Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

December 5, 2016

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

RE: **Notice of Exempt Modification for AT&T/ LTE 3C Crown Site BU: 841294**
AT&T Site ID: CT2144
230 Guinea Road, Monroe, CT 06468
Latitude: 41° 20' 30.7"/ Longitude: -73° 16' 28.3"

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 236-foot level of the existing 240-foot monopole at 230 Guinea Road in Monroe, CT. The tower is owned by Crown Castle. The property is owned by the Town of Monroe. AT&T intends to replace three (3) RRU12/A2s and three (3) RRU32 B2s, as well as, install two (2) DC lines.

In communications with the Town of Monroe, the original Zoning Approval for this tower is unavailable.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to Mr. Steve Vavrek, First Selectman, Town of Monroe, as well as the property owner, and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,

Jeffrey Barbadora
Real Estate Specialist
12 Gill Street, Suite 5800, Woburn, MA 01801
781-729-0053
Jeff.Barbadora@crowncastle.com

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: Structural Modification Report
Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc: Mr. Steve Vavrek, First-Selectman, Town of Monroe
Town of Monroe
7 Fan Hill Road
Monroe, CT 06468

Town of Monroe
7 Fan Hill Road
Monroe, CT 06468

Terry, Dashanna

From: Donna Suszynski <dsuszynski@monroect.org>
Sent: Friday, January 22, 2016 9:35 AM
To: Terry, Dashanna
Cc: Barbadora, Jeff; Joseph Chapman; Tanya Bombero; Vida Stone
Subject: RE: Zoning Documents - Tower at 230 Guinea Road
Attachments: ATT 230 Guinea Road Zoning Certificate.pdf; ATT 230 Guinea Road Zoning Certificate 3-11-2013.pdf

Good Morning Terry,
I have attached two(2) Zoning Compliance Certificates for the tower located at 230 Guinea Road. I have not found any information in the Land Use office regarding lease information pertaining to the original project. May I suggest you check with the First Selectman's office or our Town Clerk. They may have records which might be useful to you. Feel free to contact me with any other request.
Regards

Donna Suszynski
Land Use Coordinator
203-452-2809

From: Terry, Dashanna [mailto:Dashanna.Terry@crowncastle.com]
Sent: Thursday, January 21, 2016 10:25 AM
To: Donna Suszynski
Cc: Barbadora, Jeff
Subject: Zoning Documents - Tower at 230 Guinea Road

Good morning Donna,

I have an inquiry regarding original zoning documents for a tower and I am hoping you can provide more information.

We are applying for CSC Zoning Approval for tower modifications and new requirements ask that we procure original zoning documents from the jurisdiction, if possible. However, if these documents are not available, please let me know. The tower is located at 230 Guinea Road and according to lease documents this was have been approved around 1990 – the town owns the property and signed the lease at that time.

If you have any questions, please don't hesitate to call or e-mail me.

Thank you,
Dashanna

DASHANNA TERRY
Real Estate Project Coordinator
T: (781) 970-0067| M: (571) 241-0984

CROWN CASTLE
12 Gill Street, Suite 5800, Woburn, MA 01801
Crowncastle.com

230 GUINEA RD

Location	230 GUINEA RD	**Map/Lot**	080/ 013/ ZZ/ /
Acct#	080013ZZ	**Owner**	SOUTHWESTERN BELL MOBILE SYSTEMS LLC
Assessment	$370,000	**Appraisal**	$528,500
PID	8090	**Building Count**	1
Survey			

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$298,500	$230,000	$528,500
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$209,000	$161,000	$370,000

Owner of Record

Owner	SOUTHWESTERN BELL MOBILE SYSTEMS LLC	**Sale Price**	$0
Co-Owner	%CINGULAR WIRELESS LLC -TAX	**Certificate**	1
Address	575 MOROSGO DR NE RM 13E64 ATLANTA, GA 30324	**Book & Page**	
		Sale Date	

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
SOUTHWESTERN BELL MOBILE SYSTEMS LLC	$0	1		
SNET CELLULAR INC %SBC COM INC	$0	2		

Building Information

Building 1 : Section 1

Year Built: 1990
Living Area: 360

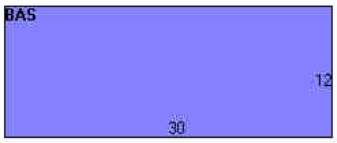
Building Attributes	
Field	**Description**
STYLE	Radio/TV Trans Bldg
MODEL	Industrial

Building Photo

Grade	C
Stories:	
Occupancy	0
Exterior Wall 1	Metal-Light
Exterior Wall 2	
Heating Fuel	Typical
Heating Type	Typical
AC Type	None
Bldg Use	Tel X Sta
Total Rooms	
Total Bedrms	
Total Baths	
Fireplace	
Xtra Fireplaces	
1st Floor Use:	430
Heat/AC	Typical
Frame Type	0
Baths/Plumbing	Normal
Ceiling/Wall	Ceil and Wall
Rooms/Prtns	Average
Wall Height	
% Comn Wall	

(http://images.vgsi.com/photos/MonroeCTPhotos//\00\00\68/25.jpg)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	360	360
		360	360

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	430
Description	Tel X Sta
Zone	RF2
Neighborhood	
Alt Land Approved	No
Category	

Land Line Valuation

Size (Acres)	0.23
Appraised Value	$230,000

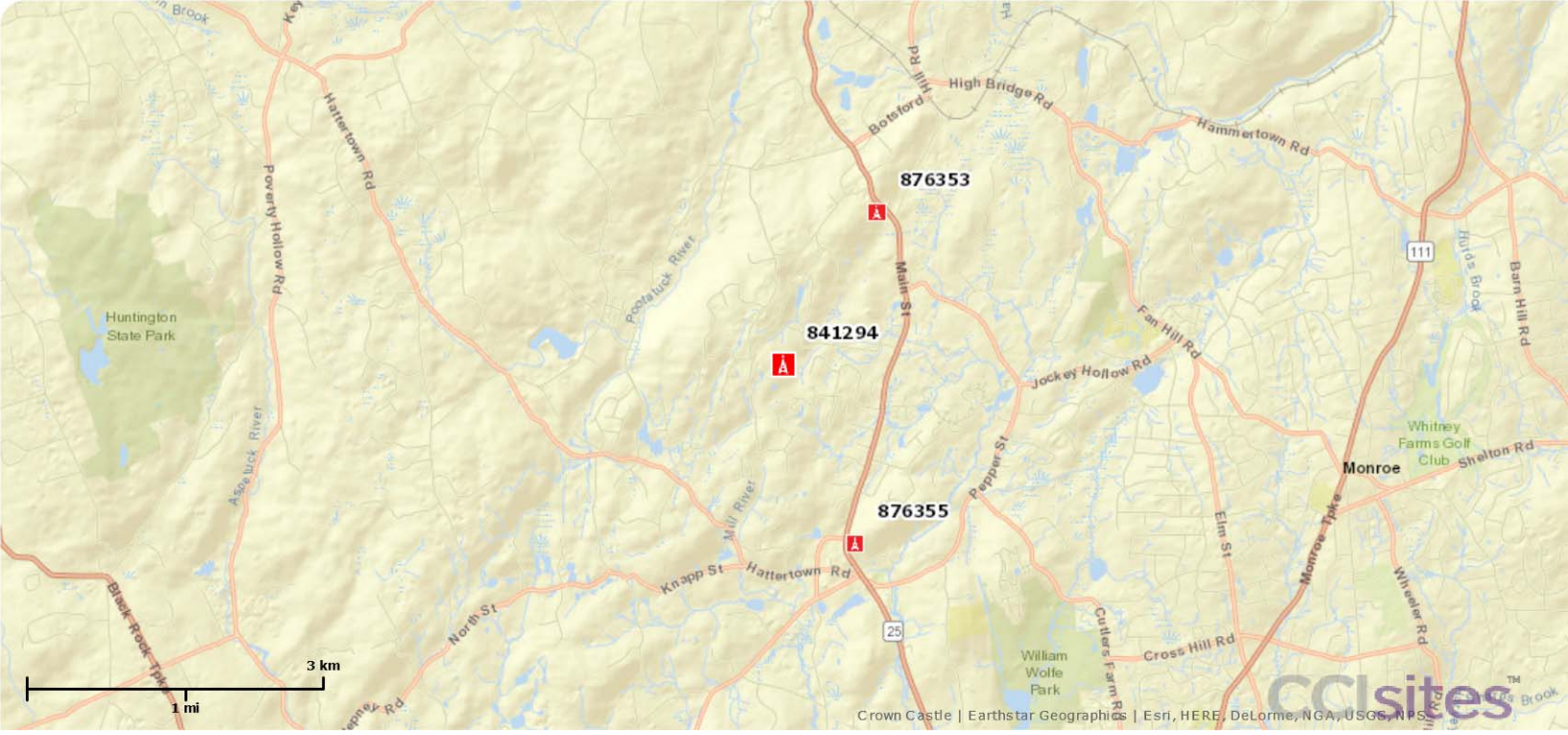
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
RS1	Frame Utility Shed			900 S.F.	$9,000	1
RS1	Frame Utility Shed			240 S.F.	$2,400	1
TT4	TOWER MONOPOLE			2 UNITS	$250,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$298,500	$230,000	$528,500
2009		$183,400	$463,010

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$209,000	$161,000	$370,000
2009		$128,380	$324,107


876353
841294
876355
Huntington State Park
Poverty Hollow Rd
Hattertown Rd
Aspetuck River
Pootatuck River
Botsford Hill Rd
High Bridge Rd
Hammertown Rd
Main St
Fan Hill Rd
Jockey Hollow Rd
Pepper St
Mill River
Knapp St
Hattertown Rd
North St
Black Rock Tpke
Elm St
Monroe Tpke
Cross Hill Rd
Cutters Farm Rd
William Wolfe Park
Whitney Farms Golf Club
Shelton Rd
Monroe
Barn Hill Rd
Wheeler Rd
111
25
3 km
1 mi
Crown Castle | Earthstar Geographics | Esri, HERE, DeLorme, NGA, USGS, NPS


Legend
Crown Internal Sites Layer
Tower
DAS NODE
DAS HUB
DAS SYSTEM
Land Under
Alternative Crown Sites
Alternative Crown Sites

PROJECT TEAM

CLIENT REPRESENTATIVE:

EMPIRE TELECOM
16 ESQUIRE ROAD
BILLERICA, MA 01821
DAVID COOPER
617-639-4908
dcooper@empiretelecomm.com

SITE ACQUISITION & ZONING:

EMPIRE TELECOM
16 ESQUIRE ROAD
BILLERICA, MA 01821
DAVID COOPER
617-639-4908
dcooper@empiretelecomm.com

ENGINEERING:

TRYLON TSF
1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038
KATYA SERAVALLE
PHONE: 519-465-4125

RF ENGINEER:

AT&T MOBILITY – NEW ENGLAND
550 COCHITUATE ROAD
SUITE 550 13 & 14
FRAMINGHAM, MA 01701
CAMERON SYME
508-596-7146
cs6970@att.com

CONSTRUCTION MANAGEMENT:

EMPIRE TELECOM
16 ESQUIRE ROAD
BILLERICA, MA 01821
GRZEGORZ "GREG" DORMAN
484-683-1750
gdorman@empiretelecomm.com

TOWER OWNER:

AT&T MOBILITY
1801 VALLEY VIEW LANE
FARMERS BRANCH, TX 75234

GENERAL NOTES

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

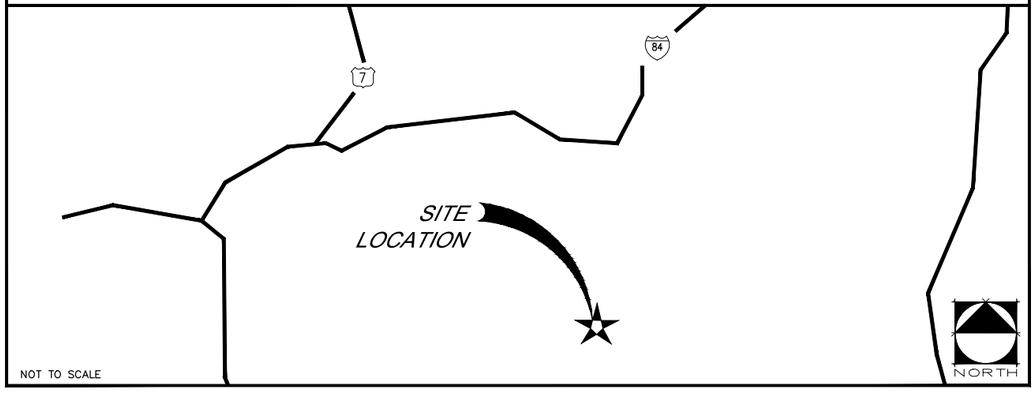
THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE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

SITE INFORMATION

LATITUDE:	41° 20' 30.67116" N
LONGITUDE:	73° 16' 28.29684" W
LAT./LONG. TYPE:	NAD 83
GROUND ELEVATION:	N/A
APN/UPC:	N/A
AREA OF CONSTRUCTION:	EXISTING
ZONING/JURISDICTION:	CITY OF MONROE
CURRENT ZONING:	N/A
EXISTING USE:	TELECOMMUNICATIONS FACILITY
COUNTY:	FAIRFIELD COUNTY
HANDICAP REQUIREMENTS:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.

LTE BWE EXPANSION
CT2144
MONROE-GUINEA ROAD
230 GUINEA ROAD
MONROE, CT 06468
FA CODE: 10035068

VICINITY MAP



DRIVING DIRECTIONS

2144 MONROE RT 15 SOUTH TO EXIT 49 RT 25 NORTH FOR APPROX 8 MILES AT 3RD LIGHT TAKE LEFT ON RT 59 QUICK RIGHT ON HATTERTOWN ROAD APPROX 1 MILE STRAIGHT AT STOP SIGN TO GUINEA ROAD RIGHT ON GUINEA ROAD APPROX 1 MILE TO ACCESS ROAD. SINGLE PADLOCK COMBO #4095 OR AT&T 0043.

CODE COMPLIANCE

BUILDING CODE: 2012 CONNECTICUT COMMERCIAL BUILDING CODE

ELECTRICAL CODE: 2014 CONNECTICUT ELECTRICAL CODE

LIGHTNING PROTECTION CODE: NFPA 780 – 2000, LIGHTNING PROTECTION CODE

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

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

CONNECTICUT ONE CALL SYSTEM, INC. 1-800-922-4455 STOP. CALL BEFORE YOU DIG!

CONNECTICUT LAW REQUIRES TWO WORKING DAYS NOTICE PRIOR TO ANY EARTH MOVING ACTIVITIES BY CALLING 800-922-4455 OR DIAL 811

APPROVALS

AT&T (RF): _____ DATE: _____

AT&T (CONST.): _____ DATE: _____

AT&T (OPS): _____ DATE: _____

TOWER OWNER: _____ DATE: _____

JURISDICTIONAL APPROVAL

BASED ON INFORMATION PROVIDED BY AT&T REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A), AND IS SUBJECT TO AN ELIGIBLE FACILITY REQUEST, EXPEDITED REVIEW AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW OR ADMINISTRATIVE REVIEW).

PROJECT DESCRIPTION

THIS PROJECT WILL BE COMPRISED OF:
CHANGES ON THE EXISTING SELF SUPPORTING TOWER;

- REMOVE (3) EXISTING RRUS-12 + RRUS-A2 (1) PER SECTOR FOR (3) SECTORS.
- INSTALL (3) NEW RRUS-32 B2, (1) PER SECTOR FOR (3) SECTORS.
- REUSE (1) EXISTING DC6 SQUID.
- REUSE (2) EXISTING DC POWER TRUNK.
- REUSE (1) EXISTING FIBER TRUNK.
- REUSE (12) EXISTING RF CABLES.

CHANGES IN THE EXISTING AT&T EQUIPMENT ENCLOSURE AREA;

- INSTALL (1) NEW XMU.

SHEET	DESCRIPTION
T-1	TITLE SHEET
GN-1	GROUNDING & GENERAL NOTES
A-1	COMPOUND PLAN
A-2	EQUIPMENT LAYOUTS
A-3	ANTENNA LAYOUTS
A-4	TOWER ELEVATION
A-5	DETAILS
G-1	GROUNDING, ONE-LINE DIAGRAM & DETAILS

at&t Mobility
1355 WEST UNIVERSITY DRIVE
MESA, AZ 85201-5419

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

PLANS PREPARED BY:
Trylon
1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038

NO.	DATE	DESCRIPTION	BY
A	11/07/16	FOR REVIEW	NPS
0	11/17/16	ISSUE FOR CONSTRUCTION	NPS

SITE INFORMATION:

CT2144
MONROE-GUINEA ROAD
FA CODE: 10035068

230 GUINEA ROAD
MONROE, CT 06468

SEAL:

11-17-2016

MICHAEL F. PLAHOVINSAK, P.E. #25849
Sole Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@mfpeng.com

SHEET TITLE:

TITLE SHEET

SHEET NUMBER:

T-1

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – EMPIRE TELECOM
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY
   OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR

9. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OFF ALL SCR1 'AP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

12. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

13. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS UNLESS OTHERWISE SPECIFIED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

14. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy=36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

15. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."

16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

17. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

19. SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

    - INTERNATIONAL BUILDING CODE: IBC 2009 WITH LOCAL & COUNTY AMENDMENTS
    - NATIONAL ELECTRICAL CODE: NEC 2011 WITH LOCAL & COUNTY AMENDMENTS
    - FIRE/LIFE SAFETY CODE: NFPA-101 2009 WITH LOCAL & COUNTY AMENDMENTS

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

    - AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
    - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, THIRTEENTH EDITION
    - AMERICAN SOCIETY OF TESTING OF MATERIALS, ASTM
    - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA-222-G-1), STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
    - TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
    - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA
    - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
    - TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

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

GROUNDING NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG00-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

13. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV-G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM EIGHT FEET (8') TO TEN FEET (10').

14. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE ½" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID TINNED COPPER GROUND WIRE, PER NEC 250.50.

at&t Mobility
1355 WEST UNIVERSITY DRIVE
MESA, AZ 85201-5419

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

PLANS PREPARED BY:
Trylon
1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038

NO.	DATE	DESCRIPTION	BY
A	11/07/16	FOR REVIEW	NPS
0	11/17/16	ISSUE FOR CONSTRUCTION	NPS

SITE INFORMATION:

CT2144
MONROE-GUINEA ROAD
FA CODE: 10035068

230 GUINEA ROAD
MONROE, CT 06468

SEAL:

11-17-2016

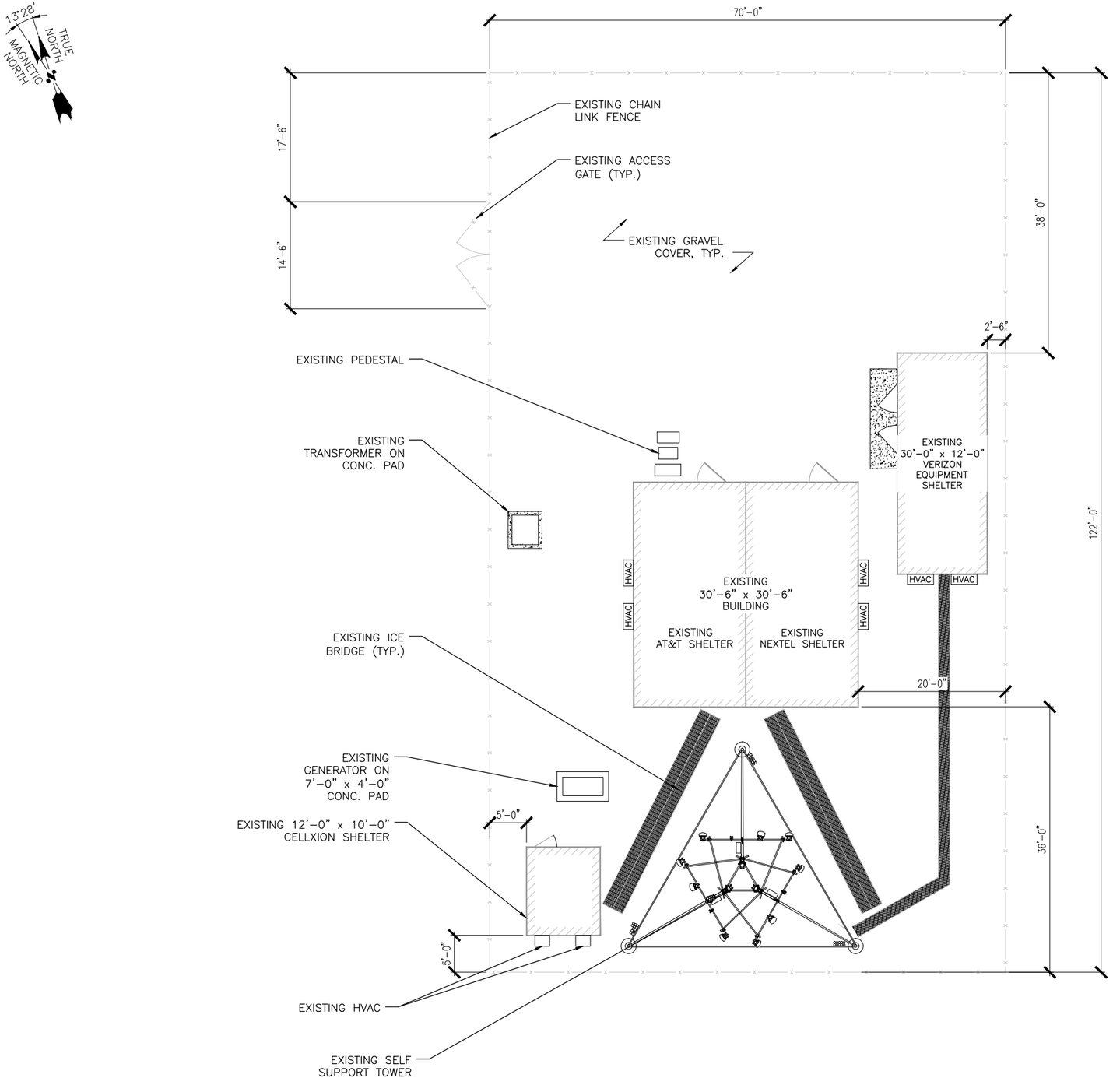
MICHAEL F. PLAHOVINSAK, P.E. #25849
Sole Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@mfpeng.com

SHEET TITLE:

GENERAL NOTES &
GROUNDING NOTES

SHEET NUMBER:

GN-1



COMPOUND PLAN

22"x34" SCALE: 1/8" = 1'-0"
11"x17" SCALE: 1/16" = 1'-0"

8' 6' 4' 2' 0" 8'

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1355 WEST UNIVERSITY DRIVE
MESA, AZ 85201-5419

EMPIRE telecom
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SEAL:

STATE OF CONNECTICUT
MICHAEL F. PLAHOVINSAK
No. 25849
REGISTERED PROFESSIONAL ENGINEER

11-17-2016

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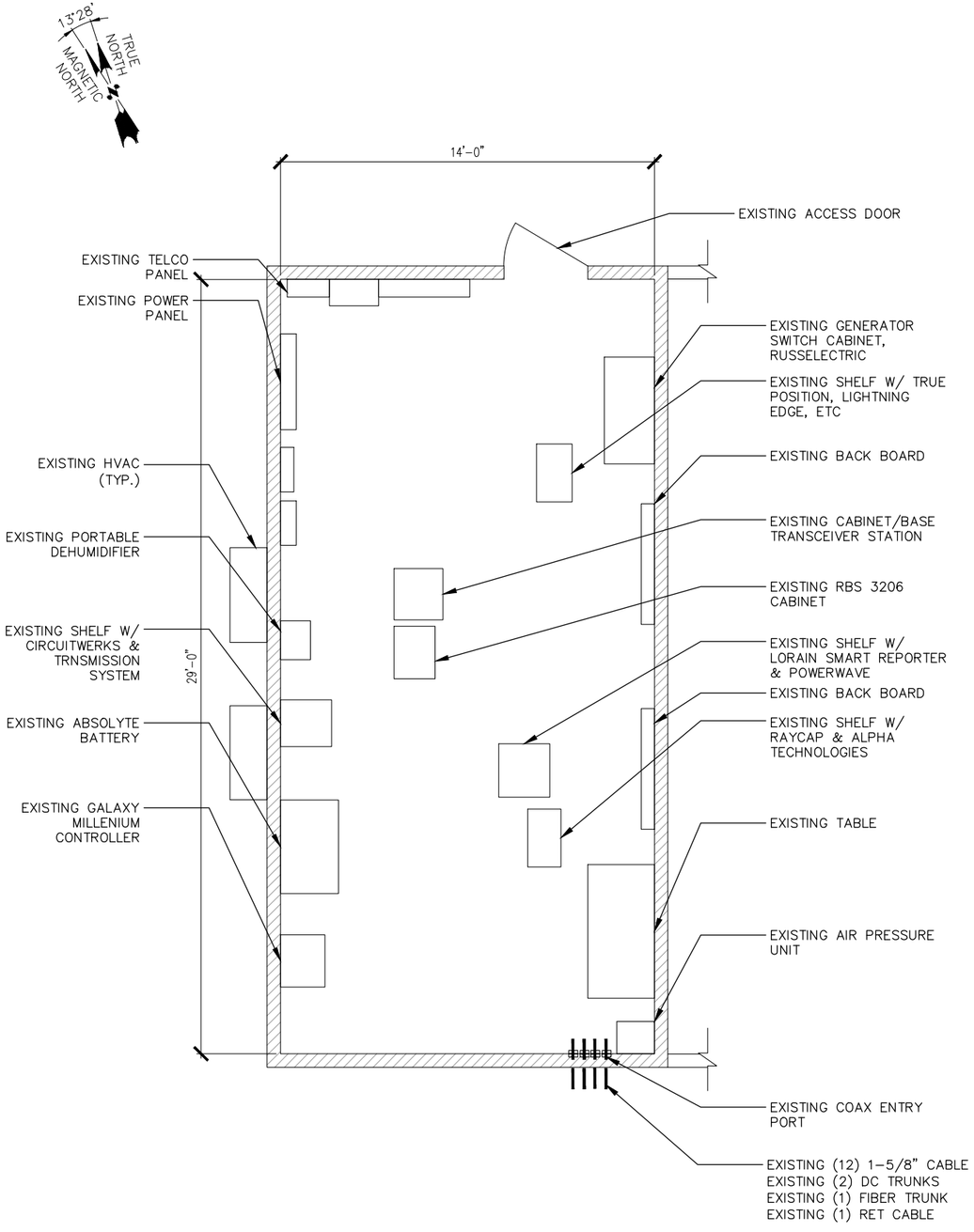
SHEET TITLE:

COMPOUND PLAN

SHEET NUMBER:

A-1

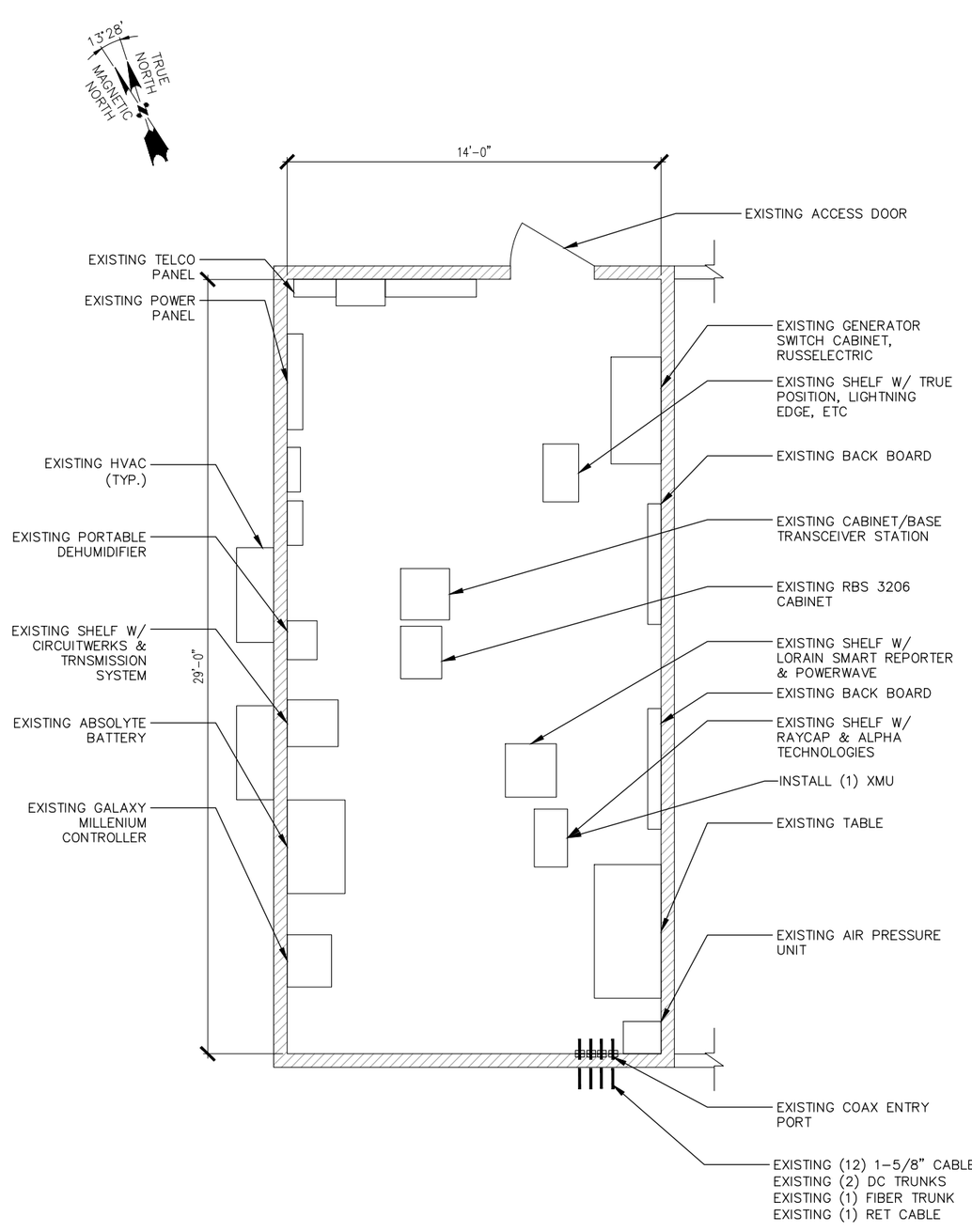


EXISTING EQUIPMENT LAYOUT

22"x34" SCALE: 3/8" = 1'-0"
11"x17" SCALE: 3/16" = 1'-0"

2' 1' 0" 2'

1



PROPOSED EQUIPMENT LAYOUT

22"x34" SCALE: 3/8" = 1'-0"
11"x17" SCALE: 3/16" = 1'-0"

2' 1' 0" 2'

2

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MESA, AZ 85201-5419

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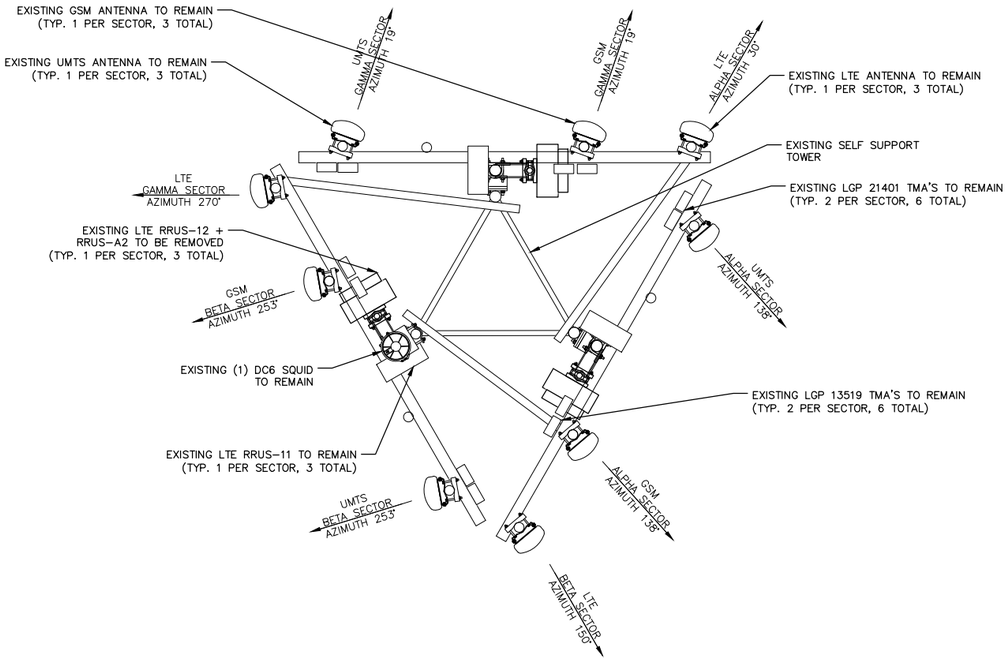
SHEET TITLE:

EQUIPMENT LAYOUTS

SHEET NUMBER:

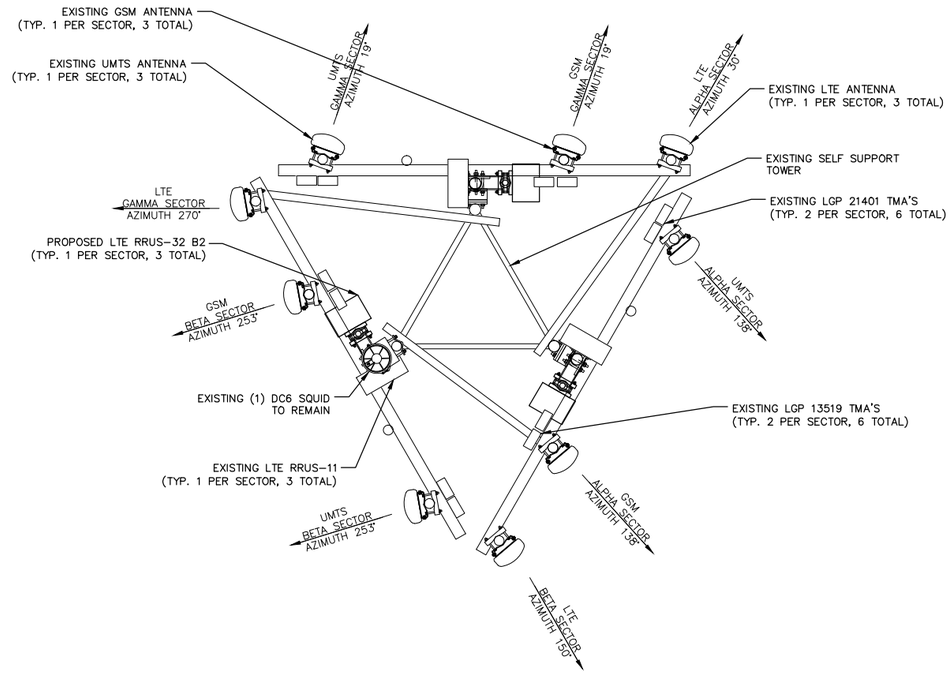
A-2



EXISTING ANTENNA LAYOUT

NOT TO SCALE

1



PROPOSED ANTENNA LAYOUT

NOT TO SCALE

2

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MONROE, CT 06468

SEAL:

11-17-2016

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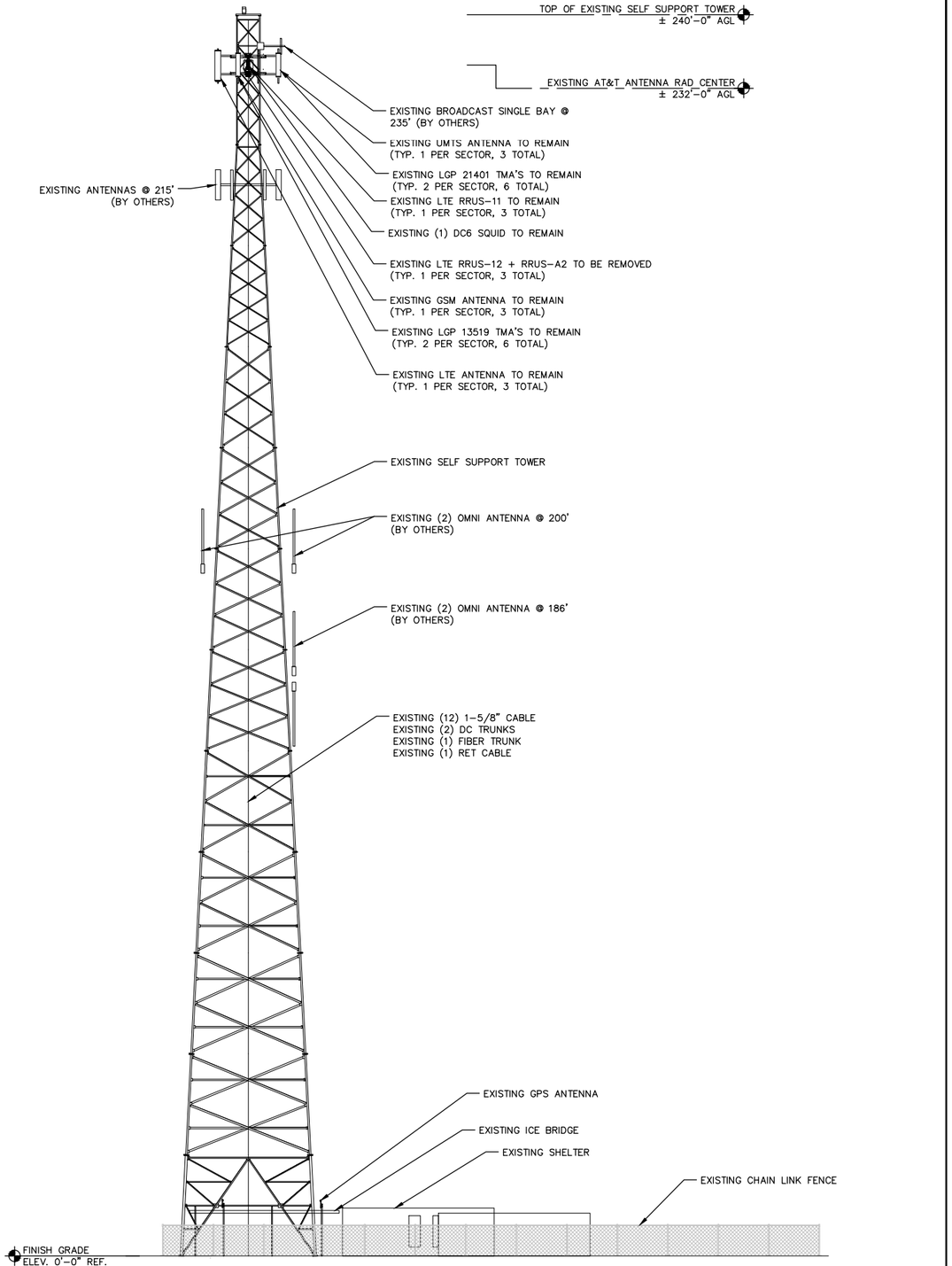
SHEET TITLE:

ANTENNA LAYOUTS

SHEET NUMBER:

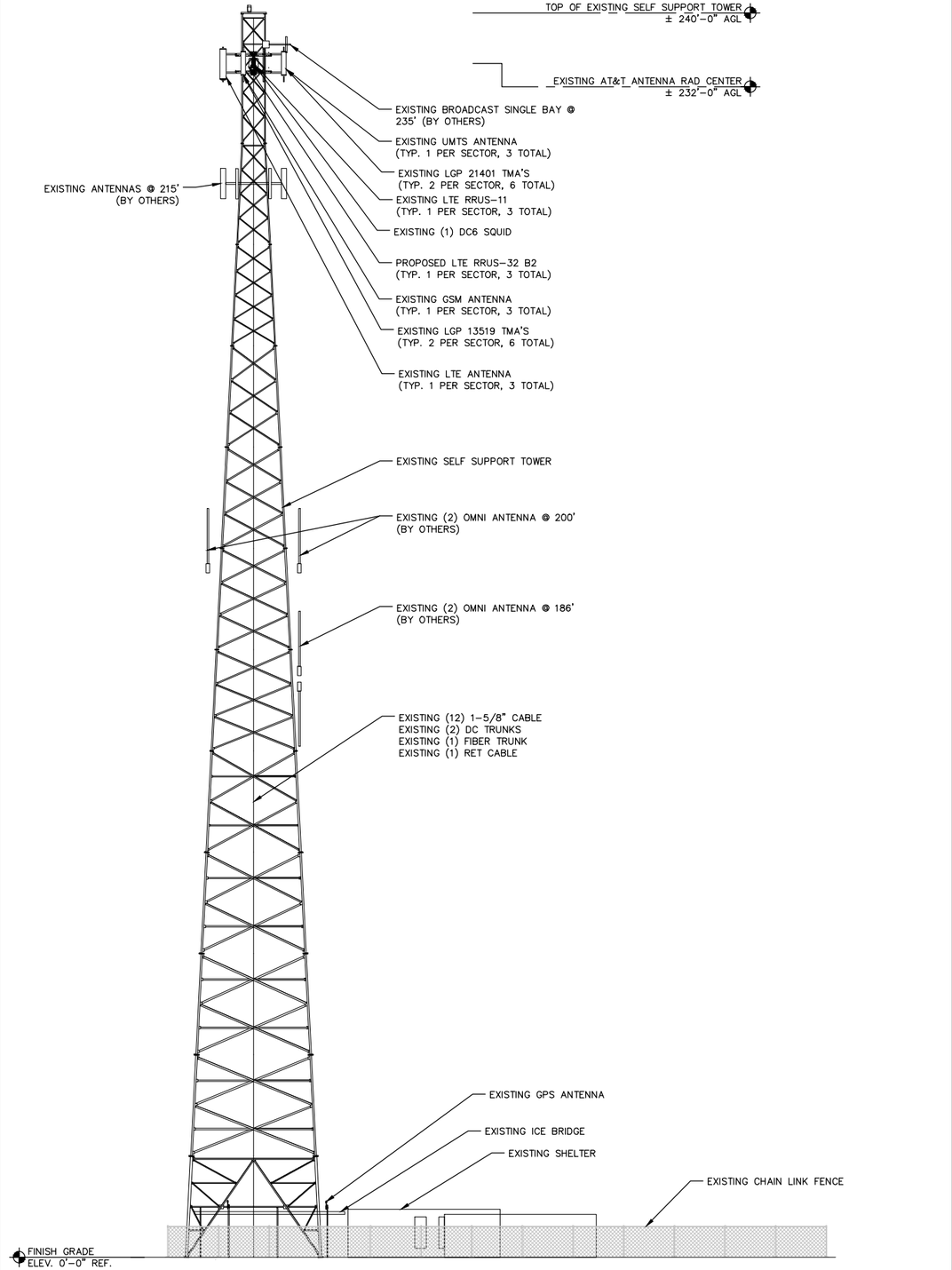
A-3



EXISTING TOWER ELEVATION

22"x34" SCALE: 3/32" = 1'-0"
11"x17" SCALE: 3/64" = 1'-0"
8' 4' 0" 8'

1



PROPOSED TOWER ELEVATION

22"x34" SCALE: 1/8" = 1'-0"
11"x17" SCALE: 1/16" = 1'-0"
8' 6' 4' 2' 0" 8'

2

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MESA, AZ 85201-5419

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16 ESQUIRE ROAD
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PLANS PREPARED BY:
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230 GUINEA ROAD
MONROE, CT 06468

SEAL:

11-17-2016

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614-398-6250 / mike@mfpeng.com

SHEET TITLE:

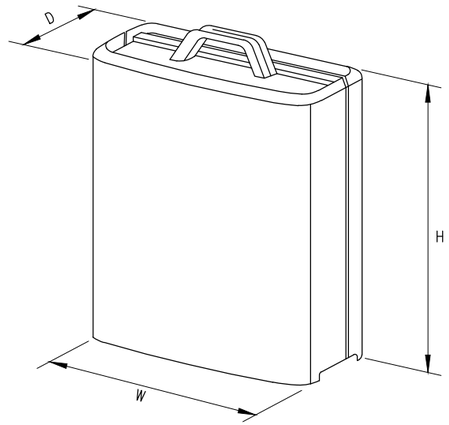
TOWER ELEVATION

SHEET NUMBER:

A-4

NOT USED

N.T.S 1



MODEL	L x W x H	WEIGHT
RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
RRUS-12	20.4" x 18.5" x 7.5"	58 LBS
RRUS-32	29.9" x 13.3" x 9.5"	77 LBS
RRUS-32 B2	20.9" x 9.5" x 3.3"	77 LBS
RRUS-E2	20.4" x 18.5" x 7.5"	58 LBS
A2 MODULE	16.4" x 15.2" x 3.4"	22 LBS

RRUS DETAILS

N.T.S 2

NOT USED

N.T.S 3

NOT USED

N.T.S 4

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PLANS PREPARED BY:
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FA CODE: 10035068

230 GUINEA ROAD
MONROE, CT 06468

SEAL:

11-17-2016

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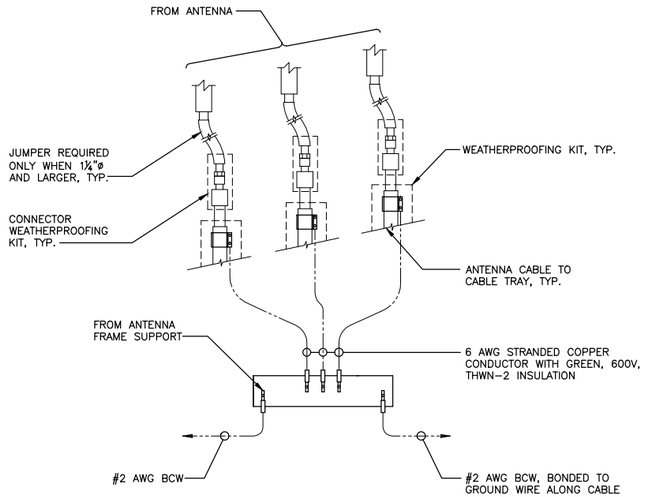
SHEET TITLE:

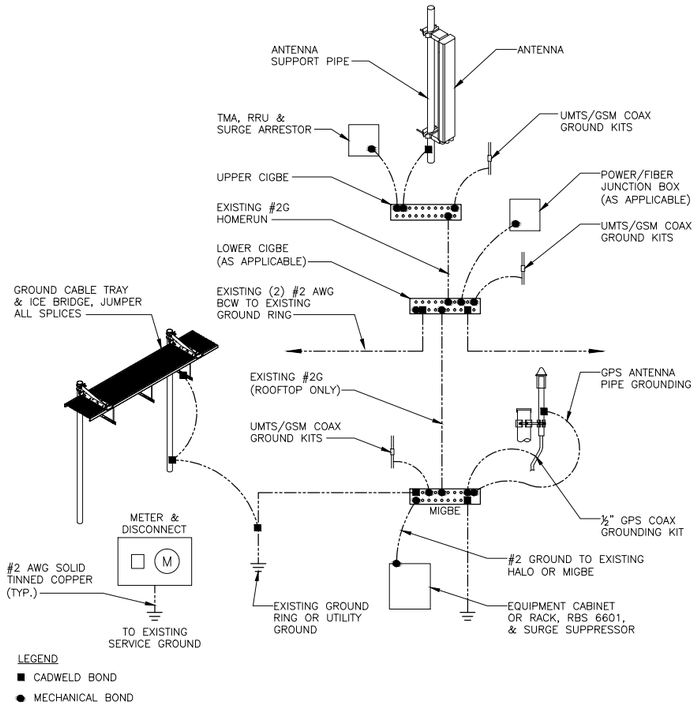
DETAILS

SHEET NUMBER:

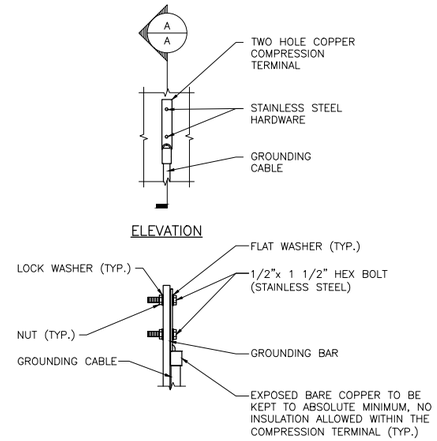
A-5



GROUND WIRE TO GROUND BAR CONNECTION DETAILS | N.T.S | 1



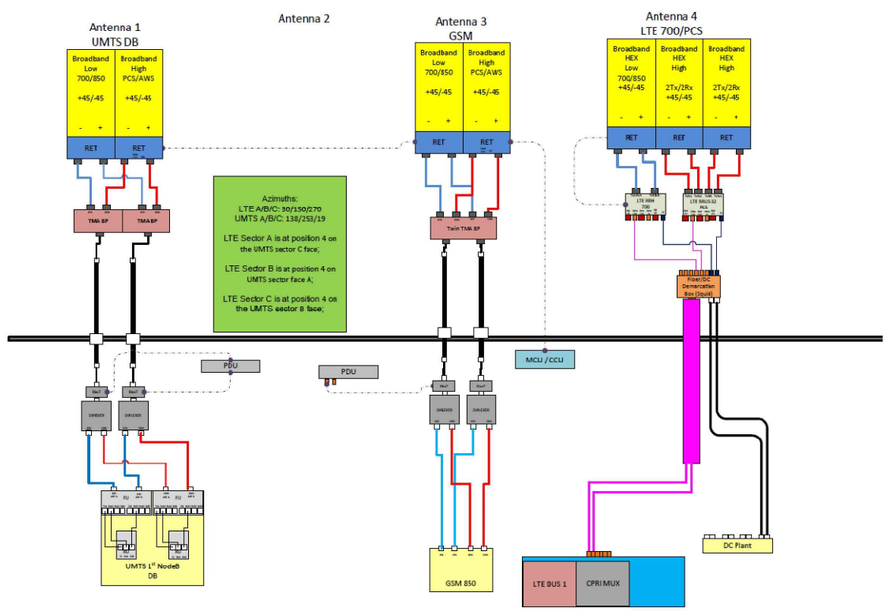
GROUND RISER DIAGRAM | N.T.S | 2



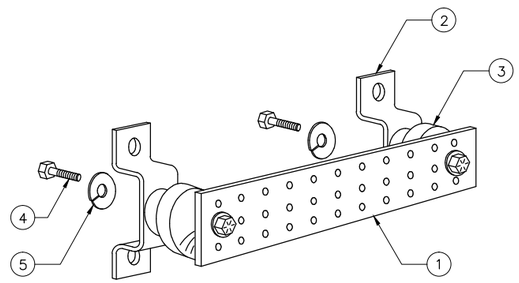
NOTE:

1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTION DETAILS | N.T.S | 3



PLUMBING DIAGRAM | N.T.S | 4



ITEM NO.	QTY.	DESCRIPTION
1	1	SOLID GROUND BAR (20"x 4"x ¼")
2	2	WALL MOUNTING BRACKET
3	2	INSULATORS
4	4	⅜"-11x1" H.H.C.S.
5	4	⅜" LOCK WASHER

NOTES:

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

SECTION "P" – SURGE PRODUCERS
- CABLE ENTRY PORTS (HATCH PLATES) (#2)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- +24V POWER SUPPLY RETURN BAR (#2)
- –48V POWER SUPPLY RETURN BAR (#2)
- RECTIFIER FRAMES

SECTION "A" – SURGE ABSORBERS
- INTERIOR GROUND RING (#2)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- BUILDING STEEL (IF AVAILABLE) (#2)

GROUND BAR DETAILS | N.T.S | 5

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1355 WEST UNIVERSITY DRIVE
MESA, AZ 85201-5419

EMPIRE telecom
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BILLERICA, MA 01821

PLANS PREPARED BY:
Trylon
1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038

NO.	DATE	DESCRIPTION	BY
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0	11/17/16	ISSUE FOR CONSTRUCTION	NPS

SITE INFORMATION:

CT2144
MONROE-GUINEA ROAD
FA CODE: 10035068

230 GUINEA ROAD
MONROE, CT 06468

SEAL:

STATE OF CONNECTICUT
MICHAEL F. PLAHOVINSAK
No. 25849
REGISTERED PROFESSIONAL ENGINEER

11-17-2016

MICHAEL F. PLAHOVINSAK, P.E. #25849
Sole Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@mfpeng.com

SHEET TITLE:

GROUNDING, ONE-LINE DIAGRAM & DETAILS

SHEET NUMBER:

G-1

Date: **November 8, 2016**

GPD Engineering and Architecture
Professional Corporation
520 South Main Street Suite 2531
Akron, Ohio 44311
(216) 927-8663
dpalkovic@gpdgroup.com

Sean Dempsey
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277
(704) 405-6565

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CT2144
	Carrier Site Name:	Monroe-Guinea Road
Crown Castle Designation:	**Crown Castle BU Number:**	841294
	Crown Castle Site Name:	MONROE-GUINEA ROAD
	Crown Castle JDE Job Number:	401574
	Crown Castle Work Order Number:	1321115
	Crown Castle Application Number:	365403 Rev. 1
Engineering Firm Designation:	**GPD Project Number:**	2017777.841294.10
Site Data:	**230 Guinea Road, Monroe, Fairfield County, CT 06468** **Latitude *41° 20' 30.7"*, Longitude *-73° 16' 28.3"*** **242.917 Foot – Modified Rohn Self Support Tower**	

Dear Sean Dempsey,

We are pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 966450, in accordance with application 365403, revision 1.

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:

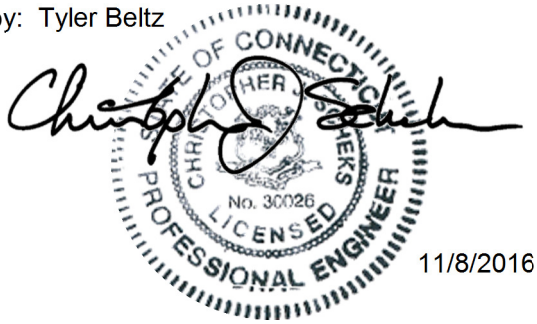
LC5: Existing + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 120 mph converted to a nominal 3-second gust wind speed of 93 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B and Risk Category II was/were used in this analysis.

We appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: Tyler Beltz

Respectfully submitted by:



Christopher J. Scheks, P.E. 11/8/2016
Connecticut #: 0030026

TABLE OF CONTENTS

1) INTRODUCTION

The existing 242.9 ft self support tower is supported on three legs and has twelve major sections. It has a triangular cross section made of bolted connections with a “K down” bracing configuration from 0' to 40.7' and an "X" bracing configuration from 40.7’ to 242.9’. The tower is fabricated with round pipe legs and pipe bracing members 0’ to 40’ and angle bracing members from 40.7’ to 242.9’. The tower is galvanized and has tower lighting.

This tower is a 242.9 ft self-support tower designed by Rohn in June of 1990. The tower was originally designed for a wind pressure of 40 psf per EIA-222-C.

The modifications designed by GPD (Project #: 2009268.80 Rev. A, dated 10/20/2009), have been considered in this analysis. The modifications consist of replacing the diagonal members from 20.3’ to 40.7’ and replacing the diagonal member bolts from 142.0’ to 162.2’.

The modifications designed by GPD (Project #: 2014777.841294.04, dated 9/22/2014) were considered in the analysis. They consist of replacing the bent top girts at 242.9’, replacing the diagonals from 121.8’-162.2’, and replacing the diagonal bolts from 101.6’-121.8’ and 162’-182.4’.

2) ANALYSIS CRITERIA

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 120 mph converted to a nominal 3-second gust wind speed of 93 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B and Risk Category II was/were used in this analysis.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
236.0	236.0	3	Ericsson	RRUS 32 B2	2	3/4	1,2

Notes:
1) See Appendix B for the proposed coax layout.
2) Equipment elevations are measured from the bottom of tower steel which is 2ft above ground level.

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
240.0	240.0	2		Side Arm Mount [SO 303-1]	1	1/2	1
	237.0	1	Decibel	DB806-XC			
		1	Kathrein	FMO			
236.0	236.0	3	Ericsson	RRUS 12 B2/RRUS A2			1,2
		3	CCI Antennas	HPA-65R-BUU-H6	12 2 3	1-5/8 5/8 3/8	1
		6	Powerwave	7770.00			
		3	Ericsson	RRUS 11 B12			
		6	Powerwave	LGP21401			
		6	Powerwave	TT19-08BP111-001			
		1	Raycap	DC6-48-60-18-8F			
		1		Pipe Mount [PM 601-3]			
		1		Sector Mount [SM 201-3]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
215.0	218.0	6	Andrew	HBXX-6517DS-A2M	18	1-5/8	1
		3	Andrew	LNX-8514DS-A1M			
		1	Antel	BXA-70063-4CF-EDIN-6			
		2	Antel	BXA-70063-6CF-2			
		3	Alcatel Lucent	RRH2X60-AWS			
		3	Alcatel Lucent	RRH2X60-PCS			
	215.0	1		Sector Mount [SM 503-3]			
	212.0	1	RFS Celwave	DB-T1-6Z-8AB-0Z			
201.0	207.0	2	Kathrein	OG-4	2	1-1/4	1
	201.0	2		Side Arm Mount [SO 306-1]			
186.0	189.0	1	Andrew	DB589-A	1 1	7/8 1/2	1
	186.0	1		Side Arm Mount [SO 308-1]			
	184.0	1	Andrew	DB589-A			
12.0	12.0	1	Scala	TY-840	1	1/2	1

Notes:
1) Equipment elevations are measured from the bottom of tower steel which is 2ft above ground level.
2) Existing equipment to be removed; not considered in this analysis.

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
240	240	3		6' Side Arms		
		3		ASPD951		
220	220	4		6' Side Arms		
		4		ASP951		
200	200	3		5' Grid Dishes		
		2		6' Side Arms		
		2		UHF/VHF Antennas		
180	180	3		6' Side Arms		
		3		UHF/VHF Antennas		
170	170	2		6' Side Arms		
		2		UHF/VHF Antennas		
150	150	3		6' Side Arms		
		3		UHF/VHF Antennas		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Tower Drawings	Rohn File #: 25692, dated: 07/05/1990	4841385	CCISITES
Foundation Investigation	WEI Project #: 2009-901, dated 09/16/2009	4468667	CCISITES
Foundation Investigation	GPD Project #: 2015777.841294.06, dated 06/11/2015	D.Palkovic	GPD
Geotechnical Report	WEI Project #: 2009-901, dated 09/16/2009	4468666	CCISITES
Boring Log Review	GPD Project #: 2015777.841294.07, dated 06/17/2015	5751301	CCISITES
Modification Design	GPD Project #: 2009268.80 Rev. A, dated 10/12/2009	4601540	CCISITES
Post-Mod Inspection	GPD Project #: 2009591.00, dated 01/13/2010	4601541	CCISITES
Modification Design	GPD Project #: 2014777.841294.04, dated 09/22/2014	5306639	CCISITES
Post-Mod Inspection	GPD Project #: 2015777.841294.05, dated 06/17/2015	5750961	CCISITES

3.1) Analysis Method

tnxTower (version 7.0.7.0), 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.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	244.917 - 224.792	Leg	ROHN 2.5 STD	3	-10.52	63.41	16.6	Pass
T2	224.792 - 204.625	Leg	ROHN 3 EH	39	-34.34	110.22	31.2	Pass
T3	204.625 - 184.438	Leg	ROHN 3.5 EH	69	-59.93	125.07	47.9	Pass
T4	184.438 - 164.229	Leg	ROHN 4 EH	90	-86.83	159.18	54.6	Pass
T5	164.229 - 144.021	Leg	ROHN 5 EH	111	-113.90	238.65	47.7	Pass
T6	144.021 - 123.813	Leg	ROHN 5 EH	132	-138.47	199.88	69.3	Pass
T7	123.813 - 103.604	Leg	ROHN 6 EH	147	-165.57	302.33	54.8	Pass
T8	103.604 - 83.3333	Leg	ROHN 6 EH	162	-193.32	301.91	64.0	Pass
T9	83.3333 - 63	Leg	ROHN 6 EH	177	-221.44	301.49	73.4	Pass
T10	63 - 42.6667	Leg	ROHN 8 EHS	192	-249.85	384.77	64.9	Pass
T11	42.6667 - 22.3334	Leg	ROHN 8 EHS	207	-255.94	384.77	66.5	Pass
T12	22.3334 - 2	Leg	ROHN 8 EH	240	-283.46	503.91	56.3	Pass
T1	244.917 - 224.792	Diagonal	L1 3/4x1 3/4x3/16	12	-2.25	8.73	25.8 38.5 (b)	Pass
T2	224.792 - 204.625	Diagonal	L1 3/4x1 3/4x3/16	48	-3.81	4.99	76.4	Pass
T3	204.625 - 184.438	Diagonal	L2 1/2x2 1/2x3/16	75	-4.67	9.18	50.9	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
							74.5 (b)	
T4	184.438 - 164.229	Diagonal	L2 1/2x2 1/2x1/4	96	-5.27	9.05	58.2 63.2 (b)	Pass
T5	164.229 - 144.021	Diagonal	L2 1/2x2 1/2x5/16	117	-5.93	8.63	68.7	Pass
T6	144.021 - 123.813	Diagonal	L3x3x5/16	138	-7.19	10.27	70.0	Pass
T7	123.813 - 103.604	Diagonal	L3 1/2x3 1/2x1/4	153	-7.96	11.38	69.9	Pass
T8	103.604 - 83.3333	Diagonal	L4x4x5/16	168	-8.82	17.71	49.8	Pass
T9	83.3333 - 63	Diagonal	L4x4x5/16	183	-9.66	15.04	64.2	Pass
T10	63 - 42.6667	Diagonal	L4x4x5/16	198	-10.43	13.09	79.7	Pass
T11	42.6667 - 22.3334	Diagonal	ROHN 3 STD	228	-18.28	31.03	58.9	Pass
T12	22.3334 - 2	Diagonal	ROHN 3 STD	261	-18.08	29.68	60.9	Pass
T11	42.6667 - 22.3334	Horizontal	ROHN 2.5 STD	224	-9.64	15.16	63.6	Pass
T12	22.3334 - 2	Horizontal	ROHN 3 STD	257	-10.10	25.38	39.8	Pass
T1	244.917 - 224.792	Top Girt	L2x2x1/8	4	-0.10	3.21	3.1	Pass
T2	224.792 - 204.625	Top Girt	L1 3/4x1 3/4x3/16	41	-0.16	3.07	5.0	Pass
T11	42.6667 - 22.3334	Redund Horz 1 Bracing	ROHN 1.5 STD	220	-4.44	13.02	34.1	Pass
T12	22.3334 - 2	Redund Horz 1 Bracing	ROHN 1.5 STD	253	-4.92	11.00	44.7	Pass
T11	42.6667 - 22.3334	Redund Diag 1 Bracing	ROHN 2 STD	221	-4.04	8.53	47.4	Pass
T12	22.3334 - 2	Redund Diag 1 Bracing	ROHN 2 STD	254	-4.22	8.10	52.1	Pass
T11	42.6667 - 22.3334	Redund Hip 1 Bracing	ROHN 1.5 STD	231	-0.03	11.61	0.2	Pass
T12	22.3334 - 2	Redund Hip 1 Bracing	ROHN 1.5 STD	264	-0.02	9.90	0.2	Pass
T11	42.6667 - 22.3334	Redund Hip Diagonal 1 Bracing	Rohn 2.5 STD	232	-0.09	10.15	0.9	Pass
T12	22.3334 - 2	Redund Hip Diagonal 1 Bracing	Rohn 2.5 STD	265	-0.08	9.31	0.9	Pass
T11	42.6667 - 22.3334	Inner Bracing	ROHN 2 STD	236	-0.01	6.24	0.3	Pass
T12	22.3334 - 2	Inner Bracing	ROHN 3 STD	270	-0.02	24.10	0.2	Pass
							Summary	
				Leg (T9)			73.4	Pass
				Diagonal (T10)			79.7	Pass
				Horizontal (T11)			63.6	Pass
				Top Girt (T2)			5.0	Pass
				Redund Horz 1 Bracing (T12)			44.7	Pass
				Redund Diag 1 Bracing (T12)			52.1	Pass
				Redund Hip 1 Bracing (T11)			0.2	Pass
				Redund Hip Diagonal 1 Bracing (T12)			0.9	Pass
				Inner Bracing (T11)			0.3	Pass
				Bolt Checks			74.5	Pass
				Rating =			79.7	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	50.8	Pass
1	Base Foundation	0	41.2	Pass
1	Base Foundation Soil Interaction	0	54.4	Pass

Structure Rating (max from all components) =	**79.7%**

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The tower has sufficient capacity to carry the proposed load configuration. Modifications will not be required to bring the tower into compliance with the TIA-222-G standard for the proposed load configuration.

5) DISCLAIMER OF WARRANTIES

GPD has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

This analysis is limited to the designated maximum wind and seismic conditions per the governing tower standards and code. Wind forces resulting in tower vibrations near the structure's resonant frequencies were not considered in this analysis and are outside the scope of this analysis. Lateral loading from any dynamic response was not evaluated under a time-domain based fatigue analysis.

GPD does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the capability of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

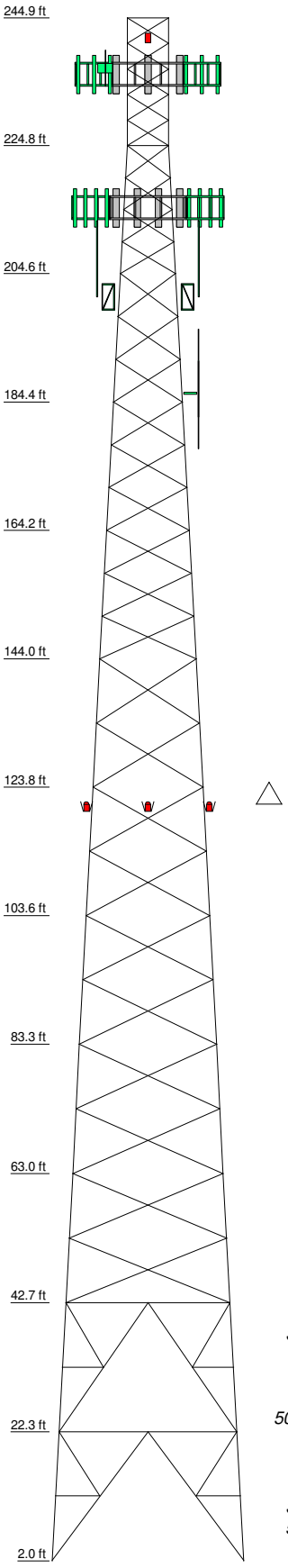
Towers are designed to carry gravity, wind, and ice loads. All members, legs, diagonals, struts, and redundant members provide structural stability to the tower with little redundancy. Absence or removal of a member can trigger catastrophic failure unless a substitute is provided before any removal. Legs carry axial loads and derive their strength from shorter unbraced lengths by the presence of redundant members and their connection to the diagonals with bolts or welds. If the bolts or welds are removed without providing any substitute to the frame, the leg is subjected to a higher unbraced length that immediately reduces its load carrying capacity. If a diagonal is also removed in addition to the connection, the unbraced length of the leg is greatly increased, jeopardizing its load carrying capacity. Failure of one leg can result in a tower collapse because there is no redundancy. Redundant members and diagonals are critical to the stability of the tower.

GPD makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

TNXTOWER OUTPUT

Section	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	ROHN 8 EH	ROHN 8 EHS			ROHN 6 EH		ROHN 5 EH		ROHN 4 EH	ROHN 3.5 EH	ROHN 3 EH	ROHN 2.5 STD
Leg Grade	A572-50											
Diagonals	ROHN 3 STD			L4x4x5/16		L3 1/2x3 1/2x1/4	L3x3x5/16	L2 1/2x2 1/2x5/16	L2 1/2x2 1/2x1/4	L2 1/2x2 1/2x3/16	L1 3/4x1 3/4x3/16	
Diagonal Grade	A572-50	A500-42		A572-50		N.A.	A36					
Top Girts											L1 3/4x1 3/4x3/16	L2x2x1/8
Horizontals	ROHN 3 STD	ROHN 2.5 STD						N.A.				
Red. Horizontals		ROHN 1.5 STD						N.A.				
Red. Diagonals		ROHN 2 STD						N.A.				
Red. Hips		ROHN 1.5 STD						N.A.				
Inner Bracing	ROHN 3 STD	ROHN 2 STD						N.A.				
Face Width (ft)	30.1771	28.0303	25.8835	23.7367	21.59	19.4432	17.2964	15.1496	13.0028	10.8561	8.70928	6.5625
# Panels @ (ft)	1 @ 20.25	1 @ 20.3333		4 @ 10.1667		2 @ 10.1354	4 @ 10.1042	6 @ 6.73611		3 @ 6.72917	4 @ 5.04167	5 @ 4.025
Weight (K)	36.5	5.5	4.4	4.7	4.2	4.0	3.2	2.7	2.7	1.9	1.4	1.1	0.9



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Flash Beacon Lighting	241	(2) HBXX-6517DS-A2M w/ Mount Pipe	215
Side Arm Mount [SO 303-1]	240	(2) HBXX-6517DS-A2M w/ Mount Pipe	215
Side Arm Mount [SO 303-1]	240	BXA-70063-6CF-2 w/ Mount Pipe	215
DB806-XC	240	BXA-70063-4CF-EDIN-6 w/ Mount Pipe	215
FMO	240		
Sector Mount [SM 201-3]	236	BXA-70063-6CF-2 w/ Mount Pipe	215
Pipe Mount [PM 601-3]	236	LNX-8514DS-A1M w/ Mount Pipe	215
(2) 7770.00	236	LNX-8514DS-A1M w/ Mount Pipe	215
(2) 7770.00	236	LNX-8514DS-A1M w/ Mount Pipe	215
(2) 7770.00	236	RRH2X60-PCS	215
HPA-65R-BUU-H6	236	RRH2X60-PCS	215
HPA-65R-BUU-H6	236	RRH2X60-PCS	215
HPA-65R-BUU-H6	236	RRH2X60-AWS	215
(2) LGP21401	236	RRH2X60-AWS	215
(2) LGP21401	236	RRH2X60-AWS	215
(2) LGP21401	236	DB-T1-6Z-8AB-0Z	215
(2) TT19-08BP111-001	236	Side Arm Mount [SO 306-1]	201
(2) TT19-08BP111-001	236	Side Arm Mount [SO 306-1]	201
(2) TT19-08BP111-001	236	OG-4	201
RRUS 11 B12	236	OG-4	201
RRUS 11 B12	236	Side Arm Mount [SO 308-1]	186
RRUS 11 B12	236	DB589-A	186
RRUS 32 B2	236	DB589-A	186
RRUS 32 B2	236	17" Side Light Mount	120
RRUS 32 B2	236	17" Side Light Mount	120
DC6-48-60-18-8F Surge Suppression Unit	236	Side Light	120
		Side Light	120
Sector Mount [SM 503-3]	215	Side Light	120
(2) HBXX-6517DS-A2M w/ Mount Pipe	215	TY-840	12

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A500-42	42 ksi	58 ksi
A36	36 ksi	58 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 93 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 79.7%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 309 K
SHEAR: 34 K

UPLIFT: -255 K
SHEAR: 29 K

AXIAL 188 K
SHEAR 18 K *MOMENT 2619 kip-ft*
TORQUE 9 kip-ft
50 mph WIND - 0.7500 in ICE
AXIAL 65 K
SHEAR 56 K *MOMENT 7512 kip-ft*
TORQUE 32 kip-ft
REACTIONS - 93 mph WIND

GPD
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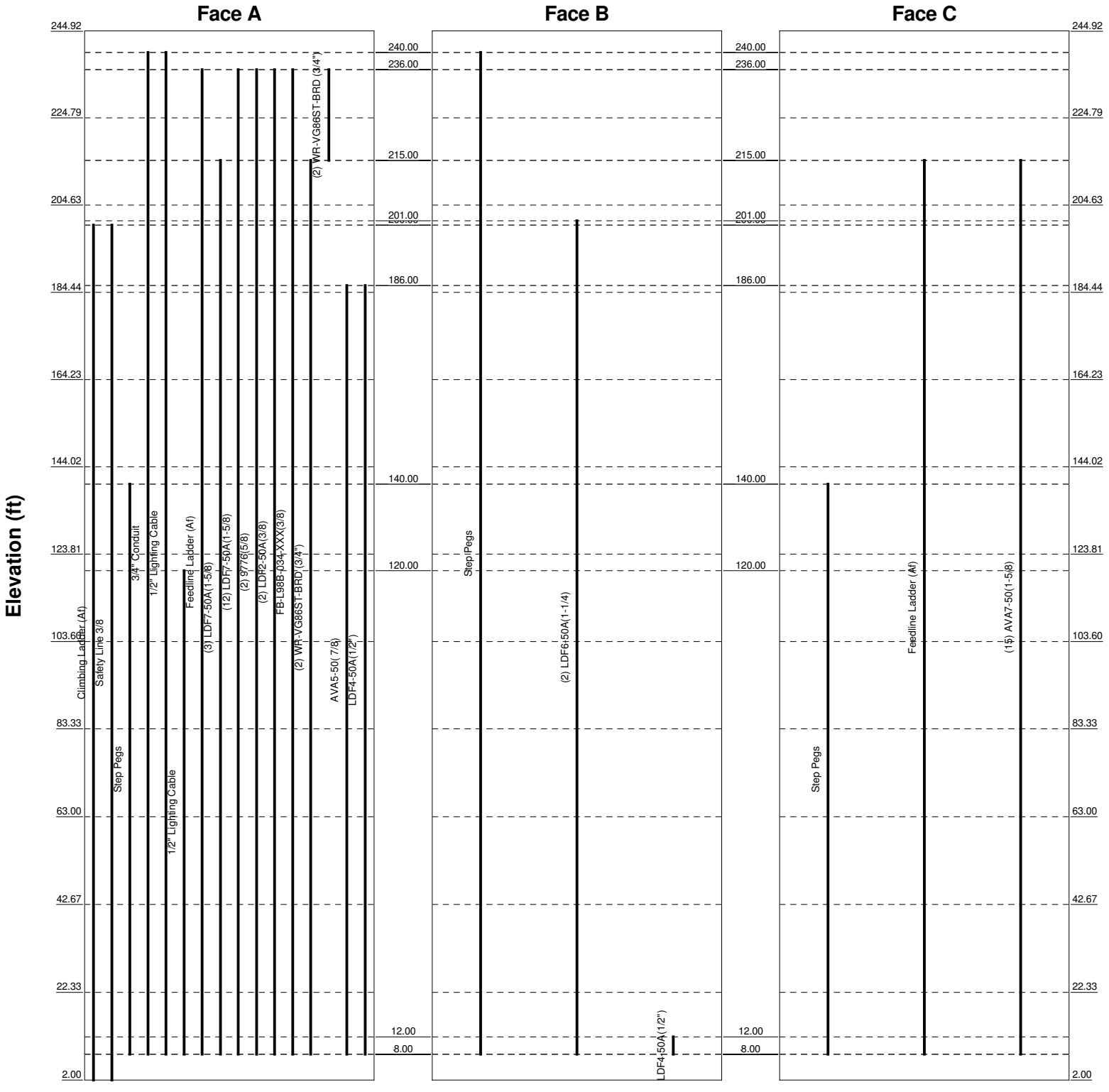
Akron, Ohio 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job:	**BU #: 841294 MONROE-GUINEA ROAD**		
Project:	**2016777.841294.10**		
Client: Crown Castle, Inc	Drawn by: tbeltz	App'd:	
Code: TIA-222-G	Date: 11/08/16	Scale: NTS	
Path: \\AKRN05.gpdco.com\TELECOM\Crown\841294\10\tnx\841294.eri		Dwg No. E-1	

Feed Line Distribution Chart
2' - 244'11-1/32"

Round Flat App In Face App Out Face Truss Leg



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Job: **BU #: 841294 MONROE-GUINEA ROAD**			
Project: **2016777.841294.10**			
Client: Crown Castle, Inc	Drawn by: tbeltz	App'd:	
Code: TIA-222-G	Date: 11/08/16	Scale: NTS	
Path: \\AKRN05.gpdco.com\TELECOM\Crown\841294\10\tnx\841294.en		Dwg No. E-7	

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 244.92 ft above the ground line.
The base of the tower is set at an elevation of 2.00 ft above the ground line.
The face width of the tower is 6.56 ft at the top and 30.18 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
Basic wind speed of 93 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned	√	Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios	√	Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients	√	Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
√	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
√	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component		Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)	√	Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric				

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	244.92-224.79			6.56	1	20.13
T2	224.79-204.63			6.56	1	20.17
T3	204.63-184.44			8.71	1	20.19
T4	184.44-164.23			10.86	1	20.21
T5	164.23-144.02			13.00	1	20.21
T6	144.02-123.81			15.15	1	20.21
T7	123.81-103.60			17.30	1	20.21
T8	103.60-83.33			19.44	1	20.27
T9	83.33-63.00			21.59	1	20.33
T10	63.00-42.67			23.74	1	20.33
T11	42.67-22.33			25.88	1	20.33
T12	22.33-2.00			28.03	1	20.33

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	244.92-224.79	4.03	X Brace	No	No	0.0000	0.0000
T2	224.79-204.63	5.04	X Brace	No	No	0.0000	0.0000
T3	204.63-184.44	6.73	X Brace	No	No	0.0000	0.0000
T4	184.44-164.23	6.74	X Brace	No	No	0.0000	0.0000
T5	164.23-144.02	6.74	X Brace	No	No	0.0000	0.0000
T6	144.02-123.81	10.10	X Brace	No	No	0.0000	0.0000
T7	123.81-103.60	10.10	X Brace	No	No	0.0000	0.0000
T8	103.60-83.33	10.14	X Brace	No	No	0.0000	0.0000
T9	83.33-63.00	10.17	X Brace	No	No	0.0000	0.0000
T10	63.00-42.67	10.17	X Brace	No	No	0.0000	0.0000
T11	42.67-22.33	20.33	K1 Down	No	Yes	0.0000	0.0000
T12	22.33-2.00	20.25	K1 Down	No	Yes	0.0000	1.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 244.92-224.79	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2 224.79-204.63	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T3 204.63-184.44	Pipe	ROHN 3.5 EH	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T4 184.44-164.23	Pipe	ROHN 4 EH	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T5 164.23-144.02	Pipe	ROHN 5 EH	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x5/16	A36 (36 ksi)
T6 144.02-123.81	Pipe	ROHN 5 EH	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T7 123.81-103.60	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A572-50 (50 ksi)
T8 103.60-83.33	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A572-50 (50 ksi)
T9 83.33-63.00	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A572-50 (50 ksi)
T10 63.00-42.67	Pipe	ROHN 8 EHS	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A572-50 (50 ksi)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T11 42.67-22.33	Pipe	ROHN 8 EHS	A572-50 (50 ksi)	Pipe	ROHN 3 STD	A500-42 (42 ksi)
T12 22.33-2.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 244.92-224.79	Equal Angle	L2x2x1/8	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
T2 224.79-204.63	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T11 42.67-22.33	None	Solid Round		A36 (36 ksi)	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)
T12 22.33-2.00	None	Solid Round		A36 (36 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T11 42.67-22.33	Solid Round		A36 (36 ksi)	Pipe	ROHN 2 STD	A572-50 (50 ksi)
T12 22.33-2.00	Solid Round		A36 (36 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T11 42.67-22.33	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 1.5 STD	1
		Diagonal (1)	Pipe	ROHN 2 STD	1
		Hip (1)	Pipe	ROHN 1.5 STD	1
		Hip Diagonal (1)	Pipe	Rohn 2.5 STD	1
T12 22.33-2.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 1.5 STD	1
		Diagonal (1)	Pipe	ROHN 2 STD	1
		Hip (1)	Pipe	ROHN 1.5 STD	1
		Hip Diagonal (1)	Pipe	Rohn 2.5 STD	1

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 244.92-224.79	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 224.79-204.63	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 204.63-184.44	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 184.44-164.23	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 164.23-144.02	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T6 144.02-123.81	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T7 123.81-103.60	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T8 103.60-83.33	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T9 83.33-63.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T10 63.00-42.67	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T11 42.67-22.33	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T12 22.33-2.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 244.92-224.79	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 224.79-204.63	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 204.63-184.44	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 184.44-164.23	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 164.23-144.02	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 144.02-123.81	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 123.81-103.60	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 103.60-83.33	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 83.33-63.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T10 63.00-42.67	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T11 42.67-22.33	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T12 22.33-2.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 244.92-224.79	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 224.79-204.63	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 204.63-184.44	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 184.44-164.23	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 164.23-144.02	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 144.02-123.81	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 123.81-103.60	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 103.60-83.33	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 83.33-63.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 63.00-42.67	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 42.67-22.33	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 22.33-2.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 244.92-224.79	Flange	0.7500 A325N	4	0.5000 A325N	1	0.5000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 224.79-204.63	Flange	0.8750 A325N	4	0.5000 A325N	1	0.5000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 204.63-184.44	Flange	0.8750 A325N	4	0.5000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 184.44-164.23	Flange	1.0000 A325N	4	0.5000 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 164.23-144.02	Flange	1.0000 A325N	4	0.5000 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 144.02-123.81	Flange	1.0000 A325N	6	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 123.81-103.60	Flange	1.0000 A325N	6	0.6250 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 103.60-83.33	Flange	1.0000 A325N	6	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 83.33-63.00	Flange	1.0000 A325N	6	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 63.00-42.67	Flange	1.0000 A325N	8	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T11 42.67-22.33	Flange	1.0000 A325N	8	0.7500 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	2	0.6250 A325N	0
T12 22.33-2.00	Flange	1.0000 A354-BC	0	0.7500 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	2	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Climbing Ladder (Af)	A	No	Af (CaAa)	200.00 - 2.00	0.0000	0.5	1	1	3.8400	3.8400		4.81
Safety Line 3/8	A	No	Ar (CaAa)	200.00 - 2.00	0.0000	0.5	1	1	0.3750	0.3750		0.22
Step Pegs	C	No	Ar (CaAa)	140.00 - 8.00	0.0000	0.5	1	1	0.8000	0.8000		2.72
Step Pegs	A	No	Ar (CaAa)	140.00 - 8.00	0.0000	0.5	1	1	0.8000	0.8000		2.72
Step Pegs	B	No	Ar (CaAa)	240.00 - 8.00	0.0000	0.5	1	1	0.8000	0.8000		2.72
3/4" Conduit	A	No	Ar (CaAa)	240.00 - 8.00	0.0000	0.4825	1	1	0.7500	0.7500		0.50
1/2" Lighting Cable	A	No	Ar (CaAa)	240.00 - 8.00	0.0000	0.4825	1	1	0.6250	0.6250		0.50
1/2" Lighting Cable	A	No	Ar (CaAa)	120.00 - 8.00	0.0000	0.4825	1	1	0.6250	0.6250		0.50
Feedline Ladder (Af)	A	No	Af (CaAa)	236.00 - 8.00	0.0000	0.4	1	1	3.0000	3.0000		8.40
LDF7-50A(1-5/8)	A	No	Ar (CaAa)	215.00 - 8.00	0.0000	0.425	3	3	1.0000	1.9800		0.82
LDF7-50A(1-5/8)	A	No	Ar (CaAa)	236.00 - 8.00	0.0000	0.4	12	4	1.0000	1.9800		0.82
9776(5/8)	A	No	Ar (CaAa)	236.00 - 8.00	0.0000	0.385	2	1	0.7350	0.7350		0.28
LDF2-50A(3/8)	A	No	Ar (CaAa)	236.00 - 8.00	1.0000	0.375	2	1	0.4400	0.4400		0.08
FB-L98B-034-XXX(3/8)	A	No	Ar (CaAa)	236.00 - 8.00	2.0000	0.375	1	1	0.3937	0.3937		0.06
WR-VG86ST-BRD (3/4")	A	No	Ar (CaAa)	215.00 - 8.00	2.0000	0.375	2	2	0.7950	0.7950		0.60
WR-VG86ST-BRD (3/4")	A	No	Ar (CaAa)	236.00 - 215.00	2.0000	0.375	2	2	0.7950	0.7950		0.60
AVA5-50(7/8)	A	No	Ar (CaAa)	186.00 - 8.00	0.0000	0.45	1	1	1.0000	1.1020		0.30
LDF4-50A(1/2")	A	No	Ar (CaAa)	186.00 - 8.00	0.0000	0.45	1	1	0.6300	0.6300		0.15
LDF6-50A(1-1/4)	B	No	Ar (CaAa)	201.00 - 8.00	0.0000	-0.25	2	2	1.0000	1.5500		0.60
Feedline Ladder (Af)	C	No	Af (CaAa)	215.00 - 8.00	0.0000	0.375	1	1	3.0000	3.0000		8.40
AVA7-50(1-5/8)	C	No	Ar (CaAa)	215.00 - 8.00	0.0000	0.4	15	9	1.0000	2.0100		0.70
LDF4-50A(1/2")	B	No	Ar (CaAa)	12.00 - 8.00	0.0000	0.375	1	1	0.6300	0.6300		0.15

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Flash Beacon Lighting	A	None		0.0000	241.00	No Ice	2.70	2.70	0.05
						1/2" Ice	3.10	3.10	0.07
						1" Ice	3.50	3.50	0.09
Side Arm Mount [SO 303-1]	B	None		0.0000	240.00	No Ice	2.24	5.32	0.12
						1/2" Ice	3.19	7.69	0.16
						1" Ice	4.14	10.06	0.20
Side Arm Mount [SO 303-1]	C	None		0.0000	240.00	No Ice	2.24	5.32	0.12
						1/2" Ice	3.19	7.69	0.16
						1" Ice	4.14	10.06	0.20
DB806-XC	C	From Leg	4.00 0.00 -3.00	0.0000	240.00	No Ice	1.14	1.14	0.02
						1/2" Ice	1.68	1.68	0.03
						1" Ice	2.03	2.03	0.04
FMO	C	From Leg	4.00 0.00 -3.00	0.0000	240.00	No Ice	8.40	8.40	0.01
						1/2" Ice	8.81	8.81	0.18
						1" Ice	9.24	9.24	0.36
Sector Mount [SM 201-3]	B	None		0.0000	236.00	No Ice	26.69	26.69	1.08
						1/2" Ice	37.60	37.60	1.49
						1" Ice	48.51	48.51	1.90
Pipe Mount [PM 601-3]	B	None		0.0000	236.00	No Ice	4.39	4.39	0.20
						1/2" Ice	5.48	5.48	0.24
						1" Ice	6.57	6.57	0.28
(2) 7770.00	A	From Leg	1.00 0.00	0.0000	236.00	No Ice	5.51	2.93	0.04
						1/2" Ice	5.87	3.27	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	6.23	3.63	0.11
(2) 7770.00	B	From Leg	1.00	0.0000	236.00	No Ice	5.51	2.93	0.04
			0.00			1/2" Ice	5.87	3.27	0.07
			0.00			1" Ice	6.23	3.63	0.11
(2) 7770.00	C	From Leg	1.00	0.0000	236.00	No Ice	5.51	2.93	0.04
			0.00			1/2" Ice	5.87	3.27	0.07
			0.00			1" Ice	6.23	3.63	0.11
HPA-65R-BUU-H6	A	From Leg	1.00	0.0000	236.00	No Ice	9.66	6.45	0.05
			0.00			1/2" Ice	10.13	6.91	0.11
			0.00			1" Ice	10.61	7.38	0.18
HPA-65R-BUU-H6	B	From Leg	1.00	0.0000	236.00	No Ice	9.66	6.45	0.05
			0.00			1/2" Ice	10.13	6.91	0.11
			0.00			1" Ice	10.61	7.38	0.18
HPA-65R-BUU-H6	C	From Leg	1.00	0.0000	236.00	No Ice	9.66	6.45	0.05
			0.00			1/2" Ice	10.13	6.91	0.11
			0.00			1" Ice	10.61	7.38	0.18
(2) LGP21401	A	From Leg	1.00	0.0000	236.00	No Ice	1.10	0.35	0.01
			0.00			1/2" Ice	1.24	0.44	0.02
			0.00			1" Ice	1.38	0.54	0.03
(2) LGP21401	B	From Leg	1.00	0.0000	236.00	No Ice	1.10	0.35	0.01
			0.00			1/2" Ice	1.24	0.44	0.02
			0.00			1" Ice	1.38	0.54	0.03
(2) LGP21401	C	From Leg	1.00	0.0000	236.00	No Ice	1.10	0.35	0.01
			0.00			1/2" Ice	1.24	0.44	0.02
			0.00			1" Ice	1.38	0.54	0.03
(2) TT19-08BP111-001	A	From Leg	1.00	0.0000	236.00	No Ice	0.55	0.44	0.02
			0.00			1/2" Ice	0.64	0.53	0.02
			0.00			1" Ice	0.74	0.63	0.03
(2) TT19-08BP111-001	B	From Leg	1.00	0.0000	236.00	No Ice	0.55	0.44	0.02
			0.00			1/2" Ice	0.64	0.53	0.02
			0.00			1" Ice	0.74	0.63	0.03
(2) TT19-08BP111-001	C	From Leg	1.00	0.0000	236.00	No Ice	0.55	0.44	0.02
			0.00			1/2" Ice	0.64	0.53	0.02
			0.00			1" Ice	0.74	0.63	0.03
RRUS 11 B12	A	From Leg	1.00	0.0000	236.00	No Ice	2.83	1.18	0.05
			0.00			1/2" Ice	3.04	1.33	0.07
			0.00			1" Ice	3.26	1.48	0.10
RRUS 11 B12	B	From Leg	1.00	0.0000	236.00	No Ice	2.83	1.18	0.05
			0.00			1/2" Ice	3.04	1.33	0.07
			0.00			1" Ice	3.26	1.48	0.10
RRUS 11 B12	C	From Leg	1.00	0.0000	236.00	No Ice	2.83	1.18	0.05
			0.00			1/2" Ice	3.04	1.33	0.07
			0.00			1" Ice	3.26	1.48	0.10
RRUS 32 B2	A	From Leg	1.00	0.0000	236.00	No Ice	2.73	1.67	0.05
			0.00			1/2" Ice	2.95	1.86	0.07
			0.00			1" Ice	3.18	2.05	0.10
RRUS 32 B2	B	From Leg	1.00	0.0000	236.00	No Ice	2.73	1.67	0.05
			0.00			1/2" Ice	2.95	1.86	0.07
			0.00			1" Ice	3.18	2.05	0.10
RRUS 32 B2	C	From Leg	1.00	0.0000	236.00	No Ice	2.73	1.67	0.05
			0.00			1/2" Ice	2.95	1.86	0.07
			0.00			1" Ice	3.18	2.05	0.10
DC6-48-60-18-8F Surge Suppression Unit	A	From Leg	1.00	0.0000	236.00	No Ice	0.92	0.92	0.02
			0.00			1/2" Ice	1.46	1.46	0.04
			0.00			1" Ice	1.64	1.64	0.06
Sector Mount [SM 503-3]	B	None		0.0000	215.00	No Ice	33.64	33.64	1.69
						1/2" Ice	48.17	48.17	2.26

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	62.70	62.70	2.82
(2) HBXX-6517DS-A2M w/ Mount Pipe	A	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	8.95 9.60 10.23	7.14 8.44 9.58	0.07 0.14 0.22
(2) HBXX-6517DS-A2M w/ Mount Pipe	B	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	8.95 9.60 10.23	7.14 8.44 9.58	0.07 0.14 0.22
(2) HBXX-6517DS-A2M w/ Mount Pipe	C	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	8.95 9.60 10.23	7.14 8.44 9.58	0.07 0.14 0.22
BXA-70063-6CF-2 w/ Mount Pipe	A	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87	5.80 6.95 7.82	0.04 0.10 0.17
BXA-70063-4CF-EDIN-6 w/ Mount Pipe	B	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	4.95 5.32 5.71	3.69 4.29 4.91	0.03 0.07 0.12
BXA-70063-6CF-2 w/ Mount Pipe	C	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87	5.80 6.95 7.82	0.04 0.10 0.17
LNX-8514DS-A1M w/ Mount Pipe	A	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	9.60 11.02 12.29	0.08 0.17 0.26
LNX-8514DS-A1M w/ Mount Pipe	B	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	9.60 11.02 12.29	0.08 0.17 0.26
LNX-8514DS-A1M w/ Mount Pipe	C	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	9.60 11.02 12.29	0.08 0.17 0.26
RRH2X60-PCS	A	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.36 1.52 1.68	0.06 0.07 0.09
RRH2X60-PCS	B	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.36 1.52 1.68	0.06 0.07 0.09
RRH2X60-PCS	C	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.36 1.52 1.68	0.06 0.07 0.09
RRH2X60-AWS	A	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	2.10 2.34 2.58	0.06 0.08 0.11
RRH2X60-AWS	B	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	2.10 2.34 2.58	0.06 0.08 0.11
RRH2X60-AWS	C	From Leg	4.00 0.00 3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	2.10 2.34 2.58	0.06 0.08 0.11
DB-T1-6Z-8AB-0Z	C	From Leg	1.00 0.00 -3.00	0.0000	215.00	No Ice 1/2" Ice 1" Ice	4.80 5.07 5.35	2.00 2.19 2.39	0.04 0.08 0.12
Side Arm Mount [SO 306-1]	B	From Leg	2.00 0.00 0.00	0.0000	201.00	No Ice 1/2" Ice 1" Ice	0.98 1.70 2.42	2.18 3.80 5.42	0.04 0.06 0.08
Side Arm Mount [SO 306-1]	C	From Leg	2.00 0.00 0.00	0.0000	201.00	No Ice 1/2" Ice 1" Ice	0.98 1.70 2.42	2.18 3.80 5.42	0.04 0.06 0.08
OG-4	B	From Leg	4.00 0.00	0.0000	201.00	No Ice 1/2" Ice	4.52 7.14	4.52 7.14	0.02 0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			6.00			1" Ice	7.86	7.86	0.11
OG-4	C	From Leg	4.00	0.0000	201.00	No Ice	4.52	4.52	0.02
			0.00			1/2" Ice	7.14	7.14	0.06
			6.00			1" Ice	7.86	7.86	0.11
Side Arm Mount [SO 308-1]	B	From Leg	1.50	0.0000	186.00	No Ice	0.98	3.03	0.05
			0.00			1/2" Ice	1.70	5.22	0.08
			0.00			1" Ice	2.42	7.41	0.10
DB589-A	B	From Leg	3.00	0.0000	186.00	No Ice	2.76	2.76	0.01
			0.00			1/2" Ice	4.17	4.17	0.03
			3.00			1" Ice	5.59	5.59	0.06
DB589-A	B	From Leg	3.00	0.0000	186.00	No Ice	2.76	2.76	0.01
			0.00			1/2" Ice	4.17	4.17	0.03
			-2.00			1" Ice	5.59	5.59	0.06
TY-840	B	From Face	1.00	0.0000	12.00	No Ice	0.25	0.25	0.00
			0.00			1/2" Ice	0.45	0.45	0.00
			0.00			1" Ice	0.65	0.65	0.00
17" Side Light Mount	A	From Face	0.50	0.0000	120.00	No Ice	2.27	2.27	0.06
			0.00			1/2" Ice	3.42	3.42	1.15
			0.00			1" Ice	4.58	4.58	2.26
17" Side Light Mount	C	From Face	0.50	0.0000	120.00	No Ice	2.27	2.27	0.06
			0.00			1/2" Ice	3.42	3.42	1.15
			0.00			1" Ice	4.58	4.58	2.26
Side Light	A	From Leg	1.00	0.0000	120.00	No Ice	0.33	0.33	0.01
			0.00			1/2" Ice	0.47	0.47	0.01
			0.00			1" Ice	0.60	0.60	0.01
Side Light	B	From Leg	1.00	0.0000	120.00	No Ice	0.33	0.33	0.01
			0.00			1/2" Ice	0.47	0.47	0.01
			0.00			1" Ice	0.60	0.60	0.01
Side Light	C	From Leg	1.00	0.0000	120.00	No Ice	0.33	0.33	0.01
			0.00			1/2" Ice	0.47	0.47	0.01
			0.00			1" Ice	0.60	0.60	0.01

Load Combinations

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	244.917 - 224.792	5.614	39	0.2109	0.0216
T2	224.792 - 204.625	4.720	39	0.2052	0.0183
T3	204.625 - 184.438	3.860	39	0.1898	0.0140
T4	184.438 - 164.229	3.080	39	0.1672	0.0112
T5	164.229 - 144.021	2.402	39	0.1428	0.0097
T6	144.021 - 123.813	1.819	39	0.1226	0.0084
T7	123.813 - 103.604	1.328	39	0.1003	0.0073
T8	103.604 - 83.3333	0.917	39	0.0833	0.0061
T9	83.3333 - 63	0.583	39	0.0651	0.0052
T10	63 - 42.6667	0.325	39	0.0462	0.0043
T11	42.6667 - 22.3334	0.140	47	0.0294	0.0033
T12	22.3334 - 2	0.043	43	0.0128	0.0016

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
241.00	Flash Beacon Lighting	39	5.439	0.2102	0.0210	656081
240.00	Side Arm Mount [SO 303-1]	39	5.394	0.2100	0.0209	656081
236.00	Sector Mount [SM 201-3]	39	5.216	0.2092	0.0203	367892
215.00	Sector Mount [SM 503-3]	39	4.295	0.1990	0.0162	84268
201.00	Side Arm Mount [SO 306-1]	39	3.713	0.1862	0.0133	53372
186.00	Side Arm Mount [SO 308-1]	39	3.137	0.1691	0.0113	45567
120.00	17" Side Light Mount	39	1.245	0.0967	0.0071	65311
12.00	TY-840	43	0.018	0.0059	0.0007	167861

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	244.917 - 224.792	21.282	2	0.7978	0.0828
T2	224.792 - 204.625	17.902	2	0.7768	0.0701
T3	204.625 - 184.438	14.642	2	0.7191	0.0535
T4	184.438 - 164.229	11.686	2	0.6332	0.0428
T5	164.229 - 144.021	9.117	2	0.5407	0.0372
T6	144.021 - 123.813	6.904	2	0.4643	0.0319
T7	123.813 - 103.604	5.045	2	0.3799	0.0278
T8	103.604 - 83.3333	3.486	2	0.3153	0.0233
T9	83.3333 - 63	2.220	2	0.2466	0.0199
T10	63 - 42.6667	1.240	2	0.1749	0.0163
T11	42.6667 - 22.3334	0.536	19	0.1112	0.0124
T12	22.3334 - 2	0.163	10	0.0485	0.0059

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
241.00	Flash Beacon Lighting	2	20.620	0.7952	0.0806	183320
240.00	Side Arm Mount [SO 303-1]	2	20.452	0.7945	0.0800	183320
236.00	Sector Mount [SM 201-3]	2	19.778	0.7913	0.0777	102796
215.00	Sector Mount [SM 503-3]	2	16.292	0.7535	0.0620	22624
201.00	Side Arm Mount [SO 306-1]	2	14.084	0.7052	0.0510	14116
186.00	Side Arm Mount [SO 308-1]	2	11.901	0.6405	0.0434	12016
120.00	17" Side Light Mount	2	4.729	0.3663	0.0269	17277
12.00	TY-840	10	0.066	0.0224	0.0028	44212

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	244.917	Leg	A325N	0.7500	4	1.93	29.82	0.065 ✔	1	Bolt Tension
		Diagonal	A325N	0.5000	1	2.20	5.71	0.385 ✔	1	Member Block Shear
		Top Girt	A325N	0.5000	1	0.10	4.13	0.024 ✔	1	Member Bearing
T2	224.792	Leg	A325N	0.8750	4	6.87	40.59	0.169 ✔	1	Bolt Tension
		Diagonal	A325N	0.5000	1	3.86	5.71	0.677 ✔	1	Member Block Shear
		Top Girt	A325N	0.5000	1	0.13	5.71	0.023 ✔	1	Member Block Shear
T3	204.625	Leg	A325N	0.8750	4	12.64	40.59	0.311 ✔	1	Bolt Tension
		Diagonal	A325N	0.5000	1	4.62	6.20	0.745 ✔	1	Member Bearing
T4	184.438	Leg	A325N	1.0000	4	18.54	53.01	0.350 ✔	1	Bolt Tension
		Diagonal	A325X	0.5000	1	5.22	8.27	0.632 ✔	1	Member Bearing
T5	164.229	Leg	A325N	1.0000	4	24.33	53.01	0.459 ✔	1	Bolt Tension
		Diagonal	A325X	0.5000	1	5.93	9.72	0.611 ✔	1	Bolt Shear
T6	144.021	Leg	A325N	1.0000	6	19.69	53.01	0.371 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	1	7.19	12.43	0.578 ✔	1	Bolt Shear
T7	123.813	Leg	A325N	1.0000	6	23.46	53.01	0.443 ✔	1	Bolt Tension
		Diagonal	A325X	0.6250	1	7.86	11.70	0.672 ✔	1	Member Bearing
T8	103.604	Leg	A325N	1.0000	6	27.23	53.01	0.514 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	8.75	17.67	0.495 ✔	1	Member Bearing
T9	83.3333	Leg	A325N	1.0000	6	31.01	53.01	0.585 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	9.66	17.89	0.540 ✔	1	Bolt Shear
T10	63	Leg	A325N	1.0000	8	26.08	53.01	0.492 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	10.32	17.67	0.584 ✔	1	Member Bearing
T11	42.6667	Leg	A325N	1.0000	8	26.49	53.01	0.500 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	3	6.09	17.89	0.341 ✔	1	Bolt Shear
		Horizontal	A325N	0.7500	2	4.93	17.89	0.276 ✔	1	Bolt Shear
T12	22.3334	Diagonal	A325N	0.7500	3	6.03	17.89	0.337 ✔	1	Bolt Shear
		Horizontal	A325N	0.7500	2	5.05	17.89	0.282 ✔	1	Bolt Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	244.917 - 224.792	ROHN 2.5 STD	20.13	4.02	51.0 K=1.00	1.7040	-10.52	63.41	0.166 [1] ✔
T2	224.792 - 204.625	ROHN 3 EH	20.20	5.05	53.3 K=1.00	3.0159	-34.34	110.22	0.312 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	204.625 - 184.438	ROHN 3.5 EH	20.23	6.74	61.9 K=1.00	3.6784	-59.93	125.07	0.479 [1] ✔
T4	184.438 - 164.229	ROHN 4 EH	20.25	6.75	54.8 K=1.00	4.4074	-86.83	159.18	0.546 [1] ✔
T5	164.229 - 144.021	ROHN 5 EH	20.25	6.75	44.0 K=1.00	6.1114	-113.90	238.65	0.477 [1] ✔
T6	144.021 - 123.813	ROHN 5 EH	20.25	10.12	66.1 K=1.00	6.1114	-138.47	199.88	0.693 [1] ✔
T7	123.813 - 103.604	ROHN 6 EH	20.25	10.12	55.3 K=1.00	8.4049	-165.57	302.33	0.548 [1] ✔
T8	103.604 - 83.3333	ROHN 6 EH	20.31	10.15	55.5 K=1.00	8.4049	-193.32	301.91	0.640 [1] ✔
T9	83.3333 - 63	ROHN 6 EH	20.37	10.19	55.7 K=1.00	8.4049	-221.44	301.49	0.734 [1] ✔
T10	63 - 42.6667	ROHN 8 EHS	20.37	10.19	41.9 K=1.00	9.7193	-249.85	384.77	0.649 [1] ✔
T11	42.6667 - 22.3334	ROHN 8 EHS	20.37	10.19	41.9 K=1.00	9.7193	-255.94	384.77	0.665 [1] ✔
T12	22.3334 - 2	ROHN 8 EH	20.37	10.14	42.3 K=1.00	12.7627	-283.46	503.91	0.563 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	244.917 - 224.792	L1 3/4x1 3/4x3/16	7.70	3.60	125.9 K=1.00	0.6211	-2.25	8.73	0.258 [1] ✔
T2	224.792 - 204.625	L1 3/4x1 3/4x3/16	9.83	4.80	167.7 K=1.00	0.6211	-3.81	4.99	0.764 [1] ✔
T3	204.625 - 184.438	L2 1/2x2 1/2x3/16	12.47	6.15	149.0 K=1.00	0.9020	-4.67	9.18	0.509 [1] ✔
T4	184.438 - 164.229	L2 1/2x2 1/2x1/4	14.33	7.05	172.3 K=1.00	1.1900	-5.27	9.05	0.582 [1] ✔
T5	164.229 - 144.021	L2 1/2x2 1/2x5/16	16.25	7.97	195.5 K=1.00	1.4600	-5.93	8.63	0.687 [1] ✔
T6	144.021 - 123.813	L3x3x5/16	19.57	9.71	197.8 K=1.00	1.7773	-7.19	10.27	0.700 [1] ✔
T7	123.813 - 103.604	L3 1/2x3 1/2x1/4	21.44	10.59	183.1 K=1.00	1.6900	-7.96	11.38	0.699 [1] ✔
T8	103.604 - 83.3333	L4x4x5/16	23.37	11.54	175.1 K=1.00	2.4023	-8.82	17.71	0.498 [1] ✔
T9	83.3333 - 63	L4x4x5/16	25.33	12.52	190.0 K=1.00	2.4023	-9.66	15.04	0.642 [1] ✔
T10	63 - 42.6667	L4x4x5/16	27.31	13.42	203.6 K=1.00	2.4023	-10.43	13.09	0.797 [1] ✔
T11	42.6667 - 22.3334	KL/R > 200 (C) - 198 ROHN 3 STD	24.70	12.35	127.4 K=1.00	2.2285	-18.28	31.03	0.589 [1] ✔
T12	22.3334 - 2	ROHN 3 STD	25.26	12.63	130.2 K=1.00	2.2285	-18.08	29.68	0.609 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T11	42.6667 - 22.3334	ROHN 2.5 STD	25.88	12.58	159.4 K=1.00	1.7040	-9.64	15.16	0.636 [1] ✔
T12	22.3334 - 2	ROHN 3 STD	28.03	13.66	140.8 K=1.00	2.2285	-10.10	25.38	0.398 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T1	244.917 - 224.792	L2x2x1/8	6.56	6.11	184.6 K=1.00	0.4844	-0.10	3.21	0.031 [1] ✔
T2	224.792 - 204.625	L1 3/4x1 3/4x3/16 KL/R > 200 (C) - 41	6.56	6.11	213.6 K=1.00	0.6211	-0.16	3.07	0.050 [1] ✔

[1] P_u / ϕP_n controls

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T11	42.6667 - 22.3334	ROHN 1.5 STD	6.47	6.11	117.8 K=1.00	0.7995	-4.44	13.02	0.341 [1] ✔
T12	22.3334 - 2	ROHN 1.5 STD	7.01	6.65	128.1 K=1.00	0.7995	-4.92	11.00	0.447 [1] ✔

[1] P_u / ϕP_n controls

Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T11	42.6667 - 22.3334	ROHN 2 STD	11.78	11.06	168.7 K=1.00	1.0745	-4.04	8.53	0.474 [1] ✔
T12	22.3334 - 2	ROHN 2 STD	12.02	11.35	173.1 K=1.00	1.0745	-4.22	8.10	0.521 [1] ✔

[1] P_u / ϕP_n controls

Redundant Hip (1) Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T11	42.6667 - 22.3334	ROHN 1.5 STD	6.47	6.47	124.7 K=1.00	0.7995	-0.03	11.61	0.002 [1] ✔
T12	22.3334 - 2	ROHN 1.5 STD	7.01	7.01	135.1 K=1.00	0.7995	-0.02	9.90	0.002 [1] ✔

[1] P_u / ϕP_n controls

Redundant Hip Diagonal (1) Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T11	42.6667 - 22.3334	Rohn 2.5 STD	15.37	15.37	194.7 K=1.00	1.7040	-0.09	10.15	0.009 [1] ✓
T12	22.3334 - 2	Rohn 2.5 STD	16.05	16.05	203.3 K=1.00	1.7040	-0.08	9.31	0.009 [1] ✓

[1] P_u / ϕP_n controls

Inner Bracing Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T11	42.6667 - 22.3334	ROHN 2 STD	12.94	12.94	197.3 K=1.00	1.0745	-0.01	6.24	0.002 [1] ✓
T12	22.3334 - 2	ROHN 3 STD	14.02	14.02	144.5 K=1.00	2.2285	-0.02	24.10	0.001 [1] ✓

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T1	244.917 - 224.792	ROHN 2.5 STD	20.13	4.02	51.0	1.7040	7.72	76.68	0.101 [1] ✓
T2	224.792 - 204.625	ROHN 3 EH	20.20	5.05	53.3	3.0159	27.47	135.72	0.202 [1] ✓
T3	204.625 - 184.438	ROHN 3.5 EH	20.23	6.74	61.9	3.6784	50.57	165.53	0.306 [1] ✓
T4	184.438 - 164.229	ROHN 4 EH	20.25	6.75	54.8	4.4074	74.16	198.34	0.374 [1] ✓
T5	164.229 - 144.021	ROHN 5 EH	20.25	6.75	44.0	6.1114	97.33	275.01	0.354 [1] ✓
T6	144.021 - 123.813	ROHN 5 EH	20.25	10.12	66.1	6.1114	118.16	275.01	0.430 [1] ✓
T7	123.813 - 103.604	ROHN 6 EH	20.25	10.12	55.3	8.4049	140.76	378.22	0.372 [1] ✓
T8	103.604 - 83.3333	ROHN 6 EH	20.31	10.15	55.5	8.4049	163.41	378.22	0.432 [1] ✓
T9	83.3333 - 63	ROHN 6 EH	20.37	10.19	55.7	8.4049	186.09	378.22	0.492 [1] ✓
T10	63 - 42.6667	ROHN 8 EHS	20.37	10.19	41.9	9.7193	208.61	437.37	0.477 [1] ✓
T11	42.6667 - 22.3334	ROHN 8 EHS	20.37	10.19	41.9	9.7193	212.21	437.37	0.485 [1] ✓
T12	22.3334 - 2	ROHN 8 EH	20.37	0.08	0.3	12.7627	256.45	574.32	0.447 [1] ✓

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	244.917 - 224.792	L1 3/4x1 3/4x3/16	7.70	3.60	82.9	0.3779	2.20	16.44	0.134 [1] ✓
T2	224.792 - 204.625	L1 3/4x1 3/4x3/16	9.83	4.80	109.6	0.3779	3.86	16.44	0.235 [1] ✓
T3	204.625 - 184.438	L2 1/2x2 1/2x3/16	12.47	6.15	96.4	0.5886	4.62	25.60	0.180 [1] ✓
T4	184.438 - 164.229	L2 1/2x2 1/2x1/4	14.33	7.05	111.6	0.7753	5.22	33.73	0.155 [1] ✓
T5	164.229 - 144.021	L2 1/2x2 1/2x5/16	16.25	7.97	127.2	0.9485	5.93	41.26	0.144 [1] ✓
T6	144.021 - 123.813	L3x3x5/16	19.57	9.71	128.0	1.1572	7.13	50.34	0.142 [1] ✓
T7	123.813 - 103.604	L3 1/2x3 1/2x1/4	21.44	10.59	117.9	1.1269	7.86	54.94	0.143 [1] ✓
T8	103.604 - 83.3333	L4x4x5/16	23.37	11.54	112.7	1.5967	8.75	77.84	0.112 [1] ✓
T9	83.3333 - 63	L4x4x5/16	25.33	12.52	122.2	1.5967	9.52	77.84	0.122 [1] ✓
T10	63 - 42.6667	L4x4x5/16	27.31	13.42	130.8	1.5967	10.32	77.84	0.133 [1] ✓
T11	42.6667 - 22.3334	ROHN 3 STD	24.70	12.35	127.4	2.2285	17.47	84.24	0.207 [1] ✓
T12	22.3334 - 2	ROHN 3 STD	25.26	12.63	130.2	2.2285	17.19	100.28	0.171 [1] ✓

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T11	42.6667 - 22.3334	ROHN 2.5 STD	25.88	12.58	159.4	1.7040	9.87	76.68	0.129 [1] ✓
T12	22.3334 - 2	ROHN 3 STD	28.03	13.66	140.8	2.2285	10.04	100.28	0.100 [1] ✓

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	244.917 - 224.792	L2x2x1/8	6.56	6.11	121.2	0.3047	0.10	13.25	0.008 [1] ✓
T2	224.792 - 204.625	L1 3/4x1 3/4x3/16	6.56	6.11	141.3	0.3779	0.13	16.44	0.008 [1] ✓

[1] P_u / ϕP_n controls

Redundant Horizontal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T11	42.6667 - 22.3334	ROHN 1.5 STD	6.47	6.11	117.8	0.7995	4.44	35.98	0.123 [1] ✓
T12	22.3334 - 2	ROHN 1.5 STD	7.01	6.65	128.1	0.7995	4.92	35.98	0.137 [1] ✓

[1] P_u / ϕP_n controls

Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T11	42.6667 - 22.3334	ROHN 2 STD	11.78	11.06	168.7	1.0745	4.04	48.35	0.084 [1] ✓
T12	22.3334 - 2	ROHN 2 STD	12.02	11.35	173.1	1.0745	4.22	48.35	0.087 [1] ✓

[1] P_u / ϕP_n controls

Redundant Hip (1) Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T11	42.6667 - 22.3334	ROHN 1.5 STD	6.47	6.47	124.7	0.7995	0.02	35.98	0.000 [1] ✓
T12	22.3334 - 2	ROHN 1.5 STD	7.01	7.01	135.1	0.7995	0.01	35.98	0.000 [1] ✓

[1] P_u / ϕP_n controls

Redundant Hip Diagonal (1) Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T11	42.6667 - 22.3334	Rohn 2.5 STD	15.37	15.37	194.7	1.7040	0.08	76.68	0.001 [1] ✓
T12	22.3334 - 2	Rohn 2.5 STD	16.05	16.05	203.3	1.7040	0.07	76.68	0.001 [1] ✓

[1] P_u / ϕP_n controls

Inner Bracing Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T11	42.6667 - 22.3334	ROHN 2 STD	12.94	12.94	197.3	1.0745	0.00	48.35	0.000 [1] ✓

[1] P_u / ϕP_n controls

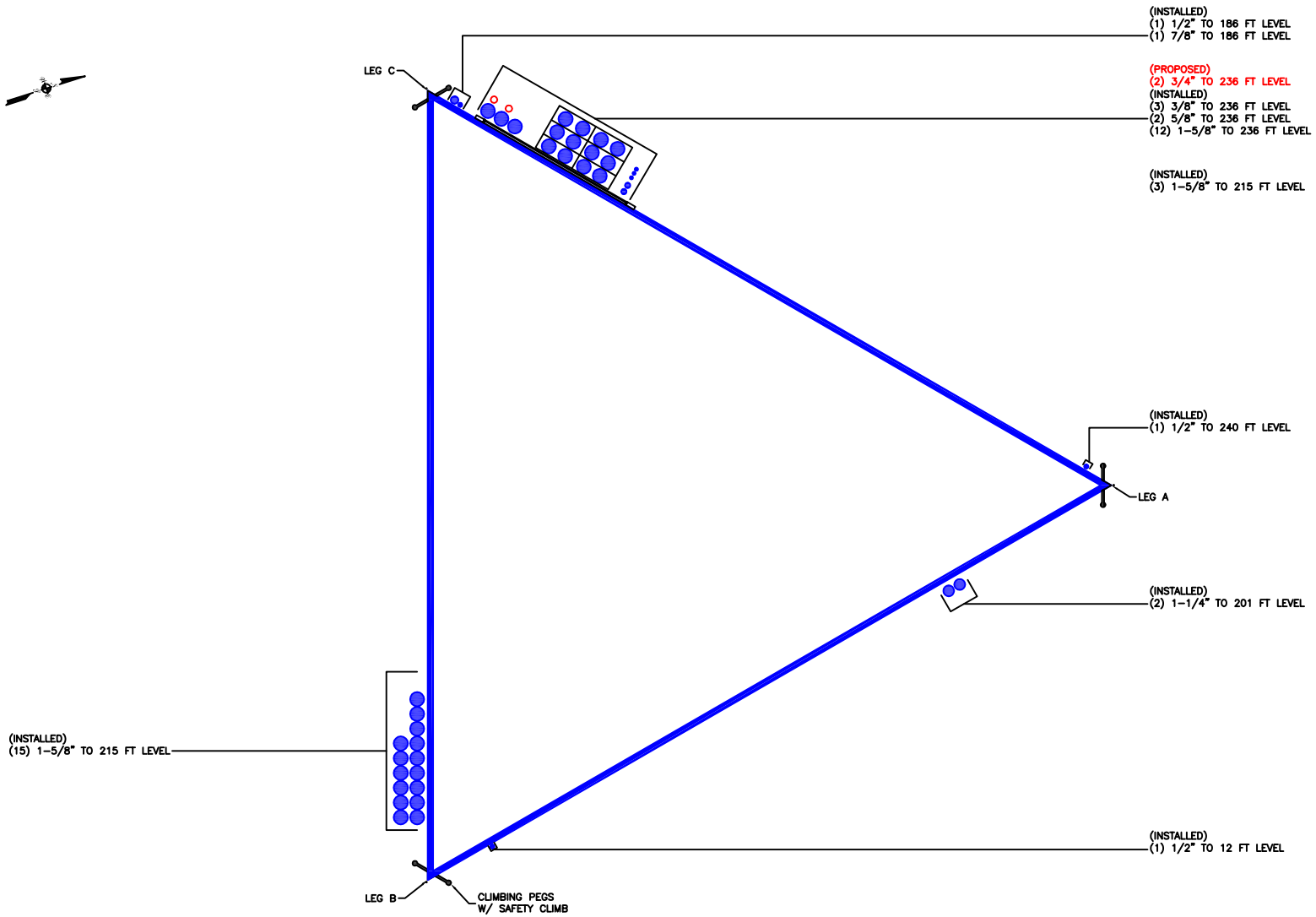
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	244.917 - 224.792	Leg	ROHN 2.5 STD	3	-10.52	63.41	16.6	Pass
T2	224.792 - 204.625	Leg	ROHN 3 EH	39	-34.34	110.22	31.2	Pass
T3	204.625 - 184.438	Leg	ROHN 3.5 EH	69	-59.93	125.07	47.9	Pass
T4	184.438 - 164.229	Leg	ROHN 4 EH	90	-86.83	159.18	54.6	Pass
T5	164.229 - 144.021	Leg	ROHN 5 EH	111	-113.90	238.65	47.7	Pass
T6	144.021 - 123.813	Leg	ROHN 5 EH	132	-138.47	199.88	69.3	Pass
T7	123.813 - 103.604	Leg	ROHN 6 EH	147	-165.57	302.33	54.8	Pass
T8	103.604 - 83.3333	Leg	ROHN 6 EH	162	-193.32	301.91	64.0	Pass
T9	83.3333 - 63	Leg	ROHN 6 EH	177	-221.44	301.49	73.4	Pass
T10	63 - 42.6667	Leg	ROHN 8 EHS	192	-249.85	384.77	64.9	Pass
T11	42.6667 - 22.3334	Leg	ROHN 8 EHS	207	-255.94	384.77	66.5	Pass
T12	22.3334 - 2	Leg	ROHN 8 EH	240	-283.46	503.91	56.3	Pass
T1	244.917 - 224.792	Diagonal	L1 3/4x1 3/4x3/16	12	-2.25	8.73	25.8 38.5 (b)	Pass
T2	224.792 - 204.625	Diagonal	L1 3/4x1 3/4x3/16	48	-3.81	4.99	76.4	Pass
T3	204.625 - 184.438	Diagonal	L2 1/2x2 1/2x3/16	75	-4.67	9.18	50.9 74.5 (b)	Pass
T4	184.438 - 164.229	Diagonal	L2 1/2x2 1/2x1/4	96	-5.27	9.05	58.2 63.2 (b)	Pass
T5	164.229 - 144.021	Diagonal	L2 1/2x2 1/2x5/16	117	-5.93	8.63	68.7	Pass
T6	144.021 - 123.813	Diagonal	L3x3x5/16	138	-7.19	10.27	70.0	Pass
T7	123.813 - 103.604	Diagonal	L3 1/2x3 1/2x1/4	153	-7.96	11.38	69.9	Pass
T8	103.604 - 83.3333	Diagonal	L4x4x5/16	168	-8.82	17.71	49.8	Pass
T9	83.3333 - 63	Diagonal	L4x4x5/16	183	-9.66	15.04	64.2	Pass
T10	63 - 42.6667	Diagonal	L4x4x5/16	198	-10.43	13.09	79.7	Pass
T11	42.6667 - 22.3334	Diagonal	ROHN 3 STD	228	-18.28	31.03	58.9	Pass
T12	22.3334 - 2	Diagonal	ROHN 3 STD	261	-18.08	29.68	60.9	Pass
T11	42.6667 - 22.3334	Horizontal	ROHN 2.5 STD	224	-9.64	15.16	63.6	Pass
T12	22.3334 - 2	Horizontal	ROHN 3 STD	257	-10.10	25.38	39.8	Pass
T1	244.917 - 224.792	Top Girt	L2x2x1/8	4	-0.10	3.21	3.1	Pass
T2	224.792 - 204.625	Top Girt	L1 3/4x1 3/4x3/16	41	-0.16	3.07	5.0	Pass
T11	42.6667 - 22.3334	Redund Horz 1 Bracing	ROHN 1.5 STD	220	-4.44	13.02	34.1	Pass
T12	22.3334 - 2	Redund Horz 1 Bracing	ROHN 1.5 STD	253	-4.92	11.00	44.7	Pass
T11	42.6667 - 22.3334	Redund Diag 1 Bracing	ROHN 2 STD	221	-4.04	8.53	47.4	Pass
T12	22.3334 - 2	Redund Diag 1 Bracing	ROHN 2 STD	254	-4.22	8.10	52.1	Pass
T11	42.6667 - 22.3334	Redund Hip 1 Bracing	ROHN 1.5 STD	231	-0.03	11.61	0.2	Pass
T12	22.3334 - 2	Redund Hip 1 Bracing	ROHN 1.5 STD	264	-0.02	9.90	0.2	Pass
T11	42.6667 - 22.3334	Redund Hip Diagonal 1 Bracing	Rohn 2.5 STD	232	-0.09	10.15	0.9	Pass
T12	22.3334 - 2	Redund Hip Diagonal 1 Bracing	Rohn 2.5 STD	265	-0.08	9.31	0.9	Pass
T11	42.6667 - 22.3334	Inner Bracing	ROHN 2 STD	236	-0.01	6.24	0.3	Pass
T12	22.3334 - 2	Inner Bracing	ROHN 3 STD	270	-0.02	24.10	0.2	Pass

Summary	ELC:	Load Case 5
Leg (T9)	73.4	Pass
Diagonal (T10)	79.7	Pass
Horizontal (T11)	63.6	Pass
Top Girt (T2)	5.0	Pass
Redund Horz 1 Bracing (T12)	44.7	Pass
Redund Diag 1 Bracing (T12)	52.1	Pass
Redund Hip 1 Bracing (T11)	0.2	Pass
Redund Hip Diagonal 1 Bracing (T12)	0.9	Pass
Inner Bracing (T11)	0.3	Pass
Bolt Checks	74.5	Pass
Rating =	79.7	Pass

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 841294 TOWER ID: C_BASELEVEL

CROWN REGION ADDRESS

USA

02/04/14	UPDATED PER WORK ORDER #7135768	AST
25/07/14	UPDATED PER WORK ORDER #7238583 & 600219	MR
12/08/14	UPDATED PER WORK ORDER # 608416	CAH
24/08/15	AS-BUILT INFORMATION ADDED PER WORK ORDER # 1281461	AGF
01/11/16	UPDATED PER WORK ORDER 1321101	JRP

DRAWN BY: VJL
CHECKED BY: AGT
DRAWING DATE: 18/03/14

SITE NUMBER:
SITE NAME:

SITE NAME

MONROE-GUINEA ROAD

BUSINESS UNIT NUMBER

841294

SITE ADDRESS

230 GUINEA ROAD
MONROE, CT 06468
FAIRFIELD COUNTY
USA

SHEET TITLE

BASE LEVEL

SHEET NUMBER

A1-0

BASE LEVEL DRAWING

SCALE: N.T.S.

1

APPENDIX C

ADDITIONAL CALCULATIONS

Anchor Rod Check for Self Supporting Towers

TIA-222-G, Section 4.9.9 Rev. 6.1

Site Data	
BU#:	**841294**
Site Name:	**MONROE-GUINEA ROAD**
App #:	**365403 Rev 1**

Anchor Rod Data		
Qty:	**10**	
Diam:	**1**	in
Rod Material:	**A354 Gr. BC (1/4 to 2-1/2 incl.)**	
Strength (Fu):	125	ksi
Yield (Fy):	109	ksi

* Rod Circle:		in
* e:		in
* # of Rods		1 or 2

Mu= Pu x e:		ft-kips

** Only enter rod circle, offset (e) and number of anchor rods at the extreme fiber to consider if eccentric load due to leg reinforcement exist.*

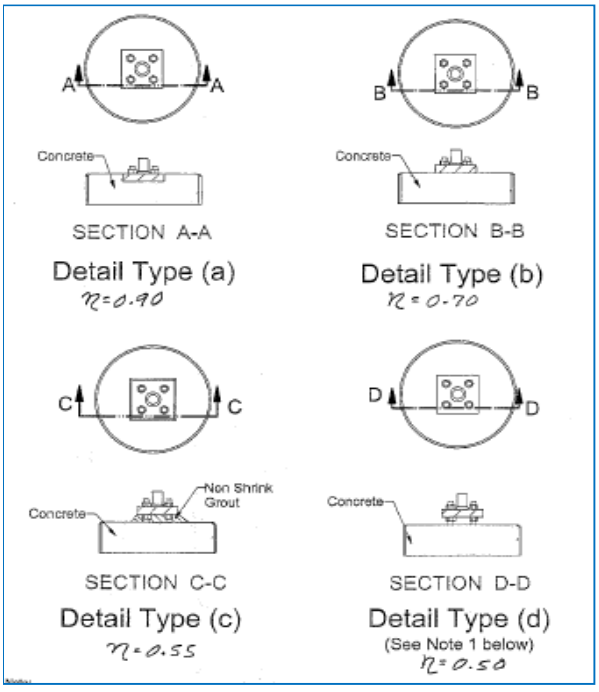


Figure 4-4 of TIA-222-G

Reactions		
Eta Factor, η	**0.55**	Detail Type
Uplift, Pu:	**255**	kips
Shear, Vu:	**29**	kips

I_{ar}:		in
$Mu = 0.65*I_{ar}*V_u$		ft-kips

Anchor Rod Results:

Max Rod (Cu+ Vu/ή):	30.8	Kips
Design Axial, Φ*Fu*Anet:	60.6	Kips
Anchor Rod Stress Ratio:	50.8%	

If Applicable;

Anchor Rod Results with Bending Considered:

When the clear distance from the top of concrete to the bottom of level nut excceeds 1.0 times the diameter of the anchor rod, the following interaction equation shall also be satisfied (see Figure 4-4 of Rev. G):

$$(V_u/\phi R_{nv})^2 + [(P_u/\phi R_{nt}) + (M_u/\phi R_{nm})]^2 <= 1$$

$\phi R_{nv}=\phi*0.45*F_{ub}*A_b=$		kips
$\phi R_{nt}=\phi*F_u*A_{net}=$		kips
$\phi R_{nm}=\phi*F_y*Z=$		ft-kips

Maximum Acceptable Ratio:	**105**	%
Governing Stress Ratio:	**50.8%**	**Pass**

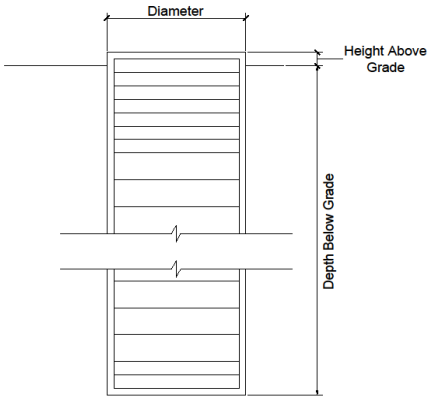
Self Support Tower Drilled Shaft Analysis - Rev G
841294 MONROE-GUINEA ROAD
2017777.841294.10

Tower Reactions		
Uplift		
Axial, P	255.0	kips
Shear, V	29.0	kips
Compression		
Axial, P	309.0	kips
Shear, V	34.0	kips

Overall Capacities		
Compression Capacity	28.8%	**OK**
Uplift Capacity	54.4%	**OK**
Reinforcement Capacity[1]	41.2%	**OK**
As Min OK?	Yes	**OK**
Controlling Capacity	**54.4%**	**OK**

1) See lateral analysis calculations for moment capacity of drilled shaft

Drilled Shaft Details		
Diameter	3.5	ft
Height Above Grade	2	ft
Depth Below Grade	20	ft
Crossectional Area	9.6	ft^2
Perimeter	11.0	ft



Reinforcement Properties	
Reinforcing Known	Yes
Vertical Bar Size	9
# of Existing Vertical Bars	12
Horizontal Bar Type	Tie
Horizontal Bar Size	4
Anchor Rod Embedment	72 in
Anchor Rod Circle	14 in
Min. Concrete Cover	8.5 in
f_c'	3000 psi
F_y	60 ksi

Soil Properties		
Water Table Depth	99	ft
Bearing Type	Net	
Ultimate End Bearing	60	ksf
φ (bearing)	0.75	(TIA-222-G-1 Section 9.4.1)
φ (skin friction - uplift)	0.75	(TIA-222-G-1 Section 9.4.1)
φ (skin friction - comp.)	0.75	(TIA-222-G-1 Section 9.4.1)

Soil Layer	Soil Layer Thickness (ft)	Ultimate Uplift Skin Friction (ksf)	Ultimate Compression Skin Friction (ksf)	Soil Unit Weight (kcf)	Concrete Dry Unit Weight (kcf)
1 (neglected)	3.5	0.000	0.000	0.120	0.150
2	3.5	0.400	0.600	0.120	0.150
3	13	4.000	6.000	0.150	0.150
Totals	20				

Soil Check							
Soil Layer	Soil Layer Thickness (ft)	Effective Soil Unit Weight (kcf)	Effective Concrete Unit Weight (kcf)	Uplift Skin Friction Resistance (kips)	Compression Skin Friction Resistance (kips)	Effective Soil Weight Removed (kips)	Effective Concrete Weight Added (kips)
1 (neglected)	3.5	0.120	0.150	0	0	4.04	7.94
2	3.5	0.120	0.150	15	23	4.04	5.05
3	13.0	0.150	0.150	572	858	18.76	18.76
Totals	20			587.2	880.7	26.8	31.7

End Bearing Resistance:	433.0	kips	Drilled Shaft Weight Resistance:	28.6	kpis
Compression Skin Friction Resistance:	660.6	kips	Uplift Skin Friction Resistance:	440.4	kips
Total Compression Resistance:	1093.5	kips	Total Uplift Resistance:	468.9	kips

Reinforcement Check		
Compression		
A_{st}	12.0	in^2
A_g	1385.4	in^2
ϕ (compression)	0.65	(ACI 318-05 Section 9.3.2.2)
ϕP_n	2195.3 k	(ACI 318-05 Section 10.3.6)
Compression Capacity	15.8% **OK**	
Reinforcment Minimum		
A_g (effective)	692.7211801	in^2 (ACI 318-05 Section 10.8.4)
Compression A_s min. (in^2)	6.9 **OK**	(ACI 318-05 Section 10.9.1)
Tension		
Rebar Cage Diameter	22.9 in	
Rqr'd Development Lenth	61.8 in	(ACI 318-05 Section 12.2.2)
Development Length (in)	59.1 **NG**	<---- Include Tensile Strength Reduction (ld/ld (required))
T_u	255.0 k	
Tensile Strength, ϕP_s (kip)	619.1	
Tensile Capacity	41.2% **OK**	

Caisson Foundation LPile Summary

841294 MONROE-GUINEA ROAD

2017777.841294.10

Reinforcement Check			
Allowable Stress Ratio =	1.05		
Case 1 - Uplift			
Nominal Moment Capacity (Mn) =	7994.6	k-in	
=	666.2	k-ft	
ϕ =	0.9		
Factored Moment Capacity (ϕMn) =	599.59	k-ft	
Maximum Bending Moment (Mu) =	2579407	in-lbs	
=	215.0	k-ft	
Mu/ϕMn =	**35.8%**		**OK**
Case 2 - Compression			
Nominal Moment Capacity (Mn) =	15491.6	k-in	
=	1291.0	k-ft	
ϕ =	0.9		
Factored Moment Capacity (ϕMn) =	1161.87	k-ft	
Maximum Bending Moment (Mu) =	3712990	in-lbs	
=	309.4	k-ft	
Mu/ϕMn =	**26.6%**		**OK**

Deflection Check		
Load Type	Design	
Allowable Deflection	1.5	in
Max Deflection from LPILE	0.3436	in
Deflections are Acceptable		

LPile for Windows, Version 2016-09.007

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

This copy of LPile is being used by:

gpd
Indy

Serial Number of Security Device: 154178656

This copy of LPile is licensed for exclusive use by:

GDP GROUP, Akron,

Use of this program by any entity other than GDP GROUP, Akron,
is a violation of the software license agreement.

Files Used for Analysis

Path to file locations:
\Crown\841294\10\Calculations\Lpile\

Name of input data file:
841294 Lpile.lp9d

Name of output report file:
841294 Lpile.lp9o

Name of plot output file:
841294 Lpile.lp9p

Name of runtime message file:
841294 Lpile.lp9r

Date and Time of Analysis

Date: November 8, 2016 Time: 12:22:14

Problem Title

Project Name:

Job Number:

Client:

Engineer:

Description:

Program Options and Settings

Computational Options:
 - Use unfactored loads in computations (conventional analysis)
Engineering Units Used for Data Input and Computations:
 - US Customary System Units (pounds, feet, inches)

Analysis Control Options:
 - Maximum number of iterations allowed = 1000
 - Deflection tolerance for convergence = 1.0000E-04 in
 - Maximum allowable deflection = 100.0000 in
 - Number of pile increments = 100

Loading Type and Number of Cycles of Loading:
 - Static loading specified

 - Use of p-y modification factors for p-y curves not selected
 - No distributed lateral loads are entered
 - Loading by lateral soil movements acting on pile not selected
 - Input of shear resistance at the pile tip not selected
 - Computation of pile-head foundation stiffness matrix not selected
 - Push-over analysis of pile not selected
 - Buckling analysis of pile not selected

Output Options:
 - Output files use decimal points to denote decimal symbols.
 - Values of pile-head deflection, bending moment, shear force, and
   soil reaction are printed for full length of pile.
 - Printing Increment (nodal spacing of output points) = 1
 - No p-y curves to be computed and reported for user-specified depths
 - Print using wide report formats

Pile Structural Properties and Geometry

Number of pile sections defined = 1
Total length of pile = 22.000 ft
Depth of ground surface below top of pile = 2.0000 ft

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	42.0000
2	22.000	42.0000

Input Structural Properties for Pile Sections:

Pile Section No. 1:

   Section 1 is a round drilled shaft, bored pile, or CIDH pile
   Length of section = 22.000000 ft
   Shaft Diameter = 42.000000 in
   Shear capacity of section = 0.0000 lbs

Ground Slope and Pile Batter Angles

Ground Slope Angle = 0.000 degrees
= 0.000 radians

Pile Batter Angle = 0.000 degrees
= 0.000 radians

Soil and Rock Layering Information

The soil profile is modelled using 3 layers

Layer 1 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	2.000000 ft
Distance from top of pile to bottom of layer	=	5.500000 ft
Effective unit weight at top of layer	=	120.000000 pcf
Effective unit weight at bottom of layer	=	120.000000 pcf
Friction angle at top of layer	=	1.000000 deg.
Friction angle at bottom of layer	=	1.000000 deg.
Subgrade k at top of layer	=	0.0000 pci
Subgrade k at bottom of layer	=	0.0000 pci

NOTE: Default values for subgrade k will be computed for this layer.

Layer 2 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	5.500000 ft
Distance from top of pile to bottom of layer	=	9.000000 ft
Effective unit weight at top of layer	=	120.000000 pcf
Effective unit weight at bottom of layer	=	120.000000 pcf
Friction angle at top of layer	=	34.000000 deg.
Friction angle at bottom of layer	=	34.000000 deg.
Subgrade k at top of layer	=	0.0000 pci
Subgrade k at bottom of layer	=	0.0000 pci

NOTE: Default values for subgrade k will be computed for this layer.

Layer 3 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer	=	9.000000 ft
Distance from top of pile to bottom of layer	=	22.000000 ft
Effective unit weight at top of layer	=	150.000000 pcf
Effective unit weight at bottom of layer	=	150.000000 pcf
Undrained cohesion at top of layer	=	10000. psf
Undrained cohesion at bottom of layer	=	10000. psf
Epsilon-50 at top of layer	=	0.0000
Epsilon-50 at bottom of layer	=	0.0000

NOTE: Default values for Epsilon-50 will be computed for this layer.

(Depth of the lowest soil layer extends 0.000 ft below the pile tip)

**** Warning - Possible Input Data Error ****

Values entered for effective unit weights of soil were outside the limits of
20 pcf to 140 pcf.

The maximum input value for effective unit weight = 150.00 pcf

This data may be erroneous. Please check your data.

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	Angle of Friction deg.	E50 or krm	kpy pci
1	Sand	2.0000	120.0000	--	1.0000	--	default
	(Reese, et al.)	5.5000	120.0000	--	1.0000	--	default
2	Sand	5.5000	120.0000	--	34.0000	--	default
	(Reese, et al.)	9.0000	120.0000	--	34.0000	--	default

3	Soft	9.0000	150.0000	10000.	--	default	--
	Clay	22.0000	150.0000	10000.	--	default	--

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 2

Load No.	Load Type	Condition 1		Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length
1	1	V = 29000. lbs	M =	0.0000 in-lbs	-255000.	No
2	1	V = 34000. lbs	M =	0.0000 in-lbs	309000.	No

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft (Bored Pile):

Length of Section	=	22.000000 ft
Shaft Diameter	=	42.000000 in
Concrete Cover Thickness	=	3.000000 in
Number of Reinforcing Bars	=	12 bars
Yield Stress of Reinforcing Bars	=	60000. psi
Modulus of Elasticity of Reinforcing Bars	=	29000000. psi
Gross Area of Shaft	=	1385. sq. in.
Total Area of Reinforcing Steel	=	12.000000 sq. in.
Area Ratio of Steel Reinforcement	=	0.87 percent
Edge-to-Edge Bar Spacing	=	7.897538 in
Maximum Concrete Aggregate Size	=	0.750000 in
Ratio of Bar Spacing to Aggregate Size	=	10.53
Offset of Center of Rebar Cage from Center of Pile	=	0.0000 in

Axial Structural Capacities:

Nom. Axial Structural Capacity = 0.85 Fc Ac + Fy As	=	4222.278 kips
Tensile Load for Cracking of Concrete	=	-537.570 kips
Nominal Axial Tensile Capacity	=	-720.000 kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches

1	1.128000	1.000000	17.436000	0.00000
2	1.128000	1.000000	15.100019	8.718000
3	1.128000	1.000000	8.718000	15.100019
4	1.128000	1.000000	0.00000	17.436000
5	1.128000	1.000000	-8.718000	15.100019
6	1.128000	1.000000	-15.100019	8.718000
7	1.128000	1.000000	-17.436000	0.00000
8	1.128000	1.000000	-15.100019	-8.718000
9	1.128000	1.000000	-8.718000	-15.100019
10	1.128000	1.000000	0.00000	-17.436000
11	1.128000	1.000000	8.718000	-15.100019
12	1.128000	1.000000	15.100019	-8.718000

NOTE: The positions of the above rebars were computed by LPile

Minimum spacing between any two bars not equal to zero = 7.898 inches
between bars 7 and 8.

Ratio of bar spacing to maximum aggregate size = 10.53

Concrete Properties:

Compressive Strength of Concrete	=	3000. psi
Modulus of Elasticity of Concrete	=	3122019. psi
Modulus of Rupture of Concrete	=	-410.791918 psi
Compression Strain at Peak Stress	=	0.001634
Tensile Strain at Fracture of Concrete	=	-0.0001160
Maximum Coarse Aggregate Size	=	0.750000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 2

Number	Axial Thrust Force kips
1	-255.000
2	309.000

Definitions of Run Messages and Notes:

C = concrete in section has cracked in tension.
Y = stress in reinforcing steel has reached yield stress.
T = ACI 318 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than 0.003. See ACI 318, Section 10.3.4.
Z = depth of tensile zone in concrete section is less than 10 percent of section depth.

Bending Stiffness (EI) = Computed Bending Moment / Curvature.
Position of neutral axis is measured from edge of compression side of pile.
Compressive stresses and strains are positive in sign.
Tensile stresses and strains are negative in sign.

Axial Thrust Force = -255.000 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max Conc Stress ksi	Max Steel Stress ksi	Run Msg
6.25000E-07	369.3919219	591027075.	-55.7325155	-0.00003483	-0.00006108	-0.1270474	-1.7675956	
0.00000125	738.7648709	591011897.	-17.3965857	-0.00002175	-0.00007425	-0.0802909	-2.1455137	
0.00000188	1108.	590989682.	-4.6314250	-0.00000868	-0.00008743	-0.0332493	-2.5241650	
0.00000250	1108.	443242261.	-272.1032502	-0.0006803	-0.0007853	0.00000	-22.7572606	C
0.00000313	1846.	590816640.	5.5574741	0.00001737	-0.0001139	0.0610644	-3.2835727	

0.00000375	1846.	492347200.	-174.4021007	-0.0006540	-0.0008115	0.00000
-23.5108909 C						
0.00000438	1846.	422011886.	-146.4874866	-0.0006409	-0.0008246	0.00000
-23.8877061 C						
0.00000500	1846.	369260400.	-125.5515260	-0.0006278	-0.0008378	0.00000
-24.2645213 C						
0.00000563	1846.	328231467.	-109.2680011	-0.0006146	-0.0008509	0.00000
-24.6413364 C						
0.00000625	1846.	295408320.	-96.2411812	-0.0006015	-0.0008640	0.00000
-25.0181514 C						
0.00000688	1846.	268553018.	-85.5828740	-0.0005884	-0.0008771	0.00000
-25.3949668 C						
0.00000750	1846.	246173600.	-76.7009513	-0.0005753	-0.0008903	0.00000
-25.7717819 C						
0.00000813	1846.	227237169.	-69.1854783	-0.0005621	-0.0009034	0.00000
-26.1485970 C						
0.00000875	1846.	211005943.	-62.7436442	-0.0005490	-0.0009165	0.00000
-26.5254122 C						
0.00000938	1846.	196938880.	-57.1607214	-0.0005359	-0.0009296	0.00000
-26.9022273 C						
0.00001000	1846.	184630200.	-52.2756639	-0.0005228	-0.0009428	0.00000
-27.2790425 C						
0.00001063	1846.	173769600.	-47.9653191	-0.0005096	-0.0009559	0.00000
-27.6558575 C						
0.00001125	1846.	164115733.	-44.1339015	-0.0004965	-0.0009690	0.00000
-28.0326728 C						
0.00001188	1846.	155478063.	-40.7057910	-0.0004834	-0.0009821	0.00000
-28.4094880 C						
0.00001250	1846.	147704160.	-37.6204915	-0.0004703	-0.0009953	0.00000
-28.7863032 C						
0.00001313	1846.	140670629.	-34.8290301	-0.0004571	-0.0010084	0.00000
-29.1631184 C						
0.00001375	1846.	134276509.	-32.2913379	-0.0004440	-0.0010215	0.00000
-29.5399335 C						
0.00001438	1846.	128438400.	-29.9743146	-0.0004309	-0.0010346	0.00000
-29.9167486 C						
0.00001500	1846.	123086800.	-27.8503766	-0.0004178	-0.0010478	0.00000
-30.2935638 C						
0.00001563	1846.	118163328.	-25.8963536	-0.0004046	-0.0010609	0.00000
-30.6703789 C						
0.00001625	1846.	113618585.	-24.0926401	-0.0003915	-0.0010740	0.00000
-31.0471941 C						
0.00001688	1846.	109410489.	-22.4225350	-0.0003784	-0.0010871	0.00000
-31.4240093 C						
0.00001750	1846.	105502971.	-20.8717231	-0.0003653	-0.0011003	0.00000
-31.8008244 C						
0.00001813	1846.	101864938.	-19.4278637	-0.0003521	-0.0011134	0.00000
-32.1776396 C						
0.00001875	1846.	98469440.	-18.0802616	-0.0003390	-0.0011265	0.00000
-32.5544548 C						
0.00001938	1846.	95293006.	-16.8196017	-0.0003259	-0.0011396	0.00000
-32.9312699 C						
0.00002000	1846.	92315100.	-15.6377329	-0.0003128	-0.0011528	0.00000
-33.3080851 C						
0.00002063	1846.	89517673.	-14.5274926	-0.0002996	-0.0011659	0.00000
-33.6849002 C						
0.00002125	1846.	86884800.	-13.4825605	-0.0002865	-0.0011790	0.00000
-34.0617153 C						
0.00002188	1846.	84402377.	-12.4973388	-0.0002734	-0.0011921	0.00000
-34.4385305 C						
0.00002250	1846.	82057867.	-11.5668517	-0.0002603	-0.0012053	0.00000
-34.8153456 C						
0.00002313	1846.	79840086.	-10.6866612	-0.0002471	-0.0012184	0.00000
-35.1921608 C						
0.00002375	1846.	77739032.	-9.8527964	-0.0002340	-0.0012315	0.00000
-35.5689760 C						
0.00002438	1846.	75745723.	-9.0616940	-0.0002209	-0.0012446	0.00000
-35.9457911 C						
0.00002563	1846.	72050810.	-7.5952602	-0.0001946	-0.0012709	0.00000
-36.6994214 C						
0.00002688	1846.	68699609.	-6.2652389	-0.0001684	-0.0012971	0.00000
-37.4530518 C						
0.00002813	1846.	65646293.	-5.0534417	-0.0001421	-0.0013234	0.00000
-38.2066821 C						
0.00002938	1846.	62852834.	-3.9447762	-0.0001159	-0.0013496	0.00000
-38.9603124 C						
0.00003063	1846.	60287412.	-2.9266140	-0.00008963	-0.0013759	0.00000
-39.7139427 C						
0.00003188	1846.	57923200.	-1.9883076	-0.00006338	-0.0014021	0.00000

-40.4675730 C						
0.00003313	1846.	55737419.	-1.1208168	-0.00003713	-0.0014284	0.00000
-41.2212033 C						
0.00003438	1846.	53710604.	-0.3164163	-0.00001088	-0.0014546	0.00000
-41.9748336 C						
0.00003563	1886.	52945142.	0.4261969	0.00001518	-0.0014811	0.0282225
-42.7339790 C						
0.00003688	1962.	53220165.	1.0849265	0.00004001	-0.0015087	0.1173302
-43.5289885 C						
0.00003813	2051.	53808645.	1.6525210	0.00006300	-0.0015382	0.1985984
-44.3770003 C						
0.00003938	2150.	54601783.	2.1478381	0.00008457	-0.0015692	0.2737104
-45.2663943 C						
0.00004063	2256.	55543664.	2.5821359	0.0001049	-0.0016014	0.3435158
-46.1917647 C						
0.00004188	2369.	56581845.	2.9661257	0.0001242	-0.0016345	0.4089319
-47.1467434 C						
0.00004313	2487.	57670171.	3.3096300	0.0001427	-0.0016685	0.4708829
-48.1245132 C						
0.00004438	2608.	58773140.	3.6208698	0.0001607	-0.0017031	0.5301751
-49.1188994 C						
0.00004563	2733.	59895077.	3.9011540	0.0001780	-0.0017383	0.5866750
-50.1316792 C						
0.00004688	2860.	61010877.	4.1566060	0.0001948	-0.0017739	0.6410123
-51.1578957 C						
0.00004813	2988.	62090895.	4.3946012	0.0002115	-0.0018098	0.6940824
-52.1899533 C						
0.00004938	3120.	63179982.	4.6083020	0.0002275	-0.0018462	0.7446237
-53.2395436 C						
0.00005063	3251.	64214079.	4.8114598	0.0002436	-0.0018827	0.7946066
-54.2891192 C						
0.00005188	3385.	65247152.	4.9949035	0.0002591	-0.0019196	0.8424262
-55.3536245 C						
0.00005313	3519.	66231686.	5.1694572	0.0002746	-0.0019566	0.8896797
-56.4185237 C						
0.00005438	3653.	67190521.	5.3315981	0.0002899	-0.0019938	0.9356831
-57.4903426 C						
0.00005563	3789.	68123454.	5.4825848	0.0003050	-0.0020313	0.9805315
-58.5683991 C						
0.00005688	3925.	69010569.	5.6276702	0.0003201	-0.0020687	1.0250119
-59.6452425 C						
0.00005813	4062.	69879195.	5.7618309	0.0003349	-0.0021063	1.0681945
-60.0000000 CY						
0.00005938	4199.	70717071.	5.8887502	0.0003496	-0.0021441	1.1106243
-60.0000000 CY						
0.00006063	4336.	71516100.	6.0110904	0.0003644	-0.0021818	1.1526973
-60.0000000 CY						
0.00006188	4473.	72287664.	6.1269903	0.0003791	-0.0022196	1.1940325
-60.0000000 CY						
0.00006313	4611.	73042289.	6.2347394	0.0003936	-0.0022577	1.2342668
-60.0000000 CY						
0.00006438	4743.	73682101.	6.3349838	0.0004078	-0.0022959	1.2734522
-60.0000000 CY						
0.00006563	4861.	74072645.	6.4211845	0.0004214	-0.0023349	1.3103489
-60.0000000 CY						
0.00006688	4971.	74336834.	6.4992449	0.0004346	-0.0023741	1.3459502
-60.0000000 CY						
0.00006813	5082.	74600412.	6.5710382	0.0004477	-0.0024136	1.3805469
-60.0000000 CY						
0.00006938	5191.	74827574.	6.6387393	0.0004606	-0.0024532	1.4144993
-60.0000000 CY						
0.00007063	5284.	74811926.	6.6928322	0.0004727	-0.0024936	1.4459995
-60.0000000 CY						
0.00007188	5351.	74449699.	6.7278452	0.0004836	-0.0025352	1.4739470
-60.0000000 CY						
0.00007313	5410.	73985478.	6.7560634	0.0004940	-0.0025772	1.5005783
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0.00007438	5469.	73532805.	6.7833775	0.0005045	-0.0026192	1.5269836
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0.00007938	5704.	71856592.	6.8860290	0.0005466	-0.0027872	1.6306528
-60.0000000 CY						
0.00008438	5937.	70370085.	6.9763856	0.0005886	-0.0029551	1.7305136
-60.0000000 CY						
0.00008938	6170.	69037281.	7.0566084	0.0006307	-0.0031231	1.8265892
-60.0000000 CY						
0.00009438	6319.	66960058.	7.0748526	0.0006677	-0.0032961	1.9077279
-60.0000000 CY						
0.00009938	6409.	64491584.	7.0540362	0.0007010	-0.0034728	1.9780452
-60.0000000 CY						

0.0001044	6498.	62256068.	7.0363960	0.0007344	-0.0036493	2.0462787
-60.0000000 CY						
0.0001094	6587.	60221505.	7.0215181	0.0007680	-0.0038258	2.1124060
-60.0000000 CY						
0.0001144	6675.	58361483.	7.0090619	0.0008017	-0.0040021	2.1764045
-60.0000000 CY						
0.0001194	6763.	56654016.	6.9987444	0.0008355	-0.0041783	2.2382507
-60.0000000 CY						
0.0001244	6851.	55080649.	6.9903292	0.0008694	-0.0043543	2.2979203
-60.0000000 CY						
0.0001294	6938.	53625782.	6.9836170	0.0009035	-0.0045302	2.3553884
-60.0000000 CY						
0.0001344	7025.	52276121.	6.9784390	0.0009377	-0.0047060	2.4106293
-60.0000000 CY						
0.0001394	7111.	51020311.	6.9746515	0.0009721	-0.0048817	2.4636169
-60.0000000 CY						
0.0001444	7194.	49827530.	6.9698615	0.0010063	-0.0050575	2.5138388
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0.0001494	7253.	48554994.	6.9487976	0.0010380	-0.0052358	2.5581056
-60.0000000 CY						
0.0001544	7279.	47153536.	6.9035827	0.0010657	-0.0054180	2.5949609
-60.0000000 CY						
0.0001594	7301.	45808340.	6.8562915	0.0010927	-0.0056010	2.6292013
-60.0000000 CY						
0.0001644	7322.	44544109.	6.8123615	0.0011198	-0.0057840	2.6620278
-60.0000000 CY						
0.0001694	7343.	43353663.	6.7715014	0.0011469	-0.0059668	2.6934279
-60.0000000 CY						
0.0001744	7364.	42230643.	6.7334534	0.0011741	-0.0061496	2.7233886
-60.0000000 CY						
0.0001794	7385.	41169399.	6.6979886	0.0012015	-0.0063323	2.7518966
-60.0000000 CY						
0.0001844	7405.	40164895.	6.6649033	0.0012288	-0.0065149	2.7789385
-60.0000000 CY						
0.0001894	7426.	39212623.	6.6340152	0.0012563	-0.0066974	2.8045003
-60.0000000 CY						
0.0001944	7446.	38308543.	6.6051613	0.0012839	-0.0068799	2.8285681
-60.0000000 CY						
0.0001994	7466.	37449016.	6.5781948	0.0013115	-0.0070622	2.8511273
-60.0000000 CY						
0.0002044	7486.	36630762.	6.5529837	0.0013393	-0.0072445	2.8721632
-60.0000000 CY						
0.0002094	7506.	35850812.	6.5294087	0.0013671	-0.0074267	2.8916608
-60.0000000 CY						
0.0002144	7526.	35106352.	6.5070857	0.0013950	-0.0076088	2.9095668
-60.0000000 CY						
0.0002194	7545.	34394235.	6.4842922	0.0014225	-0.0077913	2.9256679
-60.0000000 CY						
0.0002244	7564.	33713152.	6.4629500	0.0014501	-0.0079736	2.9402425
-60.0000000 CY						
0.0002294	7583.	33061062.	6.4429719	0.0014779	-0.0081559	2.9532738
-60.0000000 CY						
0.0002344	7602.	32436099.	6.4242784	0.0015057	-0.0083381	2.9647446
-60.0000000 CY						
0.0002394	7621.	31836550.	6.4067968	0.0015336	-0.0085201	2.9746374
-60.0000000 CY						
0.0002444	7639.	31260846.	6.3904607	0.0015617	-0.0087021	2.9829340
-60.0000000 CY						
0.0002494	7658.	30707539.	6.3752094	0.0015898	-0.0088839	2.9896155
-60.0000000 CY						
0.0002544	7676.	30175297.	6.3609871	0.0016181	-0.0090657	2.9946629
-60.0000000 CY						
0.0002594	7694.	29662891.	6.3477428	0.0016464	-0.0092473	2.9980562
-60.0000000 CY						
0.0002644	7712.	29169183.	6.3354295	0.0016749	-0.0094288	2.9997750
-60.0000000 CY						
0.0002694	7729.	28692995.	6.3240588	0.0017035	-0.0096102	2.9972133
-60.0000000 CY						
0.0002744	7747.	28233409.	6.3135660	0.0017323	-0.0097915	2.9938221
-60.0000000 CY						
0.0003044	7847.	25780241.	6.2661574	0.0019073	-0.0108765	2.9976325
-60.0000000 CY						
0.0003344	7933.	23723570.	6.2304277	0.0020833	-0.0119605	2.9980366
-60.0000000 CY						
0.0003644	7968.	21867199.	6.1560110	0.0022431	-0.0130607	2.9929605
60.0000000 CY						
0.0003944	7976.	20225005.	6.0657926	0.0023922	-0.0141716	2.9972438
60.0000000 CY						
0.0004244	7982.	18808276.	5.9829642	0.0025390	-0.0152847	2.9937025

60.0000000 CY
0.0004544 7987. 17577207. 5.9139659 0.0026872 -0.0163966 2.9991705
60.0000000 CY
0.0004844 7991. 16496893. 5.8568828 0.0028369 -0.0175068 2.9840867
60.0000000 CY
0.0005144 7994. 15541814. 5.8083470 0.0029877 -0.0186161 2.9971744
60.0000000 CY
0.0005444 7997. 14691083. 5.7672903 0.0031396 -0.0197242 2.9958735
60.0000000 CYT
0.0005744 8000. 13928351. 5.7325571 0.0032926 -0.0208311 2.9810907
60.0000000 CYT
0.0006044 8002. 13240941. 5.7024404 0.0034464 -0.0219373 2.9907052
60.0000000 CYT
0.0006344 8005. 12618148. 5.6763332 0.0036009 -0.0230428 2.9989255
60.0000000 CYT
0.0006644 8006. 12050674. 5.6503285 0.0037539 -0.0241498 2.9942677
60.0000000 CYT
0.0006944 8007. 11531759. 5.6264418 0.0039069 -0.0252569 2.9821323
60.0000000 CYT

Axial Thrust Force = 309.000 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max Conc Stress ksi	Max Steel Stress ksi	Run Msg
6.25000E-07	367.1948448	587511752.	114.2571735	0.00007141	0.00004516	0.2560950	2.0671050	
0.00000125	734.3770183	587501615.	67.6591118	0.00008457	0.00003207	0.3016812	2.4450303	
0.00000188	1102.	587480969.	52.1399897	0.00009776	0.00001901	0.3469734	2.8236932	
0.00000250	1469.	587451222.	44.3906037	0.0001110	0.00000598	0.3919693	3.2030938	
0.00000313	1836.	587407888.	39.7490678	0.0001242	-0.00000703	0.4366663	3.5832280	
0.00000375	2202.	587256754.	36.6604756	0.0001375	-0.00002002	0.4810498	3.9639892	
0.00000438	2568.	586907847.	34.4577812	0.0001508	-0.00003300	0.5250959	4.3451873	
0.00000500	2932.	586365223.	32.8078691	0.0001640	-0.00004596	0.5687883	4.7266910	
0.00000563	3294.	585659211.	31.5259681	0.0001773	-0.00005892	0.6121168	5.1084173	
0.00000625	3655.	584821536.	30.5013826	0.0001906	-0.00007187	0.6550747	5.4903131	
0.00000688	4014.	583878879.	29.6637617	0.0002039	-0.00008481	0.6976576	5.8723438	
0.00000750	4371.	582852400.	28.9662589	0.0002172	-0.00009775	0.7398626	6.2544863	
0.00000813	4727.	581758437.	28.3764713	0.0002306	-0.0001107	0.7816877	6.6367248	
0.00000875	4727.	540204263.	25.4562681	0.0002227	-0.0001448	0.7565145	6.4062405	C
0.00000938	4727.	504190646.	24.7733761	0.0002323	-0.0001615	0.7861989	6.6781677	C
0.00001000	4727.	472678730.	24.1600515	0.0002416	-0.0001784	0.8151906	6.9455149	C
0.00001063	4727.	444874099.	23.6026322	0.0002508	-0.0001955	0.8434536	7.2078547	C
0.00001125	4727.	420158872.	23.0952389	0.0002598	-0.0002127	0.8711180	7.4663092	C
0.00001188	4727.	398045247.	22.6307841	0.0002687	-0.0002300	0.8982216	7.7211575	C
0.00001250	4727.	378142984.	22.2035044	0.0002775	-0.0002475	0.9247976	7.9726453	C
0.00001313	4727.	360136176.	21.8088076	0.0002862	-0.0002650	0.9508813	8.2210462	C
0.00001375	4727.	343766349.	21.4430504	0.0002948	-0.0002827	0.9765122	8.4666789	C
0.00001438	4727.	328819986.	21.1033923	0.0003034	-0.0003004	1.0017359	8.7099330	C
0.00001500	4727.	315119154.	20.7875506	0.0003118	-0.0003182	1.0266008	-9.1360654	C

0.00001563	4727.	302514387.	20.4906300	0.0003202	-0.0003361	1.0510165
-9.6512770 C						
0.00001625	4792.	294905918.	20.2131205	0.0003285	-0.0003540	1.0751163
-10.1681044 C						
0.00001688	4879.	289112465.	19.9537589	0.0003367	-0.0003720	1.0989473
-10.6861104 C						
0.00001750	4963.	283621316.	19.7071195	0.0003449	-0.0003901	1.1223348
-11.2070619 C						
0.00001813	5047.	278479567.	19.4763665	0.0003530	-0.0004082	1.1455188
-11.7286035 C						
0.00001875	5130.	273604637.	19.2569126	0.0003611	-0.0004264	1.1683389
-12.2523662 C						
0.00001938	5212.	269015529.	19.0503524	0.0003691	-0.0004446	1.1909479
-12.7768395 C						
0.00002000	5293.	264652074.	18.8532250	0.0003771	-0.0004629	1.2132193
-13.3033294 C						
0.00002063	5374.	260540192.	18.6677383	0.0003850	-0.0004812	1.2353350
-13.8300027 C						
0.00002125	5453.	256605714.	18.4891048	0.0003929	-0.0004996	1.2570716
-14.3591766 C						
0.00002188	5532.	252892080.	18.3209603	0.0004008	-0.0005180	1.2786906
-14.8881720 C						
0.00002250	5610.	249340645.	18.1592923	0.0004086	-0.0005364	1.2999965
-15.4190367 C						
0.00002313	5688.	245959510.	18.0052180	0.0004164	-0.0005549	1.3210970
-15.9506694 C						
0.00002375	5765.	242752771.	17.8595055	0.0004242	-0.0005733	1.3420820
-16.4821281 C						
0.00002438	5842.	239661446.	17.7176521	0.0004319	-0.0005919	1.3626961
-17.0161410 C						
0.00002563	5994.	233915384.	17.4548606	0.0004473	-0.0006290	1.4035481
-18.0840504 C						
0.00002688	6144.	228620492.	17.2108005	0.0004625	-0.0006662	1.4434778
-19.1564138 C						
0.00002813	6294.	223770665.	16.9878667	0.0004778	-0.0007035	1.4828601
-20.2292399 C						
0.00002938	6441.	219265305.	16.7788377	0.0004929	-0.0007409	1.5213538
-21.3063838 C						
0.00003063	6588.	215116974.	16.5875292	0.0005080	-0.0007783	1.5594041
-22.3829443 C						
0.00003188	6733.	211233493.	16.4062184	0.0005229	-0.0008158	1.5965576
-23.4641330 C						
0.00003313	6878.	207634081.	16.2392619	0.0005379	-0.0008533	1.6332807
-24.5446777 C						
0.00003438	7022.	204264623.	16.0822072	0.0005528	-0.0008909	1.6693285
-25.6274559 C						
0.00003563	7164.	201105939.	15.9346061	0.0005677	-0.0009286	1.7047599
-26.7118537 C						
0.00003688	7307.	198153472.	15.7976109	0.0005825	-0.0009662	1.7397657
-27.7956109 C						
0.00003813	7448.	195367007.	15.6673677	0.0005973	-0.0010039	1.7740922
-28.8818353 C						
0.00003938	7589.	192739113.	15.5443849	0.0006121	-0.0010417	1.8078528
-29.9692116 C						
0.00004063	7730.	190265892.	15.4295139	0.0006268	-0.0010794	1.8411924
-31.0559476 C						
0.00004188	7870.	187931643.	15.3217403	0.0006416	-0.0011172	1.8740817
-32.1423928 C						
0.00004313	8009.	185705014.	15.2173136	0.0006562	-0.0011550	1.9062202
-33.2324658 C						
0.00004438	8147.	183597514.	15.1192703	0.0006709	-0.0011928	1.9379418
-34.3218952 C						
0.00004563	8285.	181599307.	15.0270888	0.0006856	-0.0012306	1.9692447
-35.4106767 C						
0.00004688	8424.	179701606.	14.9403033	0.0007003	-0.0012684	2.0001270
-36.4988063 C						
0.00004813	8561.	177886215.	14.8565331	0.0007150	-0.0013063	2.0303897
-37.5890197 C						
0.00004938	8697.	176151346.	14.7763694	0.0007296	-0.0013442	2.0601228
-38.6801422 C						
0.00005063	8834.	174496638.	14.7006139	0.0007442	-0.0013820	2.0894390
-39.7706048 C						
0.00005188	8970.	172916259.	14.6289511	0.0007589	-0.0014199	2.1183363
-40.8604028 C						
0.00005313	9106.	171404923.	14.5610951	0.0007736	-0.0014577	2.1468129
-41.9495315 C						
0.00005438	9241.	169957829.	14.4967862	0.0007883	-0.0014955	2.1748667
-43.0379863 C						
0.00005563	9376.	168561230.	14.4336232	0.0008029	-0.0015334	2.2022678

-44.1292554 C						
0.00005688	9511.	167219996.	14.3733924	0.0008175	-0.0015713	2.2292228
-45.2202670 C						
0.00005813	9645.	165931620.	14.3161604	0.0008321	-0.0016091	2.2557579
-46.3105907 C						
0.00005938	9779.	164692730.	14.2617409	0.0008468	-0.0016470	2.2818712
-47.4002210 C						
0.00006063	9912.	163500231.	14.2099629	0.0008615	-0.0016848	2.3075606
-48.4891526 C						
0.00006188	10045.	162351275.	14.1606692	0.0008762	-0.0017226	2.3328242
-49.5773802 C						
0.00006313	10178.	161243242.	14.1137153	0.0008909	-0.0017603	2.3576599
-50.6648984 C						
0.00006438	10311.	160173565.	14.0689246	0.0009057	-0.0017981	2.3820610
-51.7517825 C						
0.00006563	10443.	159134235.	14.0244606	0.0009204	-0.0018359	2.4058417
-52.8412920 C						
0.00006688	10575.	158129482.	13.9820363	0.0009350	-0.0018737	2.4291961
-53.9300694 C						
0.00006813	10706.	157157370.	13.9415425	0.0009498	-0.0019115	2.4521223
-55.0181086 C						
0.00006938	10837.	156216102.	13.9028779	0.0009645	-0.0019492	2.4746180
-56.1054036 C						
0.00007063	10968.	155304008.	13.8659485	0.0009793	-0.0019870	2.4966812
-57.1919478 C						
0.00007188	11099.	154419533.	13.8306668	0.0009941	-0.0020247	2.5183094
-58.2777349 C						
0.00007313	11229.	153561228.	13.7969514	0.0010089	-0.0020623	2.5395007
-59.3627584 C						
0.00007438	11359.	152727742.	13.7647265	0.0010238	-0.0021000	2.5602525
-60.0000000 CY						
0.00007938	11876.	149617848.	13.6493546	0.0010834	-0.0022503	2.6388177
-60.0000000 CY						
0.00008438	12362.	146507747.	13.5400638	0.0011424	-0.0024013	2.7089251
-60.0000000 CY						
0.00008938	12764.	142813387.	13.4225793	0.0011996	-0.0025541	2.7696212
-60.0000000 CY						
0.00009438	13044.	138210203.	13.2818717	0.0012535	-0.0027103	2.8202140
-60.0000000 CY						
0.00009938	13255.	133381057.	13.1331561	0.0013051	-0.0028686	2.8628176
-60.0000000 CY						
0.0001044	13462.	128981851.	12.9994580	0.0013568	-0.0030269	2.8997227
-60.0000000 CY						
0.0001094	13668.	124960917.	12.8811390	0.0014089	-0.0031849	2.9310494
-60.0000000 CY						
0.0001144	13869.	121263148.	12.7743950	0.0014611	-0.0033427	2.9565887
-60.0000000 CY						
0.0001194	14066.	117827453.	12.6753174	0.0015131	-0.0035006	2.9761963
-60.0000000 CY						
0.0001244	14191.	114098041.	12.5596907	0.0015621	-0.0036616	2.9892985
-60.0000000 CY						
0.0001294	14271.	110310745.	12.4383923	0.0016092	-0.0038245	2.9970171
-60.0000000 CY						
0.0001344	14349.	106781367.	12.3245290	0.0016561	-0.0039876	2.9999639
-60.0000000 CY						
0.0001394	14423.	103484837.	12.2184211	0.0017029	-0.0041508	2.9996185
-60.0000000 CY						
0.0001444	14496.	100404400.	12.1219513	0.0017501	-0.0043136	2.9986192
-60.0000000 CY						
0.0001494	14567.	97518919.	12.0340984	0.0017976	-0.0044762	2.9985063
-60.0000000 CY						
0.0001544	14636.	94806915.	11.9529863	0.0018452	-0.0046385	2.9997386
-60.0000000 CY						
0.0001594	14702.	92247036.	11.8748791	0.0018926	-0.0048012	2.9979962
-60.0000000 CY						
0.0001644	14767.	89835003.	11.8032879	0.0019402	-0.0049636	2.9999815
-60.0000000 CY						
0.0001694	14830.	87556632.	11.7378360	0.0019881	-0.0051257	2.9984842
-60.0000000 CY						
0.0001744	14892.	85402874.	11.6776045	0.0020363	-0.0052875	3.0000000
-60.0000000 CY						
0.0001794	14953.	83361378.	11.6225067	0.0020848	-0.0054490	2.9983366
-60.0000000 CY						
0.0001844	15013.	81425783.	11.5716512	0.0021335	-0.0056102	2.9999872
60.0000000 CY						
0.0001894	15071.	79583095.	11.5230001	0.0021822	-0.0057716	2.9974182
60.0000000 CY						
0.0001944	15128.	77829081.	11.4763115	0.0022307	-0.0059330	2.9997426
60.0000000 CY						

0.0001994	15184.	76158377.	11.4332853	0.0022795	-0.0060942	2.9962775
60.0000000 CY						
0.0002044	15238.	74559639.	11.3928068	0.0023284	-0.0062553	2.9986407
60.0000000 CY						
0.0002094	15290.	73025554.	11.3540939	0.0023773	-0.0064165	2.9999841
60.0000000 CY						
0.0002144	15325.	71488789.	11.3091110	0.0024244	-0.0065794	2.9953195
60.0000000 CY						
0.0002194	15353.	69985976.	11.2621941	0.0024706	-0.0067431	2.9983577
60.0000000 CY						
0.0002244	15370.	68501473.	11.2113832	0.0025156	-0.0069082	2.9998023
60.0000000 CY						
0.0002294	15384.	67070885.	11.1621802	0.0025603	-0.0070734	2.9975988
60.0000000 CY						
0.0002344	15397.	65695002.	11.1137526	0.0026048	-0.0072390	2.9956272
60.0000000 CY						
0.0002394	15409.	64371743.	11.0645113	0.0026486	-0.0074052	2.9981437
60.0000000 CY						
0.0002444	15421.	63102004.	11.0177097	0.0026925	-0.0075713	2.9996027
60.0000000 CY						
0.0002494	15432.	61882430.	10.9732593	0.0027365	-0.0077373	2.9993448
60.0000000 CY						
0.0002544	15443.	60709559.	10.9312378	0.0027806	-0.0079031	2.9947487
60.0000000 CY						
0.0002594	15454.	59581471.	10.8911694	0.0028249	-0.0080689	2.9957558
60.0000000 CY						
0.0002644	15465.	58495614.	10.8529473	0.0028692	-0.0082345	2.9980878
60.0000000 CY						
0.0002694	15475.	57449630.	10.8164723	0.0029137	-0.0084001	2.9995065
60.0000000 CY						
0.0002744	15485.	56437082.	10.7830781	0.0029586	-0.0085651	3.0000000
60.0000000 CY						
0.0003044	15529.	51018717.	10.6092924	0.0032292	-0.0095545	2.9999939
60.0000000 CYT						
0.0003344	15556.	46522961.	10.4830700	0.0035053	-0.0105385	2.9993423
60.0000000 CYT						
0.0003644	15578.	42752163.	10.3889023	0.0037855	-0.0115183	2.9949313
60.0000000 CYT						
0.0003944	15578.	39500018.	10.4307734	0.0041136	-0.0124501	2.9914313
60.0000000 CYT						

Summary of Results for Nominal (Unfactored) Moment Capacity for Section 1

Moment values interpolated at maximum compressive strain = 0.003
or maximum developed moment if pile fails at smaller strains.

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
1	-255.000	7994.575	0.00300000
2	309.000	15491.639	0.00300000

Note that the values of moment capacity in the table above are not
factored by a strength reduction factor (phi-factor).

In ACI 318, the value of the strength reduction factor depends on whether
the transverse reinforcing steel bars are tied hoops (0.65) or spirals (0.70).

The above values should be multiplied by the appropriate strength reduction
factor to compute ultimate moment capacity according to ACI 318, Section
9.3.2.2 or the value required by the design standard being followed.

The following table presents factored moment capacities and corresponding
bending stiffnesses computed for common resistance factor values used for
reinforced concrete sections.

Axial Load No.	Resist. Factor for Moment	Nominal Moment Cap in-kips	Ult. (Fac) Ax. Thrust kips	Ult. (Fac) Moment Cap in-kips	Bend. Stiff. at Ult Mom kip-in^2
1	0.65	7995.	-165.750000	5196.	74826675.
2	0.65	15492.	200.850000	10070.	162150650.
1	0.70	7995.	-178.500000	5596.	72624017.
2	0.70	15492.	216.300000	10844.	156169711.

1	0.75	7995.	-191.250000	5996.	70035322.
2	0.75	15492.	231.750000	11619.	151165524.

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	2.0000	0.00	N.A.	No	0.00	543.2796
2	5.5000	3.5000	Yes	No	543.2796	98013.
3	9.0000	0.9169	No	No	98556.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Computed Values of Pile Loading and Deflection for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 29000.0 lbs
Applied moment at pile head = 0.0 in-lbs
Axial thrust load on pile head = -255000.0 lbs

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Lat. Distrib. Load lb/inch
0.00	0.3436	4.66E-04	29000.	-0.00328	0.00	5.91E+11	0.00	0.00	0.00
0.2200	0.3349	74349.	29000.	-0.00328	0.00	5.91E+11	0.00	0.00	0.00
0.4400	0.3263	148699.	29000.	-0.00328	0.00	5.91E+11	0.00	0.00	0.00
0.6600	0.3176	223049.	29000.	-0.00328	0.00	5.91E+11	0.00	0.00	0.00
0.8800	0.3089	297399.	29000.	-0.00328	0.00	5.91E+11	0.00	0.00	0.00
1.1000	0.3003	371751.	29000.	-0.00328	0.00	5.91E+11	0.00	0.00	0.00
1.3200	0.2916	446104.	29000.	-0.00328	0.00	5.91E+11	0.00	0.00	0.00
1.5400	0.2830	520458.	29000.	-0.00328	0.00	5.91E+11	0.00	0.00	0.00
1.7600	0.2743	594813.	29000.	-0.00327	0.00	5.91E+11	0.00	0.00	0.00
1.9800	0.2657	669171.	29000.	-0.00327	0.00	5.91E+11	0.00	0.00	0.00
2.2000	0.2570	743530.	29000.	-0.00327	0.00	5.91E+11	-0.2278	2.3395	0.00
2.4200	0.2484	817890.	28999.	-0.00326	0.00	5.91E+11	-0.4623	4.9130	0.00
2.6400	0.2398	892249.	28997.	-0.00326	0.00	5.91E+11	-0.6801	7.4865	0.00
2.8600	0.2312	966606.	28995.	-0.00326	0.00	5.91E+11	-0.8811	10.0600	0.00
3.0800	0.2226	1040960.	28993.	-0.00325	0.00	5.91E+11	-1.0653	12.6335	0.00
3.3000	0.2140	1115310.	28990.	-0.00325	0.00	4.46E+11	-1.2330	15.2070	0.00

3.5200	0.2055	1189656.	28986.	-0.00324	0.00	4.72E+11	-1.3840	17.7805	0.00
3.7400	0.1969	1263996.	28982.	-0.00323	0.00	4.55E+11	-1.5184	20.3540	0.00
3.9600	0.1884	1338331.	28978.	-0.00323	0.00	5.68E+11	-1.6364	22.9275	0.00
4.1800	0.1799	1412658.	28974.	-0.00322	0.00	5.83E+11	-1.7379	25.5009	0.00
4.4000	0.1714	1486978.	28969.	-0.00321	0.00	5.77E+11	-1.8230	28.0744	0.00
4.6200	0.1630	1561289.	28964.	-0.00321	0.00	5.88E+11	-1.8917	30.6479	0.00
4.8400	0.1545	1635592.	28959.	-0.00320	0.00	5.82E+11	-1.9442	33.2214	0.00
5.0600	0.1461	1709887.	28954.	-0.00319	0.00	5.91E+11	-1.9805	35.7949	0.00
5.2800	0.1377	1784173.	28949.	-0.00318	0.00	5.86E+11	-2.0006	38.3684	0.00
5.5000	0.1293	1858450.	28900.	-0.00317	0.00	3.88E+11	-35.0807	716.4830	0.00
5.7200	0.1209	1932492.	27985.	-0.00313	0.00	8.12E+10	-657.8651	14365.	0.00
5.9400	0.1127	2001990.	26259.	-0.00305	0.00	5.35E+10	-649.5549	15215.	0.00
6.1600	0.1048	2067028.	24560.	-0.00295	0.00	5.39E+10	-637.5592	16064.	0.00
6.3800	0.09711	2127691.	22897.	-0.00285	0.00	5.44E+10	-622.1698	16914.	0.00
6.6000	0.08972	2184087.	21279.	-0.00275	0.00	5.49E+10	-603.6806	17763.	0.00
6.8200	0.08260	2236346.	19714.	-0.00264	0.00	5.54E+10	-582.3881	18613.	0.00
7.0400	0.07577	2284618.	18208.	-0.00253	0.00	5.58E+10	-558.5917	19462.	0.00
7.2600	0.06922	2329069.	16767.	-0.00243	0.00	5.62E+10	-532.5923	20312.	0.00
7.4800	0.06296	2369882.	15398.	-0.00232	0.00	5.66E+10	-504.6930	21161.	0.00
7.7000	0.05700	2407252.	14104.	-0.00220	0.00	5.69E+10	-475.1989	22011.	0.00
7.9200	0.05132	2441385.	12891.	-0.00209	0.00	5.73E+10	-444.4155	22861.	0.00
8.1400	0.04595	2472497.	11759.	-0.00198	0.00	5.75E+10	-412.6502	23710.	0.00
8.3600	0.04087	2500809.	10713.	-0.00187	0.00	5.78E+10	-380.2113	24560.	0.00
8.5800	0.03610	2526548.	9752.	-0.00175	0.00	5.80E+10	-347.4079	25409.	0.00
8.8000	0.03162	2549943.	8878.	-0.00164	0.00	5.82E+10	-314.5495	26259.	0.00
9.0200	0.02746	2571224.	5968.	-0.00152	0.00	5.84E+10	-1890.	181758.	0.00
9.2400	0.02360	2579407.	1075.	-0.00140	0.00	5.85E+10	-1817.	203223.	0.00
9.4600	0.02005	2575008.	-3618.	-0.00129	0.00	5.85E+10	-1739.	228965.	0.00
9.6800	0.01680	2558570.	-8099.	-0.00117	0.00	5.83E+10	-1656.	260256.	0.00
9.9000	0.01386	2530666.	-12357.	-0.00106	0.00	5.81E+10	-1569.	298891.	0.00
10.1200	0.01123	2491903.	-16379.	-9.41E-04	0.00	5.77E+10	-1477.	347479.	0.00
10.3400	0.00889	2442918.	-20151.	-8.28E-04	0.00	5.72E+10	-1380.	409922.	0.00
10.5600	0.00685	2384388.	-23660.	-7.16E-04	0.00	5.67E+10	-1278.	492273.	0.00
10.7800	0.00511	2317027.	-26891.	-6.06E-04	0.00	5.61E+10	-1169.	604297.	0.00
11.0000	0.00365	2241588.	-29827.	-4.98E-04	0.00	5.54E+10	-1055.	762424.	0.00
11.2200	0.00248	2158869.	-32453.	-3.93E-04	0.00	5.46E+10	-934.5238	995315.	0.00
11.4400	0.00158	2069707.	-34756.	-2.90E-04	0.00	5.39E+10	-809.9137	1353171.	0.00
11.6600	9.49E-04	1974968.	-36732.	-1.90E-04	0.00	5.33E+10	-687.0081	1911068.	0.00
11.8800	5.76E-04	1875507.	-38410.	-1.06E-04	0.00	7.12E+10	-584.2828	2676139.	0.00
12.1000	3.87E-04	1772021.	-39863.	-6.75E-05	0.00	5.68E+11	-516.6904	3522845.	

0.00								
12.3200	2.20E-04	1664939.	-41118.	-5.93E-05	0.00	5.32E+11	-433.7789	5211345.
0.00								
12.5400	7.41E-05	1554839.	-42112.	-5.16E-05	0.00	5.79E+11	-319.3705	1.14E+07
0.00								
12.7600	-5.28E-05	1442518.	-42200.	-4.48E-05	0.00	5.74E+11	252.9091	1.26E+07
0.00								
12.9800	-1.62E-04	1331965.	-41343.	-3.81E-05	0.00	5.32E+11	395.7569	6438907.
0.00								
13.2000	-2.54E-04	1224174.	-40198.	-3.13E-05	0.00	4.55E+11	472.2979	4904631.
0.00								
13.4200	-3.27E-04	1119679.	-38886.	-2.44E-05	0.00	4.50E+11	520.9969	4200633.
0.00								
13.6400	-3.83E-04	1018820.	-37466.	-1.89E-05	0.00	5.91E+11	555.3809	3825323.
0.00								
13.8600	-4.27E-04	921835.	-35964.	-1.45E-05	0.00	5.91E+11	581.8411	3596243.
0.00								
14.0800	-4.60E-04	828908.	-34401.	-1.06E-05	0.00	5.91E+11	602.3614	3456293.
0.00								
14.3000	-4.83E-04	740182.	-32790.	-7.13E-06	0.00	5.91E+11	618.1616	3376732.
0.00								
14.5200	-4.98E-04	655766.	-31143.	-4.01E-06	0.00	5.91E+11	630.0542	3341679.
0.00								
14.7400	-5.04E-04	575744.	-29468.	-1.26E-06	0.00	5.91E+11	638.6125	3341874.
0.00								
14.9600	-5.04E-04	500174.	-27775.	1.14E-06	0.00	5.91E+11	644.2594	3371810.
0.00								
15.1800	-4.98E-04	429095.	-26070.	3.21E-06	0.00	5.91E+11	647.3179	3428296.
0.00								
15.4000	-4.87E-04	362530.	-24360.	4.98E-06	0.00	5.91E+11	648.0419	3509694.
0.00								
15.6200	-4.72E-04	300482.	-22651.	6.46E-06	0.00	5.91E+11	646.6359	3615495.
0.00								
15.8400	-4.53E-04	242942.	-20948.	7.68E-06	0.00	5.91E+11	643.2678	3746093.
0.00								
16.0600	-4.32E-04	189886.	-19257.	8.64E-06	0.00	5.91E+11	638.0776	3902675.
0.00								
16.2800	-4.08E-04	141278.	-17581.	9.38E-06	0.00	5.91E+11	631.1841	4087190.
0.00								
16.5000	-3.82E-04	97069.	-15926.	9.92E-06	0.00	5.91E+11	622.6885	4302382.
0.00								
16.7200	-3.55E-04	57201.	-14296.	1.03E-05	0.00	5.91E+11	612.6780	4551883.
0.00								
16.9400	-3.28E-04	21603.	-12693.	1.04E-05	0.00	5.91E+11	601.2272	4840372.
0.00								
17.1600	-3.00E-04	-9805.	-11123.	1.05E-05	0.00	5.91E+11	588.3996	5173806.
0.00								
17.3800	-2.73E-04	-37112.	-9588.	1.04E-05	0.00	5.91E+11	574.2475	5559774.
0.00								
17.6000	-2.46E-04	-60417.	-8093.	1.01E-05	0.00	5.91E+11	558.8114	6007990.
0.00								
17.8200	-2.19E-04	-79828.	-6639.	9.83E-06	0.00	5.91E+11	542.1182	6531034.
0.00								
18.0400	-1.94E-04	-95460.	-5232.	9.44E-06	0.00	5.91E+11	524.1780	7145460.
0.00								
18.2600	-1.69E-04	-107439.	-3873.	8.98E-06	0.00	5.91E+11	504.9784	7873521.
0.00								
18.4800	-1.46E-04	-115899.	-2567.	8.48E-06	0.00	5.91E+11	484.4759	8745954.
0.00								
18.7000	-1.25E-04	-120983.	-1317.	7.95E-06	0.00	5.91E+11	462.5818	9806696.
0.00								
18.9200	-1.04E-04	-122843.	-126.8885	7.41E-06	0.00	5.91E+11	439.1383	1.11E+07
0.00								
19.1400	-8.54E-05	-121643.	999.0934	6.86E-06	0.00	5.91E+11	413.8783	1.28E+07
0.00								
19.3600	-6.80E-05	-117558.	2055.	6.33E-06	0.00	5.91E+11	386.3504	1.50E+07
0.00								
19.5800	-5.20E-05	-110782.	3035.	5.82E-06	0.00	5.91E+11	355.7680	1.81E+07
0.00								
19.8000	-3.73E-05	-101526.	3928.	5.35E-06	0.00	5.91E+11	320.6604	2.27E+07
0.00								
20.0200	-2.38E-05	-90035.	4718.	4.92E-06	0.00	5.91E+11	277.8789	3.09E+07
0.00								
20.2400	-1.13E-05	-76608.	5373.	4.55E-06	0.00	5.91E+11	218.4116	5.10E+07
0.00								
20.4600	2.33E-07	-61659.	5658.	4.24E-06	0.00	5.91E+11	-2.9135	3.31E+07
0.00								
20.6800	1.11E-05	-46731.	5363.	3.99E-06	0.00	5.91E+11	-220.0037	5.25E+07
0.00								

20.9000	2.13E-05	-33336.	4709.	3.82E-06	0.00	5.91E+11	-275.6469	3.41E+07	0.00
21.1200	3.12E-05	-21862.	3929.	3.69E-06	0.00	5.91E+11	-315.0183	2.67E+07	0.00
21.3400	4.08E-05	-12584.	3056.	3.62E-06	0.00	5.91E+11	-346.8390	2.24E+07	0.00
21.5600	5.03E-05	-5724.	2104.	3.57E-06	0.00	5.91E+11	-374.2969	1.97E+07	0.00
21.7800	5.97E-05	-1472.	1083.	3.56E-06	0.00	5.91E+11	-398.9349	1.76E+07	0.00
22.0000	6.91E-05	0.00	0.00	3.55E-06	0.00	5.91E+11	-421.5997	8056765.	0.00

* This analysis computed pile response using nonlinear moment-curvature relationships. Values of total stress due to combined axial and bending stresses are computed only for elastic sections only and do not equal the actual stresses in concrete and steel. Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 1:

```
Pile-head deflection             =     0.34359615 inches
Computed slope at pile head      =    -0.00328386 radians
Maximum bending moment           =       2579407. inch-lbs
Maximum shear force              =        -42200. lbs
Depth of maximum bending moment  =     9.24000000 feet below pile head
Depth of maximum shear force     =    12.76000000 feet below pile head
Number of iterations             =             41
Number of zero deflection points =              2
```

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 2

Pile-head conditions are Shear and Moment (Loading Type 1)

```
Shear force at pile head                          =      34000.0 lbs
Applied moment at pile head                       =          0.0 in-lbs
Axial thrust load on pile head                    =     309000.0 lbs
```

Depth X	Deflect. y	Bending Moment	Shear Force	Slope S	Total Stress	Bending Stiffness	Soil Res. p	Soil Spr. Es*h	Distrib. Lat. Load
feet	inches	in-lbs	lbs	radians	psi*	in-lb^2	lb/inch	lb/inch	lb/inch
0.00	0.08872	-2.34E-06	34000.	-7.82E-04	0.00	5.88E+11	0.00	0.00	0.00
0.2200	0.08666	90398.	34000.	-7.82E-04	0.00	5.88E+11	0.00	0.00	0.00
0.4400	0.08459	180796.	34000.	-7.81E-04	0.00	5.88E+11	0.00	0.00	0.00
0.6600	0.08253	271193.	34000.	-7.80E-04	0.00	5.88E+11	0.00	0.00	0.00
0.8800	0.08047	361588.	34000.	-7.79E-04	0.00	5.88E+11	0.00	0.00	0.00
1.1000	0.07842	451983.	34000.	-7.77E-04	0.00	5.88E+11	0.00	0.00	0.00
1.3200	0.07637	542376.	34000.	-7.75E-04	0.00	5.88E+11	0.00	0.00	0.00
1.5400	0.07433	632767.	34000.	-7.72E-04	0.00	5.88E+11	0.00	0.00	0.00
1.7600	0.07229	723156.	34000.	-7.69E-04	0.00	5.88E+11	0.00	0.00	0.00
1.9800	0.07027	813542.	34000.	-7.66E-04	0.00	5.87E+11	0.00	0.00	0.00
2.2000	0.06825	903925.	34000.	-7.62E-04	0.00	5.87E+11	-0.06048	2.3395	0.00
2.4200	0.06625	994304.	34000.	-7.57E-04	0.00	5.87E+11	-0.1233	4.9130	0.00
2.6400	0.06425	1084679.	33999.	-7.53E-04	0.00	5.87E+11	-0.1822	7.4865	0.00

2.8600	0.06227	1175049.	33999.	-7.48E-04	0.00	5.87E+11	-0.2373	10.0600
0.00								
3.0800	0.06030	1265412.	33998.	-7.42E-04	0.00	5.87E+11	-0.2886	12.6335
0.00								
3.3000	0.05835	1355769.	33997.	-7.36E-04	0.00	5.87E+11	-0.3361	15.2070
0.00								
3.5200	0.05642	1446119.	33996.	-7.30E-04	0.00	5.87E+11	-0.3800	17.7805
0.00								
3.7400	0.05450	1536460.	33995.	-7.23E-04	0.00	5.87E+11	-0.4202	20.3540
0.00								
3.9600	0.05260	1626793.	33994.	-7.16E-04	0.00	5.87E+11	-0.4568	22.9275
0.00								
4.1800	0.05072	1717117.	33993.	-7.09E-04	0.00	5.87E+11	-0.4899	25.5009
0.00								
4.4000	0.04885	1807432.	33991.	-7.01E-04	0.00	5.87E+11	-0.5195	28.0744
0.00								
4.6200	0.04701	1897736.	33990.	-6.92E-04	0.00	5.87E+11	-0.5458	30.6479
0.00								
4.8400	0.04520	1988029.	33989.	-6.84E-04	0.00	5.87E+11	-0.5688	33.2214
0.00								
5.0600	0.04340	2078311.	33987.	-6.75E-04	0.00	5.87E+11	-0.5885	35.7949
0.00								
5.2800	0.04164	2168581.	33985.	-6.65E-04	0.00	5.87E+11	-0.6051	38.3684
0.00								
5.5000	0.03989	2258839.	33970.	-6.55E-04	0.00	5.87E+11	-10.8269	716.4830
0.00								
5.7200	0.03818	2349014.	33682.	-6.45E-04	0.00	5.87E+11	-207.7344	14365.
0.00								
5.9400	0.03649	2437732.	33130.	-6.34E-04	0.00	5.87E+11	-210.2906	15215.
0.00								
6.1600	0.03483	2524975.	32573.	-6.23E-04	0.00	5.87E+11	-211.9365	16064.
0.00								
6.3800	0.03320	2610732.	32012.	-6.11E-04	0.00	5.87E+11	-212.7065	16914.
0.00								
6.6000	0.03160	2694997.	31451.	-5.99E-04	0.00	5.87E+11	-212.6365	17763.
0.00								
6.8200	0.03004	2777770.	30891.	-5.87E-04	0.00	5.87E+11	-211.7637	18613.
0.00								
7.0400	0.02850	2859057.	30334.	-5.74E-04	0.00	5.86E+11	-210.1261	19462.
0.00								
7.2600	0.02700	2938869.	29782.	-5.61E-04	0.00	5.86E+11	-207.7632	20312.
0.00								
7.4800	0.02554	3017222.	29238.	-5.48E-04	0.00	5.86E+11	-204.7154	21161.
0.00								
7.7000	0.02411	3094137.	28702.	-5.34E-04	0.00	5.86E+11	-201.0242	22011.
0.00								
7.9200	0.02272	3169640.	28177.	-5.20E-04	0.00	5.86E+11	-196.7324	22861.
0.00								
8.1400	0.02137	3243760.	27664.	-5.06E-04	0.00	5.86E+11	-191.8835	23710.
0.00								
8.3600	0.02005	3316531.	27165.	-4.91E-04	0.00	5.86E+11	-186.5223	24560.
0.00								
8.5800	0.01877	3387989.	26680.	-4.76E-04	0.00	5.85E+11	-180.6945	25409.
0.00								
8.8000	0.01754	3458176.	26211.	-4.60E-04	0.00	5.85E+11	-174.4467	26259.
0.00								
9.0200	0.01634	3527134.	23878.	-4.44E-04	0.00	5.85E+11	-1593.	257315.
0.00								
9.2400	0.01519	3584976.	19701.	-4.28E-04	0.00	5.85E+11	-1572.	273108.
0.00								
9.4600	0.01408	3631852.	15582.	-4.12E-04	0.00	5.85E+11	-1549.	290369.
0.00								
9.6800	0.01302	3667920.	11524.	-3.96E-04	0.00	5.85E+11	-1525.	309286.
0.00								
9.9000	0.01199	3693346.	7532.	-3.79E-04	0.00	5.85E+11	-1500.	330081.
0.00								
10.1200	0.01101	3708308.	3609.	-3.62E-04	0.00	5.85E+11	-1473.	353015.
0.00								
10.3400	0.01008	3712990.	-242.7551	-3.46E-04	0.00	5.85E+11	-1445.	378399.
0.00								
10.5600	0.00919	3707590.	-4018.	-3.29E-04	0.00	5.85E+11	-1415.	406603.
0.00								
10.7800	0.00834	3692310.	-7714.	-3.12E-04	0.00	5.85E+11	-1385.	438075.
0.00								
11.0000	0.00754	3667367.	-11327.	-2.95E-04	0.00	5.85E+11	-1352.	473360.
0.00								
11.2200	0.00678	3632985.	-14853.	-2.79E-04	0.00	5.85E+11	-1319.	513128.
0.00								
11.4400	0.00607	3589400.	-18287.	-2.63E-04	0.00	5.85E+11	-1283.	558215.

0.00									
	11.6600	0.00540	3536858.	-21626.	-2.47E-04	0.00	5.85E+11	-1246.	609675.
0.00									
	11.8800	0.00477	3475617.	-24865.	-2.31E-04	0.00	5.85E+11	-1208.	668861.
0.00									
	12.1000	0.00418	3405945.	-28000.	-2.15E-04	0.00	5.85E+11	-1167.	737538.
0.00									
	12.3200	0.00363	3328126.	-31026.	-2.00E-04	0.00	5.86E+11	-1125.	818060.
0.00									
	12.5400	0.00312	3242454.	-33937.	-1.85E-04	0.00	5.86E+11	-1080.	913647.
0.00									
	12.7600	0.00265	3149241.	-36727.	-1.71E-04	0.00	5.86E+11	-1033.	1028834.
0.00									
	12.9800	0.00222	3048814.	-39390.	-1.57E-04	0.00	5.86E+11	-983.7507	1170251.
0.00									
	13.2000	0.00182	2941520.	-41917.	-1.43E-04	0.00	5.86E+11	-930.9124	1348049.
0.00									
	13.4200	0.00146	2827727.	-44300.	-1.30E-04	0.00	5.87E+11	-874.1944	1578717.
0.00									
	13.6400	0.00113	2707830.	-46526.	-1.18E-04	0.00	5.87E+11	-812.5499	1891234.
0.00									
	13.8600	8.39E-04	2582261.	-48581.	-1.06E-04	0.00	5.87E+11	-744.2751	2342492.
0.00									
	14.0800	5.74E-04	2451495.	-50443.	-9.48E-05	0.00	5.87E+11	-666.3285	3064543.
0.00									
	14.3000	3.38E-04	2316075.	-52078.	-8.41E-05	0.00	5.87E+11	-572.4734	4466844.
0.00									
	14.5200	1.30E-04	2176658.	-53425.	-7.40E-05	0.00	5.87E+11	-447.9473	9085491.
0.00									
	14.7400	-5.22E-05	2034110.	-53692.	-6.45E-05	0.00	5.87E+11	246.0650	1.24E+07
0.00									
	14.9600	-2.10E-04	1893270.	-52764.	-5.57E-05	0.00	5.87E+11	456.9145	5733135.
0.00									
	15.1800	-3.46E-04	1755607.	-51427.	-4.75E-05	0.00	5.87E+11	555.8139	4239085.
0.00									
	15.4000	-4.61E-04	1621812.	-49872.	-3.99E-05	0.00	5.87E+11	622.0397	3561724.
0.00									
	15.6200	-5.57E-04	1492346.	-48166.	-3.29E-05	0.00	5.87E+11	671.0214	3181913.
0.00									
	15.8400	-6.35E-04	1367552.	-46344.	-2.65E-05	0.00	5.87E+11	708.8299	2948298.
0.00									
	16.0600	-6.96E-04	1247692.	-44434.	-2.06E-05	0.00	5.87E+11	738.5586	2799603.
0.00									
	16.2800	-7.43E-04	1132976.	-42453.	-1.52E-05	0.00	5.87E+11	762.0250	2706156.
0.00									
	16.5000	-7.77E-04	1023567.	-40417.	-1.04E-05	0.00	5.87E+11	780.3995	2651900.
0.00									
	16.7200	-7.98E-04	919592.	-38338.	-6.02E-06	0.00	5.87E+11	794.4838	2627525.
0.00									
	16.9400	-8.09E-04	821152.	-36227.	-2.11E-06	0.00	5.87E+11	804.8532	2627427.
0.00									
	17.1600	-8.09E-04	728318.	-34093.	1.37E-06	0.00	5.88E+11	811.9335	2648225.
0.00									
	17.3800	-8.01E-04	641140.	-31944.	4.45E-06	0.00	5.88E+11	816.0472	2687986.
0.00									
	17.6000	-7.86E-04	559648.	-29788.	7.14E-06	0.00	5.88E+11	817.4413	2745814.
0.00									
	17.8200	-7.64E-04	483851.	-27631.	9.49E-06	0.00	5.88E+11	816.3055	2821620.
0.00									
	18.0400	-7.36E-04	413741.	-25481.	1.15E-05	0.00	5.88E+11	812.7828	2916033.
0.00									
	18.2600	-7.03E-04	349294.	-23343.	1.32E-05	0.00	5.88E+11	806.9767	3030388.
0.00									
	18.4800	-6.66E-04	290471.	-21223.	1.47E-05	0.00	5.88E+11	798.9548	3166796.
0.00									
	18.7000	-6.26E-04	237215.	-19127.	1.58E-05	0.00	5.88E+11	788.7493	3328305.
0.00									
	18.9200	-5.82E-04	189455.	-17061.	1.68E-05	0.00	5.88E+11	776.3553	3519171.
0.00									
	19.1400	-5.37E-04	147105.	-15031.	1.76E-05	0.00	5.88E+11	761.7261	3745310.
0.00									
	19.3600	-4.90E-04	110064.	-13042.	1.81E-05	0.00	5.88E+11	744.7643	4015029.
0.00									
	19.5800	-4.41E-04	78213.	-11102.	1.86E-05	0.00	5.88E+11	725.3079	4340241.
0.00									
	19.8000	-3.92E-04	51417.	-9216.	1.88E-05	0.00	5.88E+11	703.1076	4738587.
0.00									
	20.0200	-3.42E-04	29521.	-7393.	1.90E-05	0.00	5.88E+11	677.7898	5237339.
0.00									

20.2400	-2.91E-04	12349.	-5642.	1.91E-05	0.00	5.88E+11	648.7946	5881129.	0.00
20.4600	-2.41E-04	-301.1592	-3974.	1.92E-05	0.00	5.88E+11	615.2628	6748845.	0.00
20.6800	-1.90E-04	-8663.	-2401.	1.91E-05	0.00	5.88E+11	575.8187	7995860.	0.00
20.9000	-1.40E-04	-13012.	-944.3026	1.91E-05	0.00	5.88E+11	528.1003	9982521.	0.00
21.1200	-8.94E-05	-13680.	370.0802	1.90E-05	0.00	5.88E+11	467.6443	1.38E+07	0.00
21.3400	-3.92E-05	-11089.	1498.	1.90E-05	0.00	5.88E+11	386.8776	2.60E+07	0.00
21.5600	1.08E-05	-5802.	1800.	1.89E-05	0.00	5.88E+11	-158.1246	3.87E+07	0.00
21.7800	6.07E-05	-1616.	1105.	1.89E-05	0.00	5.88E+11	-368.6733	1.60E+07	0.00
22.0000	1.11E-04	0.00	0.00	1.89E-05	0.00	5.88E+11	-468.1675	5585270.	0.00

* This analysis computed pile response using nonlinear moment-curvature relationships. Values of total stress due to combined axial and bending stresses are computed only for elastic sections only and do not equal the actual stresses in concrete and steel. Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 2:

Pile-head deflection = 0.08871959 inches
Computed slope at pile head = -0.00078204 radians
Maximum bending moment = 3712990. inch-lbs
Maximum shear force = -53692. lbs
Depth of maximum bending moment = 10.34000000 feet below pile head
Depth of maximum shear force = 14.74000000 feet below pile head
Number of iterations = 12
Number of zero deflection points = 2

Summary of Pile-head Responses for Conventional Analyses

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type 1	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	29000.	M, in-lb	0.00	-255000.	0.3436	-0.00328	-42200.	2579407.
2	V, lb	34000.	M, in-lb	0.00	309000.	0.08872	-7.82E-04	-53692.	3712990.

Maximum pile-head deflection = 0.3435961511 inches
Maximum pile-head rotation = -0.0032838591 radians = -0.188151 deg.

Summary of Warning Messages

The following warning was reported 192 times

**** Warning ****

An unreasonable value was input for friction angle has been specified
for a soil layer defined uisng the sand criteria. The input value is
either smaller than 20 degrees or higher than 48 degrees. The input
data should be checked for correctness.

The following warning was reported 720 times

**** Warning ****

An unreasonable input value for shear strength has been specified for a soil
defined using the soft clay criteria. The input value is greater than 1250 psf.
Please check your input data for correctness.

The analysis ended normally.

EBI Consulting
environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

AT&T Existing Facility

Site ID: CT2144

Monroe-Guinea Road
230 Guinea Road
Monroe, CT 06468

November 20, 2016

EBI Project Number: 6216005368

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	2.48 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

November 20, 2016

AT&T Mobility – New England
Attn: Cameron Syme, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT2144 – Monroe-Guinea Road**

EBI Consulting was directed to analyze the proposed AT&T facility located at **230 Guinea Road, Monroe, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at **230 Guinea Road, Monroe, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 2 UMTS channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 GSM channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 2 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

5) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

7) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antennas used in this modeling are the **Powerwave 7770 and the CCI HPA-65R-BUU-H6** for transmission in the 700 MHz, 850 MHz and 1900 MHz (PCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antenna mounting height centerlines of the proposed antennas are **236 feet** above ground level (AGL) for **Sector A**, **236 feet** above ground level (AGL) for **Sector B** and **236 feet** above ground level (AGL) for Sector C.

10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculations were done with respect to uncontrolled / general public threshold limits.

AT&T Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 / 13.4dBd	Gain:	11.4 / 13.4dBd	Gain:	11.4 / 13.4dBd
Height (AGL):	**236 feet**	Height (AGL):	**236 feet**	Height (AGL):	**236 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A1 MPE%	**0.19 %**	Antenna B1 MPE%	**0.19 %**	Antenna C1 MPE%	**0.19 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 dBd	Gain:	11.4 dBd	Gain:	11.4 dBd
Height (AGL):	**236 feet**	Height (AGL):	**236 feet**	Height (AGL):	**236 feet**
Frequency Bands	850 MHz	Frequency Bands	850 MHz	Frequency Bands	850 MHz
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	60 Watts	Total TX Power(W):	60 Watts	Total TX Power(W):	60 Watts
ERP (W):	828.23	ERP (W):	828.23	ERP (W):	828.23
Antenna A2 MPE%	**0.10 %**	Antenna B2 MPE%	**0.10 %**	Antenna C2 MPE%	**0.10 %**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6
Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd
Height (AGL):	**236 feet**	Height (AGL):	**236 feet**	Height (AGL):	**236 feet**
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts
ERP (W):	5,462.56	ERP (W):	5,462.56	ERP (W):	5,462.56
Antenna A3 MPE%	**0.52 %**	Antenna B3 MPE%	**0.52 %**	Antenna C3 MPE%	**0.52 %**

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max per sector	**0.80 %**
PageNet	0.20 %
RAW Mobile Data	0.01 %
Nextel	0.25 %
CL&P	0.09 %
Verizon Wireless	1.13 %
Site Total MPE %:	**2.48 %**

AT&T Sector A Total:	0.80 %
AT&T Sector B Total:	0.80 %
AT&T Sector C Total:	0.80 %
Site Total:	2.48 %

AT&T _ Frequency Band / Technology per Sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
AT&T 850 MHz UMTS	2	414.12	236	0.56	850 MHz	567	0.10%
AT&T 1900 MHz (PCS) UMTS	2	656.33	236	0.89	1900 MHz (PCS)	1000	0.09%
AT&T 850 MHz GSM	2	414.12	236	0.56	850 MHz	567	0.10%
AT&T 700 MHz LTE	2	940.05	236	1.28	700 MHz	467	0.27%
AT&T 1900 MHz (PCS) LTE	2	1,791.23	236	2.43	1900 MHz (PCS)	1000	0.24%
						Total*:	0.80%

*NOTE: Totals may vary by 0.01% due to summing of remainders

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	0.80 %
Sector B:	0.80 %
Sector C:	0.80 %
AT&T Maximum Total (per sector):	0.80 %
Site Total:	2.48 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **2.48 %** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.