	M154	N227A	N228A		FRP Angle	Beam	None	FRP Structural Shape	DR1 1
155	M155	N229A	N230A		FRP Angle	Beam	None	FRP Structural Shape	DR1 1
156	M156	N227A	N239	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
157	M157	N230A	N228	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
158	M158	N229A	N167	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
159	M159	N228A	N156	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
160	M160	N227B	N228B	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
161	M161	N229B	N230B	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
162	M162	N227B	N230B	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
163	M163	N229B	N228B	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
164	M224	N279	N280		Cross	None	None	A500 Gr.42	Typical
165	M225	N62	N279		RIGID	None	None	RIGID	Typical
166	M226	N61	N280		RIGID	None	None	RIGID	Typical
167	M227	N283A	N282A		Cross	None	None	A500 Gr.42	Typical
168	M228	N284A	N285A	90	L11/2X11/2X3	None	None	A500 Gr.42	Typical
169	M229	N286A	N284A	90	L11/2X11/2X3	None	None	A500 Gr.42	Typical
170	M230	N288	N286A	90	L11/2X11/2X3	None	None	A500 Gr.42	Typical
171	M231	N285A	N288	90	L11/2X11/2X3	None	None	A500 Gr.42	Typical
172	M232	N291A	N290A	90	L11/2X11/2X3	None	None	A500 Gr.42	Typical
173	M233	N294A	N293A	90	L11/2X11/2X3	None	None	A500 Gr.42	Typical
174	M234	N298A	N297A	90	L11/2X11/2X3	None	None	A500 Gr.42	Typical
175	M235	N302	N301	90	L11/2X11/2X3	None	None	A500 Gr.42	Typical
176	M236	N303	N311		RIGID	None	None	RIGID	Typical
177	M237	N300	N310		RIGID	None	None	RIGID	Typical
178	M238	N292A	N305		RIGID	None	None	RIGID	Typical
179	M239	N289A	N304		RIGID	None	None	RIGID	Typical
180	M240	N295A	N307		RIGID	None	None	RIGID	Typical
181	M241	N292B	N306		RIGID	None	None	RIGID	Typical
182	M242	N299	N309		RIGID	None	None	RIGID	Typical
183	M243	N296A	N308		RIGID	None	None	RIGID	Typical
184	M244	N284A	N313		RIGID	None	None	RIGID	Typical
185	M245	N286A	N314		RIGID	None	None	RIGID	Typical
186	M246	N288	N315A		RIGID	None	None	RIGID	Typical
187	M247	N285A	N321		RIGID	None	None	RIGID	Typical
188	M248	N317A	N319A	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
189	M249	N319B	N320A	270	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
190	M251	N323A	N324A	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
191	M252	N325A	N326A	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
192	M253	N327A	N328A	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
193	M253A	N327B	N328B	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
194	M254	N329A	N330A		FRP Angle	Beam	None	FRP Structural Shape	DR1 1
195	M255	N331A	N332A	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
196	M256	N333	N334	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
197	M257	N335	N336	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
198	M258	N319A	N328B	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
199	M259	N320A	N330A	270	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
200	M260	N319A	N320A	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
201	M261	N328B	N330A		FRP Angle	Beam	None	FRP Structural Shape	DR1 1
202	M262	N337	N338	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
203	M263	N339	N340	270	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
204	M264	N341	N342	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
205	M265	N343	N344	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
206	M266	N345	N346	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
207	M267	N347	N348	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
208	M268	N349	N350		FRP Angle	Beam	None	FRP Structural Shape	DR1 1
209	M269	N351	N352	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
210	M270	N353	N354	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
211	M271	N355	N356	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
212	M272	N338	N348	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
213	M273	N340	N350	270	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
214	M274	N338	N340	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
215	M275	N348	N350	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
216	M276	N357	N358	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
217	M277	N359	N360	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
218	M278	N361	N362	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
219	M279	N363	N364	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
220	M280	N365	N366	270	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
221	M281	N367	N368	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
222	M282	N369	N370	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
223	M283	N371	N372	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
224	M284	N373	N374	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
225	M285	N375	N376		FRP Angle	Beam	None	FRP Structural Shape	DR1 1
226	M286	N368	N358	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
227	M287	N376	N366		FRP Angle	Beam	None	FRP Structural Shape	DR1 1
228	M288	N358	N366		FRP Angle	Beam	None	FRP Structural Shape	DR1 1
229	M289	N368	N376	270	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
230	M290	N377	N378	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
231	M291	N379	N380	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
232	M292	N381	N382	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
233	M293	N383	N384	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
234	M294	N385	N386	270	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
235	M295	N387	N388	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
236	M296	N389	N390	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
237	M297	N391	N392	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
238	M298	N393	N394	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
239	M299	N395	N396		FRP Angle	Beam	None	FRP Structural Shape	DR1 1
240	M300	N388	N378	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
241	M301	N396	N386		FRP Angle	Beam	None	FRP Structural Shape	DR1 1
242	M302	N378	N386	180	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
243	M303	N388	N396	90	FRP Angle	Beam	None	FRP Structural Shape	DR1 1
244	M304	N399	N400		UNI	Beam	None	A570 Gr.33	Typical
245	M305	N401	N397		RIGID	None	None	RIGID	Typical
246	M306	N402	N398		RIGID	None	None	RIGID	Typical
247	M307	N405	N406		UNI	Beam	None	A570 Gr.33	Typical
248	M308	N407	N403		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
249	M309	N408	N404		RIGID	None	None	RIGID	Typical
250	M311	N413	N409		RIGID	None	None	RIGID	Typical
251	M312	N414	N410		RIGID	None	None	RIGID	Typical
252	M314	N419	N415		RIGID	None	None	RIGID	Typical
253	M315	N420	N416		RIGID	None	None	RIGID	Typical
254	M317	N425	N421		RIGID	None	None	RIGID	Typical
255	M318	N426	N422		RIGID	None	None	RIGID	Typical
256	M319	N429	N430		UNI	Beam	None	A570 Gr.33	Typical
257	M320	N431	N427		RIGID	None	None	RIGID	Typical
258	M321	N432	N428		RIGID	None	None	RIGID	Typical
259	M322	N435	N436		UNI	Beam	None	A570 Gr.33	Typical
260	M323	N437	N433		RIGID	None	None	RIGID	Typical
261	M324	N438	N434		RIGID	None	None	RIGID	Typical
262	M326	N443	N439		RIGID	None	None	RIGID	Typical
263	M327	N444	N440		RIGID	None	None	RIGID	Typical
264	M329	N449	N445		RIGID	None	None	RIGID	Typical
265	M330	N450	N446		RIGID	None	None	RIGID	Typical
266	M332	N455	N451		RIGID	None	None	RIGID	Typical
267	M333	N456	N452		RIGID	None	None	RIGID	Typical
268	M334	N459	N460		UNI	Beam	None	A570 Gr.33	Typical
269	M335	N461	N457		RIGID	None	None	RIGID	Typical
270	M336	N462	N458		RIGID	None	None	RIGID	Typical
271	M337	N465	N466		UNI	Beam	None	A570 Gr.33	Typical
272	M338	N467	N463		RIGID	None	None	RIGID	Typical
273	M339	N468	N464		RIGID	None	None	RIGID	Typical
274	M341	N473	N469		RIGID	None	None	RIGID	Typical
275	M342	N474	N470		RIGID	None	None	RIGID	Typical
276	M344	N479	N475		RIGID	None	None	RIGID	Typical
277	M345	N480	N476		RIGID	None	None	RIGID	Typical
278	M347	N485	N481		RIGID	None	None	RIGID	Typical
279	M348	N486	N482		RIGID	None	None	RIGID	Typical
280	M349	N489	N490		UNI	Beam	None	A570 Gr.33	Typical
281	M350	N491	N487		RIGID	None	None	RIGID	Typical
282	M351	N492	N488		RIGID	None	None	RIGID	Typical
283	M352	N495	N496		UNI	Beam	None	A570 Gr.33	Typical
284	M353	N497	N493		RIGID	None	None	RIGID	Typical
285	M354	N498	N494		RIGID	None	None	RIGID	Typical
286	M356	N503	N499		RIGID	None	None	RIGID	Typical
287	M357	N504	N500		RIGID	None	None	RIGID	Typical
288	M359	N509	N505		RIGID	None	None	RIGID	Typical
289	M360	N510	N506		RIGID	None	None	RIGID	Typical
290	M362	N515	N511		RIGID	None	None	RIGID	Typical
291	M362A	N38	N247		Outrigger	Beam	None	FRP Structural Shape	DR1 2
292	M363	N516	N512		RIGID	None	None	RIGID	Typical
293	M368	N37	N248		Outrigger	Beam	None	FRP Structural Shape	DR1 2
294	M372	N550	N549		Cladding	Beam	None	FRP Structural Shape	DR1 2
295	M376	N553A	N554		Cladding	Beam	None	FRP Structural Shape	DR1 2
296	M376A	N37	N281		Outrigger	Beam	None	FRP Structural Shape	DR1 2
297	M377	N557	N562		Cladding	Beam	None	FRP Structural Shape	DR1 2
298	M378	N558	N563		Cladding	Beam	None	FRP Structural Shape	DR1 2
299	M379	N559	N564		Cladding	Beam	None	FRP Structural Shape	DR1 2
300	M380	N560	N565		Cladding	Beam	None	FRP Structural Shape	DR1 2
301	M381	N561	N566		Cladding	Beam	None	FRP Structural Shape	DR1 2
302	M382	N556	N555		Cladding	Beam	None	FRP Structural Shape	DR1 2
303	M382A	N39	N282		Outrigger	Beam	None	FRP Structural Shape	DR1 2

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
304	M390A	N39	N315		Outrigger	Beam	None	FRP Structural Shape	DR1 2
305	M396A	N40	N316		Outrigger	Beam	None	FRP Structural Shape	DR1 2
306	MP-1	N539	N540		Mount Pipe	None	None	A53-B-35	Typical
307	MP-2	N423	N424		Mount Pipe	None	None	A53-B-35	Typical
308	MP-3	N411	N412		Mount Pipe	None	None	A53-B-35	Typical
309	MP-4	N417	N418		Mount Pipe	None	None	A53-B-35	Typical
310	MP-5	N535	N536		Mount Pipe	None	None	A53-B-35	Typical
311	MP-6	N547	N548		Mount Pipe	None	None	A53-B-35	Typical
312	MP-7	N453	N454		Mount Pipe	None	None	A53-B-35	Typical
313	MP-8	N441	N442		Mount Pipe	None	None	A53-B-35	Typical
314	MP-9	N447	N448		Mount Pipe	None	None	A53-B-35	Typical
315	MP-10	N543	N544		Mount Pipe	None	None	A53-B-35	Typical
316	MP-11	N523	N524		Mount Pipe	None	None	A53-B-35	Typical
317	MP-12	N483	N484		Mount Pipe	None	None	A53-B-35	Typical
318	MP-13	N471	N472		Mount Pipe	None	None	A53-B-35	Typical
319	MP-14	N477	N478		Mount Pipe	None	None	A53-B-35	Typical
320	MP-15	N519	N520		Mount Pipe	None	None	A53-B-35	Typical
321	MP-16	N531	N532		Mount Pipe	None	None	A53-B-35	Typical
322	MP-17	N513	N514		Mount Pipe	None	None	A53-B-35	Typical
323	MP-18	N501	N502		Mount Pipe	None	None	A53-B-35	Typical
324	MP-19	N507	N508		Mount Pipe	None	None	A53-B-35	Typical
325	MP-20	N527	N528		Mount Pipe	None	None	A53-B-35	Typical
326	M344A	N46	N249		Outrigger	Beam	None	FRP Structural Shape	DR1 2
327	M345A	N14	N250		Outrigger	Beam	None	FRP Structural Shape	DR1 2
328	M346	N68	N251		Outrigger	Beam	None	FRP Structural Shape	DR1 2
329	M347A	N72	N252		Outrigger	Beam	None	FRP Structural Shape	DR1 2
330	M348A	N98A	N255		Outrigger	Beam	None	FRP Structural Shape	DR1 2
331	M349A	N45	N256		Outrigger	Beam	None	FRP Structural Shape	DR1 2
332	M350A	N13	N257		Outrigger	Beam	None	FRP Structural Shape	DR1 2
333	M351A	N67	N258		Outrigger	Beam	None	FRP Structural Shape	DR1 2
334	M352A	N71	N259		Outrigger	Beam	None	FRP Structural Shape	DR1 2
335	M353A	N58	N56		Outrigger	Beam	None	FRP Structural Shape	DR1 2
336	M354A	N97B	N260		Outrigger	Beam	None	FRP Structural Shape	DR1 2
337	M355	N57	N55		Outrigger	Beam	None	FRP Structural Shape	DR1 2
338	M356A	N549	N551		Cladding	Beam	None	FRP Structural Shape	DR1 2
339	M357A	N554	N568		Cladding	Beam	None	FRP Structural Shape	DR1 2
340	M358	N562	N576		Cladding	Beam	None	FRP Structural Shape	DR1 2
341	M359A	N563	N577		Cladding	Beam	None	FRP Structural Shape	DR1 2
342	M360A	N564	N578		Cladding	Beam	None	FRP Structural Shape	DR1 2
343	M361	N565	N579		Cladding	Beam	None	FRP Structural Shape	DR1 2
344	M362B	N566	N580		Cladding	Beam	None	FRP Structural Shape	DR1 2
345	M363A	N555	N569		Cladding	Beam	None	FRP Structural Shape	DR1 2
346	M364	N45	N283		Outrigger	Beam	None	FRP Structural Shape	DR1 2
347	M365	N13	N284		Outrigger	Beam	None	FRP Structural Shape	DR1 2
348	M366	N67	N285		Outrigger	Beam	None	FRP Structural Shape	DR1 2
349	M367	N71	N286		Outrigger	Beam	None	FRP Structural Shape	DR1 2
350	M368A	N97B	N289		Outrigger	Beam	None	FRP Structural Shape	DR1 2
351	M369	N47	N290		Outrigger	Beam	None	FRP Structural Shape	DR1 2
352	M370	N15	N291		Outrigger	Beam	None	FRP Structural Shape	DR1 2
353	M371	N69	N292		Outrigger	Beam	None	FRP Structural Shape	DR1 2
354	M372A	N73	N293		Outrigger	Beam	None	FRP Structural Shape	DR1 2
355	M373	N57	N51		Outrigger	Beam	None	FRP Structural Shape	DR1 2
356	M374	N99A	N294		Outrigger	Beam	None	FRP Structural Shape	DR1 2
357	M375	N59	N52		Outrigger	Beam	None	FRP Structural Shape	DR1 2
358	M376B	N551	N553		Cladding	Beam	None	FRP Structural Shape	DR1 2

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
359	M377A	N568	N582		Cladding	Beam	None	FRP Structural Shape	DR1 2
360	M378A	N576	N590		Cladding	Beam	None	FRP Structural Shape	DR1 2
361	M379A	N577	N591		Cladding	Beam	None	FRP Structural Shape	DR1 2
362	M380A	N578	N592		Cladding	Beam	None	FRP Structural Shape	DR1 2
363	M381A	N579	N593		Cladding	Beam	None	FRP Structural Shape	DR1 2
364	M382B	N580	N594		Cladding	Beam	None	FRP Structural Shape	DR1 2
365	M383	N569	N583		Cladding	Beam	None	FRP Structural Shape	DR1 2
366	M384	N47	N317		Outrigger	Beam	None	FRP Structural Shape	DR1 2
367	M385	N15	N318		Outrigger	Beam	None	FRP Structural Shape	DR1 2
368	M386	N69	N319		Outrigger	Beam	None	FRP Structural Shape	DR1 2
369	M387	N73	N320		Outrigger	Beam	None	FRP Structural Shape	DR1 2
370	M388	N99A	N323		Outrigger	Beam	None	FRP Structural Shape	DR1 2
371	M389	N48	N324		Outrigger	Beam	None	FRP Structural Shape	DR1 2
372	M390	N16	N325		Outrigger	Beam	None	FRP Structural Shape	DR1 2
373	M391	N70	N326		Outrigger	Beam	None	FRP Structural Shape	DR1 2
374	M392	N74	N327		Outrigger	Beam	None	FRP Structural Shape	DR1 2
375	M393	N59	N53		Outrigger	Beam	None	FRP Structural Shape	DR1 2
376	M394	N100	N328		Outrigger	Beam	None	FRP Structural Shape	DR1 2
377	M395	N60	N54		Outrigger	Beam	None	FRP Structural Shape	DR1 2
378	M396	N553	N550		Cladding	Beam	None	FRP Structural Shape	DR1 2
379	M397	N582	N553A		Cladding	Beam	None	FRP Structural Shape	DR1 2
380	M398	N590	N557		Cladding	Beam	None	FRP Structural Shape	DR1 2
381	M399	N591	N558		Cladding	Beam	None	FRP Structural Shape	DR1 2
382	M400	N592	N559		Cladding	Beam	None	FRP Structural Shape	DR1 2
383	M401	N593	N560		Cladding	Beam	None	FRP Structural Shape	DR1 2
384	M402	N594	N561		Cladding	Beam	None	FRP Structural Shape	DR1 2
385	M403	N583	N556		Cladding	Beam	None	FRP Structural Shape	DR1 2
386	M386A	N12	N261		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
387	M387A	N261	N262		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
388	M388A	N262	N56		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
389	M389A	N11	N263		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
390	M390B	N263	N264		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
391	M391A	N264	N55		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
392	M392A	N7	N295		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
393	M393A	N295	N296		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
394	M394A	N296	N51		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
395	M395A	N8	N297		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
396	M396B	N297	N298		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
397	M397A	N298	N52		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
398	M398A	N9	N329		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
399	M399A	N329	N330		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
400	M400A	N330	N53		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
401	M401A	N10	N331		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
402	M402A	N331	N332		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
403	M403A	N332	N54		Outer Tower Leg	Beam	None	FRP Structural Shape	DR1 2
404	M404	N588	N600		RIGID	None	None	RIGID	Typical
405	M405	N595	N601		RIGID	None	None	RIGID	Typical
406	M406	N595	N605		RIGID	None	None	RIGID	Typical
407	M407	N589	N604		RIGID	None	None	RIGID	Typical
408	M408	N589	N609		RIGID	None	None	RIGID	Typical
409	M409	N587	N608		RIGID	None	None	RIGID	Typical
410	M410	N597	N602		RIGID	None	None	RIGID	Typical
411	M411	N599	N603		RIGID	None	None	RIGID	Typical
412	M412	N599	N607		RIGID	None	None	RIGID	Typical
413	M413	N598	N606		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
414	M414	N598	N611		RIGID	None	None	RIGID	Typical
415	M415	N596	N610		RIGID	None	None	RIGID	Typical
416	MP-21	N618	N612		Mount Pipe	None	None	A53-B-35	Typical
417	MP-22	N619	N613		Mount Pipe	None	None	A53-B-35	Typical
418	MP-23	N621	N615		Mount Pipe	None	None	A53-B-35	Typical
419	MP-24	N620	N614		Mount Pipe	None	None	A53-B-35	Typical
420	MP-25	N623	N617		Mount Pipe	None	None	A53-B-35	Typical
421	MP-26	N622	N616		Mount Pipe	None	None	A53-B-35	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	M1			Yes	** NA **	None
2	M2			Yes	** NA **	None
3	M3			Yes	** NA **	None
4	M4			Yes	** NA **	None
5	M5			Yes	** NA **	None
6	M6			Yes	** NA **	None
7	M7			Yes	** NA **	None
8	M8			Yes	** NA **	None
9	M9			Yes	N/A	None
10	M10			Yes	N/A	None
11	M11			Yes	N/A	None
12	M12			Yes	N/A	None
13	M13			Yes	N/A	None
14	M14			Yes	N/A	None
15	M15			Yes	N/A	None
16	M16			Yes	N/A	None
17	M17			Yes	N/A	None
18	M18			Yes	N/A	None
19	M19			Yes	N/A	None
20	M20			Yes	N/A	None
21	M21	BenPIN	BenPIN	Yes	** NA **	None
22	M22	BenPIN	BenPIN	Yes	** NA **	None
23	M23	BenPIN	BenPIN	Yes	** NA **	None
24	M26		BenPIN	Yes	N/A	None
25	M28		BenPIN	Yes	N/A	None
26	M30		BenPIN	Yes	N/A	None
27	M30A		BenPIN	Yes	N/A	None
28	M31		BenPIN	Yes	N/A	None
29	M32		BenPIN	Yes	N/A	None
30	M33		BenPIN	Yes	N/A	None
31	M34		BenPIN	Yes	N/A	None
32	M35		BenPIN	Yes	N/A	None
33	M36		BenPIN	Yes	N/A	None
34	M37		BenPIN	Yes	N/A	None
35	M38		BenPIN	Yes	N/A	None
36	M38A		BenPIN	Yes	N/A	None
37	M38B			Yes	N/A	None
38	M39		BenPIN	Yes	N/A	None
39	M39A			Yes	N/A	None
40	M40			Yes	N/A	None
41	M41			Yes	N/A	None
42	M42			Yes	N/A	None
43	M43			Yes	N/A	None
44	M44		BenPIN	Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
45	M45		BenPIN	Yes	** NA **	None
46	M46		BenPIN	Yes	** NA **	None
47	M47		BenPIN	Yes	** NA **	None
48	M48		BenPIN	Yes	** NA **	None
49	M49		BenPIN	Yes	** NA **	None
50	M50		BenPIN	Yes	** NA **	None
51	M51		BenPIN	Yes	** NA **	None
52	M52		BenPIN	Yes	** NA **	None
53	M53		BenPIN	Yes	** NA **	None
54	M54		BenPIN	Yes	** NA **	None
55	M55		BenPIN	Yes	** NA **	None
56	M56		BenPIN	Yes	** NA **	None
57	M57		BenPIN	Yes	** NA **	None
58	M58		BenPIN	Yes	** NA **	None
59	M59		BenPIN	Yes	** NA **	None
60	M60		BenPIN	Yes	** NA **	None
61	M61		BenPIN	Yes	** NA **	None
62	M78		BenPIN	Yes	** NA **	None
63	M79		BenPIN	Yes	** NA **	None
64	M80		BenPIN	Yes	** NA **	None
65	M81		BenPIN	Yes	** NA **	None
66	M82		BenPIN	Yes	** NA **	None
67	M83		BenPIN	Yes	** NA **	None
68	M84		BenPIN	Yes	** NA **	None
69	M85		BenPIN	Yes	** NA **	None
70	M86		BenPIN	Yes	** NA **	None
71	M87		BenPIN	Yes	** NA **	None
72	M88		BenPIN	Yes	** NA **	None
73	M89		BenPIN	Yes	** NA **	None
74	M90		BenPIN	Yes	** NA **	None
75	M91		BenPIN	Yes	** NA **	None
76	M92		BenPIN	Yes	** NA **	None
77	M93		BenPIN	Yes	** NA **	None
78	M94		BenPIN	Yes	** NA **	None
79	M95		BenPIN	Yes	** NA **	None
80	M96		BenPIN	Yes	** NA **	None
81	M97		BenPIN	Yes	** NA **	None
82	M98		BenPIN	Yes	** NA **	None
83	M99		BenPIN	Yes	** NA **	None
84	M100		BenPIN	Yes	** NA **	None
85	M101		BenPIN	Yes	** NA **	None
86	M102		BenPIN	Yes	** NA **	None
87	M103		BenPIN	Yes	** NA **	None
88	M104		BenPIN	Yes	** NA **	None
89	M105		BenPIN	Yes	** NA **	None
90	M106		BenPIN	Yes	** NA **	None
91	M107		BenPIN	Yes	** NA **	None
92	M108		BenPIN	Yes	** NA **	None
93	M109		BenPIN	Yes	** NA **	None
94	M110		BenPIN	Yes	** NA **	None
95	M111		BenPIN	Yes	** NA **	None
96	M112		BenPIN	Yes	** NA **	None
97	M113		BenPIN	Yes	** NA **	None
98	M114		BenPIN	Yes	** NA **	None
99	M115		BenPIN	Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
100	M116		BenPIN	Yes	N/A	None
101	M116A		BenPIN	Yes	** NA **	None
102	M117		BenPIN	Yes	N/A	None
103	M117A		BenPIN	Yes	** NA **	None
104	M118		BenPIN	Yes	N/A	None
105	M118A		BenPIN	Yes	** NA **	None
106	M119		BenPIN	Yes	N/A	None
107	M119A		BenPIN	Yes	** NA **	None
108	M120		BenPIN	Yes	N/A	None
109	M120A		BenPIN	Yes	** NA **	None
110	M121		BenPIN	Yes	N/A	None
111	M121A		BenPIN	Yes	** NA **	None
112	M122		BenPIN	Yes	N/A	None
113	M122A		BenPIN	Yes	** NA **	None
114	M123		BenPIN	Yes	N/A	None
115	M123A		BenPIN	Yes	** NA **	None
116	M124	BenPIN	BenPIN	Yes	N/A	None
117	M124A		BenPIN	Yes	** NA **	None
118	M125	BenPIN	BenPIN	Yes	N/A	None
119	M125A		BenPIN	Yes	** NA **	None
120	M126		BenPIN	Yes	** NA **	None
121	M127	BenPIN	BenPIN	Yes	N/A	None
122	M127A		BenPIN	Yes	** NA **	None
123	M128			Yes	N/A	None
124	M128A		BenPIN	Yes	** NA **	None
125	M129	BenPIN	BenPIN	Yes	N/A	None
126	M129A			Yes	N/A	None
127	M129B		BenPIN	Yes	** NA **	None
128	M130			Yes	N/A	None
129	M130A		BenPIN	Yes	** NA **	None
130	M131			Yes	N/A	None
131	M131A		BenPIN	Yes	** NA **	None
132	M132			Yes	N/A	None
133	M133			Yes	N/A	None
134	M134			Yes	N/A	None
135	M135			Yes	N/A	None
136	M136			Yes	N/A	None
137	M137			Yes	N/A	None
138	M138		BenPIN	Yes	N/A	None
139	M139		BenPIN	Yes	N/A	None
140	M140		BenPIN	Yes	N/A	None
141	M141		BenPIN	Yes	N/A	None
142	M142			Yes	N/A	None
143	M143			Yes	N/A	None
144	M144			Yes	N/A	None
145	M145			Yes	N/A	None
146	M146			Yes	N/A	None
147	M147			Yes	N/A	None
148	M148	BenPIN	BenPIN	Yes	N/A	None
149	M149	BenPIN	BenPIN	Yes	N/A	None
150	M150			Yes	N/A	None
151	M151			Yes	N/A	None
152	M152			Yes	N/A	None
153	M153			Yes	N/A	None
154	M154	BenPIN	BenPIN	Yes	N/A	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
155	M155	BenPIN	BenPIN	Yes	N/A	None
156	M156			Yes	N/A	None
157	M157			Yes	N/A	None
158	M158			Yes	N/A	None
159	M159			Yes	N/A	None
160	M160		BenPIN	Yes	N/A	None
161	M161		BenPIN	Yes	N/A	None
162	M162	BenPIN		Yes	N/A	None
163	M163	BenPIN		Yes	N/A	None
164	M224	BenPIN	BenPIN	Yes	** NA **	None
165	M225			Yes	** NA **	None
166	M226			Yes	** NA **	None
167	M227			Yes	** NA **	None
168	M228		BenPIN	Yes	** NA **	None
169	M229		BenPIN	Yes	** NA **	None
170	M230		BenPIN	Yes	** NA **	None
171	M231		BenPIN	Yes	** NA **	None
172	M232			Yes	** NA **	None
173	M233			Yes	** NA **	None
174	M234			Yes	** NA **	None
175	M235			Yes	** NA **	None
176	M236			Yes	** NA **	None
177	M237	OOOXOX		Yes	** NA **	None
178	M238			Yes	** NA **	None
179	M239	OOOXOX		Yes	** NA **	None
180	M240			Yes	** NA **	None
181	M241	OOOXOX		Yes	** NA **	None
182	M242			Yes	** NA **	None
183	M243	OOOXOX		Yes	** NA **	None
184	M244	BenPIN		Yes	** NA **	None
185	M245	BenPIN		Yes	** NA **	None
186	M246	BenPIN		Yes	** NA **	None
187	M247	BenPIN		Yes	** NA **	None
188	M248		BenPIN	Yes	N/A	None
189	M249		BenPIN	Yes	N/A	None
190	M251		BenPIN	Yes	N/A	None
191	M252		BenPIN	Yes	N/A	None
192	M253		BenPIN	Yes	N/A	None
193	M253A		BenPIN	Yes	N/A	None
194	M254		BenPIN	Yes	N/A	None
195	M255		BenPIN	Yes	N/A	None
196	M256		BenPIN	Yes	N/A	None
197	M257		BenPIN	Yes	N/A	None
198	M258			Yes	N/A	None
199	M259			Yes	N/A	None
200	M260			Yes	N/A	None
201	M261			Yes	N/A	None
202	M262		BenPIN	Yes	N/A	None
203	M263		BenPIN	Yes	N/A	None
204	M264		BenPIN	Yes	N/A	None
205	M265		BenPIN	Yes	N/A	None
206	M266		BenPIN	Yes	N/A	None
207	M267		BenPIN	Yes	N/A	None
208	M268		BenPIN	Yes	N/A	None
209	M269		BenPIN	Yes	N/A	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
210	M270		BenPIN	Yes	N/A	None
211	M271		BenPIN	Yes	N/A	None
212	M272			Yes	N/A	None
213	M273			Yes	N/A	None
214	M274			Yes	N/A	None
215	M275			Yes	N/A	None
216	M276		BenPIN	Yes	N/A	None
217	M277		BenPIN	Yes	N/A	None
218	M278		BenPIN	Yes	N/A	None
219	M279		BenPIN	Yes	N/A	None
220	M280		BenPIN	Yes	N/A	None
221	M281		BenPIN	Yes	N/A	None
222	M282		BenPIN	Yes	N/A	None
223	M283		BenPIN	Yes	N/A	None
224	M284		BenPIN	Yes	N/A	None
225	M285		BenPIN	Yes	N/A	None
226	M286			Yes	N/A	None
227	M287			Yes	N/A	None
228	M288			Yes	N/A	None
229	M289			Yes	N/A	None
230	M290		BenPIN	Yes	N/A	None
231	M291		BenPIN	Yes	N/A	None
232	M292		BenPIN	Yes	N/A	None
233	M293		BenPIN	Yes	N/A	None
234	M294		BenPIN	Yes	N/A	None
235	M295		BenPIN	Yes	N/A	None
236	M296		BenPIN	Yes	N/A	None
237	M297		BenPIN	Yes	N/A	None
238	M298		BenPIN	Yes	N/A	None
239	M299		BenPIN	Yes	N/A	None
240	M300			Yes	N/A	None
241	M301			Yes	N/A	None
242	M302			Yes	N/A	None
243	M303			Yes	N/A	None
244	M304			Yes	N/A	None
245	M305			Yes	** NA **	None
246	M306			Yes	** NA **	None
247	M307			Yes	N/A	None
248	M308			Yes	** NA **	None
249	M309			Yes	** NA **	None
250	M311		OOOXOX	Yes	** NA **	None
251	M312			Yes	** NA **	None
252	M314		OOOXOX	Yes	** NA **	None
253	M315			Yes	** NA **	None
254	M317		OOOXOX	Yes	** NA **	None
255	M318			Yes	** NA **	None
256	M319			Yes	N/A	None
257	M320			Yes	** NA **	None
258	M321			Yes	** NA **	None
259	M322			Yes	N/A	None
260	M323			Yes	** NA **	None
261	M324			Yes	** NA **	None
262	M326		OOOXOX	Yes	** NA **	None
263	M327			Yes	** NA **	None
264	M329		OOOXOX	Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
265	M330			Yes	** NA **	None
266	M332		OOOXOX	Yes	** NA **	None
267	M333			Yes	** NA **	None
268	M334			Yes	N/A	None
269	M335			Yes	** NA **	None
270	M336			Yes	** NA **	None
271	M337			Yes	N/A	None
272	M338			Yes	** NA **	None
273	M339			Yes	** NA **	None
274	M341		OOOXOX	Yes	** NA **	None
275	M342			Yes	** NA **	None
276	M344		OOOXOX	Yes	** NA **	None
277	M345			Yes	** NA **	None
278	M347		OOOXOX	Yes	** NA **	None
279	M348			Yes	** NA **	None
280	M349			Yes	N/A	None
281	M350			Yes	** NA **	None
282	M351			Yes	** NA **	None
283	M352			Yes	N/A	None
284	M353			Yes	** NA **	None
285	M354			Yes	** NA **	None
286	M356		OOOXOX	Yes	** NA **	None
287	M357			Yes	** NA **	None
288	M359		OOOXOX	Yes	** NA **	None
289	M360			Yes	** NA **	None
290	M362		OOOXOX	Yes	** NA **	None
291	M362A		BenPIN	Yes	N/A	None
292	M363			Yes	** NA **	None
293	M368		BenPIN	Yes	N/A	None
294	M372		BenPIN	Yes	N/A	None
295	M376		BenPIN	Yes	N/A	None
296	M376A		BenPIN	Yes	N/A	None
297	M377		BenPIN	Yes	N/A	None
298	M378		BenPIN	Yes	N/A	None
299	M379		BenPIN	Yes	N/A	None
300	M380		BenPIN	Yes	N/A	None
301	M381		BenPIN	Yes	N/A	None
302	M382		BenPIN	Yes	N/A	None
303	M382A		BenPIN	Yes	N/A	None
304	M390A		BenPIN	Yes	N/A	None
305	M396A		BenPIN	Yes	N/A	None
306	MP-1			Yes	** NA **	None
307	MP-2			Yes	** NA **	None
308	MP-3			Yes	** NA **	None
309	MP-4			Yes	** NA **	None
310	MP-5			Yes	** NA **	None
311	MP-6			Yes	** NA **	None
312	MP-7			Yes	** NA **	None
313	MP-8			Yes	** NA **	None
314	MP-9			Yes	** NA **	None
315	MP-10			Yes	** NA **	None
316	MP-11			Yes	** NA **	None
317	MP-12			Yes	** NA **	None
318	MP-13			Yes	** NA **	None
319	MP-14			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
320	MP-15			Yes	** NA **	None
321	MP-16			Yes	** NA **	None
322	MP-17			Yes	** NA **	None
323	MP-18			Yes	** NA **	None
324	MP-19			Yes	** NA **	None
325	MP-20			Yes	** NA **	None
326	M344A		BenPIN	Yes	N/A	None
327	M345A		BenPIN	Yes	N/A	None
328	M346		BenPIN	Yes	N/A	None
329	M347A		BenPIN	Yes	N/A	None
330	M348A		BenPIN	Yes	N/A	None
331	M349A		BenPIN	Yes	N/A	None
332	M350A		BenPIN	Yes	N/A	None
333	M351A		BenPIN	Yes	N/A	None
334	M352A		BenPIN	Yes	N/A	None
335	M353A		BenPIN	Yes	N/A	None
336	M354A		BenPIN	Yes	N/A	None
337	M355		BenPIN	Yes	N/A	None
338	M356A		BenPIN	Yes	N/A	None
339	M357A		BenPIN	Yes	N/A	None
340	M358		BenPIN	Yes	N/A	None
341	M359A		BenPIN	Yes	N/A	None
342	M360A		BenPIN	Yes	N/A	None
343	M361		BenPIN	Yes	N/A	None
344	M362B		BenPIN	Yes	N/A	None
345	M363A		BenPIN	Yes	N/A	None
346	M364		BenPIN	Yes	N/A	None
347	M365		BenPIN	Yes	N/A	None
348	M366		BenPIN	Yes	N/A	None
349	M367		BenPIN	Yes	N/A	None
350	M368A		BenPIN	Yes	N/A	None
351	M369		BenPIN	Yes	N/A	None
352	M370		BenPIN	Yes	N/A	None
353	M371		BenPIN	Yes	N/A	None
354	M372A		BenPIN	Yes	N/A	None
355	M373		BenPIN	Yes	N/A	None
356	M374		BenPIN	Yes	N/A	None
357	M375		BenPIN	Yes	N/A	None
358	M376B		BenPIN	Yes	N/A	None
359	M377A		BenPIN	Yes	N/A	None
360	M378A		BenPIN	Yes	N/A	None
361	M379A		BenPIN	Yes	N/A	None
362	M380A		BenPIN	Yes	N/A	None
363	M381A		BenPIN	Yes	N/A	None
364	M382B		BenPIN	Yes	N/A	None
365	M383		BenPIN	Yes	N/A	None
366	M384		BenPIN	Yes	N/A	None
367	M385		BenPIN	Yes	N/A	None
368	M386		BenPIN	Yes	N/A	None
369	M387		BenPIN	Yes	N/A	None
370	M388		BenPIN	Yes	N/A	None
371	M389		BenPIN	Yes	N/A	None
372	M390		BenPIN	Yes	N/A	None
373	M391		BenPIN	Yes	N/A	None
374	M392		BenPIN	Yes	N/A	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
375	M393		BenPIN	Yes	N/A	None
376	M394		BenPIN	Yes	N/A	None
377	M395		BenPIN	Yes	N/A	None
378	M396		BenPIN	Yes	N/A	None
379	M397		BenPIN	Yes	N/A	None
380	M398		BenPIN	Yes	N/A	None
381	M399		BenPIN	Yes	N/A	None
382	M400		BenPIN	Yes	N/A	None
383	M401		BenPIN	Yes	N/A	None
384	M402		BenPIN	Yes	N/A	None
385	M403		BenPIN	Yes	N/A	None
386	M386A			Yes	N/A	None
387	M387A			Yes	N/A	None
388	M388A			Yes	N/A	None
389	M389A			Yes	N/A	None
390	M390B			Yes	N/A	None
391	M391A			Yes	N/A	None
392	M392A			Yes	N/A	None
393	M393A			Yes	N/A	None
394	M394A			Yes	N/A	None
395	M395A			Yes	N/A	None
396	M396B			Yes	N/A	None
397	M397A			Yes	N/A	None
398	M398A			Yes	N/A	None
399	M399A			Yes	N/A	None
400	M400A			Yes	N/A	None
401	M401A			Yes	N/A	None
402	M402A			Yes	N/A	None
403	M403A			Yes	N/A	None
404	M404			Yes	** NA **	None
405	M405			Yes	** NA **	None
406	M406			Yes	** NA **	None
407	M407			Yes	** NA **	None
408	M408			Yes	** NA **	None
409	M409			Yes	** NA **	None
410	M410			Yes	** NA **	None
411	M411			Yes	** NA **	None
412	M412			Yes	** NA **	None
413	M413			Yes	** NA **	None
414	M414			Yes	** NA **	None
415	M415			Yes	** NA **	None
416	MP-21			Yes	** NA **	None
417	MP-22			Yes	** NA **	None
418	MP-23			Yes	** NA **	None
419	MP-24			Yes	** NA **	None
420	MP-25			Yes	** NA **	None
421	MP-26			Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	K y-y	K z-z	Channel Conn.	a [ft]	Function
1	M1	TWR LEG T1	31.25			0.65	0.65	N/A	N/A	Lateral
2	M2	TWR LEG T1	31.25			0.65	0.65	N/A	N/A	Lateral
3	M3	TWR LEG T1	31.25			0.65	0.65	N/A	N/A	Lateral
4	M4	TWR LEG T1	31.25			0.65	0.65	N/A	N/A	Lateral
5	M5	TWR LEG T2	22.667			2.1	2.1	N/A	N/A	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	K y-y	K z-z	Channel Conn.	a [ft]	Function
6	M6	TWR LEG T2	22.667			2.1	2.1	N/A	N/A	Lateral
7	M7	TWR LEG T2	22.667			2.1	2.1	N/A	N/A	Lateral
8	M8	TWR LEG T2	22.667			2.1	2.1	N/A	N/A	Lateral
9	M9	Inner Girt 1	3.625			0.65	0.65	N/A	N/A	Lateral
10	M10	Inner Girt 1	3.625			0.65	0.65	N/A	N/A	Lateral
11	M11	Inner Girt 1	3.625			0.65	0.65	N/A	N/A	Lateral
12	M12	Inner Girt 1	3.625			0.65	0.65	N/A	N/A	Lateral
13	M13	Inner Girt 1	3.625			0.65	0.65	N/A	N/A	Lateral
14	M14	Inner Girt 1	3.625			0.65	0.65	N/A	N/A	Lateral
15	M15	Inner Girt 1	3.625			0.65	0.65	N/A	N/A	Lateral
16	M16	Inner Girt 1	3.625			0.65	0.65	N/A	N/A	Lateral
17	M17	Inner Girt 2	5.127			0.65	0.65	N/A	N/A	Lateral
18	M18	Inner Girt 2	5.127			0.65	0.65	N/A	N/A	Lateral
19	M19	Inner Girt 2	5.127			0.65	0.65	N/A	N/A	Lateral
20	M20	Inner Girt 2	5.127			0.65	0.65	N/A	N/A	Lateral
21	M21	Inner Girt 3	3.625			1	1	N/A	N/A	Lateral
22	M22	Inner Girt 3	3.625			1	1	N/A	N/A	Lateral
23	M23	Inner Girt 3	3.625			1	1	N/A	N/A	Lateral
24	M44	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
25	M45	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
26	M46	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
27	M47	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
28	M48	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
29	M49	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
30	M50	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
31	M51	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
32	M52	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
33	M53	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
34	M54	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
35	M55	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
36	M56	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
37	M57	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
38	M58	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
39	M59	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
40	M60	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
41	M61	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
42	M78	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
43	M79	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
44	M80	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
45	M81	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
46	M82	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
47	M83	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
48	M84	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
49	M85	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
50	M86	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
51	M87	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
52	M88	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
53	M89	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
54	M90	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
55	M91	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
56	M92	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
57	M93	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
58	M94	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
59	M95	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
60	M96	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	K y-y	K z-z	Channel Conn.	a [ft]	Function
61	M97	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
62	M98	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
63	M99	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
64	M100	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
65	M101	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
66	M102	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
67	M103	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
68	M104	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
69	M105	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
70	M106	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
71	M107	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
72	M108	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
73	M109	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
74	M110	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
75	M111	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
76	M112	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
77	M113	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
78	M114	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
79	M115	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
80	M116A	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
81	M117A	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
82	M118A	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
83	M119A	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
84	M120A	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
85	M121A	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
86	M122A	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
87	M123A	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
88	M124	Inner Girt 2	3.625			1	1	N/A	N/A	Lateral
89	M124A	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
90	M125	Inner Girt 2	3.625			1	1	N/A	N/A	Lateral
91	M125A	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
92	M126	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
93	M127A	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
94	M128A	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
95	M129B	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
96	M130A	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
97	M131A	Outer Girt 2	1.786			0.8	0.8	N/A	N/A	Lateral
98	M224	Cross	14.708			1	1	N/A	N/A	Lateral
99	M227	Cross	2.885			2.1	2.1	N/A	N/A	Lateral
100	M228	L11/2X11/2X3	2			0.8	0.8	N/A	N/A	Lateral
101	M229	L11/2X11/2X3	2			0.8	0.8	N/A	N/A	Lateral
102	M230	L11/2X11/2X3	2			0.8	0.8	N/A	N/A	Lateral
103	M231	L11/2X11/2X3	2			0.8	0.8	N/A	N/A	Lateral
104	M232	L11/2X11/2X3	5.5			2.1	2.1	N/A	N/A	Lateral
105	M233	L11/2X11/2X3	5.5			2.1	2.1	N/A	N/A	Lateral
106	M234	L11/2X11/2X3	5.5			2.1	2.1	N/A	N/A	Lateral
107	M235	L11/2X11/2X3	5.5			2.1	2.1	N/A	N/A	Lateral
108	MP-1	Mount Pipe	10.5	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
109	MP-2	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
110	MP-3	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
111	MP-4	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
112	MP-5	Mount Pipe	10.5	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
113	MP-6	Mount Pipe	10.5	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
114	MP-7	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
115	MP-8	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	K y-y	K z-z	Channel Conn.	a [ft]	Function
116	MP-9	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
117	MP-10	Mount Pipe	10.5	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
118	MP-11	Mount Pipe	10.5	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
119	MP-12	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
120	MP-13	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
121	MP-14	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
122	MP-15	Mount Pipe	10.5	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
123	MP-16	Mount Pipe	10.5	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
124	MP-17	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
125	MP-18	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
126	MP-19	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
127	MP-20	Mount Pipe	10.5	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
128	MP-21	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
129	MP-22	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
130	MP-23	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
131	MP-24	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
132	MP-25	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral
133	MP-26	Mount Pipe	9	Segment	Segment	2.1	2.1	N/A	N/A	Lateral

Cold Formed Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	M304	UNI	4.625	Lbyy	Lateral
2	M307	UNI	4.625	Lbyy	Lateral
3	M319	UNI	4.625	Lbyy	Lateral
4	M322	UNI	4.625	Lbyy	Lateral
5	M334	UNI	4.625	Lbyy	Lateral
6	M337	UNI	4.625	Lbyy	Lateral
7	M349	UNI	4.625	Lbyy	Lateral
8	M352	UNI	4.625	Lbyy	Lateral

Basic Load Cases

	BLC Description	Category	Y Gravity	Point	Distributed	Area(Member)
1	Dead	None	-1	42		11
2	0 Wind - No Ice	None				7
3	90 Wind - No Ice	None				7
4	180 Wind - No Ice	None				7
5	270 Wind - No Ice	None				7
6	Snow Load	None				1
7	BLC 1 Transient Area Loads	None			388	
8	BLC 2 Transient Area Loads	None			149	
9	BLC 3 Transient Area Loads	None			149	
10	BLC 4 Transient Area Loads	None			149	
11	BLC 5 Transient Area Loads	None			149	
12	BLC 6 Transient Area Loads	None			19	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	D	Yes	Y	1	1						
2	D + S	Yes	Y	1	1	6	1				
3	D + 0.75S	Yes	Y	1	1	6	0.75				
4	D+0.6 0-Wind	Yes	Y	1	1	2	0.6				
5	D+0.6 45-Wind	Yes	Y	1	1	2	0.509	3	0.509		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
6	D+0.6 90-Wind	Yes	Y	1	1	3	0.6				
7	D+0.6 135-Wind	Yes	Y	1	1	3	0.509	4	0.509		
8	D+0.6 180-Wind	Yes	Y	1	1	4	0.6				
9	D+0.6 225-Wind	Yes	Y	1	1	4	0.509	5	0.509		
10	D+0.6 270-Wind	Yes	Y	1	1	5	0.6				
11	D+0.6 315-Wind	Yes	Y	1	1	5	0.509	2	0.509		
12	D + 0.75(0.6 0-Wind) + 0.75S	Yes	Y	1	0.6	2	0.45			6	0.75
13	D + 0.75(0.6 45-Wind) + 0.75S	Yes	Y	1	0.6	2	0.382	3	0.382	6	0.75
14	D + 0.75(0.6 90-Wind) + 0.75S	Yes	Y	1	0.6	3	0.45			6	0.75
15	D + 0.75(0.6 135-Wind) + 0.75S	Yes	Y	1	0.6	3	0.382	4	0.382	6	0.75
16	D + 0.75(0.6 180-Wind) + 0.75S	Yes	Y	1	0.6	4	0.45			6	0.75
17	D + 0.75(0.6 225-Wind) + 0.75S	Yes	Y	1	0.6	4	0.382	5	0.382	6	0.75
18	D + 0.75(0.6 270-Wind) + 0.75S	Yes	Y	1	0.6	5	0.45			6	0.75
19	D + 0.75(0.6 315-Wind) + 0.75S	Yes	Y	1	0.6	5	0.382	2	0.382	6	0.75
20	0.6D+0.6 0-Wind	Yes	Y	1	0.6	2	0.6				
21	0.6D+0.6 45-Wind	Yes	Y	1	0.6	2	0.509	3	0.509		
22	0.6D+0.6 90-Wind	Yes	Y	1	0.6	3	0.6				
23	0.6D+0.6 135-Wind	Yes	Y	1	0.6	3	0.509	4	0.509		
24	0.6D+0.6 180-Wind	Yes	Y	1	0.6	4	0.6				
25	0.6D+0.6 225-Wind	Yes	Y	1	0.6	4	0.509	5	0.509		
26	0.6D+0.6 270-Wind	Yes	Y	1	0.6	5	0.6				
27	0.6D+0.6 315-Wind	Yes	Y	1	0.6	5	0.509	2	0.509		

Nodal Loads and Enforced Displacements

No Data to Print...

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	MP-4	Y	-0.068	0.86
2	MP-6	Y	-0.068	1.45
3	MP-10	Y	-0.068	1.45
4	MP-4	Y	-0.068	5.8
5	MP-6	Y	-0.068	6.39
6	MP-10	Y	-0.068	6.39
7	MP-11	Y	-0.05	0.25
8	MP-12	Y	-0.05	0.25
9	MP-14	Y	-0.05	0.25
10	MP-15	Y	-0.05	0.25
11	MP-16	Y	-0.05	0.25
12	MP-17	Y	-0.05	0.25
13	MP-19	Y	-0.05	0.25
14	MP-20	Y	-0.05	0.25
15	MP-11	Y	-0.05	6.25
16	MP-12	Y	-0.05	6.25
17	MP-14	Y	-0.05	6.25
18	MP-15	Y	-0.05	6.25
19	MP-16	Y	-0.05	6.25
20	MP-17	Y	-0.05	6.25
21	MP-19	Y	-0.05	6.25
22	MP-20	Y	-0.05	6.25
23	MP-21	Y	-0.063	0.5
24	MP-22	Y	-0.028	0.2
25	MP-23	Y	-0.063	0.5
26	MP-24	Y	-0.028	0.2

Member Point Loads (BLC 1 : Dead) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
27	MP-25	Y	-0.063	0.5
28	MP-26	Y	-0.028	0.2
29	MP-21	Y	-0.063	8.5
30	MP-22	Y	-0.028	2.8
31	MP-23	Y	-0.063	8.5
32	MP-24	Y	-0.028	2.8
33	MP-25	Y	-0.063	8.5
34	MP-26	Y	-0.028	2.8
35	MP-21	Y	-0.032	4.5
36	MP-21	Y	-0.068	4.5
37	MP-22	Y	-0.068	4.5
38	MP-23	Y	-0.068	4.5
39	MP-24	Y	-0.068	4.5
40	MP-25	Y	-0.068	4.5
41	MP-26	Y	-0.068	4.5
42	MP-26	Y	-0.032	4.5

Member Distributed Loads (BLC 7 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M17	Y	-0.031	-0.008	0	1.709
2	M17	Y	-0.008	-0.008	1.709	3.418
3	M17	Y	-0.008	-0.031	3.418	5.127
4	M18	Y	-0.031	-0.008	0	1.709
5	M18	Y	-0.008	-0.008	1.709	3.418
6	M18	Y	-0.008	-0.031	3.418	5.127
7	M13	Y	-0.011	-0.011	0	3.625
8	M14	Y	-0.011	-0.011	0.892	2.733
9	M15	Y	-0.011	-0.011	0	3.625
10	M16	Y	-0.011	-0.011	0.892	2.733
11	M125	Y	-0.022	-0.022	0.892	2.733
12	M230	Y	-0.008	-0.008	0	1
13	M230	Y	-0.005	-0.005	1	2
14	M234	Y	-0.002	-0.002	0	1.833
15	M234	Y	-0.002	-0.002	1.833	3.667
16	M234	Y	-0.002	-0.002	3.667	5.5
17	M229	Y	-0.008	-0.008	0	1
18	M229	Y	-0.005	-0.005	1	2
19	M233	Y	-0.002	-0.002	0	1.833
20	M233	Y	-0.002	-0.002	1.833	3.667
21	M233	Y	-0.002	-0.002	3.667	5.5
22	M228	Y	-0.005	-0.005	0	1
23	M228	Y	-0.005	-0.005	1	2
24	M232	Y	-0.002	-0.002	0	1.833
25	M232	Y	-0.002	-0.002	1.833	3.667
26	M232	Y	-0.002	-0.002	3.667	5.5
27	M231	Y	-0.005	-0.005	0	1
28	M231	Y	-0.005	-0.005	1	2
29	M235	Y	-0.002	-0.002	0	1.833
30	M235	Y	-0.002	-0.002	1.833	3.667
31	M235	Y	-0.002	-0.002	3.667	5.5
32	M228	Y	-0.003	-0.003	0	2
33	M396	Y	-0.029	-0.011	0	2.317
34	M396	Y	-0.011	-0.004	2.317	4.633
35	M396	Y	-0.004	-0.004	4.633	6.95
36	M396	Y	-0.004	-0.011	6.95	9.267

Member Distributed Loads (BLC 7 : BLC 1 Transient Area Loads) (Continued)

Member Label Direction Start Magnitude [k/ft, F, ksf, k-ft/ft] End Magnitude [k/ft, F, ksf, k-ft/ft] Start Location [(ft, %)] End Location [(ft, %)]						
37	M396	Y	-0.011	-0.029	9.267	11.583
38	M397	Y	-0.055	-0.024	0	2.258
39	M397	Y	-0.024	-0.011	2.258	4.515
40	M397	Y	-0.011	-0.011	4.515	6.773
41	M397	Y	-0.011	-0.024	6.773	9.031
42	M397	Y	-0.024	-0.055	9.031	11.289
43	M398	Y	-0.046	-0.019	0	2.18
44	M398	Y	-0.019	-0.012	2.18	4.36
45	M398	Y	-0.012	-0.012	4.36	6.541
46	M398	Y	-0.012	-0.018	6.541	8.721
47	M398	Y	-0.018	-0.044	8.721	10.901
48	M399	Y	-0.043	-0.019	0	2.162
49	M399	Y	-0.019	-0.013	2.162	4.325
50	M399	Y	-0.013	-0.013	4.325	6.487
51	M399	Y	-0.013	-0.019	6.487	8.65
52	M399	Y	-0.019	-0.045	8.65	10.812
53	M400	Y	-0.042	-0.02	0	2.037
54	M400	Y	-0.02	-0.013	2.037	4.073
55	M400	Y	-0.013	-0.013	4.073	6.11
56	M400	Y	-0.013	-0.02	6.11	8.146
57	M400	Y	-0.02	-0.042	8.146	10.183
58	M401	Y	-0.037	-0.021	0	2.019
59	M401	Y	-0.021	-0.016	2.019	4.038
60	M401	Y	-0.016	-0.015	4.038	6.056
61	M401	Y	-0.015	-0.02	6.056	8.075
62	M401	Y	-0.02	-0.036	8.075	10.094
63	M402	Y	-0.045	-0.024	0	1.907
64	M402	Y	-0.024	-0.015	1.907	3.815
65	M402	Y	-0.015	-0.015	3.815	5.722
66	M402	Y	-0.015	-0.023	5.722	7.629
67	M402	Y	-0.023	-0.045	7.629	9.537
68	M403	Y	-0.022	-0.009	0	2.25
69	M403	Y	-0.009	-0.002	2.25	4.5
70	M403	Y	-0.002	-0.009	4.5	6.75
71	M403	Y	-0.009	-0.022	6.75	9
72	M398A	Y	-0.019	-0.037	0	2.143
73	M398A	Y	-0.037	-0.037	2.143	4.287
74	M398A	Y	-0.037	-0.035	4.287	6.43
75	M398A	Y	-0.035	-0.047	6.43	8.574
76	M398A	Y	-0.047	-0.047	8.574	10.717
77	M398A	Y	-0.047	-0.027	10.717	12.861
78	M398A	Y	-0.027	-0.001	12.861	15.004
79	M399A	Y	-0.001	-0.03	0	2.12
80	M399A	Y	-0.03	-0.05	2.12	4.239
81	M399A	Y	-0.05	-0.051	4.239	6.359
82	M399A	Y	-0.051	-0.053	6.359	8.479
83	M399A	Y	-0.053	-0.048	8.479	10.598
84	M399A	Y	-0.048	-0.028	10.598	12.718
85	M399A	Y	-0.028	-0.001	12.718	14.838
86	M400A	Y	-0.001	-0.022	0	2.137
87	M400A	Y	-0.022	-0.043	2.137	4.274
88	M400A	Y	-0.043	-0.05	4.274	6.411
89	M400A	Y	-0.05	-0.048	6.411	8.548
90	M400A	Y	-0.048	-0.033	8.548	10.685
91	M400A	Y	-0.033	-0.029	10.685	12.822

Member Distributed Loads (BLC 7 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
92	M400A	Y	-0.029	-0.041	12.822	14.959
93	M400A	Y	-0.041	-0.041	14.959	17.096
94	M400A	Y	-0.041	-0.051	17.096	19.233
95	M400A	Y	-0.051	-0.04	19.233	21.37
96	M400A	Y	-0.04	-0.001	21.37	23.507
97	M401A	Y	-0.019	-0.037	0	2.143
98	M401A	Y	-0.037	-0.037	2.143	4.287
99	M401A	Y	-0.037	-0.035	4.287	6.43
100	M401A	Y	-0.035	-0.047	6.43	8.574
101	M401A	Y	-0.047	-0.047	8.574	10.717
102	M401A	Y	-0.047	-0.027	10.717	12.861
103	M401A	Y	-0.027	-0.001	12.861	15.004
104	M402A	Y	-0.001	-0.03	0	2.12
105	M402A	Y	-0.03	-0.05	2.12	4.239
106	M402A	Y	-0.05	-0.051	4.239	6.359
107	M402A	Y	-0.051	-0.053	6.359	8.479
108	M402A	Y	-0.053	-0.048	8.479	10.598
109	M402A	Y	-0.048	-0.028	10.598	12.718
110	M402A	Y	-0.028	-0.001	12.718	14.838
111	M403A	Y	-0.001	-0.023	0	2.137
112	M403A	Y	-0.023	-0.044	2.137	4.274
113	M403A	Y	-0.044	-0.049	4.274	6.411
114	M403A	Y	-0.049	-0.047	6.411	8.548
115	M403A	Y	-0.047	-0.032	8.548	10.685
116	M403A	Y	-0.032	-0.029	10.685	12.822
117	M403A	Y	-0.029	-0.041	12.822	14.959
118	M403A	Y	-0.041	-0.041	14.959	17.096
119	M403A	Y	-0.041	-0.051	17.096	19.233
120	M403A	Y	-0.051	-0.04	19.233	21.37
121	M403A	Y	-0.04	-0.001	21.37	23.507
122	M38B	Y	-0.019	-0.037	0	2.143
123	M38B	Y	-0.037	-0.037	2.143	4.287
124	M38B	Y	-0.037	-0.035	4.287	6.43
125	M38B	Y	-0.035	-0.047	6.43	8.574
126	M38B	Y	-0.047	-0.047	8.574	10.717
127	M38B	Y	-0.047	-0.027	10.717	12.861
128	M38B	Y	-0.027	-0.001	12.861	15.004
129	M39A	Y	-0.001	-0.03	0	2.12
130	M39A	Y	-0.03	-0.05	2.12	4.239
131	M39A	Y	-0.05	-0.051	4.239	6.359
132	M39A	Y	-0.051	-0.053	6.359	8.479
133	M39A	Y	-0.053	-0.048	8.479	10.598
134	M39A	Y	-0.048	-0.028	10.598	12.718
135	M39A	Y	-0.028	-0.001	12.718	14.838
136	M40	Y	-0.001	-0.022	0	2.137
137	M40	Y	-0.022	-0.043	2.137	4.274
138	M40	Y	-0.043	-0.05	4.274	6.411
139	M40	Y	-0.05	-0.048	6.411	8.548
140	M40	Y	-0.048	-0.033	8.548	10.685
141	M40	Y	-0.033	-0.029	10.685	12.822
142	M40	Y	-0.029	-0.041	12.822	14.959
143	M40	Y	-0.041	-0.041	14.959	17.096
144	M40	Y	-0.041	-0.051	17.096	19.233
145	M40	Y	-0.051	-0.04	19.233	21.37
146	M40	Y	-0.04	-0.001	21.37	23.507

Member Distributed Loads (BLC 7 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
147	M41	Y	-0.019	-0.037	0	2.143
148	M41	Y	-0.037	-0.037	2.143	4.287
149	M41	Y	-0.037	-0.035	4.287	6.43
150	M41	Y	-0.035	-0.047	6.43	8.574
151	M41	Y	-0.047	-0.047	8.574	10.717
152	M41	Y	-0.047	-0.027	10.717	12.861
153	M41	Y	-0.027	-0.001	12.861	15.004
154	M42	Y	-0.001	-0.03	0	2.12
155	M42	Y	-0.03	-0.05	2.12	4.239
156	M42	Y	-0.05	-0.051	4.239	6.359
157	M42	Y	-0.051	-0.053	6.359	8.479
158	M42	Y	-0.053	-0.048	8.479	10.598
159	M42	Y	-0.048	-0.028	10.598	12.718
160	M42	Y	-0.028	-0.001	12.718	14.838
161	M43	Y	-0.001	-0.023	0	2.137
162	M43	Y	-0.023	-0.044	2.137	4.274
163	M43	Y	-0.044	-0.049	4.274	6.411
164	M43	Y	-0.049	-0.047	6.411	8.548
165	M43	Y	-0.047	-0.032	8.548	10.685
166	M43	Y	-0.032	-0.029	10.685	12.822
167	M43	Y	-0.029	-0.041	12.822	14.959
168	M43	Y	-0.041	-0.041	14.959	17.096
169	M43	Y	-0.041	-0.051	17.096	19.233
170	M43	Y	-0.051	-0.04	19.233	21.37
171	M43	Y	-0.04	-0.001	21.37	23.507
172	M372	Y	-0.029	-0.011	0	2.317
173	M372	Y	-0.011	-0.004	2.317	4.633
174	M372	Y	-0.004	-0.004	4.633	6.95
175	M372	Y	-0.004	-0.011	6.95	9.267
176	M372	Y	-0.011	-0.029	9.267	11.583
177	M376	Y	-0.055	-0.024	0	2.258
178	M376	Y	-0.024	-0.011	2.258	4.515
179	M376	Y	-0.011	-0.011	4.515	6.773
180	M376	Y	-0.011	-0.024	6.773	9.031
181	M376	Y	-0.024	-0.055	9.031	11.289
182	M377	Y	-0.046	-0.019	0	2.18
183	M377	Y	-0.019	-0.012	2.18	4.36
184	M377	Y	-0.012	-0.012	4.36	6.541
185	M377	Y	-0.012	-0.018	6.541	8.721
186	M377	Y	-0.018	-0.044	8.721	10.901
187	M378	Y	-0.043	-0.019	0	2.162
188	M378	Y	-0.019	-0.013	2.162	4.325
189	M378	Y	-0.013	-0.013	4.325	6.487
190	M378	Y	-0.013	-0.019	6.487	8.65
191	M378	Y	-0.019	-0.045	8.65	10.812
192	M379	Y	-0.042	-0.02	0	2.037
193	M379	Y	-0.02	-0.013	2.037	4.073
194	M379	Y	-0.013	-0.013	4.073	6.11
195	M379	Y	-0.013	-0.02	6.11	8.146
196	M379	Y	-0.02	-0.042	8.146	10.183
197	M380	Y	-0.037	-0.021	0	2.019
198	M380	Y	-0.021	-0.016	2.019	4.038
199	M380	Y	-0.016	-0.015	4.038	6.056
200	M380	Y	-0.015	-0.02	6.056	8.075
201	M380	Y	-0.02	-0.036	8.075	10.094

Member Distributed Loads (BLC 7 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
202	M381	Y	-0.045	-0.024	0	1.907
203	M381	Y	-0.024	-0.015	1.907	3.815
204	M381	Y	-0.015	-0.015	3.815	5.722
205	M381	Y	-0.015	-0.023	5.722	7.629
206	M381	Y	-0.023	-0.045	7.629	9.537
207	M382	Y	-0.022	-0.009	0	2.25
208	M382	Y	-0.009	-0.002	2.25	4.5
209	M382	Y	-0.002	-0.009	4.5	6.75
210	M382	Y	-0.009	-0.022	6.75	9
211	M356A	Y	-0.029	-0.011	0	2.317
212	M356A	Y	-0.011	-0.004	2.317	4.633
213	M356A	Y	-0.004	-0.004	4.633	6.95
214	M356A	Y	-0.004	-0.011	6.95	9.267
215	M356A	Y	-0.011	-0.029	9.267	11.583
216	M357A	Y	-0.055	-0.024	0	2.258
217	M357A	Y	-0.024	-0.011	2.258	4.515
218	M357A	Y	-0.011	-0.011	4.515	6.773
219	M357A	Y	-0.011	-0.024	6.773	9.031
220	M357A	Y	-0.024	-0.055	9.031	11.289
221	M358	Y	-0.046	-0.019	0	2.18
222	M358	Y	-0.019	-0.012	2.18	4.36
223	M358	Y	-0.012	-0.012	4.36	6.541
224	M358	Y	-0.012	-0.018	6.541	8.721
225	M358	Y	-0.018	-0.044	8.721	10.901
226	M359A	Y	-0.043	-0.019	0	2.162
227	M359A	Y	-0.019	-0.013	2.162	4.325
228	M359A	Y	-0.013	-0.013	4.325	6.487
229	M359A	Y	-0.013	-0.019	6.487	8.65
230	M359A	Y	-0.019	-0.045	8.65	10.812
231	M360A	Y	-0.042	-0.02	0	2.037
232	M360A	Y	-0.02	-0.013	2.037	4.073
233	M360A	Y	-0.013	-0.013	4.073	6.11
234	M360A	Y	-0.013	-0.02	6.11	8.146
235	M360A	Y	-0.02	-0.042	8.146	10.183
236	M361	Y	-0.037	-0.021	0	2.019
237	M361	Y	-0.021	-0.016	2.019	4.038
238	M361	Y	-0.016	-0.015	4.038	6.056
239	M361	Y	-0.015	-0.02	6.056	8.075
240	M361	Y	-0.02	-0.036	8.075	10.094
241	M362B	Y	-0.045	-0.024	0	1.907
242	M362B	Y	-0.024	-0.015	1.907	3.815
243	M362B	Y	-0.015	-0.015	3.815	5.722
244	M362B	Y	-0.015	-0.023	5.722	7.629
245	M362B	Y	-0.023	-0.045	7.629	9.537
246	M363A	Y	-0.022	-0.009	0	2.25
247	M363A	Y	-0.009	-0.002	2.25	4.5
248	M363A	Y	-0.002	-0.009	4.5	6.75
249	M363A	Y	-0.009	-0.022	6.75	9
250	M386A	Y	-0.019	-0.037	0	2.143
251	M386A	Y	-0.037	-0.037	2.143	4.287
252	M386A	Y	-0.037	-0.035	4.287	6.43
253	M386A	Y	-0.035	-0.047	6.43	8.574
254	M386A	Y	-0.047	-0.047	8.574	10.717
255	M386A	Y	-0.047	-0.027	10.717	12.861
256	M386A	Y	-0.027	-0.001	12.861	15.004

Member Distributed Loads (BLC 7 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
257	M387A	Y	-0.001	-0.03	0	2.12
258	M387A	Y	-0.03	-0.05	2.12	4.239
259	M387A	Y	-0.05	-0.051	4.239	6.359
260	M387A	Y	-0.051	-0.053	6.359	8.479
261	M387A	Y	-0.053	-0.048	8.479	10.598
262	M387A	Y	-0.048	-0.028	10.598	12.718
263	M387A	Y	-0.028	-0.001	12.718	14.838
264	M388A	Y	-0.001	-0.022	0	2.137
265	M388A	Y	-0.022	-0.043	2.137	4.274
266	M388A	Y	-0.043	-0.05	4.274	6.411
267	M388A	Y	-0.05	-0.048	6.411	8.548
268	M388A	Y	-0.048	-0.033	8.548	10.685
269	M388A	Y	-0.033	-0.029	10.685	12.822
270	M388A	Y	-0.029	-0.041	12.822	14.959
271	M388A	Y	-0.041	-0.041	14.959	17.096
272	M388A	Y	-0.041	-0.051	17.096	19.233
273	M388A	Y	-0.051	-0.04	19.233	21.37
274	M388A	Y	-0.04	-0.001	21.37	23.507
275	M389A	Y	-0.019	-0.037	0	2.143
276	M389A	Y	-0.037	-0.037	2.143	4.287
277	M389A	Y	-0.037	-0.035	4.287	6.43
278	M389A	Y	-0.035	-0.047	6.43	8.574
279	M389A	Y	-0.047	-0.047	8.574	10.717
280	M389A	Y	-0.047	-0.027	10.717	12.861
281	M389A	Y	-0.027	-0.001	12.861	15.004
282	M390B	Y	-0.001	-0.03	0	2.12
283	M390B	Y	-0.03	-0.05	2.12	4.239
284	M390B	Y	-0.05	-0.051	4.239	6.359
285	M390B	Y	-0.051	-0.053	6.359	8.479
286	M390B	Y	-0.053	-0.048	8.479	10.598
287	M390B	Y	-0.048	-0.028	10.598	12.718
288	M390B	Y	-0.028	-0.001	12.718	14.838
289	M391A	Y	-0.001	-0.023	0	2.137
290	M391A	Y	-0.023	-0.044	2.137	4.274
291	M391A	Y	-0.044	-0.049	4.274	6.411
292	M391A	Y	-0.049	-0.047	6.411	8.548
293	M391A	Y	-0.047	-0.032	8.548	10.685
294	M391A	Y	-0.032	-0.029	10.685	12.822
295	M391A	Y	-0.029	-0.041	12.822	14.959
296	M391A	Y	-0.041	-0.041	14.959	17.096
297	M391A	Y	-0.041	-0.051	17.096	19.233
298	M391A	Y	-0.051	-0.04	19.233	21.37
299	M391A	Y	-0.04	-0.001	21.37	23.507
300	M376B	Y	-0.029	-0.011	0	2.317
301	M376B	Y	-0.011	-0.004	2.317	4.633
302	M376B	Y	-0.004	-0.004	4.633	6.95
303	M376B	Y	-0.004	-0.011	6.95	9.267
304	M376B	Y	-0.011	-0.029	9.267	11.583
305	M377A	Y	-0.055	-0.024	0	2.258
306	M377A	Y	-0.024	-0.011	2.258	4.515
307	M377A	Y	-0.011	-0.011	4.515	6.773
308	M377A	Y	-0.011	-0.024	6.773	9.031
309	M377A	Y	-0.024	-0.055	9.031	11.289
310	M378A	Y	-0.046	-0.019	0	2.18
311	M378A	Y	-0.019	-0.012	2.18	4.36

Member Distributed Loads (BLC 7 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
312	M378A	Y	-0.012	-0.012	4.36	6.541
313	M378A	Y	-0.012	-0.018	6.541	8.721
314	M378A	Y	-0.018	-0.044	8.721	10.901
315	M379A	Y	-0.043	-0.019	0	2.162
316	M379A	Y	-0.019	-0.013	2.162	4.325
317	M379A	Y	-0.013	-0.013	4.325	6.487
318	M379A	Y	-0.013	-0.019	6.487	8.65
319	M379A	Y	-0.019	-0.045	8.65	10.812
320	M380A	Y	-0.042	-0.02	0	2.037
321	M380A	Y	-0.02	-0.013	2.037	4.073
322	M380A	Y	-0.013	-0.013	4.073	6.11
323	M380A	Y	-0.013	-0.02	6.11	8.146
324	M380A	Y	-0.02	-0.042	8.146	10.183
325	M381A	Y	-0.037	-0.021	0	2.019
326	M381A	Y	-0.021	-0.016	2.019	4.038
327	M381A	Y	-0.016	-0.015	4.038	6.056
328	M381A	Y	-0.015	-0.02	6.056	8.075
329	M381A	Y	-0.02	-0.036	8.075	10.094
330	M382B	Y	-0.045	-0.024	0	1.907
331	M382B	Y	-0.024	-0.015	1.907	3.815
332	M382B	Y	-0.015	-0.015	3.815	5.722
333	M382B	Y	-0.015	-0.023	5.722	7.629
334	M382B	Y	-0.023	-0.045	7.629	9.537
335	M383	Y	-0.022	-0.009	0	2.25
336	M383	Y	-0.009	-0.002	2.25	4.5
337	M383	Y	-0.002	-0.009	4.5	6.75
338	M383	Y	-0.009	-0.022	6.75	9
339	M392A	Y	-0.019	-0.037	0	2.143
340	M392A	Y	-0.037	-0.037	2.143	4.287
341	M392A	Y	-0.037	-0.035	4.287	6.43
342	M392A	Y	-0.035	-0.047	6.43	8.574
343	M392A	Y	-0.047	-0.047	8.574	10.717
344	M392A	Y	-0.047	-0.027	10.717	12.861
345	M392A	Y	-0.027	-0.001	12.861	15.004
346	M393A	Y	-0.001	-0.03	0	2.12
347	M393A	Y	-0.03	-0.05	2.12	4.239
348	M393A	Y	-0.05	-0.051	4.239	6.359
349	M393A	Y	-0.051	-0.053	6.359	8.479
350	M393A	Y	-0.053	-0.048	8.479	10.598
351	M393A	Y	-0.048	-0.028	10.598	12.718
352	M393A	Y	-0.028	-0.001	12.718	14.838
353	M394A	Y	-0.001	-0.022	0	2.137
354	M394A	Y	-0.022	-0.043	2.137	4.274
355	M394A	Y	-0.043	-0.05	4.274	6.411
356	M394A	Y	-0.05	-0.048	6.411	8.548
357	M394A	Y	-0.048	-0.033	8.548	10.685
358	M394A	Y	-0.033	-0.029	10.685	12.822
359	M394A	Y	-0.029	-0.041	12.822	14.959
360	M394A	Y	-0.041	-0.041	14.959	17.096
361	M394A	Y	-0.041	-0.051	17.096	19.233
362	M394A	Y	-0.051	-0.04	19.233	21.37
363	M394A	Y	-0.04	-0.001	21.37	23.507
364	M395A	Y	-0.019	-0.037	0	2.143
365	M395A	Y	-0.037	-0.037	2.143	4.287
366	M395A	Y	-0.037	-0.035	4.287	6.43

Member Distributed Loads (BLC 7 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
367	M395A	Y	-0.035	-0.047	6.43	8.574
368	M395A	Y	-0.047	-0.047	8.574	10.717
369	M395A	Y	-0.047	-0.027	10.717	12.861
370	M395A	Y	-0.027	-0.001	12.861	15.004
371	M396B	Y	-0.001	-0.03	0	2.12
372	M396B	Y	-0.03	-0.05	2.12	4.239
373	M396B	Y	-0.05	-0.051	4.239	6.359
374	M396B	Y	-0.051	-0.053	6.359	8.479
375	M396B	Y	-0.053	-0.048	8.479	10.598
376	M396B	Y	-0.048	-0.028	10.598	12.718
377	M396B	Y	-0.028	-0.001	12.718	14.838
378	M397A	Y	-0.001	-0.023	0	2.137
379	M397A	Y	-0.023	-0.044	2.137	4.274
380	M397A	Y	-0.044	-0.049	4.274	6.411
381	M397A	Y	-0.049	-0.047	6.411	8.548
382	M397A	Y	-0.047	-0.032	8.548	10.685
383	M397A	Y	-0.032	-0.029	10.685	12.822
384	M397A	Y	-0.029	-0.041	12.822	14.959
385	M397A	Y	-0.041	-0.041	14.959	17.096
386	M397A	Y	-0.041	-0.051	17.096	19.233
387	M397A	Y	-0.051	-0.04	19.233	21.37
388	M397A	Y	-0.04	-0.001	21.37	23.507

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M38B	X	-0.019	-0.051	5.551e-16	1.014
2	M38B	X	-0.051	-0.075	1.014	2.028
3	M38B	X	-0.075	-0.083	2.028	3.043
4	M38B	X	-0.083	-0.075	3.043	4.057
5	M38B	X	-0.075	-0.05	4.057	5.071
6	M38B	X	-0.05	-0.018	5.071	6.085
7	M41	X	-0.019	-0.051	8.882e-16	1.014
8	M41	X	-0.051	-0.075	1.014	2.028
9	M41	X	-0.075	-0.083	2.028	3.043
10	M41	X	-0.083	-0.075	3.043	4.057
11	M41	X	-0.075	-0.05	4.057	5.071
12	M41	X	-0.05	-0.018	5.071	6.085
13	M372	X	-0.049	-0.019	0	2.317
14	M372	X	-0.019	-0.008	2.317	4.633
15	M372	X	-0.008	-0.008	4.633	6.95
16	M372	X	-0.008	-0.019	6.95	9.267
17	M372	X	-0.019	-0.049	9.267	11.583
18	M376	X	-0.096	-0.038	0	2.258
19	M376	X	-0.038	-0.015	2.258	4.515
20	M376	X	-0.015	-0.015	4.515	6.773
21	M376	X	-0.015	-0.038	6.773	9.031
22	M376	X	-0.038	-0.096	9.031	11.289
23	M38B	X	-0.018	-0.049	6.085	7.085
24	M38B	X	-0.049	-0.073	7.085	8.086
25	M38B	X	-0.073	-0.089	8.086	9.086
26	M38B	X	-0.089	-0.096	9.086	10.086
27	M38B	X	-0.096	-0.088	10.086	11.087
28	M38B	X	-0.088	-0.072	11.087	12.087
29	M38B	X	-0.072	-0.049	12.087	13.087
30	M38B	X	-0.049	-0.017	13.087	14.087

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
31	M41	X	-0.018	-0.049	6.085	7.085
32	M41	X	-0.049	-0.073	7.085	8.086
33	M41	X	-0.073	-0.089	8.086	9.086
34	M41	X	-0.089	-0.096	9.086	10.086
35	M41	X	-0.096	-0.088	10.086	11.087
36	M41	X	-0.088	-0.072	11.087	12.087
37	M41	X	-0.072	-0.049	12.087	13.087
38	M41	X	-0.049	-0.017	13.087	14.087
39	M377	X	-0.07	-0.029	0	2.18
40	M377	X	-0.029	-0.018	2.18	4.36
41	M377	X	-0.018	-0.018	4.36	6.541
42	M377	X	-0.018	-0.028	6.541	8.721
43	M377	X	-0.028	-0.067	8.721	10.901
44	M38B	X	0.003	-0.01	13.504	14.254
45	M38B	X	-0.01	-0.038	14.254	15.004
46	M39A	X	-0.031	-0.008	0	0.742
47	M39A	X	-0.008	0.003	0.742	1.484
48	M41	X	0.003	-0.01	13.504	14.254
49	M41	X	-0.01	-0.038	14.254	15.004
50	M42	X	-0.031	-0.008	0	0.742
51	M42	X	-0.008	0.003	0.742	1.484
52	M378	X	-0.066	-0.028	0	2.162
53	M378	X	-0.028	-0.019	2.162	4.325
54	M378	X	-0.019	-0.019	4.325	6.487
55	M378	X	-0.019	-0.029	6.487	8.65
56	M378	X	-0.029	-0.069	8.65	10.812
57	M39A	X	-0.018	-0.052	0.917	1.846
58	M39A	X	-0.052	-0.076	1.846	2.775
59	M39A	X	-0.076	-0.093	2.775	3.703
60	M39A	X	-0.093	-0.1	3.703	4.632
61	M39A	X	-0.1	-0.1	4.632	5.561
62	M39A	X	-0.1	-0.1	5.561	6.49
63	M39A	X	-0.1	-0.099	6.49	7.419
64	M39A	X	-0.099	-0.099	7.419	8.348
65	M39A	X	-0.099	-0.098	8.348	9.277
66	M39A	X	-0.098	-0.098	9.277	10.205
67	M39A	X	-0.098	-0.09	10.205	11.134
68	M39A	X	-0.09	-0.074	11.134	12.063
69	M39A	X	-0.074	-0.05	12.063	12.992
70	M39A	X	-0.05	-0.017	12.992	13.921
71	M42	X	-0.018	-0.052	0.917	1.846
72	M42	X	-0.052	-0.076	1.846	2.775
73	M42	X	-0.076	-0.093	2.775	3.703
74	M42	X	-0.093	-0.1	3.703	4.632
75	M42	X	-0.1	-0.1	4.632	5.561
76	M42	X	-0.1	-0.1	5.561	6.49
77	M42	X	-0.1	-0.099	6.49	7.419
78	M42	X	-0.099	-0.099	7.419	8.348
79	M42	X	-0.099	-0.098	8.348	9.277
80	M42	X	-0.098	-0.098	9.277	10.205
81	M42	X	-0.098	-0.09	10.205	11.134
82	M42	X	-0.09	-0.074	11.134	12.063
83	M42	X	-0.074	-0.05	12.063	12.992
84	M42	X	-0.05	-0.017	12.992	13.921
85	M379	X	-0.065	-0.032	0	2.037

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
86	M379	X	-0.032	-0.02	2.037	4.073
87	M379	X	-0.02	-0.02	4.073	6.11
88	M379	X	-0.02	-0.032	6.11	8.146
89	M379	X	-0.032	-0.065	8.146	10.183
90	M39A	X	-0.009	-0.018	13.354	14.838
91	M40	X	-0.012	-0.012	0	0.891
92	M42	X	-0.016	-0.012	13.354	14.838
93	M43	X	-0.012	-0.012	0	0.891
94	M380	X	-0.07	-0.034	0	2.019
95	M380	X	-0.034	-0.022	2.019	4.038
96	M380	X	-0.022	-0.022	4.038	6.056
97	M380	X	-0.022	-0.034	6.056	8.075
98	M380	X	-0.034	-0.07	8.075	10.094
99	M40	X	-0.001	-0.047	0	2.015
100	M40	X	-0.047	-0.087	2.015	4.03
101	M40	X	-0.087	-0.097	4.03	6.045
102	M40	X	-0.097	-0.115	6.045	8.06
103	M40	X	-0.115	-0.087	8.06	10.074
104	M40	X	-0.087	-0.021	10.074	12.089
105	M40	X	-0.021	-0.001	12.089	14.104
106	M43	X	-0.001	-0.047	0	2.015
107	M43	X	-0.047	-0.087	2.015	4.03
108	M43	X	-0.087	-0.097	4.03	6.045
109	M43	X	-0.097	-0.115	6.045	8.06
110	M43	X	-0.115	-0.087	8.06	10.074
111	M43	X	-0.087	-0.021	10.074	12.089
112	M43	X	-0.021	-0.001	12.089	14.104
113	M381	X	-0.056	-0.026	0	1.907
114	M381	X	-0.026	-0.013	1.907	3.815
115	M381	X	-0.013	-0.013	3.815	5.722
116	M381	X	-0.013	-0.026	5.722	7.629
117	M381	X	-0.026	-0.056	7.629	9.537
118	M40	X	0.004	-0.047	12.42	13.344
119	M40	X	-0.047	-0.089	13.344	14.268
120	M40	X	-0.089	-0.104	14.268	15.192
121	M40	X	-0.104	-0.104	15.192	16.116
122	M40	X	-0.104	-0.103	16.116	17.04
123	M40	X	-0.103	-0.103	17.04	17.964
124	M40	X	-0.103	-0.102	17.964	18.887
125	M40	X	-0.102	-0.102	18.887	19.811
126	M40	X	-0.102	-0.101	19.811	20.735
127	M40	X	-0.101	-0.086	20.735	21.659
128	M40	X	-0.086	-0.046	21.659	22.583
129	M40	X	-0.046	0.003	22.583	23.507
130	M43	X	0.004	-0.047	12.42	13.344
131	M43	X	-0.047	-0.089	13.344	14.268
132	M43	X	-0.089	-0.104	14.268	15.192
133	M43	X	-0.104	-0.104	15.192	16.116
134	M43	X	-0.104	-0.103	16.116	17.04
135	M43	X	-0.103	-0.103	17.04	17.964
136	M43	X	-0.103	-0.102	17.964	18.887
137	M43	X	-0.102	-0.102	18.887	19.811
138	M43	X	-0.102	-0.101	19.811	20.735
139	M43	X	-0.101	-0.086	20.735	21.659
140	M43	X	-0.086	-0.046	21.659	22.583

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
141	M43	X	-0.046	0.003	22.583	23.507
142	M381	X	-0.048	-0.019	0	2.384
143	M381	X	-0.019	-0.004	2.384	4.768
144	M381	X	-0.004	-0.019	4.768	7.153
145	M381	X	-0.019	-0.048	7.153	9.537
146	M382	X	-0.047	-0.019	0	2.25
147	M382	X	-0.019	-0.005	2.25	4.5
148	M382	X	-0.005	-0.019	4.5	6.75
149	M382	X	-0.019	-0.047	6.75	9

Member Distributed Loads (BLC 9 : BLC 3 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M401A	Z	-0.051	-0.075	1.014	2.028
2	M401A	Z	-0.075	-0.083	2.028	3.043
3	M401A	Z	-0.083	-0.075	3.043	4.057
4	M401A	Z	-0.075	-0.05	4.057	5.071
5	M401A	Z	-0.05	-0.018	5.071	6.085
6	M398	Z	-0.07	-0.029	0	2.18
7	M398	Z	-0.029	-0.018	2.18	4.36
8	M398	Z	-0.018	-0.018	4.36	6.541
9	M398	Z	-0.018	-0.028	6.541	8.721
10	M398	Z	-0.028	-0.067	8.721	10.901
11	M398A	Z	-0.018	-0.049	6.085	7.085
12	M398A	Z	-0.049	-0.073	7.085	8.086
13	M398A	Z	-0.073	-0.089	8.086	9.086
14	M398A	Z	-0.089	-0.096	9.086	10.086
15	M398A	Z	-0.096	-0.088	10.086	11.087
16	M398A	Z	-0.088	-0.072	11.087	12.087
17	M398A	Z	-0.072	-0.049	12.087	13.087
18	M398A	Z	-0.049	-0.017	13.087	14.087
19	M401A	Z	-0.018	-0.049	6.085	7.085
20	M401A	Z	-0.049	-0.073	7.085	8.086
21	M401A	Z	-0.073	-0.089	8.086	9.086
22	M401A	Z	-0.089	-0.096	9.086	10.086
23	M401A	Z	-0.096	-0.088	10.086	11.087
24	M401A	Z	-0.088	-0.072	11.087	12.087
25	M401A	Z	-0.072	-0.049	12.087	13.087
26	M401A	Z	-0.049	-0.017	13.087	14.087
27	M399	Z	-0.066	-0.028	0	2.162
28	M399	Z	-0.028	-0.019	2.162	4.325
29	M399	Z	-0.019	-0.019	4.325	6.487
30	M399	Z	-0.019	-0.029	6.487	8.65
31	M399	Z	-0.029	-0.069	8.65	10.812
32	M398A	Z	0.003	-0.01	13.504	14.254
33	M398A	Z	-0.01	-0.038	14.254	15.004
34	M399A	Z	-0.031	-0.008	0	0.742
35	M399A	Z	-0.008	0.003	0.742	1.484
36	M401A	Z	0.003	-0.01	13.504	14.254
37	M401A	Z	-0.01	-0.038	14.254	15.004
38	M402A	Z	-0.031	-0.008	0	0.742
39	M402A	Z	-0.008	0.003	0.742	1.484
40	M400	Z	-0.065	-0.032	0	2.037
41	M400	Z	-0.032	-0.02	2.037	4.073
42	M400	Z	-0.02	-0.02	4.073	6.11
43	M400	Z	-0.02	-0.032	6.11	8.146

Member Distributed Loads (BLC 9 : BLC 3 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
44	M400	Z	-0.032	-0.065	8.146	10.183
45	M399A	Z	-0.018	-0.052	0.917	1.846
46	M399A	Z	-0.052	-0.076	1.846	2.775
47	M399A	Z	-0.076	-0.093	2.775	3.703
48	M399A	Z	-0.093	-0.1	3.703	4.632
49	M399A	Z	-0.1	-0.1	4.632	5.561
50	M399A	Z	-0.1	-0.1	5.561	6.49
51	M399A	Z	-0.1	-0.099	6.49	7.419
52	M399A	Z	-0.099	-0.099	7.419	8.348
53	M399A	Z	-0.099	-0.098	8.348	9.277
54	M399A	Z	-0.098	-0.098	9.277	10.205
55	M399A	Z	-0.098	-0.09	10.205	11.134
56	M399A	Z	-0.09	-0.074	11.134	12.063
57	M399A	Z	-0.074	-0.05	12.063	12.992
58	M399A	Z	-0.05	-0.017	12.992	13.921
59	M402A	Z	-0.018	-0.052	0.917	1.846
60	M402A	Z	-0.052	-0.076	1.846	2.775
61	M402A	Z	-0.076	-0.093	2.775	3.703
62	M402A	Z	-0.093	-0.1	3.703	4.632
63	M402A	Z	-0.1	-0.1	4.632	5.561
64	M402A	Z	-0.1	-0.1	5.561	6.49
65	M402A	Z	-0.1	-0.099	6.49	7.419
66	M402A	Z	-0.099	-0.099	7.419	8.348
67	M402A	Z	-0.099	-0.098	8.348	9.277
68	M402A	Z	-0.098	-0.098	9.277	10.205
69	M402A	Z	-0.098	-0.09	10.205	11.134
70	M402A	Z	-0.09	-0.074	11.134	12.063
71	M402A	Z	-0.074	-0.05	12.063	12.992
72	M402A	Z	-0.05	-0.017	12.992	13.921
73	M401	Z	-0.07	-0.034	0	2.019
74	M401	Z	-0.034	-0.022	2.019	4.038
75	M401	Z	-0.022	-0.022	4.038	6.056
76	M401	Z	-0.022	-0.034	6.056	8.075
77	M401	Z	-0.034	-0.07	8.075	10.094
78	M399A	Z	-0.014	-0.014	13.354	14.838
79	M400A	Z	-0.012	-0.012	0	0.891
80	M402A	Z	-0.016	-0.012	13.354	14.838
81	M403A	Z	-0.012	-0.012	0	0.891
82	M402	Z	-0.056	-0.026	0	1.907
83	M402	Z	-0.026	-0.013	1.907	3.815
84	M402	Z	-0.013	-0.013	3.815	5.722
85	M402	Z	-0.013	-0.026	5.722	7.629
86	M402	Z	-0.026	-0.056	7.629	9.537
87	M400A	Z	-0.001	-0.047	0	2.015
88	M400A	Z	-0.047	-0.087	2.015	4.03
89	M400A	Z	-0.087	-0.097	4.03	6.045
90	M400A	Z	-0.097	-0.115	6.045	8.06
91	M400A	Z	-0.115	-0.087	8.06	10.074
92	M400A	Z	-0.087	-0.021	10.074	12.089
93	M400A	Z	-0.021	-0.001	12.089	14.104
94	M403A	Z	-0.001	-0.047	0	2.015
95	M403A	Z	-0.047	-0.087	2.015	4.03
96	M403A	Z	-0.087	-0.097	4.03	6.045
97	M403A	Z	-0.097	-0.115	6.045	8.06
98	M403A	Z	-0.115	-0.087	8.06	10.074

Member Distributed Loads (BLC 9 : BLC 3 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
99	M403A	Z	-0.087	-0.021	10.074	12.089
100	M403A	Z	-0.021	-0.001	12.089	14.104
101	M402	Z	-0.048	-0.019	0	2.384
102	M402	Z	-0.019	-0.004	2.384	4.768
103	M402	Z	-0.004	-0.019	4.768	7.153
104	M402	Z	-0.019	-0.048	7.153	9.537
105	M403	Z	-0.047	-0.019	0	2.25
106	M403	Z	-0.019	-0.005	2.25	4.5
107	M403	Z	-0.005	-0.019	4.5	6.75
108	M403	Z	-0.019	-0.047	6.75	9
109	M400A	Z	0.004	-0.047	12.42	13.344
110	M400A	Z	-0.047	-0.089	13.344	14.268
111	M400A	Z	-0.089	-0.104	14.268	15.192
112	M400A	Z	-0.104	-0.104	15.192	16.116
113	M400A	Z	-0.104	-0.103	16.116	17.04
114	M400A	Z	-0.103	-0.103	17.04	17.964
115	M400A	Z	-0.103	-0.102	17.964	18.887
116	M400A	Z	-0.102	-0.102	18.887	19.811
117	M400A	Z	-0.102	-0.101	19.811	20.735
118	M400A	Z	-0.101	-0.086	20.735	21.659
119	M400A	Z	-0.086	-0.046	21.659	22.583
120	M400A	Z	-0.046	0.003	22.583	23.507
121	M403A	Z	0.004	-0.047	12.42	13.344
122	M403A	Z	-0.047	-0.089	13.344	14.268
123	M403A	Z	-0.089	-0.104	14.268	15.192
124	M403A	Z	-0.104	-0.104	15.192	16.116
125	M403A	Z	-0.104	-0.103	16.116	17.04
126	M403A	Z	-0.103	-0.103	17.04	17.964
127	M403A	Z	-0.103	-0.102	17.964	18.887
128	M403A	Z	-0.102	-0.102	18.887	19.811
129	M403A	Z	-0.102	-0.101	19.811	20.735
130	M403A	Z	-0.101	-0.086	20.735	21.659
131	M403A	Z	-0.086	-0.046	21.659	22.583
132	M403A	Z	-0.046	0.003	22.583	23.507
133	M396	Z	-0.049	-0.019	0	2.317
134	M396	Z	-0.019	-0.008	2.317	4.633
135	M396	Z	-0.008	-0.008	4.633	6.95
136	M396	Z	-0.008	-0.019	6.95	9.267
137	M396	Z	-0.019	-0.049	9.267	11.583
138	M397	Z	-0.096	-0.038	0	2.258
139	M397	Z	-0.038	-0.015	2.258	4.515
140	M397	Z	-0.015	-0.015	4.515	6.773
141	M397	Z	-0.015	-0.038	6.773	9.031
142	M397	Z	-0.038	-0.096	9.031	11.289
143	M398A	Z	-0.019	-0.051	5.551e-16	1.014
144	M398A	Z	-0.051	-0.075	1.014	2.028
145	M398A	Z	-0.075	-0.083	2.028	3.043
146	M398A	Z	-0.083	-0.075	3.043	4.057
147	M398A	Z	-0.075	-0.05	4.057	5.071
148	M398A	Z	-0.05	-0.018	5.071	6.085
149	M401A	Z	-0.019	-0.051	8.882e-16	1.014

Member Distributed Loads (BLC 10 : BLC 4 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M397A	X	0.102	0.101	19.811	20.735
2	M397A	X	0.101	0.086	20.735	21.659
3	M397A	X	0.086	0.046	21.659	22.583
4	M397A	X	0.046	-0.003	22.583	23.507
5	M376B	X	0.049	0.019	0	2.317
6	M376B	X	0.019	0.008	2.317	4.633
7	M376B	X	0.008	0.008	4.633	6.95
8	M376B	X	0.008	0.019	6.95	9.267
9	M376B	X	0.019	0.049	9.267	11.583
10	M377A	X	0.096	0.038	0	2.258
11	M377A	X	0.038	0.015	2.258	4.515
12	M377A	X	0.015	0.015	4.515	6.773
13	M377A	X	0.015	0.038	6.773	9.031
14	M377A	X	0.038	0.096	9.031	11.289
15	M392A	X	0.019	0.051	5.551e-16	1.014
16	M392A	X	0.051	0.075	1.014	2.028
17	M392A	X	0.075	0.083	2.028	3.043
18	M392A	X	0.083	0.075	3.043	4.057
19	M392A	X	0.075	0.05	4.057	5.071
20	M392A	X	0.05	0.018	5.071	6.085
21	M395A	X	0.019	0.051	8.882e-16	1.014
22	M395A	X	0.051	0.075	1.014	2.028
23	M395A	X	0.075	0.083	2.028	3.043
24	M395A	X	0.083	0.075	3.043	4.057
25	M395A	X	0.075	0.05	4.057	5.071
26	M395A	X	0.05	0.018	5.071	6.085
27	M378A	X	0.07	0.029	0	2.18
28	M378A	X	0.029	0.018	2.18	4.36
29	M378A	X	0.018	0.018	4.36	6.541
30	M378A	X	0.018	0.028	6.541	8.721
31	M378A	X	0.028	0.067	8.721	10.901
32	M392A	X	0.018	0.049	6.085	7.085
33	M392A	X	0.049	0.073	7.085	8.086
34	M392A	X	0.073	0.089	8.086	9.086
35	M392A	X	0.089	0.096	9.086	10.086
36	M392A	X	0.096	0.088	10.086	11.087
37	M392A	X	0.088	0.072	11.087	12.087
38	M392A	X	0.072	0.049	12.087	13.087
39	M392A	X	0.049	0.017	13.087	14.087
40	M395A	X	0.018	0.049	6.085	7.085
41	M395A	X	0.049	0.073	7.085	8.086
42	M395A	X	0.073	0.089	8.086	9.086
43	M395A	X	0.089	0.096	9.086	10.086
44	M395A	X	0.096	0.088	10.086	11.087
45	M395A	X	0.088	0.072	11.087	12.087
46	M395A	X	0.072	0.049	12.087	13.087
47	M395A	X	0.049	0.017	13.087	14.087
48	M379A	X	0.066	0.028	0	2.162
49	M379A	X	0.028	0.019	2.162	4.325
50	M379A	X	0.019	0.019	4.325	6.487
51	M379A	X	0.019	0.029	6.487	8.65
52	M379A	X	0.029	0.069	8.65	10.812
53	M392A	X	-0.003	0.01	13.504	14.254
54	M392A	X	0.01	0.038	14.254	15.004
55	M393A	X	0.031	0.008	0	0.742

Member Distributed Loads (BLC 10 : BLC 4 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
56	M393A	X	0.008	-0.003	0.742	1.484
57	M395A	X	-0.003	0.01	13.504	14.254
58	M395A	X	0.01	0.038	14.254	15.004
59	M396B	X	0.031	0.008	0	0.742
60	M396B	X	0.008	-0.003	0.742	1.484
61	M380A	X	0.065	0.032	0	2.037
62	M380A	X	0.032	0.02	2.037	4.073
63	M380A	X	0.02	0.02	4.073	6.11
64	M380A	X	0.02	0.032	6.11	8.146
65	M380A	X	0.032	0.065	8.146	10.183
66	M393A	X	0.018	0.052	0.917	1.846
67	M393A	X	0.052	0.076	1.846	2.775
68	M393A	X	0.076	0.093	2.775	3.703
69	M393A	X	0.093	0.1	3.703	4.632
70	M393A	X	0.1	0.1	4.632	5.561
71	M393A	X	0.1	0.1	5.561	6.49
72	M393A	X	0.1	0.099	6.49	7.419
73	M393A	X	0.099	0.099	7.419	8.348
74	M393A	X	0.099	0.098	8.348	9.277
75	M393A	X	0.098	0.098	9.277	10.205
76	M393A	X	0.098	0.09	10.205	11.134
77	M393A	X	0.09	0.074	11.134	12.063
78	M393A	X	0.074	0.05	12.063	12.992
79	M393A	X	0.05	0.017	12.992	13.921
80	M396B	X	0.018	0.052	0.917	1.846
81	M396B	X	0.052	0.076	1.846	2.775
82	M396B	X	0.076	0.093	2.775	3.703
83	M396B	X	0.093	0.1	3.703	4.632
84	M396B	X	0.1	0.1	4.632	5.561
85	M396B	X	0.1	0.1	5.561	6.49
86	M396B	X	0.1	0.099	6.49	7.419
87	M396B	X	0.099	0.099	7.419	8.348
88	M396B	X	0.099	0.098	8.348	9.277
89	M396B	X	0.098	0.098	9.277	10.205
90	M396B	X	0.098	0.09	10.205	11.134
91	M396B	X	0.09	0.074	11.134	12.063
92	M396B	X	0.074	0.05	12.063	12.992
93	M396B	X	0.05	0.017	12.992	13.921
94	M381A	X	0.07	0.034	0	2.019
95	M381A	X	0.034	0.022	2.019	4.038
96	M381A	X	0.022	0.022	4.038	6.056
97	M381A	X	0.022	0.034	6.056	8.075
98	M381A	X	0.034	0.07	8.075	10.094
99	M393A	X	0.014	0.014	13.354	14.838
100	M394A	X	0.012	0.012	0	0.891
101	M396B	X	0.016	0.012	13.354	14.838
102	M397A	X	0.012	0.012	0	0.891
103	M382B	X	0.056	0.026	0	1.907
104	M382B	X	0.026	0.013	1.907	3.815
105	M382B	X	0.013	0.013	3.815	5.722
106	M382B	X	0.013	0.026	5.722	7.629
107	M382B	X	0.026	0.056	7.629	9.537
108	M394A	X	0.001	0.047	0	2.015
109	M394A	X	0.047	0.087	2.015	4.03
110	M394A	X	0.087	0.097	4.03	6.045

Member Distributed Loads (BLC 10 : BLC 4 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
111	M394A	X	0.097	0.115	6.045	8.06
112	M394A	X	0.115	0.087	8.06	10.074
113	M394A	X	0.087	0.021	10.074	12.089
114	M394A	X	0.021	0.001	12.089	14.104
115	M397A	X	0.001	0.047	0	2.015
116	M397A	X	0.047	0.087	2.015	4.03
117	M397A	X	0.087	0.097	4.03	6.045
118	M397A	X	0.097	0.115	6.045	8.06
119	M397A	X	0.115	0.087	8.06	10.074
120	M397A	X	0.087	0.021	10.074	12.089
121	M397A	X	0.021	0.001	12.089	14.104
122	M382B	X	0.048	0.019	0	2.384
123	M382B	X	0.019	0.004	2.384	4.768
124	M382B	X	0.004	0.019	4.768	7.153
125	M382B	X	0.019	0.048	7.153	9.537
126	M383	X	0.047	0.019	0	2.25
127	M383	X	0.019	0.005	2.25	4.5
128	M383	X	0.005	0.019	4.5	6.75
129	M383	X	0.019	0.047	6.75	9
130	M394A	X	-0.004	0.047	12.42	13.344
131	M394A	X	0.047	0.089	13.344	14.268
132	M394A	X	0.089	0.104	14.268	15.192
133	M394A	X	0.104	0.104	15.192	16.116
134	M394A	X	0.104	0.103	16.116	17.04
135	M394A	X	0.103	0.103	17.04	17.964
136	M394A	X	0.103	0.102	17.964	18.887
137	M394A	X	0.102	0.102	18.887	19.811
138	M394A	X	0.102	0.101	19.811	20.735
139	M394A	X	0.101	0.086	20.735	21.659
140	M394A	X	0.086	0.046	21.659	22.583
141	M394A	X	0.046	-0.003	22.583	23.507
142	M397A	X	-0.004	0.047	12.42	13.344
143	M397A	X	0.047	0.089	13.344	14.268
144	M397A	X	0.089	0.104	14.268	15.192
145	M397A	X	0.104	0.104	15.192	16.116
146	M397A	X	0.104	0.103	16.116	17.04
147	M397A	X	0.103	0.103	17.04	17.964
148	M397A	X	0.103	0.102	17.964	18.887
149	M397A	X	0.102	0.102	18.887	19.811

Member Distributed Loads (BLC 11 : BLC 5 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M356A	Z	0.049	0.019	0	2.317
2	M356A	Z	0.019	0.008	2.317	4.633
3	M356A	Z	0.008	0.008	4.633	6.95
4	M356A	Z	0.008	0.019	6.95	9.267
5	M356A	Z	0.019	0.049	9.267	11.583
6	M357A	Z	0.096	0.038	0	2.258
7	M357A	Z	0.038	0.015	2.258	4.515
8	M357A	Z	0.015	0.015	4.515	6.773
9	M357A	Z	0.015	0.038	6.773	9.031
10	M357A	Z	0.038	0.096	9.031	11.289
11	M386A	Z	0.019	0.051	5.551e-16	1.014
12	M386A	Z	0.051	0.075	1.014	2.028
13	M386A	Z	0.075	0.083	2.028	3.043

Member Distributed Loads (BLC 11 : BLC 5 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
14	M386A	Z	0.083	0.075	3.043	4.057
15	M386A	Z	0.075	0.05	4.057	5.071
16	M386A	Z	0.05	0.018	5.071	6.085
17	M389A	Z	0.019	0.051	8.882e-16	1.014
18	M389A	Z	0.051	0.075	1.014	2.028
19	M389A	Z	0.075	0.083	2.028	3.043
20	M389A	Z	0.083	0.075	3.043	4.057
21	M389A	Z	0.075	0.05	4.057	5.071
22	M389A	Z	0.05	0.018	5.071	6.085
23	M358	Z	0.07	0.029	0	2.18
24	M358	Z	0.029	0.018	2.18	4.36
25	M358	Z	0.018	0.018	4.36	6.541
26	M358	Z	0.018	0.028	6.541	8.721
27	M358	Z	0.028	0.067	8.721	10.901
28	M386A	Z	0.018	0.049	6.085	7.085
29	M386A	Z	0.049	0.073	7.085	8.086
30	M386A	Z	0.073	0.089	8.086	9.086
31	M386A	Z	0.089	0.096	9.086	10.086
32	M386A	Z	0.096	0.088	10.086	11.087
33	M386A	Z	0.088	0.072	11.087	12.087
34	M386A	Z	0.072	0.049	12.087	13.087
35	M386A	Z	0.049	0.017	13.087	14.087
36	M389A	Z	0.018	0.049	6.085	7.085
37	M389A	Z	0.049	0.073	7.085	8.086
38	M389A	Z	0.073	0.089	8.086	9.086
39	M389A	Z	0.089	0.096	9.086	10.086
40	M389A	Z	0.096	0.088	10.086	11.087
41	M389A	Z	0.088	0.072	11.087	12.087
42	M389A	Z	0.072	0.049	12.087	13.087
43	M389A	Z	0.049	0.017	13.087	14.087
44	M359A	Z	0.066	0.028	0	2.162
45	M359A	Z	0.028	0.019	2.162	4.325
46	M359A	Z	0.019	0.019	4.325	6.487
47	M359A	Z	0.019	0.029	6.487	8.65
48	M359A	Z	0.029	0.069	8.65	10.812
49	M386A	Z	-0.003	0.01	13.504	14.254
50	M386A	Z	0.01	0.038	14.254	15.004
51	M387A	Z	0.031	0.008	0	0.742
52	M387A	Z	0.008	-0.003	0.742	1.484
53	M389A	Z	-0.003	0.01	13.504	14.254
54	M389A	Z	0.01	0.038	14.254	15.004
55	M390B	Z	0.031	0.008	0	0.742
56	M390B	Z	0.008	-0.003	0.742	1.484
57	M360A	Z	0.065	0.032	0	2.037
58	M360A	Z	0.032	0.02	2.037	4.073
59	M360A	Z	0.02	0.02	4.073	6.11
60	M360A	Z	0.02	0.032	6.11	8.146
61	M360A	Z	0.032	0.065	8.146	10.183
62	M387A	Z	0.018	0.052	0.917	1.846
63	M387A	Z	0.052	0.076	1.846	2.775
64	M387A	Z	0.076	0.093	2.775	3.703
65	M387A	Z	0.093	0.1	3.703	4.632
66	M387A	Z	0.1	0.1	4.632	5.561
67	M387A	Z	0.1	0.1	5.561	6.49
68	M387A	Z	0.1	0.099	6.49	7.419

Member Distributed Loads (BLC 11 : BLC 5 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
69	M387A	Z	0.099	0.099	7.419	8.348
70	M387A	Z	0.099	0.098	8.348	9.277
71	M387A	Z	0.098	0.098	9.277	10.205
72	M387A	Z	0.098	0.09	10.205	11.134
73	M387A	Z	0.09	0.074	11.134	12.063
74	M387A	Z	0.074	0.05	12.063	12.992
75	M387A	Z	0.05	0.017	12.992	13.921
76	M390B	Z	0.018	0.052	0.917	1.846
77	M390B	Z	0.052	0.076	1.846	2.775
78	M390B	Z	0.076	0.093	2.775	3.703
79	M390B	Z	0.093	0.1	3.703	4.632
80	M390B	Z	0.1	0.1	4.632	5.561
81	M390B	Z	0.1	0.1	5.561	6.49
82	M390B	Z	0.1	0.099	6.49	7.419
83	M390B	Z	0.099	0.099	7.419	8.348
84	M390B	Z	0.099	0.098	8.348	9.277
85	M390B	Z	0.098	0.098	9.277	10.205
86	M390B	Z	0.098	0.09	10.205	11.134
87	M390B	Z	0.09	0.074	11.134	12.063
88	M390B	Z	0.074	0.05	12.063	12.992
89	M390B	Z	0.05	0.017	12.992	13.921
90	M361	Z	0.07	0.034	0	2.019
91	M361	Z	0.034	0.022	2.019	4.038
92	M361	Z	0.022	0.022	4.038	6.056
93	M361	Z	0.022	0.034	6.056	8.075
94	M361	Z	0.034	0.07	8.075	10.094
95	M387A	Z	0.014	0.014	13.354	14.838
96	M388A	Z	0.012	0.012	0	0.891
97	M390B	Z	0.016	0.012	13.354	14.838
98	M391A	Z	0.012	0.012	0	0.891
99	M362B	Z	0.056	0.026	0	1.907
100	M362B	Z	0.026	0.013	1.907	3.815
101	M362B	Z	0.013	0.013	3.815	5.722
102	M362B	Z	0.013	0.026	5.722	7.629
103	M362B	Z	0.026	0.056	7.629	9.537
104	M388A	Z	0.001	0.047	0	2.015
105	M388A	Z	0.047	0.087	2.015	4.03
106	M388A	Z	0.087	0.097	4.03	6.045
107	M388A	Z	0.097	0.115	6.045	8.06
108	M388A	Z	0.115	0.087	8.06	10.074
109	M388A	Z	0.087	0.021	10.074	12.089
110	M388A	Z	0.021	0.001	12.089	14.104
111	M391A	Z	0.001	0.047	0	2.015
112	M391A	Z	0.047	0.087	2.015	4.03
113	M391A	Z	0.087	0.097	4.03	6.045
114	M391A	Z	0.097	0.115	6.045	8.06
115	M391A	Z	0.115	0.087	8.06	10.074
116	M391A	Z	0.087	0.021	10.074	12.089
117	M391A	Z	0.021	0.001	12.089	14.104
118	M362B	Z	0.048	0.019	0	2.384
119	M362B	Z	0.019	0.004	2.384	4.768
120	M362B	Z	0.004	0.019	4.768	7.153
121	M362B	Z	0.019	0.048	7.153	9.537
122	M363A	Z	0.047	0.019	0	2.25
123	M363A	Z	0.019	0.005	2.25	4.5

Member Distributed Loads (BLC 11 : BLC 5 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
124	M363A	Z	0.005	0.019	4.5	6.75
125	M363A	Z	0.019	0.047	6.75	9
126	M388A	Z	-0.004	0.047	12.42	13.344
127	M388A	Z	0.047	0.089	13.344	14.268
128	M388A	Z	0.089	0.104	14.268	15.192
129	M388A	Z	0.104	0.104	15.192	16.116
130	M388A	Z	0.104	0.103	16.116	17.04
131	M388A	Z	0.103	0.103	17.04	17.964
132	M388A	Z	0.103	0.102	17.964	18.887
133	M388A	Z	0.102	0.102	18.887	19.811
134	M388A	Z	0.102	0.101	19.811	20.735
135	M388A	Z	0.101	0.086	20.735	21.659
136	M388A	Z	0.086	0.046	21.659	22.583
137	M388A	Z	0.046	-0.003	22.583	23.507
138	M391A	Z	-0.004	0.047	12.42	13.344
139	M391A	Z	0.047	0.089	13.344	14.268
140	M391A	Z	0.089	0.104	14.268	15.192
141	M391A	Z	0.104	0.104	15.192	16.116
142	M391A	Z	0.104	0.103	16.116	17.04
143	M391A	Z	0.103	0.103	17.04	17.964
144	M391A	Z	0.103	0.102	17.964	18.887
145	M391A	Z	0.102	0.102	18.887	19.811
146	M391A	Z	0.102	0.101	19.811	20.735
147	M391A	Z	0.101	0.086	20.735	21.659
148	M391A	Z	0.086	0.046	21.659	22.583
149	M391A	Z	0.046	-0.003	22.583	23.507

Member Distributed Loads (BLC 12 : BLC 6 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M353A	Y	-0.226	-0.065	0	2.688
2	M355	Y	-0.204	-0.202	0	1.344
3	M355	Y	-0.202	-0.199	1.344	2.688
4	M363A	Y	-0.068	-0.068	2.7	9
5	M373	Y	-0.223	-0.068	0	2.688
6	M375	Y	-0.204	-0.202	0	1.344
7	M375	Y	-0.202	-0.199	1.344	2.688
8	M383	Y	-0.068	-0.068	2.7	9
9	M393	Y	-0.223	-0.068	0	2.688
10	M395	Y	-0.223	-0.068	0	2.688
11	M403	Y	-0.153	-0.153	3.594	5.406
12	M19	Y	-0.132	-0.132	0	5.127
13	M20	Y	-0.132	-0.132	0	5.127
14	M38	Y	-0.204	-0.202	0	1.344
15	M38	Y	-0.202	-0.199	1.344	2.688
16	M39	Y	-0.204	-0.202	0	1.344
17	M39	Y	-0.202	-0.199	1.344	2.688
18	M382	Y	-0.065	-0.065	0	4.5
19	M382	Y	-0.065	-0.065	4.5	9

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N55A	N53A	N54A	N56A	Y	Two Way	-0.012
2	N51A	N49A	N50A	N52A	Y	Two Way	-0.012

Member Area Loads (BLC 1 : Dead) (Continued)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
3	N297A	N286A	N288	N298A	Y	Two Way	-0.003
4	N294A	N286A	N284A	N293A	Y	Two Way	-0.003
5	N291A	N284A	N285A	N290A	Y	Two Way	-0.003
6	N302	N285A	N288	N301	Y	Two Way	-0.003
7	N288	N286A	N284A	N285A	Y	Two Way	-0.003
8	N583	N556	N550	N553	Y	Two Way	-0.01
9	N556	N555	N549	N550	Y	Two Way	-0.01
10	N555	N569	N551	N549	Y	Two Way	-0.01
11	N569	N583	N553	N551	Y	Two Way	-0.01

Member Area Loads (BLC 2 : 0 Wind - No Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N550	N553A	N554	N549	X	Two Way	-0.017
2	N553A	N557	N562	N554	X	Two Way	-0.017
3	N557	N558	N563	N562	X	Two Way	-0.017
4	N558	N559	N564	N563	X	Two Way	-0.019
5	N559	N560	N565	N564	X	Two Way	-0.019
6	N560	N561	N566	N565	X	Two Way	-0.021
7	N561	N556	N555	N566	X	Two Way	-0.022

Member Area Loads (BLC 3 : 90 Wind - No Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N553	N582	N553A	N550	Z	Two Way	-0.017
2	N582	N590	N557	N553A	Z	Two Way	-0.017
3	N590	N591	N558	N557	Z	Two Way	-0.017
4	N591	N592	N559	N558	Z	Two Way	-0.019
5	N592	N593	N560	N559	Z	Two Way	-0.019
6	N593	N594	N561	N560	Z	Two Way	-0.021
7	N594	N583	N556	N561	Z	Two Way	-0.022

Member Area Loads (BLC 4 : 180 Wind - No Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N551	N568	N582	N553	X	Two Way	0.017
2	N568	N576	N590	N582	X	Two Way	0.017
3	N576	N577	N591	N590	X	Two Way	0.017
4	N577	N578	N592	N591	X	Two Way	0.019
5	N578	N579	N593	N592	X	Two Way	0.019
6	N579	N580	N594	N593	X	Two Way	0.021
7	N580	N569	N583	N594	X	Two Way	0.022

Member Area Loads (BLC 5 : 270 Wind - No Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N549	N554	N568	N551	Z	Two Way	0.017
2	N554	N562	N576	N568	Z	Two Way	0.017
3	N562	N563	N577	N576	Z	Two Way	0.017
4	N563	N564	N578	N577	Z	Two Way	0.019
5	N564	N565	N579	N578	Z	Two Way	0.019
6	N565	N566	N580	N579	Z	Two Way	0.021
7	N566	N555	N569	N580	Z	Two Way	0.022

Member Area Loads (BLC 6 : Snow Load)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	N555	N556	N583	N569	Y	Two Way	-0.084

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
0	N1	max	1.339	20	30.962	5	1.342	6	11.016	6	0.149	7	11.801	8
1		min	-1.621	8	-22.958	25	-1.614	10	-11.772	10	-0.139	27	-11.004	4
2	N2	max	1.616	4	30.891	7	1.339	22	10.991	6	0.155	9	11.025	8
3		min	-1.342	8	-23.001	27	-1.619	10	-11.798	10	-0.133	21	-11.778	4
4	N4	max	1.62	4	31.139	9	1.614	6	11.759	6	0.148	11	10.996	8
5		min	-1.338	24	-22.928	21	-1.341	10	-11.027	10	-0.139	23	-11.801	4
6	N3	max	1.341	4	31.213	11	1.619	6	11.785	6	0.155	5	11.771	8
7		min	-1.615	8	-22.884	23	-1.338	26	-11.002	10	-0.133	25	-11.025	4
8	N11	max	-0.007	27	3.387	5	0.067	5	0	27	0	27	0	27
9		min	-0.099	8	0.961	25	-0.078	26	0	1	0	1	0	1
10	N12	max	0.099	4	3.424	7	0.073	7	0	27	0	27	0	27
11		min	0.009	25	0.982	27	-0.073	26	0	1	0	1	0	1
12	N5	max	0.078	20	3.388	7	-0.008	21	0	27	0	27	0	27
13		min	-0.067	7	0.96	27	-0.099	10	0	1	0	1	0	1
14	N6	max	0.073	20	3.427	9	0.099	6	0	27	0	27	0	27
15		min	-0.073	9	0.983	21	0.009	27	0	1	0	1	0	1
16	N10	max	0.099	4	3.388	9	0.078	22	0	27	0	27	0	27
17		min	0.008	23	0.963	21	-0.067	9	0	1	0	1	0	1
18	N9	max	-0.009	21	3.427	11	0.073	22	0	27	0	27	0	27
19		min	-0.099	8	0.985	23	-0.073	11	0	1	0	1	0	1
20	N8	max	0.067	11	3.394	11	0.099	6	0	27	0	27	0	27
21		min	-0.078	24	0.965	23	0.008	25	0	1	0	1	0	1
22	N7	max	0.073	5	3.431	5	-0.009	23	0	27	0	27	0	27
23		min	-0.073	24	0.984	25	-0.099	10	0	1	0	1	0	1
24	Totals:	max	6.287	4	48.645	2	6.285	6						
25		min	-6.287	8	25.104	27	-6.285	10						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om [k-ft]	Mnzz/om [k-ft]	Cb	Eqn
0	MP-26	PIPE 2.0NOMINAL	0.452	8.438	5	0.001	8.438	11	2.462	22.52	1.329	1.329	1	1	H1-1a
1	MP-21	PIPE 2.0NOMINAL	0.444	8.438	7	0.001	8.438	9	2.462	22.52	1.329	1.329	1	1	H1-1a
2	M8	HSS6X6X6	0.43	0	11	0.021	10.861	z	11	18.197	190.635	33.114	33.114	2.03	H1-1a
3	M5	HSS6X6X6	0.428	0	5	0.021	10.861	z	11	18.197	190.635	33.114	33.114	2.035	H1-1a
4	M7	HSS6X6X6	0.426	0	9	0.021	10.861	z	7	18.197	190.635	33.114	33.114	2.047	H1-1a
5	M6	HSS6X6X6	0.42	0	7	0.021	10.861	z	9	18.197	190.635	33.114	33.114	2.057	H1-1a
6	MP-22	PIPE 2.0NOMINAL	0.418	8.438	9	0.001	8.438	7	2.462	22.52	1.329	1.329	1	1	H1-1a
7	MP-24	PIPE 2.0NOMINAL	0.418	8.438	11	0.001	8.438	5	2.462	22.52	1.329	1.329	1	1	H1-1a
8	MP-25	PIPE 2.0NOMINAL	0.417	8.438	11	0.001	8.438	5	2.462	22.52	1.329	1.329	1	1	H1-1a
9	MP-23	PIPE 2.0NOMINAL	0.412	8.438	9	0.001	8.438	7	2.462	22.52	1.329	1.329	1	1	H1-1a
10	MP-10	PIPE 2.0NOMINAL	0.298	9.516	9	0.002	9.516	7	1.809	22.52	1.329	1.329	1	1	H1-1a
11	MP-6	PIPE 2.0NOMINAL	0.298	9.516	7	0.002	9.516	9	1.809	22.52	1.329	1.329	1	1	H1-1a
12	MP-5	PIPE 2.0NOMINAL	0.261	9.516	5	0.002	9.516	11	1.809	22.52	1.329	1.329	1	1	H1-1a
13	MP-1	PIPE 2.0NOMINAL	0.26	9.516	11	0.002	9.516	25	1.809	22.52	1.329	1.329	1	1	H1-1a
14	M4	HSS10X10X6	0.248	0	11	0.019	14.974	z	6	261.545	331.976	98.922	98.922	2.443	H1-1b
15	M3	HSS10X10X6	0.248	0	9	0.018	15.625	y	4	261.545	331.976	98.922	98.922	2.441	H1-1b
16	M1	HSS10X10X6	0.248	0	5	0.018	15.625	y	8	261.545	331.976	98.922	98.922	2.442	H1-1b
17	M2	HSS10X10X6	0.248	0	7	0.019	14.974	z	10	261.545	331.976	98.922	98.922	2.445	H1-1b
18	MP-16	PIPE 2.0NOMINAL	0.197	10.172	11	0.002	10.172	11	1.658	22.52	1.329	1.329	1	1	H1-1b*

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

	Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om [k-ft]	Mnzz/om [k-ft]	Cb	Eqn
19	M103	L4X4X4	0.195	0	9	0.043	0	y	9	33.226	41.605	2.088	4.468	1.5	H2-1		
20	M112	L4X4X4	0.195	0	7	0.043	0	z	7	33.226	41.605	2.088	4.468	1.5	H2-1		
21	MP-20	PIPE 2.0NOMINAL	0.194	10.172	5	0.002	10.172		5	1.658	22.52	1.329	1.329	1	H1-1b*		
22	MP-15	PIPE 2.0NOMINAL	0.191	10.172	9	0.002	10.172		9	1.658	22.52	1.329	1.329	1	H1-1b*		
23	M113	L4X4X4	0.187	0	11	0.045	0	z	11	33.226	41.605	2.088	4.468	1.5	H2-1		
24	M104	L4X4X4	0.187	0	5	0.045	0	y	5	33.226	41.605	2.088	4.468	1.5	H2-1		
25	MP-11	PIPE 2.0NOMINAL	0.186	10.172	7	0.002	10.172		7	1.658	22.52	1.329	1.329	1	H1-1b*		
26	M234	L11/2X11/2X3	0.179	4.526	5	0.002	4.526	z	6	0.354	13.254	0.227	0.434	1.5	H2-1		
27	M51	L4X4X4	0.172	0	5	0.039	0	y	5	33.226	41.605	2.088	4.468	1.5	H2-1		
28	M60	L4X4X4	0.171	0	11	0.039	0	z	11	33.226	41.605	2.088	4.468	1.5	H2-1		
29	M232	L11/2X11/2X3	0.171	4.526	9	0.002	0.974	z	6	0.354	13.254	0.227	0.434	1.5	H2-1		
30	M61	L4X4X4	0.162	0	7	0.039	0	z	7	33.226	41.605	2.088	4.468	1.5	H2-1		
31	M52	L4X4X4	0.161	0	9	0.039	0	y	9	33.226	41.605	2.088	4.468	1.5	H2-1		
32	M110	L4X4X4	0.135	0	11	0.034	0.893	z	11	33.226	41.605	2.088	4.468	1.5	H2-1		
33	M101	L4X4X4	0.133	0	5	0.034	0.893	y	5	33.226	41.605	2.088	4.468	1.5	H2-1		
34	M49	L4X4X4	0.131	0	9	0.033	0.893	y	9	33.226	41.605	2.088	4.468	1.5	H2-1		
35	M59	L4X4X4	0.13	0	5	0.03	0.893	z	5	33.226	41.605	2.088	4.468	1.5	H2-1		
36	M58	L4X4X4	0.127	0	7	0.033	0.893	z	7	33.226	41.605	2.088	4.468	1.5	H2-1		
37	M50	L4X4X4	0.127	0	11	0.03	0.893	y	11	33.226	41.605	2.088	4.468	1.5	H2-1		
38	M102	L4X4X4	0.125	0	7	0.029	0.893	y	7	33.226	41.605	2.088	4.468	1.5	H2-1		
39	M111	L4X4X4	0.123	0	9	0.029	0.893	z	9	33.226	41.605	2.088	4.468	1.5	H2-1		
40	M18	W12X22	0.11	0	11	0.047	3.257	y	11	161.458	194.012	9.132	73.104	2.208	H1-1b		
41	M17	W12X22	0.11	0	9	0.047	3.257	y	9	161.458	194.012	9.132	73.104	2.213	H1-1b		
42	M10	W18X35	0.098	0	10	0.08	3.625	y	10	261.947	308.383	20.11	165.918	2.264	H1-1b		
43	M12	W18X35	0.098	0	6	0.08	3.625	y	6	261.947	308.383	20.11	165.918	2.263	H1-1b		
44	M9	W18X35	0.098	3.625	8	0.08	3.625	y	8	261.947	308.383	20.11	165.918	2.261	H1-1b		
45	M11	W18X35	0.098	3.625	4	0.08	3.625	y	4	261.947	308.383	20.11	165.918	2.261	H1-1b		
46	M235	L11/2X11/2X3	0.077	4.526	11	0.003	4.526	z	4	0.354	13.254	0.227	0.434	1.5	H2-1		
47	M233	L11/2X11/2X3	0.075	4.526	7	0.003	4.526	z	8	0.354	13.254	0.227	0.434	1.5	H2-1		
48	M98	L4X4X4	0.074	0	7	0.009	0	y	8	33.226	41.605	2.088	4.468	1.5	H2-1		
49	M46	L4X4X4	0.074	0	11	0.009	0	y	4	33.226	41.605	2.088	4.468	1.5	H2-1		
50	M107	L4X4X4	0.074	0	9	0.009	0	z	8	33.226	41.605	2.088	4.468	1.5	H2-1		
51	M55	L4X4X4	0.074	0	5	0.009	0	z	4	33.226	41.605	2.088	4.468	1.5	H2-1		
52	MP-4	PIPE 2.0NOMINAL	0.068	8.438	11	0.002	8.438		11	2.462	22.52	1.329	1.329	1	H1-1b*		
53	M15	W18X35	0.066	3.625	4	0.05	3.625	y	4	261.947	308.383	20.11	165.918	2.266	H1-1b		
54	M13	W18X35	0.065	3.625	8	0.049	3.625	y	8	261.947	308.383	20.11	165.918	2.264	H1-1b		
55	M14	W18X35	0.065	0	6	0.049	3.625	y	10	261.947	308.383	20.11	165.918	2.262	H1-1b		
56	M16	W18X35	0.065	3.625	6	0.049	3.625	y	6	261.947	308.383	20.11	165.918	2.262	H1-1b		
57	M20	W12X22	0.064	5.127	4	0.02	4.005	y	11	161.458	194.012	9.132	73.104	2.576	H1-1b		
58	M19	W12X22	0.063	0	4	0.019	1.121	y	4	161.458	194.012	9.132	73.104	2.509	H1-1b		
59	M115	L4X4X4	0.061	0	5	0.011	0	y	4	33.226	41.605	2.088	4.468	1.5	H2-1		
60	M79	L4X4X4	0.061	0	9	0.011	0	y	8	33.226	41.605	2.088	4.468	1.5	H2-1		
61	M97	L4X4X4	0.061	0	7	0.011	0	y	6	33.226	41.605	2.088	4.468	1.5	H2-1		
62	M45	L4X4X4	0.061	0	11	0.011	0	y	10	33.226	41.605	2.088	4.468	1.5	H2-1		
63	M124A	L4X4X4	0.061	0	7	0.011	0	z	8	33.226	41.605	2.088	4.468	1.5	H2-1		
64	M88	L4X4X4	0.061	0	11	0.011	0	z	4	33.226	41.605	2.088	4.468	1.5	H2-1		
65	M54	L4X4X4	0.06	0	5	0.011	0	z	6	33.226	41.605	2.088	4.468	1.5	H2-1		
66	M106	L4X4X4	0.06	0	9	0.011	0	z	10	33.226	41.605	2.088	4.468	1.5	H2-1		
67	MP-17	PIPE 2.0NOMINAL	0.054	8.438	5	0.003	8.438		10	2.462	22.52	1.329	1.329	1	H1-1b*		
68	MP-19	PIPE 2.0NOMINAL	0.054	8.438	11	0.004	8.438		6	2.462	22.52	1.329	1.329	1	H1-1b*		
69	MP-14	PIPE 2.0NOMINAL	0.054	8.438	7	0.004	8.438		10	2.462	22.52	1.329	1.329	1	H1-1b*		
70	MP-12	PIPE 2.0NOMINAL	0.054	8.438	9	0.003	8.438		6	2.462	22.52	1.329	1.329	1	H1-1b*		
71	M120A	L4X4X4	0.053	0	6	0.008	0	y	6	33.226	41.605	2.088	4.468	1.5	H2-1		
72	M93	L4X4X4	0.053	0	10	0.008	0	z	10	33.226	41.605	2.088	4.468	1.5	H2-1		
73	M84	L4X4X4	0.053	0	10	0.008	0	y	10	33.226	41.605	2.088	4.468	1.5	H2-1		

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

Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om [k-ft]	Mnzz/om [k-ft]	Cb	Eqn
74	M129B	L4X4X4	0.053	0	6	0.008	0	z	6	33.226	41.605	2.088	4.468	1.5	H2-1	
75	M130A	L4X4X4	0.05	0	6	0.007	0	z	6	33.226	41.605	2.088	4.468	1.5	H2-1	
76	M89	L4X4X4	0.05	0	4	0.01	0	z	4	33.226	41.605	2.088	4.468	1.5	H2-1	
77	M80	L4X4X4	0.05	0	8	0.01	0	y	8	33.226	41.605	2.088	4.468	1.5	H2-1	
78	M116A	L4X4X4	0.05	0	4	0.01	0	y	4	33.226	41.605	2.088	4.468	1.5	H2-1	
79	M125A	L4X4X4	0.05	0	8	0.01	0	z	8	33.226	41.605	2.088	4.468	1.5	H2-1	
80	M121A	L4X4X4	0.05	0	6	0.007	0	y	6	33.226	41.605	2.088	4.468	1.5	H2-1	
81	M94	L4X4X4	0.049	0	10	0.007	0	z	10	33.226	41.605	2.088	4.468	1.5	H2-1	
82	M85	L4X4X4	0.049	0	10	0.007	0	y	10	33.226	41.605	2.088	4.468	1.5	H2-1	
83	M95	L4X4X4	0.046	0	11	0.016	1.34	y	6	33.226	41.605	2.088	4.468	1.5	H2-1	
84	M122A	L4X4X4	0.046	0	5	0.017	1.34	y	5	33.226	41.605	2.088	4.468	1.5	H2-1	
85	M131A	L4X4X4	0.044	0	7	0.016	1.34	y	10	33.226	41.605	2.088	4.468	1.5	H2-1	
86	M86	L4X4X4	0.044	0	9	0.016	1.34	y	9	33.226	41.605	2.088	4.468	1.5	H2-1	
87	MP-3	PIPE 2.0NOMINAL	0.04	8.438	6	0.004	8.438	10	2.462	22.52	1.329	1.329	1	H1-1b		
88	MP-18	PIPE 2.0NOMINAL	0.039	8.438	6	0.007	8.438	6	2.462	22.52	1.329	1.329	1	H1-1b		
89	MP-13	PIPE 2.0NOMINAL	0.039	8.438	10	0.007	8.438	10	2.462	22.52	1.329	1.329	1	H1-1b		
90	MP-8	PIPE 2.0NOMINAL	0.039	8.438	6	0.004	8.438	6	2.462	22.52	1.329	1.329	1	H1-1b		
91	M228	L11/2X11/2X3	0.035	0	4	0.002	2	z	9	10.181	13.254	0.227	0.503	1.12	H2-1	
92	M230	L11/2X11/2X3	0.033	0	8	0.002	0	z	4	10.181	13.254	0.227	0.504	1.138	H2-1	
93	M229	L11/2X11/2X3	0.027	0.979	9	0.002	0	z	5	10.181	13.254	0.227	0.504	1.131	H2-1	
94	M231	L11/2X11/2X3	0.025	0	7	0.002	2	z	7	10.181	13.254	0.227	0.503	1.121	H2-1	
95	M82	L4X4X4	0.025	0	9	0.004	0	y	8	33.226	41.605	2.088	4.468	1.5	H2-1	
96	M91	L4X4X4	0.025	0	11	0.004	0	z	4	33.226	41.605	2.088	4.468	1.5	H2-1	
97	M118A	L4X4X4	0.025	0	5	0.004	0	y	4	33.226	41.605	2.088	4.468	1.5	H2-1	
98	M127A	L4X4X4	0.025	0	7	0.004	0	z	8	33.226	41.605	2.088	4.468	1.5	H2-1	
99	M48	L4X4X4	0.025	0	11	0.004	0	y	10	33.226	41.605	2.088	4.468	1.5	H2-1	
100	M109	L4X4X4	0.025	0	9	0.004	0	z	10	33.226	41.605	2.088	4.468	1.5	H2-1	
101	M100	L4X4X4	0.025	0	7	0.004	0	y	6	33.226	41.605	2.088	4.468	1.5	H2-1	
102	M57	L4X4X4	0.025	0	5	0.004	0	z	6	33.226	41.605	2.088	4.468	1.5	H2-1	
103	MP-2	PIPE 2.0NOMINAL	0.02	8.438	6	0.002	8.438	6	2.462	22.52	1.329	1.329	1	H1-1b		
104	M22	L3X3X5	0.019	1.813	6	0.004	3.625	z	8	28.623	38.371	1.34	2.985	1.136	H2-1	
105	MP-9	PIPE 2.0NOMINAL	0.019	8.438	6	0.002	8.438	7	2.462	22.52	1.329	1.329	1	H1-1b		
106	MP-7	PIPE 2.0NOMINAL	0.019	8.438	10	0.002	8.438	9	2.462	22.52	1.329	1.329	1	H1-1b		
107	M21	L3X3X5	0.018	1.813	11	0.005	3.625	z	6	28.623	38.371	1.34	2.985	1.136	H2-1	
108	M23	L3X3X5	0.018	1.813	9	0.005	3.625	z	10	28.623	38.371	1.34	2.985	1.136	H2-1	
109	M114	L4X4X4	0.017	0	5	0.004	0	y	7	33.226	41.605	2.088	4.468	1.5	H2-1	
110	M78	L4X4X4	0.017	0	9	0.004	0	y	11	33.226	41.605	2.088	4.468	1.5	H2-1	
111	M96	L4X4X4	0.017	0	7	0.004	0	y	9	33.226	41.605	2.088	4.468	1.5	H2-1	
112	M44	L4X4X4	0.017	0	11	0.004	0	y	5	33.226	41.605	2.088	4.468	1.5	H2-1	
113	M123A	L4X4X4	0.017	0	7	0.004	0	z	5	33.226	41.605	2.088	4.468	1.5	H2-1	
114	M87	L4X4X4	0.017	0	11	0.004	0	z	9	33.226	41.605	2.088	4.468	1.5	H2-1	
115	M105	L4X4X4	0.017	0	9	0.004	0	z	7	33.226	41.605	2.088	4.468	1.5	H2-1	
116	M53	L4X4X4	0.017	0	5	0.004	0	z	11	33.226	41.605	2.088	4.468	1.5	H2-1	
117	M81	L4X4X4	0.014	0	9	0.004	0	y	4	33.226	41.605	2.088	4.468	1.5	H2-1	
118	M90	L4X4X4	0.014	0	11	0.004	0	z	8	33.226	41.605	2.088	4.468	1.5	H2-1	
119	M117A	L4X4X4	0.014	0	5	0.004	0	y	8	33.226	41.605	2.088	4.468	1.5	H2-1	
120	M126	L4X4X4	0.014	0	7	0.004	0	z	4	33.226	41.605	2.088	4.468	1.5	H2-1	
121	M128A	L4X4X4	0.009	0	6	0.006	0	z	6	33.226	41.605	2.088	4.468	1.5	H2-1	
122	M119A	L4X4X4	0.009	0	6	0.006	0	y	6	33.226	41.605	2.088	4.468	1.5	H2-1	
123	M83	L4X4X4	0.009	0	10	0.006	0	y	10	33.226	41.605	2.088	4.468	1.5	H2-1	
124	M92	L4X4X4	0.009	0	10	0.006	0	z	10	33.226	41.605	2.088	4.468	1.5	H2-1	
125	M108	L4X4X4	0.008	0	9	0.004	0	z	8	33.226	41.605	2.088	4.468	1.5	H2-1	
126	M47	L4X4X4	0.008	0	11	0.004	0	y	4	33.226	41.605	2.088	4.468	1.5	H2-1	
127	M99	L4X4X4	0.008	0	7	0.004	0	y	8	33.226	41.605	2.088	4.468	1.5	H2-1	
128	M56	L4X4X4	0.008	0	5	0.004	0	z	4	33.226	41.605	2.088	4.468	1.5	H2-1	

Company :TEP
 Designer :PRS
 Job Number :TEP No. 309257.1072627
 Model Name:Jackson DT (BU 831885)

2/28/2025
 8:52:57 AM
 Checked By : SMS

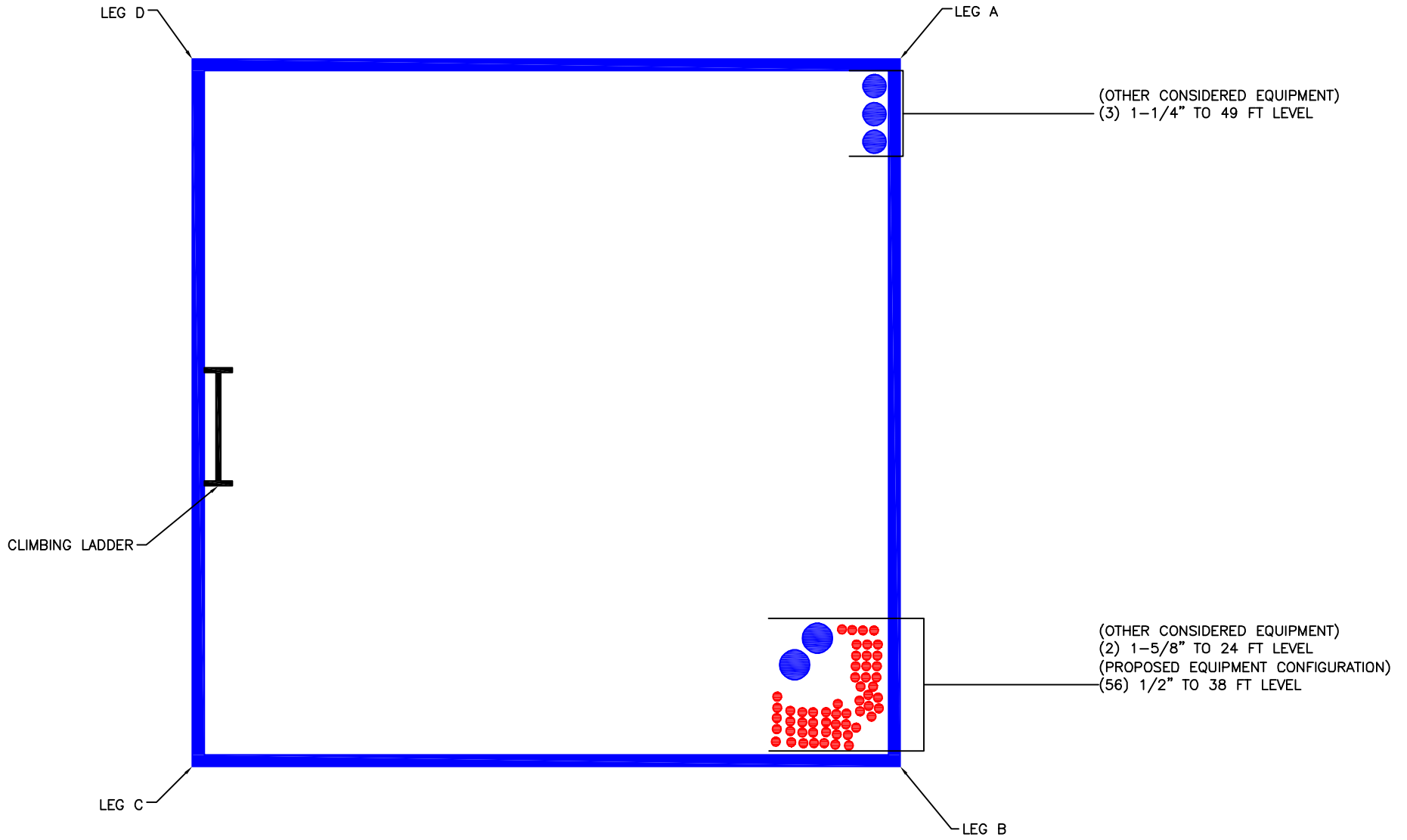
Envelope AISC 15TH (360-16): ASD Member Steel Code Checks (Continued)

	Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LC	Pnc/om [k]	Pnt/om [k]	Mnyy/om [k-ft]	Mnzz/om [k-ft]	Cb	Eqn
129	M224	HSS8X8X6	0.004		14.708	2	0	0.46	z	9		214.362	261.557	61.617	61.617	1.361	H1-1b*
130	M125	W12X22	0		3.625	10	0.001	0	y	11		157.426	194.012	9.132	73.104	1.158	H1-1b*
131	M124	W12X22	0		3.625	26	0.001	3.625	y	4		157.426	194.012	9.132	73.104	1.136	H1-1b*
132	M227	HSS8X8X6	0		2.885	27	0.001	1.443	y	8		252.871	261.557	61.617	61.617	1.563	H1-1b*

Envelope AISI S100-16: ASD Member Cold Formed Steel Code Checks

	Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LC	Pn/Om[k]	Tn/Om[k]	Mnyy/Om[k-ft]	Mnzz/Om[k-ft]	Vny/Om[k]	Vnz/Om[k]	Cb	Eqn
0	M349	Unistrut 1.625	0.376	0.53	5	0.066	0.53	y	7	3.68	9.167	0.184	0.408	1.35	2.7	2.003	H1.2-1		
1	M334	Unistrut 1.625	0.372	4.095	7	0.068	4.095	y	5	3.68	9.167	0.184	0.408	1.35	2.7	2.005	H1.2-1		
2	M307	Unistrut 1.625	0.307	0.53	10	0.181	0.53	y	10	3.68	9.167	0.236	0.423	1.35	2.7	2.145	F3.1-1		
3	M337	Unistrut 1.625	0.285	4.095	5	0.144	0.53	y	10	3.68	9.167	0.194	0.408	1.35	2.7	1.805	H1.2-1		
4	M352	Unistrut 1.625	0.285	0.53	7	0.144	0.53	y	6	3.68	9.167	0.194	0.408	1.35	2.7	1.805	H1.2-1		
5	M322	Unistrut 1.625	0.222	0.53	6	0.079	0.53	y	6	3.68	9.167	0.184	0.408	1.35	2.7	1.748	H1.2-1		
6	M304	Unistrut 1.625	0.093	4.095	5	0.044	0.771	z	6	3.68	9.167	0.194	0.408	1.35	2.7	2.217	H1.2-1		
7	M319	Unistrut 1.625	0.086	0.819	7	0.023	0.819	y	7	3.68	9.167	0.194	0.408	1.35	2.7	2.22	H1.2-1		

APPENDIX B
BASE LEVEL DRAWING



APPENDIX C

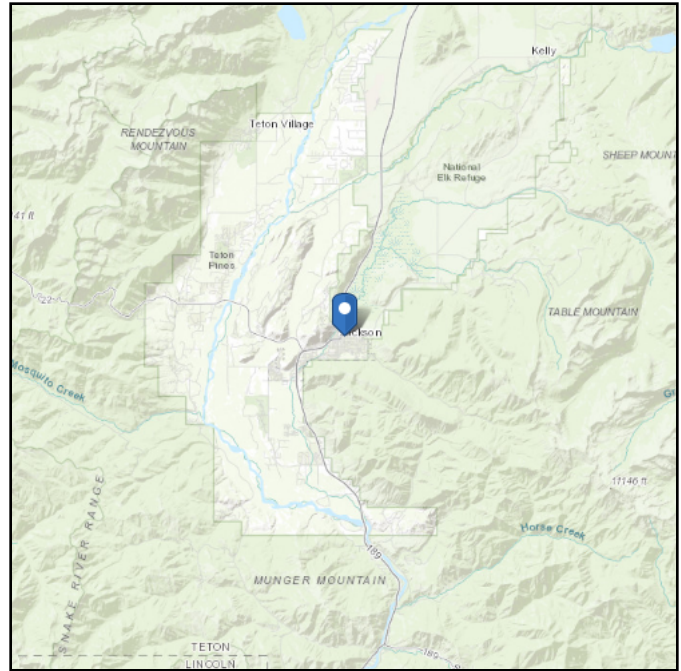
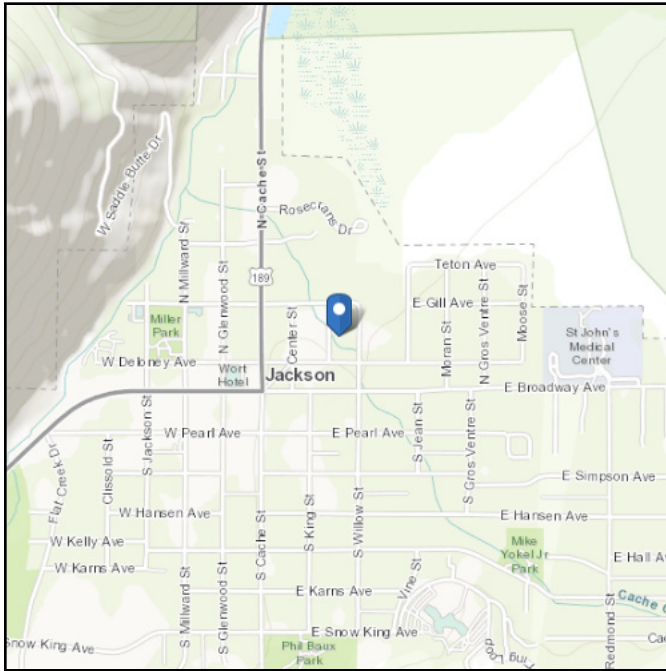
ADDITIONAL CALCULATIONS

ASCE Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Latitude: 43.480986
Longitude: -110.759617
Elevation: 6235.0421808139945 ft
(NAVD 88)



Wind

Results:

Wind Speed	105 Vmph
10-year MRI	75 Vmph
25-year MRI	81 Vmph
50-year MRI	86 Vmph
100-year MRI	91 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Fri Feb 07 2025

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

Site Soil Class: D - Stiff Soil

Results:

S_S :	1.034	S_{D1} :	N/A
S_1 :	0.341	T_L :	8
F_a :	1.086	PGA :	0.459
F_v :	N/A	PGA_M :	0.523
S_{MS} :	1.123	F_{PGA} :	1.141
S_{M1} :	N/A	I_e :	1
S_{DS} :	0.749	C_v :	1.307

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Fri Feb 07 2025

Date Source: [USGS Seismic Design Maps](#)

Ice

Results:

Ice Thickness: 0.25 in.
Concurrent Temperature: 5 F
Gust Speed 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Fri Feb 07 2025

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

In the mountain west, ice thicknesses may exceed the mapped values in the foothills and passes. However, at elevations above 5,000 ft, freezing rain is unlikely.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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**TOWER
ENGINEERING
PROFESSIONALS**

Jackson DT (BU 831885)

TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Code Revisions: TIA-222-H IBC 2021

Wind Inputs:

V_{ult}: 105.0 mph
Exposure: C
Ground Elevation: 6235.0 ft
h/w: 4.65

K_{es}: 0.95 Annex S
K_e: 0.798 Section 2.6.8
K_{zt}: 1 Section 2.6.6
K_d: 0.85 Table 2-2
G_h: 0.85 Section 2.6.9.1, h < 450 ft
C_f: 1.30 Section 2.6.11 - Calculate C_f per Table 2-9 for fully shrouded sections

α	z_g	K_{zmin}
9.5	900	0.85

z (ft)	K_z	q_z (psf)	$q_z * G_h * C_f$ (psf)
3.04	0.850	15.46	17.03
11.00	0.850	15.46	17.03
23.33	0.932	16.94	18.66
36.50	1.024	18.62	20.50
47.79	1.083	19.70	21.70



Jackson DT (BU 831885)

TEP No. 309257.1072627

Analysis By: PRS 2/28/2025

Checked By: SMS 2/28/2025

Code Revisions:	TIA-222-H	IBC 2021
Tower Type:	4 Sided Self-Support	

Wind Inputs:

Ult. Wind Velocity:	105	mph
Live Load Velocity:	30	mph
Ice Wind Velocity:	50	mph
Base Ice Thickness:	0.00	inches
Mount Centerline:	49.0	ft
Antenna Centerline:	50.0	ft
Exposure Category:	C	
Topo Category:	1	
Risk Category:	II	
Ground Elevation:	6235	ft

Wind Calculations:

K_{zt} :	1.000	Section 2.6.6
K_d :	0.950	
$K_{z-Mount}$:	1.089	Section 2.6.5.2
$K_{z-Antenna}$:	1.094	Section 2.6.5.2
K_{iz} :	1.041	Section 2.6.10
Ice Thickness:	0.000	inches - Section 2.6.10
$K_{es-wind}$:	0.95	Annex S (Table S-1)
K_{es-ice} :	0.85	Annex S (Table S-1)

Without Ice - (psf)	With Ice - (psf)
$(q_z G_h)_{Mount}$: 22.14	$(q_z G_h)_{Mount}$: 5.28
$(q_z G_h)_{Antenna}$: 22.23	$(q_z G_h)_{Antenna}$: 5.31

Seismic Code Revisions:	TIA-222-H
Seismic Risk Category:	II

Seismic Input

S_{DS} :	0.749	Design Short Period Spectral Accel.
I_p :	1.0	Importance Factor
R_p :	2.0	Response Modification Factor
ρ :	1.0	
A_s :	1.0	Applification Factor - TIA-222-H Section 2.7.8.1
S_1 :	0.341	Spectral Acceleration at a Period of 1 Second

Seismic Design Force

		TIA-H Sec 2.7.7.1.1
C_s :	0.375	kips/kip TIA-H Sec 2.7.7.1.1
C_{s-min} :	0.033	kips/kip



Jackson DT (BU 831885)
TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Antenna loads and $C_d A_a$ values calculated in accordance with TIA-222-H, unless otherwise noted
Azimuth is the absolute angle measured clockwise from RISA-3D global X-axis

*Antenna $C_d A_a$ values are provided per Crown Castle CFD data, and implemented from all wind directions with $K_a=1.0$

MFR	Model	Height (in)	Width (in)	Depth (in)	Wt. (lbs)	Azimuth*	Qty	Shape	Member Label	Distance from start node of the member			$C_d A_a$ - Front (ft ²)	$C_d A_a$ - Side (ft ²)	F_x - Front (lbs)	F_x - Side (lbs)
										Location #1 (ft,%)	Location #2 (ft,%)	Location #3 (ft,%)				
ERICSSON	AIR 32 B66AA B2P_T-MOBILE	0.00	0.00	0.00	136.69	0.00	1	Flat	MP-4	0.86	5.80		0.00	0.00	0.00	0.00
ERICSSON	AIR 32 B66AA B2P_T-MOBILE	0.00	0.00	0.00	136.69	120.00	1	Flat	MP-6	1.45	6.39		0.00	0.00	0.00	0.00
ERICSSON	AIR 32 B66AA B2P_T-MOBILE	0.00	0.00	0.00	136.69	240.00	1	Flat	MP-10	1.45	6.39		0.00	0.00	0.00	0.00
* COMMSCOPE	NHHSS-45B-R2BT4	0.00	0.00	0.00	100.54	0.00	1	Flat	MP-11	0.25	6.25		0.00	0.00	0.00	0.00
* COMMSCOPE	NHHSS-45B-R2BT4	0.00	0.00	0.00	100.54	0.00	1	Flat	MP-12	0.25	6.25		0.00	0.00	0.00	0.00
* COMMSCOPE	NHHSS-45B-R2BT4	0.00	0.00	0.00	100.54	90.00	1	Flat	MP-14	0.25	6.25		0.00	0.00	0.00	0.00
* COMMSCOPE	NHHSS-45B-R2BT4	0.00	0.00	0.00	100.54	90.00	1	Flat	MP-15	0.25	6.25		0.00	0.00	0.00	0.00
* COMMSCOPE	NHHSS-45B-R2BT4	0.00	0.00	0.00	100.54	180.00	1	Flat	MP-16	0.25	6.25		0.00	0.00	0.00	0.00
* COMMSCOPE	NHHSS-45B-R2BT4	0.00	0.00	0.00	100.54	180.00	1	Flat	MP-17	0.25	6.25		0.00	0.00	0.00	0.00
* COMMSCOPE	NHHSS-45B-R2BT4	0.00	0.00	0.00	100.54	270.00	1	Flat	MP-19	0.25	6.25		0.00	0.00	0.00	0.00
* COMMSCOPE	NHHSS-45B-R2BT4	0.00	0.00	0.00	100.54	270.00	1	Flat	MP-20	0.25	6.25		0.00	0.00	0.00	0.00
COMMSCOPE	NNH45S-65C-R3BT8	0.00	0.00	0.00	125.89	310.00	1	Flat	MP-21	0.50	8.50		0.00	0.00	0.00	0.00
ERICSSON	AIR 6419	0.00	0.00	0.00	55.40	310.00	1	Flat	MP-22	0.20	2.80		0.00	0.00	0.00	0.00
COMMSCOPE	NNH45S-65C-R3BT8	0.00	0.00	0.00	125.89	90.00	1	Flat	MP-23	0.50	8.50		0.00	0.00	0.00	0.00
ERICSSON	AIR 6419	0.00	0.00	0.00	55.40	90.00	1	Flat	MP-24	0.20	2.80		0.00	0.00	0.00	0.00
COMMSCOPE	NNH45S-65C-R3BT8	0.00	0.00	0.00	125.89	190.00	1	Flat	MP-25	0.50	8.50		0.00	0.00	0.00	0.00
ERICSSON	AIR 6419	0.00	0.00	0.00	55.40	190.00	1	Flat	MP-26	0.20	2.80		0.00	0.00	0.00	0.00
RAYCAP	RCMDC-6627-PF-48	0.00	0.00	0.00	32.00	310.00	1	Flat	MP-21	4.50			0.00	0.00	0.00	0.00
ERICSSON	RADIO 4490HP 44B5 44B13 C	0.00	0.00	0.00	68.40	310.00	1	Flat	MP-21	4.50			0.00	0.00	0.00	0.00
ERICSSON	RADIO 4490HP 44B5 44B13 C	0.00	0.00	0.00	68.40	310.00	1	Flat	MP-22	4.50			0.00	0.00	0.00	0.00
ERICSSON	RADIO 4490HP 44B5 44B13 C	0.00	0.00	0.00	68.40	90.00	1	Flat	MP-23	4.50			0.00	0.00	0.00	0.00
ERICSSON	RADIO 4890HP B2/B25 B66	0.00	0.00	0.00	68.00	90.00	1	Flat	MP-24	4.50			0.00	0.00	0.00	0.00
ERICSSON	RADIO 4890HP B2/B25 B66	0.00	0.00	0.00	68.00	190.00	1	Flat	MP-25	4.50			0.00	0.00	0.00	0.00
ERICSSON	RADIO 4890HP B2/B25 B66	0.00	0.00	0.00	68.00	190.00	1	Flat	MP-26	4.50			0.00	0.00	0.00	0.00
RAYCAP	RCMDC-6627-PF-48	0.00	0.00	0.00	32.00	190.00	1	Flat	MP-26	4.50			0.00	0.00	0.00	0.00



FRP Tube Outer Legs 29.83 ft - 53.33 ft

Jackson DT (BU 831885)

TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Input - Loads (From RISA)

P 1384 lbs
V 381 lbs
M 783 lb-ft
Controlling Member M391A

Results Summary*

Axial 7.8% OK
Bending 17.3% OK
Interaction 25.0% OK
Shear 9.9% OK

* Rating per TIA-222-H Section 15.5

Input - Material Properties

FRP Series Strongwell Extren Series 500/525
E 2600000 psi

Input - Shape Properties

Member Size HSS4x4x3/8
A 5.48 in²
Aw 2.44 in²
b 4 in
t 0.375 in
r 1.48 in
I 11.9 in⁴
S 5.95 in³

K 1.0
L 23.83 ft
Lu 11.50 ft
KLu/r 93.2

Compression

Factor of Safety 3
Fu 21728 psi - short column mode
Fa 7243 psi - short column mode
Fu' 9299 psi - long column mode
Fa' 3100 psi - long column mode
Pa 16985.31 lbs

Axial Capacity* = 7.8% OK

Bending

Factor of Safety 2.5
Fu 21728 psi
Fb 8691 psi
Ma 4309 lb-ft

Bending Capacity* = 17.3% OK

Interaction Capacity* = 25.1% OK

Shear

Factor of Safety 3
Fu 4500 psi
Fv 1500 psi
Va 3660 lbs

Shear Capacity* = 9.9% OK

FRP Square Tube Analysis

Tower Engineering Professionals, Inc.

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FRP Tube Outer Legs 15.0 ft - 29.83 ft

Jackson DT (BU 831885)

TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Input - Loads (From RISA)

P 2322 lbs
V 383 lbs
M 769 lb-ft
Controlling Member M396B

Results Summary*

Axial 15.3% OK
Bending 17.0% OK
Interaction 32.2% OK
Shear 10.0% OK

* Rating per TIA-222-H Section 15.5

Input - Material Properties

FRP Series Strongwell Extren Series 500/525
E 2600000 psi

Input - Shape Properties

Member Size HSS4x4x3/8
A 5.48 in²
Aw 2.44 in²
b 4 in
t 0.375 in
r 1.48 in
I 11.9 in⁴
S 5.95 in³

K 1.0
L 14.83 ft
Lu 13.00 ft
KLu/r 105.4

Compression

Factor of Safety 3
Fu 21728 psi - short column mode
Fa 7243 psi - short column mode
Fu' 7929 psi - long column mode
Fa' 2643 psi - long column mode
Pa 14482.86 lbs

Axial Capacity* = 15.3% OK

Bending

Factor of Safety 2.5
Fu 21728 psi
Fb 8691 psi
Ma 4309 lb-ft

Bending Capacity* = 17.0% OK

Interaction Capacity* = 32.3% OK

Shear

Factor of Safety 3
Fu 4500 psi
Fv 1500 psi
Va 3660 lbs

Shear Capacity* = 10.0% OK

FRP Square Tube Analysis

Tower Engineering Professionals, Inc.

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FRP Tube Outer Legs 0 ft - 15.0 ft

Jackson DT (BU 831885)

TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Input - Loads (From RISA)

P 3318 lbs
V 378 lbs
M 486 lb-ft
Controlling Member M392A

Results Summary*

Axial 11.6% OK
Bending 10.7% OK
Interaction 22.4% OK
Shear 9.8% OK

* Rating per TIA-222-H Section 15.5

Input - Material Properties

FRP Series Strongwell Extren Series 500/525
E 2600000 psi

Input - Shape Properties

Member Size HSS4x4x3/8
A 5.48 in²
Aw 2.44 in²
b 4 in
t 0.375 in
r 1.48 in
I 11.9 in⁴
S 5.95 in³

K 1.0
L 14.83 ft
Lu 8.00 ft
KLu/r 64.9

Compression

Factor of Safety 3
Fu 21728 psi - short column mode
Fa 7243 psi - short column mode
Fu' 14904 psi - long column mode
Fa' 4968 psi - long column mode
Pa 27224.73 lbs

Axial Capacity* = 11.6% OK

Bending

Factor of Safety 2.5
Fu 21728 psi
Fb 8691 psi
Ma 4309 lb-ft

Bending Capacity* = 10.7% OK

Interaction Capacity* = 22.4% OK

Shear

Factor of Safety 3
Fu 4500 psi
Fv 1500 psi
Va 3660 lbs

Shear Capacity* = 9.8% OK

FRP Square Tube Analysis

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FRP Tube Horizontals 53.33 ft

Jackson DT (BU 831885)

TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Input - Loads (From RISA)

P 26 lbs
V 180 lbs
M 183 lb-ft
Controlling Member M363A

Results Summary*

Axial 0.1% OK
Bending 11.4% OK
Interaction 11.6% OK
Shear 9.1% OK

* Rating per TIA-222-H Section 15.5

Input - Material Properties

FRP Series Strongwell Extren Series 500/525
E 2600000 psi

Input - Shape Properties

Member Size HSS3x3x1/4
A 2.74 in²
Aw 1.25 in²
b 3 in
t 0.25 in
r 1.13 in
I 3.5 in⁴
S 2.33 in³

K 1.0
L 9.00 ft
Lu 3.63 ft
KLu/r 38.5

Compression

Factor of Safety 3
Fu 19658 psi - short column mode
Fa 6553 psi - short column mode
Fu' 29369 psi - long column mode
Fa' 9790 psi - long column mode
Pa 17954.72 lbs

Axial Capacity* = 0.1% OK

Bending

Factor of Safety 2.5
Fu 19658 psi
Fb 7863 psi
Ma 1527 lb-ft

Bending Capacity* = 11.4% OK

Interaction Capacity* = 11.6% OK

Shear

Factor of Safety 3
Fu 4500 psi
Fv 1500 psi
Va 1875 lbs

Shear Capacity* = 9.1% OK

FRP Square Tube Analysis

Tower Engineering Professionals, Inc.

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FRP Tube Horizontals 42.25 ft

Jackson DT (BU 831885)

TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Input - Loads (From RISA)

P 73 lbs
V 131 lbs
M 203 lb-ft
Controlling Member M402

Results Summary*

Axial 0.4% OK
Bending 12.7% OK
Interaction 13.1% OK
Shear 6.7% OK

* Rating per TIA-222-H Section 15.5

Input - Material Properties

FRP Series Strongwell Extren Series 500/525
E 2600000 psi

Input - Shape Properties

Member Size HSS3x3x1/4
A 2.74 in²
Aw 1.25 in²
b 3 in
t 0.25 in
r 1.13 in
I 3.5 in⁴
S 2.33 in³

K 1.0
L 9.54 ft
Lu 3.63 ft
KLu/r 38.5

Compression

Factor of Safety 3
Fu 19658 psi - short column mode
Fa 6553 psi - short column mode
Fu' 29369 psi - long column mode
Fa' 9790 psi - long column mode
Pa 17954.72 lbs

Axial Capacity* = 0.4% OK

Bending

Factor of Safety 2.5
Fu 19658 psi
Fb 7863 psi
Ma 1527 lb-ft

Bending Capacity* = 12.7% OK

Interaction Capacity* = 13.1% OK

Shear

Factor of Safety 3
Fu 4500 psi
Fv 1500 psi
Va 1875 lbs

Shear Capacity* = 6.7% OK

FRP Square Tube Analysis

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FRP Tube Horizontals 29.83 ft

Jackson DT (BU 831885)

TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Input - Loads (From RISA)

P 137 lbs
V 110 lbs
M 197 lb-ft
Controlling Member M360A

Results Summary*

Axial 0.7% OK
Bending 12.3% OK
Interaction 13.0% OK
Shear 5.6% OK

* Rating per TIA-222-H Section 15.5

Input - Material Properties

FRP Series Strongwell Extren Series 500/525
E 2600000 psi

Input - Shape Properties

Member Size HSS3x3x1/4
A 2.74 in²
Aw 1.25 in²
b 3 in
t 0.25 in
r 1.13 in
I 3.5 in⁴
S 2.33 in³

K 1.0
L 10.18 ft
Lu 3.63 ft
KLu/r 38.5

Compression

Factor of Safety 3
Fu 19658 psi - short column mode
Fa 6553 psi - short column mode
Fu' 29369 psi - long column mode
Fa' 9790 psi - long column mode
Pa 17954.72 lbs

Axial Capacity* = 0.7% OK

Bending

Factor of Safety 2.5
Fu 19658 psi
Fb 7863 psi
Ma 1527 lb-ft

Bending Capacity* = 12.3% OK

Interaction Capacity* = 13.0% OK

Shear

Factor of Safety 3
Fu 4500 psi
Fv 1500 psi
Va 1875 lbs

Shear Capacity* = 5.6% OK

FRP Square Tube Analysis

Tower Engineering Professionals, Inc.

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FRP Tube Horizontals 15.0 ft

Jackson DT (BU 831885)

TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Input - Loads (From RISA)

P 153 lbs
V 121 lbs
M 243 lb-ft
Controlling Member M377

Results Summary*

Axial 0.8% OK
Bending 15.2% OK
Interaction 16.0% OK
Shear 6.1% OK

* Rating per TIA-222-H Section 15.5

Input - Material Properties

FRP Series Strongwell Extren Series 500/525
E 2600000 psi

Input - Shape Properties

Member Size HSS3x3x1/4
A 2.74 in²
Aw 1.25 in²
b 3 in
t 0.25 in
r 1.13 in
I 3.5 in⁴
S 2.33 in³

K 1.0
L 10.90 ft
Lu 3.63 ft
KLu/r 38.5

Compression

Factor of Safety 3
Fu 19658 psi - short column mode
Fa 6553 psi - short column mode
Fu' 29316 psi - long column mode
Fa' 9772 psi - long column mode
Pa 17954.72 lbs

Axial Capacity* = 0.8% OK

Bending

Factor of Safety 2.5
Fu 19658 psi
Fb 7863 psi
Ma 1527 lb-ft

Bending Capacity* = 15.2% OK

Interaction Capacity* = 16.0% OK

Shear

Factor of Safety 3
Fu 4500 psi
Fv 1500 psi
Va 1875 lbs

Shear Capacity* = 6.1% OK

FRP Square Tube Analysis

Tower Engineering Professionals, Inc.

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FRP Tube Horizontals 0 ft - 6.083 ft

Jackson DT (BU 831885)

TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Input - Loads (From RISA)

P 65 lbs
V 157 lbs
M 316 lb-ft
Controlling Member M376

Results Summary*

Axial 0.3% OK
Bending 19.7% OK
Interaction 20.0% OK
Shear 8.0% OK

* Rating per TIA-222-H Section 15.5

Input - Material Properties

FRP Series Strongwell Extren Series 500/525
E 2600000 psi

Input - Shape Properties

Member Size HSS3x3x1/4
A 2.74 in²
Aw 1.25 in²
b 3 in
t 0.25 in
r 1.13 in
I 3.5 in⁴
S 2.33 in³

K 1.0
L 11.58 ft
Lu 3.98 ft
KLu/r 42.3

Compression

Factor of Safety 3
Fu 19658 psi - short column mode
Fa 6553 psi - short column mode
Fu' 26010 psi - long column mode
Fa' 8670 psi - long column mode
Pa 17954.72 lbs

Axial Capacity* = 0.3% OK

Bending

Factor of Safety 2.5
Fu 19658 psi
Fb 7863 psi
Ma 1527 lb-ft

Bending Capacity* = 19.7% OK

Interaction Capacity* = 20.0% OK

Shear

Factor of Safety 3
Fu 4500 psi
Fv 1500 psi
Va 1875 lbs

Shear Capacity* = 8.0% OK

FRP Square Tube Analysis

Tower Engineering Professionals, Inc.

326 Tryon Road | Raleigh, NC 27603-3530 | Office: (919) 661-6351 | Fax: (919) 661-6350 | www.tepgroup.net



FRP Tube Outriggers 53.33 ft

Jackson DT (BU 831885)

TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Input - Loads (From RISA)

P 238 lbs
V 517 lbs
M 650 lb-ft
Controlling Member M39

Results Summary*

Axial 0.6% OK
Bending 14.4% OK
Interaction 14.9% OK
Shear 13.5% OK

* Rating per TIA-222-H Section 15.5

Input - Material Properties

FRP Series Strongwell Extren Series 500/525
E 2600000 psi

Input - Shape Properties

Member Size HSS4x4x3/8
A 5.48 in²
Aw 2.44 in²
b 4 in
t 0.375 in
r 1.48 in
I 11.9 in⁴
S 5.95 in³

K 1.0
L 1.79 ft
Lu 1.79 ft
KLu/r 14.5

Compression

Factor of Safety 3
Fu 21728 psi - short column mode
Fa 7243 psi - short column mode
Fu' 104379 psi - long column mode
Fa' 34793 psi - long column mode
Pa 39690.65 lbs

Axial Capacity* = 0.6% OK

Bending

Factor of Safety 2.5
Fu 21728 psi
Fb 8691 psi
Ma 4309 lb-ft

Bending Capacity* = 14.4% OK

Interaction Capacity* = 14.9% OK

Shear

Factor of Safety 3
Fu 4500 psi
Fv 1500 psi
Va 3660 lbs

Shear Capacity* = 13.5% OK

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FRP Tube Outriggers 42.25 ft

Jackson DT (BU 831885)

TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Input - Loads (From RISA)

P 753 lbs
V 249 lbs
M 716 lb-ft
Controlling Member M348A

Results Summary*

Axial 1.8% OK
Bending 15.8% OK
Interaction 17.6% OK
Shear 6.5% OK

* Rating per TIA-222-H Section 15.5

Input - Material Properties

FRP Series Strongwell Extren Series 500/525
E 2600000 psi

Input - Shape Properties

Member Size HSS4x4x3/8
A 5.48 in²
Aw 2.44 in²
b 4 in
t 0.375 in
r 1.48 in
I 11.9 in⁴
S 5.95 in³

K 1.0
L 2.15 ft
Lu 2.15 ft
KLu/r 17.4

Compression

Factor of Safety 3
Fu 21728 psi - short column mode
Fa 7243 psi - short column mode
Fu' 82253 psi - long column mode
Fa' 27418 psi - long column mode
Pa 39690.65 lbs

Axial Capacity* = 1.8% OK

Bending

Factor of Safety 2.5
Fu 21728 psi
Fb 8691 psi
Ma 4309 lb-ft

Bending Capacity* = 15.8% OK

Interaction Capacity* = 17.6% OK

Shear

Factor of Safety 3
Fu 4500 psi
Fv 1500 psi
Va 3660 lbs

Shear Capacity* = 6.5% OK

FRP Square Tube Analysis

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FRP Tube Outriggers 29.83 ft

Jackson DT (BU 831885)

TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Input - Loads (From RISA)

P 534 lbs
V 135 lbs
M 416 lb-ft
Controlling Member M366

Results Summary*

Axial 1.3% OK
Bending 9.2% OK
Interaction 10.5% OK
Shear 3.5% OK

* Rating per TIA-222-H Section 15.5

Input - Material Properties

FRP Series Strongwell Extren Series 500/525
E 2600000 psi

Input - Shape Properties

Member Size HSS4x4x3/8
A 5.48 in²
Aw 2.44 in²
b 4 in
t 0.375 in
r 1.48 in
I 11.9 in⁴
S 5.95 in³

K 1.0
L 2.41 ft
Lu 2.41 ft
KLu/r 19.5

Compression

Factor of Safety 3
Fu 21728 psi - short column mode
Fa 7243 psi - short column mode
Fu' 70909 psi - long column mode
Fa' 23636 psi - long column mode
Pa 39690.65 lbs

Axial Capacity* = 1.3% OK

Bending

Factor of Safety 2.5
Fu 21728 psi
Fb 8691 psi
Ma 4309 lb-ft

Bending Capacity* = 9.2% OK

Interaction Capacity* = 10.5% OK

Shear

Factor of Safety 3
Fu 4500 psi
Fv 1500 psi
Va 3660 lbs

Shear Capacity* = 3.5% OK

FRP Square Tube Analysis

Tower Engineering Professionals, Inc.

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FRP Tube Outriggers 15.0 ft

Jackson DT (BU 831885)

TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Input - Loads (From RISA)

P 747 lbs
V 96 lbs
M 311 lb-ft
Controlling Member M30

Results Summary*

Axial 1.8% OK
Bending 6.9% OK
Interaction 8.7% OK
Shear 2.5% OK

* Rating per TIA-222-H Section 15.5

Input - Material Properties

FRP Series Strongwell Extren Series 500/525
E 2600000 psi

Input - Shape Properties

Member Size HSS4x4x3/8
A 5.48 in²
Aw 2.44 in²
b 4 in
t 0.375 in
r 1.48 in
I 11.9 in⁴
S 5.95 in³

K 1.0
L 2.89 ft
Lu 2.89 ft
KLu/r 23.4

Compression

Factor of Safety 3
Fu 21728 psi - short column mode
Fa 7243 psi - short column mode
Fu' 56122 psi - long column mode
Fa' 18707 psi - long column mode
Pa 39690.65 lbs

Axial Capacity* = 1.8% OK

Bending

Factor of Safety 2.5
Fu 21728 psi
Fb 8691 psi
Ma 4309 lb-ft

Bending Capacity* = 6.9% OK

Interaction Capacity* = 8.7% OK

Shear

Factor of Safety 3
Fu 4500 psi
Fv 1500 psi
Va 3660 lbs

Shear Capacity* = 2.5% OK

FRP Square Tube Analysis

Tower Engineering Professionals, Inc.

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FRP Tube Outriggers 6.083 ft

Jackson DT (BU 831885)

TEP No. 309257.1072627
Analysis By: PRS 2/28/2025
Checked By: SMS 2/28/2025

Input - Loads (From RISA)

P 412 lbs
V 76 lbs
M 256 lb-ft
Controlling Member M26

Results Summary*

Axial 1.0% OK
Bending 5.7% OK
Interaction 6.7% OK
Shear 2.0% OK

* Rating per TIA-222-H Section 15.5

Input - Material Properties

FRP Series Strongwell Extren Series 500/525
E 2600000 psi

Input - Shape Properties

Member Size HSS4x4x3/8
A 5.48 in²
Aw 2.44 in²
b 4 in
t 0.375 in
r 1.48 in
I 11.9 in⁴
S 5.95 in³

K 1.0
L 3.14 ft
Lu 3.14 ft
KLu/r 25.5

Compression

Factor of Safety 3
Fu 21728 psi - short column mode
Fa 7243 psi - short column mode
Fu' 50270 psi - long column mode
Fa' 16757 psi - long column mode
Pa 39690.65 lbs

Axial Capacity* = 1.0% OK

Bending

Factor of Safety 2.5
Fu 21728 psi
Fb 8691 psi
Ma 4309 lb-ft

Bending Capacity* = 5.7% OK

Interaction Capacity* = 6.7% OK

Shear

Factor of Safety 3
Fu 4500 psi
Fv 1500 psi
Va 3660 lbs

Shear Capacity* = 2.0% OK

FRP Square Tube Analysis

Tower Engineering Professionals, Inc.

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Monopole Base Plate Connection-Inner

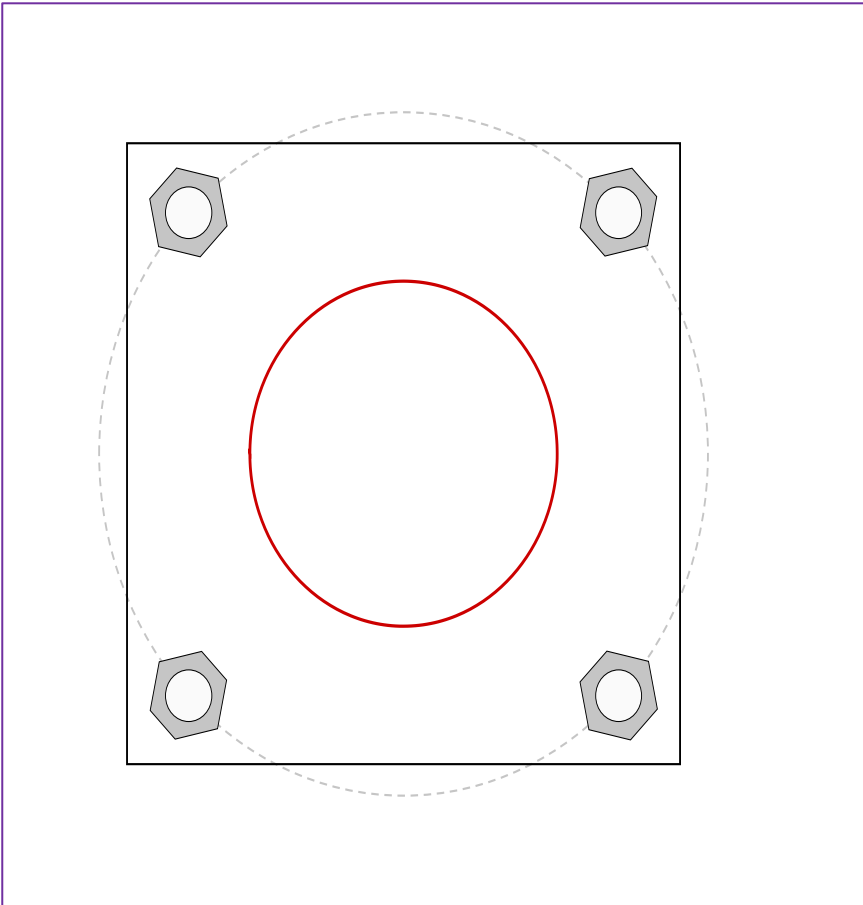


Site Info	
BU #	831885
Site Name	Jackson DT
Order #	689386 Rev. 1

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	0

Applied Loads	
Moment (kip-ft)	23.22
Axial Force (kips)	37.67
Shear Force (kips)	3.20

*TIA-222-H Section 15.5 Applied



Connection Properties		Analysis Results	
Anchor Rod Data		Anchor Rod Summary <i>(units of kips, kip-in)</i>	
(4) 1-1/2" $\varnothing$ bolts (F1554-55 N; F_y =55 ksi, F_u =75 ksi) on 19.799" BC		P_{u_c} = 23.46	ϕP_{n_c} = 87.47 Stress Rating
Base Plate Data		V_u = 0.8	ϕV_n = 39.36 25.6%
18" W x 2.25" Plate (A572-50; F_y =50 ksi, F_u =65 ksi); Clip: 0 in		M_u = n/a	ϕM_n = n/a Pass
Stiffener Data		Base Plate Summary	
N/A		Max Stress (ksi):	5.88 (Flexural)
Pole Data		Allowable Stress (ksi):	45
10" x 0.375" 4-sided pole (A500 Gr.42; F_y =42 ksi, F_u =58 ksi)		Stress Rating:	12.4% Pass

Self Support Anchor Rod Capacity-Outer



Site Info	
BU #	831885
Site Name	Jackson DT
Order #	689386 Rev. 1

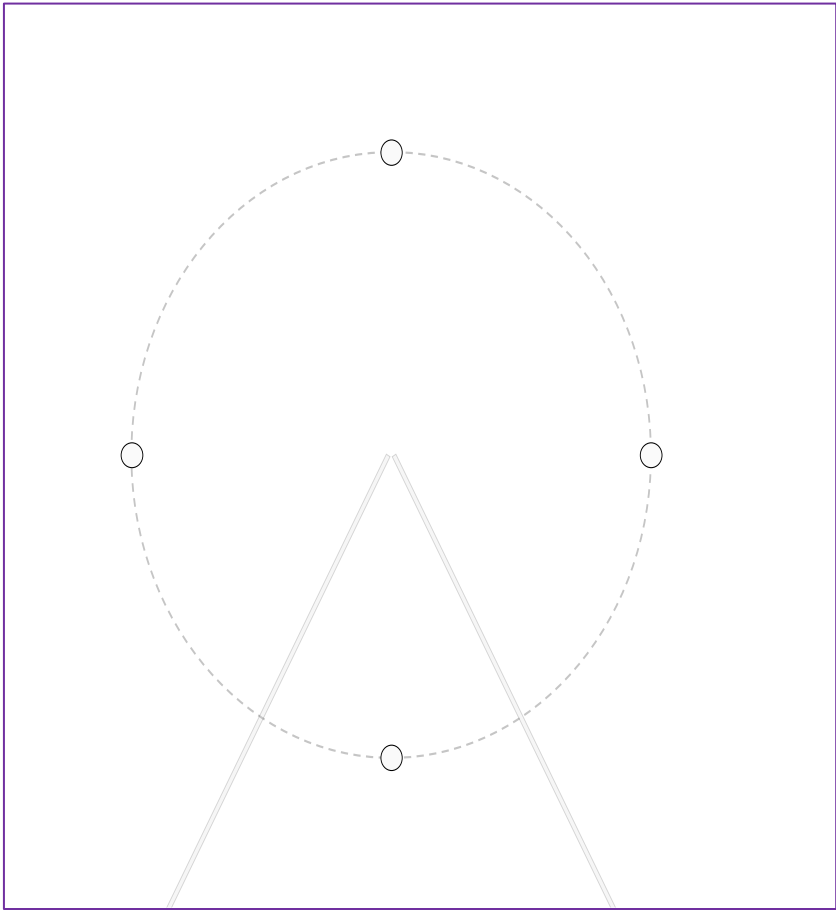
Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
I_{ar} (in)	0

Applied Loads		
	Comp.	Uplift
Axial Force (kips)	4.25	0.00
Shear Force (kips)	0.01	0.00

*TIA-222-H Section 15.5 Applied

Considered Eccentricity	
Leg Mod Eccentricity (in)	0.000
Anchor Rod N.A Shift (in)	0.000
Total Eccentricity (in)	0.000

*Anchor Rod Eccentricity Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data
(4) 1/2" ϕ bolts (HILTI KWIK TZ N; F_y =84.8 ksi, F_u =106 ksi)
I_{ar} (in): 0

Anchor Rod Summary			(units of kips, kip-in)
P_{u_c} = 1.06	ϕP_{n_c} = 14.99	Stress Rating	
V_u = 0	ϕV_n = 6.74	6.8%	
M_u = n/a	ϕM_n = n/a	Pass	

SST on Mat Foundation - TIA-222-H

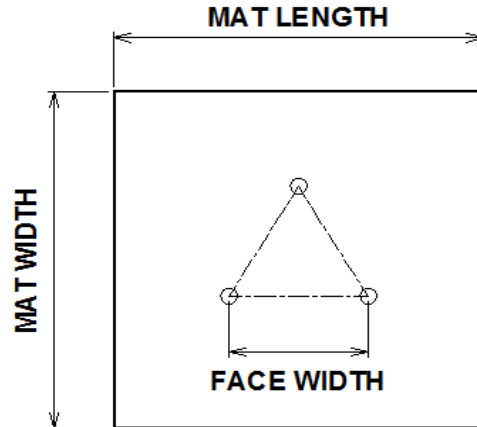
Site Data

Site Name: Jackson DT
TEP Job Number: 309257.1072627
Client Job Number: BU 831885

Factored Reactions from TNX

Axial		k
Shear		k
Moment		k-ft

*Factored Reactions from TNX assumed LC 1.2D+1.0W



Tower & Foundation Properties

Tower Face Width	11.583	ft
Mat Thickness	3.0	ft
Mat Width	15.0	ft
Mat Length	15.0	ft
Concrete Weight	150	pcf
Concrete f'c	4000	psi

Soil Properties

q_{allow}	3.5	ksf
FS	2.0	
Subgrade Mod.	126	kcf

Mat Foundation Results

Max Bearing Stress 2.03 ksf
Bearing Capacity, ϕq_{allow} 5.25 ksf
% Capacity* 36.7% **Pass**

Mat Flexural Results

Mat Flexure (from RISA) 268.54 k-ft
Flexural Capacity, ϕM_n 1702.1 k-ft
% Capacity* 15.0% **Pass**

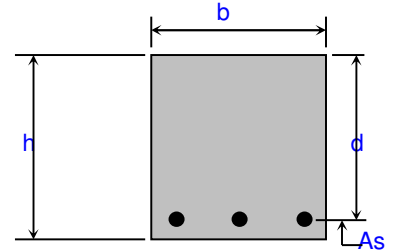
* Rating per TIA-222-H Section 15.5

RECTANGULAR CONCRETE BEAM/SECTION ANALYSIS
Ultimate Moment Capacity of Singly or Doubly Reinforced Sections
Per ACI 318-11 Code

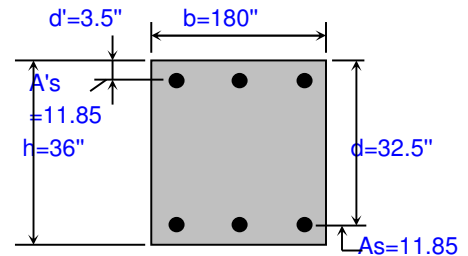
Job Name:	Jackson DT (BU 831885)	Subject:	
Job Number:	309257.1072627	Originator:	PRS
		Checker:	SMS

Input Data:

Beam or Slab Section?	Slab	
Reinforcing Yield Strength, f_y =	60	ksi
Concrete Comp. Strength, f_c' =	4	ksi
Slab Section Width, b =	180.000	in.
Depth to Tension Reinforcing, d =	32.500	in.
Total Slab Section Depth, h =	36.000	in.
Ultimate Design Moment, M_u =	268.54	ft-kips
Tension Reinforcing, A_s =	11.850	in.^2
Depth to Compression Reinf., d' =	3.500	in.
Compression Reinforcing, A_s' =	11.850	in.^2



Singly Reinforced Section



Doubly Reinforced Section

(Note: this worksheet excludes sections that qualify as "Deep Beams" per ACI 318-11 Code, Section 10.7.)

Results:

Stress Block Data:

β_1 =	0.85	$\beta_1 = 1.05 - 0.05 \cdot f'_c \geq 0.65$
c =	1.367 in.	$c = (A_s \cdot f_y) / (0.85 \cdot f'_c \cdot b) / \beta_1$
a =	1.162 in.	$a = \beta_1 \cdot c$

Reinforcing Criteria:

ρ =	0.00203	$\rho = A_s / (b \cdot d)$
ρ_b =	0.02851	$\rho_b = 0.85 \cdot \beta_1 \cdot f'_c / f_y \cdot (87 / (87 + f_y))$
$\rho(\min)$ =	0.00333	$\rho(\min) \geq 3 \cdot \text{SQRT}(f'_c) / f_y \geq 200 / f_y$
$A_s(\min)$ =	N.A.	$A_s(\min) = \rho(\min) \cdot b \cdot d$
$\rho(\text{temp})$ =	0.00180	$\rho(\text{temp}) = 0.0018 \cdot 60 / f_y$ for $f_y \geq 60$, else $0.002 - 0.00002 \cdot (f_y - 50)$
$A_s(\text{temp})$ =	11.664 in. ² (total)	$A_s(\text{temp}) = \rho(\text{temp}) \cdot b \cdot h$
$\rho(\max)$ =	0.02064	$\rho(\max) = A_s(\max) / (b \cdot d)$
$A_s(\max)$ =	120.761 in. ²	$A_s(\max) = \rho(\max) \cdot b \cdot d$ for singly reinforced, or for doubly reinforced: $A_s(\max) = (0.85 \cdot f'_c \cdot \beta_1 \cdot c \cdot b + A'_s \cdot (c - d') / c \cdot e_c \cdot E_s) / f_y$ for $c = \epsilon_c \cdot d' / (\epsilon_c + 0.004)$ $\geq A_s = 11.85 \text{ in.}^2$, O.K.

Ultimate Moment Capacity:

ϵ'_s =	N.A.	$\epsilon'_s = \epsilon_c \cdot (c - d') / c$ < f_y / E_s , f'_s does not yield
f'_s =	N.A.	$f'_s = \epsilon'_s \cdot E_s$ < f_y / E_s , f'_s does not yield
ϵ_t =	0.06834	$\epsilon_t = \epsilon_c \cdot (d - c) / c \geq 0.005$, Tension-controlled
ϕ =	0.900	$\phi = 0.65 + 0.25 \cdot (\epsilon_t - f_y / E_s) / (0.005 - f_y / E_s) \leq 0.90$
ϕM_n =	1702.09 ft-kips	for singly reinforced: $\phi M_n = \phi \cdot (A_s \cdot f_y \cdot (d - a/2))$ for doubly reinforced: $\phi M_n = \phi \cdot (A_s \cdot f_y \cdot (d - a/2) + A'_s \cdot f'_s \cdot (d - d'))$ $\geq M_u = 268.538 \text{ ft-kips}$, O.K.

Comments:

Drilled Pier Foundation-Inner

BU # :	831885
Site Name:	Jackson DT
Order Number:	689386 Rev. 1
TIA-222 Revision:	H
Tower Type:	Self Support



Applied Loads		
	Comp.	Uplift
Moment (kip-ft)	21.9330714	23.1733096
Axial Force (kips)	49.79	39.08
Shear Force (kips)	2.63680583	3.18905284

Material Properties		
Concrete Strength, f'c:	4	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	60	ksi

Pier Design Data		
Depth	2	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
<i>From 0.5' above grade to 2' below grade</i>		
Pier Diameter	3.25	ft
Rebar Quantity	8	
Rebar Size	8	
Clear Cover to Ties	3	in
Tie Size	4	
Tie Spacing	4	in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results

Reinforced Concrete Flexure		Compression	Uplift
Critical Depth (ft from TOC)	0.60	0.61	
Critical Moment (kip-ft)	23.40	25.25	
Critical Moment Capacity	507.78	414.16	
Rating*	4.4%	5.8%	
Reinforced Concrete Shear		Compression	Uplift
Critical Depth (ft from TOC)	1.55	1.55	
Critical Shear (kip)	24.41	26.61	
Critical Shear Capacity	317.67	231.52	
Rating*	7.3%	10.9%	

Structural Foundation Rating*	10.9%
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*Rating per TIA-222-H Section 15.5

Soil Profile

Groundwater Depth	N/A	# of Layers	1
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Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	γ_{concrete} (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Net Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	2	2	105	150	0.001	0	0.001	0.001	0.00	0.00	7		Cohesive

Check Limitation

Apply TIA-222-H Section 15.5:	☒
N/A	☐

Design Options

Input Effective Depths (else Actual):	☐
Consider non-tapered moment capacity:	☐
Check Shear along Depth of Pier:	☒
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

[Go to Soil Calculations](#)

Drilled Pier Foundation-Outer

BU # :	831885
Site Name:	Jackson DT
Order Number:	689386 Rev. 1
TIA-222 Revision:	H
Tower Type:	Self Support



Applied Loads		
	Comp.	Uplift
Moment (kip-ft)	0.71101758	0.41541545
Axial Force (kips)	5.72	1.69
Shear Force (kips)	0.19025246	0.11480854

Material Properties		
Concrete Strength, f'c:	4	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	60	ksi

Pier Design Data		
Depth	2	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 2' below grade		
Pier Diameter	2	ft
Rebar Quantity	5	
Rebar Size	5	
Clear Cover to Ties	3	in
Tie Size	4	
Tie Spacing	6	in

Rebar & Pier Options
Embedded Pole Inputs
Belled Pier Inputs

Analysis Results

Reinforced Concrete Flexure	Compression	Uplift
Critical Depth (ft from TOC)	0.69	0.69
Critical Moment (kip-ft)	0.82	0.49
Critical Moment Capacity	59.81	54.56
Rating*	1.3%	0.9%
Reinforced Concrete Shear	Compression	Uplift
Critical Depth (ft from TOC)	1.60	1.60
Critical Shear (kip)	0.91	0.54
Critical Shear Capacity	122.92	94.24
Rating*	0.7%	0.5%

Structural Foundation Rating*	1.3%
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*Rating per TIA-222-H Section 15.5

Soil Profile														
Groundwater Depth	N/A													

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	Y _{soil} (pcf)	Y _{concrete} (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Net Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	2	2	105	150	0.001	0	0.001	0.001	0.00	0.00	7		Cohesive

Check Limitation	
Apply TIA-222-H Section 15.5:	☒
N/A	☐
Design Options	
Input Effective Depths (else Actual):	☐
Consider non-tapered moment capacity:	☐
Check Shear along Depth of Pier:	☒
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

[Go to Soil Calculations](#)

Customer Site Name: IDL04525
Customer Site ID: IDL04525
Customer PTN #: 3770A1C538

Crown Site Name: Jackson DT
Crown Business Unit: 831885
License Number: 804608
Amendment Number: 1028216

FIRST AMENDMENT TO LEASE AGREEMENT

BUN #831885; FA #15433582

This First Amendment to Lease Agreement (this "Amendment") is made this April 8, 2025, by and between Crown Castle Towers 06-2 LLC, a Delaware limited liability company ("Crown"), and New Cingular Wireless PCS, LLC, a Delaware limited liability company ("Customer").

RECITALS:

WHEREAS, Crown (and/or certain of its affiliates and/or predecessors-in-interest) and Customer (and/or certain of its affiliates and/or predecessors-in-interest) entered into a certain Lease Agreement dated July 13, 2021, as may have been previously amended and/or assigned (hereinafter the "Co-Location Agreement"), whereby Customer leases or licenses from Crown certain space at a telecommunications facility described in the Co-Location Agreement (the "Site"); and

WHEREAS, Crown and Customer desire to amend the Co-Location Agreement pursuant to the terms and subject to the conditions set forth herein.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree to be legally bound to this Amendment as follows:

1. **Capitalized Terms.** Unless clear from the context in which they are used, all capitalized terms used herein shall have the same meanings ascribed to them in the Co-Location Agreement.
2. **Site Engineering Application.** The parties acknowledge that Customer is making certain modifications to its space and/or equipment at the Site as described in Attachment A, attached hereto.
3. **Customer's Tower Space.** The descriptions of Customer's space (including, without limitation, Customer's "reserved" space, if any) on the tower ("Tower Space") set forth in the Co-Location Agreement (including, without limitation, any descriptions of Customer's Tower Space set forth in any schedules, exhibits or attachments to the Co-Location Agreement) are hereby amended and deleted in their entirety and replaced and superseded by and with the descriptions of Customer's Tower Space set forth in Attachment A and Attachment C, attached hereto. The parties acknowledge and agree that the descriptions of Customer's Tower Space set forth in Attachment A and/or Attachment C, attached hereto, include, without limitation, descriptions of all of Customer's "reserved" Tower Space, if any. Customer and Crown acknowledge and agree that the foregoing statement is not intended to limit or remove any Customer co-location space on the tower or tower capacity rights existing prior to this Amendment and any such rights shall continue to apply.

TT: 857744 ATT-Classic
Prepared by: M. Davis
Prepared on: 3/25/2025
Revised on:
AT&T Universal SLA/TLA Amendment 4/30/12

LRF Rev. #: 1
App Rev. #: 1
MLA #: 278410

Customer Site Name: IDL04525
Customer Site ID: IDL04525
Customer PTN #: 3770A1C538

Crown Site Name: Jackson DT
Crown Business Unit: 831885
License Number: 804608
Amendment Number: 1028216

4. **Customer's Tower-Mounted Equipment.** The equipment descriptions and specifications with respect to Customer's tower-mounted equipment (including, without limitation, Customer's permitted tower-mounted equipment not yet installed, if any) set forth in the Co-Location Agreement (including, without limitation, any equipment descriptions and specifications with respect to Customer's tower-mounted equipment set forth in any schedules, exhibits or attachments to the Co-Location Agreement) are hereby amended and deleted in their entirety and replaced and superseded by and with the equipment descriptions and specifications with respect to Customer's tower-mounted equipment set forth in Attachment A and Attachment C, attached hereto. The parties acknowledge and agree that, (i) the descriptions of Customer's tower-mounted equipment set forth in Attachment A and/or Attachment C, attached hereto, include, without limitation, descriptions of all of Customer's permitted tower-mounted equipment not yet installed, if any, and (ii) notwithstanding anything to the contrary herein, this Amendment does not in any way modify the equipment descriptions and specifications with respect to Customer's ground-based equipment set forth in the Co-Location Agreement (including, without limitation, any equipment descriptions and specifications with respect to Customer's ground-based equipment set forth in any schedules, exhibits or attachments to the Co-Location Agreement). Customer and Crown acknowledge and agree that the foregoing statement is not intended to limit or remove any Customer co-location space on the tower or tower capacity rights existing prior to this Amendment and any such rights shall continue to apply.

5. **Full Force and Effect; Inconsistent Terms.** Except as expressly set forth in this Amendment, the Co-Location Agreement is otherwise unmodified, shall remain in full force and effect and is incorporated and restated herein as if fully set forth at length. In the event of any inconsistencies between the Co-Location Agreement and this Amendment, the terms of this Amendment shall control. Each reference in the Co-Location Agreement to itself shall be deemed to also refer to this Amendment.

[Remainder of Page Intentionally Left Blank]

TT: 857744 ATT-Classic
Prepared by: M. Davis
Prepared on: 3/25/2025
Revised on:
AT&T Universal SLA/TLA Amendment 4/30/12

LRF Rev. #: 1
App Rev. #: 1
MLA #: 278410

Customer Site Name: IDL04525
Customer Site ID: IDL04525
Customer PTN #: 3770A1C538

Crown Site Name: Jackson DT
Crown Business Unit: 831885
License Number: 804608
Amendment Number: 1028216

IN WITNESS WHEREOF, the parties have set forth their hand and seal as of the date indicated above.

Crown:

Crown Castle Towers 06-2 LLC,
a Delaware limited liability company

Signed by:
By: Robert Geis
Print Name: Robert Geis
Title: Supervisor, Contract Development
Date: April 8, 2025

CUSTOMER:

New Cingular Wireless PCS, LLC,
a Delaware limited liability company

By: AT&T Mobility Corporation
Its: Manager

By: Ashwan Goel
Print Name: ASHWAN GOEL
Title: Director of Engineering
Date: 4/1/2025

TT: 857744 ATT-Classic
Prepared by: M. Davis
Prepared on: 3/25/2025
Revised on:
AT&T Universal SLA/TLA Amendment 4/30/12

LRF Rev. #: 1
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Customer PTN #: 3770A1C538

Crown Site Name: Jackson DT
Crown Business Unit: 831885
License Number: 804608
Amendment Number: 1028216

STATE OF North Carolina :
: SS
COUNTY OF Cabarrus :

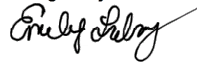
ACKNOWLEDGMENT OF CROWN

On this April 8, 2025, before me, personally appeared Robert Geis,
to me personally known, who, being by me duly sworn, did say that he/she is Supervisor, Contract Development
of Crown Castle Towers 06-2 LLC, a Delaware limited liability company, and
that said instrument was signed on behalf of said company and said appeared Robert Geis
acknowledged said instrument to be his/her free act and deed.

In witness whereof, I have hereunto set my hand and affixed my seal at my office in said
County and State on the day and year first above written.

Sworn to and subscribed before me this April 8, 2025.

EMILY LABOY
Electronic Notary Public
Cabarrus County
North Carolina
Commission Expires 5/9/2027

Signed by:

E89C913682254FC...

Notary Public

My Commission Expires: 5/9/2027

Customer Site Name: IDL04525
Customer Site ID: IDL04525
Customer PTN #: 3770A1C538

Crown Site Name: Jackson DT
Crown Business Unit: 831885
License Number: 804608
Amendment Number: 1028216

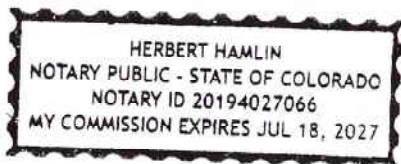
STATE OF Colorado :
 : SS
COUNTY OF Brapahoe :

ACKNOWLEDGMENT OF ATT

On this 1st April 2025, before me, personally appeared Ashwari Goel,
to me personally known, who, being by me duly sworn, did say that he/she is Director
of Engineering of New Cingular Wireless PCS, LLC, a Delaware limited liability company, and
that said instrument was signed on behalf of said company and said appeared Ashwari Goel
acknowledged said instrument to be his/her free act and deed.

In witness whereof, I have hereunto set my hand and affixed my seal at my office in said
County and State on the day and year first above written.

Sworn to and subscribed before me this 1st April 2025.



[Signature]
Notary Public

My Commission Expires: July 18, 2027

Customer Site Name: IDL04525
Customer Site ID: IDL04525
Customer PTN #: 3770A1C538

Crown Site Name: Jackson DT
Crown Business Unit: 831885
License Number: 804608
Amendment Number: 1028216

ATTACHMENT A

Site Engineering Application

(see attached approved Site Engineering Application)

TT: 857744 ATT-Classic
Prepared by: M. Davis
Prepared on: 3/25/2025
Revised on:
AT&T Universal SLA/TLA Amendment 4/30/12

LRF Rev. #: 1
App Rev. #: 1
MLA #: 278410



Order Information

Order ID	Submitted By	Original Submit Date	JDE Job Number	Revision Number
689386	Taylor Day	Dec 18 2024	2134451	1

Orders are subject to applicable Crown Castle engineering, regulatory, zoning/planning, and priority property-owner approval. Approval conditions may result in alternative requirements for type and/or placement of equipment. Approval conditions may also lead to additional or revised engineering analysis at Crown Castle discretion and upon consent of the customer.

Site Information

Site ID	Crown Castle Structure	Structure Height (ft)	Crown Castle Site Name
831885	A	55.0	Jackson DT
Crown Castle District	County		
SEA	Teton		
Latitude	Longitude	Structure Type	Site Address
43° 28' 51.55"	-110° 45' 34.62"	OTHER	275 North Willow St Jackson, WY 83001

Order Parameters

Who is the customer?	What do you want to do?	License Number	What is the Scope of your Order?
AT&T Mobility	Amendment	804608	Tower Equipment
Are you changing a mount?			
--			
	What is the scope of work?		
	Final Config: (8) Antennas, (56) Coax		

Customer

Billing Company	Billing ID Number	Billing Address	
AT&T Mobility	110912	1025 LENOX PARK BLVD NE 3RD FLOOR ATLANTA, GA 30319	
Operating Legal Entity	Operating Legal Entity ID		
New Cingular Wireless PCS, LLC	470022		
AT&T Site Name	AT&T Site ID	Project Tracking Number (PTN)	FA #
IDL04525	IDL04525	3770A1C538	15433582
PACE Ref #	AT&T Market	AT&T Region	AT&T Sub-Market
MRUTH068440	ROCKY MOUNTAIN REGION	WEST	IDAHO
Project Management Vendor			
ANSCO			

Contacts

NAME	EMAIL	PHONE	ADDRESS
Jannett Lopez	jannett.lopez@anscollc.com	6305900567	

RF Contacts

There are currently no Contacts for this order.

Configuration Review

Antennas

MCL (ft)	ACL (ft)	TOTAL	INSTALLED	PROPOSED	NOT INSTALLED	MANUFACTURER / MODEL	HEIGHT (in)	WIDTH (in)	DEPTH (in)	WEIGHT (lbs)
38	41	8	0	8	0	COMMSCOPE / NHHSS-45B-R2BT4	71.97	17.99	7.01	100.54

Tower Mounted Equipment

There are currently no TMEs for this order.

Feedlines

MCL (ft)	ACL (ft)	TOTAL INSTALLED	PROPOSED NOT INSTALLED	MANUFACTURER / MODEL	NOMINAL SIZE (in)	NOMINAL O.D. (in)
38	41	56	0	56 0 ANDREW / LDF4P-50A	1/2	0.62

Frequencies

SVC TECHNOLOGY	EIRP (WATTS)	STANDARD FREQUENCY	TRANSMIT FREQUENCY
5G	3280.00		3450.000 -3550.000MHZ 3700.000 -3980.000MHZ

All Receive frequencies are approved.

Cabinets

Number of Proposed Additional Cabinets

0

Lease Areas

There are currently no Lease Areas for this order

Power

Do you need Crown to supply Power?

No

Battery Backup Required?

No

Equipment

Order autopopulated from LMP(Installed Config)

Antennas

MANUFACTURER / MODEL	ANTENNA CENTERLINE (ft)	AZIMUTH	CUSTOMER MOUNT CLASS	MOUNT ORIENTATION	STATUS
COMMSCOPE / NHHSS-45B-R2BT4	41	0	PIPE MOUNT	Mid-Mount	Proposed
COMMSCOPE / NHHSS-45B-R2BT4	41	0	PIPE MOUNT	Mid-Mount	Proposed
COMMSCOPE / NHHSS-45B-R2BT4	41	90	PIPE MOUNT	Mid-Mount	Proposed
COMMSCOPE / NHHSS-45B-R2BT4	41	90	PIPE MOUNT	Mid-Mount	Proposed
COMMSCOPE / NHHSS-45B-R2BT4	41	180	PIPE MOUNT	Mid-Mount	Proposed
COMMSCOPE / NHHSS-45B-R2BT4	41	180	PIPE MOUNT	Mid-Mount	Proposed
COMMSCOPE / NHHSS-45B-R2BT4	41	270	PIPE MOUNT	Mid-Mount	Proposed
COMMSCOPE / NHHSS-45B-R2BT4	41	270	PIPE MOUNT	Mid-Mount	Proposed

Tower Mounted Equipment

There are currently no TMEs for this order.

TYPE	MANUFACTURER / MODEL	NOMINAL SIZE (in)	ATTACHED CENTERLINE (ft)	LENGTH (ft)	IN CONDUIT?	STATUS
COAX	ANDREW / LDF4P-50A	1/2	41	91	No	Proposed
COAX	ANDREW / LDF4P-50A	1/2	41	91	No	Proposed
COAX	ANDREW / LDF4P-50A	1/2	41	91	No	Proposed
COAX	ANDREW / LDF4P-50A	1/2	41	91	No	Proposed
COAX	ANDREW / LDF4P-50A	1/2	41	91	No	Proposed
COAX	ANDREW / LDF4P-50A	1/2	41	91	No	Proposed
COAX	ANDREW / LDF4P-50A	1/2	41	91	No	Proposed
COAX	ANDREW / LDF4P-50A	1/2	41	91	No	Proposed
COAX	ANDREW / LDF4P-50A	1/2	41	91	No	Proposed
COAX	ANDREW / LDF4P-50A	1/2	41	91	No	Proposed
COAX	ANDREW / LDF4P-50A	1/2	41	91	No	Proposed
COAX	ANDREW / LDF4P-50A	1/2	41	91	No	Proposed

NOTICE: Structural Analysis shall be performed in accordance with the current revision of the TIA/EIA 222 standard and applicable local building permit codes and standards. EME analysis shall be consistent with current revision of FCC/OSHA standard OETB 65. AM detuning, when required, will be performed to 47 CFR22.371. The customer is responsible for all analysis expenses. All construction drawings are subject to Crown Castle engineering approval prior to commencement of tower attachments and compound installations. Installation of equipment not conforming to approved drawings may violate the terms of the occupancy agreement and will be corrected at the customer's expense. Crown Castle requires drawings for pre-construction approval and as built drawings for physical configuration validation to be submitted as unlocked AutoCAD files (Version 2000i preferred). Because manufacturers may change equipment specifications (e.g., length, width, height, depth or weight) for a Model Number without changing the Model Number itself, the equipment specifications for such Model Number as identified herein shall be used to determine exactly which version of equipment with such Model Number is approved by Crown Castle herein. Crown Castle may include the suffix "CCiv" together with a number (indicating a version number) after a Model Number, which suffix is not part of the actual Model Number, but indicative of a known change to the equipment specifications applicable to such Model Number.

Customer Site Name: IDL04525

Customer Site ID: IDL04525

Customer PTN #: 3770A1C538

Crown Site Name: Jackson DT

Crown Business Unit: 831885

License Number: 804608

Amendment Number: 1028216

ATTACHMENT B

Site Plan

Intentionally Omitted

TT: 857744 ATT-Classic

Prepared by: M. Davis

Prepared on: 3/25/2025

Revised on:

AT&T Universal SLA/TLA Amendment 4/30/12

LRF Rev. #: 1

App Rev. #: 1

MLA #: 278410

Customer Site Name: IDL04525
Customer Site ID: IDL04525
Customer PTN #: 3770A1C538

Crown Site Name: Jackson DT
Crown Business Unit: 831885
License Number: 804608
Amendment Number: 1028216

ATTACHMENT C

Level Drawing

(see attached CAD-generated Level Drawing)

TT: 857744 ATT-Classic
Prepared by: M. Davis
Prepared on: 3/25/2025
Revised on:
AT&T Universal SLA/TLA Amendment 4/30/12

LRF Rev. #: 1
App Rev. #: 1
MLA #: 278410

Multiple attempts made to enhance the following (2) page to be legible from the PDF provided from Crown Castle.

A handwritten signature in dark ink, appearing to be 'Bert Hamlin', written over a horizontal line.

Bert Hamlin

hh6077@att.com

720-266-3750

AT&T Clearinghouse Form
Licensing Request for Non Qualified SLA

Application ID	689386	REV SHARE SITE	No	Commencement Date	
BU	831885	Area	West	District	Seattle
Type of App	Amendment	Reason for App	Tower Equipment		
Parent License	804608	MLA Description	Stand Alone Agreement - TLA		
AT&T FA #	15433582	Account Executive	Hutchins Caroline		

CLEARINGHOUSE PRICING AND INSTRUCTIONS

Pricing Good Through	6/30/2025	Total	\$0.00
		Rev Share	

CLEARINGHOUSE Additional Information

New Install - with \$

Is Ground Equipment on this SLA shared with equipment from another AT&T SLA (is Paragraph 10 Required?). What is the number/identifier of the existing AT&T Parent License from which the new AT&T SLA will derive its ground space rights at the site?

Area Suggested Pricing:

Area Comments

Clearinghouse Comments

BMI/DCS Sublease Sites	Add	Remove	Model Change	Relocation
Antenna				
MW				
Coax				
TMA				
MISC				

Quantity	Manufacturer	Model	Nominal Size	Nominal O.D. (IN)	
56	ANDREW	LDF4P-50A	45659	0.63	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
0	0	0	0	0	
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56	Count of Lines				



Certificate Of Completion

Envelope Id: 7B480294-4211-470C-903A-EDF586FAFB53

Status: Sent

Subject: BU-831885_PLIC-804608_ORD-689386_Jackson DT_AT&T Mobility_15433582_3770A1C538_IDL04525_IDL04525

License: 804608

District: SEA

BusinessUnit: 831885

Area: WTA

ApplicationId: 689386

Source Envelope:

Document Pages: 16

Signatures: 0

Envelope Originator:

Certificate Pages: 4

Initials: 0

Monica Davis

AutoNav: Enabled

2000 Corporate Drive

Canonsburg, PA 15317

Envelopeld Stamping: Enabled

Monica.Davis@crowncastle.com

Time Zone: (UTC-05:00) Eastern Time (US & Canada)

IP Address: 4.78.16.2

Record Tracking

Status: Original

Holder: Monica Davis

Location: DocuSign

4/1/2025 11:03:07 AM

Monica.Davis@crowncastle.com

Signer Events

Signature	Timestamp
Robert Swan	Sent: 4/1/2025 11:09:45 AM
Robert.Swan@crowncastle.com	Viewed: 4/1/2025 11:13:58 AM
Security Level:	Signed: 4/1/2025 11:14:15 AM
.Email	
ID: 285541a9-9821-4978-99a8-960dc7ef2e9c	
4/1/2025 11:13:39 AM	
Electronic Record and Signature Disclosure:	
Accepted: 4/1/2025 11:13:58 AM	
ID: 21af0c57-ed4f-49bf-883b-ca547b52f291	

Security Level: Email, Account Authentication (None)

Electronic Record and Signature Disclosure: Not Offered via Docusign

Contract Compliance
Compliancereview@crowncastle.com

Security Level: Email, Account Authentication (None)

Electronic Record and Signature Disclosure: Not Offered via Docusign

Execution Specialist
executionspecialist.embedded@crowncastle.com

Security Level: Email, Account Authentication (None)

Electronic Record and Signature Disclosure: Not Offered via Docusign

System Sync
system.sync@crowncastle.com

Security Level: Email, Account Authentication (None)

Electronic Record and Signature Disclosure: Not Offered via Docusign

Signer Events	Signature	Timestamp
Crown Supervisor, Contract Development (ATT)		
Signing Group: Crown Supervisor, Contract Development (ATT)		
Security Level: Email, Account Authentication (None)		
Electronic Record and Signature Disclosure: Not Offered via Docusign		
In Person Signer Events	Signature	Timestamp
Editor Delivery Events	Status	Timestamp
Agent Delivery Events	Status	Timestamp
Jannett Lopez jannett.lopez@anscollc.com Security Level: Email, Account Authentication (None)		Sent: 4/1/2025 11:14:52 AM Viewed: 4/1/2025 11:20:59 AM
Electronic Record and Signature Disclosure: Accepted: 4/1/2025 11:20:59 AM ID: 0c260a36-b94a-4b12-b01c-9f6756281487		
Intermediary Delivery Events	Status	Timestamp
Certified Delivery Events	Status	Timestamp
Carbon Copy Events	Status	Timestamp
Allie Kmiecik allie.kmiecik@crowncastle.com Security Level: Email, Account Authentication (None)	COPIED	Sent: 4/1/2025 11:14:50 AM
Electronic Record and Signature Disclosure: Not Offered via Docusign		
Megan Hartz megan.hartz@crowncastle.com Security Level: Email, Account Authentication (None)	COPIED	Sent: 4/1/2025 11:14:51 AM
Electronic Record and Signature Disclosure: Not Offered via Docusign		
Witness Events	Signature	Timestamp
Notary Events	Signature	Timestamp
Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	4/1/2025 11:07:56 AM
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Envelope Updated	Security Checked	4/1/2025 11:09:38 AM
Envelope Updated	Security Checked	4/1/2025 11:09:41 AM
Envelope Updated	Security Checked	4/1/2025 11:09:46 AM
Envelope Updated	Security Checked	4/1/2025 11:14:53 AM
Payment Events	Status	Timestamps
Electronic Record and Signature Disclosure		

ELECTRONIC RECORD AND SIGNATURE DISCLOSURE

In order to provide more efficient and faster service, Crown Castle ("we", "us" or "company") is pleased to announce the use of DocuSign, Inc. ("DocuSign") electronic signing system. The terms for providing such documents for execution and various other documents and records to you electronically through DocuSign are set forth below. Please read the information below carefully and if you can satisfactorily access this information electronically and agree to these terms, please confirm your agreement by clicking the "I agree" button at the bottom of this document.

Getting paper copies

At any time, you may request from us a paper copy of any document for execution or other document or record provided or made available electronically to you by us. You will be able to download and print documents we send to you through the DocuSign system during and immediately after each signing session and, if you elect to create a DocuSign signer account, you may access them for a limited period of time thereafter. To request paper copies of documents previously provided by us to you electronically, send an e-mail to esignature@CrownCastle.com, requesting the subject paper copies and stating your e-mail address, name, US Postal address and telephone number.

Withdrawing your consent to receive and/or execute documents electronically

If you elect to receive documents for execution and various other documents and records from us electronically, you may at any time change your mind and tell us that thereafter you want to receive such documents only in paper format. To withdraw your consent to electronic delivery and execution of documents, use the DocuSign 'Withdraw Consent' form on the signing page of a DocuSign envelope, instead of signing it. Thereafter, you will no longer be able to use the DocuSign system to electronically receive and execute documents or other records from us. You may also send an e-mail to esignature@CrownCastle.com stating that you are withdrawing your consent to electronic delivery and execution of documents through the DocuSign system and stating your e-mail address, name, US Postal Address, and telephone number.

Consequences of withdrawing consent to receive and/or execute documents electronically

If you elect to receive documents for execution and various other documents and other records only in paper format, it will slow the speed at which we can complete the subject transactions because of the increased delivery time.

Documents for execution, and other documents and records may be sent to you electronically

Unless you tell us otherwise in accordance with the procedures described herein, we may provide documents for execution, and other documents and records electronically to you through the DocuSign system during the course of our relationship with you. To reduce the chance of you inadvertently not receiving any document for execution or other document or record, we prefer to provide all documents for execution, and other documents and records by the same method and to the same address that you have given us. If you do not agree with this process, please let us know as described below.

How to contact Crown Castle

You may contact us to let us know of any changes related to contacting you electronically, to request paper copies of documents for execution and other documents and records from us, and to withdraw your prior consent to receive documents for execution and other documents and records electronically as follows:

To contact us by phone call: 724-416-2000

To contact us by email, send messages to: esignature@CrownCastle.com

To contact us by paper mail, send correspondence to

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317

To advise Crown Castle and DocuSign of your new e-mail address

To let us know of a change to the e-mail address where we should send documents for execution and other documents and records to you, you must send an email message to esignature@CrownCastle.com and state your previous e-mail address and your new e-mail address.

In addition, you must notify DocuSign, Inc. to arrange for your new email address to be reflected in your DocuSign account by following the process for changing e-mail in the DocuSign system.

Required hardware and software

Browsers:	Internet Explorer® 11 (Windows only); Windows Edge Current Version; Mozilla Firefox Current Version; Safari™ (Mac OS only) 6.2 or above; Google Chrome Current Version; Note : Pre-release (e.g., beta) versions of operating systems and browsers are not supported.
Mobile Signing:	Apple iOS 7.0 or above; Android 4.0 or above
PDF Reader:	Acrobat® Reader or similar software may be required to view and print PDF files
Screen Resolution:	1024 x 768

Enabled Security Settings:	Allow per session cookies
----------------------------------	---------------------------

These minimum requirements are subject to change. If these requirements change, you will be asked to re-accept the disclosure. Pre-release (e.g. beta) versions of operating systems and browsers are not supported.

Acknowledging your access and consent to receive documents electronically

Please confirm that you were able to access this disclosure electronically (which is similar to the manner in which we will deliver documents for execution and other documents and records) and that you were able to print this disclosure on paper or electronically save it for your future reference and access or that you were able to e-mail this disclosure to an address where you will be able to print it on paper or save it for your future reference and access. Further, if you consent to receiving documents for execution and other documents and records in electronic format on the terms described above, please let us know by clicking the "I agree" button below.

By checking the 'I agree' box, I confirm that:

- You can access and read this Electronic Record and Signature Disclosure; and
- As a recipient, you can read, electronically sign and act upon this message, and you agree not to forward it or any other DocuSign e-mail communications. In the event another party needs to be added to the DocuSign communication, you must make a request to the e-mail originator.