



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

September 3, 2021

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

RE: Tower Share Application
28 Brewer Drive, Bloomfield CT 06002
Latitude: 41.835158
Longitude: -72.741167
Site# 876329_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 28 Brewer Drive in Bloomfield, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 5G MHz antenna and six (6) RRUs, at the 89-foot level of the existing 120-foot monopole tower, one (1) Fiber cables will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7x5 lease area. Included are plans by Infinigy, dated July 22, 2021 Exhibit C. Also included is a structural analysis prepared by Crown Castle, dated June 7, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. This facility was approved by the Town of Bloomfield Planning and Zoning on August 5, 1996. Please see attached Exhibit A.

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 Mayor Suzette DeBeatham-Brown for the Town of Bloomfield, Jose Giner, Director of Planning and Zoning, as well as the tower owner (Crown Castle) and property owner (Town of Bloomfield)

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 tower is 120-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 89-feet.
2. The proposed modifications will not result in the increase of the site boundary as depicted on the attached site plan.
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 negligible.



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. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 18.04% 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 indicates 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 support tower in Bloomfield. 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 89-foot level of the existing 120-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 guyed 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 Bloomfield.

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



NSS **NORTHEAST**
SITE SOLUTIONS

Turnkey Wireless Development

Attachments

cc: Suzette DeBeatham-Brown, Mayor and Property owner
Town of Bloomfield
800 Bloomfield Ave, Bloomfield, CT 06002

Jose Giner, Director of Planning and Zoning
Town of Bloomfield
800 Bloomfield Ave, Bloomfield, CT 06002

Crown Castle - Tower Owner

Exhibit A

Original Facility Approval

076

ZONING BOARD OF APPEALS

August 5, 1996

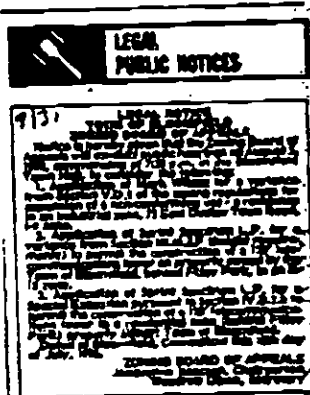
The Zoning Board of Appeals held a meeting on August 5, 1996, at 7:30 PM with the following members present.

Jacqueline Isaacson/Chairperson	Michael Kosilla/ZEO
Woodrow Dixon	Nancy Awalt/Recording Clerk
Joeannah Stinson	
Charles Strouse	

Absent: William Goldstein, Robert Horn, Valeria Caldwell-Gaines, Joel Neuwirth

The meeting was called to order at 7:36 PM. Ms. Isaacson explained that with only four (4) members present, the applicants would need 4 affirmative votes for the applications to carry. She also explained that due to the fact that items 2 and 3 needed a sign language interpreter, they would be taken out of order and heard first.

Mr. Dixon read the call for the first application.



Darryl Hendrickson was present regarding the application of Sprint Spectrum L.P for a variance from Section III.M.4.P (height requirements) to permit the construction of a 120' telecommunication tower on property owned by the Town of Bloomfield, behind Pilley Park, in an R-15 Zone. An additional application for a Special Exception pursuant to Section IV.B.2.b was also presented at this time. Steve Crotty was also present for this application.

APPLICATION OF SPRINT SPECTRUM L.P.

Mr. Hendrickson thanked Staff for helping them get to this point in the application especially Mr. Hooper, Mr. Chapman and Chief Mulhall. The proposal is for a 120' telecommunication facility for the Pilley Park location. Sprint Spectrum is currently implementing PCS which stands for Personal Communication Service. It is the next cellular system that has been approved for an FCC license by the government. It will bring the existing cellular service up to a digital standard. These phones will enable the general consumer to enjoy S-mail, paging, PBX, voice data, etc.



ZBA Meeting

2

August 7, 1996

There was a brief discussion regarding the exact location and then Mr. Hendrickson showed enlarged photo's of the site, taken from various views. The first photo was taken from the cul-de-sac in the Mountain View Cemetery looking north. He explained that they would be taking down a large, dead tree and erecting the tower approximately where the tree had been located. The second photo was taken from Brewer Road looking up the hill. He noted that they would be using this overgrown road off of Brewer for access for the construction trucks. There is also a pending easement agreement with Mountain View Cemetery that would allow Sprint to go through the Cemetery for their monthly inspections and maintenance of the tower so the use of the road off of Brewer would be for construction purposes only. Once completed the road would be allowed to go back to it's natural state. The third photo was taken from the entrance of Mountain View Cemetery off of Route 178. The purpose of the photo's was to show how the tower would look from different angles in Town. Sprint has worked with the Town very closely in choosing the location of this tower that would be beneficial to all the involved parties. Because of the elevation of this area, the tower will only be 120' high which is a relative low height for these towers. Sprint will also be installing an antenna for the Bloomfield Police Department to enhance their radio capabilities.

Mr. Hendrickson explained further the access road that would be used for trucks during construction. Because of the height of the weeds there might be a need to construct a temporary road but it would be allowed to grow back to its natural state when construction was complete. There is a requirement by Sprint to have a once a month maintenance visit to each tower and this would be done through the Cemetery as mentioned before.

The construction should take about 30-60 days to complete. The nearest house is no more than 600'-700' away. It was asked how the 120' height was arrived at and if the tower should fall would it hit any buildings. Steve Crotty showed graphic photos of the proposed Bloomfield site as well as other proposed and existing sites in surrounding towns. The maps showed the coverage of the town and the only non-coverage area was at the top of Avon Mountain. Mr. Crotty explained that locations are chosen so the services overlap so all areas are served. There had been a drive test done with a crane and the 120' height was what was needed to serve the Town of Bloomfield. He noted that the towers range from 100'-250' high. Because of the high elevation of this site, only 120' was all that was needed for this tower. He noted that Chief Mulhall had been extremely interested in having this installed stating that it would be a 40%-60% improvement in their radio transmissions. The tower would be delivered in sections and constructed on site. If the tower would fall it would collapse at the joint and fall into itself. At the worst case scenario, if the tower would fall straight, to the east or west it would fall on Town property, to the south it would fall on the Cemetery property and to the north it would fall on Alexandria Manor. There would be no buildings hit if the tower would fall.

Mr. Kosilla stated that there had been a meeting with the applicant, the Town Manager, The Town Planner and Chief Mulhall regarding this application and that he Town is very interested in this tower.

George Szala of 17 Downing Drive asked if the access road would be blocked off at the end of each working day. His concern was that because of the tracks made, it might encourage others to use this as a road. After a brief discussion Mr. Hendrickson stated that if the Town so wished, signs or road blocks of some sort could be used to deterred others from using the road. As mentioned before, they would let the road grow back to it's

ZBA Meeting

3

August 5, 1996

original state or if needed additional plantings would be done. Mr. Szala also asked the time schedule of this project and was told that assuming that all approvals are given, they should be going for the building permit by the end of September.

Attorney John Pinney, on behalf of the Mountain View Cemetery, stated that their first involvement with this project had been through the Town contacting them. In exchange for the access through the Cemetery, Sprint will be installing underground electric and phone wires to the existing building on the Cemetery property which had been unattainable before because of the costs. The existing building on the Cemetery property would then be used to house some of the records and the daily operations of the Cemetery. Mr. Pinney stated that the Cemetery Association supported both of the applications being presented by Sprint Spectrum L.P.

Mr. Hendrickson said that they would be leasing a 100' x 100' fenced area. The concrete slab for the tower would be 15' x 20'. There will also be a slab constructed at this time for the Town of Bloomfield's Police Department's equipment. There would also be room for future projects if needed. There would be three (3) five foot high, weather-proofed, electronic cabinets with the tower, on the slab. There was a brief discussion regarding hours of operation for the construction. Mr. Hendrickson stated that he didn't know the exact hours that Sprint used but it would probably be 7:30 AM - 5:30 PM. Mr. Hendrickson left handouts with the Board of an article from USA Today, July 17, 1996, talking about President Clintons plans to introduce cellular phones as the newest weapon in his community policing initiative.

The public hearing was closed and a brief discussion followed. Mr. Strouse then motioned to approve the application of Sprint Spectrum L. P. for a variance from Section III.M.4.P (height requirements) to permit the construction of a 120' telecommunication tower on property owned by the Town of Bloomfield, behind Filley Park, in an R-15 zone. Conditions of this approval are that the hours will be from 7:30 AM to 5:00 PM, Monday through Friday and that the access road be blocked off at the end of each working day. Ms. Stinson seconded the motion and it carried unanimously.

Ms. Stinson motioned to approve the application of Sprint Spectrum L.P. for a Special Exemption pursuant to Section IV.B.2.b to permit the construction of a 120' telecommunications tower in a residential zone (behind Filley Park) property owner: Town of Bloomfield. Mr. Dixon seconded the motion and it carried unanimously.

The call for the second hearing was read.

Exhibit B

Property Card



Town of Bloomfield			
Parcel: 7622 Acres: 3.37			
Name:	BLOOMFIELD TOWN OF	Land Value	327300
Site:	28 BREWER DR	Building Value	0
Sale:	0 on 0000-00-00 Reason=U Qual=34	Misc Value	0
Mail:	800 BLOOMFIELD AVE BLOOMFIELD, CT 06002	Just Value	330700
		Assessed Value	0
		Exempt Value	0
		Taxable Value	0



Town of Bloomfield makes every effort to produce the most accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use or interpretation. The assessment information is from the 2011 tax year. Property Tax Maps are for assessment purposes only. Neither the town nor its employees assume responsibility for errors or omissions. ---THIS IS NOT A SURVEY---

Date printed: 09/19/16 : 14:48:54



Recent Sales in Neighborhood	Previous Parcel	Next Parcel	Field Definitions	Return to Main Search	Bloomfield Home
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Owner and Parcel Information

Owner Name	BLOOMFIELD TOWN OF TOWN HALL	Today's Date	September 19, 2016
Mailing Address	800 BLOOMFIELD AVE	Parcel ID	7622 (Account #: R12968)
	BLOOMFIELD, CT 06002	Fire District	C
Location Address	28 BREWER DR	Census Tract	
Map / Lot	176-1 / 1168	Acreage	3.37
Use Class / Description	921 Mun Lnd Res	Parcel Map	Show Parcel Map Owner List By Radius
Assessing Neighborhood	0001A	Utilities	

Current Appraised Value Information

Building Value	XF Value	OB Value	Land Value	Special Land Value	Total Appraised Value	Net Appraised Value	Current Assessment
\$ 0	\$ 0	\$ 3,400	\$ 327,300		\$ 330,700	\$ 330,700	\$ 231,490

Assessment History

Year	Building	OB/Misc	Land	Total Assessment
Current	0	\$ 2,380	\$ 229,110	\$ 231,490
2013	0	\$ 2,380	\$ 195,860	\$ 198,240
2009	0	\$ 2,380	\$ 195,860	\$ 198,240

Land Information

Use	Class	Zoning	Area	Value
Mun Lnd Res	E	R-15	0.34 AC	\$ 107,200
Res Cell Site	R	R-15	1 BL	\$ 200,000
Mun Lnd Res	E		3.03 AC	\$ 20,100

Building Information

No Building Information available for this parcel.

Out Buildings / Extra Features

Description	Sub Description	Area	Year Built	Value
Shed	1 Stry Frame	286 S.F.	1998	\$ 3,400

Sale Information

Sale Date	Sale Price	Deed Book/Page	Sale Qualification	Reason	Vacant or Improved	Owner
00/00/0000		113/ 751	Unqualified	Old sale- Validity unknown	Vacant	BLOOMFIELD TOWN OF TOWN HALL

Permit Information

Permit ID	Issue Date	Type	Description	Amount	Inspection Date	% Complete	Date Complete	Comments
B19770	05/06/1998					100		12X26 SHED TENANT ON TOWER;

Recent Sales in Neighborhood	Previous Parcel	Next Parcel	Field Definitions	Return to Main Search Page	Bloomfield Home
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The Town of Bloomfield Assessor's Office makes every effort to produce the most accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use or interpretation. Website Updated: September 17, 2016

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Exhibit C

Construction Drawings



DISH Wireless L.L.C. SITE ID:

BOBDL00081A

DISH Wireless L.L.C. SITE ADDRESS:

**28 BREWER DR.
BLOOMFIELD, CT 06002**

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:	
<ul style="list-style-type: none"> • INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR) • INSTALL (1) PROPOSED PLATFORM • INSTALL PROPOSED JUMPERS • INSTALL (6) PROPOSED RRUs (2 PER SECTOR) • INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP) • INSTALL (1) PROPOSED HYBRID CABLE 	
GROUND SCOPE OF WORK:	
<ul style="list-style-type: none"> • 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 SAFETY SWITCH (IF REQUIRED) • INSTALL (1) PROPOSED CIENA BOX (IF REQUIRED) • EXISTING METER SOCKET TO BE UTILIZED 	

SITE INFORMATION	PROJECT DIRECTORY
PROPERTY OWNER: TOWN OF BLOOMFIELD	APPLICANT: DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
ADDRESS: PO BOX 337-800 BLOOMFIELD AVE. BLOOMFIELD, CT 06002	TOWER OWNER: CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (877) 486-9377
TOWER TYPE: MONOPOLE	SITE DESIGNER: INFINIGY 2500 W. HIGGINS RD. STE. 500 HOFFMAN ESTATES, IL 60169 (847) 648-4068
TOWER CO SITE ID: 876329	SITE ACQUISITION: SARAH PARSONS SARAH.PARSONS@CROWNCastle.COM
TOWER APP NUMBER: 556612	CONSTRUCTION MANAGER: JAVIER SOTO (617) 839-6514
COUNTY: HARTFORD	RF ENGINEER: JARED ROBINSON (978) 855-5870
LATITUDE (NAD 83): 41° 50' 6.57" N 41.835158 N	
LONGITUDE (NAD 83): -72° 44' 28.20" W -72.741167 W	
ZONING JURISDICTION: TBD	
ZONING DISTRICT: TBD	
PARCEL NUMBER: TBD	
OCCUPANCY GROUP: U	
CONSTRUCTION TYPE: V-B	
POWER COMPANY: EVERSOURCE	
TELEPHONE COMPANY: TBD	



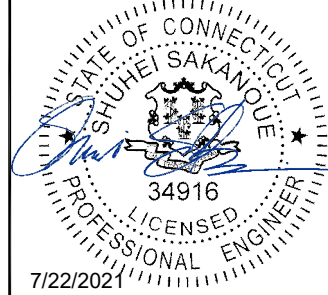
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



2000 CORPORATE DRIVE
CANONSBURG, PA 15317



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PHONE: 847-648-4068 | FAX: 518-690-0793
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DRAWN BY: RCD | CHECKED BY: SS | APPROVED BY: CJW

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

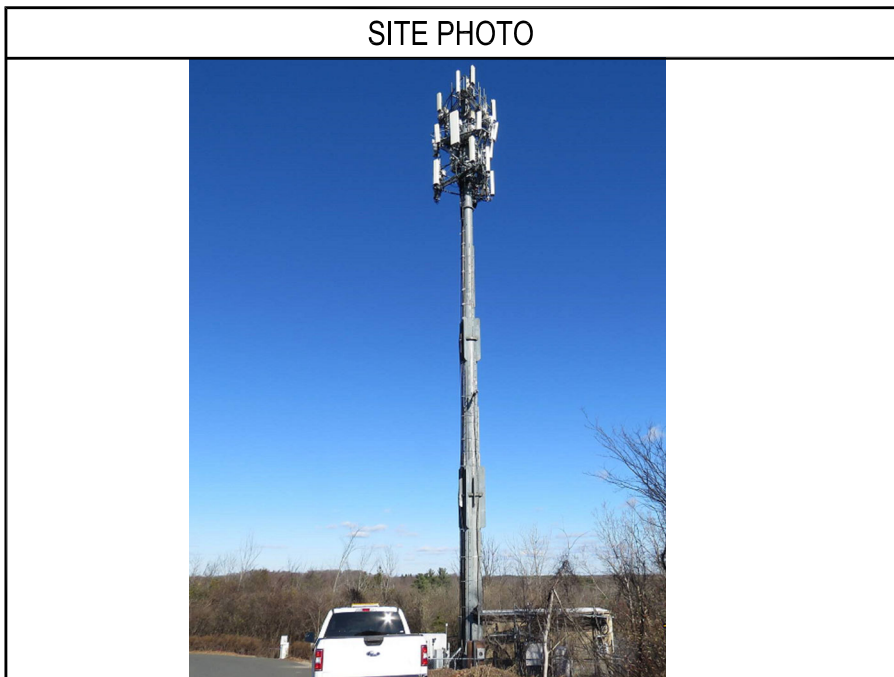
SUBMITTALS		
REV	DATE	DESCRIPTION
A	06/09/2021	ISSUED FOR REVIEW
0	07/08/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
6039-Z0001C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00081A
28 BREWER DR.
BLOOMFIELD, CT 06002

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



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

GENERAL NOTES

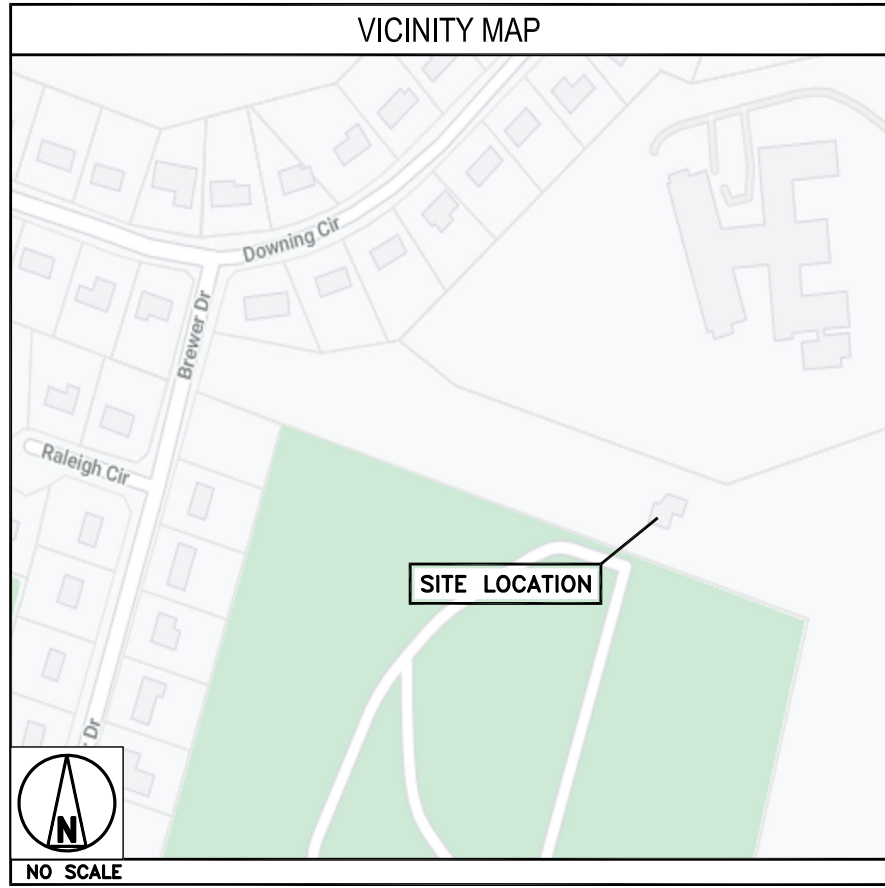
THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE, NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE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

DIRECTIONS

DIRECTIONS FROM TOURS OF DISTINCTION AIRPORT:
DEPART AND HEAD TOWARD MASSACO ST, TURN RIGHT ONTO MASSACO ST, TURN RIGHT ONTO US-202 W / CT-10 / HOPMEADOW ST, TURN LEFT ONTO CT-185 / HARTFORD RD, TURN LEFT ONTO CT-178 / LOEFFLER RD, TURN LEFT, ARRIVE AT 28 BREWER DR., BLOOMFIELD, CT 06002



CONNECTICUT CODE COMPLIANCE

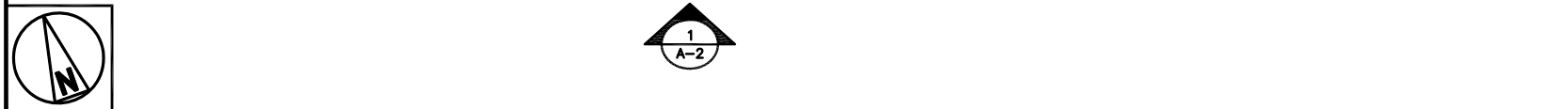
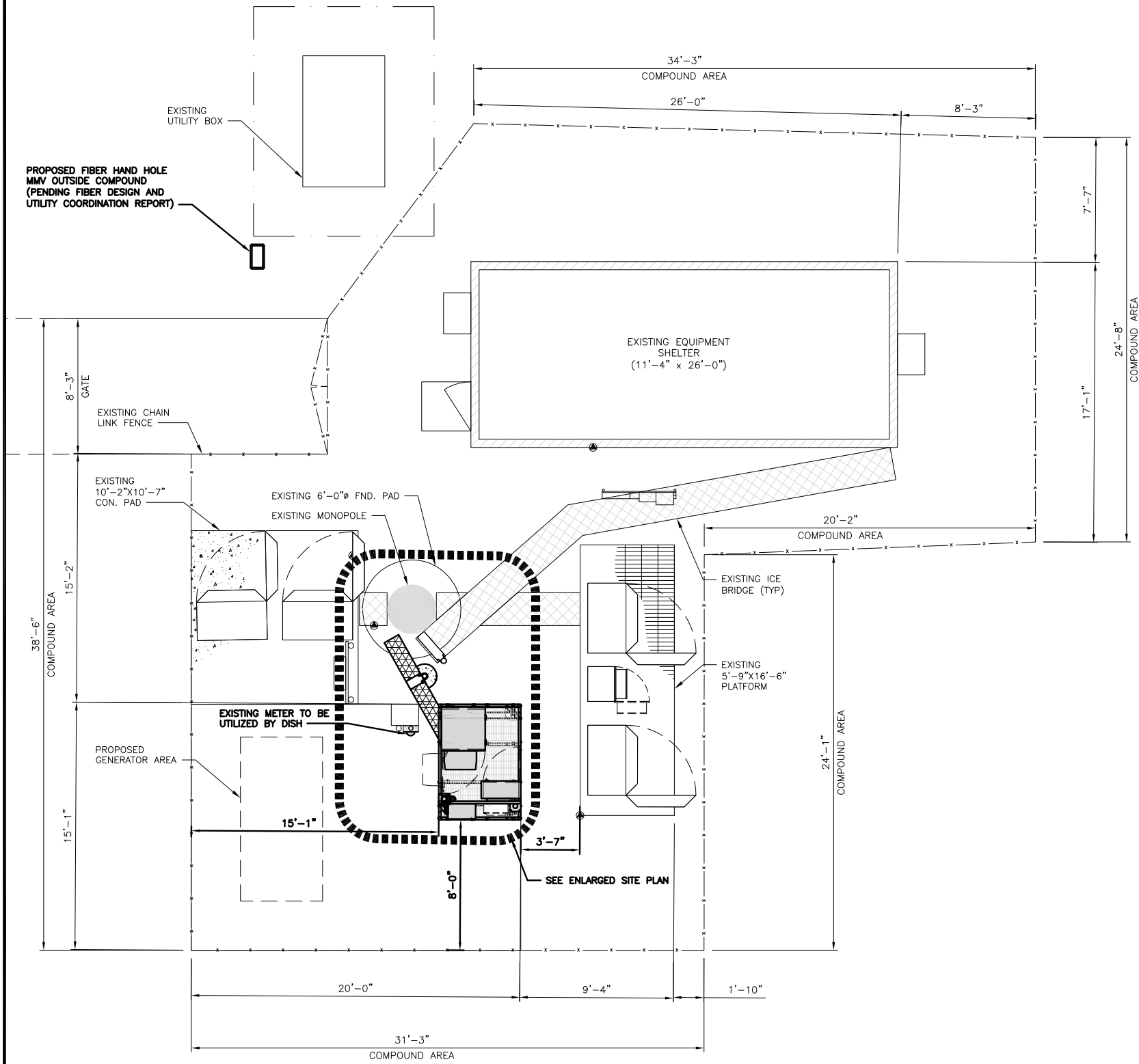
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

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	
SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
A-1	OVERALL AND ENLARGED SITE PLAN
A-2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT PLATFORM AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODE
GN-1	LEGEND AND ABBREVIATIONS
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES

NOTES

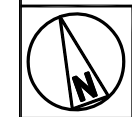
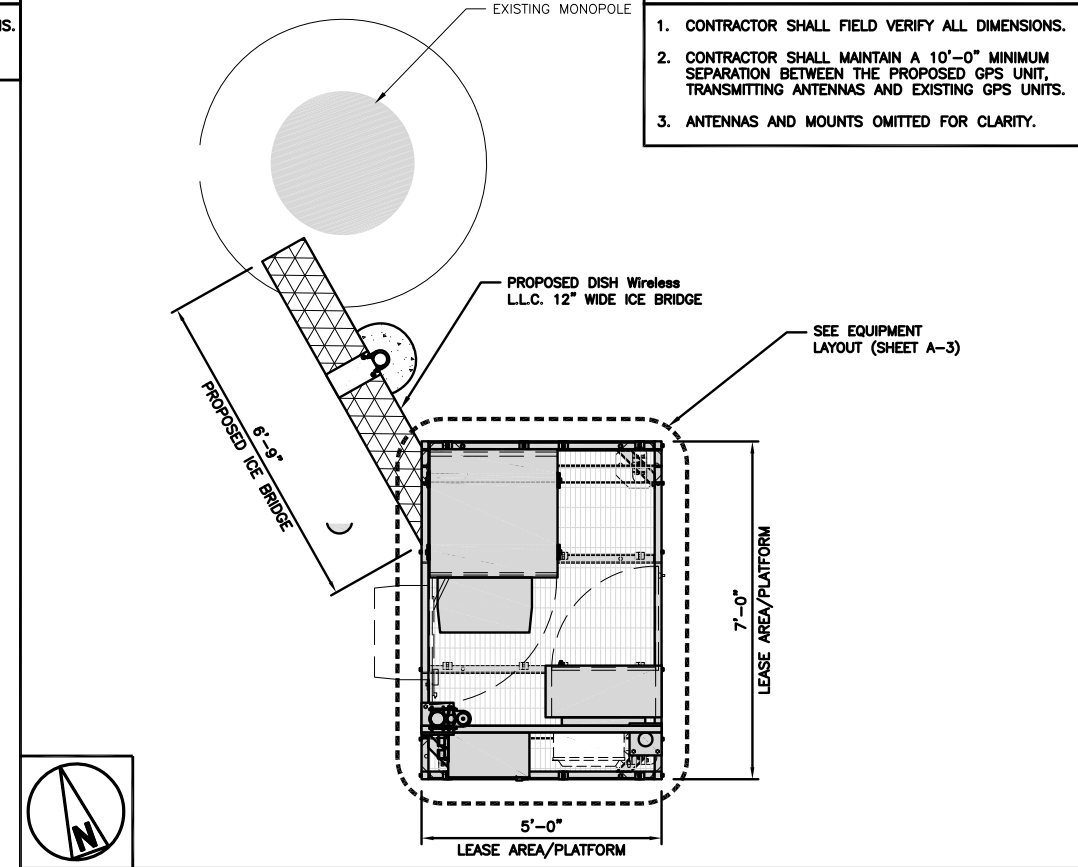
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



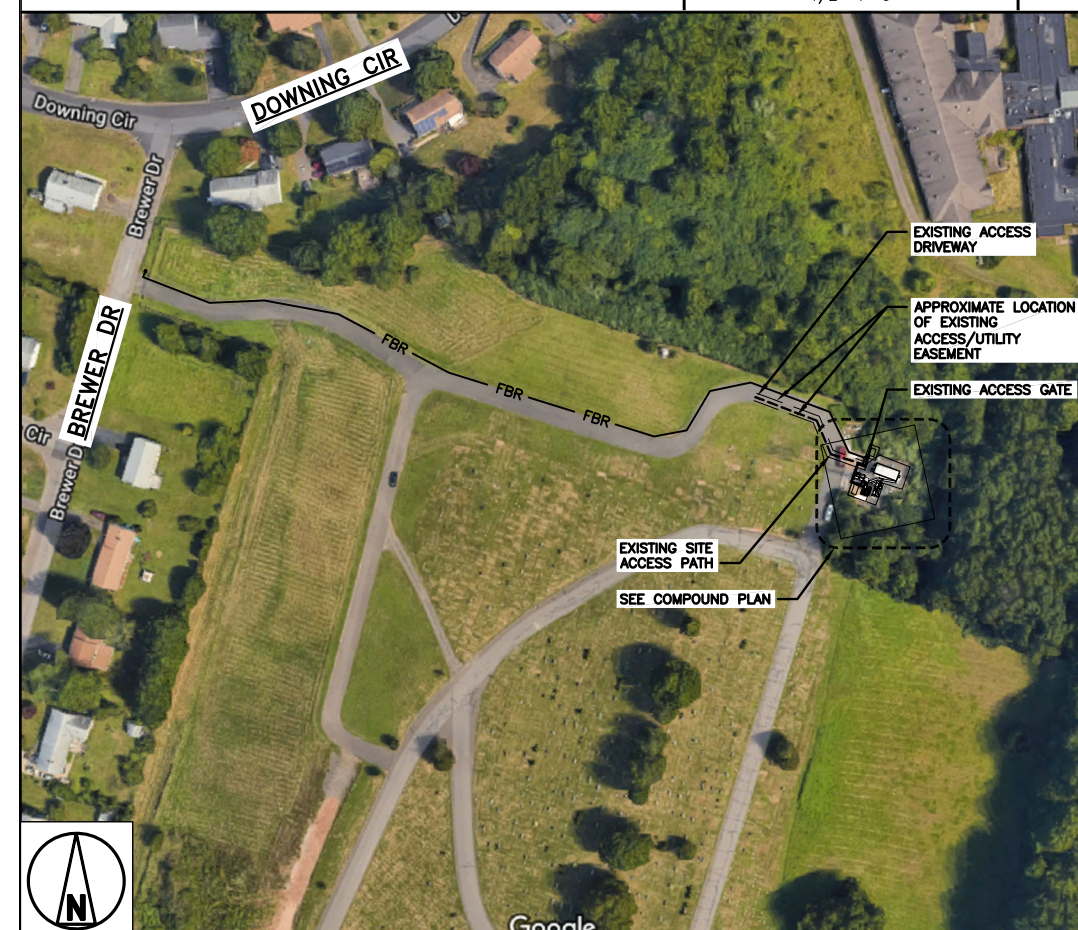
COMPOUND PLAN

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



SITE PLAN



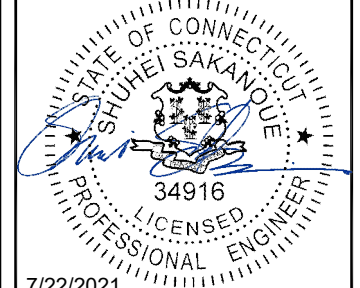
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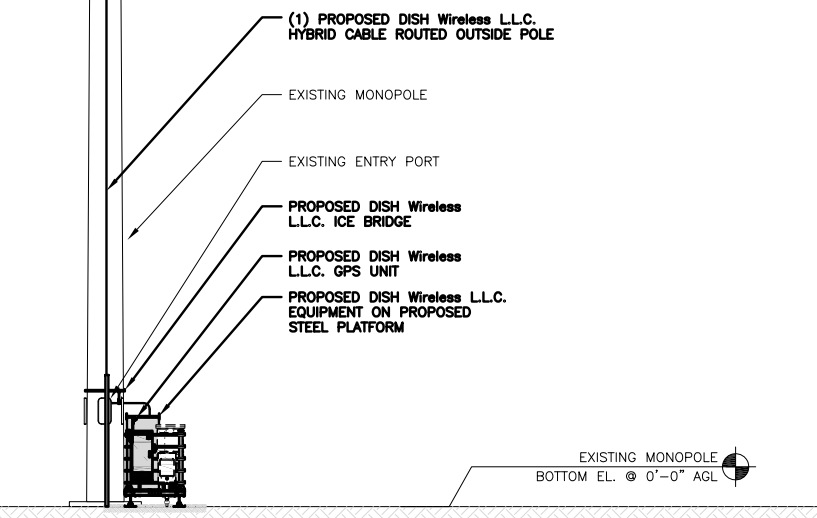
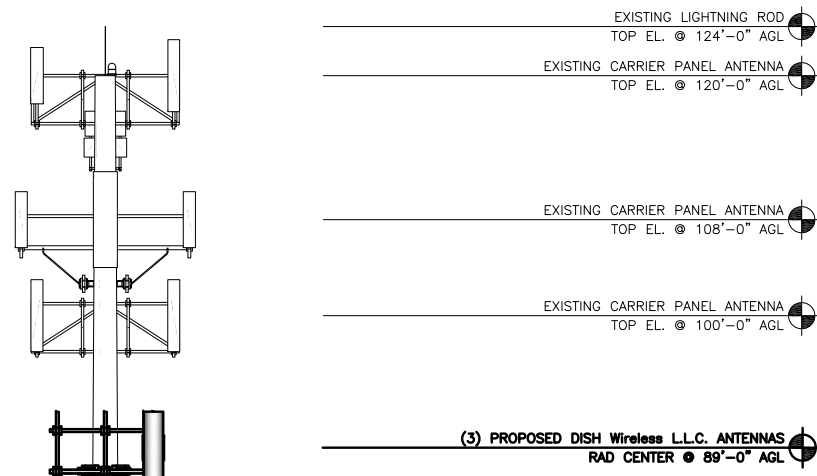
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00081A
28 BREWER DR.
BLOOMFIELD, CT 06002

SHEET TITLE
OVERALL AND ENLARGED
SITE PLAN

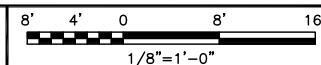
SHEET NUMBER
A-1

NOTES

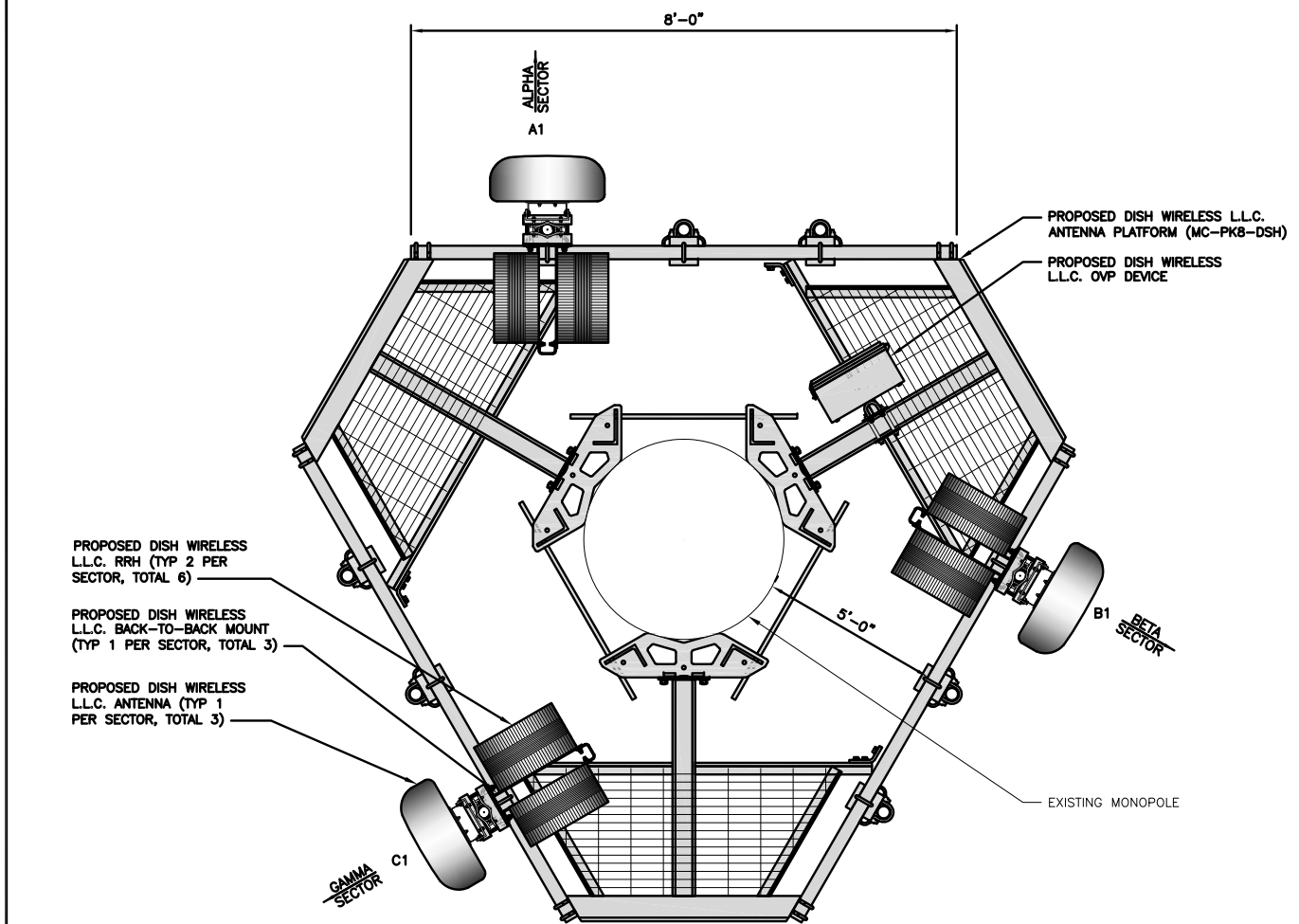
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



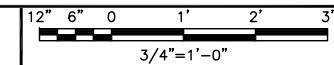
PROPOSED SOUTH ELEVATION



1



ANTENNA LAYOUT



2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS - MX08FRO665-21	5G	72.0" x 20.0"	0°	89'-0"	(1) HIGH-CAPACITY HYBRID CABLE (120' LONG)
BETA	B1	PROPOSED	JMA WIRELESS - MX08FRO665-21	5G	72.0" x 20.0"	120°	89'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS - MX08FRO665-21	5G	72.0" x 20.0"	240°	89'-0"	

- NOTES**
1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
 2. ANTENNA OR 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.

SECTOR	POSITION	RRH		NOTES
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY	
ALPHA	A1	FUJITSU - TA08025-B604	5G	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.
	A1	FUJITSU - TA08025-B605	5G	
BETA	B1	FUJITSU - TA08025-B604	5G	
	B1	FUJITSU - TA08025-B605	5G	
GAMMA	C1	FUJITSU - TA08025-B604	5G	
	C1	FUJITSU - TA08025-B605	5G	

ANTENNA SCHEDULE

NO SCALE

3



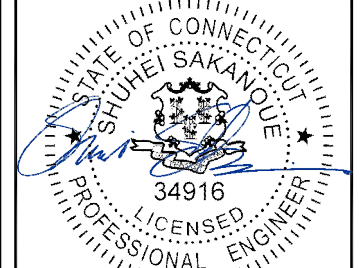
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DRAWN BY: RCD
CHECKED BY: SS
APPROVED BY: CJW

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	06/09/2021	ISSUED FOR REVIEW
0	07/08/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
6039-Z0001C

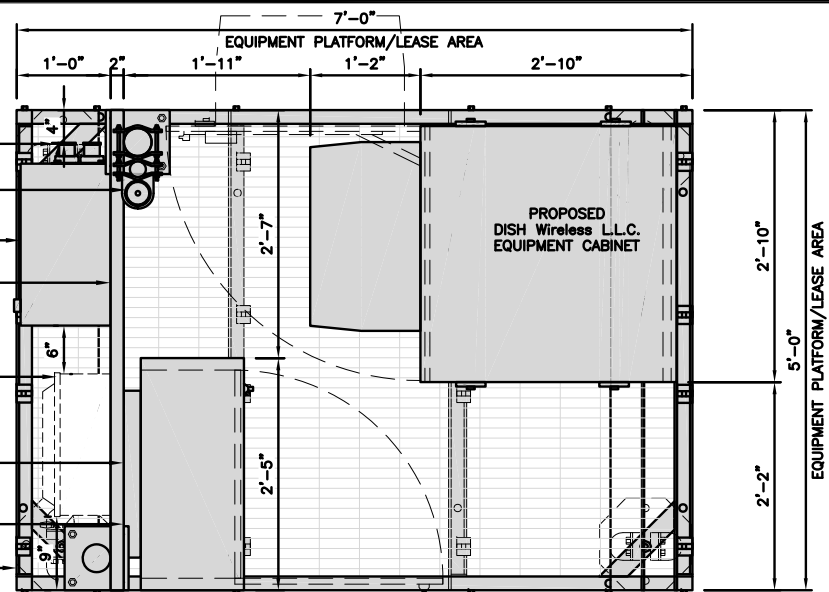
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00081A
28 BREWER DR.
BLOOMFIELD, CT 06002

SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

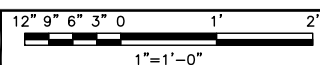
SHEET NUMBER

A-2

- PROPOSED DISH Wireless L.L.C. GENERATOR PLUG
- PROPOSED DISH Wireless L.L.C. GPS UNIT
- PROPOSED DISH Wireless L.L.C. POWER PROTECTIVE CABINET
- PROPOSED DISH Wireless L.L.C. H-FRAME
- PROPOSED DISH Wireless L.L.C. SAFETY SWITCH. SPACE RESERVED FOR ADDITIONAL DISCONNECT IF REQUIRED.
- PROPOSED DISH Wireless L.L.C. TELCO FIBER ENCLOSURE
- PROPOSED DISH Wireless L.L.C. FIBER NID, IF REQUIRED
- PROPOSED DISH Wireless L.L.C. EQUIPMENT PLATFORM



PLATFORM EQUIPMENT PLAN

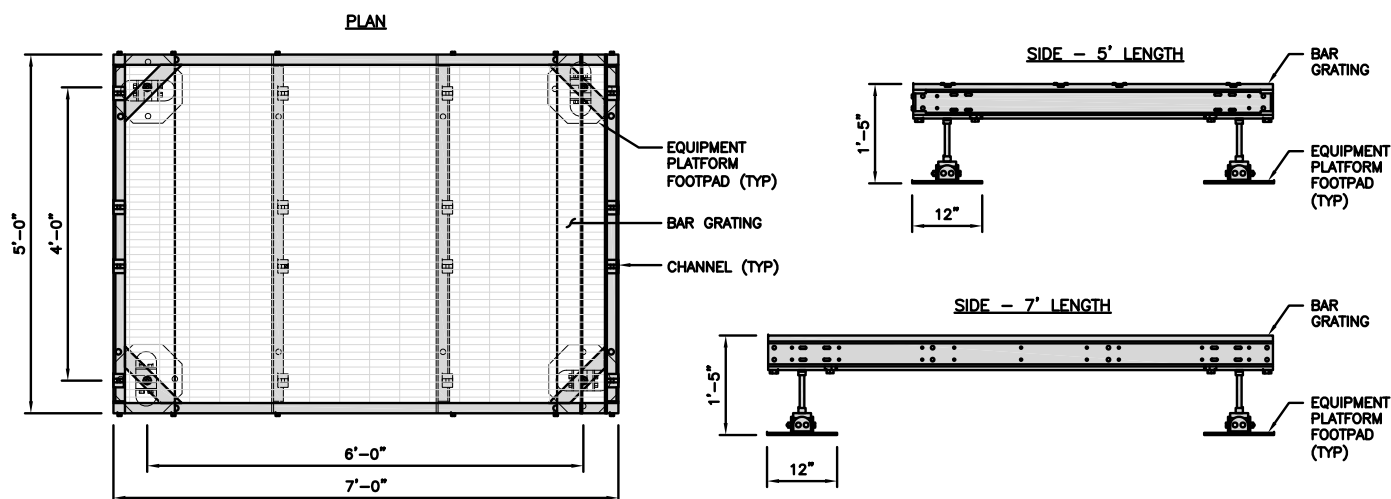


1

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"

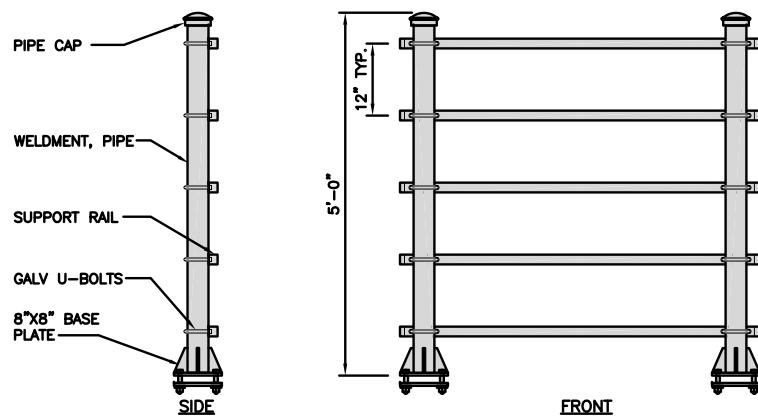
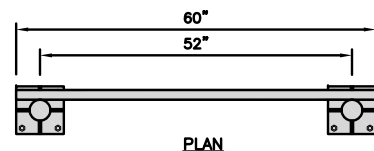


PLATFORM DETAIL

NO SCALE 2

KENWOOD T1701KT5-5S H-FRAME

UNISTRUT/SUPPORT RAIL	5
WEIGHT/ VOLUME	173.6 LBS



H-FRAME DETAIL

NO SCALE 3

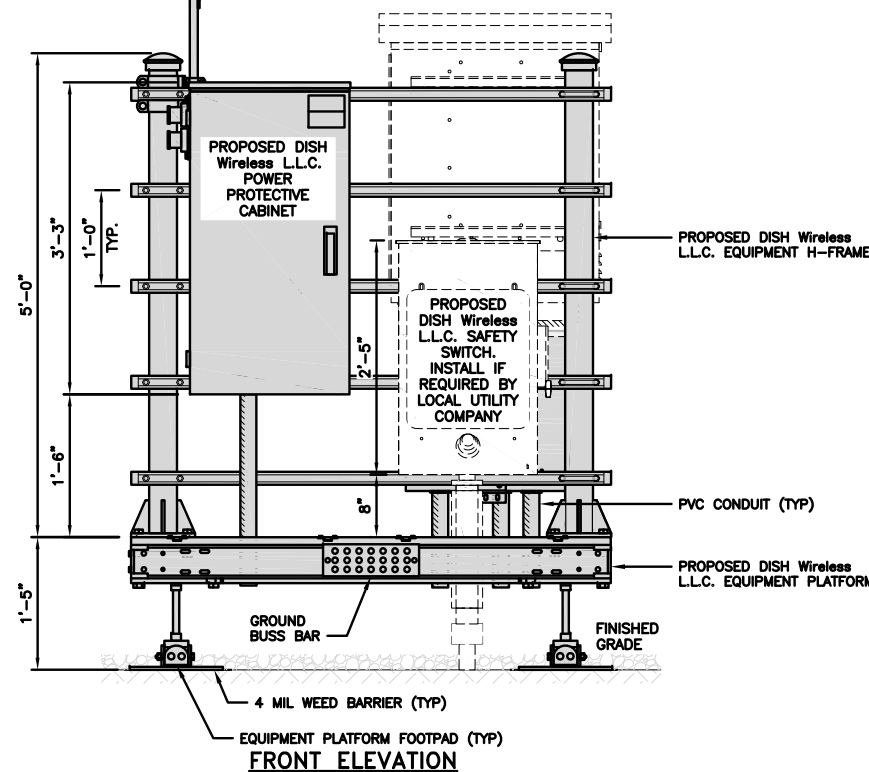
NOT USED

NO SCALE 4

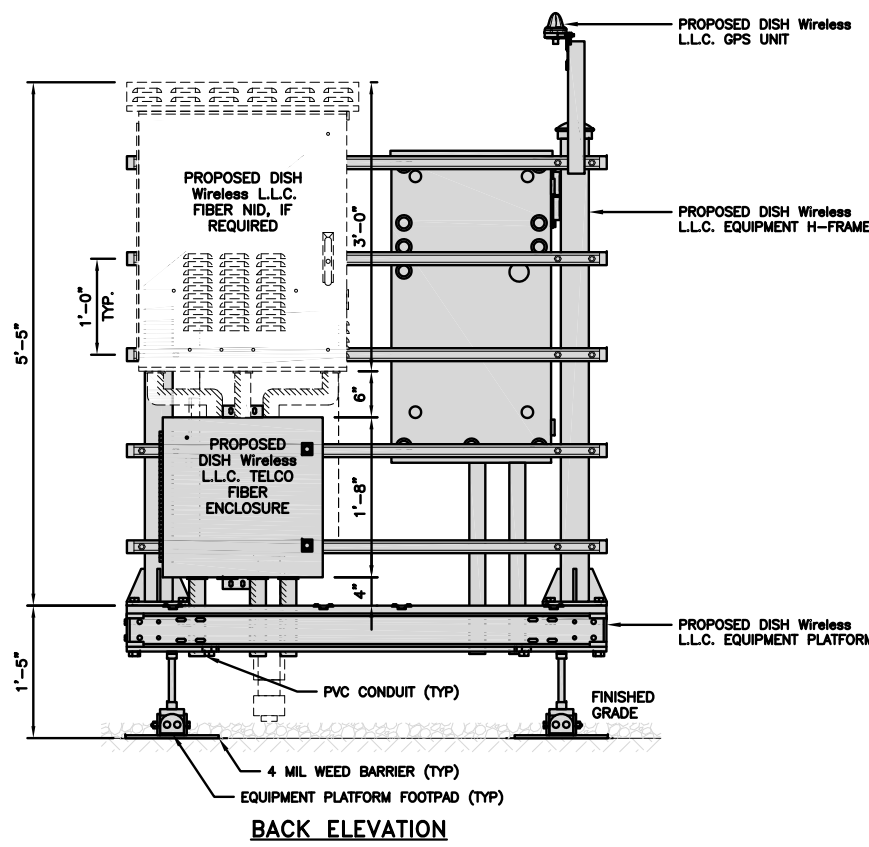
NOTES

- CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
- 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)
- EQUIPMENT CABINET OMITTED FOR CLARITY

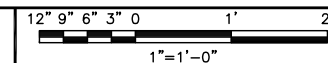
PROPOSED DISH Wireless L.L.C. GPS UNIT



FRONT ELEVATION



BACK ELEVATION



5

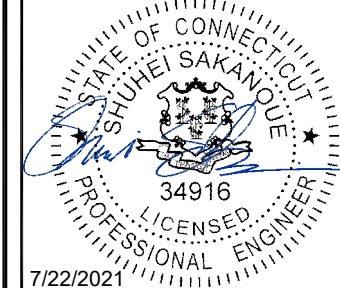


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RCD	SS	CJW

RFDS REV #: N/A

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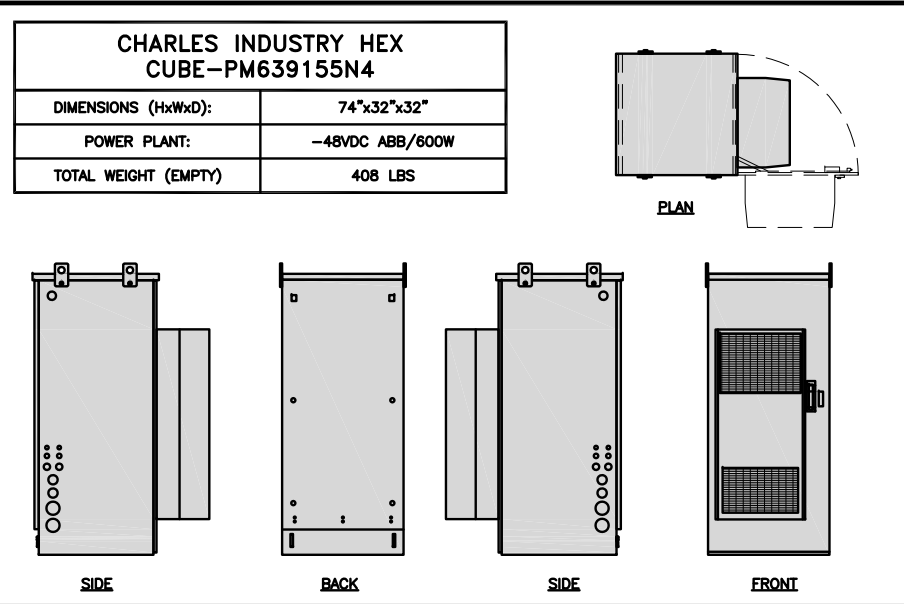
A&E PROJECT NUMBER
6039-Z0001C

DISH Wireless L.L.C. PROJECT INFORMATION
BOBDL00081A
28 BREWER DR.
BLOOMFIELD, CT 06002

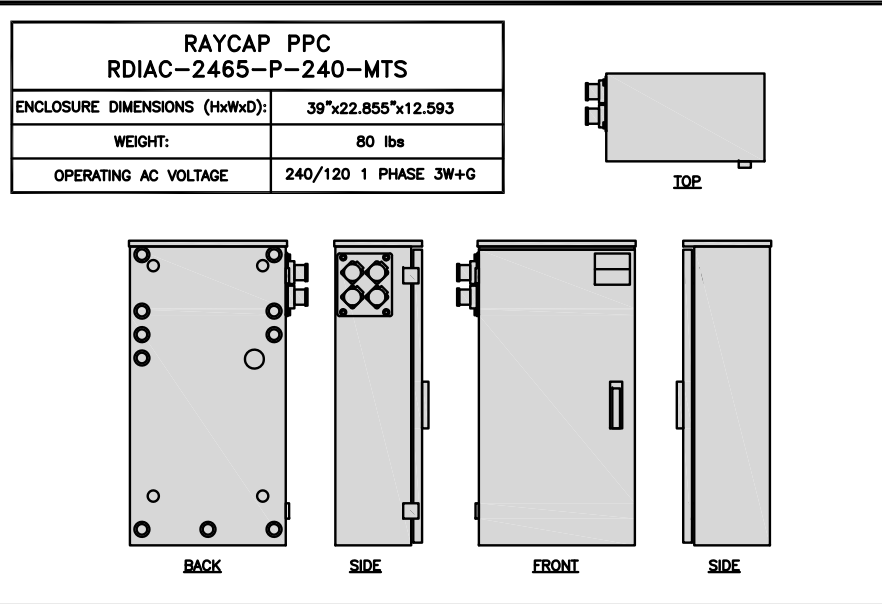
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER

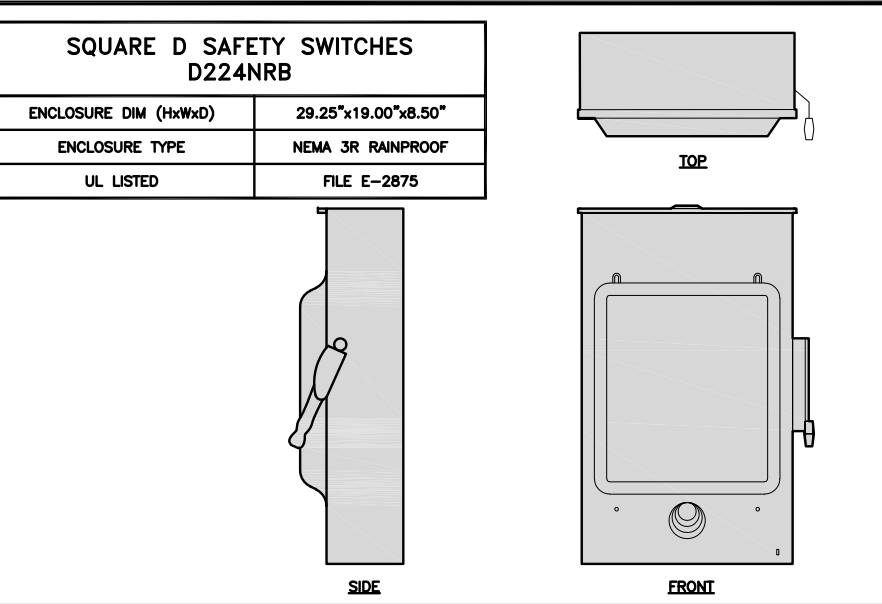
A-3



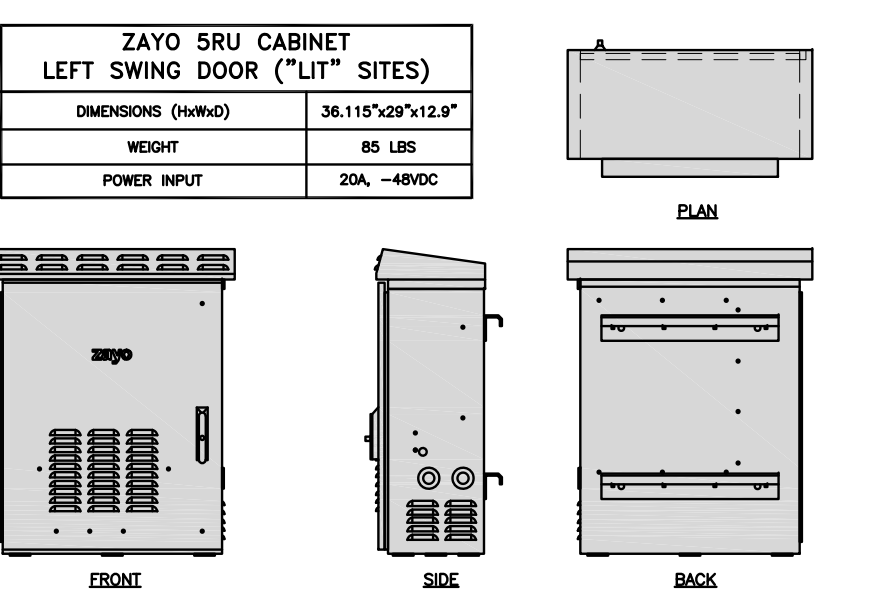
CABINET DETAIL NO SCALE 1



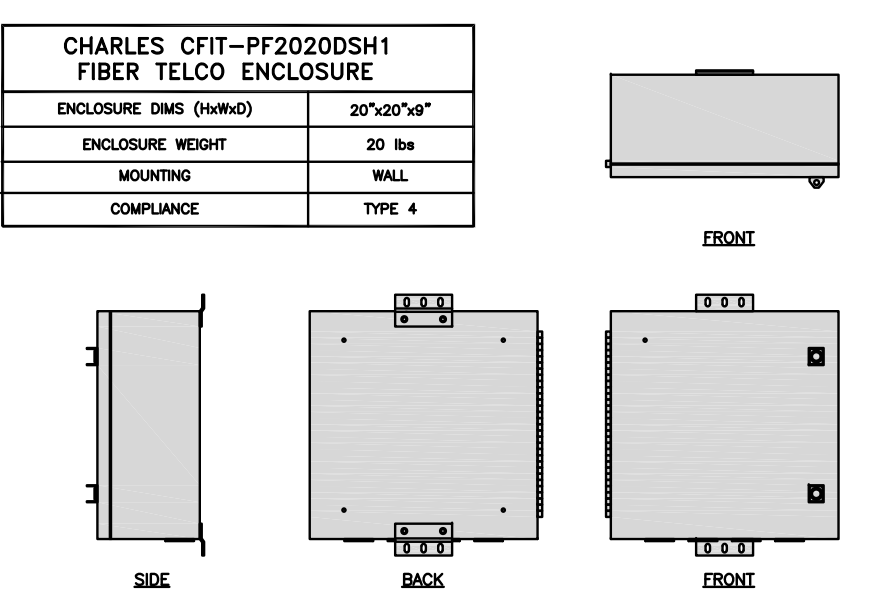
POWER PROTECTION CABINET (PPC) DETAIL NO SCALE 2



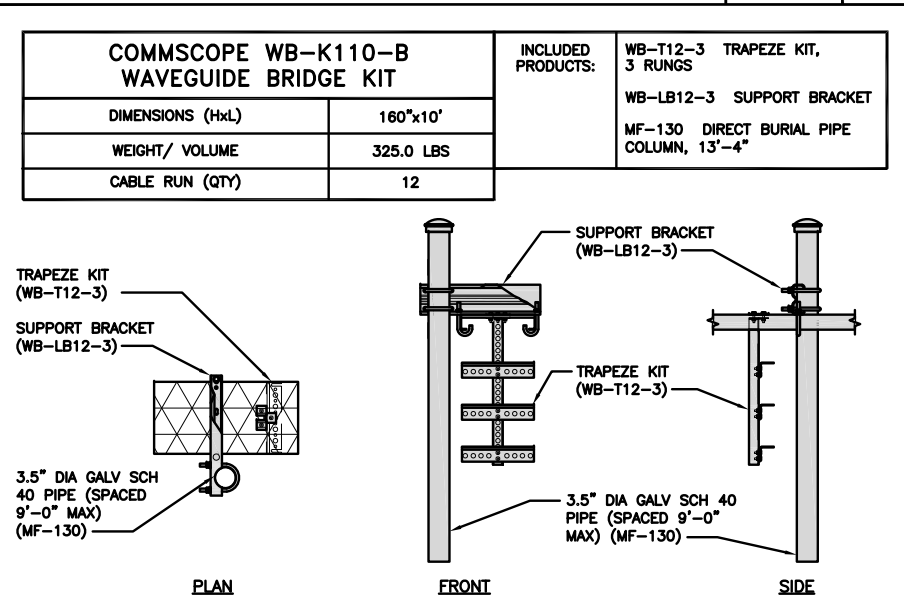
SAFETY SWITCH DETAIL NO SCALE 3



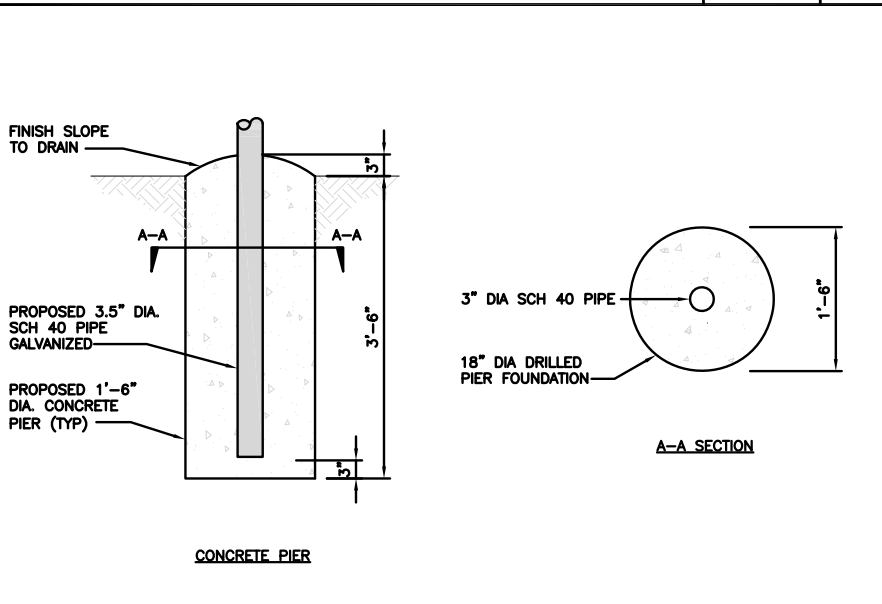
NETWORK INTERFACE UNIT DETAIL NO SCALE 5



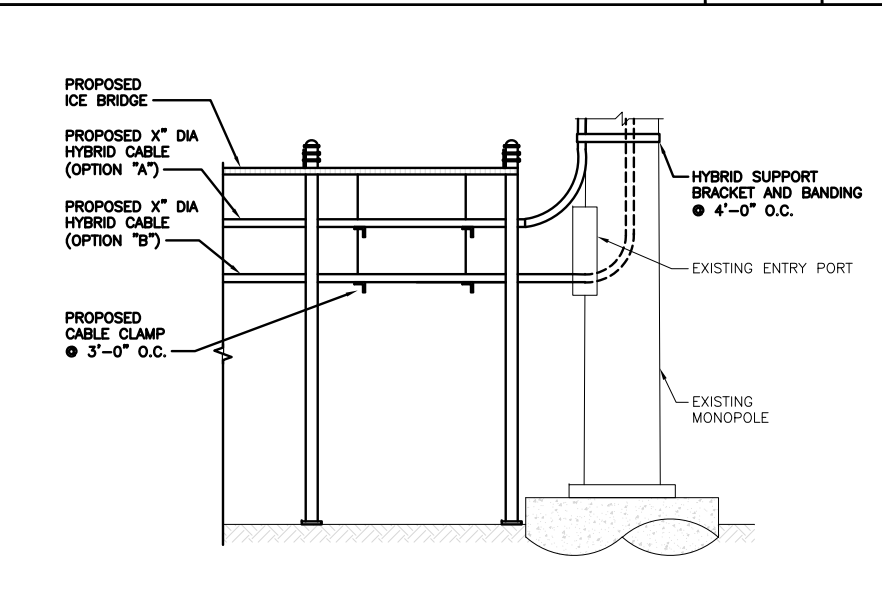
FIBER TELCO ENCLOSURE DETAIL NO SCALE 6



ICE BRIDGE DETAIL NO SCALE 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL NO SCALE 8



HYBRID CABLE RUN NO SCALE 9

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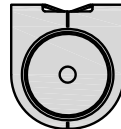
A&E PROJECT NUMBER
6039-Z0001C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00081A
28 BREWER DR.
BLOOMFIELD, CT 06002

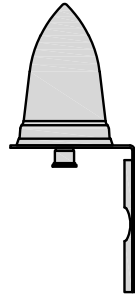
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

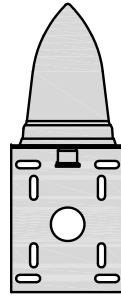
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



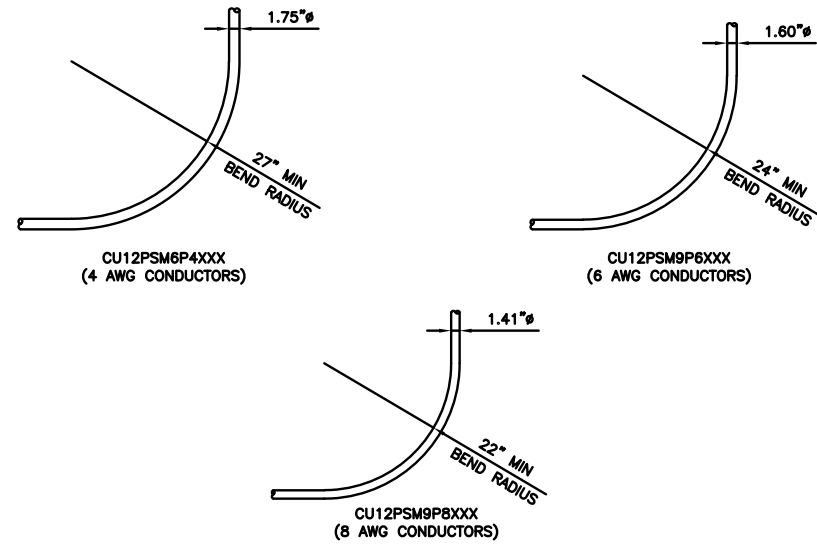
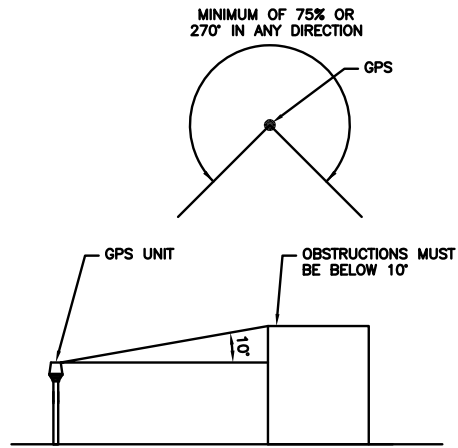
TOP



BACK



SIDE



GPS DETAIL

NO SCALE

1

GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

2

CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUS

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

dish
wireless.

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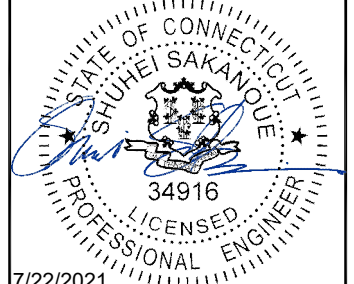
CROWN CASTLE

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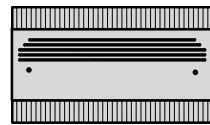
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00081A
28 BREWER DR.
BLOOMFIELD, CT 06002

SHEET TITLE
EQUIPMENT DETAILS

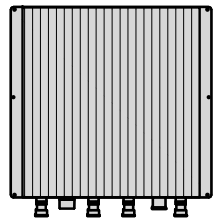
SHEET NUMBER

A-5

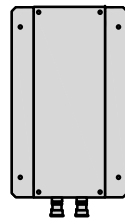
FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



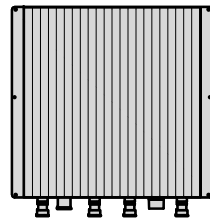
PLAN



BACK



SIDE



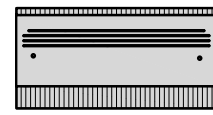
FRONT

RRH DETAIL

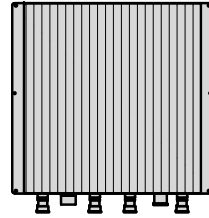
NO SCALE

1

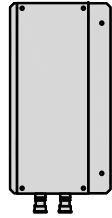
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



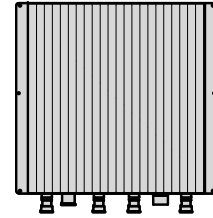
PLAN



BACK



SIDE



FRONT

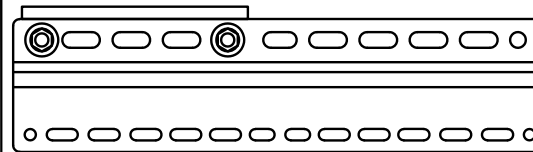
RRH DETAIL

NO SCALE

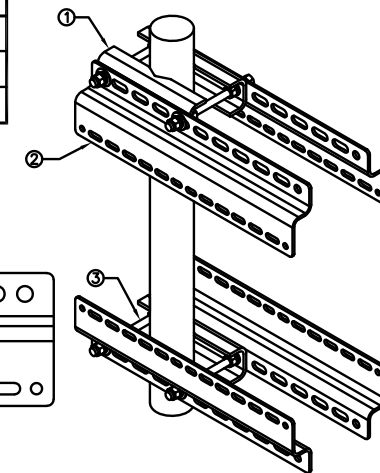
2

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

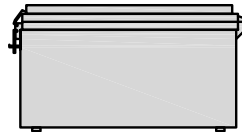


RRH MOUNT DETAIL

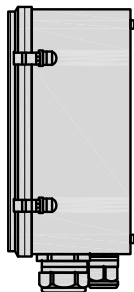
NO SCALE

3

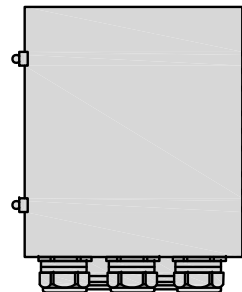
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



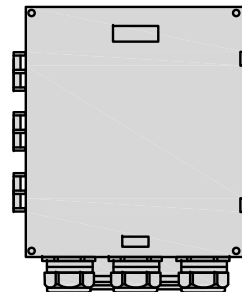
PLAN



SIDE



BACK



FRONT

SURGE SUPPRESSION DETAIL

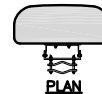
NO SCALE

4

JMA WIRELESS MX08FR0665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.8"x20.0"x8.0"
TOTAL WEIGHT	64.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE

NOTES

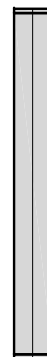
FINAL ANTENNA SPECIFICATIONS
TO BE CONFIRMED BY GC



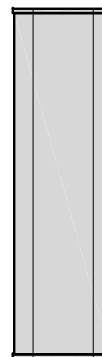
PLAN



BACK



SIDE



FRONT

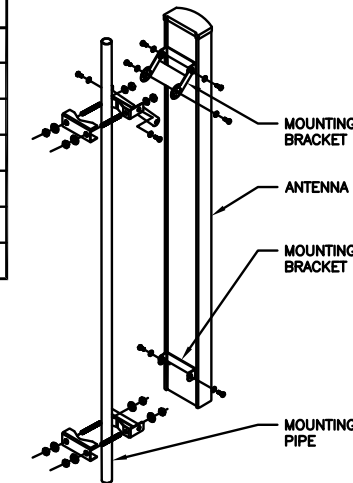
ANTENNA DETAIL

NO SCALE

5

M04 MOUNTING BRACKET HPA-33R-BUU-H4-K	
WIDTH	5"
DEPTH	2"
HEIGHT	8"
TOTAL WEIGHT	1.5 lbs
HOUSING MATERIAL	ASA/ABS/ALUMINUM
RADOME COLOR	LIGHT GRAY
CONNECTOR	1x8-PIN DAISY CHAIN

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

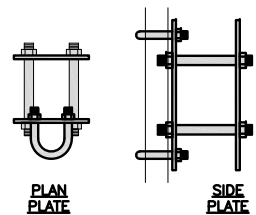


ANTENNA MOUNTING DETAIL

NO SCALE

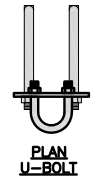
6

COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11.023 LBS



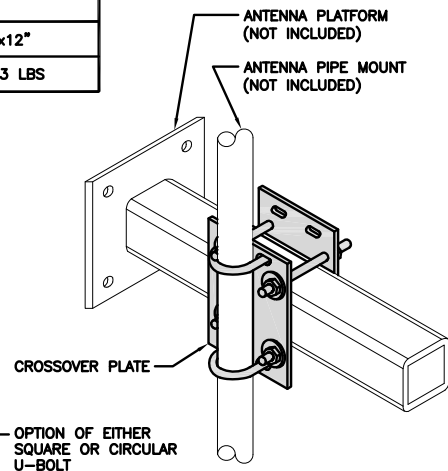
PLAN PLATE

SIDE PLATE



PLAN U-BOLT

SIDE U-BOLT



CROSSOVER PLATE

OPTION OF EITHER
SQUARE OR CIRCULAR
U-BOLT

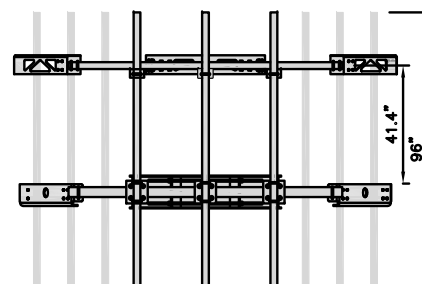
RRH/OVP MOUNT DETAIL

NO SCALE

7

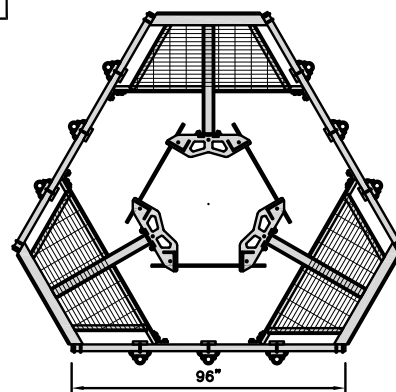
COMMSCOPE MC-PK8-DSH	
FACE WIDTH	96"
WEIGHT	1373.08 lbs
NOTE: 15" TO 38" O.D.	

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



41.4"

96"



96"

ANTENNA PLATFORM DETAIL

NO SCALE

8

NOT USED

NO SCALE

9

dish
wireless.

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**CROWN
CASTLE**

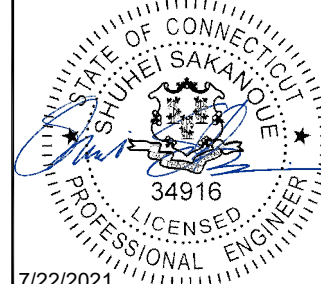
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RCD SS CJW

RFDS REV #: N/A

CONSTRUCTION
DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/09/2021	ISSUED FOR REVIEW
0	07/08/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
6039-Z0001C

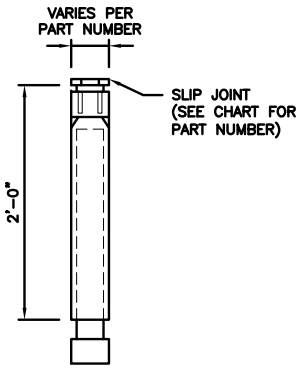
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00081A
28 BREWER DR.
BLOOMFIELD, CT 06002

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-6

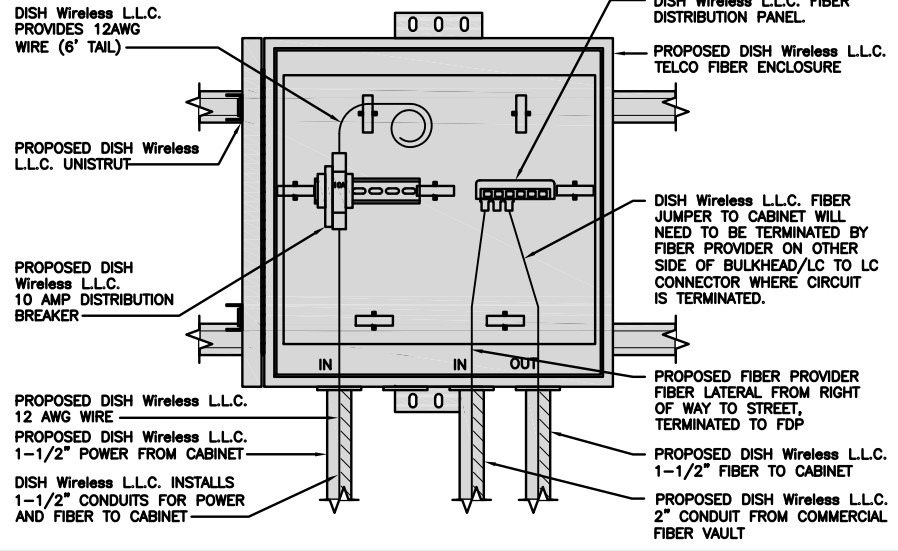
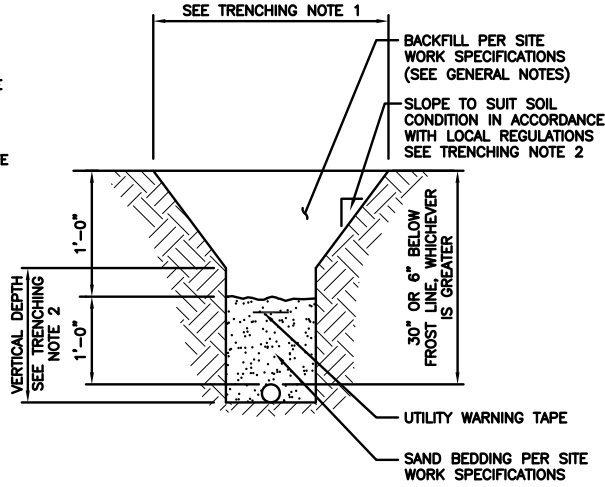
CARLON EXPANSION FITTINGS				
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
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.

TRENCHING NOTES

- 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.
- TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
- 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.



EXPANSION JOINT DETAIL

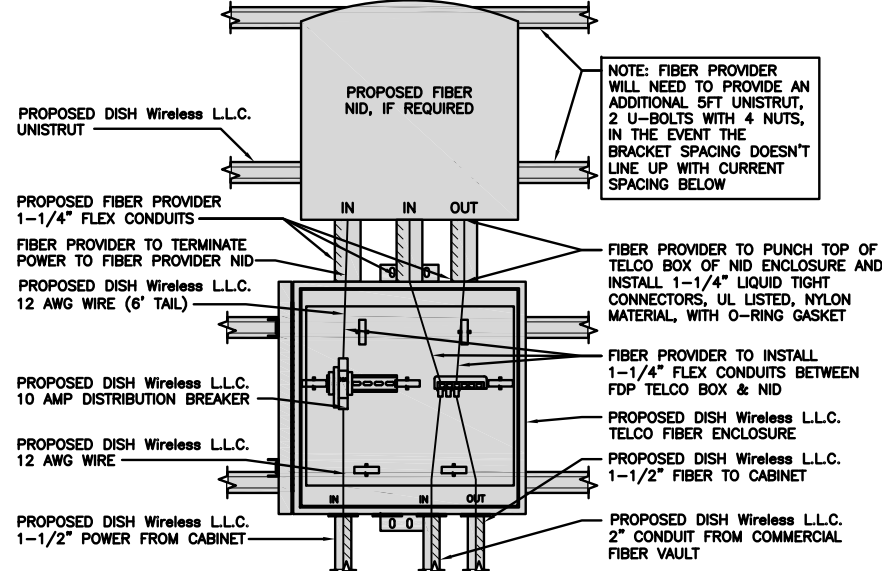
NO SCALE 1

TYPICAL UNDERGROUND TRENCH DETAIL

NO SCALE 2

DARK TELCO BOX – INTERIOR WIRING LAYOUT

NO SCALE 3



NOTE: FIBER PROVIDER WILL NEED TO PROVIDE AN ADDITIONAL 5FT UNISTRUT, 2 U-BOLTS WITH 4 NUTS, IN THE EVENT THE BRACKET SPACING DOESN'T LINE UP WITH CURRENT SPACING BELOW

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



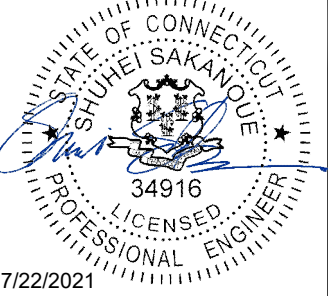
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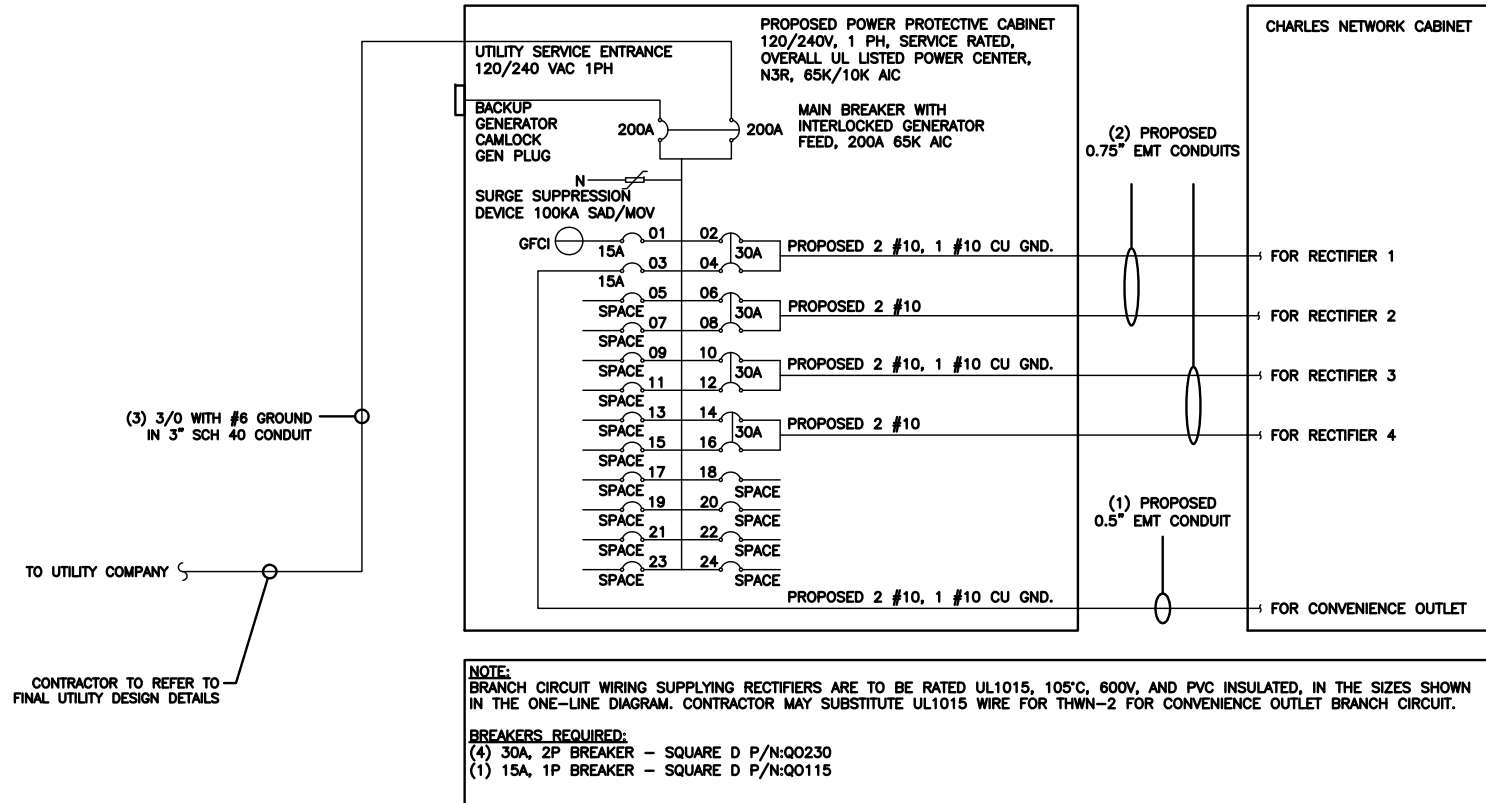
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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00081A
28 BREWER DR.
BLOOMFIELD, CT 06002

SHEET TITLE
ELECTRICAL
DETAILS

SHEET NUMBER

E-2



NOTES

THE (2) CONDUITS WITH (4) CURRENT CARRYING CONDUCTORS EACH, SHALL APPLY THE ADJUSTMENT FACTOR OF 80% PER 2014/17 NEC TABLE 310.15(B)(3)(g) OR 2020 NEC TABLE 310.15(C)(1) FOR UL1015 WIRE.

#12 FOR 15A-20A/1P BREAKER: 0.8 x 30A = 24.0A
 #10 FOR 25A-30A/2P BREAKER: 0.8 x 40A = 32.0A
 #8 FOR 35A-40A/2P BREAKER: 0.8 x 55A = 44.0A
 #6 FOR 45A-60A/2P BREAKER: 0.8 x 75A = 60.0A

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 (2 CONDUITS): USING UL1015, CU.
 #10 - 0.0266 SQ. IN X 4 = 0.1064 SQ. IN
 #10 - 0.0082 SQ. IN X 1 = 0.0082 SQ. IN <BARE GROUND
 TOTAL = 0.1146 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (5) 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.

dish wireless.

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STATE OF CONNECTICUT
 SHUHEI SAKANOU
 34916
 LICENSED PROFESSIONAL ENGINEER
 7/22/2021

PPC ONE-LINE DIAGRAM

NO SCALE 1

PROPOSED CHARLES PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS)		TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS)		LOAD SERVED
	L1	L2						L1	L2	
PPC GFCI OUTLET	180	180	15A	1	A	2	30A	2880	2880	ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET	180	180	15A	3	B	4	30A	2880	2880	ABB/GE INFINITY RECTIFIER 1
-SPACE-				5	A	6	30A	2880	2880	ABB/GE INFINITY RECTIFIER 2
-SPACE-				7	B	8	30A	2880	2880	ABB/GE INFINITY RECTIFIER 2
-SPACE-				9	A	10	30A	2880	2880	ABB/GE INFINITY RECTIFIER 3
-SPACE-				11	B	12	30A	2880	2880	ABB/GE INFINITY RECTIFIER 3
-SPACE-				13	A	14	30A	2880	2880	ABB/GE INFINITY RECTIFIER 4
-SPACE-				15	B	16	30A	2880	2880	ABB/GE INFINITY RECTIFIER 4
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS		180	180					11520	11520	
200A MCB, 1φ, 24 SPACE, 120/240V				L1	L2					
MB RATING: 65,000 AIC				11700	11700					
				98	98					
				98						
				123						

PANEL SCHEDULE

NO SCALE 2

NOT USED

NO SCALE 3

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RFDS REV #: N/A

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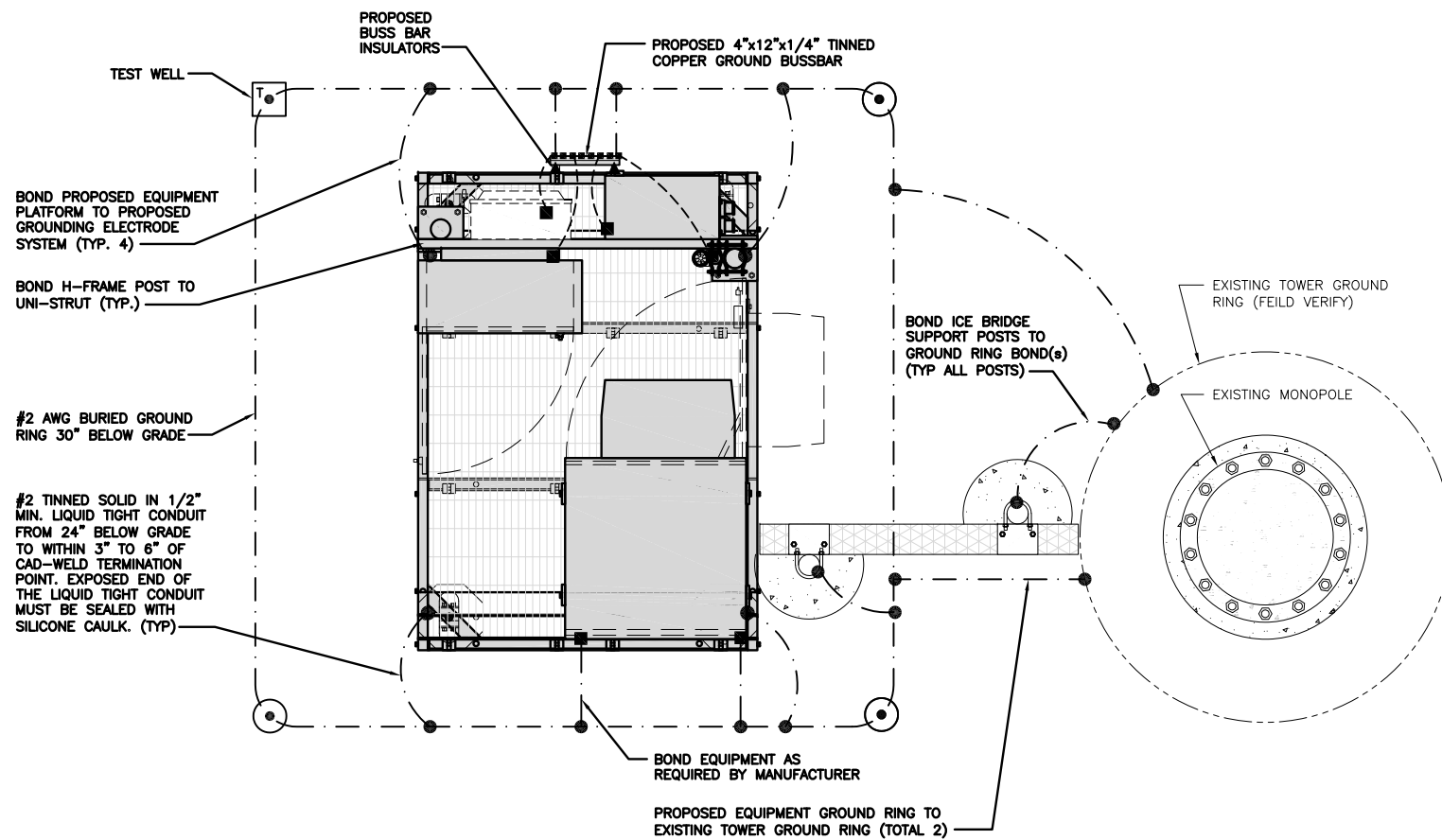
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BOBDL00081A
28 BREWER DR.
BLOOMFIELD, CT 06002

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

SHEET NUMBER
E-3

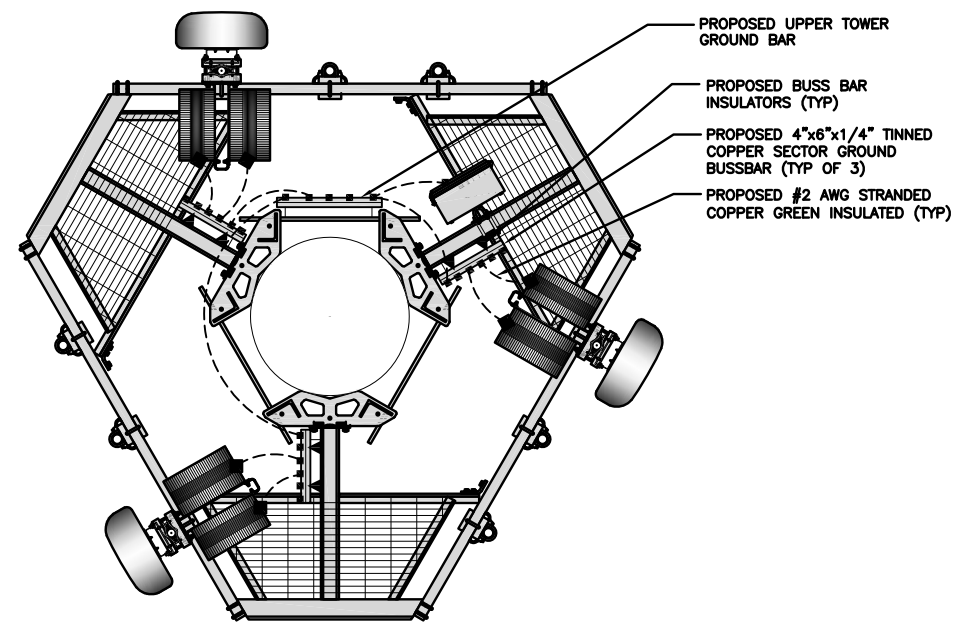


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1

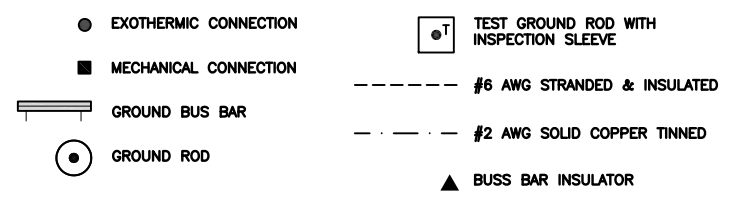
NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2



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



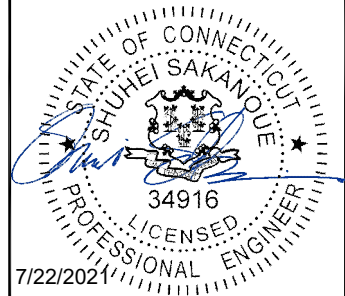
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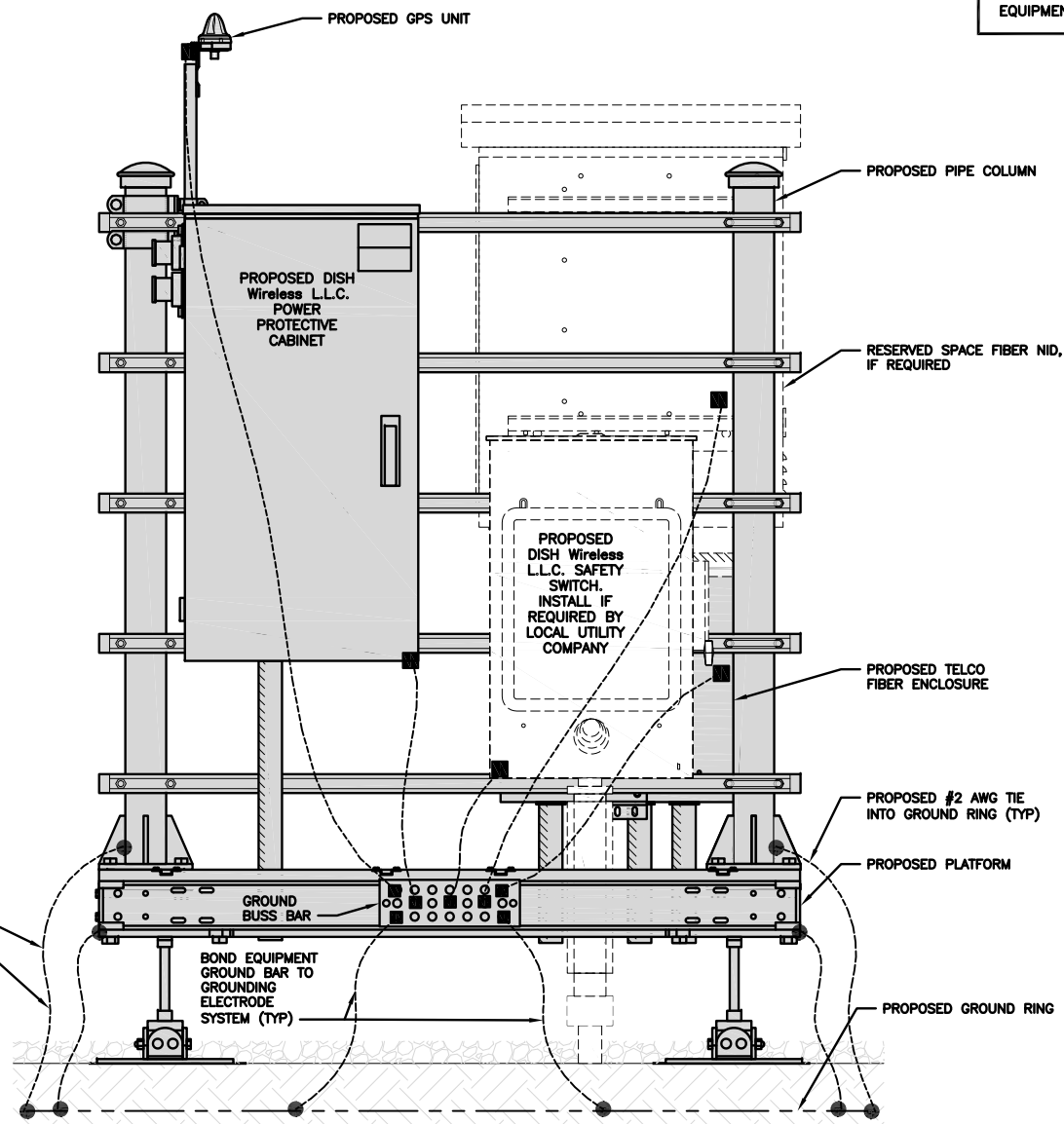
SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

G-1

NOTES

EQUIPMENT CABINET OMITTED FOR CLARITY

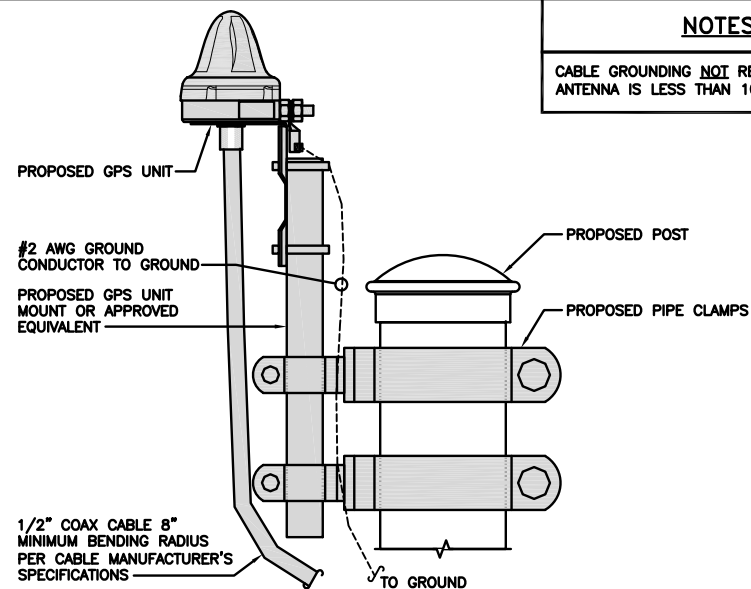


H-FRAME GROUNDING DETAIL

NO SCALE 1

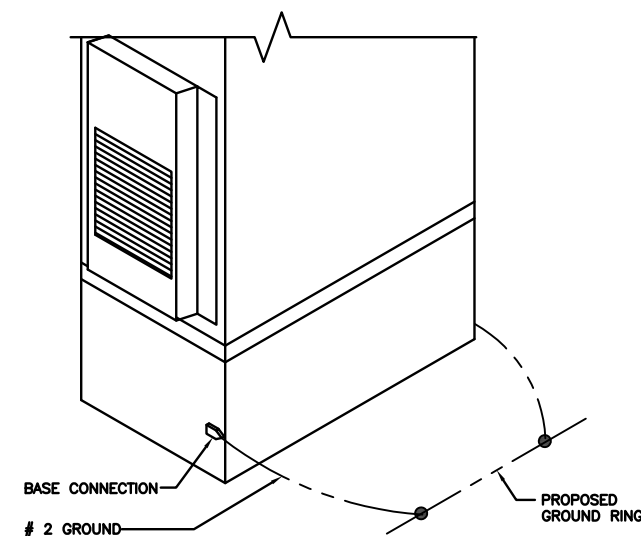
NOTES

CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



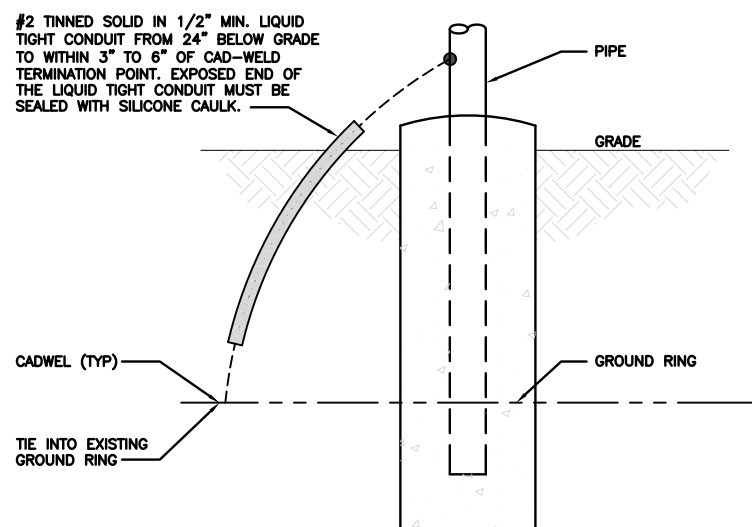
TYPICAL GPS UNIT GROUNDING

NO SCALE 2



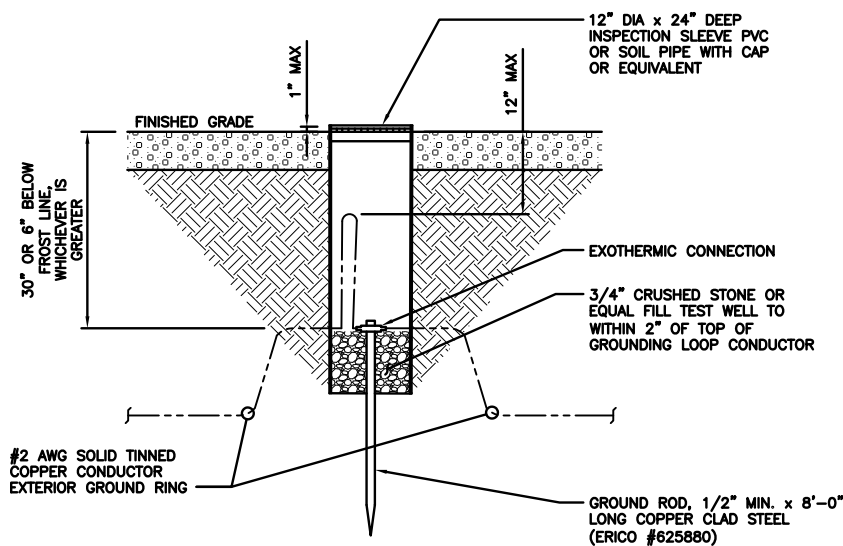
OUTDOOR CABINET GROUNDING

NO SCALE 3



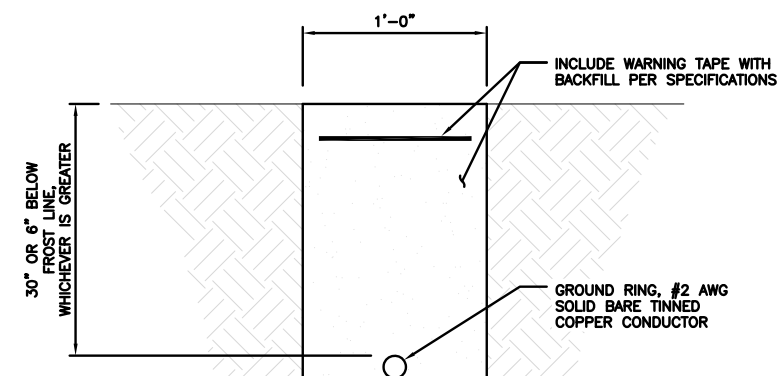
TRANSITIONING GROUND DETAIL

NO SCALE 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

NO SCALE 5



TYPICAL GROUND RING TRENCH

NO SCALE 6

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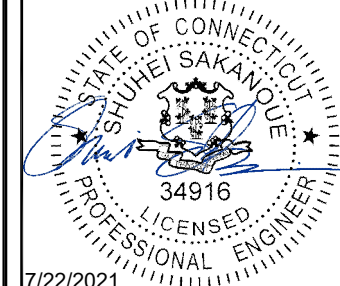
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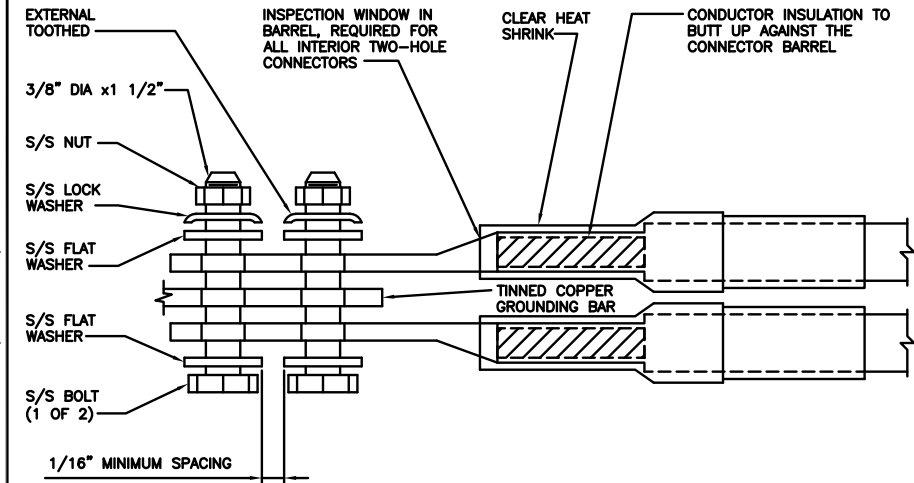
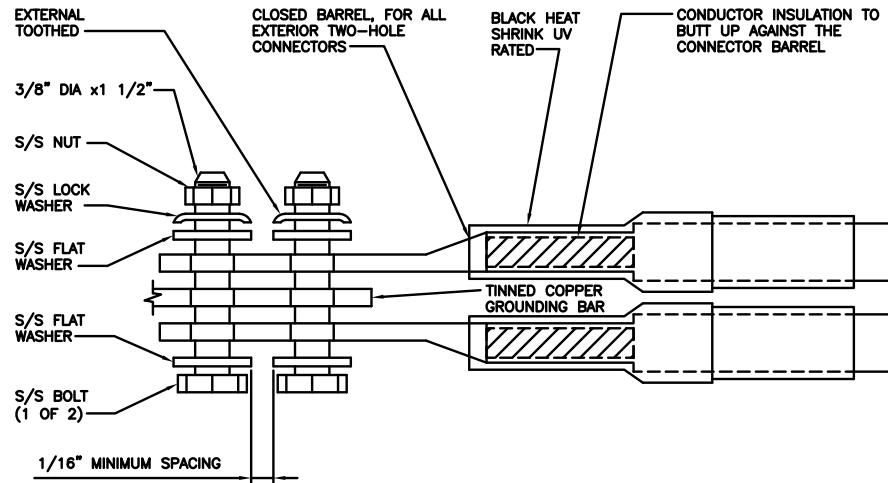
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28 BREWER DR.
BLOOMFIELD, CT 06002

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.
9. 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

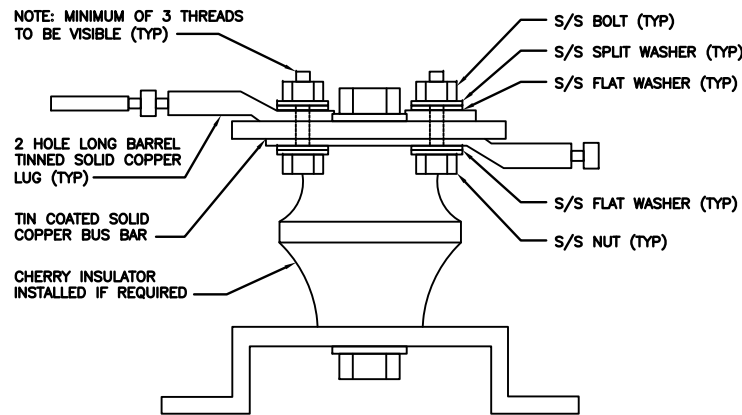
NO SCALE

2

TYPICAL INTERIOR TWO HOLE LUG

NO SCALE

3



LUG DETAIL

NO SCALE

4

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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wireless.

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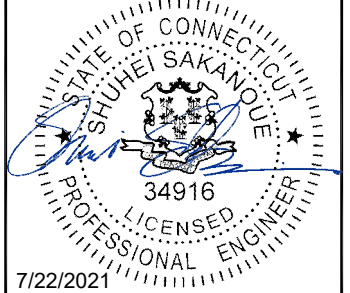
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SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER

G-3

RF JUMPER COLOR CODING

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

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

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

ALPHA RRH				BETA RRH				GAMMA RRH			
PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT
RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
ORANGE	ORANGE	RED	RED	ORANGE	ORANGE	BLUE	BLUE	ORANGE	ORANGE	GREEN	GREEN
	WHITE (-) PORT	ORANGE	ORANGE		WHITE (-) PORT	ORANGE	ORANGE		WHITE (-) PORT	ORANGE	ORANGE
			WHITE (-) PORT				WHITE (-) PORT				WHITE (-) PORT

MID-BAND RRH -
(AWS BANDS N66+N70)

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

RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
PURPLE	PURPLE	RED	RED	PURPLE	PURPLE	BLUE	BLUE	PURPLE	PURPLE	GREEN	GREEN
	WHITE (-) PORT	PURPLE	PURPLE		WHITE (-) PORT	PURPLE	PURPLE		WHITE (-) PORT	PURPLE	PURPLE
			WHITE (-) PORT				WHITE (-) PORT				WHITE (-) PORT

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 1	EXAMPLE 2	EXAMPLE 3
RED	RED	RED
BLUE	BLUE	
GREEN	GREEN	ORANGE
ORANGE	YELLOW	PURPLE
PURPLE		

FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

RET MOTORS AT ANTENNAS

ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"	ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"	ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

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

FORWARD AZIMUTH OF 0-120 DEGREES		FORWARD AZIMUTH OF 120-240 DEGREES		FORWARD AZIMUTH OF 240-360 DEGREES	
PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
RED	RED	BLUE	BLUE	GREEN	GREEN
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
	RED		BLUE		GREEN
	WHITE		WHITE		WHITE

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

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

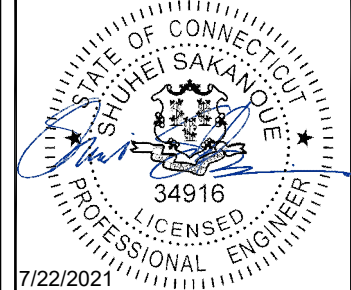
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TO ALTER THIS DOCUMENT.

DRAWN BY: CHECKED BY: APPROVED BY:

RCD SS CJW

RFDS REV #: N/A

CONSTRUCTION
DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/09/2021	ISSUED FOR REVIEW
D	07/08/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

6039-Z0001C

DISH Wireless L.L.C.
PROJECT INFORMATION

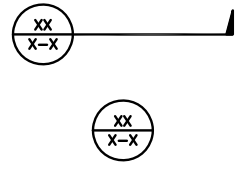
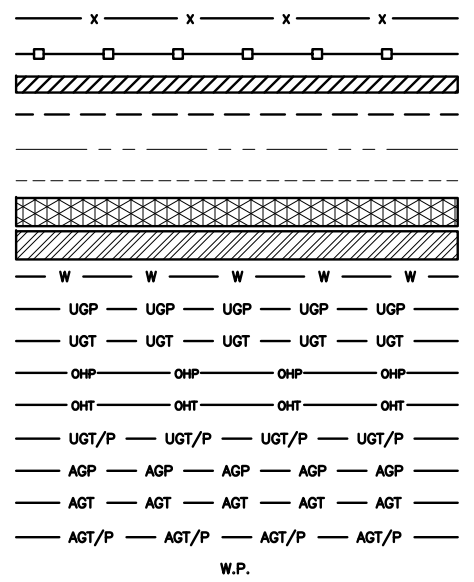
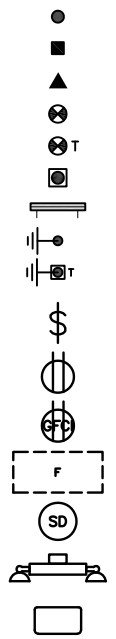
BOBDL00081A
28 BREWER DR.
BLOOMFIELD, CT 06002

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

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-DOBTD
 CHAIN LINK FENCE
 WOOD/WROUGHT IRON FENCE
 WALL STRUCTURE
 LEASE AREA
 PROPERTY LINE (PL)
 SETBACKS
 ICE BRIDGE
 CABLE TRAY
 WATER LINE
 UNDERGROUND POWER
 UNDERGROUND TELCO
 OVERHEAD POWER
 OVERHEAD TELCO
 UNDERGROUND TELCO/POWER
 ABOVE GROUND POWER
 ABOVE GROUND TELCO
 ABOVE GROUND TELCO/POWER
 WORKPOINT



SECTION REFERENCE
 DETAIL REFERENCE

LEGEND

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 UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
 VIF VERIFIED IN FIELD
 W WIDE
 W/ WITH
 WD WOOD
 WP WEATHERPROOF
 WT WEIGHT

ABBREVIATIONS



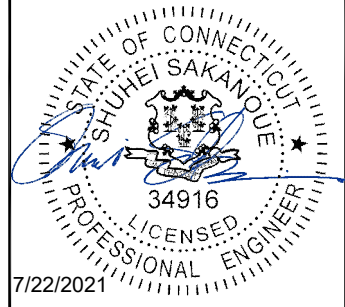
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DRAWN BY: RCD
 CHECKED BY: SS
 APPROVED BY: CJW

RFDS REV #: N/A

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SUBMITTALS		
REV	DATE	DESCRIPTION
A	06/09/2021	ISSUED FOR REVIEW
0	07/08/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
 6039-Z0001C

DISH Wireless L.L.C.
 PROJECT INFORMATION
 BOBDL00081A
 28 BREWER DR.
 BLOOMFIELD, CT 06002

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.



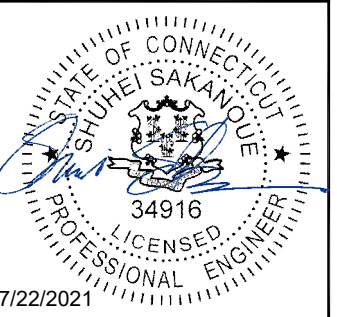
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RCD	SS	CJW

RFDS REV #: N/A

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REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER
6039-Z0001C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00081A
28 BREWER DR.
BLOOMFIELD, CT 06002

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.



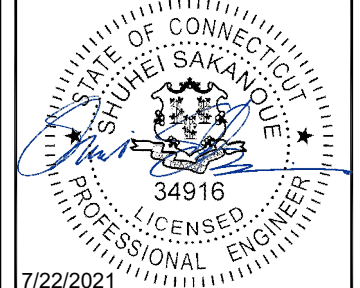
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A&E PROJECT NUMBER
6039-Z0001C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00081A
28 BREWER DR.
BLOOMFIELD, CT 06002

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.



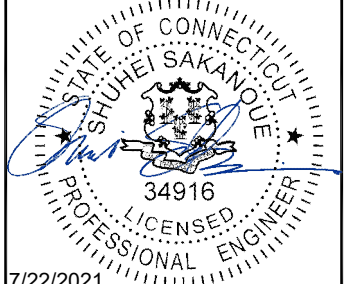
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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00081A
28 BREWER DR.
BLOOMFIELD, CT 06002

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

Exhibit D

Structural Analysis Report

Date: **June 07, 2021**



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

Subject: **Structural Analysis Report**

Carrier Designation: **DISH Network Co-Locate**
Site Number: BOBDL00081A
Site Name: CT-CCI-T-876329

Crown Castle Designation: **BU Number:** 876329
Site Name: MTN. VIEW CEM. (FILLEY PARK)
JDE Job Number: 650071
Work Order Number: 1966223
Order Number: 556612 Rev. 1

Engineering Firm Designation: **Crown Castle Project Number:** 1966223

Site Data: **28 Brewer Dr., BLOOMFIELD, HARTFORD County, CT**
Latitude 41° 50' 6.57", Longitude -72° 44' 28.2"
120 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:

LC5: Proposed Equipment Configuration

Sufficient Capacity-88.9%

This analysis utilizes an ultimate 3-second gust wind speed of 125 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: Subhash Mandal

Respectfully submitted by:



Terry P Styran
2021.06.07
17:56:25 -04'00'

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

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1) INTRODUCTION

This tower is a 120 ft Monopole tower designed by ROHN.

The tower has been modified multiple times in the past to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1 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)
89.0	89.0	3	fujitsu	TA08025-B604	1	1-3/8
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		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)
118.0	120.0	3	alcatel lucent	TD-RRH8X20-25	1 3 2	5/8 1-1/4 1/2
		1	rfs celwave	APXV9ERR18-C-A20 w/ Mount Pipe		
		2	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe		
	118.0	1	tower mounts	Platform Mount [LP 502-1]		
	116.0	1	andrew	VHLP1-18		
		1	andrew	VHLP1-23-DW1		
		2	dragonwave	HORIZON COMPACT		
114.0	115.0	3	alcatel lucent	PCS 1900MHz 4x45W-65MHz	-	-
	114.0	1	tower mounts	Pipe Mount [PM 602-3]		
	113.0	3	alcatel lucent	800MHz 2X50W RRH W/FILTER		
107.0	108.0	6	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	1 13	1-3/8 1-5/8
		3	ericsson	KRY 112 144/1		
		3	ericsson	RADIO 4449 B12/B71		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
	107.0	1	tower mounts	Platform Mount [LP 712-1]		
99.0	100.0	6	cci antennas	TPX-070821	2 4 12	3/8 3/4 7/8
		3	communication components inc.	DTMABP7819VG12A		
		3	ericsson	RRUS 11		
		3	ericsson	RRUS 32		
		3	ericsson	RRUS 8843 B2/B66A		
		6	quintel technology	QS66512-2 w/ Mount Pipe		
		1	raycap	DC6-48-60-18-8C		
	1	raycap	DC6-48-60-18-8F			
	99.0	1	tower mounts	Platform Mount [LP 502-1]		
59.0	59.0	1	tower mounts	Side Arm Mount [SO 701-1]	-	-
48.0	50.0	1	gps	GPS_A	2	1/2
		1	lucent	KS24019-L112A		
	48.0	1	tower mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	1529722	CCISITES
4-POST-MODIFICATION INSPECTION	2343686	CCISITES
4-POST-MODIFICATION INSPECTION	4092494	CCISITES
4-POST-MODIFICATION INSPECTION	6693484	CCISITES
4-POST-MODIFICATION INSPECTION	6898999	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1616549	CCISITES
4-TOWER MANUFACTURER DRAWINGS	2158527	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2205450	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2343687	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2917489	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	6413631	CCISITES
4-POST-MODIFICATION INSPECTION	9094446	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	7922717	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	7736461	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.9.0), 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.

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the pole and in the reinforcing elements. These calculations are included in Appendix C.

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)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
120 - 115	Pole	TP24x24x0.25	Pole	4.8%	Pass
115 - 110	Pole	TP24x24x0.25	Pole	10.9%	Pass
110 - 105	Pole	TP24x24x0.25	Pole	20.4%	Pass
105 - 100	Pole	TP24x24x0.25	Pole	31.9%	Pass
100 - 95	Pole	TP24x24x0.25	Pole	47.6%	Pass
95 - 90	Pole	TP24x24x0.25	Pole	63.5%	Pass
90 - 85	Pole	TP24x24x0.375	Pole	53.1%	Pass
85 - 80	Pole	TP24x24x0.375	Pole	66.4%	Pass
80 - 79.75	Pole + Reinf.	TP24x24x0.625	Reinf. 1 Tension Rupture	63.7%	Pass
79.75 - 78.5	Pole + Reinf.	TP24x24x0.625	Reinf. 1 Tension Rupture	67.0%	Pass
78.5 - 78.25	Pole + Reinf.	TP24x24x0.775	Reinf. 7 Tension Rupture	36.2%	Pass
78.25 - 73.25	Pole + Reinf.	TP24x24x0.775	Reinf. 7 Tension Rupture	43.4%	Pass
73.25 - 68.25	Pole + Reinf.	TP24x24x0.775	Reinf. 7 Tension Rupture	50.9%	Pass
68.25 - 68	Pole + Reinf.	TP24x24x0.775	Reinf. 7 Tension Rupture	51.3%	Pass
68 - 67.75	Pole + Reinf.	TP24x24x0.775	Reinf. 7 Tension Rupture	51.7%	Pass
67.75 - 62.75	Pole + Reinf.	TP24x24x0.775	Reinf. 7 Tension Rupture	59.6%	Pass
62.75 - 60	Pole + Reinf.	TP24x24x0.775	Reinf. 7 Tension Rupture	64.0%	Pass
60 - 57.5	Pole + Reinf.	TP30x30x0.675	Pole	50.2%	Pass
57.5 - 57.25	Pole + Reinf.	TP30x30x0.675	Pole	50.5%	Pass
57.25 - 52.25	Pole + Reinf.	TP30x30x0.675	Pole	57.1%	Pass
52.25 - 47.25	Pole + Reinf.	TP30x30x0.675	Pole	63.9%	Pass
47.25 - 45.33	Pole + Reinf.	TP30x30x0.675	Pole	66.6%	Pass
45.33 - 45.08	Pole + Reinf.	TP30x30x0.8375	Pole	55.3%	Pass
45.08 - 40.08	Pole + Reinf.	TP30x30x0.8375	Pole	61.1%	Pass
40.08 - 35.08	Pole + Reinf.	TP30x30x0.8375	Pole	67.1%	Pass
35.08 - 33.58	Pole + Reinf.	TP30x30x0.8375	Pole	69.0%	Pass
33.58 - 33.33	Pole + Reinf.	TP30x30x1	Pole	59.1%	Pass
33.33 - 32.42	Pole + Reinf.	TP30x30x1	Pole	60.0%	Pass
32.42 - 32.17	Pole + Reinf.	TP30x30x0.675	Pole	85.7%	Pass
32.17 - 30	Pole + Reinf.	TP30x30x0.675	Pole	88.9%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
30 - 26.75	Pole + Reinf.	TP36x36x0.625	Pole	72.7%	Pass
26.75 - 26.5	Pole + Reinf.	TP36x36x0.7125	Pole	63.8%	Pass
26.5 - 21.5	Pole + Reinf.	TP36x36x0.7125	Pole	69.4%	Pass
21.5 - 21.25	Pole + Reinf.	TP36x36x0.975	Pole	52.2%	Pass
21.25 - 16.25	Pole + Reinf.	TP36x36x0.975	Pole	56.4%	Pass
16.25 - 11.25	Pole + Reinf.	TP36x36x0.975	Pole	60.8%	Pass
11.25 - 6.25	Pole + Reinf.	TP36x36x0.975	Pole	65.3%	Pass
6.25 - 1.25	Pole + Reinf.	TP36x36x0.975	Pole	69.8%	Pass
1.25 - 0	Pole + Reinf.	TP36x36x0.975	Pole	70.9%	Pass
				Summary	
			Pole	88.9%	Pass
			Reinforcement	86.2%	Pass
			Overall	88.9%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	90	36.0	Pass
1	Flange Plate	90	43.5	Pass
1	Flange Bolts	60	17.5	Pass
1	Flange Plate	60	34.2	Pass
1	Bridge Stiffeners	60	36.4	Pass
1	Flange Bolts	30	18.3	Pass
1	Flange Plate	30	40.4	Pass
1	Bridge Stiffeners	30	40.6	Pass
1	Anchor Rods	0	84.4	Pass
1	Base Plate	0	57.9	Pass
1	Base Foundation (Structure)	0	76.1	Pass
1	Base Foundation (Soil Interaction)	0	30.5	Pass

Structure Rating (max from all components) =	88.9%
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Notes:

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

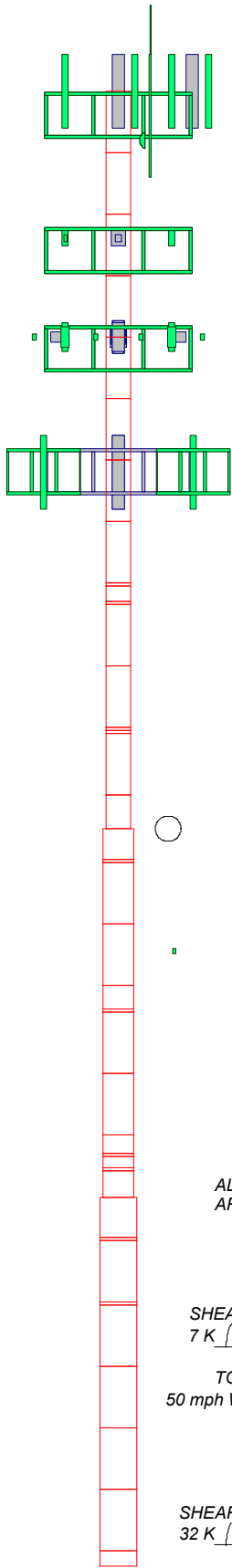
4.1) Recommendations

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	Size	Length (ft)	Grade	Weight (K)
1	P24x0.25	5.00	A53-B-42	0.3
2	P24x0.25	5.00	A53-B-42	0.3
3	P24x0.25	5.00	A53-B-42	0.3
4	P24x0.25	5.00	A53-B-42	0.3
5	P24x0.25	5.00	A53-B-42	0.3
6	P24x0.25	5.00	A53-B-42	0.3
7	P24x0.375	5.00	A53-B-42	0.5
8	P24x0.50	5.00	A53-B-42	0.5
9	P24x0.50	5.00	A53-B-42	0.5
10	P24x0.50	5.00	A53-B-42	0.5
11	P24x0.50	5.00	A53-B-42	0.5
12	P24x0.50	5.00	A53-B-42	0.9
13	P24x0.50	5.00	A53-B-42	0.9
14	P24x0.50	5.00	A53-B-42	0.9
15	P24x0.50	5.00	A53-B-42	0.9
16	P24x0.50	5.00	A53-B-42	0.9
17	P24x0.50	5.00	A53-B-42	0.9
18	P24x0.50	5.00	A53-B-42	0.9
19	P24x0.50	5.00	A53-B-42	0.9
20	P24x0.50	5.00	A53-B-42	1.0
21	P24x0.50	5.00	A53-B-42	1.0
22	P24x0.50	5.00	A53-B-42	1.0
23	P24x0.50	5.00	A53-B-42	1.0
24	P24x0.50	5.00	A53-B-42	1.2
25	P24x0.50	5.00	A53-B-42	1.2
26	P24x0.50	5.00	A53-B-42	1.2
27	P24x0.50	5.00	A53-B-42	1.2
28	P24x0.50	5.00	A53-B-42	1.2
29	P24x0.50	5.00	A53-B-42	1.2
30	P24x0.50	5.00	A53-B-42	1.2
31	P24x0.50	5.00	A53-B-42	1.2
32	P24x0.50	5.00	A53-B-42	1.3
33	P24x0.50	5.00	A53-B-42	1.3
34	P24x0.50	5.00	A53-B-42	1.7
35	P24x0.50	5.00	A53-B-42	1.7
36	P24x0.50	5.00	A53-B-42	1.7
37	P24x0.50	5.00	A53-B-42	1.7
38	P24x0.50	5.00	A53-B-42	1.7
39	P24x0.50	1.25	A53-B-42	22.2

120.0 ft
115.0 ft
110.0 ft
105.0 ft
100.0 ft
95.0 ft
90.0 ft
85.0 ft
80.0 ft
78.5 ft
73.3 ft
68.3 ft
62.8 ft
60.0 ft
57.5 ft
52.3 ft
47.3 ft
45.3 ft
40.1 ft
35.1 ft
33.6 ft
32.2 ft
30.0 ft
26.8 ft
21.5 ft
16.3 ft
11.3 ft
6.3 ft
1.3 ft
0.0 ft



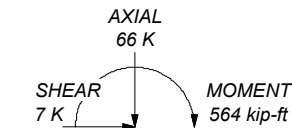
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-42	42 ksi	63 ksi			

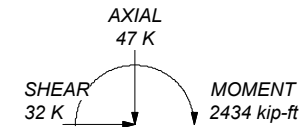
TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 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 0.00 ft
8. TOWER RATING: 88.9%

ALL REACTIONS
ARE FACTORED



TORQUE 1 kip-ft
50 mph WIND - 1.0000 in ICE



TORQUE 4 kip-ft
REACTIONS - 125 mph WIND

CROWN CASTLE
The Pathway to Possible

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

Job: **MTN. VIEW CEM. (FILLEY PARK) (BU# 876329)**

Project: **37518-2442 (876329.1558710)**

Client: Crown Castle	Drawn by: SMandal	App'd:
Code: TIA-222-H	Date: 06/07/21	Scale: NTS
Path:		Dwg No. E-1

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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 Hartford County, Connecticut.
- Tower base elevation above sea level: 0.00 ft.
- Basic wind speed of 125 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.0000 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.
- Temperature drop of 50 °F.
- 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 Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs	Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <div style="text-align: center; background-color: #e0e0e0; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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Pole Section Geometry

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	120.00-115.00	5.00	P24x0.25	A53-B-42 (42 ksi)	
L2	115.00-110.00	5.00	P24x0.25	A53-B-42 (42 ksi)	
L3	110.00-105.00	5.00	P24x0.25	A53-B-42 (42 ksi)	
L4	105.00-100.00	5.00	P24x0.25	A53-B-42 (42 ksi)	
L5	100.00-95.00	5.00	P24x0.25	A53-B-42 (42 ksi)	
L6	95.00-90.00	5.00	P24x0.25	A53-B-42 (42 ksi)	
L7	90.00-85.00	5.00	P24x0.375	A53-B-42 (42 ksi)	
L8	85.00-80.00	5.00	P24x0.375	A53-B-42 (42 ksi)	
L9	80.00-79.75	0.25	P24x0.625	A53-B-42 (42 ksi)	
L10	79.75-78.50	1.25	P24x0.625	A53-B-42 (42 ksi)	
L11	78.50-78.25	0.25	P24x0.775	A53-B-42 (42 ksi)	
L12	78.25-73.25	5.00	P24x0.775	A53-B-42 (42 ksi)	
L13	73.25-68.25	5.00	P24x0.775	A53-B-42 (42 ksi)	
L14	68.25-68.00	0.25	P24x0.775	A53-B-42 (42 ksi)	
L15	68.00-67.75	0.25	P24x0.775	A53-B-42 (42 ksi)	
L16	67.75-62.75	5.00	P24x0.775	A53-B-42 (42 ksi)	
L17	62.75-60.00	2.75	P24x0.775	A53-B-42 (42 ksi)	
L18	60.00-57.50	2.50	P30x0.675	A53-B-42 (42 ksi)	
L19	57.50-57.25	0.25	P30x0.675	A53-B-42 (42 ksi)	
L20	57.25-52.25	5.00	P30x0.675	A53-B-42 (42 ksi)	
L21	52.25-47.25	5.00	P30x0.675	A53-B-42 (42 ksi)	
L22	47.25-45.33	1.92	P30x0.675	A53-B-42 (42 ksi)	
L23	45.33-45.08	0.25	P30x0.8375	A53-B-42 (42 ksi)	
L24	45.08-40.08	5.00	P30x0.8375	A53-B-42 (42 ksi)	
L25	40.08-35.08	5.00	P30x0.8375	A53-B-42 (42 ksi)	
L26	35.08-33.58	1.50	P30x0.8375	A53-B-42 (42 ksi)	
L27	33.58-33.33	0.25	P30x1	A53-B-42 (42 ksi)	
L28	33.33-32.42	0.91	P30x1	A53-B-42 (42 ksi)	
L29	32.42-32.17	0.25	P30x0.675	A53-B-42 (42 ksi)	
L30	32.17-30.00	2.17	P30x0.675	A53-B-42 (42 ksi)	
L31	30.00-26.75	3.25	P36x0.625	A53-B-42 (42 ksi)	
L32	26.75-26.50	0.25	P36x0.7125	A53-B-42 (42 ksi)	
L33	26.50-21.50	5.00	P36x0.7125	A53-B-42 (42 ksi)	
L34	21.50-21.25	0.25	P36x0.975	A53-B-42 (42 ksi)	
L35	21.25-16.25	5.00	P36x0.975	A53-B-42	

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L36	16.25-11.25	5.00	P36x0.975	(42 ksi) A53-B-42	
L37	11.25-6.25	5.00	P36x0.975	(42 ksi) A53-B-42	
L38	6.25-1.25	5.00	P36x0.975	(42 ksi) A53-B-42	
L39	1.25-0.00	1.25	P36x0.975	(42 ksi) A53-B-42	

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	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 120.00-115.00				1	1	1			
L2 115.00-110.00				1	1	1			
L3 110.00-105.00				1	1	1			
L4 105.00-100.00				1	1	1			
L5 100.00-95.00				1	1	1			
L6 95.00-90.00				1	1	1			
L7 90.00-85.00				1	1	1			
L8 85.00-80.00				1	1	1			
L9 80.00-79.75				1	1	0.933238			
L10 79.75-78.50				1	1	0.933238			
L11 78.50-78.25				1	1	0.916633			
L12 78.25-73.25				1	1	0.916633			
L13 73.25-68.25				1	1	0.916633			
L14 68.25-68.00				1	1	0.916633			
L15 68.00-67.75				1	1	0.916633			
L16 67.75-62.75				1	1	0.916633			
L17 62.75-60.00				1	1	0.916633			
L18 60.00-57.50				1	1	0.947179			
L19 57.50-57.25				1	1	0.947179			
L20 57.25-52.25				1	1	0.947179			
L21 52.25-47.25				1	1	0.947179			
L22 47.25-45.33				1	1	0.947179			
L23 45.33-45.08				1	1	0.919876			
L24 45.08-40.08				1	1	0.919876			
L25 40.08-35.08				1	1	0.919876			
L26 35.08-33.58				1	1	0.919876			

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_r	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
ft	ft ²	in							
L27 33.58-33.33				1	1	0.894573			
L28 33.33-32.42				1	1	0.894573			
L29 32.42-32.17				1	1	0.947179			
L30 32.17-30.00				1	1	0.947179			
L31 30.00-26.75				1	1	0.94977			
L32 26.75-26.50				1	1	0.94281			
L33 26.50-21.50				1	1	0.94281			
L34 21.50-21.25				1	1	0.917846			
L35 21.25-16.25				1	1	0.917846			
L36 16.25-11.25				1	1	0.917846			
L37 11.25-6.25				1	1	0.917846			
L38 6.25-1.25				1	1	0.917846			
L39 1.25-0.00				1	1	0.917846			

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
FSJ4-50B(1/2)	B	No	Surface Ar (CaAa)	48.00 - 0.00	2	2	0.250 0.300	0.5300		0.14
FSJ4-50B(1/2)	B	No	Surface Ar (CaAa)	118.00 - 0.00	2	2	0.380 0.420	0.5300		0.14

HCS 6X12 6AWG(1-3/8)	A	No	Surface Ar (CaAa)	107.00 - 0.00	1	1	-0.450 -0.450	1.3800		1.70
FLC 158-50J(1-5/8)	A	No	Surface Ar (CaAa)	107.00 - 0.00	7	7	-0.450 -0.300	2.0150		0.92
CU12PSM9P8XXX(1-3/8)	C	No	Surface Ar (CaAa)	89.00 - 0.00	1	1	0.000 0.000	1.4110		1.66
3" x 1-1/4" Reinf. Bar	A	No	Surface Af (CaAa)	81.00 - 67.00	1	1	0.000 0.000	1.2500	8.5000	14.00
3" x 1-1/4" Reinf. Bar	B	No	Surface Af (CaAa)	81.00 - 67.00	1	1	0.300 0.300	1.2500	8.5000	14.00
3" x 1-1/4" Reinf. Bar	C	No	Surface Af (CaAa)	81.00 - 67.00	1	1	0.000 0.000	1.2500	8.5000	14.00
3" x 1-1/4" Reinf. Bar	C	No	Surface Af (CaAa)	81.00 - 67.00	1	1	0.300 0.300	1.2500	8.5000	14.00
MP3-05	A	No	Surface Af (CaAa)	36.00 - 30.00	1	1	0.000 0.000	5.3300	14.8400	0.00
MP3-05	B	No	Surface Af (CaAa)	36.00 - 30.00	1	1	0.300 0.300	5.3300	14.8400	0.00
MP3-05	C	No	Surface Af (CaAa)	36.00 - 30.00	1	1	0.000 0.000	5.3300	14.8400	0.00
MP3-05	C	No	Surface Af (CaAa)	36.00 - 30.00	1	1	0.300 0.300	5.3300	14.8400	0.00
MP3-03	A	No	Surface Af (CaAa)	46.50 - 36.50	1	1	0.000 0.000	4.0600	11.2600	0.00

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
MP3-03	B	No	Surface Af (CaAa)	46.50 - 36.50	1	1	0.300 0.300	4.0600	11.2600	0.00
MP3-03	C	No	Surface Af (CaAa)	46.50 - 36.50	1	1	0.000 0.000	4.0600	11.2600	0.00
MP3-03	C	No	Surface Af (CaAa)	46.50 - 36.50	1	1	0.300 0.300	4.0600	11.2600	0.00
CCI-65FP-060100	A	No	Surface Af (CaAa)	23.50 - 0.50	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-65FP-060100	B	No	Surface Af (CaAa)	23.50 - 0.50	1	1	0.300 0.300	6.0000	14.0000	0.00
CCI-65FP-060100	C	No	Surface Af (CaAa)	23.50 - 0.50	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-65FP-060100	C	No	Surface Af (CaAa)	23.50 - 0.50	1	1	0.300 0.300	6.0000	14.0000	0.00
CCI-65FP-060100	A	No	Surface Af (CaAa)	59.50 - 30.50	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-65FP-060100	B	No	Surface Af (CaAa)	59.50 - 30.50	1	1	0.300 0.300	6.0000	14.0000	0.00
CCI-65FP-060100	C	No	Surface Af (CaAa)	59.50 - 30.50	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-65FP-060100	C	No	Surface Af (CaAa)	59.50 - 30.50	1	1	0.300 0.300	6.0000	14.0000	0.00
CCI-65FP-060100	A	No	Surface Af (CaAa)	80.50 - 60.50	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-65FP-060100	B	No	Surface Af (CaAa)	80.50 - 60.50	1	1	0.300 0.300	6.0000	14.0000	0.00
CCI-65FP-060100	C	No	Surface Af (CaAa)	80.50 - 60.50	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-65FP-060100	C	No	Surface Af (CaAa)	80.50 - 60.50	1	1	0.300 0.300	6.0000	14.0000	0.00
CCI-65FP-065125	A	No	Surface Af (CaAa)	29.50 - 0.00	1	1	0.000 0.000	6.5000	15.5000	0.00
CCI-65FP-065125	B	No	Surface Af (CaAa)	29.50 - 0.00	1	1	0.300 0.300	6.5000	15.5000	0.00
CCI-65FP-065125	C	No	Surface Af (CaAa)	29.50 - 0.00	1	1	0.000 0.000	6.5000	15.5000	0.00
CCI-65FP-065125	C	No	Surface Af (CaAa)	29.50 - 0.00	1	1	0.300 0.300	6.5000	15.5000	0.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		CAAA ft ² /ft	Weight plf

HB058-M12-XXXF(5/8)	C	No	No	Inside Pole	118.00 - 0.00	1	No Ice	0.00	0.24
							1/2" Ice	0.00	0.24
							1" Ice	0.00	0.24
HB114-1-08U4-M5J(1-1/4)	C	No	No	Inside Pole	118.00 - 0.00	3	No Ice	0.00	1.08
							1/2" Ice	0.00	1.08
							1" Ice	0.00	1.08

LDF5-50A(7/8)	C	No	No	Inside Pole	99.00 - 0.00	12	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
FB-L98B-034-XXX(3/8)	C	No	No	Inside Pole	99.00 - 0.00	2	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	99.00 - 0.00	4	No Ice	0.00	0.58
							1/2" Ice	0.00	0.58
							1" Ice	0.00	0.58
MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	A	No	No	Inside Pole	107.00 - 0.00	6	No Ice	0.00	1.07
							1/2" Ice	0.00	1.07
							1" Ice	0.00	1.07

Feed Line/Linear Appurtenances Section Areas

Tower Sectio n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	120.00-115.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.318	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.01
L2	115.00-110.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.530	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L3	110.00-105.00	A	0.000	0.000	3.097	0.000	0.03
		B	0.000	0.000	0.530	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L4	105.00-100.00	A	0.000	0.000	7.743	0.000	0.07
		B	0.000	0.000	0.530	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L5	100.00-95.00	A	0.000	0.000	7.743	0.000	0.07
		B	0.000	0.000	0.530	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.04
L6	95.00-90.00	A	0.000	0.000	7.743	0.000	0.07
		B	0.000	0.000	0.530	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.05
L7	90.00-85.00	A	0.000	0.000	7.743	0.000	0.07
		B	0.000	0.000	0.530	0.000	0.00
		C	0.000	0.000	0.564	0.000	0.06
L8	85.00-80.00	A	0.000	0.000	8.451	0.000	0.09
		B	0.000	0.000	1.238	0.000	0.02
		C	0.000	0.000	2.122	0.000	0.09
L9	80.00-79.75	A	0.000	0.000	0.689	0.000	0.01
		B	0.000	0.000	0.329	0.000	0.00
		C	0.000	0.000	0.639	0.000	0.01
L10	79.75-78.50	A	0.000	0.000	3.446	0.000	0.04
		B	0.000	0.000	1.643	0.000	0.02
		C	0.000	0.000	3.197	0.000	0.05
L11	78.50-78.25	A	0.000	0.000	0.689	0.000	0.01
		B	0.000	0.000	0.329	0.000	0.00
		C	0.000	0.000	0.639	0.000	0.01
L12	78.25-73.25	A	0.000	0.000	13.784	0.000	0.14
		B	0.000	0.000	6.572	0.000	0.07
		C	0.000	0.000	12.789	0.000	0.20
L13	73.25-68.25	A	0.000	0.000	13.784	0.000	0.14
		B	0.000	0.000	6.572	0.000	0.07
		C	0.000	0.000	12.789	0.000	0.20
L14	68.25-68.00	A	0.000	0.000	0.689	0.000	0.01
		B	0.000	0.000	0.329	0.000	0.00
		C	0.000	0.000	0.639	0.000	0.01
L15	68.00-67.75	A	0.000	0.000	0.689	0.000	0.01
		B	0.000	0.000	0.329	0.000	0.00
		C	0.000	0.000	0.639	0.000	0.01
L16	67.75-62.75	A	0.000	0.000	12.899	0.000	0.08
		B	0.000	0.000	5.686	0.000	0.01
		C	0.000	0.000	11.018	0.000	0.08
L17	62.75-60.00	A	0.000	0.000	6.508	0.000	0.04
		B	0.000	0.000	2.542	0.000	0.00
		C	0.000	0.000	4.888	0.000	0.03
L18	60.00-57.50	A	0.000	0.000	5.871	0.000	0.04
		B	0.000	0.000	2.265	0.000	0.00
		C	0.000	0.000	4.353	0.000	0.03
L19	57.50-57.25	A	0.000	0.000	0.637	0.000	0.00
		B	0.000	0.000	0.277	0.000	0.00
		C	0.000	0.000	0.535	0.000	0.00
L20	57.25-52.25	A	0.000	0.000	12.743	0.000	0.07
		B	0.000	0.000	5.530	0.000	0.00
		C	0.000	0.000	10.706	0.000	0.06
L21	52.25-47.25	A	0.000	0.000	12.743	0.000	0.07

Tower Section	Tower Elevation	Face	A _R	A _F	C _{AA} _A In Face	C _{AA} _A Out Face	Weight
n	ft		ft ²	ft ²	ft ²	ft ²	K
		B	0.000	0.000	5.609	0.000	0.00
		C	0.000	0.000	10.706	0.000	0.06
L22	47.25-45.33	A	0.000	0.000	5.685	0.000	0.03
		B	0.000	0.000	3.119	0.000	0.00
		C	0.000	0.000	5.694	0.000	0.02
L23	45.33-45.08	A	0.000	0.000	0.806	0.000	0.00
		B	0.000	0.000	0.472	0.000	0.00
		C	0.000	0.000	0.874	0.000	0.00
L24	45.08-40.08	A	0.000	0.000	16.126	0.000	0.07
		B	0.000	0.000	9.443	0.000	0.00
		C	0.000	0.000	17.472	0.000	0.06
L25	40.08-35.08	A	0.000	0.000	15.813	0.000	0.07
		B	0.000	0.000	9.131	0.000	0.00
		C	0.000	0.000	16.847	0.000	0.06
L26	35.08-33.58	A	0.000	0.000	4.870	0.000	0.02
		B	0.000	0.000	2.869	0.000	0.00
		C	0.000	0.000	5.314	0.000	0.02
L27	33.58-33.33	A	0.000	0.000	0.813	0.000	0.00
		B	0.000	0.000	0.479	0.000	0.00
		C	0.000	0.000	0.887	0.000	0.00
L28	33.33-32.42	A	0.000	0.000	2.970	0.000	0.01
		B	0.000	0.000	1.750	0.000	0.00
		C	0.000	0.000	3.241	0.000	0.01
L29	32.42-32.17	A	0.000	0.000	0.813	0.000	0.00
		B	0.000	0.000	0.479	0.000	0.00
		C	0.000	0.000	0.887	0.000	0.00
L30	32.17-30.00	A	0.000	0.000	6.559	0.000	0.03
		B	0.000	0.000	3.659	0.000	0.00
		C	0.000	0.000	6.703	0.000	0.03
L31	30.00-26.75	A	0.000	0.000	8.012	0.000	0.05
		B	0.000	0.000	3.668	0.000	0.00
		C	0.000	0.000	6.417	0.000	0.04
L32	26.75-26.50	A	0.000	0.000	0.658	0.000	0.00
		B	0.000	0.000	0.324	0.000	0.00
		C	0.000	0.000	0.577	0.000	0.00
L33	26.50-21.50	A	0.000	0.000	15.159	0.000	0.07
		B	0.000	0.000	8.477	0.000	0.00
		C	0.000	0.000	15.539	0.000	0.06
L34	21.50-21.25	A	0.000	0.000	0.908	0.000	0.00
		B	0.000	0.000	0.574	0.000	0.00
		C	0.000	0.000	1.077	0.000	0.00
L35	21.25-16.25	A	0.000	0.000	18.159	0.000	0.07
		B	0.000	0.000	11.477	0.000	0.00
		C	0.000	0.000	21.539	0.000	0.06
L36	16.25-11.25	A	0.000	0.000	18.159	0.000	0.07
		B	0.000	0.000	11.477	0.000	0.00
		C	0.000	0.000	21.539	0.000	0.06
L37	11.25-6.25	A	0.000	0.000	18.159	0.000	0.07
		B	0.000	0.000	11.477	0.000	0.00
		C	0.000	0.000	21.539	0.000	0.06
L38	6.25-1.25	A	0.000	0.000	18.159	0.000	0.07
		B	0.000	0.000	11.477	0.000	0.00
		C	0.000	0.000	21.539	0.000	0.06
L39	1.25-0.00	A	0.000	0.000	4.040	0.000	0.02
		B	0.000	0.000	2.369	0.000	0.00
		C	0.000	0.000	4.385	0.000	0.01

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation	Face or Leg	Ice Thickness	A _R	A _F	C _{AA} _A In Face	C _{AA} _A Out Face	Weight
n	ft		in	ft ²	ft ²	ft ²	ft ²	K
L1	120.00-115.00	A	0.965	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	1.121	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.01
L2	115.00-110.00	A	0.961	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
		B		0.000	0.000	1.864	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.02
L3	110.00-105.00	A	0.957	0.000	0.000	4.663	0.000	0.06
		B		0.000	0.000	1.858	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.02
L4	105.00-100.00	A	0.952	0.000	0.000	11.648	0.000	0.16
		B		0.000	0.000	1.853	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.02
L5	100.00-95.00	A	0.947	0.000	0.000	11.637	0.000	0.16
		B		0.000	0.000	1.847	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.04
L6	95.00-90.00	A	0.942	0.000	0.000	11.626	0.000	0.16
		B		0.000	0.000	1.840	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.05
L7	90.00-85.00	A	0.937	0.000	0.000	11.614	0.000	0.16
		B		0.000	0.000	1.834	0.000	0.01
		C		0.000	0.000	1.314	0.000	0.07
L8	85.00-80.00	A	0.932	0.000	0.000	12.589	0.000	0.18
		B		0.000	0.000	2.815	0.000	0.03
		C		0.000	0.000	3.613	0.000	0.11
L9	80.00-79.75	A	0.929	0.000	0.000	0.975	0.000	0.01
		B		0.000	0.000	0.486	0.000	0.01
		C		0.000	0.000	0.872	0.000	0.02
L10	79.75-78.50	A	0.928	0.000	0.000	4.872	0.000	0.07
		B		0.000	0.000	2.430	0.000	0.03
		C		0.000	0.000	4.357	0.000	0.08
L11	78.50-78.25	A	0.927	0.000	0.000	0.974	0.000	0.01
		B		0.000	0.000	0.486	0.000	0.01
		C		0.000	0.000	0.871	0.000	0.02
L12	78.25-73.25	A	0.924	0.000	0.000	19.473	0.000	0.28
		B		0.000	0.000	9.706	0.000	0.13
		C		0.000	0.000	17.407	0.000	0.32
L13	73.25-68.25	A	0.917	0.000	0.000	19.446	0.000	0.28
		B		0.000	0.000	9.686	0.000	0.13
		C		0.000	0.000	17.376	0.000	0.32
L14	68.25-68.00	A	0.914	0.000	0.000	0.972	0.000	0.01
		B		0.000	0.000	0.484	0.000	0.01
		C		0.000	0.000	0.868	0.000	0.02
L15	68.00-67.75	A	0.914	0.000	0.000	0.971	0.000	0.01
		B		0.000	0.000	0.484	0.000	0.01
		C		0.000	0.000	0.868	0.000	0.02
L16	67.75-62.75	A	0.910	0.000	0.000	17.756	0.000	0.20
		B		0.000	0.000	8.003	0.000	0.06
		C		0.000	0.000	14.021	0.000	0.16
L17	62.75-60.00	A	0.904	0.000	0.000	9.004	0.000	0.10
		B		0.000	0.000	3.643	0.000	0.02
		C		0.000	0.000	6.199	0.000	0.07
L18	60.00-57.50	A	0.900	0.000	0.000	8.126	0.000	0.09
		B		0.000	0.000	3.254	0.000	0.02
		C		0.000	0.000	5.523	0.000	0.06
L19	57.50-57.25	A	0.898	0.000	0.000	0.871	0.000	0.01
		B		0.000	0.000	0.384	0.000	0.00
		C		0.000	0.000	0.670	0.000	0.01
L20	57.25-52.25	A	0.894	0.000	0.000	17.412	0.000	0.18
		B		0.000	0.000	7.674	0.000	0.04
		C		0.000	0.000	13.388	0.000	0.13
L21	52.25-47.25	A	0.886	0.000	0.000	17.384	0.000	0.18
		B		0.000	0.000	7.921	0.000	0.04
		C		0.000	0.000	13.362	0.000	0.13
L22	47.25-45.33	A	0.879	0.000	0.000	7.605	0.000	0.08
		B		0.000	0.000	4.548	0.000	0.03
		C		0.000	0.000	6.999	0.000	0.06
L23	45.33-45.08	A	0.877	0.000	0.000	1.068	0.000	0.01
		B		0.000	0.000	0.670	0.000	0.00
		C		0.000	0.000	1.067	0.000	0.01
L24	45.08-40.08	A	0.872	0.000	0.000	21.342	0.000	0.21
		B		0.000	0.000	13.380	0.000	0.08
		C		0.000	0.000	21.327	0.000	0.18
L25	40.08-35.08	A	0.861	0.000	0.000	20.902	0.000	0.20

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
		B		0.000	0.000	12.937	0.000	0.07
		C		0.000	0.000	20.485	0.000	0.17
L26	35.08-33.58	A	0.853	0.000	0.000	6.369	0.000	0.06
		B		0.000	0.000	3.984	0.000	0.02
		C		0.000	0.000	6.364	0.000	0.06
L27	33.58-33.33	A	0.851	0.000	0.000	1.063	0.000	0.01
		B		0.000	0.000	0.665	0.000	0.00
		C		0.000	0.000	1.062	0.000	0.01
L28	33.33-32.42	A	0.850	0.000	0.000	3.882	0.000	0.04
		B		0.000	0.000	2.427	0.000	0.01
		C		0.000	0.000	3.878	0.000	0.03
L29	32.42-32.17	A	0.848	0.000	0.000	1.063	0.000	0.01
		B		0.000	0.000	0.664	0.000	0.00
		C		0.000	0.000	1.062	0.000	0.01
L30	32.17-30.00	A	0.845	0.000	0.000	8.635	0.000	0.09
		B		0.000	0.000	5.176	0.000	0.03
		C		0.000	0.000	8.041	0.000	0.07
L31	30.00-26.75	A	0.837	0.000	0.000	10.843	0.000	0.11
		B		0.000	0.000	5.661	0.000	0.03
		C		0.000	0.000	7.882	0.000	0.08
L32	26.75-26.50	A	0.832	0.000	0.000	0.881	0.000	0.01
		B		0.000	0.000	0.483	0.000	0.00
		C		0.000	0.000	0.702	0.000	0.01
L33	26.50-21.50	A	0.823	0.000	0.000	19.928	0.000	0.19
		B		0.000	0.000	11.953	0.000	0.06
		C		0.000	0.000	18.668	0.000	0.15
L34	21.50-21.25	A	0.814	0.000	0.000	1.169	0.000	0.01
		B		0.000	0.000	0.770	0.000	0.00
		C		0.000	0.000	1.280	0.000	0.01
L35	21.25-16.25	A	0.803	0.000	0.000	23.336	0.000	0.20
		B		0.000	0.000	15.356	0.000	0.08
		C		0.000	0.000	25.555	0.000	0.18
L36	16.25-11.25	A	0.779	0.000	0.000	23.232	0.000	0.20
		B		0.000	0.000	15.246	0.000	0.07
		C		0.000	0.000	25.433	0.000	0.18
L37	11.25-6.25	A	0.744	0.000	0.000	23.086	0.000	0.19
		B		0.000	0.000	15.091	0.000	0.07
		C		0.000	0.000	25.261	0.000	0.17
L38	6.25-1.25	A	0.684	0.000	0.000	22.829	0.000	0.18
		B		0.000	0.000	14.819	0.000	0.06
		C		0.000	0.000	24.958	0.000	0.16
L39	1.25-0.00	A	0.572	0.000	0.000	5.031	0.000	0.04
		B		0.000	0.000	3.021	0.000	0.01
		C		0.000	0.000	4.985	0.000	0.03

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
L1	120.00-115.00	0.5871	0.1908	0.8715	0.2832
L2	115.00-110.00	0.9468	0.3076	1.3290	0.4318
L3	110.00-105.00	-3.3981	1.3548	-1.6772	1.1003
L4	105.00-100.00	-6.2488	2.0309	-4.0969	1.6385
L5	100.00-95.00	-6.2488	2.0309	-4.0993	1.6381
L6	95.00-90.00	-6.2488	2.0309	-4.1018	1.6376
L7	90.00-85.00	-6.0158	2.4289	-3.9339	2.0968
L8	85.00-80.00	-5.3221	2.8477	-3.8115	2.5442
L9	80.00-79.75	-3.4901	3.4589	-3.3675	3.5677
L10	79.75-78.50	-3.4901	3.4589	-3.3677	3.5675
L11	78.50-78.25	-3.4901	3.4589	-3.3679	3.5673
L12	78.25-73.25	-3.4901	3.4589	-3.3687	3.5668
L13	73.25-68.25	-3.4901	3.4589	-3.3702	3.5656
L14	68.25-68.00	-3.4901	3.4589	-3.3710	3.5650
L15	68.00-67.75	-3.4901	3.4589	-3.3711	3.5649

Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
L16	67.75-62.75	-3.5913	3.3669	-3.4514	3.4055
L17	62.75-60.00	-3.6969	3.2100	-3.5280	3.2515
L18	60.00-57.50	-4.2592	3.6821	-4.1339	3.8010
L19	57.50-57.25	-4.1830	3.8893	-4.0807	3.9787
L20	57.25-52.25	-4.1830	3.8893	-4.0820	3.9780
L21	52.25-47.25	-4.1488	3.8839	-3.9839	3.9479
L22	47.25-45.33	-3.8734	4.1818	-3.4543	4.1010
L23	45.33-45.08	-3.8330	4.3399	-3.4590	4.2540
L24	45.08-40.08	-3.8330	4.3399	-3.4615	4.2538
L25	40.08-35.08	-3.8379	4.3034	-3.4626	4.2150
L26	35.08-33.58	-3.8086	4.3445	-3.4529	4.2433
L27	33.58-33.33	-3.8086	4.3445	-3.4539	4.2432
L28	33.33-32.42	-3.8086	4.3445	-3.4546	4.2431
L29	32.42-32.17	-3.8086	4.3445	-3.4553	4.2431
L30	32.17-30.00	-3.8380	4.2141	-3.4525	4.1153
L31	30.00-26.75	-4.4495	4.2408	-3.9393	4.2332
L32	26.75-26.50	-4.4292	4.4395	-3.9598	4.4092
L33	26.50-21.50	-4.3899	4.8107	-3.9973	4.7525
L34	21.50-21.25	-4.3489	5.1979	-4.0363	5.1250
L35	21.25-16.25	-4.3489	5.1979	-4.0412	5.1242
L36	16.25-11.25	-4.3489	5.1979	-4.0526	5.1224
L37	11.25-6.25	-4.3489	5.1979	-4.0688	5.1199
L38	6.25-1.25	-4.3489	5.1979	-4.0978	5.1153
L39	1.25-0.00	-4.3743	4.9577	-4.1486	4.8701

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	FSJ4-50B(1/2)	115.00 - 118.00	1.0000	1.0000
L2	5	FSJ4-50B(1/2)	110.00 - 115.00	1.0000	1.0000
L3	5	FSJ4-50B(1/2)	105.00 - 110.00	1.0000	1.0000
L3	16	HCS 6X12 6AWG(1-3/8)	105.00 - 107.00	1.0000	1.0000
L3	18	FLC 158-50J(1-5/8)	105.00 - 107.00	1.0000	1.0000
L4	5	FSJ4-50B(1/2)	100.00 - 105.00	1.0000	1.0000
L4	16	HCS 6X12 6AWG(1-3/8)	100.00 - 105.00	1.0000	1.0000
L4	18	FLC 158-50J(1-5/8)	100.00 - 105.00	1.0000	1.0000
L5	5	FSJ4-50B(1/2)	95.00 - 100.00	1.0000	1.0000
L5	16	HCS 6X12 6AWG(1-3/8)	95.00 - 100.00	1.0000	1.0000
L5	18	FLC 158-50J(1-5/8)	95.00 - 100.00	1.0000	1.0000
L6	5	FSJ4-50B(1/2)	90.00 - 95.00	1.0000	1.0000
L6	16	HCS 6X12 6AWG(1-3/8)	90.00 - 95.00	1.0000	1.0000
L6	18	FLC 158-50J(1-5/8)	90.00 - 95.00	1.0000	1.0000
L7	5	FSJ4-50B(1/2)	85.00 - 90.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L7	16	HCS 6X12 6AWG(1-3/8)	85.00 - 90.00	1.0000	1.0000
L7	18	FLC 158-50J(1-5/8)	85.00 - 90.00	1.0000	1.0000
L7	20	CU12PSM9P8XXX(1-3/8)	85.00 - 89.00	1.0000	1.0000
L8	5	FSJ4-50B(1/2)	80.00 - 85.00	1.0000	1.0000
L8	16	HCS 6X12 6AWG(1-3/8)	80.00 - 85.00	1.0000	1.0000
L8	18	FLC 158-50J(1-5/8)	80.00 - 85.00	1.0000	1.0000
L8	20	CU12PSM9P8XXX(1-3/8)	80.00 - 85.00	1.0000	1.0000
L8	22	3" x 1-1/4" Reinf. Bar	80.00 - 81.00	1.0000	1.0000
L8	23	3" x 1-1/4" Reinf. Bar	80.00 - 81.00	1.0000	1.0000
L8	24	3" x 1-1/4" Reinf. Bar	80.00 - 81.00	1.0000	1.0000
L8	25	3" x 1-1/4" Reinf. Bar	80.00 - 81.00	1.0000	1.0000
L8	42	CCI-65FP-060100	80.00 - 80.50	1.0000	1.0000
L8	43	CCI-65FP-060100	80.00 - 80.50	1.0000	1.0000
L8	44	CCI-65FP-060100	80.00 - 80.50	1.0000	1.0000
L8	45	CCI-65FP-060100	80.00 - 80.50	1.0000	1.0000
L9	5	FSJ4-50B(1/2)	79.75 - 80.00	1.0000	1.0000
L9	16	HCS 6X12 6AWG(1-3/8)	79.75 - 80.00	1.0000	1.0000
L9	18	FLC 158-50J(1-5/8)	79.75 - 80.00	1.0000	1.0000
L9	20	CU12PSM9P8XXX(1-3/8)	79.75 - 80.00	1.0000	1.0000
L9	22	3" x 1-1/4" Reinf. Bar	79.75 - 80.00	1.0000	1.0000
L9	23	3" x 1-1/4" Reinf. Bar	79.75 - 80.00	1.0000	1.0000
L9	24	3" x 1-1/4" Reinf. Bar	79.75 - 80.00	1.0000	1.0000
L9	25	3" x 1-1/4" Reinf. Bar	79.75 - 80.00	1.0000	1.0000
L9	42	CCI-65FP-060100	79.75 - 80.00	1.0000	1.0000
L9	43	CCI-65FP-060100	79.75 - 80.00	1.0000	1.0000
L9	44	CCI-65FP-060100	79.75 - 80.00	1.0000	1.0000
L9	45	CCI-65FP-060100	79.75 - 80.00	1.0000	1.0000
L10	5	FSJ4-50B(1/2)	78.50 - 79.75	1.0000	1.0000
L10	16	HCS 6X12 6AWG(1-3/8)	78.50 - 79.75	1.0000	1.0000
L10	18	FLC 158-50J(1-5/8)	78.50 - 79.75	1.0000	1.0000
L10	20	CU12PSM9P8XXX(1-3/8)	78.50 - 79.75	1.0000	1.0000
L10	22	3" x 1-1/4" Reinf. Bar	78.50 - 79.75	1.0000	1.0000
L10	23	3" x 1-1/4" Reinf. Bar	78.50 - 79.75	1.0000	1.0000
L10	24	3" x 1-1/4" Reinf. Bar	78.50 - 79.75	1.0000	1.0000
L10	25	3" x 1-1/4" Reinf. Bar	78.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L10	42	CCI-65FP-060100	79.75 78.50 - 79.75	1.0000	1.0000
L10	43	CCI-65FP-060100	78.50 - 79.75	1.0000	1.0000
L10	44	CCI-65FP-060100	78.50 - 79.75	1.0000	1.0000
L10	45	CCI-65FP-060100	78.50 - 79.75	1.0000	1.0000
L11	5	FSJ4-50B(1/2)	78.25 - 78.50	1.0000	1.0000
L11	16	HCS 6X12 6AWG(1-3/8)	78.25 - 78.50	1.0000	1.0000
L11	18	FLC 158-50J(1-5/8)	78.25 - 78.50	1.0000	1.0000
L11	20	CU12PSM9P8XXX(1-3/8)	78.25 - 78.50	1.0000	1.0000
L11	22	3" x 1-1/4" Reinf. Bar	78.25 - 78.50	1.0000	1.0000
L11	23	3" x 1-1/4" Reinf. Bar	78.25 - 78.50	1.0000	1.0000
L11	24	3" x 1-1/4" Reinf. Bar	78.25 - 78.50	1.0000	1.0000
L11	25	3" x 1-1/4" Reinf. Bar	78.25 - 78.50	1.0000	1.0000
L11	42	CCI-65FP-060100	78.25 - 78.50	1.0000	1.0000
L11	43	CCI-65FP-060100	78.25 - 78.50	1.0000	1.0000
L11	44	CCI-65FP-060100	78.25 - 78.50	1.0000	1.0000
L11	45	CCI-65FP-060100	78.25 - 78.50	1.0000	1.0000
L12	5	FSJ4-50B(1/2)	73.25 - 78.25	1.0000	1.0000
L12	16	HCS 6X12 6AWG(1-3/8)	73.25 - 78.25	1.0000	1.0000
L12	18	FLC 158-50J(1-5/8)	73.25 - 78.25	1.0000	1.0000
L12	20	CU12PSM9P8XXX(1-3/8)	73.25 - 78.25	1.0000	1.0000
L12	22	3" x 1-1/4" Reinf. Bar	73.25 - 78.25	1.0000	1.0000
L12	23	3" x 1-1/4" Reinf. Bar	73.25 - 78.25	1.0000	1.0000
L12	24	3" x 1-1/4" Reinf. Bar	73.25 - 78.25	1.0000	1.0000
L12	25	3" x 1-1/4" Reinf. Bar	73.25 - 78.25	1.0000	1.0000
L12	42	CCI-65FP-060100	73.25 - 78.25	1.0000	1.0000
L12	43	CCI-65FP-060100	73.25 - 78.25	1.0000	1.0000
L12	44	CCI-65FP-060100	73.25 - 78.25	1.0000	1.0000
L12	45	CCI-65FP-060100	73.25 - 78.25	1.0000	1.0000
L13	5	FSJ4-50B(1/2)	68.25 - 73.25	1.0000	1.0000
L13	16	HCS 6X12 6AWG(1-3/8)	68.25 - 73.25	1.0000	1.0000
L13	18	FLC 158-50J(1-5/8)	68.25 - 73.25	1.0000	1.0000
L13	20	CU12PSM9P8XXX(1-3/8)	68.25 - 73.25	1.0000	1.0000
L13	22	3" x 1-1/4" Reinf. Bar	68.25 - 73.25	1.0000	1.0000
L13	23	3" x 1-1/4" Reinf. Bar	68.25 - 73.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L13	24	3" x 1-1/4" Reinf. Bar	68.25 - 73.25	1.0000	1.0000
L13	25	3" x 1-1/4" Reinf. Bar	68.25 - 73.25	1.0000	1.0000
L13	42	CCI-65FP-060100	68.25 - 73.25	1.0000	1.0000
L13	43	CCI-65FP-060100	68.25 - 73.25	1.0000	1.0000
L13	44	CCI-65FP-060100	68.25 - 73.25	1.0000	1.0000
L13	45	CCI-65FP-060100	68.25 - 73.25	1.0000	1.0000
L14	5	FSJ4-50B(1/2)	68.00 - 68.25	1.0000	1.0000
L14	16	HCS 6X12 6AWG(1-3/8)	68.00 - 68.25	1.0000	1.0000
L14	18	FLC 158-50J(1-5/8)	68.00 - 68.25	1.0000	1.0000
L14	20	CU12PSM9P8XXX(1-3/8)	68.00 - 68.25	1.0000	1.0000
L14	22	3" x 1-1/4" Reinf. Bar	68.00 - 68.25	1.0000	1.0000
L14	23	3" x 1-1/4" Reinf. Bar	68.00 - 68.25	1.0000	1.0000
L14	24	3" x 1-1/4" Reinf. Bar	68.00 - 68.25	1.0000	1.0000
L14	25	3" x 1-1/4" Reinf. Bar	68.00 - 68.25	1.0000	1.0000
L14	42	CCI-65FP-060100	68.00 - 68.25	1.0000	1.0000
L14	43	CCI-65FP-060100	68.00 - 68.25	1.0000	1.0000
L14	44	CCI-65FP-060100	68.00 - 68.25	1.0000	1.0000
L14	45	CCI-65FP-060100	68.00 - 68.25	1.0000	1.0000
L15	5	FSJ4-50B(1/2)	67.75 - 68.00	1.0000	1.0000
L15	16	HCS 6X12 6AWG(1-3/8)	67.75 - 68.00	1.0000	1.0000
L15	18	FLC 158-50J(1-5/8)	67.75 - 68.00	1.0000	1.0000
L15	20	CU12PSM9P8XXX(1-3/8)	67.75 - 68.00	1.0000	1.0000
L15	22	3" x 1-1/4" Reinf. Bar	67.75 - 68.00	1.0000	1.0000
L15	23	3" x 1-1/4" Reinf. Bar	67.75 - 68.00	1.0000	1.0000
L15	24	3" x 1-1/4" Reinf. Bar	67.75 - 68.00	1.0000	1.0000
L15	25	3" x 1-1/4" Reinf. Bar	67.75 - 68.00	1.0000	1.0000
L15	42	CCI-65FP-060100	67.75 - 68.00	1.0000	1.0000
L15	43	CCI-65FP-060100	67.75 - 68.00	1.0000	1.0000
L15	44	CCI-65FP-060100	67.75 - 68.00	1.0000	1.0000
L15	45	CCI-65FP-060100	67.75 - 68.00	1.0000	1.0000
L16	5	FSJ4-50B(1/2)	62.75 - 67.75	1.0000	1.0000
L16	16	HCS 6X12 6AWG(1-3/8)	62.75 - 67.75	1.0000	1.0000
L16	18	FLC 158-50J(1-5/8)	62.75 - 67.75	1.0000	1.0000
L16	20	CU12PSM9P8XXX(1-3/8)	62.75 - 67.75	1.0000	1.0000
L16	22	3" x 1-1/4" Reinf. Bar	67.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
			67.75		
L16	23	3" x 1-1/4" Reinf. Bar	67.00 - 67.75	1.0000	1.0000
L16	24	3" x 1-1/4" Reinf. Bar	67.00 - 67.75	1.0000	1.0000
L16	25	3" x 1-1/4" Reinf. Bar	67.00 - 67.75	1.0000	1.0000
L16	42	CCI-65FP-060100	62.75 - 67.75	1.0000	1.0000
L16	43	CCI-65FP-060100	62.75 - 67.75	1.0000	1.0000
L16	44	CCI-65FP-060100	62.75 - 67.75	1.0000	1.0000
L16	45	CCI-65FP-060100	62.75 - 67.75	1.0000	1.0000
L17	5	FSJ4-50B(1/2)	60.00 - 62.75	1.0000	1.0000
L17	16	HCS 6X12 6AWG(1-3/8)	60.00 - 62.75	1.0000	1.0000
L17	18	FLC 158-50J(1-5/8)	60.00 - 62.75	1.0000	1.0000
L17	20	CU12PSM9P8XXX(1-3/8)	60.00 - 62.75	1.0000	1.0000
L17	42	CCI-65FP-060100	60.50 - 62.75	1.0000	1.0000
L17	43	CCI-65FP-060100	60.50 - 62.75	1.0000	1.0000
L17	44	CCI-65FP-060100	60.50 - 62.75	1.0000	1.0000
L17	45	CCI-65FP-060100	60.50 - 62.75	1.0000	1.0000
L18	5	FSJ4-50B(1/2)	57.50 - 60.00	1.0000	1.0000
L18	16	HCS 6X12 6AWG(1-3/8)	57.50 - 60.00	1.0000	1.0000
L18	18	FLC 158-50J(1-5/8)	57.50 - 60.00	1.0000	1.0000
L18	20	CU12PSM9P8XXX(1-3/8)	57.50 - 60.00	1.0000	1.0000
L18	38	CCI-65FP-060100	57.50 - 59.50	1.0000	1.0000
L18	39	CCI-65FP-060100	57.50 - 59.50	1.0000	1.0000
L18	40	CCI-65FP-060100	57.50 - 59.50	1.0000	1.0000
L18	41	CCI-65FP-060100	57.50 - 59.50	1.0000	1.0000
L19	5	FSJ4-50B(1/2)	57.25 - 57.50	1.0000	1.0000
L19	16	HCS 6X12 6AWG(1-3/8)	57.25 - 57.50	1.0000	1.0000
L19	18	FLC 158-50J(1-5/8)	57.25 - 57.50	1.0000	1.0000
L19	20	CU12PSM9P8XXX(1-3/8)	57.25 - 57.50	1.0000	1.0000
L19	38	CCI-65FP-060100	57.25 - 57.50	1.0000	1.0000
L19	39	CCI-65FP-060100	57.25 - 57.50	1.0000	1.0000
L19	40	CCI-65FP-060100	57.25 - 57.50	1.0000	1.0000
L19	41	CCI-65FP-060100	57.25 - 57.50	1.0000	1.0000
L20	5	FSJ4-50B(1/2)	52.25 - 57.25	1.0000	1.0000
L20	16	HCS 6X12 6AWG(1-3/8)	52.25 - 57.25	1.0000	1.0000
L20	18	FLC 158-50J(1-5/8)	52.25 - 57.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L20	20	CU12PSM9P8XXX(1-3/8)	52.25 - 57.25	1.0000	1.0000
L20	38	CCI-65FP-060100	52.25 - 57.25	1.0000	1.0000
L20	39	CCI-65FP-060100	52.25 - 57.25	1.0000	1.0000
L20	40	CCI-65FP-060100	52.25 - 57.25	1.0000	1.0000
L20	41	CCI-65FP-060100	52.25 - 57.25	1.0000	1.0000
L21	4	FSJ4-50B(1/2)	47.25 - 48.00	1.0000	1.0000
L21	5	FSJ4-50B(1/2)	47.25 - 52.25	1.0000	1.0000
L21	16	HCS 6X12 6AWG(1-3/8)	47.25 - 52.25	1.0000	1.0000
L21	18	FLC 158-50J(1-5/8)	47.25 - 52.25	1.0000	1.0000
L21	20	CU12PSM9P8XXX(1-3/8)	47.25 - 52.25	1.0000	1.0000
L21	38	CCI-65FP-060100	47.25 - 52.25	1.0000	1.0000
L21	39	CCI-65FP-060100	47.25 - 52.25	1.0000	1.0000
L21	40	CCI-65FP-060100	47.25 - 52.25	1.0000	1.0000
L21	41	CCI-65FP-060100	47.25 - 52.25	1.0000	1.0000
L22	4	FSJ4-50B(1/2)	45.33 - 47.25	1.0000	1.0000
L22	5	FSJ4-50B(1/2)	45.33 - 47.25	1.0000	1.0000
L22	16	HCS 6X12 6AWG(1-3/8)	45.33 - 47.25	1.0000	1.0000
L22	18	FLC 158-50J(1-5/8)	45.33 - 47.25	1.0000	1.0000
L22	20	CU12PSM9P8XXX(1-3/8)	45.33 - 47.25	1.0000	1.0000
L22	30	MP3-03	45.33 - 46.50	1.0000	1.0000
L22	31	MP3-03	45.33 - 46.50	1.0000	1.0000
L22	32	MP3-03	45.33 - 46.50	1.0000	1.0000
L22	33	MP3-03	45.33 - 46.50	1.0000	1.0000
L22	38	CCI-65FP-060100	45.33 - 47.25	1.0000	1.0000
L22	39	CCI-65FP-060100	45.33 - 47.25	1.0000	1.0000
L22	40	CCI-65FP-060100	45.33 - 47.25	1.0000	1.0000
L22	41	CCI-65FP-060100	45.33 - 47.25	1.0000	1.0000
L23	4	FSJ4-50B(1/2)	45.08 - 45.33	1.0000	1.0000
L23	5	FSJ4-50B(1/2)	45.08 - 45.33	1.0000	1.0000
L23	16	HCS 6X12 6AWG(1-3/8)	45.08 - 45.33	1.0000	1.0000
L23	18	FLC 158-50J(1-5/8)	45.08 - 45.33	1.0000	1.0000
L23	20	CU12PSM9P8XXX(1-3/8)	45.08 - 45.33	1.0000	1.0000
L23	30	MP3-03	45.08 - 45.33	1.0000	1.0000
L23	31	MP3-03	45.08 - 45.33	1.0000	1.0000
L23	32	MP3-03	45.08 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L23	33	MP3-03	45.33 45.08 -	1.0000	1.0000
L23	38	CCI-65FP-060100	45.33 45.08 -	1.0000	1.0000
L23	39	CCI-65FP-060100	45.33 45.08 -	1.0000	1.0000
L23	40	CCI-65FP-060100	45.33 45.08 -	1.0000	1.0000
L23	41	CCI-65FP-060100	45.33 45.08 -	1.0000	1.0000
L24	4	FSJ4-50B(1/2)	45.33 40.08 -	1.0000	1.0000
L24	5	FSJ4-50B(1/2)	45.08 40.08 -	1.0000	1.0000
L24	16	HCS 6X12 6AWG(1-3/8)	45.08 40.08 -	1.0000	1.0000
L24	18	FLC 158-50J(1-5/8)	45.08 40.08 -	1.0000	1.0000
L24	20	CU12PSM9P8XXX(1-3/8)	45.08 40.08 -	1.0000	1.0000
L24	30	MP3-03	45.08 40.08 -	1.0000	1.0000
L24	31	MP3-03	45.08 40.08 -	1.0000	1.0000
L24	32	MP3-03	45.08 40.08 -	1.0000	1.0000
L24	33	MP3-03	45.08 40.08 -	1.0000	1.0000
L24	38	CCI-65FP-060100	45.08 40.08 -	1.0000	1.0000
L24	39	CCI-65FP-060100	45.08 40.08 -	1.0000	1.0000
L24	40	CCI-65FP-060100	45.08 40.08 -	1.0000	1.0000
L24	41	CCI-65FP-060100	45.08 40.08 -	1.0000	1.0000
L25	4	FSJ4-50B(1/2)	45.08 35.08 -	1.0000	1.0000
L25	5	FSJ4-50B(1/2)	40.08 35.08 -	1.0000	1.0000
L25	16	HCS 6X12 6AWG(1-3/8)	40.08 35.08 -	1.0000	1.0000
L25	18	FLC 158-50J(1-5/8)	40.08 35.08 -	1.0000	1.0000
L25	20	CU12PSM9P8XXX(1-3/8)	40.08 35.08 -	1.0000	1.0000
L25	26	MP3-05	40.08 35.08 -	1.0000	1.0000
L25	27	MP3-05	36.00 35.08 -	1.0000	1.0000
L25	28	MP3-05	36.00 35.08 -	1.0000	1.0000
L25	29	MP3-05	36.00 35.08 -	1.0000	1.0000
L25	30	MP3-03	36.00 36.50 -	1.0000	1.0000
L25	31	MP3-03	40.08 36.50 -	1.0000	1.0000
L25	32	MP3-03	40.08 36.50 -	1.0000	1.0000
L25	33	MP3-03	40.08 36.50 -	1.0000	1.0000
L25	38	CCI-65FP-060100	40.08 35.08 -	1.0000	1.0000
L25	39	CCI-65FP-060100	40.08 35.08 -	1.0000	1.0000
L25	40	CCI-65FP-060100	40.08 35.08 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L25	41	CCI-65FP-060100	35.08 - 40.08	1.0000	1.0000
L26	4	FSJ4-50B(1/2)	33.58 - 35.08	1.0000	1.0000
L26	5	FSJ4-50B(1/2)	33.58 - 35.08	1.0000	1.0000
L26	16	HCS 6X12 6AWG(1-3/8)	33.58 - 35.08	1.0000	1.0000
L26	18	FLC 158-50J(1-5/8)	33.58 - 35.08	1.0000	1.0000
L26	20	CU12PSM9P8XXX(1-3/8)	33.58 - 35.08	1.0000	1.0000
L26	26	MP3-05	33.58 - 35.08	1.0000	1.0000
L26	27	MP3-05	33.58 - 35.08	1.0000	1.0000
L26	28	MP3-05	33.58 - 35.08	1.0000	1.0000
L26	29	MP3-05	33.58 - 35.08	1.0000	1.0000
L26	38	CCI-65FP-060100	33.58 - 35.08	1.0000	1.0000
L26	39	CCI-65FP-060100	33.58 - 35.08	1.0000	1.0000
L26	40	CCI-65FP-060100	33.58 - 35.08	1.0000	1.0000
L26	41	CCI-65FP-060100	33.58 - 35.08	1.0000	1.0000
L27	4	FSJ4-50B(1/2)	33.33 - 33.58	1.0000	1.0000
L27	5	FSJ4-50B(1/2)	33.33 - 33.58	1.0000	1.0000
L27	16	HCS 6X12 6AWG(1-3/8)	33.33 - 33.58	1.0000	1.0000
L27	18	FLC 158-50J(1-5/8)	33.33 - 33.58	1.0000	1.0000
L27	20	CU12PSM9P8XXX(1-3/8)	33.33 - 33.58	1.0000	1.0000
L27	26	MP3-05	33.33 - 33.58	1.0000	1.0000
L27	27	MP3-05	33.33 - 33.58	1.0000	1.0000
L27	28	MP3-05	33.33 - 33.58	1.0000	1.0000
L27	29	MP3-05	33.33 - 33.58	1.0000	1.0000
L27	38	CCI-65FP-060100	33.33 - 33.58	1.0000	1.0000
L27	39	CCI-65FP-060100	33.33 - 33.58	1.0000	1.0000
L27	40	CCI-65FP-060100	33.33 - 33.58	1.0000	1.0000
L27	41	CCI-65FP-060100	33.33 - 33.58	1.0000	1.0000
L28	4	FSJ4-50B(1/2)	32.42 - 33.33	1.0000	1.0000
L28	5	FSJ4-50B(1/2)	32.42 - 33.33	1.0000	1.0000
L28	16	HCS 6X12 6AWG(1-3/8)	32.42 - 33.33	1.0000	1.0000
L28	18	FLC 158-50J(1-5/8)	32.42 - 33.33	1.0000	1.0000
L28	20	CU12PSM9P8XXX(1-3/8)	32.42 - 33.33	1.0000	1.0000
L28	26	MP3-05	32.42 - 33.33	1.0000	1.0000
L28	27	MP3-05	32.42 - 33.33	1.0000	1.0000
L28	28	MP3-05	32.42 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L28	29	MP3-05	33.33 32.42 - 33.33	1.0000	1.0000
L28	38	CCI-65FP-060100	32.42 - 33.33	1.0000	1.0000
L28	39	CCI-65FP-060100	32.42 - 33.33	1.0000	1.0000
L28	40	CCI-65FP-060100	32.42 - 33.33	1.0000	1.0000
L28	41	CCI-65FP-060100	32.42 - 33.33	1.0000	1.0000
L29	4	FSJ4-50B(1/2)	32.17 - 32.42	1.0000	1.0000
L29	5	FSJ4-50B(1/2)	32.17 - 32.42	1.0000	1.0000
L29	16	HCS 6X12 6AWG(1-3/8)	32.17 - 32.42	1.0000	1.0000
L29	18	FLC 158-50J(1-5/8)	32.17 - 32.42	1.0000	1.0000
L29	20	CU12PSM9P8XXX(1-3/8)	32.17 - 32.42	1.0000	1.0000
L29	26	MP3-05	32.17 - 32.42	1.0000	1.0000
L29	27	MP3-05	32.17 - 32.42	1.0000	1.0000
L29	28	MP3-05	32.17 - 32.42	1.0000	1.0000
L29	29	MP3-05	32.17 - 32.42	1.0000	1.0000
L29	38	CCI-65FP-060100	32.17 - 32.42	1.0000	1.0000
L29	39	CCI-65FP-060100	32.17 - 32.42	1.0000	1.0000
L29	40	CCI-65FP-060100	32.17 - 32.42	1.0000	1.0000
L29	41	CCI-65FP-060100	32.17 - 32.42	1.0000	1.0000
L30	4	FSJ4-50B(1/2)	30.00 - 32.17	1.0000	1.0000
L30	5	FSJ4-50B(1/2)	30.00 - 32.17	1.0000	1.0000
L30	16	HCS 6X12 6AWG(1-3/8)	30.00 - 32.17	1.0000	1.0000
L30	18	FLC 158-50J(1-5/8)	30.00 - 32.17	1.0000	1.0000
L30	20	CU12PSM9P8XXX(1-3/8)	30.00 - 32.17	1.0000	1.0000
L30	26	MP3-05	30.00 - 32.17	1.0000	1.0000
L30	27	MP3-05	30.00 - 32.17	1.0000	1.0000
L30	28	MP3-05	30.00 - 32.17	1.0000	1.0000
L30	29	MP3-05	30.00 - 32.17	1.0000	1.0000
L30	38	CCI-65FP-060100	30.50 - 32.17	1.0000	1.0000
L30	39	CCI-65FP-060100	30.50 - 32.17	1.0000	1.0000
L30	40	CCI-65FP-060100	30.50 - 32.17	1.0000	1.0000
L30	41	CCI-65FP-060100	30.50 - 32.17	1.0000	1.0000
L31	4	FSJ4-50B(1/2)	26.75 - 30.00	1.0000	1.0000
L31	5	FSJ4-50B(1/2)	26.75 - 30.00	1.0000	1.0000
L31	16	HCS 6X12 6AWG(1-3/8)	26.75 - 30.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L31	18	FLC 158-50J(1-5/8)	26.75 - 30.00	1.0000	1.0000
L31	20	CU12PSM9P8XXX(1-3/8)	26.75 - 30.00	1.0000	1.0000
L31	46	CCI-65FP-065125	26.75 - 29.50	1.0000	1.0000
L31	47	CCI-65FP-065125	26.75 - 29.50	1.0000	1.0000
L31	48	CCI-65FP-065125	26.75 - 29.50	1.0000	1.0000
L31	49	CCI-65FP-065125	26.75 - 29.50	1.0000	1.0000
L32	4	FSJ4-50B(1/2)	26.50 - 26.75	1.0000	1.0000
L32	5	FSJ4-50B(1/2)	26.50 - 26.75	1.0000	1.0000
L32	16	HCS 6X12 6AWG(1-3/8)	26.50 - 26.75	1.0000	1.0000
L32	18	FLC 158-50J(1-5/8)	26.50 - 26.75	1.0000	1.0000
L32	20	CU12PSM9P8XXX(1-3/8)	26.50 - 26.75	1.0000	1.0000
L32	46	CCI-65FP-065125	26.50 - 26.75	1.0000	1.0000
L32	47	CCI-65FP-065125	26.50 - 26.75	1.0000	1.0000
L32	48	CCI-65FP-065125	26.50 - 26.75	1.0000	1.0000
L32	49	CCI-65FP-065125	26.50 - 26.75	1.0000	1.0000
L33	4	FSJ4-50B(1/2)	21.50 - 26.50	1.0000	1.0000
L33	5	FSJ4-50B(1/2)	21.50 - 26.50	1.0000	1.0000
L33	16	HCS 6X12 6AWG(1-3/8)	21.50 - 26.50	1.0000	1.0000
L33	18	FLC 158-50J(1-5/8)	21.50 - 26.50	1.0000	1.0000
L33	20	CU12PSM9P8XXX(1-3/8)	21.50 - 26.50	1.0000	1.0000
L33	34	CCI-65FP-060100	21.50 - 23.50	1.0000	1.0000
L33	35	CCI-65FP-060100	21.50 - 23.50	1.0000	1.0000
L33	36	CCI-65FP-060100	21.50 - 23.50	1.0000	1.0000
L33	37	CCI-65FP-060100	21.50 - 23.50	1.0000	1.0000
L33	46	CCI-65FP-065125	21.50 - 26.50	1.0000	1.0000
L33	47	CCI-65FP-065125	21.50 - 26.50	1.0000	1.0000
L33	48	CCI-65FP-065125	21.50 - 26.50	1.0000	1.0000
L33	49	CCI-65FP-065125	21.50 - 26.50	1.0000	1.0000
L34	4	FSJ4-50B(1/2)	21.25 - 21.50	1.0000	1.0000
L34	5	FSJ4-50B(1/2)	21.25 - 21.50	1.0000	1.0000
L34	16	HCS 6X12 6AWG(1-3/8)	21.25 - 21.50	1.0000	1.0000
L34	18	FLC 158-50J(1-5/8)	21.25 - 21.50	1.0000	1.0000
L34	20	CU12PSM9P8XXX(1-3/8)	21.25 - 21.50	1.0000	1.0000
L34	34	CCI-65FP-060100	21.25 - 21.50	1.0000	1.0000
L34	35	CCI-65FP-060100	21.25 - 21.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L34	36	CCI-65FP-060100	21.50 21.25 - 21.50	1.0000	1.0000
L34	37	CCI-65FP-060100	21.25 - 21.50	1.0000	1.0000
L34	46	CCI-65FP-065125	21.25 - 21.50	1.0000	1.0000
L34	47	CCI-65FP-065125	21.25 - 21.50	1.0000	1.0000
L34	48	CCI-65FP-065125	21.25 - 21.50	1.0000	1.0000
L34	49	CCI-65FP-065125	21.25 - 21.50	1.0000	1.0000
L35	4	FSJ4-50B(1/2)	16.25 - 21.25	1.0000	1.0000
L35	5	FSJ4-50B(1/2)	16.25 - 21.25	1.0000	1.0000
L35	16	HCS 6X12 6AWG(1-3/8)	16.25 - 21.25	1.0000	1.0000
L35	18	FLC 158-50J(1-5/8)	16.25 - 21.25	1.0000	1.0000
L35	20	CU12PSM9P8XXX(1-3/8)	16.25 - 21.25	1.0000	1.0000
L35	34	CCI-65FP-060100	16.25 - 21.25	1.0000	1.0000
L35	35	CCI-65FP-060100	16.25 - 21.25	1.0000	1.0000
L35	36	CCI-65FP-060100	16.25 - 21.25	1.0000	1.0000
L35	37	CCI-65FP-060100	16.25 - 21.25	1.0000	1.0000
L35	46	CCI-65FP-065125	16.25 - 21.25	1.0000	1.0000
L35	47	CCI-65FP-065125	16.25 - 21.25	1.0000	1.0000
L35	48	CCI-65FP-065125	16.25 - 21.25	1.0000	1.0000
L35	49	CCI-65FP-065125	16.25 - 21.25	1.0000	1.0000
L36	4	FSJ4-50B(1/2)	11.25 - 16.25	1.0000	1.0000
L36	5	FSJ4-50B(1/2)	11.25 - 16.25	1.0000	1.0000
L36	16	HCS 6X12 6AWG(1-3/8)	11.25 - 16.25	1.0000	1.0000
L36	18	FLC 158-50J(1-5/8)	11.25 - 16.25	1.0000	1.0000
L36	20	CU12PSM9P8XXX(1-3/8)	11.25 - 16.25	1.0000	1.0000
L36	34	CCI-65FP-060100	11.25 - 16.25	1.0000	1.0000
L36	35	CCI-65FP-060100	11.25 - 16.25	1.0000	1.0000
L36	36	CCI-65FP-060100	11.25 - 16.25	1.0000	1.0000
L36	37	CCI-65FP-060100	11.25 - 16.25	1.0000	1.0000
L36	46	CCI-65FP-065125	11.25 - 16.25	1.0000	1.0000
L36	47	CCI-65FP-065125	11.25 - 16.25	1.0000	1.0000
L36	48	CCI-65FP-065125	11.25 - 16.25	1.0000	1.0000
L36	49	CCI-65FP-065125	11.25 - 16.25	1.0000	1.0000
L37	4	FSJ4-50B(1/2)	6.25 - 11.25	1.0000	1.0000
L37	5	FSJ4-50B(1/2)	6.25 - 11.25	1.0000	1.0000
L37	16	HCS 6X12 6AWG(1-3/8)	6.25 - 11.25	1.0000	1.0000
L37	18	FLC 158-50J(1-5/8)	6.25 - 11.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L37	20	CU12PSM9P8XXX(1-3/8)	6.25 - 11.25	1.0000	1.0000
L37	34	CCI-65FP-060100	6.25 - 11.25	1.0000	1.0000
L37	35	CCI-65FP-060100	6.25 - 11.25	1.0000	1.0000
L37	36	CCI-65FP-060100	6.25 - 11.25	1.0000	1.0000
L37	37	CCI-65FP-060100	6.25 - 11.25	1.0000	1.0000
L37	46	CCI-65FP-065125	6.25 - 11.25	1.0000	1.0000
L37	47	CCI-65FP-065125	6.25 - 11.25	1.0000	1.0000
L37	48	CCI-65FP-065125	6.25 - 11.25	1.0000	1.0000
L37	49	CCI-65FP-065125	6.25 - 11.25	1.0000	1.0000
L38	4	FSJ4-50B(1/2)	1.25 - 6.25	1.0000	1.0000
L38	5	FSJ4-50B(1/2)	1.25 - 6.25	1.0000	1.0000
L38	16	HCS 6X12 6AWG(1-3/8)	1.25 - 6.25	1.0000	1.0000
L38	18	FLC 158-50J(1-5/8)	1.25 - 6.25	1.0000	1.0000
L38	20	CU12PSM9P8XXX(1-3/8)	1.25 - 6.25	1.0000	1.0000
L38	34	CCI-65FP-060100	1.25 - 6.25	1.0000	1.0000
L38	35	CCI-65FP-060100	1.25 - 6.25	1.0000	1.0000
L38	36	CCI-65FP-060100	1.25 - 6.25	1.0000	1.0000
L38	37	CCI-65FP-060100	1.25 - 6.25	1.0000	1.0000
L38	46	CCI-65FP-065125	1.25 - 6.25	1.0000	1.0000
L38	47	CCI-65FP-065125	1.25 - 6.25	1.0000	1.0000
L38	48	CCI-65FP-065125	1.25 - 6.25	1.0000	1.0000
L38	49	CCI-65FP-065125	1.25 - 6.25	1.0000	1.0000
L39	4	FSJ4-50B(1/2)	0.00 - 1.25	1.0000	1.0000
L39	5	FSJ4-50B(1/2)	0.00 - 1.25	1.0000	1.0000
L39	16	HCS 6X12 6AWG(1-3/8)	0.00 - 1.25	1.0000	1.0000
L39	18	FLC 158-50J(1-5/8)	0.00 - 1.25	1.0000	1.0000
L39	20	CU12PSM9P8XXX(1-3/8)	0.00 - 1.25	1.0000	1.0000
L39	34	CCI-65FP-060100	0.50 - 1.25	1.0000	1.0000
L39	35	CCI-65FP-060100	0.50 - 1.25	1.0000	1.0000
L39	36	CCI-65FP-060100	0.50 - 1.25	1.0000	1.0000
L39	37	CCI-65FP-060100	0.50 - 1.25	1.0000	1.0000
L39	46	CCI-65FP-065125	0.00 - 1.25	1.0000	1.0000
L39	47	CCI-65FP-065125	0.00 - 1.25	1.0000	1.0000
L39	48	CCI-65FP-065125	0.00 - 1.25	1.0000	1.0000
L39	49	CCI-65FP-065125	0.00 - 1.25	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L8	22	3" x 1-1/4" Reinf. Bar	80.00 - 81.00	Auto	1.0000
L8	23	3" x 1-1/4" Reinf. Bar	80.00 - 81.00	Auto	1.0000
L8	24	3" x 1-1/4" Reinf. Bar	80.00 - 81.00	Auto	1.0000
L8	25	3" x 1-1/4" Reinf. Bar	80.00 - 81.00	Auto	1.0000
L8	42	CCI-65FP-060100	80.00 - 80.50	Auto	1.0000
L8	43	CCI-65FP-060100	80.00 - 80.50	Auto	1.0000
L8	44	CCI-65FP-060100	80.00 - 80.50	Auto	1.0000
L8	45	CCI-65FP-060100	80.00 - 80.50	Auto	1.0000
L9	22	3" x 1-1/4" Reinf. Bar	79.75 - 80.00	Auto	1.0000
L9	23	3" x 1-1/4" Reinf. Bar	79.75 -	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L9	24	3" x 1-1/4" Reinf. Bar	80.00 79.75 - 80.00	Auto	1.0000
L9	25	3" x 1-1/4" Reinf. Bar	79.75 - 80.00	Auto	1.0000
L9	42	CCI-65FP-060100	79.75 - 80.00	Auto	1.0000
L9	43	CCI-65FP-060100	79.75 - 80.00	Auto	1.0000
L9	44	CCI-65FP-060100	79.75 - 80.00	Auto	1.0000
L9	45	CCI-65FP-060100	79.75 - 80.00	Auto	1.0000
L10	22	3" x 1-1/4" Reinf. Bar	78.50 - 79.75	Auto	1.0000
L10	23	3" x 1-1/4" Reinf. Bar	78.50 - 79.75	Auto	1.0000
L10	24	3" x 1-1/4" Reinf. Bar	78.50 - 79.75	Auto	1.0000
L10	25	3" x 1-1/4" Reinf. Bar	78.50 - 79.75	Auto	1.0000
L10	42	CCI-65FP-060100	78.50 - 79.75	Auto	1.0000
L10	43	CCI-65FP-060100	78.50 - 79.75	Auto	1.0000
L10	44	CCI-65FP-060100	78.50 - 79.75	Auto	1.0000
L10	45	CCI-65FP-060100	78.50 - 79.75	Auto	1.0000
L11	22	3" x 1-1/4" Reinf. Bar	78.25 - 78.50	Auto	1.0000
L11	23	3" x 1-1/4" Reinf. Bar	78.25 - 78.50	Auto	1.0000
L11	24	3" x 1-1/4" Reinf. Bar	78.25 - 78.50	Auto	1.0000
L11	25	3" x 1-1/4" Reinf. Bar	78.25 - 78.50	Auto	1.0000
L11	42	CCI-65FP-060100	78.25 - 78.50	Auto	1.0000
L11	43	CCI-65FP-060100	78.25 - 78.50	Auto	1.0000
L11	44	CCI-65FP-060100	78.25 - 78.50	Auto	1.0000
L11	45	CCI-65FP-060100	78.25 - 78.50	Auto	1.0000
L12	22	3" x 1-1/4" Reinf. Bar	73.25 - 78.25	Auto	1.0000
L12	23	3" x 1-1/4" Reinf. Bar	73.25 - 78.25	Auto	1.0000
L12	24	3" x 1-1/4" Reinf. Bar	73.25 - 78.25	Auto	1.0000
L12	25	3" x 1-1/4" Reinf. Bar	73.25 - 78.25	Auto	1.0000
L12	42	CCI-65FP-060100	73.25 - 78.25	Auto	1.0000
L12	43	CCI-65FP-060100	73.25 - 78.25	Auto	1.0000
L12	44	CCI-65FP-060100	73.25 - 78.25	Auto	1.0000
L12	45	CCI-65FP-060100	73.25 - 78.25	Auto	1.0000
L13	22	3" x 1-1/4" Reinf. Bar	68.25 - 73.25	Auto	1.0000
L13	23	3" x 1-1/4" Reinf. Bar	68.25 - 73.25	Auto	1.0000
L13	24	3" x 1-1/4" Reinf. Bar	68.25 - 73.25	Auto	1.0000
L13	25	3" x 1-1/4" Reinf. Bar	68.25 -	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L13	42	CCI-65FP-060100	73.25 - 68.25 - 73.25	Auto	1.0000
L13	43	CCI-65FP-060100	73.25 - 68.25 - 73.25	Auto	1.0000
L13	44	CCI-65FP-060100	73.25 - 68.25 - 73.25	Auto	1.0000
L13	45	CCI-65FP-060100	73.25 - 68.25 - 73.25	Auto	1.0000
L14	22	3" x 1-1/4" Reinf. Bar	68.00 - 68.25	Auto	1.0000
L14	23	3" x 1-1/4" Reinf. Bar	68.00 - 68.25	Auto	1.0000
L14	24	3" x 1-1/4" Reinf. Bar	68.00 - 68.25	Auto	1.0000
L14	25	3" x 1-1/4" Reinf. Bar	68.00 - 68.25	Auto	1.0000
L14	42	CCI-65FP-060100	68.00 - 68.25	Auto	1.0000
L14	43	CCI-65FP-060100	68.00 - 68.25	Auto	1.0000
L14	44	CCI-65FP-060100	68.00 - 68.25	Auto	1.0000
L14	45	CCI-65FP-060100	68.00 - 68.25	Auto	1.0000
L15	22	3" x 1-1/4" Reinf. Bar	67.75 - 68.00	Auto	1.0000
L15	23	3" x 1-1/4" Reinf. Bar	67.75 - 68.00	Auto	1.0000
L15	24	3" x 1-1/4" Reinf. Bar	67.75 - 68.00	Auto	1.0000
L15	25	3" x 1-1/4" Reinf. Bar	67.75 - 68.00	Auto	1.0000
L15	42	CCI-65FP-060100	67.75 - 68.00	Auto	1.0000
L15	43	CCI-65FP-060100	67.75 - 68.00	Auto	1.0000
L15	44	CCI-65FP-060100	67.75 - 68.00	Auto	1.0000
L15	45	CCI-65FP-060100	67.75 - 68.00	Auto	1.0000
L16	22	3" x 1-1/4" Reinf. Bar	67.00 - 67.75	Auto	1.0000
L16	23	3" x 1-1/4" Reinf. Bar	67.00 - 67.75	Auto	1.0000
L16	24	3" x 1-1/4" Reinf. Bar	67.00 - 67.75	Auto	1.0000
L16	25	3" x 1-1/4" Reinf. Bar	67.00 - 67.75	Auto	1.0000
L16	42	CCI-65FP-060100	62.75 - 67.75	Auto	1.0000
L16	43	CCI-65FP-060100	62.75 - 67.75	Auto	1.0000
L16	44	CCI-65FP-060100	62.75 - 67.75	Auto	1.0000
L16	45	CCI-65FP-060100	62.75 - 67.75	Auto	1.0000
L17	42	CCI-65FP-060100	60.50 - 62.75	Auto	1.0000
L17	43	CCI-65FP-060100	60.50 - 62.75	Auto	1.0000
L17	44	CCI-65FP-060100	60.50 - 62.75	Auto	1.0000
L17	45	CCI-65FP-060100	60.50 - 62.75	Auto	1.0000
L18	38	CCI-65FP-060100	57.50 - 59.50	Auto	1.0000
L18	39	CCI-65FP-060100	57.50 -	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L18	40	CCI-65FP-060100	59.50 57.50 - 59.50	Auto	1.0000
L18	41	CCI-65FP-060100	57.50 - 59.50	Auto	1.0000
L19	38	CCI-65FP-060100	57.25 - 57.50	Auto	1.0000
L19	39	CCI-65FP-060100	57.25 - 57.50	Auto	1.0000
L19	40	CCI-65FP-060100	57.25 - 57.50	Auto	1.0000
L19	41	CCI-65FP-060100	57.25 - 57.50	Auto	1.0000
L20	38	CCI-65FP-060100	52.25 - 57.25	Auto	1.0000
L20	39	CCI-65FP-060100	52.25 - 57.25	Auto	1.0000
L20	40	CCI-65FP-060100	52.25 - 57.25	Auto	1.0000
L20	41	CCI-65FP-060100	52.25 - 57.25	Auto	1.0000
L21	38	CCI-65FP-060100	47.25 - 52.25	Auto	1.0000
L21	39	CCI-65FP-060100	47.25 - 52.25	Auto	1.0000
L21	40	CCI-65FP-060100	47.25 - 52.25	Auto	1.0000
L21	41	CCI-65FP-060100	47.25 - 52.25	Auto	1.0000
L22	30	MP3-03	45.33 - 46.50	Auto	1.0000
L22	31	MP3-03	45.33 - 46.50	Auto	1.0000
L22	32	MP3-03	45.33 - 46.50	Auto	1.0000
L22	33	MP3-03	45.33 - 46.50	Auto	1.0000
L22	38	CCI-65FP-060100	45.33 - 47.25	Auto	1.0000
L22	39	CCI-65FP-060100	45.33 - 47.25	Auto	1.0000
L22	40	CCI-65FP-060100	45.33 - 47.25	Auto	1.0000
L22	41	CCI-65FP-060100	45.33 - 47.25	Auto	1.0000
L23	30	MP3-03	45.08 - 45.33	Auto	1.0000
L23	31	MP3-03	45.08 - 45.33	Auto	1.0000
L23	32	MP3-03	45.08 - 45.33	Auto	1.0000
L23	33	MP3-03	45.08 - 45.33	Auto	1.0000
L23	38	CCI-65FP-060100	45.08 - 45.33	Auto	1.0000
L23	39	CCI-65FP-060100	45.08 - 45.33	Auto	1.0000
L23	40	CCI-65FP-060100	45.08 - 45.33	Auto	1.0000
L23	41	CCI-65FP-060100	45.08 - 45.33	Auto	1.0000
L24	30	MP3-03	40.08 - 45.08	Auto	1.0000
L24	31	MP3-03	40.08 - 45.08	Auto	1.0000
L24	32	MP3-03	40.08 - 45.08	Auto	1.0000
L24	33	MP3-03	40.08 -	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L24	38	CCI-65FP-060100	45.08 40.08 - 45.08	Auto	1.0000
L24	39	CCI-65FP-060100	40.08 - 45.08	Auto	1.0000
L24	40	CCI-65FP-060100	40.08 - 45.08	Auto	1.0000
L24	41	CCI-65FP-060100	40.08 - 45.08	Auto	1.0000
L25	26	MP3-05	35.08 - 36.00	Auto	1.0000
L25	27	MP3-05	35.08 - 36.00	Auto	1.0000
L25	28	MP3-05	35.08 - 36.00	Auto	1.0000
L25	29	MP3-05	35.08 - 36.00	Auto	1.0000
L25	30	MP3-03	36.50 - 40.08	Auto	1.0000
L25	31	MP3-03	36.50 - 40.08	Auto	1.0000
L25	32	MP3-03	36.50 - 40.08	Auto	1.0000
L25	33	MP3-03	36.50 - 40.08	Auto	1.0000
L25	38	CCI-65FP-060100	35.08 - 40.08	Auto	1.0000
L25	39	CCI-65FP-060100	35.08 - 40.08	Auto	1.0000
L25	40	CCI-65FP-060100	35.08 - 40.08	Auto	1.0000
L25	41	CCI-65FP-060100	35.08 - 40.08	Auto	1.0000
L26	26	MP3-05	33.58 - 35.08	Auto	1.0000
L26	27	MP3-05	33.58 - 35.08	Auto	1.0000
L26	28	MP3-05	33.58 - 35.08	Auto	1.0000
L26	29	MP3-05	33.58 - 35.08	Auto	1.0000
L26	38	CCI-65FP-060100	33.58 - 35.08	Auto	1.0000
L26	39	CCI-65FP-060100	33.58 - 35.08	Auto	1.0000
L26	40	CCI-65FP-060100	33.58 - 35.08	Auto	1.0000
L26	41	CCI-65FP-060100	33.58 - 35.08	Auto	1.0000
L27	26	MP3-05	33.33 - 33.58	Auto	1.0000
L27	27	MP3-05	33.33 - 33.58	Auto	1.0000
L27	28	MP3-05	33.33 - 33.58	Auto	1.0000
L27	29	MP3-05	33.33 - 33.58	Auto	1.0000
L27	38	CCI-65FP-060100	33.33 - 33.58	Auto	1.0000
L27	39	CCI-65FP-060100	33.33 - 33.58	Auto	1.0000
L27	40	CCI-65FP-060100	33.33 - 33.58	Auto	1.0000
L27	41	CCI-65FP-060100	33.33 - 33.58	Auto	1.0000
L28	26	MP3-05	32.42 - 33.33	Auto	1.0000
L28	27	MP3-05	32.42 -	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L28	28	MP3-05	33.33 32.42 - 33.33	Auto	1.0000
L28	29	MP3-05	32.42 - 33.33	Auto	1.0000
L28	38	CCI-65FP-060100	32.42 - 33.33	Auto	1.0000
L28	39	CCI-65FP-060100	32.42 - 33.33	Auto	1.0000
L28	40	CCI-65FP-060100	32.42 - 33.33	Auto	1.0000
L28	41	CCI-65FP-060100	32.42 - 33.33	Auto	1.0000
L29	26	MP3-05	32.17 - 32.42	Auto	1.0000
L29	27	MP3-05	32.17 - 32.42	Auto	1.0000
L29	28	MP3-05	32.17 - 32.42	Auto	1.0000
L29	29	MP3-05	32.17 - 32.42	Auto	1.0000
L29	38	CCI-65FP-060100	32.17 - 32.42	Auto	1.0000
L29	39	CCI-65FP-060100	32.17 - 32.42	Auto	1.0000
L29	40	CCI-65FP-060100	32.17 - 32.42	Auto	1.0000
L29	41	CCI-65FP-060100	32.17 - 32.42	Auto	1.0000
L30	26	MP3-05	30.00 - 32.17	Auto	1.0000
L30	27	MP3-05	30.00 - 32.17	Auto	1.0000
L30	28	MP3-05	30.00 - 32.17	Auto	1.0000
L30	29	MP3-05	30.00 - 32.17	Auto	1.0000
L30	38	CCI-65FP-060100	30.50 - 32.17	Auto	1.0000
L30	39	CCI-65FP-060100	30.50 - 32.17	Auto	1.0000
L30	40	CCI-65FP-060100	30.50 - 32.17	Auto	1.0000
L30	41	CCI-65FP-060100	30.50 - 32.17	Auto	1.0000
L31	46	CCI-65FP-065125	26.75 - 29.50	Auto	1.0000
L31	47	CCI-65FP-065125	26.75 - 29.50	Auto	1.0000
L31	48	CCI-65FP-065125	26.75 - 29.50	Auto	1.0000
L31	49	CCI-65FP-065125	26.75 - 29.50	Auto	1.0000
L32	46	CCI-65FP-065125	26.50 - 26.75	Auto	1.0000
L32	47	CCI-65FP-065125	26.50 - 26.75	Auto	1.0000
L32	48	CCI-65FP-065125	26.50 - 26.75	Auto	1.0000
L32	49	CCI-65FP-065125	26.50 - 26.75	Auto	1.0000
L33	34	CCI-65FP-060100	21.50 - 23.50	Auto	1.0000
L33	35	CCI-65FP-060100	21.50 - 23.50	Auto	1.0000
L33	36	CCI-65FP-060100	21.50 - 23.50	Auto	1.0000
L33	37	CCI-65FP-060100	21.50 -	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L33	46	CCI-65FP-065125	23.50 21.50 - 26.50	Auto	1.0000
L33	47	CCI-65FP-065125	21.50 - 26.50	Auto	1.0000
L33	48	CCI-65FP-065125	21.50 - 26.50	Auto	1.0000
L33	49	CCI-65FP-065125	21.50 - 26.50	Auto	1.0000
L34	34	CCI-65FP-060100	21.25 - 21.50	Auto	1.0000
L34	35	CCI-65FP-060100	21.25 - 21.50	Auto	1.0000
L34	36	CCI-65FP-060100	21.25 - 21.50	Auto	1.0000
L34	37	CCI-65FP-060100	21.25 - 21.50	Auto	1.0000
L34	46	CCI-65FP-065125	21.25 - 21.50	Auto	1.0000
L34	47	CCI-65FP-065125	21.25 - 21.50	Auto	1.0000
L34	48	CCI-65FP-065125	21.25 - 21.50	Auto	1.0000
L34	49	CCI-65FP-065125	21.25 - 21.50	Auto	1.0000
L35	34	CCI-65FP-060100	16.25 - 21.25	Auto	1.0000
L35	35	CCI-65FP-060100	16.25 - 21.25	Auto	1.0000
L35	36	CCI-65FP-060100	16.25 - 21.25	Auto	1.0000
L35	37	CCI-65FP-060100	16.25 - 21.25	Auto	1.0000
L35	46	CCI-65FP-065125	16.25 - 21.25	Auto	1.0000
L35	47	CCI-65FP-065125	16.25 - 21.25	Auto	1.0000
L35	48	CCI-65FP-065125	16.25 - 21.25	Auto	1.0000
L35	49	CCI-65FP-065125	16.25 - 21.25	Auto	1.0000
L36	34	CCI-65FP-060100	11.25 - 16.25	Auto	1.0000
L36	35	CCI-65FP-060100	11.25 - 16.25	Auto	1.0000
L36	36	CCI-65FP-060100	11.25 - 16.25	Auto	1.0000
L36	37	CCI-65FP-060100	11.25 - 16.25	Auto	1.0000
L36	46	CCI-65FP-065125	11.25 - 16.25	Auto	1.0000
L36	47	CCI-65FP-065125	11.25 - 16.25	Auto	1.0000
L36	48	CCI-65FP-065125	11.25 - 16.25	Auto	1.0000
L36	49	CCI-65FP-065125	11.25 - 16.25	Auto	1.0000
L37	34	CCI-65FP-060100	6.25 - 11.25	Auto	1.0000
L37	35	CCI-65FP-060100	6.25 - 11.25	Auto	1.0000
L37	36	CCI-65FP-060100	6.25 - 11.25	Auto	1.0000
L37	37	CCI-65FP-060100	6.25 - 11.25	Auto	1.0000
L37	46	CCI-65FP-065125	6.25 - 11.25	Auto	1.0000
L37	47	CCI-65FP-065125	6.25 - 11.25	Auto	1.0000
L37	48	CCI-65FP-065125	6.25 - 11.25	Auto	1.0000
L37	49	CCI-65FP-065125	6.25 - 11.25	Auto	1.0000
L38	34	CCI-65FP-060100	1.25 - 6.25	Auto	1.0000
L38	35	CCI-65FP-060100	1.25 - 6.25	Auto	1.0000
L38	36	CCI-65FP-060100	1.25 - 6.25	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L38	37	CCI-65FP-060100	1.25 - 6.25	Auto	1.0000
L38	46	CCI-65FP-065125	1.25 - 6.25	Auto	1.0000
L38	47	CCI-65FP-065125	1.25 - 6.25	Auto	1.0000
L38	48	CCI-65FP-065125	1.25 - 6.25	Auto	1.0000
L38	49	CCI-65FP-065125	1.25 - 6.25	Auto	1.0000
L39	34	CCI-65FP-060100	0.50 - 1.25	Auto	1.0000
L39	35	CCI-65FP-060100	0.50 - 1.25	Auto	1.0000
L39	36	CCI-65FP-060100	0.50 - 1.25	Auto	1.0000
L39	37	CCI-65FP-060100	0.50 - 1.25	Auto	1.0000
L39	46	CCI-65FP-065125	0.00 - 1.25	Auto	1.0000
L39	47	CCI-65FP-065125	0.00 - 1.25	Auto	1.0000
L39	48	CCI-65FP-065125	0.00 - 1.25	Auto	1.0000
L39	49	CCI-65FP-065125	0.00 - 1.25	Auto	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment	Placement ft
Lightning Rod 5/8"x4'	B	From Leg	2.00 0.00 7.00	0.0000	118.00
10'x4" Mount Pipe	B	From Leg	2.00 0.00 0.00	0.0000	118.00

Platform Mount [LP 502-1]	C	None		0.0000	118.00
10'x2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	118.00
(2) 7'x2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	118.00
(2) 7'x2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	118.00
10'x2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	118.00
APXV9ERR18-C-A20 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	118.00
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	118.00
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	118.00
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.00 6.00 2.00	0.0000	118.00
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.00 -6.00 2.00	0.0000	118.00
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.00 6.00 2.00	0.0000	118.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
(2) HORIZON COMPACT	B	From Leg	4.00 0.00 -2.00	0.0000	118.00
TD-RRH8X20-25	A	From Leg	4.00 0.00 2.00	0.0000	118.00
(2) TD-RRH8X20-25	B	From Leg	4.00 0.00 2.00	0.0000	118.00

Pipe Mount [PM 602-3]	C	None		0.0000	114.00
PCS 1900MHz 4x45W-65MHz	A	From Leg	1.00 0.00 1.00	0.0000	114.00
PCS 1900MHz 4x45W-65MHz	B	From Leg	1.00 0.00 1.00	0.0000	114.00
PCS 1900MHz 4x45W-65MHz	C	From Leg	1.00 0.00 1.00	0.0000	114.00
800MHz 2X50W RRH W/FILTER	A	From Leg	1.00 0.00 -1.00	0.0000	114.00
800MHz 2X50W RRH W/FILTER	B	From Leg	1.00 0.00 -1.00	0.0000	114.00
800MHz 2X50W RRH W/FILTER	C	From Leg	1.00 0.00 -1.00	0.0000	114.00

(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.0000	107.00
(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.0000	107.00
(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.0000	107.00
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.0000	107.00
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.0000	107.00
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.0000	107.00
RADIO 4449 B12/B71	A	From Leg	4.00 0.00 1.00	0.0000	107.00
RADIO 4449 B12/B71	B	From Leg	4.00 0.00 1.00	0.0000	107.00
RADIO 4449 B12/B71	C	From Leg	4.00 0.00 1.00	0.0000	107.00
KRY 112 144/1	A	From Leg	4.00 0.00 1.00	0.0000	107.00
KRY 112 144/1	B	From Leg	4.00 0.00 1.00	0.0000	107.00
KRY 112 144/1	C	From Leg	4.00 0.00 1.00	0.0000	107.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			0.00		
Platform Mount [LP 712-1] ****	C	None	1.00	0.0000	107.00
(2) QS66512-2 w/ Mount Pipe	A	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
(2) QS66512-2 w/ Mount Pipe	B	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
(2) QS66512-2 w/ Mount Pipe	C	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
RRUS 8843 B2/B66A	A	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
RRUS 8843 B2/B66A	B	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
RRUS 8843 B2/B66A	C	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
(2) TPX-070821	A	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
(2) TPX-070821	B	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
(2) TPX-070821	C	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
(2) DTMABP7819VG12A	A	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
DTMABP7819VG12A	C	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
RRUS 32	A	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
RRUS 32	B	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
RRUS 32	C	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
RRUS 11	A	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
RRUS 11	B	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
RRUS 11	C	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
DC6-48-60-18-8F	A	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
DC6-48-60-18-8C	A	From Leg	4.00	0.0000	99.00
			0.00		
			1.00		
Platform Mount [LP 502-1] ****	C	None		0.0000	99.00
Side Arm Mount [SO 701-1] ****	A	None		0.0000	59.00

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement
			Horz	Lateral	Vert		
			ft	ft	ft	°	ft
GPS_A	B	From Leg	4.00			0.0000	48.00
			0.00				
			2.00				
KS24019-L112A	B	From Leg	4.00			0.0000	48.00
			0.00				
			2.00				
Side Arm Mount [SO 701-1] **	B	None				0.0000	48.00
(2) Bridge Stiffener (137" x 15.5" x 1.25")	C	None				0.0000	30.00
(2) Bridge Stiffener (109" x 15.75" x 1.25") ***	C	None				0.0000	60.00
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00			0.0000	89.00
			0.00				
			0.00				
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00			0.0000	89.00
			0.00				
			0.00				
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00			0.0000	89.00
			0.00				
			0.00				
TA08025-B604	A	From Leg	4.00			0.0000	89.00
			0.00				
			0.00				
TA08025-B604	B	From Leg	4.00			0.0000	89.00
			0.00				
			0.00				
TA08025-B604	C	From Leg	4.00			0.0000	89.00
			0.00				
			0.00				
TA08025-B605	A	From Leg	4.00			0.0000	89.00
			0.00				
			0.00				
TA08025-B605	B	From Leg	4.00			0.0000	89.00
			0.00				
			0.00				
TA08025-B605	C	From Leg	4.00			0.0000	89.00
			0.00				
			0.00				
RDIDC-9181-PF-48	A	From Leg	4.00			0.0000	89.00
			0.00				
			0.00				
(2) 8' x 2" Mount Pipe	A	From Leg	4.00			0.0000	89.00
			0.00				
			0.00				
(2) 8' x 2" Mount Pipe	B	From Leg	4.00			0.0000	89.00
			0.00				
			0.00				
(2) 8' x 2" Mount Pipe	C	From Leg	4.00			0.0000	89.00
			0.00				
			0.00				
Commscope MC-PK8-DSH	C	None				0.0000	89.00

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:			3 dB Beam Width	Elevation	Outside Diameter
				Horz	Lateral	Vert			
				ft	ft	ft	°	ft	ft

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft
VHLP1-18	B	Paraboloid w/o Radome	From Leg	1.00 0.00 -2.00	-6.0000		118.00	1.27
VHLP1-23-DW1	B	Paraboloid w/o Radome	From Leg	1.00 0.00 -2.00	-6.0000		118.00	1.27

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
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+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
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	120 - 115	Pole	Max Tension	42	0.00	-0.00	0.00
			Max. Compression	26	-5.44	-6.03	-1.10
			Max. Mx	8	-2.69	-17.48	-1.43
			Max. My	14	-2.70	-3.81	-14.80
			Max. Vy	20	-3.93	10.87	0.22
			Max. Vx	2	-3.86	-2.05	13.41
			Max. Torque	14			4.82
L2	115 - 110	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-7.20	-6.07	-1.09
			Max. Mx	8	-3.77	-41.43	-2.30
			Max. My	14	-3.78	-4.85	-38.45
			Max. Vy	20	-5.20	35.13	1.52
			Max. Vx	2	-5.13	-0.42	37.33
			Max. Torque	14			4.82
L3	110 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-13.91	-6.07	-1.06
			Max. Mx	8	-7.29	-77.62	-3.17
			Max. My	14	-7.30	-5.90	-74.33
			Max. Vy	20	-9.26	71.67	2.84
			Max. Vx	2	-9.19	1.23	73.52
			Max. Torque	14			4.82
L4	105 - 100	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-14.64	-6.00	-0.98
			Max. Mx	8	-7.77	-124.37	-4.03
			Max. My	14	-7.78	-6.93	-120.81
			Max. Vy	20	-9.58	118.81	4.19
			Max. Vx	2	-9.53	2.93	120.36
			Max. Torque	14			4.82
L5	100 - 95	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-20.79	-5.77	0.11
			Max. Mx	8	-11.01	-186.67	-4.41
			Max. My	2	-11.00	4.68	183.60
			Max. Vy	20	-12.93	181.69	5.94
			Max. Vx	2	-12.93	4.68	183.60
			Max. Torque	14			4.82
L6	95 - 90	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-21.56	-5.71	0.19
			Max. Mx	8	-11.57	-251.67	-5.23
			Max. My	2	-11.56	6.34	249.04
			Max. Vy	20	-13.21	247.08	7.25
			Max. Vx	2	-13.24	6.34	249.04
			Max. Torque	14			4.75
L7	90 - 85	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.37	-5.64	0.57
			Max. Mx	8	-15.35	-331.93	-5.96
			Max. My	2	-15.33	8.02	330.10
			Max. Vy	20	-16.96	327.72	8.67
			Max. Vx	2	-17.04	8.02	330.10
			Max. Torque	14			4.74
L8	85 - 80	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.44	-5.57	0.59
			Max. Mx	8	-16.20	-417.01	-6.82
			Max. My	2	-16.18	9.70	416.04
			Max. Vy	20	-17.22	413.19	9.96
			Max. Vx	2	-17.35	9.70	416.04
			Max. Torque	14			4.74
L9	80 - 79.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.54	-5.56	0.58
			Max. Mx	8	-16.28	-421.30	-6.87
			Max. My	2	-16.26	9.79	420.37
			Max. Vy	20	-17.25	417.50	10.01
			Max. Vx	2	-17.39	9.79	420.37
			Max. Torque	14			4.74
L10	79.75 - 78.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.99	-5.53	0.54
			Max. Mx	8	-16.62	-442.91	-7.11

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L11	78.5 - 78.25	Pole	Max. My	2	-16.59	10.21	442.22
			Max. Vy	20	-17.45	439.20	10.31
			Max. Vx	2	-17.63	10.21	442.22
			Max. Torque	14			4.74
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-29.09	-5.53	0.53
			Max. Mx	8	-16.70	-447.26	-7.16
			Max. My	2	-16.68	10.30	446.63
			Max. Vy	20	-17.49	443.57	10.37
			Max. Vx	2	-17.67	10.30	446.63
L12	78.25 - 73.25	Pole	Max. Torque	14			4.71
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.11	-5.41	0.36
			Max. Mx	8	-18.26	-536.56	-8.13
			Max. My	2	-18.23	12.00	537.22
			Max. Vy	8	18.30	-536.56	-8.13
			Max. Vx	2	-18.62	12.00	537.22
			Max. Torque	14			4.71
			Max Tension	1	0.00	0.00	0.00
			L13	73.25 - 68.25	Pole	Max. Compression	26
Max. Mx	8	-19.84				-629.99	-9.09
Max. My	2	-19.81				13.71	632.41
Max. Vy	8	19.11				-629.99	-9.09
Max. Vx	2	-19.52				13.71	632.41
Max. Torque	14						4.61
Max Tension	1	0.00				0.00	0.00
Max. Compression	26	-33.21				-5.28	0.19
Max. Mx	8	-19.92				-634.77	-9.14
Max. My	2	-19.89				13.79	637.29
L14	68.25 - 68	Pole	Max. Vy	8	19.14	-634.77	-9.14
			Max. Vx	2	-19.56	13.79	637.29
			Max. Torque	14			4.52
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.32	-5.27	0.18
			Max. Mx	8	-20.00	-639.55	-9.19
			Max. My	2	-19.97	13.88	642.18
			Max. Vy	8	19.18	-639.55	-9.19
			Max. Vx	2	-19.60	13.88	642.18
			Max. Torque	14			4.51
L15	68 - 67.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.32	-5.27	0.18
			Max. Mx	8	-20.00	-639.55	-9.19
			Max. My	2	-19.97	13.88	642.18
			Max. Vy	8	19.18	-639.55	-9.19
			Max. Vx	2	-19.60	13.88	642.18
			Max. Torque	14			4.51
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.96	-5.17	0.16
			Max. Mx	8	-21.32	-736.83	-10.04
L16	67.75 - 62.75	Pole	Max. My	2	-21.29	15.57	741.65
			Max. Vy	8	19.75	-736.83	-10.04
			Max. Vx	2	-20.20	15.57	741.65
			Max. Torque	14			4.51
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.82	-5.12	0.17
			Max. Mx	8	-22.03	-791.48	-10.49
			Max. My	2	-21.99	16.50	797.58
			Max. Vy	8	20.04	-791.48	-10.49
			Max. Vx	2	-20.49	16.50	797.58
L17	62.75 - 60	Pole	Max. Torque	14			4.51
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.50	-5.06	0.17
			Max. Mx	8	-24.20	-845.97	-10.91
			Max. My	2	-24.17	17.35	853.24
			Max. Vy	8	22.01	-845.97	-10.91
			Max. Vx	2	-22.47	17.35	853.24
			Max. Torque	14			4.51
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.59	-5.06	0.17
L18	60 - 57.5	Pole	Max. Mx	8	-24.28	-851.47	-10.95
			Max. My	2	-24.25	17.43	858.86
			Max. Vy	8	22.04	-851.47	-10.95
			Max. Vx	2	-22.50	17.43	858.86
			Max. Torque	14			4.51
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.59	-5.06	0.17
			Max. Mx	8	-24.28	-851.47	-10.95
			Max. My	2	-24.25	17.43	858.86
			Max. Vy	8	22.04	-851.47	-10.95
L19	57.5 - 57.25	Pole	Max. Vx	2	-22.50	17.43	858.86
			Max. Torque	14			4.51
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.59	-5.06	0.17
			Max. Mx	8	-24.28	-851.47	-10.95
			Max. My	2	-24.25	17.43	858.86
			Max. Vy	8	22.04	-851.47	-10.95
			Max. Vx	2	-22.50	17.43	858.86
			Max. Torque	14			4.51
			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
L20	57.25 - 52.25	Pole	Max. Torque	14			4.51
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.34	-4.93	0.18
			Max. Mx	8	-25.68	-963.25	-11.77
			Max. My	2	-25.65	19.13	973.09
			Max. Vy	8	22.71	-963.25	-11.77
			Max. Vx	2	-23.19	19.13	973.09
L21	52.25 - 47.25	Pole	Max. Torque	14			4.51
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.21	-4.87	0.14
			Max. Mx	8	-27.19	-1078.38	-12.61
			Max. My	2	-27.16	20.79	1090.72
			Max. Vy	8	23.42	-1078.38	-12.61
			Max. Vx	2	-23.93	20.79	1090.72
L22	47.25 - 45.33	Pole	Max. Torque	14			4.57
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.91	-4.82	0.14
			Max. Mx	8	-27.73	-1123.54	-12.92
			Max. My	2	-27.70	21.44	1136.89
			Max. Vy	8	23.68	-1123.54	-12.92
			Max. Vx	2	-24.19	21.44	1136.89
L23	45.33 - 45.08	Pole	Max. Torque	14			4.57
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.01	-4.81	0.13
			Max. Mx	8	-27.83	-1129.46	-12.96
			Max. My	2	-27.80	21.52	1142.94
			Max. Vy	8	23.69	-1129.46	-12.96
			Max. Vx	2	-24.21	21.52	1142.94
L24	45.08 - 40.08	Pole	Max. Torque	14			4.57
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.10	-4.66	0.10
			Max. Mx	8	-29.49	-1249.48	-13.77
			Max. My	2	-29.46	23.21	1265.72
			Max. Vy	8	24.35	-1249.48	-13.77
			Max. Vx	2	-24.90	23.21	1265.72
L25	40.08 - 35.08	Pole	Max. Torque	14			4.57
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.18	-4.52	0.07
			Max. Mx	8	-31.17	-1372.66	-14.58
			Max. My	2	-31.14	24.89	1391.81
			Max. Vy	8	24.96	-1372.66	-14.58
			Max. Vx	2	-25.55	24.89	1391.81
L26	35.08 - 33.583	Pole	Max. Torque	14			4.57
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.81	-4.48	0.05
			Max. Mx	8	-31.67	-1410.13	-14.82
			Max. My	2	-31.64	25.39	1430.22
			Max. Vy	8	25.15	-1410.13	-14.82
			Max. Vx	2	-25.79	25.39	1430.22
L27	33.583 - 33.333	Pole	Max. Torque	14			4.57
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.93	-4.47	0.05
			Max. Mx	8	-31.78	-1416.41	-14.86
			Max. My	2	-31.75	25.48	1436.67
			Max. Vy	8	25.16	-1416.41	-14.86
			Max. Vx	2	-25.81	25.48	1436.67
L28	33.333 - 32.42	Pole	Max. Torque	14			4.55
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.35	-4.44	0.04
			Max. Mx	8	-32.12	-1439.42	-15.01

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L29	32.42 - 32.17	Pole	Max. My	2	-32.09	25.78	1460.30
			Max. Vy	8	25.28	-1439.42	-15.01
			Max. Vx	2	-25.97	25.78	1460.30
			Max. Torque	14			4.55
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.45	-4.44	0.04
			Max. Mx	8	-32.20	-1445.74	-15.05
			Max. My	2	-32.17	25.87	1466.80
			Max. Vy	8	25.30	-1445.74	-15.05
			Max. Vx	2	-26.00	25.87	1466.80
L30	32.17 - 30	Pole	Max. Torque	14			4.53
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.24	-4.38	0.03
			Max. Mx	8	-32.83	-1500.85	-15.40
			Max. My	2	-32.81	26.59	1523.54
			Max. Vy	8	25.54	-1500.85	-15.40
			Max. Vx	2	-26.31	26.59	1523.54
			Max. Torque	14			4.53
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.56	-4.27	0.04
L31	30 - 26.75	Pole	Max. Mx	8	-35.64	-1589.97	-15.91
			Max. My	2	-35.61	27.68	1615.25
			Max. Vy	8	27.64	-1589.97	-15.91
			Max. Vx	2	-28.43	27.68	1615.25
			Max. Torque	14			4.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.67	-4.27	0.04
			Max. Mx	8	-35.73	-1596.87	-15.95
			Max. My	2	-35.71	27.77	1622.36
			Max. Vy	8	27.66	-1596.87	-15.95
L32	26.75 - 26.5	Pole	Max. Vx	2	-28.45	27.77	1622.36
			Max. Torque	14			4.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.80	-4.11	0.03
			Max. Mx	8	-37.49	-1736.67	-16.74
			Max. My	2	-37.47	29.44	1766.24
			Max. Vy	8	28.29	-1736.67	-16.74
			Max. Vx	2	-29.10	29.44	1766.24
			Max. Torque	14			4.50
			Max Tension	1	0.00	0.00	0.00
L33	26.5 - 21.5	Pole	Max. Compression	26	-54.93	-4.10	0.03
			Max. Mx	8	-37.61	-1743.74	-16.78
			Max. My	2	-37.59	29.52	1773.51
			Max. Vy	8	28.32	-1743.74	-16.78
			Max. Vx	2	-29.13	29.52	1773.51
			Max. Torque	14			4.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.60	-3.93	-0.02
			Max. Mx	8	-39.84	-1886.83	-17.57
			Max. My	2	-39.83	31.19	1920.84
L34	21.5 - 21.25	Pole	Max. Vy	8	28.96	-1886.83	-17.57
			Max. Vx	2	-29.80	31.19	1920.84
			Max. Torque	14			4.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.26	-3.77	-0.07
			Max. Mx	8	-42.09	-2032.95	-18.35
			Max. My	2	-42.08	32.85	2071.36
			Max. Vy	8	29.54	-2032.95	-18.35
			Max. Vx	2	-30.42	32.85	2071.36
			Max. Torque	14			4.50
L35	21.25 - 16.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.89	-3.61	-0.11
			Max. Mx	8	-44.35	-2181.91	-19.13
			Max. My	2	-44.35	34.50	2224.88
			Max. Vy	8	30.09	-2181.91	-19.13
			Max. Vx	2	-31.00	34.50	2224.88
			Max. Torque	14			4.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.89	-3.61	-0.11
			Max. Mx	8	-44.35	-2181.91	-19.13
L36	16.25 - 11.25	Pole	Max. My	2	-44.35	34.50	2224.88
			Max. Vy	8	30.09	-2181.91	-19.13
			Max. Vx	2	-31.00	34.50	2224.88
			Max. Torque	14			4.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.89	-3.61	-0.11
			Max. Mx	8	-44.35	-2181.91	-19.13
			Max. My	2	-44.35	34.50	2224.88
			Max. Vy	8	30.09	-2181.91	-19.13
			Max. Vx	2	-31.00	34.50	2224.88
L37	11.25 - 6.25	Pole	Max. Torque	14			4.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.89	-3.61	-0.11
			Max. Mx	8	-44.35	-2181.91	-19.13
			Max. My	2	-44.35	34.50	2224.88
			Max. Vy	8	30.09	-2181.91	-19.13
			Max. Vx	2	-31.00	34.50	2224.88
			Max. Torque	14			4.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.89	-3.61	-0.11

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L38	6.25 - 1.25	Pole	Max. Torque	14			4.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.49	-3.46	-0.15
			Max. Mx	8	-46.62	-2333.58	-19.90
			Max. My	2	-46.62	36.14	2381.27
			Max. Vy	8	30.63	-2333.58	-19.90
			Max. Vx	2	-31.57	36.14	2381.27
L39	1.25 - 0	Pole	Max. Torque	14			4.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.11	-3.42	-0.15
			Max. Mx	8	-47.19	-2371.91	-20.09
			Max. My	2	-47.19	36.55	2420.80
			Max. Vy	8	30.76	-2371.91	-20.09
			Max. Vx	2	-31.70	36.55	2420.80
		Max. Torque	14			4.50	

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	66.11	0.06	6.76
	Max. H _x	20	47.21	29.73	0.24
	Max. H _z	3	35.40	0.31	31.68
	Max. M _x	2	2420.80	0.31	31.68
	Max. M _z	8	2371.91	-30.74	-0.16
	Max. Torsion	14	4.50	-0.19	-28.49
	Min. Vert	17	35.40	13.17	-22.91
	Min. H _x	8	47.21	-30.74	-0.16
	Min. H _z	15	35.40	-0.19	-28.49
	Min. M _x	14	-2280.55	-0.19	-28.49
	Min. M _z	20	-2330.94	29.73	0.24
	Min. Torsion	2	-4.41	0.31	31.68

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	39.34	0.00	0.00	0.04	-1.82	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	47.21	-0.31	-31.68	-2420.80	36.55	4.41
0.9 Dead+1.0 Wind 0 deg - No Ice	35.40	-0.31	-31.68	-2398.94	36.71	4.35
1.2 Dead+1.0 Wind 30 deg - No Ice	47.21	15.34	-26.73	-2046.48	-1173.44	4.13
0.9 Dead+1.0 Wind 30 deg - No Ice	35.40	15.34	-26.73	-2027.98	-1162.26	4.08
1.2 Dead+1.0 Wind 60 deg - No Ice	47.21	26.68	-15.33	-1164.27	-2036.59	2.57
0.9 Dead+1.0 Wind 60 deg - No Ice	35.40	26.68	-15.33	-1153.78	-2017.57	2.54
1.2 Dead+1.0 Wind 90 deg - No Ice	47.21	30.74	0.16	20.09	-2371.91	0.39
0.9 Dead+1.0 Wind 90 deg - No Ice	35.40	30.74	0.16	19.84	-2349.78	0.39
1.2 Dead+1.0 Wind 120 deg - No Ice	47.21	26.14	15.21	1192.61	-2043.77	-2.05
0.9 Dead+1.0 Wind 120 deg - No Ice	35.40	26.14	15.21	1181.66	-2024.50	-2.02
1.2 Dead+1.0 Wind 150 deg	47.21	14.64	25.24	2002.23	-1167.28	-3.90

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
- No Ice						
0.9 Dead+1.0 Wind 150 deg	35.40	14.64	25.24	1983.72	-1155.89	-3.85
- No Ice						
1.2 Dead+1.0 Wind 180 deg	47.21	0.19	28.49	2280.55	-25.67	-4.50
- No Ice						
0.9 Dead+1.0 Wind 180 deg	35.40	0.19	28.49	2259.43	-24.79	-4.44
- No Ice						
1.2 Dead+1.0 Wind 210 deg	47.21	-13.17	22.91	1915.30	1096.96	-4.15
- No Ice						
0.9 Dead+1.0 Wind 210 deg	35.40	-13.17	22.91	1897.41	1087.31	-4.10
- No Ice						
1.2 Dead+1.0 Wind 240 deg	47.21	-24.62	13.97	1094.71	1948.41	-2.48
- No Ice						
0.9 Dead+1.0 Wind 240 deg	35.40	-24.62	13.97	1084.63	1930.96	-2.44
- No Ice						
1.2 Dead+1.0 Wind 270 deg	47.21	-29.73	-0.24	-30.20	2330.94	-0.26
- No Ice						
0.9 Dead+1.0 Wind 270 deg	35.40	-29.73	-0.24	-29.87	2310.16	-0.26
- No Ice						
1.2 Dead+1.0 Wind 300 deg	47.21	-26.70	-15.51	-1204.25	2065.16	2.02
- No Ice						
0.9 Dead+1.0 Wind 300 deg	35.40	-26.70	-15.51	-1193.28	2046.93	1.99
- No Ice						
1.2 Dead+1.0 Wind 330 deg	47.21	-15.99	-27.35	-2097.48	1234.40	3.73
- No Ice						
0.9 Dead+1.0 Wind 330 deg	35.40	-15.99	-27.35	-2078.50	1223.74	3.68
- No Ice						
1.2 Dead+1.0 Ice+1.0 Temp	66.11	0.00	-0.00	0.15	-3.42	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	66.11	-0.06	-6.76	-563.95	3.87	1.02
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	66.11	3.29	-5.72	-479.60	-278.82	0.97
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	66.11	5.68	-3.26	-272.14	-478.30	0.60
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	66.11	6.58	0.03	3.64	-558.27	0.10
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	66.11	5.64	3.28	279.12	-482.53	-0.47
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	66.11	3.26	5.63	479.56	-281.89	-0.89
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	66.11	0.03	6.53	554.21	-7.71	-1.04
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	66.11	-3.20	5.56	473.53	268.91	-0.97
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	66.11	-5.51	3.13	265.38	466.70	-0.58
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	66.11	-6.48	-0.04	-5.46	548.16	-0.08
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	66.11	-5.71	-3.31	-280.36	479.32	0.46
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	66.11	-3.39	-5.81	-486.74	282.62	0.85
Dead+Wind 0 deg - Service	39.34	-0.07	-6.88	-522.78	6.49	0.96
Dead+Wind 30 deg - Service	39.34	3.33	-5.80	-441.92	-254.80	0.89
Dead+Wind 60 deg - Service	39.34	5.79	-3.33	-251.40	-441.20	0.54
Dead+Wind 90 deg - Service	39.34	6.67	0.03	4.36	-513.61	0.07
Dead+Wind 120 deg - Service	39.34	5.68	3.30	257.58	-442.74	-0.46
Dead+Wind 150 deg - Service	39.34	3.18	5.48	432.40	-253.45	-0.85
Dead+Wind 180 deg - Service	39.34	0.04	6.19	492.49	-6.92	-0.97
Dead+Wind 210 deg - Service	39.34	-2.86	4.97	413.59	235.48	-0.89
Dead+Wind 240 deg - Service	39.34	-5.35	3.03	236.43	419.34	-0.52
Dead+Wind 270 deg - Service	39.34	-6.45	-0.05	-6.48	501.98	-0.04
Dead+Wind 300 deg -	39.34	-5.80	-3.37	-260.03	444.61	0.45

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
Service Dead+Wind 330 deg - Service	39.34	-3.47	-5.94	-452.95	265.20	0.82

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-39.34	0.00	0.00	39.34	0.00	0.000%
2	-0.31	-47.21	-31.68	0.31	47.21	31.68	0.000%
3	-0.31	-35.40	-31.68	0.31	35.40	31.68	0.000%
4	15.34	-47.21	-26.73	-15.34	47.21	26.73	0.000%
5	15.34	-35.40	-26.73	-15.34	35.40	26.73	0.000%
6	26.68	-47.21	-15.33	-26.68	47.21	15.33	0.000%
7	26.68	-35.40	-15.33	-26.68	35.40	15.33	0.000%
8	30.74	-47.21	0.16	-30.74	47.21	-0.16	0.000%
9	30.74	-35.40	0.16	-30.74	35.40	-0.16	0.000%
10	26.14	-47.21	15.21	-26.14	47.21	-15.21	0.000%
11	26.14	-35.40	15.21	-26.14	35.40	-15.21	0.000%
12	14.64	-47.21	25.24	-14.64	47.21	-25.24	0.000%
13	14.64	-35.40	25.24	-14.64	35.40	-25.24	0.000%
14	0.19	-47.21	28.49	-0.19	47.21	-28.49	0.000%
15	0.19	-35.40	28.49	-0.19	35.40	-28.49	0.000%
16	-13.17	-47.21	22.91	13.17	47.21	-22.91	0.000%
17	-13.17	-35.40	22.91	13.17	35.40	-22.91	0.000%
18	-24.62	-47.21	13.97	24.62	47.21	-13.97	0.000%
19	-24.62	-35.40	13.97	24.62	35.40	-13.97	0.000%
20	-29.73	-47.21	-0.24	29.73	47.21	0.24	0.000%
21	-29.73	-35.40	-0.24	29.73	35.40	0.24	0.000%
22	-26.70	-47.21	-15.51	26.70	47.21	15.51	0.000%
23	-26.70	-35.40	-15.51	26.70	35.40	15.51	0.000%
24	-15.99	-47.21	-27.35	15.99	47.21	27.35	0.000%
25	-15.99	-35.40	-27.35	15.99	35.40	27.35	0.000%
26	0.00	-66.11	0.00	-0.00	66.11	0.00	0.000%
27	-0.06	-66.11	-6.76	0.06	66.11	6.76	0.000%
28	3.29	-66.11	-5.72	-3.29	66.11	5.72	0.000%
29	5.68	-66.11	-3.26	-5.68	66.11	3.26	0.000%
30	6.58	-66.11	0.03	-6.58	66.11	-0.03	0.000%
31	5.64	-66.11	3.28	-5.64	66.11	-3.28	0.000%
32	3.26	-66.11	5.63	-3.26	66.11	-5.63	0.000%
33	0.03	-66.11	6.53	-0.03	66.11	-6.53	0.000%
34	-3.20	-66.11	5.56	3.20	66.11	-5.56	0.000%
35	-5.51	-66.11	3.13	5.51	66.11	-3.13	0.000%
36	-6.48	-66.11	-0.04	6.48	66.11	0.04	0.000%
37	-5.71	-66.11	-3.31	5.71	66.11	3.31	0.000%
38	-3.39	-66.11	-5.81	3.39	66.11	5.81	0.000%
39	-0.07	-39.34	-6.88	0.07	39.34	6.88	0.000%
40	3.33	-39.34	-5.80	-3.33	39.34	5.80	0.000%
41	5.79	-39.34	-3.33	-5.79	39.34	3.33	0.000%
42	6.67	-39.34	0.03	-6.67	39.34	-0.03	0.000%
43	5.68	-39.34	3.30	-5.68	39.34	-3.30	0.000%
44	3.18	-39.34	5.48	-3.18	39.34	-5.48	0.000%
45	0.04	-39.34	6.19	-0.04	39.34	-6.19	0.000%
46	-2.86	-39.34	4.97	2.86	39.34	-4.97	0.000%
47	-5.35	-39.34	3.03	5.35	39.34	-3.03	0.000%
48	-6.45	-39.34	-0.05	6.45	39.34	0.05	0.000%
49	-5.80	-39.34	-3.37	5.80	39.34	3.37	0.000%
50	-3.47	-39.34	-5.94	3.47	39.34	5.94	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000463
2	Yes	6	0.00000001	0.00005098
3	Yes	5	0.00000001	0.00051144
4	Yes	6	0.00000001	0.00027644
5	Yes	6	0.00000001	0.00009438
6	Yes	6	0.00000001	0.00022156
7	Yes	6	0.00000001	0.00007462
8	Yes	5	0.00000001	0.00025170
9	Yes	5	0.00000001	0.00011646
10	Yes	6	0.00000001	0.00023935
11	Yes	6	0.00000001	0.00008019
12	Yes	6	0.00000001	0.00028265
13	Yes	6	0.00000001	0.00009641
14	Yes	6	0.00000001	0.00007099
15	Yes	5	0.00000001	0.00071764
16	Yes	6	0.00000001	0.00020405
17	Yes	6	0.00000001	0.00006971
18	Yes	6	0.00000001	0.00024566
19	Yes	6	0.00000001	0.00008476
20	Yes	5	0.00000001	0.00014981
21	Yes	5	0.00000001	0.00006585
22	Yes	6	0.00000001	0.00026935
23	Yes	6	0.00000001	0.00009104
24	Yes	6	0.00000001	0.00023996
25	Yes	6	0.00000001	0.00007988
26	Yes	4	0.00000001	0.00059276
27	Yes	6	0.00000001	0.00016801
28	Yes	6	0.00000001	0.00018796
29	Yes	6	0.00000001	0.00018380
30	Yes	6	0.00000001	0.00016864
31	Yes	6	0.00000001	0.00018823
32	Yes	6	0.00000001	0.00019037
33	Yes	6	0.00000001	0.00016655
34	Yes	6	0.00000001	0.00017733
35	Yes	6	0.00000001	0.00017604
36	Yes	6	0.00000001	0.00016068
37	Yes	6	0.00000001	0.00018311
38	Yes	6	0.00000001	0.00018418
39	Yes	5	0.00000001	0.00006007
40	Yes	5	0.00000001	0.00009902
41	Yes	5	0.00000001	0.00005704
42	Yes	4	0.00000001	0.00037050
43	Yes	5	0.00000001	0.00006148
44	Yes	5	0.00000001	0.00009959
45	Yes	5	0.00000001	0.00006320
46	Yes	5	0.00000001	0.00005840
47	Yes	5	0.00000001	0.00007502
48	Yes	4	0.00000001	0.00033947
49	Yes	5	0.00000001	0.00008117
50	Yes	5	0.00000001	0.00006636

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 115	13.37	43	0.9791	0.0137
L2	115 - 110	12.36	50	0.9762	0.0129
L3	110 - 105	11.36	50	0.9670	0.0115
L4	105 - 100	10.37	50	0.9512	0.0101
L5	100 - 95	9.40	50	0.9249	0.0087
L6	95 - 90	8.46	50	0.8862	0.0073
L7	90 - 85	7.56	50	0.8324	0.0060
L8	85 - 80	6.71	50	0.7857	0.0050
L9	80 - 79.75	5.92	50	0.7266	0.0041
L10	79.75 - 78.5	5.88	50	0.7245	0.0040

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L11	78.5 - 78.25	5.70	50	0.7139	0.0039
L12	78.25 - 73.25	5.66	50	0.7121	0.0039
L13	73.25 - 68.25	4.93	50	0.6725	0.0034
L14	68.25 - 68	4.25	50	0.6253	0.0029
L15	68 - 67.75	4.22	50	0.6227	0.0029
L16	67.75 - 62.75	4.19	50	0.6201	0.0029
L17	62.75 - 60	3.57	50	0.5643	0.0024
L18	60 - 57.5	3.25	50	0.5301	0.0022
L19	57.5 - 57.25	2.98	50	0.5111	0.0020
L20	57.25 - 52.25	2.95	50	0.5091	0.0020
L21	52.25 - 47.25	2.44	50	0.4669	0.0018
L22	47.25 - 45.33	1.98	50	0.4193	0.0015
L23	45.33 - 45.08	1.81	50	0.3996	0.0014
L24	45.08 - 40.08	1.79	50	0.3974	0.0014
L25	40.08 - 35.08	1.40	50	0.3520	0.0012
L26	35.08 - 33.583	1.05	50	0.3018	0.0010
L27	33.583 - 33.333	0.96	50	0.2858	0.0009
L28	33.333 - 32.42	0.95	50	0.2835	0.0009
L29	32.42 - 32.17	0.89	50	0.2750	0.0008
L30	32.17 - 30	0.88	50	0.2716	0.0008
L31	30 - 26.75	0.76	50	0.2417	0.0007
L32	26.75 - 26.5	0.61	50	0.2127	0.0006
L33	26.5 - 21.5	0.60	50	0.2107	0.0006
L34	21.5 - 21.25	0.40	50	0.1682	0.0005
L35	21.25 - 16.25	0.39	50	0.1666	0.0005
L36	16.25 - 11.25	0.23	50	0.1320	0.0003
L37	11.25 - 6.25	0.11	50	0.0946	0.0002
L38	6.25 - 1.25	0.04	50	0.0544	0.0001
L39	1.25 - 0	0.00	50	0.0112	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
118.00	Lightning Rod 5/8"x4'	43	12.96	0.9784	0.0135	46177
116.00	VHLP1-18	50	12.56	0.9771	0.0132	46177
114.00	Pipe Mount [PM 602-3]	50	12.16	0.9749	0.0128	38962
107.00	(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	50	10.77	0.9585	0.0107	16737
99.00	(2) QS66512-2 w/ Mount Pipe	50	9.21	0.9185	0.0085	8165
89.00	MX08FRO665-21 w/ Mount Pipe	50	7.39	0.8230	0.0058	5594
60.00	(2) Bridge Stiffener (109" x 15.75" x 1.25")	50	3.25	0.5301	0.0022	5700
59.00	Side Arm Mount [SO 701-1]	50	3.14	0.5217	0.0021	6122
48.00	GPS_A	50	2.04	0.4272	0.0016	5914
30.00	(2) Bridge Stiffener (137" x 15.5" x 1.25")	50	0.76	0.2417	0.0007	5331

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 115	62.26	24	4.4781	0.0646
L2	115 - 110	57.58	24	4.4736	0.0608
L3	110 - 105	52.92	24	4.4472	0.0544
L4	105 - 100	48.29	24	4.3894	0.0479
L5	100 - 95	43.76	24	4.2829	0.0413
L6	95 - 90	39.36	24	4.1164	0.0347
L7	90 - 85	35.17	24	3.8785	0.0281

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L8	85 - 80	31.22	24	3.6639	0.0236
L9	80 - 79.75	27.53	24	3.3862	0.0191
L10	79.75 - 78.5	27.35	24	3.3766	0.0190
L11	78.5 - 78.25	26.48	24	3.3269	0.0183
L12	78.25 - 73.25	26.30	24	3.3185	0.0182
L13	73.25 - 68.25	22.93	24	3.1324	0.0159
L14	68.25 - 68	19.76	24	2.9113	0.0137
L15	68 - 67.75	19.61	24	2.8993	0.0136
L16	67.75 - 62.75	19.46	24	2.8873	0.0135
L17	62.75 - 60	16.57	24	2.6260	0.0113
L18	60 - 57.5	15.10	24	2.4663	0.0101
L19	57.5 - 57.25	13.84	24	2.3774	0.0095
L20	57.25 - 52.25	13.71	24	2.3682	0.0095
L21	52.25 - 47.25	11.33	24	2.1712	0.0082
L22	47.25 - 45.33	9.17	24	1.9494	0.0070
L23	45.33 - 45.08	8.41	24	1.8575	0.0065
L24	45.08 - 40.08	8.31	24	1.8475	0.0064
L25	40.08 - 35.08	6.49	24	1.6356	0.0054
L26	35.08 - 33.583	4.90	24	1.4019	0.0044
L27	33.583 - 33.333	4.47	24	1.3276	0.0041
L28	33.333 - 32.42	4.40	24	1.3169	0.0041
L29	32.42 - 32.17	4.15	24	1.2773	0.0039
L30	32.17 - 30	4.08	24	1.2616	0.0038
L31	30 - 26.75	3.54	24	1.1224	0.0033
L32	26.75 - 26.5	2.82	24	0.9878	0.0028
L33	26.5 - 21.5	2.77	24	0.9783	0.0028
L34	21.5 - 21.25	1.85	24	0.7809	0.0021
L35	21.25 - 16.25	1.81	24	0.7732	0.0021
L36	16.25 - 11.25	1.08	24	0.6125	0.0016
L37	11.25 - 6.25	0.53	24	0.4389	0.0011
L38	6.25 - 1.25	0.17	24	0.2522	0.0006
L39	1.25 - 0	0.01	24	0.0521	0.0001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
118.00	Lightning Rod 5/8"x4'	24	60.39	4.4778	0.0634	14694
116.00	VHLP1-18	24	58.52	4.4758	0.0618	14694
114.00	Pipe Mount [PM 602-3]	24	56.65	4.4705	0.0597	11931
107.00	(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe	24	50.13	4.4175	0.0504	4183
99.00	(2) QS66512-2 w/ Mount Pipe	24	42.86	4.2558	0.0400	1890
89.00	MX08FRO665-21 w/ Mount Pipe	24	34.36	3.8366	0.0271	1253
60.00	(2) Bridge Stiffener (109" x 15.75" x 1.25")	24	15.10	2.4663	0.0101	1232
59.00	Side Arm Mount [SO 701-1]	24	14.59	2.4273	0.0099	1322
48.00	GPS_A	24	9.48	1.9860	0.0072	1272
30.00	(2) Bridge Stiffener (137" x 15.5" x 1.25")	24	3.54	1.1224	0.0034	1147

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _n K	Ratio P _u / φP _n
L1	120 - 115 (1)	P24x0.25	5.00	0.00	0.0	18.653	-2.68	662.26	0.004
L2	115 - 110 (2)	P24x0.25	5.00	0.00	0.0	18.653	-3.75	662.26	0.006
L3	110 - 105 (3)	P24x0.25	5.00	0.00	0.0	18.653	-7.27	662.26	0.011
L4	105 - 100 (4)	P24x0.25	5.00	0.00	0.0	18.653	-7.75	662.26	0.012
L5	100 - 95 (5)	P24x0.25	5.00	0.00	0.0	18.653	-11.00	662.26	0.017
L6	95 - 90 (6)	P24x0.25	5.00	0.00	0.0	18.653	-11.56	662.26	0.017
L7	90 - 85 (7)	P24x0.375	5.00	0.00	0.0	27.832	-15.33	1052.07	0.015
L8	85 - 80 (8)	P24x0.375	5.00	0.00	0.0	27.832	-16.18	1052.07	0.015
L9	80 - 79.75 (9)	P24x0.625	0.25	0.00	0.0	45.896	-16.26	1734.90	0.009
L10	79.75 - 78.5 (10)	P24x0.625	1.25	0.00	0.0	45.896	-16.60	1734.90	0.010
L11	78.5 - 78.25 (11)	P24x0.775	0.25	0.00	0.0	56.546	-16.69	2137.47	0.008
L12	78.25 - 73.25 (12)	P24x0.775	5.00	0.00	0.0	56.546	-18.21	2137.47	0.009
L13	73.25 - 68.25 (13)	P24x0.775	5.00	0.00	0.0	56.546	-19.79	2137.47	0.009
L14	68.25 - 68 (14)	P24x0.775	0.25	0.00	0.0	56.546	-19.88	2137.47	0.009
L15	68 - 67.75 (15)	P24x0.775	0.25	0.00	0.0	56.546	-19.96	2137.47	0.009
L16	67.75 - 62.75 (16)	P24x0.775	5.00	0.00	0.0	56.546	-21.28	2137.47	0.010
L17	62.75 - 60 (17)	P24x0.775	2.75	0.00	0.0	56.546	-21.98	2137.47	0.010
L18	60 - 57.5 (18)	P30x0.675	2.50	0.00	0.0	62.185	-24.16	2350.63	0.010
L19	57.5 - 57.25 (19)	P30x0.675	0.25	0.00	0.0	62.185	-24.24	2350.63	0.010
L20	57.25 - 52.25 (20)	P30x0.675	5.00	0.00	0.0	62.185	-25.64	2350.63	0.011
L21	52.25 - 47.25 (21)	P30x0.675	5.00	0.00	0.0	62.185	-27.15	2350.63	0.012
L22	47.25 - 45.33 (22)	P30x0.675	1.92	0.00	0.0	62.185	-27.69	2350.63	0.012
L23	45.33 - 45.08 (23)	P30x0.8375	0.25	0.00	0.0	76.729	-27.79	2900.36	0.010
L24	45.08 - 40.08 (24)	P30x0.8375	5.00	0.00	0.0	76.729	-29.45	2900.36	0.010
L25	40.08 - 35.08 (25)	P30x0.8375	5.00	0.00	0.0	76.729	-31.14	2900.36	0.011
L26	35.08 - 33.583 (26)	P30x0.8375	1.50	0.00	0.0	76.729	-31.64	2900.36	0.011
L27	33.583 - 33.333 (27)	P30x1	0.25	0.00	0.0	91.106	-31.75	3443.81	0.009
L28	33.333 - 32.42 (28)	P30x1	0.91	0.00	0.0	91.106	-32.09	3443.81	0.009
L29	32.42 - 32.17 (29)	P30x0.675	0.25	0.00	0.0	62.185	-32.17	2350.63	0.014
L30	32.17 - 30 (30)	P30x0.675	2.17	0.00	0.0	62.185	-32.80	2350.63	0.014
L31	30 - 26.75 (31)	P36x0.625	3.25	0.00	0.0	69.458	-35.61	2625.54	0.014
L32	26.75 - 26.5 (32)	P36x0.7125	0.25	0.00	0.0	78.987	-35.71	2985.71	0.012
L33	26.5 - 21.5 (33)	P36x0.7125	5.00	0.00	0.0	78.987	-37.47	2985.71	0.013
L34	21.5 - 21.25 (34)	P36x0.975	0.25	0.00	0.0	107.28	-37.59	4055.31	0.009
L35	21.25 - 16.25	P36x0.975	5.00	0.00	0.0	107.28	-39.83	4055.31	0.010

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _n K	Ratio P _u φP _n
	(35)					30			
L36	16.25 - 11.25	P36x0.975	5.00	0.00	0.0	107.28	-42.08	4055.31	0.010
	(36)					30			
L37	11.25 - 6.25	P36x0.975	5.00	0.00	0.0	107.28	-44.35	4055.31	0.011
	(37)					30			
L38	6.25 - 1.25	P36x0.975	5.00	0.00	0.0	107.28	-46.62	4055.31	0.011
	(38)					30			
L39	1.25 - 0 (39)	P36x0.975	1.25	0.00	0.0	107.28	-47.19	4055.31	0.012
						30			

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio M _{ux} φM _{nx}	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio M _{uy} φM _{ny}
L1	120 - 115 (1)	P24x0.25	18.08	396.68	0.046	0.00	396.68	0.000
L2	115 - 110 (2)	P24x0.25	42.80	396.68	0.108	0.00	396.68	0.000
L3	110 - 105 (3)	P24x0.25	79.76	396.68	0.201	0.00	396.68	0.000
L4	105 - 100 (4)	P24x0.25	127.29	396.68	0.321	0.00	396.68	0.000
L5	100 - 95 (5)	P24x0.25	190.14	396.68	0.479	0.00	396.68	0.000
L6	95 - 90 (6)	P24x0.25	255.92	396.68	0.645	0.00	396.68	0.000
L7	90 - 85 (7)	P24x0.375	336.96	623.72	0.540	0.00	623.72	0.000
L8	85 - 80 (8)	P24x0.375	423.09	623.72	0.678	0.00	623.72	0.000
L9	80 - 79.75 (9)	P24x0.625	427.47	1075.97	0.397	0.00	1075.97	0.000
L10	79.75 - 78.5 (10)	P24x0.625	449.53	1075.97	0.418	0.00	1075.97	0.000
L11	78.5 - 78.25 (11)	P24x0.775	453.97	1317.30	0.345	0.00	1317.30	0.000
L12	78.25 - 73.25 (12)	P24x0.775	545.48	1317.30	0.414	0.00	1317.30	0.000
L13	73.25 - 68.25 (13)	P24x0.775	641.42	1317.30	0.487	0.00	1317.30	0.000
L14	68.25 - 68 (14)	P24x0.775	646.32	1317.30	0.491	0.00	1317.30	0.000
L15	68 - 67.75 (15)	P24x0.775	651.24	1317.30	0.494	0.00	1317.30	0.000
L16	67.75 - 62.75 (16)	P24x0.775	751.27	1317.30	0.570	0.00	1317.30	0.000
L17	62.75 - 60 (17)	P24x0.775	807.50	1317.30	0.613	0.00	1317.30	0.000
L18	60 - 57.5 (18)	P30x0.675	863.44	1828.80	0.472	0.00	1828.80	0.000
L19	57.5 - 57.25 (19)	P30x0.675	869.09	1828.80	0.475	0.00	1828.80	0.000
L20	57.25 - 52.25 (20)	P30x0.675	983.89	1828.80	0.538	0.00	1828.80	0.000
L21	52.25 - 47.25 (21)	P30x0.675	1102.08	1828.80	0.603	0.00	1828.80	0.000
L22	47.25 - 45.33 (22)	P30x0.675	1148.48	1828.80	0.628	0.00	1828.80	0.000
L23	45.33 - 45.08 (23)	P30x0.8375	1154.56	2244.22	0.514	0.00	2244.22	0.000
L24	45.08 - 40.08 (24)	P30x0.8375	1277.95	2244.22	0.569	0.00	2244.22	0.000
L25	40.08 - 35.08 (25)	P30x0.8375	1404.68	2244.22	0.626	0.00	2244.22	0.000
L26	35.08 - 33.583 (26)	P30x0.8375	1443.26	2244.22	0.643	0.00	2244.22	0.000
L27	33.583 - 33.333 (27)	P30x1	1449.72	2650.20	0.547	0.00	2650.20	0.000
L28	33.333 - 32.42 (28)	P30x1	1473.42	2650.20	0.556	0.00	2650.20	0.000
L29	32.42 - 32.17 (29)	P30x0.675	1479.93	1828.80	0.809	0.00	1828.80	0.000
L30	32.17 - 30 (30)	P30x0.675	1536.70	1828.80	0.840	0.00	1828.80	0.000

Section No.	Elevation	Size	M_{ux}	ϕM_{nx}	Ratio	M_{uy}	ϕM_{ny}	Ratio
	ft		kip-ft	kip-ft	$\frac{M_{ux}}{\phi M_{nx}}$		kip-ft	kip-ft
L31	30 - 26.75 (31)	P36x0.625	1628.36	2373.92	0.686	0.00	2373.92	0.000
L32	26.75 - 26.5 (32)	P36x0.7125	1635.47	2761.27	0.592	0.00	2761.27	0.000
L33	26.5 - 21.5 (33)	P36x0.7125	1779.28	2761.27	0.644	0.00	2761.27	0.000
L34	21.5 - 21.25 (34)	P36x0.975	1786.56	3768.63	0.474	0.00	3768.63	0.000
L35	21.25 - 16.25 (35)	P36x0.975	1933.83	3768.63	0.513	0.00	3768.63	0.000
L36	16.25 - 11.25 (36)	P36x0.975	2084.32	3768.63	0.553	0.00	3768.63	0.000
L37	11.25 - 6.25 (37)	P36x0.975	2237.83	3768.63	0.594	0.00	3768.63	0.000
L38	6.25 - 1.25 (38)	P36x0.975	2394.22	3768.63	0.635	0.00	3768.63	0.000
L39	1.25 - 0 (39)	P36x0.975	2433.76	3768.63	0.646	0.00	3768.63	0.000

Pole Shear Design Data

Section No.	Elevation	Size	Actual	ϕV_n	Ratio	Actual	ϕT_n	Ratio
	ft		V_u	K	$\frac{V_u}{\phi V_n}$	T_u	kip-ft	$\frac{T_u}{\phi T_n}$
L1	120 - 115 (1)	P24x0.25	4.02	201.86	0.020	1.54	324.23	0.005
L2	115 - 110 (2)	P24x0.25	5.29	201.86	0.026	1.54	324.23	0.005
L3	110 - 105 (3)	P24x0.25	9.35	201.86	0.046	1.54	324.23	0.005
L4	105 - 100 (4)	P24x0.25	9.68	201.86	0.048	1.54	324.23	0.005
L5	100 - 95 (5)	P24x0.25	13.03	201.86	0.065	2.03	324.23	0.006
L6	95 - 90 (6)	P24x0.25	13.31	201.86	0.066	2.03	324.23	0.006
L7	90 - 85 (7)	P24x0.375	17.07	315.62	0.054	2.26	655.57	0.003
L8	85 - 80 (8)	P24x0.375	17.51	315.62	0.055	4.09	655.57	0.006
L9	80 - 79.75 (9)	P24x0.625	17.54	520.47	0.034	4.09	1069.61	0.004
L10	79.75 - 78.5 (10)	P24x0.625	17.74	520.47	0.034	4.08	1069.61	0.004
L11	78.5 - 78.25 (11)	P24x0.775	17.77	641.24	0.028	4.06	1309.35	0.003
L12	78.25 - 73.25 (12)	P24x0.775	18.78	641.24	0.029	3.82	1309.35	0.003
L13	73.25 - 68.25 (13)	P24x0.775	19.63	641.24	0.031	3.73	1309.35	0.003
L14	68.25 - 68 (14)	P24x0.775	19.67	641.24	0.031	3.71	1309.35	0.003
L15	68 - 67.75 (15)	P24x0.775	19.71	641.24	0.031	3.71	1309.35	0.003
L16	67.75 - 62.75 (16)	P24x0.775	20.30	641.24	0.032	3.70	1309.35	0.003
L17	62.75 - 60 (17)	P24x0.775	20.60	641.24	0.032	3.70	1309.35	0.003
L18	60 - 57.5 (18)	P30x0.675	22.58	705.19	0.032	3.70	1818.12	0.002
L19	57.5 - 57.25 (19)	P30x0.675	22.61	705.19	0.032	3.70	1818.12	0.002
L20	57.25 - 52.25 (20)	P30x0.675	23.30	705.19	0.033	3.70	1818.12	0.002
L21	52.25 - 47.25 (21)	P30x0.675	24.04	705.19	0.034	3.74	1818.12	0.002
L22	47.25 - 45.33 (22)	P30x0.675	24.31	705.19	0.034	3.74	1818.12	0.002
L23	45.33 - 45.08 (23)	P30x0.8375	24.32	870.11	0.028	3.74	2230.88	0.002
L24	45.08 - 40.08 (24)	P30x0.8375	25.02	870.11	0.029	3.74	2230.88	0.002
L25	40.08 - 35.08 (25)	P30x0.8375	25.67	870.11	0.030	3.74	2230.88	0.002
L26	35.08 - 33.583 (26)	P30x0.8375	25.87	870.11	0.030	3.74	2230.88	0.002

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 $\frac{T_u}{\phi T_n}$
L27	33.583 - 33.333 (27)	P30x1	25.89	1033.14	0.025	3.74	2634.14	0.001
L28	33.333 - 32.42 (28)	P30x1	26.02	1033.14	0.025	3.74	2634.14	0.001
L29	32.42 - 32.17 (29)	P30x0.675	26.04	705.19	0.037	3.74	1818.12	0.002
L30	32.17 - 30 (30)	P30x0.675	26.29	705.19	0.037	3.74	1818.12	0.002
L31	30 - 26.75 (31)	P36x0.625	28.41	787.66	0.036	3.74	2449.72	0.002
L32	26.75 - 26.5 (32)	P36x0.7125	28.43	895.71	0.032	3.74	2778.88	0.001
L33	26.5 - 21.5 (33)	P36x0.7125	29.09	895.71	0.032	3.73	2778.88	0.001
L34	21.5 - 21.25 (34)	P36x0.975	29.11	1216.59	0.024	3.73	3746.31	0.001
L35	21.25 - 16.25 (35)	P36x0.975	29.79	1216.59	0.024	3.73	3746.31	0.001
L36	16.25 - 11.25 (36)	P36x0.975	30.41	1216.59	0.025	3.73	3746.31	0.001
L37	11.25 - 6.25 (37)	P36x0.975	31.00	1216.59	0.025	3.73	3746.31	0.001
L38	6.25 - 1.25 (38)	P36x0.975	31.57	1216.59	0.026	3.73	3746.31	0.001
L39	1.25 - 0 (39)	P36x0.975	31.70	1216.59	0.026	3.73	3746.31	0.001

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		ϕP_n	ϕM_{nx}	ϕM_{ny}	ϕV_n	ϕT_n			
L1	120 - 115 (1)	0.004	0.046	0.000	0.020	0.005	0.050	1.050	4.8.2
L2	115 - 110 (2)	0.006	0.108	0.000	0.026	0.005	0.115	1.050	4.8.2
L3	110 - 105 (3)	0.011	0.201	0.000	0.046	0.005	0.215	1.050	4.8.2
L4	105 - 100 (4)	0.012	0.321	0.000	0.048	0.005	0.335	1.050	4.8.2
L5	100 - 95 (5)	0.017	0.479	0.000	0.065	0.006	0.501	1.050	4.8.2
L6	95 - 90 (6)	0.017	0.645	0.000	0.066	0.006	0.668	1.050	4.8.2
L7	90 - 85 (7)	0.015	0.540	0.000	0.054	0.003	0.558	1.050	4.8.2
L8	85 - 80 (8)	0.015	0.678	0.000	0.055	0.006	0.698	1.050	4.8.2
L9	80 - 79.75 (9)	0.009	0.397	0.000	0.034	0.004	0.408	1.050	4.8.2
L10	79.75 - 78.5 (10)	0.010	0.418	0.000	0.034	0.004	0.429	1.050	4.8.2
L11	78.5 - 78.25 (11)	0.008	0.345	0.000	0.028	0.003	0.353	1.050	4.8.2
L12	78.25 - 73.25 (12)	0.009	0.414	0.000	0.029	0.003	0.424	1.050	4.8.2
L13	73.25 - 68.25 (13)	0.009	0.487	0.000	0.031	0.003	0.497	1.050	4.8.2
L14	68.25 - 68 (14)	0.009	0.491	0.000	0.031	0.003	0.501	1.050	4.8.2
L15	68 - 67.75 (15)	0.009	0.494	0.000	0.031	0.003	0.505	1.050	4.8.2
L16	67.75 - 62.75 (16)	0.010	0.570	0.000	0.032	0.003	0.581	1.050	4.8.2
L17	62.75 - 60 (17)	0.010	0.613	0.000	0.032	0.003	0.624	1.050	4.8.2
L18	60 - 57.5 (18)	0.010	0.472	0.000	0.032	0.002	0.484	1.050	4.8.2
L19	57.5 - 57.25 (19)	0.010	0.475	0.000	0.032	0.002	0.487	1.050	4.8.2
L20	57.25 - 52.25 (20)	0.011	0.538	0.000	0.033	0.002	0.550	1.050	4.8.2
L21	52.25 - 47.25 (21)	0.012	0.603	0.000	0.034	0.002	0.615	1.050	4.8.2

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_u	M_{ux}	M_{uy}	V_u	T_u			
L22	47.25 - 45.33 (22)	0.012	0.628	0.000	0.034	0.002	0.641	1.050	4.8.2
L23	45.33 - 45.08 (23)	0.010	0.514	0.000	0.028	0.002	0.525	1.050	4.8.2
L24	45.08 - 40.08 (24)	0.010	0.569	0.000	0.029	0.002	0.581	1.050	4.8.2
L25	40.08 - 35.08 (25)	0.011	0.626	0.000	0.030	0.002	0.638	1.050	4.8.2
L26	35.08 - 33.583 (26)	0.011	0.643	0.000	0.030	0.002	0.655	1.050	4.8.2
L27	33.583 - 33.333 (27)	0.009	0.547	0.000	0.025	0.001	0.557	1.050	4.8.2
L28	33.333 - 32.42 (28)	0.009	0.556	0.000	0.025	0.001	0.566	1.050	4.8.2
L29	32.42 - 32.17 (29)	0.014	0.809	0.000	0.037	0.002	0.824	1.050	4.8.2
L30	32.17 - 30 (30)	0.014	0.840	0.000	0.037	0.002	0.856	1.050	4.8.2
L31	30 - 26.75 (31)	0.014	0.686	0.000	0.036	0.002	0.701	1.050	4.8.2
L32	26.75 - 26.5 (32)	0.012	0.592	0.000	0.032	0.001	0.605	1.050	4.8.2
L33	26.5 - 21.5 (33)	0.013	0.644	0.000	0.032	0.001	0.658	1.050	4.8.2
L34	21.5 - 21.25 (34)	0.009	0.474	0.000	0.024	0.001	0.484	1.050	4.8.2
L35	21.25 - 16.25 (35)	0.010	0.513	0.000	0.024	0.001	0.524	1.050	4.8.2
L36	16.25 - 11.25 (36)	0.010	0.553	0.000	0.025	0.001	0.564	1.050	4.8.2
L37	11.25 - 6.25 (37)	0.011	0.594	0.000	0.025	0.001	0.605	1.050	4.8.2
L38	6.25 - 1.25 (38)	0.011	0.635	0.000	0.026	0.001	0.648	1.050	4.8.2
L39	1.25 - 0 (39)	0.012	0.646	0.000	0.026	0.001	0.658	1.050	4.8.2

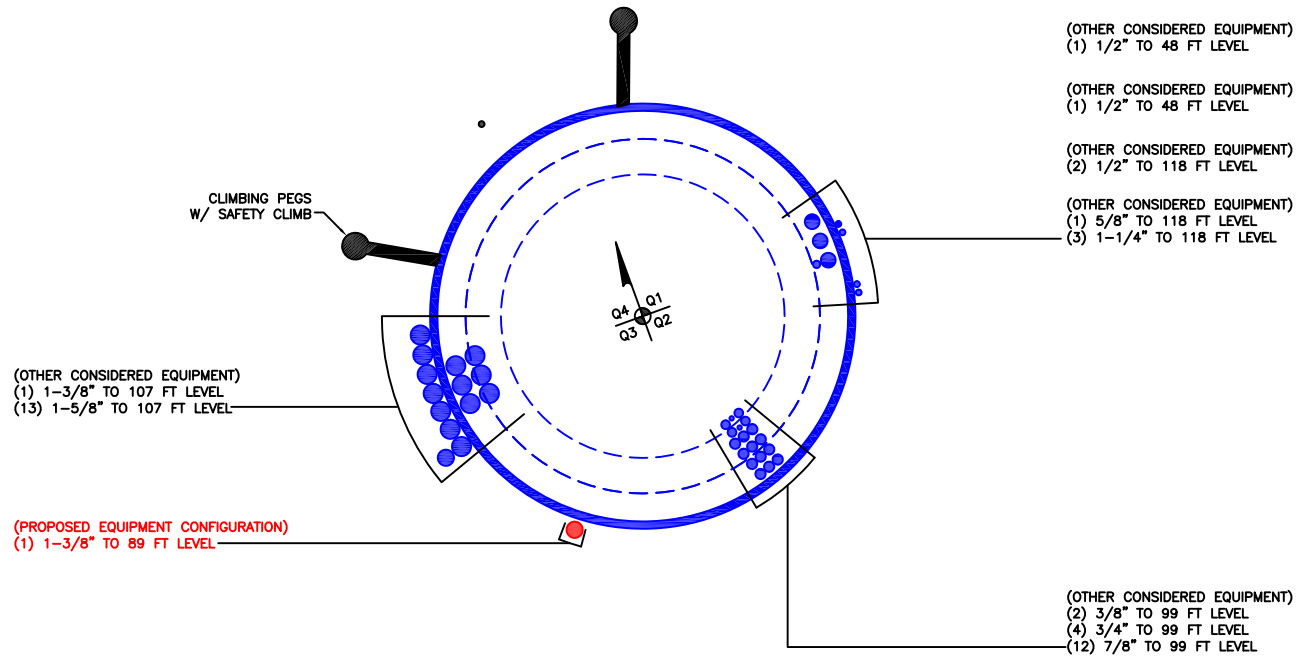
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	120 - 115	Pole	P24x0.25	1	-2.68	695.38	4.8	Pass
L2	115 - 110	Pole	P24x0.25	2	-3.75	695.38	10.9	Pass
L3	110 - 105	Pole	P24x0.25	3	-7.27	695.38	20.4	Pass
L4	105 - 100	Pole	P24x0.25	4	-7.75	695.38	31.9	Pass
L5	100 - 95	Pole	P24x0.25	5	-11.00	695.38	47.7	Pass
L6	95 - 90	Pole	P24x0.25	6	-11.56	695.38	63.6	Pass
L7	90 - 85	Pole	P24x0.375	7	-15.33	1104.67	53.2	Pass
L8	85 - 80	Pole	P24x0.375	8	-16.18	1104.67	66.4	Pass
L9	80 - 79.75	Pole	P24x0.625	9	-16.26	1821.64	38.9	Pass
L10	79.75 - 78.5	Pole	P24x0.625	10	-16.60	1821.64	40.8	Pass
L11	78.5 - 78.25	Pole	P24x0.775	11	-16.69	2244.34	33.7	Pass
L12	78.25 - 73.25	Pole	P24x0.775	12	-18.21	2244.34	40.3	Pass
L13	73.25 - 68.25	Pole	P24x0.775	13	-19.79	2244.34	47.4	Pass
L14	68.25 - 68	Pole	P24x0.775	14	-19.88	2244.34	47.7	Pass
L15	68 - 67.75	Pole	P24x0.775	15	-19.96	2244.34	48.1	Pass
L16	67.75 - 62.75	Pole	P24x0.775	16	-21.28	2244.34	55.4	Pass
L17	62.75 - 60	Pole	P24x0.775	17	-21.98	2244.34	59.5	Pass
L18	60 - 57.5	Pole	P30x0.675	18	-24.16	2468.16	46.1	Pass
L19	57.5 - 57.25	Pole	P30x0.675	19	-24.24	2468.16	46.4	Pass
L20	57.25 - 52.25	Pole	P30x0.675	20	-25.64	2468.16	52.4	Pass
L21	52.25 - 47.25	Pole	P30x0.675	21	-27.15	2468.16	58.6	Pass
L22	47.25 - 45.33	Pole	P30x0.675	22	-27.69	2468.16	61.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
L23	45.33 - 45.08	Pole	P30x0.8375	23	-27.79	3045.38	50.0	Pass	
L24	45.08 - 40.08	Pole	P30x0.8375	24	-29.45	3045.38	55.3	Pass	
L25	40.08 - 35.08	Pole	P30x0.8375	25	-31.14	3045.38	60.7	Pass	
L26	35.08 - 33.583	Pole	P30x0.8375	26	-31.64	3045.38	62.4	Pass	
L27	33.583 - 33.333	Pole	P30x1	27	-31.75	3616.00	53.0	Pass	
L28	33.333 - 32.42	Pole	P30x1	28	-32.09	3616.00	53.9	Pass	
L29	32.42 - 32.17	Pole	P30x0.675	29	-32.17	2468.16	78.5	Pass	
L30	32.17 - 30	Pole	P30x0.675	30	-32.80	2468.16	81.5	Pass	
L31	30 - 26.75	Pole	P36x0.625	31	-35.61	2756.82	66.8	Pass	
L32	26.75 - 26.5	Pole	P36x0.7125	32	-35.71	3135.00	57.7	Pass	
L33	26.5 - 21.5	Pole	P36x0.7125	33	-37.47	3135.00	62.7	Pass	
L34	21.5 - 21.25	Pole	P36x0.975	34	-37.59	4258.08	46.1	Pass	
L35	21.25 - 16.25	Pole	P36x0.975	35	-39.83	4258.08	49.9	Pass	
L36	16.25 - 11.25	Pole	P36x0.975	36	-42.08	4258.08	53.7	Pass	
L37	11.25 - 6.25	Pole	P36x0.975	37	-44.35	4258.08	57.7	Pass	
L38	6.25 - 1.25	Pole	P36x0.975	38	-46.62	4258.08	61.7	Pass	
L39	1.25 - 0	Pole	P36x0.975	39	-47.19	4258.08	62.7	Pass	
							Summary		
							Pole (L30)	81.5	Pass
							RATING =	81.5	Pass

***NOTE: Above stress ratios for reinforced sections are approximate. More exact calculations are presented in Appendix C.**

APPENDIX B
BASE LEVEL DRAWING



APPENDIX C
ADDITIONAL CALCULATIONS

TNX Geometry Input

Increment (ft): [Export to TNX](#)

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	120 - 115	5		0	24.000	24.000	0.25	A53-B-42	1.000
2	115 - 110	5		0	24.000	24.000	0.25	A53-B-42	1.000
3	110 - 105	5		0	24.000	24.000	0.25	A53-B-42	1.000
4	105 - 100	5		0	24.000	24.000	0.25	A53-B-42	1.000
5	100 - 95	5		0	24.000	24.000	0.25	A53-B-42	1.000
6	95 - 90	5	0	0	24.000	24.000	0.25	A53-B-42	1.000
7	90 - 85	5		0	24.000	24.000	0.375	A53-B-42	1.000
8	85 - 80	5		0	24.000	24.000	0.375	A53-B-42	1.000
9	80 - 79.75	0.25		0	24.000	24.000	0.625	A53-B-42	0.933
10	79.75 - 78.5	1.25		0	24.000	24.000	0.625	A53-B-42	0.933
11	78.5 - 78.25	0.25		0	24.000	24.000	0.775	A53-B-42	0.917
12	78.25 - 73.25	5		0	24.000	24.000	0.775	A53-B-42	0.917
13	73.25 - 68.25	5		0	24.000	24.000	0.775	A53-B-42	0.917
14	68.25 - 68	0.25		0	24.000	24.000	0.775	A53-B-42	0.917
15	68 - 67.75	0.25		0	24.000	24.000	0.775	A53-B-42	0.917
16	67.75 - 62.75	5		0	24.000	24.000	0.775	A53-B-42	0.917
17	62.75 - 60	2.75	0	0	24.000	24.000	0.775	A53-B-42	0.917
18	60 - 57.5	2.5		0	30.000	30.000	0.675	A53-B-42	0.947
19	57.5 - 57.25	0.25		0	30.000	30.000	0.675	A53-B-42	0.947
20	57.25 - 52.25	5		0	30.000	30.000	0.675	A53-B-42	0.947
21	52.25 - 47.25	5		0	30.000	30.000	0.675	A53-B-42	0.947
22	47.25 - 45.33	1.92		0	30.000	30.000	0.675	A53-B-42	0.947
23	45.33 - 45.08	0.25		0	30.000	30.000	0.8375	A53-B-42	0.920
24	45.08 - 40.08	5		0	30.000	30.000	0.8375	A53-B-42	0.920
25	40.08 - 35.08	5		0	30.000	30.000	0.8375	A53-B-42	0.920
26	35.08 - 33.583	1.497		0	30.000	30.000	0.8375	A53-B-42	0.920
27	33.583 - 33.333	0.25		0	30.000	30.000	1	A53-B-42	0.895
28	33.333 - 32.42	0.913		0	30.000	30.000	1	A53-B-42	0.895
29	32.42 - 32.17	0.25		0	30.000	30.000	0.675	A53-B-42	0.947
30	32.17 - 30	2.17	0	0	30.000	30.000	0.675	A53-B-42	0.947
31	30 - 26.75	3.25		0	36.000	36.000	0.625	A53-B-42	0.950
32	26.75 - 26.5	0.25		0	36.000	36.000	0.7125	A53-B-42	0.943
33	26.5 - 21.5	5		0	36.000	36.000	0.7125	A53-B-42	0.943
34	21.5 - 21.25	0.25		0	36.000	36.000	0.975	A53-B-42	0.918
35	21.25 - 16.25	5		0	36.000	36.000	0.975	A53-B-42	0.918
36	16.25 - 11.25	5		0	36.000	36.000	0.975	A53-B-42	0.918
37	11.25 - 6.25	5		0	36.000	36.000	0.975	A53-B-42	0.918
38	6.25 - 1.25	5		0	36.000	36.000	0.975	A53-B-42	0.918
39	1.25 - 0	1.25		0	36.000	36.000	0.975	A53-B-42	0.918

TNX Section Forces

Increment (ft):		TNX Output			
	5	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)
1	120 - 115	2.68	18.08	4.02	
2	115 - 110	3.75	42.80	5.29	
3	110 - 105	7.27	79.76	9.35	
4	105 - 100	7.75	127.29	9.68	
5	100 - 95	11.00	190.14	13.03	
6	95 - 90	11.56	255.92	13.31	
7	90 - 85	15.33	336.96	17.07	
8	85 - 80	16.18	423.09	17.51	
9	80 - 79.75	16.26	427.47	17.54	
10	79.75 - 78.5	16.60	449.53	17.74	
11	78.5 - 78.25	16.69	453.97	17.77	
12	78.25 - 73.25	18.21	545.48	18.78	
13	73.25 - 68.25	19.79	641.42	19.63	
14	68.25 - 68	19.88	646.32	19.67	
15	68 - 67.75	19.96	651.24	19.71	
16	67.75 - 62.75	21.28	751.27	20.30	
17	62.75 - 60	21.98	807.50	20.60	
18	60 - 57.5	24.16	863.44	22.58	
19	57.5 - 57.25	24.24	869.09	22.61	
20	57.25 - 52.25	25.64	983.89	23.30	
21	52.25 - 47.25	27.15	1102.09	24.04	
22	47.25 - 45.33	27.69	1148.48	24.31	
23	45.33 - 45.08	27.79	1154.56	24.32	
24	45.08 - 40.08	29.45	1277.95	25.02	
25	40.08 - 35.08	31.14	1404.68	25.67	
26	35.08 - 33.583	31.64	1443.25	25.87	
27	33.583 - 33.333	31.75	1449.72	25.89	
28	33.333 - 32.42	32.09	1473.42	26.01	
29	32.42 - 32.17	32.17	1479.93	26.04	
30	32.17 - 30	32.80	1536.70	26.29	
31	30 - 26.75	35.61	1628.36	28.41	
32	26.75 - 26.5	35.71	1635.47	28.43	
33	26.5 - 21.5	37.47	1779.28	29.09	
34	21.5 - 21.25	37.59	1786.56	29.11	
35	21.25 - 16.25	39.83	1933.84	29.79	
36	16.25 - 11.25	42.08	2084.33	30.41	
37	11.25 - 6.25	44.35	2237.83	31.00	
38	6.25 - 1.25	46.62	2394.23	31.57	
39	1.25 - 0	47.19	2433.76	31.70	

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
120 - 115	Pole	TP24x24x0.25	Pole	4.8%	Pass
115 - 110	Pole	TP24x24x0.25	Pole	10.9%	Pass
110 - 105	Pole	TP24x24x0.25	Pole	20.4%	Pass
105 - 100	Pole	TP24x24x0.25	Pole	31.9%	Pass
100 - 95	Pole	TP24x24x0.25	Pole	47.6%	Pass
95 - 90	Pole	TP24x24x0.25	Pole	63.5%	Pass
90 - 85	Pole	TP24x24x0.375	Pole	53.1%	Pass
85 - 80	Pole	TP24x24x0.375	Pole	66.4%	Pass
80 - 79.75	Pole + Reinf.	TP24x24x0.625	Reinf. 1 Tension Rupture	63.7%	Pass
79.75 - 78.5	Pole + Reinf.	TP24x24x0.625	Reinf. 1 Tension Rupture	67.0%	Pass
78.5 - 78.25	Pole + Reinf.	TP24x24x0.775	Reinf. 7 Tension Rupture	36.2%	Pass
78.25 - 73.25	Pole + Reinf.	TP24x24x0.775	Reinf. 7 Tension Rupture	43.4%	Pass
73.25 - 68.25	Pole + Reinf.	TP24x24x0.775	Reinf. 7 Tension Rupture	50.9%	Pass
68.25 - 68	Pole + Reinf.	TP24x24x0.775	Reinf. 7 Tension Rupture	51.3%	Pass
68 - 67.75	Pole + Reinf.	TP24x24x0.775	Reinf. 7 Tension Rupture	51.7%	Pass
67.75 - 62.75	Pole + Reinf.	TP24x24x0.775	Reinf. 7 Tension Rupture	59.6%	Pass
62.75 - 60	Pole + Reinf.	TP24x24x0.775	Reinf. 7 Tension Rupture	64.0%	Pass
60 - 57.5	Pole + Reinf.	TP30x30x0.675	Pole	50.2%	Pass
57.5 - 57.25	Pole + Reinf.	TP30x30x0.675	Pole	50.5%	Pass
57.25 - 52.25	Pole + Reinf.	TP30x30x0.675	Pole	57.1%	Pass
52.25 - 47.25	Pole + Reinf.	TP30x30x0.675	Pole	63.9%	Pass
47.25 - 45.33	Pole + Reinf.	TP30x30x0.675	Pole	66.6%	Pass
45.33 - 45.08	Pole + Reinf.	TP30x30x0.8375	Pole	55.3%	Pass
45.08 - 40.08	Pole + Reinf.	TP30x30x0.8375	Pole	61.1%	Pass
40.08 - 35.08	Pole + Reinf.	TP30x30x0.8375	Pole	67.1%	Pass
35.08 - 33.58	Pole + Reinf.	TP30x30x0.8375	Pole	69.0%	Pass
33.58 - 33.33	Pole + Reinf.	TP30x30x1	Pole	59.1%	Pass
33.33 - 32.42	Pole + Reinf.	TP30x30x1	Pole	60.0%	Pass
32.42 - 32.17	Pole + Reinf.	TP30x30x0.675	Pole	85.7%	Pass
32.17 - 30	Pole + Reinf.	TP30x30x0.675	Pole	88.9%	Pass
30 - 26.75	Pole + Reinf.	TP36x36x0.625	Pole	72.7%	Pass
26.75 - 26.5	Pole + Reinf.	TP36x36x0.7125	Pole	63.8%	Pass
26.5 - 21.5	Pole + Reinf.	TP36x36x0.7125	Pole	69.4%	Pass
21.5 - 21.25	Pole + Reinf.	TP36x36x0.975	Pole	52.2%	Pass
21.25 - 16.25	Pole + Reinf.	TP36x36x0.975	Pole	56.4%	Pass
16.25 - 11.25	Pole + Reinf.	TP36x36x0.975	Pole	60.8%	Pass
11.25 - 6.25	Pole + Reinf.	TP36x36x0.975	Pole	65.3%	Pass
6.25 - 1.25	Pole + Reinf.	TP36x36x0.975	Pole	69.8%	Pass
1.25 - 0	Pole + Reinf.	TP36x36x0.975	Pole	70.9%	Pass
				Summary	
			Pole	88.9%	Pass
			Reinforcement	86.2%	Pass
			Overall	88.9%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity*							
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7
120 - 115	1315	n/a	1315	18.65	n/a	18.65	4.8%							
115 - 110	1315	n/a	1315	18.65	n/a	18.65	10.9%							
110 - 105	1315	n/a	1315	18.65	n/a	18.65	20.4%							
105 - 100	1315	n/a	1315	18.65	n/a	18.65	31.9%							
100 - 95	1315	n/a	1315	18.65	n/a	18.65	47.6%							
95 - 90	1315	n/a	1315	18.65	n/a	18.65	63.5%							
90 - 85	1942	n/a	1942	27.83	n/a	27.83	53.1%							
85 - 80	1942	n/a	1942	27.83	n/a	27.83	66.4%							
80 - 79.75	1942	1202	3144	27.83	15.00	42.83	41.3%	63.7%						
79.75 - 78.5	1942	1202	3144	27.83	15.00	42.83	43.4%	67.0%						
78.5 - 78.25	1942	1912	3854	27.83	24.00	51.83	35.7%							36.2%
78.25 - 73.25	1942	1912	3854	27.83	24.00	51.83	42.8%							43.4%
73.25 - 68.25	1942	1912	3854	27.83	24.00	51.83	50.2%							50.9%
68.25 - 68	1942	1912	3854	27.83	24.00	51.83	50.6%							51.3%
68 - 67.75	1942	1912	3854	27.83	24.00	51.83	51.0%							51.7%
67.75 - 62.75	1942	1912	3854	27.83	24.00	51.83	58.8%							59.6%
62.75 - 60	1942	1912	3854	27.83	24.00	51.83	63.1%							64.0%
60 - 57.5	3829	2920	6749	34.90	24.00	58.90	50.2%							48.7%
57.5 - 57.25	3829	2920	6749	34.90	24.00	58.90	50.5%							49.0%
57.25 - 52.25	3829	2920	6749	34.90	24.00	58.90	57.1%							55.4%
52.25 - 47.25	3829	2920	6749	34.90	24.00	58.90	63.9%							62.0%
47.25 - 45.33	3829	2920	6749	34.90	24.00	58.90	66.6%							64.6%
45.33 - 45.08	3829	4343	8173	34.90	35.68	70.58	55.3%			51.5%				53.6%
45.08 - 40.08	3829	4343	8173	34.90	35.68	70.58	61.1%			57.0%				59.3%
40.08 - 35.08	3829	4343	8173	34.90	35.68	70.58	67.1%			62.6%				65.1%
35.08 - 33.58	3829	4343	8173	34.90	35.68	70.58	69.0%			64.3%				66.9%
33.58 - 33.33	3829	5752	9581	34.90	46.60	81.50	59.1%		53.6%					57.3%
33.33 - 32.42	3829	5752	9581	34.90	46.60	81.50	60.0%		54.4%					58.2%
32.42 - 32.17	3829	2920	6749	34.90	24.00	58.90	85.7%							83.1%
32.17 - 30	3829	2920	6749	34.90	24.00	58.90	88.9%							86.2%
30 - 26.75	6659	4144	10803	41.97	24.00	65.97	72.7%							68.4%
26.75 - 26.5	6659	5696	12355	41.97	32.50	74.47	63.8%						59.3%	
26.5 - 21.5	6659	5696	12355	41.97	32.50	74.47	69.4%						64.4%	
21.5 - 21.25	6659	9840	16499	41.97	56.50	98.47	52.2%				49.1%	48.4%		
21.25 - 16.25	6659	9840	16499	41.97	56.50	98.47	56.4%				53.1%	52.4%		
16.25 - 11.25	6659	9840	16499	41.97	56.50	98.47	60.8%				57.2%	56.4%		
11.25 - 6.25	6659	9840	16499	41.97	56.50	98.47	65.3%				61.4%	60.6%		
6.25 - 1.25	6659	9840	16499	41.97	56.50	98.47	69.8%				65.7%	64.8%		
1.25 - 0	6659	9840	16499	41.97	56.50	98.47	70.9%				66.7%	65.9%		

Note: Section capacity checked using 5 degree increments.
Rating per TIA-222-H Section 15.5.

Monopole Flange Plate Connection

Elevation = 90 ft.



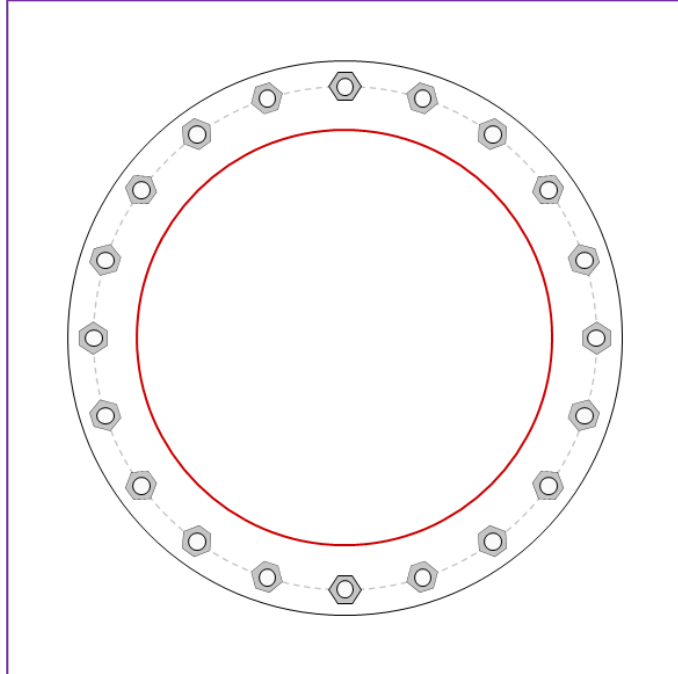
BU #	876329
Site Name	. VIEW CEM. (FILLEY P
Order #	556612 Rev.1

Applied Loads	
Moment (kip-ft)	255.92
Axial Force (kips)	11.56
Shear Force (kips)	13.31

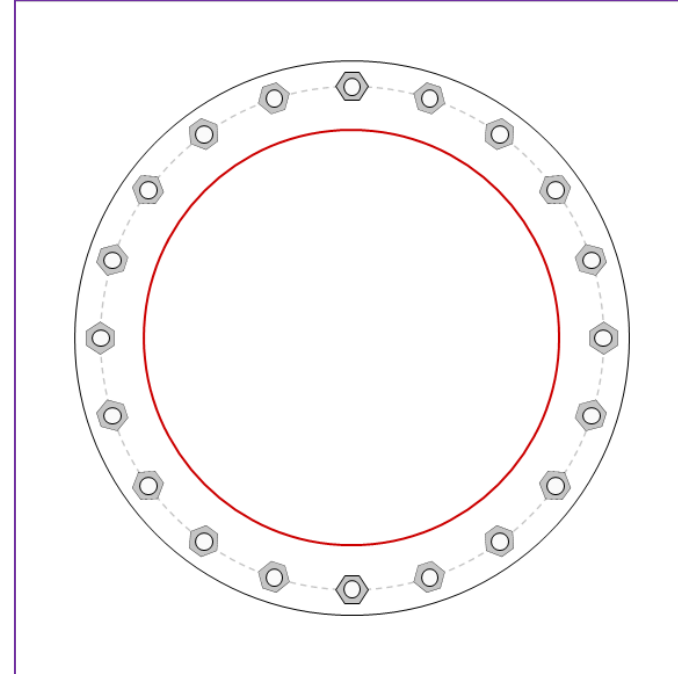
TIA-222 Revision	H
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*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(20) 1" ϕ bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 29" BC

Top Plate Data

32" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

32" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

24" x 0.25" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Pole Data

24" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	20.59
Allowable (kips)	54.53
Stress Rating:	36.0% Pass

Top Plate Capacity

Max Stress (ksi):	14.80	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	43.5%	Pass
Tension Side Stress Rating:	20.6%	Pass

Bottom Plate Capacity

Max Stress (ksi):	14.80	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	43.5%	Pass
Tension Side Stress Rating:	20.6%	Pass

Monopole Flange Plate Connection

Elevation = 60 ft.



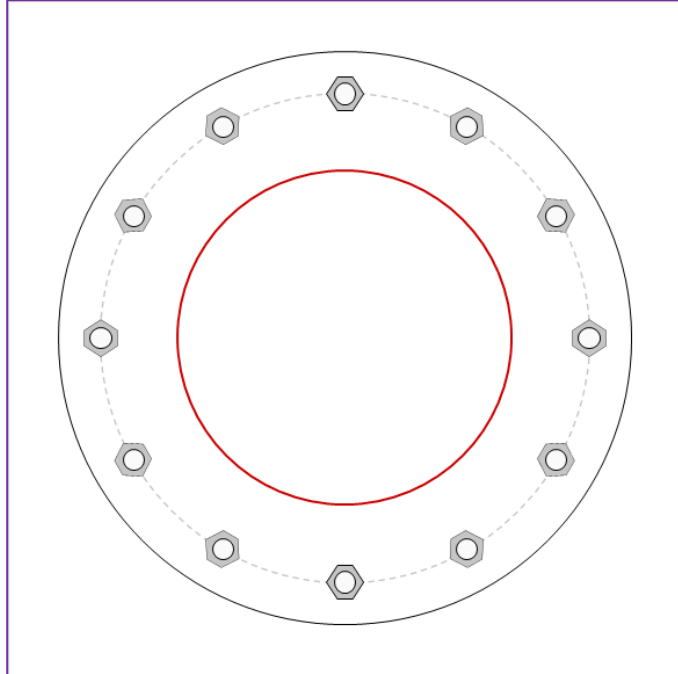
BU #	876329
Site Name	. VIEW CEM. (FILLEY P
Order #	556612 Rev.1

TIA-222 Revision	H
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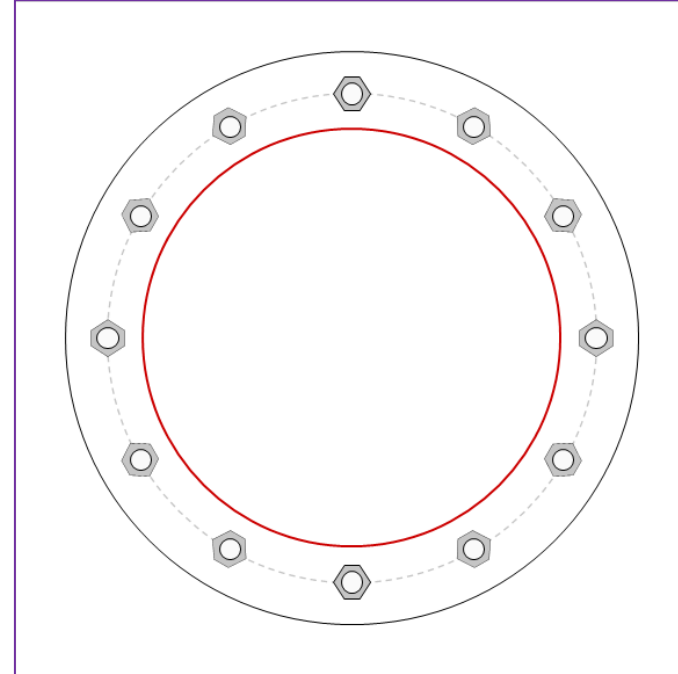
Applied Loads to Flange Connections		Applied Loads to Bridge Stiffeners	
Moment (kip-ft)	219.65	Moment (kip-ft)	587.84
Axial Force (kips)	21.98	Axial Force (kips)	0.00
Shear Force (kips)	20.60	Shear Force (kips)	0.00

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(12) 1-1/2" ϕ bolts (A325 N; Fy=81 ksi, Fu=120 ksi) on 35" BC

Top Plate Data

41" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

24" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bridge Stiffener Group 1 Data

(4) Welded, 6"x1.25", A572-65, Lu=5.63", Upper Plate Width=15.5", Lower Plate Width=9.5", Neglect Flange in MOI: No

Bottom Plate Data

41" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

30" x 0.675" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	23.25
Allowable (kips)	126.87
Stress Rating:	17.5% Pass

Top Plate Capacity

Max Stress (ksi):	11.65	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	34.2%	Pass
Tension Side Stress Rating:	18.3%	Pass

Bottom Plate Capacity

Max Stress (ksi):	5.50	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	16.2%	Pass
Tension Side Stress Rating:	5.2%	Pass

Bridge Stiffener Group 1 Analysis Capacity

Max Compression (kip):	164.05	
Max Tension (kip):	164.05	
Comp. Capacity (kip):	428.71	
Tens. Capacity (kip):	438.75	(Yield)
Comp. Stress Rating:	36.4%	Pass
Tens. Stress Rating:	35.6%	Pass

Welded Bridge Stiffener Design

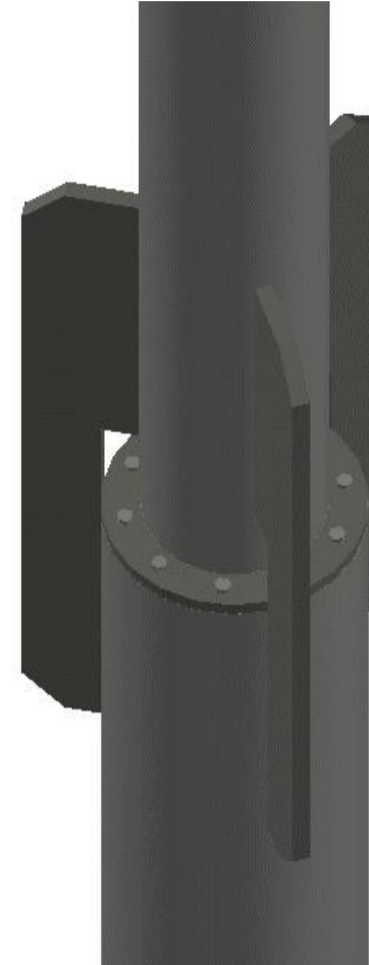
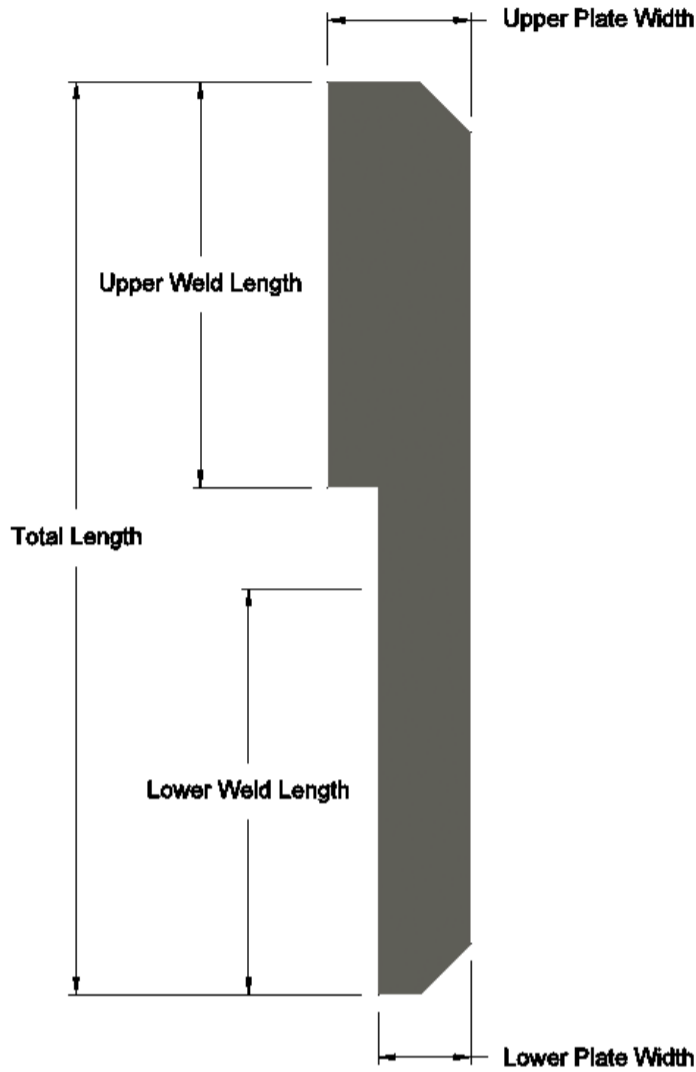
Elevation = 60 ft.



BU #	876329
Site Name	J. VIEW CEM. (FILLEY P)
Order #	556612 Rev.1
TIA-222 Revision	H

Applied Loads to Design Groups	
Moment (kip-ft)	587.84
Axial Force (kips)	0.00
Shear Force (kips)	0.00

*TIA-222-H Section 15.5 Applied



Design Properties

Bridge Stiffener Group 1 Data

(4) Welded, 6"x1.25", A572-65, Lu=5.63", Upper Plate Width=15.5", Lower Plate Width=9.5", Neglect Flange in MOI: No

Total Length:	108 in	Upper Weld Size:	Good
Weld Type:	Fillet (both sides)	Upper Weld Rating:	18.52%
Weld Size:	0.375 in	Lower Weld Size:	Good
Exx:	80 ksi	Lower Weld Rating:	17.83%
Upper Weld Length:	51.19 in	Top Plate Lateral-Torsional Buckling Rating:	3.85%
Upper Plate Width:	15.5 in	Top Plate Tension Yield Rating:	6.26%
Lower Weld Length:	51.19 in	Top Plate Tension Rupture Rating:	6.78%
Lower Plate Width:	9.5 in	Top Plate Interaction Rating:	4.33%
Stiffener Front EPA (No Ice):	12.95 ft ²	Bottom Plate Lateral-Torsional Buckling Rating:	2.39%
Stiffener Side EPA (No Ice):	1.88 ft ²	Bottom Plate Tension Yield Rating:	6.26%
Stiffener Front EPA (1/2" Ice):	13.59 ft ²	Bottom Plate Tension Rupture Rating:	6.78%
Stiffener Side EPA (1/2" Ice):	3.41 ft ²	Bottom Plate Interaction Rating:	2.88%
Stiffener Weight (No Ice):	0.473 kip	Top Pole Punching Shear Rating:	11.99%
Stiffener Weight (1/2" Ice):	0.521 kip	Bottom Pole Punching Shear Rating:	4.56%

Monopole Flange Plate Connection

Elevation = 30 ft.



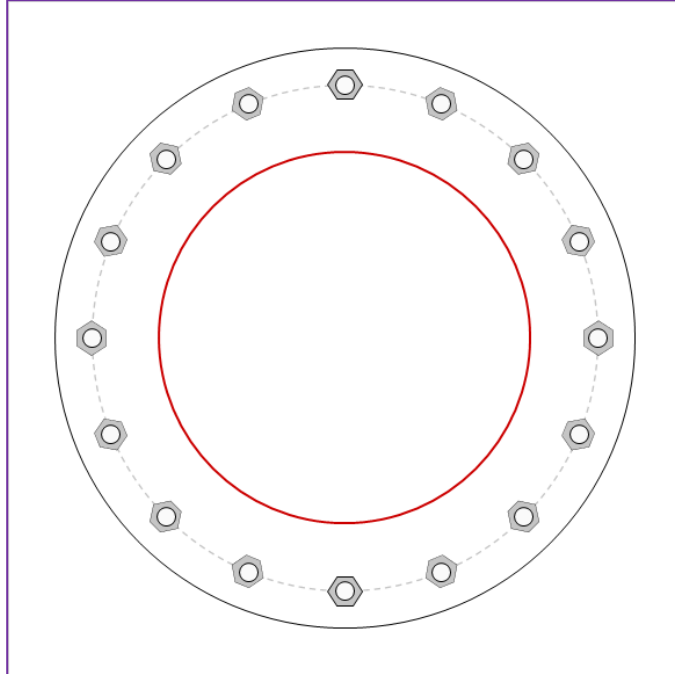
BU #	876329
Site Name	. VIEW CEM. (FILLEY P
Order #	556612 Rev.1

TIA-222 Revision	H
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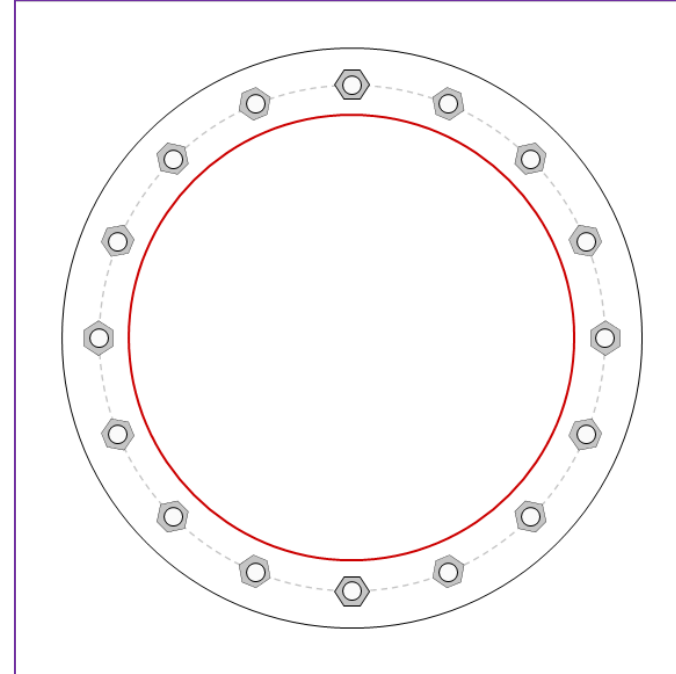
Applied Loads to Flange Connections		Applied Loads to Bridge Stiffeners	
Moment (kip-ft)	362.02	Moment (kip-ft)	1174.67
Axial Force (kips)	32.80	Axial Force (kips)	0.00
Shear Force (kips)	26.29	Shear Force (kips)	0.00

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(16) 1-1/2" ϕ bolts (A325 N; Fy=81 ksi, Fu=120 ksi) on 41" BC

Top Plate Data

47" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

30" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bridge Stiffener Group 1 Data

(4) Welded, 4.25"x1.25", A572-65, Lu=12", Upper Plate Width=12.75", Lower Plate Width=8.625", Neglect Flange in MOI: No

Bottom Plate Data

47" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

36" x 0.625" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bridge Stiffener Group 2 Data

(4) Welded, 6"x1.25", A572-65, Lu=5.63", Upper Plate Width=15.5", Lower Plate Width=9.5", Neglect Flange in MOI: No

Analysis Results

Bolt Capacity

Max Load (kips)	24.43
Allowable (kips)	126.87
Stress Rating:	18.3% Pass

Top Plate Capacity

Max Stress (ksi):	13.76	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	40.4%	Pass
Tension Side Stress Rating:	20.7%	Pass

Bridge Stiffener Group 1 Analysis Capacity

Max Compression (kip):	119.28	
Max Tension (kip):	119.28	
Comp. Capacity (kip):	279.77	
Tens. Capacity (kip):	310.78	(Yield)
Comp. Stress Rating:	40.6%	Pass
Tens. Stress Rating:	36.6%	Pass

Bottom Plate Capacity

Max Stress (ksi):	6.17	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	18.1%	Pass
Tension Side Stress Rating:	6.2%	Pass

Bridge Stiffener Group 2 Analysis Capacity

Max Compression (kip):	168.40	
Max Tension (kip):	168.40	
Comp. Capacity (kip):	428.71	
Tens. Capacity (kip):	438.75	(Yield)
Comp. Stress Rating:	37.4%	Pass
Tens. Stress Rating:	36.6%	Pass

Welded Bridge Stiffener Design

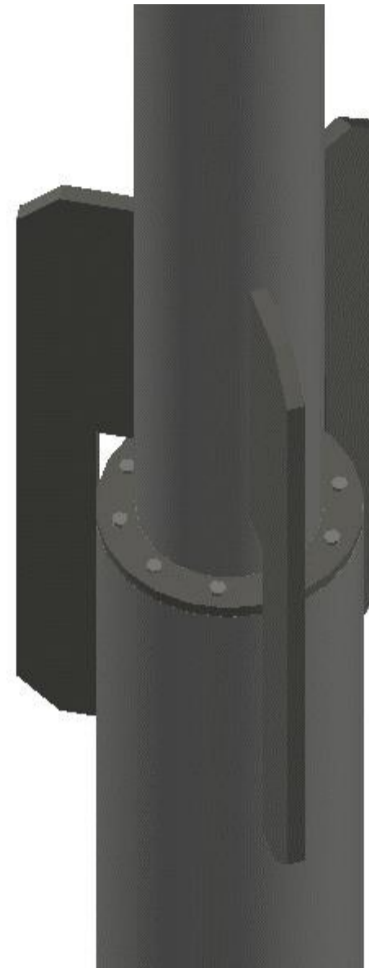
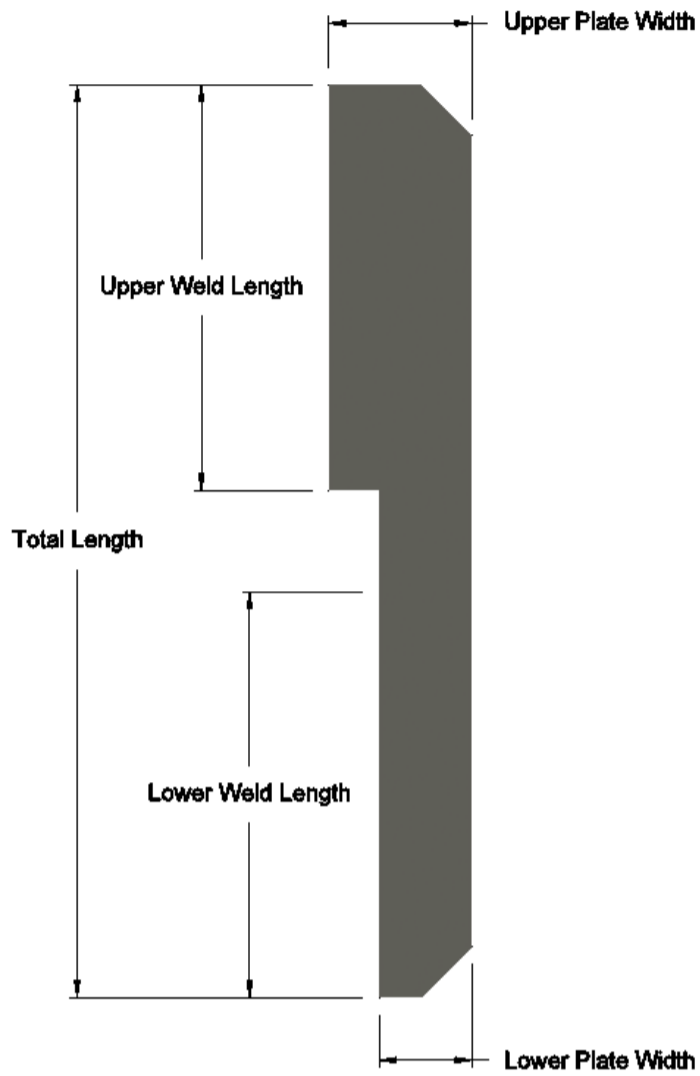
Elevation = 30 ft.



BU #	876329
Site Name	. VIEW CEM. (FILLEY P
Order #	556612 Rev.1
TIA-222 Revision	H

Applied Loads to Design Groups	
Moment (kip-ft)	1174.67
Axial Force (kips)	0.00
Shear Force (kips)	0.00

*TIA-222-H Section 15.5 Applied



Design Properties

Bridge Stiffener Group 1 Data

(4) Welded, 4.25"x1.25", A572-65, Lu=12", Upper Plate Width=12.75", Lower Plate Width=8.625", Neglect Flange in MOI: No

Total Length:	61.125 in	Upper Weld Size:	Good
Weld Type:	Fillet (both sides)	Upper Weld Rating:	31.66%
Weld Size:	0.375 in	Lower Weld Size:	Good
Exx:	80 ksi	Lower Weld Rating:	37.63%
Upper Weld Length:	27 in	Top Plate Lateral-Torsional Buckling Rating:	8.77%
Upper Plate Width:	12.75 in	Top Plate Tension Yield Rating:	8.63%
Lower Weld Length:	21.25 in	Top Plate Tension Rupture Rating:	9.35%
Lower Plate Width:	8.625 in	Top Plate Interaction Rating:	9.69%
Stiffener Front EPA (No Ice):	5.77 ft ²	Bottom Plate Lateral-Torsional Buckling Rating:	9.27%
Stiffener Side EPA (No Ice):	1.06 ft ²	Bottom Plate Tension Yield Rating:	10.97%
Stiffener Front EPA (1/2" Ice):	6.20 ft ²	Bottom Plate Tension Rupture Rating:	11.88%
Stiffener Side EPA (1/2" Ice):	1.94 ft ²	Bottom Plate Interaction Rating:	10.75%
Stiffener Weight (No Ice):	0.226 kip	Top Pole Punching Shear Rating:	31.33%
Stiffener Weight (1/2" Ice):	0.251 kip	Bottom Pole Punching Shear Rating:	20.76%

Bridge Stiffener Group 2 Data

(4) Welded, 6"x1.25", A572-65, Lu=5.63", Upper Plate Width=15.5", Lower Plate Width=9.5", Neglect Flange in MOI: No

Total Length:	132 in	Upper Weld Size:	Good
Weld Type:	Fillet (both sides)	Upper Weld Rating:	15.83%
Weld Size:	0.375 in	Lower Weld Size:	Good
Exx:	80 ksi	Lower Weld Rating:	13.88%
Upper Weld Length:	60 in	Top Plate Lateral-Torsional Buckling Rating:	3.01%
Upper Plate Width:	15.5 in	Top Plate Tension Yield Rating:	5.48%
Lower Weld Length:	67 in	Top Plate Tension Rupture Rating:	5.94%
Lower Plate Width:	9.5 in	Top Plate Interaction Rating:	3.38%
Stiffener Front EPA (No Ice):	16.26 ft ²	Bottom Plate Lateral-Torsional Buckling Rating:	1.50%
Stiffener Side EPA (No Ice):	2.29 ft ²	Bottom Plate Tension Yield Rating:	4.91%
Stiffener Front EPA (1/2" Ice):	17.03 ft ²	Bottom Plate Tension Rupture Rating:	5.32%
Stiffener Side EPA (1/2" Ice):	4.16 ft ²	Bottom Plate Interaction Rating:	1.80%
Stiffener Weight (No Ice):	0.572 kip	Top Pole Punching Shear Rating:	8.96%
Stiffener Weight (1/2" Ice):	0.631 kip	Bottom Pole Punching Shear Rating:	2.95%

Monopole Base Plate Connection

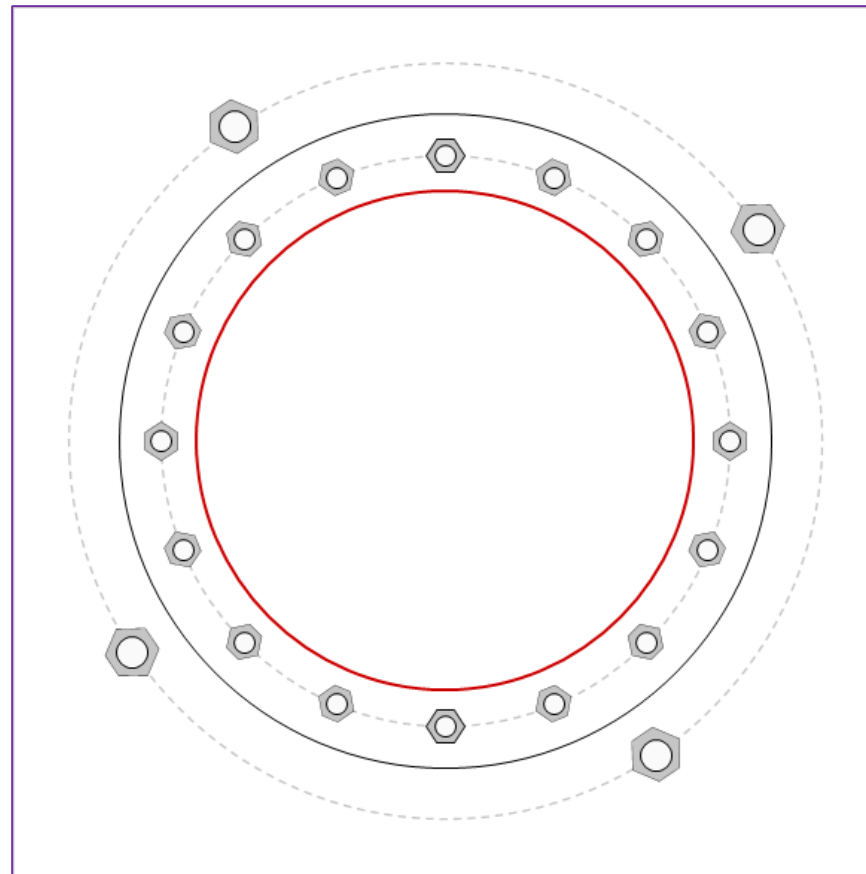


Site Info	
BU #	876329
Site Name	L. VIEW CEM. (FILLEY P.
Order #	556612 Rev.1

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

Applied Loads	
Moment (kip-ft)	2433.76
Axial Force (kips)	47.19
Shear Force (kips)	31.70

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
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Anchor Rod Data
GROUP 1: (16) 1-1/2" ϕ bolts (A354-BC N; $F_y=109$ ksi, $F_u=125$ ksi) on 41" BC
GROUP 2: (4) 2-1/4" ϕ bolts (A193 Gr. B7 N; $F_y=105$ ksi, $F_u=125$ ksi) on 54.5" BC

Base Plate Data
47" OD x 2" Plate (A36; $F_y=36$ ksi, $F_u=58$ ksi)

Stiffener Data
N/A

Pole Data
36" x 0.375" round pole (A53-B-42; $F_y=42$ ksi, $F_u=63$ ksi)

Anchor Rod Summary	<i>(units of kips, kip-in)</i>	
GROUP 1:		
$P_{u,t} = 85.23$	$\phi P_{n,t} = 132.19$	Stress Rating
$V_u = 1.98$	$\phi V_n = 82.83$	61.4%
$M_u = n/a$	$\phi M_n = n/a$	Pass
GROUP 2:		
$P_{u,t} = 270.14$	$\phi P_{n,t} = 304.69$	Stress Rating
$V_u = 0$	$\phi V_n = 186.38$	84.4%
$M_u = n/a$	$\phi M_n = n/a$	Pass
Base Plate Summary		
Max Stress (ksi):	19.7	(Flexural)
Allowable Stress (ksi):	32.4	
Stress Rating:	57.9%	Pass

CCIplate

Elevation (ft) 0 (Base)

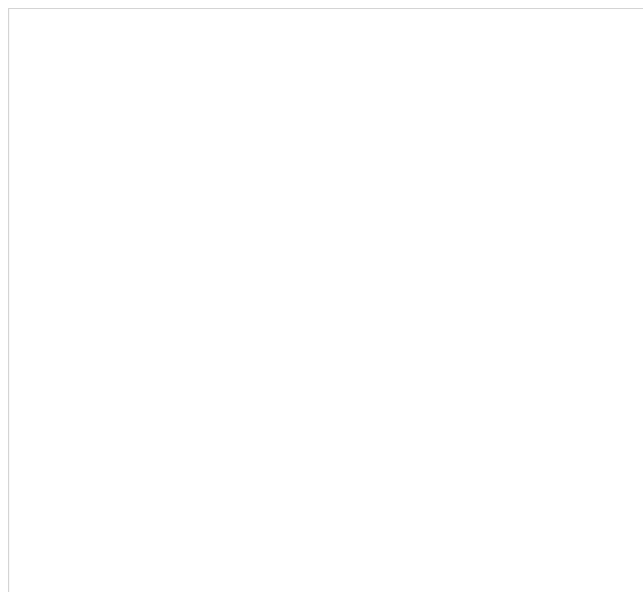
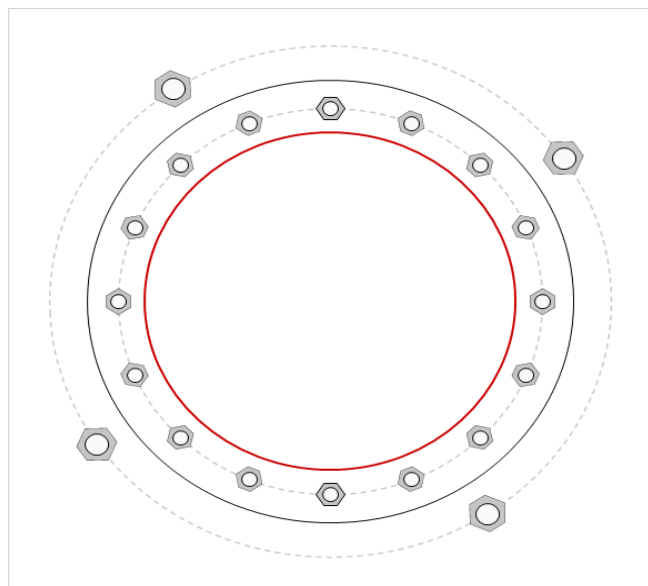
note: Bending interaction not considered when Grout Considered = "Yes"

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 :	I_{ar} (in):	Thread Type	Area Override, in ²	Tension Only
1	1	0	1.5	A354-BC	41	0.5	0	N-Included		No
2	1	22.5	1.5	A354-BC	41	0.5	0	N-Included		No
3	1	45	1.5	A354-BC	41	0.5	0	N-Included		No
4	1	67.5	1.5	A354-BC	41	0.5	0	N-Included		No
5	1	90	1.5	A354-BC	41	0.5	0	N-Included		No
6	1	112.5	1.5	A354-BC	41	0.5	0	N-Included		No
7	1	135	1.5	A354-BC	41	0.5	0	N-Included		No
8	1	157.5	1.5	A354-BC	41	0.5	0	N-Included		No
9	1	180	1.5	A354-BC	41	0.5	0	N-Included		No
10	1	202.5	1.5	A354-BC	41	0.5	0	N-Included		No
11	1	225	1.5	A354-BC	41	0.5	0	N-Included		No
12	1	247.5	1.5	A354-BC	41	0.5	0	N-Included		No
13	1	270	1.5	A354-BC	41	0.5	0	N-Included		No
14	1	292.5	1.5	A354-BC	41	0.5	0	N-Included		No
15	1	315	1.5	A354-BC	41	0.5	0	N-Included		No
16	1	337.5	1.5	A354-BC	41	0.5	0	N-Included		No
17	2	34	2.25	A193 Gr. B7	54.5	0.5	0	N-Included		No
18	2	124	2.25	A193 Gr. B7	54.5	0.5	0	N-Included		No
19	2	214	2.25	A193 Gr. B7	54.5	0.5	0	N-Included		No
20	2	304	2.25	A193 Gr. B7	54.5	0.5	0	N-Included		No

Plot Graphic



Drilled Pier Foundation

BU # :	876329
Site Name:	MTN. VIEW CEM. (FILLEY)
Order Number:	556612 REV. 1
TIA-222 Revision:	H
Tower Type:	Monopole



Applied Loads		
	Comp.	Uplift
Moment (kip-ft)	2433.76	
Axial Force (kips)	47.21	
Shear Force (kips)	31.68	

Material Properties		
Concrete Strength, f'c:	3	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	40	ksi

Pier Design Data		
Depth	25	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
<i>From 0.5' above grade to 25' below grade</i>		
Pier Diameter	6	ft
Rebar Quantity	24	
Rebar Size	9	
Clear Cover to Ties	3	in
Tie Size	5	
Tie Spacing		in

[Rebar & Pier Options](#)

[Embedded Pole Inputs](#)

[Belled Pier Inputs](#)

Analysis Results

Soil Lateral Check	Compression	Uplift
D _{v=0} (ft from TOC)	6.76	-
Soil Safety Factor	4.15	-
Max Moment (kip-ft)	2639.49	-
Rating*	30.5%	-

Soil Vertical Check	Compression	Uplift
Skin Friction (kips)	526.86	-
End Bearing (kips)	339.29	-
Weight of Concrete (kips)	108.59	-
Total Capacity (kips)	866.15	-
Axial (kips)	155.80	-
Rating*	17.1%	-

Reinforced Concrete Flexure	Compression	Uplift
Critical Depth (ft from TOC)	6.72	-
Critical Moment (kip-ft)	2639.48	-
Critical Moment Capacity	3304.24	-
Rating*	76.1%	-

Reinforced Concrete Shear	Compression	Uplift
Critical Depth (ft from TOC)	18.19	-
Critical Shear (kip)	305.45	-
Critical Shear Capacity	396.69	-
Rating*	73.3%	-

Structural Foundation Rating*	76.1%
Soil Interaction Rating*	30.5%

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	<input checked="" type="checkbox"/>
N/A	<input type="checkbox"/>
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	<input type="checkbox"/>
Shear Design Options	
Check Shear along Depth of Pier:	<input checked="" type="checkbox"/>
Utilize Shear-Friction Methodology:	<input type="checkbox"/>
Override Critical Depth:	<input type="checkbox"/>

[Go to Soil Calculations](#)

Soil Profile				
Groundwater Depth	15	# of Layers	3	

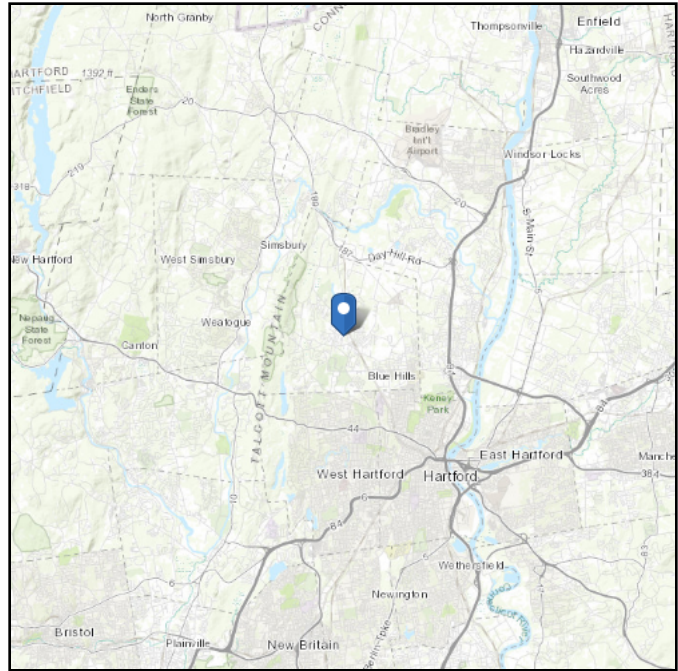
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ _{soil} (pcf)	γ _{concrete} (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3.33	3.33	135	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3.33	15	11.67	135	150		36	1.350	1.350				50	Cohesionless
3	15	25	10	75	87.6		36	2.151	2.151			16	42	Cohesionless

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 192.79 ft (NAVD 88)
Latitude: 41.835158
Longitude: -72.741167



Wind

Results:

Wind Speed:	121 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 7-10 Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

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).

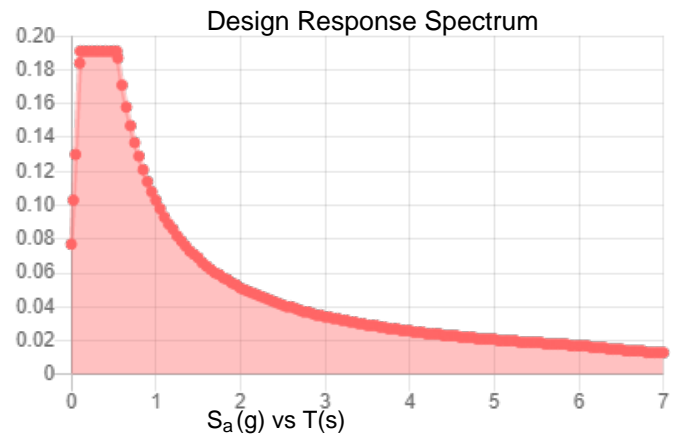
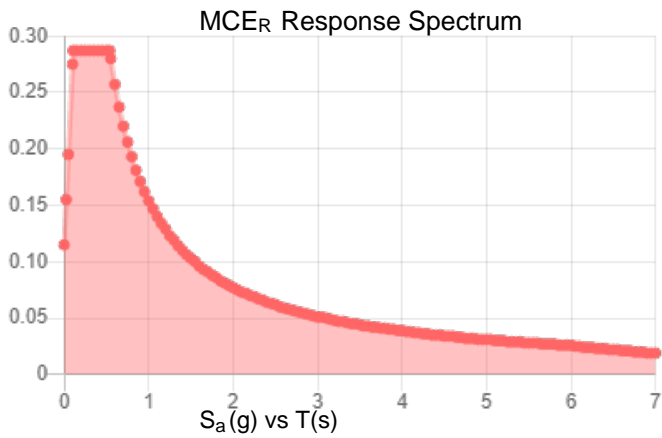
Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Stiff Soil

Results:

S_S :	0.18	S_{DS} :	0.191
S_1 :	0.064	S_{D1} :	0.103
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.09
S_{MS} :	0.287	PGA _M :	0.144
S_{M1} :	0.154	F _{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Mon May 24 2021

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: 1.00 in.

Concurrent Temperature: 5 F

Gust Speed: 50 mph

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

Date Accessed: Mon May 24 2021

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.

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Exhibit E

Mount Analysis

Date: **August 1, 2021**

Darcy Tarr
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
704-405-6589



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

Subject: **Mount Replacement Analysis Report**

Carrier Designation: **DISH Network Equipment Change-Out**
Carrier Site Number: BOBDL00081A
Carrier Site Name: CT-CCI-T-876329

Crown Castle Designation: **Crown Castle BU Number:** 876329
Crown Castle Site Name: MTN. VIEW CEM. (FILLEY PARK)
Crown Castle JDE Job Number: 650071
Crown Castle Order Number: 556612 Rev. 1

Engineering Firm Designation: **Trylon Report Designation:** 189194

Site Data: **28 Brewer Dr., Bloomfield, Hartford County, CT, 06002**
Latitude 41°50'6.57" Longitude -72°44'28.20"

Structure Information: **Tower Height & Type:** **120.0 ft Monopole**
Mount Elevation: **89.0 ft**
Mount Type: **8.0 ft Platform**

Dear Darcy Tarr,

Trylon is pleased to submit this "**Mount Replacement 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 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Jordan Everson, E.I.T.

Respectfully Submitted by:
Cliff Abernathy, P.E.



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Supplemental Drawings

1) INTRODUCTION

This is a proposed 3 sector 8.0 ft Platform designed by CommScope.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC / 2018 Connecticut State Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	2.0 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.180
Seismic S₁:	0.064
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
89.0	89.0	3	JMA WIRELESS	MX08FRO665-21	8.0 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	556612 Rev. 1	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.

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Tower Mount Analysis* (Revision 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. Tylon 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, All Sectors)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2	Mount Pipe(s)	MP1	89.0	37.5	Pass
	Horizontal(s)	H1		12.6	Pass
	Standoff(s)	M2		61.4	Pass
	Bracing(s)	M1		47.2	Pass
	Handrail(s)	M19		16.9	Pass
	Mount Connection(s)			25.5	Pass

Structure Rating (max from all components) =	61.4%
---	--------------

Notes:

- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
- 2) Rating per TIA-222-H, Section 15.5

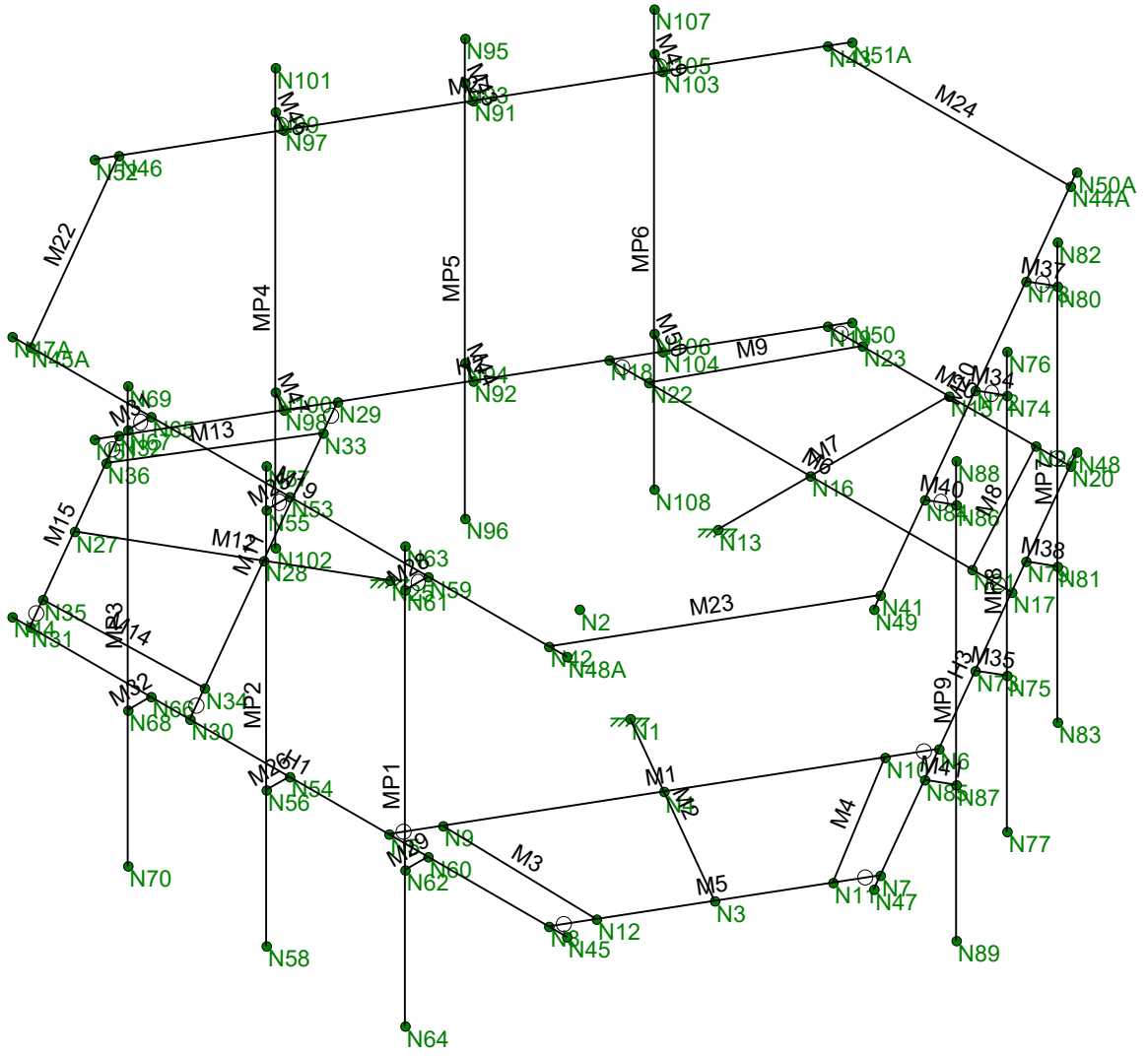
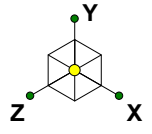
4.1) Recommendations

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

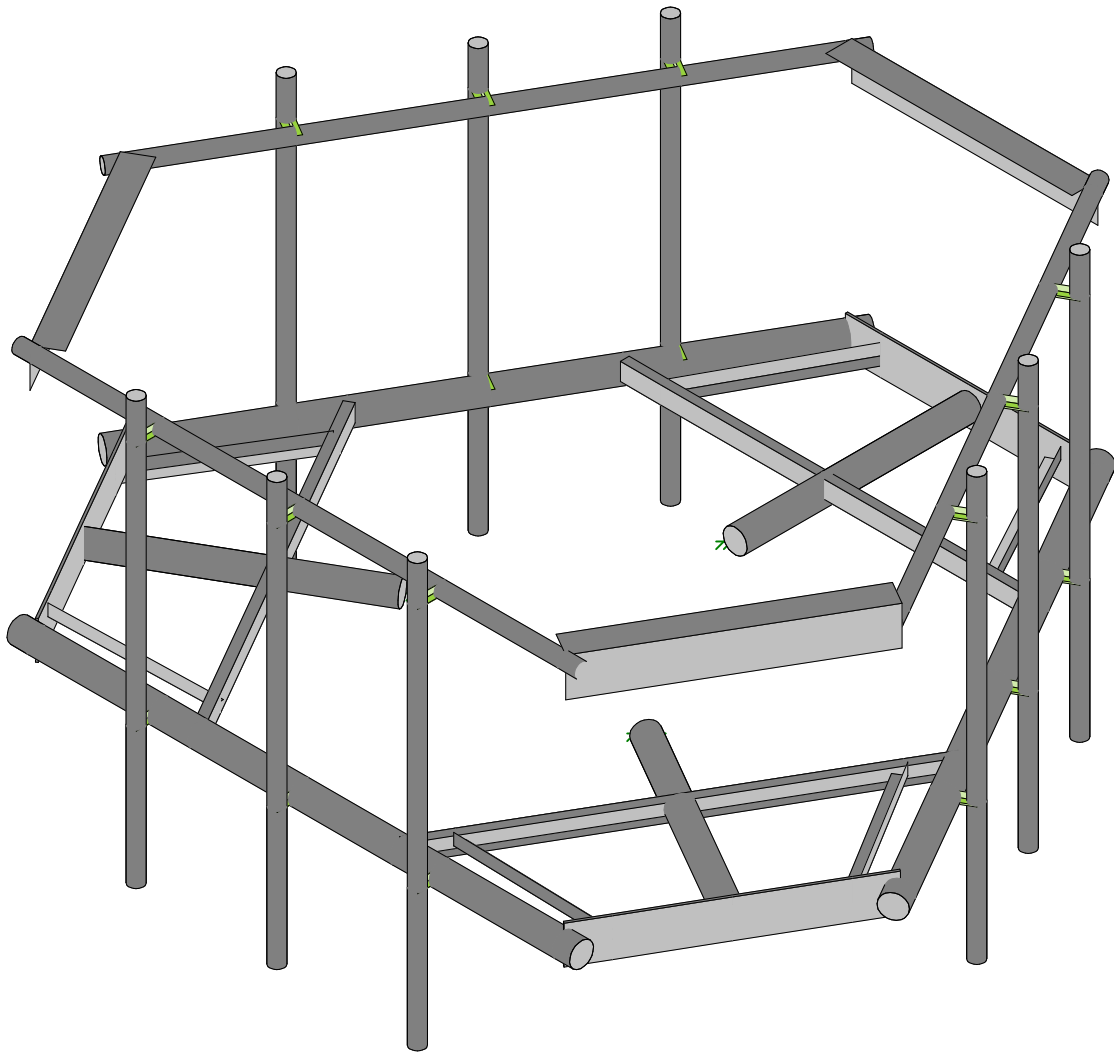
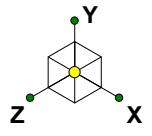
No structural modifications are required at this time, provided that the above-listed changes are implemented.

APPENDIX A
WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

Trylon	MC-PK8-C	Aug 1, 2021 at 8:01 AM
JE		876329_loaded.r3d



Envelope Only Solution

Trylon

JE

MC-PK8-C

Render

Aug 1, 2021 at 8:01 AM

876329_loaded.r3d

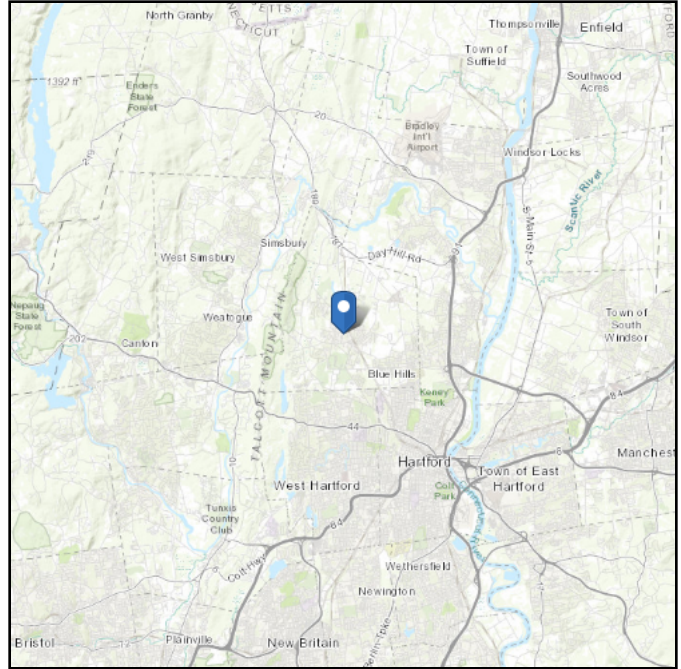
APPENDIX B
SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 192.79 ft (NAVD 88)
Latitude: 41.835158
Longitude: -72.741167



Ice

Results:

Ice Thickness: 1.00 in.

Concurrent Temperature: 5 F

Gust Speed: 50 mph

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

Date Accessed: Thu Jul 29 2021

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.

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Trylon

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

TIA LOAD CALCULATOR 2.0

PROJECT DATA	
Job Code:	189194
Carrier Site ID:	BOBDL00081A
Carrier Site Name:	CT-CCI-T-876329

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

STRUCTURE DETAILS		
Mount Type:	Platform	--
Mount Elevation:	89.0	ft.
Number of Sectors:	3	--
Structure Type:	Monopole	--
Structure Height:	120.0	ft.

ANALYSIS CRITERIA		
Structure Risk Category:	II	--
Exposure Category:	C	--
Site Class:	D - Default	--
Ground Elevation:	192.79	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:	125	mph
Wind Escalation Factor (K_s):	1.00	--
Velocity Coefficient (K_z):	1.23	--
Directionality Factor (K_d):	0.95	--
Gust Effect Factor (G_h):	1.00	--
Shielding Factor (K_a):	0.90	--
Velocity Pressure (q_z):	46.60	psf

ICE PARAMETERS		
Design Ice Wind Speed:	50	mph
Design Ice Thickness (t_i):	2.00	in
Importance Factor (I_i):	1.00	--
Ice Velocity Pressure (q_{zi}):	46.60	psf
Mount Ice Thickness (t_{iz}):	2.21	in

WIND STRUCTURE CALCULATIONS		
Flat Member Pressure:	83.88	psf
Round Member Pressure:	50.33	psf
Ice Wind Pressure:	7.20	psf

SEISMIC PARAMETERS		
Importance Factor (I_e):	1.00	--
Short Period Accel. (S_s):	0.18	g
1 Second Accel. (S_1):	0.06	g
Short Period Des. (S_{DS}):	0.19	g
1 Second Des. (S_{D1}):	0.10	g
Short Period Coeff. (F_a):	1.60	--
1 Second Coeff. (F_v):	2.40	--
Response Coefficient (C_s):	0.10	--
Amplification Factor (A_S):	1.20	--

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 LATERAL WIND FORCE CALCULATIONS [CONT.]

<i>Appurtenance Name</i>	<i>Qty.</i>	--	<i>0° 180°</i>	<i>30° 210°</i>	<i>60° 240°</i>	<i>90° 270°</i>	<i>120° 300°</i>	<i>150° 330°</i>
		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						

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	Y
Global Member Orientation Plane	XZ
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 S100-12: LRFD
Wood Code	AWC NDS-15: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-14
Masonry Code	ACI 530-13: Strength
Aluminum Code	AA ADM1-10: LRFD - 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
Parame Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR SET ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Plates	6.5"x0.37" Plate	Beam	RECT	A53 Gr.B	Typical	2.405	.027	8.468	.106
2	Grating Bracing	L2x2x3	Beam	Single An...	A36 Gr.36	Typical	.722	.271	.271	.009
3	Standoffs	PIPE 3.5	Beam	Pipe	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
4	Standoff Bracing	C3X5	Beam	Channel	A36 Gr.36	Typical	1.47	.241	1.85	.043
5	Handrails	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
6	Handrail Corners	L6 5/8x4 7/16x3/16	Beam	Single An...	A36 Gr.36	Typical	2.039	3.593	9.575	.023
7	Horizontals	PIPE 3.5	Beam	Pipe	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
8	Mount Pipes	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25

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 Gra...	Y Gra...	Z Gra...	Joint	Point	Distributed	Area(Member)	Surface(Plate/Wall)
1	Self Weight	DL		-1			24		3	
2	Structure Wind Z	WLZ						51		
3	Structure Wind X	WLX						51		
4	Wind Load 0 AZI	WLZ					48			
5	Wind Load 30 AZI	None					48			
6	Wind Load 45 AZI	None					48			
7	Wind Load 60 AZI	None					48			
8	Wind Load 90 AZI	WLX					48			
9	Wind Load 120 AZI	None					48			
10	Wind Load 135 AZI	None					48			
11	Wind Load 150 AZI	None					48			
12	Ice Weight	OL1					24	51	3	
13	Ice Structure Wind Z	OL2						51		
14	Ice Structure Wind X	OL3						51		
15	Ice Wind Load 0 AZI	OL2					48			
16	Ice Wind Load 30 AZI	None					48			
17	Ice Wind Load 45 AZI	None					48			
18	Ice Wind Load 60 AZI	None					48			
19	Ice Wind Load 90 AZI	OL3					48			
20	Ice Wind Load 120 ...	None					48			
21	Ice Wind Load 135 ...	None					48			
22	Ice Wind Load 150 ...	None					48			
23	Seismic Load Z	ELZ			-115		24			
24	Seismic Load X	ELX	-115				24			
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			
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 Are...	None						9		
44	BLC 12 Transient Ar...	None						9		

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Yes	Y			DL	1.4													
2	1.2DL + 1WL 0 AZI	Yes	Y			DL	1.2	2	1	3		4	1							
3	1.2DL + 1WL 30 AZI	Yes	Y			DL	1.2	2	.866	3	.5	5	1							
4	1.2DL + 1WL 45 AZI	Yes	Y			DL	1.2	2	.707	3	.707	6	1							
5	1.2DL + 1WL 60 AZI	Yes	Y			DL	1.2	2	.5	3	.866	7	1							
6	1.2DL + 1WL 90 AZI	Yes	Y			DL	1.2	2		3	1	8	1							
7	1.2DL + 1WL 120 AZI	Yes	Y			DL	1.2	2	-.5	3	.866	9	1							



Company : Trylon
 Designer : JE
 Job Number :
 Model Name : MC-PK8-C

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Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
8	1.2DL + 1WL 135 AZI	Yes	Y		DL	1.2	2	-7...	3	.707	10	1										
9	1.2DL + 1WL 150 AZI	Yes	Y		DL	1.2	2	-8...	3	.5	11	1										
10	1.2DL + 1WL 180 AZI	Yes	Y		DL	1.2	2	-1	3		4	-1										
11	1.2DL + 1WL 210 AZI	Yes	Y		DL	1.2	2	-8...	3	-.5	5	-1										
12	1.2DL + 1WL 225 AZI	Yes	Y		DL	1.2	2	-7...	3	-.7...	6	-1										
13	1.2DL + 1WL 240 AZI	Yes	Y		DL	1.2	2	-.5	3	-.8...	7	-1										
14	1.2DL + 1WL 270 AZI	Yes	Y		DL	1.2	2		3	-1	8	-1										
15	1.2DL + 1WL 300 AZI	Yes	Y		DL	1.2	2	.5	3	-.8...	9	-1										
16	1.2DL + 1WL 315 AZI	Yes	Y		DL	1.2	2	.707	3	-.7...	10	-1										
17	1.2DL + 1WL 330 AZI	Yes	Y		DL	1.2	2	.866	3	-.5	11	-1										
18	0.9DL + 1WL 0 AZI	Yes	Y		DL	.9	2	1	3		4	1										
19	0.9DL + 1WL 30 AZI	Yes	Y		DL	.9	2	.866	3	.5	5	1										
20	0.9DL + 1WL 45 AZI	Yes	Y		DL	.9	2	.707	3	.707	6	1										
21	0.9DL + 1WL 60 AZI	Yes	Y		DL	.9	2	.5	3	.866	7	1										
22	0.9DL + 1WL 90 AZI	Yes	Y		DL	.9	2		3	1	8	1										
23	0.9DL + 1WL 120 AZI	Yes	Y		DL	.9	2	-.5	3	.866	9	1										
24	0.9DL + 1WL 135 AZI	Yes	Y		DL	.9	2	-.7...	3	.707	10	1										
25	0.9DL + 1WL 150 AZI	Yes	Y		DL	.9	2	-.8...	3	.5	11	1										
26	0.9DL + 1WL 180 AZI	Yes	Y		DL	.9	2	-1	3		4	-1										
27	0.9DL + 1WL 210 AZI	Yes	Y		DL	.9	2	-.8...	3	-.5	5	-1										
28	0.9DL + 1WL 225 AZI	Yes	Y		DL	.9	2	-.7...	3	-.7...	6	-1										
29	0.9DL + 1WL 240 AZI	Yes	Y		DL	.9	2	-.5	3	-.8...	7	-1										
30	0.9DL + 1WL 270 AZI	Yes	Y		DL	.9	2		3	-1	8	-1										
31	0.9DL + 1WL 300 AZI	Yes	Y		DL	.9	2	.5	3	-.8...	9	-1										
32	0.9DL + 1WL 315 AZI	Yes	Y		DL	.9	2	.707	3	-.7...	10	-1										
33	0.9DL + 1WL 330 AZI	Yes	Y		DL	.9	2	.866	3	-.5	11	-1										
34	1.2DL + 1DLi + 1WLi 0 AZI	Yes	Y		DL	1.2	0...	1	13	1	14		15	1								
35	1.2DL + 1DLi + 1WLi 30 AZI	Yes	Y		DL	1.2	0...	1	13	.866	14	.5	16	1								
36	1.2DL + 1DLi + 1WLi 45 AZI	Yes	Y		DL	1.2	0...	1	13	.707	14	.707	17	1								
37	1.2DL + 1DLi + 1WLi 60 AZI	Yes	Y		DL	1.2	0...	1	13	.5	14	.866	18	1								
38	1.2DL + 1DLi + 1WLi 90 AZI	Yes	Y		DL	1.2	0...	1	13		14	1	19	1								
39	1.2DL + 1DLi + 1WLi 120 AZI	Yes	Y		DL	1.2	0...	1	13	-.5	14	.866	20	1								
40	1.2DL + 1DLi + 1WLi 135 AZI	Yes	Y		DL	1.2	0...	1	13	-.7...	14	.707	21	1								
41	1.2DL + 1DLi + 1WLi 150 AZI	Yes	Y		DL	1.2	0...	1	13	-.8...	14	.5	22	1								
42	1.2DL + 1DLi + 1WLi 180 AZI	Yes	Y		DL	1.2	0...	1	13	-1	14		15	-1								
43	1.2DL + 1DLi + 1WLi 210 AZI	Yes	Y		DL	1.2	0...	1	13	-.8...	14	-.5	16	-1								
44	1.2DL + 1DLi + 1WLi 225 AZI	Yes	Y		DL	1.2	0...	1	13	-.7...	14	-.7...	17	-1								
45	1.2DL + 1DLi + 1WLi 240 AZI	Yes	Y		DL	1.2	0...	1	13	-.5	14	-.8...	18	-1								
46	1.2DL + 1DLi + 1WLi 270 AZI	Yes	Y		DL	1.2	0...	1	13		14	-1	19	-1								
47	1.2DL + 1DLi + 1WLi 300 AZI	Yes	Y		DL	1.2	0...	1	13	.5	14	-.8...	20	-1								
48	1.2DL + 1DLi + 1WLi 315 AZI	Yes	Y		DL	1.2	0...	1	13	.707	14	-.7...	21	-1								
49	1.2DL + 1DLi + 1WLi 330 AZI	Yes	Y		DL	1.2	0...	1	13	.866	14	-.5	22	-1								
50	(1.2+0.2Sds)DL + 1E 0 AZI	Yes	Y		DL	1.2...	23	1	24													
51	(1.2+0.2Sds)DL + 1E 30 AZI	Yes	Y		DL	1.2...	23	.866	24	.5												
52	(1.2+0.2Sds)DL + 1E 45 AZI	Yes	Y		DL	1.2...	23	.707	24	.707												
53	(1.2+0.2Sds)DL + 1E 60 AZI	Yes	Y		DL	1.2...	23	.5	24	.866												
54	(1.2+0.2Sds)DL + 1E 90 AZI	Yes	Y		DL	1.2...	23		24	1												
55	(1.2+0.2Sds)DL + 1E 120 AZI	Yes	Y		DL	1.2...	23	-.5	24	.866												
56	(1.2+0.2Sds)DL + 1E 135 AZI	Yes	Y		DL	1.2...	23	-.7...	24	.707												
57	(1.2+0.2Sds)DL + 1E 150 AZI	Yes	Y		DL	1.2...	23	-.8...	24	.5												
58	(1.2+0.2Sds)DL + 1E 180 AZI	Yes	Y		DL	1.2...	23	-1	24													
59	(1.2+0.2Sds)DL + 1E 210 AZI	Yes	Y		DL	1.2...	23	-.8...	24	-.5												
60	(1.2+0.2Sds)DL + 1E 225 AZI	Yes	Y		DL	1.2...	23	-.7...	24	-.7...												
61	(1.2+0.2Sds)DL + 1E 240 AZI	Yes	Y		DL	1.2...	23	-.5	24	-.8...												
62	(1.2+0.2Sds)DL + 1E 270 AZI	Yes	Y		DL	1.2...	23		24	-1												
63	(1.2+0.2Sds)DL + 1E 300 AZI	Yes	Y		DL	1.2...	23	.5	24	-.8...												
64	(1.2+0.2Sds)DL + 1E 315 AZI	Yes	Y		DL	1.2...	23	.707	24	-.7...												



Company : Trylon
 Designer : JE
 Job Number :
 Model Name : MC-PK8-C

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Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...
65	(1.2+0.2Sds)DL + 1E 330 AZI	Yes	Y		DL	1.2	23	.866	24	-.5													
66	(0.9-0.2Sds)DL + 1E 0 AZI	Yes	Y		DL	.862	23	1	24														
67	(0.9-0.2Sds)DL + 1E 30 AZI	Yes	Y		DL	.862	23	.866	24	.5													
68	(0.9-0.2Sds)DL + 1E 45 AZI	Yes	Y		DL	.862	23	.707	24	.707													
69	(0.9-0.2Sds)DL + 1E 60 AZI	Yes	Y		DL	.862	23	.5	24	.866													
70	(0.9-0.2Sds)DL + 1E 90 AZI	Yes	Y		DL	.862	23		24	1													
71	(0.9-0.2Sds)DL + 1E 120 AZI	Yes	Y		DL	.862	23	-.5	24	.866													
72	(0.9-0.2Sds)DL + 1E 135 AZI	Yes	Y		DL	.862	23	-.7...	24	.707													
73	(0.9-0.2Sds)DL + 1E 150 AZI	Yes	Y		DL	.862	23	-.8...	24	.5													
74	(0.9-0.2Sds)DL + 1E 180 AZI	Yes	Y		DL	.862	23	-.1	24														
75	(0.9-0.2Sds)DL + 1E 210 AZI	Yes	Y		DL	.862	23	-.8...	24	-.5													
76	(0.9-0.2Sds)DL + 1E 225 AZI	Yes	Y		DL	.862	23	-.7...	24	-.7...													
77	(0.9-0.2Sds)DL + 1E 240 AZI	Yes	Y		DL	.862	23	-.5	24	-.8...													
78	(0.9-0.2Sds)DL + 1E 270 AZI	Yes	Y		DL	.862	23		24	-.1													
79	(0.9-0.2Sds)DL + 1E 300 AZI	Yes	Y		DL	.862	23	.5	24	-.8...													
80	(0.9-0.2Sds)DL + 1E 315 AZI	Yes	Y		DL	.862	23	.707	24	-.7...													
81	(0.9-0.2Sds)DL + 1E 330 AZI	Yes	Y		DL	.862	23	.866	24	-.5													
82	1.2DL + 1Lv1	Yes	Y		DL	1.2	25	1.5															
83	1.2DL + 1Lv2	Yes	Y		DL	1.2	26	1.5															
84	1.2DL + 1Lv3	Yes	Y		DL	1.2	27	1.5															
85	1.2DL + 1Lv4	Yes	Y		DL	1.2	28	1.5															
86	1.2DL + 1Lv5	Yes	Y		DL	1.2	29	1.5															
87	1.2DL + 1Lv6	Yes	Y		DL	1.2	30	1.5															
88	1.2DL + 1Lv7	Yes	Y		DL	1.2	31	1.5															
89	1.2DL + 1Lv8	Yes	Y		DL	1.2	32	1.5															
90	1.2DL + 1Lv9	Yes	Y		DL	1.2	33	1.5															
91	1.2DL + 1.5Lm + 1Wm 0 AZI - ...	Yes	Y		DL	1.2	34	1.5	2	.058	3		4	.058									
92	1.2DL + 1.5Lm + 1Wm 30 AZI ...	Yes	Y		DL	1.2	34	1.5	2	.05	3	.029	5	.058									
93	1.2DL + 1.5Lm + 1Wm 45 AZI ...	Yes	Y		DL	1.2	34	1.5	2	.041	3	.041	6	.058									
94	1.2DL + 1.5Lm + 1Wm 60 AZI ...	Yes	Y		DL	1.2	34	1.5	2	.029	3	.05	7	.058									
95	1.2DL + 1.5Lm + 1Wm 90 AZI ...	Yes	Y		DL	1.2	34	1.5	2		3	.058	8	.058									
96	1.2DL + 1.5Lm + 1Wm 120 AZI ...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	.05	9	.058									
97	1.2DL + 1.5Lm + 1Wm 135 AZI ...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	.041	10	.058									
98	1.2DL + 1.5Lm + 1Wm 150 AZI ...	Yes	Y		DL	1.2	34	1.5	2	-.05	3	.029	11	.058									
99	1.2DL + 1.5Lm + 1Wm 180 AZI ...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3		4	-.0...									
100	1.2DL + 1.5Lm + 1Wm 210 AZI ...	Yes	Y		DL	1.2	34	1.5	2	-.05	3	-.0...	5	-.0...									
101	1.2DL + 1.5Lm + 1Wm 225 AZI ...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	-.0...	6	-.0...									
102	1.2DL + 1.5Lm + 1Wm 240 AZI ...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	-.05	7	-.0...									
103	1.2DL + 1.5Lm + 1Wm 270 AZI ...	Yes	Y		DL	1.2	34	1.5	2		3	-.0...	8	-.0...									
104	1.2DL + 1.5Lm + 1Wm 300 AZI ...	Yes	Y		DL	1.2	34	1.5	2	.029	3	-.05	9	-.0...									
105	1.2DL + 1.5Lm + 1Wm 315 AZI ...	Yes	Y		DL	1.2	34	1.5	2	.041	3	-.0...	10	-.0...									
106	1.2DL + 1.5Lm + 1Wm 330 AZI ...	Yes	Y		DL	1.2	34	1.5	2	.05	3	-.0...	11	-.0...									
107	1.2DL + 1.5Lm + 1Wm 0 AZI - ...	Yes	Y		DL	1.2	35	1.5	2	.058	3		4	.058									
108	1.2DL + 1.5Lm + 1Wm 30 AZI ...	Yes	Y		DL	1.2	35	1.5	2	.05	3	.029	5	.058									
109	1.2DL + 1.5Lm + 1Wm 45 AZI ...	Yes	Y		DL	1.2	35	1.5	2	.041	3	.041	6	.058									
110	1.2DL + 1.5Lm + 1Wm 60 AZI ...	Yes	Y		DL	1.2	35	1.5	2	.029	3	.05	7	.058									
111	1.2DL + 1.5Lm + 1Wm 90 AZI ...	Yes	Y		DL	1.2	35	1.5	2		3	.058	8	.058									
112	1.2DL + 1.5Lm + 1Wm 120 AZI ...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	.05	9	.058									
113	1.2DL + 1.5Lm + 1Wm 135 AZI ...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	.041	10	.058									
114	1.2DL + 1.5Lm + 1Wm 150 AZI ...	Yes	Y		DL	1.2	35	1.5	2	-.05	3	.029	11	.058									
115	1.2DL + 1.5Lm + 1Wm 180 AZI ...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3		4	-.0...									
116	1.2DL + 1.5Lm + 1Wm 210 AZI ...	Yes	Y		DL	1.2	35	1.5	2	-.05	3	-.0...	5	-.0...									
117	1.2DL + 1.5Lm + 1Wm 225 AZI ...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	-.0...	6	-.0...									
118	1.2DL + 1.5Lm + 1Wm 240 AZI ...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	-.05	7	-.0...									
119	1.2DL + 1.5Lm + 1Wm 270 AZI ...	Yes	Y		DL	1.2	35	1.5	2		3	-.0...	8	-.0...									
120	1.2DL + 1.5Lm + 1Wm 300 AZI ...	Yes	Y		DL	1.2	35	1.5	2	.029	3	-.05	9	-.0...									
121	1.2DL + 1.5Lm + 1Wm 315 AZI ...	Yes	Y		DL	1.2	35	1.5	2	.041	3	-.0...	10	-.0...									



Company : Trylon
 Designer : JE
 Job Number :
 Model Name : MC-PK8-C

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 Checked By: _____

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...						
179	1.2DL + 1.5Lm + 1Wm 180 AZI...	Yes	Y		DL	1.2	39	1.5	2	-0...	3		4	-0...																							
180	1.2DL + 1.5Lm + 1Wm 210 AZI...	Yes	Y		DL	1.2	39	1.5	2	-05	3		5	-0...																							
181	1.2DL + 1.5Lm + 1Wm 225 AZI...	Yes	Y		DL	1.2	39	1.5	2	-0...	3		6	-0...																							
182	1.2DL + 1.5Lm + 1Wm 240 AZI...	Yes	Y		DL	1.2	39	1.5	2	-0...	3		7	-0...																							
183	1.2DL + 1.5Lm + 1Wm 270 AZI...	Yes	Y		DL	1.2	39	1.5	2		3		8	-0...																							
184	1.2DL + 1.5Lm + 1Wm 300 AZI...	Yes	Y		DL	1.2	39	1.5	2	.029	3		9	-0...																							
185	1.2DL + 1.5Lm + 1Wm 315 AZI...	Yes	Y		DL	1.2	39	1.5	2	.041	3		10	-0...																							
186	1.2DL + 1.5Lm + 1Wm 330 AZI...	Yes	Y		DL	1.2	39	1.5	2	.05	3		11	-0...																							
187	1.2DL + 1.5Lm + 1Wm 0 AZI - ...	Yes	Y		DL	1.2	40	1.5	2	.058	3		4	.058																							
188	1.2DL + 1.5Lm + 1Wm 30 AZI ...	Yes	Y		DL	1.2	40	1.5	2	.05	3		.029	5	.058																						
189	1.2DL + 1.5Lm + 1Wm 45 AZI ...	Yes	Y		DL	1.2	40	1.5	2	.041	3		.041	6	.058																						
190	1.2DL + 1.5Lm + 1Wm 60 AZI ...	Yes	Y		DL	1.2	40	1.5	2	.029	3		.05	7	.058																						
191	1.2DL + 1.5Lm + 1Wm 90 AZI ...	Yes	Y		DL	1.2	40	1.5	2		3		.058	8	.058																						
192	1.2DL + 1.5Lm + 1Wm 120 AZI...	Yes	Y		DL	1.2	40	1.5	2	-0...	3		.05	9	.058																						
193	1.2DL + 1.5Lm + 1Wm 135 AZI...	Yes	Y		DL	1.2	40	1.5	2	-0...	3		.041	10	.058																						
194	1.2DL + 1.5Lm + 1Wm 150 AZI...	Yes	Y		DL	1.2	40	1.5	2	-05	3		.029	11	.058																						
195	1.2DL + 1.5Lm + 1Wm 180 AZI...	Yes	Y		DL	1.2	40	1.5	2	-0...	3		4	-0...																							
196	1.2DL + 1.5Lm + 1Wm 210 AZI...	Yes	Y		DL	1.2	40	1.5	2	-05	3		5	-0...																							
197	1.2DL + 1.5Lm + 1Wm 225 AZI...	Yes	Y		DL	1.2	40	1.5	2	-0...	3		6	-0...																							
198	1.2DL + 1.5Lm + 1Wm 240 AZI...	Yes	Y		DL	1.2	40	1.5	2	-0...	3		7	-0...																							
199	1.2DL + 1.5Lm + 1Wm 270 AZI...	Yes	Y		DL	1.2	40	1.5	2		3		8	-0...																							
200	1.2DL + 1.5Lm + 1Wm 300 AZI...	Yes	Y		DL	1.2	40	1.5	2	.029	3		9	-0...																							
201	1.2DL + 1.5Lm + 1Wm 315 AZI...	Yes	Y		DL	1.2	40	1.5	2	.041	3		10	-0...																							
202	1.2DL + 1.5Lm + 1Wm 330 AZI...	Yes	Y		DL	1.2	40	1.5	2	.05	3		11	-0...																							
203	1.2DL + 1.5Lm + 1Wm 0 AZI - ...	Yes	Y		DL	1.2	41	1.5	2	.058	3		4	.058																							
204	1.2DL + 1.5Lm + 1Wm 30 AZI ...	Yes	Y		DL	1.2	41	1.5	2	.05	3		.029	5	.058																						
205	1.2DL + 1.5Lm + 1Wm 45 AZI ...	Yes	Y		DL	1.2	41	1.5	2	.041	3		.041	6	.058																						
206	1.2DL + 1.5Lm + 1Wm 60 AZI ...	Yes	Y		DL	1.2	41	1.5	2	.029	3		.05	7	.058																						
207	1.2DL + 1.5Lm + 1Wm 90 AZI ...	Yes	Y		DL	1.2	41	1.5	2		3		.058	8	.058																						
208	1.2DL + 1.5Lm + 1Wm 120 AZI...	Yes	Y		DL	1.2	41	1.5	2	-0...	3		.05	9	.058																						
209	1.2DL + 1.5Lm + 1Wm 135 AZI...	Yes	Y		DL	1.2	41	1.5	2	-0...	3		.041	10	.058																						
210	1.2DL + 1.5Lm + 1Wm 150 AZI...	Yes	Y		DL	1.2	41	1.5	2	-05	3		.029	11	.058																						
211	1.2DL + 1.5Lm + 1Wm 180 AZI...	Yes	Y		DL	1.2	41	1.5	2	-0...	3		4	-0...																							
212	1.2DL + 1.5Lm + 1Wm 210 AZI...	Yes	Y		DL	1.2	41	1.5	2	-05	3		5	-0...																							
213	1.2DL + 1.5Lm + 1Wm 225 AZI...	Yes	Y		DL	1.2	41	1.5	2	-0...	3		6	-0...																							
214	1.2DL + 1.5Lm + 1Wm 240 AZI...	Yes	Y		DL	1.2	41	1.5	2	-0...	3		7	-0...																							
215	1.2DL + 1.5Lm + 1Wm 270 AZI...	Yes	Y		DL	1.2	41	1.5	2		3		8	-0...																							
216	1.2DL + 1.5Lm + 1Wm 300 AZI...	Yes	Y		DL	1.2	41	1.5	2	.029	3		9	-0...																							
217	1.2DL + 1.5Lm + 1Wm 315 AZI...	Yes	Y		DL	1.2	41	1.5	2	.041	3		10	-0...																							
218	1.2DL + 1.5Lm + 1Wm 330 AZI...	Yes	Y		DL	1.2	41	1.5	2	.05	3		11	-0...																							
219	1.2DL + 1.5Lm + 1Wm 0 AZI - ...	Yes	Y		DL	1.2	42	1.5	2	.058	3		4	.058																							
220	1.2DL + 1.5Lm + 1Wm 30 AZI ...	Yes	Y		DL	1.2	42	1.5	2	.05	3		.029	5	.058																						
221	1.2DL + 1.5Lm + 1Wm 45 AZI ...	Yes	Y		DL	1.2	42	1.5	2	.041	3		.041	6	.058																						
222	1.2DL + 1.5Lm + 1Wm 60 AZI ...	Yes	Y		DL	1.2	42	1.5	2	.029	3		.05	7	.058																						
223	1.2DL + 1.5Lm + 1Wm 90 AZI ...	Yes	Y		DL	1.2	42	1.5	2		3		.058	8	.058																						
224	1.2DL + 1.5Lm + 1Wm 120 AZI...	Yes	Y		DL	1.2	42	1.5	2	-0...	3		.05	9	.058																						
225	1.2DL + 1.5Lm + 1Wm 135 AZI...	Yes	Y		DL	1.2	42	1.5	2	-0...	3		.041	10	.058																						
226	1.2DL + 1.5Lm + 1Wm 150 AZI...	Yes	Y		DL	1.2	42	1.5	2	-05	3		.029	11	.058																						
227	1.2DL + 1.5Lm + 1Wm 180 AZI...	Yes	Y		DL	1.2	42	1.5	2	-0...	3		4	-0...																							
228	1.2DL + 1.5Lm + 1Wm 210 AZI...	Yes	Y		DL	1.2	42	1.5	2	-05	3		5	-0...																							
229	1.2DL + 1.5Lm + 1Wm 225 AZI...	Yes	Y		DL	1.2	42	1.5	2	-0...	3		6	-0...																							
230	1.2DL + 1.5Lm + 1Wm 240 AZI...	Yes	Y		DL	1.2	42	1.5	2	-0...	3		7	-0...																							
231	1.2DL + 1.5Lm + 1Wm 270 AZI...	Yes	Y		DL	1.2	42	1.5	2		3		8	-0...																							
232	1.2DL + 1.5Lm + 1Wm 300 AZI...	Yes	Y		DL	1.2	42	1.5	2	.029	3		9	-0...																							
233	1.2DL + 1.5Lm + 1Wm 315 AZI...	Yes	Y		DL	1.2	42	1.5	2	.041	3		10	-0...																							
234	1.2DL + 1.5Lm + 1Wm 330 AZI...	Yes	Y		DL	1.2	42	1.5	2	.05	3		11	-0...																							



Company : Trylon
 Designer : JE
 Job Number :
 Model Name : MC-PK8-C

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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	1254.949	20	2457.232	39	1885.617	3	315.604	33	2239.618	19	256.929	30
2		min	-1260.048	12	6.551	31	-1878.961	27	-2385.088	41	-2243.048	11	-4572.18	38
3	N1	max	1074.586	8	2457.225	45	1957.543	17	371.81	19	2239.588	25	4308.393	45
4		min	-1066.083	32	6.548	21	-1956.271	25	-2839.065	43	-2243.068	17	-220.901	21
5	N13	max	2021.31	22	2461.813	34	476.728	18	5139.591	34	1988.892	30	763.953	167
6		min	-2024.346	14	-12.993	26	-485.188	10	-334.545	26	-1992.32	6	-616.12	223
7	Totals:	max	3633.954	22	7021.813	42	3810.375	18						
8		min	-3633.954	30	1463.175	66	-3810.376	10						

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

Member	Shape	Code Check	Loc[in]	LC	Shear Che...	Loc[.	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn	
1	M7	PIPE 3.5	.647	40	34	.185	40	14	75262....	78750	7953.75	7953.75	2...	H1-1b	
2	M12	PIPE 3.5	.645	40	39	.195	40	3	75262....	78750	7953.75	7953.75	2...	H1-1b	
3	M2	PIPE 3.5	.645	40	45	.195	40	9	75262....	78750	7953.75	7953.75	2...	H1-1b	
4	M6	C3X5	.500	34.856	34	.176	63.1...y	46	37027....	47628	981.263	4020.2...	1	H1-1b	
5	M1	C3X5	.496	34.856	44	.177	63.1...y	40	11202....	47628	981.263	4104	1...	H1-1b	
6	M11	C3X5	.493	34.856	38	.177	63.1...y	35	11202....	47628	981.263	4104	1...	H1-1b	
7	MP4	PIPE 2.0	.397	48	11	.060	48	11	20866....	32130	1871.6...	1871.6...	1...	H1-1b	
8	MP1	PIPE 2.0	.394	48	17	.058	48	17	20866....	32130	1871.6...	1871.6...	1...	H1-1b	
9	MP3	PIPE 2.0	.378	48	5	.036	48	10	20866....	32130	1871.6...	1871.6...	2...	H1-1b	
10	MP9	PIPE 2.0	.376	48	10	.035	48	3	20866....	32130	1871.6...	1871.6...	1...	H1-1b	
11	MP7	PIPE 2.0	.375	48	10	.051	48	6	20866....	32130	1871.6...	1871.6...	1...	H1-1b	
12	MP8	PIPE 2.0	.366	48	10	.048	48	14	20866....	32130	1871.6...	1871.6...	1...	H1-1b	
13	MP2	PIPE 2.0	.365	48	5	.055	48	9	20866....	32130	1871.6...	1871.6...	2...	H1-1b	
14	MP6	PIPE 2.0	.351	48	15	.037	48	5	20866....	32130	1871.6...	1871.6...	2...	H1-1b	
15	MP5	PIPE 2.0	.350	48	16	.057	48	3	20866....	32130	1871.6...	1871.6...	2...	H1-1b	
16	M10	6.5"x0.37"...	.289	21	2	.126	21	y	48	3513.8...	75757.5	583.963	6358.0...	1...	H1-1b
17	M15	6.5"x0.37"...	.287	21	7	.125	21	y	37	3513.8...	75757.5	583.963	6343.6...	1...	H1-1b
18	M5	6.5"x0.37"...	.274	21	12	.126	21	y	42	3513.8...	75757.5	583.963	6581.3...	1...	H1-1b
19	M13	L2x2x3	.242	0	14	.035	0	z	43	18051....	23392.8	557.717	1239.29	2...	H2-1
20	M3	L2x2x3	.225	0	3	.035	0	z	49	18051....	23392.8	557.717	1239.29	2...	H2-1
21	M8	L2x2x3	.216	0	9	.035	0	z	38	18051....	23392.8	557.717	1239.29	2...	H2-1
22	M22	L6 5/8x4 7...	.187	0	21	.035	42	z	4	15453....	66065....	1040.5...	3031.0...	1...	H2-1
23	M23	L6 5/8x4 7...	.181	0	26	.035	42	y	17	15453....	66065....	1040.5...	3031.0...	1...	H2-1
24	M21	PIPE 2.0	.179	72	5	.154	72	13	14916....	32130	1871.6...	1871.6...	1...	H1-1b	
25	M19	PIPE 2.0	.178	72	10	.157	72	2	14916....	32130	1871.6...	1871.6...	1...	H1-1b	
26	M4	L2x2x3	.170	0	13	.038	0	y	41	18051....	23392.8	557.717	1239.29	2...	H2-1
27	M20	PIPE 2.0	.170	72	15	.153	72	8	14916....	32130	1871.6...	1871.6...	1...	H1-1b	
28	M24	L6 5/8x4 7...	.165	0	32	.034	42	y	6	15453....	66065....	1040.5...	3031.0...	1...	H2-1
29	M9	L2x2x3	.154	0	2	.038	0	y	46	18051....	23392.8	557.717	1239.29	2...	H2-1
30	M14	L2x2x3	.140	0	7	.038	0	y	36	18051....	23392.8	557.717	1239.29	2...	H2-1
31	H3	PIPE 3.5	.136	31	10	.110	24	16	60666....	78750	7953.75	7953.75	1...	H1-1b	
32	H2	PIPE 3.5	.132	31	15	.103	24	5	60666....	78750	7953.75	7953.75	1...	H1-1b	
33	H1	PIPE 3.5	.132	31	4	.109	24	11	60666....	78750	7953.75	7953.75	1...	H1-1b	

APPENDIX D
ADDITIONAL CALCUATIONS

BOLT TOOL 1.5.2

Project Data	
Job Code:	189194
Carrier Site ID:	BOBDL00081A
Carrier Site Name:	CT-CCI-T-876329

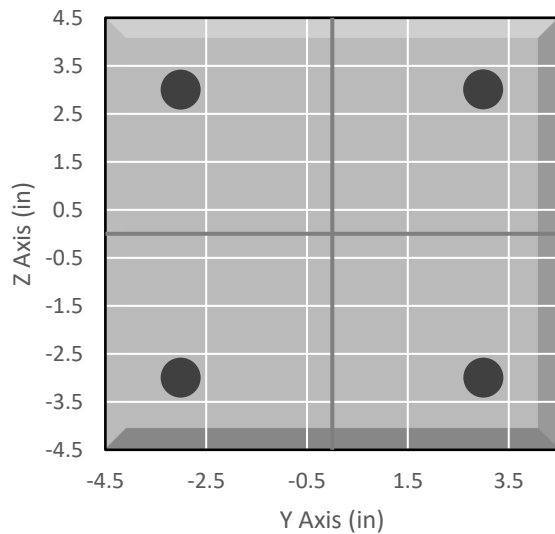
Code	
Design Standard:	TIA-222-H
Slip Check:	No
Pretension Standard:	TIA-222-H

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
Mount to Tower

Bolt Check*		
Tensile Capacity (ϕT_n):	20340.1	lbs
Shear Capacity (ϕV_n):	13805.8	lbs
Tension Force (T_u):	5441.5	lbs
Shear Force (V_u):	849.6	lbs
Tension Usage:	25.5%	--
Shear Usage:	5.9%	--
Interaction:	25.5%	Pass
Controlling Member:	M2	--
Controlling LC:	42	--

*Rating per TIA-222-H Section 15.5

Bolt Layout


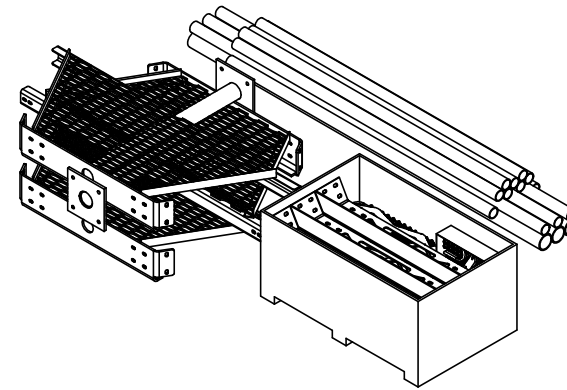
APPENDIX E
SUPPLEMENTAL DRAWINGS

ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT	NOTE NO.
1	MTC3006SB	STEEL BUNDLE FOR SNUB NOSE PLATFORM	1	402.64 LBS	
2	MCPK8CSB	PIPE STEEL BUNDLE FOR MC-PK8-C	1	464.27 LBS	
3	MCPK8CHWK	HARDWARE KIT FOR MC-PK8-C	1	543.22 LBS	




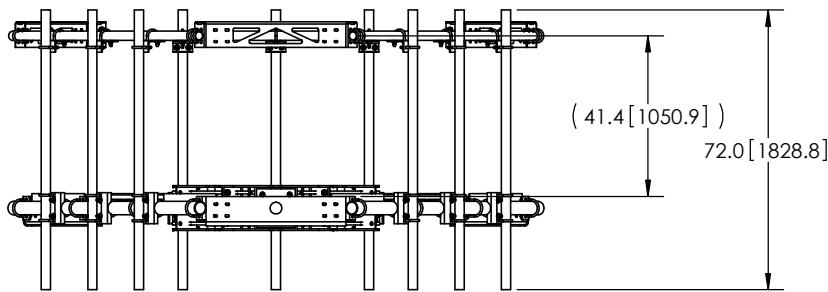
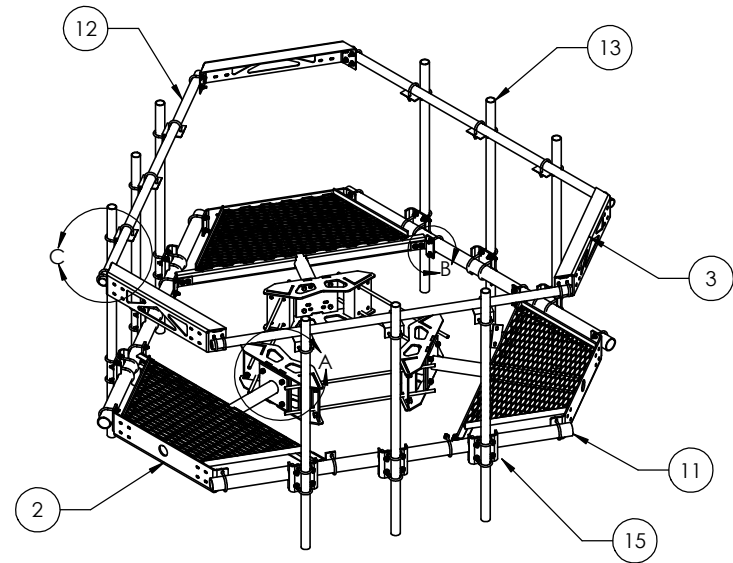
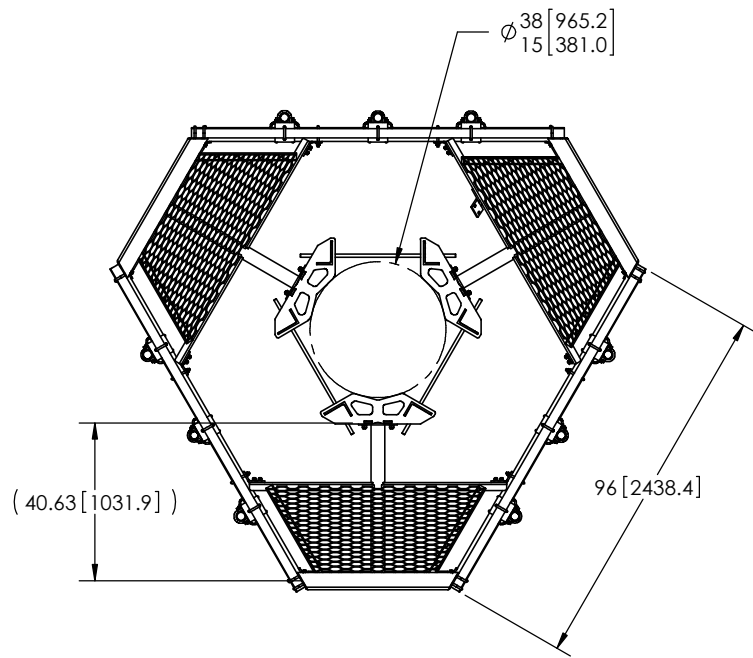
REVISIONS				
REV.	ECN	DESCRIPTION	BY	DATE
A		INITIAL RELEASE	DRR	12/27/11
B	8000005979	CHANGE NOSE CORNER BRKT, ADD GUB-4240	MSM	11/25/14
C	8000007579	NEW RINGMOUNT WELDMENT DESIGN	RJC	04/07/15

FOR BOM ENTRY ONLY




NOTES:
1. CUSTOMER ASSEMBLY SHEETS 2-3.

<small>These drawings and specifications are the proprietary property of ANDREW CORPORATION and may be used only for the specific purpose authorized in writing by Andrew Corporation.</small>			<small>DRAWN BY:</small> MSM	<small>SHEET:</small> 1 of 3	<small>PART NUMBER:</small> MC-PK8-C
<small>ALL DIMENSIONS ARE IN INCHES U.O.S. TOLERANCES UNLESS OTHERWISE SPECIFIED:</small>			<small>CHECKED BY:</small> TP	<small>SCALE:</small> NTS	<small>DESCRIPTION:</small> LOW PROFILE PLATFORM KIT 8' FACE
<small>.X = ± .12 ANGLES ±2° .XX = ± .06 FRACTIONS ±1/32 .XXX = ± .03</small>			<small>DATE:</small> 10/18/11	<small>MATERIAL:</small> A36, A500	<small>DRAWING TYPE:</small> ASSEMBLY DRAWING
<small>REMOVE BURRS AND BREAK EDGES .005</small>			<small>REVISION:</small> C	<small>FINISH:</small> GALV A123	
<small>DO NOT SCALE THIS PRINT</small>				<small>WEIGHT:</small> 1410.14 LBS	



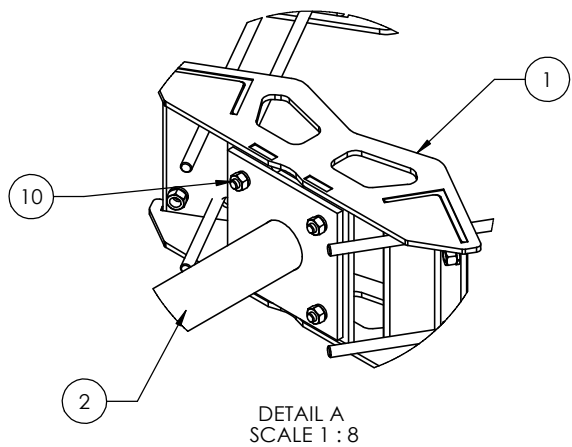
ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT
1	MC-RM1550-3	12" - 50" OD RINGMOUNT	1	230.42 LBS
2	MTC300601	Low Profile Co-Location Platform Snub Nose	3	134.21 LBS
3	MT195801	Corner Weldment Snub Nose Handrail	3	27.10 LBS
4	XA2020.01	CROSS OVER ANGLE	9	2.65 LBS
5	GUB-4356	1/2" X 3-5/8" X 6" GALV U-BOLT	18	0.82 LBS
6	GUB-4355	1/2" X 3-5/8" X 5" GALV U-BOLT	12	0.71 LBS
7	GUB-4240	1/2" X 2-1/2" X 4" GALV U-BOLT	48	0.56 LBS
8	GB-04145	1/2" X 1-1/2" GALV BOLT KIT	12	0.13 LBS
9	GWF-04	1/2" GALV FLAT WASHER	24	0.03 LBS
10	GB-0520A	5/8" X 2" GALV BOLT KIT (A325)	12	0.27 LBS
11	MT54796	3.50" OD X 96" GALV PIPE	3	60.28 LBS
12	MT-651-96	Ø2.375" OD X 96" PIPE	3	29.07 LBS
13	MT-651	2.375" OD x 72" PIPE	9	21.80 LBS
14	MT19617	MT196 Pipe Mount Plate	6	2.49 LBS
15	MT21701	PIPE MOUNT PLATE	9	7.93 LBS

<small>These drawings and specifications are the proprietary property of ANDREW CORPORATION and may be used only for the specific purpose authorized in writing by Andrew Corporation.</small>			
<small>ALL DIMENSIONS ARE IN INCHES U.O.S. TOLERANCES UNLESS OTHERWISE SPECIFIED:</small> .X = ± .12 ANGLES ±2° .XX = ± .06 FRACTIONS ±1/32 .XXX = ± .03 REMOVE BURRS AND BREAK EDGES .005 DO NOT SCALE THIS PRINT	<small>DRAWN BY:</small> MSM <small>CHECKED BY:</small> TP <small>DATE:</small> 10/18/11 <small>REVISION:</small> C	<small>SHEET:</small> 2 of 3 <small>SCALE:</small> NTS <small>MATERIAL:</small> A36, A53 <small>FINISH:</small> GALV A123 <small>WEIGHT:</small> 1361.27 LBS	<small>PART NUMBER:</small> MC-PK8-C <small>DESCRIPTION:</small> 25" OD Snub Nose MT-196 <small>DRAWING TYPE:</small> ASSEMBLY DRAWING 
			WESTCHESTER, IL. 60154 U.S.A.

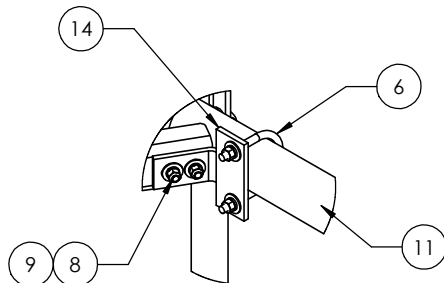
NOTES:

1. ALL METRIC DIMENSIONS ARE IN BRACKETS.
2. WILL FIT MONOPOLES 15"-38" OD.

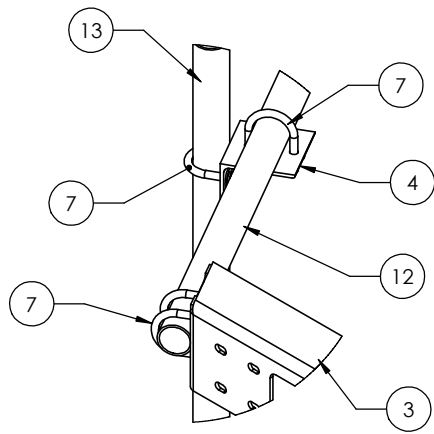
8 7 6 5 4 3 2 1



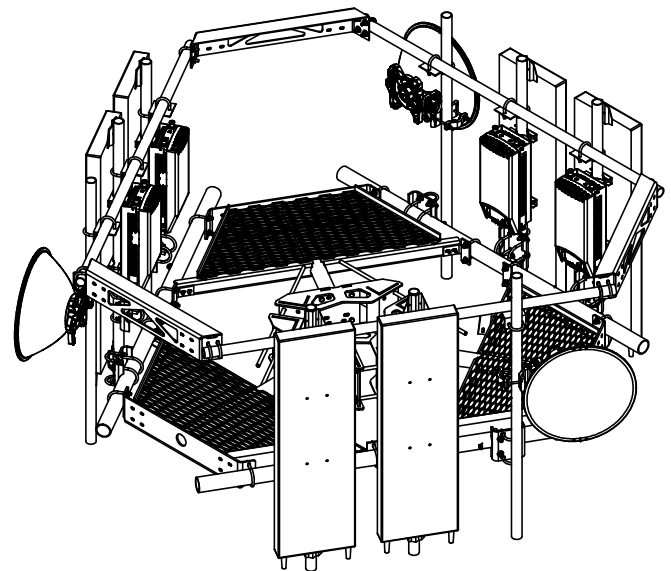
DETAIL A
SCALE 1 : 8



DETAIL B
SCALE 1 : 8




DETAIL C
SCALE 1 : 8



WITH ANTENNAS

NOTES:
1. ALL METRIC DIMENSIONS ARE IN BRACKETS.

<small>These drawings and specifications are the proprietary property of ANDREW CORPORATION and may be used only for the specific purpose authorized in writing by Andrew Corporation.</small>			<small>DRAWN BY:</small> MSM	<small>SHEET:</small> 3 of 3	<small>PART NUMBER:</small> MC-PK8-C
<small>ALL DIMENSIONS ARE IN INCHES U.O.S. TOLERANCES UNLESS OTHERWISE SPECIFIED:</small> .X = ± .12 ANGLES ±2° .XX = ± .06 FRACTIONS ±1/32 .XXX = ± .03			<small>CHECKED BY:</small> TP	<small>SCALE:</small> NTS	<small>DESCRIPTION:</small> 25" OD Snub Nose MT-196
<small>REMOVE BURRS AND BREAK EDGES .005</small> DO NOT SCALE THIS PRINT			<small>DATE:</small> 10/18/11	<small>MATERIAL:</small> A36, A53	<small>DRAWING TYPE:</small> ASSEMBLY DRAWING
			<small>REVISION:</small> C	<small>FINISH:</small> GALV A123	 WESTCHESTER, IL. 60154 U.S.A.
				<small>WEIGHT:</small> 1.361.27 LBS	

8 7 6 5 4 3 2 1

Exhibit F

Power Density/RF Emissions Report

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

Dish Wireless Existing Facility

Site ID: BOBDL00081A

876329

28 Brewer Drive

Bloomfield, Connecticut 06002

August 30, 2021

EBI Project Number: 6221004800

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	18.04%

August 30, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00081A - 876329

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **28 Brewer Drive in Bloomfield, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is $1000 \mu\text{W}/\text{cm}^2$. 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 antenna facility located at 28 Brewer Drive in Bloomfield, 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) 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.
- 4) 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.

- 5) The antennas used in this modeling are the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector B, the JMA MX08FRO665-21 for the 600 MHz / 1900 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.
- 6) The antenna mounting height centerline of the proposed antennas is 89 feet above ground level (AGL).
- 7) 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.
- 8) 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:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz
Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd
Height (AGL):	89 feet	Height (AGL):	89 feet	Height (AGL):	89 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts
ERP (W):	3,065.51	ERP (W):	3,065.51	ERP (W):	3,065.51
Antenna AI MPE %:	2.30%	Antenna BI MPE %:	2.30%	Antenna CI MPE %:	2.30%

Site Composite MPE %	
Carrier	MPE %
Dish Wireless (Max at Sector A):	2.30%
T-Mobile	5.43%
Verizon	3.31%
AT&T	6.36%
Clearwire	0.15%
Sprint	0.07%
Town	0.42%
Site Total MPE % :	18.04%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	2.30%
Dish Wireless Sector B Total:	2.30%
Dish Wireless Sector C Total:	2.30%
Site Total MPE % :	18.04%

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 ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	89.0	4.67	600 MHz n71	400	1.17%
Dish Wireless 1900 MHz n70	4	542.70	89.0	11.33	1900 MHz n70	1000	1.13%
						Total:	2.30%

• 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:	2.30%
Sector B:	2.30%
Sector C:	2.30%
Dish Wireless Maximum MPE % (Sector A):	2.30%
Site Total:	18.04%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **18.04%** 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



4545 E River Rd, Suite 320
West Henrietta, NY 14586

Phone: (585) 445-5896
Fax: (724) 416-4461
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:
28 BREWER DR., BLOOMFIELD, CT 06002**

GLOBAL SIGNAL ACQUISITIONS II LLC ("Crown Castle") hereby authorizes DISH WIRELESS, LLC, 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: 876329/MTN. VIEW CEM. (FILLEEY PARK)
Customer Site ID: BOBDL00081A/CT-CCI-T-876329
Site Address: 28 Brewer Dr., BLOOMFIELD, CT 06002**

Crown Castle


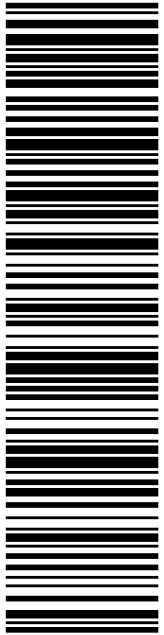
By:  _____ Date: 8/18/2021
Richard Zajac
Site Acquisition Specialist

Exhibit H

Recipient Mailings



USPS TRACKING #

9405 5036 9930 0499 1341 24

Electronic Rate Approved #038555749

SHIP

TO: SUZETTE DEBEATHAM-BROWN
MAYOR OF BLOOMFIELD
800 BLOOMFIELD AVE
BLOOMFIELD CT 06002-2460

P

US POSTAGE
Flat Rate Env
\$7.95

U.S. POSTAGE PAID
Click-N-Ship®

09/09/2021 Mailed from 01566

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

Expected Delivery Date: 09/13/21
Ref#: DS-876329
0006

PRIORITY MAIL 2-DAY™

C017



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 0499 1341 24

Trans. #: 543194688	Priority Mail® Postage: \$7.95
Print Date: 09/09/2021	Total: \$7.95
Ship Date: 09/09/2021	
Expected Delivery Date: 09/13/2021	

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

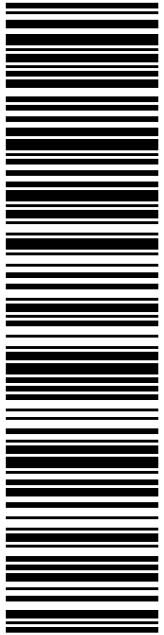
Ref#: DS-876329

To: SUZETTE DEBEATHAM-BROWN
MAYOR OF BLOOMFIELD
800 BLOOMFIELD AVE
BLOOMFIELD CT 06002-2460

* 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



USPS TRACKING #

9405 5036 9930 0499 1341 55

Electronic Rate Approved #038555749

SHIP

TO: JOSE GINER
DIRECTOR PLANNING & ZONING
800 BLOOMFIELD AVE
BLOOMFIELD CT 06002-2460

P

09/09/2021

U.S. POSTAGE PAID
Click-N-Ship®

Mailed from 01566


USPS.com 9405 5036 9930 0499 1341 55 0079 5000 0010 6002
US POSTAGE
Flat Rate Env

Expected Delivery Date: 09/13/21
Re#: DS-876329
0006

C017

PRIORITY MAIL 2-DAY™

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



Click-N-Ship®



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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 0499 1341 55

Trans. #: 543194688	Priority Mail® Postage: \$7.95
Print Date: 09/09/2021	Total: \$7.95
Ship Date: 09/09/2021	
Expected Delivery Date: 09/13/2021	

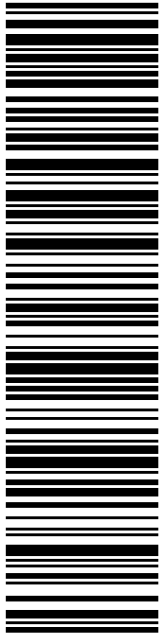
From: DEBORAH CHASE **Re#:** DS-876329
 NORTHEAST SITE SOLUTIONS
 420 MAIN ST
 STE 1
 STURBRIDGE MA 01566-1359

To: JOSE GINER
 DIRECTOR PLANNING & ZONING
 800 BLOOMFIELD AVE
 BLOOMFIELD CT 06002-2460

* 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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USPS TRACKING #

9405 5036 9930 0499 1341 79

Electronic Rate Approved #038555749

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

Expected Delivery Date: 09/13/21
Re#: DS-876329
0006

R013

P

usps.com
US POSTAGE
Flat Rate Env
\$7.95
9405 5036 9930 0499 1341 79 0079 5000 0031 4586


09/09/2021

Mailed from 01566

U.S. POSTAGE PAID
Click-N-Ship®

PRIORITY MAIL 2-DAY™

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



Click-N-Ship®



Cut on dotted line.

Instructions

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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 0499 1341 79

Trans. #: 543194688	Priority Mail® Postage: \$7.95
Print Date: 09/09/2021	Total: \$7.95
Ship Date: 09/09/2021	
Expected Delivery Date: 09/13/2021	

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

Re#: DS-876329

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.



Thank you for shipping with the United States Postal Service!
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876329



FISKDALE
458 MAIN ST
FISKDALE, MA 01518-9998
(800)275-8777

09/10/2021 10:57 AM

Product Qty Unit Price

Prepaid Mail 1 \$0.00
Bloomfield, CT 06002
Weight: 1 lb 10.30 oz
Acceptance Date:
Fri 09/10/2021
Tracking #:
9405 5036 9930 0499 1341 24

Prepaid Mail 1 \$0.00
Bloomfield, CT 06002
Weight: 1 lb 10.40 oz
Acceptance Date:
Fri 09/10/2021
Tracking #:
9405 5036 9930 0499 1341 55

Prepaid Mail 1 \$0.00
West Henrietta, NY 14586
Weight: 0 lb 2.00 oz
Acceptance Date:
Fri 09/10/2021
Tracking #:
9405 5036 9930 0499 1341 79

Grand Total: \$0.00

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increases and limited employee
availability due to the impacts of