



Filed by:

G. Scott Shepherd, Sr. Property Specialist - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3807 - GShepherd@sbsite.com

December 27, 2021

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Tower Share Application
1 Hartford Square, New Britain, CT 06052
Latitude: 41.666411
Longitude: -72.812803
Dish Site# BOBDL00121A

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 1 Hartford Square, New Britain, CT

Dish Wireless LLC proposes to install three (3) 600/1900/2100 MHz antennas and six (6) RRUs, at the 130-foot level of the existing 176-foot Self Supporting tower, one (1) 1.6" Hybrid cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7' x 5' lease area. Included are plans by T, dated Sept. 23, 2021 Exhibit 10. Also included is a structural analysis prepared by TES, dated September 2, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment and attached as Exhibit 8. This facility was approved by the City of New Britain's Dept. of Municipal Development on July 17, 2000. Please see attached Exhibit 6.

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 The City of New Britain's Mayor, Erin E. Stewart, Zoning Enf. Officer, David Wadowski and to the Property Owner, Hartford Square Associates, LLC. Separate notice is not being sent to the tower owner as it belongs to SBA.

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 176-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 130-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 negligent.
4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 24.28% as evidenced by Exhibit 7.

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 8.
- 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 Canton. 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 2, 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 130-foot level of the existing 176-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 7, 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 Intent 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 Westbrook.

Sincerely,

Scott Shepherd
Site Development Specialist II
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581
508.251.0720 x3807 + T
508.366.2610 + F
508.868.6000 + C
GShepherd@sbsite.com

Attachments:

cc: Erin E. Stewart, Moyer / with attachments
City of New Britain, 27 West Main St.
New Britain, CT 06051
David Wadowski, Zoning Enf. Officer / with attachments
City of New Britain 27 West Main St.,
New Britain, CT 06051
Hartford Square Associates, LLC / with attachments
1 Hartford Sq. Door# 19, New Britain, CT 06052 (SBA address on file)



EXHIBIT LIST

Exhibit 1	Copy of Check	X
Exhibit 2	Letter of Intent to Allow Shared Use of the Existing SBA Telecommunications Site	X
Exhibit 3	Notification Receipts	x
Exhibit 4	Property Card	x
Exhibit 5	Property Map	x
Exhibit 6	Original Zoning Approval	City of New Britain Dept. of Municipal Dev. (7/27/00)
Exhibit 7	EME Report	EBI Consulting 12/23/21
Exhibit 8	Structural Analysis	TES 9/2/21
Exhibit 9	Mount Analysis	B + T Group 8/26/21
Exhibit 10	Construction Drawings	B + T Group 9/23/21

EXHIBIT 1

Copy of check

EXHIBIT 2

Letter of Intent

December 27, 2021

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

RE: **Notice of Intent to Allow Shared Use of the Existing SBA Telecommunications Site**
Location: 1 Hartford Square, New Britain, CT
Dish Wireless Site No: BOBDL00121A
Site No: CT04382-S

Dear Ms. Bachman:

Please let the following serve as Evidence of Intent to allow Dish Wireless' shared use of the existing SBA telecommunications site at **1 Hartford Square, New Britain, CT.**

SBA Towers, LLC ("Owner") and Dish Wireless ("Tenant") are entering into a Site Lease Agreement. Tenant will be provided ground space within the existing site compound for its base station equipment and space at the height of 130' for antennas and associated equipment.

Thank you,

Rick Woods

Site Development Manager
SBA COMMUNICATIONS CORPORATION
134 Flanders Road, Suite 125
Westboro, MA 01581

508.251.0720 x3800 + T
508.366.2610 + F
508.614.0389 + C
rwoods@sbsite.com

EXHIBIT 3

Fedex Labels



Shipping

Tracking

Printing Services

Locations

Support

ORIGIN ID:BBFA (508) 614-0389
 RICK WOODS
 SBA COMMUNICATIONS CORPORATION
 134 FLANDERS RD
 SUITE 125
 WESTBOROUGH, MA 01581
 UNITED STATES US

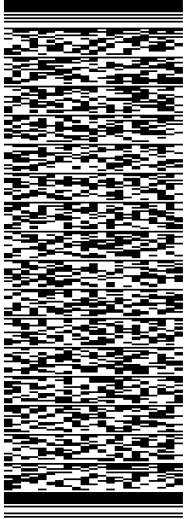

SHIP DATE: 27DEC21
 ACTWGT: 2.00 LB
 CAD: 105843304/NET14400

BILL SENDER

TO
MELANIE A. BACHMAN EXEC. DIR
CONNECTICUT SITING COUNCIL
TEN FRANKLIN SQUARE

NEW BRITAIN CT 06051
 (508) 251-0720 X-3807
 INV
 F.O.

REF: 10-56-92009-6099
 DEPT.

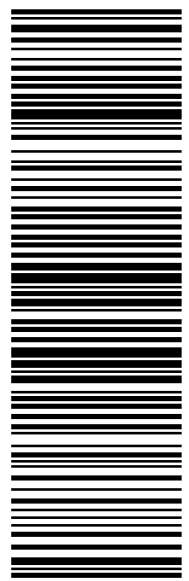
J212321121681uv

TRK# 7756 0268 3308
 0201

EB BDLA

CT-US BDL 06051

TUE - 28 DEC 11:30A
 PRIORITY OVERNIGHT



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FRAMINGHAM, MA

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FROM

SBA COMMUNICATIONS CORPORATION

Rick Woods

134 Flanders Rd

Suite 125

WESTBOROUGH, MA US 01581

508-614-0389

TO

Melanie A. Bachman Exec. Dir

Connecticut Siting Council

Ten Franklin Square

NEW BRITAIN, CT US 06051

508-251-0720

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Travel History

Shipment Facts

Travel History

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WEIGHT

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10-56-92009-6089	FedEx Pak	Deliver Weekday
12/27/21 ?	12/28/21 before 11:30 am ?	12/28/21 before 11:30 am

All (30)

Inbound (8)

Outbound (22)

Watch list (0)



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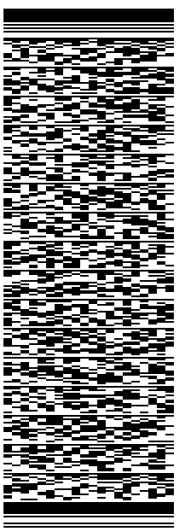

ORIGIN ID:BBFA (508) 614-0389
 RICK WOODS
 SBA COMMUNICATIONS CORPORATION
 134 FLANDERS RD
 SUITE 125
 WESTBOROUGH, MA 01581
 UNITED STATES US

SHIP DATE: 27DEC21
 ACTWGT: 1.00 LB
 CAD: 105843304/NET14400
 BILL SENDER

TO
ERIN E. STEWART
CITY OF NEW BRITAIN
MAYOR
27 WEST MAIN ST
NEW BRITAIN CT 06051
 (508) 251-0720 X-3807
 NY DEPT

TRK# 7756 0270 5913
 0201
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 CT-US BDL
 06051

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FROM

SBA COMMUNICATIONS CORPORATION

Rick Woods

134 Flanders Rd

Suite 125

WESTBOROUGH, MA US 01581

508-614-0389

TO

Erin E. Stewart

City of New Britain

Mayor

27 West Main St

NEW BRITAIN, CT US 06051

508-251-0720

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10-56-92009-6089	FedEx Pak	Deliver Weekday
12/27/21 ?	12/28/21 before 11:30 am ?	12/28/21 before 11:30 am

- All (30)
 - Inbound (8)
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 - Watch list (0)
-



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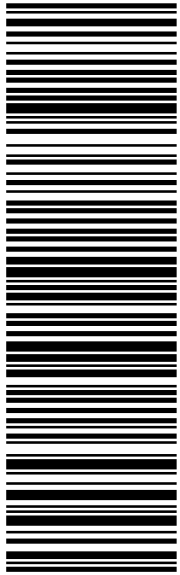
Support

TRK# 7756 0271 9585
0201

EB BDLA

CT-US BDL 06051

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TO DAVID WADOWSKI
CITY OF NEW BRITAIN
ZONING ENFORCEMENT OFFICER
27 WEST MAIN ST
NEW BRITAIN CT 06051

(508) 251-0720 X-3807
NY DEPT

REF: 10-56-92009-6009

ORIGIN ID:BBFA (508) 614-0389
RICK WOODS
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH MA 01581
UNITED STATES US

SHIP DATE: 27DEC21
ACTWGT: 1.00 LB
CAD: 105843304/NET14400
BILL SENDER



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FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
David Wadowski
City of New Britain
Zoning Enforcement Officer
27 West Main St
NEW BRITAIN, CT US 06051
508-251-0720

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All (30)

Inbound (8)

Outbound (22)

Watch list (0)



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ORIGIN ID:BBFA (508) 614-0389
 RICK WOODS
 SBA COMMUNICATIONS CORPORATION
 134 FLANDERS RD
 SUITE 125
 WESTBOROUGH, MA 01581
 UNITED STATES US

SHIP DATE: 27DEC21
 ACTWGT: 1.00 LB
 CAD: 105843304/NET14400
 BILL SENDER

TO

HARTFORD SQUARE ASSOCIATES, LLC
1 HARTFORD SQUARE
DOOR #19
NEW BRITAIN CT 06052

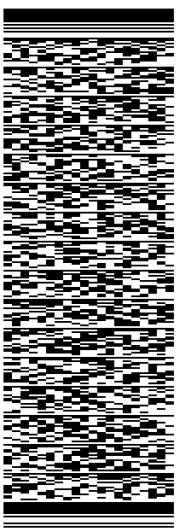

(508) 251-0720 X-3807 REF: 10-56-92009-6099
 INV DEPT

TRK# 7756 0273 5033
 0201

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FROM
SBA COMMUNICATIONS CORPORATION
Rick Woods
134 Flanders Rd
Suite 125
WESTBOROUGH, MA US 01581
508-614-0389

TO
Hartford Square Associates, LLC
1 Hartford Square
Door #19
NEW BRITAIN, CT US 06052
508-251-0720

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1	1 lbs / 0.45 kgs	Shipper
10-56-92009-6089	FedEx Pak	Deliver Weekday
12/27/21 ?	12/28/21 before 11:30 am ?	12/28/21 before 11:30 am

- All (30)
- Inbound (8)
- Outbound (22)
- Watch list (0)

EXHIBIT 4

Property Card



Property Information

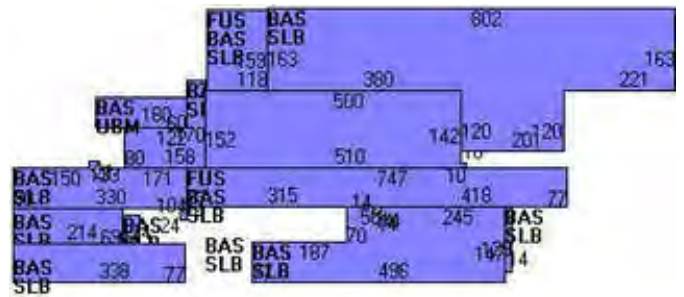
Property Location	1 HARTFORD SQ
Owner	HARTFORD SQUARE ASSOCIATES LLC
Co-Owner	
Mailing Address	1 HARTFORD SQ WEST BOX #15 NEW BRITAIN CT 06052
Land Use	4010 Ind Whse MDL-96
Land Class	I
Zoning Code	I2
Census Tract	416400

Neighborhood	101G
Acreage	24.88
Utilities	All Public
Lot Setting/Desc	Level
Fire District	
Book / Page	1903/1103

Photo



Sketch



Primary Construction Details

Year Built	1940
Building Desc.	Ind Whse MDL-96
Building Style	Warehouse
Building Grade	C
Stories	2
Occupancy	31.00
Exterior Walls	Brick/Masonry
Exterior Walls 2	NA
Roof Style	Gable
Roof Cover	Metal/Tin
Interior Walls	Minimum/Masonr
Interior Walls 2	NA
Interior Floors 1	Finished Concr
Interior Floors 2	NA

Heating Fuel	Yes
Heating Type	99
AC Type	Partial
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	
Bath Style	NA
Kitchen Style	NA
Rec Rm Area	0
Rec Rm Quality	NA
Bsmt Gar	0
Fireplaces	0

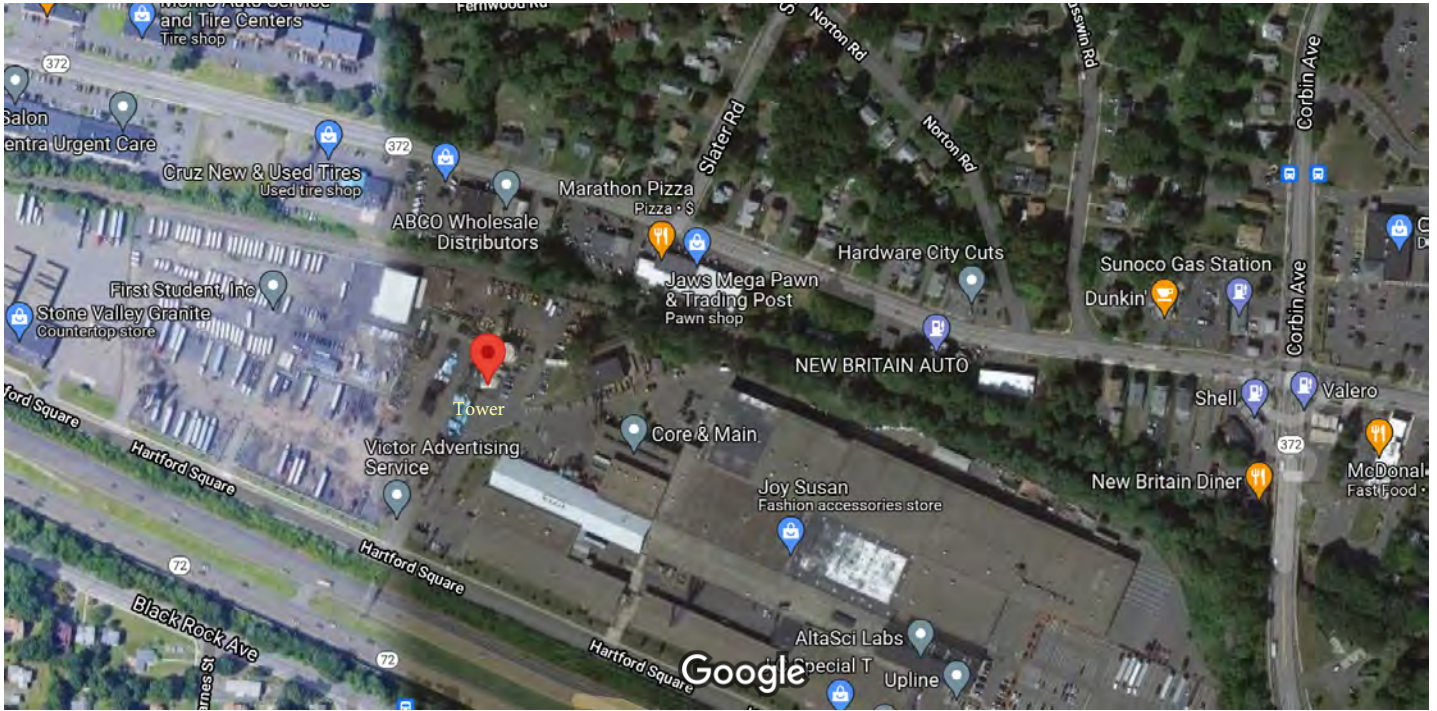
(*Industrial / Commercial Details)

Building Use	Ind/Comm
Building Condition	F
Sprinkler %	NA
Heat / AC	Unit Heat
Frame Type	Steel
Baths / Plumbing	Average
Ceiling / Wall	Ceil & Min WL
Rooms / Prtns	Average
Wall Height	18.00
First Floor Use	4010
Foundation	

EXHIBIT 5

Property Map

Google Maps 41°39'59.1"N 72°48'46.1"W



Imagery ©2021 CNES / Airbus, Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2021 200 ft

EXHIBIT 6

Zoning Approval

CT 04382-S

SITE ID #10125-077

SITE NAME: New Britain 2, CT

JOB COST #004382

ZONING/PERMITTING COMPLETION FORM

Zoning Classification for Site: I-2

Special Relief (setback, height variance, special use permit, wetlands permit etc.):

Building Permit

* Date of Zoning Decision: 8/14/00

Summary of zoning conditions (Include details of any conditions relative to time restrictions, expiration dates, renewal obligations, monetary obligations, performance obligation, inspection fees).

See attached

Submitted by: Esther McNany

Title: Territory Manager

Territory Manager Approval:

* Attach a copy of the Zoning decision and forward to the Regional Compliance Manager as soon as possible, after the decision.



City of New Britain

New Britain, Connecticut 06051

DEPT. OF MUNICIPAL DEVELOPMENT

"New Britain:
A City for
All People"

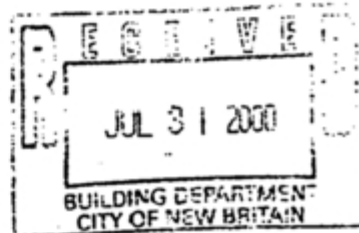
27 West Main Street - Room 311

(860) 826-3330

FAX: (860) 826-2682

MEMORANDUM

TO: Frank M. Wiatr, Director of Licenses and Permits
FROM: Steven P. Schiller, Planner II
DATE: July 27, 2000
SUBJECT: Site Plan Review for:



ONE HARTFORD SQUARE
SBA CELL TOWER, AMODIO PROPERTY
PLAN DATED: 7/17/00

As requested, a review of the above Site Plan was made and we recommend that the Site Plan be APPROVED as submitted. City Plan approval indicates that the Site Plan and/or Landscaping Plan appears to conform to professional planning standards, but in no way shall be construed as confirmation of the accuracy or adequacy of the contents of the plans and shall not relieve the owner of the obligation to construct facilities which function safely and conform to all applicable statutes, ordinances and regulations.

NOTE: APPROVAL IS CONTINGENT UPON ZONING ENFORCEMENT OFFICIAL'S CONCURRENCE THAT THE PROPOSED USE IS PERMISSIBLE IN THE I-2 DISTRICT AND THAT THE 135 FOOT TOWER IS EXEMPTED FROM THE 125 FOOT MAXIMUM HEIGHT RESTRICTION, PURSUANT TO SECTION 230-30.

cc: Clarence Corbin, City Engineer

Kenneth A. Malinowski, Director
Department of Municipal Development

SITE # 10125-077
FILE TYPE CONS
SECTION Permitting

B 1414
CITY OF NEW BRITAIN
DEPARTMENT OF LICENSES, PERMITS
AND INSPECTIONS
TELEPHONE: 826-3383

BUILDING/ZONING PERMIT

DATE	8/14/00
COST	84,000.
FEE	1,290.

APPLICANT SBA TEL. NO. 860 659-9101

ADDRESS 80 Eastern Bld. Glastonbury, CT

PERMIT FOR: Construct 175' Lattice Type Communication Tower per plans and specs.

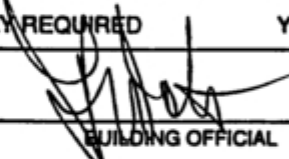
LOCATION ONE HARTFORD SQUARE

BUILDING DIMENSIONS	FT. WIDE BY	FT. LONG AND	FT. IN HEIGHT
BUILDING TYPE	USE GROUP	LOT SIZE	ZONE I2
OWNER Dixwell Associates		CERT. OF OCCURANCY REQUIRED	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
ADDRESS 1 Hartford Sq. NB, CT		AS-BUILT SURVEY REQUIRED	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>

THE MATCHING APPLICATION IS PART AND PARCEL OF THIS BUILDING PERMIT.

WHERE APPLICABLE SEPARATE PERMITS ARE
REQUIRED FOR ELECTRICAL, PLUMBING AND
MECHANICAL INSTALLATIONS.

APPLICANT'S COPY


BUILDING OFFICIAL

POST PERMIT FOR DURATION OF WORK

MANDATORY INSPECTIONS REQUIRED

EXHIBIT 7

EME Report

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

Dish Wireless Existing Facility

Site ID: BOBDL00121A

BOBDL00121A
1 Hartford Square
New Britain, Connecticut 06052

December 23, 2021

EBI Project Number: 6221007851

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	24.28%

December 23, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00121A - BOBDL00121A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **1 Hartford Square in New Britain, 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 Wireless antenna facility located at 1 Hartford Square in New Britain, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 4 n71 channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 4 n70 channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 3) 4 n66 channels (AWS Band - 2190 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 4) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 5) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative

estimate as gain reductions for these particular antennas are typically much higher in this direction.

- 6) The antennas used in this modeling are the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 7) The antenna mounting height centerline of the proposed antennas is 130 feet above ground level (AGL).
- 8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 9) All calculations were done with respect to uncontrolled / general population threshold limits.



Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	I	Antenna #:	I	Antenna #:	I
Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz
Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd
Height (AGL):	130 feet	Height (AGL):	130 feet	Height (AGL):	130 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	5,236.31	ERP (W):	5,236.31	ERP (W):	5,236.31
Antenna AI MPE %:	1.54%	Antenna BI MPE %:	1.54%	Antenna CI MPE %:	1.54%

Site Composite MPE %	
Carrier	MPE %
Dish Wireless (Max at Sector A):	1.54%
Sprint	1.67%
Clearwire	0.07%
T-Mobile	11.47%
Metro PCS	0.79%
Verizon	3.69%
AT&T	5.05%
Site Total MPE % :	24.28%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	1.54%
Dish Wireless Sector B Total:	1.54%
Dish Wireless Sector C Total:	1.54%
Site Total MPE % :	24.28%

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	130.0	2.09	600 MHz n71	400	0.52%
Dish Wireless 1900 MHz n70	4	542.70	130.0	5.08	1900 MHz n70	1000	0.51%
Dish Wireless 2190 MHz n66	4	542.70	130.0	5.08	2190 MHz n66	1000	0.51%
						Total:	1.54%

• 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:	1.54%
Sector B:	1.54%
Sector C:	1.54%
Dish Wireless Maximum MPE % (Sector A):	1.54%
Site Total:	24.28%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **24.28%** 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 8

Structural Analysis



Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 176 ft Rohn Self Supporting Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT04382-S

Customer Site Name: New Britain 2, CT

Carrier Name: Dish Wireless (App#: 167821, V1)

Carrier Site ID / Name: BOBDL00121A / 0

Site Location: 1 Hartford Square

New Britain, Connecticut

Hartford County

Latitude: 41.666411

Longitude: -72.812803

Exp.10/31/2021



09/02/2021

Analysis Result:

Max Structural Usage: 84.0% [Pass]

Max Foundation Usage: 52.0% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Younus Alkarawi

Introduction

The purpose of this report is to summarize the analysis results on the 176 ft Rohn Self Supporting Tower to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Rohn Eng. File # 44545AE, Dwg. # C000882, dated 08/21/2000
Foundation Drawing	Rohn Eng. File # 44545AE, Dwg. # A001473, dated 07/26/2000
Geotechnical Report	Jaworski Geotech Project # 00309G, dated 07/05/2000
Modification Drawings	Allpro Consulting Group Job # 17-0378 rev.1, dated 02/21/2017
Mount Analysis	N/A

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2. In accordance with this standard, the structure was analyzed using **TESTowers**, a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 125.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 97.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.183$, $S_1 = 0.064$

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	177.0	3	Kathrein 840 10054 Panel	(3) Sector Frames w/ (3) VBrace Kits (SitePro SFSV- L) & (6) 2-3/8"x6" Pipe Masts (BBPM-K1)	(4) 1/2" Fiber (6) 5/16" Fiber (1) 5/16" RET	Sprint Nextel
2		4	Andrew VHLP2.5 Dish			
3		3	Samsung U-RAS Flexible FRH			
4		3	Dragonwave Horizon Duo			
5	166.0	3	Cci Antennas DMP65R-BU6DA Panel	(3) Commscope SFG22HDX Mount	(6) 1 5/8" (4) 3/4" DC (2) 1/2" Fiber (1) 3" Conduit [(4) existing DC & (2) existing fiber in (1) 3" conduit]	AT&T
6		3	Cci Antennas OPA65R-BU6DA Panel			
7		3	Quintel QS66512-2 Panel			
8		3	Ericsson 8843 B2/B66A RRU			
9		6	CCI TPX-070821 Diplexer			
10		3	Ericsson RRUS-32 RRU			
11		3	Ericsson 4449 B5/B12 RRU			
12		3	Ericsson 4478 B14 RRU			
13		3	Commscope ION23 SDARS RRU			
14		3	Commscope CBC23SR-43 Combiners			
15		2	Raycap DC6-48-60-18-8F OVP			
16		1	Raycap DC6-48-60-0-8C-EV OVP			
17		1	Raycap DC6-48-60-18-8C-EV OVP			
18	152.0	3	Ericsson AIR32 KRD901146- 1_B66A_B2A (Octo)	(3) Sector Frame	(1) 1 1/4" Fiber (8) 1 5/8" Coax (5) 1 5/8" Fiber	T-Mobile
19		3	RFS APXVAARR24_43-U-NA20			
20		3	Ericsson AIR6449 B41			
21		3	Ericsson KRY 112 144/1			
22		3	Commscope SDX1926Q-43			
23		3	Ericsson 4449 B71+B85			
24		3	Ericsson 4415 B25			
25	140.0	3	Kathrein 800 10735v01 Panel	(3) T-Frames	(12) 1 5/8" (2) 1 5/8" Hybrid (1) 1/2"	Verizon
26		3	Antel BXA-80080/4CF Panel			
27		6	Andrew SBNHH-1D65B Panel			
26		3	ALU RRH-2x60-AWS			
28		3	ALU RRH-2x60-PCS			
29		3	ALU RRH-2X60W-700U			
30		1	RFS DB-T1-6Z-8AB-0Z Box			
31	1	GPS				
36	82.0	1	GPS	Pipe	(2) 1/2"	Sprint Nextel

*inside (1) 3" Flex conduit

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
32	130.0	3	JMA Wireless MX08FRO665-21 - Panel	(3) Sector frames Commscope MTC3975083	(1) 1.6" Hybrid	Dish Wireless
33		3	Fujitsu TA08025-B605 RRU -			
34		3	Fujitsu TA08025-B604 RRU -			
35		1	Raycap RDIDC-9181-PF-48 - OVP			

See the attached coax layout for the line placement considered in the analysis.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

Tower Component	Legs	Diagonals	Horizontals
Max. Usage:	56.1%	84.0%	3.9%
Pass/Fail	Pass	Pass	Pass

Foundations

	Compression (Kips)	Uplift (Kips)	Shear (Kips)
Original Design Reactions	364.9	312.3	34.3
Analysis Reactions	275.2	234.4	26.6
Factored Reactions*	492.6	421.6	46.3
% of Design Reactions	55.9%	55.6%	57.5%

* Per section 15.5.1 of the TIA-222-G standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

The maximum twist and sway of the microwave dishes under the operational wind speed as specified in the Analysis Criteria are listed in the table below:

Elevation (ft)	Antenna / Dish	Carrier	Twist (deg)	Sway (deg)
177.0	Andrew - VHLP2.5 - Dish	Sprint Nextel	0.007	0.192

It is recommended that the carriers review the twist and sway values of the microwave dishes.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Structure: CT04382-S-SBA

Site Name: New Britain 2, CT

Code: EIA/TIA-222-G

9/2/2021

Type: Self Support

Base Shape: Triangle

Basic WS: 97.00

Height: 176.00 (ft)

Base Width: 21.00

Basic Ice WS: 50.00

Base Elev: 0.00 (ft)

Top Width: 4.69

Operational WS: 60.00

Page: 1

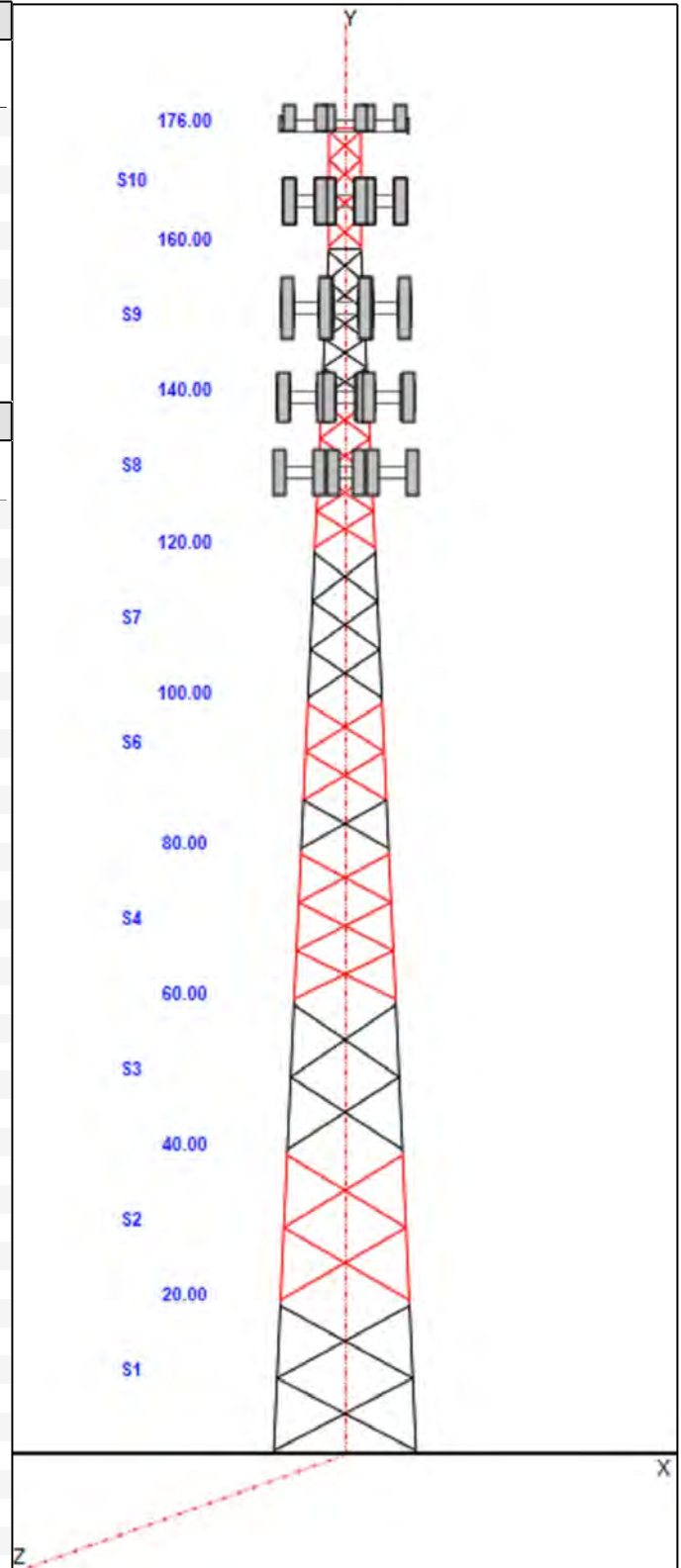


Section Properties

Sect	Leg Members	Diagonal Members	Horizontal Members
1	PX 8" DIA PIPE	SAE 4X4X0.25	
2	PX 8" DIA PIPE	SAE 3.5X3.5X0.25	
3	PSP ROHN 8 EHS	SAE 3.5X3.5X0.25	
4	PX 6" DIA PIPE	SAE 3X3X0.25	
5	PX 6" DIA PIPE	MOD 2L2.5x2.5x3/16_S	
6	PX 6" DIA PIPE	SAE 2.5X2.5X0.1875	
7	PSP ROHN 6 EHS	SAE 2.5X2.5X0.1875	
8	PX 5" DIA PIPE	SAE 2X2X0.1875	
9	PX 4" DIA PIPE	SAE 2X2X0.1875	SAE 2X2X0.1875
10	PX 3" DIA PIPE	SAE 2X2X0.25	SAE 2X2X0.25

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description
176.00	179.00	1	Lightning Rod
176.00	176.00	1	Beacon
176.00	176.00	3	Light Sector Frame
176.00	176.00	1	(3) SFS-H-L (V-Braces)
176.00	177.00	4	VHLP2.5
176.00	177.00	3	Horizon Duo
176.00	177.00	3	840 10054
176.00	177.00	3	U-RAS Flexible FRH
166.00	166.00	3	DMP65R-BU6DA
166.00	166.00	3	Antennas OPA65R-BU6DA
166.00	166.00	3	4449 B5/B12
166.00	166.00	3	4478 B14
166.00	166.00	3	ION23 SDARS
166.00	166.00	3	CBC23SR-43
166.00	166.00	3	800-10121
166.00	166.00	3	QS66512-2
166.00	166.00	6	LGP21401
166.00	166.00	6	CCI TPX-070821
166.00	166.00	6	860 10025
166.00	166.00	6	RRUS 32 B2
166.00	166.00	3	RRUS 32 B66
166.00	166.00	3	RRUS 32
166.00	166.00	2	DC6-48-60-18-8F
166.00	166.00	1	DC6-48-60-18-8C-EV
166.00	166.00	1	DC6-48-60-18-8C-EV
166.00	166.00	1	Commscope SFG22HDX
152.00	152.00	3	AIR32 KRD901146-1_B66A_B2A (Oc
152.00	152.00	3	APXVAARR24_43-U-NA20
152.00	152.00	3	AIR6449 B41
152.00	152.00	3	SDX1926Q-43
152.00	152.00	3	4449 B71 + B85
152.00	152.00	3	RRUS 4415 B25
152.00	152.00	3	Sector Frame
152.00	152.00	3	KRY 112 144/1
140.00	140.00	3	Sector Frame-Pipe
140.00	140.00	6	SBNHH-1D65B
140.00	140.00	3	800 10735
140.00	140.00	3	BXA-80080-4CF
140.00	140.00	3	RRH-2X60-AWS



Structure: CT04382-S-SBA

Site Name: New Britain 2, CT	Code: EIA/TIA-222-G	9/2/2021
Type: Self Support	Base Shape: Triangle	Basic WS: 97.00
Height: 176.00 (ft)	Base Width: 21.00	Basic Ice WS: 50.00
Base Elev: 0.00 (ft)	Top Width: 4.69	Operational WS: 60.00



Page: 2

140.00	140.00	3	RRH-2X60-PCS
140.00	140.00	1	GPS
140.00	140.00	3	RRH-2x60-700U
140.00	140.00	1	DB-T1-6Z-8AB-0Z Box
130.00	130.00	3	JMA Wireless MX08FRO665-21
130.00	130.00	1	(3) MTC3975083
130.00	130.00	3	Fujitsu TA08025-B605 RRU
130.00	130.00	3	Fujitsu TA08025-B604 RRU
130.00	130.00	1	Raycap RDIDC-9181-PF-48
82.00	82.00	1	GPS

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Qty	Description
152.00	176.00	4	1/2" Fiber
152.00	176.00	6	5/16" Fiber
152.00	176.00	1	5/16" RET
152.00	176.00	1	W/G Ladder
0.00	166.00	6	1 5/8" Coax
0.00	166.00	2	1/2" Fiber
0.00	166.00	1	3" Conduit
0.00	166.00	4	3/4" DC
0.00	162.00	1	W/G Ladder
0.00	152.00	1	1 1/4" Fiber
0.00	152.00	8	1 5/8" Coax
0.00	152.00	5	1 5/8" Fiber
0.00	152.00	1	W/G Ladder
0.00	140.00	12	1 5/8" Coax
0.00	140.00	2	1 5/8" Hybrid
0.00	140.00	1	1/2" Coax
0.00	130.00	1	1.6" Hybrid
0.00	82.00	1	1/2" Coax

Base Reactions

Leg	Overturning
Max Uplift: -234.38 (kips)	Moment: 4676.88 (ft-kips)
Max Down: 275.24 (kips)	Total Down: 54.23 (kips)
Max Shear: 26.62 (kips)	Total Shear: 42.54 (kips)

Structure: CT04382-S-SBA

Site Name: New Britain 2, CT

Code: EIA/TIA-222-G

9/2/2021

Type: Self Support

Base Shape: Triangle

Basic WS: 97.00

Height: 176.00 (ft)

Base Width: 21.00

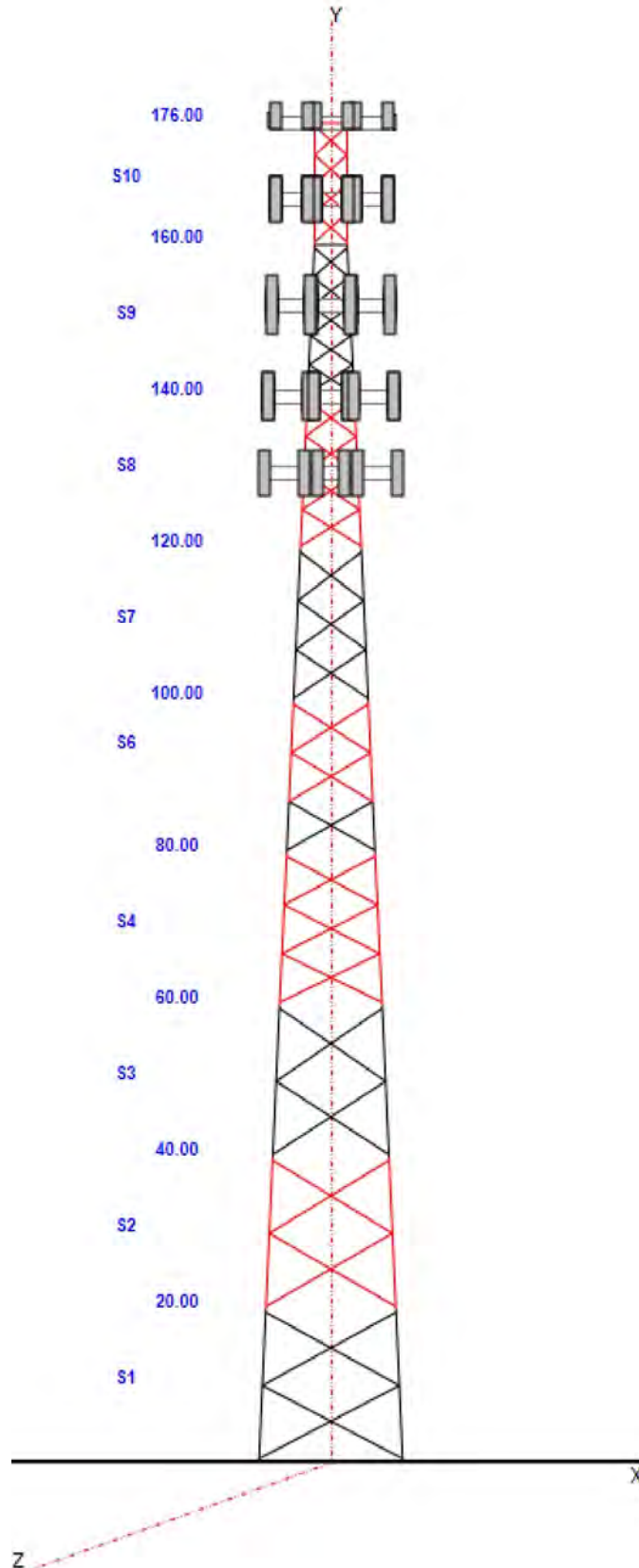
Basic Ice WS: 50.00

Base Elev: 0.00 (ft)

Top Width: 4.69

Operational WS: 60.00

Page: 3



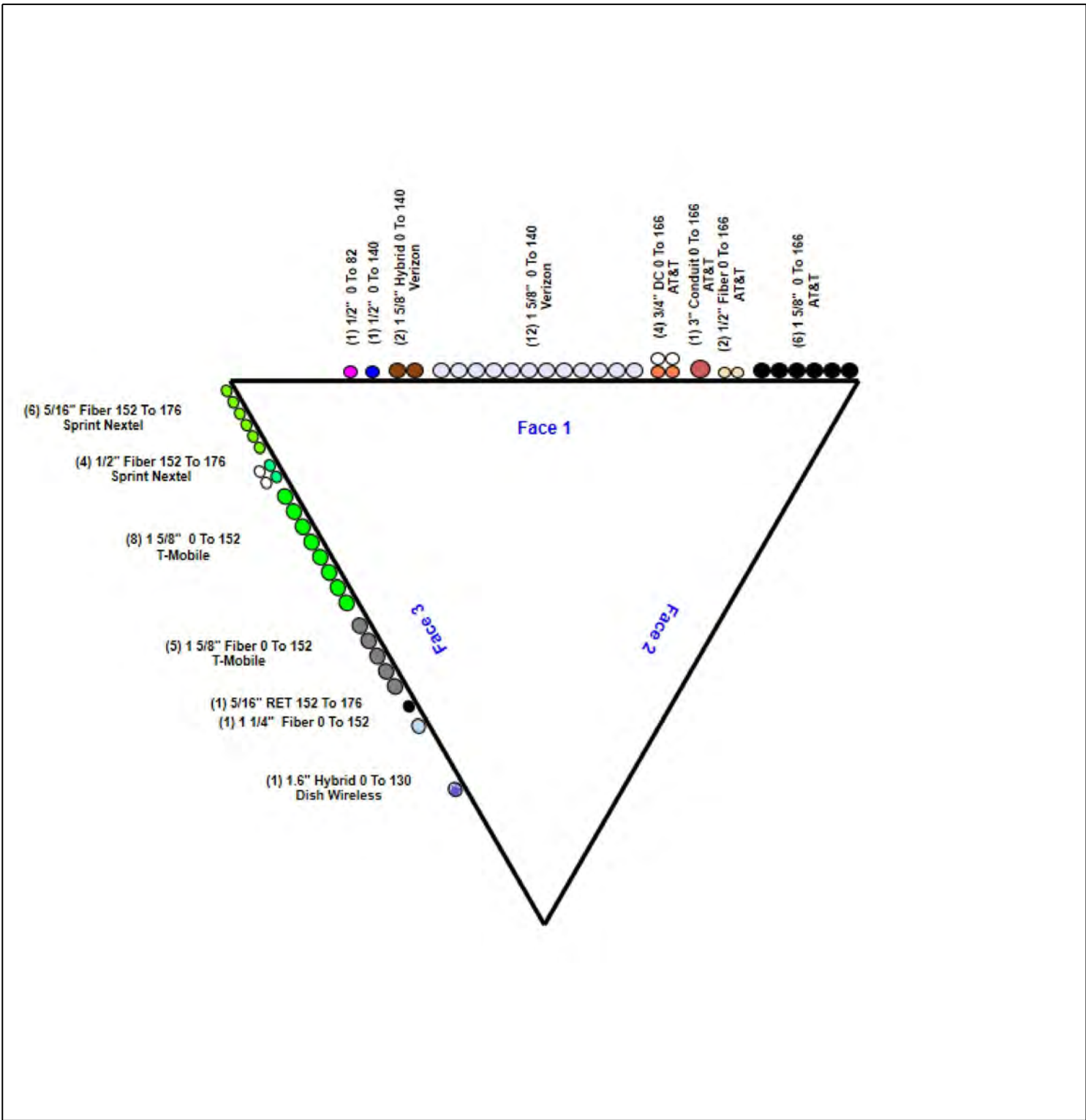
Structure: CT04382-S-SBA - Coax Line Placement

Type: Self Support
Site Name: New Britain 2, CT
Height: 176.00 (ft)

9/2/2021



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Loading Summary

Structure: CT04382-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: New Britain 2, CT	Exposure: B	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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Discrete Appurtenances Properties

Attach Elev (ft)	Description	Qty	No Ice		Ice		Len (in)	Width (in)	Depth (in)	Ka	Orientation Factor	Vert Ecc (ft)
			Weight (lb)	CaAa (sf)	Weight (lb)	CaAa (sf)						
176.00	Lightning Rod	1	5.00	0.500	33.24	2.853	72.000	1.000	1.000	1.00	1.00	3.000
176.00	Beacon	1	36.00	2.720	215.62	4.000	28.000	17.500	17.500	1.00	1.00	0.000
176.00	Light Sector Frame	3	500.00	17.500	1441.39	36.281	0.000	0.000	0.000	0.75	0.75	0.000
176.00	(3) SFS-H-L (V-Braces)	1	230.00	6.700	663.04	16.161	0.000	0.000	0.000	0.75	1.00	0.000
176.00	VHLP2.5	4	27.00	4.680	158.97	6.398	26.100	26.100	13.200	1.00	1.00	1.000
176.00	Horizon Duo	3	10.60	0.430	40.99	1.119	4.700	7.500	7.500	0.80	0.67	1.000
176.00	840 10054	3	30.00	4.590	143.64	6.846	42.000	12.700	2.800	0.80	0.68	1.000
176.00	U-RAS Flexible FRH	3	33.00	1.820	89.17	3.134	16.000	11.600	5.000	0.80	0.67	1.000
166.00	DMP65R-BU6DA	3	79.40	12.710	476.60	14.684	71.200	20.700	7.700	0.80	0.72	0.000
166.00	Antennas OPA65R-BU6DA	3	79.40	12.710	476.60	14.684	71.200	20.700	7.700	0.80	0.72	0.000
166.00	4449 B5/B12	3	71.00	1.970	142.99	2.708	17.900	13.200	9.400	0.80	0.67	0.000
166.00	4478 B14	3	59.90	1.840	123.28	2.550	16.500	13.400	7.700	0.80	0.67	0.000
166.00	ION23 SDARS	3	15.00	3.230	160.56	4.314	32.000	12.000	7.000	0.80	0.67	0.000
166.00	CBC23SR-43	3	4.90	0.420	19.92	0.802	8.000	6.300	4.900	0.80	0.67	0.000
166.00	800-10121	3	44.10	5.150	198.99	7.991	54.500	10.300	5.900	0.80	0.79	0.000
166.00	QS66512-2	3	111.00	8.130	436.39	9.922	72.000	12.000	9.600	0.80	0.92	0.000
166.00	LGP21401	6	14.10	1.290	47.81	2.417	14.400	9.200	2.600	0.80	0.67	0.000
166.00	CCI TPX-070821	6	20.00	2.180	87.27	3.600	16.000	14.000	6.000	0.80	0.67	0.000
166.00	860 10025	6	1.20	0.180	9.29	0.691	7.600	2.400	2.000	0.80	0.67	0.000
166.00	RRUS 32 B2	6	53.00	2.740	181.79	3.750	27.200	12.100	7.000	0.80	0.67	0.000
166.00	RRUS 32 B66	3	53.00	2.740	181.79	3.750	27.200	12.100	7.000	0.80	0.67	0.000
166.00	RRUS 32	3	77.00	1.650	150.17	2.458	20.900	9.500	3.300	0.80	0.67	0.000
166.00	DC6-48-60-18-8F	2	31.80	0.920	115.17	1.511	24.000	11.000	11.000	0.80	0.67	0.000
166.00	DC6-48-60-18-8C-EV	1	16.00	4.780	182.86	5.973	31.400	18.300	10.200	1.00	1.00	0.000
166.00	DC6-48-60-18-8C-EV	1	16.00	4.780	182.86	5.973	31.400	18.300	10.200	1.00	1.00	0.000
166.00	Commscope SFG22HDX	1	1599.0	51.900	3706.40	139.84	0.000	0.000	0.000	0.75	1.00	0.000
152.00	AIR32 KRD901146-1_B66A_B2A	3	132.20	6.510	393.25	8.098	57.000	12.900	8.700	0.80	0.87	0.000
152.00	APXVAARR24_43-U-NA20	3	128.00	20.240	709.08	22.805	95.900	24.000	7.800	0.80	0.70	0.000
152.00	AIR6449 B41	3	103.00	5.650	285.82	6.917	33.100	20.500	8.300	0.80	0.71	0.000
152.00	SDX1926Q-43	3	6.10	0.230	17.47	0.721	4.000	6.000	3.000	0.80	0.67	0.000
152.00	4449 B71 + B85	3	74.00	1.970	151.83	2.729	17.900	13.200	10.600	0.80	0.67	0.000
152.00	RRUS 4415 B25	3	46.00	1.640	100.80	2.327	15.000	13.200	5.400	0.80	0.67	0.000
152.00	Sector Frame	3	500.00	17.500	1430.78	36.069	0.000	0.000	0.000	0.75	0.75	0.000
152.00	KRY 112 144/1	3	11.00	0.410	25.38	1.044	6.900	6.100	2.700	0.80	0.67	0.000
140.00	Sector Frame-Pipe	3	450.00	14.000	912.45	23.249	0.000	0.000	0.000	0.75	0.75	0.000
140.00	SBNHH-1D65B	6	40.00	8.160	314.13	9.905	72.600	11.900	7.100	0.80	0.83	0.000
140.00	800 10735	3	28.70	8.620	230.29	12.504	76.100	11.900	3.900	0.80	0.66	0.000
140.00	BXA-80080-4CF	3	48.20	4.800	527.57	7.262	48.200	11.200	5.900	0.80	0.76	0.000
140.00	RRH-2X60-AWS	3	55.00	3.500	160.17	4.537	21.000	11.500	7.000	0.80	0.67	0.000
140.00	RRH-2X60-PCS	3	55.00	2.200	145.64	3.209	21.000	12.000	7.000	0.80	0.67	0.000
140.00	GPS	1	10.00	1.000	48.54	1.936	12.000	9.000	6.000	1.00	1.00	0.000
140.00	RRH-2x60-700U	3	19.50	1.510	78.90	2.203	21.600	12.000	9.000	0.80	0.67	0.000
140.00	DB-T1-6Z-8AB-OZ Box	1	18.90	4.800	178.05	7.002	24.000	24.000	10.000	1.00	1.00	0.000
130.00	JMA Wireless MX08FRO665-21	3	64.50	12.490	446.82	14.415	72.000	20.000	8.000	0.80	0.74	0.000
130.00	(3) MTC3975083	1	1242.0	28.050	2837.45	74.377	0.000	0.000	0.000	0.75	1.00	0.000
130.00	Fujitsu TA08025-B605 RRU	3	75.00	1.960	143.75	2.697	15.800	15.000	9.100	0.80	0.67	0.000
130.00	Fujitsu TA08025-B604 RRU	3	63.90	1.960	130.45	2.697	15.800	15.000	7.900	0.80	0.67	0.000
130.00	Raycap RDIDC-9181-PF-48	1	21.90	2.010	91.89	2.757	16.600	14.600	8.500	1.00	1.00	0.000

Loading Summary

Structure: CT04382-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: New Britain 2, CT	Exposure: B	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Page: 6
Struct Class: II		



82.00 GPS	1	10.00	1.000	46.86	1.895	12.000	9.000	6.000	1.00	1.00	0.000
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Totals:	140	13,231.40		42,813.54						Number of Appurtenances :	49
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Loading Summary

Structure: CT04382-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: New Britain 2, CT	Exposure: B	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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Linear Appurtenances Properties

Elev. From (ft)	Elev. To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out of Zone	Spacing (in)	Orientation Factor	Ka Override
152.00	176.00	1/2" Fiber	4	0.50	0.16	50.00	3	Block		N	0.50	1.00	
152.00	176.00	5/16" Fiber	6	0.32	0.95	100.00	3	Individual IR		N	0.50	1.00	
152.00	176.00	5/16" RET	1	0.32	0.08	100.00	3	Individual NR		N	1.00	1.00	
152.00	176.00	W/G Ladder	1	2.00	6.00	100.00	3	Individual NR		N	0.50	1.00	
0.00	166.00	1 5/8" Coax	6	1.98	1.04	100.00	1	Individual IR		N	0.50	1.00	
0.00	166.00	1/2" Fiber	2	0.50	0.16	100.00	1	Individual IR		N	0.50	0.00	0
0.00	166.00	3" Conduit	1	3.02	1.78	100.00	1	Individual NR		N	0.50	1.00	
0.00	166.00	3/4" DC	4	0.75	0.40	50.00	1	Block		N	0.50	0.94	0
0.00	162.00	W/G Ladder	1	0.25	6.00	100.00	1	Individual NR		N	0.50	1.00	
0.00	152.00	1 1/4" Fiber	1	1.55	0.66	100.00	3	Individual NR		N	1.00	1.00	
0.00	152.00	1 5/8" Coax	8	1.98	1.04	100.00	3	Individual IR		N	0.50	1.00	
0.00	152.00	1 5/8" Fiber	5	2.00	1.10	100.00	3	Individual IR		N	0.50	1.00	
0.00	152.00	W/G Ladder	1	0.25	6.00	100.00	3	Individual NR		N	0.50	1.00	
0.00	140.00	1 5/8" Coax	12	1.98	1.04	100.00	1	Individual IR		N	0.50	1.00	0
0.00	140.00	1 5/8" Hybrid	2	2.00	1.10	100.00	1	Individual IR		N	0.50	1.00	0
0.00	140.00	1/2" Coax	1	0.65	0.16	100.00	1	Individual NR		N	1.00	1.00	
0.00	130.00	1.6" Hybrid	1	1.55	0.66	100.00	3	Individual NR		N	1.00	1.00	
0.00	82.00	1/2" Coax	1	0.65	0.16	100.00	1	Individual NR		N	1.00	1.00	

Section Forces

Structure: CT04382-S-SBA
Site Name: New Britain 2, CT
Height: 176.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

9/2/2021

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Load Case: 1.2D + 1.6W Normal Wind

1.2D + 1.6W 97 mph Wind at Normal To Face

Wind Load Factor: 1.60
Dead Load Factor: 1.20
Ice Dead Load Factor: 0.00

Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	Total Flat Area (psf)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
1	10.0	14.33	28.639	28.80	0.00	0.14	2.81	1.00	1.00	0.00	41.32	125.67	0.00	6,491.8	0.0	2265.98	1087.03	3,353.01
2	30.0	14.34	22.974	28.80	0.00	0.14	2.81	1.00	1.00	0.00	35.64	125.67	0.00	6,086.8	0.0	1957.29	1087.95	3,045.23
3	50.0	16.60	20.940	28.80	0.00	0.15	2.78	1.00	1.00	0.00	33.15	125.67	0.00	5,194.7	0.0	2076.81	1258.91	3,335.72
4	70.0	18.27	22.213	22.12	0.00	0.15	2.76	1.00	1.00	0.00	32.88	125.67	0.00	4,936.5	0.0	2255.93	1385.94	3,641.87
5	83.4	19.21	0.000	17.99	0.00	0.20	2.59	1.00	1.00	0.00	9.80	42.42	0.00	1,752.5	0.0	663.12	489.93	1,153.05
6	93.4	19.84	10.586	14.61	0.00	0.16	2.74	1.00	1.00	0.00	17.51	82.27	0.00	2,769.6	0.0	1296.87	979.97	2,276.85
7	110.0	20.79	14.081	22.12	0.00	0.17	2.69	1.00	1.00	0.00	24.58	124.58	0.00	3,676.9	0.0	1868.66	1554.93	3,423.60
8	130.0	21.81	11.695	18.58	0.00	0.18	2.66	1.00	1.00	0.00	21.17	123.29	0.00	3,386.0	0.0	1669.70	1603.37	3,273.07
9	150.0	22.72	11.717	15.03	0.00	0.22	2.54	1.00	1.00	0.00	20.03	60.05	0.00	2,531.2	0.0	1573.00	1298.37	2,871.37
10	168.0	23.47	8.438	9.33	0.00	0.22	2.53	1.00	1.00	0.00	13.84	16.14	0.00	1,526.8	0.0	1115.49	401.42	1,516.91
													38,352.9	0.0	27,890.67			

Load Case: 1.2D + 1.6W 60° Wind

1.2D + 1.6W 97 mph Wind at 60° From Face

Wind Load Factor: 1.60
Dead Load Factor: 1.20
Ice Dead Load Factor: 0.00

Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	Total Flat Area (psf)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
1	10.0	14.33	28.639	28.80	0.00	0.14	2.81	0.80	1.00	0.00	35.59	125.67	0.00	6,491.8	0.0	1951.84	1087.03	3,038.87
2	30.0	14.34	22.974	28.80	0.00	0.14	2.81	0.80	1.00	0.00	31.05	125.67	0.00	6,086.8	0.0	1704.98	1087.95	2,792.92
3	50.0	16.60	20.940	28.80	0.00	0.15	2.78	0.80	1.00	0.00	28.96	125.67	0.00	5,194.7	0.0	1814.40	1258.91	3,073.31
4	70.0	18.27	22.213	22.12	0.00	0.15	2.76	0.80	1.00	0.00	28.43	125.67	0.00	4,936.5	0.0	1951.08	1385.94	3,337.02
5	83.4	19.21	0.000	17.99	0.00	0.20	2.59	0.80	1.00	0.00	9.80	42.42	0.00	1,752.5	0.0	663.12	489.93	1,153.05
6	93.4	19.84	10.586	14.61	0.00	0.16	2.74	0.80	1.00	0.00	15.39	82.27	0.00	2,769.6	0.0	1140.05	979.97	2,120.02
7	110.0	20.79	14.081	22.12	0.00	0.17	2.69	0.80	1.00	0.00	21.76	124.58	0.00	3,676.9	0.0	1654.53	1554.93	3,209.47
8	130.0	21.81	11.695	18.58	0.00	0.18	2.66	0.80	1.00	0.00	18.83	123.29	0.00	3,386.0	0.0	1485.25	1603.37	3,088.61
9	150.0	22.72	11.717	15.03	0.00	0.22	2.54	0.80	1.00	0.00	17.69	60.05	0.00	2,531.2	0.0	1389.01	1298.37	2,687.38
10	168.0	23.47	8.438	9.33	0.00	0.22	2.53	0.80	1.00	0.00	12.15	16.14	0.00	1,526.8	0.0	979.45	401.42	1,380.87
													38,352.9	0.0	25,881.52			

Section Forces

Structure: CT04382-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: New Britain 2, CT	Exposure: B	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 90° Wind	1.2D + 1.6W 97 mph Wind at 90° From Face
Wind Load Factor: 1.60	Wind Importance Factor: 1.00
Dead Load Factor: 1.20	
Ice Dead Load Factor: 0.00	Ice Importance Factor: 1.00

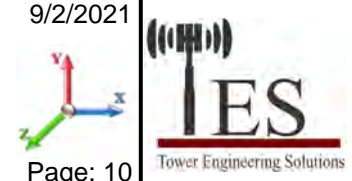
Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	14.33	28.639	28.80	0.00	0.14	2.81	0.85	1.00	0.00	37.02	125.67	0.00	6,491.8	0.0	2030.37	1087.03	3,117.40
2	30.0	14.34	22.974	28.80	0.00	0.14	2.81	0.85	1.00	0.00	32.20	125.67	0.00	6,086.8	0.0	1768.05	1087.95	2,856.00
3	50.0	16.60	20.940	28.80	0.00	0.15	2.78	0.85	1.00	0.00	30.00	125.67	0.00	5,194.7	0.0	1880.01	1258.91	3,138.91
4	70.0	18.27	22.213	22.12	0.00	0.15	2.76	0.85	1.00	0.00	29.55	125.67	0.00	4,936.5	0.0	2027.29	1385.94	3,413.23
5	83.4	19.21	0.000	17.99	0.00	0.20	2.59	0.85	1.00	0.00	9.80	42.42	0.00	1,752.5	0.0	663.12	489.93	1,153.05
6	93.4	19.84	10.586	14.61	0.00	0.16	2.74	0.85	1.00	0.00	15.92	82.27	0.00	2,769.6	0.0	1179.25	979.97	2,159.23
7	110.0	20.79	14.081	22.12	0.00	0.17	2.69	0.85	1.00	0.00	22.46	124.58	0.00	3,676.9	0.0	1708.07	1554.93	3,263.00
8	130.0	21.81	11.695	18.58	0.00	0.18	2.66	0.85	1.00	0.00	19.42	123.29	0.00	3,386.0	0.0	1531.36	1603.37	3,134.73
9	150.0	22.72	11.717	15.03	0.00	0.22	2.54	0.85	1.00	0.00	18.28	60.05	0.00	2,531.2	0.0	1435.01	1298.37	2,733.38
10	168.0	23.47	8.438	9.33	0.00	0.22	2.53	0.85	1.00	0.00	12.57	16.14	0.00	1,526.8	0.0	1013.46	401.42	1,414.88
														38,352.9	0.0	26,383.81		

Load Case: 0.9D + 1.6W Normal Wind	0.9D + 1.6W 97 mph Wind at Normal To Face
Wind Load Factor: 1.60	Wind Importance Factor: 1.00
Dead Load Factor: 0.90	
Ice Dead Load Factor: 0.00	Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	14.33	28.639	28.80	0.00	0.14	2.81	1.00	1.00	0.00	41.32	125.67	0.00	4,868.9	0.0	2265.98	1087.03	3,353.01
2	30.0	14.34	22.974	28.80	0.00	0.14	2.81	1.00	1.00	0.00	35.64	125.67	0.00	4,565.1	0.0	1957.29	1087.95	3,045.23
3	50.0	16.60	20.940	28.80	0.00	0.15	2.78	1.00	1.00	0.00	33.15	125.67	0.00	3,896.0	0.0	2076.81	1258.91	3,335.72
4	70.0	18.27	22.213	22.12	0.00	0.15	2.76	1.00	1.00	0.00	32.88	125.67	0.00	3,702.3	0.0	2255.93	1385.94	3,641.87
5	83.4	19.21	0.000	17.99	0.00	0.20	2.59	1.00	1.00	0.00	9.80	42.42	0.00	1,314.4	0.0	663.12	489.93	1,153.05
6	93.4	19.84	10.586	14.61	0.00	0.16	2.74	1.00	1.00	0.00	17.51	82.27	0.00	2,077.2	0.0	1296.87	979.97	2,276.85
7	110.0	20.79	14.081	22.12	0.00	0.17	2.69	1.00	1.00	0.00	24.58	124.58	0.00	2,757.7	0.0	1868.66	1554.93	3,423.60
8	130.0	21.81	11.695	18.58	0.00	0.18	2.66	1.00	1.00	0.00	21.17	123.29	0.00	2,539.5	0.0	1669.70	1603.37	3,273.07
9	150.0	22.72	11.717	15.03	0.00	0.22	2.54	1.00	1.00	0.00	20.03	60.05	0.00	1,898.4	0.0	1573.00	1298.37	2,871.37
10	168.0	23.47	8.438	9.33	0.00	0.22	2.53	1.00	1.00	0.00	13.84	16.14	0.00	1,145.1	0.0	1115.49	401.42	1,516.91
														28,764.7	0.0	27,890.67		

Section Forces

Structure: CT04382-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: New Britain 2, CT	Exposure: B	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II
		Page: 10



Load Case: 0.9D + 1.6W 60° Wind	0.9D + 1.6W 97 mph Wind at 60° From Face
Wind Load Factor: 1.60	Wind Importance Factor: 1.00
Dead Load Factor: 0.90	
Ice Dead Load Factor: 0.00	Ice Importance Factor: 1.00

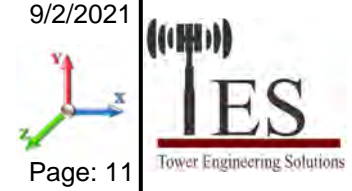
Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	10.0	14.33	28.639	28.80	0.00	0.14	2.81	0.80	1.00	0.00	35.59	125.67	0.00	4,868.9	0.0	1951.84	1087.03	3,038.87
2	30.0	14.34	22.974	28.80	0.00	0.14	2.81	0.80	1.00	0.00	31.05	125.67	0.00	4,565.1	0.0	1704.98	1087.95	2,792.92
3	50.0	16.60	20.940	28.80	0.00	0.15	2.78	0.80	1.00	0.00	28.96	125.67	0.00	3,896.0	0.0	1814.40	1258.91	3,073.31
4	70.0	18.27	22.213	22.12	0.00	0.15	2.76	0.80	1.00	0.00	28.43	125.67	0.00	3,702.3	0.0	1951.08	1385.94	3,337.02
5	83.4	19.21	0.000	17.99	0.00	0.20	2.59	0.80	1.00	0.00	9.80	42.42	0.00	1,314.4	0.0	663.12	489.93	1,153.05
6	93.4	19.84	10.586	14.61	0.00	0.16	2.74	0.80	1.00	0.00	15.39	82.27	0.00	2,077.2	0.0	1140.05	979.97	2,120.02
7	110.0	20.79	14.081	22.12	0.00	0.17	2.69	0.80	1.00	0.00	21.76	124.58	0.00	2,757.7	0.0	1654.53	1554.93	3,209.47
8	130.0	21.81	11.695	18.58	0.00	0.18	2.66	0.80	1.00	0.00	18.83	123.29	0.00	2,539.5	0.0	1485.25	1603.37	3,088.61
9	150.0	22.72	11.717	15.03	0.00	0.22	2.54	0.80	1.00	0.00	17.69	60.05	0.00	1,898.4	0.0	1389.01	1298.37	2,687.38
10	168.0	23.47	8.438	9.33	0.00	0.22	2.53	0.80	1.00	0.00	12.15	16.14	0.00	1,145.1	0.0	979.45	401.42	1,380.87
													28,764.7	0.0	25,881.52			

Load Case: 0.9D + 1.6W 90° Wind	0.9D + 1.6W 97 mph Wind at 90° From Face
Wind Load Factor: 1.60	Wind Importance Factor: 1.00
Dead Load Factor: 0.90	
Ice Dead Load Factor: 0.00	Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	10.0	14.33	28.639	28.80	0.00	0.14	2.81	0.85	1.00	0.00	37.02	125.67	0.00	4,868.9	0.0	2030.37	1087.03	3,117.40
2	30.0	14.34	22.974	28.80	0.00	0.14	2.81	0.85	1.00	0.00	32.20	125.67	0.00	4,565.1	0.0	1768.05	1087.95	2,856.00
3	50.0	16.60	20.940	28.80	0.00	0.15	2.78	0.85	1.00	0.00	30.00	125.67	0.00	3,896.0	0.0	1880.01	1258.91	3,138.91
4	70.0	18.27	22.213	22.12	0.00	0.15	2.76	0.85	1.00	0.00	29.55	125.67	0.00	3,702.3	0.0	2027.29	1385.94	3,413.23
5	83.4	19.21	0.000	17.99	0.00	0.20	2.59	0.85	1.00	0.00	9.80	42.42	0.00	1,314.4	0.0	663.12	489.93	1,153.05
6	93.4	19.84	10.586	14.61	0.00	0.16	2.74	0.85	1.00	0.00	15.92	82.27	0.00	2,077.2	0.0	1179.25	979.97	2,159.23
7	110.0	20.79	14.081	22.12	0.00	0.17	2.69	0.85	1.00	0.00	22.46	124.58	0.00	2,757.7	0.0	1708.07	1554.93	3,263.00
8	130.0	21.81	11.695	18.58	0.00	0.18	2.66	0.85	1.00	0.00	19.42	123.29	0.00	2,539.5	0.0	1531.36	1603.37	3,134.73
9	150.0	22.72	11.717	15.03	0.00	0.22	2.54	0.85	1.00	0.00	18.28	60.05	0.00	1,898.4	0.0	1435.01	1298.37	2,733.38
10	168.0	23.47	8.438	9.33	0.00	0.22	2.53	0.85	1.00	0.00	12.57	16.14	0.00	1,145.1	0.0	1013.46	401.42	1,414.88
													28,764.7	0.0	26,383.81			

Section Forces

Structure: CT04382-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: New Britain 2, CT	Exposure: B	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi Normal Wind	1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face
Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.20	
Ice Dead Load Factor: 1.00	Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	10.0	3.81	28.639	66.92	38.12	0.23	2.51	1.00	1.00	1.77	67.44	196.33	29.58	16,076.	9584.3	547.27	452.50	999.78
2	30.0	3.81	22.974	68.98	40.18	0.24	2.46	1.00	1.00	1.98	63.19	201.83	33.02	16,298.	10211.6	504.26	472.17	976.43
3	50.0	4.41	20.940	68.67	39.87	0.26	2.40	1.00	1.00	2.08	61.33	204.60	34.75	15,751.	10556.5	551.76	554.44	1,106.20
4	70.0	4.86	22.213	69.64	47.52	0.31	2.27	1.00	1.00	2.16	64.12	206.50	35.94	15,962.	11026.3	601.34	608.70	1,210.04
5	83.4	5.10	0.000	33.28	15.29	0.36	2.14	1.00	1.00	2.19	20.93	70.21	10.67	5,780.1	4027.6	194.52	207.70	402.22
6	93.4	5.27	10.586	44.01	29.40	0.33	2.22	1.00	1.00	2.22	37.39	136.77	19.54	9,607.1	6837.5	371.55	418.33	789.88
7	110.0	5.52	14.081	63.84	41.72	0.36	2.15	1.00	1.00	2.26	53.64	208.07	30.08	13,887.	10210.2	541.57	661.89	1,203.46
8	130.0	5.79	11.695	62.14	43.57	0.42	2.02	1.00	1.00	2.29	51.88	207.80	26.76	13,247.	9861.7	516.06	645.29	1,161.35
9	150.0	6.04	11.717	59.43	44.41	0.54	1.85	1.00	1.00	2.33	53.84	117.92	15.51	9,787.0	7255.8	511.33	436.57	947.91
10	168.0	6.23	8.438	42.77	33.44	0.59	1.81	1.00	1.00	2.35	40.03	45.05	8.63	5,543.8	4017.0	383.85	167.24	551.09
													121,941.4	83588.5	9,348.35			

Load Case: 1.2D + 1.0Di + 1.0Wi 60° Wind	1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face
Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.20	
Ice Dead Load Factor: 1.00	Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	10.0	3.81	28.639	66.92	38.12	0.23	2.51	0.80	1.00	1.77	61.71	196.33	29.58	16,076.	9584.3	500.79	452.50	953.29
2	30.0	3.81	22.974	68.98	40.18	0.24	2.46	0.80	1.00	1.98	58.59	201.83	33.02	16,298.	10211.6	467.60	472.17	939.76
3	50.0	4.41	20.940	68.67	39.87	0.26	2.40	0.80	1.00	2.08	57.14	204.60	34.75	15,751.	10556.5	514.09	554.44	1,068.53
4	70.0	4.86	22.213	69.64	47.52	0.31	2.27	0.80	1.00	2.16	59.68	206.50	35.94	15,962.	11026.3	559.67	608.70	1,168.38
5	83.4	5.10	0.000	33.28	15.29	0.36	2.14	0.80	1.00	2.19	20.93	70.21	10.67	5,780.1	4027.6	194.52	207.70	402.22
6	93.4	5.27	10.586	44.01	29.40	0.33	2.22	0.80	1.00	2.22	35.27	136.77	19.54	9,607.1	6837.5	350.51	418.33	768.84
7	110.0	5.52	14.081	63.84	41.72	0.36	2.15	0.80	1.00	2.26	50.82	208.07	30.08	13,887.	10210.2	513.14	661.89	1,175.03
8	130.0	5.79	11.695	62.14	43.57	0.42	2.02	0.80	1.00	2.29	49.54	207.80	26.76	13,247.	9861.7	492.79	645.29	1,138.08
9	150.0	6.04	11.717	59.43	44.41	0.54	1.85	0.80	1.00	2.33	51.50	117.92	15.51	9,787.0	7255.8	489.07	436.57	925.65
10	168.0	6.23	8.438	42.77	33.44	0.59	1.81	0.80	1.00	2.35	38.34	45.05	8.63	5,543.8	4017.0	367.67	167.24	534.90
													121,941.4	83588.5	9,074.68			

Section Forces

Structure: CT04382-S-SBA
Site Name: New Britain 2, CT
Height: 176.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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Load Case: 1.2D + 1.0Di + 1.0Wi 90° Wind

1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face

Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.20	
Ice Dead Load Factor: 1.00	Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	10.0	3.81	28.639	66.92	38.12	0.23	2.51	0.85	1.00	1.77	63.14	196.33	29.58	16,076.	9584.3	512.41	452.50	964.91
2	30.0	3.81	22.974	68.98	40.18	0.24	2.46	0.85	1.00	1.98	59.74	201.83	33.02	16,298.	10211.6	476.76	472.17	948.93
3	50.0	4.41	20.940	68.67	39.87	0.26	2.40	0.85	1.00	2.08	58.19	204.60	34.75	15,751.	10556.5	523.51	554.44	1,077.95
4	70.0	4.86	22.213	69.64	47.52	0.31	2.27	0.85	1.00	2.16	60.79	206.50	35.94	15,962.	11026.3	570.09	608.70	1,178.79
5	83.4	5.10	0.000	33.28	15.29	0.36	2.14	0.85	1.00	2.19	20.93	70.21	10.67	5,780.1	4027.6	194.52	207.70	402.22
6	93.4	5.27	10.586	44.01	29.40	0.33	2.22	0.85	1.00	2.22	35.80	136.77	19.54	9,607.1	6837.5	355.77	418.33	774.10
7	110.0	5.52	14.081	63.84	41.72	0.36	2.15	0.85	1.00	2.26	51.52	208.07	30.08	13,887.	10210.2	520.25	661.89	1,182.14
8	130.0	5.79	11.695	62.14	43.57	0.42	2.02	0.85	1.00	2.29	50.12	207.80	26.76	13,247.	9861.7	498.61	645.29	1,143.90
9	150.0	6.04	11.717	59.43	44.41	0.54	1.85	0.85	1.00	2.33	52.08	117.92	15.51	9,787.0	7255.8	494.64	436.57	931.21
10	168.0	6.23	8.438	42.77	33.44	0.59	1.81	0.85	1.00	2.35	38.77	45.05	8.63	5,543.8	4017.0	371.71	167.24	538.95
														121,941.4	83588.5			

Load Case: 1.0D + 1.0W Normal Wind

1.0D + 1.0W 60 mph Wind at Normal To Face

Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.00	
Ice Dead Load Factor: 0.00	Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	10.0	5.48	28.639	28.80	0.00	0.14	2.81	1.00	1.00	0.00	44.39	125.67	0.00	5,409.8	0.0	582.18	259.94	842.12
2	30.0	5.49	22.974	28.80	0.00	0.14	2.81	1.00	1.00	0.00	38.72	125.67	0.00	5,072.4	0.0	508.45	260.16	768.62
3	50.0	6.35	20.940	28.80	0.00	0.15	2.78	1.00	1.00	0.00	36.36	125.67	0.00	4,328.9	0.0	544.84	301.05	845.89
4	70.0	6.99	22.213	22.12	0.00	0.15	2.76	1.00	1.00	0.00	34.78	125.67	0.00	4,113.7	0.0	570.61	331.42	902.04
5	83.4	7.35	0.000	17.99	0.00	0.20	2.59	1.00	1.00	0.00	10.58	42.42	0.00	1,460.5	0.0	171.24	117.16	288.40
6	93.4	7.59	10.586	14.61	0.00	0.16	2.74	1.00	1.00	0.00	18.85	82.27	0.00	2,308.0	0.0	333.85	234.34	568.19
7	110.0	7.96	14.081	22.12	0.00	0.17	2.69	1.00	1.00	0.00	26.56	124.58	0.00	3,064.1	0.0	482.97	371.84	854.81
8	130.0	8.34	11.695	18.58	0.00	0.18	2.66	1.00	1.00	0.00	22.31	123.29	0.00	2,821.6	0.0	420.75	383.42	804.17
9	150.0	8.69	11.717	15.03	0.00	0.22	2.54	1.00	1.00	0.00	20.40	60.05	0.00	2,109.3	0.0	382.96	310.48	693.44
10	168.0	8.98	8.438	9.33	0.00	0.22	2.53	1.00	1.00	0.00	13.84	16.14	0.00	1,272.4	0.0	266.75	95.99	362.74
														31,960.7	0.0			

Section Forces

Structure: CT04382-S-SBA
Site Name: New Britain 2, CT
Height: 176.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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Load Case: 1.0D + 1.0W 60° Wind	1.0D + 1.0W 60 mph Wind at 60° From Face
Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.00	
Ice Dead Load Factor: 0.00	Ice Importance Factor: 1.00

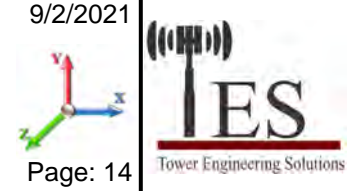
Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	10.0	5.48	28.639	28.80	0.00	0.14	2.81	0.80	1.00	0.00	38.66	125.67	0.00	5,409.8	0.0	507.05	259.94	767.00
2	30.0	5.49	22.974	28.80	0.00	0.14	2.81	0.80	1.00	0.00	34.13	125.67	0.00	5,072.4	0.0	448.12	260.16	708.28
3	50.0	6.35	20.940	28.80	0.00	0.15	2.78	0.80	1.00	0.00	32.17	125.67	0.00	4,328.9	0.0	482.09	301.05	783.14
4	70.0	6.99	22.213	22.12	0.00	0.15	2.76	0.80	1.00	0.00	30.33	125.67	0.00	4,113.7	0.0	497.72	331.42	829.14
5	83.4	7.35	0.000	17.99	0.00	0.20	2.59	0.80	1.00	0.00	10.58	42.42	0.00	1,460.5	0.0	171.24	117.16	288.40
6	93.4	7.59	10.586	14.61	0.00	0.16	2.74	0.80	1.00	0.00	16.73	82.27	0.00	2,308.0	0.0	296.35	234.34	530.69
7	110.0	7.96	14.081	22.12	0.00	0.17	2.69	0.80	1.00	0.00	23.75	124.58	0.00	3,064.1	0.0	431.76	371.84	803.60
8	130.0	8.34	11.695	18.58	0.00	0.18	2.66	0.80	1.00	0.00	19.97	123.29	0.00	2,821.6	0.0	376.64	383.42	760.06
9	150.0	8.69	11.717	15.03	0.00	0.22	2.54	0.80	1.00	0.00	18.05	60.05	0.00	2,109.3	0.0	338.96	310.48	649.44
10	168.0	8.98	8.438	9.33	0.00	0.22	2.53	0.80	1.00	0.00	12.15	16.14	0.00	1,272.4	0.0	234.22	95.99	330.21
													31,960.7	0.0	6,449.96			

Load Case: 1.0D + 1.0W 90° Wind	1.0D + 1.0W 60 mph Wind at 90° From Face
Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.00	
Ice Dead Load Factor: 0.00	Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	10.0	5.48	28.639	28.80	0.00	0.14	2.81	0.85	1.00	0.00	40.09	125.67	0.00	5,409.8	0.0	525.83	259.94	785.78
2	30.0	5.49	22.974	28.80	0.00	0.14	2.81	0.85	1.00	0.00	35.27	125.67	0.00	5,072.4	0.0	463.20	260.16	723.37
3	50.0	6.35	20.940	28.80	0.00	0.15	2.78	0.85	1.00	0.00	33.22	125.67	0.00	4,328.9	0.0	497.78	301.05	798.83
4	70.0	6.99	22.213	22.12	0.00	0.15	2.76	0.85	1.00	0.00	31.44	125.67	0.00	4,113.7	0.0	515.94	331.42	847.36
5	83.4	7.35	0.000	17.99	0.00	0.20	2.59	0.85	1.00	0.00	10.58	42.42	0.00	1,460.5	0.0	171.24	117.16	288.40
6	93.4	7.59	10.586	14.61	0.00	0.16	2.74	0.85	1.00	0.00	17.26	82.27	0.00	2,308.0	0.0	305.72	234.34	540.07
7	110.0	7.96	14.081	22.12	0.00	0.17	2.69	0.85	1.00	0.00	24.45	124.58	0.00	3,064.1	0.0	444.57	371.84	816.40
8	130.0	8.34	11.695	18.58	0.00	0.18	2.66	0.85	1.00	0.00	20.56	123.29	0.00	2,821.6	0.0	387.67	383.42	771.09
9	150.0	8.69	11.717	15.03	0.00	0.22	2.54	0.85	1.00	0.00	18.64	60.05	0.00	2,109.3	0.0	349.96	310.48	660.44
10	168.0	8.98	8.438	9.33	0.00	0.22	2.53	0.85	1.00	0.00	12.57	16.14	0.00	1,272.4	0.0	242.35	95.99	338.34
													31,960.7	0.0	6,570.08			

Force/Stress Compression Summary

Structure: CT04382-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: New Britain 2, CT	Exposure: B	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II
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LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
						X	Y	Z				
1	20	PX - 8" DIA PIPE	-269.29	1.2D + 1.6W Normal Wind	9.64	100	100	100	40.20	510.21	52.8	Member X
2	40	PX - 8" DIA PIPE	-245.02	1.2D + 1.6W Normal Wind	9.64	100	100	100	40.20	510.21	48.0	Member X
3	60	PSP - ROHN 8 EHS	-218.66	1.2D + 1.6W Normal Wind	9.64	100	100	100	39.62	389.96	56.1	Member X
4	80	PX - 6" DIA PIPE	-193.26	1.2D + 1.6W Normal Wind	6.43	100	100	100	35.22	345.22	56.0	Member X
5	86.79	PX - 5" DIA PIPE	-164.29	1.2D + 1.6W Normal Wind	6.43	100	100	100	35.22	345.22	47.6	Member X
6	100	PX - 6" DIA PIPE	-154.48	1.2D + 1.6W Normal Wind	6.43	100	100	100	35.22	345.23	44.7	Member X
7	120	PSP - ROHN 6 EHS	-131.81	1.2D + 1.6W Normal Wind	6.43	100	100	100	34.66	276.68	47.6	Member X
8	140	PX - 5" DIA PIPE	-96.67	1.2D + 1.6W Normal Wind	4.82	100	100	100	31.44	255.78	37.8	Member X
9	160	PX - 4" DIA PIPE	-59.16	1.2D + 1.6W Normal Wind	0.38	100	100	100	3.05	198.32	29.8	Member X
10	176	PX - 3" DIA PIPE	-20.14	1.2D + 1.6W Normal Wind	0.38	100	100	100	3.95	135.75	14.8	Member X

Splices

Sect	Top Elev	Load Case	Top Splice				Load Case	Bottom Splice				
			Force (kips)	Cap (kips)	Use %	Bolt Type		Num Bolts	Force (kips)	Cap (kips)	Use %	Bolt Type
1	20	1.2D + 1.6W Normal Wind	252.51	0.00	0.0		1.2D + 1.6W Normal Wind	275.87	0.00			
2	40	1.2D + 1.6W Normal Wind	226.44	0.00	0.0		1.2D + 1.6W Normal Wind	252.51	0.00		1 A325	8
3	60	1.2D + 1.6W Normal Wind	198.77	0.00	0.0		1.2D + 1.6W Normal Wind	226.44	0.00		1 A325	8
4	80	1.2D + 1.6W Normal Wind	170.57	0.00	0.0		1.2D + 1.6W Normal Wind	198.77	0.00		1 A325	8
5	86.79	1.2D + 1.6W Normal Wind	158.94	0.00	0.0		1.2D + 1.6W Normal Wind	170.57	0.00		1 A325	6
6	100	1.2D + 1.6W Normal Wind	138.49	0.00	0.0		1.2D + 1.6W Normal Wind	158.94	0.00		1 A325	6
7	120	1.2D + 1.6W Normal Wind	102.32	0.00	0.0		1.2D + 1.6W Normal Wind	138.49	0.00		1 A325	6
8	140	1.2D + 1.6W Normal Wind	60.31	0.00	0.0		1.2D + 1.6W Normal Wind	102.32	0.00		1 A325	6
9	160	1.2D + 1.6W Normal Wind	20.49	0.00	0.0		1.2D + 1.6W Normal Wind	60.31	0.00		1 A325	4
10	176	1.2D + 1.0Di + 1.0Wi Normal Wi	2.46	0.00	0.0		1.2D + 1.6W Normal Wind	20.49	0.00		7/8 A325	4

HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Bear		Use %	Controls
						X	Y	Z					Cap (kips)	Cap (kips)		
1	20								0.00	0	0					
2	40								0.00	0	0					
3	60								0.00	0	0					
4	80								0.00	0	0					
5	86.7								0.00	0	0					
6	100								0.00	0	0					
7	120								0.00	0	0					
8	140								0.00	0	0					
9	160	SAE - 2X2X0.1875	-0.29	1.2D + 1.6W Normal Wind	4.76	100	100	100	144.97	36.00	7.63	1	1	12.43	7.84	4 Member Z
10	176	SAE - 2X2X0.25	-0.27	1.2D + 1.6W 60° Wind	4.69	100	100	100	143.88	36.00	10.26	1	1	12.43	10.45	3 Member Z

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Bear		Use %	Controls
						X	Y	Z					Cap (kips)	Cap (kips)		
1	20	SAE - 4X4X0.25	-7.41	0.9D + 1.6W 90° Wind	21.76	50	50	50	164.26	36.00	16.24	1	1	17.89	12.6	59 Bolt Bear
2	40	SAE - 3.5X3.5X0.25	-7.06	1.2D + 1.6W 90° Wind	20.84	50	50	50	180.15	36.00	11.76	1	1	17.89	12.6	60 Member Z
3	60	SAE - 3.5X3.5X0.25	-7.14	1.2D + 1.6W 90° Wind	18.25	50	50	50	157.82	36.00	15.33	1	1	17.89	12.6	57 Bolt Bear
4	80	SAE - 3X3X0.25	-6.21	1.2D + 1.6W 90° Wind	14.76	50	50	50	149.57	36.00	14.54	1	1	17.89	12.6	49 Bolt Bear
5	86.7	MOD - 2L2.5x2.5x3/16	-6.26	1.2D + 1.6W 90° Wind	14.10	50	50	8	113.59	36.00	29.91	1	1	12.43		50 Bolt Shear
6	100	SAE - 2.5X2.5X0.1875	-6.42	1.2D + 1.6W 90° Wind	12.97	50	50	50	157.27	36.00	8.24	1	1	12.43	7.84	82 Bolt Bear

Force/Stress Compression Summary

Structure: CT04382-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: New Britain 2, CT	Exposure: B	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap		Bear Cap (kips)	Use %	Controls
						X	Y	Z					(kips)	(kips)			
7	120	SAE - 2.5X2.5X0.1875	-6.58	1.2D + 1.6W 90° Wind	11.28	50	50	50	136.73	36.00	10.90	1	12.43	7.84	84	Bolt Bear	
8	140	SAE - 2X2X0.1875	-5.64	1.2D + 1.6W 90° Wind	9.88	50	50	50	150.45	36.00	7.09	1	12.43	7.84	80	Member Z	
9	160	SAE - 2X2X0.1875	-4.23	1.2D + 1.6W 90° Wind	7.64	50	50	50	117.23	36.00	11.16	1	12.43	7.84	54	Bolt Bear	
10	176	SAE - 2X2X0.25	-3.97	1.2D + 1.6W 90° Wind	6.09	50	50	50	100.10	36.00	17.97	1	12.43	10.4	38	Bolt Bear	

Force/Stress Tension Summary

Structure: CT04382-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: New Britain 2, CT	Exposure: B	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	20	PX - 8" DIA PIPE	235.67	0.9D + 1.6W 60° Wind	50	574.20	41.0	Member
2	40	PX - 8" DIA PIPE	216.23	0.9D + 1.6W 60° Wind	50	574.20	37.7	Member
3	60	PSP - ROHN 8 EHS	194.93	0.9D + 1.6W 60° Wind	50	437.40	44.6	Member
4	80	PX - 6" DIA PIPE	171.62	0.9D + 1.6W 60° Wind	50	378.00	45.4	Member
5	86.792	PX - 6" DIA PIPE	147.46	0.9D + 1.6W 60° Wind	50	378.00	39.0	Member
6	100	PX - 6" DIA PIPE	133.35	0.9D + 1.6W 60° Wind	50	378.00	35.3	Member
7	120	PSP - ROHN 6 EHS	119.18	0.9D + 1.6W 60° Wind	50	302.09	39.5	Member
8	140	PX - 5" DIA PIPE	86.27	0.9D + 1.6W 60° Wind	50	274.95	31.4	Member
9	160	PX - 4" DIA PIPE	49.07	0.9D + 1.6W 60° Wind	50	198.45	24.7	Member
10	176	PX - 3" DIA PIPE	14.33	0.9D + 1.6W 60° Wind	50	135.90	10.5	Member

Splices

Sect	Top Elev	Top Splice					Bottom Splice						
		Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	20	0.9D + 1.6W 60° Wind	215.92	0.00	0.0			0.9D + 1.6W 60° Wind	235.6	0.00			
2	40	0.9D + 1.6W 60° Wind	194.56	0.00	0.0			0.9D + 1.6W 60° Wind	215.9	424.08	50.9	1 A325	8
3	60	0.9D + 1.6W 60° Wind	171.29	0.00	0.0			0.9D + 1.6W 60° Wind	194.5	424.08	45.9	1 A325	8
4	80	0.9D + 1.6W 60° Wind	147.24	0.00	0.0			0.9D + 1.6W 60° Wind	171.2	424.08	40.4	1 A325	8
5	86.792	0.9D + 1.6W 60° Wind	137.07	0.00	0.0			0.9D + 1.6W 60° Wind	147.2	318.06	46.3	1 A325	6
6	100	0.9D + 1.6W 60° Wind	118.96	0.00	0.0			0.9D + 1.6W 60° Wind	137.0	318.06	43.1	1 A325	6
7	120	0.9D + 1.6W 60° Wind	86.09	0.00	0.0			0.9D + 1.6W 60° Wind	118.9	318.06	37.4	1 A325	6
8	140	0.9D + 1.6W 60° Wind	48.34	0.00	0.0			0.9D + 1.6W 60° Wind	86.09	318.06	27.1	1 A325	6
9	160	0.9D + 1.6W 60° Wind	14.46	0.00	0.0			0.9D + 1.6W 60° Wind	48.34	212.04	22.8	1 A325	4
10	176		0.00	0.00	0.0			0.9D + 1.6W 60° Wind	14.46	166.24	8.7	7/8 A325	4

HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	20	-			36	0.00	0	0					
2	40	-			36	0.00	0	0					
3	60	-			36	0.00	0	0					
4	80	-			36	0.00	0	0					
5	86.792	-			36	0.00	0	0					
6	100	-			36	0.00	0	0					
7	120	-			36	0.00	0	0					
8	140	-			36	0.00	0	0					
9	160	SAE - 2X2X0.1875	0.30	1.2D + 1.6W 60° Wind	36	23.00	1	1	12.43	7.84	7.85	3.9	Bolt Bear
10	176	SAE - 2X2X0.25	0.40	0.9D + 1.6W Normal Wi	36	30.46	1	1	12.43	10.45	10.47	3.8	Bolt Bear

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	20	SAE - 4X4X0.25	7.28	0.9D + 1.6W 90° Wind	36	62.86	1	1	17.89	12.62	26.92	57.7	Bolt Bear
2	40	SAE - 3.5X3.5X0.25	7.08	0.9D + 1.6W 90° Wind	36	54.76	1	1	17.89	12.62	21.48	56.1	Bolt Bear
3	60	SAE - 3.5X3.5X0.25	6.94	0.9D + 1.6W 90° Wind	36	54.76	1	1	17.89	12.62	21.48	55.0	Bolt Bear
4	80	SAE - 3X3X0.25	6.08	0.9D + 1.6W 90° Wind	36	46.66	1	1	17.89	12.62	16.04	48.2	Bolt Bear
5	86.792	MOD - 2L2.5x2.5x3/16_Spec	6.13	1.2D + 1.6W 90° Wind	36	59.00	1	1	12.43			49.4	Bolt Shear
6	100	SAE - 2.5X2.5X0.1875	6.31	1.2D + 1.6W 90° Wind	36	29.22	1	1	12.43	7.84	9.89	80.5	Bolt Bear
7	120	SAE - 2.5X2.5X0.1875	6.44	1.2D + 1.6W 90° Wind	36	29.22	1	1	12.43	7.84	9.89	82.1	Bolt Bear

Force/Stress Tension Summary

Structure: CT04382-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: New Britain 2, CT	Exposure: B	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
8	140	SAE - 2X2X0.1875	5.72	1.2D + 1.6W 90° Wind	36	23.00	1	1	12.43	7.84	7.85	73.0	Bolt Bear
9	160	SAE - 2X2X0.1875	4.19	1.2D + 1.6W 90° Wind	36	23.00	1	1	12.43	7.84	7.85	53.4	Bolt Bear
10	176	SAE - 2X2X0.25	3.84	0.9D + 1.6W 90° Wind	36	30.46	1	1	12.43	10.45	10.47	36.8	Bolt Bear

Seismic Section Forces

Structure: CT04382-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: New Britain 2, CT	Exposure: B	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E

Dead Load Factor	1.20	Sds 0.195	Ss 0.1830	Fa 1.6000	Ke 0.0000
Seismic Load Factor	1.00	Sd1 0.102	S1 0.0640	Fv 2.4000	Kg 0.0000
Seismic Importance Factor	1.00	SA 0.172	R 3.0000	Vs 3.1196	f1 1.6845

Sect #	Elev (ft)	Wz (lb)	Lateral			Fsz (lb)
			a	b	c	
1	10.00	5409.8	0.01	0.05	0.03	20.50
2	30.00	5072.3	0.05	0.07	0.04	41.61
3	50.00	4328.9	0.15	0.07	0.03	58.47
4	70.00	4113.7	0.30	0.05	0.01	83.88
5	83.40	1470.4	0.42	0.01	0.01	36.86
6	93.40	2308.0	0.53	-0.03	0.01	65.55
7	110.00	3064.0	0.74	-0.10	0.04	105.51
8	130.00	6933.8	1.03	-0.10	0.15	330.02
9	150.00	5110.2	1.37	0.23	0.40	399.21
10	168.00	7380.6	1.72	1.21	0.85	960.64

Load Case: 0.9D + 1.0E

Dead Load Factor	0.90	Sds 0.195	Ss 0.1830	Fa 1.6000	Ke 0.0000
Seismic Load Factor	1.00	Sd1 0.102	S1 0.0640	Fv 2.4000	Kg 0.0000
Seismic Importance Factor	1.00	SA 0.172	R 3.0000	Vs 3.1196	f1 1.6845

Sect #	Elev (ft)	Wz (lb)	Lateral			Fsz (lb)
			a	b	c	
1	10.00	5409.8	0.01	0.05	0.03	20.50
2	30.00	5072.3	0.05	0.07	0.04	41.61
3	50.00	4328.9	0.15	0.07	0.03	58.47
4	70.00	4113.7	0.30	0.05	0.01	83.88
5	83.40	1470.4	0.42	0.01	0.01	36.86
6	93.40	2308.0	0.53	-0.03	0.01	65.55
7	110.00	3064.0	0.74	-0.10	0.04	105.51
8	130.00	6933.8	1.03	-0.10	0.15	330.02
9	150.00	5110.2	1.37	0.23	0.40	399.21
10	168.00	7380.6	1.72	1.21	0.85	960.64

Support Forces Summary

Structure: CT04382-S-SBA
Site Name: New Britain 2, CT
Height: 176.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

9/2/2021

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Load Case	Node	FX (kips)	FY (kips)	FZ (kips)	(-) = Uplift (+) = Down
1.2D + 1.6W Normal Wind	1	-0.01	275.24	-26.62	
	1a	8.88	-110.51	-7.96	
	1b	-8.88	-110.50	-7.97	
1.2D + 1.6W 60° Wind	1	-2.23	142.26	-13.32	
	1a	-12.65	142.17	4.73	
	1b	-20.23	-230.20	-11.68	
1.2D + 1.6W 90° Wind	1	-2.65	18.08	-1.12	
	1a	-20.12	234.97	10.11	
	1b	-18.27	-198.82	-8.99	
0.9D + 1.6W Normal Wind	1	-0.01	270.37	-26.32	
	1a	9.13	-114.85	-8.10	
	1b	-9.12	-114.84	-8.11	
0.9D + 1.6W 60° Wind	1	-2.24	137.57	-13.03	
	1a	-12.40	137.49	4.58	
	1b	-20.47	-234.38	-11.82	
0.9D + 1.6W 90° Wind	1	-2.66	13.56	-0.83	
	1a	-19.87	230.15	9.96	
	1b	-18.52	-203.04	-9.13	
1.2D + 1.0Di + 1.0Wi Normal Wind	1	0.00	133.87	-8.17	
	1a	2.91	14.18	-2.55	
	1b	-2.91	14.22	-2.55	
1.2D + 1.0Di + 1.0Wi 60° Wind	1	-0.73	93.29	-4.10	
	1a	-3.91	93.26	1.42	
	1b	-6.59	-24.29	-3.81	
1.2D + 1.0Di + 1.0Wi 90° Wind	1	-0.85	54.08	-0.20	
	1a	-6.27	122.39	3.13	
	1b	-5.94	-14.20	-2.94	
1.2D + 1.0E	1	0.00	34.38	4.61	
	1a	5.71	9.92	-3.35	
	1b	-5.71	9.92	-3.35	
0.9D + 1.0E	1	0.00	29.84	4.91	
	1a	5.97	5.42	-3.49	
	1b	-5.97	5.42	-3.49	
1.0D + 1.0W Normal Wind	1	0.00	77.23	-7.19	
	1a	1.56	-16.02	-1.60	
	1b	-1.56	-16.01	-1.61	
1.0D + 1.0W 60° Wind	1	-0.56	45.09	-3.94	
	1a	-3.70	45.07	1.48	
	1b	-4.33	-44.96	-2.50	
1.0D + 1.0W 90° Wind	1	-0.66	15.06	-0.96	
	1a	-5.52	67.50	2.80	
	1b	-3.86	-37.37	-1.84	

Max Reactions

Leg		Overturning	
Max Uplift:	-234.38 (kips)	Moment:	4676.88 (ft-kips)
Max Down:	275.24 (kips)	Total Down:	54.23 (kips)
Max Shear:	26.62 (kips)	Total Shear:	42.54 (kips)

Analysis Summary

Structure: CT04382-S-SBA	Code: EIA/TIA-222-G	9/2/2021
Site Name: New Britain 2, CT	Exposure: B	
Height: 176.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II
		Page: 21



Max Reactions

	Leg	Overturning
Max Uplift:	-234.38 (kips)	Moment: 4676.88 (ft-kips)
Max Down:	275.24 (kips)	Total Down: 54.23 (kips)
Max Shear:	26.62 (kips)	Total Shear: 42.54 (kips)

Anchor Bolts

Bolt Size (in.): 1.00	Number Bolts: 10
Yield Strength (Ksi): 109.00	Tensile Strength (Ksi): 125.00
Detail Type: C	

Interaction Ratio: 0.47


Max Usages

Max Leg: 56.1% (1.2D + 1.6W Normal Wind - Sect 3)
 Max Diag: 84.0% (1.2D + 1.6W 90° Wind - Sect 7)
 Max Horiz: 3.9% (1.2D + 1.6W 60° Wind - Sect 9)

Max Deflection, Twist and Sway

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
0.9D + 1.0E - Normal To Face	80.38	0.0164	0.0009	0.0247
	130.00	0.0453	-0.0015	0.0462
	140.00	0.0537	-0.0017	0.0544
	151.93	0.0647	-0.0015	0.0570
	164.19	0.0773	-0.0016	0.0594
	176.00	0.0900	-0.0016	0.0641
0.9D + 1.6W 97 mph Wind at 60° From Face	80.38	0.2208	0.0157	0.3540
	130.00	0.6149	0.0256	0.5881
	140.00	0.7209	0.0286	0.6807
	151.93	0.8563	0.0272	0.6753
	164.19	1.0048	0.0302	0.6872
	176.00	1.1494	0.0339	0.7256
0.9D + 1.6W 97 mph Wind at 90° From Face	80.38	0.2223	-0.0170	0.3525
	130.00	0.6191	-0.0268	0.5896
	140.00	0.7258	-0.0296	0.6775
	151.93	0.8619	-0.0268	0.6776
	164.19	1.0113	-0.0283	0.6940
	176.00	1.1564	-0.0293	0.7057
0.9D + 1.6W 97 mph Wind at Normal To Face	80.38	0.2281	0.0137	0.3654
	130.00	0.6329	0.0212	0.6036
	140.00	0.7420	0.0232	0.6981
	151.93	0.8810	0.0203	0.6930
	164.19	1.0337	0.0207	0.7060
	176.00	1.1826	0.0197	0.8046

1.0D + 1.0W 60 mph Wind at 60° From Face	80.38	0.0533	0.0035	0.0855
	130.00	0.1480	0.0055	0.1411
	140.00	0.1735	0.0061	0.1636
	151.93	0.2060	0.0054	0.1618
	164.19	0.2416	0.0057	0.1645
	176.00	0.2761	0.0059	0.1740
1.0D + 1.0W 60 mph Wind at 90° From Face	80.38	0.0538	-0.0041	0.0850
	130.00	0.1491	-0.0064	0.1415
	140.00	0.1747	-0.0070	0.1628
	151.93	0.2074	-0.0063	0.1624
	164.19	0.2432	-0.0067	0.1662
	176.00	0.2779	-0.0069	0.1693
1.0D + 1.0W 60 mph Wind at Normal To Face	80.38	0.0552	0.0033	0.0880
	130.00	0.1526	0.0051	0.1449
	140.00	0.1787	0.0056	0.1670
	151.93	0.2120	0.0049	0.1662
	164.19	0.2486	0.0049	0.1694
	176.00	0.2843	0.0047	0.1924
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face	80.38	0.0708	0.0046	0.1117
	130.00	0.1927	0.0071	0.1812
	140.00	0.2253	0.0078	0.2106
	151.93	0.2669	0.0071	0.2081
	164.19	0.3125	0.0074	0.2118
	176.00	0.3574	0.0077	0.2268
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face	80.38	0.0710	-0.0053	0.1108
	130.00	0.1937	-0.0082	0.1819
	140.00	0.2265	-0.0090	0.2094
	151.93	0.2683	-0.0082	0.2091
	164.19	0.3142	-0.0087	0.2144
	176.00	0.3592	-0.0090	0.2215
1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face	80.38	0.0712	0.0043	0.1128
	130.00	0.1954	0.0065	0.1842
	140.00	0.2286	0.0071	0.2106
	151.93	0.2709	0.0063	0.2118
	164.19	0.3174	0.0064	0.2164
	176.00	0.3631	0.0062	0.2460
1.2D + 1.0E - Normal To Face	80.38	0.0164	0.0009	0.0247
	130.00	0.0454	0.0015	0.0463
	140.00	0.0538	0.0017	0.0544
	151.93	0.0648	0.0015	0.0572
	164.19	0.0774	0.0016	0.0595
	176.00	0.0902	0.0016	0.0641
1.2D + 1.6W 97 mph Wind at 60° From Face	80.38	0.2212	0.0157	0.3547
	130.00	0.6160	0.0257	0.5895
	140.00	0.7222	0.0287	0.6825
	151.93	0.8580	0.0272	0.6769
	164.19	1.0069	0.0303	0.6888
	176.00	1.1518	0.0340	0.7276
1.2D + 1.6W 97 mph Wind at 90° From Face	80.38	0.2226	-0.0170	0.3531
	130.00	0.6202	-0.0268	0.5909
	140.00	0.7272	-0.0297	0.6792
	151.93	0.8637	-0.0268	0.6793
	164.19	1.0134	-0.0283	0.6956
	176.00	1.1588	-0.0294	0.7076
1.2D + 1.6W 97 mph Wind at Normal To Face	80.38	0.2285	0.0137	0.3661
	130.00	0.6341	0.0212	0.6050
	140.00	0.7435	0.0233	0.6997
	151.93	0.8828	0.0204	0.6947
	164.19	1.0358	0.0207	0.7078
	176.00	1.1851	0.0198	0.8064

	Mat Foundation Design for Self Supporting Tower			Date
				9/2/2021
	Customer Name:	SBA Communications Corp	EIA/TIA Standard:	EIA-222-G
	Site Name:		Structure Height (Ft.):	176
	Site Nmber:	CT04382-S-SBA	Engineer Name:	T. Alajaj
Engr. Number:	114603	Engineer Login ID:		

Foundation Info Obtained from:

Analysis or Design?

Number of Tower Legs:

Base Reactions (Factored):

(1). Individual Leg:

Axial Load (Kips):	275.2	Uplift Force (Kips):	234.4
Shear Force (Kips):	26.6		

(2). Tower Base:

Total Vertical Load (Kips):	54.2	Total Shear Force (Kips):	42.5
Moment (Kips-ft):	4676.9		

Foundation Geometries:

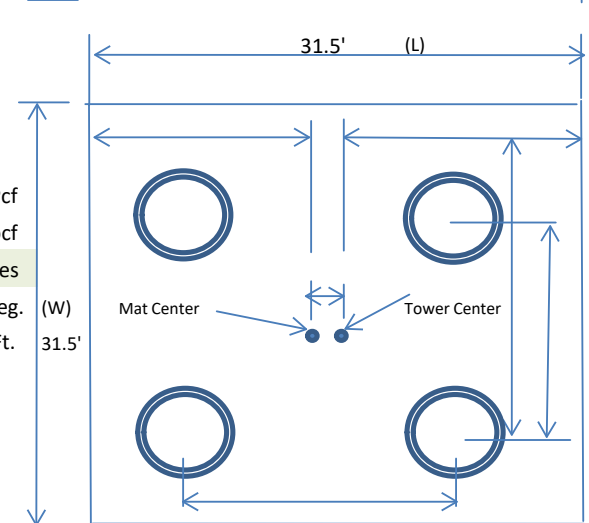
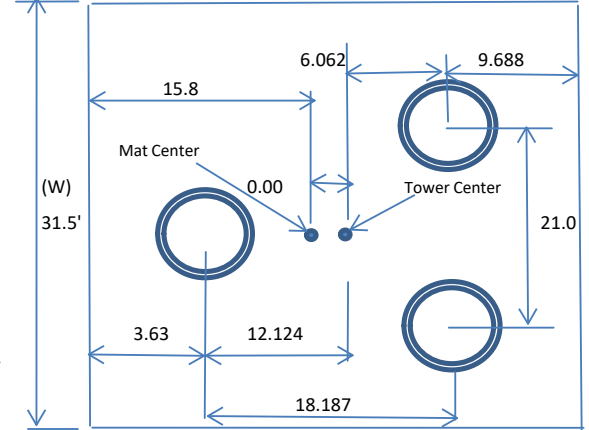
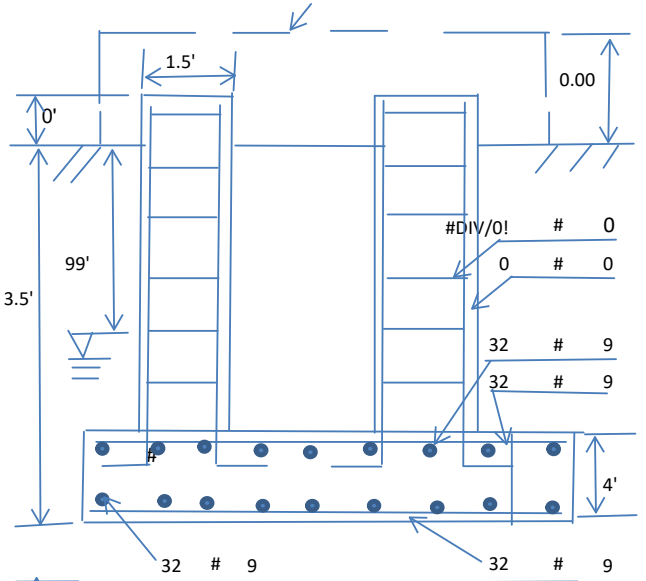
Leg distance (Center-to-Center ft.):	21.0	Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	Round 1.5	Pier Height A. G. (ft.):	0.00
Tower center to mat center (ft):	0	Depth of Base BG (ft.):	3.5
Length of Pad (ft.):	31.5	Width of Pad (ft.):	31.5
Thickness of Pad (ft):	4.00		

Material Properties and Rebar Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)		Tie steel yield (ksi):	60	
Vertical Rebar Size #:		Tie / Stirrup Size #:		
Qty. of Vertical Rebars:		Tie Spacing (in):		
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	32	Qty. of Rebar in Pad (W):	32	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	32	Qty. of Rebar in Pad (W):	32	

Soil Design Parameters:

Soil Unit Weight (pcf):	115.0	Soil Buoyant Weight:	50.0	Pcf
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	10000	Consider ties in concrete shear strength:	Yes	
Consider Soil Lateral Resistance ?	Yes	Enter soil C (psf) or Phi (deg.):	30.0	Deg. (W)
		Depth to ignor lateral resistance	1.0	Ft. (W)



Apply 1.35 for e/w per G/H: 1.35

Foundation Analysis and Design:	Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	1.97	Total Dry Soil Weight (Kips):	0.23	
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00	
Total Effective Soil Weight (Kips):	0.23	Weight from the Concrete Block at Top (K):	0.00	
Total Dry Concrete Volume (cu. Ft.):	3969.04	Total Dry Concrete Weight (Kips):	595.36	
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00	
Total Effective Concrete Weight (Kips):	595.36	Total Vertical Load on Base (Kips):	649.81	

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	1732.34	<	Allowable Factored Soil Bearing (psf):	7500	0.23	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	9296.5	>	Design Factored Momont (kips-ft):	4847	0.52	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.92					OK!

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00

(2).Concrete Pad:

One-Way Design Shear Capacity (L or W Direction, Kips):	1380.0	>	One-Way Factored Shear (L/W-Dir Kips)	298.5	0.22	OK!
One-Way Design Shear Capacity (Diagonal Dir., Kips):	1112.9	>	One-Way Factored Shear (Dia. Dir, Kips)	267.6	0.24	OK!
Lower Steel Pad Reinforcement Ratio (L or W-Direct.):	0.0019		Lower Steel Reinf. Ratio (Dia. Dir.):	0.0017		
Lower Steel Pad Moment Capacity (L or W-Dir. Kips-ft):	6255.6	>	Moment at Bottom (L-Direct. K-Ft):	2045.5	0.33	OK!
Lower Steel Pad Moment Capacity (Dia. Direction,K-ft):	6061.9	>	Moment at Bottom (Dia. Dir. K-Ft):	1617.1	0.27	OK!
Upper Steel Pad Reinforcement Ratio (L or W -Direction):	0.0019		Upper Steel Reinf. Ratio (Dia. Dir.):	0.0017		
Upper Steel Pad Moment Capacity (L or W-Dir., Kips-ft):	6255.6	>	Moment at the top (L-Dir Kips-Ft):	1013.6	0.16	OK!
Upper Steel Pad Moment Capacity (Dia. Direction, K-ft):	6061.9	>	Moment at the top (Dia. Dir., K-Ft):	599.0	0.10	OK!
Punching Failure Capacity (Kips):	1351.5	>	Punch. Failure Factored Shear (K):	275.2	0.20	OK!

EXHIBIT 9

Antenna Mount Analysis



August 26, 2021

Sherri Knapik
SBA Network Services, LLC.
134 Flanders Road, Suite 125
Westborough, MA 01581
(508) 251-0720 x 3805

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
towersupport@btgrp.com

Subject: Appurtenance Mount Analysis Report

Carrier Designation: *Dish Wireless Co-Locate*
Site Number: BOBDL00121A
Site Name: N/A

SBA Network Services Designation: **Site Number:** CT04382-S
Site Name: New Britain 2, CT
Application Number: 167821, v1

Engineering Firm Designation: **B+T Group Project Number:** 149445.003.01

Site Data: 1 Hartford Square, New Britain, CT, 06052, Hartford County
Latitude 41.66641°, Longitude -72.81280°
Self-Support Tower
8' Sector Mount

Dear Ms. Knapik,

B+T Group is pleased to submit this “**Appurtenance Mount Analysis Report**” to determine the structural integrity of the antenna mount on the above-mentioned structure.

The purpose of the analysis is to determine acceptability of the mount’s stress level. Based on our analysis we have determined the stress level for the mount under the following load case to be:

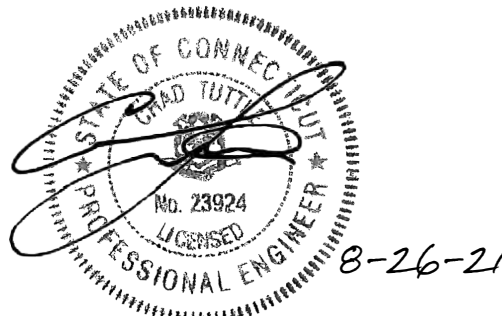
Proposed Equipment	Sufficient Capacity
Note: See Table 1 for the final loading configuration	(Passing at 39.1%)

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B and Risk Category II were used in this analysis.

We at B+T Group appreciate the opportunity of providing our continuing professional services to you and SBA Network Services, LLC. If you have any questions or need further assistance on this or any other projects, please give us a call.

Mount structural analysis prepared by: Anne Delice

Respectfully submitted by: B&T Engineering, Inc.
COA: PEC.0001564 Expires: 02/10/2022



Chad E. Tuttle, P.E.

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RISA-3D Output

7) APPENDIX B

Additional Calculations

1) INTRODUCTION

The mount consists of Commscope sector mount (Part #MTC3975083) at 130 ft., attached to self-support tower at 1 Hartford Square, New Britain, CT, 06052, Hartford County. The proposed antenna loading information was obtained from SBA Network Services, LLC. All information provided to B+T Group was assumed accurate and complete.

2) ANALYSIS CRITERIA

The structural analysis was performed for this mount in accordance with the ANSI/TIA-222-G-2-2005 Structural Standard for Antenna Supporting Structures and Antennas – Addendum 2 using a 3-second gust wind speed of 97 mph with no ice and 50 mph with 1 inch escalated ice thickness. Exposure Category B, Topographic Category 1 and Risk Category II were used in this analysis. In addition, the sector mount has been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust of 30 mph. The mount was analyzed under 30° increments in the wind direction. The analyzed loading is detailed in Table 1.

Table 1 – Proposed Equipment Information

Loading	RAD Center Elev. (ft.)	Position	Qty.	Description	Note
Proposed	130	1	3	JMA Wireless MX08FRO665-21	1
			3	Fujitsu TA08025-B605	2
			3	Fujitsu TA08025-B604	
		--	1	Raycap RDIDC-9181-PF-48	3

Note:

- (1) Proposed Antenna to be installed on the proposed Mount Pipe.
- (2) Proposed Equipment to be installed directly behind the Antenna.
- (3) Proposed Equipment to be installed on the Mount.

Table 2 - Documents Provided

Documents	Remarks	Reference	Source
Collo App	Proposed Loading	Date: 08/02/2021	SBA Network Services, LLC.
RFDS		Date: 07/22/2021	

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses and deflections for various loading cases. Selected output from the analysis is included in Appendix A.

Manufacturers drawing were used to create the model.

3.2) Assumptions

1. The mount was built in accordance with the manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas and other appurtenances are as specified in Table 1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.

6. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
7. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
8. 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.
9. The following material grades were assumed (Unless Noted Otherwise):
 - a) Connection Bolts : ASTM A325
 - b) Steel Pipe : ASTM A53 (GR. 35)
 - c) HSS (Round) : ASTM 500 (GR. B-42)
 - d) HSS (Rectangular) : ASTM 500 (GR. B-46)
 - e) Channel : ASTM A36 (GR. 36)
 - f) Steel Solid Rod : ASTM A36 (GR. 36)
 - g) Steel Plate : ASTM A36 (GR. 36)
 - h) Steel Angle : ASTM A36 (GR. 36)
 - i) UNISTRUT : ASTM A570 (GR. 33)

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group 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

Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Face Horizontals	130	10.1	Pass
-	Support Arms	130	16.4	Pass
-	Diagonals	130	1.6	Pass
-	Connection Plates	130	19.8	Pass
-	Verticals	130	39.1	Pass
-	Tieback	130	10.8	Pass
-	Mount Pipes	130	16.5	Pass
-	Connection Bolts	130	21.2	Pass

5) RECOMMENDATIONS

The Commscope sector mount, Part #MTC3975083 has sufficient capacity to carry the proposed loads and is in compliance with the ANSI/TIA-222-G standard for the proposed loading. (Refer to the RISA output for the specific members).

APPENDIX A

(RISA-3D Output)

ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 235.38 ft (NAVD 88)
Latitude: 41.666411
Longitude: -72.812803

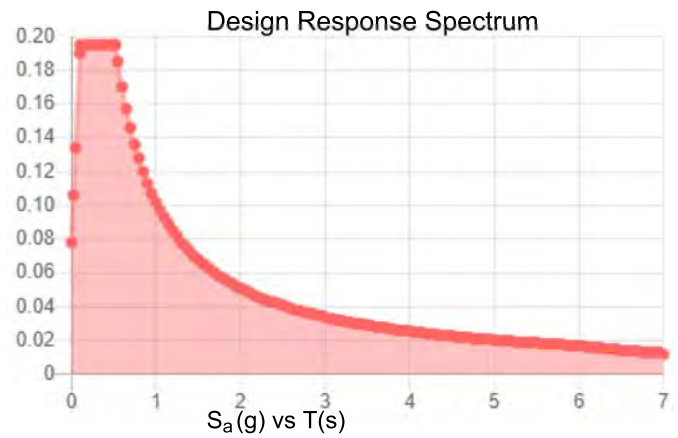
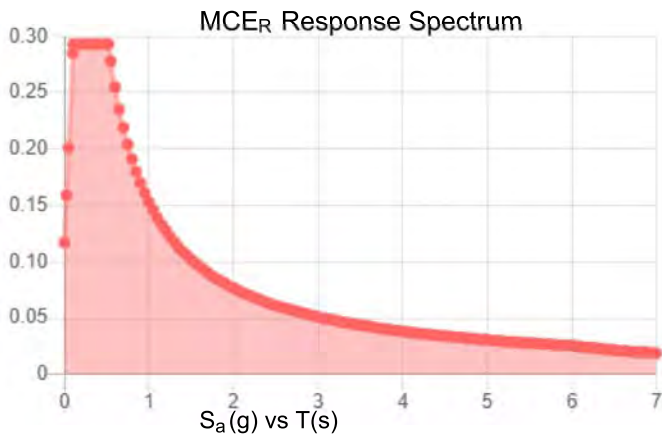


Site Soil Class: D - Stiff Soil

Results:

S_s :	0.183	S_{DS} :	0.195
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.093
S_{MS} :	0.293	PGA _M :	0.149
S_{M1} :	0.153	F _{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Thu Aug 26 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: Thu Aug 26 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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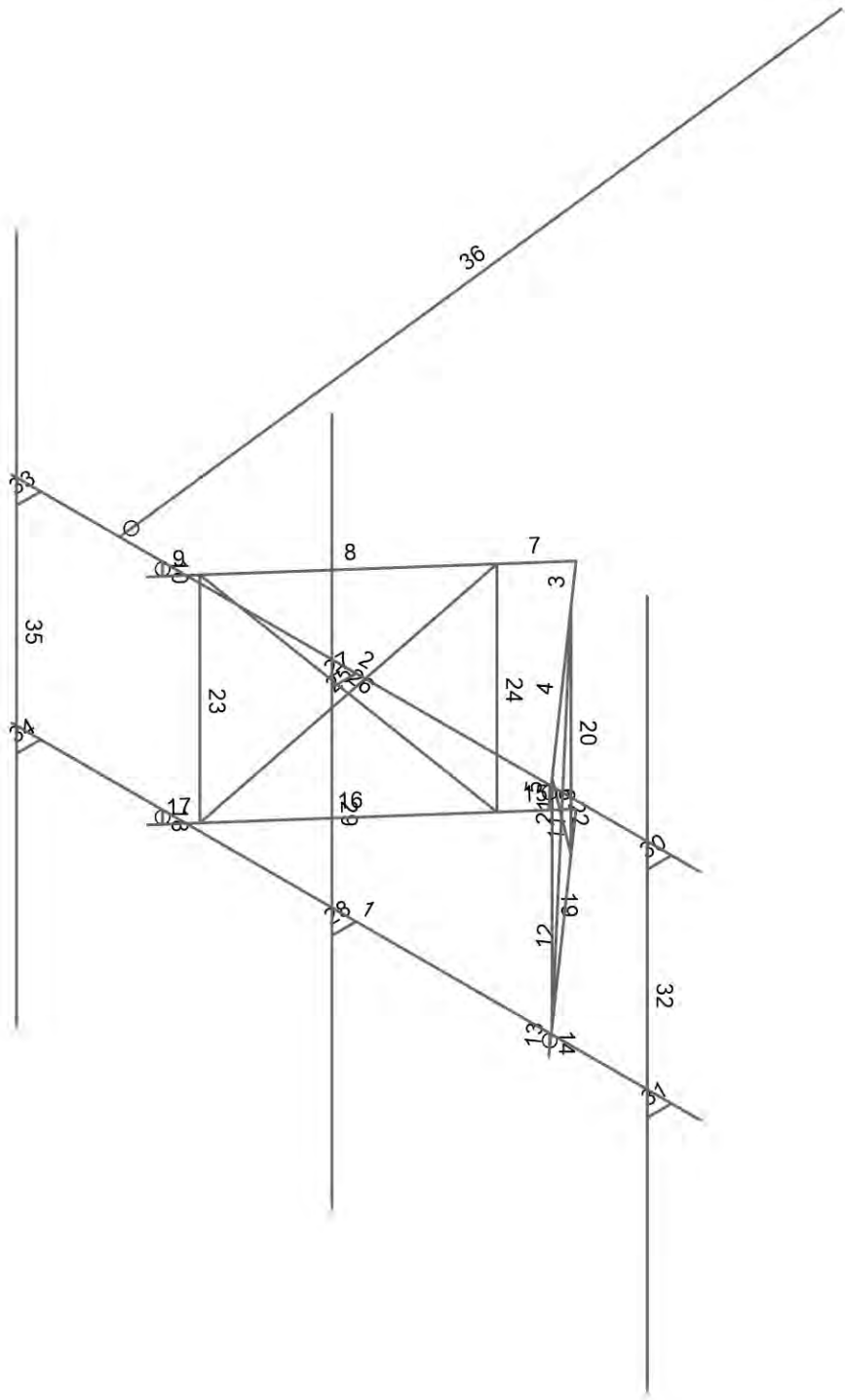
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CT04382-S - New Britain 2, CT

SK-1

Aug 26, 2021

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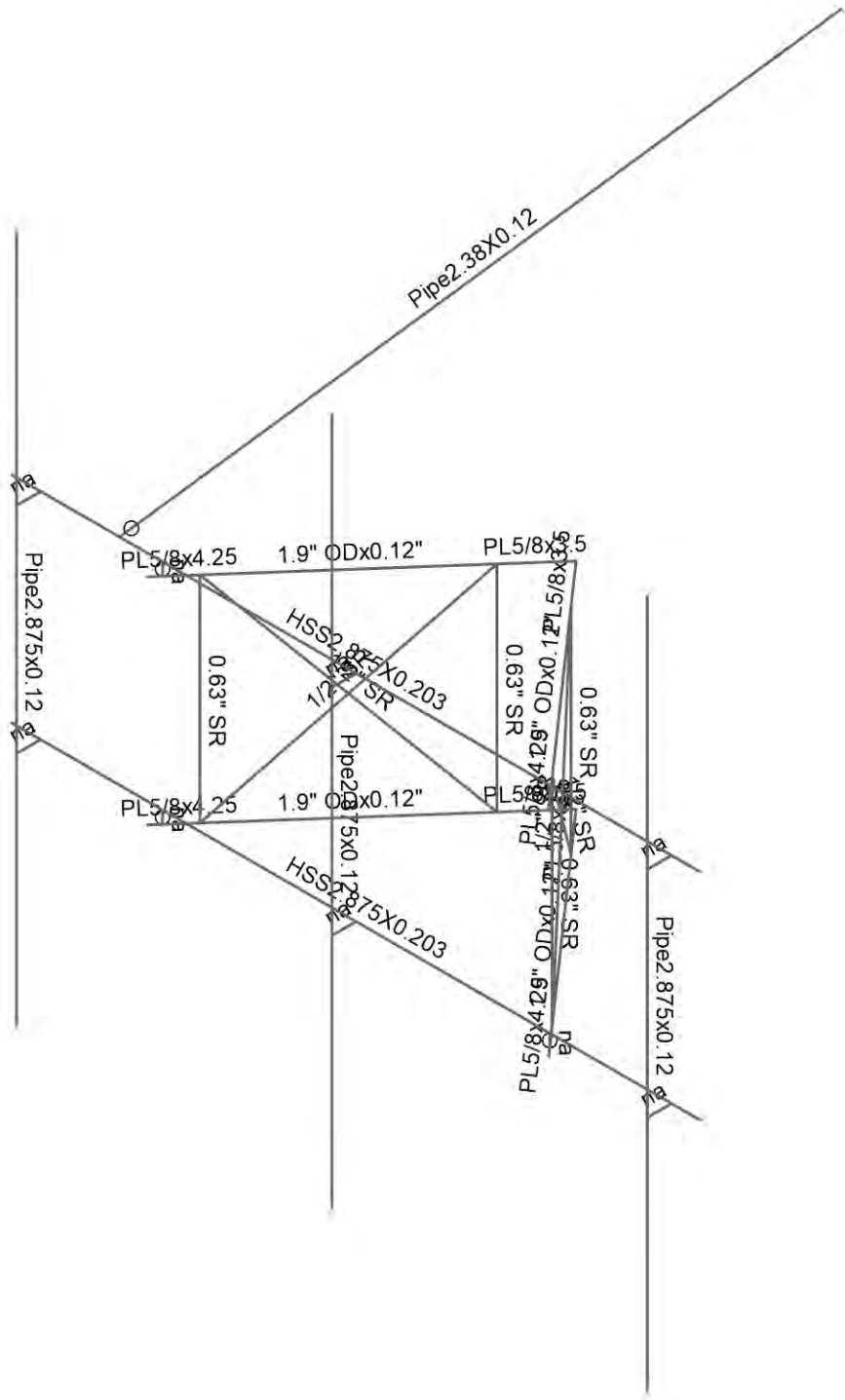


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Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	MF-H1	HSS2.875X0.203	Beam	HSS Pipe	A500 Gr.C	Typical	1.59	1.45	1.45	2.89
2	MF-SA1	1.9" ODx0.12"	Beam	Pipe	A500 Gr.C	Typical	0.671	0.267	0.267	0.534
3	MF-D1	1/2" SR	VBrace	BAR	A529 Gr.50	Typical	0.196	0.003	0.003	0.006
4	MF-CP1	PL5/8x3.5	Beam	RECT	A572 Gr.50	Typical	2.205	0.073	2.251	0.259
5	MF-V1	0.63" SR	Column	BAR	A529 Gr.50	Typical	0.312	0.008	0.008	0.015
6	MF-CP2	PL5/8x4.25	Beam	RECT	A572 Gr.50	Typical	2.656	0.086	3.998	0.314
7	Tieback	Pipe2.38X0.12	Beam	Pipe	A500 Gr.C	Typical	0.852	0.545	0.545	1.091
8	MF-P1	Pipe2.875x0.12	Column	Pipe	A500 Gr.C	Typical	1.039	0.987	0.987	1.975

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	CF1	8CU1.25X057	Beam	None	A653 SS Gr33	Typical	0.581	0.057	4.41	0.00063

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	2		MF-H1	Beam	HSS Pipe	A500 Gr.C	Typical
2	2	3	4		MF-H1	Beam	HSS Pipe	A500 Gr.C	Typical
3	3	12	5	90	MF-CP1	Beam	RECT	A572 Gr.50	Typical
4	4	6	7		MF-SA1	Beam	Pipe	A500 Gr.C	Typical
5	5	8	9	90	MF-CP2	Beam	RECT	A572 Gr.50	Typical
6	6	10	11	90	RIGID	None	None	RIGID	Typical
7	7	12	13	90	MF-CP1	Beam	RECT	A572 Gr.50	Typical
8	8	14	15		MF-SA1	Beam	Pipe	A500 Gr.C	Typical
9	9	16	17	90	MF-CP2	Beam	RECT	A572 Gr.50	Typical
10	10	18	19	90	RIGID	None	None	RIGID	Typical
11	11	27	20	90	MF-CP1	Beam	RECT	A572 Gr.50	Typical
12	12	21	22		MF-SA1	Beam	Pipe	A500 Gr.C	Typical
13	13	23	24	90	MF-CP2	Beam	RECT	A572 Gr.50	Typical
14	14	25	26	90	RIGID	None	None	RIGID	Typical
15	15	27	28	90	MF-CP1	Beam	RECT	A572 Gr.50	Typical
16	16	29	30		MF-SA1	Beam	Pipe	A500 Gr.C	Typical
17	17	31	32	90	MF-CP2	Beam	RECT	A572 Gr.50	Typical
18	18	33	34	90	RIGID	None	None	RIGID	Typical
19	19	37	36		MF-V1	Column	BAR	A529 Gr.50	Typical
20	20	35	38		MF-V1	Column	BAR	A529 Gr.50	Typical
21	21	35	36		MF-D1	VBrace	BAR	A529 Gr.50	Typical
22	22	37	38		MF-D1	VBrace	BAR	A529 Gr.50	Typical
23	23	41	40		MF-V1	Column	BAR	A529 Gr.50	Typical
24	24	39	42		MF-V1	Column	BAR	A529 Gr.50	Typical
25	25	39	40		MF-D1	VBrace	BAR	A529 Gr.50	Typical
26	26	41	42		MF-D1	VBrace	BAR	A529 Gr.50	Typical
27	27	43	44	90	RIGID	None	None	RIGID	Typical
28	28	45	46	90	RIGID	None	None	RIGID	Typical
29	29	47	48		MF-P1	Column	Pipe	A500 Gr.C	Typical
30	30	49	50	90	RIGID	None	None	RIGID	Typical
31	31	51	52	90	RIGID	None	None	RIGID	Typical
32	32	53	54		MF-P1	Column	Pipe	A500 Gr.C	Typical
33	33	55	56	90	RIGID	None	None	RIGID	Typical
34	34	57	58	90	RIGID	None	None	RIGID	Typical
35	35	59	60		MF-P1	Column	Pipe	A500 Gr.C	Typical
36	36	61	62		Tieback	Beam	Pipe	A500 Gr.C	Typical

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	12	Reaction	Reaction	Reaction	Reaction	Reaction
2	27	Reaction	Reaction	Reaction	Reaction	Reaction
3	62	Reaction	Reaction	Reaction		
4	63					

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Y	-0.032	%15
2	29	Y	-0.032	%85
3	29	Y	-0.075	%20
4	29	Y	-0.064	%50
5	29	Y	0	0
6	4	Y	-0.022	%50
7	4	Y	0	0
8	4	Y	0	0
9	4	Y	0	0
10	4	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.152	%15
2	29	Z	-0.152	%85
3	29	Z	-0.048	%20
4	29	Z	-0.048	%50
5	29	Z	0	0
6	4	Z	-0.049	%50
7	4	Z	0	0
8	4	Z	0	0
9	4	Z	0	0
10	4	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.061	%15
2	29	X	-0.061	%85
3	29	X	-0.029	%20
4	29	X	-0.025	%50
5	29	X	0	0
6	4	X	-0.027	%50
7	4	X	0	0
8	4	X	0	0
9	4	X	0	0
10	4	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.053	%15
2	29	Z	-0.053	%85
3	29	Z	-0.022	%20
4	29	Z	-0.022	%50
5	29	Z	0	0
6	4	Z	-0.022	%50



Member Point Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	4	Z	0	0
8	4	Z	0	0
9	4	Z	0	0
10	4	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.027	%15
2	29	X	-0.027	%85
3	29	X	-0.015	%20
4	29	X	-0.014	%50
5	29	X	0	0
6	4	X	-0.015	%50
7	4	X	0	0
8	4	X	0	0
9	4	X	0	0
10	4	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.014	%15
2	29	Z	-0.014	%85
3	29	Z	-0.005	%20
4	29	Z	-0.005	%50
5	29	Z	0	0
6	4	Z	-0.005	%50
7	4	Z	0	0
8	4	Z	0	0
9	4	Z	0	0
10	4	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.006	%15
2	29	X	-0.006	%85
3	29	X	-0.003	%20
4	29	X	-0.002	%50
5	29	X	0	0
6	4	X	-0.003	%50
7	4	X	0	0
8	4	X	0	0
9	4	X	0	0
10	4	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Y	-0.2	%15
2	29	Y	-0.2	%85
3	29	Y	-0.073	%20
4	29	Y	-0.071	%50
5	29	Y	0	0
6	4	Y	-0.074	%50
7	4	Y	0	0



Member Point Loads (BLC 8 : Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
8	4	Y	0	0
9	4	Y	0	0
10	4	Y	0	0

Member Point Loads (BLC 13 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.25	%95

Member Point Loads (BLC 14 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%95

Member Point Loads (BLC 15 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	8	Y	-0.25	%50

Member Point Loads (BLC 16 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	16	Y	-0.25	%50

Member Point Loads (BLC 17 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	4	Y	-0.25	%50

Member Point Loads (BLC 18 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	12	Y	-0.25	%50

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

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.007	-0.007	0	%100
2	2	Z	-0.007	-0.007	0	%100
3	3	Z	-0.002	-0.002	0	%100
4	4	Z	-0.004	-0.004	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	7	Z	-0.002	-0.002	0	%100
7	8	Z	-0.004	-0.004	0	%100
8	9	Z	-0.002	-0.002	0	%100
9	11	Z	-0.002	-0.002	0	%100
10	12	Z	-0.004	-0.004	0	%100
11	13	Z	-0.002	-0.002	0	%100
12	15	Z	-0.002	-0.002	0	%100
13	16	Z	-0.004	-0.004	0	%100
14	17	Z	-0.002	-0.002	0	%100
15	19	Z	-0.002	-0.002	0	%100
16	20	Z	-0.002	-0.002	0	%100
17	21	Z	-0.001	-0.001	0	%100
18	22	Z	-0.001	-0.001	0	%100
19	23	Z	-0.002	-0.002	0	%100



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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
20	24	Z	-0.002	-0.002	0	%100
21	25	Z	-0.001	-0.001	0	%100
22	26	Z	-0.001	-0.001	0	%100
23	29	Z	-0.007	-0.007	0	%100
24	32	Z	-0.007	-0.007	0	%100
25	35	Z	-0.007	-0.007	0	%100
26	36	Z	-0.006	-0.006	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.007	-0.007	0	%100
2	2	X	-0.007	-0.007	0	%100
3	3	X	-0.002	-0.002	0	%100
4	4	X	-0.004	-0.004	0	%100
5	5	X	-0.002	-0.002	0	%100
6	7	X	-0.002	-0.002	0	%100
7	8	X	-0.004	-0.004	0	%100
8	9	X	-0.002	-0.002	0	%100
9	11	X	-0.002	-0.002	0	%100
10	12	X	-0.004	-0.004	0	%100
11	13	X	-0.002	-0.002	0	%100
12	15	X	-0.002	-0.002	0	%100
13	16	X	-0.004	-0.004	0	%100
14	17	X	-0.002	-0.002	0	%100
15	19	X	-0.002	-0.002	0	%100
16	20	X	-0.002	-0.002	0	%100
17	21	X	-0.001	-0.001	0	%100
18	22	X	-0.001	-0.001	0	%100
19	23	X	-0.002	-0.002	0	%100
20	24	X	-0.002	-0.002	0	%100
21	25	X	-0.001	-0.001	0	%100
22	26	X	-0.001	-0.001	0	%100
23	29	X	-0.007	-0.007	0	%100
24	32	X	-0.007	-0.007	0	%100
25	35	X	-0.007	-0.007	0	%100
26	36	X	-0.006	-0.006	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.003	-0.003	0	%100
2	2	Z	-0.003	-0.003	0	%100
3	3	Z	-0.007	-0.007	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.007	-0.007	0	%100
6	7	Z	-0.007	-0.007	0	%100
7	8	Z	-0.002	-0.002	0	%100
8	9	Z	-0.007	-0.007	0	%100
9	11	Z	-0.007	-0.007	0	%100
10	12	Z	-0.002	-0.002	0	%100
11	13	Z	-0.007	-0.007	0	%100
12	15	Z	-0.007	-0.007	0	%100
13	16	Z	-0.002	-0.002	0	%100
14	17	Z	-0.007	-0.007	0	%100
15	19	Z	-0.004	-0.004	0	%100
16	20	Z	-0.004	-0.004	0	%100
17	21	Z	-0.004	-0.004	0	%100



Member Distributed Loads (BLC 4 : 0 Wind - Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
18	22	Z	-0.004	-0.004	0	%100
19	23	Z	-0.004	-0.004	0	%100
20	24	Z	-0.004	-0.004	0	%100
21	25	Z	-0.004	-0.004	0	%100
22	26	Z	-0.004	-0.004	0	%100
23	29	Z	-0.003	-0.003	0	%100
24	32	Z	-0.003	-0.003	0	%100
25	35	Z	-0.003	-0.003	0	%100
26	36	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.003	-0.003	0	%100
2	2	X	-0.003	-0.003	0	%100
3	3	X	-0.007	-0.007	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.007	-0.007	0	%100
6	7	X	-0.007	-0.007	0	%100
7	8	X	-0.002	-0.002	0	%100
8	9	X	-0.007	-0.007	0	%100
9	11	X	-0.007	-0.007	0	%100
10	12	X	-0.002	-0.002	0	%100
11	13	X	-0.007	-0.007	0	%100
12	15	X	-0.007	-0.007	0	%100
13	16	X	-0.002	-0.002	0	%100
14	17	X	-0.007	-0.007	0	%100
15	19	X	-0.004	-0.004	0	%100
16	20	X	-0.004	-0.004	0	%100
17	21	X	-0.004	-0.004	0	%100
18	22	X	-0.004	-0.004	0	%100
19	23	X	-0.004	-0.004	0	%100
20	24	X	-0.004	-0.004	0	%100
21	25	X	-0.004	-0.004	0	%100
22	26	X	-0.004	-0.004	0	%100
23	29	X	-0.003	-0.003	0	%100
24	32	X	-0.003	-0.003	0	%100
25	35	X	-0.003	-0.003	0	%100
26	36	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.0003	-0.0003	0	%100
2	2	Z	-0.0003	-0.0003	0	%100
3	3	Z	-0.0002	-0.0002	0	%100
4	4	Z	-0.0002	-0.0002	0	%100
5	5	Z	-0.0002	-0.0002	0	%100
6	7	Z	-0.0002	-0.0002	0	%100
7	8	Z	-0.0002	-0.0002	0	%100
8	9	Z	-0.0002	-0.0002	0	%100
9	11	Z	-0.0002	-0.0002	0	%100
10	12	Z	-0.0002	-0.0002	0	%100
11	13	Z	-0.0002	-0.0002	0	%100
12	15	Z	-0.0002	-0.0002	0	%100
13	16	Z	-0.0002	-0.0002	0	%100
14	17	Z	-0.0002	-0.0002	0	%100
15	19	Z	-1e-04	-1e-04	0	%100



Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
16	20	Z	-1e-04	-1e-04	0	%100
17	21	Z	-1e-04	-1e-04	0	%100
18	22	Z	-1e-04	-1e-04	0	%100
19	23	Z	-1e-04	-1e-04	0	%100
20	24	Z	-1e-04	-1e-04	0	%100
21	25	Z	-1e-04	-1e-04	0	%100
22	26	Z	-1e-04	-1e-04	0	%100
23	29	Z	-0.0003	-0.0003	0	%100
24	32	Z	-0.0003	-0.0003	0	%100
25	35	Z	-0.0003	-0.0003	0	%100
26	36	Z	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.0003	-0.0003	0	%100
2	2	X	-0.0003	-0.0003	0	%100
3	3	X	-0.0002	-0.0002	0	%100
4	4	X	-0.0002	-0.0002	0	%100
5	5	X	-0.0002	-0.0002	0	%100
6	7	X	-0.0002	-0.0002	0	%100
7	8	X	-0.0002	-0.0002	0	%100
8	9	X	-0.0002	-0.0002	0	%100
9	11	X	-0.0002	-0.0002	0	%100
10	12	X	-0.0002	-0.0002	0	%100
11	13	X	-0.0002	-0.0002	0	%100
12	15	X	-0.0002	-0.0002	0	%100
13	16	X	-0.0002	-0.0002	0	%100
14	17	X	-0.0002	-0.0002	0	%100
15	19	X	-1e-04	-1e-04	0	%100
16	20	X	-1e-04	-1e-04	0	%100
17	21	X	-1e-04	-1e-04	0	%100
18	22	X	-1e-04	-1e-04	0	%100
19	23	X	-1e-04	-1e-04	0	%100
20	24	X	-1e-04	-1e-04	0	%100
21	25	X	-1e-04	-1e-04	0	%100
22	26	X	-1e-04	-1e-04	0	%100
23	29	X	-0.0003	-0.0003	0	%100
24	32	X	-0.0003	-0.0003	0	%100
25	35	X	-0.0003	-0.0003	0	%100
26	36	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.014	-0.014	0	%100
2	2	Y	-0.014	-0.014	0	%100
3	3	Y	-0.016	-0.016	0	%100
4	4	Y	-0.012	-0.012	0	%100
5	5	Y	-0.018	-0.018	0	%100
6	7	Y	-0.016	-0.016	0	%100
7	8	Y	-0.012	-0.012	0	%100
8	9	Y	-0.018	-0.018	0	%100
9	11	Y	-0.016	-0.016	0	%100
10	12	Y	-0.012	-0.012	0	%100
11	13	Y	-0.018	-0.018	0	%100
12	15	Y	-0.016	-0.016	0	%100
13	16	Y	-0.012	-0.012	0	%100



Member Distributed Loads (BLC 8 : Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
14	17	Y	-0.018	-0.018	0	%100
15	19	Y	-0.008	-0.008	0	%100
16	20	Y	-0.008	-0.008	0	%100
17	21	Y	-0.008	-0.008	0	%100
18	22	Y	-0.008	-0.008	0	%100
19	23	Y	-0.008	-0.008	0	%100
20	24	Y	-0.008	-0.008	0	%100
21	25	Y	-0.008	-0.008	0	%100
22	26	Y	-0.008	-0.008	0	%100
23	29	Y	-0.014	-0.014	0	%100
24	32	Y	-0.014	-0.014	0	%100
25	35	Y	-0.014	-0.014	0	%100
26	36	Y	-0.013	-0.013	0	%100

Member Area Loads

No Data to Print...						
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Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed
1	Dead	DL	-1		10	
2	0 Wind - No Ice	WLZ			10	26
3	90 Wind - No Ice	WLX			10	26
4	0 Wind - Ice	WLZ			10	26
5	90 Wind - Ice	WLX			10	26
6	0 Wind - Service	WLZ			10	26
7	90 Wind - Service	WLX			10	26
8	Ice	OL1			10	26
9	Live Load a	LL		1		
10	Live Load b	LL		1		
11	Live Load c	LL		1		
12	Live Load d	LL				
13	Maint LL 1	LL			1	
14	Maint LL 2	LL			1	
15	Maint LL 3	LL			1	
16	Maint LL 4	LL			1	
17	Maint LL 5	LL			1	
18	Maint LL 6	LL			1	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	0.9 D + 1.6 - 0 W	Yes	Y	1	0.9	2	1.6				
3	0.9 D + 1.6 - 30 W	Yes	Y	1	0.9	2	1.386	3	0.8		
4	0.9 D + 1.6 - 60 W	Yes	Y	1	0.9	3	1.386	2	0.8		
5	0.9 D + 1.6 - 90 W	Yes	Y	1	0.9	3	1.6				
6	0.9 D + 1.6 - 120 W	Yes	Y	1	0.9	3	1.386	2	-0.8		
7	0.9 D + 1.6 - 150 W	Yes	Y	1	0.9	2	-1.386	3	0.8		
8	0.9 D + 1.6 - 180 W	Yes	Y	1	0.9	2	-1.6				
9	0.9 D + 1.6 - 210 W	Yes	Y	1	0.9	2	-1.386	3	-0.8		
10	0.9 D + 1.6 - 240 W	Yes	Y	1	0.9	3	-1.386	2	-0.8		
11	0.9 D + 1.6 - 270 W	Yes	Y	1	0.9	3	-1.6				
12	0.9 D + 1.6 - 300 W	Yes	Y	1	0.9	3	-1.386	2	0.8		
13	0.9 D + 1.6 - 330 W	Yes	Y	1	0.9	2	1.386	3	-0.8		
14	1.2 D + 1.6 - 0 W	Yes	Y	1	1.2	2	1.6				
15	1.2 D + 1.6 - 30 W	Yes	Y	1	1.2	2	1.386	3	0.8		
16	1.2 D + 1.6 - 60 W	Yes	Y	1	1.2	3	1.386	2	0.8		



Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
17	1.2 D + 1.6 - 90 W	Yes	Y	1	1.2	3	1.6				
18	1.2 D + 1.6 - 120 W	Yes	Y	1	1.2	3	1.386	2	-0.8		
19	1.2 D + 1.6 - 150 W	Yes	Y	1	1.2	2	-1.386	3	0.8		
20	1.2 D + 1.6 - 180 W	Yes	Y	1	1.2	2	-1.6				
21	1.2 D + 1.6 - 210 W	Yes	Y	1	1.2	2	-1.386	3	-0.8		
22	1.2 D + 1.6 - 240 W	Yes	Y	1	1.2	3	-1.386	2	-0.8		
23	1.2 D + 1.6 - 270 W	Yes	Y	1	1.2	3	-1.6				
24	1.2 D + 1.6 - 300 W	Yes	Y	1	1.2	3	-1.386	2	0.8		
25	1.2 D + 1.6 - 330 W	Yes	Y	1	1.2	2	1.386	3	-0.8		
26	0.9 D + 1.6 - 0 W/Ice	Yes	Y	1	0.9	4	1.6			8	1
27	0.9 D + 1.6 - 30 W/Ice	Yes	Y	1	0.9	4	1.386	5	0.8	8	1
28	0.9 D + 1.6 - 60 W/Ice	Yes	Y	1	0.9	5	1.386	4	0.8	8	1
29	0.9 D + 1.6 - 90 W/Ice	Yes	Y	1	0.9	5	1.6			8	1
30	0.9 D + 1.6 - 120 W/Ice	Yes	Y	1	0.9	5	1.386	4	-0.8	8	1
31	0.9 D + 1.6 - 150 W/Ice	Yes	Y	1	0.9	4	-1.386	5	0.8	8	1
32	0.9 D + 1.6 - 180 W/Ice	Yes	Y	1	0.9	4	-1.6			8	1
33	0.9 D + 1.6 - 210 W/Ice	Yes	Y	1	0.9	4	-1.386	5	-0.8	8	1
34	0.9 D + 1.6 - 240 W/Ice	Yes	Y	1	0.9	5	-1.386	4	-0.8	8	1
35	0.9 D + 1.6 - 270 W/Ice	Yes	Y	1	0.9	5	-1.6			8	1
36	0.9 D + 1.6 - 300 W/Ice	Yes	Y	1	0.9	5	-1.386	4	0.8	8	1
37	0.9 D + 1.6 - 330 W/Ice	Yes	Y	1	0.9	4	1.386	5	-0.8	8	1
38	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
39	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
40	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
41	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
42	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
43	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
44	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
45	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
46	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
47	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
48	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
49	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
50	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			9	1.5
51	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	9	1.5
52	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	9	1.5
53	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			9	1.5
54	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	9	1.5
55	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	9	1.5
56	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			9	1.5
57	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	9	1.5
58	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	9	1.5
59	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			9	1.5
60	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	9	1.5
61	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	9	1.5
62	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			10	1.5
63	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	10	1.5
64	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	10	1.5
65	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			10	1.5
66	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	10	1.5
67	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	10	1.5
68	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			10	1.5
69	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	10	1.5
70	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	10	1.5
71	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			10	1.5
72	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	10	1.5
73	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	10	1.5
74	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5



Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
75	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
76	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
77	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
78	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
79	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
80	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
81	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
82	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
83	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
84	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
85	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
86	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
87	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
88	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
89	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
90	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
91	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
92	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
93	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
94	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
95	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
96	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
97	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
98	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					13	1.5
99	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					14	1.5
100	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					15	1.5
101	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					16	1.5
102	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					17	1.5
103	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					18	1.5

Envelope Node Reactions

Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
1	12	max	1.001	53	1.165	42	0.787	13	-0.041	6	0	103	0.171	77
2		min	-0.988	83	0.203	9	-2.339	31	-0.338	48	0	1	-0.172	59
3	27	max	0.977	77	1.08	48	2.038	38	-0.03	8	0	103	0.153	77
4		min	-0.99	59	0.195	4	-0.067	8	-0.313	49	0	1	-0.148	59
5	62	max	0.136	5	0.079	47	0.778	17	0	103	0	103	0	103
6		min	-0.136	11	0.012	5	-0.778	23	0	1	0	1	0	1
7	Totals:	max	0.992	17	2.307	43	1.386	2						
8		min	-0.992	11	0.456	13	-1.386	20						

Envelope AISC 13TH (360-05): LRFD Member Steel Code Checks

Member	Shape	Code Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	Lcphi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn	
1	20	0.63" SR	0.391	0	78	0.006	2.5	76	1.941	14.028	0.147	0.147	2.255	H1-1a	
2	24	0.63" SR	0.384	2.5	59	0.006	2.5	59	1.941	14.028	0.147	0.147	2.253	H1-1a	
3	23	0.63" SR	0.361	2.5	50	0.008	0	17	1.941	14.028	0.147	0.147	2.267	H1-1a	
4	19	0.63" SR	0.36	2.5	74	0.004	2.5	78	1.941	14.028	0.147	0.147	2.261	H1-1a	
5	21	1/2" SR	0.265	3.499	28	0.011	3.499	20	0.393	8.836	0.074	0.074	2.313	H1-1b	
6	25	1/2" SR	0.264	3.499	36	0.011	3.499	20	0.393	8.836	0.074	0.074	2.313	H1-1b	
7	3	PL5/8x3.5	0.198	0	79	0.03	0	z	76	84.578	99.225	1.302	7.235	1.161	H1-1b
8	7	PL5/8x3.5	0.197	0	57	0.031	0	z	52	84.578	99.225	1.302	7.235	1.151	H1-1b
9	11	PL5/8x3.5	0.183	0	40	0.035	0	y	80	84.578	99.225	1.302	7.235	1.075	H1-1b
10	15	PL5/8x3.5	0.177	0	58	0.035	0	y	56	84.578	99.225	1.302	7.235	1.314	H1-1b
11	29	Pipe2.875x0.12	0.165	2.75	20	0.032	2.75	15	22.398	42.998	3.144	3.144	3	H1-1b	
12	4	1.9" ODx0.12"	0.164	1.292	102	0.04	2.449	76	23.614	27.779	1.314	1.314	1.412	H1-1b	
13	12	1.9" ODx0.12"	0.163	1.292	103	0.042	2.449	80	23.614	27.779	1.314	1.314	1.413	H1-1b	



Company : B+T Group
 Designer : KR
 Job Number : 149445.003.01
 Model Name : CT04382-S - New Britain 2, CT

8/26/2021
 12:08:00 PM
 Checked By : _____

Envelope AISC 13TH (360-05): LRFD Member Steel Code Checks (Continued)

Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	Lc	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
14	16	1.9" ODx0.12"	0.162	1.292	101	0.043	2.449	56			23.614	27.779	1.314	1.314	1.419	H1-1b
15	8	1.9" ODx0.12"	0.153	1.292	100	0.04	2.449	52			23.614	27.779	1.314	1.314	1.412	H1-1b
16	36	Pipe2.38X0.12	0.108	4.792	29	0.008	9.583	47			9.31	35.273	2.115	2.115	1.136	H1-1b
17	35	Pipe2.875x0.12	0.106	5.25	53	0.03	5.25	59			22.398	42.998	3.144	3.144	3	H1-1b
18	32	Pipe2.875x0.12	0.105	5.25	83	0.029	2.75	82			22.398	42.998	3.144	3.144	3	H1-1b
19	1	HSS2.875X0.203	0.101	4	66	0.053	1.75	60			33.355	65.826	4.727	4.727	1.552	H1-1b
20	9	PL5/8x4.25	0.093	0.362	24	0.032	0.127	y 17			110.629	119.531	1.556	10.583	1.409	H1-1b
21	2	HSS2.875X0.203	0.087	4	63	0.06	1.75	17			33.355	65.826	4.727	4.727	1.625	H1-1b
22	5	PL5/8x4.25	0.067	0.127	31	0.028	0.362	y 75			110.629	119.531	1.556	10.583	1.606	H1-1b
23	17	PL5/8x4.25	0.058	0.127	56	0.036	0.127	y 56			110.629	119.531	1.556	10.583	1.395	H1-1b
24	13	PL5/8x4.25	0.057	0.127	80	0.035	0.127	y 80			110.629	119.531	1.556	10.583	1.397	H1-1b
25	22	1/2" SR	0	3.499	103	0.005	0	14			0.393	8.836	0.074	0.074	1	H1-1a
26	26	1/2" SR	0	3.499	103	0.016	0	16			0.393	8.836	0.074	0.074	1.684	H1-1a

Envelope NONE Member Cold Formed Steel Code Checks

No Data to Print...

APPENDIX B

(Additional Calculations)

PROJECT	154220.003.01 - Robleswoods (N. Valje AD		
SUBJECT	Platform Mount Analysis Beta		
DATE	08/26/21	PAGE	1 OF 1



B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 (918) 587-4630

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	2.038	k
Vertical Shear	:	1.08	k
Horizontal Shear	:	0.977	k
Torsion	:	0.153	k.ft
Moment from Horizontal Forces	:	0	k.ft
Moment from Vertical Forces	:	-0.03	k.ft

Bolt Parameters

Bolt Grade	:	A325	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in ²
Bolt spacing, Horizontal	:	4	in
Bolt spacing, Vertical	:	3	in
Bolt edge distance, plate height	:	1	in
Bolt edge distance, plate width	:	1	in
Total Number of Bolts	:	2	bolts

Summary of Forces

Shear Resultant Force	:	1.46	k
Force from Horz. Moment	:	0.00	k
Force from Vert. Moment	:	-0.10	k
Shear Load / Bolt	:	0.73	k
Tension Load / Bolt	:	1.02	k
Resultant from Moments / Bolt	:	0.10	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	5.40%		OKAY
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	15.81%		OKAY
Unity Check, Combined	:	21.21%		OKAY
Available Bearing Strength, ΦR_n	:	36.70	k/bolt	
Unity Check, Bolt Bearing	:	1.98%		OKAY

EXHIBIT 10

Construction Drawings



DISH Wireless L.L.C. SITE ID:

BOBDL00121A

DISH Wireless L.L.C. SITE ADDRESS:

**1 HARTFORD SQUARE
NEW BRITAIN, CT 06052**



By Stephen Roth at 6:09:21 AM, 10/1/2021

SCOPE OF WORK

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

- TOWER SCOPE OF WORK:**
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
 - INSTALL (3) PROPOSED SECTOR FRAMES
 - INSTALL PROPOSED JUMPERS
 - INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
 - INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
 - INSTALL (13) 10'-0" CABLE LADDERS
 - INSTALL (1) PROPOSED HYBRID CABLE

- GROUND SCOPE OF WORK:**
- 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 FIBER NID (IF REQUIRED)
 - INSTALL (1) PROPOSED METER SOCKET

SITE INFORMATION	PROJECT DIRECTORY
PROPERTY OWNER: HARTFORD SQUARE ASSOCIATES LLC ADDRESS: 1 HARTFORD SQ WEST BOX #15 NEW BRITAIN, CT 06052	APPLICANT: DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER TYPE: SELF-SUPPORT TOWER	TOWER OWNER: SBA COMMUNICATIONS CORP. 8051 CONGRESS AVENUE BOCA RATON, FL 33487 (800) 487-7483
TOWER CO SITE ID: CT04382-S	SITE DESIGNER: B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
TOWER APP NUMBER: 167821	SITE ACQUISITION: APRIL PARROTT APRIL.PARROTT@DISH.COM
COUNTY: HARTFORD	CONST. MANAGER: JAVIER SOTO JAVIER.SOTO@DISH.COM
LATITUDE (NAD 83): 41° 39' 59.08" N 41.666411 N	RF ENGINEER: BOSSENER CHARLES BOSSENER.CHARLES@DISH.COM
LONGITUDE (NAD 83): 72° 48' 46.09" W 72.812803 W	
ZONING JURISDICTION: CITY OF NEW BRITAIN	
ZONING DISTRICT: I2	
PARCEL NUMBER: 09003089-F4A 2	
OCCUPANCY GROUP: U	
CONSTRUCTION TYPE: II-B	
POWER COMPANY: EVERSOURCE	
TELEPHONE COMPANY: T.B.D.	



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



1717 S. BOULDER
SUITE 300
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PH: (918) 587-4630
www.btgrp.com



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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00121A
1 HARTFORD SQUARE
NEW BRITAIN, CT 06052

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

CONNECTICUT CODE OF COMPLIANCE

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

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

SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
LS1	SITE SURVEY
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

SITE PHOTO



UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM
CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION



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

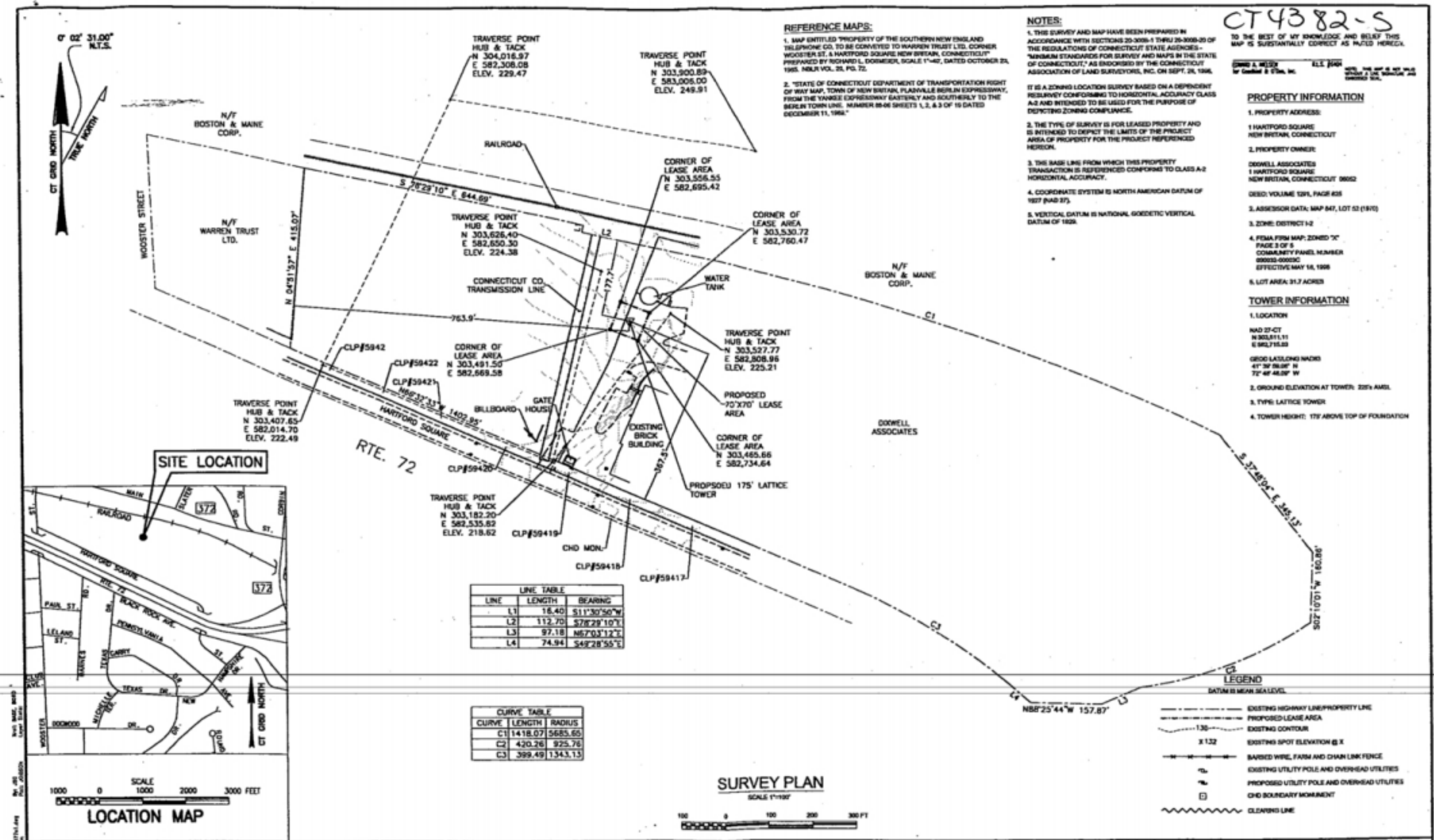
CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:
CONTINUE TO BRADLEY INTERNATIONAL AIRPORT CON HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT SLIGHT LEFT TAKE I-91 S AND I-84 TO CT-372 E/CORBIN AVE IN NEW BRITAIN. TAKE EXIT 7 FROM CT-72 E CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON USE THE RIGHT 2 LANES TO MERGE WITH I-91 S TOWARD HARTFORD TAKE EXIT 32A-32B FOR I-84 W TOWARD WATERBURY MERGE WITH I-84 USE THE LEFT LANE TO TAKE EXIT 35 TO MERGE WITH CT-72 E TOWARD CT-9/NEW BRITAIN/MIDDLETOWN TAKE EXIT 7 FOR CT-372/CORBIN AVE TAKE BLACK ROCK AVE TO HARTFORD SQUARE CONTINUE ONTO CT-372 E/CORBIN AVE TURN RIGHT ONTO BLACK ROCK AVE TURN RIGHT AT WARREN ST CONTINUE ONTO HARTFORD SQUARE AND ARRIVE AT BOBDL00121A.

VICINITY MAP





CT4382-S



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



801 CONGRESS AVENUE
BOCA RATON, FL 33487



B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

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BMK BLB BLB

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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00121A
1 HARTFORD SQUARE
NEW BRITAIN, CT 06052

SHEET TITLE
SITE SURVEY

SHEET NUMBER
LS1

Goodkind & O'Dea, Inc.
Consulting Engineers and Planners
59 ELM STREET, SUITE 101
NEW HAVEN, CONNECTICUT 06510
(203) 776-2277

NEW BRITAIN #2 CT
ONE HARTFORD SQUARE
NEW BRITAIN, CONNECTICUT

SBA, INC.

80 EASTERN BOULEVARD
GLASTONBURY, CONNECTICUT
(860) 658-4101
10th FLOOR

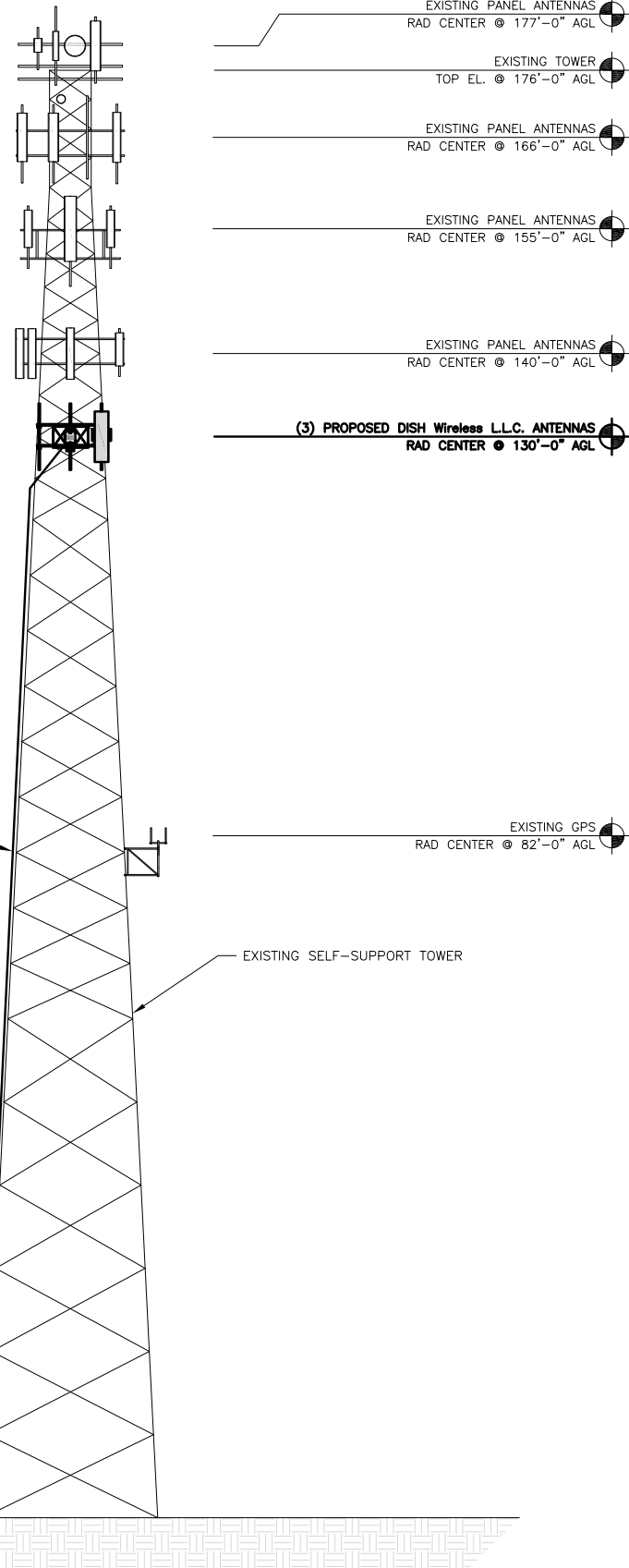
ONE TOWN CENTER RD, 3RD FL.
BOCA RATON, FL, 33486
(561) 995-7670

SITE NUMBER 10125-077
NEW BRITAIN #2 CT
EXISTING CONDITION SURVEY

NO.	DATE	REVISION	BY	CHK	APP'D
1		PRELIMINARY ISSUE FOR CONSTRUCTION	JSC	DM	FDK
2		PRELIMINARY ISSUE FOR ZONING	JSC	DM	FDK

NOTES

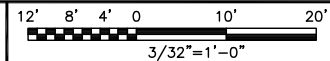
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



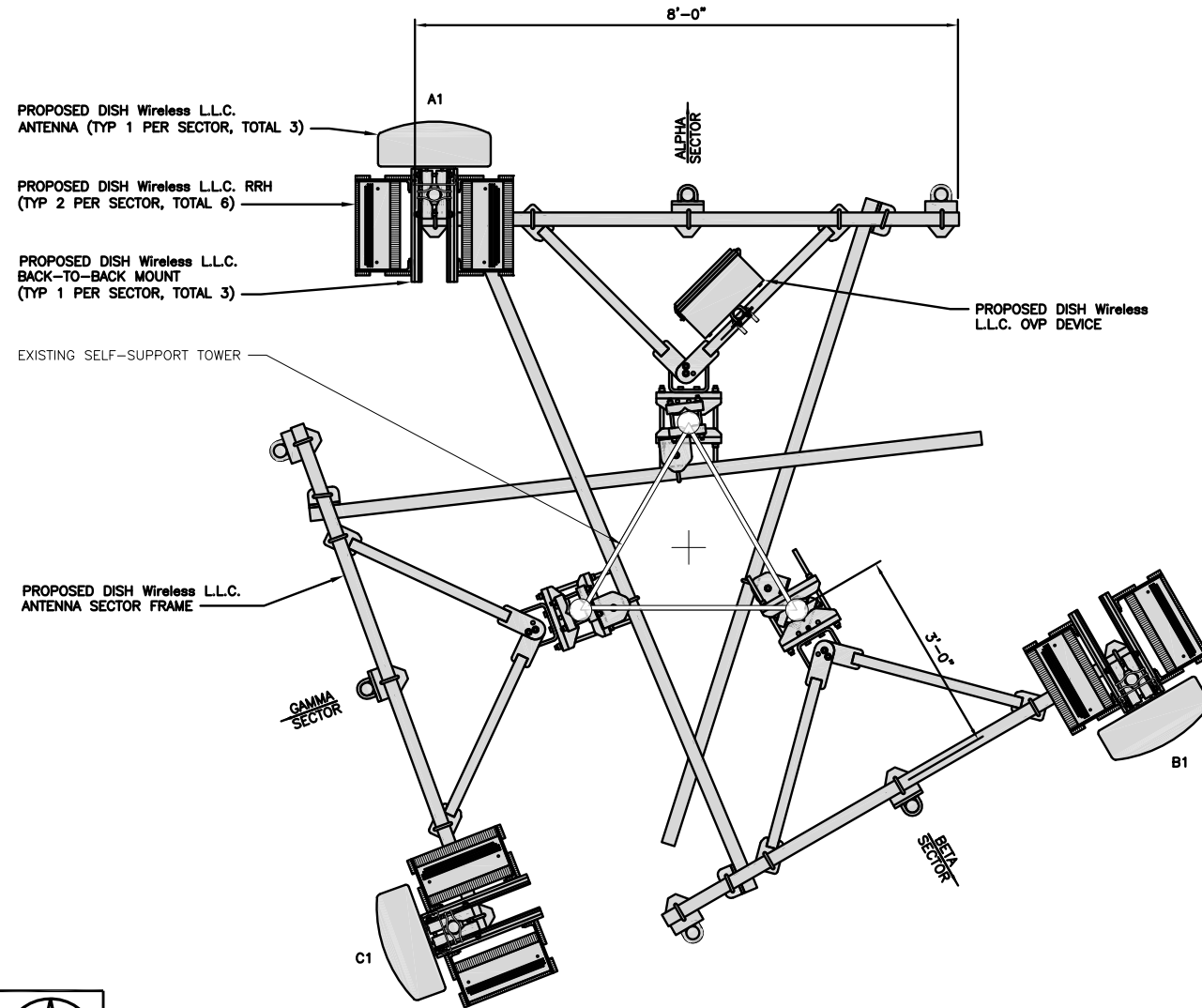
(1) PROPOSED DISH Wireless L.L.C. HYBRID CABLE ON PROPOSED WAVEGUIDE LADDER

PROPOSED DISH Wireless L.L.C. ICE BRIDGE
 PROPOSED DISH WIRELESS L.L.C. EQUIPMENT ON EXISTING CONCRETE PAD
 PROPOSED DISH Wireless L.L.C. GPS UNIT

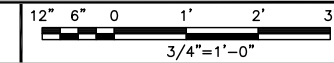
PROPOSED SOUTH ELEVATION



1



ANTENNA LAYOUT



2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA - MX08FRO665-21	5G	72.0" x 20.0"	0°	130'-0"	(1) HIGH-CAPACITY HYBRID CABLE (165' LONG)
BETA	B1	PROPOSED	JMA - MX08FRO665-21	5G	72.0" x 20.0"	150°	130'-0"	
GAMMA	G1	PROPOSED	JMA - MX08FRO665-21	5G	72.0" x 20.0"	250°	130'-0"	
SECTOR	POSITION	RRH		NOTES				
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY					
ALPHA	A1	FUJITSU - TA08025-B605	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-B604	5G					
BETA	B1	FUJITSU - TA08025-B605	5G					
	B1	FUJITSU - TA08025-B604	5G					
GAMMA	G1	FUJITSU - TA08025-B605	5G					
	G1	FUJITSU - TA08025-B604	5G					

ANTENNA SCHEDULE

NO SCALE

3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



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 APPROVED BY: BLB

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DISH Wireless L.L.C. PROJECT INFORMATION
 BOBDL00121A
 1 HARTFORD SQUARE
 NEW BRITAIN, CT 06052

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



8051 CONGRESS AVENUE
BOCA RATON, FL 33487



1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com



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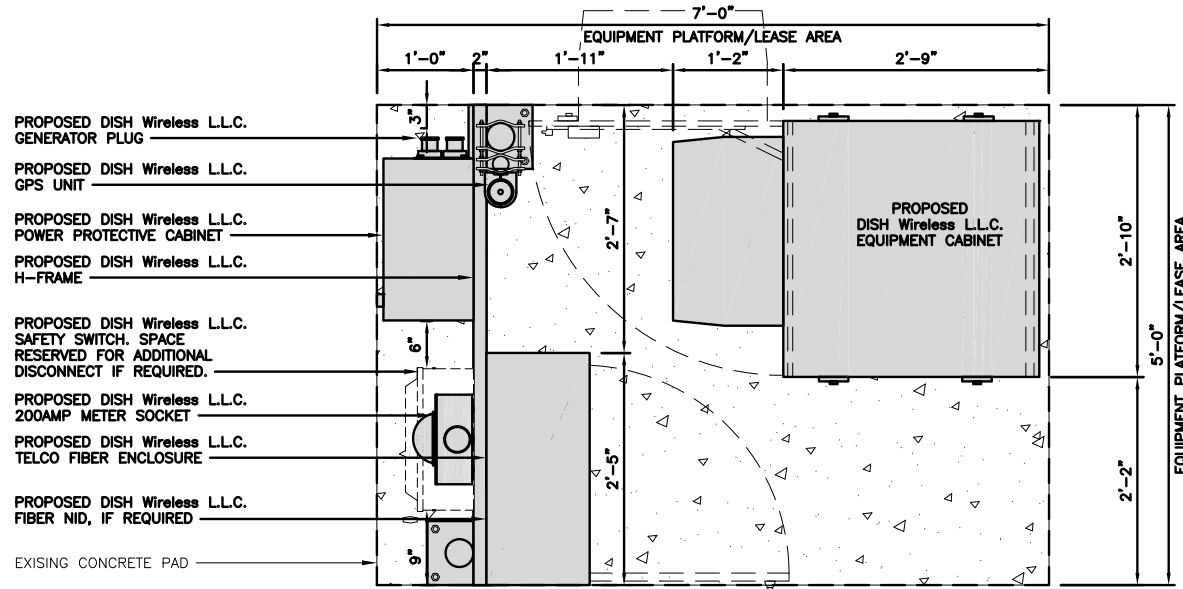
SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER

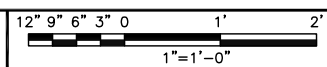
A-3

NOTES

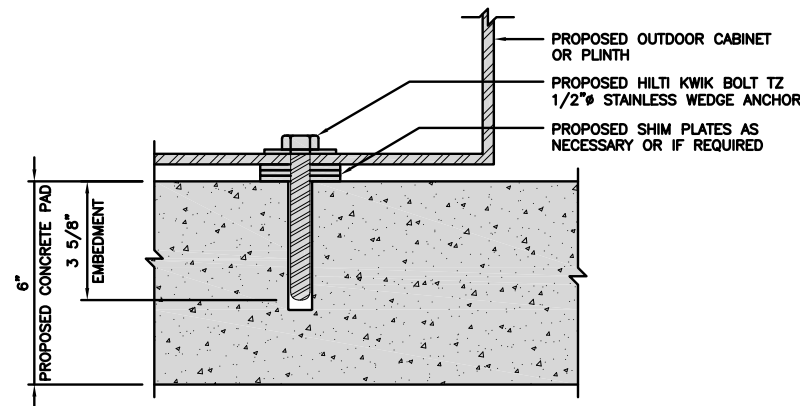
1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
3. EQUIPMENT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



PLATFORM EQUIPMENT PLAN



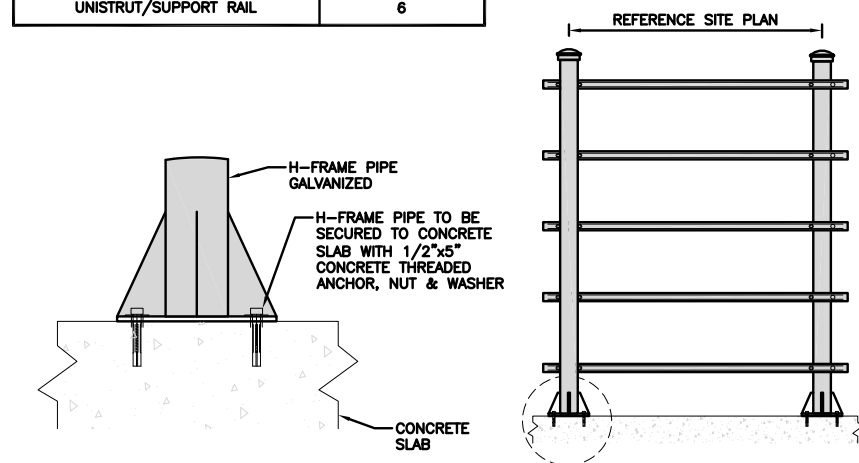
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TYPICAL OUTDOOR EQUIPMENT TO CONCRETE SLAB ANCHORAGE

NO SCALE 2

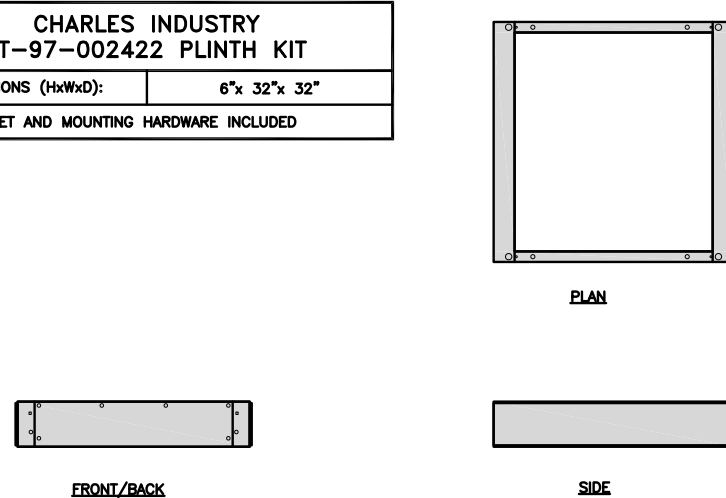
H-FRAME	
UNISTRUT/SUPPORT RAIL	6



H-FRAME CONCRETE SLAB INSTALLATION DETAIL

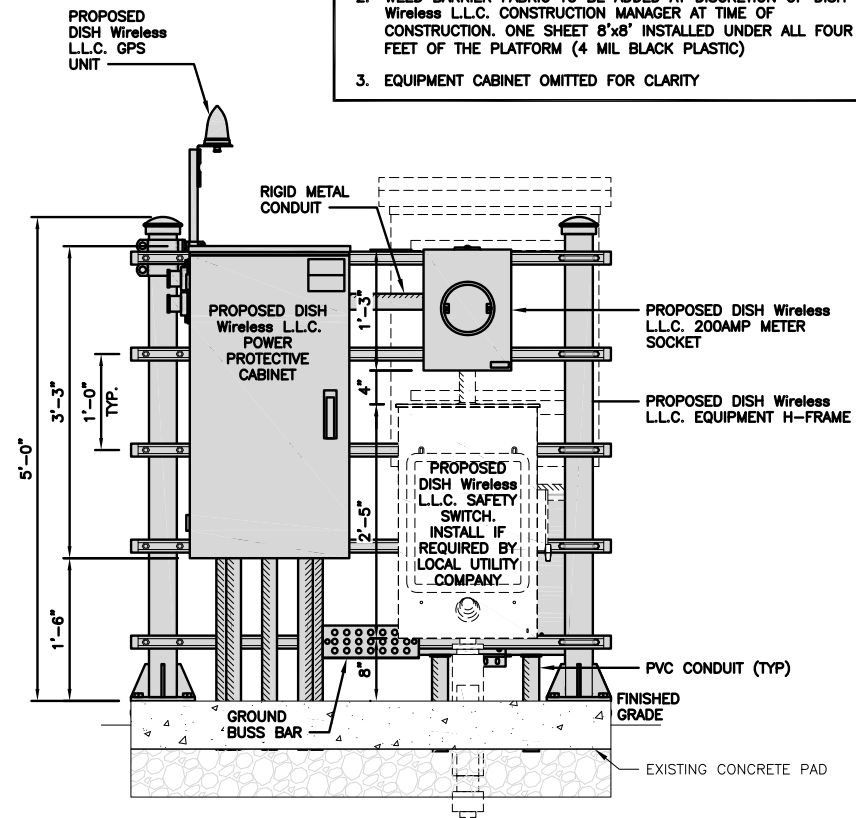
NO SCALE 3

CHARLES INDUSTRY LT-97-002422 PLINTH KIT	
DIMENSIONS (HxWxD):	6"x 32"x 32"
NOTE: GASKET AND MOUNTING HARDWARE INCLUDED	

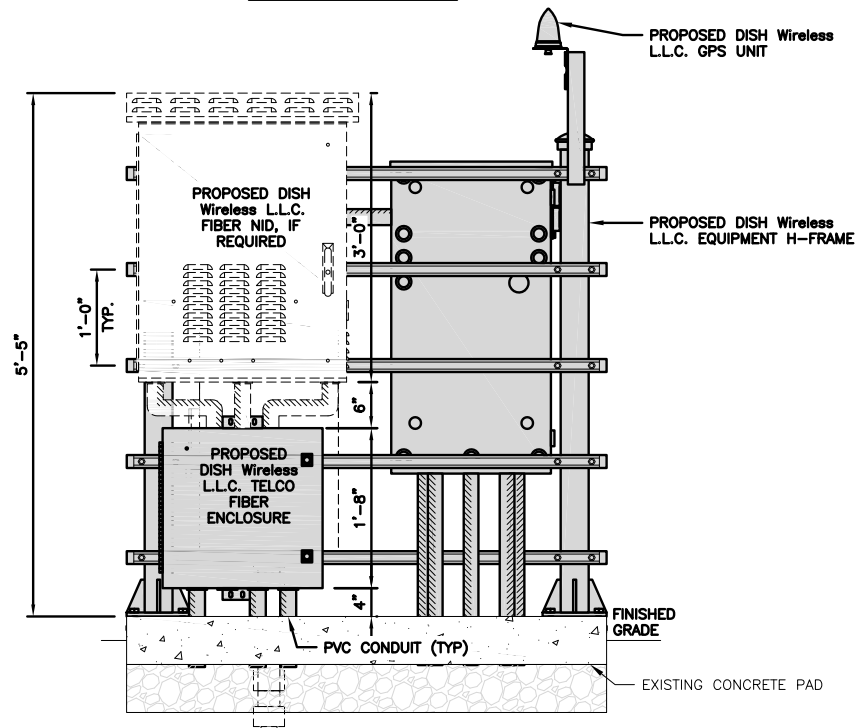


PLINTH DETAIL

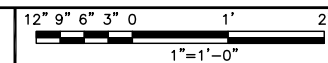
NO SCALE 4



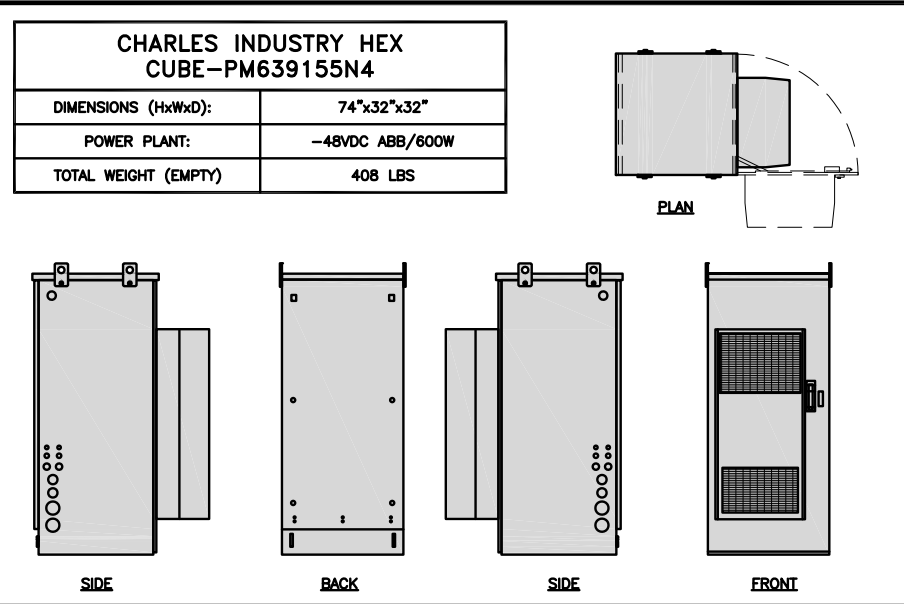
FRONT ELEVATION



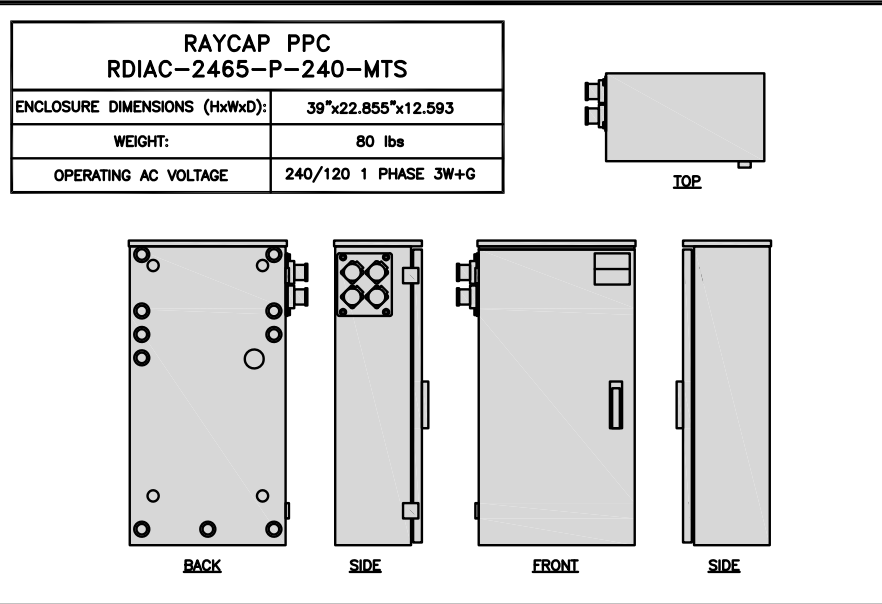
BACK ELEVATION



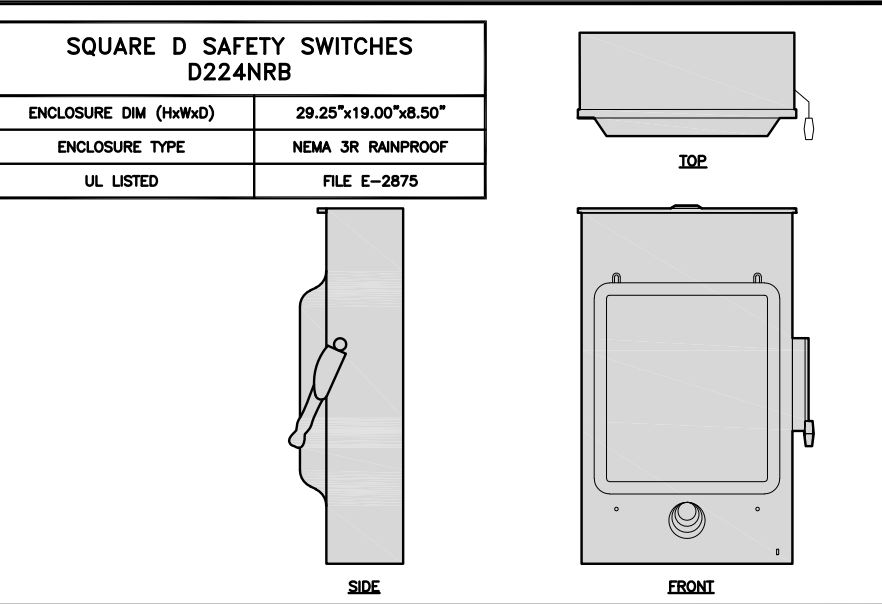
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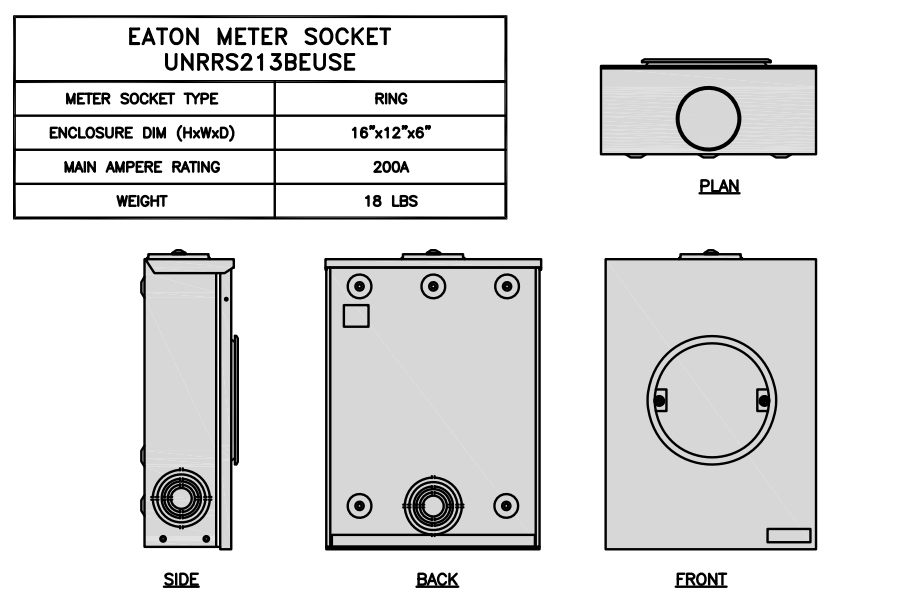
CABINET DETAIL NO SCALE 1



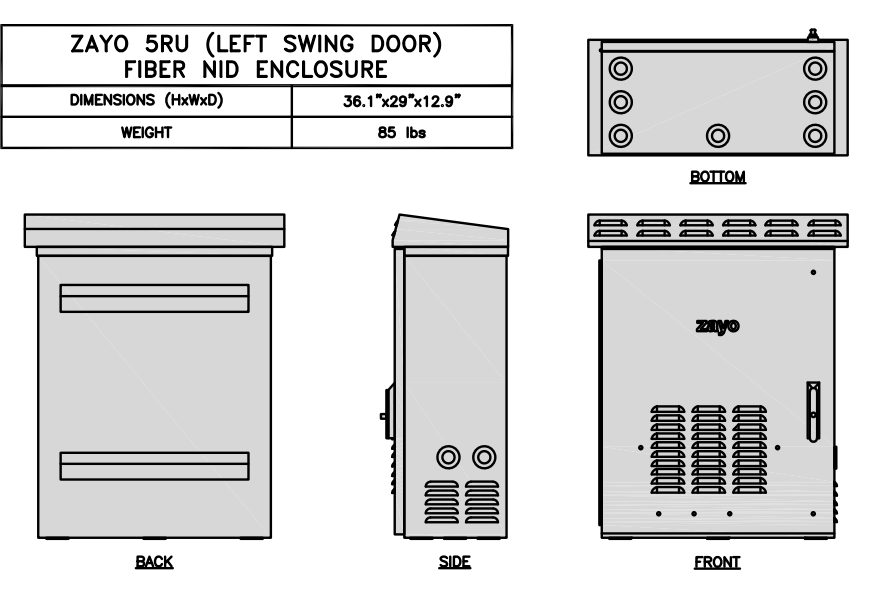
POWER PROTECTION CABINET (PPC) DETAIL NO SCALE 2



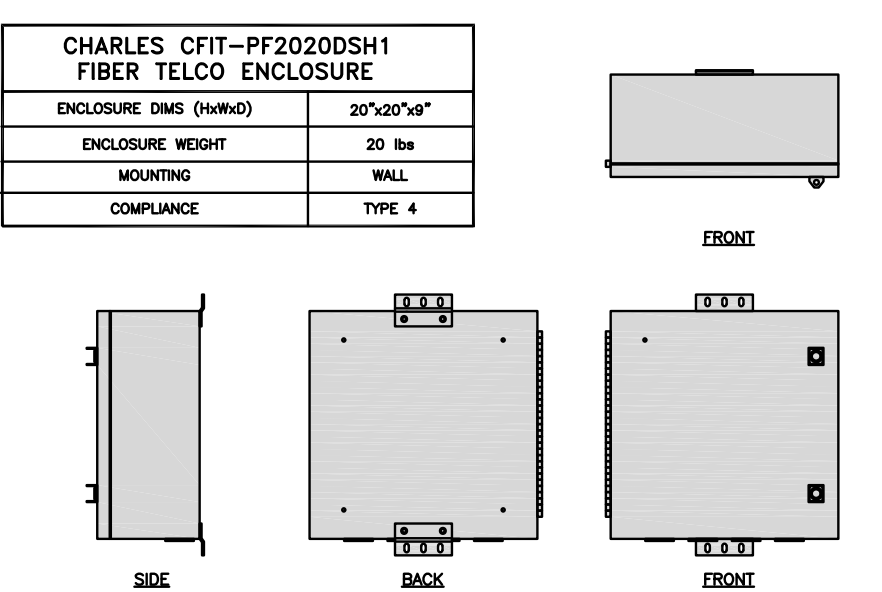
SAFETY SWITCH DETAIL NO SCALE 3



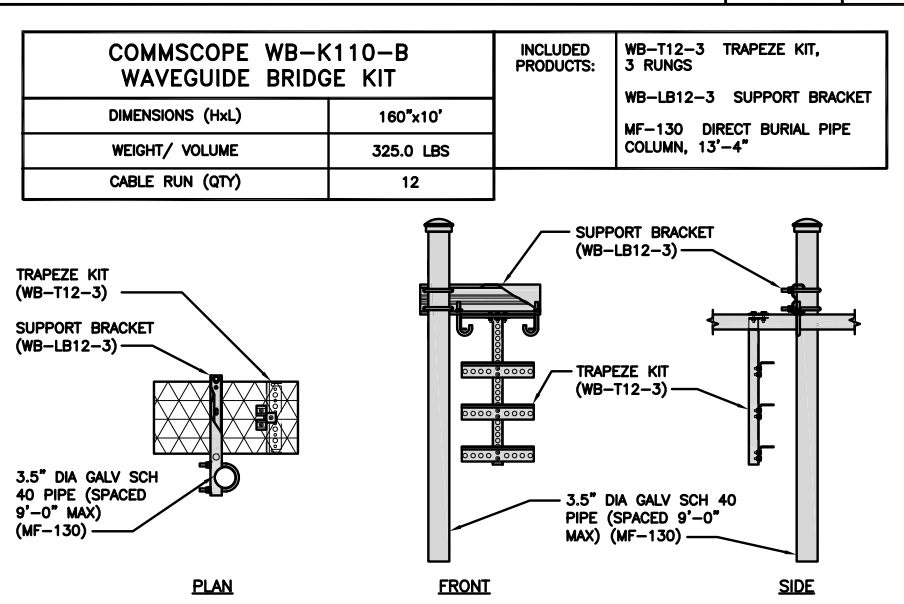
METER SOCKET DETAIL NO SCALE 4



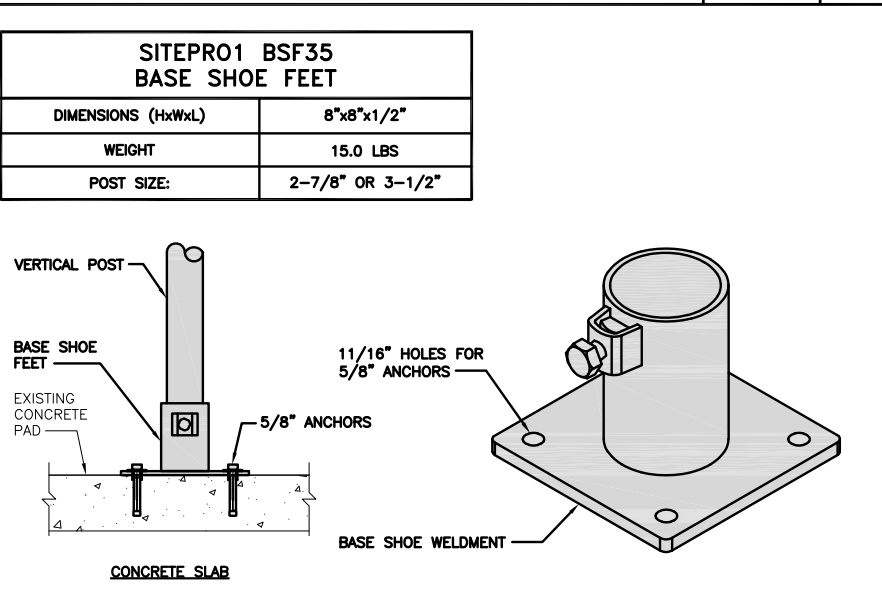
FIBER NID ENCLOSURE DETAIL NO SCALE 5



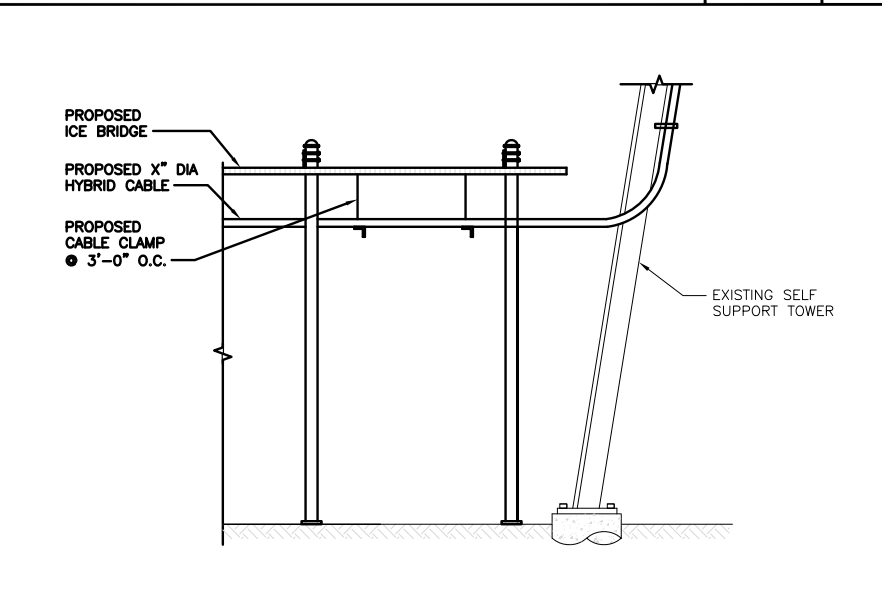
FIBER TELCO ENCLOSURE DETAIL NO SCALE 6



ICE BRIDGE DETAIL NO SCALE 7



ICE BRIDGE PIPE MOUNT DETAIL NO SCALE 8



HYBRID CABLE RUN NO SCALE 9

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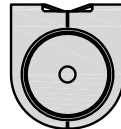
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00121A
1 HARTFORD SQUARE
NEW BRITAIN, CT 06052

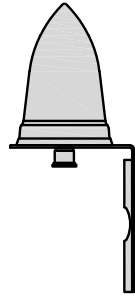
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

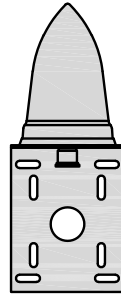
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



TOP



BACK

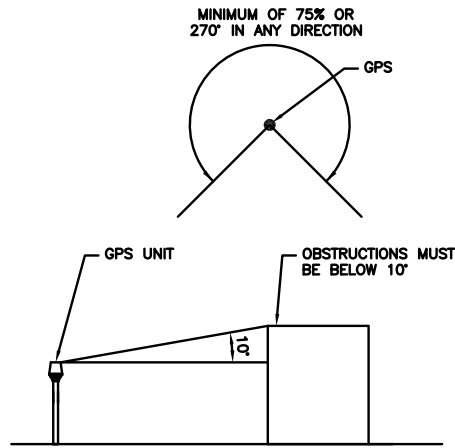


SIDE

GPS DETAIL

NO SCALE

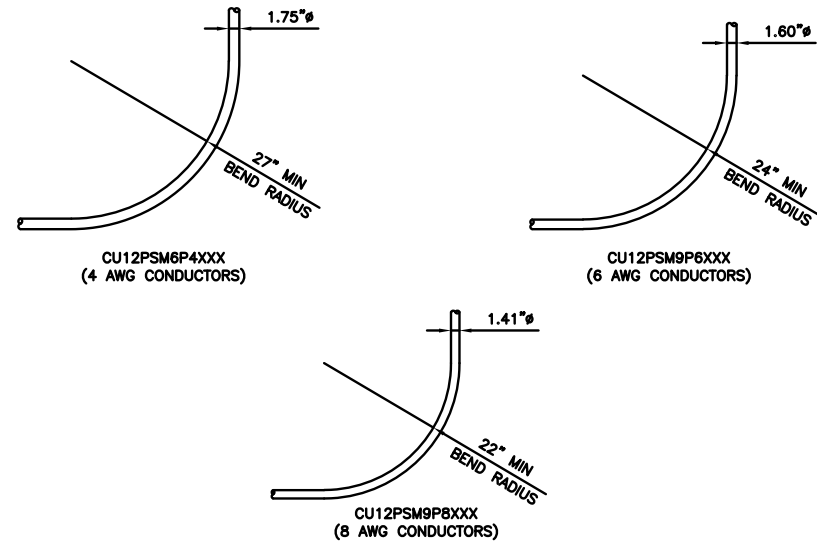
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GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

2



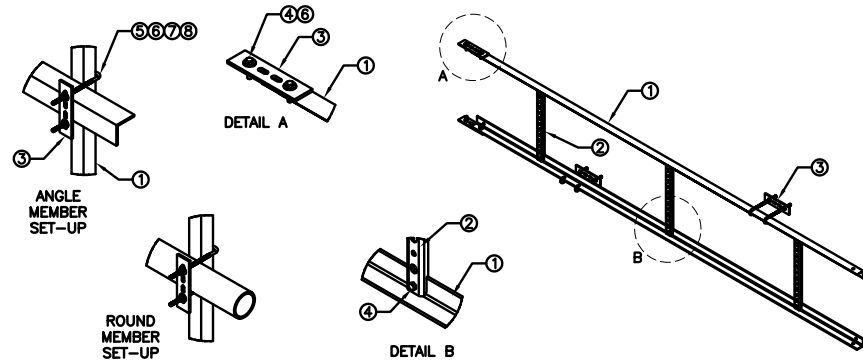
CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUSES

NO SCALE

3

COMMSCOPE 10' CABLE LADDER 6 HOLE RUNGS	
DIMENSIONS (WxL)	20.5"x120"
WEIGHT	43.65 lbs

ITEM#	DESCRIPTION
1	10" ANGLE SIDE RAIL
2	20" LADDER RUNG
3	BACKING PLATE
4	3/8"x1-1/2" GALV BOLT KIT
5	8" GALV J-BOLT KIT
6	3/8" GALV FLAT WASHER
7	3/8" GALV LOCK WASHER
8	3/8" GALV HEX NUT



CABLE LADDER DETAIL

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9

dish
wireless.

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**CONSTRUCTION
DOCUMENTS**

SUBMITTALS		
REV	DATE	DESCRIPTION
A	8/31/21	ISSUED FOR REVIEW
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A&E PROJECT NUMBER
149445.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

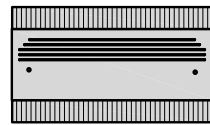
BOBDL00121A
1 HARTFORD SQUARE
NEW BRITAIN, CT 06052

SHEET TITLE
EQUIPMENT DETAILS

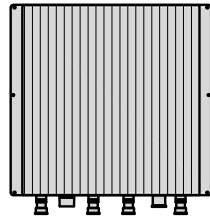
SHEET NUMBER

A-5

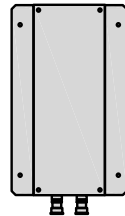
FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



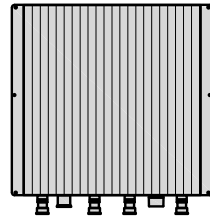
PLAN



BACK



SIDE



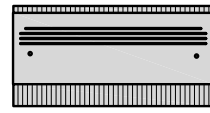
FRONT

RRH DETAIL

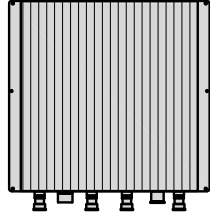
NO SCALE

1

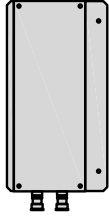
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



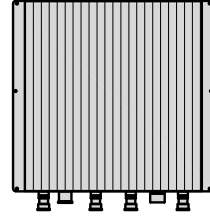
PLAN



BACK



SIDE



FRONT

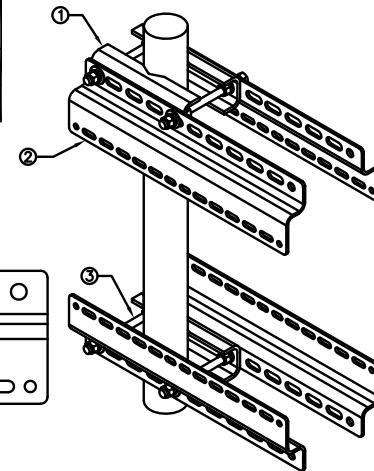
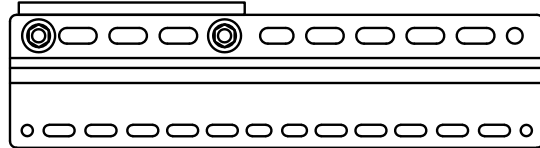
RRH DETAIL

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"



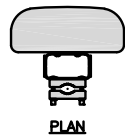
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL

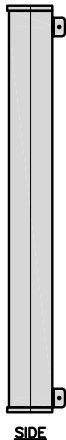
NO SCALE

3

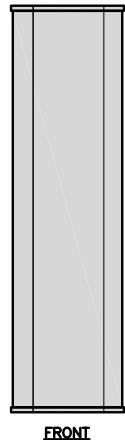
JMA MX08FRO665-21	
DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



PLAN



SIDE



FRONT

ANTENNA DETAIL

NO SCALE

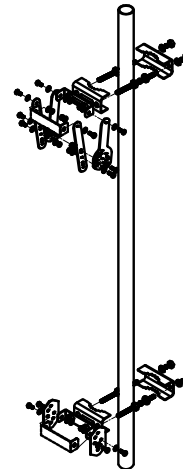
4

NOT USED

NO SCALE 5

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

NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS
FOR 4-, 6-, AND 8-FOOT ANTENNAS
ANTENNA BRACKET NOT PART OF KIT



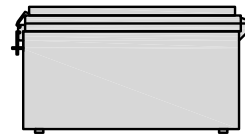
NOTE:
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ANTENNA BRACKET DETAIL

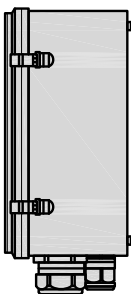
NO SCALE

6

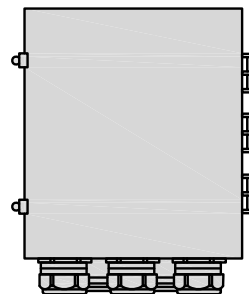
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



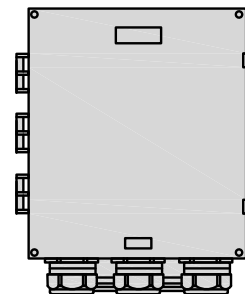
PLAN



SIDE



BACK



FRONT

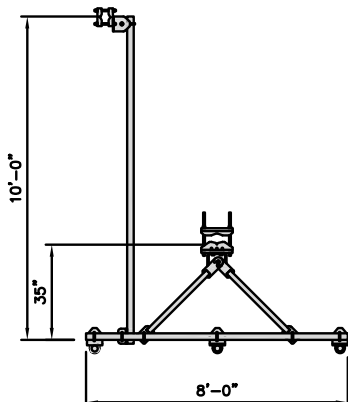
SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

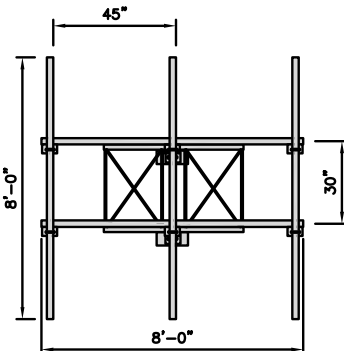
7

COMMSCOPE V-FRAME MTC3975083	
FACE SIZE	8'-0"
WEIGHT	352.136 lbs

NOTE:
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APPROVED EQUIVALENT



PLAN



FRONT

ANTENNA FRAME DETAIL

NO SCALE

8

NOT USED

NO SCALE 9



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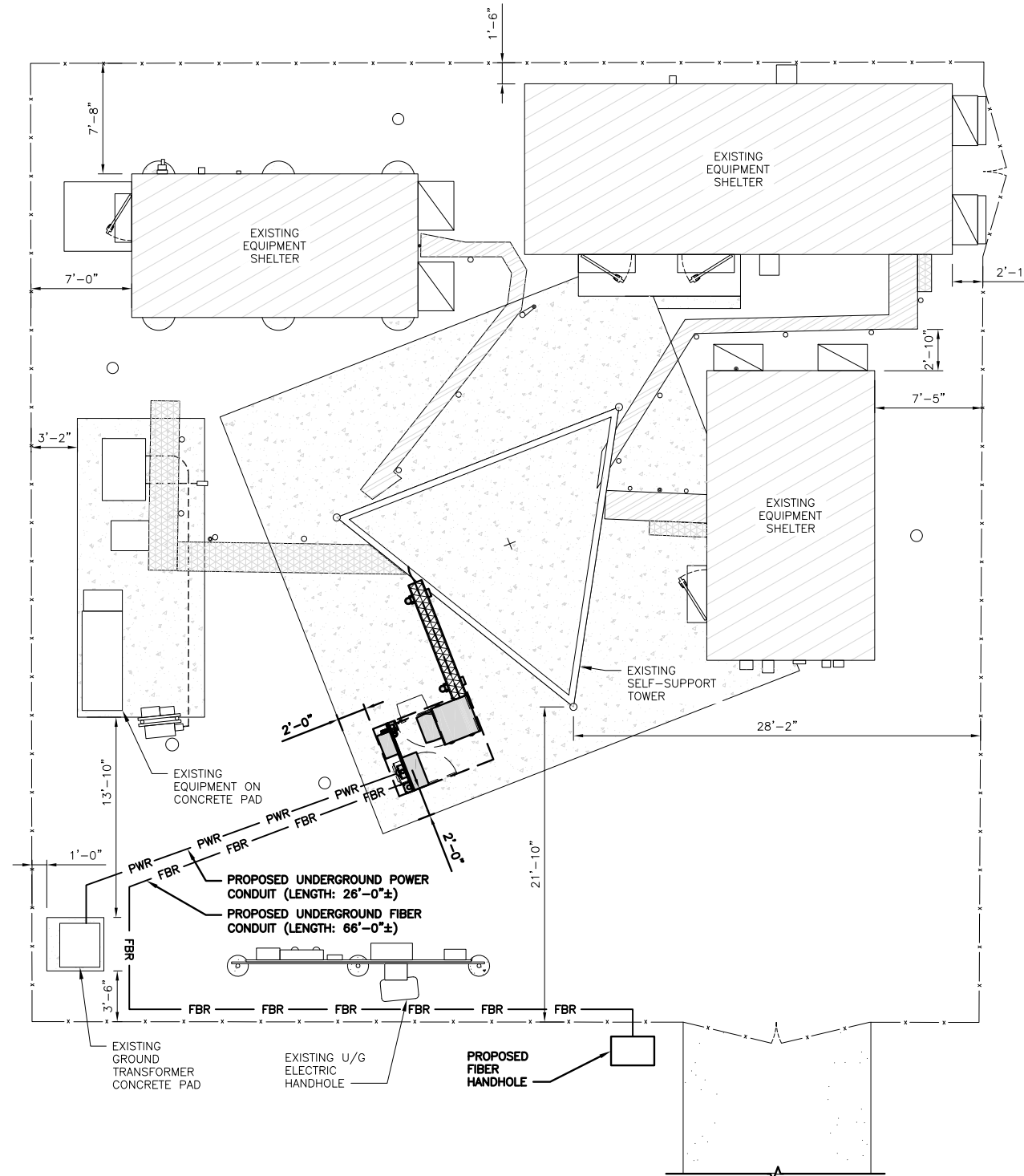
A-6

NOTES

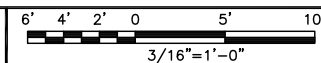
1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.

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

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



UTILITY ROUTE PLAN



1

ELECTRICAL NOTES

NO SCALE

2



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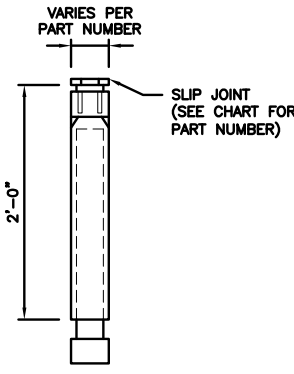
SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER

E-1

CARLON EXPANSION FITTINGS

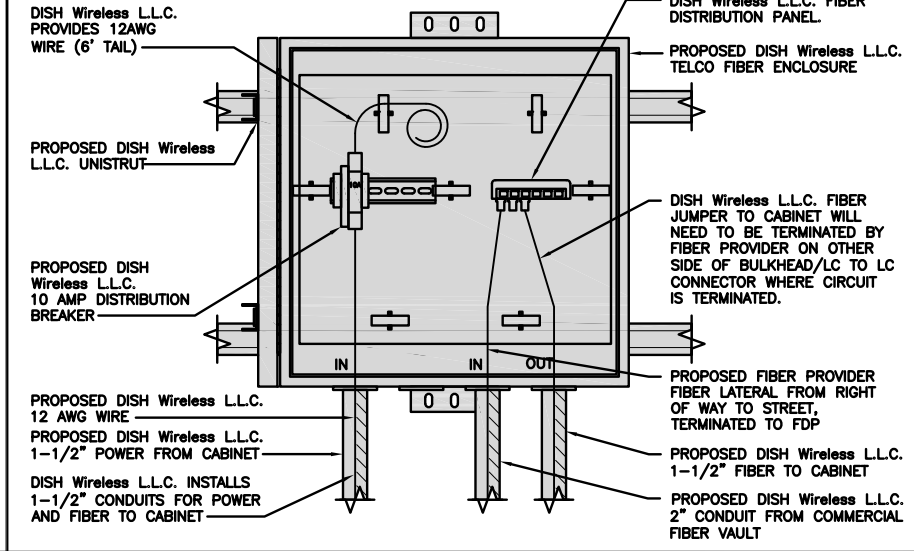
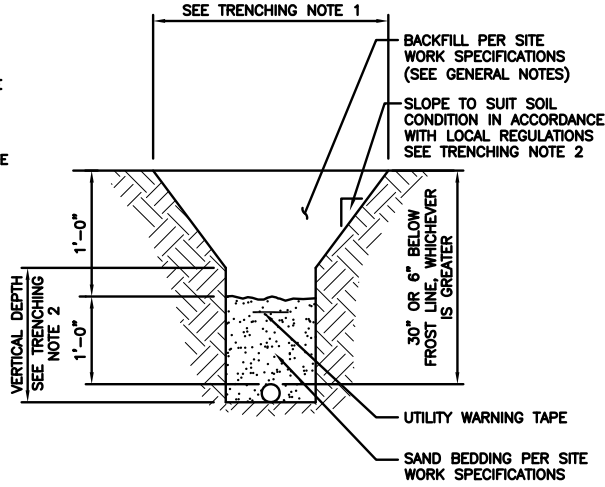
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N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



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

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

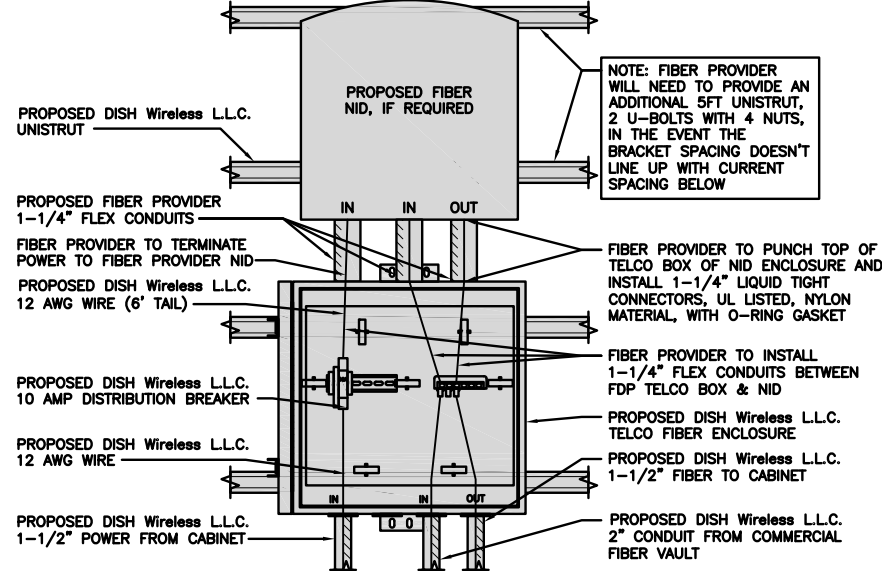
NO SCALE 1

TYPICAL UNDERGROUND TRENCH DETAIL

NO SCALE 2

DARK TELCO BOX – INTERIOR WIRING LAYOUT

NO SCALE 3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL)

NO SCALE 4

NOT USED

NO SCALE 5

NOT USED

NO SCALE 6

NOT USED

NO SCALE 8

NOT USED

NO SCALE 9



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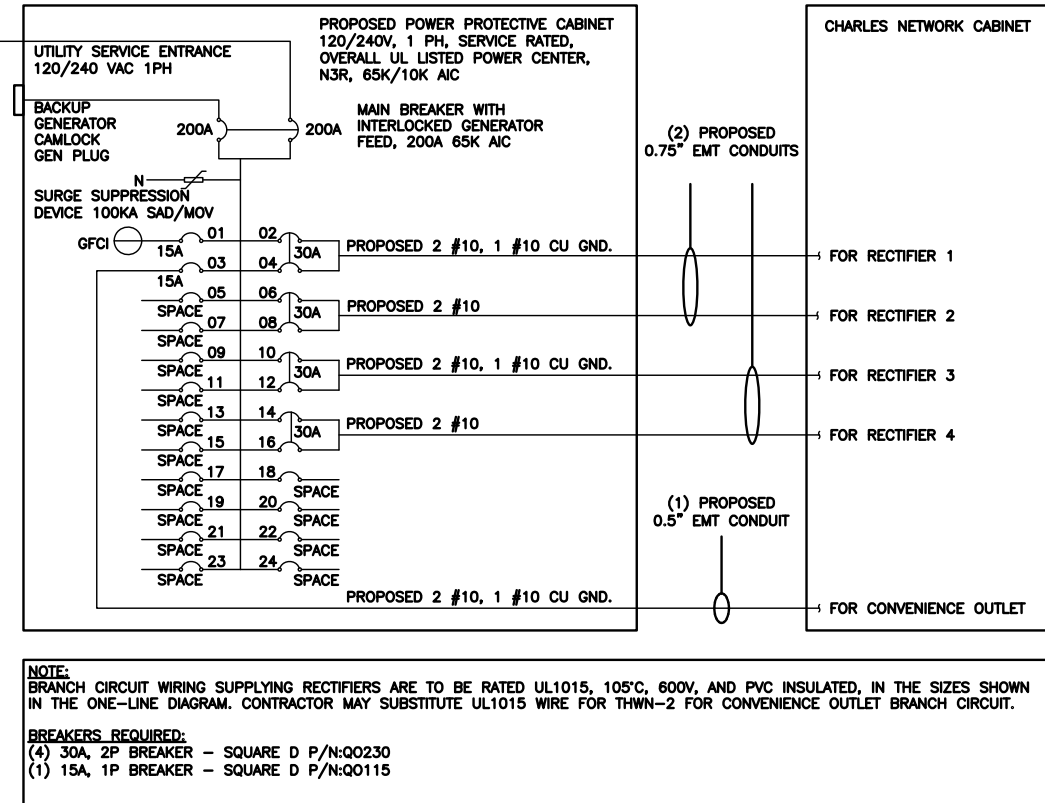
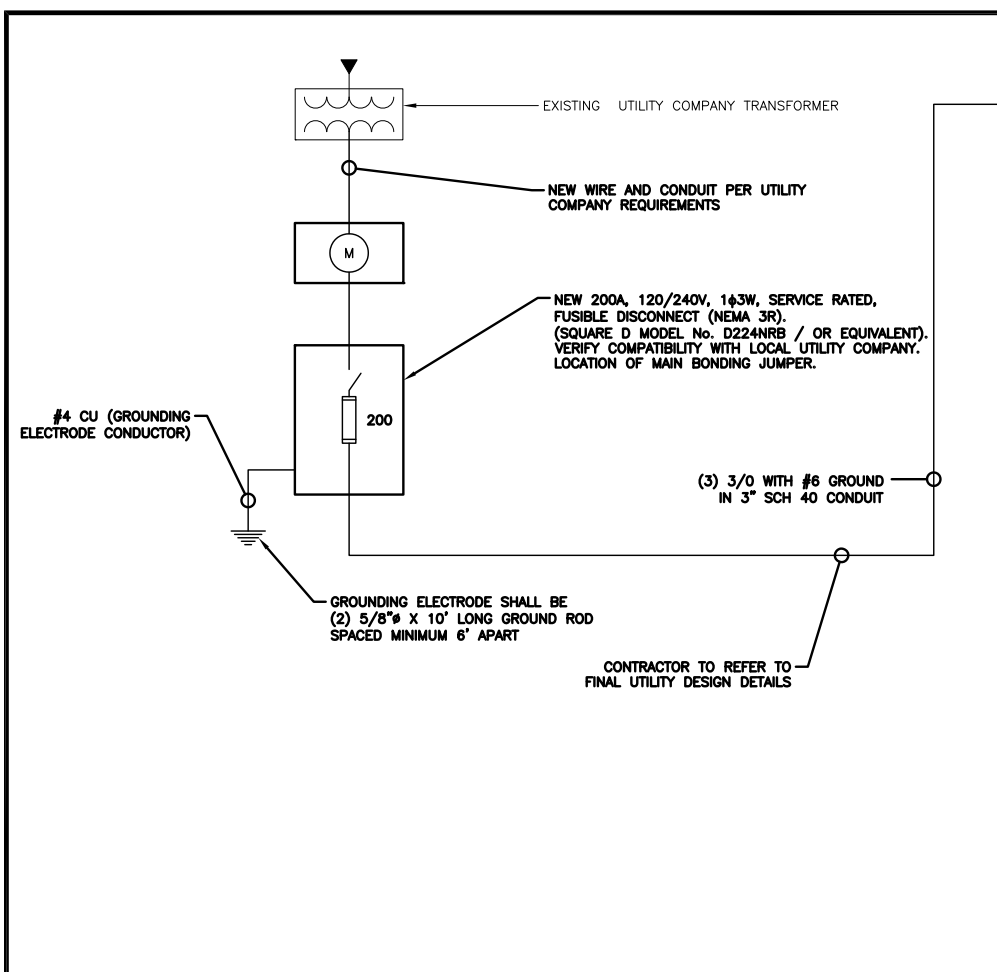
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BOBDL00121A
1 HARTFORD SQUARE
NEW BRITAIN, CT 06052

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.

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			15A	3	B	4					
-SPACE-				5	A	6	30A	2880	2880	ABB/GE INFINITY RECTIFIER 2	
-SPACE-				7	B	8					
-SPACE-				9	A	10	30A	2880	2880	ABB/GE INFINITY RECTIFIER 3	
-SPACE-				11	B	12					
-SPACE-				13	A	14	30A	2880	2880	ABB/GE INFINITY RECTIFIER 4	
-SPACE-				15	B	16					
-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, 1Ø, 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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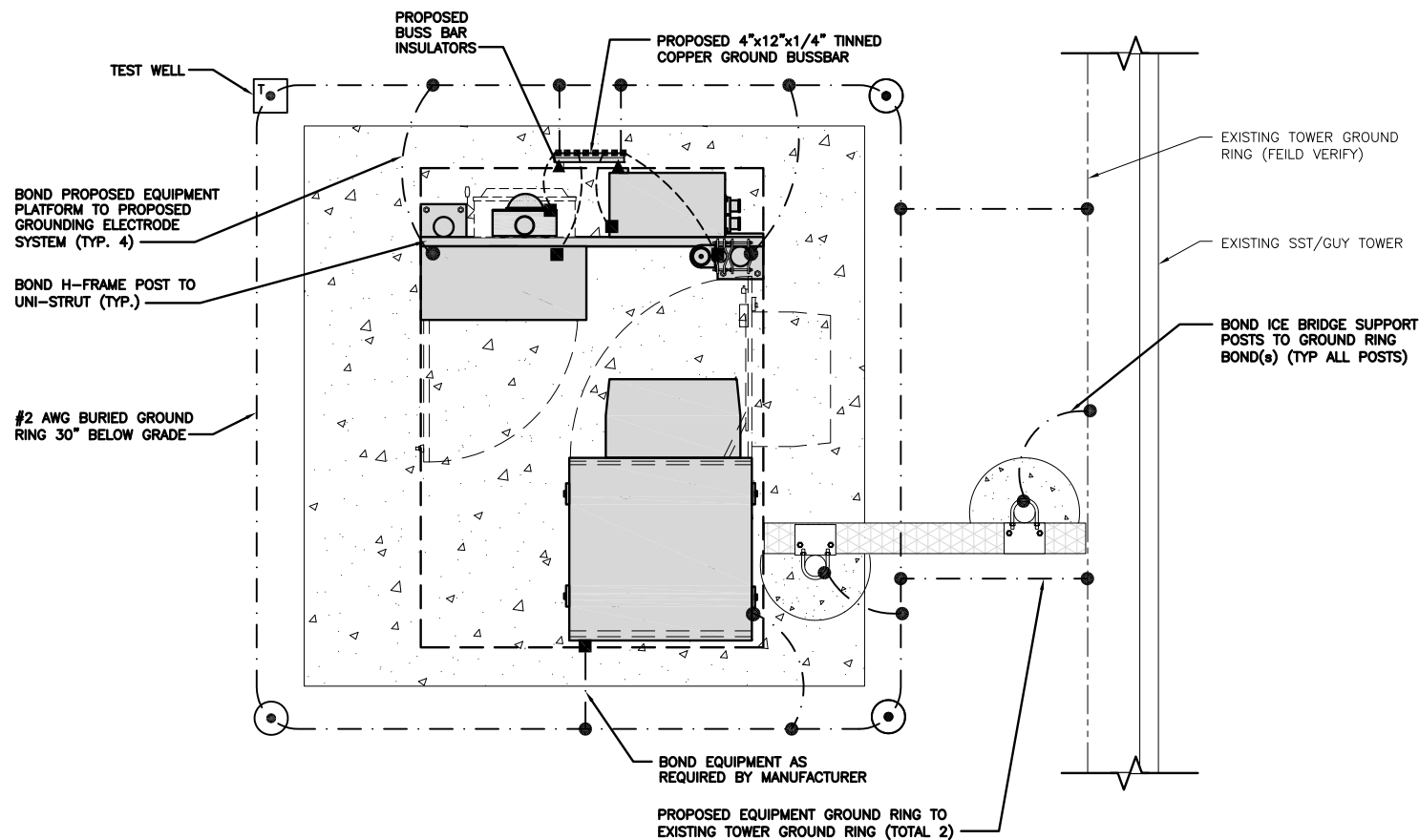
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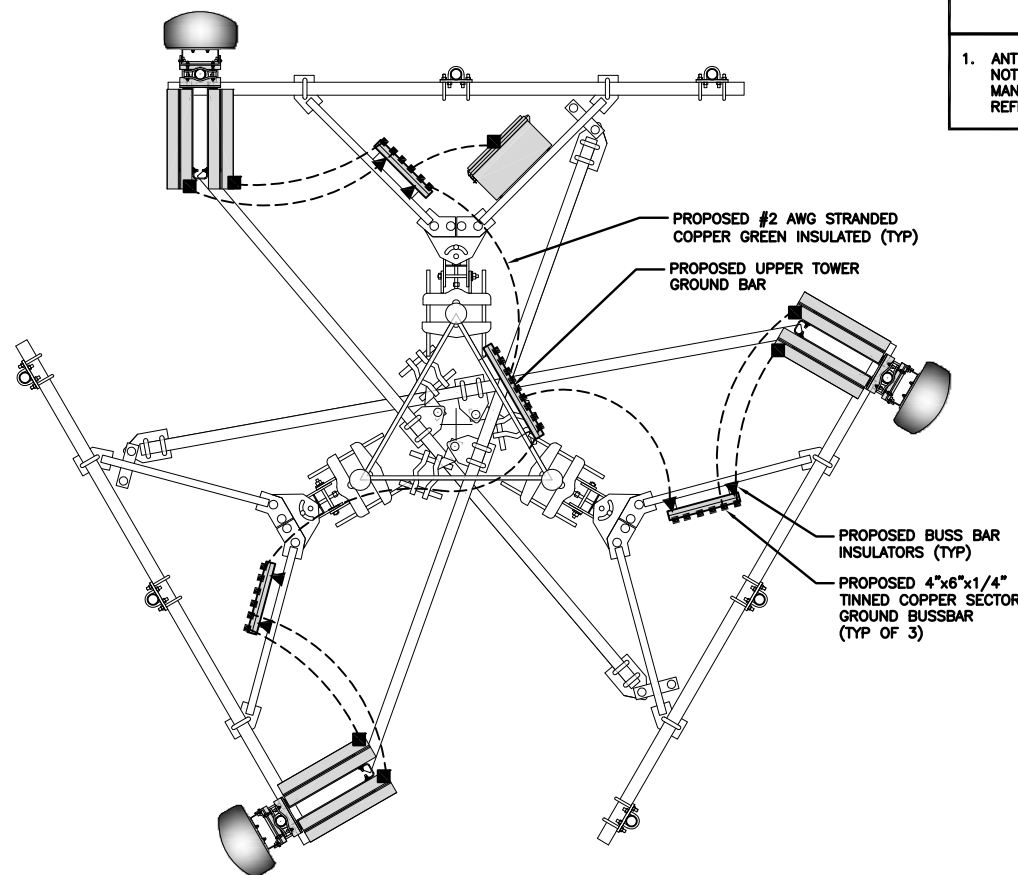
SHEET TITLE
ELECTRICAL ONE-LINE, FAULT
CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2

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

GROUNDING LEGEND

- GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
- 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.
- 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 TOWER STEEL.

GROUNDING KEY NOTES

NO SCALE 3



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CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER
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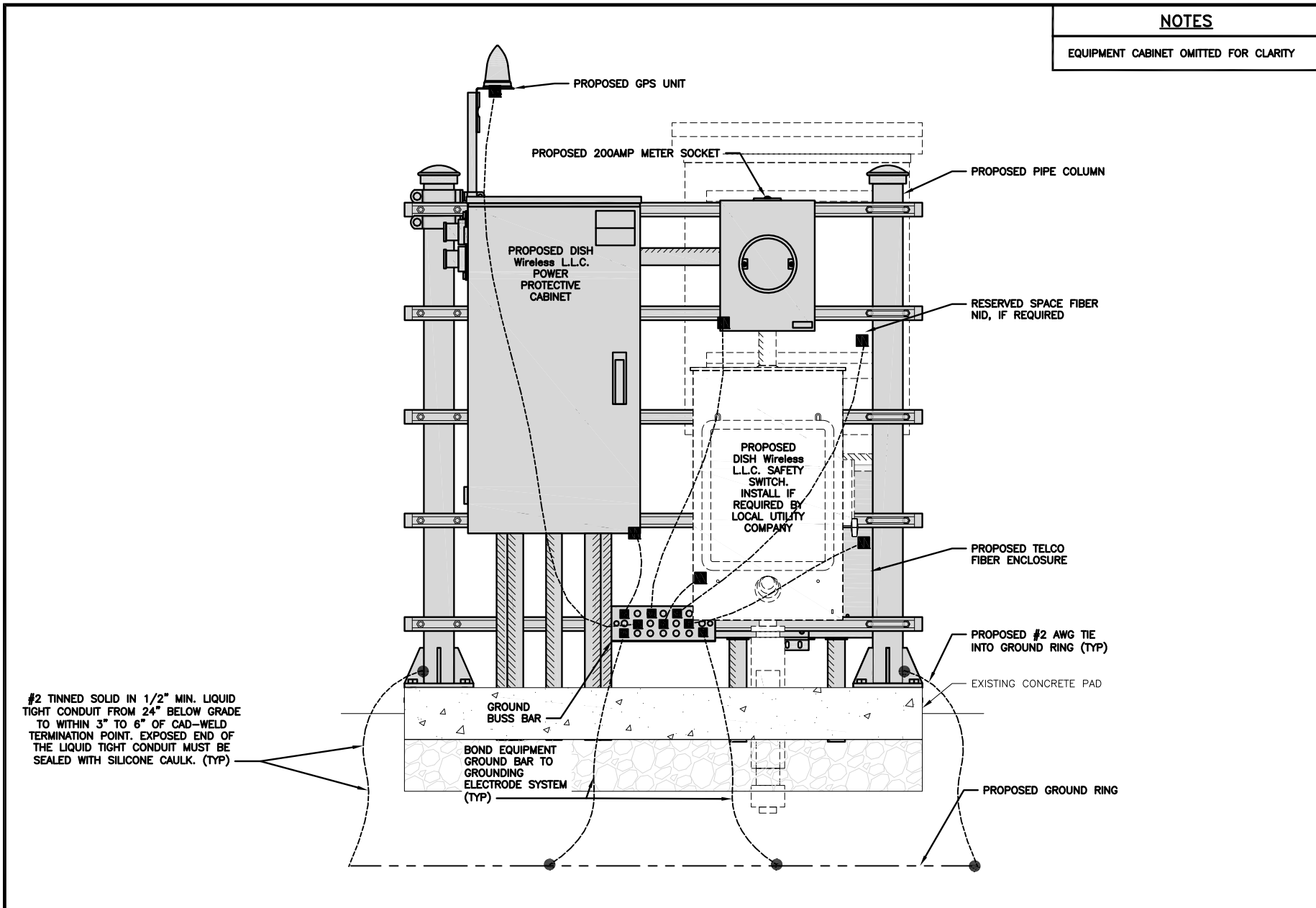
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PROJECT INFORMATION

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1 HARTFORD SQUARE
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SHEET TITLE
GROUNDING PLANS
AND NOTES

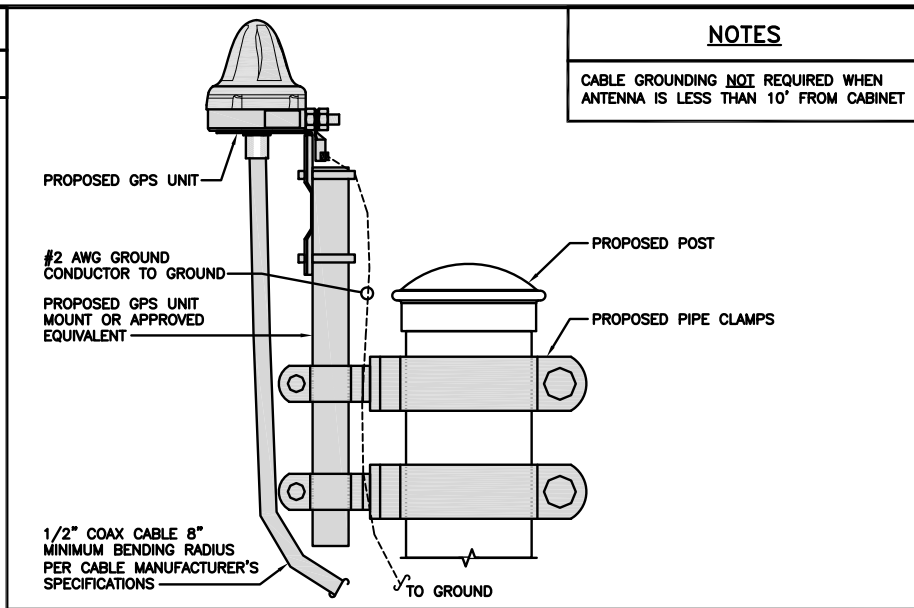
SHEET NUMBER

G-1



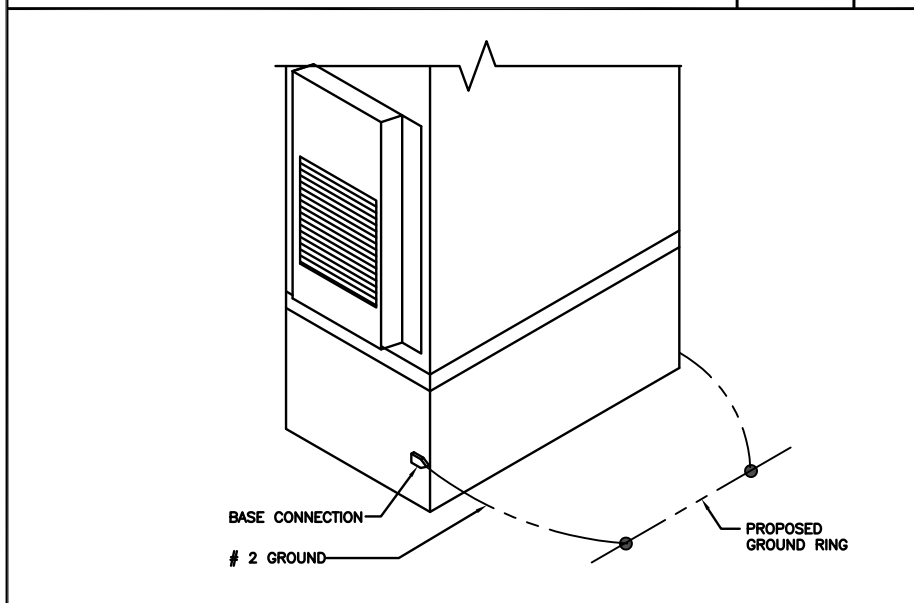
H-FRAME GROUNDING DETAIL

NO SCALE 1



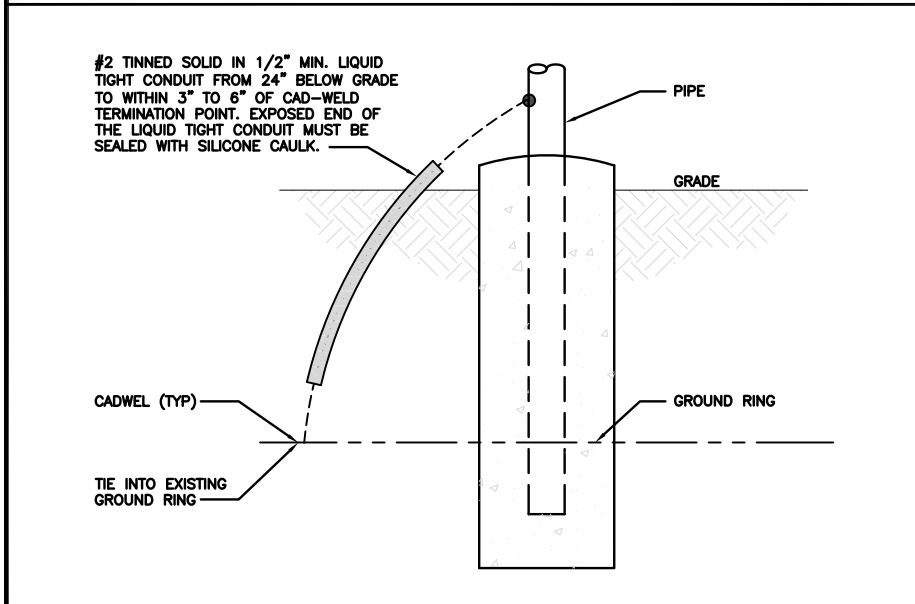
TYPICAL GPS UNIT GROUNDING

NO SCALE 2



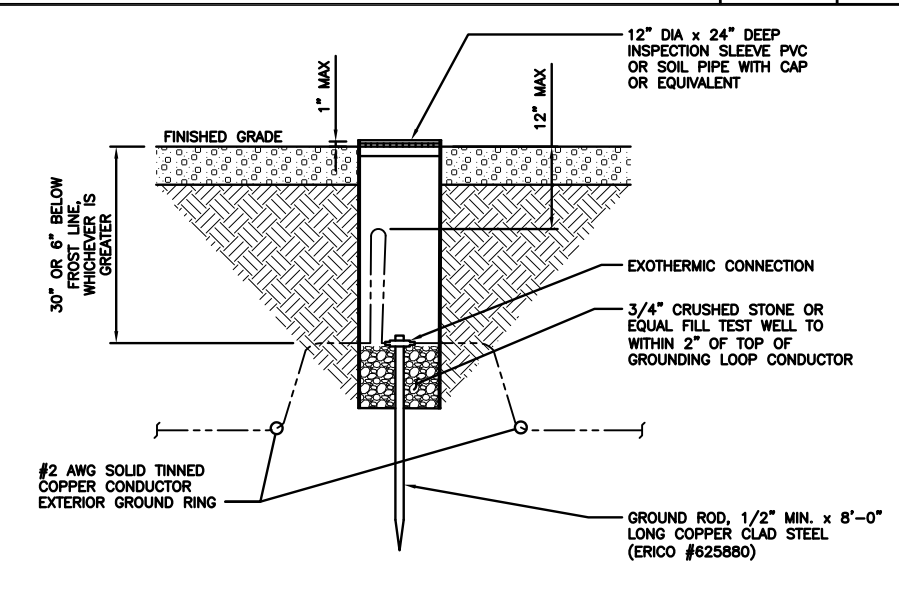
OUTDOOR CABINET GROUNDING

NO SCALE 3



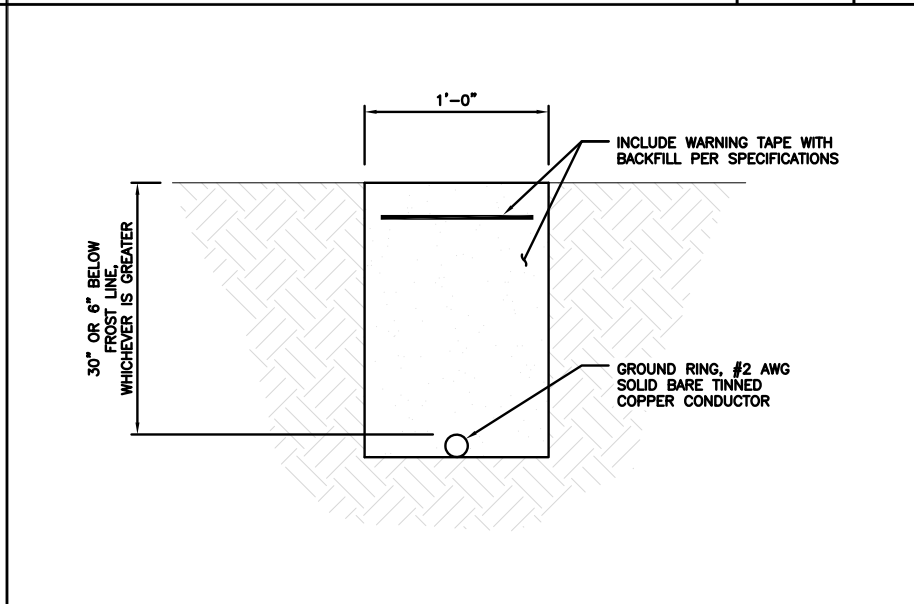
TRANSITIONING GROUND DETAIL

NO SCALE 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

NO SCALE 5



TYPICAL GROUND RING TRENCH

NO SCALE 6



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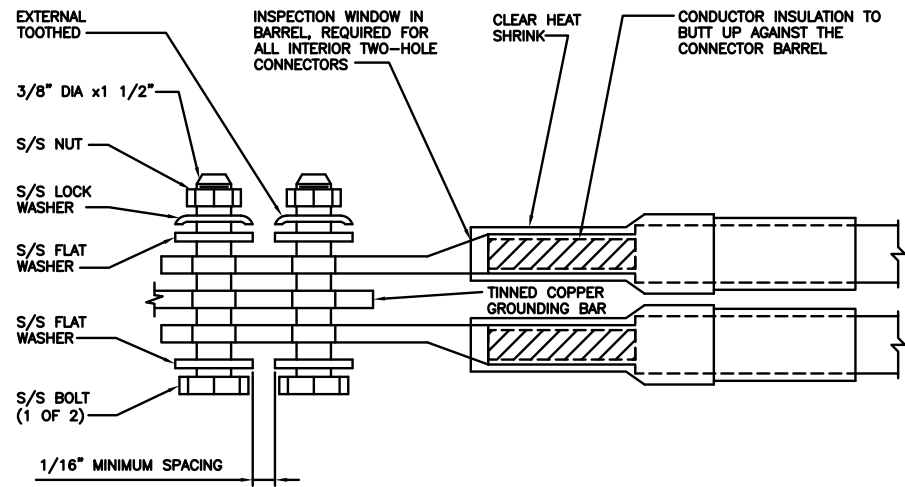
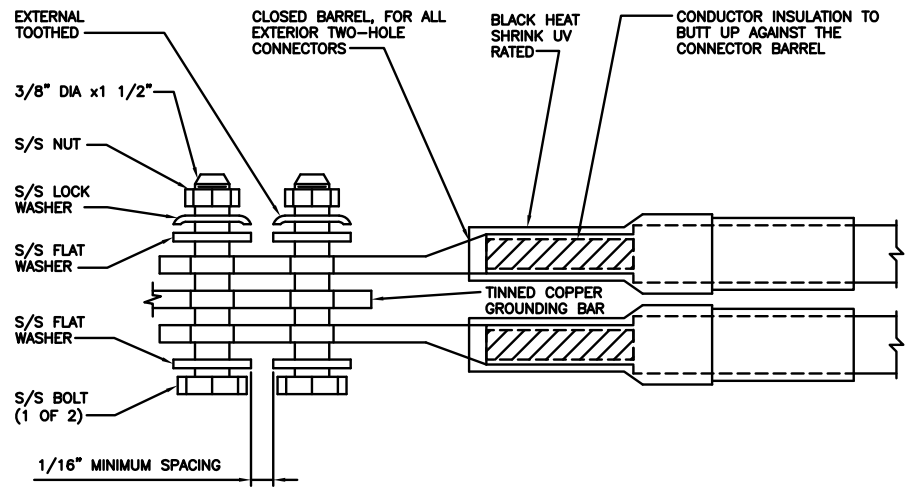
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SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-2

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



TYPICAL GROUNDING NOTES

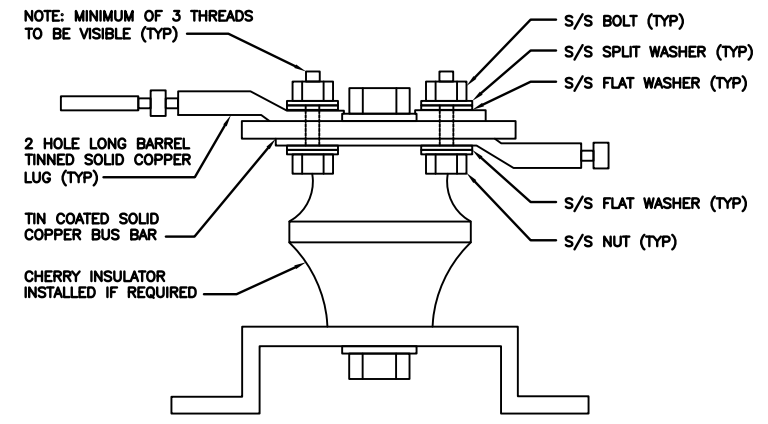
NO SCALE 1

TYPICAL EXTERIOR TWO HOLE LUG

NO SCALE 2

TYPICAL INTERIOR TWO HOLE LUG

NO SCALE 3



LUG DETAIL

NO SCALE 4

NOT USED

NO SCALE 5

NOT USED

NO SCALE 6

NOT USED

NO SCALE 7

NOT USED

NO SCALE 8

NOT USED

NO SCALE 9



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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		

CONTRACTOR TO REFER TO FINAL CONSTRUCTION
RFDS FOR ALL RF DETAILS. FINAL RFDS IS IN
NEXSYSONE.

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)



AWS
(N66+N70+H-BLOCK)



CBRS TECH
(3 GHz)



NEGATIVE SLANT PORT
ON ANT/RRH



ALPHA SECTOR



BETA SECTOR



GAMMA SECTOR



COLOR IDENTIFIER

NO SCALE

2

NOT USED

NO SCALE

3

NOT USED

NO SCALE

4



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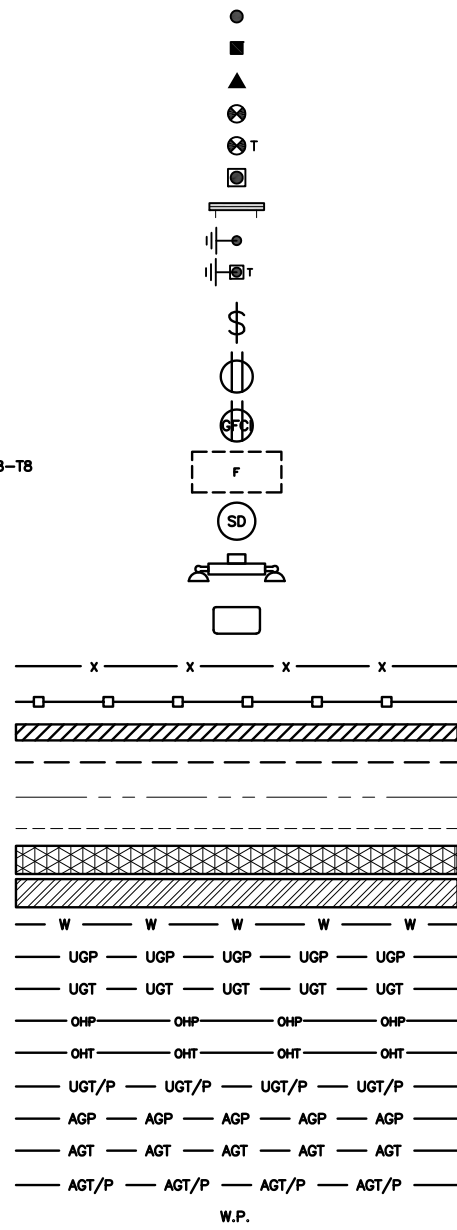
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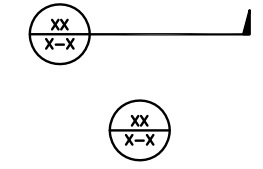
SHEET TITLE
RF
CABLE COLOR CODE

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

ABBREVIATIONS



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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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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

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

DRAWN BY: BMK CHECKED BY: BLB APPROVED BY: BLB

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	8/31/21	ISSUED FOR REVIEW
0	9/23/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149445.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00121A
1 HARTFORD SQUARE
NEW BRITAIN, CT 06052

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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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

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DRAWN BY:	CHECKED BY:	APPROVED BY:
BMK	BLB	BLB

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	8/31/21	ISSUED FOR REVIEW
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A&E PROJECT NUMBER
149445.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00121A
1 HARTFORD SQUARE
NEW BRITAIN, CT 06052

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
BMK	BLB	BLB

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	8/31/21	ISSUED FOR REVIEW
0	9/23/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149445.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

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SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4