NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Denise Sabo
4 Angela's Way, Burlington CT 06013
203-435-3640
denise@northeastsitesolutions.com

May 31, 2022

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

RE: Tower Share Application
201 South Main Street, Newtown, CT 06470
Latitude: 41.378166
Longitude: -73.274094
Site #: 826222_Crown_Dish

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 201 South Main Street, Newtown, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 73-foot level of the existing 150-foot monopole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the existing compound. Included are plans by USA Engineering, dated March 23, 2022, Exhibit C. Also included is a structural analysis prepared by Crown Castle, dated January 11, 2022, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was originally approved by the Town of Newtown, although a copy of the decision is not available.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Daniel Rosenthal, First Selectman and George Benson, Director of Planning for the Town of Newtown, as well as the tower owner (Crown Castle) and property owner (Bluelinx Corp).

The planned modifications of the facility fall squarely within those activities explicitly provided for in R.C.S.A. 16-50j-89.

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 150-feet and the Dish Wireless LLC antennas will be located at a center line height of 73-feet.

2. The proposed modifications will not result in an increase of the site boundary as depicted on the attached site plan.

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3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligent.

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. The combined site operations will result in a total power density of 18.26% as evidenced by Exhibit F.

Connecticut General Statutes 16-50aa indicates that the Council must approve the shared use of a telecommunications facility provided it finds the shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns. As demonstrated in this letter, Dish Wireless LLC respectfully submits that the shared use of this facility satisfies these criteria.

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting Dish Wireless LLC proposed loading. The structural analysis is included as Exhibit D.

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this monopole tower in Newtown. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish Wireless LLC to obtain a building permit for the proposed installation. Further, a Letter of Authorization is included as Exhibit G, authorizing Dish Wireless LLC to file this application for shared use.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 73-foot level of the existing 150-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

D. Economic Feasibility. Dish Wireless LLC will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist Dish Wireless LLC with this tower sharing application.

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting Dish Wireless LLC proposed loading. Dish Wireless LLC is not aware of any public safety concerns relative to the proposed sharing of the existing tower. Dish Wireless LLC intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Newtown.

Sincerely,

Denise Sabo

Denise Sabo
Mobile: 203-435-3640
Fax: 413-521-0558
Office: 4 Angela's Way, Burlington CT 06013
Email: denise@northeastsitesolutions.com

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments

Cc: Daniel Rosenthal, First Selectman
Newtown Municipal Center
3 Primrose Street
Newtown, CT 06470

George Benson, Director of Planning
Newtown Municipal Center
3 Primrose Street
Newtown, CT 06470

Bluelinx Corp, Property Owner
201 South Main Street
Newtown, CT 06470

Crown Castle, Tower Owner

Exhibit A

Original Facility Approval

Upgrade to existing ground cabinet. (Internally)

The original date and conditions of the zoning of this facility are unknown despite diligent search efforts to obtain same.

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.C.S.A. § 16-50j-73, a copy of this letter is being sent to Daniel Rosenthal, First Selectman for the Town of Newtown, George Benson, Director of Planning, BlueLink Corp 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, T-Mobile 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: Anne Marie Zsamba.

Sincerely,

Anne Marie Zsamba
Site Acquisition Specialist
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
(201) 236-9224
AnneMarie.Zsamba@crowncastle.com

Attachments

cc:

Daniel Rosenthal, First Selectman (*via email only to Daniel.rosenthal@newtown-ct.gov*)
Town of Newtown

Exhibit B

Property Card

Town of Newtown, CT

Property Listing Report

Map Block Lot **36-12-10-C**

Account **00383600C**

Property Information

Property Location	**201 SOUTH MAIN STREET**
Owner	**BLUELINX CORP**
Co-Owner	**CCTMO**
Mailing Address	**PMB 331- 4017 WASHINGTON ROAD** **MCMURRAY PA 15317**
Land Use	**4310 CELL SITE**
Land Class	**I**
Zoning Code	**M-1**
Census Tract	
Sub Lot	

Neighborhood	
Acreage	**0**
Utilities	**Well,Septic**
Lot Setting/Desc	
Survey Map	
TC Survey Numbers	

Photo

No Photo Available

Sketch

Primary Construction Details

Year Built		Bedrooms		Exterior Walls	
Stories		Full Bathrooms		Interior Walls	
Building Style		Half Bathrooms		Heating Type	
Building Use		Bath Style		Heating Fuel	
Building Condition		Kitchen Style		AC Type	
Floors		Roof Style		Gross Bldg Area	
Total Rooms		Roof Cover		Total Living Area	

Report Created On **8/27/2020**

Town of Newtown, CT

Property Listing Report | Map Block Lot **36-12-10-C** | Account **00383600C**

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings		
Extras		
Outbuildings		
Land		
Total		

Outbuilding and Extra Items

Type	Description
Cell Tower	1 Units
Fence	200 L.F.
Cellular Shed	240 S.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area		0

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
BLUELINX CORP	1005/ 848	3/22/2012	

Report Created On **8/27/2020**

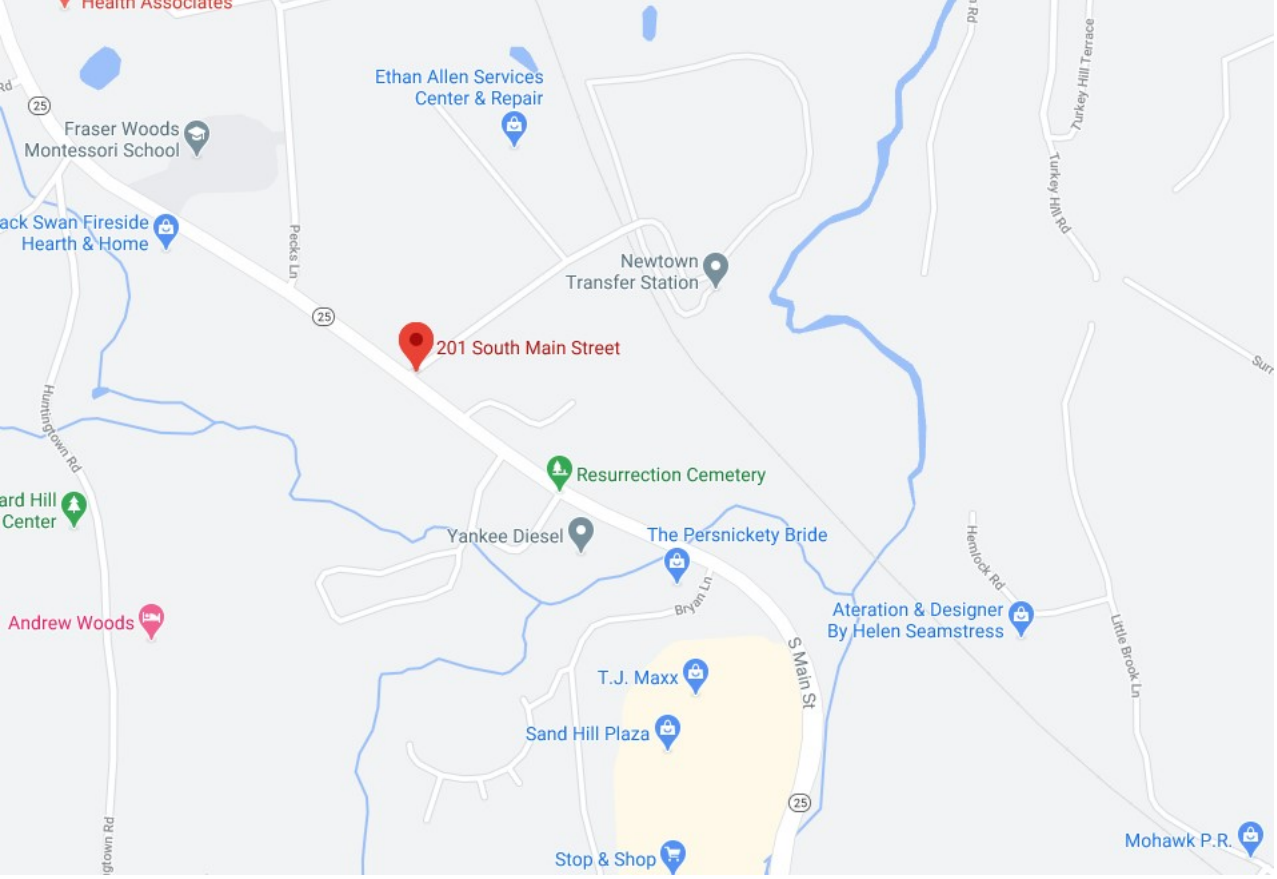

Health Associates
Ethan Allen Services
Center & Repair
Fraser Woods
Montessori School
ack Swan Fireside
Hearth & Home
Pecks Ln
Newtown
Transfer Station
Turkey Hill Terrace
Turkey Hill Rd
201 South Main Street
Huntingtown Rd
Resurrection Cemetery
ard Hill
Center
Yankee Diesel
The Persnickety Bride
Hemlock Rd
Bryan Ln
Andrew Woods
Ateration & Designer
By Helen Seamstress
Little Brook Ln
T.J. Maxx
S Main St
Sand Hill Plaza
Stop & Shop
Mohawk P.R.

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

NJJER02056A

DISH Wireless L.L.C. SITE ADDRESS:

201 SOUTH MAIN STREET
NEWTOWN, CT 06470

CONNECTICUT CODE OF COMPLIANCE

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

CODE TYPE	CODE
BUILDING	2018 CT STATE BUILDING CODE/2015 IBC W/ CT AMENDMENTS
MECHANICAL	2018 CT STATE BUILDING CODE/2015 IMC W/ CT AMENDMENTS
ELECTRICAL	2018 CT STATE BUILDING CODE/2017 NEC W/ CT AMENDMENTS

SHEET INDEX

SCOPE OF WORK

THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE. THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (1) PROPOSED ANTENNA PLATFORM MOUNT
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRHs (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED METAL PLATFORM
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED FUSED DISCONNECT
- INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)
- INSTALL (1) PROPOSED METER SOCKET

SITE PHOTO

UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	CHRISTIAN OXFORD ASSOCIATES LLC
ADDRESS:	831 FEDERAL ROAD BROOKFIELD, CT 06804
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	826222
TOWER APP NUMBER:	578963
COUNTY:	FAIRFIELD
LATITUDE (NAD 83):	41° 22' 41.32" N 41.378139 N
LONGITUDE (NAD 83):	73° 16' 26.94" W 73.274139 W
ZONING JURISDICTION:	FAIRFIELD COUNTY
ZONING DISTRICT:	M-1
PARCEL NUMBER:	36-12-10
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	NORTHEAST UTILITIES
TELEPHONE COMPANY:	LIGHTOWER

PROJECT DIRECTORY

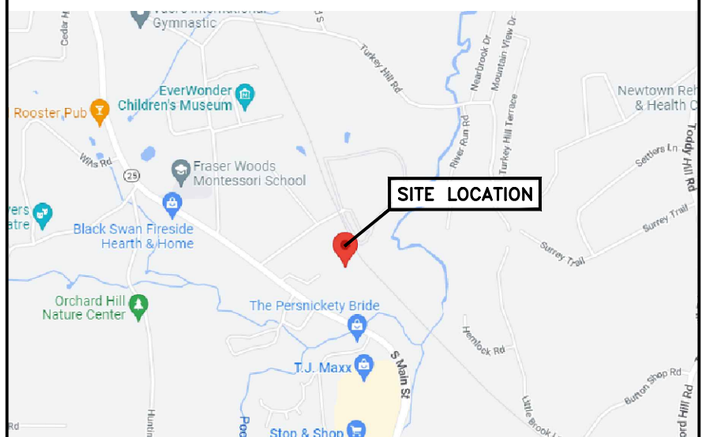
APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (877) 486-9377
SITE DESIGNER:	USA ENGINEERING 2818 CYPRESS RIDGE BLVD, SUITE 110 WESLEY CHAPEL, FL 33544 (813) 994-0365
SITE ACQUISITION:	WILLIAM SNIDER WILLIAM.SNIDER@DISH.COM
CONSTRUCTION MANAGER:	MICHAEL NARDUCCI MICHAEL.NARDUCCI@DISH.COM
RF ENGINEER:	MURUGABIRAN JAYAPAL MURUGABIRAN@DISH.COM

DIRECTIONS

DIRECTIONS FROM 3 ADP BOULEVARD ROSELAND, NJ 07068:

GET ON I-280 E FROM LIVINGSTON AVE 2 MIN (0.8 MI), HEAD NORTHEAST ON ADP BLVD TOWARD CHOCTAW WAY 26 FT, TURN RIGHT ONTO CHOCTAW WAY 0.1 MI, USE THE LEFT LANE TO TURN RIGHT ONTO LIVINGSTON AVE 0.4 MI, USE THE RIGHT LANE TO TAKE THE RAMP ONTO I-280 E 0.2 MI, TAKE GARDEN STATE PKWY, I-287 E, I-684 N AND I-84 E TO CT-25 S IN NEWTOWN. TAKE EXIT 9 FROM I-84 E 1 HR 33 MIN (96.5 MI), MERGE ONTO I-280 E 6.8 MI, TAKE EXIT 12 TOWARD ORATON PKWY TOLL ROAD 0.8 MI,
KEEP LEFT, FOLLOW SIGNS FOR GARDEN STATE PARKWAY AND MERGE ONTO GARDEN STATE PKWY TOLL ROAD 25.5 MI, CONTINUE ONTO NJ-444 N/GARDEN STATE PKWY TOLL ROAD ENTERING NEW YORK 312 FT
CONTINUE ONTO GARDEN STATE PARKWAY CONNECTOR TOLL ROAD 1.7 MI, TAKE EXIT 14-1 TO MERGE ONTO I-287 E/I-87 S TOLL ROAD 12.5 MI, KEEP LEFT AT THE FORK TO CONTINUE ON I-287 E, FOLLOW SIGNS FOR WHITE PLAINS/RYE 6.6 MI, TAKE EXIT 9A TO MERGE ONTO I-684 N TOWARD BREWSTER PASSING THROUGH CONNECTICUT ENTERING NEW YORK 27.9 MI, TAKE EXIT 9E TO MERGE ONTO I-84 E TOWARD DANBURY ENTERING CONNECTICUT 14.4 MI, TAKE EXIT 9 TO MERGE ONTO CT-25 S 0.2 MI, FOLLOW US-6 E AND CT-25 S/MAIN ST TO ETHAN ALLEN RD11 MIN (6.1 MI), MERGE ONTO CT-25 S 0.4 MI, TURN LEFT ONTO US-6 E 2.7 MI, CONTINUE ONTO CT-25 S/MAIN ST 3.0 MI, TURN LEFT ONTO ETHAN ALLEN RD 52 FT

VICINITY MAP



N

NO SCALE

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

USA ENGINEERING
2818 CYPRESS RIDGE BLVD.
SUITE 110
WESLEY CHAPEL, FL 33544
(813) 994-0365
FL COA #31705

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

STATE OF CONNECTICUT
ALEXANDER LABRIOLA
PEN.31022
LICENSED PROFESSIONAL ENGINEER
3-23-22

DRAWN BY:	CHECKED BY:	APPROVED BY:
EDZ	TW	DW

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	01/27/2022	ISSUED FOR REVIEW
0	03/22/2022	FINAL CDs

A&E PROJECT NUMBER

NJJER02056A_826222

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER02056A
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

SHEET TITLE

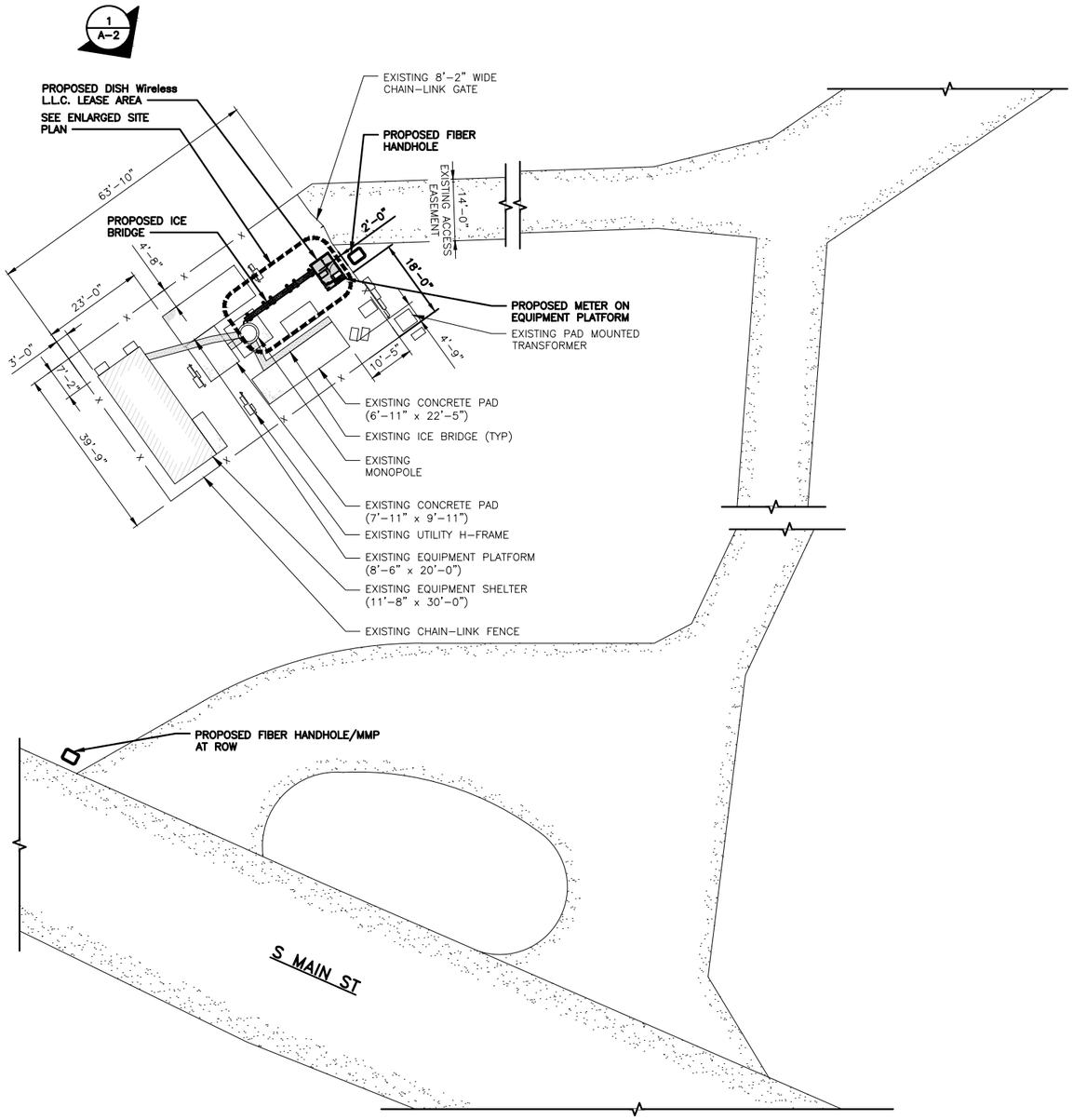
TITLE SHEET

SHEET NUMBER

T-1

NOTES

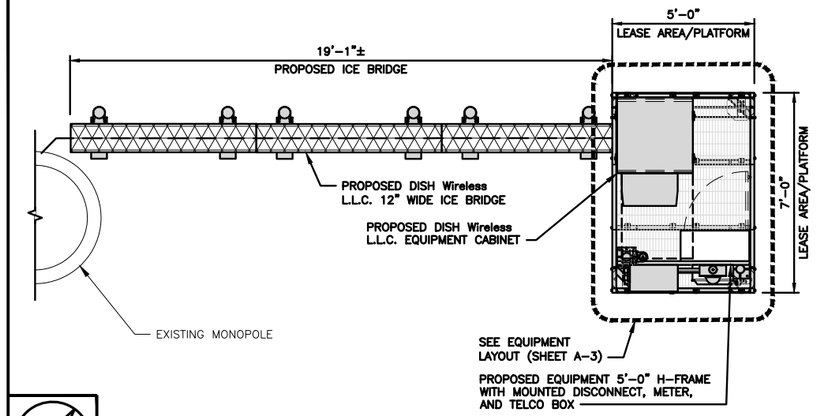
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



OVERALL SITE PLAN | 16' 12' 8' 4' 0 16' 32' (1/16"=1'-0") | 1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN | 12" 6" 0 1' 2' 3' 4' 5' 6' 7' (3/8"=1'-0") | 2

AERIAL VIEW | NO SCALE | 3

dish wireless.
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(813) 994-0365
FL COA #31705

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

STATE OF CONNECTICUT
ALEXANDER LABRANCHE
PEN.31022
LICENSED PROFESSIONAL ENGINEER
3-23-22

DRAWN BY:	CHECKED BY:	APPROVED BY:
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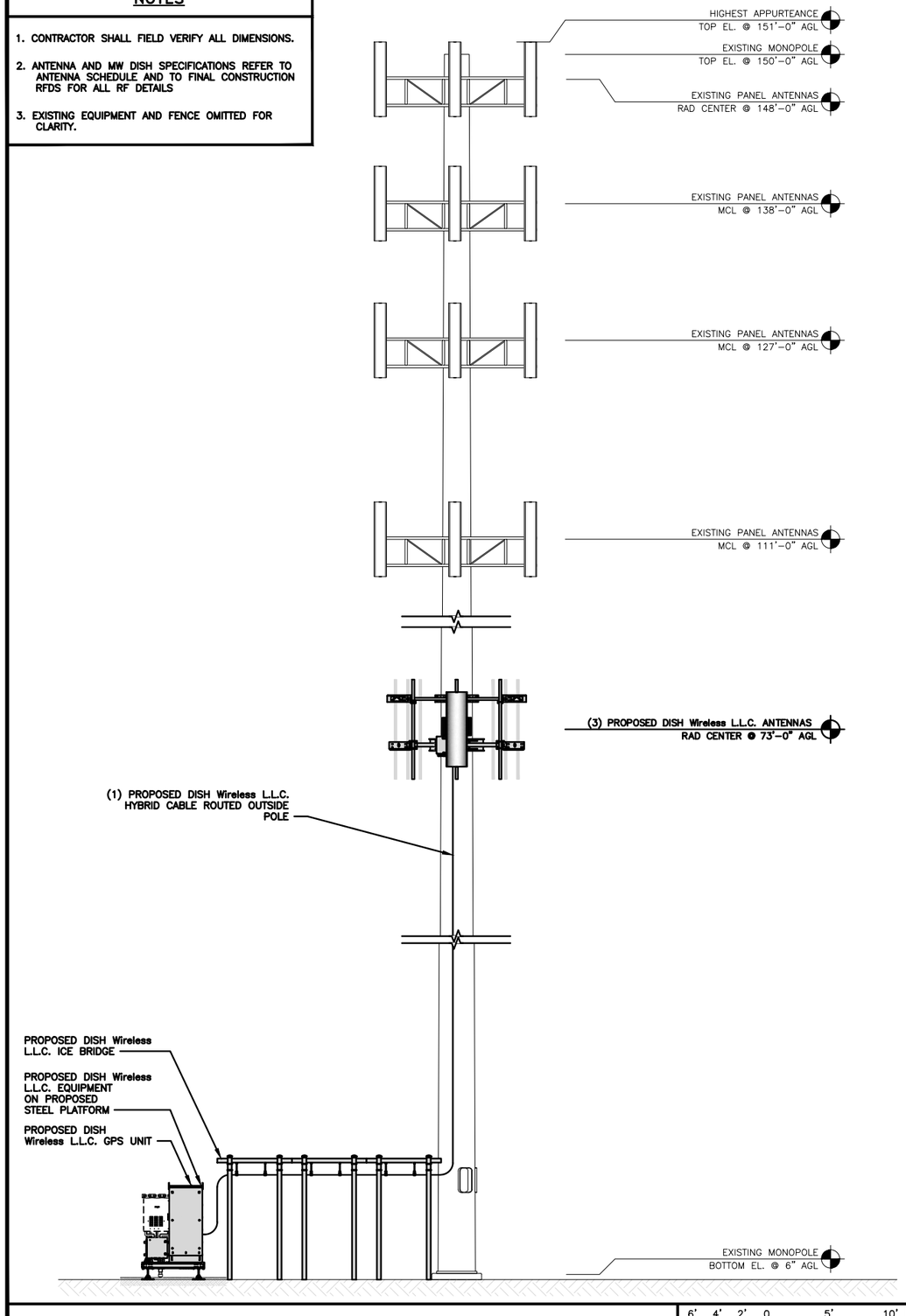
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER
A-1

NOTES

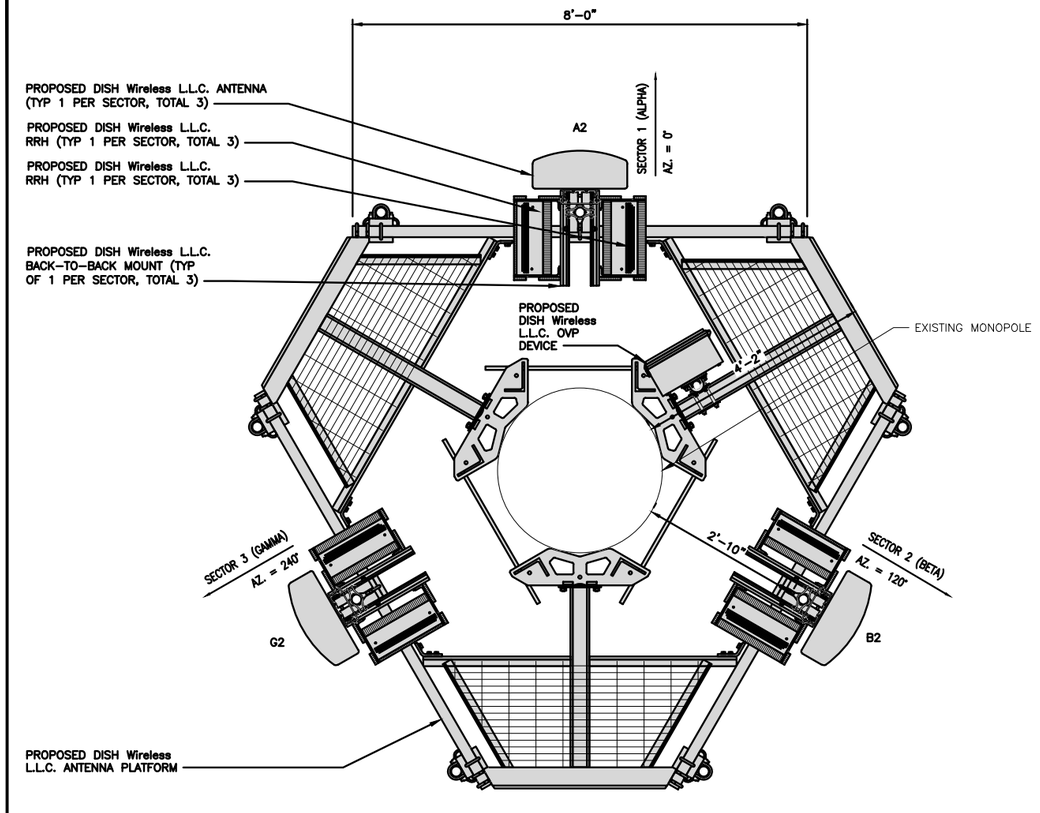
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED NORTHWEST ELEVATION

6' 4' 2' 0 5' 10'
3/16"=1'-0"

1



ANTENNA LAYOUT

12" 6" 0 1' 2' 3'
3/4"=1'-0"

2

SECTOR POS.	ANTENNA					TRANSMISSION CABLE	RRH			OVP
	EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECH	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH	MANUFACTURER – MODEL NUMBER	TECH	POS.	MANUFACTURER MODEL
A1	--	--	--	--	--	(1) HIGH-CAPACITY HYBRID CABLE (100' LONG) CU12PSM9P8XXX	FUJITSU – TA08025-B604	5G	A2	RAYCAP RDIDC-9181-PF-48
A2	PROPOSED	COMMSCOPE – FVV-65B-R2	5G	0°	73'-0"		FUJITSU – TA08025-B605	5G	A2	
A3	--	--	--	--	--		--	--	--	
B1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU – TA08025-B604	5G	B2	SHARED W/ALPHA
B2	PROPOSED	COMMSCOPE – FVV-65B-R2	5G	120°	73'-0"		FUJITSU – TA08025-B605	5G	B2	
B3	--	--	--	--	--		--	--	--	
C1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU – TA08025-B604	5G	C2	SHARED W/ALPHA
C2	PROPOSED	COMMSCOPE – FVV-65B-R2	5G	240°	73'-0"		FUJITSU – TA08025-B605	5G	C2	
C3	--	--	--	--	--		--	--	--	

NOTES

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.

ANTENNA SCHEDULE

NO SCALE

3

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

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2818 CYPRESS RIDGE BLVD.
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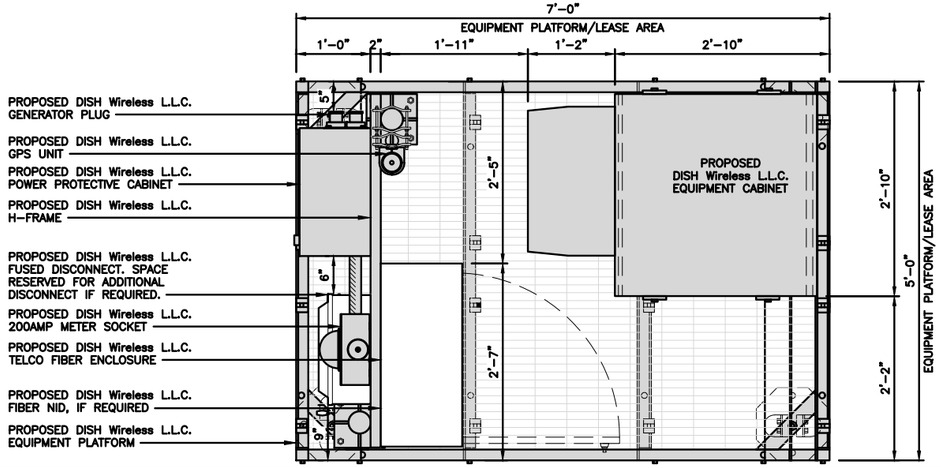
SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



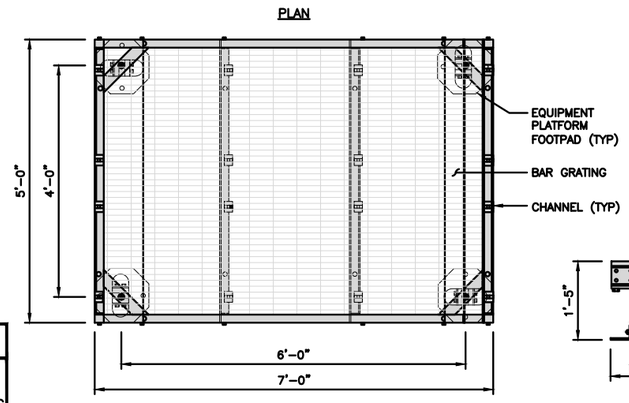
PLATFORM EQUIPMENT PLAN

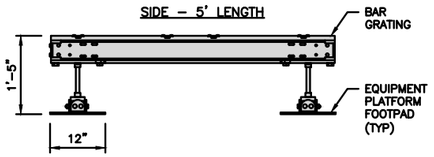
12" 9" 6" 3" 0 1' 2"
1"=1'-0"

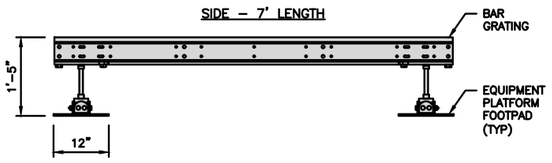
1

COMMSCOPE MTC4045LP 5X7 PLATFORM	
DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

NOTE:
GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 17"





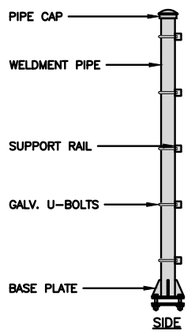


NOTES

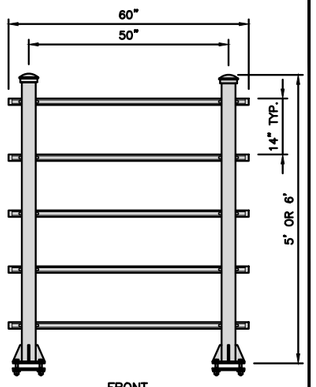
1. PLATFORM MUST BE LEVEL WITHIN (1) DEGREE.
2. THIS DESIGN ASSUMES A MINIMUM SOIL BEARING PRESSURE OF 2,000 PSF.

PLATFORM DETAIL | NO SCALE | 2

COMMSCOPE MTC4045HFLD H-FRAME	
UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	59.74 lbs



NOTE:
OR DISH Wireless L.L.C. APPROVED EQUIVALENT

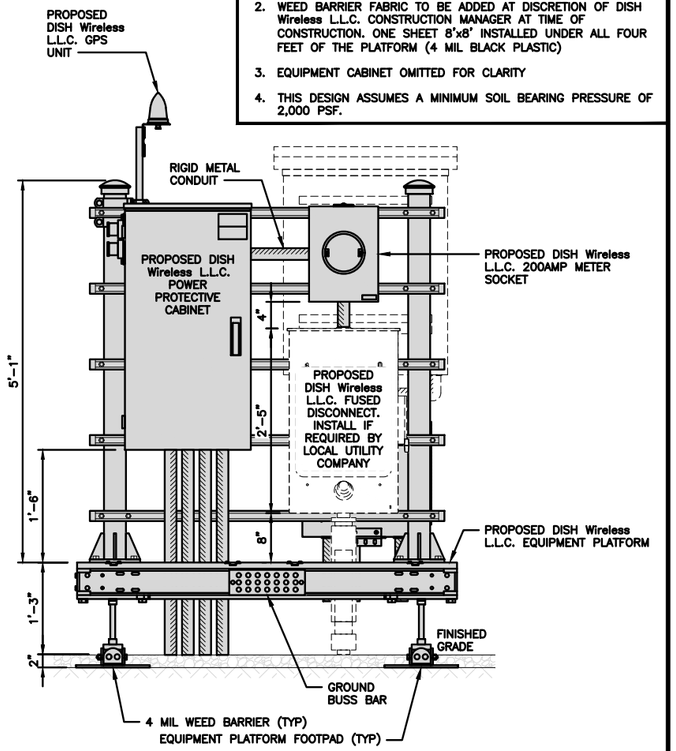


H-FRAME DETAIL | NO SCALE | 3

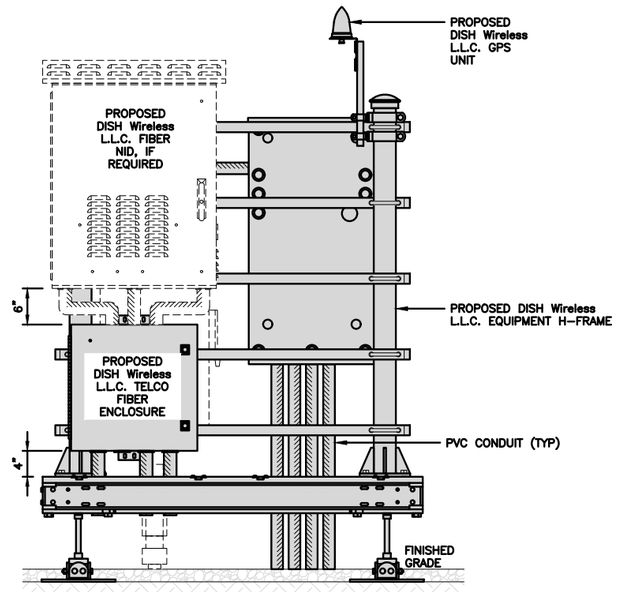
NOT USED | NO SCALE | 4

NOTES

1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
3. EQUIPMENT CABINET OMITTED FOR CLARITY
4. THIS DESIGN ASSUMES A MINIMUM SOIL BEARING PRESSURE OF 2,000 PSF.



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION | 12" 9" 6" 3" 0 1' 2" 1"=1'-0" | 5

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LITTLETON, CO 80120

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CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

STATE OF CONNECTICUT
ALEXANDER M. ARGENTIERI
PEN.31022
LICENSED PROFESSIONAL ENGINEER
3-23-22

DRAWN BY:	CHECKED BY:	APPROVED BY:
EDZ	TW	DW

RFDS REV #: ---

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SUBMITTALS

REV	DATE	DESCRIPTION
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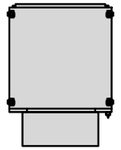
A&E PROJECT NUMBER
NJJER02056A_826222

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER02056A
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

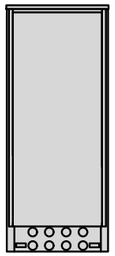
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

ENERSYS HEX 20000059996	
DIMENSIONS (HxWxD)	73"x30"x32"
POWER SYSTEM	-48V ALPHA/600A
HEATER	800W
TOTAL WEIGHT (EMPTY)	376 lbs



PLAN



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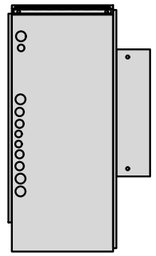
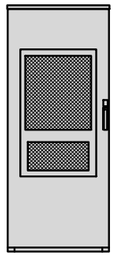


SIDE

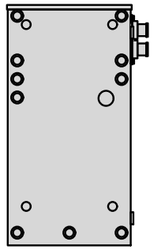


FRONT

CABINET DETAIL | NO SCALE | 1

RAYCAP PPC RDIAC-2465-P-240-MTS	
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G

TOP



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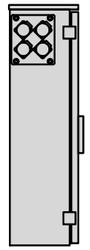
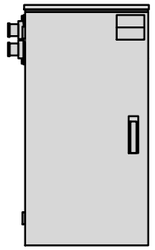
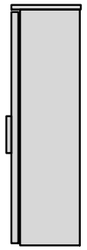


SIDE



FRONT

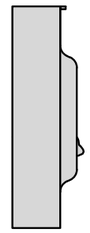


SIDE

POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

SQUARE D SAFETY SWITCHES D224NRB (FUSIBLE)	
ENCLOSURE DIM (HxWxD)	29.25"x17.25"x8.25"
TOTAL WEIGHT (EMPTY)	45.33 LBS
MAX VOLTAGE/AMPS/WATT	240V/200A/48000W
ENCLOSURE RATING	OUTDOOR NEMA 3R

PLAN



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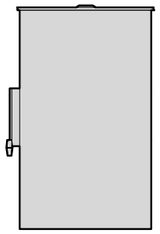

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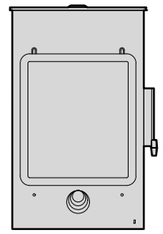
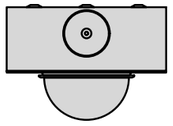


FRONT

FUSED DISCONNECT DETAIL | NO SCALE | 3

EATON METER SOCKET UNRRS213BEUSE	
DIMENSIONS (HxWxD)	16"x12"x6"
TYPE	RING
AMPERAGE RATING	200 CONT. AMP
WEIGHT	18 lbs



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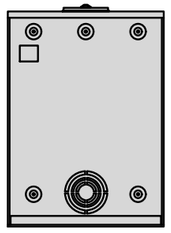

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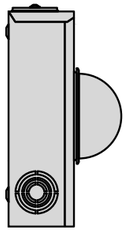
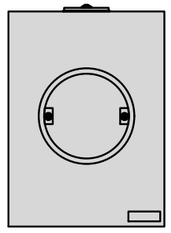


SIDE

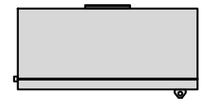


FRONT

METER BANK DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

CHARLES CFIT-PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



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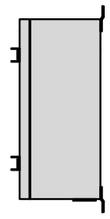

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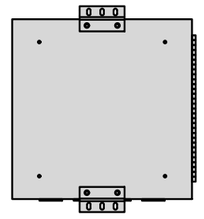

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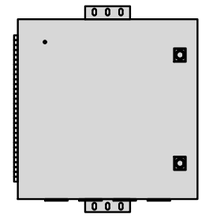
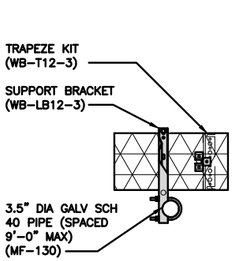


FRONT

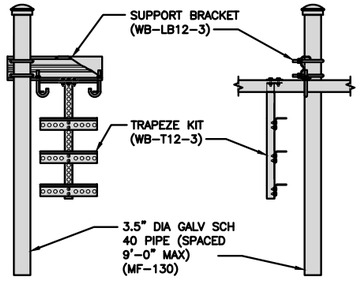
FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

COMMSCOPE WB-K110-B WAVEGUIDE BRIDGE KIT	
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

INCLUDED PRODUCTS:	
	WB-T12-3 TRAPEZE KIT, 3 RUNGS
	WB-LB12-3 SUPPORT BRACKET
	MF-130 DIRECT BURIAL PIPE COLUMN, 13'-4"

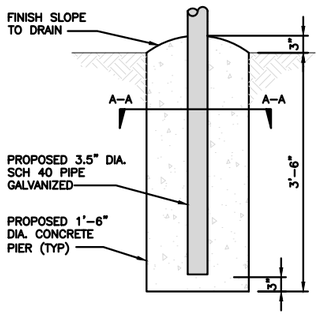


PLAN

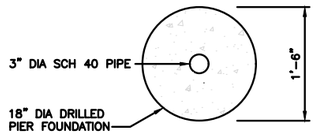


FRONT SIDE

ICE BRIDGE DETAIL | NO SCALE | 7

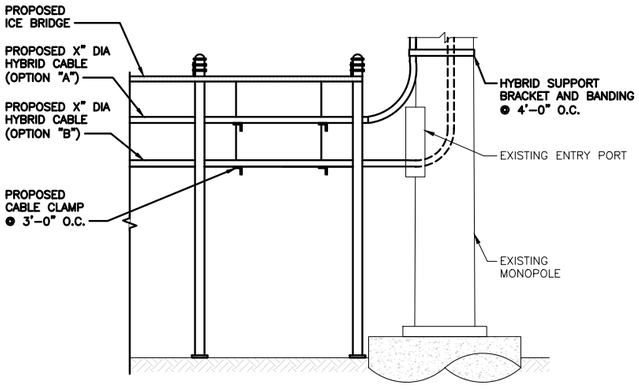


CONCRETE PIER



A-A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

USA ENGINEERING
2818 CYPRESS RIDGE BLVD.
SUITE 110
WESLEY CHAPEL, FL 33544
(813) 994-0365
FL COA #31705

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

STATE OF CONNECTICUT
ALEXANDER LABRIOLA
PEN.31022
LICENSED
PROFESSIONAL ENGINEER
3-23-22

DRAWN BY:	CHECKED BY:	APPROVED BY:
EDZ	TW	DW

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

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A	01/27/2022	ISSUED FOR REVIEW
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A&E PROJECT NUMBER

NJJER02056A_826222

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER02056A
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

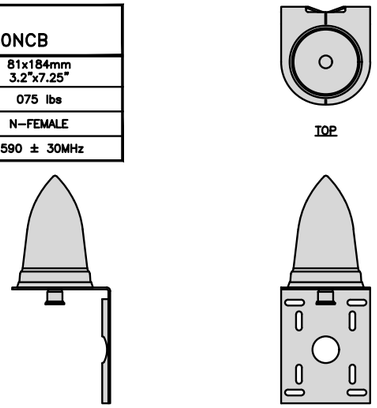
SHEET TITLE

EQUIPMENT DETAILS

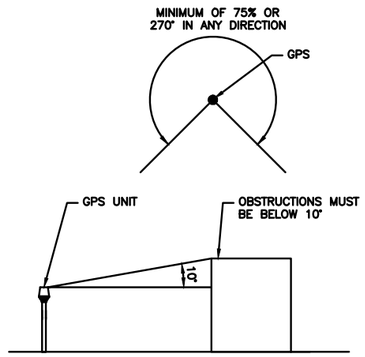
SHEET NUMBER

A-4

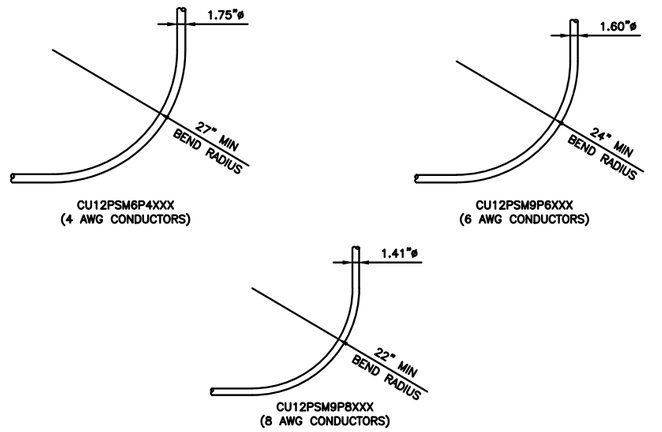
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUSES | NO SCALE | 3

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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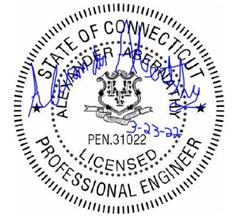

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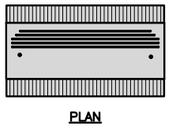
DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER02056A
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

SHEET TITLE
EQUIPMENT DETAILS

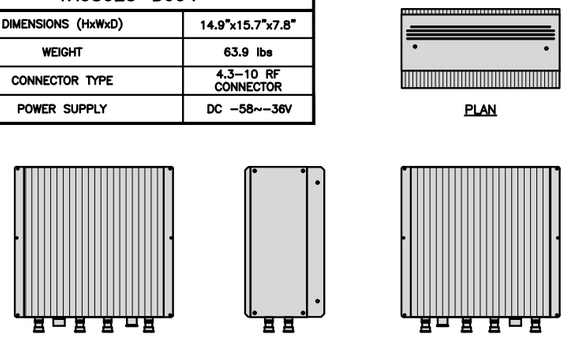
SHEET NUMBER
A-5

FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



RRH DETAIL | NO SCALE | 1

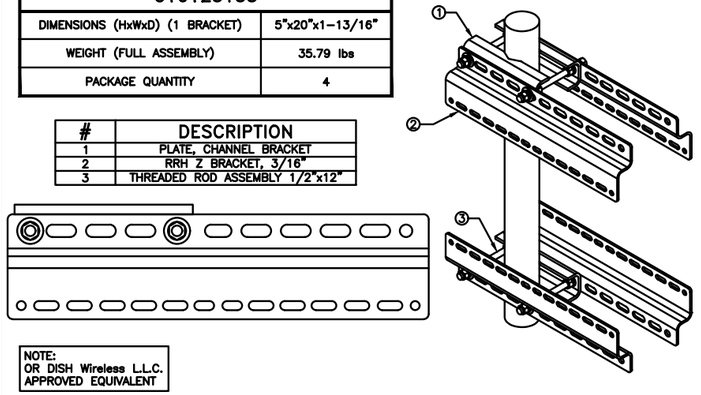
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



RRH DETAIL | NO SCALE | 2

SABRE DOUBLE Z-BRACKET C10123155	
DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

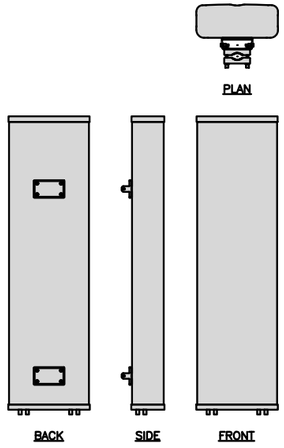
#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL | NO SCALE | 3

COMMSCOPE FFVV-65B-R2	
DIMENSIONS (HxWxD)(MM/IN)	1828x498x197 72"x19.6"x7.8"
RF CONNECTOR INTERFACE	4.3-10 FEMALE
WEIGHT	70.8 lbs
WEIGHT WITH BRACKETS	98.1 lbs



ANTENNA DETAIL | NO SCALE | 4

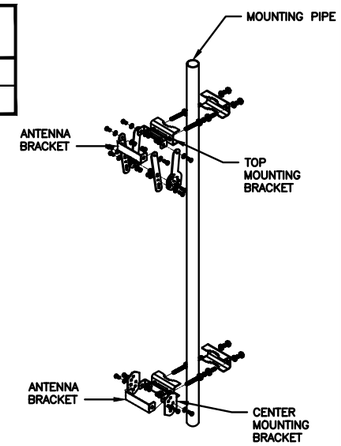
NOT USED | NO SCALE | 5

JMA ANTENNA MOUNT BRACKET #91900318	
TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS FOR 4-,6-, AND 8-FOOT ANTENNAS

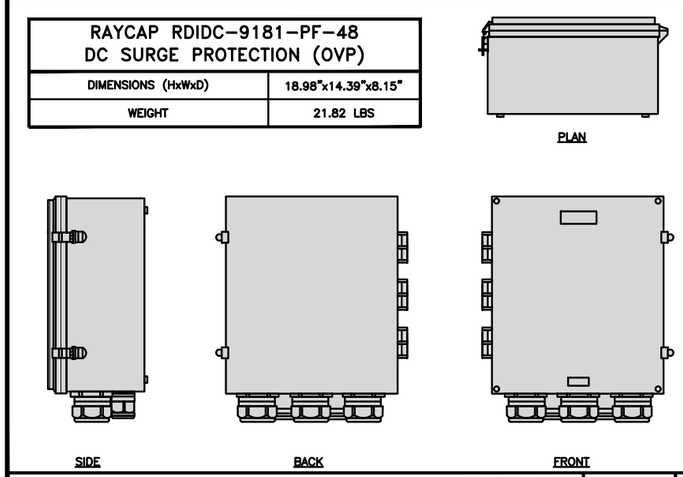
ANTENNA BRACKET NOT PART OF KIT

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT



ANTENNA BRACKET DETAIL | NO SCALE | 6

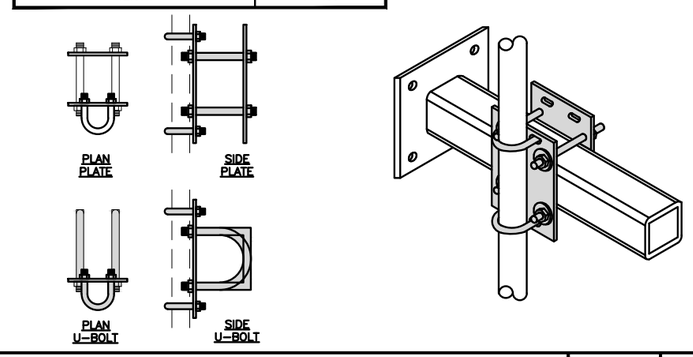
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

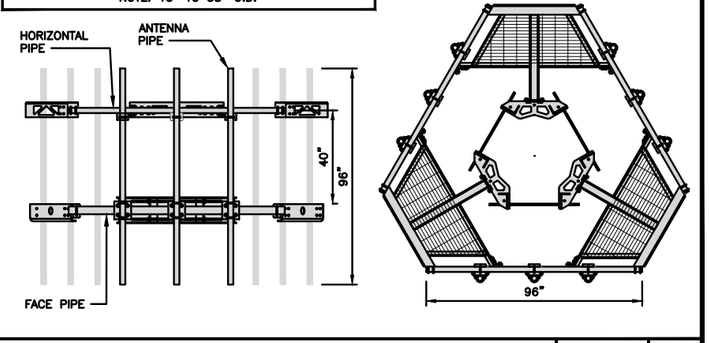
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT



RRH/OVP MOUNT DETAIL | NO SCALE | 8

COMMSCOPE MC-PK8-DSH	
FACE WIDTH	96"
WEIGHT	1373.08 lbs
NOTE: 15" TO 38" O.D.	

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT



ANTENNA PLATFORM DETAIL | NO SCALE | 9

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ALEXANDER LABRANCHE
PEN.31022
LICENSED PROFESSIONAL ENGINEER
3-23-22

DRAWN BY:	CHECKED BY:	APPROVED BY:
EDZ	TW	DW

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	01/27/2022	ISSUED FOR REVIEW
0	03/22/2022	FINAL CDs

A&E PROJECT NUMBER
NJJER02056A_826222

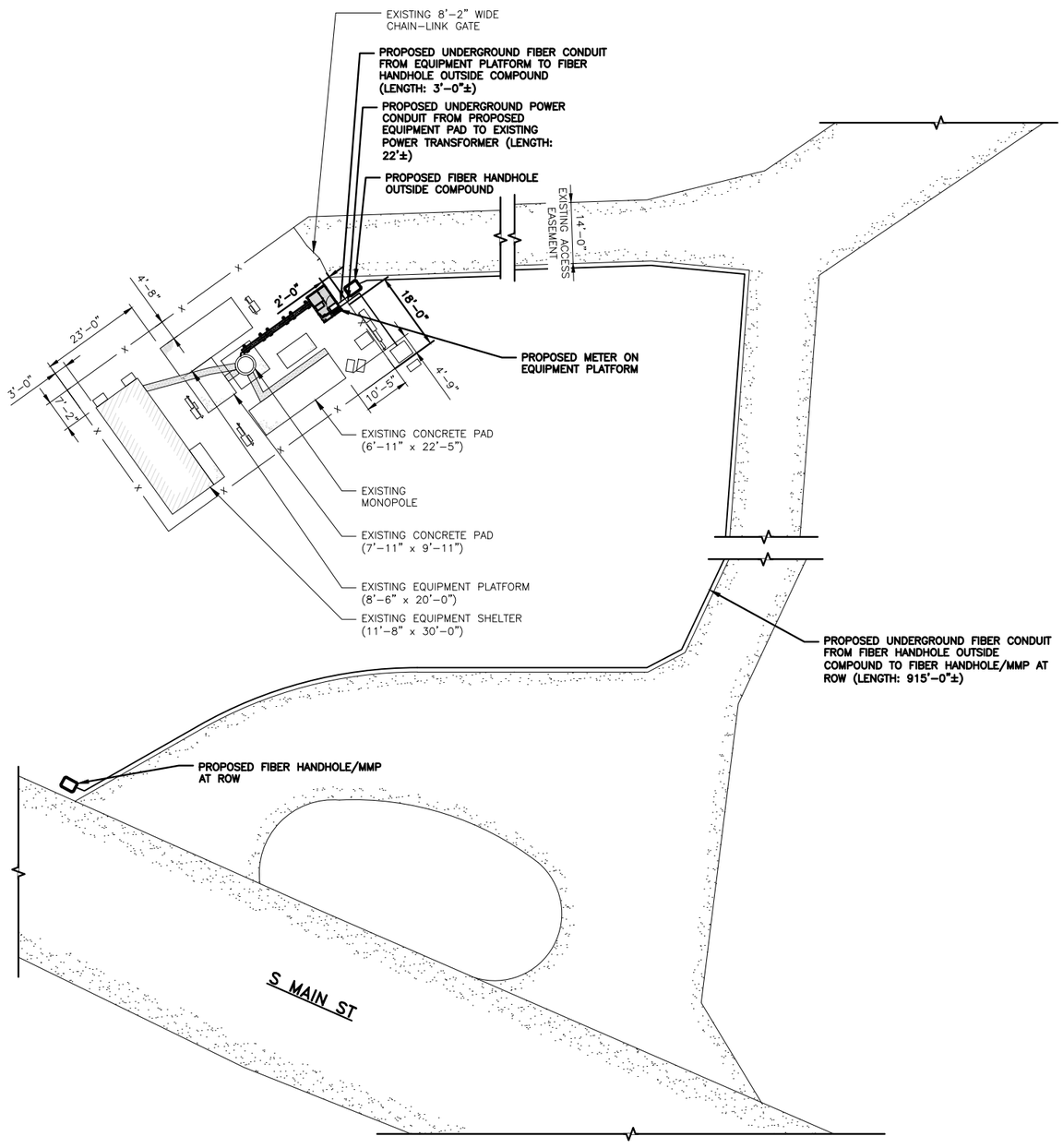
DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER02056A
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. THE GROUND LEASE DOES NOT SPECIFY OUR UTILITY RIGHTS. "PWR" AND "FBR" PATH DEPICTED ON A–1 AND E–1 ARE BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLAEASE LOCATE AND FOLLOW EXSITING PATH. IF EXISTING PATH IS NOT AN OPTION PLEASE NOTIFY TOWER OWNER AS FURTHER COORINATION MAY BE NEEDED.



UTILITY ROUTE PLAN

16' 12' 8' 4' 0 16' 32'
1/16"=1'–0"

1

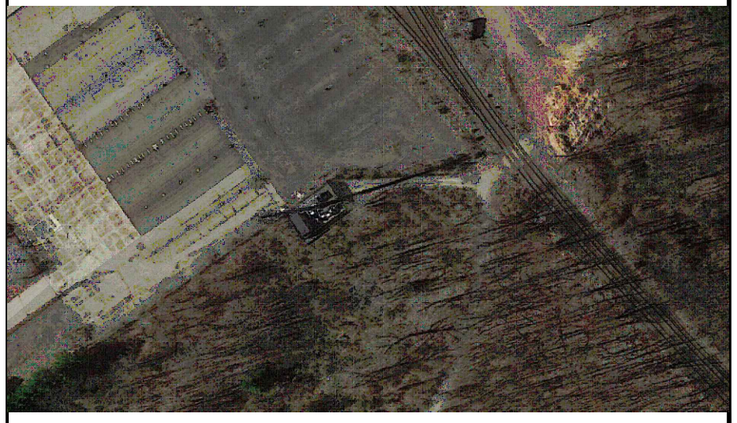
DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND –48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY –48V.

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL STATE AND LOCAL CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
3. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.
4. CONDUIT ROUGH–IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.
5. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.
6. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314.
7. CONTRACTOR SHALL PROVIDE ALL STRAIN RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
9. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.
10. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
11. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST–CONSTRUCTION EQUIPMENT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS–BUILT PANEL SCHEDULE AND SITE DRAWINGS.
13. ALL TRENCHES IN COMPOUND TO BE HAND DUG

ELECTRICAL NOTES

NO SCALE

2



UTILITY ROUTE AERIAL

NO SCALE

3

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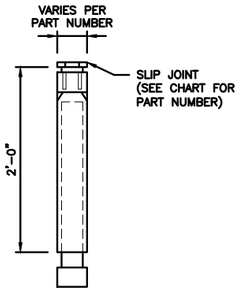
SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N	E945NX	4"	5	8"
E945P	E945PX	5"	1	8"
E945R	E945RX	6"	1	8"

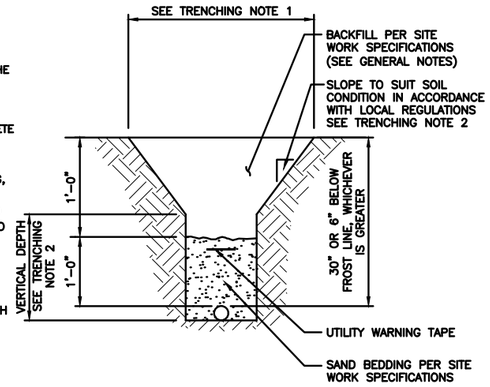


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

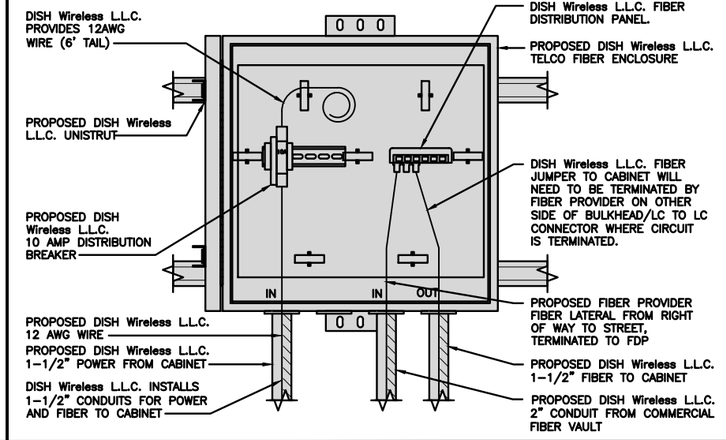
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

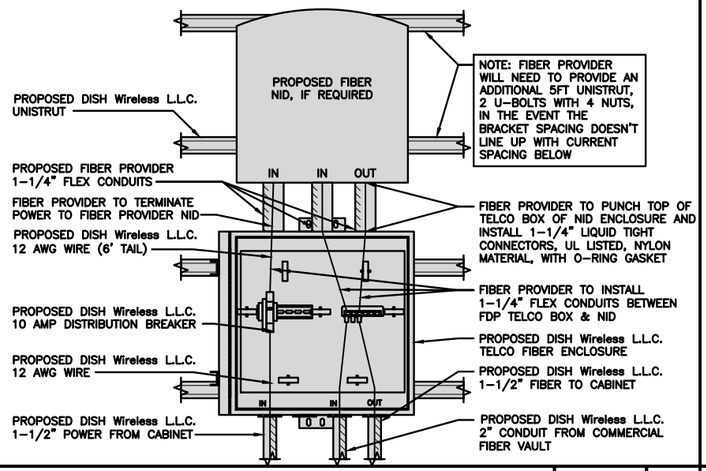
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
3. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



DARK TELCO BOX – INTERIOR WIRING LAYOUT | NO SCALE | 3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL) | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

DISH Wireless L.L.C. TEMPLATE VERSION 45 – 10/08/2021

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ALEXANDER ABRAHAM
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LICENSED PROFESSIONAL ENGINEER
3-23-22

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RFDS REV #: ---

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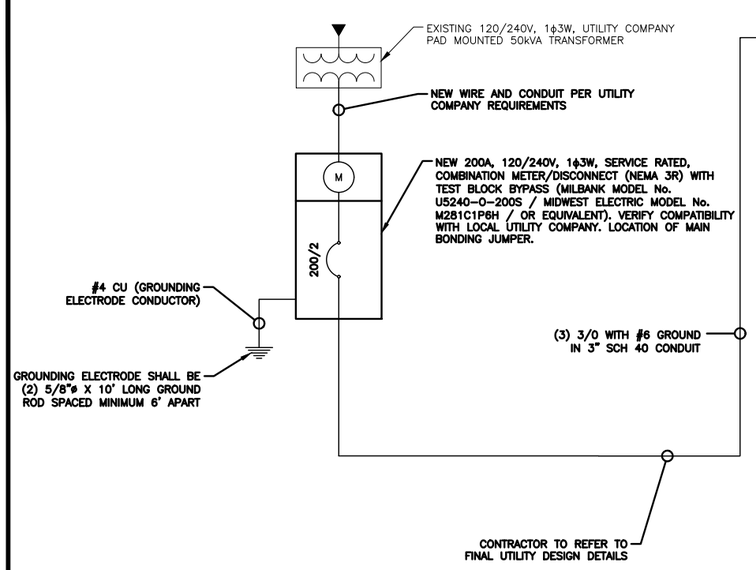
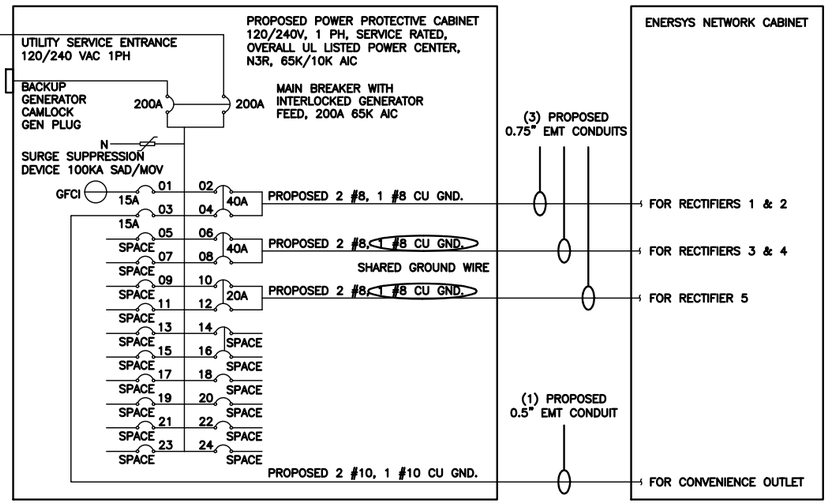
DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER02056A
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2





NOTE:
BRANCH CIRCUIT WIRING SUPPLYING RECTIFIERS ARE TO BE RATED UL1015, 105°C, 600V, AND PVC INSULATED, IN THE SIZES SHOWN IN THE ONE-LINE DIAGRAM. CONTRACTOR MAY SUBSTITUTE UL1015 WIRE FOR THWN-2 FOR CONVENIENCE OUTLET BRANCH CIRCUIT.

BREAKERS REQUIRED:
(2) 40A, 2P BREAKER – SQUARE D P/N:QO240
(1) 20A, 2P BREAKER – SQUARE D P/N:QO220
(1) 20A, 1P BREAKER – SQUARE D P/N:QO120

NOTES

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUIT AND FEEDERS COMPLY WITH THE NEC (LISTED ON T-1) ARTICLE 210.19(A)(1) FPN NO. 4.

CONDUIT SIZING: AT 40% FILL PER NEC CHAPTER 9, TABLE 4, ARTICLE 358.
0.5" CONDUIT – 0.122 SQ. IN AREA
0.75" CONDUIT – 0.213 SQ. IN AREA
2.0" CONDUIT – 1.316 SQ. IN AREA
3.0" CONDUIT – 2.907 SQ. IN AREA

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.

#10 – 0.0211 SQ. IN X 2 =	0.0422 SQ. IN
#10 – 0.0211 SQ. IN X 1 =	0.0211 SQ. IN <GROUND
TOTAL	= 0.0633 SQ. IN

0.5" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

RECTIFIER CONDUCTORS (3 CONDUITS): USING UL1015, CU.

#8 – 0.0552 SQ. IN X 2 =	0.1103 SQ. IN
#8 – 0.0131 SQ. IN X 1 =	0.0131 SQ. IN <BARE GROUND
TOTAL	= 0.1234 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC FEED CONDUCTORS (1 CONDUIT): USING THWN, CU.

3/0 – 0.2679 SQ. IN X 3 =	0.8037 SQ. IN
#6 – 0.0507 SQ. IN X 1 =	0.0507 SQ. IN <GROUND
TOTAL	= 0.8544 SQ. IN

3.0" SCH 40 PVC CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (4) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC ONE-LINE DIAGRAM — NO SCALE — 1

PROPOSED ENERSYS PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
PPC GFCI OUTLET	180		15A	1	A	2	40A	3840		ENERSYS ALPHA CORDEX
ENERSYS GFCI OUTLET		180	15A	3	B	4			3840	RECTIFIERS 1 & 2
-SPACE-				5	A	6	40A	3840		ENERSYS ALPHA CORDEX
-SPACE-				7	B	8			3840	RECTIFIER 3 & 4
-SPACE-				9	A	10	20A	1920		ENERSYS ALPHA CORDEX
-SPACE-				11	B	12			1920	RECTIFIER 5
-SPACE-				13	A	14				-SPACE-
-SPACE-				15	B	16				-SPACE-
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						9500	9500	
200A MCB, 1ϕ, 24 SPACE, 120/240V			L1		L2					
MB RATING: 65,000 AIC			9680		9680		VOLTAGE AMPS			
			81		81		AMPS			
			81				MAX AMPS			
			102				MAX 125%			

PANEL SCHEDULE — NO SCALE — 2

NOT USED — NO SCALE — 3

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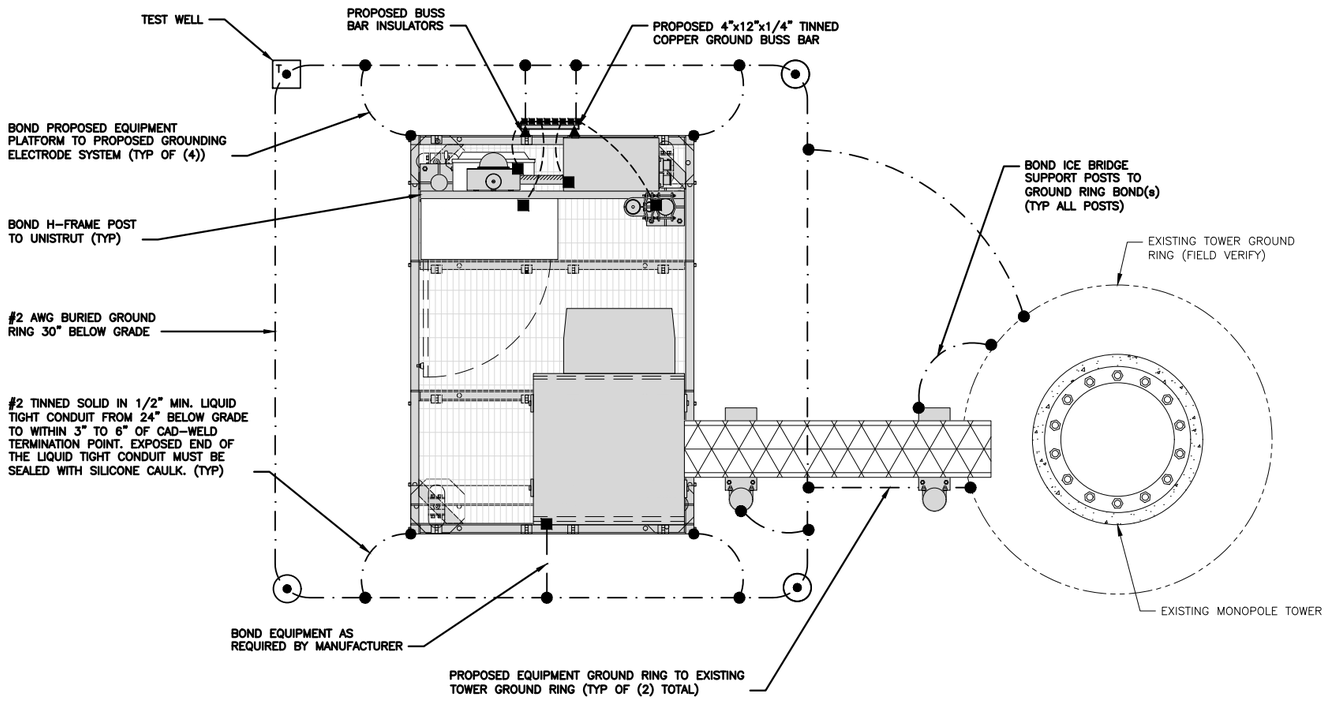
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

SHEET TITLE
ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3

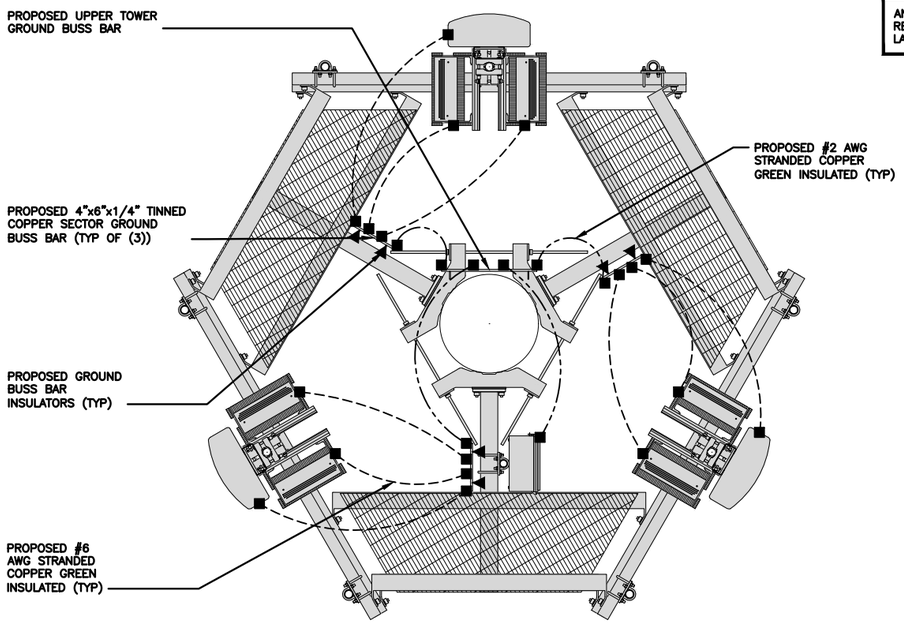


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1

NOTES

ANTENNAS AND OVP SHOWN ARE GENERIC AND NOT REFERENCING TO A SPECIFIC MANUFACTURER. THIS LAYOUT IS FOR REFERENCE PURPOSES ONLY



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- GROUND BUS BAR
- GROUND ROD
- TEST GROUND ROD WITH INSPECTION SLEEVE
- #6 AWG STRANDED & INSULATED
- #2 AWG SOLID COPPER TINNED
- #2 AWG STRANDED & INSULATED
- BUSS BAR INSULATOR

GROUNDING LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH Wireless L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES

(A) **EXTERIOR GROUND RING:** #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.

(B) **TOWER GROUND RING:** THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.

(C) **INTERIOR GROUND RING:** #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.

(D) **BOND TO INTERIOR GROUND RING:** #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.

(E) **GROUND ROD:** UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.

(F) **CELL REFERENCE GROUND BAR:** POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.

(G) **HATCH PLATE GROUND BAR:** BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.

(H) **EXTERIOR CABLE ENTRY PORT GROUND BARS:** LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.

(I) **TELCO GROUND BAR:** BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.

(J) **FRAME BONDING:** THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.

(K) **INTERIOR UNIT BONDS:** METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.

(L) **FENCE AND GATE GROUNDING:** METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.

(M) **EXTERIOR UNIT BONDS:** METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE

(N) **ICE BRIDGE SUPPORTS:** EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.

(O) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR

(P) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR.

REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE | 3

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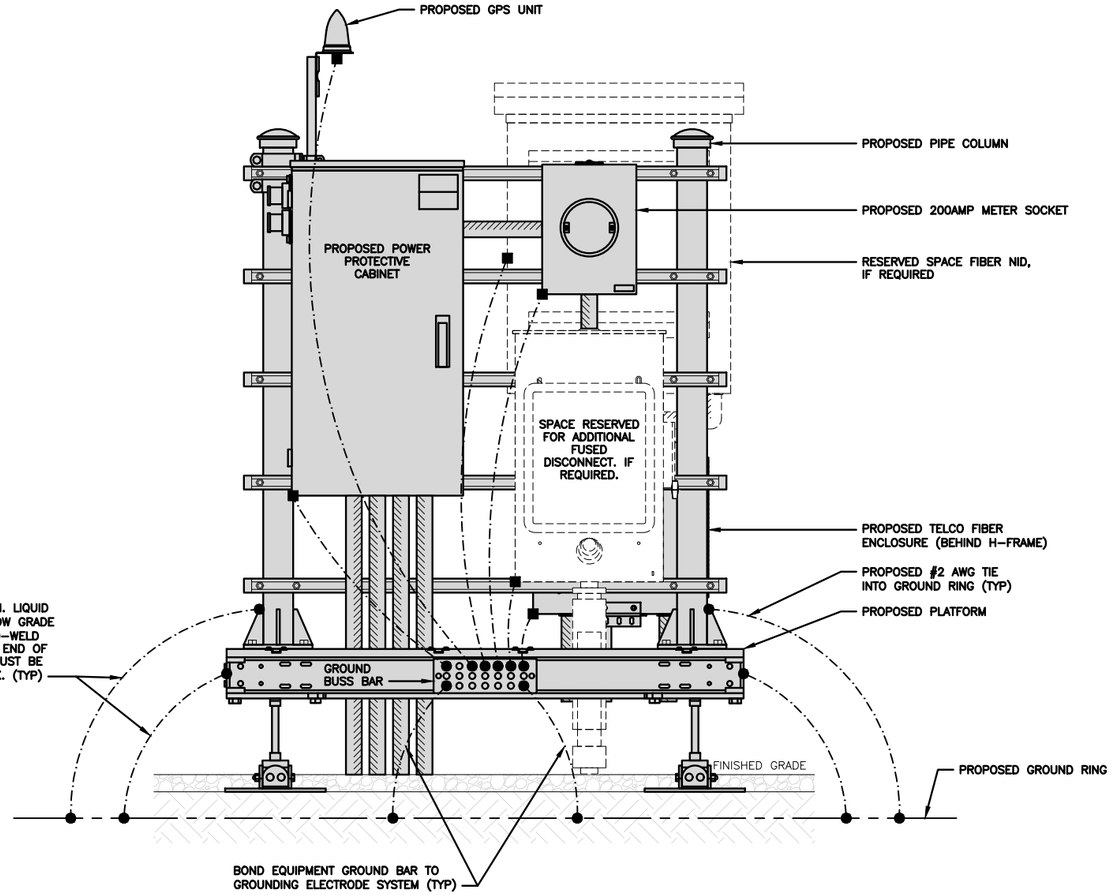
SHEET TITLE
GROUNDING PLANS AND NOTES

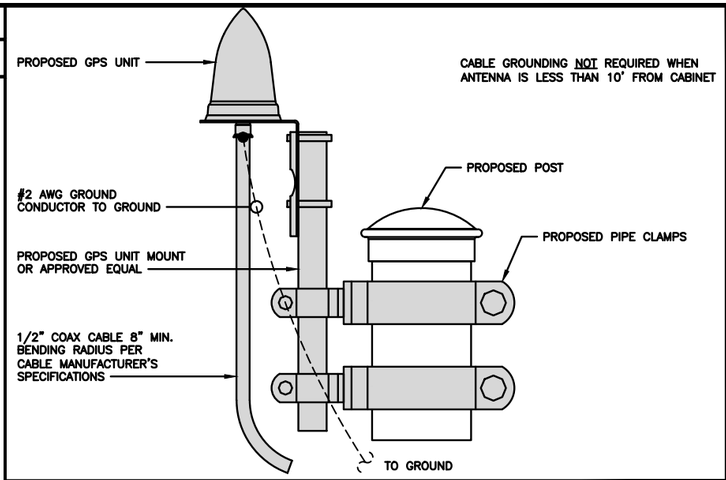
SHEET NUMBER
G-1

NOTES

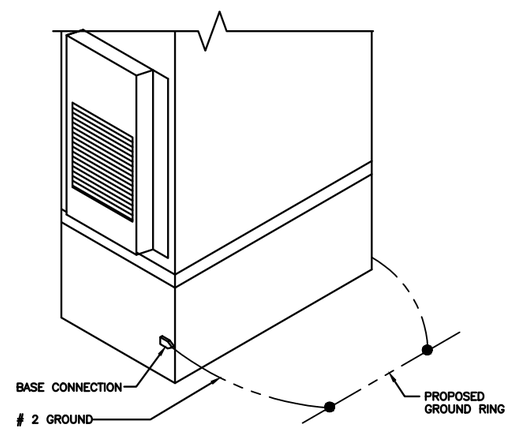
EQUIPMENT CABINET OMITTED FOR CLARITY



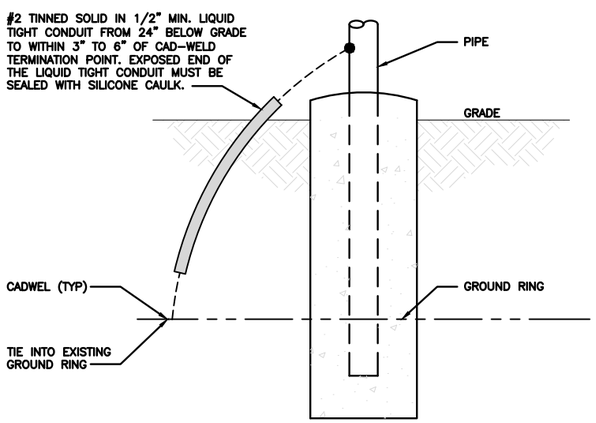
H-FRAME GROUNDING DETAIL | NO SCALE | 1



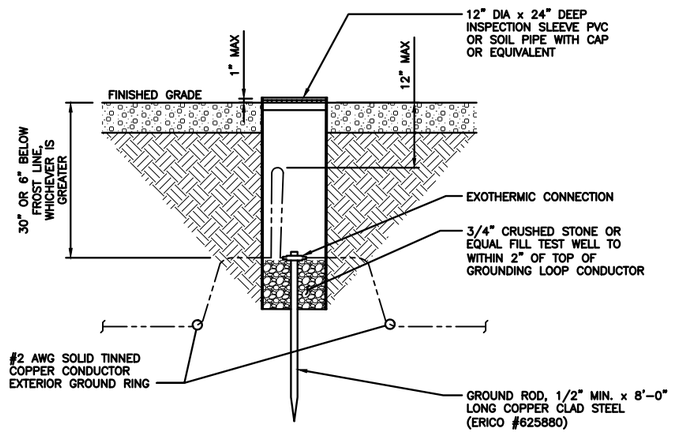
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



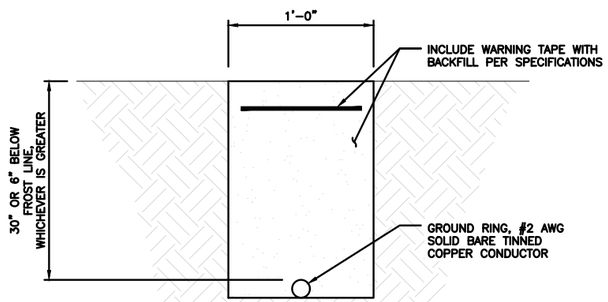
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE | NO SCALE | 5



TYPICAL GROUND RING TRENCH | NO SCALE | 6

dish wireless.
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CROWN CASTLE
2000 CORPORATE DRIVE
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STATE OF CONNECTICUT
ALEXANDER LABRANCHE
PEN.31022
LICENSED PROFESSIONAL ENGINEER
3-23-22

DRAWN BY:	CHECKED BY:	APPROVED BY:
EDZ	TW	DW

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER

NJJER02056A_826222

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER02056A
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

SHEET TITLE

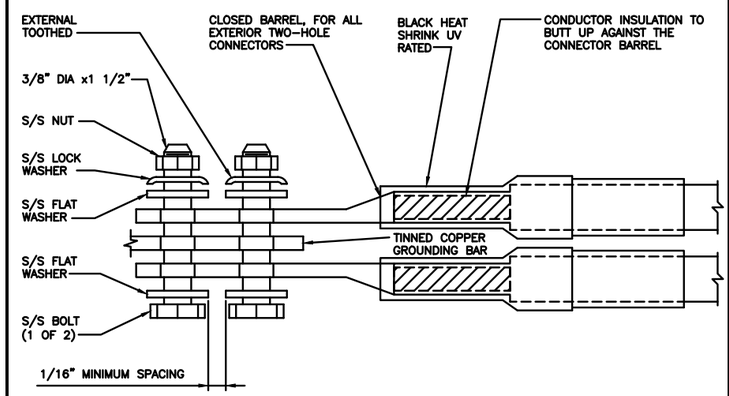
GROUNDING DETAILS

SHEET NUMBER

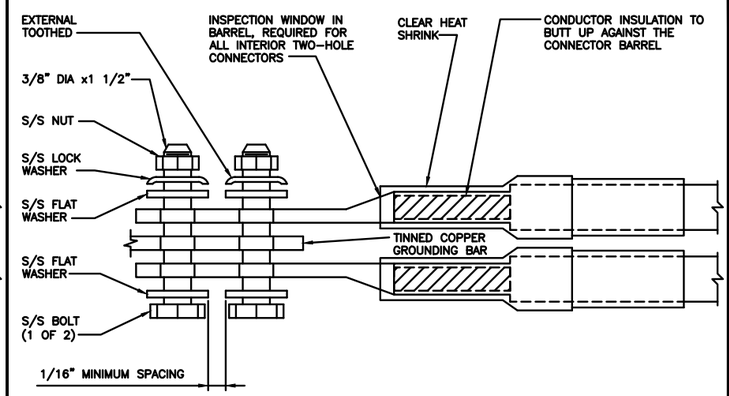
G-2

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR, ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.
5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.
6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.
8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).

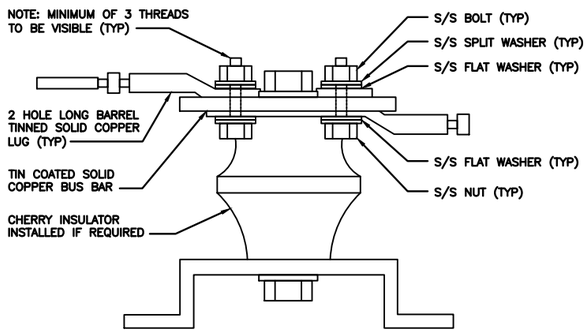
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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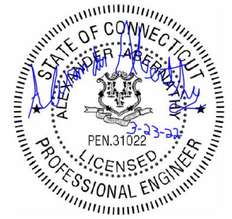

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PROJECT INFORMATION

NJJER02056A
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

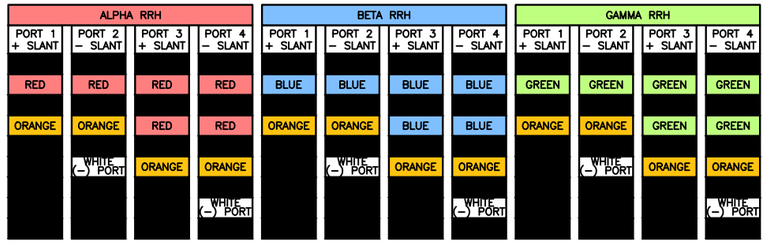
G-3

HYBRID/DISCREET CABLES

3/4" TAPE WIDTHS WITH 3/4" SPACING

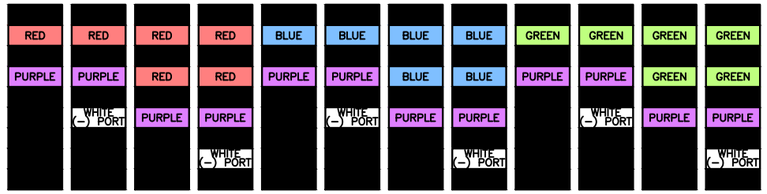
LOW-BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) – OPTIONAL PER MARKET

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BAND)



MID-BAND RRH
(AWS BANDS N66+N70)

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BANDS)



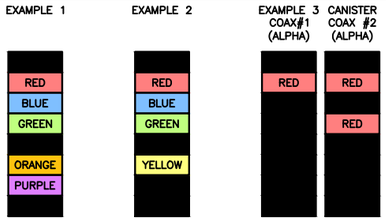
HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.

EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS.

EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS.

EXAMPLE 3 – MAIN COAX WITH GROUND MOUNTED RRHs.

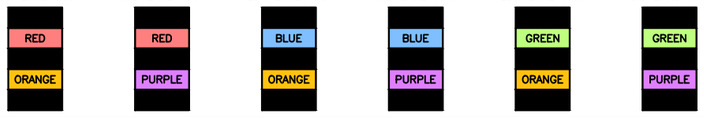


FIBER JUMPERS TO RRHs

LOW-BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.

POWER CABLES TO RRHs

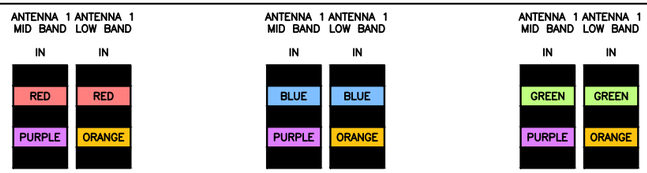
LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



RET MOTORS AT ANTENNAS

RET CONTROL IS HANDLED BY THE MID-BAND RRH WHEN ONE SET OF RET PORTS EXIST ON ANTENNA.

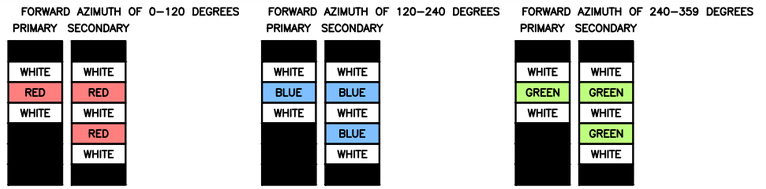
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.



MICROWAVE RADIO LINKS

LINKS WILL HAVE A 1.5–2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE.
ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.

MICROWAVE CABLES WILL REQUIRE P-TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID's.



RF CABLE COLOR CODES	NO SCALE	1

LOW BANDS (N71+N26) OPTIONAL – (N29): ORANGE

AWS (N66+N70+H-BLOCK): PURPLE

CBRS TECH (3 GHz): YELLOW

NEGATIVE SLANT PORT ON ANT/RRH: WHITE

ALPHA SECTOR: RED

BETA SECTOR: BLUE

GAMMA SECTOR: GREEN

COLOR IDENTIFIER	NO SCALE	2

NOT USED	NO SCALE	3

NOT USED	NO SCALE	4

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DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER02056A
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW LED–1–25A400/51K–SR4–120–PE–DDBTXD

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

W.P.

SECTION REFERENCE

DETAIL REFERENCE

ABBREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
AC	ALTERNATING CURRENT
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGL	ABOVE GROUND LEVEL
AIC	AMPERAGE INTERRUPTION CAPACITY
ALUM	ALUMINUM
ALT	ALTERNATE
ANT	ANTENNA
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BTC	BARE TINNED COPPER CONDUCTOR
BOF	BOTTOM OF FOOTING
CAB	CABINET
CANT	CANTILEVERED
CHG	CHARGING
CLG	CEILING
CLR	CLEAR
COL	COLUMN
COMM	COMMON
CONC	CONCRETE
CONSTR	CONSTRUCTION
DBL	DOUBLE
DC	DIRECT CURRENT
DEPT	DEPARTMENT
DF	DOUGLAS FIR
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DWG	DRAWING
DWL	DOWEL
EA	EACH
EC	ELECTRICAL CONDUCTOR
EL.	ELEVATION
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ENG	ENGINEER
EQ	EQUAL
EXP	EXPANSION
EXT	EXTERIOR
EW	EACH WAY
FAB	FABRICATION
FF	FINISH FLOOR
FG	FINISH GRADE
FIF	FACILITY INTERFACE FRAME
FIN	FINISH(ED)
FLR	FLOOR
FDN	FOUNDATION
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FS	FINISH SURFACE
FT	FOOT
FTG	FOOTING
GA	GAUGE
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GLB	GLUE LAMINATED BEAM
GLV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE
HDG	HOT DIPPED GALVANIZED
HDR	HEADER
HGR	HANGER
HVAC	HEAT/VENTILATION/AIR CONDITIONING
HT	HEIGHT
IGR	INTERIOR GROUND RING
IN	INCH
INT	INTERIOR
LB(S)	POUND(S)
LF	LINEAR FEET
LTE	LONG TERM EVOLUTION
MAS	MASONRY
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
MTS	MANUAL TRANSFER SWITCH
MW	MICROWAVE
NEC	NATIONAL ELECTRIC CODE
NM	NEWTON METERS
NO.	NUMBER
#	NUMBER
NTS	NOT TO SCALE
OC	ON–CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OPNG	OPENING
P/C	PRECAST CONCRETE
PCS	PERSONAL COMMUNICATION SERVICES
PCU	PRIMARY CONTROL UNIT
PRC	PRIMARY RADIO CABINET
PP	POLARIZING PRESERVING
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PWR	POWER CABINET
QTY	QUANTITY
RAD	RADIUS
RECT	RECTIFIER
REF	REFERENCE
REINF	REINFORCEMENT
REQ'D	REQUIRED
RET	REMOTE ELECTRIC TILT
RF	RADIO FREQUENCY
RMC	RIGID METALLIC CONDUIT
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
RWY	RACEWAY
SCH	SCHEDULE
SHT	SHEET
SIAD	SMART INTEGRATED ACCESS DEVICE
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
TEMP	TEMPORARY
THK	THICKNESS
TMA	TOWER MOUNTED AMPLIFIER
TN	TOE NAIL
TOA	TOP OF ANTENNA
TOC	TOP OF CURB
TOF	TOP OF FOUNDATION
TOP	TOP OF PLATE (PARAPET)
TOS	TOP OF STEEL
TOW	TOP OF WALL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
UPS	UNITERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
VIF	VERIFIED IN FIELD
W	WIDE
W/	WITH
WD	WOOD
WP	WEATHERPROOF
WT	WEIGHT

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DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER02056A
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.

2. "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.

4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).

5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."

6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

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

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

9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.

10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.

11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.

12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.

14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.

15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.

16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.

18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

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

20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.

3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.

4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.

5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.

6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR 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 CARRIER POC AND TOWER OWNER.

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

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

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

10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.

12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER

13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

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PEN.31022
LICENSED PROFESSIONAL ENGINEER
3-23-22

DRAWN BY:	CHECKED BY:	APPROVED BY:
EDZ	TW	DW

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	01/27/2022	ISSUED FOR REVIEW
0	03/22/2022	FINAL CDs

A&E PROJECT NUMBER

NJJER02056A_826222

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER02056A
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.

3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.

4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.

5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
- CONCRETE EXPOSED TO EARTH OR WEATHER:
- #6 BARS AND LARGER 2"
- #5 BARS AND SMALLER 1-1/2"
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
- SLAB AND WALLS 3/4"
- BEAMS AND COLUMNS 1-1/2"

7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.

2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.

3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.

4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.

4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.

4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.

5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.

6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).

7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.

8. TIE WRAPS ARE NOT ALLOWED.

9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.

12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).

14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.

18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.

21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).

22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).

23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.

24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.

25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.

29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".

30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

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PROFESSIONAL ENGINEER
3-23-22

DRAWN BY:	CHECKED BY:	APPROVED BY:
EDZ	TW	DW

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	01/27/2022	ISSUED FOR REVIEW
0	03/22/2022	FINAL CDs

A&E PROJECT NUMBER

NJJER02056A_826222

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER02056A
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

1. 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.

2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.

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

5. 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.

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

7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.

8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.

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

10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.

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

12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.

13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.

14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.

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

18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.

19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING 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 CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.

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A&E PROJECT NUMBER

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DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER02056A
201 SOUTH MAIN STREET
NEWTOWN, CT 06470

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

Date: **January 11, 2022**

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-2000

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate** **Site Number:**	 NJJER02056A
Crown Castle Designation:	**BU Number:** **Site Name:** **JDE Job Number:** **Work Order Number:** **Order Number:**	826222 Newtown/RT-25 678162 2057447 578963 Rev. 3
Engineering Firm Designation:	**Crown Castle Project Number:**	2057447
Site Data:	**201 South Main Street, Newtown, Fairfield County, CT** **Latitude *41° 22' 41.32"*, Longitude *-73° 16' 26.94"*** **150 Foot - Monopole Tower**	

Crown Castle is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

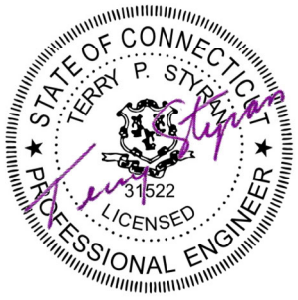
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity – 100.0%**

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Dolly Hsu

Respectfully submitted by:



Terry P. Styran, P.E.
Senior Project Engineer

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1) INTRODUCTION

This tower is a 150 ft Monopole tower designed by PIROD MANUFACTURES INC. The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
73.0	73.0	3	commscope	FFVV-65B-R2 w/ Mount Pipe	1	1-3/8
		3	fujitsu	TA08025-B604		
		3	fujitsu	TA08025-B605		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
148.0	148.0	1	-	RMQLP-496-HK	13	1-5/8
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe		
		3	ericsson	KRY 112 144/1_T-MOBILE		
	146.0	3	ericsson	AIR -32 B2A/B66AA w/ Mount Pipe		
		3	ericsson	RADIO 4449 B12/B71		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
138.0	138.0	1	tower mounts	Platform Mount [LP 601-1]	3	1-1/4
	137.0	3	alcatel lucent	1900MHZ RRH		
		3	alcatel lucent	800MHZ RRH		
		3	alcatel lucent	TD-RRH8X20-25		
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe		
127.0	127.0	3	alcatel lucent	RRH2X60-700	13	1-5/8
		3	alcatel lucent	RRH2X60-PCS		
		9	commscope	SBNHH-1D65B w/ Mount Pipe		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		1	raycap	RHSDC-3315-PF-48		
		6	rfs celwave	APL866513-42T0 w/ Mount Pipe		
		6	rfs celwave	FD9R6004/2C-3L		
		1	tower mounts	Platform Mount [LP 304-1]		
111.0	114.0	1	raycap	DC6-48-60-18-8F	4 2 6 2	7/8 3/8 1-1/4 Conduit
	112.0	6	powerwave tech	LGP21401		
		1	raycap	DC6-48-60-18-8C-EV		
	111.0	3	cci antennas	DMP65R-BU6D w/ Mount Pipe		
		3	cci antennas	OPA65R-BU6D w/ Mount Pipe		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 8843 B2/B66A_CCIV2		
		3	powerwave technologies	7770.00 w/ Mount Pipe		
68.0	68.0	1	gps	GPS_A	1	1/2

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	3536527	CCISITES
4-TOWER MANUFACTURER DRAWINGS	3536528	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3963744	CCISITES
4-POST-MODIFICATION INSPECTION	5156735	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5982445	CCISITES
4-POST-MODIFICATION INSPECTION	6139913	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	3917010	CCISITES

3.1) Analysis Method

tnxTower (version 8.1.1.0), 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. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	150 - 133	Pole	TP26x21.83x0.25	1	-8.06	1220.16	9.9	Pass
L2	133 - 98.42	Pole	TP34.0625x24.7837x0.3125	2	-19.09	1998.51	38.8	Pass
L3	98.42 - 64.75	Pole	TP41.75x32.4898x0.375	3	-30.01	2940.66	49.3	Pass
L4	64.75 - 31.92	Pole	TP49.0625x39.8468x0.375	4	-39.53	3460.78	62.8	Pass
L5	31.92 - 0	Pole	TP56.125x46.9609x0.375	5	-52.47	4075.94	73.4	Pass
							Summary	
						Pole (L5)	73.4	Pass
						Rating =	73.4	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	80.8	Pass
1	Base Plate	0	55.3	Pass
1	Base Foundation (Structure)	0	100.0	Pass
1	Base Foundation (Soil Interaction)	0	94.6	Pass

Structure Rating (max from all components) =	100%

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

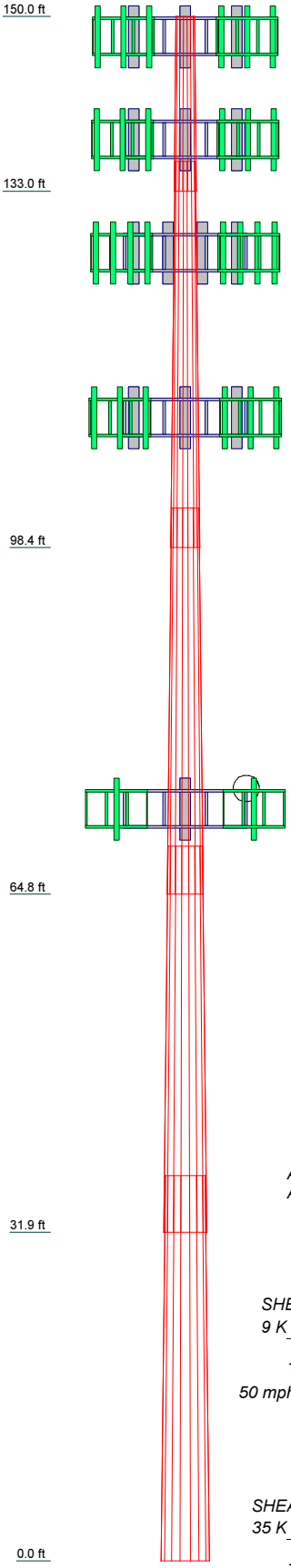
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	17.0000	18	0.2500	2.9200	21.8300	26.0000		1.1
2	37.5000	18	0.3125	3.8300	24.7837	34.0625		3.7
3	37.5000	18	0.3750	4.6700	32.4898	41.7500	A572-65	5.6
4	37.5000	18	0.3750	5.5000	39.8468	49.0625		6.7
5	37.4200	18	0.3750		46.9609	56.1250		7.8
								24.8



ALL REACTIONS ARE FACTORED

AXIAL 88 K

SHEAR 9 K — *MOMENT 991 kip-ft*

TORQUE 0 kip-ft

50 mph WIND - 1.5000 in ICE

AXIAL 52 K

SHEAR 35 K — *MOMENT 3703 kip-ft*

TORQUE 1 kip-ft

REACTIONS - 120 mph WIND

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.0000 ft
8. TOWER RATING: 73.4%

CROWN CASTLE
The Pathway to Possible

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
Phone: (724) 416-2000
FAX:

Job: ***BU# 826222***			
Project:			
Client: Crown Castle	Drawn by: Dolly Hsu		App'd:
Code: TIA-222-H	Date: 01/11/22		Scale: NTS
Path: C:\Users\dhsu\Documents\Weekend WIP\826222\WO 2057447 - SA\Prod\826222 - Shielding.eri			Dwg No. E-1

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

- Tower is located in Fairfield County, Connecticut.
- Tower base elevation above sea level: 399.0000 ft.
- Basic wind speed of 120 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.0000 ft.
- Nominal ice thickness of 1.5000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.00 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- 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-H Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H 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		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	*Elevation*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	150.0000-133.0000	17.0000	2.92	18	21.8300	26.0000	0.2500	1.0000	A572-65 (65 ksi)
L2	133.0000-98.4200	37.5000	3.83	18	24.7837	34.0625	0.3125	1.2500	A572-65 (65 ksi)
L3	98.4200-64.7500	37.5000	4.67	18	32.4898	41.7500	0.3750	1.5000	A572-65 (65 ksi)
L4	64.7500-31.9200	37.5000	5.50	18	39.8468	49.0625	0.3750	1.5000	A572-65 (65 ksi)
L5	31.9200-0.0000	37.4200		18	46.9609	56.1250	0.3750	1.5000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	22.1282	17.1237	1007.4853	7.6609	11.0896	90.8492	2016.2962	8.5635	3.4021	13.608
	26.3625	20.4326	1711.6544	9.1412	13.2080	129.5922	3425.5610	10.2183	4.1360	16.544
L2	25.8515	24.2724	1836.3792	8.6873	12.5901	145.8585	3675.1749	12.1385	3.8119	12.198
	34.5398	33.4758	4817.4335	11.9812	17.3038	278.4040	9641.2058	16.7411	5.4450	17.424
L3	33.8935	38.2247	4980.7241	11.4008	16.5048	301.7737	9968.0019	19.1160	5.0582	13.489
	42.3362	49.2466	10650.9822	14.6881	21.2090	502.1916	21315.9793	24.6280	6.6880	17.835
L4	41.5690	46.9813	9247.7575	14.0125	20.2422	456.8559	18507.6835	23.4951	6.3530	16.941
	49.7615	57.9503	17355.1378	17.2841	24.9238	696.3293	34733.1119	28.9807	7.9750	21.267
L5	48.9952	55.4488	15203.3083	16.5380	23.8561	637.2918	30426.6216	27.7297	7.6051	20.28
	56.9330	66.3564	26056.1506	19.7913	28.5115	913.8821	52146.5865	33.1845	9.2180	24.581

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
L1 150.0000-133.0000				1	1	1			
L2 133.0000-98.4200				1	1	1			
L3 98.4200-64.7500				1	1	1			
L4 64.7500-31.9200				1	1	1			
L5 31.9200-0.0000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
**********										
LDF7-50A(1-5/8) ***	A	No	Surface Ar (CaAa)	148.0000 - 0.0000	13	6	-0.305 -0.142	1.9800		0.82

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
LDF4-50A(1/2)	A	No	Surface Ar (CaAa)	68.0000 - 0.0000	2	2	0.114 0.180	0.6300		0.15
***										
CU12PSM9P8XXX(1-3/8)	A	No	Surface Ar (CaAa)	73.0000 - 0.0000	1	1	0.500 0.500	1.4110		1.66
***										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
**********									
**********									
***									
HB114-1-0813U4-M5J(1-1/4)	C	No	No	Inside Pole	138.0000 - 0.0000	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	1.20 1.20 1.20 1.20
***									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	127.0000 - 0.0000	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.82 0.82 0.82 0.82
HB158-1-08U8-S8J18(1-5/8)	C	No	No	Inside Pole	127.0000 - 0.0000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	1.30 1.30 1.30 1.30
***									
LDF2-50A(3/8)	C	No	No	Inside Pole	111.0000 - 0.0000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.08 0.08 0.08 0.08
LDF5-50A(7/8)	C	No	No	Inside Pole	111.0000 - 0.0000	4	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.33 0.33 0.33 0.33
LDF6-50A(1-1/4)	C	No	No	Inside Pole	111.0000 - 0.0000	6	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.60 0.60 0.60 0.60
2" (Nominal) Conduit	C	No	No	Inside Pole	111.0000 - 0.0000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.72 0.72 0.72 0.72
***									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	150.0000-133.0000	A	0.000	0.000	17.820	0.000	0.16
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L2	133.0000-98.4200	A	0.000	0.000	41.081	0.000	0.37
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.52
L3	98.4200-64.7500	A	0.000	0.000	41.574	0.000	0.37

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.72
L4	64.7500-31.9200	A	0.000	0.000	47.771	0.000	0.41
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.70
L5	31.9200-0.0000	A	0.000	0.000	46.447	0.000	0.40
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.68

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	150.0000-133.0000	A	1.475	0.000	0.000	27.805	0.000	0.54
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L2	133.0000-98.4200	A	1.445	0.000	0.000	64.099	0.000	1.25
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.52
L3	98.4200-64.7500	A	1.395	0.000	0.000	67.393	0.000	1.27
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.72
L4	64.7500-31.9200	A	1.324	0.000	0.000	90.615	0.000	1.50
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.70
L5	31.9200-0.0000	A	1.186	0.000	0.000	86.517	0.000	1.40
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.68

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	150.0000-133.0000	-4.5357	-0.2534	-5.0171	-0.2803
L2	133.0000-98.4200	-5.9550	-0.3327	-5.7212	-0.3197
L3	98.4200-64.7500	-6.5934	-0.5986	-6.0549	-0.7768
L4	64.7500-31.9200	-7.1740	-1.5814	-6.3198	-2.4262
L5	31.9200-0.0000	-7.6617	-1.7042	-6.6529	-2.5311

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	5	LDF7-50A(1-5/8)	133.00 - 148.00	1.0000	1.0000
L2	5	LDF7-50A(1-5/8)	98.42 - 133.00	1.0000	1.0000
L3	5	LDF7-50A(1-5/8)	64.75 - 98.42	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L3	20	LDF4-50A(1/2)	64.75 - 68.00	1.0000	1.0000
L3	22	CU12PSM9P8XXX(1-3/8)	64.75 - 73.00	1.0000	1.0000
L4	5	LDF7-50A(1-5/8)	31.92 - 64.75	1.0000	1.0000
L4	20	LDF4-50A(1/2)	31.92 - 64.75	1.0000	1.0000
L4	22	CU12PSM9P8XXX(1-3/8)	31.92 - 64.75	1.0000	1.0000
L5	5	LDF7-50A(1-5/8)	0.00 - 31.92	1.0000	1.0000
L5	20	LDF4-50A(1/2)	0.00 - 31.92	1.0000	1.0000
L5	22	CU12PSM9P8XXX(1-3/8)	0.00 - 31.92	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
AIR -32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.0000 0.00 -2.00	0.00	148.0000
AIR -32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.0000 0.00 -2.00	0.00	148.0000
AIR -32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.0000 0.00 -2.00	0.00	148.0000
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	148.0000
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	148.0000
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	148.0000
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.0000 0.00 -2.00	0.00	148.0000
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.0000 0.00 -2.00	0.00	148.0000
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.0000 0.00 -2.00	0.00	148.0000
KRY 112 144/1_T-MOBILE	A	From Leg	4.0000 0.00 0.00	0.00	148.0000
KRY 112 144/1_T-MOBILE	B	From Leg	4.0000 0.00 0.00	0.00	148.0000
KRY 112 144/1_T-MOBILE	C	From Leg	4.0000 0.00 0.00	0.00	148.0000
RADIO 4449 B12/B71	A	From Leg	4.0000 0.00 -2.00	0.00	148.0000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
RADIO 4449 B12/B71	B	From Leg	4.0000 0.00 -2.00	0.00	148.0000
RADIO 4449 B12/B71	C	From Leg	4.0000 0.00 -2.00	0.00	148.0000
RMQLP-496-HK	C	None		0.00	148.0000
Miscellaneous [NA 509-1]	A	From Leg	2.0000 0.00 0.00	0.00	148.0000
Miscellaneous [NA 509-1]	B	From Leg	2.0000 0.00 0.00	0.00	148.0000
Miscellaneous [NA 509-1]	C	From Leg	2.0000 0.00 0.00	0.00	148.0000
***					
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.0000 0.00 -1.00	0.00	138.0000
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.0000 0.00 -1.00	0.00	138.0000
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.0000 0.00 -1.00	0.00	138.0000
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.0000 0.00 -1.00	0.00	138.0000
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.0000 0.00 -1.00	0.00	138.0000
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.0000 0.00 -1.00	0.00	138.0000
1900MHZ RRH	A	From Leg	4.0000 0.00 -1.00	0.00	138.0000
1900MHZ RRH	B	From Leg	4.0000 0.00 -1.00	0.00	138.0000
1900MHZ RRH	C	From Leg	4.0000 0.00 -1.00	0.00	138.0000
800MHZ RRH	A	From Leg	4.0000 0.00 -1.00	0.00	138.0000
800MHZ RRH	B	From Leg	4.0000 0.00 -1.00	0.00	138.0000
800MHZ RRH	C	From Leg	4.0000 0.00 -1.00	0.00	138.0000
TD-RRH8X20-25	A	From Leg	4.0000 0.00 -1.00	0.00	138.0000
TD-RRH8X20-25	B	From Leg	4.0000 0.00 -1.00	0.00	138.0000
TD-RRH8X20-25	C	From Leg	4.0000 0.00 -1.00	0.00	138.0000
(2) 8' x 2'' Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	138.0000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
(2) 8' x 2'' Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	138.0000
(2) 8' x 2'' Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	138.0000
Platform Mount [LP 601-1]	C	None		0.00	138.0000
***					
(3) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	127.0000
(3) SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	127.0000
(3) SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	127.0000
(2) APL866513-42T0 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	127.0000
(2) APL866513-42T0 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	127.0000
(2) APL866513-42T0 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	127.0000
(2) FD9R6004/2C-3L	A	From Leg	4.0000 0.00 0.00	0.00	127.0000
(2) FD9R6004/2C-3L	B	From Leg	4.0000 0.00 0.00	0.00	127.0000
(2) FD9R6004/2C-3L	C	From Leg	4.0000 0.00 0.00	0.00	127.0000
RRH2X60-700	A	From Leg	4.0000 0.00 0.00	0.00	127.0000
RRH2X60-700	B	From Leg	4.0000 0.00 0.00	0.00	127.0000
RRH2X60-700	C	From Leg	4.0000 0.00 0.00	0.00	127.0000
RRH2X60-PCS	A	From Leg	4.0000 0.00 0.00	0.00	127.0000
RRH2X60-PCS	B	From Leg	4.0000 0.00 0.00	0.00	127.0000
RRH2X60-PCS	C	From Leg	4.0000 0.00 0.00	0.00	127.0000
RHSDC-3315-PF-48	C	From Leg	4.0000 0.00 0.00	0.00	127.0000
Platform Mount [LP 304-1]	C	None		0.00	127.0000
***					
DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	111.0000
DMP65R-BU6D w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	111.0000
DMP65R-BU6D w/ Mount Pipe	C	From Leg	4.0000	0.00	111.0000

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* °	*Placement* *ft*
			0.00 0.00		
OPA65R-BU6D w/ Mount Pipe	A	From Leg	4.0000 0.00	0.00	111.0000
OPA65R-BU6D w/ Mount Pipe	B	From Leg	0.00 4.0000 0.00	0.00	111.0000
OPA65R-BU6D w/ Mount Pipe	C	From Leg	0.00 4.0000 0.00	0.00	111.0000
7770.00 w/ Mount Pipe	A	From Leg	0.00 4.0000 0.00	0.00	111.0000
7770.00 w/ Mount Pipe	B	From Leg	0.00 4.0000 0.00	0.00	111.0000
7770.00 w/ Mount Pipe	C	From Leg	0.00 4.0000 0.00	0.00	111.0000
RRUS 4449 B5/B12	A	From Leg	0.00 4.0000 0.00	90.00	111.0000
RRUS 4449 B5/B12	B	From Leg	0.00 4.0000 0.00	90.00	111.0000
RRUS 4449 B5/B12	C	From Leg	0.00 4.0000 0.00	90.00	111.0000
RRUS 8843 B2/B66A_CCIV2	A	From Leg	0.00 4.0000 0.00	90.00	111.0000
RRUS 8843 B2/B66A_CCIV2	B	From Leg	0.00 4.0000 0.00	90.00	111.0000
RRUS 8843 B2/B66A_CCIV2	C	From Leg	0.00 4.0000 0.00	90.00	111.0000
LGP21401	A	From Leg	0.00 4.0000 0.00	90.00	111.0000
LGP21401	B	From Leg	1.00 4.0000 0.00	90.00	111.0000
LGP21401	C	From Leg	1.00 4.0000 0.00	90.00	111.0000
LGP21401	A	From Leg	1.00 4.0000 0.00	90.00	111.0000
LGP21401	B	From Leg	1.00 4.0000 0.00	90.00	111.0000
LGP21401	C	From Leg	1.00 4.0000 0.00	90.00	111.0000
DC6-48-60-18-8C-EV	A	From Leg	1.00 4.0000 0.00	0.00	111.0000
DC6-48-60-18-8F	B	From Leg	1.00 4.0000 0.00	0.00	111.0000
Platform Mount [LP 303-1_HR-1]	C	None	3.00	0.00	111.0000
2.375" OD x 4' Mount Pipe	A	From Leg	4.0000 0.00	0.00	111.0000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			0.00		
2.375" OD x 4' Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	111.0000
2.375" OD x 4' Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	111.0000
***					
FFVV-65B-R2 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	73.0000
FFVV-65B-R2 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	73.0000
FFVV-65B-R2 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	73.0000
TA08025-B604	A	From Leg	4.0000 0.00 0.00	0.00	73.0000
TA08025-B604	B	From Leg	4.0000 0.00 0.00	0.00	73.0000
TA08025-B604	C	From Leg	4.0000 0.00 0.00	0.00	73.0000
TA08025-B605	A	From Leg	4.0000 0.00 0.00	0.00	73.0000
TA08025-B605	B	From Leg	4.0000 0.00 0.00	0.00	73.0000
TA08025-B605	C	From Leg	4.0000 0.00 0.00	0.00	73.0000
RDIDC-9181-PF-48	A	From Leg	4.0000 0.00 0.00	0.00	73.0000
Commscope MC-PK8-DSH	C	None		0.00	73.0000
(2) 8' x 2" Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	73.0000
(2) 8' x 2" Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	73.0000
(2) 8' x 2" Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	73.0000
***					

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice

Comb. No.	Description
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	150 - 133	Pole	Max Tension	20	0.00	-0.00	0.00
			Max. Compression	26	-18.96	0.57	0.32
			Max. Mx	20	-8.24	64.09	0.10
			Max. My	2	-8.06	0.14	72.12
			Max. Vy	20	-9.40	64.09	0.10
			Max. Vx	2	-10.56	0.14	72.12
			Max. Torque	14			-0.56
L2	133 - 98.42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.55	2.62	1.35
			Max. Mx	20	-19.38	561.28	-0.03
			Max. My	2	-19.09	0.26	628.11
			Max. Vy	20	-20.29	561.28	-0.03
			Max. Vx	2	-22.50	0.26	628.11
			Max. Torque	15			-1.05
L3	98.42 - 64.75	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-59.10	4.92	3.19
			Max. Mx	20	-30.27	1290.54	-0.16
			Max. My	2	-30.01	0.32	1440.33
			Max. Vy	20	-26.26	1290.54	-0.16
			Max. Vx	2	-29.11	0.32	1440.33
			Max. Torque	15			-0.84
L4	64.75 - 31.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.84	7.81	4.86
			Max. Mx	20	-39.69	2181.12	-0.30
			Max. My	2	-39.53	0.57	2427.45
			Max. Vy	20	-29.29	2181.12	-0.30
			Max. Vx	2	-32.45	0.57	2427.45
			Max. Torque	15			-0.84
L5	31.92 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-88.47	11.32	6.89
			Max. Mx	20	-52.47	3337.00	-0.37
			Max. My	2	-52.47	1.00	3703.30
			Max. Vy	20	-32.28	3337.00	-0.37
			Max. Vx	2	-35.52	1.00	3703.30
			Max. Torque	15			-0.84

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	88.47	-0.00	-0.00
	Max. H_x	21	39.37	32.25	-0.02
	Max. H_z	3	39.37	-0.02	35.49
	Max. M_x	2	3703.30	-0.02	35.49
	Max. M_z	8	3329.82	-32.25	0.02
	Max. Torsion	3	0.83	-0.02	35.49
	Min. Vert	21	39.37	32.25	-0.02
	Min. H_x	9	39.37	-32.25	0.02
	Min. H_z	15	39.37	0.02	-35.49
	Min. M_x	14	-3698.86	0.02	-35.49
	Min. M_z	20	-3337.00	32.25	-0.02
	Min. Torsion	15	-0.84	0.02	-35.49

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	43.74	-0.00	0.00	-1.77	2.86	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	52.49	0.02	-35.49	-3703.30	1.00	-0.83
0.9 Dead+1.0 Wind 0 deg - No Ice	39.37	0.02	-35.49	-3661.09	0.10	-0.83
1.2 Dead+1.0 Wind 30 deg - No Ice	52.49	16.72	-28.94	-3003.71	-1731.00	-0.21
0.9 Dead+1.0 Wind 30 deg - No Ice	39.37	16.72	-28.94	-2969.40	-1712.43	-0.21
1.2 Dead+1.0 Wind 60 deg - No Ice	52.49	27.95	-16.15	-1671.25	-2884.98	-0.20
0.9 Dead+1.0 Wind 60 deg - No Ice	39.37	27.95	-16.15	-1651.91	-2853.43	-0.20
1.2 Dead+1.0 Wind 90 deg - No Ice	52.49	32.25	-0.02	-4.82	-3329.82	-0.15
0.9 Dead+1.0 Wind 90 deg -	39.37	32.25	-0.02	-4.21	-3293.46	-0.15

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
No Ice						
1.2 Dead+1.0 Wind 120 deg - No Ice	52.49	27.93	16.12	1662.32	-2882.40	-0.05
0.9 Dead+1.0 Wind 120 deg - No Ice	39.37	27.93	16.12	1644.18	-2850.88	-0.05
1.2 Dead+1.0 Wind 150 deg - No Ice	52.49	16.31	28.28	2927.47	-1686.56	0.06
0.9 Dead+1.0 Wind 150 deg - No Ice	39.37	16.31	28.28	2895.08	-1668.47	0.06
1.2 Dead+1.0 Wind 180 deg - No Ice	52.49	-0.02	35.49	3698.86	6.18	0.83
0.9 Dead+1.0 Wind 180 deg - No Ice	39.37	-0.02	35.49	3657.80	5.22	0.84
1.2 Dead+1.0 Wind 210 deg - No Ice	52.49	-16.72	28.94	2999.26	1738.19	0.21
0.9 Dead+1.0 Wind 210 deg - No Ice	39.37	-16.72	28.94	2966.10	1717.76	0.21
1.2 Dead+1.0 Wind 240 deg - No Ice	52.49	-27.95	16.15	1666.80	2892.16	0.20
0.9 Dead+1.0 Wind 240 deg - No Ice	39.37	-27.95	16.15	1648.61	2858.75	0.20
1.2 Dead+1.0 Wind 270 deg - No Ice	52.49	-32.25	0.02	0.37	3337.00	0.15
0.9 Dead+1.0 Wind 270 deg - No Ice	39.37	-32.25	0.02	0.91	3298.78	0.14
1.2 Dead+1.0 Wind 300 deg - No Ice	52.49	-27.93	-16.12	-1666.76	2889.57	0.05
0.9 Dead+1.0 Wind 300 deg - No Ice	39.37	-27.93	-16.12	-1647.48	2856.20	0.05
1.2 Dead+1.0 Wind 330 deg - No Ice	52.49	-16.31	-28.28	-2931.91	1693.74	-0.06
0.9 Dead+1.0 Wind 330 deg - No Ice	39.37	-16.31	-28.28	-2898.37	1673.79	-0.06
1.2 Dead+1.0 Ice	88.47	0.00	0.00	-6.89	11.32	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice	88.47	0.00	-9.41	-991.39	11.04	-0.12
1.2 Dead+1.0 Wind 30 deg+1.0 Ice	88.47	4.65	-8.05	-843.68	-471.82	-0.03
1.2 Dead+1.0 Wind 60 deg+1.0 Ice	88.47	8.04	-4.65	-490.36	-825.17	-0.05
1.2 Dead+1.0 Wind 90 deg+1.0 Ice	88.47	9.29	-0.00	-7.54	-954.32	-0.05
1.2 Dead+1.0 Wind 120 deg+1.0 Ice	88.47	8.04	4.64	475.42	-824.66	-0.04
1.2 Dead+1.0 Wind 150 deg+1.0 Ice	88.47	4.64	8.04	829.11	-470.94	-0.02
1.2 Dead+1.0 Wind 180 deg+1.0 Ice	88.47	-0.00	9.41	977.34	12.06	0.12
1.2 Dead+1.0 Wind 210 deg+1.0 Ice	88.47	-4.65	8.05	829.62	494.92	0.03
1.2 Dead+1.0 Wind 240 deg+1.0 Ice	88.47	-8.04	4.65	476.30	848.26	0.05
1.2 Dead+1.0 Wind 270 deg+1.0 Ice	88.47	-9.29	0.00	-6.52	977.41	0.05
1.2 Dead+1.0 Wind 300 deg+1.0 Ice	88.47	-8.04	-4.64	-489.48	847.75	0.04
1.2 Dead+1.0 Wind 330 deg+1.0 Ice	88.47	-4.64	-8.04	-843.17	494.04	0.02
Dead+Wind 0 deg - Service	43.74	0.00	-8.36	-867.94	2.37	-0.19
Dead+Wind 30 deg - Service	43.74	3.94	-6.82	-704.11	-402.87	-0.05
Dead+Wind 60 deg - Service	43.74	6.58	-3.80	-392.33	-672.84	-0.05
Dead+Wind 90 deg - Service	43.74	7.60	-0.00	-2.45	-777.04	-0.04
Dead+Wind 120 deg - Service	43.74	6.58	3.80	387.60	-672.23	-0.02
Dead+Wind 150 deg - Service	43.74	3.84	6.66	683.61	-392.46	0.01
Dead+Wind 180 deg - Service	43.74	-0.00	8.36	864.26	3.58	0.19
Dead+Wind 210 deg -	43.74	-3.94	6.82	700.43	408.83	0.05

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Service						
Dead+Wind 240 deg - Service	43.74	-6.58	3.80	388.65	678.79	0.05
Dead+Wind 270 deg - Service	43.74	-7.60	0.00	-1.24	782.99	0.04
Dead+Wind 300 deg - Service	43.74	-6.58	-3.80	-391.28	678.18	0.02
Dead+Wind 330 deg - Service	43.74	-3.84	-6.66	-687.29	398.41	-0.01

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-43.74	0.00	0.00	43.74	0.00	0.000%
2	0.02	-52.49	-35.49	-0.02	52.49	35.49	0.003%
3	0.02	-39.37	-35.49	-0.02	39.37	35.49	0.002%
4	16.72	-52.49	-28.94	-16.72	52.49	28.94	0.000%
5	16.72	-39.37	-28.94	-16.72	39.37	28.94	0.000%
6	27.95	-52.49	-16.15	-27.95	52.49	16.15	0.000%
7	27.95	-39.37	-16.15	-27.95	39.37	16.15	0.000%
8	32.26	-52.49	-0.02	-32.25	52.49	0.02	0.006%
9	32.26	-39.37	-0.02	-32.25	39.37	0.02	0.005%
10	27.93	-52.49	16.12	-27.93	52.49	-16.12	0.000%
11	27.93	-39.37	16.12	-27.93	39.37	-16.12	0.000%
12	16.31	-52.49	28.28	-16.31	52.49	-28.28	0.000%
13	16.31	-39.37	28.28	-16.31	39.37	-28.28	0.000%
14	-0.02	-52.49	35.49	0.02	52.49	-35.49	0.003%
15	-0.02	-39.37	35.49	0.02	39.37	-35.49	0.002%
16	-16.72	-52.49	28.94	16.72	52.49	-28.94	0.000%
17	-16.72	-39.37	28.94	16.72	39.37	-28.94	0.000%
18	-27.95	-52.49	16.15	27.95	52.49	-16.15	0.000%
19	-27.95	-39.37	16.15	27.95	39.37	-16.15	0.000%
20	-32.26	-52.49	0.02	32.25	52.49	-0.02	0.006%
21	-32.26	-39.37	0.02	32.25	39.37	-0.02	0.005%
22	-27.93	-52.49	-16.12	27.93	52.49	16.12	0.000%
23	-27.93	-39.37	-16.12	27.93	39.37	16.12	0.000%
24	-16.31	-52.49	-28.28	16.31	52.49	28.28	0.000%
25	-16.31	-39.37	-28.28	16.31	39.37	28.28	0.000%
26	0.00	-88.47	0.00	-0.00	88.47	-0.00	0.001%
27	0.00	-88.47	-9.41	-0.00	88.47	9.41	0.001%
28	4.65	-88.47	-8.05	-4.65	88.47	8.05	0.001%
29	8.04	-88.47	-4.65	-8.04	88.47	4.65	0.001%
30	9.29	-88.47	-0.00	-9.29	88.47	0.00	0.001%
31	8.04	-88.47	4.64	-8.04	88.47	-4.64	0.001%
32	4.64	-88.47	8.04	-4.64	88.47	-8.04	0.001%
33	-0.00	-88.47	9.41	0.00	88.47	-9.41	0.001%
34	-4.65	-88.47	8.05	4.65	88.47	-8.05	0.001%
35	-8.04	-88.47	4.65	8.04	88.47	-4.65	0.001%
36	-9.29	-88.47	0.00	9.29	88.47	-0.00	0.001%
37	-8.04	-88.47	-4.64	8.04	88.47	4.64	0.001%
38	-4.64	-88.47	-8.04	4.64	88.47	8.04	0.001%
39	0.00	-43.74	-8.36	-0.00	43.74	8.36	0.002%
40	3.94	-43.74	-6.82	-3.94	43.74	6.82	0.002%
41	6.58	-43.74	-3.80	-6.58	43.74	3.80	0.002%
42	7.60	-43.74	-0.00	-7.60	43.74	0.00	0.002%
43	6.58	-43.74	3.80	-6.58	43.74	-3.80	0.002%
44	3.84	-43.74	6.66	-3.84	43.74	-6.66	0.002%
45	-0.00	-43.74	8.36	0.00	43.74	-8.36	0.002%
46	-3.94	-43.74	6.82	3.94	43.74	-6.82	0.002%
47	-6.58	-43.74	3.80	6.58	43.74	-3.80	0.002%
48	-7.60	-43.74	0.00	7.60	43.74	-0.00	0.002%
49	-6.58	-43.74	-3.80	6.58	43.74	3.80	0.002%
50	-3.84	-43.74	-6.66	3.84	43.74	6.66	0.002%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	8	0.00004077	0.00008072
3	Yes	8	0.00002599	0.00006400
4	Yes	11	0.00000001	0.00010506
5	Yes	11	0.00000001	0.00007429
6	Yes	11	0.00000001	0.00009605
7	Yes	11	0.00000001	0.00006831
8	Yes	7	0.00010795	0.00009132
9	Yes	7	0.00007059	0.00008300
10	Yes	11	0.00000001	0.00009531
11	Yes	11	0.00000001	0.00006786
12	Yes	11	0.00000001	0.00009883
13	Yes	11	0.00000001	0.00007020
14	Yes	8	0.00004077	0.00008785
15	Yes	8	0.00002599	0.00006926
16	Yes	11	0.00000001	0.00010596
17	Yes	11	0.00000001	0.00007490
18	Yes	11	0.00000001	0.00009586
19	Yes	11	0.00000001	0.00006814
20	Yes	7	0.00010793	0.00009052
21	Yes	7	0.00007058	0.00008275
22	Yes	11	0.00000001	0.00009570
23	Yes	11	0.00000001	0.00006797
24	Yes	11	0.00000001	0.00010034
25	Yes	11	0.00000001	0.00007114
26	Yes	4	0.00000001	0.00001454
27	Yes	9	0.00000001	0.00000679
28	Yes	9	0.00000001	0.00003301
29	Yes	9	0.00000001	0.00003359
30	Yes	9	0.00000001	0.00000563
31	Yes	9	0.00000001	0.00003204
32	Yes	9	0.00000001	0.00003190
33	Yes	9	0.00000001	0.00000673
34	Yes	9	0.00000001	0.00003452
35	Yes	9	0.00000001	0.00003395
36	Yes	9	0.00000001	0.00000577
37	Yes	9	0.00000001	0.00003534
38	Yes	9	0.00000001	0.00003545
39	Yes	7	0.00000001	0.00003198
40	Yes	7	0.00000001	0.00006736
41	Yes	7	0.00000001	0.00006148
42	Yes	7	0.00000001	0.00002617
43	Yes	7	0.00000001	0.00006041
44	Yes	7	0.00000001	0.00006198
45	Yes	7	0.00000001	0.00003196
46	Yes	7	0.00000001	0.00006997
47	Yes	7	0.00000001	0.00006080
48	Yes	7	0.00000001	0.00002639
49	Yes	7	0.00000001	0.00006126
50	Yes	7	0.00000001	0.00006597

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 133	21.43	39	1.17	0.00
L2	135.92 - 98.42	17.98	39	1.16	0.00
L3	102.25 - 64.75	10.42	39	0.94	0.00
L4	69.42 - 31.92	4.85	39	0.65	0.00

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L5	37.42 - 0	1.43	39	0.35	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
148.0000	AIR -32 B2A/B66AA w/ Mount Pipe	39	20.94	1.17	0.00	54069
138.0000	APXVSPP18-C-A20 w/ Mount Pipe	39	18.48	1.16	0.00	22579
127.0000	(3) SBNHH-1D65B w/ Mount Pipe	39	15.85	1.12	0.00	12532
111.0000	DMP65R-BU6D w/ Mount Pipe	39	12.24	1.02	0.00	7721
73.0000	FFVV-65B-R2 w/ Mount Pipe	39	5.37	0.69	0.00	6662

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 133	91.53	2	5.02	0.01
L2	135.92 - 98.42	76.79	2	4.95	0.01
L3	102.25 - 64.75	44.50	2	4.04	0.00
L4	69.42 - 31.92	20.73	2	2.79	0.00
L5	37.42 - 0	6.12	2	1.48	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
148.0000	AIR -32 B2A/B66AA w/ Mount Pipe	2	89.42	5.02	0.01	12804
138.0000	APXVSPP18-C-A20 w/ Mount Pipe	2	78.95	4.97	0.01	5345
127.0000	(3) SBNHH-1D65B w/ Mount Pipe	2	67.69	4.80	0.01	2965
111.0000	DMP65R-BU6D w/ Mount Pipe	2	52.26	4.34	0.00	1823
73.0000	FFVV-65B-R2 w/ Mount Pipe	2	22.91	2.93	0.00	1565

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	150 - 133 (1)	TP26x21.83x0.25	17.0000	0.0000	0.0	19.8643	-8.06	1162.06	0.007

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L2	133 - 98.42 (2)	TP34.0625x24.7837x0.3125	37.5000	0.0000	0.0	32.5358	-19.09	1903.34	0.010
L3	98.42 - 64.75 (3)	TP41.75x32.4898x0.375	37.5000	0.0000	0.0	47.8740	-30.01	2800.63	0.011
L4	64.75 - 31.92 (4)	TP49.0625x39.8468x0.375	37.5000	0.0000	0.0	56.3415	-39.53	3295.98	0.012
L5	31.92 - 0 (5)	TP56.125x46.9609x0.375	37.4200	0.0000	0.0	66.3564	-52.47	3881.85	0.014

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	150 - 133 (1)	TP26x21.83x0.25	72.12	748.47	0.096	0.00	748.47	0.000
L2	133 - 98.42 (2)	TP34.0625x24.7837x0.3125	628.11	1587.37	0.396	0.00	1587.37	0.000
L3	98.42 - 64.75 (3)	TP41.75x32.4898x0.375	1440.33	2847.69	0.506	0.00	2847.69	0.000
L4	64.75 - 31.92 (4)	TP49.0625x39.8468x0.375	2427.45	3755.80	0.646	0.00	3755.80	0.000
L5	31.92 - 0 (5)	TP56.125x46.9609x0.375	3703.30	4897.52	0.756	0.00	4897.52	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	150 - 133 (1)	TP26x21.83x0.25	10.56	348.62	0.030	0.56	764.29	0.001
L2	133 - 98.42 (2)	TP34.0625x24.7837x0.3125	22.50	563.64	0.040	0.84	1640.30	0.001
L3	98.42 - 64.75 (3)	TP41.75x32.4898x0.375	29.11	831.88	0.035	0.83	2959.50	0.000
L4	64.75 - 31.92 (4)	TP49.0625x39.8468x0.375	32.45	981.00	0.033	0.83	4098.98	0.000
L5	31.92 - 0 (5)	TP56.125x46.9609x0.375	35.52	1155.96	0.031	0.83	5685.72	0.000

Pole Interaction Design Data

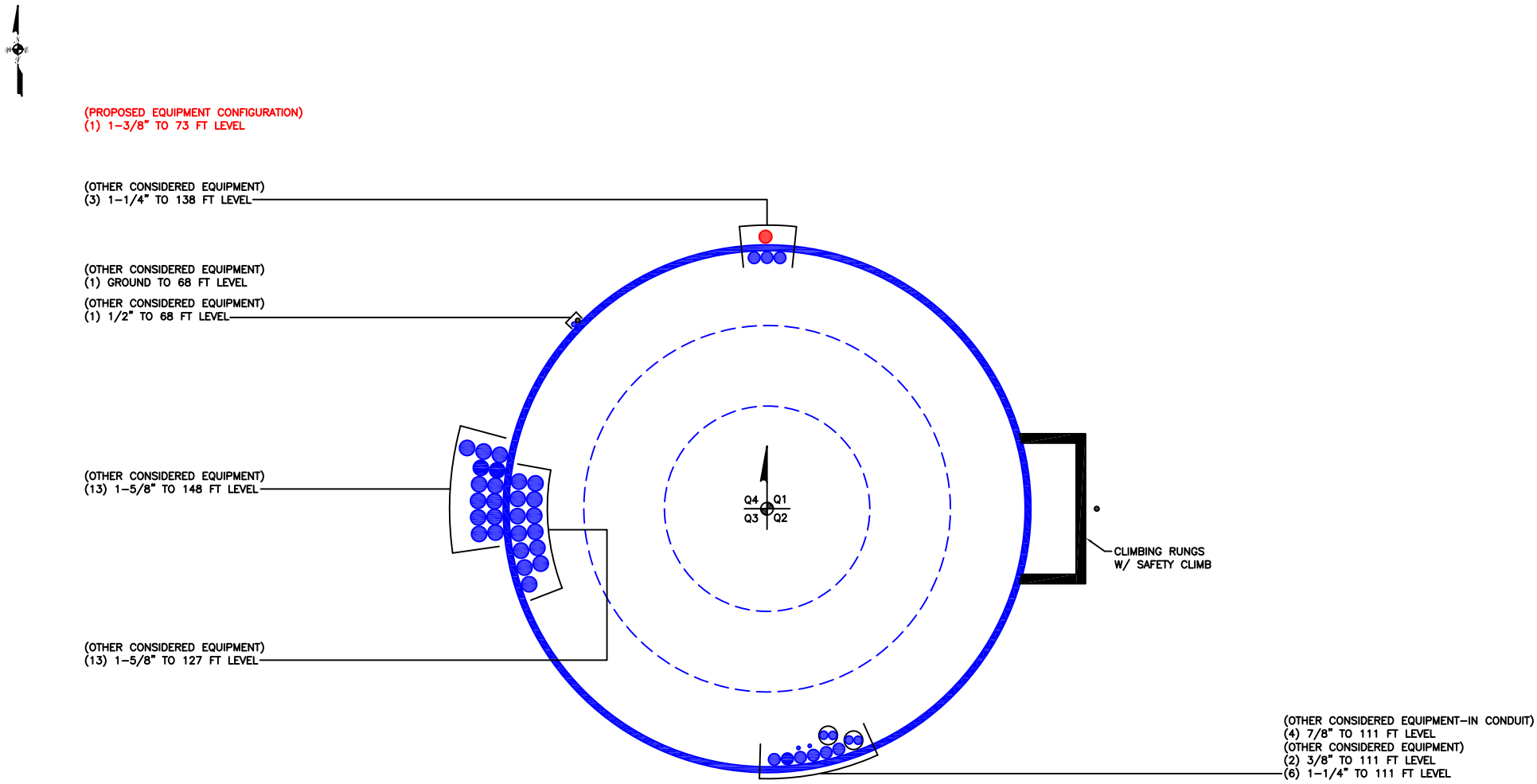
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	150 - 133 (1)	0.007	0.096	0.000	0.030	0.001	0.104	1.050	4.8.2
L2	133 - 98.42 (2)	0.010	0.396	0.000	0.040	0.001	0.407	1.050	4.8.2
L3	98.42 - 64.75 (3)	0.011	0.506	0.000	0.035	0.000	0.518	1.050	4.8.2
L4	64.75 - 31.92 (4)	0.012	0.646	0.000	0.033	0.000	0.659	1.050	4.8.2
L5	31.92 - 0 (5)	0.014	0.756	0.000	0.031	0.000	0.771	1.050	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	150 - 133	Pole	TP26x21.83x0.25	1	-8.06	1220.16	9.9	Pass
L2	133 - 98.42	Pole	TP34.0625x24.7837x0.3125	2	-19.09	1998.51	38.8	Pass
L3	98.42 - 64.75	Pole	TP41.75x32.4898x0.375	3	-30.01	2940.66	49.3	Pass
L4	64.75 - 31.92	Pole	TP49.0625x39.8468x0.375	4	-39.53	3460.78	62.8	Pass
L5	31.92 - 0	Pole	TP56.125x46.9609x0.375	5	-52.47	4075.94	73.4	Pass
							Summary	
						Pole (L5)	73.4	Pass
						RATING =	**73.4**	**Pass**

APPENDIX B

BASE LEVEL DRAWING


(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1-3/8" TO 73 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(3) 1-1/4" TO 138 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) GROUND TO 68 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 68 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(13) 1-5/8" TO 148 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(13) 1-5/8" TO 127 FT LEVEL
Q4
Q1
Q3
Q2
CLIMBING RUNGS
W/ SAFETY CLIMB
(OTHER CONSIDERED EQUIPMENT-IN CONDUIT)
(4) 7/8" TO 111 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(2) 3/8" TO 111 FT LEVEL
(6) 1-1/4" TO 111 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

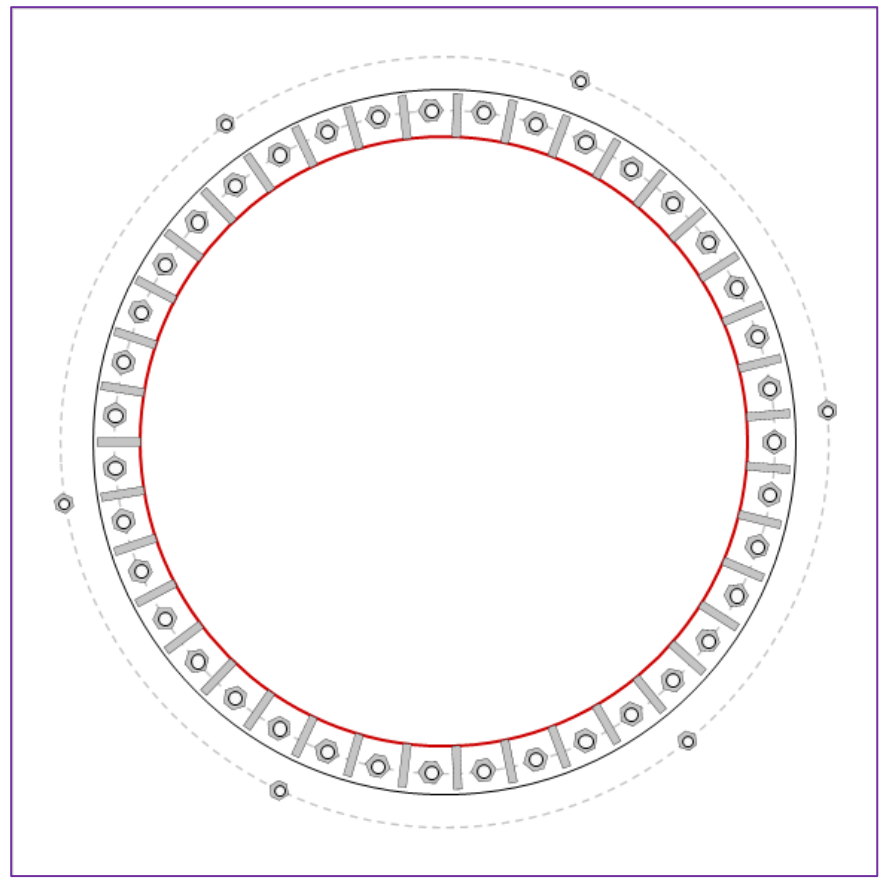
Monopole Base Plate Connection

Site Info	
BU #	826222
Site Name	Newtown/RT-25
Order #	578963 Rev. 3

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	See Custom Sheet
l_{ar} (in)	See Custom Sheet

Applied Loads	
Moment (kip-ft)	3703.30
Axial Force (kips)	52.47
Shear Force (kips)	35.52

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (39) 1-1/4" ø bolts (A687 N; Fy=105 ksi, Fu=125 ksi) on 61" BC
GROUP 2: (6) 1" ø bolts (DWYIDAG N; Fy=125 ksi, Fu=125 ksi) on 71.13" BC

Base Plate Data

65" OD x 1.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Stiffener Data

(39) 12"H x 4"W x 0.75"T, Notch: 0.5"
plate: Fy= 50 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.5" fillet
vert. weld: 0.5" fillet

Pole Data

56.125" x 0.375" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

GROUP 1:		
Pu_t = 64.72	ϕPn_t = 90.84	**Stress Rating**
Vu = 0.91	ϕVn = 57.52	**67.9%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_t = 48.18	ϕPn_t = 56.81	**Stress Rating**
Vu = 0	ϕVn = 36.82	**80.8%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	5.62	(Shear)
Allowable Stress (ksi):	29.25	
Stress Rating:	**18.3%**	**Pass**

Stiffener Summary

Horizontal Weld:	**55.3%**	**Pass**
Vertical Weld:	**18.4%**	**Pass**
Plate Flexure+Shear:	**8.5%**	**Pass**
Plate Tension+Shear:	**37.4%**	**Pass**
Plate Compression:	**39.0%**	**Pass**

Pole Summary

Punching Shear:	**6.7%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

note: Bending interaction not considered when Grout Considered = "Yes"

Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending	Grout Considered	Apply at BARB Elevation	BARB CL Elevation (ft)
1	Yes	Yes	Yes	No	No	
2	No	No	No	No	No	

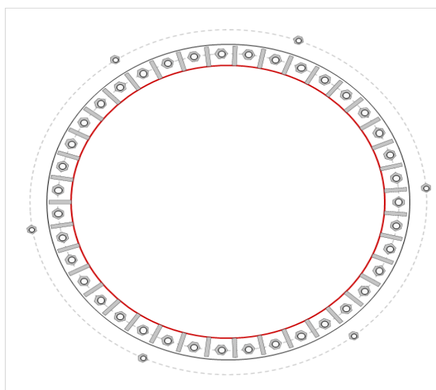
Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	0	1.25	A687	61	0.5	1.25	N-Included		No
2	1	9.23076923	1.25	A687	61	0.5	1.25	N-Included		No
3	1	18.4615385	1.25	A687	61	0.5	1.25	N-Included		No
4	1	27.6923077	1.25	A687	61	0.5	1.25	N-Included		No
5	1	36.9230769	1.25	A687	61	0.5	1.25	N-Included		No
6	1	46.1538462	1.25	A687	61	0.5	1.25	N-Included		No
7	1	55.3846154	1.25	A687	61	0.5	1.25	N-Included		No
8	1	64.6153846	1.25	A687	61	0.5	1.25	N-Included		No
9	1	73.8461538	1.25	A687	61	0.5	1.25	N-Included		No
10	1	83.0769231	1.25	A687	61	0.5	1.25	N-Included		No
11	1	92.3076923	1.25	A687	61	0.5	1.25	N-Included		No
12	1	101.538462	1.25	A687	61	0.5	1.25	N-Included		No
13	1	110.769231	1.25	A687	61	0.5	1.25	N-Included		No
14	1	120	1.25	A687	61	0.5	1.25	N-Included		No
15	1	129.230769	1.25	A687	61	0.5	1.25	N-Included		No
16	1	138.461538	1.25	A687	61	0.5	1.25	N-Included		No
17	1	147.692308	1.25	A687	61	0.5	1.25	N-Included		No
18	1	156.923077	1.25	A687	61	0.5	1.25	N-Included		No
19	1	166.153846	1.25	A687	61	0.5	1.25	N-Included		No
20	1	175.384615	1.25	A687	61	0.5	1.25	N-Included		No
21	1	184.615385	1.25	A687	61	0.5	1.25	N-Included		No
22	1	193.846154	1.25	A687	61	0.5	1.25	N-Included		No
23	1	203.076923	1.25	A687	61	0.5	1.25	N-Included		No
24	1	212.307692	1.25	A687	61	0.5	1.25	N-Included		No
25	1	221.538462	1.25	A687	61	0.5	1.25	N-Included		No
26	1	230.769231	1.25	A687	61	0.5	1.25	N-Included		No
27	1	240	1.25	A687	61	0.5	1.25	N-Included		No
28	1	249.230769	1.25	A687	61	0.5	1.25	N-Included		No
29	1	258.461538	1.25	A687	61	0.5	1.25	N-Included		No
30	1	267.692308	1.25	A687	61	0.5	1.25	N-Included		No
31	1	276.923077	1.25	A687	61	0.5	1.25	N-Included		No
32	1	286.153846	1.25	A687	61	0.5	1.25	N-Included		No
33	1	295.384615	1.25	A687	61	0.5	1.25	N-Included		No
34	1	304.615385	1.25	A687	61	0.5	1.25	N-Included		No
35	1	313.846154	1.25	A687	61	0.5	1.25	N-Included		No
36	1	323.076923	1.25	A687	61	0.5	1.25	N-Included		No
37	1	332.307692	1.25	A687	61	0.5	1.25	N-Included		No
38	1	341.538462	1.25	A687	61	0.5	1.25	N-Included		No
39	1	350.769231	1.25	A687	61	0.5	1.25	N-Included		No
40	2	4.61538462	1	DWYIDAG	71.13	0.5	0	N-Included		No
41	2	69.2307692	1	DWYIDAG	71.13	0.5	0	N-Included		No
42	2	124.615385	1	DWYIDAG	71.13	0.5	0	N-Included		No
43	2	189.230769	1	DWYIDAG	71.13	0.5	0	N-Included		No
44	2	244.615385	1	DWYIDAG	71.13	0.5	0	N-Included		No
45	2	309.230769	1	DWYIDAG	71.13	0.5	0	N-Included		No

Custom Stiffener Connection

Stiffener	Stiffener Group ID	Location (deg.)	Width (in)	Height (in)	Thickness (in)	H. Notch (in)	V. Notch (in)	Grade (ksi)	Weld Type	Groove Depth (in)	Groove Angle (deg.)	H. Fillet Weld Size (in)	V. Fillet Weld Size (in)	Weld Strength (ksi)
1	1	4.61538462	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
2	1	13.8461538	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
3	1	23.0769231	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
4	1	32.3076923	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
5	1	41.5384615	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
6	1	50.7692308	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
7	1	60	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
8	1	69.2307692	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
9	1	78.4615385	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
10	1	87.6923077	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
11	1	96.9230769	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
12	1	106.153846	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
13	1	115.384615	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
14	1	124.615385	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
15	1	133.846154	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
16	1	143.076923	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
17	1	152.307692	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
18	1	161.538462	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
19	1	170.769231	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
20	1	180	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
21	1	189.230769	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
22	1	198.461538	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
23	1	207.692308	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
24	1	216.923077	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
25	1	226.153846	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
26	1	235.384615	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
27	1	244.615385	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
28	1	253.846154	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
29	1	263.076923	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
30	1	272.307692	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
31	1	281.538462	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
32	1	290.769231	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
33	1	300	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
34	1	309.230769	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
35	1	318.461538	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
36	1	327.692308	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
37	1	336.923077	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
38	1	346.153846	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70
39	1	355.384615	4	12	0.75	0.5	0.5	50	Fillet			0.5	0.5	70

Plot Graphic



Pier and Pad Foundation

BU # :	826222
Site Name:	Newtown/RT-25
App. Number:	578963 Rev. 3

TIA-222 Revision:	H
Tower Type:	Monopole

Top & Bot. Pad Rein. Different?:	☐
Block Foundation?:	☐
Rectangular Pad?:	☐

Superstructure Analysis Reactions

Compression, P_{comp}:	52.49	kips
Base Shear, Vu_comp:	35.49	kips
Moment, M_u:	3703.3	ft-kips
Tower Height, **H**:	150	ft
BP Dist. Above Fdn, bp_{dist}:	3.625	in

Pier Properties

Pier Shape:	Circular	
Pier Diameter, **dpier**:	7	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	8	
Pier Rebar Quantity, **mc**:	36	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	9	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	6	ft
Pad Width, W_1:	21	ft
Pad Thickness, **T**:	2	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	27	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	4	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties

Total Soil Unit Weight, γ:	125	pcf
Ultimate Net Bearing, Qnet:	30.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	35	degrees
SPT Blow Count, N_{blows}:	29	
Base Friction, μ:	0.4	
Neglected Depth, **N**:	3.40	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	186.91	35.49	**18.1%**	**Pass**
Bearing Pressure (ksf)	23.06	9.03	**39.2%**	**Pass**
*Overturning (kip*ft)*	4169.74	3944.71	**94.6%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	4737.42	3863.01	**77.7%**	**Pass**
Pier Compression (kip)	24494.62	83.66	**0.3%**	**Pass**
*Pad Flexure (kip*ft)*	1800.02	938.01	**49.6%**	**Pass**
Pad Shear - 1-way (kips)	466.18	348.36	**71.2%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.190	0.000	**0.0%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	2208.21	2317.80	**100.0%**	**Pass**

**Rating per TIA-222-H Section 15.5*

Structural Rating*:	**100.0%**
Soil Rating*:	**94.6%**

Pile Foundation

Checks the capacity of pile foundation configurations for monopoles or self-support towers with individual foundations in Rev. F, G, and H.

BU #:	826222
Site Name:	Newtown/RT-25
Order:	578963 Rev. 3

Tower Type:	Monopole
TIA Revision:	H

Top & Bot. Pad Rein. Different?: ☐

Factored Design Reactions At Base		
Moment, M:	3703.3	ft-kips
Axial, Pu:	52.49	kips
Shear, Sc:	35.49	kips
Load Eccentricity, Ecc:	0	in

Pile Properties		
Pile Shape:	Round	
Pile Material:	Concrete	
Length of Pile, Lpile:	27	ft
Pile Diameter:	10.5	in
Pile (Soil) Capacity Given?	No	
Steel Grade, Fy:	87.24	ksi
Pile Rebar Size, Psize:	14	
Rebar Quantity, Pquan:	1	

Pile Group		
Group Configuration:	Rectangular	
Number of Columns, Nx:	2	
Number of Rows, Ny:	2	
Column Spacing, Dx:	126	in
Row Spacing, Dy:	126	in
Orientation of Neutral Axis, θ:	0	deg
Group Efficiency Given in Geotech?	No	

Program Calculated Group Efficiency, Eg: 1.00

Pile Cap		
Cap Type:	Pier and Pad	
Depth to Bottom of Pad, D:	6.00	ft
Thickness of Pad, T:	2.00	ft
Pad Width, Wx:	21.00	ft
Pad Length, Wy:	21.00	ft
Pad Rebar Size (Bot.), Spad:	8	
Pad Rebar Quantity (X-direction) (Bot.), Mpad:	27	
Pad Rebar Quantity (Y-direction) (Bot.), $Mpad_y$:	27	
Extension of Pier Above Grade, E:	0.50	ft
Pier Shape:	Circular	
Pier Diameter, di:	7.00	ft
Pier Rebar Size, Rs:	8	
Pier Rebar Quantity, mc:	36	
Pier Tie Size, St:	4	

Material Properties		
Rebar Grade, Fy:	60	ksi
Concrete Strength, Fc:	4	ksi
Clear Cover, cc:	3	in

Soil Properties		
Groundwater Depth, GW:	99.00	ft
Soil Unit Weight:	125	pcf
Cohesion, Co:	0	ksf
Friction Angle, ϕ:	35	deg
Neglected Depth, ND:	3.4	ft
Negative Friction Force (per pile), Sw:		kips
SPT Blow Count, N_{blows}:	29	

Design Checks	Capacity	Demand	Rating*	Check
PILE CHECKS				
Soil Uplift (kips per pile):	192.96	120.71	**59.6%**	**Pass**
Pile Tensile Strength (kips):	157.03	120.71	**73.2%**	**Pass**
PAD CHECKS				
One-Way Shear (kips):	466.18	348.36	**71.2%**	**Pass**
Pad Shear - Comp Two-Way (ksi):	0.164	0.077	**44.3%**	**Pass**
*Flexural Two-Way (Comp) (kip*ft):*	2208.21	2317.80	**100.0%**	**Pass**
*Pad Flexure (kip*ft):*	1945.61	938.01	**45.9%**	**Pass**
PIER CHECKS				
Pier Compression (kips):	24494.62	83.66	**0.3%**	**Pass**
Pier Flexure (Comp.) (ft-kips):	4737.42	3863.01	**77.7%**	**Pass**

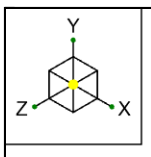
**Rating per TIA-222-H Section 15.5*

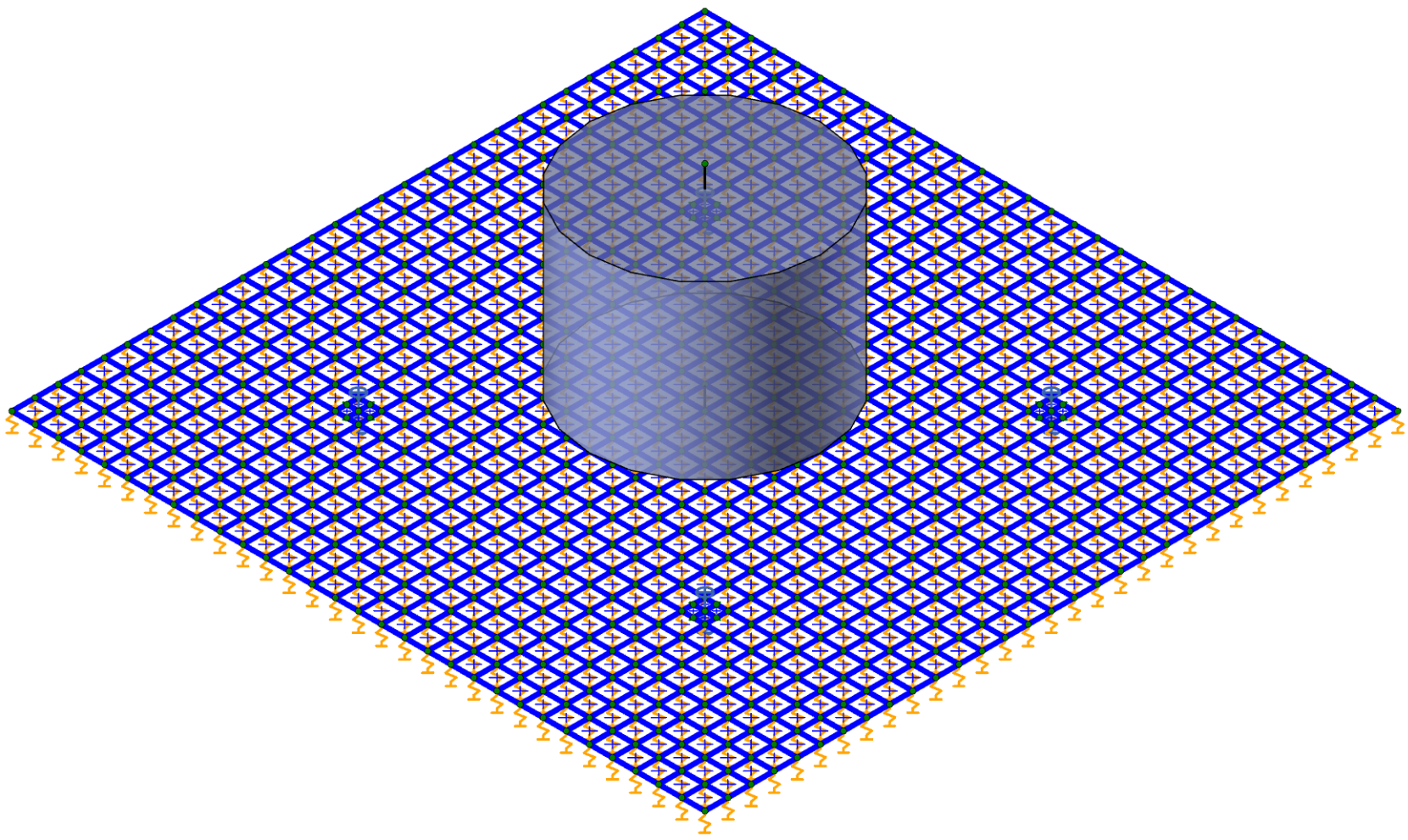
Structural Rating:	**100.0%**
Soil Rating:	**59.6%**

Ultimate Pile Capacities Based on Soil Properties

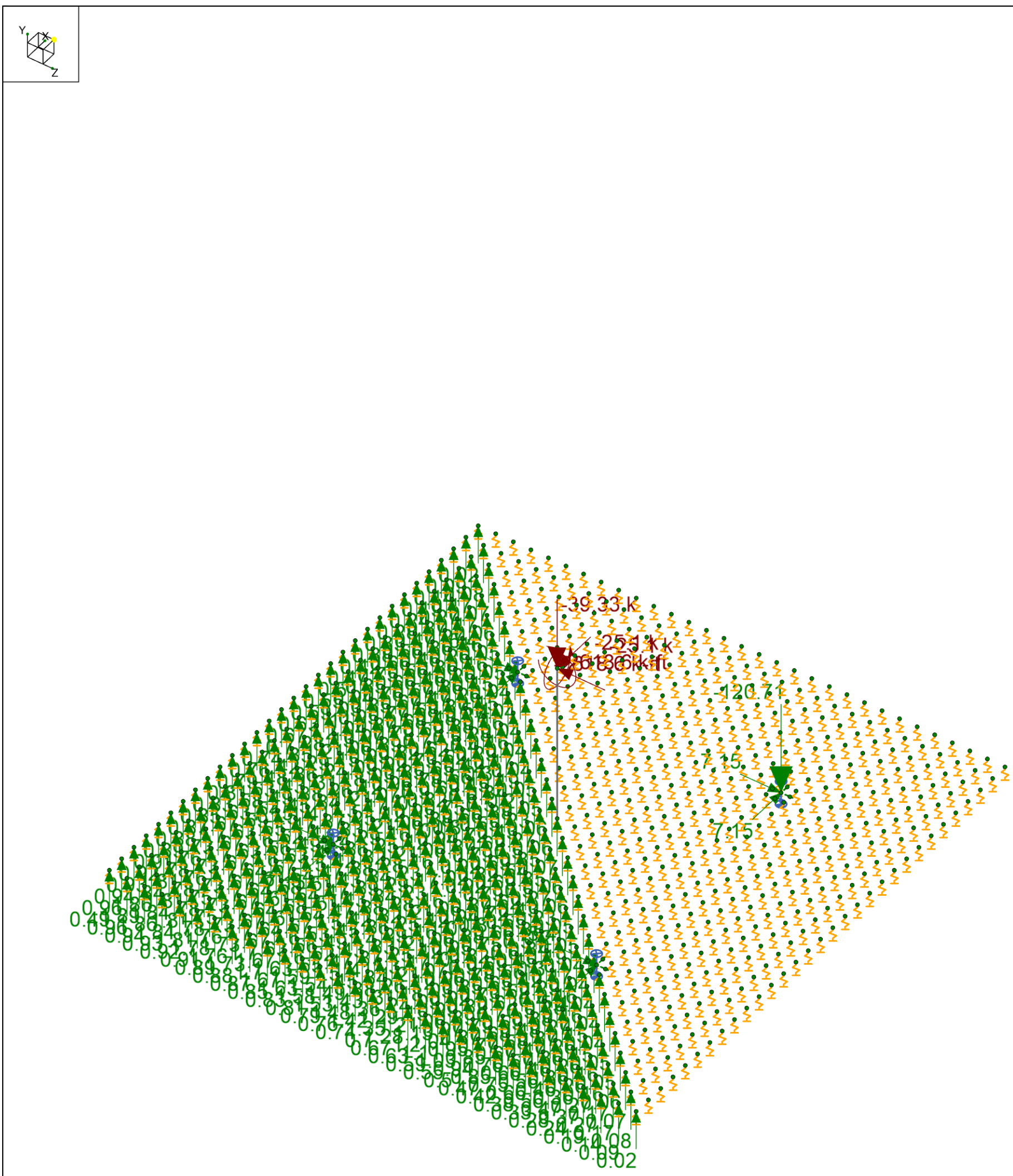
Skin Friction Given? **Yes**

Depth (ft) Top	Depth (ft) Bottom	Cohesion (ksf)	Friction Angle (deg)	Soil Weight (pcf)	Blows per Foot (N)	Ult. Comp. (ksf)	Ult. Uplift (ksf)
0	9	0	0	0	0	0.00	0.00
9	25	0	0	0	0	2.88	2.88
25	35	0	0	0	0	3.60	3.60
35	36	0	0	0	0	2.88	2.88
36	0	0	0	0	0	0.00	0.00
0	0	0	0	0	0	0.00	0.00
0	0	0	0	0	0	0.00	0.00
0	0	0	0	0	0	0.00	0.00
0	0	0	0	0	0	0.00	0.00
0	0	0	0	0	0	0.00	0.00
0	0	0	0	0	0	0.00	0.00
0	0	0	0	0	0	0.00	0.00
0	0	0	0	0	0	0.00	0.00
				Ultimate End Bearing (ksf):			-
				Total Capacities (kips):		233.55	233.55



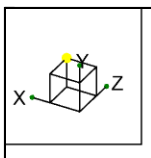


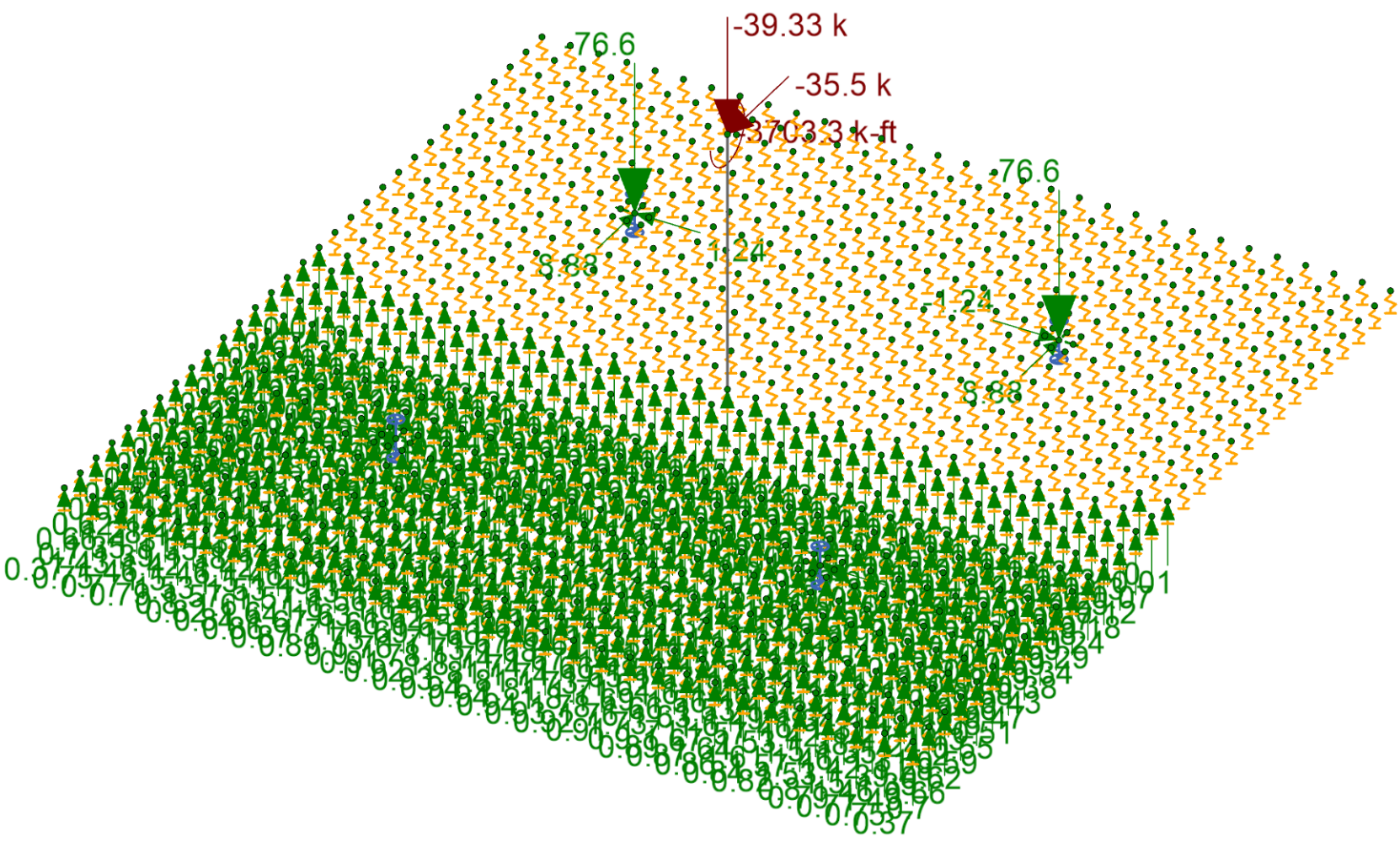
Crown Castle	BU# 826222	SK-1
DHsu		Jan 11, 2022
		826222_RPA_PJFWAY (Rolando).rt3



Loads: LC 9, 0.9 Dead+1.0 Wind 45 deg (0.75 Dsoil)
Results for LC 9, 0.9 Dead+1.0 Wind 45 deg (0.75 Dsoil)
Reaction and Moment Units are kips and kip-ft

Crown Castle	BU# 826222	SK-2
DHsu		Jan 11, 2022
		826222_RPA_PJFWAY (Rolando).rt3





Loads: LC 7, 0.9 Dead+1.0 Wind 0 deg (0.75 Dsoil)
Results for LC 7, 0.9 Dead+1.0 Wind 0 deg (0.75 Dsoil)
Reaction and Moment Units are kips and kip-ft

Crown Castle	BU# 826222	SK-3
DHsu		Jan 11, 2022
		826222_RPA_PJFWAY (Rolando).rt3

Nodal Loads and Enforced Displacements

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	TOP	L	Y	-43.7

Nodal Loads and Enforced Displacements

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	TOP	L	Z	-35.5
2	TOP	L	MX	-3703.3

Nodal Loads and Enforced Displacements

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	TOP	L	Z	-25.1
2	TOP	L	X	-25.1
3	TOP	L	MZ	2618.6
4	TOP	L	MX	-2618.6

Nodal Loads and Enforced Displacements

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	TOP	L	Y	10

Basic Load Cases

	BLC Description	Category	Nodal	Surface(Plate/Wall)
1	ASD DL-Tower	DL	1	
2	ASD DL Concrete	DL		912
3	ASD DL Soil	None		912
5	LRFD Wind 90	None	2	
7	LRFD Wind 45	None	4	
9	uplift test	None	1	

Load Combinations

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	BLC	BLC	BLC	BLC
1	DL -Tower	Yes	Y	1	1					0		0	0	0	0	0
2	DL-Conc	Yes	Y	2	1					0		0	0	0	0	0
3	DL-Soil	Yes	Y	3	1					0		0	0	0	0	0
4	DL-All	Yes	Y	1	1	2	1	3	1	0		0	0	0	0	0
5	Uplift Test	Yes	Y	9	1					0		0	0	0	0	0
6	0.9 Dead+1.0 Wind 0 deg - No Ice	Yes	Y	L4	0.9	5	1					0	0	0	0	0
7	0.9 Dead+1.0 Wind 0 deg (0.75 Dsoil)	Yes	Y	1	0.9	2	0.9	3	0.75	5	1	0	0	0	0	0
8	0.9 Dead+1.0 Wind 45 deg - No Ice	Yes	Y	L4	0.9	7	1					0	0	0	0	0
9	0.9 Dead+1.0 Wind 45 deg (0.75 Dsoil)	Yes	Y	1	0.9	2	0.9	3	0.75	7	1	0	0	0	0	0

Load Combination Design

	Description	Service	Hot Rolled	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
1	DL -Tower		Yes				Yes	Yes	Yes	Yes
2	DL-Conc		Yes				Yes	Yes	Yes	Yes
3	DL-Soil		Yes				Yes	Yes	Yes	Yes
4	DL-All		Yes				Yes	Yes	Yes	Yes
5	Uplift Test		Yes				Yes	Yes	Yes	Yes
6	0.9 Dead+1.0 Wind 0 deg - No Ice		Yes				Yes	Yes	Yes	Yes
7	0.9 Dead+1.0 Wind 0 deg (0.75 Dsoil)		Yes				Yes	Yes	Yes	Yes
8	0.9 Dead+1.0 Wind 45 deg - No Ice		Yes				Yes	Yes	Yes	Yes
9	0.9 Dead+1.0 Wind 45 deg (0.75 Dsoil)		Yes				Yes	Yes	Yes	Yes

Concrete Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	f'c [ksi]	Lambda	Flex Steel [ksi]	Shear Steel [ksi]
1	Conc3000NW	3156	1372	0.15	0.6	0.145	3	1	60	60
2	Conc3500NW	3409	1482	0.15	0.6	0.145	3.5	1	60	60
3	Conc4000NW	3644	1584	0.15	0.6	0.145	4	1	60	60
4	Conc3000LW	2085	907	0.15	0.6	0.11	3	0.75	60	60
5	Conc3500LW	2252	979	0.15	0.6	0.11	3.5	0.75	60	60
6	Conc4000LW	2408	1047	0.15	0.6	0.11	4	0.75	60	60

Plate Forces (per ft) (By Combination)

	LC	Plate Label	Qx[k]	Qy[k]	Mx[k-ft]	My[k-ft]	Mxy[k-ft]	Fx[k]	Fy[k]	Fxy[k]
1	9	P437	476.851	476.851	-938.007	-938.007	-1007.988	-8.337	-8.337	-10.806
2	9	P467	299.369	277.597	-798.851	768.091	-5.953	-8.154	8.154	0
3	9	P438	293.534	82.094	-465.28	-1.999	-175.029	-5.216	1.151	-3.278
4	9	P468	151.142	-144.704	-345.43	-33.507	11.162	-4.346	1.117	-0.112
5	9	P408	179.41	179.41	-295.64	-295.64	-239.103	-2.62	-2.62	-4.42
6	9	P439	149.149	-24.085	-233.408	-99.645	-69.305	-3.377	0.463	-1.745
7	9	P409	136.81	57.31	-207.046	-125.177	-84.779	-2.573	-0.394	-2.665
8	9	P469	87.959	-94.5	-195.401	-27.87	-38.955	-2.893	1.015	-0.481
9	9	P379	81.686	81.686	-150.663	-150.663	-70.219	-1.379	-1.379	-2.649
10	9	P440	86.676	-29.101	-137.561	-83.981	-48.933	-2.395	0.447	-1.193
11	9	P410	89.443	11.959	-132.489	-108.523	-46.621	-2.114	-0.081	-1.84
12	9	P470	57.017	-62.684	-126.38	-50.33	-43.222	-2.111	0.623	-0.471
13	9	P378	57.31	136.81	-125.177	-207.046	-84.779	-0.394	-2.573	-2.665
14	9	P499	-0.47	-100.159	-123.258	5.071	-11.209	-1.679	0.775	0.098
15	9	P380	70.14	38.803	-115.171	-108.288	-37.292	-1.505	-0.615	-2.103
16	9	P348	11.959	89.443	-108.523	-132.489	-46.621	-0.081	-2.114	-1.84
17	9	P349	38.803	70.14	-108.288	-115.171	-37.292	-0.615	-1.505	-2.103
18	9	P500	15.731	-69.537	-102.399	-8.85	-32.412	-1.461	0.6	-0.054
19	9	P377	-24.085	149.149	-99.645	-233.408	-69.305	0.463	-3.377	-1.745
20	9	P350	45.514	45.514	-96.156	-96.156	-26.401	-0.965	-0.965	-2.034
21	9	P498	-65.847	-72.742	-94.657	72.15	-6.57	-1.583	1.583	0
22	9	P319	17.644	53.592	-90.66	-81.813	-25.604	-0.353	-1.356	-1.679
23	9	P441	55.936	-22.652	-89.784	-75.369	-41.406	-1.788	0.33	-0.904
24	9	P318	-0.49	60.28	-89.273	-87.524	-34.465	0.029	-1.675	-1.368
25	9	P411	60.28	-0.49	-87.524	-89.273	-34.465	-1.675	0.029	-1.368
26	9	P471	40.12	-40.05	-87.356	-49.264	-43.179	-1.609	0.474	-0.435
27	9	P347	-29.101	86.676	-83.981	-137.561	-48.933	0.447	-2.395	-1.193
28	9	P381	53.592	17.644	-81.813	-90.66	-25.604	-1.356	-0.353	-1.679
29	9	P320	27.183	41.305	-80.943	-74.19	-17.491	-0.664	-1.011	-1.81
30	9	P501	18.653	-45.916	-80.183	-19.856	-38.261	-1.233	0.475	-0.117
31	9	P289	8.38	40.464	-76.328	-57.334	-21.264	-0.256	-1.123	-1.34
32	9	P530	-15.583	-53.153	-75.993	20.299	-18.669	-0.873	0.528	0.039
33	9	P317	-22.652	55.936	-75.369	-89.784	-41.406	0.33	-1.788	-0.904
34	9	P288	-3.244	42.66	-75.156	-59.895	-29.61	0.038	-1.314	-1.053
35	9	P351	41.305	27.183	-74.19	-80.943	-17.491	-1.011	-0.664	-1.81
36	9	P290	16.275	34.381	-69.995	-54.311	-14.029	-0.557	-0.889	-1.546
37	9	P531	-0.325	-40.275	-69.182	6.02	-28.551	-0.842	0.444	0
38	9	P321	29.144	29.144	-66.405	-66.405	-11.896	-0.813	-0.813	-1.826
39	9	P259	4.355	30.918	-64.776	-39.933	-19.487	-0.207	-0.892	-1.045
40	9	P287	-15.938	39.073	-64.57	-61.841	-36.823	0.264	-1.37	-0.706
41	9	P529	-49.531	-53.317	-63.362	44.712	-6.796	-0.808	0.808	0
42	9	P258	-3.173	31.491	-63.338	-41.58	-26.736	0.043	-1.025	-0.808
43	9	P472	29.926	-25.9	-62.674	-46.232	-40.325	-1.26	0.386	-0.374
44	9	P442	39.073	-15.938	-61.841	-64.57	-36.823	-1.37	0.264	-0.706
45	9	P502	17.737	-30.266	-61.496	-24.167	-38.651	-1.031	0.426	-0.131
46	9	P260	10.195	27.835	-60.503	-38.552	-12.972	-0.501	-0.703	-1.243
47	9	P412	42.66	-3.244	-59.895	-75.156	-29.61	-1.314	0.038	-1.053
48	9	P291	19.909	27.03	-59.098	-50.851	-8.916	-0.798	-0.719	-1.714
49	9	P532	5.992	-28.694	-57.723	-3.865	-32.341	-0.776	0.431	0
50	9	P382	40.464	8.38	-57.334	-76.328	-21.264	-1.123	-0.256	-1.34
51	9	P561	-11.795	-28.888	-56.65	22.528	-17.158	-0.57	0.434	0
52	9	P257	-10.915	28.84	-55.438	-43.57	-33.084	0.231	-1.064	-0.544
53	9	P229	2.593	23.933	-55.207	-27.284	-18.466	-0.137	-0.7	-0.788
54	9	P352	34.381	16.275	-54.311	-69.995	-14.029	-0.889	-0.557	-1.546
55	9	P560	-28.011	-30.634	-53.869	37.688	-6.997	-0.544	0.544	0
56	9	P228	-2.424	23.939	-53.823	-28.65	-24.526	0.072	-0.8	-0.604
57	9	P261	13.71	23.461	-52.418	-37.14	-8.101	-0.832	-0.529	-1.434
58	9	P230	6.802	22.315	-52.333	-26.455	-12.813	-0.395	-0.547	-0.937
59	9	P562	-2.698	-23.185	-51.551	11.162	-23.573	-0.573	0.442	0
60	9	P322	27.03	19.909	-50.851	-59.098	-8.916	-0.719	-0.798	-1.714
61	9	P346	-62.684	57.017	-50.33	-126.38	-43.222	0.623	-2.111	-0.471
62	9	P316	-40.05	40.12	-49.264	-87.356	-43.179	0.474	-1.609	-0.435
63	9	P227	-7.413	22.044	-47.817	-30.609	-29.816	0.232	-0.832	-0.4
64	9	P199	1.818	18.634	-47.386	-17.881	-17.659	-0.033	-0.553	-0.582
65	9	P292	20.276	20.276	-46.856	-46.856	-5.9	-0.877	-0.877	-1.936
66	9	P503	15.816	-20.247	-46.64	-25.759	-36.576	-0.861	0.416	-0.101
67	9	P231	9.716	19.686	-46.288	-25.946	-8.342	-0.715	-0.348	-1.053
68	9	P286	-25.9	29.926	-46.232	-62.674	-40.325	0.386	-1.26	-0.374
69	9	P198	-1.641	18.475	-46.181	-19.119	-22.63	0.129	-0.623	-0.438
70	9	P533	8.306	-20.165	-46.142	-9.926	-32.744	-0.698	0.46	0
71	9	P473	23.212	-17.058	-45.517	-42.013	-36.734	-1	0.35	-0.294
72	9	P200	4.865	17.749	-45.381	-17.235	-12.873	-0.223	-0.438	-0.69
73	9	P591	-15.865	-17.848	-44.485	30.112	-7.138	-0.448	0.448	0
74	9	P592	-7.59	-16.527	-44.019	19.753	-14.615	-0.466	0.464	0
75	9	P563	2.074	-17.538	-43.713	2.809	-26.437	-0.56	0.513	0.067
76	9	P443	28.84	-10.915	-43.57	-55.438	-33.084	-1.064	0.231	-0.544
77	9	P262	15.033	18.999	-42.504	-35.677	-4.924	-1.221	-0.377	-1.754
78	9	P256	-17.058	23.212	-42.013	-45.517	-36.734	0.35	-1	-0.294
79	9	P197	-5.016	17.15	-41.616	-20.964	-26.95	0.258	-0.648	-0.275
80	9	P413	31.491	-3.173	-41.58	-63.338	-26.736	-1.025	0.043	-0.808
81	9	P169	1.489	14.419	-41.041	-10.857	-16.918	0.088	-0.434	-0.435
82	9	P201	7.157	16.128	-40.833	-16.96	-8.908	-0.439	-0.29	-0.749
83	9	P168	-0.986	14.254	-40.077	-11.977	-20.964	0.202	-0.48	-0.313
84	9	P383	30.918	4.355	-39.933	-64.776	-19.487	-0.892	-0.207	-1.045
85	9	P593	-2.245	-13.603	-39.59	11.228	-19.25	-0.477	0.592	0.066
86	9	P170	3.739	13.905	-39.557	-10.274	-12.918	-0.036	-0.358	-0.529
87	9	P353	27.835	10.195	-38.552	-60.503	-12.972	-0.703	-0.501	-1.243
88	9	P232	11.239	16.727	-38.346	-25.371	-5.343	-1.167	-0.171	-1.145
89	9	P590	-27.347	-14.71	-38.122	42.1	3.129	-0.434	0.57	0
90	9	P559	-51.085	-19.445	-38.099	59.569	5.071	-0.528	0.873	-0.039
91	9	P226	-11.434	18.433	-37.911	-32.866	-33.123	0.345	-0.796	-0.204
92	9	P323	23.461	13.71	-37.14	-52.418	-8.101	-0.529	-0.832	-1.434
93	9	P167	-3.377	13.358	-36.608	-13.636	-24.463	0.299	-0.495	-0.174
94	9	P622	-9.334	-10.848	-36.159	23.159	-7.17	-0.492	0.492	0
95	9	P171	5.531	12.884	-36.056	-10.097	-9.432	-0.153	-0.241	-0.595
96	9	P139	1.403	10.89	-35.937	-5.729	-16.21	0.201	-0.328	-0.335
97	9	P534	8.811	-14.216	-35.807	-13.528	-31.416	-0.609	0.497	0.078
98	9	P293	18.999	15.033	-35.677	-42.504	-4.924	-0.377	-1.221	-1.754
99	9	P564	4.442	-13.004	-35.407	-3.003	-27.036	-0.517	0.588	0.155
100	9	P138	-0.443	10.783	-35.23	-6.697	-19.494	0.28	-0.355	-0.223

Plate Forces (per ft) (By Combination) (Continued)

	LC	Plate Label	Qx[k]	Qy[k]	Mx[k-ft]	My[k-ft]	Mxy[k-ft]	Fx[k]	Fy[k]	Fxy[k]
101	9	P623	-4.884	-9.513	-34.834	15.388	-12.259	-0.511	0.691	0.06
102	9	P504	13.736	-13.78	-34.817	-25.776	-33.668	-0.712	0.426	-0.04
103	9	P140	3.118	10.565	-34.74	-5.218	-12.882	0.118	-0.275	-0.431
104	9	P202	8.564	14.251	-34.67	-16.986	-6.074	-0.666	-0.047	-0.781
105	9	P196	-7.783	14.783	-34.205	-23.185	-29.796	0.358	-0.628	-0.113
106	9	P621	-15.397	-9.939	-33.739	31.003	0.353	-0.464	0.466	0
107	9	P594	1.106	-10.685	-33.649	4.656	-21.562	-0.468	0.731	0.211
108	9	P406	-144.704	151.142	-33.507	-345.43	11.162	1.117	-4.346	-0.112
109	9	P474	18.433	-11.434	-32.866	-37.911	-33.123	-0.796	0.345	-0.204
110	9	P137	-2.218	10.219	-32.601	-8.115	-22.319	0.349	-0.361	-0.099
111	9	P263	14.349	14.349	-32.548	-32.548	-2.268	-1.58	-1.58	-2.754
112	9	P141	4.539	9.894	-31.91	-5.057	-9.86	0.037	-0.182	-0.507
113	9	P109	1.594	7.791	-31.886	-2.244	-15.479	0.301	-0.226	-0.263
114	9	P108	0.158	7.764	-31.424	-3.016	-18.142	0.361	-0.241	-0.159
115	9	P172	6.775	11.571	-31.175	-9.988	-6.781	-0.258	-0.034	-0.633
116	9	P166	-5.369	11.811	-31.005	-15.663	-26.851	0.378	-0.48	-0.033
117	9	P654	-2.966	-4.817	-30.941	10.251	-11.032	-0.908	1.577	0.52
118	9	P110	2.945	7.559	-30.822	-1.834	-12.723	0.231	-0.189	-0.356
119	9	P444	22.044	-7.413	-30.609	-47.817	-29.816	-0.832	0.232	-0.4
120	9	P624	-1.081	-7.743	-30.452	8.983	-16.032	-0.43	0.993	0.258
121	9	P107	-1.222	7.465	-29.442	-4.137	-20.417	0.409	-0.242	-0.048
122	9	P233	11.294	15.203	-29.334	-26.615	-3.373	-2.014	0.559	-1.506
123	9	P79	2.48	4.973	-28.771	-0.262	-14.474	0.4	-0.133	-0.2
124	9	P653	-5.285	-6.3	-28.766	16.618	-7.071	-0.868	0.868	0
125	9	P414	23.939	-2.424	-28.65	-53.823	-24.526	-0.8	0.072	-0.604
126	9	P78	1.353	5.026	-28.528	-0.794	-16.614	0.454	-0.141	-0.11
127	9	P111	4.084	7.112	-28.414	-1.731	-10.124	0.154	-0.12	-0.429
128	9	P136	-3.72	9.247	-28.322	-9.853	-24.294	0.405	-0.348	0
129	9	P652	-8.759	-6.851	-28.18	23.081	-2.001	-0.691	0.511	-0.06
130	9	P142	5.565	8.986	-27.911	-5.12	-7.319	-0.042	0	-0.555
131	9	P376	-94.5	87.959	-27.87	-195.401	-38.955	1.015	-2.893	-0.481
132	9	P80	3.535	4.792	-27.754	0.016	-12.219	0.328	-0.111	-0.281
133	9	P565	5.43	-9.65	-27.611	-6.929	-26.338	-0.429	0.607	0.271
134	9	P203	9.555	12.515	-27.571	-16.201	-5.022	-0.982	0.549	-0.712
135	9	P384	23.933	2.593	-27.284	-55.207	-18.466	-0.7	-0.137	-0.788
136	9	P595	3.009	-8.38	-27.168	-0.124	-22.268	-0.344	0.743	0.404
137	9	P77	0.262	4.944	-27.037	-1.57	-18.426	0.489	-0.14	0
138	9	P535	8.452	-10.132	-26.944	-15.529	-29.347	-0.502	0.514	0.159
139	9	P49	5.532	2.434	-26.64	0.378	-12.304	0.522	-0.057	-0.133
140	9	P264	15.203	11.294	-26.615	-29.334	-3.373	0.559	-2.014	-1.506
141	9	P48	4.812	2.543	-26.56	0.105	-13.914	0.58	-0.06	-0.067
142	9	P354	22.315	6.802	-26.455	-52.333	-12.813	-0.547	-0.395	-0.937
143	9	P625	1.338	-6.729	-26.176	4.574	-17.991	-0.28	0.959	0.658
144	9	P106	-2.406	6.923	-26.142	-5.518	-22.03	0.442	-0.23	0.063
145	9	P528	-97.465	-6.243	-26.079	104.444	-1.795	-0.775	1.679	-0.098
146	9	P19	15.46	0.525	-26	0.185	-6.061	0.698	0	-0.05
147	9	P620	-22.422	-5.751	-25.963	38.607	9.688	-0.442	0.573	0
148	9	P18	15.789	0.603	-25.949	0.113	-6.8	0.767	0	0
149	9	P324	19.686	9.716	-25.946	-46.288	-8.342	-0.348	-0.715	-1.053
150	9	P173	7.498	10.081	-25.882	-9.934	-4.685	-0.329	0.353	-0.602
151	9	P225	-13.78	13.736	-25.776	-34.817	-33.668	0.426	-0.712	-0.04
152	9	P255	-20.247	15.816	-25.759	-46.64	-36.576	0.416	-0.861	-0.101
153	9	P50	6.158	2.296	-25.629	0.517	-10.585	0.434	-0.048	-0.192
154	9	P81	4.42	4.504	-25.598	0.071	-10.041	0.24	-0.068	-0.342
155	9	P47	4.072	2.617	-25.403	-0.297	-15.266	0.606	-0.059	0
156	9	P294	16.727	11.239	-25.371	-38.346	-5.343	-0.171	-1.167	-1.145
157	9	P505	11.725	-9.542	-25.346	-25.049	-30.624	-0.574	0.438	0.034
158	9	P195	-9.542	11.725	-25.049	-25.346	-30.624	0.438	-0.574	0.034
159	9	P20	14.942	0.461	-25.009	0.221	-5.264	0.581	0	-0.075
160	9	P112	4.923	6.513	-24.952	-1.841	-7.868	0.066	0	-0.466
161	9	P17	15.916	0.692	-24.869	0.008	-7.418	0.788	0	0
162	9	P651	-13.089	-4.873	-24.65	28.046	5.161	-0.592	0.477	-0.066
163	9	P76	-0.693	4.735	-24.454	-2.53	-19.719	0.502	-0.131	0.076
164	9	P285	-30.266	17.737	-24.167	-61.496	-38.651	0.426	-1.031	-0.131
165	9	P165	-6.724	9.815	-24.009	-17.739	-27.747	0.443	-0.441	0.102
166	9	P204	10.273	9.689	-24.001	-14.927	-3.258	-1.009	1.664	-0.065
167	9	P496	79.341	282.964	-23.871	443.284	166.704	-1.151	5.216	3.278
168	9	P51	6.626	2.135	-23.622	0.536	-8.892	0.323	-0.029	-0.235
169	9	P714	-3.046	-3.73	-23.548	9.584	-3.913	0.45	-1.254	-0.517
170	9	P46	3.379	2.652	-23.294	-0.798	-16.229	0.6	-0.055	0.066
171	9	P475	14.783	-7.783	-23.185	-34.205	-29.796	-0.628	0.358	-0.113
172	9	P143	6.145	7.954	-23.11	-5.276	-5.379	-0.127	0.246	-0.528
173	9	P21	14.25	0.412	-23.061	0.226	-4.473	0.427	0	-0.093
174	9	P135	-4.796	7.982	-22.909	-11.688	-25.149	0.446	-0.315	0.15
175	9	P16	15.832	0.788	-22.88	-0.124	-7.856	0.76	0	0.03
176	9	P589	-39.238	-4.078	-22.667	54.659	15.146	-0.444	0.842	0
177	9	P655	-0.56	-5.064	-22.584	7.676	-12.734	0.824	1.2	1.475
178	9	P82	5.059	4.14	-22.534	-0.04	-8.085	0.139	0	-0.367
179	9	P105	-3.287	6.195	-21.893	-7.003	-22.79	0.457	-0.204	0.17
180	9	P683	-4.022	-4.312	-21.32	19.311	-3.163	-1.577	0.908	-0.52
181	9	P682	-7.292	-3.508	-21.166	20.159	1.973	-0.993	0.43	-0.258
182	9	P75	-1.43	4.425	-21.053	-3.576	-20.355	0.491	-0.113	0.161
183	9	P596	3.796	-6.631	-21.016	-3.577	-21.95	-0.178	0.604	0.511
184	9	P445	17.15	-5.016	-20.964	-41.616	-26.95	-0.648	0.258	-0.275
185	9	P113	5.409	5.828	-20.819	-2.067	-6.05	-0.029	0.151	-0.431
186	9	P52	6.884	1.96	-20.803	0.464	-7.337	0.198	0	-0.252
187	9	P566	5.569	-7.239	-20.629	-9.529	-24.984	-0.3	0.557	0.357
188	9	P626	2.276	-5.82	-20.462	1.129	-18.218	0.155	0.581	0.741
189	9	P45	2.79	2.65	-20.455	-1.349	-16.707	0.562	-0.046	0.124
190	9	P22	13.401	0.375	-20.329	0.206	-3.738	0.249	0	-0.101
191	9	P15	15.54	0.882	-20.185	-0.269	-8.071	0.687	0	0.052
192	9	P315	-45.916	18.653	-19.856	-80.183	-38.261	0.475	-1.233	-0.117
193	9	P174	7.563	8.542	-19.746	-9.823	-3.391	-0.292	0.86	-0.348
194	9	P536	7.642	-7.333	-19.498	-16.553	-27.057	-0.382	0.501	0.229
195	9	P415	18.475	-1.641	-19.119	-46.181	-22.63	-0.623	0.129	-0.438
196	9	P83	5.407	3.732	-18.853	-0.244	-6.445	0.038	0.082	-0.338
197	9	P906	12.79	12.79	-18.768	-18.768	-14.436	-5.541	-5.541	-10.932
198	9	P656	0.664	-4.963	-18.611	4.171	-14.289	0.587	0.149	0.665
199	9	P685	-2.146	-4.569	-18.407	11.593	-9.675	1.254	-0.45	0.517
200	9	P713	-4.303	-2.311	-18.249	14.515	0.373	-1.2	-0.824	-1.475

Plate Forces (per ft) (By Combination) (Continued)

	LC	Plate Label	Qx[k]	Qy[k]	Mx[k-ft]	My[k-ft]	Mxy[k-ft]	Fx[k]	Fy[k]	Fxy[k]
201	9	P144	6.272	6.895	-18.101	-5.434	-4.033	-0.198	0.493	-0.335
202	9	P715	-1.643	-3.089	-18.078	7.987	-6.49	0.503	-0.503	0
203	9	P385	18.634	1.818	-17.881	-47.386	-17.659	-0.553	-0.033	-0.582
204	9	P506	9.815	-6.724	-17.739	-24.009	-27.747	-0.441	0.443	0.102
205	9	P902	-3.617	-3.993	-17.51	-0.447	-8.571	3.633	3.814	7.713
206	9	P681	-10.561	-1.66	-17.441	23.661	7.783	-0.731	0.468	-0.211
207	9	P53	6.899	1.779	-17.422	0.338	-5.992	0.074	0.034	-0.233
208	9	P355	17.749	4.865	-17.235	-45.381	-12.873	-0.438	-0.223	-0.69
209	9	P74	-1.904	4.044	-17.187	-4.591	-20.274	0.456	-0.083	0.233
210	9	P44	2.339	2.61	-17.166	-1.893	-16.658	0.496	-0.033	0.17
211	9	P104	-3.81	5.364	-17.162	-8.405	-22.624	0.451	-0.159	0.266
212	9	P14	15.047	0.966	-17.048	-0.414	-8.044	0.577	0	0.07
213	9	P23	12.41	0.345	-17.047	0.171	-3.091	0.072	0	-0.094
214	9	P134	-5.371	6.578	-17.007	-13.351	-24.799	0.472	-0.261	0.267
215	9	P295	14.251	8.564	-16.986	-34.67	-6.074	-0.047	-0.666	-0.781
216	9	P325	16.128	7.157	-16.96	-40.833	-8.908	-0.29	-0.439	-0.749
217	9	P650	-17.315	-1.039	-16.742	32.384	12.779	-0.513	0.56	-0.067
218	9	P686	-0.366	-3.255	-16.706	5.252	-11.472	0.654	0	0.249
219	9	P164	-7.333	7.642	-16.553	-19.498	-27.057	0.501	-0.382	0.229
220	9	P114	5.527	5.121	-16.376	-2.31	-4.706	-0.095	0.285	-0.306
221	9	P745	-1.024	-2.014	-16.323	7.218	-3.734	0.094	-0.339	-0.04
222	9	P712	-6.461	-0.991	-16.251	17.351	4.564	-0.959	0.28	-0.658
223	9	P265	12.515	9.555	-16.201	-27.571	-5.022	0.549	-0.982	-0.712
224	9	P912	-76.962	-76.962	-16.156	-16.156	-3.523	-4.383	-4.383	-9.499
225	9	P744	-2.999	-2.228	-16.145	9.03	-1.576	0	-0.654	-0.249
226	9	P743	-4.843	-1.261	-15.818	11.595	1.305	-0.149	-0.587	-0.665
227	9	P905	12.073	12.073	-15.799	-15.799	-10.141	4.383	4.383	9.499
228	9	P476	11.811	-5.369	-15.663	-31.005	-26.851	-0.48	0.378	-0.033
229	9	P716	-0.248	-1.895	-15.632	6.307	-8.87	0.339	-0.094	0.04
230	9	P194	-10.132	8.452	-15.529	-26.944	-29.347	0.514	-0.502	0.159
231	9	P597	3.901	-5.182	-15.286	-6.14	-21.034	0	0.44	0.486
232	9	P627	2.713	-4.634	-15.252	-2.041	-18.161	0.183	0.298	0.517
233	9	P904A	2.637	3.821	-15.122	-12.61	7.682	-4.939	5.568	-0.547
234	9	P235	9.689	10.273	-14.927	-24.001	-3.258	1.664	-1.009	-0.065
235	9	P84	5.443	3.311	-14.884	-0.474	-5.156	-0.042	0.151	-0.252
236	9	P903	-4.489	-4.845	-14.716	2.811	-7.065	-3.814	-3.633	-7.713
237	9	P657	1.69	-3.771	-14.642	0.823	-15.197	0.363	0.135	0.405
238	9	P567	5.188	-5.464	-14.609	-11.255	-23.352	-0.177	0.477	0.379
239	9	P175	7.043	7.127	-14.475	-9.599	-2.772	-0.145	0.878	0.231
240	9	P746	-0.005	-1.349	-14.464	5.681	-6.051	0.093	-0.093	0
241	9	P205	7.675	7.675	-14.356	-14.356	-1.521	1.253	1.253	1.297
242	9	P911	97.065	97.065	-13.803	-13.803	-0.052	5.541	5.541	10.932
243	9	P687	1.036	-2.689	-13.764	2.663	-12.372	0.377	0	0.199
244	9	P54	6.657	1.595	-13.76	0.195	-4.889	-0.03	0.062	-0.178
245	9	P13	14.375	1.033	-13.75	-0.544	-7.783	0.442	0	0.08
246	9	P43	2.039	2.537	-13.731	-2.373	-16.098	0.406	0	0.198
247	9	P775	-1.26	-1.061	-13.66	6.176	-2.282	0	-0.239	-0.044
248	9	P774	-2.676	-0.94	-13.64	7.65	-0.041	0	-0.377	-0.199
249	9	P446	13.358	-3.377	-13.636	-36.608	-24.463	-0.495	0.299	-0.174
250	9	P224	-14.216	8.811	-13.528	-35.807	-31.416	0.497	-0.609	0.078
251	9	P24	11.287	0.319	-13.486	0.132	-2.55	-0.079	0	-0.072
252	9	P537	6.578	-5.371	-13.351	-17.007	-24.799	-0.261	0.472	0.267
253	9	P73	-2.105	3.626	-13.224	-5.461	-19.509	0.395	-0.037	0.283
254	9	P145	5.963	5.904	-13.14	-5.488	-3.248	-0.115	0.545	-0.048
255	9	P717	0.81	-1.697	-12.845	3.469	-9.78	0.239	0	0.044
256	9	P742	-5.947	0.015	-12.72	13.693	5.3	-0.581	-0.155	-0.741
257	9	P776	-0.108	-0.872	-12.705	4.684	-4.091	0	-0.082	0
258	9	P907	3.821	2.637	-12.61	-15.122	7.682	5.568	-4.939	-0.547
259	9	P103	-3.975	4.505	-12.42	-9.551	-21.586	0.417	-0.087	0.347
260	9	P773	-4.061	-0.371	-12.212	9.047	2.589	-0.135	-0.363	-0.405
261	9	P711	-8.527	0.277	-12.082	18.884	8.862	-0.743	0.344	-0.404
262	9	P115	5.294	4.447	-12.026	-2.492	-3.805	-0.102	0.327	-0.126
263	9	P416	14.254	-0.986	-11.977	-40.077	-20.964	-0.48	0.202	-0.313
264	9	P747	0.796	-1.038	-11.868	3.61	-7.455	0.082	0	0
265	9	P507	7.982	-4.796	-11.688	-22.909	-25.149	-0.315	0.446	0.15
266	9	P805	-1.218	-0.333	-11.684	4.741	-1.1	-0.035	-0.15	-0.049
267	9	P910A	-83.045	88.271	-11.597	-9.518	-4.777	-5.568	4.939	0.547
268	9	P619	-28.311	2.366	-11.541	44.927	19.151	-0.431	0.776	0
269	9	P133	-5.464	5.188	-11.255	-14.609	-23.352	0.477	-0.177	0.379
270	9	P804	-2.338	-0.131	-11.239	5.748	0.863	-0.058	-0.22	-0.153
271	9	P806	-0.198	-0.37	-11.095	3.613	-2.717	-0.035	-0.063	0
272	9	P85	5.175	2.902	-10.944	-0.67	-4.207	-0.082	0.178	-0.131
273	9	P386	14.419	1.489	-10.857	-41.041	-16.918	-0.434	0.088	-0.435
274	9	P777	0.749	-0.627	-10.785	3.142	-5.463	0	0	0
275	9	P628	2.904	-3.406	-10.621	-4.453	-17.608	0.136	0.236	0.374
276	9	P12	13.549	1.078	-10.56	-0.648	-7.315	0.297	0	0.079
277	9	P658	2.266	-2.769	-10.544	-1.679	-15.146	0.218	0.125	0.282
278	9	P42	1.884	2.436	-10.43	-2.748	-15.095	0.303	0	0.2
279	9	P558	-68.33	10.788	-10.35	86.075	19.804	-0.6	1.461	0.054
280	9	P598	3.671	-3.826	-10.305	-8.083	-19.835	0	0.342	0.392
281	9	P356	13.905	3.739	-10.274	-39.557	-12.918	-0.358	-0.036	-0.529
282	9	P688	1.82	-2.02	-10.181	0.189	-12.657	0.22	0.058	0.153
283	9	P55	6.162	1.414	-10.105	0.067	-4.028	-0.097	0.074	-0.099
284	9	P326	12.884	5.531	-10.097	-36.056	-9.432	-0.241	-0.153	-0.595
285	9	P680	-13.145	1.348	-10.085	25.744	13.637	-0.588	0.517	-0.155
286	9	P835	-1.05	0.196	-10.045	3.132	-0.351	-0.042	-0.083	-0.039
287	9	P296	11.571	6.775	-9.988	-31.175	-6.781	-0.034	-0.258	-0.633
288	9	P266	10.081	7.498	-9.934	-25.882	-4.685	0.353	-0.329	-0.602
289	9	P254	-20.165	8.306	-9.926	-46.142	-32.744	0.46	-0.698	0
290	9	P25	10.039	0.292	-9.924	0.096	-2.115	-0.18	0	-0.039
291	9	P477	9.247	-3.72	-9.853	-28.322	-24.294	-0.348	0.405	0
292	9	P236	8.542	7.563	-9.823	-19.746	-3.391	0.86	-0.292	-0.348
293	9	P836	-0.172	0.058	-9.787	2.406	-1.719	-0.032	-0.037	0
294	9	P803	-3.412	0.28	-9.683	6.538	3.074	-0.125	-0.218	-0.282
295	9	P807	0.662	-0.3	-9.675	2.42	-3.924	-0.031	0	0
296	9	P718	1.574	-1.309	-9.636	1.255	-10.288	0.15	0.035	0.049
297	9	P206	7.127	7.043	-9.599	-14.475	-2.772	0.878	-0.145	0.231
298	9	P568	4.505	-3.975	-9.551	-12.42	-21.586	-0.087	0.417	0.347
299	9	P163	-7.239	5.569	-9.529	-20.629	-24.984	0.557	-0.3	0.357
300	9	P913	88.271	-83.045	-9.518	-11.597	-4.777	4.939	-5.568	0.547

Plate Forces (per ft) (By Combination) (Continued)

	LC	Plate Label	Qx[k]	Qy[k]	Mx[k-ft]	My[k-ft]	Mxy[k-ft]	Fx[k]	Fy[k]	Fxy[k]
301	9	P772	-5.131	0.513	-9.516	10.069	5.478	-0.298	-0.183	-0.517
302	9	P72	-2.054	3.2	-9.497	-6.103	-18.163	0.311	0	0.298
303	9	P834	-1.959	0.409	-9.374	3.73	1.285	-0.07	-0.117	-0.112
304	9	P176	6.062	6.062	-9.24	-9.24	-2.556	0.392	0.392	0.387
305	9	P901A	-0.118	-1.89	-9.068	9.421	-3.061	-4.081	4.081	0
306	9	P748	1.463	-0.753	-8.986	1.643	-8.135	0.063	0.035	0
307	9	P865	-0.803	0.517	-8.891	1.545	0.01	0	-0.034	0
308	9	P345	-69.537	15.731	-8.85	-102.399	-32.412	0.6	-1.461	-0.054
309	9	P866	-0.16	0.342	-8.845	1.195	-1.043	0	0	0
310	9	P146	5.307	5.061	-8.789	-5.399	-2.915	0	0.374	0.142
311	9	P837	0.61	-0.021	-8.716	1.606	-2.757	0	0	0
312	9	P895	-0.491	0.38	-8.597	0.384	0.048	0.038	0	0
313	9	P896	-0.514	0.276	-8.592	0.297	-0.437	0.038	0	0
314	9	P538	5.364	-3.81	-8.405	-17.162	-22.624	-0.159	0.451	0.266
315	9	P778	1.403	-0.372	-8.285	1.572	-6.261	0	0.031	0
316	9	P741	-7.039	1.225	-8.194	14.444	8.922	-0.604	0.178	-0.511
317	9	P447	10.219	-2.218	-8.115	-32.601	-22.319	-0.361	0.349	-0.099
318	9	P102	-3.826	3.671	-8.083	-10.305	-19.835	0.342	0	0.392
319	9	P864	-1.42	0.7	-8.071	1.819	1.258	-0.054	-0.049	-0.069
320	9	P116	4.753	3.847	-8.059	-2.556	-3.271	-0.045	0.264	0
321	9	P867	0.464	0.18	-8.016	0.793	-1.843	0	0	0
322	9	P904	-0.523	-1.504	-7.804	8.304	-3.297	3.899	-3.899	0
323	9	P897	-0.366	0.162	-7.798	0.194	-0.804	0	0	0
324	9	P894	-0.308	0.47	-7.75	0.451	0.623	0	0	0
325	9	P833	-2.81	0.705	-7.705	4.14	3.083	-0.129	-0.118	-0.199
326	9	P11	12.597	1.098	-7.699	-0.72	-6.687	0.163	0	0.066
327	9	P808	1.342	-0.136	-7.595	1.221	-4.691	0	0	0
328	9	P41	1.847	2.315	-7.493	-2.995	-13.749	0.201	0.036	0.174
329	9	P86	4.632	2.527	-7.327	-0.787	-3.55	-0.08	0.154	0
330	9	P508	6.195	-3.287	-7.003	-21.893	-22.79	-0.204	0.457	0.17
331	9	P838	1.256	-0.007	-6.985	0.772	-3.42	0	0	0
332	9	P802	-4.293	0.869	-6.947	6.993	5.376	-0.236	-0.136	-0.374
333	9	P193	-9.65	5.43	-6.929	-27.611	-26.338	0.607	-0.429	0.271
334	9	P56	5.432	1.237	-6.724	-0.02	-3.377	-0.124	0.067	0
335	9	P417	10.783	-0.443	-6.697	-35.23	-19.494	-0.355	0.28	-0.223
336	9	P26	8.666	0.259	-6.624	0.07	-1.773	-0.223	0	0
337	9	P659	2.445	-1.374	-6.598	-3.682	-14.362	0.118	0.129	0.199
338	9	P868	1.019	0.054	-6.527	0.356	-2.345	0	0	0
339	9	P689	2.176	-0.888	-6.499	-1.818	-12.239	0.117	0.07	0.112
340	9	P629	2.795	-1.79	-6.479	-6.261	-16.391	0.081	0.215	0.269
341	9	P863	-1.958	0.89	-6.36	1.986	2.612	-0.114	-0.05	-0.126
342	9	P898	-0.046	0.047	-6.322	0.079	-1.029	0	0	0
343	9	P71	-1.79	2.795	-6.261	-6.479	-16.391	0.215	0.081	0.269
344	9	P719	1.992	-0.425	-6.24	-0.64	-10.156	0.083	0.042	0.039
345	9	P132	-5.182	3.901	-6.14	-15.286	-21.034	0.44	0	0.486
346	9	P599	3.2	-2.054	-6.103	-9.497	-18.163	0	0.311	0.298
347	9	P893	0.021	0.542	-6.036	0.488	1.246	-0.057	0	-0.046
348	9	P749	1.879	-0.06	-5.882	-0.034	-8.213	0.037	0.032	0
349	9	P387	10.89	1.403	-5.729	-35.937	-16.21	-0.328	0.201	-0.335
350	9	P478	6.923	-2.406	-5.518	-26.142	-22.03	-0.23	0.442	0.063
351	9	P207	5.904	5.963	-5.488	-13.14	-3.248	0.545	-0.115	-0.048
352	9	P779	1.811	0.17	-5.483	0.15	-6.469	0	0	0
353	9	P569	3.626	-2.105	-5.461	-13.224	-19.509	-0.037	0.395	0.283
354	9	P237	6.895	6.272	-5.434	-18.101	-4.033	0.493	-0.198	-0.335
355	9	P710	-10.049	2.448	-5.411	19.655	13.208	-0.607	0.429	-0.271
356	9	P177	5.061	5.307	-5.399	-8.789	-2.915	0.374	0	0.142
357	9	P771	-5.871	1.532	-5.323	10.429	8.355	-0.44	0	-0.486
358	9	P10	11.545	1.096	-5.32	-0.759	-5.949	0.057	0	0.046
359	9	P267	7.954	6.145	-5.276	-23.11	-5.379	0.246	-0.127	-0.528
360	9	P357	10.565	3.118	-5.218	-34.74	-12.882	-0.275	0.118	-0.431
361	9	P147	4.408	4.408	-5.145	-5.145	-2.868	0.155	0.155	0.163
362	9	P297	8.986	5.565	-5.12	-27.911	-7.319	0	-0.042	-0.555
363	9	P809	1.763	0.259	-5.097	0.088	-4.949	0	0	0
364	9	P40	1.886	2.189	-5.075	-3.111	-12.18	0.114	0.05	0.126
365	9	P832	-3.506	1.073	-5.066	4.301	4.897	-0.215	-0.081	-0.269
366	9	P327	9.894	4.539	-5.057	-31.91	-9.86	-0.182	0.037	-0.507
367	9	P699	8.372	-16.177	-4.895	-2.599	-3.789	1.009	-1.664	0.065
368	9	P839	1.69	0.215	-4.78	-0.046	-3.646	0	0	0
369	9	P117	3.969	3.356	-4.756	-2.481	-3.006	0	0.149	0.105
370	9	P539	4.044	-1.904	-4.591	-17.187	-20.274	-0.083	0.456	0.233
371	9	P869	1.439	0.07	-4.553	-0.099	-2.487	0	0	0
372	9	P101	-3.406	2.904	-4.453	-10.621	-17.608	0.236	0.136	0.374
373	9	P899	0.405	-0.037	-4.33	-0.046	-1.08	0	0	0
374	9	P649	-20.208	4.806	-4.284	35.021	19.744	-0.46	0.698	0
375	9	P87	3.86	2.202	-4.271	-0.8	-3.112	-0.055	0.099	0.066
376	9	P448	7.465	-1.222	-4.137	-29.442	-20.417	-0.242	0.409	-0.048
377	9	P284	-28.694	5.992	-3.865	-57.723	-32.341	0.431	-0.776	0
378	9	P57	4.498	1.068	-3.85	-0.052	-2.887	-0.117	0.045	0.044
379	9	P27	7.163	0.218	-3.822	0.06	-1.502	-0.212	0	0
380	9	P862	-2.361	1.077	-3.804	2.021	3.962	-0.201	-0.036	-0.174
381	9	P70	-1.374	2.445	-3.682	-6.598	-14.362	0.129	0.118	0.199
382	9	P162	-6.631	3.796	-3.577	-21.016	-21.95	0.604	-0.178	0.511
383	9	P509	4.425	-1.43	-3.576	-21.053	-20.355	-0.113	0.491	0.161
384	9	P892	0.472	0.59	-3.511	0.491	1.865	-0.163	0	-0.066
385	9	P9	10.412	1.077	-3.5	-0.767	-5.157	0	0	0
386	9	P39	1.948	2.07	-3.251	-3.111	-10.506	0.054	0.049	0.069
387	9	P801	-4.89	1.573	-3.148	6.996	7.543	-0.342	0	-0.392
388	9	P690	2.07	1.948	-3.111	-3.251	-10.506	0.049	0.054	0.069
389	9	P660	2.189	1.886	-3.111	-5.075	-12.18	0.05	0.114	0.126
390	9	P720	1.967	1.976	-3.021	-2.011	-8.831	0.034	0	0
391	9	P418	7.764	0.158	-3.016	-31.424	-18.142	-0.241	0.361	-0.159
392	9	P223	-13.004	4.442	-3.003	-35.407	-27.036	0.588	-0.517	0.155
393	9	P630	2.315	1.847	-2.995	-7.493	-13.749	0.036	0.201	0.174
394	9	P639	12.305	33.122	-2.946	9.204	-3.842	-0.559	2.014	1.506
395	9	P750	1.883	1.921	-2.872	-1.278	-7.234	0	0	0
396	9	P600	2.436	1.884	-2.748	-10.43	-15.095	0	0.303	0.2
397	9	P780	1.821	1.75	-2.697	-0.921	-5.765	0	0	0
398	9	P668	-16.177	8.372	-2.599	-4.895	-3.789	-1.664	1.009	0.065
399	9	P178	3.847	4.753	-2.556	-8.059	-3.271	0.264	-0.045	0
400	9	P810	1.777	1.447	-2.532	-0.784	-4.446	0	0	0

Plate Forces (per ft) (By Combination) (Continued)

	LC	Plate Label	Qx[k]	Qy[k]	Mx[k-ft]	My[k-ft]	Mxy[k-ft]	Fx[k]	Fy[k]	Fxy[k]
401	9	P479	4.735	-0.693	-2.53	-24.454	-19.719	-0.131	0.502	0.076
402	9	P208	4.447	5.294	-2.492	-12.026	-3.805	0.327	-0.102	-0.126
403	9	P148	3.356	3.969	-2.481	-4.756	-3.006	0.149	0	0.105
404	9	P840	1.723	1.017	-2.414	-0.7	-3.262	0	0	0
405	9	P870	1.535	0.494	-2.374	-0.506	-2.141	0	0	0
406	9	P570	2.537	2.039	-2.373	-13.731	-16.098	0	0.406	0.198
407	9	P238	5.121	5.527	-2.31	-16.376	-4.706	0.285	-0.095	-0.306
408	9	P118	3.013	3.013	-2.269	-2.269	-2.895	0.045	0.045	0.118
409	9	P388	7.791	1.594	-2.244	-31.886	-15.479	-0.226	0.301	-0.263
410	9	P8	9.209	1.045	-2.237	-0.751	-4.358	-0.038	0	0
411	9	P740	-7.849	2.787	-2.196	14.393	12.117	-0.557	0.3	-0.357
412	9	P698	-9.113	-9.113	-2.194	-2.194	0.35	-1.253	-1.253	-1.297
413	9	P900	0.817	0.051	-2.15	-0.173	-0.869	0	0	0
414	9	P268	5.828	5.409	-2.067	-20.819	-6.05	0.151	-0.029	-0.431
415	9	P131	-4.634	2.713	-2.041	-15.252	-18.161	0.298	0.183	0.517
416	9	P38	1.976	1.967	-2.011	-3.021	-8.831	0	0.034	0
417	9	P407	82.094	293.534	-1.999	-465.28	-175.029	1.151	-5.216	-3.278
418	9	P88	2.918	1.958	-1.958	-0.701	-2.808	-0.03	0.038	0.102
419	9	P540	2.61	2.339	-1.893	-17.166	-16.658	-0.033	0.496	0.17
420	9	P298	6.513	4.923	-1.841	-24.952	-7.868	0	0.066	-0.466
421	9	P358	7.559	2.945	-1.834	-30.822	-12.723	-0.189	0.231	-0.356
422	9	P69	-0.888	2.176	-1.818	-6.499	-12.239	0.07	0.117	0.112
423	9	P328	7.112	4.084	-1.731	-28.414	-10.124	-0.12	0.154	-0.429
424	9	P28	5.526	0.167	-1.709	0.068	-1.273	-0.165	0	0.036
425	9	P100	-2.769	2.266	-1.679	-10.544	-15.146	0.125	0.218	0.282
426	9	P638	-5.141	22.896	-1.673	7.791	-7.029	-0.549	0.982	0.712
427	9	P58	3.403	0.921	-1.665	-0.015	-2.493	-0.092	0	0.078
428	9	P449	4.944	0.262	-1.57	-27.037	-18.426	-0.14	0.489	0
429	9	P831	-3.967	1.487	-1.565	4.168	6.558	-0.311	0	-0.298
430	9	P7	7.938	1.009	-1.458	-0.719	-3.589	-0.038	0	0
431	9	P510	2.65	2.79	-1.349	-20.455	-16.707	-0.046	0.562	0.124
432	9	P37	1.921	1.883	-1.278	-2.872	-7.234	0	0	0
433	9	P544	2.383	2.673	-1.203	19.109	1.589	0.111	-0.328	0.281
434	9	P545	4.15	3.298	-1.074	21.601	1.464	0.189	-0.231	0.356
435	9	P514	2.86	1.422	-1.059	20.357	3.551	0.133	-0.4	0.2
436	9	P6	6.593	0.975	-1.039	-0.68	-2.874	0	0	0
437	9	P574	1.723	3.577	-1.004	16.561	-0.066	0.068	-0.24	0.342
438	9	P575	2.979	4.551	-0.99	18.429	-0.76	0.12	-0.154	0.429
439	9	P36	1.75	1.821	-0.921	-2.697	-5.765	0	0	0
440	9	P728	0.688	-4.489	-0.821	0.634	-0.669	0.145	-0.878	-0.231
441	9	P5	5.159	0.951	-0.818	-0.643	-2.222	0	0	0
442	9	P543	0.983	2.759	-0.804	17.485	1.551	0.048	-0.434	0.192
443	9	P149	2.202	3.86	-0.8	-4.271	-3.112	0.099	-0.055	0.066
444	9	P480	2.652	3.379	-0.798	-23.294	-16.229	-0.055	0.6	0.066
445	9	P419	5.026	1.353	-0.794	-28.528	-16.614	-0.141	0.454	-0.11
446	9	P179	2.527	4.632	-0.787	-7.327	-3.55	0.154	-0.08	0
447	9	P35	1.447	1.777	-0.784	-2.532	-4.446	0	0	0
448	9	P513	1.229	1.902	-0.777	18.569	2.947	0.057	-0.522	0.133
449	9	P691	1.077	10.412	-0.767	-3.5	-5.157	0	0	0
450	9	P661	1.096	11.545	-0.759	-5.32	-5.949	0	0.057	0.046
451	9	P721	1.045	9.209	-0.751	-2.237	-4.358	0	-0.038	0
452	9	P631	1.098	12.597	-0.72	-7.699	-6.687	0	0.163	0.066
453	9	P751	1.009	7.938	-0.719	-1.458	-3.589	0	-0.038	0
454	9	P119	1.958	2.918	-0.701	-1.958	-2.808	0.038	-0.03	0.102
455	9	P34	1.017	1.723	-0.7	-2.414	-3.262	0	0	0
456	9	P781	0.975	6.593	-0.68	-1.039	-2.874	0	0	0
457	9	P209	2.902	5.175	-0.67	-10.944	-4.207	0.178	-0.082	-0.131
458	9	P515	4.893	1.611	-0.659	23.066	4.06	0.226	-0.301	0.263
459	9	P573	0.696	3.351	-0.656	15.349	0.374	0.029	-0.323	0.235
460	9	P601	1.078	13.549	-0.648	-10.56	-7.315	0	0.297	0.079
461	9	P811	0.951	5.159	-0.643	-0.818	-2.222	0	0	0
462	9	P68	-0.425	1.992	-0.64	-6.24	-10.156	0.042	0.083	0.039
463	9	P871	0.847	2.032	-0.636	-0.342	-1.009	0	0	0
464	9	P4	3.625	0.93	-0.623	-0.622	-1.623	0	0	0
465	9	P841	0.93	3.625	-0.622	-0.623	-1.623	0	0	0
466	9	P484	3.111	0.02	-0.574	20.104	5.511	0.141	-0.454	0.11
467	9	P483	1.412	0.899	-0.567	18.407	4.352	0.06	-0.58	0.067
468	9	P576	4.629	6.374	-0.547	21.081	-1.461	0.182	-0.037	0.507
469	9	P604	0.989	3.985	-0.547	13.152	-1.143	0	-0.139	0.367
470	9	P571	1.033	14.375	-0.544	-13.75	-7.783	0	0.442	0.08
471	9	P901	0.613	0.59	-0.534	-0.072	-0.287	0	0	0
472	9	P861	-2.577	1.25	-0.532	1.907	5.177	-0.303	0	-0.2
473	9	P33	0.494	1.535	-0.506	-2.374	-2.141	0	0	0
474	9	P89	1.878	1.878	-0.5	-0.5	-2.533	0	0	0.105
475	9	P239	3.311	5.443	-0.474	-14.884	-5.156	0.151	-0.042	-0.252
476	9	P605	1.578	5.076	-0.463	14.083	-2.19	0	-0.066	0.466
477	9	P908	-3.993	-3.617	-0.447	-17.51	-8.571	3.814	3.633	7.713
478	9	P541	0.966	15.047	-0.414	-17.048	-8.044	0	0.577	0.07
479	9	P29	3.766	0.127	-0.412	0.099	-1.042	-0.101	0	0.038
480	9	P603	0.406	3.599	-0.387	12.518	-0.42	0	-0.198	0.252
481	9	P3	2.032	0.847	-0.342	-0.636	-1.009	0	0	0
482	9	P891	1.015	0.611	-0.309	0.456	2.421	-0.297	0	-0.079
483	9	P450	2.617	4.072	-0.297	-25.403	-15.266	-0.059	0.606	0
484	9	P59	2.214	0.855	-0.289	0.094	-2.109	-0.06	0	0.084
485	9	P511	0.882	15.54	-0.269	-20.185	-8.071	0	0.687	0.052
486	9	P389	4.973	2.48	-0.262	-28.771	-14.474	-0.133	0.4	-0.2
487	9	P269	3.732	5.407	-0.244	-18.853	-6.445	0.082	0.038	-0.338
488	9	P606	2.133	7.243	-0.243	15.346	-3.458	0	0.042	0.555
489	9	P542	0.108	4.204	-0.237	17	0.822	0	-0.581	0.075
490	9	P512	0.173	4.186	-0.236	18.018	1.446	0	-0.698	0.05
491	9	P546	6.464	4.427	-0.204	25.034	1.498	0.275	-0.118	0.431
492	9	P453	1.526	-0.122	-0.202	16.989	5.561	0.059	-0.606	0
493	9	P572	0.058	4.079	-0.194	15.003	0.294	0	-0.427	0.093
494	9	P482	0.251	4.025	-0.187	17.871	2.073	0	-0.767	0
495	9	P32	0.051	0.817	-0.173	-2.15	-0.869	0	0	0
496	9	P192	-8.38	3.009	-0.124	-27.168	-22.268	0.743	-0.344	0.404
497	9	P481	0.788	15.832	-0.124	-22.88	-7.856	0	0.76	0.03
498	9	P602	0.025	3.823	-0.12	12.357	-0.07	0	-0.249	0.101
499	9	P63	0.07	1.439	-0.099	-4.553	-2.487	0	0	0
500	9	P452	0.337	3.728	-0.096	16.533	2.614	0	-0.788	0

Plate Forces (per ft) (By Combination) (Continued)

	LC	Plate Label	Qx[k]	Qy[k]	Mx[k-ft]	My[k-ft]	Mxy[k-ft]	Fx[k]	Fy[k]	Fxy[k]
501	9	P633	0.159	3.493	-0.09	9.444	-0.764	-0.034	-0.074	0.233
502	9	P607	3.034	11.451	-0.079	17.331	-4.63	0.034	0.258	0.633
503	9	P2	0.59	0.613	-0.072	-0.534	-0.287	0	0	0
504	9	P150	1.068	4.498	-0.052	-3.85	-2.887	0.045	-0.117	0.044
505	9	P64	0.215	1.69	-0.046	-4.78	-3.646	0	0	0
506	9	P62	-0.037	0.405	-0.046	-4.33	-1.08	0	0	0
507	9	P632	0.007	3.459	-0.041	9.465	-0.242	0	-0.072	0.094
508	9	P299	4.14	5.059	-0.04	-22.534	-8.085	0	0.139	-0.367
509	9	P67	-0.06	1.879	-0.034	-5.882	-8.213	0.032	0.037	0
510	9	P180	1.237	5.432	-0.02	-6.724	-3.377	0.067	-0.124	0
511	9	P842	0.049	0.401	-0.017	0.025	0.12	0	0.043	0
512	9	P120	0.921	3.403	-0.015	-1.665	-2.493	0	-0.092	0.078
513	9	P634	0.327	3.862	-0.011	9.499	-1.519	-0.082	-0.038	0.338
514	9	P872	0.103	0.103	-0.006	-0.006	0.037	0	0	0
515	9	P812	0.033	0.768	0	0.195	0.159	0	0.101	-0.038
516	9	P843	0.235	0.235	0.006	0.006	0.259	0.031	0.031	-0.066
517	9	P770	-6.295	2.679	0.007	10.032	10.752	-0.477	0.177	-0.379
518	9	P451	0.692	15.916	0.008	-24.869	-7.418	0	0.788	0
519	9	P359	4.792	3.535	0.016	-27.754	-12.219	-0.111	0.328	-0.281
520	9	P782	0.027	1.168	0.018	0.611	0.153	0	0.165	-0.036
521	9	P662	0.001	3.02	0.022	6.712	-0.246	0	0.079	0.072
522	9	P422	0.423	3.312	0.023	14.133	2.994	0	-0.76	-0.03
523	9	P873	0.401	0.049	0.025	-0.017	0.12	0.043	0	0
524	9	P752	0.019	1.6	0.04	1.376	0.096	0	0.212	0
525	9	P813	0.154	0.506	0.047	0.176	0.317	0	0.06	-0.084
526	9	P692	0.003	2.543	0.054	4.38	-0.144	0	0.18	0.039
527	9	P722	0.01	2.062	0.056	2.602	-0.012	0	0.223	0
528	9	P151	0.218	7.163	0.06	-3.822	-1.502	0	-0.212	0
529	9	P210	1.414	6.162	0.067	-10.105	-4.028	0.074	-0.097	-0.099
530	9	P31	0.495	0.495	0.068	0.068	-0.215	0	0	0
531	9	P121	0.167	5.526	0.068	-1.709	-1.273	0	-0.165	0.036
532	9	P181	0.259	8.666	0.07	-6.624	-1.773	0	-0.223	0
533	9	P329	4.504	4.42	0.071	-25.598	-10.041	-0.068	0.24	-0.342
534	9	P30	1.981	0.181	0.078	0.156	-0.722	-0.043	0	0
535	9	P92	0.047	-0.046	0.079	-6.322	-1.029	0	0	0
536	9	P65	0.259	1.763	0.088	-5.097	-4.949	0	0	0
537	9	P90	0.855	2.214	0.094	-0.289	-2.109	0	-0.06	0.084
538	9	P211	0.292	10.039	0.096	-9.924	-2.115	0	-0.18	-0.039
539	9	P91	0.127	3.766	0.099	-0.412	-1.042	0	-0.101	0.038
540	9	P420	2.543	4.812	0.105	-26.56	-13.914	-0.06	0.58	-0.067
541	9	P783	0.079	0.865	0.108	0.569	0.294	0	0.092	-0.078
542	9	P421	0.603	15.789	0.113	-25.949	-6.8	0	0.767	0
543	9	P241	0.319	11.287	0.132	-13.486	-2.55	0	-0.079	-0.072
544	9	P663	-0.009	3.094	0.142	6.567	-0.717	-0.062	0.03	0.178
545	9	P66	0.17	1.811	0.15	-5.483	-6.469	0	0	0
546	9	P392	0.501	2.8	0.154	10.919	3.167	0	-0.687	-0.052
547	9	P61	0.181	1.981	0.156	0.078	-0.722	0	-0.043	0
548	9	P271	0.345	12.41	0.171	-17.047	-3.091	0	0.072	-0.094
549	9	P844	0.506	0.154	0.176	0.047	0.317	0.06	0	-0.084
550	9	P391	0.525	15.46	0.185	-26	-6.061	0	0.698	-0.05
551	9	P753	-0.004	1.33	0.186	1.282	0.16	-0.045	0.117	-0.044
552	9	P454	3.143	-1.349	0.187	18.374	7.184	0.14	-0.489	0
553	9	P99	-2.02	1.82	0.189	-10.181	-12.657	0.058	0.22	0.153
554	9	P122	0.162	-0.366	0.194	-7.798	-0.804	0	0	0
555	9	P874	0.768	0.033	0.195	0	0.159	0.101	0	-0.038
556	9	P240	1.595	6.657	0.195	-13.76	-4.889	0.062	-0.03	-0.178
557	9	P814	0.346	0.346	0.199	0.199	0.376	0	0	-0.105
558	9	P301	0.375	13.401	0.206	-20.329	-3.738	0	0.249	-0.101
559	9	P485	5.178	-0.209	0.206	22.646	6.608	0.241	-0.361	0.159
560	9	P727	-1.749	-1.749	0.208	0.208	0.254	-0.392	-0.392	-0.387
561	9	P361	0.461	14.942	0.221	-25.009	-5.264	0	0.581	-0.075
562	9	P331	0.412	14.25	0.226	-23.061	-4.473	0	0.427	-0.093
563	9	P60	1.048	1.048	0.246	0.246	-1.603	-0.031	-0.031	0.066
564	9	P723	-0.07	1.899	0.253	2.448	-0.099	-0.067	0.124	0
565	9	P693	-0.082	2.52	0.254	4.194	-0.435	-0.074	0.097	0.099
566	9	P635	0.282	4.755	0.255	9.435	-2.553	-0.151	0.029	0.431
567	9	P423	1.574	-1.047	0.266	14.461	6.412	0.055	-0.6	-0.066
568	9	P784	0.154	0.64	0.267	0.505	0.358	-0.038	0.03	-0.102
569	9	P362	0.563	2.222	0.279	7.213	3.116	0	-0.577	-0.07
570	9	P637	-2.069	10.364	0.281	8.223	-5.502	-0.353	0.329	0.602
571	9	P152	0.276	-0.514	0.297	-8.592	-0.437	0	0.038	0
572	9	P270	1.779	6.899	0.338	-17.422	-5.992	0.034	0.074	-0.233
573	9	P93	0.054	1.019	0.356	-6.527	-2.345	0	0	0
574	9	P390	2.434	5.532	0.378	-26.64	-12.304	-0.057	0.522	-0.133
575	9	P332	0.601	1.613	0.383	3.36	2.855	0	-0.442	-0.08
576	9	P182	0.38	-0.491	0.384	-8.597	0.048	0	0.038	0
577	9	P754	-0.075	1.095	0.392	1.058	0.195	-0.099	0.055	-0.066
578	9	P679	-14.543	5.453	0.393	26.373	18.577	-0.497	0.609	-0.078
579	9	P664	-0.13	3.311	0.402	6.214	-1.291	-0.151	0.042	0.252
580	9	P212	0.47	-0.308	0.451	-7.75	0.623	0	0	0
581	9	P302	0.611	1.015	0.456	-0.309	2.421	0	-0.297	-0.079
582	9	P300	1.96	6.884	0.464	-20.803	-7.337	0	0.198	-0.252
583	9	P785	0.31	0.31	0.482	0.482	0.385	-0.045	-0.045	-0.118
584	9	P242	0.542	0.021	0.488	-6.036	1.246	0	-0.057	-0.046
585	9	P272	0.59	0.472	0.491	-3.511	1.865	0	-0.163	-0.066
586	9	P815	0.64	0.154	0.505	0.267	0.358	0.03	-0.038	-0.102
587	9	P360	2.296	6.158	0.517	-25.629	-10.585	-0.048	0.434	-0.192
588	9	P724	-0.269	1.743	0.531	2.04	-0.181	-0.154	0.08	0
589	9	P330	2.135	6.626	0.536	-23.622	-8.892	-0.029	0.323	-0.235
590	9	P636	-0.296	6.529	0.552	9.115	-3.886	-0.246	0.127	0.528
591	9	P845	0.865	0.079	0.569	0.108	0.294	0.092	0	-0.078
592	9	P755	-0.156	0.678	0.573	0.792	0.27	-0.149	0	-0.105
593	9	P694	-0.319	2.532	0.574	3.702	-0.74	-0.178	0.082	0.131
594	9	P875	1.168	0.027	0.611	0.018	0.153	0.165	0	-0.036
595	9	P577	7.289	9.009	0.615	24.739	-1.732	0.241	0.153	0.595
596	9	P608	7.154	16.857	0.626	20.533	-4.448	0.047	0.666	0.781
597	9	P697	-4.489	0.688	0.634	-0.821	-0.669	-0.878	0.145	-0.231
598	9	P756	-0.119	-0.119	0.642	0.642	0.319	-0.155	-0.155	-0.163
599	9	P757	0.55	-1.209	0.66	0.8	0.016	0	-0.374	-0.142
600	9	P516	7.453	2.076	0.685	26.724	4.817	0.328	-0.201	0.335

Plate Forces (per ft) (By Combination) (Continued)

	LC	Plate Label	Qx[k]	Qy[k]	Mx[k-ft]	My[k-ft]	Mxy[k-ft]	Fx[k]	Fy[k]	Fxy[k]
601	9	P94	-0.007	1.256	0.772	-6.985	-3.42	0	0	0
602	9	P393	1.563	-1.793	0.773	11.095	6.802	0.046	-0.562	-0.124
603	9	P725	-0.63	1.407	0.783	1.426	-0.163	-0.264	0.045	0
604	9	P786	0.678	-0.156	0.792	0.573	0.27	0	-0.149	-0.105
605	9	P123	0.18	0.464	0.793	-8.016	-1.843	0	0	0
606	9	P665	-0.579	3.767	0.797	5.49	-1.983	-0.285	0.095	0.306
607	9	P726	-1.209	0.55	0.8	0.66	0.016	-0.374	0	-0.142
608	9	P130	-3.771	1.69	0.823	-14.642	-15.197	0.135	0.363	0.405
609	9	P695	-0.854	2.514	0.943	2.826	-0.998	-0.327	0.102	0.126
610	9	P667	-4.988	5.666	1.019	1.567	-3.476	-0.86	0.292	0.348
611	9	P816	1.095	-0.075	1.058	0.392	0.195	0.055	-0.099	-0.066
612	9	P424	2.993	-2.531	1.123	15.379	8.347	0.131	-0.502	-0.076
613	9	P161	-5.82	2.276	1.129	-20.462	-18.218	0.581	0.155	0.741
614	9	P696	-2.009	2.201	1.168	1.437	-1.061	-0.545	0.115	0.048
615	9	P666	-1.806	4.525	1.177	4.054	-2.736	-0.493	0.198	0.335
616	9	P153	0.342	-0.16	1.195	-8.845	-1.043	0	0	0
617	9	P95	-0.136	1.342	1.221	-7.595	-4.691	0	0	0
618	9	P363	1.501	-2.306	1.252	7.233	6.698	0.033	-0.496	-0.17
619	9	P98	-1.309	1.574	1.255	-9.636	-10.288	0.035	0.15	0.049
620	9	P846	1.33	-0.004	1.282	0.186	0.16	0.117	-0.045	-0.044
621	9	P876	1.6	0.019	1.376	0.04	0.096	0.212	0	0
622	9	P455	5.056	-1.931	1.421	20.428	8.75	0.242	-0.409	0.048
623	9	P787	1.407	-0.63	1.426	0.783	-0.163	0.045	-0.264	0
624	9	P758	2.201	-2.009	1.437	1.168	-1.061	0.115	-0.545	0.048
625	9	P800	-5.151	2.347	1.527	6.506	9.324	-0.417	0.087	-0.347
626	9	P183	0.517	-0.803	1.545	-8.891	0.01	-0.034	0	0
627	9	P729	5.666	-4.988	1.567	1.019	-3.476	0.292	-0.86	0.348
628	9	P96	-0.372	1.403	1.572	-8.285	-6.261	0.031	0	0
629	9	P124	-0.021	0.61	1.606	-8.716	-2.757	0	0	0
630	9	P97	-0.753	1.463	1.643	-8.986	-8.135	0.035	0.063	0
631	9	P333	1.394	-2.566	1.644	3.243	6.128	0	-0.406	-0.198
632	9	P213	0.7	-1.42	1.819	-8.071	1.258	-0.049	-0.054	-0.069
633	9	P547	9.632	5.92	1.85	29.508	1.969	0.358	0.036	0.529
634	9	P303	1.25	-2.577	1.907	-0.532	5.177	0	-0.303	-0.2
635	9	P243	0.89	-1.958	1.986	-6.36	2.612	-0.05	-0.114	-0.126
636	9	P273	1.077	-2.361	2.021	-3.804	3.962	-0.036	-0.201	-0.174
637	9	P486	7.707	-0.333	2.027	26.039	8.02	0.355	-0.28	0.223
638	9	P817	1.743	-0.269	2.04	0.531	-0.181	0.08	-0.154	0
639	9	P394	2.707	-3.42	2.109	11.464	8.862	0.113	-0.491	-0.161
640	9	P154	0.058	-0.172	2.406	-9.787	-1.719	-0.037	-0.032	0
641	9	P125	-0.3	0.662	2.42	-9.675	-3.924	0	-0.031	0
642	9	P847	1.899	-0.07	2.448	0.253	-0.099	0.124	-0.067	0
643	9	P588	-45.475	14.26	2.47	65.81	25.927	-0.475	1.233	0.117
644	9	P830	-4.132	1.916	2.578	3.729	7.878	-0.395	0.037	-0.283
645	9	P877	2.062	0.01	2.602	0.056	-0.012	0.223	0	0
646	9	P129	-2.689	1.036	2.663	-13.764	-12.372	0	0.377	0.199
647	9	P253	-17.538	2.074	2.809	-43.713	-26.437	0.513	-0.56	0.067
648	9	P909	-4.845	-4.489	2.811	-14.716	-7.065	-3.633	-3.814	-7.713
649	9	P788	2.514	-0.854	2.826	0.943	-0.998	0.102	-0.327	0.126
650	9	P425	4.611	-3.378	2.841	16.711	10.2	0.23	-0.442	-0.063
651	9	P364	2.333	-3.958	3.016	7.052	8.689	0.083	-0.456	-0.233
652	9	P184	0.196	-1.05	3.132	-10.045	-0.351	-0.083	-0.042	-0.039
653	9	P126	-0.627	0.749	3.142	-10.785	-5.463	0	0	0
654	9	P860	-2.566	1.394	3.243	1.644	6.128	-0.406	0	-0.198
655	9	P709	-10.662	5.279	3.314	19.227	16.647	-0.514	0.502	-0.159
656	9	P890	1.613	0.601	3.36	0.383	2.855	-0.442	0	-0.08
657	9	P517	10.761	2.643	3.374	31.413	6.002	0.434	-0.088	0.435
658	9	P128	-1.697	0.81	3.469	-12.845	-9.78	0	0.239	0.044
659	9	P578	11.459	12.011	3.602	29.377	-1.065	0.29	0.439	0.749
660	9	P127	-1.038	0.796	3.61	-11.868	-7.455	0	0.082	0
661	9	P155	-0.37	-0.198	3.613	-11.095	-2.717	-0.063	-0.035	0
662	9	P818	2.532	-0.319	3.702	0.574	-0.74	0.082	-0.178	0.131
663	9	P456	7.338	-2.549	3.726	23.13	10.67	0.361	-0.349	0.099
664	9	P334	1.916	-4.132	3.729	2.578	7.878	0.037	-0.395	-0.283
665	9	P214	0.409	-1.959	3.73	-9.374	1.285	-0.117	-0.07	-0.112
666	9	P759	4.525	-1.806	4.054	1.177	-2.736	0.198	-0.493	0.335
667	9	P244	0.705	-2.81	4.14	-7.705	3.083	-0.118	-0.129	-0.199
668	9	P304	1.487	-3.967	4.168	-1.565	6.558	0	-0.311	-0.298
669	9	P160	-4.963	0.664	4.171	-18.611	-14.289	0.149	0.587	0.665
670	9	P848	2.52	-0.082	4.194	0.254	-0.435	0.097	-0.074	0.099
671	9	P395	3.943	-4.426	4.284	11.958	10.786	0.204	-0.457	-0.17
672	9	P274	1.073	-3.506	4.301	-5.066	4.897	-0.081	-0.215	-0.269
673	9	P878	2.543	0.003	4.38	0.054	-0.144	0.18	0	0.039
674	9	P191	-6.729	1.338	4.574	-26.176	-17.991	0.959	-0.28	0.658
675	9	P222	-10.685	1.106	4.656	-33.649	-21.562	0.731	-0.468	0.211
676	9	P156	-0.872	-0.108	4.684	-12.705	-4.091	-0.082	0	0
677	9	P185	-0.333	-1.218	4.741	-11.684	-1.1	-0.15	-0.035	-0.049
678	9	P375	-100.159	-0.47	5.071	-123.258	-11.209	0.775	-1.679	0.098
679	9	P739	-8.029	4.715	5.086	13.496	14.49	-0.501	0.382	-0.229
680	9	P527	-93.79	80.842	5.208	176.894	27.705	-1.015	2.893	0.481
681	9	P487	10.891	-0.591	5.233	30.365	9.887	0.48	-0.202	0.313
682	9	P159	-3.255	-0.366	5.252	-16.706	-11.472	0	0.654	0.249
683	9	P789	3.767	-0.579	5.49	0.797	-1.983	0.095	-0.285	0.306
684	9	P365	3.157	-5.015	5.561	6.716	10.465	0.159	-0.451	-0.266
685	9	P426	6.479	-4.36	5.613	18.407	12.403	0.348	-0.405	0
686	9	P157	-1.349	-0.005	5.681	-14.464	-6.051	-0.093	0.093	0
687	9	P215	-0.131	-2.338	5.748	-11.239	0.863	-0.22	-0.058	-0.153
688	9	P609	14.212	20.862	5.784	24.345	-2.109	0.171	1.167	1.145
689	9	P548	13.889	7.638	5.889	34.977	3.044	0.438	0.223	0.69
690	9	P314	-40.275	-0.325	6.02	-69.182	-28.551	0.444	-0.842	0
691	9	P769	-6.251	3.97	6.124	9	12.388	-0.472	0.261	-0.267
692	9	P186	-1.061	-1.26	6.176	-13.66	-2.282	-0.239	0	-0.044
693	9	P819	3.311	-0.13	6.214	0.402	-1.291	0.042	-0.151	0.252
694	9	P158	-1.895	-0.248	6.307	-15.632	-8.87	-0.094	0.339	0.04
695	9	P335	2.347	-5.151	6.506	1.527	9.324	0.087	-0.417	-0.347
696	9	P245	0.28	-3.412	6.538	-9.683	3.074	-0.218	-0.125	-0.282
697	9	P849	3.094	-0.009	6.567	0.142	-0.717	0.03	-0.062	0.178
698	9	P879	3.02	0.001	6.712	0.022	-0.246	0.079	0	0.072
699	9	P799	-5.015	3.157	6.716	5.561	10.465	-0.451	0.159	-0.266
700	9	P275	0.869	-4.293	6.993	-6.947	5.376	-0.136	-0.236	-0.374

Plate Forces (per ft) (By Combination) (Continued)

	LC	Plate Label	Qx[k]	Qy[k]	Mx[k-ft]	My[k-ft]	Mxy[k-ft]	Fx[k]	Fy[k]	Fxy[k]
701	9	P305	1.573	-4.89	6.996	-3.148	7.543	0	-0.342	-0.392
702	9	P829	-3.958	2.333	7.052	3.016	8.689	-0.456	0.083	-0.233
703	9	P889	2.222	0.563	7.213	0.279	3.116	-0.577	0	-0.07
704	9	P187	-2.014	-1.024	7.218	-16.323	-3.734	-0.339	0.094	-0.04
705	9	P859	-2.306	1.501	7.233	1.252	6.698	-0.496	0.033	-0.17
706	9	P457	10.144	-3.513	7.395	26.531	13.081	0.495	-0.299	0.174
707	9	P497	-142.804	140.733	7.45	323.27	-23.189	-1.117	4.346	0.112
708	9	P396	5.294	-5.617	7.456	12.493	12.989	0.315	-0.446	-0.15
709	9	P216	-0.94	-2.676	7.65	-13.64	-0.041	-0.377	0	-0.199
710	9	P190	-5.064	-0.56	7.676	-22.584	-12.734	1.2	0.824	1.475
711	9	P700	22.896	-5.141	7.791	-1.673	-7.029	0.982	-0.549	0.712
712	9	P188	-3.089	-1.643	7.987	-18.078	-6.49	-0.503	0.503	0
713	9	P518	15.063	3.239	8.047	37.199	7.649	0.553	0.033	0.582
714	9	P730	10.364	-2.069	8.223	0.281	-5.502	0.329	-0.353	0.602
715	9	P907A	-1.504	-0.523	8.304	-7.804	-3.297	-3.899	3.899	0
716	9	P618	-30.249	13.712	8.459	48.84	26.475	-0.426	1.031	0.131
717	9	P221	-7.743	-1.081	8.983	-30.452	-16.032	0.993	-0.43	0.258
718	9	P366	3.97	-6.251	9	6.124	12.388	0.261	-0.472	-0.267
719	9	P217	-2.228	-2.999	9.03	-16.145	-1.576	-0.654	0	-0.249
720	9	P246	-0.371	-4.061	9.047	-12.212	2.589	-0.363	-0.135	-0.405
721	9	P760	6.529	-0.296	9.115	0.552	-3.886	0.127	-0.246	0.528
722	9	P670	33.122	12.305	9.204	-2.946	-3.842	2.014	-0.559	1.506
723	9	P910	-1.89	-0.118	9.421	-9.068	-3.061	4.081	-4.081	0
724	9	P790	4.755	0.282	9.435	0.255	-2.553	0.029	-0.151	0.431
725	9	P850	3.493	0.159	9.444	-0.09	-0.764	-0.074	-0.034	0.233
726	9	P880	3.459	0.007	9.465	-0.041	-0.242	-0.072	0	0.094
727	9	P820	3.862	0.327	9.499	-0.011	-1.519	-0.038	-0.082	0.338
728	9	P218	-3.73	-3.046	9.584	-23.548	-3.913	-1.254	0.45	-0.517
729	9	P427	8.691	-5.848	9.694	20.44	15.08	0.48	-0.378	0.033
730	9	P579	16.899	14.928	9.89	34.472	0.601	0.348	0.715	1.053
731	9	P336	2.679	-6.295	10.032	0.007	10.752	0.177	-0.477	-0.379
732	9	P276	0.513	-5.131	10.069	-9.516	5.478	-0.183	-0.298	-0.517
733	9	P220	-4.817	-2.966	10.251	-30.941	-11.032	1.577	-0.908	0.52
734	9	P488	15.001	-1.115	10.337	35.749	12.224	0.623	-0.129	0.438
735	9	P306	1.532	-5.871	10.429	-5.323	8.355	0	-0.44	-0.486
736	9	P888	2.8	0.501	10.919	0.154	3.167	-0.687	0	-0.052
737	9	P858	-1.793	1.563	11.095	0.773	6.802	-0.562	0.046	-0.124
738	9	P283	-23.185	-2.698	11.162	-51.551	-23.573	0.442	-0.573	0
739	9	P252	-13.603	-2.245	11.228	-39.59	-19.25	0.592	-0.477	0.066
740	9	P828	-3.42	2.707	11.464	2.109	8.862	-0.491	0.113	-0.161
741	9	P648	-20.483	12.055	11.543	35.632	24.462	-0.416	0.861	0.101
742	9	P189	-4.569	-2.146	11.593	-18.407	-9.675	-0.45	1.254	0.517
743	9	P247	-1.261	-4.843	11.595	-15.818	1.305	-0.587	-0.149	-0.665
744	9	P397	6.781	-7.382	11.839	12.952	15.562	0.441	-0.443	-0.102
745	9	P798	-4.426	3.943	11.958	4.284	10.786	-0.457	0.204	-0.17
746	9	P881	3.823	0.025	12.357	-0.12	-0.07	-0.249	0	0.101
747	9	P768	-5.617	5.294	12.493	7.456	12.989	-0.446	0.315	-0.15
748	9	P851	3.599	0.406	12.518	-0.387	-0.42	-0.198	0	0.252
749	9	P640	27.111	27.111	12.566	12.566	0.662	1.58	1.58	2.754
750	9	P678	-14.184	10.199	12.835	25.479	21.549	-0.426	0.712	0.04
751	9	P458	13.715	-5.067	12.861	30.716	16.007	0.648	-0.258	0.275
752	9	P738	-7.382	6.781	12.952	11.839	15.562	-0.443	0.441	-0.102
753	9	P549	19.264	9.629	12.987	41.291	4.605	0.547	0.395	0.937
754	9	P821	3.985	0.989	13.152	-0.547	-1.143	-0.139	0	0.367
755	9	P708	-10.075	8.417	13.158	17.72	18.467	-0.438	0.574	-0.034
756	9	P367	4.715	-8.029	13.496	5.086	14.49	0.382	-0.501	-0.229
757	9	P277	0.015	-5.947	13.693	-12.72	5.3	-0.155	-0.581	-0.741
758	9	P791	5.076	1.578	14.083	-0.463	-2.19	-0.066	0	0.466
759	9	P887	3.312	0.423	14.133	0.023	2.994	-0.76	0	-0.03
760	9	P337	2.787	-7.849	14.393	-2.196	12.117	0.3	-0.557	-0.357
761	9	P307	1.225	-7.039	14.444	-8.194	8.922	0.178	-0.604	-0.511
762	9	P857	-1.047	1.574	14.461	0.266	6.412	-0.6	0.055	-0.066
763	9	P248	-2.311	-4.303	14.515	-18.249	0.373	-0.824	-1.2	-1.475
764	9	P882	4.079	0.058	15.003	-0.194	0.294	-0.427	0	0.093
765	9	P761	7.243	2.133	15.346	-0.243	-3.458	0.042	0	0.555
766	9	P852	3.351	0.696	15.349	-0.656	0.374	-0.323	0.029	0.235
767	9	P827	-2.531	2.993	15.379	1.123	8.347	-0.502	0.131	-0.076
768	9	P251	-9.513	-4.884	15.388	-34.834	-12.259	0.691	-0.511	0.06
769	9	P428	11.393	-8.169	15.45	22.779	18.246	0.628	-0.358	0.113
770	9	P519	20.64	3.968	15.534	44.169	9.644	0.7	0.137	0.788
771	9	P610	20.916	22.626	16.266	27.556	0.708	0.377	1.221	1.754
772	9	P886	3.728	0.337	16.533	-0.096	2.614	-0.788	0	0
773	9	P822	3.577	1.723	16.561	-1.004	-0.066	-0.24	0.068	0.342
774	9	P250	-6.3	-5.285	16.618	-28.766	-7.071	0.868	-0.868	0
775	9	P797	-3.378	4.611	16.711	2.841	10.2	-0.442	0.23	-0.063
776	9	P856	-0.122	1.526	16.989	-0.202	5.561	-0.606	0.059	0
777	9	P883	4.204	0.108	17	-0.237	0.822	-0.581	0	0.075
778	9	P731	11.451	3.034	17.331	-0.079	-4.63	0.258	0.034	0.633
779	9	P278	-0.991	-6.461	17.351	-16.251	4.564	0.28	-0.959	-0.658
780	9	P853	2.759	0.983	17.485	-0.804	1.551	-0.434	0.048	0.192
781	9	P398	8.417	-10.075	17.72	13.158	18.467	0.574	-0.438	-0.034
782	9	P885	4.025	0.251	17.871	-0.187	2.073	-0.767	0	0
783	9	P884	4.186	0.173	18.018	-0.236	1.446	-0.698	0	0.05
784	9	P489	20.455	-1.955	18.071	42.382	14.956	0.8	-0.072	0.604
785	9	P826	-1.349	3.143	18.374	0.187	7.184	-0.489	0.14	0
786	9	P767	-4.36	6.479	18.407	5.613	12.403	-0.405	0.348	0
787	9	P855	0.899	1.412	18.407	-0.567	4.352	-0.58	0.06	0.067
788	9	P792	4.551	2.979	18.429	-0.99	-0.76	-0.154	0.12	0.429
789	9	P854	1.902	1.229	18.569	-0.777	2.947	-0.522	0.057	0.133
790	9	P308	0.277	-8.527	18.884	-12.082	8.862	0.344	-0.743	-0.404
791	9	P823	2.673	2.383	19.109	-1.203	1.589	-0.328	0.111	0.281
792	9	P368	5.279	-10.662	19.227	3.314	16.647	0.502	-0.514	-0.159
793	9	P249	-4.312	-4.022	19.311	-21.32	-3.163	0.908	-1.577	-0.52
794	9	P338	2.448	-10.049	19.655	-5.411	13.208	0.429	-0.607	-0.271
795	9	P282	-16.527	-7.59	19.753	-44.019	-14.615	0.464	-0.466	0
796	9	P825	0.02	3.111	20.104	-0.574	5.511	-0.454	0.141	0.11
797	9	P279	-3.508	-7.292	20.159	-21.166	1.973	0.43	-0.993	-0.258
798	9	P344	-53.153	-15.583	20.299	-75.993	-18.669	0.528	-0.873	0.039
799	9	P824	1.422	2.86	20.357	-1.059	3.551	-0.4	0.133	0.2
800	9	P796	-1.931	5.056	20.428	1.421	8.75	-0.409	0.242	0.048

Plate Forces (per ft) (By Combination) (Continued)

	LC	Plate Label	Qx[k]	Qy[k]	Mx[k-ft]	My[k-ft]	Mxy[k-ft]	Fx[k]	Fy[k]	Fxy[k]
801	9	P737	-5.848	8.691	20.44	9.694	15.08	-0.378	0.48	0.033
802	9	P701	16.857	7.154	20.533	0.626	-4.448	0.666	0.047	0.781
803	9	P580	22.578	17.958	20.68	39.656	2.586	0.529	0.832	1.434
804	9	P459	18.445	-7.48	20.77	35.816	19.402	0.832	-0.232	0.4
805	9	P762	6.374	4.629	21.081	-0.547	-1.461	-0.037	0.182	0.507
806	9	P793	3.298	4.15	21.601	-1.074	1.464	-0.231	0.189	0.356
807	9	P313	-28.888	-11.795	22.528	-56.65	-17.158	0.434	-0.57	0
808	9	P795	-0.209	5.178	22.646	0.206	6.608	-0.361	0.241	0.159
809	9	P707	-8.169	11.393	22.779	15.45	18.246	-0.358	0.628	0.113
810	9	P794	1.611	4.893	23.066	-0.659	4.06	-0.301	0.226	0.263
811	9	P280	-6.851	-8.759	23.081	-28.18	-2.001	0.511	-0.691	-0.06
812	9	P766	-2.549	7.338	23.13	3.726	10.67	-0.349	0.361	0.099
813	9	P281	-10.848	-9.334	23.159	-36.159	-7.17	0.492	-0.492	0
814	9	P429	14.814	-11.769	23.416	25.37	21.835	0.796	-0.345	0.204
815	9	P309	-1.66	-10.561	23.661	-17.441	7.783	0.468	-0.731	-0.211
816	9	P550	25.612	12.423	24.018	48.399	6.387	0.703	0.501	1.243
817	9	P671	20.862	14.212	24.345	5.784	-2.109	1.167	0.171	1.145
818	9	P732	9.009	7.289	24.739	0.615	-1.732	0.153	0.241	0.595
819	9	P763	4.427	6.464	25.034	-0.204	1.498	-0.118	0.275	0.431
820	9	P677	-11.769	14.814	25.37	23.416	21.835	-0.345	0.796	0.204
821	9	P399	10.199	-14.184	25.479	12.835	21.549	0.712	-0.426	0.04
822	9	P339	1.348	-13.145	25.744	-10.085	13.637	0.517	-0.588	-0.155
823	9	P765	-0.333	7.707	26.039	2.027	8.02	-0.28	0.355	0.223
824	9	P369	5.453	-14.543	26.373	0.393	18.577	0.609	-0.497	-0.078
825	9	P736	-3.513	10.144	26.531	7.395	13.081	-0.299	0.495	0.174
826	9	P764	2.076	7.453	26.724	0.685	4.817	-0.201	0.328	0.335
827	9	P520	27.908	5.317	26.859	52.529	11.863	0.892	0.207	1.045
828	9	P641	22.626	20.916	27.556	16.266	0.708	1.221	0.377	1.754
829	9	P310	-4.873	-13.089	28.046	-24.65	5.161	0.477	-0.592	-0.066
830	9	P647	-17.366	19.35	28.075	34.444	25.685	-0.35	1	0.294
831	9	P702	12.011	11.459	29.377	3.602	-1.065	0.439	0.29	0.749
832	9	P733	5.92	9.632	29.508	1.85	1.969	0.036	0.358	0.529
833	9	P490	27.986	-2.97	29.527	50.553	18.009	1.025	-0.043	0.808
834	9	P312	-17.848	-15.865	30.112	-44.485	-7.138	0.448	-0.448	0
835	9	P735	-0.591	10.891	30.365	5.233	9.887	-0.202	0.48	0.313
836	9	P557	-62.628	51.452	30.413	110.277	32.25	-0.623	2.111	0.471
837	9	P617	-26.175	25.734	30.607	50.035	29.433	-0.386	1.26	0.374
838	9	P706	-5.067	13.715	30.716	12.861	16.007	-0.258	0.648	0.275
839	9	P311	-9.939	-15.397	31.003	-33.739	0.353	0.466	-0.464	0
840	9	P611	23.838	23.838	31.031	31.031	2.53	0.877	0.877	1.936
841	9	P734	2.643	10.761	31.413	3.374	6.002	-0.088	0.434	0.435
842	9	P587	-40.235	35.413	31.655	73.103	32.321	-0.474	1.609	0.435
843	9	P460	25.058	-11.103	32.168	42.02	23.195	1.064	-0.231	0.544
844	9	P340	-1.039	-17.315	32.384	-16.742	12.779	0.56	-0.513	-0.067
845	9	P430	19.35	-17.366	34.444	28.075	25.685	1	-0.35	0.294
846	9	P672	14.928	16.899	34.472	9.89	0.601	0.715	0.348	1.053
847	9	P703	7.638	13.889	34.977	5.889	3.044	0.223	0.438	0.69
848	9	P370	4.806	-20.208	35.021	-4.284	19.744	0.698	-0.46	0
849	9	P581	27.181	22.227	35.205	45.151	4.555	0.719	0.798	1.714
850	9	P400	12.055	-20.483	35.632	11.543	24.462	0.861	-0.416	0.101
851	9	P705	-1.115	15.001	35.749	10.337	12.224	-0.129	0.623	0.438
852	9	P676	-7.48	18.445	35.816	20.77	19.402	-0.232	0.832	0.4
853	9	P704	3.239	15.063	37.199	8.047	7.649	0.033	0.553	0.582
854	9	P343	-30.634	-28.011	37.688	-53.869	-6.997	0.544	-0.544	0
855	9	P341	-5.751	-22.422	38.607	-25.963	9.688	0.573	-0.442	0
856	9	P551	32.657	17.349	39.523	56.577	8.555	0.889	0.557	1.546
857	9	P642	17.958	22.578	39.656	20.68	2.586	0.832	0.529	1.434
858	9	P673	9.629	19.264	41.291	12.987	4.605	0.395	0.547	0.937
859	9	P646	-11.103	25.058	42.02	32.168	23.195	-0.231	1.064	0.544
860	9	P342	-14.71	-27.347	42.1	-38.122	3.129	0.57	-0.434	0
861	9	P675	-1.955	20.455	42.382	18.071	14.956	-0.072	0.8	0.604
862	9	P521	37.562	8.583	43.367	62.596	14.576	1.123	0.256	1.34
863	9	P674	3.968	20.64	44.169	15.534	9.644	0.137	0.7	0.788
864	9	P374	-53.317	-49.531	44.712	-63.362	-6.796	0.808	-0.808	0
865	9	P371	2.366	-28.311	44.927	-11.541	19.151	0.776	-0.431	0
866	9	P612	22.227	27.181	45.151	35.205	4.555	0.798	0.719	1.714
867	9	P491	39.002	-3.517	46.607	60.72	21.587	1.314	-0.038	1.053
868	9	P643	12.423	25.612	48.399	24.018	6.387	0.501	0.703	1.243
869	9	P401	13.712	-30.249	48.84	8.459	26.475	1.031	-0.426	0.131
870	9	P461	34.994	-16.342	49.004	49.413	27.365	1.37	-0.264	0.706
871	9	P616	-16.342	34.994	49.413	49.004	27.365	-0.264	1.37	0.706
872	9	P431	25.734	-26.175	50.035	30.607	29.433	1.26	-0.386	0.374
873	9	P645	-2.97	27.986	50.553	29.527	18.009	-0.043	1.025	0.808
874	9	P582	29.291	29.291	51.683	51.683	7.538	0.813	0.813	1.826
875	9	P644	5.317	27.908	52.529	26.859	11.863	0.207	0.892	1.045
876	9	P372	-4.078	-39.238	54.659	-22.667	15.146	0.842	-0.444	0
877	9	P613	17.349	32.657	56.577	39.523	8.555	0.557	0.889	1.546
878	9	P586	-23.355	51.336	58.163	75.488	32.237	-0.33	1.788	0.904
879	9	P552	39.61	26.784	59.246	66.293	12.42	1.011	0.664	1.81
880	9	P373	-19.445	-51.085	59.569	-38.099	5.071	0.873	-0.528	-0.039
881	9	P615	-3.517	39.002	60.72	46.607	21.587	-0.038	1.314	1.053
882	9	P614	8.583	37.562	62.596	43.367	14.576	0.256	1.123	1.34
883	9	P556	-30.197	81.168	64.397	121.548	39.93	-0.447	2.395	1.193
884	9	P402	14.26	-45.475	65.81	2.47	25.927	1.233	-0.475	0.117
885	9	P583	26.784	39.61	66.293	59.246	12.42	0.664	1.011	1.81
886	9	P522	50.519	16.799	67.021	75.352	19.461	1.356	0.353	1.679
887	9	P405	-72.742	-65.847	72.15	-94.657	-6.57	1.583	-1.583	0
888	9	P585	-1.445	56.234	72.958	73.008	26.932	-0.029	1.675	1.368
889	9	P492	56.234	-1.445	73.008	72.958	26.932	1.675	-0.029	1.368
890	9	P432	35.413	-40.235	73.103	31.655	32.321	1.609	-0.474	0.435
891	9	P584	16.799	50.519	75.352	67.021	19.461	0.353	1.356	1.679
892	9	P462	51.336	-23.355	75.488	58.163	32.237	1.788	-0.33	0.904
893	9	P526	-25.849	141.996	77.247	215.067	60.433	-0.463	3.377	1.745
894	9	P553	43.535	43.535	80.619	80.619	21.127	0.965	0.965	2.034
895	9	P403	10.788	-68.33	86.075	-10.35	19.804	1.461	-0.6	0.054
896	9	P555	10.047	84.683	90.193	116.432	39.395	0.081	2.114	1.84
897	9	P554	36.632	66.641	91.527	99.188	31.316	0.615	1.505	2.103
898	9	P523	66.641	36.632	99.188	91.527	31.316	1.505	0.615	2.103
899	9	P404	-6.243	-97.465	104.444	-26.079	-1.795	1.679	-0.775	-0.098
900	9	P525	53.884	130.931	104.847	188.719	77.784	0.394	2.573	2.665

Plate Forces (per ft) (By Combination) (Continued)

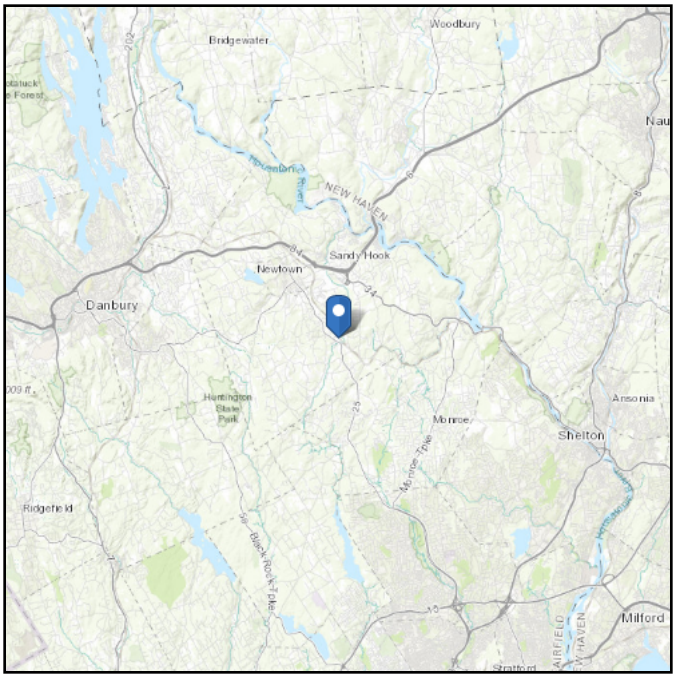
	LC	Plate Label	Qx[k]	Qy[k]	Mx[k-ft]	My[k-ft]	Mxy[k-ft]	Fx[k]	Fy[k]	Fxy[k]
901	9	P433	51.452	-62.628	110.277	30.413	32.25	2.111	-0.623	0.471
902	9	P493	84.683	10.047	116.432	90.193	39.395	2.114	0.081	1.84
903	9	P463	81.168	-30.197	121.548	64.397	39.93	2.395	-0.447	1.193
904	9	P524	77.727	77.727	132.786	132.786	64.028	1.379	1.379	2.649
905	9	P434	80.842	-93.79	176.894	5.208	27.705	2.893	-1.015	0.481
906	9	P494	130.931	53.884	188.719	104.847	77.784	2.573	0.394	2.665
907	9	P464	141.996	-25.849	215.067	77.247	60.433	3.377	-0.463	1.745
908	9	P495	172.006	172.006	273.587	273.587	232.027	2.62	2.62	4.42
909	9	P435	140.733	-142.804	323.27	7.45	-23.189	4.346	-1.117	0.112
910	9	P465	282.964	79.341	443.284	-23.871	166.704	5.216	-1.151	3.278
911	9	P436	277.597	299.369	768.091	-798.851	-5.953	8.154	-8.154	0
912	9	P466	454.734	454.734	907.318	907.318	999.37	8.337	8.337	10.806

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 398.5 ft (NAVD 88)
Latitude: 41.378144
Longitude: -73.27415



Wind

Results:

Wind Speed:	120 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	91 Vmph
100-year MRI	97 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014

Date Accessed: Tue Nov 24 2020

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

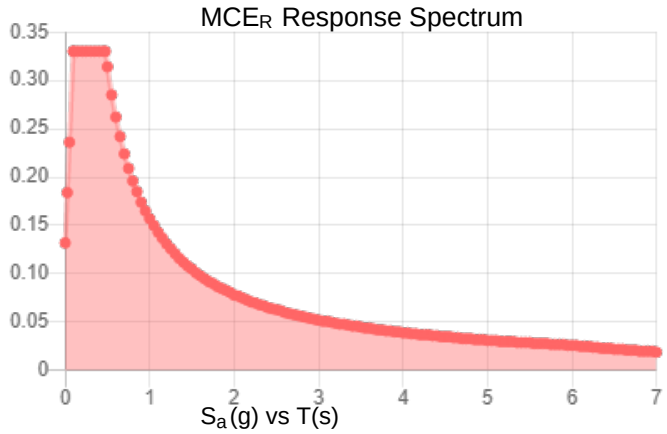
Seismic

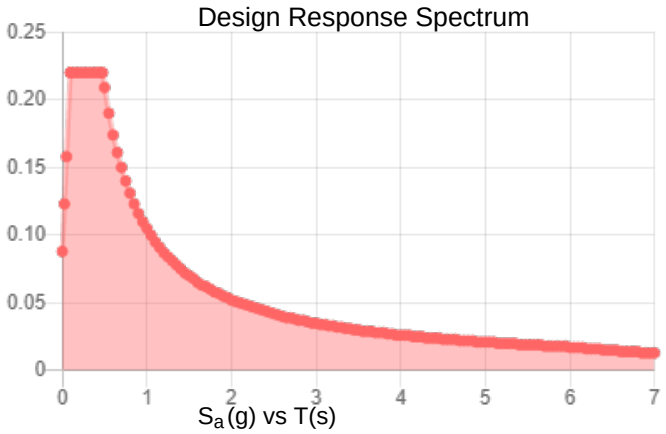
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.208	S_{DS} :	0.22
S_1 :	0.066	S_{D1} :	0.105
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.111
S_{MS} :	0.33	PGA_M :	0.175
S_{M1} :	0.157	F_{PGA} :	1.578
		I_e :	1

Seismic Design Category B





Data Accessed: Tue Nov 24 2020

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Nov 24 2020

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit E

Mount Analysis

Date: **March 10, 2022**

Trylon
1825 W. Walnut Hill Lane,
Suite 302
Irving, TX 75038
214-930-1730

Subject:	**Mount Analysis Report**	
Carrier Designation:	**DISH Network Equipment Change-Out**	
	Carrier Site Number:	NJJER02056A
	Carrier Site Name:	-
Crown Castle Designation:	**BU Number:**	826222
	Site Name:	Newtown/RT-25
	JDE Job Number:	678162
	Order Number:	578963 Rev. 3
Engineering Firm Designation:	**Trylon Report Designation:**	204513
Site Data:	**201 South Main Street, Newtown, Fairfield County, CT, 06470**	
	Latitude 41°22'41.32" Longitude -73°16'26.94"	
Structure Information:	**Tower Height & Type:**	**150.0 ft Monopole**
	Mount Elevation:	**73.0 ft**
	Mount Width & Type:	**10.0 ft Platform**

Trylon is pleased to submit this **"Mount Analysis Report"** to determine the structural integrity of DISH Network's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

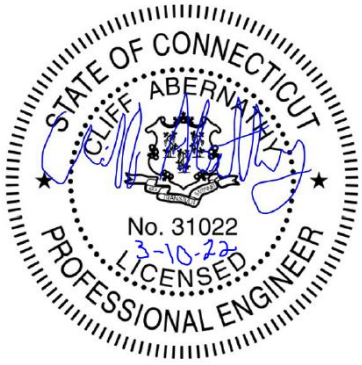
Platform **Sufficient***

***Sufficient upon completion of the changes listed in the 'Recommendations' section of this report.**

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the Connecticut Design Criteria-State Building Code . Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Gabriela Raboj

Respectfully Submitted by:
Cliff Abernathy, P.E.



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1) INTRODUCTION

This is a proposed 3 sector 10.0 ft Platform**,** designed by Commscope.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor at Base:	1.00
Topographic Factor at Mount:	1.00
Ice Thickness:	1.50 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.208
Seismic S_1:	0.066
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
73.0	73.0	3	COMMSCOPE	FFVV-65B-R2	10.0 ft Platform **[Commscope MC-PK8-DSH]**
		3	FUJITSU	TA08025-B604	
		3	FUJITSU	TA08025-B605	
		1	RAYCAP	RDIDC-9181-PF-48	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	DISH Network Application	578963, Rev. 3	CCI Sites
Mount Manufacturer Drawings	Commscope	MC-PK8-DSH	Trylon

3.1) Analysis Method

RISA-3D (Version 17.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

A tool internally developed, using Microsoft Excel, by Trylon was used to calculate wind loading on all appurtenances, dishes, and mount members for various load cases. Selected output from the analysis is included in Appendix B.

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.

2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
5) Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

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

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (Platform, Worst Case Sector)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1, 2, 3	Mount Pipe(s)	MP1	73.0	12.7	Pass
	Standoff(s)	M2		65.3	Pass
	Horizontal(s)	H3		11.2	Pass
	Bracing(s)	M1		48.8	Pass
	Handrail(s)	M19		9.7	Pass
	Plate(s)	M10		23.3	Pass
	Mount Connection(s)	-		19.3	Pass

Structure Rating (max from all components) =	**65.3%**

Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) See additional documentation in “Appendix D – Additional Calculations” for detailed mount connection calculations.
3) Rating per TIA-222-H, Section 15.5

4.1) Recommendations

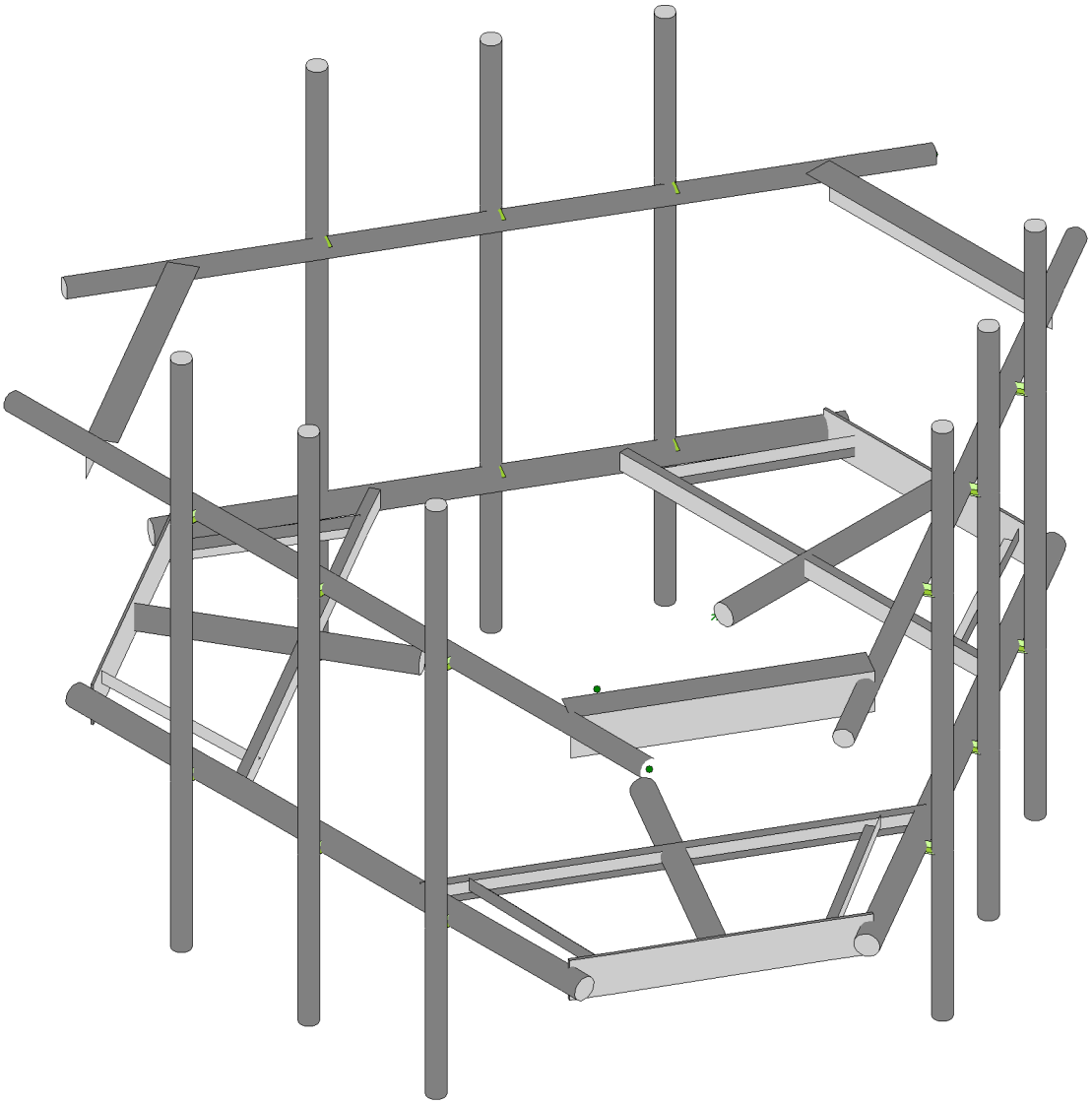
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the proposed mount listed below must be installed.

1. Commscope, MC−PK8−DSH.

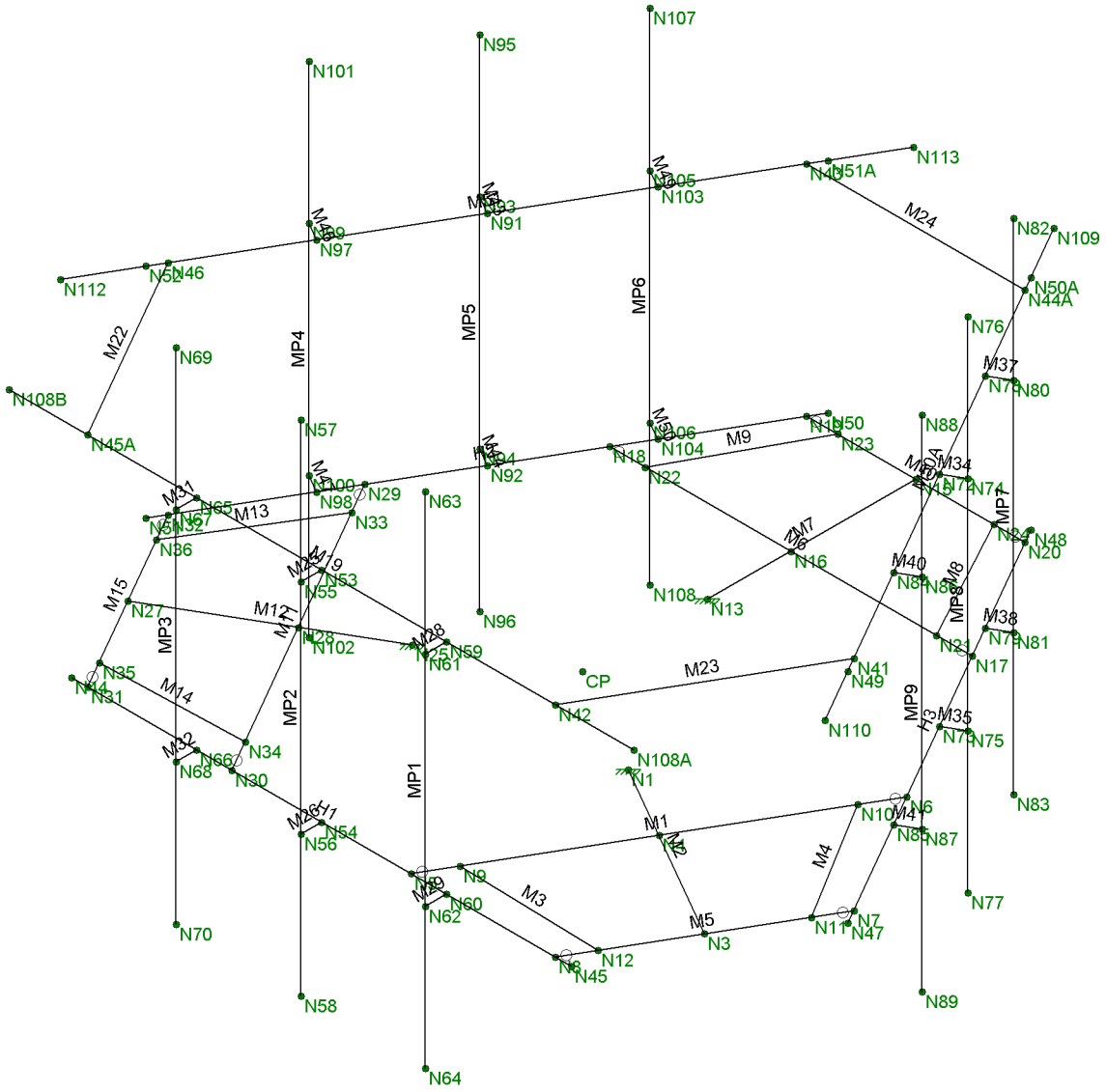
No structural modifications are required at this time, provided that the above-listed changes are implemented.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Trylon	826222	SK - 1
RG		Mar 10, 2022 at 2:16 PM
204513		826222_loaded.r3d



Trylon	826222	SK - 2
RG		Mar 10, 2022 at 2:16 PM
204513		826222_loaded.r3d

APPENDIX B

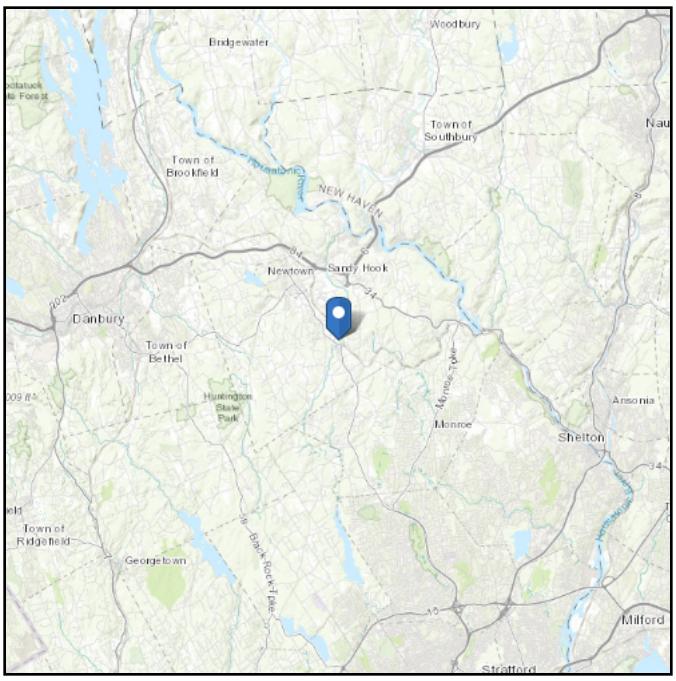
SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 398.5 ft (NAVD 88)
Latitude: 41.378144
Longitude: -73.27415



Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph

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

Date Accessed: Thu Mar 10 2022

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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Trylon
1825 W. Walnut Hill Lane Suite 120
Irving, TX 75038

TIA LOAD CALCULATOR 2.2

PROJECT DATA	
Job Code:	204513
Carrier Site ID:	NJJER02056A
Carrier Site Name:	-

CODES AND STANDARDS	
Building Code:	2015 IBC
Local Building Code:	2018 CBC
Design Standard:	TIA-222-H

STRUCTURE DETAILS		
Mount Type:	Platform	--
Mount Elevation:	73.0	ft.
Number of Sectors:	3	--
Structure Type:	Monopole	--
Structure Height:	150.0	ft.

ANALYSIS CRITERIA		
Structure Risk Category:	II	--
Exposure Category:	C	--
Site Class:	D - Stiff Soil	--
Ground Elevation:	398.5	ft.

TOPOGRAPHIC DATA		
Topographic Category:	1.00	--
Topographic Feature:	N/A	--
Crest Point Elevation:	0.00	ft.
Base Point Elevation:	0.00	ft.
Crest to Mid-Height (L/2):	0.00	ft.
Distance from Crest (x):	0.00	ft.
Base Topo Factor (K_{zt}):	1.00	--
Mount Topo Factor (K_{zt}):	1.00	--

WIND PARAMETERS		
Design Wind Speed:	120	mph
Wind Escalation Factor (K_s):	1.00	--
Velocity Coefficient (K_z):	1.18	--
Directionality Factor (K_d):	0.95	--
Gust Effect Factor (Gh):	1.00	--
Shielding Factor (K_a):	0.90	--
Velocity Pressure (q_z):	40.89	psf
Ground Elevation Factor (K_e):	0.99	--

ICE PARAMETERS		
Design Ice Wind Speed:	50	mph
Design Ice Thickness (t_i):	1.50	in
Importance Factor (I_i):	1.00	--
Ice Velocity Pressure (q_{zi}):	6.49	psf
Mount Ice Thickness (t_{iz}):	1.62	in

WIND STRUCTURE CALCULATIONS		
Flat Member Pressure:	73.60	psf
Round Member Pressure:	44.16	psf
Ice Wind Pressure:	7.01	psf

SEISMIC PARAMETERS		
Importance Factor (I_e):	1.00	--
Short Period Accel .(S_s):	0.208	g
1 Second Accel (S_1):	0.066	g
Short Period Des. (S_{DS}):	0.22	g
1 Second Des. (S_{D1}):	0.11	g
Short Period Coeff. (F_a):	1.60	--
1 Second Coeff. (F_v):	2.40	--
Response Coefficient (Cs):	0.11	--
Amplification Factor (A_S):	3.00	--

LOAD COMBINATIONS [LRFD]

#	Description
1	1.4DL
2	1.2DL + 1WL 0 AZI
3	1.2DL + 1WL 30 AZI
4	1.2DL + 1WL 45 AZI
5	1.2DL + 1WL 60 AZI
6	1.2DL + 1WL 90 AZI
7	1.2DL + 1WL 120 AZI
8	1.2DL + 1WL 135 AZI
9	1.2DL + 1WL 150 AZI
10	1.2DL + 1WL 180 AZI
11	1.2DL + 1WL 210 AZI
12	1.2DL + 1WL 225 AZI
13	1.2DL + 1WL 240 AZI
14	1.2DL + 1WL 270 AZI
15	1.2DL + 1WL 300 AZI
16	1.2DL + 1WL 315 AZI
17	1.2DL + 1WL 330 AZI
18	0.9DL + 1WL 0 AZI
19	0.9DL + 1WL 30 AZI
20	0.9DL + 1WL 45 AZI
21	0.9DL + 1WL 60 AZI
22	0.9DL + 1WL 90 AZI
23	0.9DL + 1WL 120 AZI
24	0.9DL + 1WL 135 AZI
25	0.9DL + 1WL 150 AZI
26	0.9DL + 1WL 180 AZI
27	0.9DL + 1WL 210 AZI
28	0.9DL + 1WL 225 AZI
29	0.9DL + 1WL 240 AZI
30	0.9DL + 1WL 270 AZI
31	0.9DL + 1WL 300 AZI
32	0.9DL + 1WL 315 AZI
33	0.9DL + 1WL 330 AZI
34	1.2DL + 1DLi + 1WLi 0 AZI
35	1.2DL + 1DLi + 1WLi 30 AZI
36	1.2DL + 1DLi + 1WLi 45 AZI
37	1.2DL + 1DLi + 1WLi 60 AZI
38	1.2DL + 1DLi + 1WLi 90 AZI
39	1.2DL + 1DLi + 1WLi 120 AZI
40	1.2DL + 1DLi + 1WLi 135 AZI
41	1.2DL + 1DLi + 1WLi 150 AZI

#	Description
42	1.2DL + 1DLi + 1WLi 180 AZI
43	1.2DL + 1DLi + 1WLi 210 AZI
44	1.2DL + 1DLi + 1WLi 225 AZI
45	1.2DL + 1DLi + 1WLi 240 AZI
46	1.2DL + 1DLi + 1WLi 270 AZI
47	1.2DL + 1DLi + 1WLi 300 AZI
48	1.2DL + 1DLi + 1WLi 315 AZI
49	1.2DL + 1DLi + 1WLi 330 AZI
50	(1.2+0.2Sds) + 1.0E 0 AZI
51	(1.2+0.2Sds) + 1.0E 30 AZI
52	(1.2+0.2Sds) + 1.0E 45 AZI
53	(1.2+0.2Sds) + 1.0E 60 AZI
54	(1.2+0.2Sds) + 1.0E 90 AZI
55	(1.2+0.2Sds) + 1.0E 120 AZI
56	(1.2+0.2Sds) + 1.0E 135 AZI
57	(1.2+0.2Sds) + 1.0E 150 AZI
58	(1.2+0.2Sds) + 1.0E 180 AZI
59	(1.2+0.2Sds) + 1.0E 210 AZI
60	(1.2+0.2Sds) + 1.0E 225 AZI
61	(1.2+0.2Sds) + 1.0E 240 AZI
62	(1.2+0.2Sds) + 1.0E 270 AZI
63	(1.2+0.2Sds) + 1.0E 300 AZI
64	(1.2+0.2Sds) + 1.0E 315 AZI
65	(1.2+0.2Sds) + 1.0E 330 AZI
66	(0.9-0.2Sds) + 1.0E 0 AZI
67	(0.9-0.2Sds) + 1.0E 30 AZI
68	(0.9-0.2Sds) + 1.0E 45 AZI
69	(0.9-0.2Sds) + 1.0E 60 AZI
70	(0.9-0.2Sds) + 1.0E 90 AZI
71	(0.9-0.2Sds) + 1.0E 120 AZI
72	(0.9-0.2Sds) + 1.0E 135 AZI
73	(0.9-0.2Sds) + 1.0E 150 AZI
74	(0.9-0.2Sds) + 1.0E 180 AZI
75	(0.9-0.2Sds) + 1.0E 210 AZI
76	(0.9-0.2Sds) + 1.0E 225 AZI
77	(0.9-0.2Sds) + 1.0E 240 AZI
78	(0.9-0.2Sds) + 1.0E 270 AZI
79	(0.9-0.2Sds) + 1.0E 300 AZI
80	(0.9-0.2Sds) + 1.0E 315 AZI
81	(0.9-0.2Sds) + 1.0E 330 AZI
82-88	1.2D + 1.5 Lv1

#	Description
89	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP1
90	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP1
91	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP1
92	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP1
93	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP1
94	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP1
95	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP1
96	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP1
97	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP1
98	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP1
99	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP1
100	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP1
101	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP1
102	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP1
103	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP1
104	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP1
105	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP2
106	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP2
107	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP2
108	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP2
109	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP2
110	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP2
111	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP2
112	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP2
113	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP2
114	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP2
115	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP2
116	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP2
117	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP2
118	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP2
119	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP2
120	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP2

#	Description
121	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP3
122	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP3
123	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP3
124	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP3
125	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP3
126	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP3
127	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP3
128	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP3
129	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP3
130	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP3
131	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP3
132	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP3
133	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP3
134	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP3
135	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP3
136	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP3
137	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP4
138	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP4
139	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP4
140	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP4
141	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP4
142	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP4
143	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP4
144	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP4
145	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP4
146	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP4
147	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP4
148	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP4
149	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP4
150	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP4
151	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP4
152	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP4

*This page shows an example of maintenance loads for (4) pipes, the number of mount pipe LCs may vary per site

EQUIPMENT LOADING

Appurtenance Name	Qty.	Elevation [ft]	--	EPA_N (ft2)	EPA_T (ft2)	Weight (lbs)
FFVV-65B-R2	3	73	No Ice	7.62	3.01	70.80
--	--	--	w/ Ice	9.18	4.38	258.83
RDIDC-9181-PF-48	1	73	No Ice	2.01	1.17	21.85
--	--	--	w/ Ice	2.41	1.50	67.79
TA08025-B605	3	73	No Ice	1.96	1.13	75.00
--	--	--	w/ Ice	2.36	1.45	68.79
TA08025-B604	3	73	No Ice	1.96	0.98	63.90
--	--	--	w/ Ice	2.36	1.29	64.54
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
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			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			

EQUIPMENT LOADING [CONT.]

Appurtenance Name	Qty.	Elevation [ft]	--	EPA_N (ft2)	EPA_T (ft2)	Weight (lbs)
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
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			No Ice			
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			No Ice			
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			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			

EQUIPMENT WIND CALCULATIONS

Appurtenance Name	Qty.	Elevation [ft]	K_{zt}	K_z	K_d	t_d	q_z [psf]	q_{zi} [psf]
FFVV-65B-R2	3	73	1.00	1.18	0.95	1.62	40.89	7.10
RDIDC-9181-PF-48	1	73	1.00	1.18	0.95	1.62	40.89	7.10
TA08025-B605	3	73	1.00	1.18	0.95	1.62	40.89	7.10
TA08025-B604	3	73	1.00	1.18	0.95	1.62	40.89	7.10

EQUIPMENT LATERAL WIND FORCE CALCULATIONS

Appurtenance Name	*Qty.*	*--*	*0° 180°*	*30° 210°*	*60° 240°*	*90° 270°*	*120° 300°*	*150° 330°*
FFVV-65B-R2	3	No Ice	280.41	153.17	238.00	110.76	238.00	153.17
--	--	w/ Ice	58.64	35.66	50.98	28.00	50.98	35.66
RDIDC-9181-PF-48	1	No Ice	74.03	50.75	66.27	42.99	66.27	50.75
--	--	w/ Ice	15.42	11.05	13.96	9.59	13.96	11.05
TA08025-B605	3	No Ice	72.25	49.24	64.58	41.56	64.58	49.24
--	--	w/ Ice	15.07	10.71	13.62	9.26	13.62	10.71
TA08025-B604	3	No Ice	72.25	45.14	63.22	36.10	63.22	45.14
--	--	w/ Ice	15.07	9.94	13.36	8.23	13.36	9.94
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						

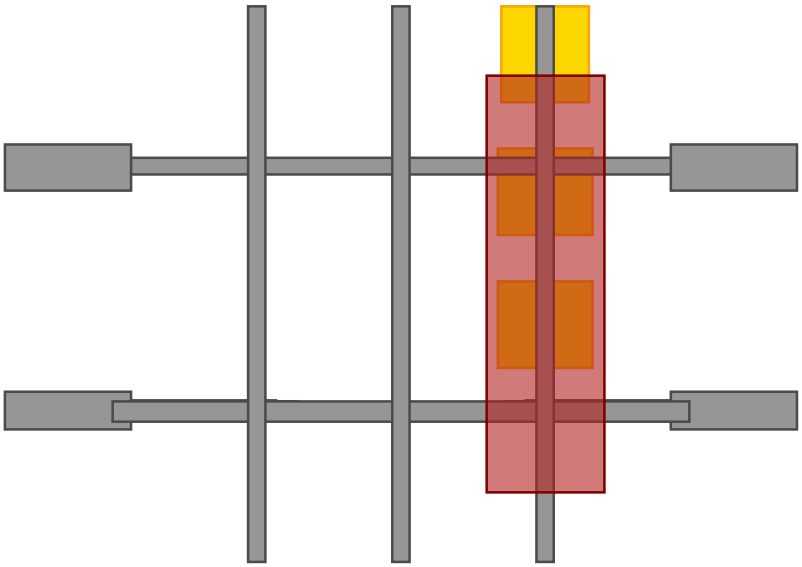
EQUIPMENT LATERAL WIND FORCE CALCULATIONS [CONT.]

Appurtenance Name	*Qty.*	*--*	*0° 180°*	*30° 210°*	*60° 240°*	*90° 270°*	*120° 300°*	*150° 330°*
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						

EQUIPMENT SEISMIC FORCE CALCULATIONS

Appurtenance Name	*Qty.*	*Elevation [ft]*	*Weight [lbs]*	F_p [lbs]
FFVV-65B-R2	3	73	70.8	23.56
RDIDC-9181-PF-48	1	73	21.85	7.27
TA08025-B605	3	73	75	24.96
TA08025-B604	3	73	63.9	21.27

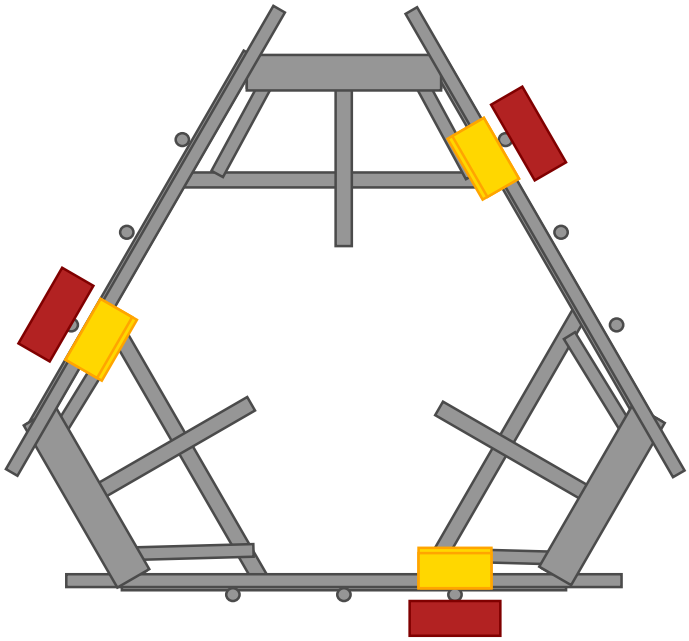
ELEVATION VIEW



MP3 MP2 MP1

*Elevation View Shows Alpha Sector Only

PLAN VIEW



1825 W. Walnut Hill Lane, Suite 120
Irving, Texas 75038

Equipment Name	Total Quantity	Antenna Centerline	Mount Pipe Positions	Equipment Azimuths
FFVV-65B-R2	3	73	MP1/MP4/MP7	0/120/240
RDIDC-9181-PF-48	1	73	MP1	0
TA08025-B605	3	73	MP1/MP4/MP7	0/120/240
TA08025-B604	3	73	MP1/MP4/MP7	0/120/240

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Z
Global Member Orientation Plane	XY
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 15th(360-16): LRFD
Cold Formed Steel Code	AISI S100-16: LRFD
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)

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

(Global) Model Settings, Continued

Seismic Code	ASCE 7-16
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E..	Density[k/ft...	Yield[psi]	Ry	Fu[psi]	Rt
1	A992	29000	11154	.3	.65	.49	50000	1.1	65000	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36000	1.5	58000	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50000	1.1	65000	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42000	1.4	58000	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46000	1.4	58000	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35000	1.6	60000	1.2
7	A1085	29000	11154	.3	.65	.49	50000	1.4	65000	1.3
8	A 500 Gr. C	29000	11154	.3	.65	.49	46000	1.5	62000	1.2

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[psi]	Fu[psi]
1	A653 SS Gr33	29500	11346	.3	.65	.49	33000	45000
2	A653 SS Gr50/1	29500	11346	.3	.65	.49	50000	65000

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Plates	6.5"x0.37" ...	Beam	RECT	A53 Gr.B	Typical	2.405	.027	8.468	.106
2	Grating Bra..	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
3	Standoffs	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
4	Standoff Br...	C3X5	Beam	Channel	A36 Gr.36	Typical	1.47	.241	1.85	.043
5	Handrails	PIPE_2.5	Beam	Pipe	A 500 Gr. C	Typical	1.61	1.45	1.45	2.89
6	Handrail Co..	L6.6"X4.46...	Beam	Single Angle	A36 Gr.36	Typical	2.703	4.759	12.473	.055

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
7	Horizontals	PIPE_3.5"o...	Beam	Pipe	A 500 Gr. C	Typical	1.729	2.409	2.409	4.819
8	Mount Pipes	PIPE_2.5	Beam	Pipe	A 500 Gr. C	Typical	1.61	1.45	1.45	2.89

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF1A	8CU1.25X057	Beam	None	A653 SS Gr33	Typical	.581	.057	4.41	.00063

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N25	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N13	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Self Weight	DL			-1		13		3	
2	Structure Wind X	WLX						51		
3	Structure Wind Y	WLY						51		
4	Wind Load 0 AZI	WLX					26			
5	Wind Load 30 AZI	None					26			
6	Wind Load 45 AZI	None					26			
7	Wind Load 60 AZI	None					26			
8	Wind Load 90 AZI	WLY					26			
9	Wind Load 120 AZI	None					26			
10	Wind Load 135 AZI	None					26			
11	Wind Load 150 AZI	None					26			
12	Ice Weight	OL1					13	51	3	
13	Ice Structure Wind X	OL2						51		
14	Ice Structure Wind Y	OL3						51		
15	Ice Wind Load 0 AZI	OL2					26			
16	Ice Wind Load 30 AZI	None					26			
17	Ice Wind Load 45 AZI	None					26			
18	Ice Wind Load 60 AZI	None					26			
19	Ice Wind Load 90 AZI	OL3					26			
20	Ice Wind Load 120 AZI	None					26			
21	Ice Wind Load 135 AZI	None					26			
22	Ice Wind Load 150 AZI	None					26			
23	Seismic Load X	ELX	-.333				13			
24	Seismic Load Y	ELY		-.333			13			
25	Live Load 1 (Lv)	None					1			
26	Live Load 2 (Lv)	None					1			
27	Live Load 3 (Lv)	None					1			
28	Live Load 4 (Lv)	None					1			
29	Live Load 5 (Lv)	None					1			
30	Live Load 6 (Lv)	None					1			
31	Live Load 7 (Lv)	None					1			
32	Live Load 8 (Lv)	None					1			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
33	Live Load 9 (Lv)	None					1			
34	Maintenance Load 1 (...	None					1			
35	Maintenance Load 2 (...	None					1			
36	Maintenance Load 3 (...	None					1			
37	Maintenance Load 4 (...	None					1			
38	Maintenance Load 5 (...	None					1			
39	Maintenance Load 6 (...	None					1			
40	Maintenance Load 7 (...	None					1			
41	Maintenance Load 8 (...	None					1			
42	Maintenance Load 9 (...	None					1			
43	BLC 1 Transient Area...	None						9		
44	BLC 12 Transient Are...	None						9		

Load Combinations

	Description	Sol..	PD..	SR..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Factor	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact...
1	1.4DL	Yes	Y		DL	1.4																		
2	1.2DL + 1...	Yes	Y		DL	1.2	2	1	3		4	1												
3	1.2DL + 1...	Yes	Y		DL	1.2	2	.866	3	.5	5	1												
4	1.2DL + 1...	Yes	Y		DL	1.2	2	.707	3	.707	6	1												
5	1.2DL + 1...	Yes	Y		DL	1.2	2	.5	3	.866	7	1												
6	1.2DL + 1...	Yes	Y		DL	1.2	2		3	1	8	1												
7	1.2DL + 1...	Yes	Y		DL	1.2	2	-.5	3	.866	9	1												
8	1.2DL + 1...	Yes	Y		DL	1.2	2	-.707	3	.707	10	1												
9	1.2DL + 1...	Yes	Y		DL	1.2	2	-.866	3	.5	11	1												
10	1.2DL + 1...	Yes	Y		DL	1.2	2	-1	3		4	-1												
11	1.2DL + 1...	Yes	Y		DL	1.2	2	-.866	3	-.5	5	-1												
12	1.2DL + 1...	Yes	Y		DL	1.2	2	-.707	3	-.707	6	-1												
13	1.2DL + 1...	Yes	Y		DL	1.2	2	-.5	3	-.866	7	-1												
14	1.2DL + 1...	Yes	Y		DL	1.2	2		3	-1	8	-1												
15	1.2DL + 1...	Yes	Y		DL	1.2	2	.5	3	-.866	9	-1												
16	1.2DL + 1...	Yes	Y		DL	1.2	2	.707	3	-.707	10	-1												
17	1.2DL + 1...	Yes	Y		DL	1.2	2	.866	3	-.5	11	-1												
18	0.9DL + 1...	Yes	Y		DL	.9	2	1	3		4	1												
19	0.9DL + 1...	Yes	Y		DL	.9	2	.866	3	.5	5	1												
20	0.9DL + 1...	Yes	Y		DL	.9	2	.707	3	.707	6	1												
21	0.9DL + 1...	Yes	Y		DL	.9	2	.5	3	.866	7	1												
22	0.9DL + 1...	Yes	Y		DL	.9	2		3	1	8	1												
23	0.9DL + 1...	Yes	Y		DL	.9	2	-.5	3	.866	9	1												
24	0.9DL + 1...	Yes	Y		DL	.9	2	-.707	3	.707	10	1												
25	0.9DL + 1...	Yes	Y		DL	.9	2	-.866	3	.5	11	1												
26	0.9DL + 1...	Yes	Y		DL	.9	2	-1	3		4	-1												
27	0.9DL + 1...	Yes	Y		DL	.9	2	-.866	3	-.5	5	-1												
28	0.9DL + 1...	Yes	Y		DL	.9	2	-.707	3	-.707	6	-1												
29	0.9DL + 1...	Yes	Y		DL	.9	2	-.5	3	-.866	7	-1												
30	0.9DL + 1...	Yes	Y		DL	.9	2		3	-1	8	-1												
31	0.9DL + 1...	Yes	Y		DL	.9	2	.5	3	-.866	9	-1												
32	0.9DL + 1...	Yes	Y		DL	.9	2	.707	3	-.707	10	-1												
33	0.9DL + 1...	Yes	Y		DL	.9	2	.866	3	-.5	11	-1												
34	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13	1	14		15	1										
35	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13	.866	14	.5	16	1										

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Factor	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact...
36	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13	.707	14	.707	17	1												
37	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13	.5	14	.866	18	1												
38	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13		14	1	19	1												
39	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13	-.5	14	.866	20	1												
40	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13	-.707	14	.707	21	1												
41	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13	-.866	14	.5	22	1												
42	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13	-1	14		15	-1												
43	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13	-.866	14	-.5	16	-1												
44	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13	-.707	14	-.707	17	-1												
45	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13	-.5	14	-.866	18	-1												
46	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13		14	-1	19	-1												
47	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13	.5	14	-.866	20	-1												
48	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13	.707	14	-.707	21	-1												
49	1.2DL + 1...	Yes	Y		DL	1.2	OL1	1	13	.866	14	-.5	22	-1												
50	(1.2+0.2S...	Yes	Y		DL	1.244	23	1	24																	
51	(1.2+0.2S...	Yes	Y		DL	1.244	23	.866	24	.5																
52	(1.2+0.2S...	Yes	Y		DL	1.244	23	.707	24	.707																
53	(1.2+0.2S...	Yes	Y		DL	1.244	23	.5	24	.866																
54	(1.2+0.2S...	Yes	Y		DL	1.244	23		24	1																
55	(1.2+0.2S...	Yes	Y		DL	1.244	23	-.5	24	.866																
56	(1.2+0.2S...	Yes	Y		DL	1.244	23	-.707	24	.707																
57	(1.2+0.2S...	Yes	Y		DL	1.244	23	-.866	24	.5																
58	(1.2+0.2S...	Yes	Y		DL	1.244	23	-1	24																	
59	(1.2+0.2S...	Yes	Y		DL	1.244	23	-.866	24	-.5																
60	(1.2+0.2S...	Yes	Y		DL	1.244	23	-.707	24	-.707																
61	(1.2+0.2S...	Yes	Y		DL	1.244	23	-.5	24	-.866																
62	(1.2+0.2S...	Yes	Y		DL	1.244	23		24	-1																
63	(1.2+0.2S...	Yes	Y		DL	1.244	23	.5	24	-.866																
64	(1.2+0.2S...	Yes	Y		DL	1.244	23	.707	24	-.707																
65	(1.2+0.2S...	Yes	Y		DL	1.244	23	.866	24	-.5																
66	(0.9-0.2S...	Yes	Y		DL	.856	23	1	24																	
67	(0.9-0.2S...	Yes	Y		DL	.856	23	.866	24	.5																
68	(0.9-0.2S...	Yes	Y		DL	.856	23	.707	24	.707																
69	(0.9-0.2S...	Yes	Y		DL	.856	23	.5	24	.866																
70	(0.9-0.2S...	Yes	Y		DL	.856	23		24	1																
71	(0.9-0.2S...	Yes	Y		DL	.856	23	-.5	24	.866																
72	(0.9-0.2S...	Yes	Y		DL	.856	23	-.707	24	.707																
73	(0.9-0.2S...	Yes	Y		DL	.856	23	-.866	24	.5																
74	(0.9-0.2S...	Yes	Y		DL	.856	23	-1	24																	
75	(0.9-0.2S...	Yes	Y		DL	.856	23	-.866	24	-.5																
76	(0.9-0.2S...	Yes	Y		DL	.856	23	-.707	24	-.707																
77	(0.9-0.2S...	Yes	Y		DL	.856	23	-.5	24	-.866																
78	(0.9-0.2S...	Yes	Y		DL	.856	23		24	-1																
79	(0.9-0.2S...	Yes	Y		DL	.856	23	.5	24	-.866																
80	(0.9-0.2S...	Yes	Y		DL	.856	23	.707	24	-.707																
81	(0.9-0.2S...	Yes	Y		DL	.856	23	.866	24	-.5																
82	1.2DL + 1...	Yes	Y		DL	1.2	25	1.5																		
83	1.2DL + 1...	Yes	Y		DL	1.2	26	1.5																		
84	1.2DL + 1...	Yes	Y		DL	1.2	27	1.5																		
85	1.2DL + 1...	Yes	Y		DL	1.2	28	1.5																		
86	1.2DL + 1...	Yes	Y		DL	1.2	29	1.5																		
87	1.2DL + 1...	Yes	Y		DL	1.2	30	1.5																		

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Factor	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact...
88	1.2DL + 1...	Yes	Y		DL	1.2	31	1.5																		
89	1.2DL + 1...	Yes	Y		DL	1.2	32	1.5																		
90	1.2DL + 1...	Yes	Y		DL	1.2	33	1.5																		
91	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2	.063	3		4	.063												
92	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2	.054	3	.031	5	.063												
93	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2	.044	3	.044	6	.063												
94	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2	.031	3	.054	7	.063												
95	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2		3	.063	8	.063												
96	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2	-.031	3	.054	9	.063												
97	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2	-.044	3	.044	10	.063												
98	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2	-.054	3	.031	11	.063												
99	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2	-.063	3		4	-.063												
100	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2	-.054	3	-.031	5	-.063												
101	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2	-.044	3	-.044	6	-.063												
102	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2	-.031	3	-.054	7	-.063												
103	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2		3	-.063	8	-.063												
104	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2	.031	3	-.054	9	-.063												
105	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2	.044	3	-.044	10	-.063												
106	1.2DL + 1...	Yes	Y		DL	1.2	34	1.5	2	.054	3	-.031	11	-.063												
107	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2	.063	3		4	.063												
108	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2	.054	3	.031	5	.063												
109	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2	.044	3	.044	6	.063												
110	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2	.031	3	.054	7	.063												
111	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2		3	.063	8	.063												
112	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2	-.031	3	.054	9	.063												
113	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2	-.044	3	.044	10	.063												
114	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2	-.054	3	.031	11	.063												
115	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2	-.063	3		4	-.063												
116	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2	-.054	3	-.031	5	-.063												
117	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2	-.044	3	-.044	6	-.063												
118	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2	-.031	3	-.054	7	-.063												
119	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2		3	-.063	8	-.063												
120	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2	.031	3	-.054	9	-.063												
121	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2	.044	3	-.044	10	-.063												
122	1.2DL + 1...	Yes	Y		DL	1.2	35	1.5	2	.054	3	-.031	11	-.063												
123	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2	.063	3		4	.063												
124	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2	.054	3	.031	5	.063												
125	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2	.044	3	.044	6	.063												
126	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2	.031	3	.054	7	.063												
127	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2		3	.063	8	.063												
128	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2	-.031	3	.054	9	.063												
129	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2	-.044	3	.044	10	.063												
130	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2	-.054	3	.031	11	.063												
131	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2	-.063	3		4	-.063												
132	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2	-.054	3	-.031	5	-.063												
133	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2	-.044	3	-.044	6	-.063												
134	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2	-.031	3	-.054	7	-.063												
135	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2		3	-.063	8	-.063												
136	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2	.031	3	-.054	9	-.063												
137	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2	.044	3	-.044	10	-.063												
138	1.2DL + 1...	Yes	Y		DL	1.2	36	1.5	2	.054	3	-.031	11	-.063												
139	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2	.063	3		4	.063												

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Factor	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact...
140	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2	.054	3	.031	5	.063										
141	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2	.044	3	.044	6	.063										
142	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2	.031	3	.054	7	.063										
143	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2		3	.063	8	.063										
144	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2	-.031	3	.054	9	.063										
145	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2	-.044	3	.044	10	.063										
146	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2	-.054	3	.031	11	.063										
147	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2	-.063	3		4	-.063										
148	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2	-.054	3	-.031	5	-.063										
149	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2	-.044	3	-.044	6	-.063										
150	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2	-.031	3	-.054	7	-.063										
151	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2		3	-.063	8	-.063										
152	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2	.031	3	-.054	9	-.063										
153	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2	.044	3	-.044	10	-.063										
154	1.2DL + 1...	Yes	Y		DL	1.2	37	1.5	2	.054	3	-.031	11	-.063										
155	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2	.063	3		4	.063										
156	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2	.054	3	.031	5	.063										
157	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2	.044	3	.044	6	.063										
158	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2	.031	3	.054	7	.063										
159	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2		3	.063	8	.063										
160	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2	-.031	3	.054	9	.063										
161	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2	-.044	3	.044	10	.063										
162	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2	-.054	3	.031	11	.063										
163	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2	-.063	3		4	-.063										
164	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2	-.054	3	-.031	5	-.063										
165	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2	-.044	3	-.044	6	-.063										
166	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2	-.031	3	-.054	7	-.063										
167	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2		3	-.063	8	-.063										
168	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2	.031	3	-.054	9	-.063										
169	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2	.044	3	-.044	10	-.063										
170	1.2DL + 1...	Yes	Y		DL	1.2	38	1.5	2	.054	3	-.031	11	-.063										
171	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2	.063	3		4	.063										
172	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2	.054	3	.031	5	.063										
173	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2	.044	3	.044	6	.063										
174	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2	.031	3	.054	7	.063										
175	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2		3	.063	8	.063										
176	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2	-.031	3	.054	9	.063										
177	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2	-.044	3	.044	10	.063										
178	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2	-.054	3	.031	11	.063										
179	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2	-.063	3		4	-.063										
180	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2	-.054	3	-.031	5	-.063										
181	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2	-.044	3	-.044	6	-.063										
182	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2	-.031	3	-.054	7	-.063										
183	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2		3	-.063	8	-.063										
184	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2	.031	3	-.054	9	-.063										
185	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2	.044	3	-.044	10	-.063										
186	1.2DL + 1...	Yes	Y		DL	1.2	39	1.5	2	.054	3	-.031	11	-.063										
187	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2	.063	3		4	.063										
188	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2	.054	3	.031	5	.063										
189	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2	.044	3	.044	6	.063										
190	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2	.031	3	.054	7	.063										
191	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2		3	.063	8	.063										

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Factor	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact..	BLC	Fact...
192	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2	-.031	3	.054	9	.063										
193	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2	-.044	3	.044	10	.063										
194	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2	-.054	3	.031	11	.063										
195	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2	-.063	3		4	-.063										
196	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2	-.054	3	-.031	5	-.063										
197	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2	-.044	3	-.044	6	-.063										
198	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2	-.031	3	-.054	7	-.063										
199	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2		3	-.063	8	-.063										
200	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2	.031	3	-.054	9	-.063										
201	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2	.044	3	-.044	10	-.063										
202	1.2DL + 1...	Yes	Y		DL	1.2	40	1.5	2	.054	3	-.031	11	-.063										
203	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2	.063	3		4	.063										
204	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2	.054	3	.031	5	.063										
205	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2	.044	3	.044	6	.063										
206	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2	.031	3	.054	7	.063										
207	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2		3	.063	8	.063										
208	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2	-.031	3	.054	9	.063										
209	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2	-.044	3	.044	10	.063										
210	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2	-.054	3	.031	11	.063										
211	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2	-.063	3		4	-.063										
212	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2	-.054	3	-.031	5	-.063										
213	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2	-.044	3	-.044	6	-.063										
214	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2	-.031	3	-.054	7	-.063										
215	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2		3	-.063	8	-.063										
216	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2	.031	3	-.054	9	-.063										
217	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2	.044	3	-.044	10	-.063										
218	1.2DL + 1...	Yes	Y		DL	1.2	41	1.5	2	.054	3	-.031	11	-.063										
219	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2	.063	3		4	.063										
220	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2	.054	3	.031	5	.063										
221	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2	.044	3	.044	6	.063										
222	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2	.031	3	.054	7	.063										
223	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2		3	.063	8	.063										
224	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2	-.031	3	.054	9	.063										
225	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2	-.044	3	.044	10	.063										
226	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2	-.054	3	.031	11	.063										
227	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2	-.063	3		4	-.063										
228	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2	-.054	3	-.031	5	-.063										
229	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2	-.044	3	-.044	6	-.063										
230	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2	-.031	3	-.054	7	-.063										
231	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2		3	-.063	8	-.063										
232	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2	.031	3	-.054	9	-.063										
233	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2	.044	3	-.044	10	-.063										
234	1.2DL + 1...	Yes	Y		DL	1.2	42	1.5	2	.054	3	-.031	11	-.063										

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N25	max	1420.831	3	972.569	21	2031.361	39	464.168	31	405.768	33	1681.088	19
2		min	-1414.293	27	-980.459	13	-115.712	31	-3340.378	39	-1889.423	41	-1681.979	11
3	N1	max	1490.426	17	867.325	8	2080.149	45	3323.322	45	403.667	19	1706.888	25
4		min	-1485.004	25	-857.128	32	-107.034	21	-449.611	21	-2158.598	43	-1710.366	17

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
5	N13	max	516.877	18	1462.018	22	1982.719	34	546.861	167	3728.181	34	1451.379	30
6		min	-531.284	10	-1464.383	14	-162.57	26	-457.536	223	-646.013	26	-1451.779	6
7	Totals:	max	3135.511	2	2942.627	22	5602.818	41						
8		min	-3135.509	26	-2942.627	14	1507.787	81						

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code Che...	Loc[in]	LC	Shear C...	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	M2	PIPE_3.0	.686	40	45	.199	40		9	50160.8...	65205	5748.75	5748.75	2....	H1-1b
2	M12	PIPE_3.0	.666	40	39	.189	40		3	50160.8...	65205	5748.75	5748.75	2....	H1-1b
3	M7	PIPE_3.0	.649	40	34	.177	40		14	50160.8...	65205	5748.75	5748.75	2....	H1-1b
4	M1	C3X5	.513	34.856	45	.173	63.177	y	42	32283.1...	47628	981.263	4104	1....	H1-1b
5	M11	C3X5	.502	34.856	40	.171	63.177	y	36	32283.1...	47628	981.263	4104	1....	H1-1b
6	M6	C3X5	.489	34.856	34	.166	63.177	y	47	32283.1...	47628	981.263	4104	1....	H1-1b
7	M13	L2x2x3	.254	0	14	.034	0	z	41	18084.2	23392.8	557.717	1182.442	1	H2-1
8	M3	L2x2x3	.248	0	3	.034	0	z	47	18084.2	23392.8	557.717	1182.442	1	H2-1
9	M10	6.5"x0.37" P...	.245	21	2	.111	21	y	49	27548.2...	75757.5	583.963	6619.818	1....	H1-1b
10	M8	L2x2x3	.242	0	10	.033	0	z	36	18084.2	23392.8	557.717	1182.442	1	H2-1
11	M5	6.5"x0.37" P...	.241	21	13	.118	21	y	43	27548.2...	75757.5	583.963	6676.849	1....	H1-1b
12	M15	6.5"x0.37" P...	.239	21	7	.113	21	y	38	27548.2...	75757.5	583.963	6579.912	1....	H1-1b
13	M4	L2x2x3	.223	0	13	.036	0	y	43	18084.2	23392.8	557.717	1182.442	1	H2-1
14	M9	L2x2x3	.214	0	2	.035	0	y	49	18084.2	23392.8	557.717	1182.442	1	H2-1
15	M14	L2x2x3	.202	0	7	.036	0	y	38	18084.2	23392.8	557.717	1182.442	1	H2-1
16	MP1	PIPE_2.5	.134	69	16	.034	27		11	33487.3...	66654	4726.5	4726.5	2....	H1-1b
17	M23	L6.6"X4.46"...	.133	42	18	.023	42	z	10	51170.9...	87561	2464.809	7125.374	1	H2-1
18	MP4	PIPE_2.5	.131	69	10	.027	27		6	33487.3...	66654	4726.5	4726.5	2....	H1-1b
19	MP7	PIPE_2.5	.121	69	5	.030	69		2	33487.3...	66654	4726.5	4726.5	1	H1-1b
20	MP9	PIPE_2.5	.120	69	2	.030	69		16	33487.3...	66654	4726.5	4726.5	1	H1-1b
21	H3	PIPE_3.5"o...	.118	31	10	.088	24		16	45871.8...	71569.8...	6336.493	6336.493	1....	H1-1b
22	MP3	PIPE_2.5	.117	69	13	.037	69		10	33487.3...	66654	4726.5	4726.5	4....	H1-1b
23	M22	L6.6"X4.46"...	.114	42	29	.021	42	z	4	51170.9...	87561	2464.809	7125.374	1	H2-1
24	H1	PIPE_3.5"o...	.112	31	5	.090	24		11	45871.8...	71569.8...	6336.493	6336.493	1....	H1-1b
25	H2	PIPE_3.5"o...	.110	31	15	.079	24		6	45871.8...	71569.8...	6336.493	6336.493	1....	H1-1b
26	MP6	PIPE_2.5	.107	69	7	.030	69		5	33487.3...	66654	4726.5	4726.5	1	H1-1b
27	M19	PIPE_2.5	.102	85	10	.082	103.75		2	22748.1...	66654	4726.5	4726.5	1....	H1-1b
28	M50A	PIPE_2.5	.099	35	17	.067	103.75		7	22748.1...	66654	4726.5	4726.5	1....	H1-1b
29	M24	L6.6"X4.46"...	.099	42	23	.019	0	y	14	51170.9...	87561	2464.809	7125.374	1	H2-1
30	MP8	PIPE_2.5	.098	69	10	.047	69		11	33487.3...	66654	4726.5	4726.5	3....	H1-1b
31	MP2	PIPE_2.5	.098	69	6	.044	69		6	33487.3...	66654	4726.5	4726.5	1	H1-1b
32	MP5	PIPE_2.5	.095	69	17	.045	69		17	33487.3...	66654	4726.5	4726.5	4....	H1-1b
33	M51	PIPE_2.5	.087	35	6	.070	103.75		12	22748.1...	66654	4726.5	4726.5	1....	H1-1b

Envelope AISI S100-16: LRFD Cold Formed Steel Code Checks

Member	Shape	Code ...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pn[lb]	phi*Tn[lb]	phi*Mny...	phi*Mnz...	phi*V...	phi*V...	Cb	Eqn
No Data to Print ...																

APPENDIX D

ADDITIONAL CALCULATIONS

Trylon

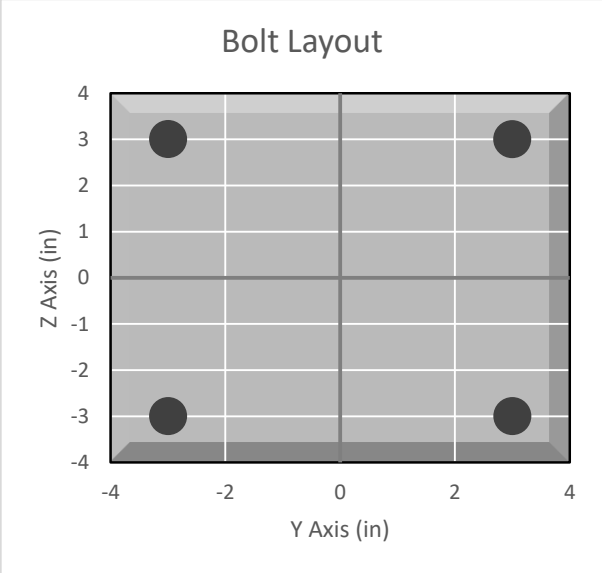
Analysis date: 10/03/2022

BOLT TOOL 1.5.2

Project Data	
Job Code:	204513
Carrier Site ID:	NJJER02056A
Carrier Site Name:	-

Code	
Design Standard:	TIA-222-H
Slip Check:	No
Pretension Standard:	AISC

Bolt Properties		
Connection Type:	Bolt	
Diameter:	0.625	in
Grade:	A325	--
Yield Strength (Fy):	92	ksi
Ultimate Strength (Fu):	120	ksi
Number of Bolts:	4	--
Threads Included:	Yes	--
Double Shear:	No	--
Connection Pipe Size:	-	in



Connection Description
Standoff to Collar

Bolt Check*		
Tensile Capacity (ϕT_n):	20340.1	lbs
Shear Capacity (ϕV_n):	13805.8	lbs
Tension Force (T_u):	4126.5	lbs
Shear Force (V_u):	682.0	lbs
Tension Usage:	19.3%	--
Shear Usage:	4.7%	--
Interaction:	19.3%	Pass
Controlling Member:	M2	--
Controlling LC:	42	--

**Rating per TIA-222-H Section 15.5*

1825 W. Walnut Hill Lane, Suite 120
Irving, Texas 75038

APPENDIX E
SUPPLEMENTAL DRAWINGS

NOTES:

1.0 GENERAL
- 1.1 ALL METRIC DIMENSIONS ARE IN BRACKETS
- 1.2 FOR PATENTS, SEE WWW.CS-PAT.COM

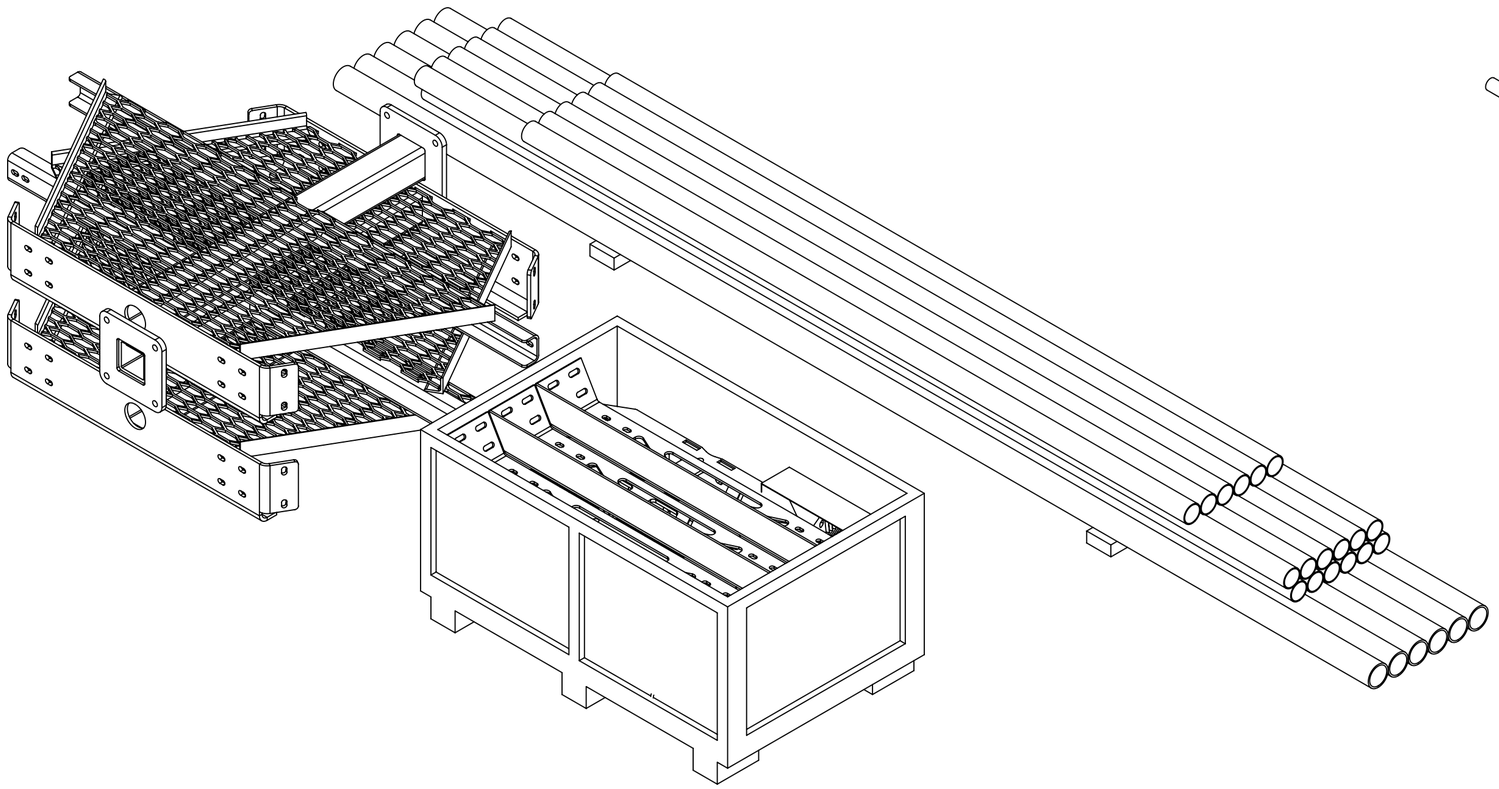
2.0 DESIGN NOTES
- 2.1 TIGHTEN ALL BOLTS SECURING FLAT PLATES BY THE TURN-OF-NUT METHOD. TIGHTEN ALL U-BOLTS USING TURN-OF-NUT METHOD WITH ATTENTION TO LEAVE EQUAL DISTANCE AND EQUAL FORCE ON EACH LEG OF THE U-BOLT.

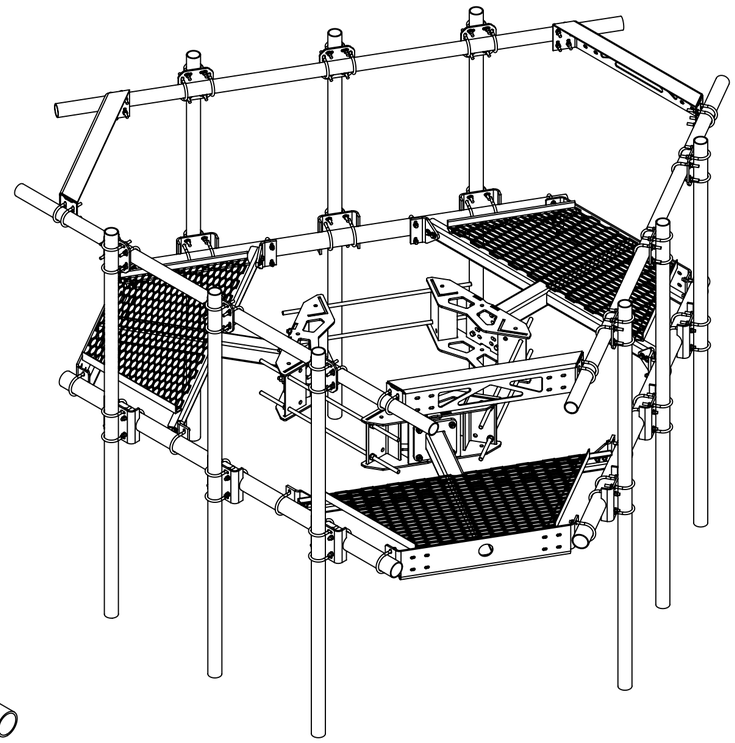
3.0 MANUFACTURING/SPECIAL REQUIREMENTS

4.0 TEST

5.0 PACKAGING
- 5.1 PACKAGING SHALL MEET COMMSCOPE REQUIREMENTS PER DOCUMENT IS-PL-3005.
- 5.2 PRINTED DOCUMENT TO BE PLACED INSIDE POLYBAG AND THEN IN SHIPPING CONTAINER.
- 5.3 EXTRA HARDWARE MAYBE SUPPLIED, BAGGED AND SHIPPED.

REVISIONS				
REV.	ECN	DESCRIPTION	BY	DATE
A	10272PC	INITIAL RELEASE	HDAI	03/08/2021
B	14762	SHEET 1: UPDATED NOTE 2.1 & ADDED NOTE 5.1 TO 5.2 SHEET2: REPOSITION ANTENNA PIPES; CHANGED HAND RAIL DISTANCE FORM PLATFORM: 42" WAS 40" IN ZONE B3; DIM ∅12 WAS ∅15 IN ZONE D3; UPDATED ITEM 4: GB-0522A WAS GB-0520A	JL1183	09/10/2021
c	40139639CMO	ADDED WEIGHT AND MASS INFORMATION	LL1090	12/07/2021





PATENT PENDING

DENSITY		lbs/in³
MASS	1801.56	lbs
VOLUME	6362.00	in³
SURFACE AREA	55884.77	in²
HEIGHT	96"	
LENGTH	46"	
WIDTH	29'	

COMMSCOPE, INC. OF NORTH CAROLINA

TOLERANCES
1 PLACE .X ± .25 | 3 PLACE .XXX ± 0.06
2 PLACE .XX ± 0.12 | ANGLES ± 2°

SAP MATERIAL MASTER: MC-PK8-DSH

FINISH: GALV A123

MATERIAL: SEE SEPARATE BILLS OF MATERIAL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES INTERPRET PER ANSI Y 14.5M-1994

	NAME	DATE
CE	MRC	02/17/20
RW	LL1090	12/07/2021
AD	VCORTEZ1	12/09/2021
RE	VCORTEZ1	12/09/2021

ECN 40139639CMO

TITLE: **LOW PROFILE PLATFORM FACE**

SCALE: 1:32

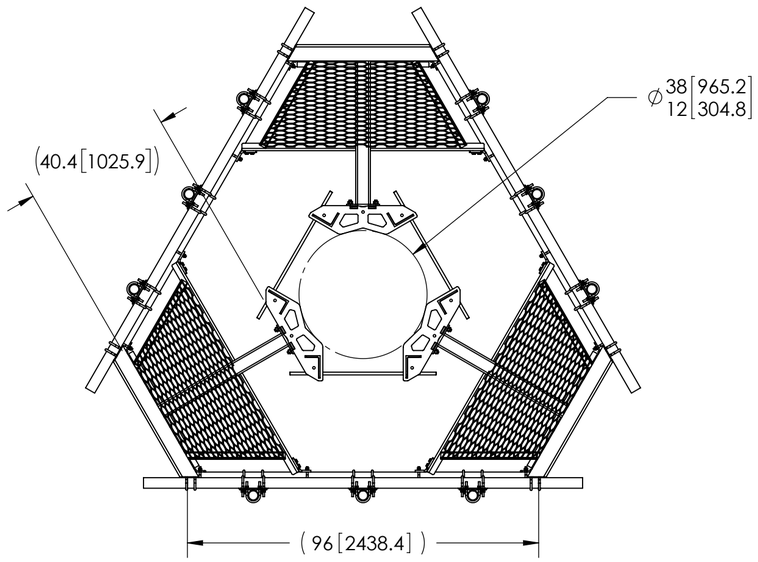
DOCUMENT NO.: MC-PK8-DSH

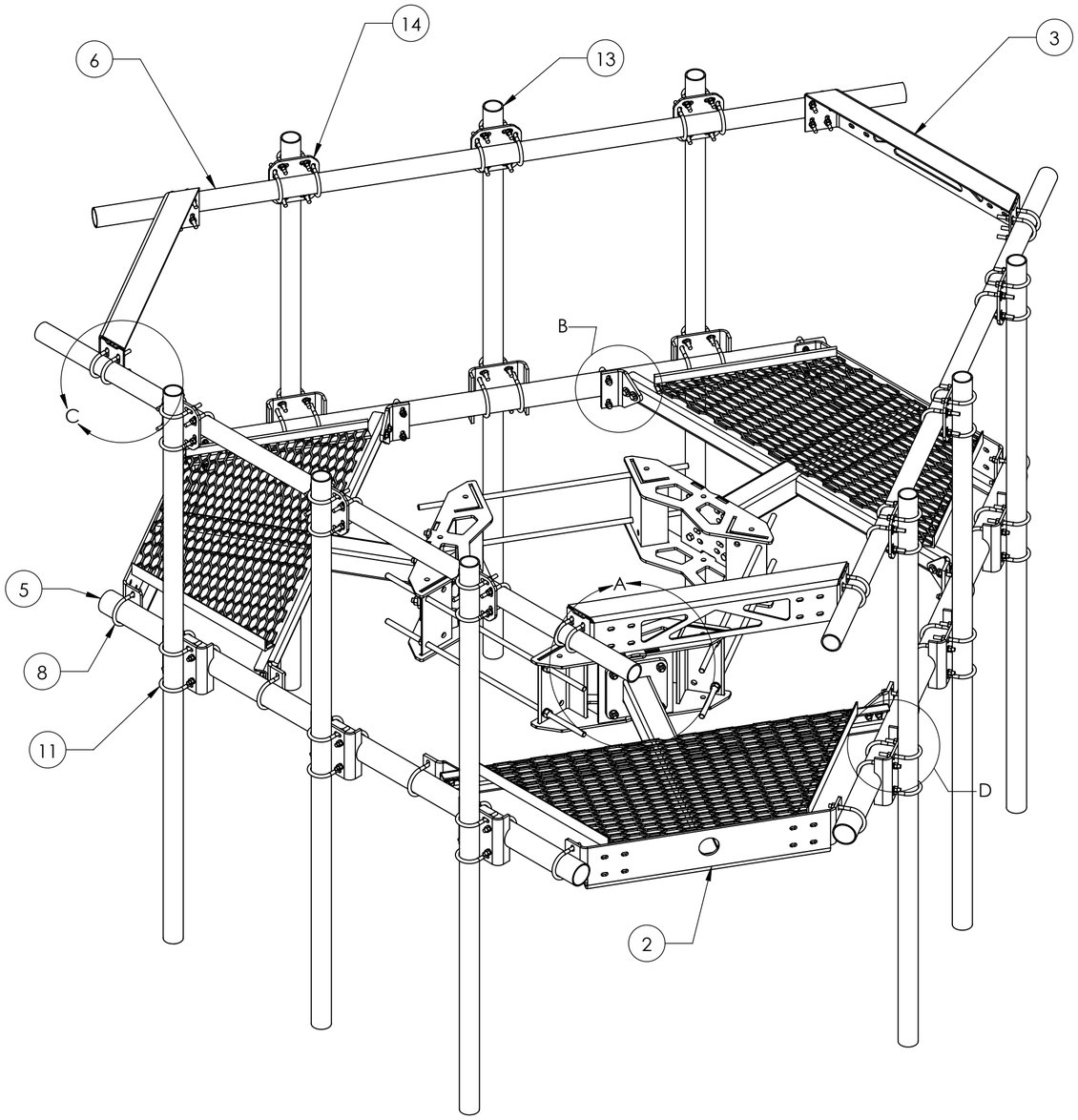
SIZE: C

Auth Group: INSL

MODEL			DRAWING			SHEET
VERSION	STATUS	REVISION	VERSION	STATUS	REVISION	
03	RE	B	02	RE	C	1 OF 3

NOTES:





BOM IS FOR REFERENCE ONLY, PART NUMBER SUBSTITUTIONS MAY BE MADE

ITEM	PART NO.	DESCRIPTION	QTY.
1	MC-RM1550-3	12" - 50" OD RINGMOUNT	1
2	MTC300602	SECTOR WELDMENT FOR SNUB NOSE PLATFORM	3
3	MT195801	Corner Weldment Snub Nose Handrail	3
4	GB-0522A	5/8" X 2-1/4" GALV BOLT KIT (A325)	12
5	MT54796	3.50" OD X 96" GALV PIPE	3
6	MT546120	2.875" O.D. X 120" PIPE	3
7	GWF-04	1/2" GALV FLAT WASHER	12
8	GUB-4355	1/2" X 3-5/8" X 5" GALV U-BOLT	12
9	MTC300618	MOUNTING PLATE FOR MT-196	6
10	GB-04205	1/2" X 2" GALV BOLT KIT	12
11	MT-219M-H	3.5" OD X 2-7/8" OD CLAMP BRACKET ASSY	9
12	GUB-4352	1/2" X 3" X 5-1/4" GALV U-BOLT	12
13	MT54696	∅2.875" O.D. X 96 PIPE	9
14	XP-2525	CROSSOVER PLATE KIT, 2-7/8 OD X 2-7/8 OD	9

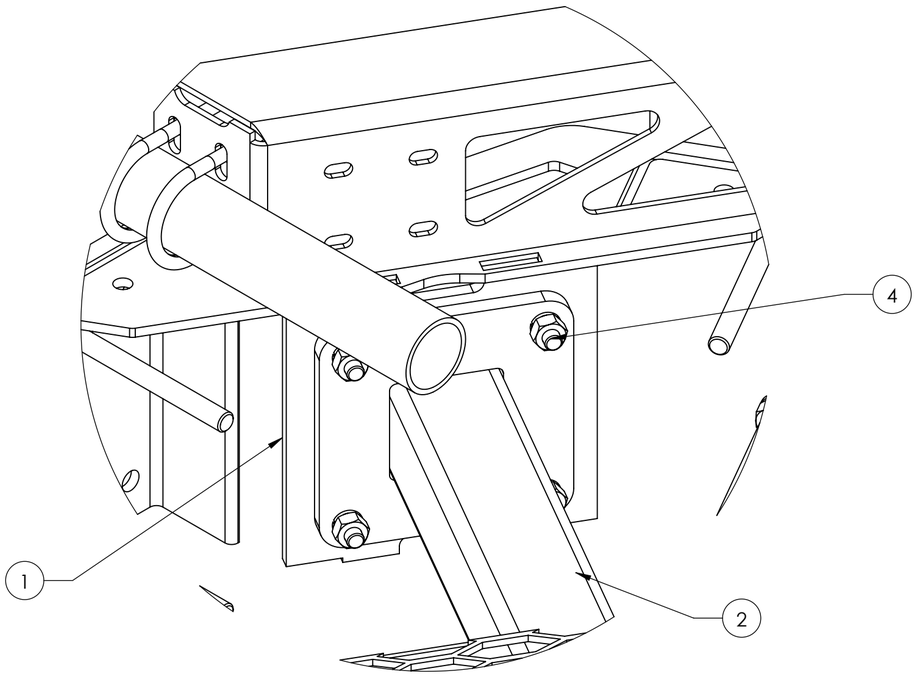
COMMSCOPE, INC. OF NORTH CAROLINA

TITLE

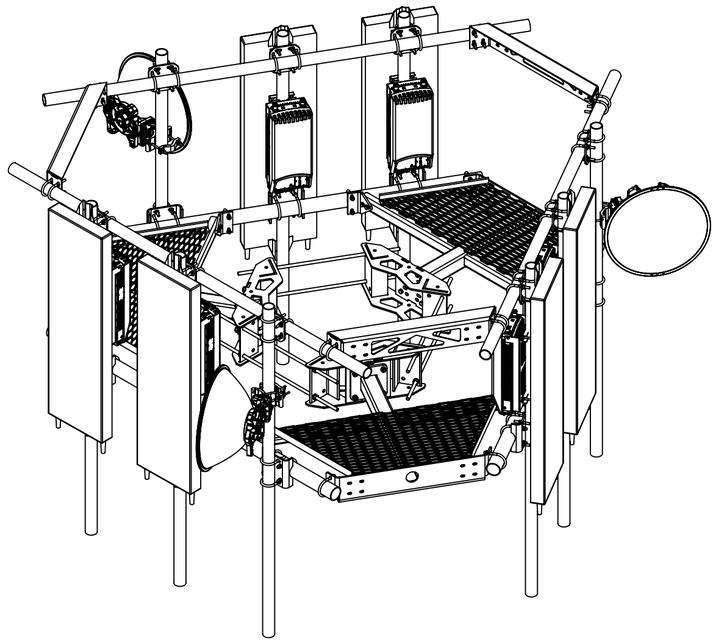
LOW PROFILE PLATFORM FACE

SIZE	SCALE	DOCUMENT NO.			
C	1:32	MC-PK8-DSH			
		DRAWING			SHEET
		VERSION	STATUS	REVISION	
		02	RE	C	

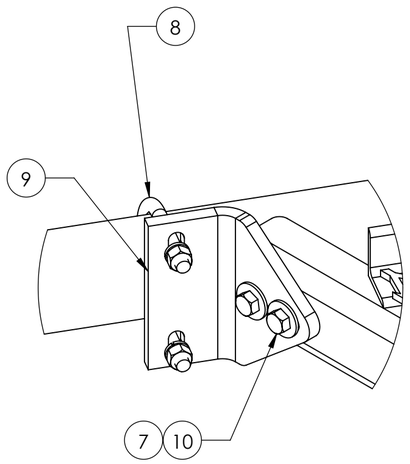
NOTES:



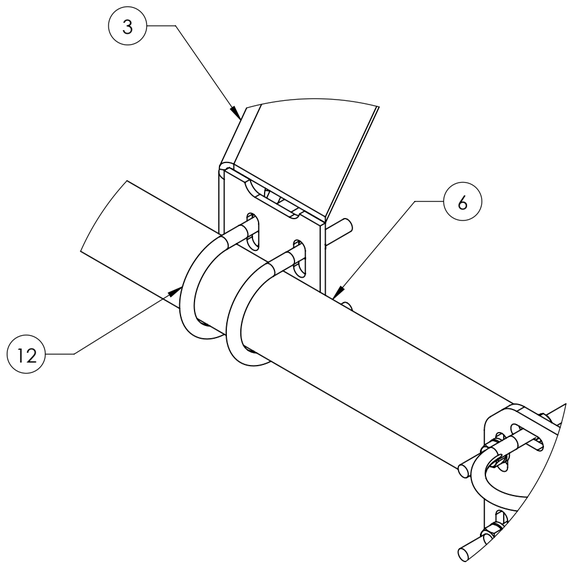
DETAIL A
SCALE 1 : 4



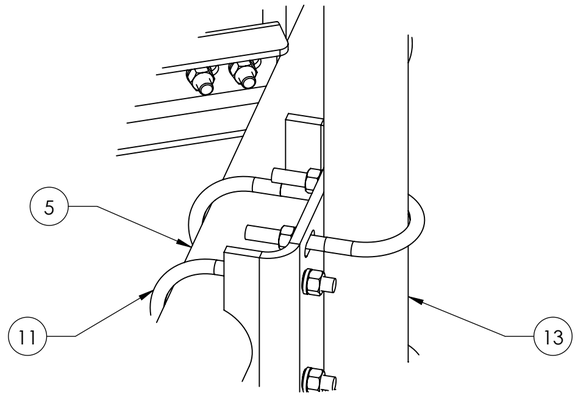
WITH ANTENNAS



DETAIL B
SCALE 1 : 4



DETAIL C
SCALE 1 : 4



DETAIL D
SCALE 1 : 4

COMMSCOPE, INC. OF NORTH CAROLINA				
TITLE: LOW PROFILE PLATFORM FACE				
SIZE: C	SCALE: 1:24	DOCUMENT NO.: MC-PK8-DSH		
		DRAWING		SHEET
		VERSION: 02	STATUS: RE	REVISION: C
				3 OF 3

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

Dish Wireless Existing Facility

Site ID: 826222

NJJER02056A
201 South Main Street
Newtown, Connecticut 06470

May 27, 2022

EBI Project Number: 6222003438

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**18.26%**

May 27, 2022

Attn: Dish Wireless

Emissions Analysis for Site: 826222 - NJJER02056A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **201 South Main Street** in **Newtown, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless 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 ($\mu W/cm^2$). 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 population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

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 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency 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 Dish Wireless Wireless antenna facility located at 201 South Main Street in Newtown, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless 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 manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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) 4 n71 channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 4 n70 channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) 4 n66 channels (AWS Band - 2190 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

4) 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.

5) 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 manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

6) The antennas used in this modeling are the Commscope FFVV-65B-R2 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the Commscope FFVV-65B-R2 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the Commscope FFVV-65B-R2 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

7) The antenna mounting height centerline of the proposed antennas is 73 feet above ground level (AGL).

8) 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.

9) All calculations were done with respect to uncontrolled / general population threshold limits.

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Commscope FFVV-65B-R2	Make / Model:	Commscope FFVV-65B-R2	Make / Model:	Commscope FFVV-65B-R2
Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz
Gain:	11.35 dBd / 15.52 dBd / 11.1 dBd	Gain:	11.35 dBd / 15.52 dBd / 11.1 dBd	Gain:	11.35 dBd / 15.52 dBd / 11.1 dBd
Height (AGL):	73 feet	Height (AGL):	73 feet	Height (AGL):	73 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440.00 Watts	Total TX Power (W):	440.00 Watts	Total TX Power (W):	440.00 Watts
ERP (W):	1,972.81	ERP (W):	1,972.81	ERP (W):	1,972.81
Antenna A1 MPE %:	**2.11%**	Antenna B1 MPE %:	**2.11%**	Antenna C1 MPE %:	**2.11%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	2.11%
AT&T	7.23%
T-Mobile	3.08%
Sprint	3.1%
Verizon	2.74%
Site Total MPE % :	18.26%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	2.11%
Dish Wireless Sector B Total:	2.11%
Dish Wireless Sector C Total:	2.11%
Site Total MPE % :	18.26%

Dish Wireless Maximum MPE Power Values (Sector A)

Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	110.82	73.0	3.55	600 MHz n71	400	0.89%
Dish Wireless 1900 MHz n70	4	238.81	73.0	7.65	1900 MHz n70	1000	0.77%
Dish Wireless 2190 MHz n66	4	143.57	73.0	4.60	2190 MHz n66	1000	0.46%
						Total:	**2.11%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

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

The anticipated maximum composite contributions from the Dish Wireless facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

Dish Wireless Sector	Power Density Value (%)
Sector A:	2.11%
Sector B:	2.11%
Sector C:	2.11%
Dish Wireless Maximum MPE % (Sector A):	2.11%
Site Total:	18.26%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **18.26%** of the allowable FCC established general population 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.

Exhibit G

Letter of Authorization

6325 Ardrey Kell Rd, Suite 600
Charlotte, NC 28277

Phone:
www.crowncastle.com

Crown Castle Letter of Authorization

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

Re: Tower Share Application
Crown Castle telecommunications site at:
201 SOUTH MAIN STREET, NEWTOWN, CT 06470

T-MOBILE USA TOWER LLC ("Crown Castle") hereby authorizes DISH NETWORK, including their Agent, to act as our Agent in the processing of all zoning applications, building permits and approvals through the CT - CONNECTICUT SITING COUNCIL for the existing wireless communications site described below:

Crown Site ID/Name: **826222/Newtown/RT-25**
Customer Site ID: **NJJER02056A/**
Site Address: **201 South Main Street, Newtown, CT 06470**

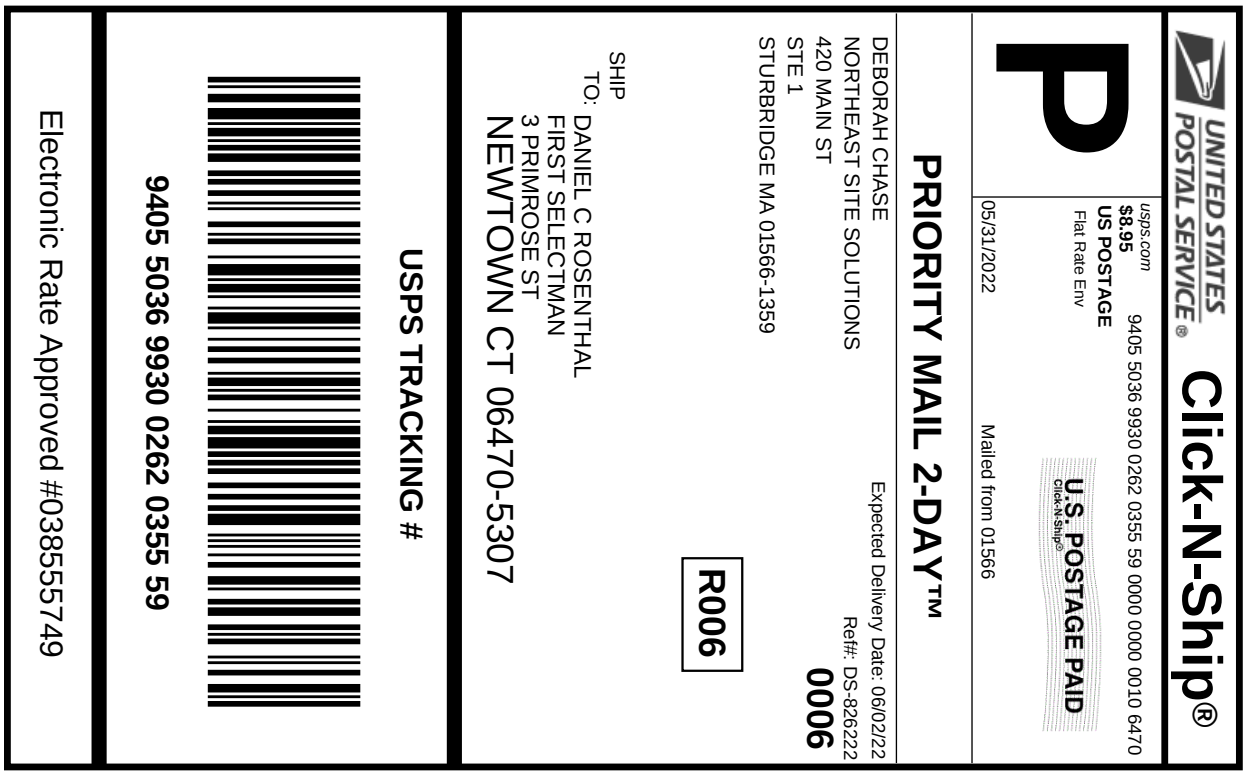
Crown Castle

By: _____ Date: 04/07/2022

Robin Cannizzaro
Real Estate Specialist

Exhibit H

Recipient Mailings



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0262 0355 59

Trans. #:	564628253
Print Date:	05/31/2022
Ship Date:	05/31/2022
Expected Delivery Date:	06/02/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

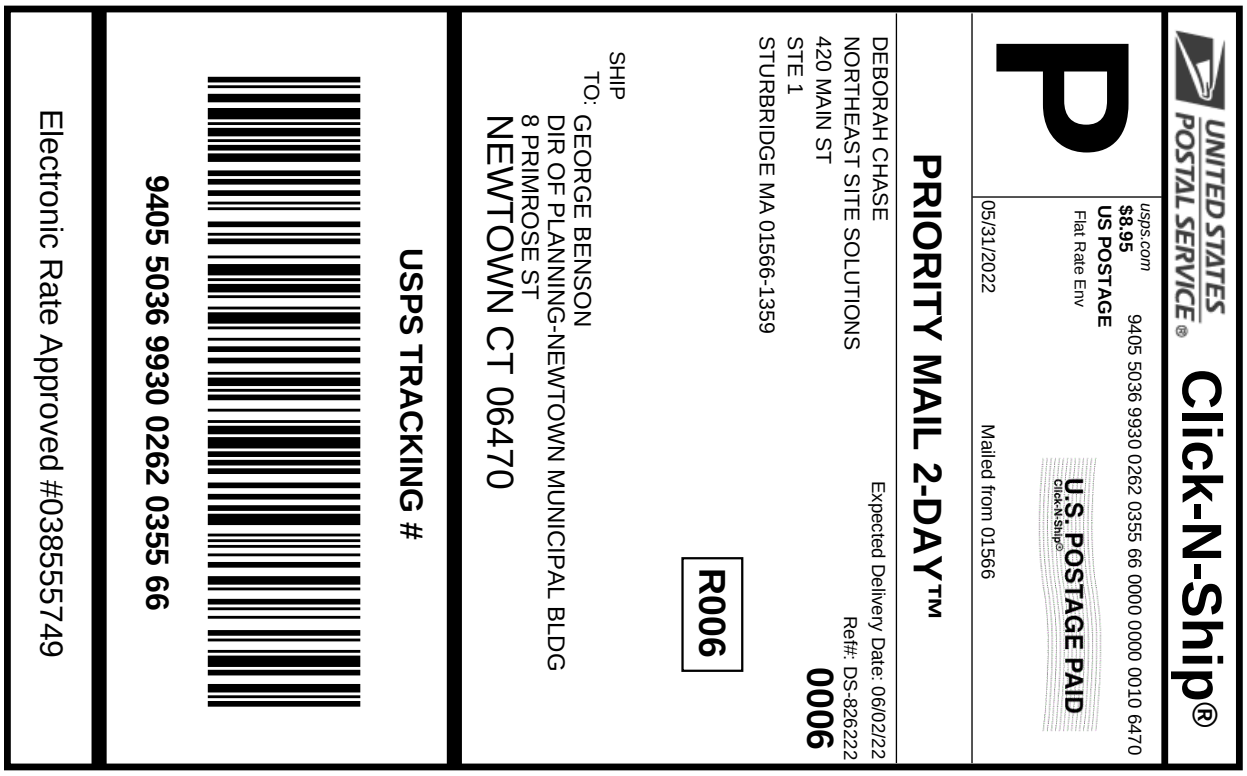
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-826222

To: DANIEL C ROSENTHAL
FIRST SELECTMAN
3 PRIMROSE ST
NEWTOWN CT 06470-5307

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



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Instructions

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2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0262 0355 66

Trans. #:	564628253
Print Date:	05/31/2022
Ship Date:	05/31/2022
Expected Delivery Date:	06/02/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

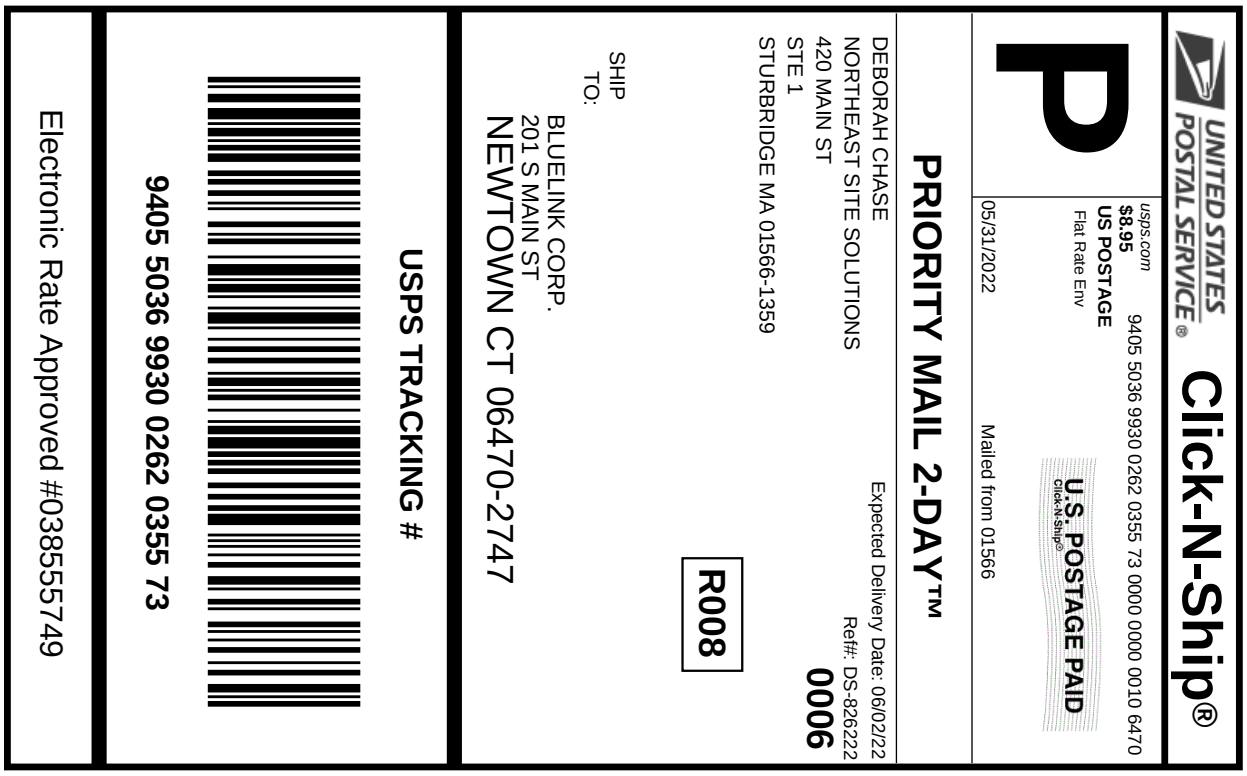
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-826222

To: GEORGE BENSON
DIR OF PLANNING-NEWTOWN MUNICIPAL BLDG
8 PRIMROSE ST
NEWTOWN CT 06470

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
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5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0262 0355 73

Trans. #:	564628253
Print Date:	05/31/2022
Ship Date:	05/31/2022
Expected Delivery Date:	06/02/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

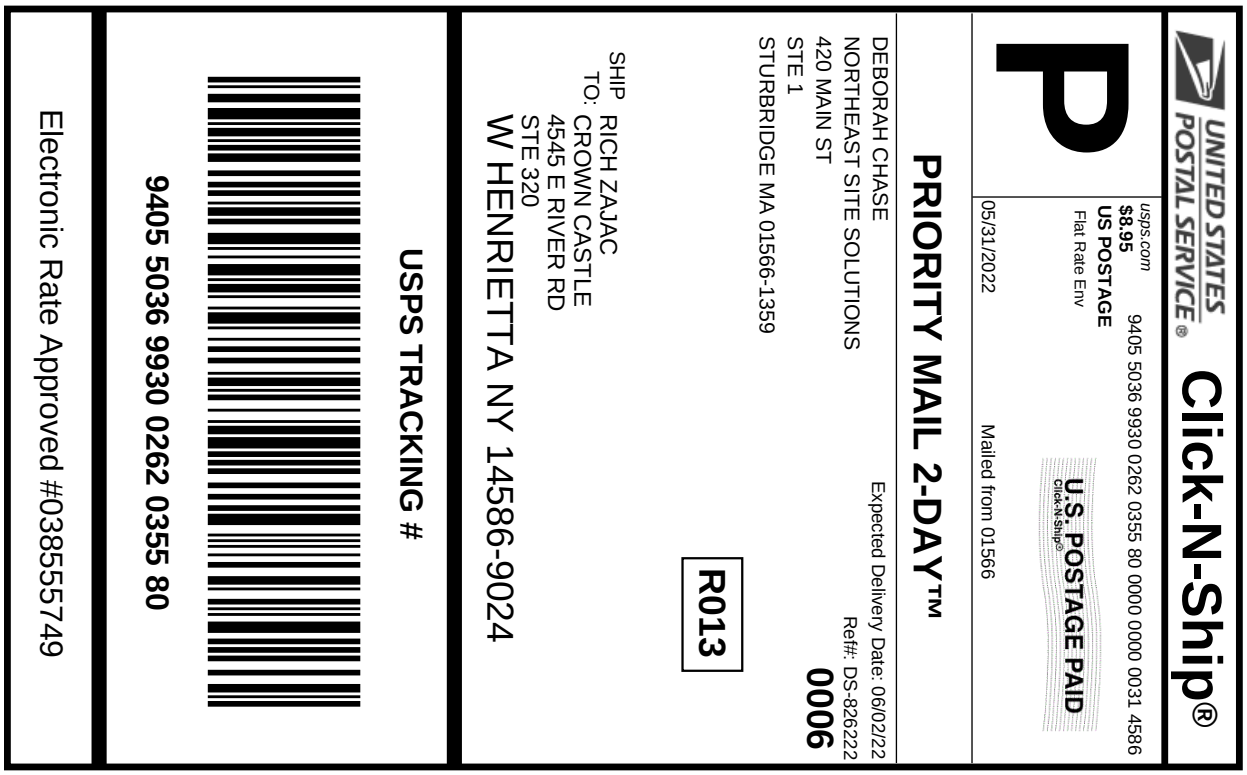
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-826222

To: BLUELINK CORP.
201 S MAIN ST
NEWTOWN CT 06470-2747

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0262 0355 80

Trans. #:	564628253
Print Date:	05/31/2022
Ship Date:	05/31/2022
Expected Delivery Date:	06/02/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-826222

To: RICH ZAJAC
CROWN CASTLE
4545 E RIVER RD
STE 320
W HENRIETTA NY 14586-9024

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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0626222 Crown
DISH

UNITED STATES POSTAL SERVICE.

FARMINGTON
210 MAIN ST
FARMINGTON, CT 06032-9998
(800)275-8777

06/01/2022 03:18 PM

Product	Qty	Unit Price	Price
Prepaid Mail West Henrietta, NY 14586 Weight: 0 lb 1.90 oz Acceptance Date: Wed 06/01/2022 Tracking #: 9405 5036 9930 0262 0355 80	1		$0.00
Prepaid Mail Newtown, CT 06470 Weight: 0 lb 10.10 oz Acceptance Date: Wed 06/01/2022 Tracking #: 9405 5036 9930 0262 0355 59	1		$0.00
Prepaid Mail Newtown, CT 06470 Weight: 0 lb 10.10 oz Acceptance Date: Wed 06/01/2022 Tracking #: 9405 5036 9930 0262 0355 66	1		$0.00
Prepaid Mail Newtown, CT 06470 Weight: 0 lb 10.10 oz Acceptance Date: Wed 06/01/2022 Tracking #: 9405 5036 9930 0262 0355 73	1		$0.00
Grand Total:			$0.00

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eligible to receive a third set
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or scan this code with your mobile device,

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