



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

January 12, 2024

Catherine Ware
SBA Communications Corporation
134 Flanders Road, Suite 125
Westborough, MA 01581
CWare@sbsite.com

RE: **TS-DISH-004-231213** - Dish Wireless, LLC request for an order to approve tower sharing at an existing telecommunications facility located at 277 Huckleberry Hill Road, Avon, Connecticut. **Acknowledgement of Complete Request.**

Dear Catherine Ware:

The Connecticut Siting Council (Council) is in receipt of your correspondence of January 10, 2024 submitted in response to the Council's December 22, 2023 notification of an incomplete request for tower sharing with regard to the above-referenced matter.

The submission renders the request for tower sharing complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

A handwritten signature in dark ink, appearing to read "Melanie Bachman".

Melanie Bachman
Executive Director

MAB/ANM/laf



December 6, 2023 - Revised January 4, 2024

Melanie Bachman Connecticut Siting Council Ten
Franklin Square
New Britain, CT 06051

RE: Tower Share Application

277 Huckleberry Hill Rd. Avon, CT 06013
Latitude: Lat.: 41.788219
Longitude: -72.918272
Site#: CT46143-A_BOBDL00139A_SBA_DISH

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the newly constructed/existing Monopole tower site located at 277 Huckleberry Hill Rd. Avon, CT

Dish Wireless LLC proposes to install three JMA Wireless MX08FRO665-21 panel antennas and six (6) RRUs, at the 70-foot level of the newly constructed/existing 130-foot monopole tower, one (1) Fiber cables will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7' x 5' lease area. Included are plans by Kimley-Horn November 6, 2023 Exhibit 10. Also included is a structural analysis prepared by TES, dated December 7, 2023, confirming that the existing tower is structurally capable of supporting the proposed equipment, attached as Exhibit 8. Also included is a mount analysis prepared by Kimley-Horn dated 6/06/2023 confirming that the mount is structurally capable of supporting the proposed equipment, attached as Exhibit 9. This facility was approved by the CT Siting Council on March 2, 2023 Petition # 1547. 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 Mr. Brandon Robertson Town Manager, Avon CT and Mr. Hiram Peck III Director of Planning Avon Ct.. (Separate notice is not being sent to SBA, as SBA is the tower owner making this submission).

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 130-feet and the Dish Wireless LLC antennas will be located at a center line height of 70-feet.
2. The proposed modifications will not result in the increase of the site boundary as depicted on the attached site plan.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels



that exceed local and state criteria. The incremental effect of the proposed changes will be negligible.

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 35.95% 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 monopole tower in Avon. 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.

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 70-foot level of the existing 130 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 Authorization has been provided by the owner to assist Dish Wireless LLC with this tower sharing application.

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting Dish Wireless LLC proposed loading.

Dish Wireless LLC is not aware of any public safety concerns relative to the proposed sharing of the existing monopole 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 Avon.

Sincerely,

Catherine Ware

Catherine Ware

Site Development Specialist

SBA Communications Corporation

134 Flanders Road, Suite 125

Westborough, MA 01581



917.868.8365 + T
CWare@sbsite.com
Attachments:

cc: Mr. Hiram Peck III, Director of Planning and Community Development
Avon Town Hall - 60 West Main Street Avon, CT 06001
860-409-4328

Mr. Brandon Robertson - Town Manager
Avon Town Hall - 60 West Main Street Avon, CT 06001
860-409-4328

EXHIBIT LIST

Exhibit 1	Copy of Check	X
Exhibit 2	letter of intent	x
Exhibit 3	FedEx labels	x
Exhibit 4	Property Card	x
Exhibit 5	Propert Map	
Exhibit 6	Zoning Approval	March 2, 2023 Petition #1547
Exhibit 7	EME	Fox Hill Telecom – 12/04/2023
Exhibit 8	StructuralAnalysis	TES 12/07/2023
Exhibit 9	Mount Analysis	Kimley-Horn - 6/06/2023
Exhibit 10	Construction Drawings	Kimley-Horn 11/06/2023

EXHIBIT 1

Copy of check

SBA Network Services, LLC

To: CONNECTICUT SITING COUNCIL

129986

Check Number:

2163370

Date:

12/16/2021

Invoice Number	Invoice Date	Description	Gross Amount	Taxes Withheld	Net Amount
PRSF12162110	12/16/2021	CSC FEE BOBDL00139A DISH	\$ 625.00	\$ 0.00	\$ 625.00

\$ 625.00

\$ 0.00

\$ 625.00

SBA Network Services, LLC

8051 Congress Avenue
Boca Raton, FL 33487

(800) 487-7483

Wells Fargo Bank

061209756

2163370

129986

DATE

AMOUNT

12/16/2021

\$ 625.00

Six Hundred Twenty Five Dollars And 00 Cents

Void After 120 Days

Pay to the Order of:

CONNECTICUT SITING COUNCIL
ACCOUNTS RECEIVABLE
TEN FRANKLIN SQUARE

NEW BRITAIN, CT 06051

Brian Lagunas

⑈ 2163370⑈⑈061209756⑈2079900424566⑈

EXHIBIT 2

Letter of Intent

December 11, 2023

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: 277 Huckleberry Hill Road, Avon, CT
Dish Wireless Site No: BOBDL00139A
SBA Site No: CT46143-A

Dear Ms. Bachman:

Please let the following serve as Evidence of Intent to allow Dish's shared use of the existing SBA telecommunications site at **277 Huckleberry Hill Road, Avon, CT**.

SBA Properties, 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 70' for antennas and associated equipment.

Thank you,

Catherine Ware

Catherine Ware
Site Development Specialist
SBA COMMUNICATIONS CORPORATION
134 Flanders Road, Suite 125
Westboro, MA 01581

(917)868-8365 + C
CWare@sbsite.com

EXHIBIT 3

Fedex Labels

ORIGIN ID: ZRPA
CATHERINE WARE
SBA COMMUNICATIONS CORPORATION
101 INTERCHANGE PALZA

(917) 868-8365

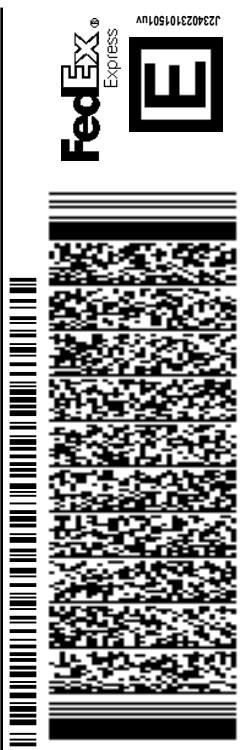
SHIP DATE: 11DEC23
ACTWGT: 2.00 LB
CAD: 255382542INET4535

BILL SENDER

CRANBURY, NJ 08512
UNITED STATES US

TO **MS. MELANIE BACHMAN**
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQUARE

NEW BRITAIN CT 06051
(860) 827-2935 REF: 10-56-92009-6089
INV: PO: DEPT:



TRK# 7744 2799 8631

0201

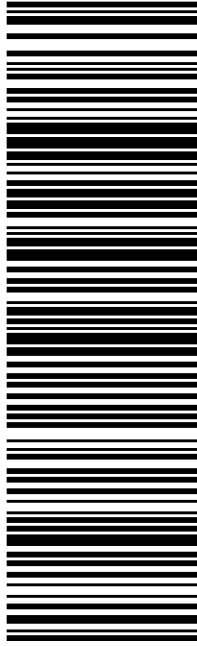
TUE - 12 DEC 5:00P

STANDARD OVERNIGHT

EB BDLA

06051

CT-US BDL



After printing this label:
1. Fold the printed page along the horizontal line.
2. Place label in shipping pouch and affix it to your shipment.

CONSIGNEE COPY - PLEASE PLACE IN FRONT OF POUCH

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ORIGIN ID: ZRPA
CATHERINE WARE
SBA COMMUNICATIONS CORPORATION
101 INTERCHANGE PALZA

(917) 868-8365

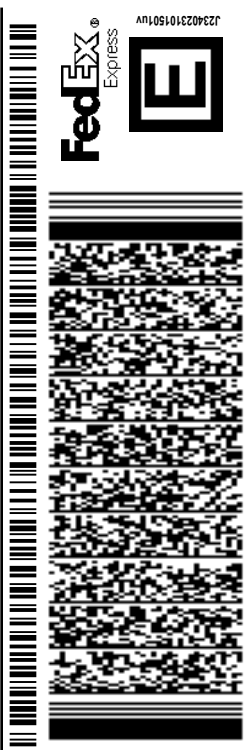
SHIP DATE: 11DEC23
ACTWGT: 2.00 LB
CAD: 255382542INET4535

BILL SENDER

CRANBURY, NJ 08512
UNITED STATES US

TO **MR. HIRAM PECK III**
TOWN OF AVON - DIRECTOR OF PLANNING
60 WEST MAIN STREET (ROUTE 44)

AVON CT 06001
(860) 409-4300
INV: REF: 10-56-92009-6089
PO: DEPT:



TRK# 7744 2826 9334

0201

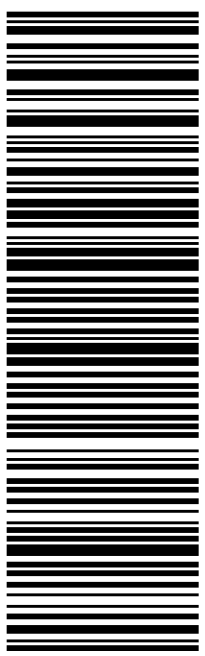
TUE - 12 DEC 5:00P

STANDARD OVERNIGHT

EB EHTA

06001

CT-US BDL



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ORIGIN ID: ZRPA
CATHERINE WARE
SBA COMMUNICATIONS CORPORATION
101 INTERCHANGE PALZA

(917) 868-8365

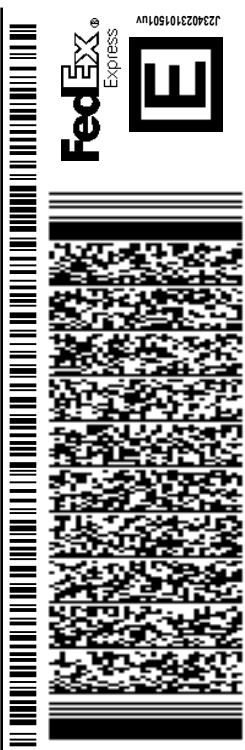
SHIP DATE: 11DEC23
ACTWGT: 2.00 LB
CAD: 255382542INET4535

BILL SENDER

CRANBURY, NJ 08512
UNITED STATES US

TO **MR. BRANDON ROBERTSON**
TOWN OF AVON - TOWN MANAGER
60 WEST MAIN STREET (ROUTE 44)

AVON CT 06001
(860) 409-4300
INV: REF: 10-56-92009-6089
PO: DEPT:



TRK# 7744 2815 9352

0201

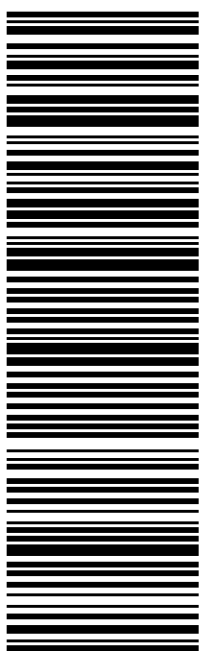
TUE - 12 DEC 5:00P

STANDARD OVERNIGHT

EB EHTA

06001

CT-US BDL



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Transaction Record

12/11/2023 4:19 PM

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The following shipment(s) were scanned:

774428159352

At FedEx Office:

1 Oak St
Westborough, MA 01581
DeviceID: AYEK-ROSA



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This receipt was created at a self-service kiosk at FedEx. See invoice for shipping charges. Visit us at fedex.com or call 1.800.GoFedEx. See FedEx Service Guide at fedex.com for terms and conditions governing your shipment.

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Page 1 of 1



Transaction Record

12/11/2023 4:18 PM

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774428269334

At FedEx Office:

1 Oak St
Westborough, MA 01581
DeviceID: AYEK-ROSA



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Page 1 of 1

EXHIBIT 4

Property Card

Property at 00277 HUCKLEBERRY HILL RD

Prop ID 2810277

Printed 17-Aug-2021 11:34 AM Design and Layout (C) Right/Angles

BAAX

Administrative Information

Owner name: AVON TOWN OF
 Second name:
 Address: 60 WEST MAIN STREET
 City/state: AVON CT Zip: 06001

Location Information

Map: 016 Clerk map:
 Lot: 2810277 Neigh.: Zone: R40 Vol: 80 Page: 20

Assessments

Assmt category	Qty	Amount
Resident Excess	73.40	385,350
Resident Outbldg	3.00	28,460

Exemptions

Exempt	Cat	Amount

Last sale

Sale date: 19-Dec-1972
 Sale price:
 Sale valid:

Values

Mkt value :
 Cost value: 591,157

Summary

Total assessments	413,810
Total exemptions	
Net assessment	413,810

Utilities

Water	None
Sewer	None
Gas	None

Sales ratios

Cost/sale :
 Mkt/sale :
 Assmt/sale:

Land Information

Type	Use	Acres/SqFt	Rate	Total	Infl	Fact	Value	70% Value
RES	12	73.400	7,500	550,500			550,500	385,350
Residual		3,197,304						

73.400 acres	Total land value	550,500	385,350
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Outbuilding Information

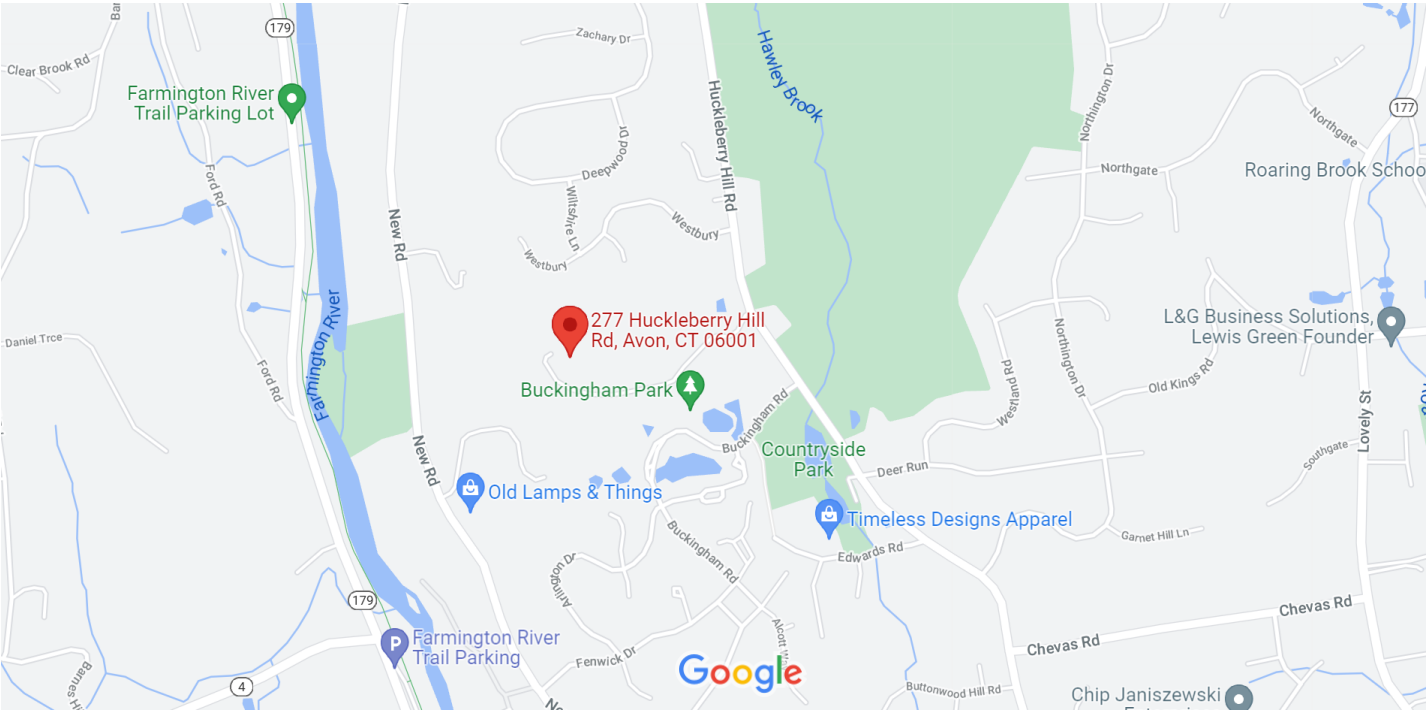
Description	Wid	Len	Area	Rate	Year	Cnd	RCN	Depr	Value
C18 1 story frame	16	28	448	80.75	1957	C	36,176	50	18,090
RG1 Frame or Con Block Detach Garage	30	40	1,200	28.85		C	34,620	50	17,310
C84 Canopy	16	42	672	15.63	1992	C	10,503	50	5,250
Value at 70%			28,455				Value at 100%		40,650

No sketch for this property

EXHIBIT 5

Property Map

Google Maps 277 Huckleberry Hill Rd



Map data ©2021 1000 ft

Google Maps

277 Huckleberry Hill Rd



Imagery ©2021 Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2021 100 ft

EXHIBIT 6

Zoning Approval



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

Web Site: portal.ct.gov/csc

**VIA ELECTRONIC MAIL & CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

March 3, 2023

Kenneth C. Baldwin, Esq.
Christopher Y. Eddy, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597
kbaldwin@rc.com
ceddy@rc.com

RE: **PETITION NO. 1547** – SBA Communications Corporation petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed replacement and extension of an existing telecommunications facility located at 277 Huckleberry Hill Road, Avon, Connecticut.

Dear Attorney Baldwin and Attorney Eddy:

At a public meeting held on March 2, 2023, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need with recommendations that the finish on the replacement tower match the color of the existing tower to minimize visibility and the duration of emergency backup power generation at the site be maximized, and with the following conditions:

1. Approval of any project changes be delegated to Council staff;
2. Radio frequency access restriction and caution signage shall be installed at the site in compliance with FCC guidance;
3. Deployment of any 5G services must comply with FCC and FAA guidance relative to air navigation, as applicable;
4. Submission of final construction drawings stamped and signed by a Professional Engineer duly licensed in the State of Connecticut prior to commencement of construction;
5. Submission of a structural analysis for the replacement tower/antenna mounts and foundation stamped and signed by a Professional Engineer duly licensed in the State of Connecticut prior to commencement of construction;
6. Submission of written notification from the Town as to when it plans to commence its equipment installation, prior to the commencement of construction;

7. The Council shall be notified in writing at least two weeks prior to the commencement of site construction activities;
8. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council's decision, this decision shall be void, and the facility owner/operator shall dismantle the facility and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.
9. Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, and the Town of Avon.
10. Unless otherwise approved by the Council, the existing wood laminate tower shall be removed within 180 days of the installation of the new steel monopole tower;
11. The Council shall be notified in writing within 45 days of when the existing wood laminate tower is removed and the new steel monopole tower is operational unless a written request for an extension is submitted to the Council within that timeframe;
12. The facility owner/operator shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v;
13. If the facility ceases to be used for signal transmission or reception in the electromagnetic spectrum pursuant to a Federal Communications Commission license for a period of one year, the facility owner/operator shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council within 90 days from the one year period of cessation of signal transmission or reception. The facility owner/operator may submit a written request to the Council for an extension of the 90 day period not later than 60 days prior to the expiration of the 90 day period; and
14. This Declaratory Ruling may be transferred or partially transferred, provided both the facility owner/operator/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. The Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the facility within 30 days of the sale and/or transfer. Both the facility owner/operator/transferor and the transferee shall provide the Council with a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility, including contact information for the individual acting on behalf of the transferee.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated November 9, 2022, and additional information received on January 13, 2023 and February 2, 2023.

Enclosed for your information is a copy of the staff report on this project.

Sincerely,



Melanie A. Bachman

Executive Director

MAB/RDM/lm

Enclosure: Staff Report dated March 2, 2023

c: The Honorable Heather Maguire, Chairperson, Town of Avon (hmaguire@avonct.gov)
Brandon Robertson, Town Manager, Town of Avon (brobertson@avonct.gov)



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

Web Site: portal.ct.gov/csc

Petition No. 1547

SBA Communications Corporation

277 Huckleberry Hill Road, Avon, Connecticut

Staff Report

March 2, 2023

Introduction

On November 9, 2022, SBA Communications Corporation (SBA) submitted a petition to the Connecticut Siting Council (Council) for a declaratory ruling pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k for the proposed replacement and extension of an existing telecommunications facility located at 277 Huckleberry Hill Road, Connecticut (Petition or Project).

Specifically, SBA proposes to replace and extend the height of the existing telecommunications facility and expand the existing compound/lease area at the site to accommodate the co-location of Cellco Partnership d/b/a Verizon Wireless (Cellco) and the Town of Avon (Town). The existing 100-foot wood laminate monopole has limited structural capacity as it was designed to support three carriers and is not tall enough to support Cellco's or the Town's co-location.

Pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-40, on or about November 9, 2022, SBA provided notice to the abutting property owners and Town officials.

On November 10, 2022, the Council sent correspondence to the Town stating that the Council has received the Petition and invited the Town to contact the Council with any questions or comments by December 9, 2022. The Town Fire Chief, Town Manager, Town Council, Police Chief and Superintendent of Schools submitted correspondence in support of the Project on November 15, 16, 18, 23, and December 2, 2022, respectively.

On November 14, 2022, Cellco requested intervenor status. The Council granted Cellco intervenor status during a public meeting held on December 9, 2022.

The Council issued interrogatories to SBA and Cellco on December 9, 2022. Cellco and SBA submitted responses to the Council's interrogatories on December 14, 2022 and January 13, 2023, respectively. The Council issued a second set of interrogatories to SBA on January 23, 2023. SBA responded to the second set of interrogatories on February 2, 2023.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take an action on a petition for a declaratory ruling within 60 days of receipt. On December 22, 2022, pursuant to CGS §4-176(e), the Council voted to set the date by which to render a decision on the Petition as no later than May 8, 2023, which is the 180-day statutory deadline for a final decision under CGS §4-176(i).

Jurisdiction

Pursuant to CGS §§16-50i(a)(6) and 16-50x, the Council has exclusive jurisdiction over telecommunications towers, including associated equipment, owned or operated by the state, a public service company or a certified telecommunications provider or used in a cellular system.

Under RCSA §16-50j-2a (30), “Tower” means a structure, whether free standing or attached to a building or another structure, that has a height greater than its diameter and that is high relative to its surroundings, or that is used to support antennas for sending or receiving radio frequency signals, or for sending or receiving signals to or from satellites, or any of these, which is or is to be:

- a) **Used principally to support one or more antennas** for receiving or sending radio frequency signals, or for sending or receiving signals to or from satellites, or any of these, and
- b) Owned or operated by the state, a public service company as defined in Section 16-1 of the Connecticut General Statutes, or a certified telecommunications provider, or used in a cellular system, as defined in Section 16-50i(a) of the Connecticut General Statutes.

Like the existing facility, the proposed replacement tower will be used principally to support antennas and used in a cellular system. Unlike the existing facility, the proposed replacement tower will host municipal communications equipment in addition to telecommunications carrier equipment. The Connecticut Supreme Court determined the Council has exclusive jurisdiction over facilities that would host both cellular and non-cellular attachments.¹ Thus, the Council has jurisdiction over the proposed replacement facility.

Pursuant to the tower sharing policy of the state under CGS §16-50aa, the Council must examine whether the proposed replacement facility may be shared with any public or private entity that provides service to the public, provided such shared use is technically, legally, environmentally and economically feasible and meets public safety concerns, to promote the immediate and shared use of telecommunications facilities and avoid the unnecessary proliferation of such facilities in the state. The proposed replacement facility is designed to accommodate a minimum of four wireless carriers and municipal antennas, and would have the ability to support up to five carriers.

Existing Facility

The Council issued a Certificate of Environmental Compatibility and Public Need (Certificate) to Sprint Spectrum, L.P. (Sprint) for this facility on January 24, 2005 in Docket No. 297, and included a condition that “the tower shall be designed as a laminated wood monopole and shall be constructed no taller than 100 feet above ground level (agl) to provide telecommunications services to both public and private entities.” The Certificate was transferred from Sprint to TowerCo Assets LLC on January 23, 2009. SBA acquired TowerCo’s tower sites in Connecticut on October 1, 2012.

The existing 100-foot monopole is located on the central portion of an approximately 73-acre parcel owned by the Town. The parcel, zoned residential, contains a former landfill and serves as the Town’s Transfer Station. Abutting property to the west is owned by the Town. Abutting property to the north is developed residential. Abutting property to the east and south consists of a mix of Town property and residential development.

The existing tower currently supports Sprint at 100 feet agl, AT&T at 90-feet agl and T-Mobile at 80 feet agl. The existing tower is located in the northern corner of a 40-foot by 38-foot equipment compound. The compound contains an AT&T equipment shelter and equipment cabinets on concrete pads for T-Mobile and Sprint.

¹ *Town of Westport v. Conn. Siting Council*, 260 Conn. 266 (2002).

Proposed Project

SBA intends to replace the existing 100-foot tall wood laminate tower with a 130-foot tall steel monopole within the existing compound to accommodate Cellco, AT&T, T-Mobile, and municipal antennas, as well as provide space for future collocation. Sprint's equipment would be decommissioned and removed from the tower and compound as part of the Project.

The proposed replacement tower would be installed 34 feet from the existing tower. It would have a diameter of 51 inches at the base and 26 inches at the top. The existing tower has a diameter of 30 inches at the base and 26 inches at the top.

Cellco would install 9 antennas and 12 remote radio heads on an antenna platform at a tower height of 110 feet agl. Cellco's proposed antennas would provide services in the 700 MHz, 850 MHz, 1900 MHz, 2100 MHz, 3550 MHz, and 3700 MHz frequencies. The 850 MHz, and 3700 MHz frequencies are capable of supporting 5G services.

Cellco's installation would improve 700 MHz service to residential areas north and south of the site and to the Route 4 and Route 179 corridors west of the site, and provide 850 MHz, 1900 MHz, 2100 MHz and 5G services to the surrounding area. In addition to coverage improvements, the site would provide capacity relief to Cellco's adjacent sites to the north and east.

The Town would install three 16-foot tall whip antennas (one transmit and two receive) at the top of the tower as part of a new town-wide communication system. The Town's communication network would operate at the 770 MHz and 805 MHz frequencies. It was designed by Motorola Solutions and would achieve a minimum 95 percent coverage throughout Town by locating on the replacement tower and at two other existing towers in the Avon area.

The Department of Emergency Services and Public Protection received a grant from the State Bond Commission to purchase public safety equipment for installation on the tower, which will enhance coverage of the Connecticut Land Mobile Radio Network (CLMRN) and provide communication services for the Town. The CLMRN offers interoperability with other emergency response agencies such as the Connecticut State Police. The CLMRN would operate from the Town antennas and would utilize a fiber connection. A dish antenna would not be required.

AT&T and T-Mobile would relocate to the replacement tower, maintaining their existing antenna heights of 90 and 80-feet agl, respectively. The 120-foot and 100-foot levels would be available for future collocation.

The compound would be expanded by 160 feet along the length of the north side and expanded by 390 square feet along the southeast side, enclosed by a new 6-foot tall perimeter fence. SBA would utilize existing access and utilities to the site. The concrete pad previously used by Sprint would be resurfaced and expanded to accommodate the Town's 12-foot by 20-foot equipment shelter. A new access gate would be installed along the northwest side to access the Town's shelter. Cellco would install one radio and one battery cabinet on a concrete pad within the expanded portion of the compound. There would be no changes to AT&T's or T-Mobile's existing ground equipment.

The existing 100-foot wood laminate monopole would be decommissioned and removed within 90 days of operation of AT&T, T-Mobile's and Cellco's equipment on the replacement facility. No disruption to AT&T's and T-Mobile's wireless services are anticipated. The Town would locate its equipment at the site as soon as possible and would coordinate work within the compound with SBA and the carriers.

The Town would install a 40-kW diesel-fueled emergency backup generator within the compound. The generator includes a 275-gallon double walled fuel tank that would provide approximately 74 hours of run time before refueling is required. Cellco proposes to install a backup power battery on its proposed concrete pad at the site that would provide approximately 4 to 8 hours of run time before recharging is necessary. Both AT&T and T-Mobile have existing backup power sources at the site.

Commercial Mobile Radio Service (CMRS) providers are licensed by and are under the jurisdiction and authority of the Federal Communications Commission (FCC). At present, no standards for backup power for CMRS providers have been promulgated by the FCC.

The nearest property line and residence from the replacement tower is approximately 270 feet and 295 feet, respectively, to the south at 19 Berkshire Crossing. There are approximately 18 residences within 1,000 feet of the proposed replacement tower.

The estimated cost of the proposed replacement facility is \$550,000, excluding the Town's and Cellco's installations, and AT&T's and T-Mobile's relocation costs. If the tower was designed to a height of 110 feet with the capability of supporting a 20-foot extension, the Project cost would increase to \$650,000. Fabrication and installation of a 20-foot extension at a later date would be an additional \$125,000.

Neither the Project, nor any portion thereof, is proposed to be undertaken by state departments, institutions or agencies, or funded in whole or in part by the state through any grant or contract. SBA is a private entity.

Facility Construction

Construction would occur over a 4 to 6 month period. Typical construction hours and workdays of the week are as follows: Monday through Saturday. 7:00 AM to 7:00 PM.

Environmental

Construction would occur within the existing compound and adjacent transfer station areas. Three existing trees would be removed to facilitate the expansion of the compound.

The Project site is not located within a Connecticut Department of Energy and Environmental Protection (DEEP) Natural Diversity Database buffered area. The proposed facility is not within a DEEP designated Aquifer Protection Area.

There are no Audubon-designated Important Bird Areas within two miles of the site. The proposed replacement tower would comply with the USFWS recommended best practices for Communication Tower Design, Siting, Construction, Operation, Maintenance and Decommissioning.

The existing compound is not located within a flood zone or within 200 feet of a wetland.

The foundation of the existing tower would be partially removed to a depth of two feet below grade. Approximately 53 cubic yards of material would be excavated to install a mat foundation for the replacement tower. Excess material would be spread within the expanded compound area or removed from the site. The installation of the replacement tower foundation would not interfere with any subsurface utilities or infrastructure. These areas would be marked prior to excavation.

SBA would incorporate appropriate soil erosion and sedimentation control measures consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* prior to the commencement of construction.

A visibility study within a two-mile radius (8,042 acres) of the site determined the proposed 130-foot replacement tower would be visible year-round from 27 acres (0.3%) compared to 11 acres (0.1%) for the existing tower. Most of the year-round visibility occurs within 0.5 mile of the site.

The replacement tower would be visible year-round from residential yards along Berkshire Way and Camden Crossing, approximately 480 feet to 0.25 mile to the south/southeast. It would also be visible year-round from the adjacent transfer station and ballfields within the Town's Buckingham Park, approximately 0.1 mile to the southeast. The replacement tower would be seasonally visible through the trees from adjacent residential areas along the edge of the host parcel to the north and residential areas to the south/southeast, out to a distance of approximately 0.4 mile.

The replacement tower would not be visible from the Farmington River, a designated Wild & Scenic River, or the Farmington River Recreation Trail, both approximately 1,700 feet to the west of the site at their closest point.

Whip antennas are generally not discernable when viewed from a distance beyond 1,300 feet. To reduce visibility of the whip antennas from areas closer to the tower, the antennas would be painted "horizon blue."

A steel monopole was selected over a wood laminate tower in order to provide the structural capacity to support tower sharing to the greatest extent practical. A galvanized tower would dull and blend in with the wooded surroundings and would soften views similar to a tower that was painted brown. A monopine design was not considered given the distance of the tower to neighboring parcels, the presence of intervening vegetation that would screen most views of the tower and additional cost.

Public Safety

The Project would be constructed in accordance with the Connecticut State Building Code, revised October 2022, Telecommunications Industry Association (TIA) 222-H Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the National Electrical Code, the Connecticut State Fire Safety Code, and the Occupational Safety and Health Administration standards (OSHA).

Access to the facility is restricted to the Town, tower tenant and SBA personnel. Carrier equipment would be fitted with silent intrusion alarms. Climbing pegs on the lower portion of the tower would be removed to deter unauthorized climbing of the tower. The expanded compound would be enclosed by a six-foot tall chain link fence with barbed wire on top.

Construction of the replacement tower would not impact or interfere with any existing nearby public utilities. Prior to commencement of construction, all existing utilities and infrastructure locations will be identified to ensure that proper construction measures can be incorporated to avoid impacts and interference.

The replacement tower would not constitute an obstruction or hazard to air navigation. Notice to the Federal Aviation Administration is not required.

The proposed replacement facility and associated equipment would comply with DEEP Noise Control Standards. Emergency backup generators are exempt from DEEP Noise Control Regulations §22a-69-1.8.

Cellco's antennas would support text-to-911 service and would comply with E911 requirements and the intent of the Warning, Alert and Response Network Act of 2006.

AT&T does not provide FirstNet Services² from the existing tower at this time.

The calculated cumulative worst-case power density from the operation of the Town's, Cellco's AT&T's, and T-Mobile's antennas would be 11.4% of the applicable exposure limit established by the Federal Communications Commission at ground level using a far field approximation.

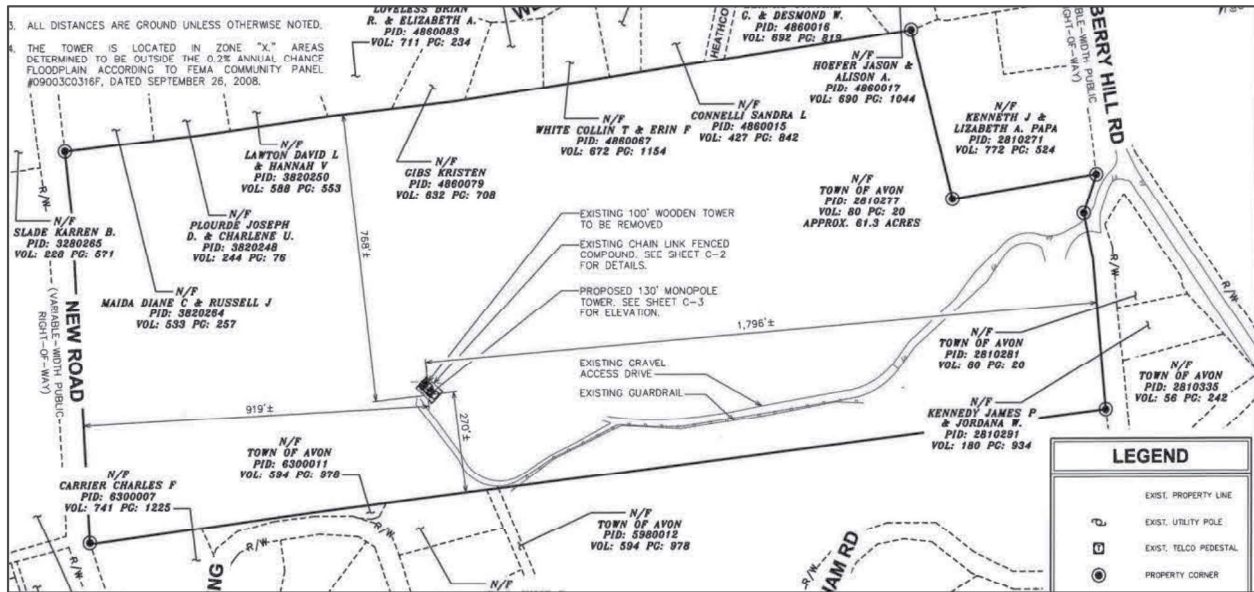
Conclusion

If approved, staff recommends the following conditions:

- 1) Approval of any project changes be delegated to Council staff;
- 2) Radio frequency access restriction and caution signage shall be installed at the site in compliance with FCC guidance;
- 3) Deployment of any 5G services must comply with FCC and FAA guidance relative to air navigation, as applicable;
- 4) Submission of final construction drawings stamped and signed by a Professional Engineer duly licensed in the State of Connecticut prior to commencement of construction;
- 5) Submission of a structural analysis for the replacement tower/antenna mounts and foundation stamped and signed by a Professional Engineer duly licensed in the State of Connecticut prior to commencement of construction; and
- 6) Submission of written notification from the Town as to when it plans to commence its equipment installation, prior to the commencement of construction.

² FirstNet is a subscriber service available to local emergency response entities that would allow preferred wireless service on AT&T's 700 MHz system during emergencies.

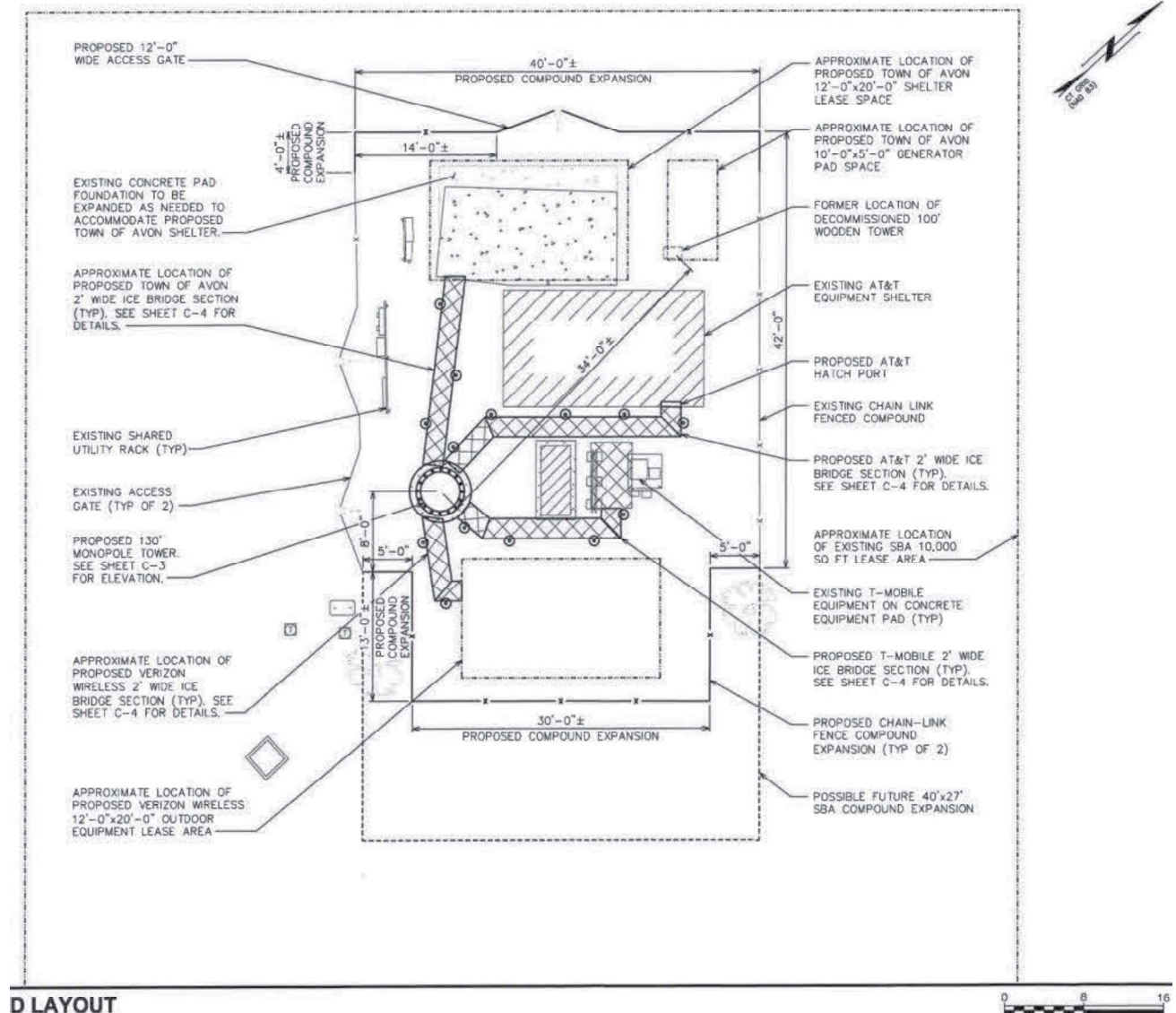
Existing Site Parcel and Site Location



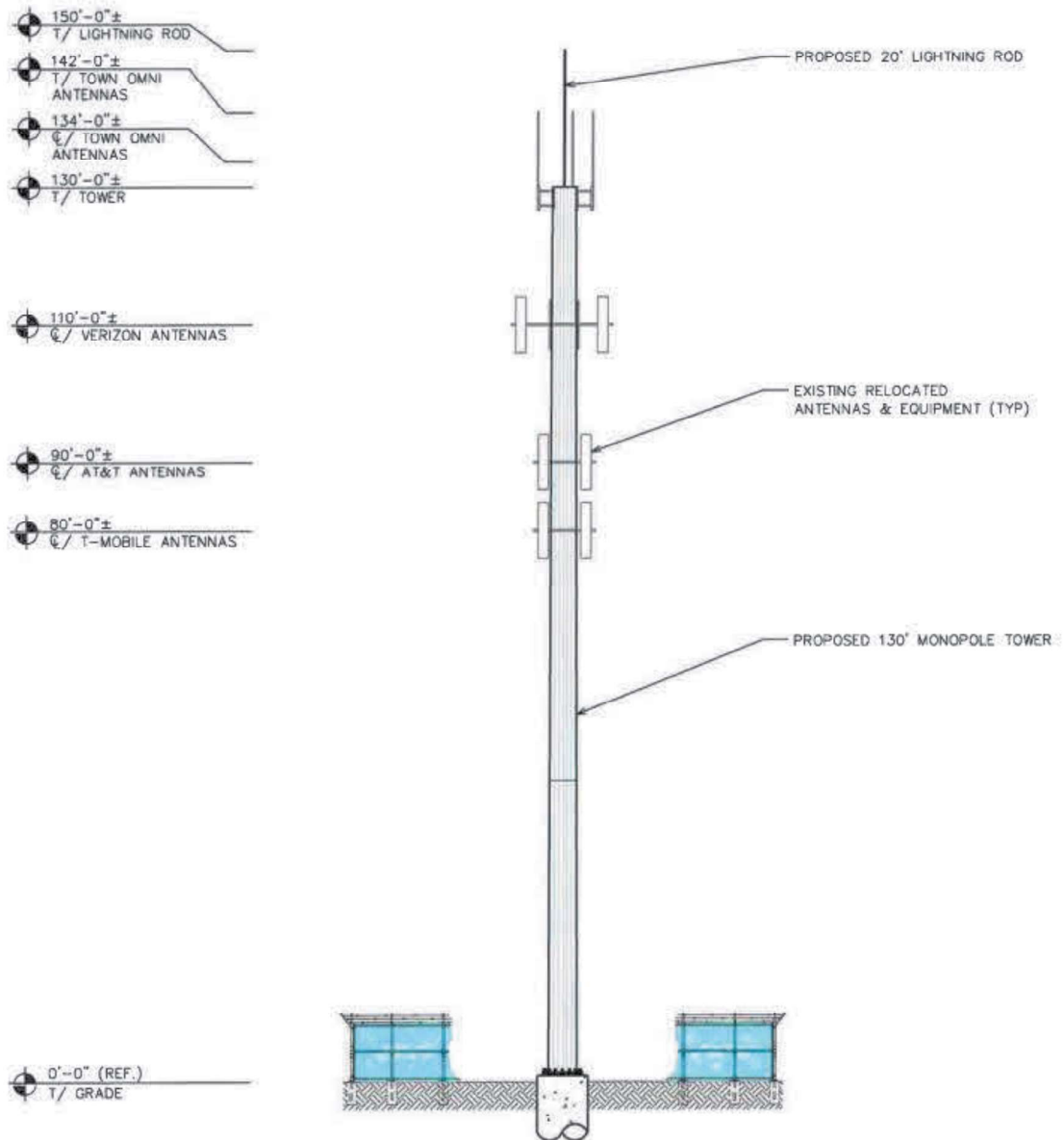
Proposed South Compound Expansion Area (red paint/stakes)



Proposed Site Plan



Proposed Replacement Tower Elevation Drawing



STATE OF CONNECTICUT

)

: ss. Southington, Connecticut

March 3, 2023

COUNTY OF HARTFORD

)

I hereby certify that the foregoing is a true and correct copy of the Decision and Staff Report in Petition No. 1547 issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:



Melanie A. Bachman
Executive Director
Connecticut Siting Council

STATE OF CONNECTICUT

)

: ss. New Britain, Connecticut

March 3, 2023

COUNTY OF HARTFORD

)

I certify that a copy of the Connecticut Siting Council Decision and Staff Report in Petition No. 1547 has been forwarded by Certified First Class Return Receipt Requested mail, on March 3, 2023, to all parties and intervenors of record as listed on the attached service list, dated December 8, 2022.

ATTEST:



Lisa A. Mathews
Office Assistant
Connecticut Siting Council

LIST OF PARTIES AND INTERVENORS
SERVICE LIST

Status Granted	Document Service	Status Holder (name, address & phone number)	Representative (name, address & phone number)
Petitioner	<input checked="" type="checkbox"/> E-mail	SBA Communications Corporation	Kenneth C. Baldwin, Esq. Christopher Y. Eddy, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597 (860) 275-8200 kbaldwin@rc.com ceddy@rc.com
Intervenor (granted 12/08/22)	<input checked="" type="checkbox"/> E-mail	Cellco Partnership d/b/a Verizon Wireless	Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597 (860) 275-8200 kbaldwin@rc.com



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@po.state.ct.us

www.ct.gov/csc

January 26, 2005

Thomas J. Regan, Esq.
Brown Rudnick Berlack Israels LLP
CityPlace I, 38th Floor
185 Asylum Street
Hartford, CT 06103-3402

RE: **DOCKET NO. 297** – Sprint Spectrum, L.P. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility in Avon, Connecticut.

Dear Attorney Regan:

By its Decision and Order dated January 24, 2005, the Connecticut Siting Council (Council) granted a Certificate of Environmental Compatibility and Public Need (Certificate) to Sprint Spectrum L.P. for the construction, maintenance and operation of a telecommunications facility located at 277 Huckleberry Hill Road, Avon, Connecticut.

Enclosed are the Council's Certificate, Findings of Fact, Opinion, and Decision and Order.

Very truly yours,



S. Derek Phelps
Executive Director

SDP/laf

Enclosures (4)



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@po.state.ct.us

Web Site: www.ct.gov/csc

**CERTIFICATE
OF
ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED
DOCKET NO. 297**

Pursuant to General Statutes § 16-50k, as amended, the Connecticut Siting Council hereby issues a Certificate of Environmental Compatibility and Public Need to Sprint Spectrum, L.P. for the construction, maintenance and operation of a telecommunications facility located at 277 Huckleberry Hill Road, Avon, Connecticut. This Certificate is issued in accordance with and subject to the terms and conditions set forth in the Decision and Order of the Council on January 24, 2005.

By order of the Council,


Colin C. Tait, Esq., Vice Chairman

January 24, 2005

DOCKET NO. 297 – Sprint Spectrum, L.P. application for a }
Certificate of Environmental Compatibility and Public Need for }
the construction, maintenance and operation of a }
telecommunications facility in Avon, Connecticut. }

Connecticut

Siting

Council

January 24, 2005

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Sprint Spectrum, L.P. for the construction, maintenance and operation of a wireless telecommunications facility at 277 Huckleberry Hill Road, Avon, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be designed as a laminated wood monopole and shall be constructed no taller than 100 feet above ground level to provide telecommunications services to both public and private entities. The location of the tower and equipment compound shall be adjusted to avoid cutting down an existing 33" dbh tree.
2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on all parties and intervenors, as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) a final site plan(s) of site development to include specifications for the tower, tower foundation, flush-mounted antennas, equipment building, access road, utility line, and landscaping; and
 - b) construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council in the event other carriers locate at this facility or if circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any municipal antennas, provided such antennas are compatible with the structural integrity of the tower.
7. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
8. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.
9. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved. Any request for extensions of the period shall be filed with the Council not later than sixty days prior to expiration date of the Certificate and shall be served on all parties and intervenors, as listed in the service list. Any proposed modifications to this Decision and Order shall likewise be so served.
10. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with notice in writing two weeks prior to the commencement of construction activities at the approved site. In addition, the Certificate Holder shall provide the Council with written notice of the completion of construction.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Hartford Courant, Valley News, and the Farmington Valley Post.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant

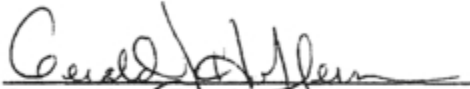
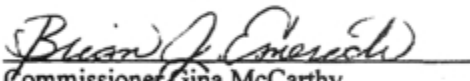
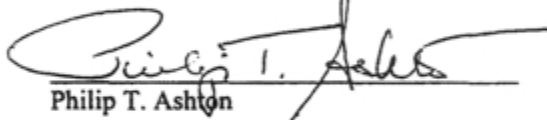
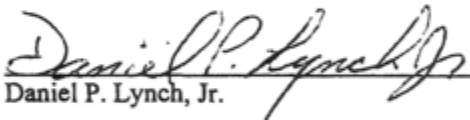
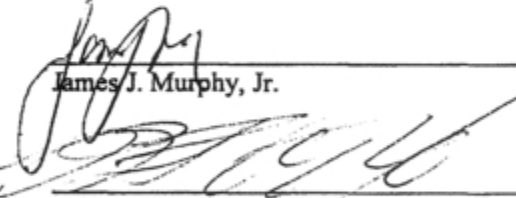
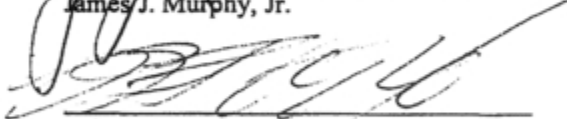
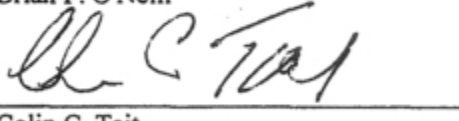

Sprint Spectrum, L.P.
d/b/a Sprint PCS

Its Representative

Thomas J. Regan, Esq.
Brown Rudnick Berlack Israels LLP
CityPlace I, 38th Floor
185 Asylum Street
Hartford, CT 06103-3402
(860) 509-6522
(860) 509-6501 – fax

CERTIFICATION

The undersigned members of the Connecticut Siting Council (Council) hereby certify that they have heard this case, or read the record thereof, in **DOCKET NO. 297** – Sprint Spectrum, L.P. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility in Avon, Connecticut, and voted as follows to approve the proposed facility located at 277 Huckleberry Hill Road, Avon, Connecticut:

<u>Council Members</u>	<u>Vote Cast</u>
<hr/> Pamela B. Katz, P.E., Chairman	Absent
 Commissioner Donald W. Downes Designee: Gerald J. Heffernan	Yes
 Commissioner Gina McCarthy Designee: Brian J. Emerick	Yes
 Philip T. Ashton	Yes
 Daniel P. Lynch, Jr.	Yes
 James J. Murphy, Jr.	Abstain
 Brian F. O'Neill	Yes
 Colin C. Tait	Yes
 Edward S. Wilensky	Yes

Dated at New Britain, Connecticut, January 24, 2005.

STATE OF CONNECTICUT)

ss. New Britain, Connecticut :

COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the Findings of Fact, Opinion, and Decision and Order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

A handwritten signature in black ink, appearing to read 'S. Derek Phelps', is written over a horizontal line.

S. Derek Phelps
Executive Director
Connecticut Siting Council

I certify that a copy of the Findings of Fact, Opinion, and Decision and Order in Docket No. 297 has been forwarded by Certified First Class Return Receipt Requested mail on January 26, 2005, to all parties and intervenors of record as listed on the attached service list, dated October 25, 2004.

ATTEST:

A handwritten signature in black ink, appearing to read 'Lisa A. Fontaine', is written over a horizontal line.

Lisa A. Fontaine
Administrative Assistant
Connecticut Siting Council

EXHIBIT 7

EME Report



FOX HILL TELECOM

Radio Frequency Emissions Analysis Report



Site ID: BOBDL00139A

SBA - Huckleberry Hill Road
277 Huckleberry Hill Road
Avon, CT 06001

December 4, 2023

Fox Hill Telecom Project Number: 231062

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	35.95 %



December 4, 2023

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOBDL00139A – SBA - Huckleberry Hill Road**

Fox Hill Telecom, Inc (“Fox Hill”) was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **277 Huckleberry Hill Road, Avon, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and 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.

Population 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 limit for the 600 MHz band is approximately $400 \mu\text{W}/\text{cm}^2$. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS / AWS-4) 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 performed for the proposed upgrades to the Dish Wireless antenna facility located at **277 Huckleberry Hill Road, Avon, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65 for far field modeling calculations.

In OET-65, plane wave power densities in the Far Field of an antenna are calculated by considering antenna gain and reflective waves that would contribute to exposure.

Since the radiation pattern of an antenna has developed in the **Far Field** region the power gain in specific directions needs to be considered in exposure predictions to yield an Effective Radiated Power (ERP) in each specific direction from the antenna. Also, since the vertical radiation pattern of the antenna is considered, the exposure calculations would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels. To determine a worst-case scenario at each point along the calculation radials, each point was calculated using the antenna gain value at each angle of incident and compared against the result using an isotropic radiator at the antenna height with the greater of the two used to yield the more pessimistic far field value for each point along the calculation radial.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential 1.6 times increase in power density in calculating far field power density values.

With these factors Considered, the worst case **Far Field prediction model** utilized in this analysis is determined by the following equation:

Equation 9 per FCC OET65 for Far Field Modeling

$$S = \frac{33.4 \text{ ERP}}{R^2}$$

S = Power Density (in $\mu\text{W}/\text{cm}^2$)

ERP = Effective Radiated Power from antenna (watts)

R = Distance from the antenna (meters)

Predicted far field power density values for all carriers identified in this report were calculated 6 feet above the ground level and are displayed as a percentage of the applicable FCC standards. All emissions values for other carriers were calculated using the same Far Field model outlined above, using industry standard radio configurations and frequency band selection based upon available licenses in this geographic area for emissions contribution estimates.



For each Dish sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
5G	n71 (600 MHz)	4	61.5
5G	n70 (AWS-4 / 1995-2020)	4	40
5G	n66 (AWS-4 / 2180-2200)	4	40

Table 1: Channel Data Table



The following **Dish** antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz (n71) frequency band and the 2100 MHz (AWS 4) frequency bands at 1995-2020 MHz (n70) and 2180-2200 MHz (n66). This is based on feedback from Dish regarding anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	JMA MX08FRO665-21	70
B	1	JMA MX08FRO665-21	70
C	1	JMA MX08FRO665-21	70

Table 2: Antenna Data

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



RESULTS

Per the calculations completed for the proposed **Dish** configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	8.29
Sector A Composite MPE%							8.29
Antenna B1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	8.29
Sector B Composite MPE%							8.29
Antenna C1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	8.29
Sector C Composite MPE%							8.29

Table 3: Dish Emissions Levels



The Following table (*Table 4*) shows all additional carriers on site and their emissions contribution estimates, along with the newly calculated **Dish** far field emissions contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas, the highest recorded sector value be used for composite site emissions values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results for all three sectors. *Table 5* below shows a summary for each **Dish** Sector as well as the composite emissions value for the site.

Site Composite MPE%	
Carrier	MPE%
Dish – Max Per Sector Value	8.29 %
AT&T	9.68 %
T-Mobile	11.66 %
Verizon Wireless	6.32 %
Site Total MPE %:	35.95 %

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	8.29 %
Dish Sector B Total:	8.29 %
Dish Sector C Total:	8.29 %
Site Total:	35.95 %

Table 5: Site MPE Summary



Table 6 below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated **Dish** sector(s). For this site, all three sectors have the same configuration yielding the same results for all three sectors.

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	# 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 n71 (600 MHz) 5G	4	858.77	70	21.96	n71 (600 MHz)	400	5.49%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,648.39	70	14.00	n70 (AWS-4 / 1995-2020)	1000	1.40%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,849.52	70	14.00	n66 (AWS-4 / 2180-2200)	1000	1.40%
						Total:	8.29 %

Table 6: Dish Maximum Sector MPE Power Values



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 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 Sector	Power Density Value (%)
Sector A:	8.29 %
Sector B:	8.29 %
Sector C:	8.29 %
Dish Maximum Total (per sector):	8.29 %
Site Total:	35.95 %
Site Compliance Status:	COMPLIANT

The anticipated composite emissions value for this site, assuming all carriers present, is **35.95 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon the far field calculations performed for all carriers identified in this report.

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.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Worcester, MA 01609
(978)660-3998

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 130 ft Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46143-A

Customer Site Name: Burlington - Avon Landfill

Carrier Name: Dish Wireless (App#: 211810, V#1)

Carrier Site ID / Name: BOBDL00139A / 0

Site Location: 277 Huckleberry Hill Road

Avon, Connecticut

Hartford County

Latitude: 41.788055

Longitude: -72.918166

Analysis Result:

Max Structural Usage: 31.2% [Pass]

Max Foundation Usage: 27% [Pass]

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



Report Prepared By: Nedim Maric



Tower Engineering Solutions

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

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Latitude: 41.788055

Longitude: -72.918166

Analysis Result:

Max Structural Usage: 31.2% [Pass]

Max Foundation Usage: 27% [Pass]

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

Report Prepared By: Nedim Maric

Introduction

The purpose of this report is to summarize the analysis results on the 130 ft Monopole 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	Design Report prepared by Sabre, Job #521586 Revision A dated 6/29/2023
Foundation Drawing	Design Report prepared by Sabre, Job #521586 Revision A dated 6/29/2023
Geotechnical Report	Delta Oaks Group, Project #23-19365-01 Revision 0 dated 6/28/2023
Modification Drawings	N/A
Mount Analysis	N/A

Analysis Criteria

The comprehensive analysis was performed in accordance with the requirements and stipulations of the TIA-222-H. In accordance with this standard, the structure was analyzed using **TESPoles**, 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:	120.0 mph (3-Sec. Gust) (Ultimate wind speed)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1"1/2 radial ice concurrent
Service Load Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.189$, $S_1 = 0.055$

This structural analysis is based upon the tower being classified as a Risk Category 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	110.0	3	Commscope NHHSS-65B-R2B - Panel	(2) Ring Mounts	(2) 1 5/8" 6x12 Hybrid	Verizon
2		3	Commscope NHH-65B-R2B - Panel			
3		3	Samsung MT6407-77A - Panel			
4		3	Samsung B2/B66A RRH-BR049 - RRU			
5		3	Samsung B5/B13 RRH-BR04C - RRU			
6		3	Samusng CBRS RRH - RT4401-48A - RRU			
7		1	Raycap DB-B1-6C-12AB-0Z - TMA			
8	99.0	3	Andrew DHHTT65B-3XR - Panel	Flush Mount	(4) 1 1/4"	Sprint Nextel
9		4	RFS ACU-A20-N - RRU			
10		3	ALU 1900MHz RRH - RRU			
11		3	ALU 800 MHz RRH - RRU			
12		3	ALU TD-RRH8x20-25 - RRU			
13		3	ALU 800MHz Filter			
14	90.0	3	Andrew SBNHH-1D65C - Panel	Flush Mount	(6) 1 5/8" (1) 3" Conduit housing {(2) 3/4" DC (1) 7/16" Fiber}	AT&T
15		3	Powerwave LGP21401 - TMA			
16		3	Cci TMABPD7823VG12A - TMA			
17		3	Andrew APTDC-BDFDM-DBW - OVP			
18	80.0	3	RFS APXVAR18_43-C-NA20 - Panel	Flush Mount	(12) 7/8"	T-Mobile
19		6	RFS ATMAA1412D-A1A20 - TMA			

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
20	70.0	3	JMA Wireless MX08FRO665-21 - Panel	Commscope MC-PK8-DSH (Platform w/HRK)	(1) 1.41" Hybrid	Dish Wireless
21		3	Fujitsu TA08025-B605 - RRU			
22		3	Fujitsu TA08025-B604 - RRU			
23		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:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	31.2%	29.3%	31.2%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	1859.9	20.9	32.6

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.

Service Load Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.459 degrees under the operational wind speed as specified in the Analysis Criteria.

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.

Usage Diagram - Max Ratio 31.22% at 0.0ft

Structure: CT46143-A-SBA
Site Name: Burlington - Avon Landfill
Height: 130.00 (ft)
Base Elev: 0.000 (ft)

Code: EIA/TIA-222-H
Exposure: C
Gh: 1.1

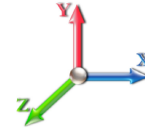
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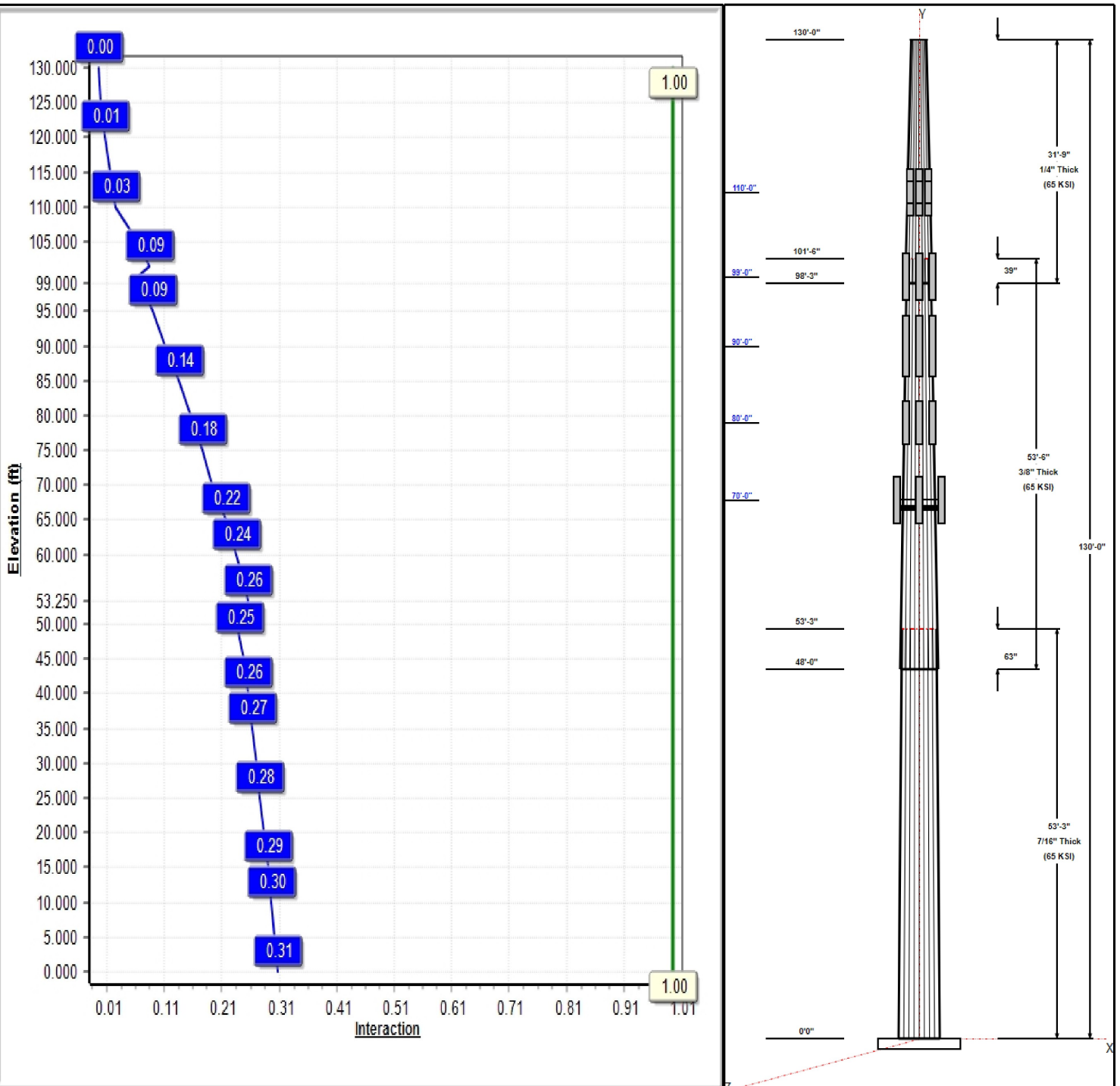
Dead Load Factor: 1.20
Wind Load Factor: 1.00

Load Case : 1.2D + 1.0W 120 mph Wind



Iterations: 21

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Structure: CT46143-A-SBA

Type: Tapered
Site Name: Burlington - Avon Landfill
Height: 130.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.29531

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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	35.41	51.14	0.438		0.29531	65
2	53.50	21.92	37.72	0.375	Slip	0.29531	65
3	31.75	14.00	23.38	0.250	Slip	0.29531	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
110.00	110.00	1	Ring Mount	Verizon
110.00	110.00	3	Samsung B2/B66A	Verizon
110.00	110.00	3	Samsung B5/B13	Verizon
110.00	110.00	3	Samusng CBRS RRH -	Verizon
110.00	110.00	1	Raycap	Verizon
110.00	110.00	3	Commscope	Verizon
110.00	110.00	3	Commscope	Verizon
110.00	110.00	3	Samsung MT6407-77A	Verizon
99.00	99.00	1	Flush Mount	Sprint Nextel
99.00	99.00	3	Andrew DHHTT65B-3XR	Sprint Nextel
99.00	99.00	4	RFS ACU-A20-N	Sprint Nextel
99.00	99.00	3	ALU 1900MHz RRH	Sprint Nextel
99.00	99.00	3	ALU 800 MHz RRH	Sprint Nextel
99.00	99.00	3	ALU TD-RRH8x20-25	Sprint Nextel
99.00	99.00	3	ALU 800MHz Filter	Sprint Nextel
90.00	90.00	3	Andrew SBNHH-1D65C	AT&T
90.00	90.00	3	Powerwave LGP21401	AT&T
90.00	90.00	3	Cci TMABPD7823VG12A	AT&T
90.00	90.00	3	Andrew	AT&T
90.00	90.00	1	Flush Mount	AT&T
80.00	80.00	1	Flush Mount	T-Mobile
80.00	80.00	3	RFS	T-Mobile
80.00	80.00	6	RFS ATMAA1412D-A1A20	T-Mobile
70.00	70.00	3	JMA Wireless	Dish Wireless
70.00	70.00	3	Fujitsu TA08025-B605	Dish Wireless
70.00	70.00	3	Fujitsu TA08025-B604	Dish Wireless
70.00	70.00	1	Raycap	Dish Wireless
70.00	70.00	1	Commscope MC-PK8-DSH	Dish Wireless

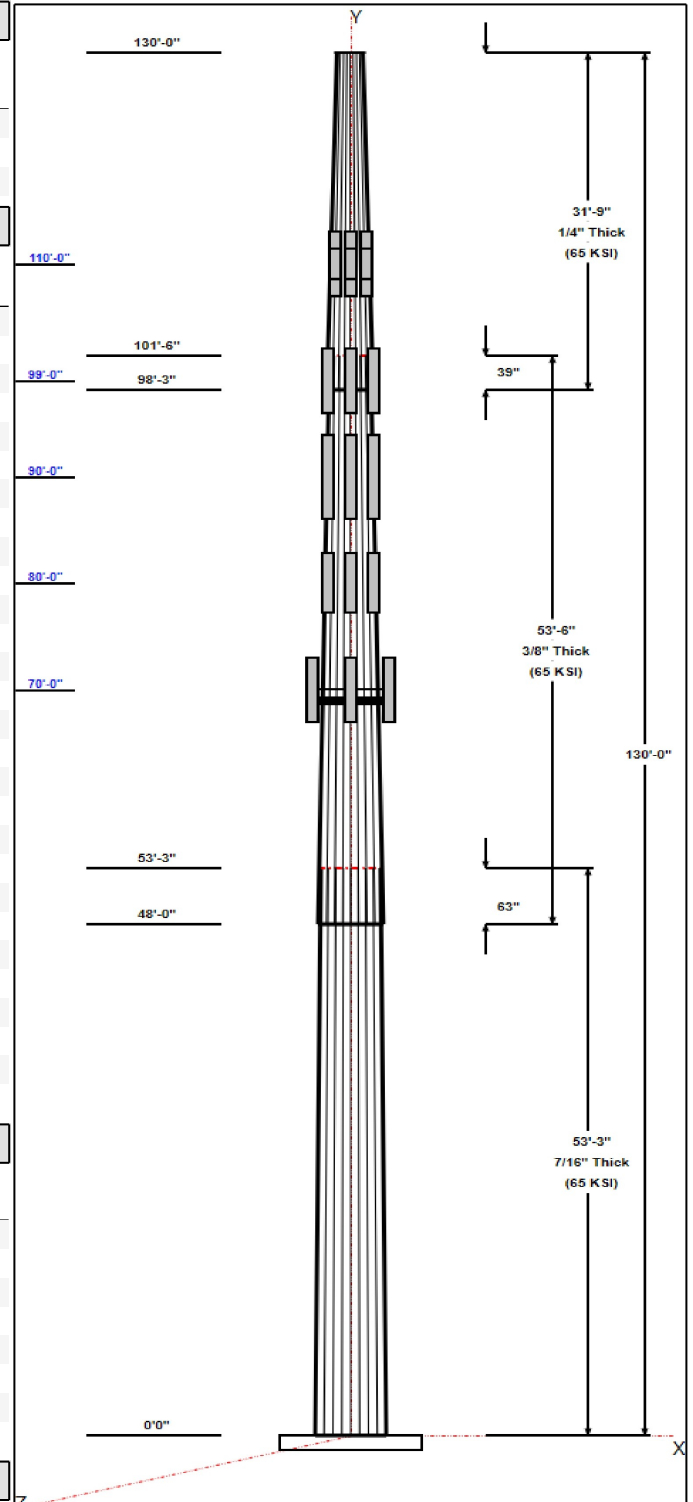
Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	110.00	Inside	1 5/8" 6x12 Hybrid	Verizon
0.00	99.00	Inside	1 1/4" Coax	Sprint Nextel
0.00	90.00	Inside	1 5/8" Coax	AT&T
0.00	90.00	Inside	3" Coax	AT&T
0.00	90.00	Inside	3/4" DC	AT&T
0.00	90.00	Inside	7/16" Fiber	AT&T
0.00	80.00	Inside	7/8" Coax	T-Mobile
0.00	70.00	Outside	1.41" Hybrid	Dish Wireless

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
18	2.25" 18J	75.0	Radial

Base Plate



Structure: CT46143-A-SBA

Type: Tapered
Site Name: Burlington - Avon Landfill
Height: 130.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.29531

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Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.2500	63.8	50.0	Round

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.0W 120 mph Wind	1589.9	20.9	32.6
0.9D + 1.0W 120 mph Wind	1583.1	20.9	24.4
1.2D + 1.0Di + 1.0Wi 50 mph Wind	440.2	5.9	50.1
1.2D + 1.0Ev + 1.0Eh	69.5	0.8	33.7
0.9D + 1.0Ev + 1.0Eh	69.4	0.8	25.5
1.0D + 1.0W 60 mph Wind	354.6	4.7	27.2

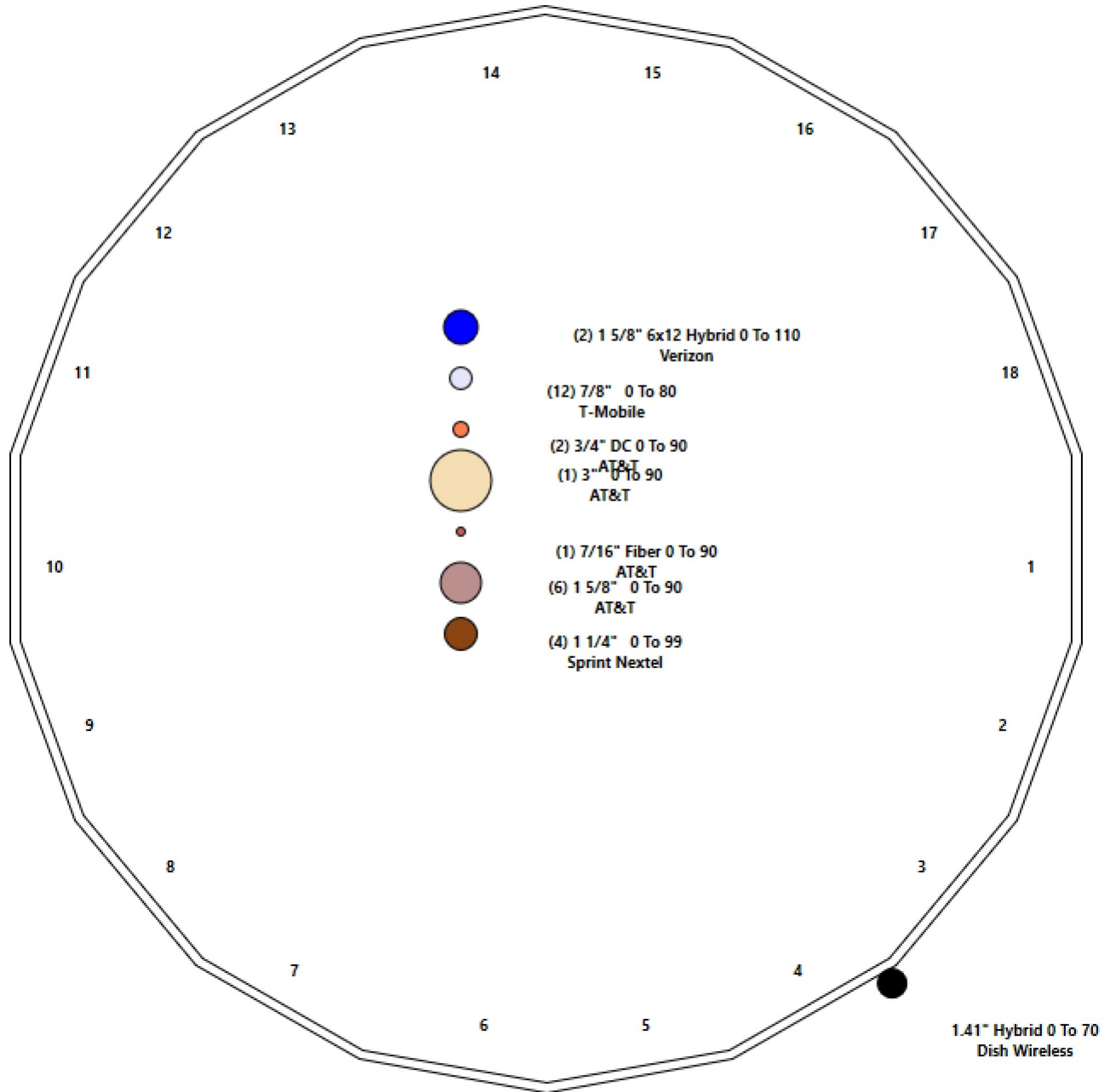
Structure: CT46143-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Burlington - Avon Landfill
Height: 130.00 (ft)

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Shaft Properties

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	53.250	0.4375	65		0.00	10,779
2	18	53.500	0.3750	65	Slip	63.00	6,379
3	18	31.750	0.2500	65	Slip	39.00	1,581
Total Shaft Weight:							18,739

Bottom

Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	51.14	0.00	70.40	22867.07	19.20	116.89	35.41	53.25	48.57	7507.30	12.86	80.95	0.295308
2	37.72	48.00	44.44	7829.01	16.32	100.57	21.92	101.50	25.64	1503.11	8.89	58.44	0.295308
3	23.38	98.25	18.35	1239.90	15.08	93.50	14.00	130.00	10.91	260.61	8.46	56.00	0.295308

Load Summary

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 6



Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	110.00	Ring Mount	1	660.00	7.50	1.00	1553.33	15.114	1.00	0.00	0.00
2	110.00	Samsung B2/B66A RRH-BR049	3	84.40	1.87	0.67	158.07	2.424	0.67	0.00	0.00
3	110.00	Samsung B5/B13 RRH-BR04C	3	70.30	1.87	0.67	137.02	2.424	0.67	0.00	0.00
4	110.00	Samusng CBRS RRH - RT4401-48A	3	23.10	1.54	0.67	73.54	2.049	0.67	0.00	0.00
5	110.00	Raycap DB-B1-6C-12AB-0Z	1	21.40	4.10	1.00	136.39	4.877	1.00	0.00	0.00
6	110.00	Commscope NHHSS-65B-R2B	3	51.00	8.05	0.84	237.52	9.276	0.84	0.00	0.00
7	110.00	Commscope NHH-65B-R2B	3	43.70	8.08	0.83	238.01	9.330	0.83	0.00	0.00
8	110.00	Samsung MT6407-77A	3	79.40	4.69	0.70	194.55	5.607	0.70	0.00	0.00
9	99.00	Flush Mount	1	350.00	5.00	1.00	631.26	8.348	1.00	0.00	0.00
10	99.00	Andrew DHHTT65B-3XR	3	45.00	8.09	0.83	238.03	9.388	0.83	0.00	0.00
11	99.00	RFS ACU-A20-N	4	1.00	0.14	0.67	5.12	0.425	0.67	0.00	0.00
12	99.00	ALU 1900MHz RRH	3	60.00	2.31	0.67	132.57	2.933	0.67	0.00	0.00
13	99.00	ALU 800 MHz RRH	3	53.00	2.13	0.67	113.52	2.698	0.67	0.00	0.00
14	99.00	ALU TD-RRH8x20-25	3	70.00	4.05	0.67	175.07	4.828	0.67	0.00	0.00
15	99.00	ALU 800MHz Filter	3	8.80	0.78	0.67	25.73	1.401	0.67	0.00	0.00
16	90.00	Andrew SBNHH-1D65C	3	49.60	11.39	0.84	296.91	12.962	0.84	0.00	0.00
17	90.00	Powerwave LGP21401	3	17.50	0.82	0.67	37.85	1.196	0.67	0.00	0.00
18	90.00	Cci TMABPD7823VG12A	3	26.00	1.37	0.67	58.22	1.822	0.67	0.00	0.00
19	90.00	Andrew APTDC-BDFDM-DBW	3	1.32	0.10	0.67	4.21	0.248	0.67	0.00	0.00
20	90.00	Flush Mount	1	350.00	5.00	1.00	628.60	8.317	1.00	0.00	0.00
21	80.00	Flush Mount	1	350.00	5.00	1.00	625.33	8.278	1.00	0.00	0.00
22	80.00	RFS APXVAR18_43-C-NA20	3	69.40	9.65	0.81	290.10	10.884	0.81	0.00	0.00
23	80.00	RFS ATMAA1412D-A1A20	6	1.16	0.15	0.67	6.33	0.336	0.67	0.00	0.00
24	70.00	JMA Wireless MX08FRO665-21	3	64.50	12.49	0.74	334.03	13.847	0.74	0.00	0.00
25	70.00	Fujitsu TA08025-B605	3	75.00	1.96	0.67	123.47	2.480	0.67	0.00	0.00
26	70.00	Fujitsu TA08025-B604	3	63.90	1.96	0.67	110.81	2.480	0.67	0.00	0.00
27	70.00	Raycap RDIDC-9181-PF-48	1	21.85	2.56	1.00	84.10	3.146	1.00	0.00	0.00
28	70.00	Commscope MC-PK8-DSH	1	1727.00	37.59	1.00	3290.98	81.358	1.00	0.00	0.00
Totals:			74	6,358.97			15,946.00				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	110.00	(2) 1 5/8" 6x12 Hybrid	0.00	Inside
0.00	99.00	(4) 1 1/4" Coax	0.00	Inside
0.00	90.00	(6) 1 5/8" Coax	0.00	Inside
0.00	90.00	(1) 3" Coax	0.00	Inside
0.00	90.00	(2) 3/4" DC	0.00	Inside
0.00	90.00	(1) 7/16" Fiber	0.00	Inside
0.00	80.00	(12) 7/8" Coax	0.00	Inside
0.00	70.00	(1) 1.41" Hybrid	1.41	Outside

Shaft Section Properties

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 7



Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.4375	51.140	70.404	22867.1	19.20	116.89	78.8	880.7	0.0
5.00		0.4375	49.663	68.354	20926.9	18.61	113.52	79.5	829.9	1180.4
10.00		0.4375	48.187	66.304	19099.7	18.01	110.14	80.2	780.7	1145.5
15.00		0.4375	46.710	64.253	17382.1	17.42	106.77	80.9	732.9	1110.6
20.00		0.4375	45.234	62.203	15770.7	16.82	103.39	81.6	686.7	1075.8
25.00		0.4375	43.757	60.153	14262.1	16.23	100.02	82.3	642.0	1040.9
30.00		0.4375	42.281	58.103	12852.8	15.63	96.64	82.5	598.7	1006.0
35.00		0.4375	40.804	56.052	11539.7	15.03	93.27	82.5	557.0	971.1
40.00		0.4375	39.328	54.002	10319.1	14.44	89.89	82.5	516.8	936.2
45.00		0.4375	37.851	51.952	9187.8	13.84	86.52	82.5	478.1	901.3
48.00	Bot - Section 2	0.4375	36.965	50.721	8550.5	13.49	84.49	82.5	455.6	524.1
50.00		0.4375	36.375	49.901	8142.4	13.25	83.14	82.5	440.9	642.5
53.25	Top - Section 1	0.3750	36.165	42.597	6893.8	15.59	96.44	0.0	0.0	1021.9
55.00		0.3750	35.648	41.982	6599.4	15.35	95.06	82.5	364.6	251.8
60.00		0.3750	34.172	40.225	5804.9	14.66	91.12	82.5	334.6	699.3
65.00		0.3750	32.695	38.467	5076.8	13.96	87.19	82.5	305.8	669.4
70.00		0.3750	31.218	36.710	4412.3	13.27	83.25	82.5	278.4	639.5
75.00		0.3750	29.742	34.953	3808.5	12.57	79.31	82.5	252.2	609.6
80.00		0.3750	28.265	33.195	3262.4	11.88	75.37	82.5	227.3	579.7
85.00		0.3750	26.789	31.438	2771.2	11.19	71.44	82.5	203.8	549.8
90.00		0.3750	25.312	29.681	2332.0	10.49	67.50	82.5	181.5	519.9
95.00		0.3750	23.836	27.923	1941.8	9.80	63.56	82.5	160.5	490.0
98.25	Bot - Section 3	0.3750	22.876	26.781	1713.1	9.35	61.00	82.5	147.5	302.5
99.00		0.3750	22.655	26.517	1663.0	9.24	60.41	82.5	144.6	114.6
100.00		0.3750	22.359	26.166	1597.8	9.10	59.62	82.5	140.7	151.1
101.50	Top - Section 2	0.2500	22.416	17.588	1091.8	14.40	89.67	0.0	0.0	222.9
105.00		0.2500	21.383	16.768	946.1	13.67	85.53	82.5	87.2	204.6
110.00		0.2500	19.906	15.597	761.3	12.63	79.62	82.5	75.3	275.3
115.00		0.2500	18.430	14.425	602.3	11.59	73.72	82.5	64.4	255.4
120.00		0.2500	16.953	13.253	467.2	10.55	67.81	82.5	54.3	235.5
125.00		0.2500	15.477	12.082	353.9	9.51	61.91	82.5	45.0	215.5
130.00		0.2500	14.000	10.910	260.6	8.46	56.00	82.5	36.7	195.6
										18738.5

Wind Loading - Shaft

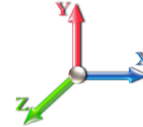
Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0W 120 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 21

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	29.269	32.20	474.73	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	29.269	32.20	461.02	0.730	0.000	5.00	21.325	15.57	501.2	0.0	1416.5
10.00		1.00	0.85	29.269	32.20	447.32	0.730	0.000	5.00	20.700	15.11	486.5	0.0	1374.6
15.00		1.00	0.85	29.269	32.20	433.61	0.730	0.000	5.00	20.075	14.65	471.8	0.0	1332.8
20.00		1.00	0.90	31.055	34.16	432.53	0.730	0.000	5.00	19.451	14.20	485.0	0.0	1290.9
25.00		1.00	0.95	32.549	35.80	428.36	0.730	0.000	5.00	18.826	13.74	492.0	0.0	1249.0
30.00		1.00	0.98	33.823	37.20	421.92	0.730	0.000	5.00	18.201	13.29	494.3	0.0	1207.2
35.00		1.00	1.01	34.938	38.43	413.85	0.730	0.000	5.00	17.576	12.83	493.1	0.0	1165.3
40.00		1.00	1.04	35.934	39.53	404.52	0.730	0.000	5.00	16.952	12.37	489.1	0.0	1123.5
45.00		1.00	1.07	36.837	40.52	394.19	0.730	0.000	5.00	16.327	11.92	482.9	0.0	1081.6
48.00 Bot - Section 2		1.00	1.08	37.341	41.07	387.59	0.730	0.000	3.00	9.496	6.93	284.7	0.0	628.9
50.00		1.00	1.09	37.663	41.43	383.04	0.730	0.000	2.00	6.333	4.62	191.5	0.0	771.0
53.25 Top - Section 1		1.00	1.11	38.165	41.98	375.41	0.730	0.000	3.25	10.078	7.36	308.9	0.0	1226.3
55.00		1.00	1.12	38.426	42.27	379.17	0.730	0.000	1.75	5.317	3.88	164.1	0.0	302.2
60.00		1.00	1.14	39.137	43.05	366.81	0.730	0.000	5.00	14.770	10.78	464.2	0.0	839.2
65.00		1.00	1.16	39.802	43.78	353.93	0.730	0.000	5.00	14.145	10.33	452.1	0.0	803.3
70.00 Appurtenance(s)		1.00	1.17	40.427	44.47	340.59	0.730	0.000	5.00	13.521	9.87	438.9	0.0	767.4
75.00		1.00	1.19	41.019	45.12	326.85	0.730	0.000	5.00	12.896	9.41	424.8	0.0	731.6
80.00 Appurtenance(s)		1.00	1.21	41.580	45.74	312.74	0.730	0.000	5.00	12.271	8.96	409.7	0.0	695.7
85.00		1.00	1.22	42.114	46.33	298.30	0.730	0.000	5.00	11.647	8.50	393.9	0.0	659.8
90.00 Appurtenance(s)		1.00	1.24	42.624	46.89	283.56	0.730	0.000	5.00	11.022	8.05	377.2	0.0	623.9
95.00		1.00	1.25	43.112	47.42	268.54	0.730	0.000	5.00	10.397	7.59	359.9	0.0	588.0
98.25 Bot - Section 3		1.00	1.26	43.418	47.76	258.64	0.730	0.000	3.25	6.423	4.69	223.9	0.0	363.0
99.00 Appurtenance(s)		1.00	1.26	43.488	47.84	256.35	0.730	0.000	0.75	1.477	1.08	51.6	0.0	137.5
100.00		1.00	1.27	43.580	47.94	253.27	0.730	0.000	1.00	1.947	1.42	68.1	0.0	181.3
101.50 Top - Section 2		1.00	1.27	43.717	48.09	248.64	0.730	0.000	1.50	2.873	2.10	100.9	0.0	267.5
105.00		1.00	1.28	44.030	48.43	243.46	0.730	0.000	3.50	6.486	4.73	229.3	0.0	245.5
110.00 Appurtenance(s)		1.00	1.29	44.463	48.91	227.76	0.730	0.000	5.00	8.735	6.38	311.9	0.0	330.4
115.00		1.00	1.30	44.881	49.37	211.85	0.730	0.000	5.00	8.110	5.92	292.3	0.0	306.5
120.00		1.00	1.32	45.285	49.81	195.75	0.730	0.000	5.00	7.485	5.46	272.2	0.0	282.6
125.00		1.00	1.33	45.676	50.24	179.48	0.730	0.000	5.00	6.860	5.01	251.6	0.0	258.6
130.00		1.00	1.34	46.055	50.66	163.02	0.730	0.000	5.00	6.236	4.55	230.6	0.0	234.7
Totals:									130.00			10,698.5		22,486.2

Discrete Appurtenance Forces

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

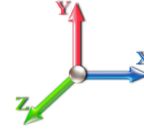


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Load Case: 1.2D + 1.0W 120 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 21

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	110.00	Samusng CBRS RRH -	3	44.463	48.910	0.54	0.80	2.48	83.16	0.000	0.000	121.12	0.00	0.00
2	110.00	Ring Mount	1	44.463	48.910	1.00	1.00	7.50	792.00	0.000	0.000	366.82	0.00	0.00
3	110.00	Samsung B2/B66A	3	44.463	48.910	0.54	0.80	3.01	303.84	0.000	0.000	147.07	0.00	0.00
4	110.00	Samsung B5/B13	3	44.463	48.910	0.54	0.80	3.01	253.08	0.000	0.000	147.07	0.00	0.00
5	110.00	Samsung MT6407-77A	3	44.463	48.910	0.56	0.80	7.88	285.84	0.000	0.000	385.37	0.00	0.00
6	110.00	Raycap	1	44.463	48.910	0.80	0.80	3.28	25.68	0.000	0.000	160.42	0.00	0.00
7	110.00	Commscope	3	44.463	48.910	0.67	0.80	16.23	183.60	0.000	0.000	793.75	0.00	0.00
8	110.00	Commscope	3	44.463	48.910	0.66	0.80	16.10	157.32	0.000	0.000	787.22	0.00	0.00
9	99.00	ALU 800MHz Filter	3	43.488	47.837	0.54	0.80	1.25	31.68	0.000	0.000	60.00	0.00	0.00
10	99.00	ALU TD-RRH8x20-25	3	43.488	47.837	0.54	0.80	6.51	252.00	0.000	0.000	311.53	0.00	0.00
11	99.00	ALU 800 MHz RRH	3	43.488	47.837	0.54	0.80	3.43	190.80	0.000	0.000	163.84	0.00	0.00
12	99.00	ALU 1900MHz RRH	3	43.488	47.837	0.54	0.80	3.71	216.00	0.000	0.000	177.69	0.00	0.00
13	99.00	RFS ACU-A20-N	4	43.488	47.837	0.54	0.80	0.30	4.80	0.000	0.000	14.36	0.00	0.00
14	99.00	Andrew DHHTT65B-3XR	3	43.488	47.837	0.66	0.80	16.12	162.00	0.000	0.000	770.90	0.00	0.00
15	99.00	Flush Mount	1	43.488	47.837	1.00	1.00	5.00	420.00	0.000	0.000	239.18	0.00	0.00
16	90.00	Flush Mount	1	42.624	46.886	1.00	1.00	5.00	420.00	0.000	0.000	234.43	0.00	0.00
17	90.00	Andrew	3	42.624	46.886	0.54	0.80	0.16	4.75	0.000	0.000	7.54	0.00	0.00
18	90.00	Cci TMABPD7823VG12A	3	42.624	46.886	0.54	0.80	2.20	93.60	0.000	0.000	103.29	0.00	0.00
19	90.00	Powerwave LGP21401	3	42.624	46.886	0.54	0.80	1.32	63.00	0.000	0.000	61.82	0.00	0.00
20	90.00	Andrew SBNHH-1D65C	3	42.624	46.886	0.67	0.80	22.96	178.56	0.000	0.000	1076.62	0.00	0.00
21	80.00	Flush Mount	1	41.580	45.738	1.00	1.00	5.00	420.00	0.000	0.000	228.69	0.00	0.00
22	80.00	RFS	3	41.580	45.738	0.65	0.80	18.76	249.84	0.000	0.000	858.03	0.00	0.00
23	80.00	RFS	6	41.580	45.738	0.54	0.80	0.48	8.35	0.000	0.000	22.06	0.00	0.00
24	70.00	Commscope	1	40.427	44.470	1.00	1.00	37.59	2072.40	0.000	0.000	1671.64	0.00	0.00
25	70.00	Raycap	1	40.427	44.470	0.75	0.75	1.92	26.22	0.000	0.000	85.38	0.00	0.00
26	70.00	Fujitsu TA08025-B604	3	40.427	44.470	0.50	0.75	2.95	230.04	0.000	0.000	131.40	0.00	0.00
27	70.00	Fujitsu TA08025-B605	3	40.427	44.470	0.50	0.75	2.95	270.00	0.000	0.000	131.40	0.00	0.00
28	70.00	JMA Wireless	3	40.427	44.470	0.55	0.75	20.80	232.20	0.000	0.000	924.80	0.00	0.00

Totals: 7,630.76

10,183.43

Total Applied Force Summary

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



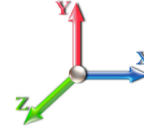
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Load Case: 1.2D + 1.0W 120 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 21



Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		501.19	1553.37	0.00	0.00
10.00		486.51	1511.51	0.00	0.00
15.00		471.82	1469.65	0.00	0.00
20.00		485.05	1427.79	0.00	0.00
25.00		492.05	1385.93	0.00	0.00
30.00		494.34	1344.07	0.00	0.00
35.00		493.11	1302.21	0.00	0.00
40.00		489.15	1260.35	0.00	0.00
45.00		482.95	1218.49	0.00	0.00
48.00		284.74	711.00	0.00	0.00
50.00		191.53	825.71	0.00	0.00
53.25		308.85	1315.25	0.00	0.00
55.00		164.07	350.11	0.00	0.00
60.00		464.18	976.08	0.00	0.00
65.00		452.10	940.20	0.00	0.00
70.00	(11) attachments	3383.54	3735.18	0.00	0.00
75.00		424.77	861.60	0.00	0.00
80.00	(10) attachments	1518.51	1503.91	0.00	0.00
85.00		393.86	752.40	0.00	0.00
90.00	(13) attachments	1860.95	1476.43	0.00	0.00
95.00		359.94	623.40	0.00	0.00
98.25		223.94	385.97	0.00	0.00
99.00	(20) attachments	1789.07	1420.12	0.00	0.00
100.00		68.13	185.20	0.00	0.00
101.50		100.87	273.31	0.00	0.00
105.00		229.32	259.17	0.00	0.00
110.00	(20) attachments	3220.69	2434.43	0.00	0.00
115.00		292.28	306.47	0.00	0.00
120.00		272.19	282.55	0.00	0.00
125.00		251.63	258.63	0.00	0.00
130.00		230.61	234.71	0.00	0.00
Totals:		20,881.90	32,585.26	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

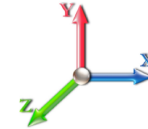


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Load Case: 1.2D + 1.0W 120 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 21

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.028	0.000	29.269	0.00	6.84
10.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.028	0.000	29.269	0.00	6.84
15.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.029	0.000	29.269	0.00	6.84
20.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.030	0.000	31.055	0.00	6.84
25.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.031	0.000	32.549	0.00	6.84
30.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.032	0.000	33.823	0.00	6.84
35.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.033	0.000	34.938	0.00	6.84
40.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.035	0.000	35.934	0.00	6.84
45.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.036	0.000	36.837	0.00	6.84
48.00	1.41" Hybrid	Yes	3.00	0.000	1.41	0.35	0.00	0.037	0.000	37.341	0.00	4.10
50.00	1.41" Hybrid	Yes	2.00	0.000	1.41	0.23	0.00	0.038	0.000	37.663	0.00	2.74
53.25	1.41" Hybrid	Yes	3.25	0.000	1.41	0.38	0.00	0.039	0.000	38.165	0.00	4.45
55.00	1.41" Hybrid	Yes	1.75	0.000	1.41	0.21	0.00	0.039	0.000	38.426	0.00	2.39
60.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.040	0.000	39.137	0.00	6.84
65.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.042	0.000	39.802	0.00	6.84
70.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.043	0.000	40.427	0.00	6.84
Totals:											0.0	95.8

Calculated Forces

Structure: CT46143-A-SBA **Code:** TIA-222-H 12/7/2023
Site Name: Burlington - Avon Landfill **Exposure:** C
Height: 130.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 12

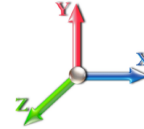


Load Case: 1.2D + 1.0W 120 mph Wind

Iterations 21

Dead Load Factor 1.20

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-32.57	-20.91	0.00	-1589.8	0.00	1589.87	4994.17	1235.59	5197.80	5206.12	0.00	0.000	0.000	0.312
5.00	-30.98	-20.46	0.00	-1485.3	0.00	1485.32	4891.79	1199.61	4899.47	4949.63	0.05	-0.096	0.000	0.307
10.00	-29.44	-20.02	0.00	-1383.0	0.00	1383.03	4786.83	1163.63	4609.96	4696.86	0.20	-0.193	0.000	0.301
15.00	-27.93	-19.59	0.00	-1282.9	0.00	1282.93	4679.28	1127.65	4329.26	4448.07	0.46	-0.292	0.000	0.295
20.00	-26.47	-19.14	0.00	-1184.9	0.00	1184.98	4569.15	1091.66	4057.38	4203.49	0.82	-0.393	0.000	0.288
25.00	-25.06	-18.69	0.00	-1089.2	0.00	1089.26	4456.44	1055.68	3794.32	3963.36	1.29	-0.496	0.000	0.281
30.00	-23.69	-18.22	0.00	-995.83	0.00	995.83	4316.73	1019.70	3540.07	3706.95	1.87	-0.600	0.000	0.274
35.00	-22.36	-17.76	0.00	-904.72	0.00	904.72	4164.40	983.72	3294.64	3448.64	2.55	-0.705	0.000	0.268
40.00	-21.07	-17.29	0.00	-815.95	0.00	815.95	4012.07	947.73	3058.03	3199.66	3.35	-0.811	0.000	0.261
45.00	-19.84	-16.82	0.00	-729.50	0.00	729.50	3859.75	911.75	2830.23	2960.01	4.25	-0.918	0.000	0.252
48.00	-19.11	-16.54	0.00	-679.05	0.00	679.05	3768.35	890.16	2697.78	2820.70	4.85	-0.983	0.000	0.246
50.00	-18.27	-16.35	0.00	-645.97	0.00	645.97	3707.42	875.77	2611.24	2729.69	5.27	-1.027	0.000	0.242
53.25	-16.95	-16.03	0.00	-592.83	0.00	592.83	3164.77	747.58	2219.90	2324.50	6.00	-1.098	0.000	0.261
55.00	-16.58	-15.89	0.00	-564.77	0.00	564.77	3119.07	736.79	2156.26	2257.51	6.41	-1.136	0.000	0.256
60.00	-15.59	-15.43	0.00	-485.35	0.00	485.35	2988.51	705.95	1979.51	2071.51	7.66	-1.249	0.000	0.240
65.00	-14.63	-14.99	0.00	-408.19	0.00	408.19	2857.94	675.10	1810.33	1893.51	9.03	-1.359	0.000	0.221
70.00	-10.96	-11.53	0.00	-333.27	0.00	333.27	2727.38	644.26	1648.70	1723.51	10.51	-1.462	0.000	0.198
75.00	-10.09	-11.10	0.00	-275.62	0.00	275.62	2596.81	613.42	1494.62	1561.50	12.10	-1.561	0.000	0.181
80.00	-8.61	-9.55	0.00	-220.12	0.00	220.12	2466.25	582.58	1348.10	1407.49	13.78	-1.653	0.000	0.160
85.00	-7.86	-9.15	0.00	-172.36	0.00	172.36	2335.68	551.74	1209.14	1261.47	15.56	-1.739	0.000	0.140
90.00	-6.43	-7.25	0.00	-126.62	0.00	126.62	2205.12	520.89	1077.74	1123.45	17.42	-1.816	0.000	0.116
95.00	-5.82	-6.88	0.00	-90.37	0.00	90.37	2074.55	490.05	953.89	993.42	19.36	-1.882	0.000	0.094
98.25	-5.43	-6.64	0.00	-68.02	0.00	68.02	1989.68	470.00	877.44	913.19	20.66	-1.919	0.000	0.077
99.00	-4.07	-4.81	0.00	-63.04	0.00	63.04	1970.10	465.38	860.25	895.16	20.96	-1.928	0.000	0.073
100.00	-3.89	-4.73	0.00	-58.24	0.00	58.24	1943.99	459.21	837.60	871.39	21.36	-1.938	0.000	0.069
101.50	-3.62	-4.62	0.00	-51.14	0.00	51.14	1306.72	308.67	567.69	593.96	21.98	-1.953	0.000	0.089
105.00	-3.37	-4.39	0.00	-34.96	0.00	34.96	1245.79	294.28	515.98	539.57	23.42	-1.981	0.000	0.068
110.00	-1.04	-1.08	0.00	-13.02	0.00	13.02	1158.75	273.72	446.40	466.39	25.51	-2.017	0.000	0.029
115.00	-0.75	-0.78	0.00	-7.60	0.00	7.60	1071.71	253.16	381.85	398.55	27.64	-2.036	0.000	0.020
120.00	-0.48	-0.50	0.00	-3.69	0.00	3.69	984.66	232.60	322.34	336.04	29.78	-2.050	0.000	0.011
125.00	-0.23	-0.24	0.00	-1.19	0.00	1.19	897.62	212.04	267.87	278.85	31.93	-2.057	0.000	0.005
130.00	0.00	-0.23	0.00	0.00	0.00	0.00	810.58	191.47	218.44	227.00	34.08	-2.060	0.000	0.000

Wind Loading - Shaft

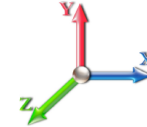
Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 21

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	29.269	32.20	474.73	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	29.269	32.20	461.02	0.730	0.000	5.00	21.325	15.57	501.2	0.0	1062.4
10.00		1.00	0.85	29.269	32.20	447.32	0.730	0.000	5.00	20.700	15.11	486.5	0.0	1031.0
15.00		1.00	0.85	29.269	32.20	433.61	0.730	0.000	5.00	20.075	14.65	471.8	0.0	999.6
20.00		1.00	0.90	31.055	34.16	432.53	0.730	0.000	5.00	19.451	14.20	485.0	0.0	968.2
25.00		1.00	0.95	32.549	35.80	428.36	0.730	0.000	5.00	18.826	13.74	492.0	0.0	936.8
30.00		1.00	0.98	33.823	37.20	421.92	0.730	0.000	5.00	18.201	13.29	494.3	0.0	905.4
35.00		1.00	1.01	34.938	38.43	413.85	0.730	0.000	5.00	17.576	12.83	493.1	0.0	874.0
40.00		1.00	1.04	35.934	39.53	404.52	0.730	0.000	5.00	16.952	12.37	489.1	0.0	842.6
45.00		1.00	1.07	36.837	40.52	394.19	0.730	0.000	5.00	16.327	11.92	482.9	0.0	811.2
48.00 Bot - Section 2		1.00	1.08	37.341	41.07	387.59	0.730	0.000	3.00	9.496	6.93	284.7	0.0	471.7
50.00		1.00	1.09	37.663	41.43	383.04	0.730	0.000	2.00	6.333	4.62	191.5	0.0	578.2
53.25 Top - Section 1		1.00	1.11	38.165	41.98	375.41	0.730	0.000	3.25	10.078	7.36	308.9	0.0	919.7
55.00		1.00	1.12	38.426	42.27	379.17	0.730	0.000	1.75	5.317	3.88	164.1	0.0	226.6
60.00		1.00	1.14	39.137	43.05	366.81	0.730	0.000	5.00	14.770	10.78	464.2	0.0	629.4
65.00		1.00	1.16	39.802	43.78	353.93	0.730	0.000	5.00	14.145	10.33	452.1	0.0	602.5
70.00 Appurtenance(s)		1.00	1.17	40.427	44.47	340.59	0.730	0.000	5.00	13.521	9.87	438.9	0.0	575.6
75.00		1.00	1.19	41.019	45.12	326.85	0.730	0.000	5.00	12.896	9.41	424.8	0.0	548.7
80.00 Appurtenance(s)		1.00	1.21	41.580	45.74	312.74	0.730	0.000	5.00	12.271	8.96	409.7	0.0	521.8
85.00		1.00	1.22	42.114	46.33	298.30	0.730	0.000	5.00	11.647	8.50	393.9	0.0	494.8
90.00 Appurtenance(s)		1.00	1.24	42.624	46.89	283.56	0.730	0.000	5.00	11.022	8.05	377.2	0.0	467.9
95.00		1.00	1.25	43.112	47.42	268.54	0.730	0.000	5.00	10.397	7.59	359.9	0.0	441.0
98.25 Bot - Section 3		1.00	1.26	43.418	47.76	258.64	0.730	0.000	3.25	6.423	4.69	223.9	0.0	272.2
99.00 Appurtenance(s)		1.00	1.26	43.488	47.84	256.35	0.730	0.000	0.75	1.477	1.08	51.6	0.0	103.2
100.00		1.00	1.27	43.580	47.94	253.27	0.730	0.000	1.00	1.947	1.42	68.1	0.0	136.0
101.50 Top - Section 2		1.00	1.27	43.717	48.09	248.64	0.730	0.000	1.50	2.873	2.10	100.9	0.0	200.6
105.00		1.00	1.28	44.030	48.43	243.46	0.730	0.000	3.50	6.486	4.73	229.3	0.0	184.1
110.00 Appurtenance(s)		1.00	1.29	44.463	48.91	227.76	0.730	0.000	5.00	8.735	6.38	311.9	0.0	247.8
115.00		1.00	1.30	44.881	49.37	211.85	0.730	0.000	5.00	8.110	5.92	292.3	0.0	229.9
120.00		1.00	1.32	45.285	49.81	195.75	0.730	0.000	5.00	7.485	5.46	272.2	0.0	211.9
125.00		1.00	1.33	45.676	50.24	179.48	0.730	0.000	5.00	6.860	5.01	251.6	0.0	194.0
130.00		1.00	1.34	46.055	50.66	163.02	0.730	0.000	5.00	6.236	4.55	230.6	0.0	176.0
Totals:									130.00			10,698.5		16,864.7

Discrete Appurtenance Forces

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

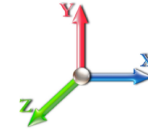


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Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



Iterations 21

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	110.00	Samusng CBRS RRH -	3	44.463	48.910	0.54	0.80	2.48	62.37	0.000	0.000	121.12	0.00	0.00
2	110.00	Ring Mount	1	44.463	48.910	1.00	1.00	7.50	594.00	0.000	0.000	366.82	0.00	0.00
3	110.00	Samsung B2/B66A	3	44.463	48.910	0.54	0.80	3.01	227.88	0.000	0.000	147.07	0.00	0.00
4	110.00	Samsung B5/B13	3	44.463	48.910	0.54	0.80	3.01	189.81	0.000	0.000	147.07	0.00	0.00
5	110.00	Samsung MT6407-77A	3	44.463	48.910	0.56	0.80	7.88	214.38	0.000	0.000	385.37	0.00	0.00
6	110.00	Raycap	1	44.463	48.910	0.80	0.80	3.28	19.26	0.000	0.000	160.42	0.00	0.00
7	110.00	Commscope	3	44.463	48.910	0.67	0.80	16.23	137.70	0.000	0.000	793.75	0.00	0.00
8	110.00	Commscope	3	44.463	48.910	0.66	0.80	16.10	117.99	0.000	0.000	787.22	0.00	0.00
9	99.00	ALU 800MHz Filter	3	43.488	47.837	0.54	0.80	1.25	23.76	0.000	0.000	60.00	0.00	0.00
10	99.00	ALU TD-RRH8x20-25	3	43.488	47.837	0.54	0.80	6.51	189.00	0.000	0.000	311.53	0.00	0.00
11	99.00	ALU 800 MHz RRH	3	43.488	47.837	0.54	0.80	3.43	143.10	0.000	0.000	163.84	0.00	0.00
12	99.00	ALU 1900MHz RRH	3	43.488	47.837	0.54	0.80	3.71	162.00	0.000	0.000	177.69	0.00	0.00
13	99.00	RFS ACU-A20-N	4	43.488	47.837	0.54	0.80	0.30	3.60	0.000	0.000	14.36	0.00	0.00
14	99.00	Andrew DHHTT65B-3XR	3	43.488	47.837	0.66	0.80	16.12	121.50	0.000	0.000	770.90	0.00	0.00
15	99.00	Flush Mount	1	43.488	47.837	1.00	1.00	5.00	315.00	0.000	0.000	239.18	0.00	0.00
16	90.00	Flush Mount	1	42.624	46.886	1.00	1.00	5.00	315.00	0.000	0.000	234.43	0.00	0.00
17	90.00	Andrew	3	42.624	46.886	0.54	0.80	0.16	3.56	0.000	0.000	7.54	0.00	0.00
18	90.00	Cci TMABPD7823VG12A	3	42.624	46.886	0.54	0.80	2.20	70.20	0.000	0.000	103.29	0.00	0.00
19	90.00	Powerwave LGP21401	3	42.624	46.886	0.54	0.80	1.32	47.25	0.000	0.000	61.82	0.00	0.00
20	90.00	Andrew SBNHH-1D65C	3	42.624	46.886	0.67	0.80	22.96	133.92	0.000	0.000	1076.62	0.00	0.00
21	80.00	Flush Mount	1	41.580	45.738	1.00	1.00	5.00	315.00	0.000	0.000	228.69	0.00	0.00
22	80.00	RFS	3	41.580	45.738	0.65	0.80	18.76	187.38	0.000	0.000	858.03	0.00	0.00
23	80.00	RFS	6	41.580	45.738	0.54	0.80	0.48	6.26	0.000	0.000	22.06	0.00	0.00
24	70.00	Commscope	1	40.427	44.470	1.00	1.00	37.59	1554.30	0.000	0.000	1671.64	0.00	0.00
25	70.00	Raycap	1	40.427	44.470	0.75	0.75	1.92	19.67	0.000	0.000	85.38	0.00	0.00
26	70.00	Fujitsu TA08025-B604	3	40.427	44.470	0.50	0.75	2.95	172.53	0.000	0.000	131.40	0.00	0.00
27	70.00	Fujitsu TA08025-B605	3	40.427	44.470	0.50	0.75	2.95	202.50	0.000	0.000	131.40	0.00	0.00
28	70.00	JMA Wireless	3	40.427	44.470	0.55	0.75	20.80	174.15	0.000	0.000	924.80	0.00	0.00

Totals: 5,723.07

10,183.43

Total Applied Force Summary

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

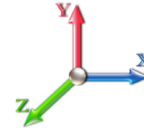


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Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



Iterations 21

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		501.19	1165.03	0.00	0.00
10.00		486.51	1133.64	0.00	0.00
15.00		471.82	1102.24	0.00	0.00
20.00		485.05	1070.85	0.00	0.00
25.00		492.05	1039.45	0.00	0.00
30.00		494.34	1008.06	0.00	0.00
35.00		493.11	976.66	0.00	0.00
40.00		489.15	945.27	0.00	0.00
45.00		482.95	913.87	0.00	0.00
48.00		284.74	533.25	0.00	0.00
50.00		191.53	619.28	0.00	0.00
53.25		308.85	986.43	0.00	0.00
55.00		164.07	262.58	0.00	0.00
60.00		464.18	732.06	0.00	0.00
65.00		452.10	705.15	0.00	0.00
70.00	(11) attachments	3383.54	2801.39	0.00	0.00
75.00		424.77	646.20	0.00	0.00
80.00	(10) attachments	1518.51	1127.94	0.00	0.00
85.00		393.86	564.30	0.00	0.00
90.00	(13) attachments	1860.95	1107.33	0.00	0.00
95.00		359.94	467.55	0.00	0.00
98.25		223.94	289.48	0.00	0.00
99.00	(20) attachments	1789.07	1065.09	0.00	0.00
100.00		68.13	138.90	0.00	0.00
101.50		100.87	204.98	0.00	0.00
105.00		229.32	194.38	0.00	0.00
110.00	(20) attachments	3220.69	1825.83	0.00	0.00
115.00		292.28	229.85	0.00	0.00
120.00		272.19	211.91	0.00	0.00
125.00		251.63	193.97	0.00	0.00
130.00		230.61	176.03	0.00	0.00
Totals:		20,881.90	24,438.95	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

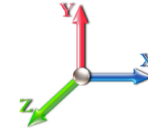


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Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



Iterations 21

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.028	0.000	29.269	0.00	5.13
10.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.028	0.000	29.269	0.00	5.13
15.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.029	0.000	29.269	0.00	5.13
20.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.030	0.000	31.055	0.00	5.13
25.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.031	0.000	32.549	0.00	5.13
30.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.032	0.000	33.823	0.00	5.13
35.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.033	0.000	34.938	0.00	5.13
40.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.035	0.000	35.934	0.00	5.13
45.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.036	0.000	36.837	0.00	5.13
48.00	1.41" Hybrid	Yes	3.00	0.000	1.41	0.35	0.00	0.037	0.000	37.341	0.00	3.08
50.00	1.41" Hybrid	Yes	2.00	0.000	1.41	0.23	0.00	0.038	0.000	37.663	0.00	2.05
53.25	1.41" Hybrid	Yes	3.25	0.000	1.41	0.38	0.00	0.039	0.000	38.165	0.00	3.33
55.00	1.41" Hybrid	Yes	1.75	0.000	1.41	0.21	0.00	0.039	0.000	38.426	0.00	1.80
60.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.040	0.000	39.137	0.00	5.13
65.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.042	0.000	39.802	0.00	5.13
70.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.043	0.000	40.427	0.00	5.13
Totals:											0.0	71.8

Calculated Forces

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0W 120 mph Wind

Iterations 21

Dead Load Factor 0.90

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-24.42	-20.90	0.00	-1583.0	0.00	1583.06	4994.17	1235.59	5197.80	5206.12	0.00	0.000	0.000	0.309
5.00	-23.22	-20.44	0.00	-1478.5	0.00	1478.55	4891.79	1199.61	4899.47	4949.63	0.05	-0.095	0.000	0.304
10.00	-22.06	-19.99	0.00	-1376.3	0.00	1376.35	4786.83	1163.63	4609.96	4696.86	0.20	-0.192	0.000	0.298
15.00	-20.92	-19.55	0.00	-1276.4	0.00	1276.41	4679.28	1127.65	4329.26	4448.07	0.46	-0.291	0.000	0.292
20.00	-19.82	-19.09	0.00	-1178.6	0.00	1178.68	4569.15	1091.66	4057.38	4203.49	0.82	-0.392	0.000	0.285
25.00	-18.75	-18.62	0.00	-1083.2	0.00	1083.22	4456.44	1055.68	3794.32	3963.36	1.28	-0.494	0.000	0.278
30.00	-17.71	-18.15	0.00	-990.10	0.00	990.10	4316.73	1019.70	3540.07	3706.95	1.86	-0.597	0.000	0.272
35.00	-16.71	-17.68	0.00	-899.33	0.00	899.33	4164.40	983.72	3294.64	3448.64	2.54	-0.701	0.000	0.265
40.00	-15.74	-17.21	0.00	-810.94	0.00	810.94	4012.07	947.73	3058.03	3199.66	3.33	-0.807	0.000	0.258
45.00	-14.81	-16.73	0.00	-724.90	0.00	724.90	3859.75	911.75	2830.23	2960.01	4.23	-0.913	0.000	0.249
48.00	-14.27	-16.45	0.00	-674.71	0.00	674.71	3768.35	890.16	2697.78	2820.70	4.83	-0.978	0.000	0.243
50.00	-13.63	-16.26	0.00	-641.80	0.00	641.80	3707.42	875.77	2611.24	2729.69	5.25	-1.022	0.000	0.239
53.25	-12.64	-15.95	0.00	-588.95	0.00	588.95	3164.77	747.58	2219.90	2324.50	5.97	-1.091	0.000	0.258
55.00	-12.36	-15.80	0.00	-561.04	0.00	561.04	3119.07	736.79	2156.26	2257.51	6.38	-1.130	0.000	0.253
60.00	-11.61	-15.34	0.00	-482.06	0.00	482.06	2988.51	705.95	1979.51	2071.51	7.62	-1.242	0.000	0.237
65.00	-10.88	-14.89	0.00	-405.36	0.00	405.36	2857.94	675.10	1810.33	1893.51	8.98	-1.351	0.000	0.218
70.00	-8.15	-11.45	0.00	-330.91	0.00	330.91	2727.38	644.26	1648.70	1723.51	10.45	-1.454	0.000	0.195
75.00	-7.49	-11.03	0.00	-273.64	0.00	273.64	2596.81	613.42	1494.62	1561.50	12.03	-1.551	0.000	0.178
80.00	-6.39	-9.49	0.00	-218.51	0.00	218.51	2466.25	582.58	1348.10	1407.49	13.70	-1.643	0.000	0.158
85.00	-5.83	-9.08	0.00	-171.08	0.00	171.08	2335.68	551.74	1209.14	1261.47	15.47	-1.728	0.000	0.138
90.00	-4.77	-7.20	0.00	-125.66	0.00	125.66	2205.12	520.89	1077.74	1123.45	17.32	-1.804	0.000	0.114
95.00	-4.31	-6.82	0.00	-89.69	0.00	89.69	2074.55	490.05	953.89	993.42	19.25	-1.870	0.000	0.093
98.25	-4.02	-6.59	0.00	-67.51	0.00	67.51	1989.68	470.00	877.44	913.19	20.54	-1.907	0.000	0.076
99.00	-3.02	-4.77	0.00	-62.57	0.00	62.57	1970.10	465.38	860.25	895.16	20.84	-1.916	0.000	0.072
100.00	-2.88	-4.70	0.00	-57.80	0.00	57.80	1943.99	459.21	837.60	871.39	21.24	-1.926	0.000	0.068
101.50	-2.68	-4.59	0.00	-50.75	0.00	50.75	1306.72	308.67	567.69	593.96	21.85	-1.940	0.000	0.088
105.00	-2.49	-4.36	0.00	-34.68	0.00	34.68	1245.79	294.28	515.98	539.57	23.28	-1.969	0.000	0.066
110.00	-0.77	-1.07	0.00	-12.90	0.00	12.90	1158.75	273.72	446.40	466.39	25.37	-2.004	0.000	0.028
115.00	-0.55	-0.77	0.00	-7.53	0.00	7.53	1071.71	253.16	381.85	398.55	27.48	-2.024	0.000	0.019
120.00	-0.35	-0.50	0.00	-3.66	0.00	3.66	984.66	232.60	322.34	336.04	29.60	-2.037	0.000	0.011
125.00	-0.17	-0.24	0.00	-1.18	0.00	1.18	897.62	212.04	267.87	278.85	31.74	-2.044	0.000	0.004
130.00	0.00	-0.23	0.00	0.00	0.00	0.00	810.58	191.47	218.44	227.00	33.88	-2.046	0.000	0.000

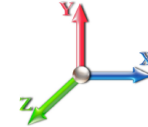
Wind Loading - Shaft

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 18



Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 20

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.081	5.59	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.081	5.59	0.00	1.200	1.242	5.00	22.360	26.83	150.0	396.1	1812.6
10.00		1.00	0.85	5.081	5.59	0.00	1.200	1.331	5.00	21.809	26.17	146.3	412.9	1787.5
15.00		1.00	0.85	5.081	5.59	0.00	1.200	1.386	5.00	21.230	25.48	142.4	417.6	1750.4
20.00		1.00	0.90	5.392	5.93	0.00	1.200	1.427	5.00	20.639	24.77	146.9	417.0	1707.9
25.00		1.00	0.95	5.651	6.22	0.00	1.200	1.459	5.00	20.042	24.05	149.5	413.2	1662.2
30.00		1.00	0.98	5.872	6.46	0.00	1.200	1.486	5.00	19.439	23.33	150.7	407.3	1614.5
35.00		1.00	1.01	6.066	6.67	0.00	1.200	1.509	5.00	18.834	22.60	150.8	399.9	1565.2
40.00		1.00	1.04	6.239	6.86	0.00	1.200	1.529	5.00	18.226	21.87	150.1	391.3	1514.8
45.00		1.00	1.07	6.395	7.03	0.00	1.200	1.547	5.00	17.616	21.14	148.7	381.8	1463.4
48.00 Bot - Section 2		1.00	1.08	6.483	7.13	0.00	1.200	1.557	3.00	10.275	12.33	87.9	225.4	854.3
50.00		1.00	1.09	6.539	7.19	0.00	1.200	1.564	2.00	6.854	8.22	59.2	151.5	922.5
53.25 Top - Section 1		1.00	1.11	6.626	7.29	0.00	1.200	1.574	3.25	10.930	13.12	95.6	241.7	1468.0
55.00		1.00	1.12	6.671	7.34	0.00	1.200	1.579	1.75	5.778	6.93	50.9	128.8	431.0
60.00		1.00	1.14	6.795	7.47	0.00	1.200	1.592	5.00	16.097	19.32	144.4	356.6	1195.8
65.00		1.00	1.16	6.910	7.60	0.00	1.200	1.605	5.00	15.483	18.58	141.2	344.8	1148.1
70.00 Appurtenance(s)		1.00	1.17	7.019	7.72	0.00	1.200	1.617	5.00	14.868	17.84	137.7	332.5	1099.9
75.00		1.00	1.19	7.121	7.83	0.00	1.200	1.628	5.00	14.253	17.10	134.0	319.9	1051.4
80.00 Appurtenance(s)		1.00	1.21	7.219	7.94	0.00	1.200	1.639	5.00	13.637	16.36	129.9	306.9	1002.5
85.00		1.00	1.22	7.311	8.04	0.00	1.200	1.649	5.00	13.021	15.62	125.7	293.6	953.4
90.00 Appurtenance(s)		1.00	1.24	7.400	8.14	0.00	1.200	1.658	5.00	12.404	14.88	121.2	280.0	903.9
95.00		1.00	1.25	7.485	8.23	0.00	1.200	1.667	5.00	11.787	14.14	116.4	266.2	854.2
98.25 Bot - Section 3		1.00	1.26	7.538	8.29	0.00	1.200	1.673	3.25	7.329	8.80	72.9	167.1	530.1
99.00 Appurtenance(s)		1.00	1.26	7.550	8.30	0.00	1.200	1.674	0.75	1.686	2.02	16.8	39.0	176.6
100.00		1.00	1.27	7.566	8.32	0.00	1.200	1.676	1.00	2.226	2.67	22.2	51.5	232.8
101.50 Top - Section 2		1.00	1.27	7.590	8.35	0.00	1.200	1.678	1.50	3.293	3.95	33.0	75.9	343.4
105.00		1.00	1.28	7.644	8.41	0.00	1.200	1.684	3.50	7.468	8.96	75.4	170.2	415.7
110.00 Appurtenance(s)		1.00	1.29	7.719	8.49	0.00	1.200	1.692	5.00	10.144	12.17	103.4	228.7	559.1
115.00		1.00	1.30	7.792	8.57	0.00	1.200	1.699	5.00	9.526	11.43	98.0	214.1	520.6
120.00		1.00	1.32	7.862	8.65	0.00	1.200	1.707	5.00	8.907	10.69	92.4	199.3	481.8
125.00		1.00	1.33	7.930	8.72	0.00	1.200	1.714	5.00	8.288	9.95	86.8	184.3	443.0
130.00		1.00	1.34	7.996	8.80	0.00	1.200	1.720	5.00	7.669	9.20	80.9	169.2	403.9
Totals:									130.00			3,361.2		30,870.7

Discrete Appurtenance Forces

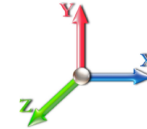
Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 20

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	110.00	Samusng CBRS RRH -	3	7.719	8.491	0.54	0.80	3.29	234.47	0.000	0.000	27.97	0.00	0.00
2	110.00	Ring Mount	1	7.719	8.491	1.00	1.00	15.11	2028.33	0.000	0.000	128.33	0.00	0.00
3	110.00	Samsung B2/B66A	3	7.719	8.491	0.54	0.80	3.90	524.85	0.000	0.000	33.10	0.00	0.00
4	110.00	Samsung B5/B13	3	7.719	8.491	0.54	0.80	3.90	453.23	0.000	0.000	33.10	0.00	0.00
5	110.00	Samsung MT6407-77A	3	7.719	8.491	0.56	0.80	9.42	631.28	0.000	0.000	79.99	0.00	0.00
6	110.00	Raycap	1	7.719	8.491	0.80	0.80	3.90	110.97	0.000	0.000	33.13	0.00	0.00
7	110.00	Commscope	3	7.719	8.491	0.67	0.80	18.70	605.16	0.000	0.000	158.79	0.00	0.00
8	110.00	Commscope	3	7.719	8.491	0.66	0.80	18.58	740.24	0.000	0.000	157.81	0.00	0.00
9	99.00	ALU 800MHz Filter	3	7.550	8.305	0.54	0.80	2.25	67.46	0.000	0.000	18.70	0.00	0.00
10	99.00	ALU TD-RRH8x20-25	3	7.550	8.305	0.54	0.80	7.76	567.21	0.000	0.000	64.47	0.00	0.00
11	99.00	ALU 800 MHz RRH	3	7.550	8.305	0.54	0.80	4.34	285.65	0.000	0.000	36.03	0.00	0.00
12	99.00	ALU 1900MHz RRH	3	7.550	8.305	0.54	0.80	4.72	388.10	0.000	0.000	39.17	0.00	0.00
13	99.00	RFS ACU-A20-N	4	7.550	8.305	0.54	0.80	0.91	16.08	0.000	0.000	7.56	0.00	0.00
14	99.00	Andrew DHHTT65B-3XR	3	7.550	8.305	0.66	0.80	18.70	741.09	0.000	0.000	155.30	0.00	0.00
15	99.00	Flush Mount	1	7.550	8.305	1.00	1.00	8.35	601.26	0.000	0.000	69.33	0.00	0.00
16	90.00	Flush Mount	1	7.400	8.140	1.00	1.00	8.32	598.60	0.000	0.000	67.70	0.00	0.00
17	90.00	Andrew	3	7.400	8.140	0.54	0.80	0.40	17.37	0.000	0.000	3.24	0.00	0.00
18	90.00	Cci TMABPD7823VG12A	3	7.400	8.140	0.54	0.80	2.93	268.25	0.000	0.000	23.84	0.00	0.00
19	90.00	Powerwave LGP21401	3	7.400	8.140	0.54	0.80	1.92	112.95	0.000	0.000	15.65	0.00	0.00
20	90.00	Andrew SBNHH-1D65C	3	7.400	8.140	0.67	0.80	26.13	920.48	0.000	0.000	212.71	0.00	0.00
21	80.00	Flush Mount	1	7.219	7.941	1.00	1.00	8.28	595.33	0.000	0.000	65.73	0.00	0.00
22	80.00	RFS	3	7.219	7.941	0.65	0.80	21.16	1120.14	0.000	0.000	168.01	0.00	0.00
23	80.00	RFS	6	7.219	7.941	0.54	0.80	1.08	-77.28	0.000	0.000	8.58	0.00	0.00
24	70.00	Commscope	1	7.019	7.721	1.00	1.00	81.36	3263.38	0.000	0.000	628.13	0.00	0.00
25	70.00	Raycap	1	7.019	7.721	0.75	0.75	2.36	75.72	0.000	0.000	18.22	0.00	0.00
26	70.00	Fujitsu TA08025-B604	3	7.019	7.721	0.50	0.75	3.74	334.48	0.000	0.000	28.86	0.00	0.00
27	70.00	Fujitsu TA08025-B605	3	7.019	7.721	0.50	0.75	3.74	377.60	0.000	0.000	28.86	0.00	0.00
28	70.00	JMA Wireless	3	7.019	7.721	0.55	0.75	23.06	839.18	0.000	0.000	178.00	0.00	0.00

Totals: 16,441.56

2,490.32

Total Applied Force Summary

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

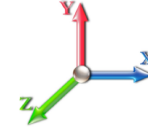


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 20

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		149.98	1966.51	0.00	0.00
10.00		146.28	1943.38	0.00	0.00
15.00		142.40	1907.47	0.00	0.00
20.00		146.89	1865.87	0.00	0.00
25.00		149.49	1820.96	0.00	0.00
30.00		150.67	1773.83	0.00	0.00
35.00		150.80	1725.10	0.00	0.00
40.00		150.09	1675.14	0.00	0.00
45.00		148.71	1624.21	0.00	0.00
48.00		87.92	950.94	0.00	0.00
50.00		59.16	986.99	0.00	0.00
53.25		95.60	1572.95	0.00	0.00
55.00		50.88	487.56	0.00	0.00
60.00		144.37	1357.78	0.00	0.00
65.00		141.22	1310.36	0.00	0.00
70.00	(11) attachments	1019.82	6152.86	0.00	0.00
75.00		133.98	1181.46	0.00	0.00
80.00	(10) attachments	372.26	2770.79	0.00	0.00
85.00		125.66	1045.98	0.00	0.00
90.00	(13) attachments	444.31	2914.18	0.00	0.00
95.00		116.45	889.60	0.00	0.00
98.25		72.93	553.08	0.00	0.00
99.00	(20) attachments	407.37	2848.72	0.00	0.00
100.00		22.23	236.68	0.00	0.00
101.50		32.99	349.26	0.00	0.00
105.00		75.36	429.39	0.00	0.00
110.00	(20) attachments	755.58	5907.17	0.00	0.00
115.00		97.98	520.57	0.00	0.00
120.00		92.44	481.85	0.00	0.00
125.00		86.76	442.96	0.00	0.00
130.00		80.94	403.91	0.00	0.00
Totals:		5,851.54	50,097.52	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

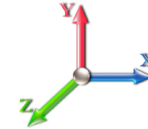


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 20

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.41" Hybrid	Yes	5.00	0.000	1.41	1.62	0.00	0.028	0.000	5.081	0.00	23.90
10.00	1.41" Hybrid	Yes	5.00	0.000	1.41	1.70	0.00	0.028	0.000	5.081	0.00	25.79
15.00	1.41" Hybrid	Yes	5.00	0.000	1.41	1.74	0.00	0.029	0.000	5.081	0.00	27.01
20.00	1.41" Hybrid	Yes	5.00	0.000	1.41	1.78	0.00	0.030	0.000	5.392	0.00	27.93
25.00	1.41" Hybrid	Yes	5.00	0.000	1.41	1.80	0.00	0.031	0.000	5.651	0.00	28.67
30.00	1.41" Hybrid	Yes	5.00	0.000	1.41	1.83	0.00	0.032	0.000	5.872	0.00	29.30
35.00	1.41" Hybrid	Yes	5.00	0.000	1.41	1.84	0.00	0.033	0.000	6.066	0.00	29.85
40.00	1.41" Hybrid	Yes	5.00	0.000	1.41	1.86	0.00	0.035	0.000	6.239	0.00	30.34
45.00	1.41" Hybrid	Yes	5.00	0.000	1.41	1.88	0.00	0.036	0.000	6.395	0.00	30.78
48.00	1.41" Hybrid	Yes	3.00	0.000	1.41	1.13	0.00	0.037	0.000	6.483	0.00	18.61
50.00	1.41" Hybrid	Yes	2.00	0.000	1.41	0.76	0.00	0.038	0.000	6.539	0.00	12.47
53.25	1.41" Hybrid	Yes	3.25	0.000	1.41	1.23	0.00	0.039	0.000	6.626	0.00	20.42
55.00	1.41" Hybrid	Yes	1.75	0.000	1.41	0.67	0.00	0.039	0.000	6.671	0.00	11.04
60.00	1.41" Hybrid	Yes	5.00	0.000	1.41	1.91	0.00	0.040	0.000	6.795	0.00	31.89
65.00	1.41" Hybrid	Yes	5.00	0.000	1.41	1.93	0.00	0.042	0.000	6.910	0.00	32.21
70.00	1.41" Hybrid	Yes	5.00	0.000	1.41	1.94	0.00	0.043	0.000	7.019	0.00	32.51
Totals:											0.0	412.7

Calculated Forces

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 22
	Struct Class: II	

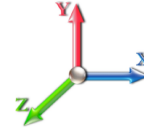


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 20

Dead Load Factor 1.20

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-50.10	-5.86	0.00	-440.25	0.00	440.25	4994.17	1235.59	5197.80	5206.12	0.00	0.000	0.000	0.095
5.00	-48.13	-5.73	0.00	-410.94	0.00	410.94	4891.79	1199.61	4899.47	4949.63	0.01	-0.026	0.000	0.093
10.00	-46.18	-5.61	0.00	-382.26	0.00	382.26	4786.83	1163.63	4609.96	4696.86	0.06	-0.053	0.000	0.091
15.00	-44.27	-5.49	0.00	-354.22	0.00	354.22	4679.28	1127.65	4329.26	4448.07	0.13	-0.081	0.000	0.089
20.00	-42.40	-5.36	0.00	-326.79	0.00	326.79	4569.15	1091.66	4057.38	4203.49	0.23	-0.109	0.000	0.087
25.00	-40.58	-5.22	0.00	-300.00	0.00	300.00	4456.44	1055.68	3794.32	3963.36	0.36	-0.137	0.000	0.085
30.00	-38.80	-5.09	0.00	-273.89	0.00	273.89	4316.73	1019.70	3540.07	3706.95	0.52	-0.166	0.000	0.083
35.00	-37.08	-4.95	0.00	-248.45	0.00	248.45	4164.40	983.72	3294.64	3448.64	0.70	-0.195	0.000	0.081
40.00	-35.40	-4.81	0.00	-223.70	0.00	223.70	4012.07	947.73	3058.03	3199.66	0.92	-0.224	0.000	0.079
45.00	-33.77	-4.67	0.00	-199.64	0.00	199.64	3859.75	911.75	2830.23	2960.01	1.17	-0.253	0.000	0.076
48.00	-32.82	-4.59	0.00	-185.63	0.00	185.63	3768.35	890.16	2697.78	2820.70	1.34	-0.271	0.000	0.075
50.00	-31.83	-4.53	0.00	-176.46	0.00	176.46	3707.42	875.77	2611.24	2729.69	1.46	-0.283	0.000	0.073
53.25	-30.26	-4.44	0.00	-161.73	0.00	161.73	3164.77	747.58	2219.90	2324.50	1.65	-0.302	0.000	0.079
55.00	-29.77	-4.39	0.00	-153.97	0.00	153.97	3119.07	736.79	2156.26	2257.51	1.77	-0.312	0.000	0.078
60.00	-28.41	-4.26	0.00	-132.01	0.00	132.01	2988.51	705.95	1979.51	2071.51	2.11	-0.343	0.000	0.073
65.00	-27.10	-4.12	0.00	-110.73	0.00	110.73	2857.94	675.10	1810.33	1893.51	2.49	-0.373	0.000	0.068
70.00	-20.95	-3.07	0.00	-90.13	0.00	90.13	2727.38	644.26	1648.70	1723.51	2.89	-0.401	0.000	0.060
75.00	-19.77	-2.94	0.00	-74.78	0.00	74.78	2596.81	613.42	1494.62	1561.50	3.33	-0.428	0.000	0.056
80.00	-17.00	-2.55	0.00	-60.11	0.00	60.11	2466.25	582.58	1348.10	1407.49	3.79	-0.453	0.000	0.050
85.00	-15.96	-2.42	0.00	-47.37	0.00	47.37	2335.68	551.74	1209.14	1261.47	4.28	-0.476	0.000	0.044
90.00	-13.05	-1.96	0.00	-35.26	0.00	35.26	2205.12	520.89	1077.74	1123.45	4.79	-0.498	0.000	0.037
95.00	-12.16	-1.84	0.00	-25.48	0.00	25.48	2074.55	490.05	953.89	993.42	5.32	-0.516	0.000	0.032
98.25	-11.60	-1.76	0.00	-19.52	0.00	19.52	1989.68	470.00	877.44	913.19	5.68	-0.527	0.000	0.027
99.00	-8.76	-1.33	0.00	-18.20	0.00	18.20	1970.10	465.38	860.25	895.16	5.76	-0.529	0.000	0.025
100.00	-8.52	-1.30	0.00	-16.87	0.00	16.87	1943.99	459.21	837.60	871.39	5.87	-0.532	0.000	0.024
101.50	-8.17	-1.27	0.00	-14.92	0.00	14.92	1306.72	308.67	567.69	593.96	6.04	-0.536	0.000	0.031
105.00	-7.75	-1.19	0.00	-10.49	0.00	10.49	1245.79	294.28	515.98	539.57	6.43	-0.545	0.000	0.026
110.00	-1.85	-0.38	0.00	-4.55	0.00	4.55	1158.75	273.72	446.40	466.39	7.01	-0.556	0.000	0.011
115.00	-1.33	-0.27	0.00	-2.67	0.00	2.67	1071.71	253.16	381.85	398.55	7.60	-0.563	0.000	0.008
120.00	-0.85	-0.18	0.00	-1.30	0.00	1.30	984.66	232.60	322.34	336.04	8.19	-0.568	0.000	0.005
125.00	-0.40	-0.08	0.00	-0.42	0.00	0.42	897.62	212.04	267.87	278.85	8.79	-0.570	0.000	0.002
130.00	0.00	-0.08	0.00	0.00	0.00	0.00	810.58	191.47	218.44	227.00	9.38	-0.571	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Ev + 1.0Eh

Iterations 19

Gust Response Factor 1.10

Sds 0.20

Ss 0.19

Dead Load Factor 1.20 **Seismic Load Factor** 1.00

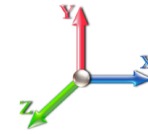
Sd1 0.09

S1 0.06

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.55

SA 0.05

Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	
						R: 1.50
0.00		0.00	0.00	0.00	0.00	
5.00		1317.2	2.50	53.11	0.19	
10.00		1282.4	7.50	51.71	1.13	
15.00		1247.5	12.50	50.30	2.52	
20.00		1212.6	17.50	48.89	4.19	
25.00		1177.7	22.50	47.49	6.06	
30.00		1142.8	27.50	46.08	8.04	
35.00		1107.9	32.50	44.67	10.08	
40.00		1073.1	37.50	43.27	12.11	
45.00		1038.2	42.50	41.86	14.11	
48.00	Bot - Section 2	606.19	46.50	24.44	6.71	
50.00		697.22	49.00	28.11	9.23	
53.25	Top - Section 1	1110.8	51.63	44.79	21.80	
55.00		299.74	54.13	12.09	2.69	
60.00		836.22	57.50	33.72	16.27	
65.00		806.32	62.50	32.51	17.59	
70.00	Appurtenance(s)	3135.4	67.50	126.42	189.95	
75.00		739.68	72.50	29.82	19.50	
80.00	Appurtenance(s)	1274.9	77.50	51.41	53.72	
85.00		642.44	82.50	25.90	19.13	
90.00	Appurtenance(s)	1245.8	87.50	50.23	63.22	
95.00		525.40	92.50	21.18	16.57	
98.25	Bot - Section 3	325.47	96.63	13.12	8.05	
99.00	Appurtenance(s)	1184.3	98.63	47.75	70.90	
100.00		154.98	99.50	6.25	2.47	
101.50	Top - Section 2	228.74	100.75	9.22	4.81	
105.00		218.25	103.25	8.80	4.63	
110.00	Appurtenance(s)	2031.9	107.50	81.93	200.16	
115.00		255.39	112.50	10.30	6.93	
120.00		235.46	117.50	9.49	6.51	
125.00		215.53	122.50	8.69	6.02	
130.00		195.59	127.50	7.89	5.48	
Totals:		27,565.8		1,111.5	810.8	
					Total Wind:	20,881.9

Calculated Forces

Structure: CT46143-A-SBA **Code:** TIA-222-H 12/7/2023
Site Name: Burlington - Avon Landfill **Exposure:** C
Height: 130.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 24



Load Case: 1.2D + 1.0Ev + 1.0Eh

Iterations 19

Gust Response Factor 1.10

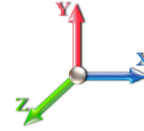
Sds 0.20

Ss 0.19

Dead Load Factor 1.20 **Seismic Load Factor** 1.00 **Sd1** 0.09

S1 0.06

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.55 **SA** 0.05 **Seismic Importance Factor** 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-33.70	-0.81	0.00	-69.46	0.00	69.46	4994.17	1235.59	5197.80	5206.12	0.00	0.00	0.00	0.020
5.00	-32.09	-0.81	0.00	-65.40	0.00	65.40	4891.79	1199.61	4899.47	4949.63	0.00	0.00	0.00	0.020
10.00	-30.53	-0.81	0.00	-61.33	0.00	61.33	4786.83	1163.63	4609.96	4696.86	0.01	-0.01	0.019	0.019
15.00	-29.01	-0.81	0.00	-57.26	0.00	57.26	4679.28	1127.65	4329.26	4448.07	0.02	-0.01	0.019	0.019
20.00	-27.53	-0.81	0.00	-53.19	0.00	53.19	4569.15	1091.66	4057.38	4203.49	0.04	-0.02	0.019	0.019
25.00	-26.10	-0.81	0.00	-49.13	0.00	49.13	4456.44	1055.68	3794.32	3963.36	0.06	-0.02	0.018	0.018
30.00	-24.71	-0.80	0.00	-45.09	0.00	45.09	4316.73	1019.70	3540.07	3706.95	0.08	-0.03	0.018	0.018
35.00	-23.36	-0.79	0.00	-41.09	0.00	41.09	4164.40	983.72	3294.64	3448.64	0.11	-0.03	0.018	0.018
40.00	-22.06	-0.78	0.00	-37.13	0.00	37.13	4012.07	947.73	3058.03	3199.66	0.15	-0.04	0.017	0.017
45.00	-20.80	-0.77	0.00	-33.22	0.00	33.22	3859.75	911.75	2830.23	2960.01	0.19	-0.04	0.017	0.017
48.00	-20.06	-0.76	0.00	-30.92	0.00	30.92	3768.35	890.16	2697.78	2820.70	0.22	-0.04	0.016	0.016
50.00	-19.21	-0.75	0.00	-29.40	0.00	29.40	3707.42	875.77	2611.24	2729.69	0.24	-0.05	0.016	0.016
53.25	-17.85	-0.73	0.00	-26.95	0.00	26.95	3164.77	747.58	2219.90	2324.50	0.27	-0.05	0.017	0.017
55.00	-17.48	-0.73	0.00	-25.67	0.00	25.67	3119.07	736.79	2156.26	2257.51	0.29	-0.05	0.017	0.017
60.00	-16.47	-0.71	0.00	-22.03	0.00	22.03	2988.51	705.95	1979.51	2071.51	0.34	-0.06	0.016	0.016
65.00	-15.50	-0.70	0.00	-18.47	0.00	18.47	2857.94	675.10	1810.33	1893.51	0.40	-0.06	0.015	0.015
70.00	-11.64	-0.50	0.00	-15.00	0.00	15.00	2727.38	644.26	1648.70	1723.51	0.47	-0.07	0.013	0.013
75.00	-10.75	-0.48	0.00	-12.49	0.00	12.49	2596.81	613.42	1494.62	1561.50	0.54	-0.07	0.012	0.012
80.00	-9.19	-0.43	0.00	-10.08	0.00	10.08	2466.25	582.58	1348.10	1407.49	0.62	-0.07	0.011	0.011
85.00	-8.41	-0.41	0.00	-7.95	0.00	7.95	2335.68	551.74	1209.14	1261.47	0.70	-0.08	0.010	0.010
90.00	-6.89	-0.34	0.00	-5.91	0.00	5.91	2205.12	520.89	1077.74	1123.45	0.78	-0.08	0.008	0.008
95.00	-6.24	-0.33	0.00	-4.20	0.00	4.20	2074.55	490.05	953.89	993.42	0.87	-0.09	0.007	0.007
98.25	-5.84	-0.32	0.00	-3.14	0.00	3.14	1989.68	470.00	877.44	913.19	0.93	-0.09	0.006	0.006
99.00	-4.38	-0.24	0.00	-2.90	0.00	2.90	1970.10	465.38	860.25	895.16	0.94	-0.09	0.005	0.005
100.00	-4.19	-0.24	0.00	-2.66	0.00	2.66	1943.99	459.21	837.60	871.39	0.96	-0.09	0.005	0.005
101.50	-3.90	-0.24	0.00	-2.30	0.00	2.30	1306.72	308.67	567.69	593.96	0.99	-0.09	0.007	0.007
105.00	-3.63	-0.23	0.00	-1.47	0.00	1.47	1245.79	294.28	515.98	539.57	1.05	-0.09	0.006	0.006
110.00	-1.12	-0.03	0.00	-0.32	0.00	0.32	1158.75	273.72	446.40	466.39	1.15	-0.09	0.002	0.002
115.00	-0.80	-0.02	0.00	-0.19	0.00	0.19	1071.71	253.16	381.85	398.55	1.24	-0.09	0.001	0.001
120.00	-0.51	-0.01	0.00	-0.09	0.00	0.09	984.66	232.60	322.34	336.04	1.34	-0.09	0.001	0.001
125.00	-0.24	-0.01	0.00	-0.03	0.00	0.03	897.62	212.04	267.87	278.85	1.44	-0.09	0.000	0.000
130.00	0.00	-0.01	0.00	0.00	0.00	0.00	810.58	191.47	218.44	227.00	1.53	-0.09	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0Ev + 1.0Eh

Iterations 18

Gust Response Factor 1.10

Sds 0.20

Ss 0.19

Dead Load Factor 0.90 **Seismic Load Factor** 1.00

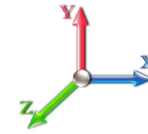
Sd1 0.09

S1 0.06

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.55

SA 0.05

Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	
5.00		1283.0	2.50	51.73	0.19	
10.00		1248.1	7.50	50.33	1.11	
15.00		1213.3	12.50	48.92	2.46	
20.00		1178.4	17.50	47.51	4.09	
25.00		1143.5	22.50	46.11	5.91	
30.00		1108.6	27.50	44.70	7.83	
35.00		1073.7	32.50	43.29	9.79	
40.00		1038.8	37.50	41.89	11.75	
45.00		1004.0	42.50	40.48	13.67	
48.00	Bot - Section 2	585.66	46.50	23.61	6.49	
50.00		683.53	49.00	27.56	9.15	
53.25	Top - Section 1	1088.6	51.63	43.89	21.58	
55.00		287.76	54.13	11.60	2.57	
60.00		801.99	57.50	32.34	15.55	
65.00		772.09	62.50	31.13	16.76	
70.00	Appurtenance(s)	3101.2	67.50	125.04	190.95	
75.00		707.16	72.50	28.51	18.53	
80.00	Appurtenance(s)	1242.4	77.50	50.09	52.69	
85.00		619.28	82.50	24.97	18.42	
90.00	Appurtenance(s)	1222.6	87.50	49.30	62.74	
95.00		516.55	92.50	20.83	16.49	
98.25	Bot - Section 3	319.73	96.63	12.89	8.00	
99.00	Appurtenance(s)	1183.0	98.63	47.70	72.44	
100.00		154.01	99.50	6.21	2.50	
101.50	Top - Section 2	227.27	100.75	9.16	4.87	
105.00		214.84	103.25	8.66	4.62	
110.00	Appurtenance(s)	2027.0	107.50	81.73	204.09	
115.00		255.39	112.50	10.30	7.09	
120.00		235.46	117.50	9.49	6.66	
125.00		215.53	122.50	8.69	6.17	
130.00		195.59	127.50	7.89	5.61	
Totals:		26,948.7		1,086.6	810.8	
					Total Wind:	20,881.9

Calculated Forces

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

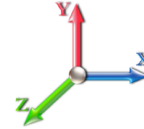


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Load Case: 0.9D + 1.0Ev + 1.0Eh

Iterations 18

Gust Response Factor 1.10	Sds 0.20	Ss 0.19
Dead Load Factor 0.90	Seismic Load Factor 1.00	S1 0.06
Wind Load Factor 0.00	Structure Frequency (f1) 0.55	SA 0.05
Seismic Importance Factor 1.00		



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-25.53	-0.81	0.00	-69.36	0.00	69.36	4994.17	1235.59	5197.80	5206.12		0.00	0.00	0.018
5.00	-24.31	-0.81	0.00	-65.31	0.00	65.31	4891.79	1199.61	4899.47	4949.63		0.00	0.00	0.018
10.00	-23.12	-0.81	0.00	-61.25	0.00	61.25	4786.83	1163.63	4609.96	4696.86		0.01	-0.01	0.018
15.00	-21.97	-0.81	0.00	-57.18	0.00	57.18	4679.28	1127.65	4329.26	4448.07		0.02	-0.01	0.018
20.00	-20.85	-0.81	0.00	-53.13	0.00	53.13	4569.15	1091.66	4057.38	4203.49		0.04	-0.02	0.017
25.00	-19.77	-0.80	0.00	-49.08	0.00	49.08	4456.44	1055.68	3794.32	3963.36		0.06	-0.02	0.017
30.00	-18.72	-0.80	0.00	-45.06	0.00	45.06	4316.73	1019.70	3540.07	3706.95		0.08	-0.03	0.016
35.00	-17.70	-0.79	0.00	-41.07	0.00	41.07	4164.40	983.72	3294.64	3448.64		0.11	-0.03	0.016
40.00	-16.71	-0.78	0.00	-37.13	0.00	37.13	4012.07	947.73	3058.03	3199.66		0.15	-0.04	0.016
45.00	-15.75	-0.76	0.00	-33.24	0.00	33.24	3859.75	911.75	2830.23	2960.01		0.19	-0.04	0.015
48.00	-15.20	-0.76	0.00	-30.94	0.00	30.94	3768.35	890.16	2697.78	2820.70		0.22	-0.04	0.015
50.00	-14.55	-0.75	0.00	-29.43	0.00	29.43	3707.42	875.77	2611.24	2729.69		0.24	-0.05	0.015
53.25	-13.52	-0.73	0.00	-26.99	0.00	26.99	3164.77	747.58	2219.90	2324.50		0.27	-0.05	0.016
55.00	-13.25	-0.73	0.00	-25.72	0.00	25.72	3119.07	736.79	2156.26	2257.51		0.29	-0.05	0.016
60.00	-12.48	-0.71	0.00	-22.09	0.00	22.09	2988.51	705.95	1979.51	2071.51		0.34	-0.06	0.015
65.00	-11.75	-0.69	0.00	-18.54	0.00	18.54	2857.94	675.10	1810.33	1893.51		0.40	-0.06	0.014
70.00	-8.82	-0.50	0.00	-15.07	0.00	15.07	2727.38	644.26	1648.70	1723.51		0.47	-0.07	0.012
75.00	-8.14	-0.48	0.00	-12.56	0.00	12.56	2596.81	613.42	1494.62	1561.50		0.54	-0.07	0.011
80.00	-6.97	-0.43	0.00	-10.15	0.00	10.15	2466.25	582.58	1348.10	1407.49		0.62	-0.07	0.010
85.00	-6.38	-0.41	0.00	-8.01	0.00	8.01	2335.68	551.74	1209.14	1261.47		0.70	-0.08	0.009
90.00	-5.22	-0.35	0.00	-5.97	0.00	5.97	2205.12	520.89	1077.74	1123.45		0.78	-0.08	0.008
95.00	-4.73	-0.33	0.00	-4.24	0.00	4.24	2074.55	490.05	953.89	993.42		0.87	-0.09	0.007
98.25	-4.43	-0.32	0.00	-3.17	0.00	3.17	1989.68	470.00	877.44	913.19		0.93	-0.09	0.006
99.00	-3.32	-0.25	0.00	-2.93	0.00	2.93	1970.10	465.38	860.25	895.16		0.94	-0.09	0.005
100.00	-3.17	-0.24	0.00	-2.69	0.00	2.69	1943.99	459.21	837.60	871.39		0.96	-0.09	0.005
101.50	-2.96	-0.24	0.00	-2.32	0.00	2.32	1306.72	308.67	567.69	593.96		0.99	-0.09	0.006
105.00	-2.76	-0.23	0.00	-1.49	0.00	1.49	1245.79	294.28	515.98	539.57		1.05	-0.09	0.005
110.00	-0.85	-0.03	0.00	-0.32	0.00	0.32	1158.75	273.72	446.40	466.39		1.15	-0.09	0.001
115.00	-0.61	-0.02	0.00	-0.19	0.00	0.19	1071.71	253.16	381.85	398.55		1.25	-0.09	0.001
120.00	-0.39	-0.01	0.00	-0.09	0.00	0.09	984.66	232.60	322.34	336.04		1.34	-0.09	0.001
125.00	-0.18	-0.01	0.00	-0.03	0.00	0.03	897.62	212.04	267.87	278.85		1.44	-0.09	0.000
130.00	0.00	-0.01	0.00	0.00	0.00	0.00	810.58	191.47	218.44	227.00		1.53	-0.09	0.000

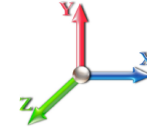
Wind Loading - Shaft

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 20

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	6.547	7.20	237.37	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	6.547	7.20	230.51	0.730	0.000	5.00	21.325	15.57	112.1	0.0	1180.4
10.00		1.00	0.85	6.547	7.20	223.66	0.730	0.000	5.00	20.700	15.11	108.8	0.0	1145.5
15.00		1.00	0.85	6.547	7.20	216.81	0.730	0.000	5.00	20.075	14.65	105.5	0.0	1110.6
20.00		1.00	0.90	6.947	7.64	216.27	0.730	0.000	5.00	19.451	14.20	108.5	0.0	1075.8
25.00		1.00	0.95	7.281	8.01	214.18	0.730	0.000	5.00	18.826	13.74	110.1	0.0	1040.9
30.00		1.00	0.98	7.566	8.32	210.96	0.730	0.000	5.00	18.201	13.29	110.6	0.0	1006.0
35.00		1.00	1.01	7.815	8.60	206.92	0.730	0.000	5.00	17.576	12.83	110.3	0.0	971.1
40.00		1.00	1.04	8.038	8.84	202.26	0.730	0.000	5.00	16.952	12.37	109.4	0.0	936.2
45.00		1.00	1.07	8.240	9.06	197.09	0.730	0.000	5.00	16.327	11.92	108.0	0.0	901.3
48.00 Bot - Section 2		1.00	1.08	8.352	9.19	193.79	0.730	0.000	3.00	9.496	6.93	63.7	0.0	524.1
50.00		1.00	1.09	8.425	9.27	191.52	0.730	0.000	2.00	6.333	4.62	42.8	0.0	642.5
53.25 Top - Section 1		1.00	1.11	8.537	9.39	187.71	0.730	0.000	3.25	10.078	7.36	69.1	0.0	1021.9
55.00		1.00	1.12	8.595	9.45	189.59	0.730	0.000	1.75	5.317	3.88	36.7	0.0	251.8
60.00		1.00	1.14	8.754	9.63	183.41	0.730	0.000	5.00	14.770	10.78	103.8	0.0	699.3
65.00		1.00	1.16	8.903	9.79	176.97	0.730	0.000	5.00	14.145	10.33	101.1	0.0	669.4
70.00 Appurtenance(s)		1.00	1.17	9.043	9.95	170.30	0.730	0.000	5.00	13.521	9.87	98.2	0.0	639.5
75.00		1.00	1.19	9.175	10.09	163.42	0.730	0.000	5.00	12.896	9.41	95.0	0.0	609.6
80.00 Appurtenance(s)		1.00	1.21	9.301	10.23	156.37	0.730	0.000	5.00	12.271	8.96	91.6	0.0	579.7
85.00		1.00	1.22	9.420	10.36	149.15	0.730	0.000	5.00	11.647	8.50	88.1	0.0	549.8
90.00 Appurtenance(s)		1.00	1.24	9.534	10.49	141.78	0.730	0.000	5.00	11.022	8.05	84.4	0.0	519.9
95.00		1.00	1.25	9.643	10.61	134.27	0.730	0.000	5.00	10.397	7.59	80.5	0.0	490.0
98.25 Bot - Section 3		1.00	1.26	9.712	10.68	129.32	0.730	0.000	3.25	6.423	4.69	50.1	0.0	302.5
99.00 Appurtenance(s)		1.00	1.26	9.728	10.70	128.17	0.730	0.000	0.75	1.477	1.08	11.5	0.0	114.6
100.00		1.00	1.27	9.748	10.72	126.64	0.730	0.000	1.00	1.947	1.42	15.2	0.0	151.1
101.50 Top - Section 2		1.00	1.27	9.779	10.76	124.32	0.730	0.000	1.50	2.873	2.10	22.6	0.0	222.9
105.00		1.00	1.28	9.849	10.83	121.73	0.730	0.000	3.50	6.486	4.73	51.3	0.0	204.6
110.00 Appurtenance(s)		1.00	1.29	9.946	10.94	113.88	0.730	0.000	5.00	8.735	6.38	69.8	0.0	275.3
115.00		1.00	1.30	10.039	11.04	105.93	0.730	0.000	5.00	8.110	5.92	65.4	0.0	255.4
120.00		1.00	1.32	10.130	11.14	97.88	0.730	0.000	5.00	7.485	5.46	60.9	0.0	235.5
125.00		1.00	1.33	10.217	11.24	89.74	0.730	0.000	5.00	6.860	5.01	56.3	0.0	215.5
130.00		1.00	1.34	10.302	11.33	81.51	0.730	0.000	5.00	6.236	4.55	51.6	0.0	195.6
Totals:									130.00			2,393.1		18,738.5

Discrete Appurtenance Forces

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

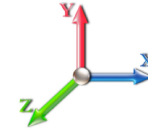


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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 20

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	110.00	Samusng CBRS RRH -	3	9.946	10.940	0.54	0.80	2.48	69.30	0.000	0.000	27.09	0.00	0.00
2	110.00	Ring Mount	1	9.946	10.940	1.00	1.00	7.50	660.00	0.000	0.000	82.05	0.00	0.00
3	110.00	Samsung B2/B66A	3	9.946	10.940	0.54	0.80	3.01	253.20	0.000	0.000	32.90	0.00	0.00
4	110.00	Samsung B5/B13	3	9.946	10.940	0.54	0.80	3.01	210.90	0.000	0.000	32.90	0.00	0.00
5	110.00	Samsung MT6407-77A	3	9.946	10.940	0.56	0.80	7.88	238.20	0.000	0.000	86.20	0.00	0.00
6	110.00	Raycap	1	9.946	10.940	0.80	0.80	3.28	21.40	0.000	0.000	35.88	0.00	0.00
7	110.00	Commscope	3	9.946	10.940	0.67	0.80	16.23	153.00	0.000	0.000	177.55	0.00	0.00
8	110.00	Commscope	3	9.946	10.940	0.66	0.80	16.10	131.10	0.000	0.000	176.09	0.00	0.00
9	99.00	ALU 800MHz Filter	3	9.728	10.700	0.54	0.80	1.25	26.40	0.000	0.000	13.42	0.00	0.00
10	99.00	ALU TD-RRH8x20-25	3	9.728	10.700	0.54	0.80	6.51	210.00	0.000	0.000	69.68	0.00	0.00
11	99.00	ALU 800 MHz RRH	3	9.728	10.700	0.54	0.80	3.43	159.00	0.000	0.000	36.65	0.00	0.00
12	99.00	ALU 1900MHz RRH	3	9.728	10.700	0.54	0.80	3.71	180.00	0.000	0.000	39.75	0.00	0.00
13	99.00	RFS ACU-A20-N	4	9.728	10.700	0.54	0.80	0.30	4.00	0.000	0.000	3.21	0.00	0.00
14	99.00	Andrew DHHTT65B-3XR	3	9.728	10.700	0.66	0.80	16.12	135.00	0.000	0.000	172.44	0.00	0.00
15	99.00	Flush Mount	1	9.728	10.700	1.00	1.00	5.00	350.00	0.000	0.000	53.50	0.00	0.00
16	90.00	Flush Mount	1	9.534	10.488	1.00	1.00	5.00	350.00	0.000	0.000	52.44	0.00	0.00
17	90.00	Andrew	3	9.534	10.488	0.54	0.80	0.16	3.96	0.000	0.000	1.69	0.00	0.00
18	90.00	Cci TMABPD7823VG12A	3	9.534	10.488	0.54	0.80	2.20	78.00	0.000	0.000	23.10	0.00	0.00
19	90.00	Powerwave LGP21401	3	9.534	10.488	0.54	0.80	1.32	52.50	0.000	0.000	13.83	0.00	0.00
20	90.00	Andrew SBNHH-1D65C	3	9.534	10.488	0.67	0.80	22.96	148.80	0.000	0.000	240.82	0.00	0.00
21	80.00	Flush Mount	1	9.301	10.231	1.00	1.00	5.00	350.00	0.000	0.000	51.15	0.00	0.00
22	80.00	RFS	3	9.301	10.231	0.65	0.80	18.76	208.20	0.000	0.000	191.93	0.00	0.00
23	80.00	RFS	6	9.301	10.231	0.54	0.80	0.48	6.96	0.000	0.000	4.94	0.00	0.00
24	70.00	Commscope	1	9.043	9.947	1.00	1.00	37.59	1727.00	0.000	0.000	373.92	0.00	0.00
25	70.00	Raycap	1	9.043	9.947	0.75	0.75	1.92	21.85	0.000	0.000	19.10	0.00	0.00
26	70.00	Fujitsu TA08025-B604	3	9.043	9.947	0.50	0.75	2.95	191.70	0.000	0.000	29.39	0.00	0.00
27	70.00	Fujitsu TA08025-B605	3	9.043	9.947	0.50	0.75	2.95	225.00	0.000	0.000	29.39	0.00	0.00
28	70.00	JMA Wireless	3	9.043	9.947	0.55	0.75	20.80	193.50	0.000	0.000	206.86	0.00	0.00

Totals: 6,358.97

2,277.87

Total Applied Force Summary

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

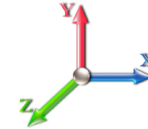


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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 20

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		112.11	1294.48	0.00	0.00
10.00		108.82	1259.59	0.00	0.00
15.00		105.54	1224.71	0.00	0.00
20.00		108.50	1189.83	0.00	0.00
25.00		110.06	1154.94	0.00	0.00
30.00		110.57	1120.06	0.00	0.00
35.00		110.30	1085.18	0.00	0.00
40.00		109.41	1050.29	0.00	0.00
45.00		108.03	1015.41	0.00	0.00
48.00		63.69	592.50	0.00	0.00
50.00		42.84	688.09	0.00	0.00
53.25		69.09	1096.04	0.00	0.00
55.00		36.70	291.75	0.00	0.00
60.00		103.83	813.40	0.00	0.00
65.00		101.13	783.50	0.00	0.00
70.00	(11) attachments	756.84	3112.65	0.00	0.00
75.00		95.01	718.00	0.00	0.00
80.00	(10) attachments	339.67	1253.26	0.00	0.00
85.00		88.10	627.00	0.00	0.00
90.00	(13) attachments	416.26	1230.36	0.00	0.00
95.00		80.51	519.50	0.00	0.00
98.25		50.09	321.64	0.00	0.00
99.00	(20) attachments	400.19	1183.44	0.00	0.00
100.00		15.24	154.33	0.00	0.00
101.50		22.56	227.76	0.00	0.00
105.00		51.29	215.98	0.00	0.00
110.00	(20) attachments	720.42	2028.70	0.00	0.00
115.00		65.38	255.39	0.00	0.00
120.00		60.88	235.46	0.00	0.00
125.00		56.28	215.53	0.00	0.00
130.00		51.58	195.59	0.00	0.00
Totals:		4,670.95	27,154.39	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

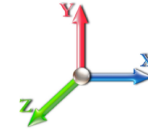


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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 20

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.028	0.000	6.547	0.00	5.70
10.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.028	0.000	6.547	0.00	5.70
15.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.029	0.000	6.547	0.00	5.70
20.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.030	0.000	6.947	0.00	5.70
25.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.031	0.000	7.281	0.00	5.70
30.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.032	0.000	7.566	0.00	5.70
35.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.033	0.000	7.815	0.00	5.70
40.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.035	0.000	8.038	0.00	5.70
45.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.036	0.000	8.240	0.00	5.70
48.00	1.41" Hybrid	Yes	3.00	0.000	1.41	0.35	0.00	0.037	0.000	8.352	0.00	3.42
50.00	1.41" Hybrid	Yes	2.00	0.000	1.41	0.23	0.00	0.038	0.000	8.425	0.00	2.28
53.25	1.41" Hybrid	Yes	3.25	0.000	1.41	0.38	0.00	0.039	0.000	8.537	0.00	3.70
55.00	1.41" Hybrid	Yes	1.75	0.000	1.41	0.21	0.00	0.039	0.000	8.595	0.00	1.99
60.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.040	0.000	8.754	0.00	5.70
65.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.042	0.000	8.903	0.00	5.70
70.00	1.41" Hybrid	Yes	5.00	0.000	1.41	0.59	0.00	0.043	0.000	9.043	0.00	5.70
Totals:											0.0	79.8

Calculated Forces

Structure: CT46143-A-SBA **Code:** TIA-222-H 12/7/2023
Site Name: Burlington - Avon Landfill **Exposure:** C
Height: 130.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 31

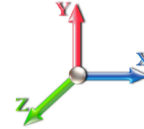


Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 20

Dead Load Factor 1.00

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-27.15	-4.68	0.00	-354.63	0.00	354.63	4994.17	1235.59	5197.80	5206.12	0.00	0.000	0.000	0.074
5.00	-25.86	-4.57	0.00	-331.26	0.00	331.26	4891.79	1199.61	4899.47	4949.63	0.01	-0.021	0.000	0.072
10.00	-24.60	-4.47	0.00	-308.39	0.00	308.39	4786.83	1163.63	4609.96	4696.86	0.05	-0.043	0.000	0.071
15.00	-23.37	-4.38	0.00	-286.03	0.00	286.03	4679.28	1127.65	4329.26	4448.07	0.10	-0.065	0.000	0.069
20.00	-22.18	-4.27	0.00	-264.15	0.00	264.15	4569.15	1091.66	4057.38	4203.49	0.18	-0.088	0.000	0.068
25.00	-21.02	-4.17	0.00	-242.78	0.00	242.78	4456.44	1055.68	3794.32	3963.36	0.29	-0.111	0.000	0.066
30.00	-19.90	-4.07	0.00	-221.93	0.00	221.93	4316.73	1019.70	3540.07	3706.95	0.42	-0.134	0.000	0.064
35.00	-18.81	-3.96	0.00	-201.60	0.00	201.60	4164.40	983.72	3294.64	3448.64	0.57	-0.157	0.000	0.063
40.00	-17.76	-3.86	0.00	-181.80	0.00	181.80	4012.07	947.73	3058.03	3199.66	0.75	-0.181	0.000	0.061
45.00	-16.75	-3.75	0.00	-162.52	0.00	162.52	3859.75	911.75	2830.23	2960.01	0.95	-0.205	0.000	0.059
48.00	-16.15	-3.69	0.00	-151.27	0.00	151.27	3768.35	890.16	2697.78	2820.70	1.08	-0.219	0.000	0.058
50.00	-15.46	-3.64	0.00	-143.90	0.00	143.90	3707.42	875.77	2611.24	2729.69	1.18	-0.229	0.000	0.057
53.25	-14.37	-3.57	0.00	-132.06	0.00	132.06	3164.77	747.58	2219.90	2324.50	1.34	-0.245	0.000	0.061
55.00	-14.08	-3.54	0.00	-125.80	0.00	125.80	3119.07	736.79	2156.26	2257.51	1.43	-0.253	0.000	0.060
60.00	-13.26	-3.44	0.00	-108.10	0.00	108.10	2988.51	705.95	1979.51	2071.51	1.71	-0.278	0.000	0.057
65.00	-12.48	-3.34	0.00	-90.91	0.00	90.91	2857.94	675.10	1810.33	1893.51	2.01	-0.303	0.000	0.052
70.00	-9.37	-2.57	0.00	-74.22	0.00	74.22	2727.38	644.26	1648.70	1723.51	2.34	-0.326	0.000	0.047
75.00	-8.65	-2.47	0.00	-61.37	0.00	61.37	2596.81	613.42	1494.62	1561.50	2.70	-0.348	0.000	0.043
80.00	-7.40	-2.13	0.00	-49.01	0.00	49.01	2466.25	582.58	1348.10	1407.49	3.07	-0.368	0.000	0.038
85.00	-6.77	-2.04	0.00	-38.38	0.00	38.38	2335.68	551.74	1209.14	1261.47	3.47	-0.387	0.000	0.033
90.00	-5.54	-1.61	0.00	-28.19	0.00	28.19	2205.12	520.89	1077.74	1123.45	3.88	-0.405	0.000	0.028
95.00	-5.02	-1.53	0.00	-20.12	0.00	20.12	2074.55	490.05	953.89	993.42	4.32	-0.419	0.000	0.023
98.25	-4.70	-1.48	0.00	-15.14	0.00	15.14	1989.68	470.00	877.44	913.19	4.60	-0.428	0.000	0.019
99.00	-3.52	-1.07	0.00	-14.04	0.00	14.04	1970.10	465.38	860.25	895.16	4.67	-0.429	0.000	0.017
100.00	-3.37	-1.05	0.00	-12.97	0.00	12.97	1943.99	459.21	837.60	871.39	4.76	-0.432	0.000	0.017
101.50	-3.14	-1.03	0.00	-11.38	0.00	11.38	1306.72	308.67	567.69	593.96	4.90	-0.435	0.000	0.022
105.00	-2.92	-0.98	0.00	-7.78	0.00	7.78	1245.79	294.28	515.98	539.57	5.22	-0.441	0.000	0.017
110.00	-0.90	-0.24	0.00	-2.90	0.00	2.90	1158.75	273.72	446.40	466.39	5.69	-0.449	0.000	0.007
115.00	-0.65	-0.17	0.00	-1.69	0.00	1.69	1071.71	253.16	381.85	398.55	6.16	-0.454	0.000	0.005
120.00	-0.41	-0.11	0.00	-0.82	0.00	0.82	984.66	232.60	322.34	336.04	6.64	-0.457	0.000	0.003
125.00	-0.20	-0.05	0.00	-0.27	0.00	0.27	897.62	212.04	267.87	278.85	7.12	-0.458	0.000	0.001
130.00	0.00	-0.05	0.00	0.00	0.00	0.00	810.58	191.47	218.44	227.00	7.60	-0.459	0.000	0.000

Final Analysis Summary

Structure: CT46143-A-SBA	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.0W 120 mph Wind	20.9	0.00	32.57	0.00	0.00	1589.87
0.9D + 1.0W 120 mph Wind	20.9	0.00	24.42	0.00	0.00	1583.06
1.2D + 1.0Di + 1.0Wi 50 mph Wind	5.9	0.00	50.10	0.00	0.00	440.25
1.2D + 1.0Ev + 1.0Eh	0.8	0.00	33.70	0.00	0.00	69.46
0.9D + 1.0Ev + 1.0Eh	0.8	0.00	25.53	0.00	0.00	69.36
1.0D + 1.0W 60 mph Wind	4.7	0.00	27.15	0.00	0.00	354.63

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.0W 120 mph Wind	-32.57	-20.91	0.00	-1589.8	0.00	-1589.8	4994.17	1235.5	5197.80	5206.12	0.00	0.312
0.9D + 1.0W 120 mph Wind	-24.42	-20.90	0.00	-1583.0	0.00	-1583.0	4994.17	1235.5	5197.80	5206.12	0.00	0.309
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-50.10	-5.86	0.00	-440.25	0.00	-440.25	4994.17	1235.5	5197.80	5206.12	0.00	0.095
1.2D + 1.0Ev + 1.0Eh	-33.70	-0.81	0.00	-69.46	0.00	-69.46	4994.17	1235.5	5197.80	5206.12	0.00	0.020
0.9D + 1.0Ev + 1.0Eh	-25.53	-0.81	0.00	-69.36	0.00	-69.36	4994.17	1235.5	5197.80	5206.12	0.00	0.018
1.0D + 1.0W 60 mph Wind	-27.15	-4.68	0.00	-354.63	0.00	-354.63	4994.17	1235.5	5197.80	5206.12	0.00	0.074

Base Plate Summary

Structure: CT46143-A-SB	Code: TIA-222-H	12/7/2023
Site Name: Burlington - Avon Landfill	Exposure: C	
Height: 130.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 33



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 50.00	Bolt Circle: 58.00
Moment (kip-ft): 4630.55	Width (in): 63.75	Number Bolts: 18.00
Axial (kip): 43.46	Style: Round	Bolt Type: 2.25" 18J
Shear (kip): 48.17	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.0W)	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 1589.87	Effective Len (in): 14.47	Ultimate (ksi): 100.00
Axial (kip): 32.57	Moment (kip-in): 256.93	Arrangement: Radial
Shear (kip): 20.91	Allow Stress (ksi): 67.50	Cluster Dist (in): 0.00
	Applied Stress (ksi): 20.93	Start Angle (deg): 0.00
	Stress Ratio: 0.31	Compression
		Force (kip): 74.91
		Allowable (kip): 268.39
		Ratio: 0.28
		Tension
		Force (kip): 71.29
		Allowable (kip): 243.75
		Ratio: 0.29

Check Soil Capacities:

Allowable Foundation Overturning Resistance (kips-ft.):	7127.3	>	Design Factored Moment (kips-ft):	1914	Usage	0.27	OK!
Factor of Safety of Passive Soil Resistance against Moment:	3.72	OK!					

Check the capacities of Reinforcing 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				
Reinforcing Concrete Pier:					Usage		
Vertical Steel Rebar Area (sq. in./each):	1.27	Tie / Stirrup Area (sq. in./each):	0.60				
Calculated Moment Capacity (Mn,Kips-Ft):	9419.1	>	Design Factored Moment (Mu, K-Ft):	1679.8	0.18	OK!	
Calculated Shear Capacity (Kips):	1188.9	>	Design Factored Shear (Kips):	259.9	0.22	OK!	
Calculated Tension Capacity (Tn, Kips):	3154.7	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!	
Calculated Compression Capacity (Pn, Kips):	10906	>	Design Factored Axial Load (Pu Kips):	32.6	0.00	OK!	
Moment & Axial Strength Combination:	0.18	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.		
Pier Reinforcement Ratio:	0.011	Reinforcement Ratio is satisfied per ACI					



Structural Design Report
131' Monopole
Site: Burlington Avon Landfill, CT
Site Number: CT46143

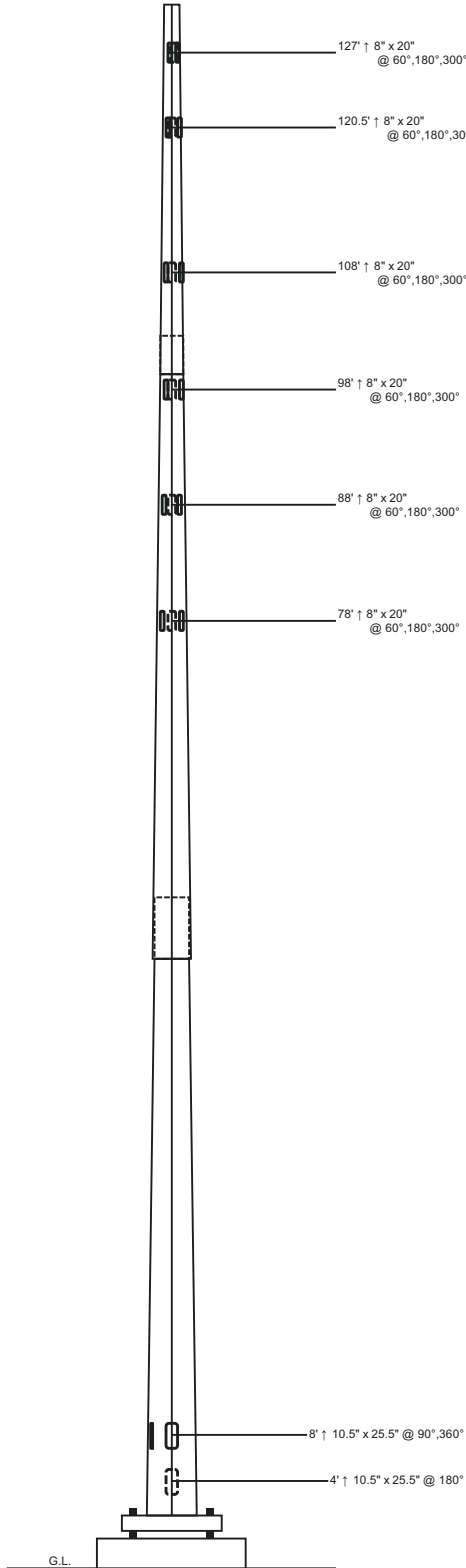
Prepared for: SBA NETWORK SERVICES INC
by: Sabre IndustriesTM

Job Number: 521586
Revision A
June 29, 2023

Monopole Profile.....	1
Foundation Design Summary.....	2
Pole Calculations.....	3-16
Foundation Calculations.....	17-25



Length (ft)	53'-3"	53'-5"	18	31'-9"
Number Of Sides				
Thickness (in)	7/16"	3/8"		1/4"
Lap Splice (ft)		5'-3"		A
Top Diameter (in)	35.41"	21.92"		14"
Bottom Diameter (in)	51.14"	37.71"		23.38"
Taper (in/ft)				
Grade		0.2953		
Weight (lbs)	12969	A572-65	7231	2145
Overall Steel Height (ft)		130		



Designed Appurtenance Loading

Elev	Description	Tx-Line
138	(1) 50 SQFT	(8) 1 5/8"
122.5	(1) 125 Sq. Ft. EPA (2,000 lbs)	(8) 1 5/8"
110	(1) 150 Sq. Ft. EPA (2250 lbs)	(8) 1 5/8"
100	(1) 150 Sq. Ft. EPA (2250 lbs)	(8) 1 5/8"
90	(1) 175 Sq. Ft. EPA (2500 lbs)	(8) 1 5/8"
80	(1) 150 Sq. Ft. EPA (2250 lbs)	(12) 1 5/8"

Design Criteria - ANSI/TIA-222-H

Wind Speed (No Ice)	120 mph
Wind Speed (Ice)	50 mph
Design Ice Thickness	1.50 in
Risk Category	II
Exposure Category	C
Topographic Factor Procedure	Method 1 (Simplified)
Topographic Category	1
Ground Elevation	468 ft
Seismic Importance Factor, I _e	1.00
0.2-sec Spectral Response, S _s	0.182 g
1-sec Spectral Response, S ₁	0.064 g
Site Class	B
Seismic Design Category	A
Basic Seismic Force-Resisting System	Telecommunication Tower (Pole: Steel)

Limit State Load Combination Reactions

Load Combination	Axial (kips)	Shear (kips)	Moment (ft-k)	Deflection (ft)	Sway (deg)
1.2 D + 1.0 W _o	43.46	48.17	4630.55	10.47	8.9
0.9 D + 1.0 W _o	32.55	48.02	4571.06	10.31	8.75
1.2 D + 1.0 D _i + 1.0 W _i	71.7	15.17	1527.91	3.65	3.19
1.2 D + 1.0 E _v + 1.0 E _h	44.16	1.09	114.34	0.28	0.25
0.9 D - 1.0 E _v + 1.0 E _h	31.74	1.08	112.61	0.28	0.24
1.0 D + 1.0 W _o (Service @ 60 mph)	36.2	10.77	1034.29	2.38	2

Base Plate Dimensions

Shape	Diameter	Thickness	Bolt Circle	Bolt Qty	Bolt Diameter
Round	63.75"	2.25"	58"	18	2.25"

Anchor Bolt Dimensions

Length	Diameter	Hole Diameter	Weight	Type	Finish
84"	2.25"	2.625"	2179.8	A615-75	Galv

Material List

Display	Value
A	3' - 3"

Notes

- 1) Antenna Feed Lines Run Inside Pole
- 2) All dimensions are above ground level, unless otherwise specified.
- 3) Weights shown are estimates. Final weights may vary.
- 4) Full Height Step Bolts
- 5) Anchor bolt template must be 1/2" thick minimum-50 ksi
- 6) Tower Rating: 92.9%
- 7) This tower and foundation design shown on the following page meets or exceeds the requirements of the 2022 Connecticut Building Code.

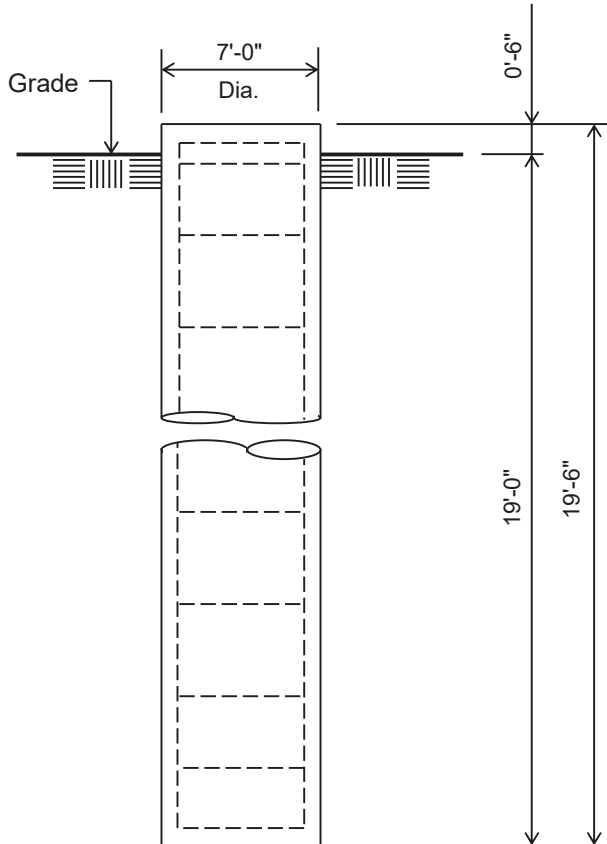


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Job:	521586
Customer:	SBA NETWORK SERVICES INC
Site Name:	Burlington Avon Landfill, CT CT46143
Description:	130' Monopole
Date:	3/15/2023
By:	REB
Page:	1

Customer: SBA NETWORK SERVICES INC
Site: Burlington Avon Landfill, CT CT46143
131' Monopole



ELEVATION VIEW

(27.79 Cu. Yds.)

(1 REQUIRED; NOT TO SCALE)

Notes:

- 1) Concrete shall have a minimum 28-day compressive strength of 4,500 psi, in accordance with ACI 318-14.
- 2) Rebar to conform to ASTM specification A615 Grade 60.
- 3) All rebar to have a minimum of 3" concrete cover.
- 4) All exposed concrete corners to be chamfered 3/4".
- 5) The foundation design is based on the geotechnical report by Delta Oaks Group, Project GEO 23-19365-01, dated June 28, 2023.
- 6) See the geotechnical report for drilled pier installation requirements, if specified.
- 7) This foundation is designed for a max capacity ratio of 95%.
- 8) The bottom anchor bolt template shall be positioned as closely as possible to the bottom of the anchor bolts.

Rebar Schedule for Pier

Pier	(46) #10 vertical rebar w/ #7 ties, (2) within top 5" of pier, then 4.5" C/C
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131' Monopole / Burlington Avon Landfill, CT

* All pole diameters shown on the following pages are across corners.
See profile drawing for widths across flats.

POLE GEOMETRY

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ELEV	SECTION	No.	OUTSIDE	THICK	RESISTANCES	SPLICE	...OVERLAP...	w/t
ft	NAME	SIDE	DIAM	-NESS	◆*Pn ◆*Mn	TYPE	LENGTH	RATIO
			in	in	kip ft-kip		ft	
130.0	.....						
	A	18	14.22	0.250	810.6 227.0			8.6
			22.75	0.250	1306.3 593.4			
101.5	.....						
	A/B	18	22.75	0.250	1306.3 593.4	SLIP	3.25	1.70
			23.24	0.375	1990.4 913.7			
98.2	.....						
	B	18	23.24	0.375	1990.4 913.7			9.8
			36.71	0.375	3162.4 2321.3			
53.2	.....						
	B/C	18	36.71	0.375	3162.4 2321.3	SLIP	5.25	1.70
			37.55	0.438	3769.5 2821.7			
48.0	.....						
	C	18	37.55	0.438	3769.5 2821.7			14.0
			51.93	0.438	4952.9 5161.4			
0.0	.....						

POLE ASSEMBLY

=====

SECTION	BASE	.....	BOLTS	AT	BASE	OF	SECTION	.....	CALC
NAME	ELEV	NUMBER	TYPE		DIAM	STRENGTH	THREADS	IN	BASE
	ft				in	ksi	SHEAR	PLANE	ELEV
									ft
A	98.250	0	A325		0.00	92.0	0	98.250	
B	48.000	0	A325		0.00	92.0	0	48.000	
C	0.000	0	A325		0.00	92.0	0	0.000	

POLE SECTIONS

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SECTION	No.of	LENGTH	OUTSIDE	DIAMETER	BEND	MAT-	FLANGE	ID	FLANGE	WELD
NAME	SIDES		BOT	TOP	RAD	ERIAL	BOT	TOP	..GROUP	ID..
		ft	* in	* in	in	ID			BOT	TOP
A	18	31.75	23.74	14.22	0.625	1	0	0	0	0
B	18	53.50	38.30	22.25	0.625	2	0	0	0	0
C	18	53.25	51.93	35.96	0.625	3	0	0	0	0

* - Diameter of circumscribed circle

MATERIAL TYPES

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TYPE OF SHAPE	TYPE NO	NO OF ELEM.	ORIENT & deg	HEIGHT in	WIDTH in	.THICKNESS. WEB FLANGE in in		IRREGULARITY .PROJECTION. % OF ORIENT AREA deg	
PL	1	1	0.0	23.74	0.25	0.250	0.250	0.00	0.0
PL	2	1	0.0	38.30	0.38	0.375	0.375	0.00	0.0
PL	3	1	0.0	51.93	0.44	0.438	0.438	0.00	0.0

& - With respect to vertical

MATERIAL PROPERTIES

=====

MATERIAL TYPE NO.	ELASTIC MODULUS ksi	UNIT WEIGHT pcf	.. STRENGTH .. Fu ksi Fy ksi		THERMAL COEFFICIENT /deg
1	29000.0	490.0	80.0	65.0	0.00001170
2	29000.0	490.0	80.0	65.0	0.00001170
3	29000.0	490.0	80.0	65.0	0.00001170

* Only 5 condition(s) shown in full

* Some concentrated wind loads may have been derived from full-scale wind tunnel testing

=====

LOADING CONDITION A =====

120 mph wind with no ice. Wind Azimuth: 0° (1.2 D + 1.0 Wo)

LOADS ON POLE

=====

LOAD TYPE	ELEV ft	APPLY..LOAD..AT RADIUS ft	..AZI	LOAD AZI	.....FORCES..... HORIZ DOWN kip kip		.....MOMENTS..... VERTICAL TORSNAL ft-kip ft-kip	
C	137.000	0.00	0.0	0.0	2.5650	0.6000	0.0000	0.0000
C	128.000	0.00	0.0	0.0	0.0000	1.2780	0.0000	0.0000
C	125.000	0.00	0.0	0.0	0.0367	0.0168	0.0000	0.0000
C	121.500	0.00	0.0	0.0	0.0000	1.2131	0.0000	0.0000
C	121.500	0.00	0.0	0.0	6.2536	2.4000	0.0000	0.0000
C	115.000	0.00	0.0	0.0	0.0360	0.0168	0.0000	0.0000
C	109.000	0.00	0.0	0.0	0.0000	1.0883	0.0000	0.0000
C	109.000	0.00	0.0	0.0	7.3362	2.7000	0.0000	0.0000
C	105.000	0.00	0.0	0.0	0.0354	0.0168	0.0000	0.0000
C	99.000	0.00	0.0	0.0	0.0000	0.9884	0.0000	0.0000
C	99.000	0.00	0.0	0.0	7.1904	2.7000	0.0000	0.0000
C	95.000	0.00	0.0	0.0	0.0346	0.0168	0.0000	0.0000
C	89.000	0.00	0.0	0.0	0.0000	0.8886	0.0000	0.0000
C	89.000	0.00	0.0	0.0	8.2048	3.0000	0.0000	0.0000
C	85.000	0.00	0.0	0.0	0.0338	0.0168	0.0000	0.0000
C	79.000	0.00	0.0	0.0	0.0000	1.1831	0.0000	0.0000
C	79.000	0.00	0.0	0.0	6.8605	2.7000	0.0000	0.0000

C	75.000	0.00	0.0	0.0	0.0329	0.0168	0.0000	0.0000
C	65.000	0.00	0.0	0.0	0.0320	0.0168	0.0000	0.0000
C	55.000	0.00	0.0	0.0	0.0309	0.0168	0.0000	0.0000
C	45.000	0.00	0.0	0.0	0.0296	0.0168	0.0000	0.0000
C	35.000	0.00	0.0	0.0	0.0281	0.0168	0.0000	0.0000
C	25.000	0.00	0.0	0.0	0.0261	0.0168	0.0000	0.0000
C	15.000	0.00	0.0	0.0	0.0235	0.0168	0.0000	0.0000
D	130.000	0.00	180.0	0.0	0.0414	0.0492	0.0000	0.0000
D	101.500	0.00	180.0	0.0	0.0546	0.0672	0.0000	0.0000
D	101.500	0.00	180.0	0.0	0.0586	0.1807	0.0000	0.0000
D	98.250	0.00	180.0	0.0	0.0586	0.1807	0.0000	0.0000
D	98.250	0.00	180.0	0.0	0.0630	0.1204	0.0000	0.0000
D	83.250	0.00	180.0	0.0	0.0630	0.1204	0.0000	0.0000
D	83.250	0.00	180.0	0.0	0.0714	0.1417	0.0000	0.0000
D	68.250	0.00	180.0	0.0	0.0714	0.1417	0.0000	0.0000
D	68.250	0.00	180.0	0.0	0.0784	0.1630	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0784	0.1630	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0821	0.3805	0.0000	0.0000
D	48.000	0.00	180.0	0.0	0.0821	0.3805	0.0000	0.0000
D	48.000	0.00	180.0	0.0	0.0829	0.2174	0.0000	0.0000
D	36.000	0.00	180.0	0.0	0.0829	0.2174	0.0000	0.0000
D	36.000	0.00	180.0	0.0	0.0844	0.2373	0.0000	0.0000
D	24.000	0.00	180.0	0.0	0.0844	0.2373	0.0000	0.0000
D	24.000	0.00	180.0	0.0	0.0826	0.2572	0.0000	0.0000
D	12.000	0.00	180.0	0.0	0.0826	0.2572	0.0000	0.0000
D	12.000	0.00	180.0	0.0	0.0847	0.2771	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.0847	0.2771	0.0000	0.0000

=====

LOADING CONDITION M =====

120 mph wind with no ice. Wind Azimuth: 0° (0.9 D + 1.0 Wo)

LOADS ON POLE
=====

LOAD TYPE	ELEV ft	APPLY..LOAD..AT RADIUS ft	AZI	LOAD AZI	.....FORCES.....		.....MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	137.000	0.00	0.0	0.0	2.5650	0.4500	0.0000	0.0000
C	128.000	0.00	0.0	0.0	0.0000	0.9585	0.0000	0.0000
C	125.000	0.00	0.0	0.0	0.0367	0.0126	0.0000	0.0000
C	121.500	0.00	0.0	0.0	0.0000	0.9098	0.0000	0.0000
C	121.500	0.00	0.0	0.0	6.2536	1.8000	0.0000	0.0000
C	115.000	0.00	0.0	0.0	0.0360	0.0126	0.0000	0.0000
C	109.000	0.00	0.0	0.0	0.0000	0.8162	0.0000	0.0000
C	109.000	0.00	0.0	0.0	7.3362	2.0250	0.0000	0.0000
C	105.000	0.00	0.0	0.0	0.0354	0.0126	0.0000	0.0000
C	99.000	0.00	0.0	0.0	0.0000	0.7413	0.0000	0.0000
C	99.000	0.00	0.0	0.0	7.1904	2.0250	0.0000	0.0000
C	95.000	0.00	0.0	0.0	0.0346	0.0126	0.0000	0.0000
C	89.000	0.00	0.0	0.0	0.0000	0.6664	0.0000	0.0000
C	89.000	0.00	0.0	0.0	8.2048	2.2500	0.0000	0.0000
C	85.000	0.00	0.0	0.0	0.0338	0.0126	0.0000	0.0000
C	79.000	0.00	0.0	0.0	0.0000	0.8873	0.0000	0.0000
C	79.000	0.00	0.0	0.0	6.8605	2.0250	0.0000	0.0000
C	75.000	0.00	0.0	0.0	0.0329	0.0126	0.0000	0.0000
C	65.000	0.00	0.0	0.0	0.0320	0.0126	0.0000	0.0000
C	55.000	0.00	0.0	0.0	0.0309	0.0126	0.0000	0.0000
C	45.000	0.00	0.0	0.0	0.0296	0.0126	0.0000	0.0000
C	35.000	0.00	0.0	0.0	0.0281	0.0126	0.0000	0.0000
C	25.000	0.00	0.0	0.0	0.0261	0.0126	0.0000	0.0000
C	15.000	0.00	0.0	0.0	0.0235	0.0126	0.0000	0.0000

D	130.000	0.00	180.0	0.0	0.0414	0.0369	0.0000	0.0000
D	101.500	0.00	180.0	0.0	0.0546	0.0504	0.0000	0.0000
D	101.500	0.00	180.0	0.0	0.0586	0.1355	0.0000	0.0000
D	98.250	0.00	180.0	0.0	0.0586	0.1355	0.0000	0.0000
D	98.250	0.00	180.0	0.0	0.0630	0.0903	0.0000	0.0000
D	83.250	0.00	180.0	0.0	0.0630	0.0903	0.0000	0.0000
D	83.250	0.00	180.0	0.0	0.0714	0.1063	0.0000	0.0000
D	68.250	0.00	180.0	0.0	0.0714	0.1063	0.0000	0.0000
D	68.250	0.00	180.0	0.0	0.0784	0.1222	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0784	0.1222	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0821	0.2853	0.0000	0.0000
D	48.000	0.00	180.0	0.0	0.0821	0.2853	0.0000	0.0000
D	48.000	0.00	180.0	0.0	0.0829	0.1631	0.0000	0.0000
D	36.000	0.00	180.0	0.0	0.0829	0.1631	0.0000	0.0000
D	36.000	0.00	180.0	0.0	0.0844	0.1780	0.0000	0.0000
D	24.000	0.00	180.0	0.0	0.0844	0.1780	0.0000	0.0000
D	24.000	0.00	180.0	0.0	0.0826	0.1929	0.0000	0.0000
D	12.000	0.00	180.0	0.0	0.0826	0.1929	0.0000	0.0000
D	12.000	0.00	180.0	0.0	0.0847	0.2078	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.0847	0.2078	0.0000	0.0000

=====

LOADING CONDITION Y =====

50 mph wind with 1.5 ice. Wind Azimuth: 0° (1.2 D + 1.0 Di + 1.0 Wi)

LOADS ON POLE

=====

LOAD TYPE	ELEV ft	APPLY.. RADIUS ft	LOAD..AT AZI	LOAD AZI	.....FORCES.....		.....MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	137.000	0.00	0.0	0.0	1.2160	1.4654	0.0000	0.0000
C	128.000	0.00	0.0	0.0	0.0000	1.2780	0.0000	0.0000
C	125.000	0.00	0.0	0.0	0.0494	0.0288	0.0000	0.0000
C	121.500	0.00	0.0	0.0	0.0000	1.2131	0.0000	0.0000
C	121.500	0.00	0.0	0.0	1.8284	5.8205	0.0000	0.0000
C	115.000	0.00	0.0	0.0	0.0482	0.0288	0.0000	0.0000
C	109.000	0.00	0.0	0.0	0.0000	1.0883	0.0000	0.0000
C	109.000	0.00	0.0	0.0	2.1356	6.5068	0.0000	0.0000
C	105.000	0.00	0.0	0.0	0.0469	0.0288	0.0000	0.0000
C	99.000	0.00	0.0	0.0	0.0000	0.9884	0.0000	0.0000
C	99.000	0.00	0.0	0.0	2.0852	6.4707	0.0000	0.0000
C	95.000	0.00	0.0	0.0	0.0455	0.0288	0.0000	0.0000
C	89.000	0.00	0.0	0.0	0.0000	0.8886	0.0000	0.0000
C	89.000	0.00	0.0	0.0	2.3693	7.1458	0.0000	0.0000
C	85.000	0.00	0.0	0.0	0.0441	0.0288	0.0000	0.0000
C	79.000	0.00	0.0	0.0	0.0000	1.1831	0.0000	0.0000
C	79.000	0.00	0.0	0.0	1.9719	6.3875	0.0000	0.0000
C	75.000	0.00	0.0	0.0	0.0425	0.0288	0.0000	0.0000
C	65.000	0.00	0.0	0.0	0.0407	0.0288	0.0000	0.0000
C	55.000	0.00	0.0	0.0	0.0387	0.0288	0.0000	0.0000
C	45.000	0.00	0.0	0.0	0.0365	0.0288	0.0000	0.0000
C	35.000	0.00	0.0	0.0	0.0339	0.0288	0.0000	0.0000
C	25.000	0.00	0.0	0.0	0.0307	0.0288	0.0000	0.0000
C	15.000	0.00	0.0	0.0	0.0264	0.0288	0.0000	0.0000
D	130.000	0.00	180.0	0.0	0.0153	0.0856	0.0000	0.0000
D	120.500	0.00	180.0	0.0	0.0153	0.0856	0.0000	0.0000
D	120.500	0.00	180.0	0.0	0.0173	0.1002	0.0000	0.0000
D	111.000	0.00	180.0	0.0	0.0173	0.1002	0.0000	0.0000
D	111.000	0.00	180.0	0.0	0.0191	0.1147	0.0000	0.0000
D	101.500	0.00	180.0	0.0	0.0191	0.1147	0.0000	0.0000
D	101.500	0.00	180.0	0.0	0.0203	0.2318	0.0000	0.0000
D	98.250	0.00	180.0	0.0	0.0203	0.2318	0.0000	0.0000

D	98.250	0.00	180.0	0.0	0.0216	0.1755	0.0000	0.0000
D	83.250	0.00	180.0	0.0	0.0216	0.1755	0.0000	0.0000
D	83.250	0.00	180.0	0.0	0.0240	0.2047	0.0000	0.0000
D	68.250	0.00	180.0	0.0	0.0240	0.2047	0.0000	0.0000
D	68.250	0.00	180.0	0.0	0.0260	0.2333	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0260	0.2333	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0270	0.4553	0.0000	0.0000
D	48.000	0.00	180.0	0.0	0.0270	0.4553	0.0000	0.0000
D	48.000	0.00	180.0	0.0	0.0271	0.2944	0.0000	0.0000
D	36.000	0.00	180.0	0.0	0.0271	0.2944	0.0000	0.0000
D	36.000	0.00	180.0	0.0	0.0274	0.3182	0.0000	0.0000
D	24.000	0.00	180.0	0.0	0.0274	0.3182	0.0000	0.0000
D	24.000	0.00	180.0	0.0	0.0266	0.3404	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.0270	0.3578	0.0000	0.0000

=====

LOADING CONDITION AK =====

Seismic - Azimuth: 0° (1.2 D + 1.0 Ev + 1.0 Eh)

LOADS ON POLE

=====

LOAD TYPE	ELEV ft	APPLY.. RADIUS ft	LOAD..AT AZI	LOAD AZI	.....FORCES..... HORIZ kip	DOWN kip	.....MOMENTS..... VERTICAL ft-kip	TORSNAL ft-kip
C	137.000	0.00	0.0	0.0	0.0405	0.6109	0.0000	0.0000
C	128.000	0.00	0.0	0.0	0.0755	1.3012	0.0000	0.0000
C	125.000	0.00	0.0	0.0	0.0009	0.0171	0.0000	0.0000
C	121.500	0.00	0.0	0.0	0.0646	1.2351	0.0000	0.0000
C	121.500	0.00	0.0	0.0	0.1278	2.4436	0.0000	0.0000
C	115.000	0.00	0.0	0.0	0.0008	0.0171	0.0000	0.0000
C	114.120	0.00	0.0	0.0	0.0890	1.9273	0.0000	0.0000
C	109.000	0.00	0.0	0.0	0.0467	1.1081	0.0000	0.0000
C	109.000	0.00	0.0	0.0	0.1159	2.7490	0.0000	0.0000
C	105.000	0.00	0.0	0.0	0.0007	0.0171	0.0000	0.0000
C	99.000	0.00	0.0	0.0	0.0351	1.0064	0.0000	0.0000
C	99.000	0.00	0.0	0.0	0.0958	2.7490	0.0000	0.0000
C	95.000	0.00	0.0	0.0	0.0005	0.0171	0.0000	0.0000
C	89.000	0.00	0.0	0.0	0.0255	0.9047	0.0000	0.0000
C	89.000	0.00	0.0	0.0	0.0862	3.0545	0.0000	0.0000
C	85.000	0.00	0.0	0.0	0.0004	0.0171	0.0000	0.0000
C	79.000	0.00	0.0	0.0	0.0268	1.2046	0.0000	0.0000
C	79.000	0.00	0.0	0.0	0.0613	2.7490	0.0000	0.0000
C	75.000	0.00	0.0	0.0	0.0003	0.0171	0.0000	0.0000
C	74.750	0.00	0.0	0.0	0.1552	7.7735	0.0000	0.0000
C	65.000	0.00	0.0	0.0	0.0003	0.0171	0.0000	0.0000
C	55.000	0.00	0.0	0.0	0.0002	0.0171	0.0000	0.0000
C	45.000	0.00	0.0	0.0	0.0001	0.0171	0.0000	0.0000
C	35.000	0.00	0.0	0.0	0.0001	0.0171	0.0000	0.0000
C	26.620	0.00	0.0	0.0	0.0339	13.1368	0.0000	0.0000
C	25.000	0.00	0.0	0.0	0.0000	0.0171	0.0000	0.0000
C	15.000	0.00	0.0	0.0	0.0000	0.0171	0.0000	0.0000
D	130.000	0.00	180.0	180.0	0.0000	0.0000	0.0000	0.0000
D	0.000	0.00	180.0	180.0	0.0000	0.0000	0.0000	0.0000

=====

LOADING CONDITION AL =====

Seismic - Azimuth: 0° (0.9 D - 1.0 Ev + 1.0 Eh)

LOADS ON POLE

=====

LOAD TYPE	ELEV ft	APPLY...LOAD... RADIUS ft	AT AZI	LOAD AZI	.....FORCES.....		.....MOMENTS.....	
					HORIZ kip	DOWN kip	VERTICAL ft-kip	TORSNAL ft-kip
C	137.000	0.00	0.0	0.0	0.0405	0.4391	0.0000	0.0000
C	128.000	0.00	0.0	0.0	0.0755	0.9353	0.0000	0.0000
C	125.000	0.00	0.0	0.0	0.0009	0.0123	0.0000	0.0000
C	121.500	0.00	0.0	0.0	0.0646	0.8878	0.0000	0.0000
C	121.500	0.00	0.0	0.0	0.1278	1.7564	0.0000	0.0000
C	115.000	0.00	0.0	0.0	0.0008	0.0123	0.0000	0.0000
C	114.120	0.00	0.0	0.0	0.0890	1.3853	0.0000	0.0000
C	109.000	0.00	0.0	0.0	0.0467	0.7964	0.0000	0.0000
C	109.000	0.00	0.0	0.0	0.1159	1.9760	0.0000	0.0000
C	105.000	0.00	0.0	0.0	0.0007	0.0123	0.0000	0.0000
C	99.000	0.00	0.0	0.0	0.0351	0.7233	0.0000	0.0000
C	99.000	0.00	0.0	0.0	0.0958	1.9760	0.0000	0.0000
C	95.000	0.00	0.0	0.0	0.0005	0.0123	0.0000	0.0000
C	89.000	0.00	0.0	0.0	0.0255	0.6504	0.0000	0.0000
C	89.000	0.00	0.0	0.0	0.0862	2.1955	0.0000	0.0000
C	85.000	0.00	0.0	0.0	0.0004	0.0123	0.0000	0.0000
C	79.000	0.00	0.0	0.0	0.0268	0.8658	0.0000	0.0000
C	79.000	0.00	0.0	0.0	0.0613	1.9760	0.0000	0.0000
C	75.000	0.00	0.0	0.0	0.0003	0.0123	0.0000	0.0000
C	74.750	0.00	0.0	0.0	0.1552	5.5874	0.0000	0.0000
C	65.000	0.00	0.0	0.0	0.0003	0.0123	0.0000	0.0000
C	55.000	0.00	0.0	0.0	0.0002	0.0123	0.0000	0.0000
C	45.000	0.00	0.0	0.0	0.0001	0.0123	0.0000	0.0000
C	35.000	0.00	0.0	0.0	0.0001	0.0123	0.0000	0.0000
C	26.620	0.00	0.0	0.0	0.0339	9.4424	0.0000	0.0000
C	25.000	0.00	0.0	0.0	0.0000	0.0123	0.0000	0.0000
C	15.000	0.00	0.0	0.0	0.0000	0.0123	0.0000	0.0000
D	130.000	0.00	180.0	180.0	0.0000	0.0000	0.0000	0.0000
D	0.000	0.00	180.0	180.0	0.0000	0.0000	0.0000	0.0000

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131' Monopole / Burlington Avon Landfill, CT

MAXIMUM POLE DEFORMATIONS CALCULATED(w.r.t. wind direction)

=====

MAST ELEV ft	.....DEFLECTIONS (ft).....			.....ROTATIONS (deg).....		
	HORIZONTAL ALONG	ACROSS	DOWN	TILT ALONG	ACROSS	TWIST
130.0	10.47A	-0.02N	1.16F	8.90A	-0.02N	0.00B
120.5	9.05A	-0.02N	0.94F	8.66A	-0.02N	0.00B
111.0	7.68A	-0.02N	0.74F	8.21A	-0.02N	0.00B

101.5	6.39A	-0.02N	0.56F	7.55A	-0.02N	0.00B
98.2	5.98A	-0.01N	0.51F	7.37A	-0.02N	0.00B
83.2	4.21A	-0.01N	0.30F	6.29A	-0.02N	0.00B
68.2	2.74A	-0.01N	0.15K	5.01A	-0.01N	0.00B
53.2	1.61A	0.00N	0.07K	3.67A	-0.01N	0.00B
48.0	1.30A	0.00N	0.05K	3.27A	-0.01N	0.00B
36.0	0.71A	0.00N	0.02K	2.36A	-0.01N	0.00B
24.0	0.31A	0.00N	0.01K	1.51A	0.00N	0.00B
12.0	0.07A	0.00N	0.00F	0.72A	0.00N	0.00B
0.0	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A

MAXIMUM POLE FORCES CALCULATED(w.r.t. to wind direction)

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MAST ELEV ft	TOTAL AXIAL kip	SHEAR.w.r.t. ALONG kip	WIND.DIR ACROSS kip	MOMENT.w.r.t. ALONG ft-kip	WIND.DIR ACROSS ft-kip	TORSION ft-kip
130.0	1.47 AA	2.57 T	0.00 R	-17.96 N	0.00 R	0.00 R
120.5	10.62 AA	9.27 T	0.00 R	-53.09 E	-0.01 E	-0.01 E
	10.62 AG	9.27 P	0.00 X	-53.09 E	-0.01 E	-0.01 E
111.0	11.60 AG	9.76 P	0.00 X	-150.03 F	0.03 B	-0.05 E
	11.60 AG	9.76 P	0.01 X	-150.03 F	0.03 F	-0.05 E
101.5	20.31 AG	17.62 P	0.01 X	-310.01 C	0.09 B	-0.11 E
	20.32 AD	17.71 N	-0.07 X	-310.08 C	-0.17 X	-0.11 E
98.2	28.53 AD	25.09 N	-0.07 X	-376.99 C	0.13 B	-0.13 E
	28.53 AA	25.20 A	-0.14 N	-376.94 I	0.20 I	-0.13 E
83.2	39.26 AA	34.41 A	-0.14 N	-834.25 A	1.95 N	0.41 B
	39.25 Z	34.38 A	-0.11 T	-834.25 A	1.95 N	0.41 B
68.2	49.92 Z	42.34 A	-0.11 T	-1462.30 A	3.36 N	0.74 B
	49.92 Z	42.36 A	-0.11 N	-1462.29 A	3.36 N	0.74 B
53.2	53.47 Z	43.60 A	-0.11 N	-2134.88 A	4.92 N	0.98 B
	53.47 Z	43.59 A	-0.11 T	-2134.88 A	4.93 N	0.98 B
48.0	55.86 Z	44.02 A	-0.11 T	-2373.58 A	5.48 N	1.05 B
	55.86 Z	44.06 A	-0.13 N	-2373.57 A	5.47 N	1.05 B
36.0	59.42 Z	45.08 A	-0.13 N	-2926.29 A	7.01 N	1.18 B
	59.42 Z	45.08 A	-0.14 N	-2926.29 A	7.02 N	1.18 B
	63.30 Z	46.15 A	-0.14 N	-3487.28 A	8.65 N	1.28 B

24.0	63.30 Z	46.14 A	-0.14 N	-3487.28 A	8.65 N	1.28 B
	67.46 Z	47.15 A	-0.14 N	-4055.57 A	10.29 N	1.34 B
12.0	67.46 Z	47.15 A	-0.13 N	-4055.57 A	10.29 N	1.34 B
	71.70 Z	48.17 A	-0.13 N	-4630.55 A	11.86 N	1.36 B

base	71.70 Z	-48.17 A	0.13 N	4630.55 A	-11.86 N	-1.36 B
reaction						

COMPLIANCE WITH 4.8.2 & 4.5.4
=====

ELEV ft	AXIAL	BENDING	SHEAR + TORSIONAL	TOTAL	SATISFIED	D/t(w/t)	MAX ALLOWED
130.00	0.00AA	0.08N	0.01T	0.08L	YES	8.64A	45.2
	0.01AA	0.16E	0.02T	0.17E	YES	10.62A	45.2
120.50	0.01AG	0.16E	0.02P	0.17E	YES	10.62A	45.2
	0.01AG	0.33F	0.02P	0.34F	YES	12.60A	45.2
111.00	0.01AG	0.33F	0.02P	0.34F	YES	12.60A	45.2
	0.02AG	0.52C	0.03P	0.53C	YES	14.58A	45.2
101.50	0.01AD	0.35C	0.02N	0.36C	YES	9.60A	45.2
	0.01AD	0.39C	0.02N	0.40C	YES	10.05A	45.2
98.25	0.01AA	0.41I	0.03A	0.42I	YES	9.82A	45.2
	0.02AA	0.64A	0.03A	0.65A	YES	11.90A	45.2
83.25	0.02Z	0.64A	0.03A	0.65A	YES	11.90A	45.2
	0.02Z	0.82A	0.03A	0.83A	YES	13.98A	45.2
68.25	0.02Z	0.82A	0.03A	0.83A	YES	13.98A	45.2
	0.02Z	0.92A	0.03A	0.93A	YES	16.06A	45.2
53.25	0.01Z	0.79A	0.02A	0.80A	YES	13.72A	45.2
	0.01Z	0.81A	0.02A	0.82A	YES	14.34A	45.2
48.00	0.01Z	0.84A	0.02A	0.85A	YES	14.04A	45.2
	0.01Z	0.86A	0.02A	0.87A	YES	15.47A	45.2
36.00	0.01Z	0.86A	0.02A	0.87A	YES	15.47A	45.2
	0.01Z	0.88A	0.02A	0.89A	YES	16.90A	45.2
24.00	0.01Z	0.88A	0.02A	0.89A	YES	16.90A	45.2
	0.01Z	0.89A	0.02A	0.90A	YES	18.33A	45.2
12.00	0.01Z	0.89A	0.02A	0.90A	YES	18.33A	45.2
	0.01Z	0.90A	0.02A	0.91A	YES	19.75A	45.2

0.00

MAXIMUM LOADS ONTO FOUNDATION(w.r.t. wind direction)

=====

DOWN	SHEAR.w.r.t.WIND.DIR		MOMENT.w.r.t.WIND.DIR		TORSION
kip	ALONG	ACROSS	ALONG	ACROSS	ft-kip
	kip	kip	ft-kip	ft-kip	
71.70	48.17	-0.13	-4630.55	11.86	1.36
Z	A	N	A	N	B

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131' Monopole / Burlington Avon Landfill, CT

***** Service Load Condition *****

* Only 1 condition(s) shown in full

* Some concentrated wind loads may have been derived from full-scale wind tunnel testing

LOADING CONDITION A =====

60 mph wind with no ice. Wind Azimuth: 00 (1.0 D + 1.0 Wo)

LOADS ON POLE

=====

LOAD	ELEV	APPLY..LOAD..AT	LOADFORCES.....MOMENTS.....			
TYPE	ft	RADIUS	AZI	AZI	HORIZ	DOWN	VERTICAL	TORSNAL
		ft			kip	kip	ft-kip	ft-kip
C	137.000	0.00	0.0	0.0	0.5737	0.5000	0.0000	0.0000
C	128.000	0.00	0.0	0.0	0.0000	1.0650	0.0000	0.0000
C	125.000	0.00	0.0	0.0	0.0082	0.0140	0.0000	0.0000
C	121.500	0.00	0.0	0.0	0.0000	1.0109	0.0000	0.0000
C	121.500	0.00	0.0	0.0	1.3988	2.0000	0.0000	0.0000
C	115.000	0.00	0.0	0.0	0.0081	0.0140	0.0000	0.0000
C	109.000	0.00	0.0	0.0	0.0000	0.9069	0.0000	0.0000
C	109.000	0.00	0.0	0.0	1.6410	2.2500	0.0000	0.0000
C	105.000	0.00	0.0	0.0	0.0079	0.0140	0.0000	0.0000
C	99.000	0.00	0.0	0.0	0.0000	0.8237	0.0000	0.0000
C	99.000	0.00	0.0	0.0	1.6084	2.2500	0.0000	0.0000
C	95.000	0.00	0.0	0.0	0.0077	0.0140	0.0000	0.0000
C	89.000	0.00	0.0	0.0	0.0000	0.7405	0.0000	0.0000
C	89.000	0.00	0.0	0.0	1.8353	2.5000	0.0000	0.0000
C	85.000	0.00	0.0	0.0	0.0076	0.0140	0.0000	0.0000
C	79.000	0.00	0.0	0.0	0.0000	0.9859	0.0000	0.0000
C	79.000	0.00	0.0	0.0	1.5346	2.2500	0.0000	0.0000

C	75.000	0.00	0.0	0.0	0.0074	0.0140	0.0000	0.0000
C	65.000	0.00	0.0	0.0	0.0071	0.0140	0.0000	0.0000
C	55.000	0.00	0.0	0.0	0.0069	0.0140	0.0000	0.0000
C	45.000	0.00	0.0	0.0	0.0066	0.0140	0.0000	0.0000
C	35.000	0.00	0.0	0.0	0.0063	0.0140	0.0000	0.0000
C	25.000	0.00	0.0	0.0	0.0058	0.0140	0.0000	0.0000
C	15.000	0.00	0.0	0.0	0.0053	0.0140	0.0000	0.0000
D	130.000	0.00	180.0	0.0	0.0093	0.0410	0.0000	0.0000
D	101.500	0.00	180.0	0.0	0.0122	0.0560	0.0000	0.0000
D	101.500	0.00	180.0	0.0	0.0131	0.1506	0.0000	0.0000
D	98.250	0.00	180.0	0.0	0.0131	0.1506	0.0000	0.0000
D	98.250	0.00	180.0	0.0	0.0141	0.1004	0.0000	0.0000
D	83.250	0.00	180.0	0.0	0.0141	0.1004	0.0000	0.0000
D	83.250	0.00	180.0	0.0	0.0160	0.1181	0.0000	0.0000
D	68.250	0.00	180.0	0.0	0.0160	0.1181	0.0000	0.0000
D	68.250	0.00	180.0	0.0	0.0175	0.1358	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0175	0.1358	0.0000	0.0000
D	53.250	0.00	180.0	0.0	0.0184	0.3170	0.0000	0.0000
D	48.000	0.00	180.0	0.0	0.0184	0.3170	0.0000	0.0000
D	48.000	0.00	180.0	0.0	0.0185	0.1812	0.0000	0.0000
D	36.000	0.00	180.0	0.0	0.0185	0.1812	0.0000	0.0000
D	36.000	0.00	180.0	0.0	0.0189	0.1978	0.0000	0.0000
D	24.000	0.00	180.0	0.0	0.0189	0.1978	0.0000	0.0000
D	24.000	0.00	180.0	0.0	0.0185	0.2144	0.0000	0.0000
D	12.000	0.00	180.0	0.0	0.0185	0.2144	0.0000	0.0000
D	12.000	0.00	180.0	0.0	0.0190	0.2309	0.0000	0.0000
D	0.000	0.00	180.0	0.0	0.0190	0.2309	0.0000	0.0000

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MAXIMUM POLE DEFORMATIONS CALCULATED(w.r.t. wind direction)

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MAST ELEV ftDEFLECTIONS (ft).....		ROTATIONS (deg).....		
 HORIZONTAL ALONG ACROSS	DOWN TILT	ACROSS	TWIST
130.0	2.38I	0.00F	0.06E	2.00I	0.00F	0.00I
.....						
120.5	2.05I	0.00F	0.05E	1.95I	0.00F	0.00I
.....						
111.0	1.74I	0.00F	0.04E	1.84I	0.00F	0.00I
.....						
101.5	1.44I	0.00F	0.03E	1.70I	0.00F	0.00I
.....						
98.2	1.35I	0.00F	0.03E	1.65I	0.00F	0.00I
.....						
83.2	0.95I	0.00F	0.02E	1.41I	0.00F	0.00I
.....						
68.2	0.62I	0.00F	0.01E	1.12I	0.00F	0.00I
.....						
53.2	0.36I	0.00F	0.00E	0.82I	0.00F	0.00I
.....						
48.0	0.29I	0.00F	0.00E	0.73I	0.00F	0.00I
.....						
36.0	0.16I	0.00F	0.00I	0.53I	0.00F	0.00I
.....						
24.0	0.07I	0.00F	0.00I	0.34I	0.00F	0.00I
.....						
12.0	0.02I	0.00F	0.00I	0.16I	0.00F	0.00I
.....						
0.0	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A
.....						

MAXIMUM POLE FORCES CALCULATED(w.r.t. to wind direction)

=====

MAST ELEV ft	TOTAL AXIAL kip	SHEAR.w.r.t.WIND.DIR ALONG kip	WIND.DIR ACROSS kip	MOMENT.w.r.t.WIND.DIR ALONG ft-kip	WIND.DIR ACROSS ft-kip	TORSION ft-kip
130.0	0.50 F	0.57 F	0.00 F	-4.02 E	0.00 F	0.00 F
	5.00 F	2.07 F	0.00 F	-11.94 B	0.00 I	0.00 I
120.5	5.00 K	2.07 I	0.00 C	-11.94 E	0.00 L	0.00 I
	5.48 K	2.18 I	0.00 C	-33.77 I	0.00 F	0.00 C
111.0	5.48 L	2.19 I	0.00 B	-33.77 I	0.00 F	0.00 C
	9.16 L	3.95 I	0.00 B	-69.77 I	0.01 B	0.00 I
101.5	9.16 B	3.97 C	-0.01 I	-69.79 L	-0.02 I	0.00 I
	12.72 B	5.62 C	-0.01 I	-84.84 E	0.02 I	0.00 E
98.2	12.72 E	5.62 I	0.02 F	-84.85 E	0.03 I	0.00 E
	17.50 E	7.68 I	0.02 F	-187.19 I	-0.39 F	0.01 I
83.2	17.50 D	7.69 I	0.02 F	-187.19 I	-0.39 F	0.01 I
	22.52 D	9.47 I	0.02 F	-327.60 I	-0.74 F	0.02 I
68.2	22.52 D	9.47 I	0.02 F	-327.60 I	-0.74 F	0.02 I
	24.58 D	9.75 I	0.02 F	-477.68 I	-1.06 F	0.02 I
53.2	24.58 D	9.75 I	0.02 F	-477.68 I	-1.06 F	0.02 I
	26.25 D	9.85 I	0.02 F	-530.93 I	-1.18 F	0.02 I
48.0	26.25 D	9.85 I	0.02 F	-530.91 I	-1.18 F	0.02 I
	28.44 D	10.08 I	0.02 F	-654.05 I	-1.48 F	0.03 I
36.0	28.44 D	10.08 I	0.02 F	-654.05 I	-1.48 F	0.03 I
	30.84 D	10.31 I	0.02 F	-779.04 I	-1.75 F	0.03 I
24.0	30.84 D	10.32 I	0.02 F	-779.04 I	-1.75 F	0.03 I
	33.42 D	10.54 I	0.02 F	-905.83 I	-2.03 F	0.03 I
12.0	33.42 D	10.54 I	0.02 F	-905.83 I	-2.03 F	0.03 I
	36.20 D	10.77 I	0.02 F	-1034.29 I	-2.31 F	0.03 I
base reaction	36.20 D	-10.77 I	-0.02 F	1034.29 I	2.31 F	-0.03 I

COMPLIANCE WITH 4.8.2 & 4.5.4
=====

ELEV ft	AXIAL	BENDING	SHEAR + TORSIONAL	TOTAL	SATISFIED	D/t(w/t)	MAX ALLOWED
130.00	0.00F	0.02E	0.00F	0.02E	YES	8.64A	45.2

120.50	0.01F	0.04B	0.00F	0.04B	YES	10.62A	45.2
	0.01K	0.04E	0.00I	0.04E	YES	10.62A	45.2
111.00	0.00K	0.07I	0.00I	0.08I	YES	12.60A	45.2
	0.00L	0.07I	0.00I	0.08I	YES	12.60A	45.2
101.50	0.01L	0.12I	0.01I	0.12I	YES	14.58A	45.2
	0.00B	0.08L	0.00C	0.08L	YES	9.60A	45.2
98.25	0.01B	0.09E	0.01C	0.10E	YES	10.05A	45.2
	0.01E	0.09E	0.01I	0.10E	YES	9.82A	45.2
83.25	0.01E	0.14I	0.01I	0.15I	YES	11.90A	45.2
	0.01D	0.14I	0.01I	0.15I	YES	11.90A	45.2
68.25	0.01D	0.18I	0.01I	0.19I	YES	13.98A	45.2
	0.01D	0.18I	0.01I	0.19I	YES	13.98A	45.2
53.25	0.01D	0.21I	0.01I	0.21I	YES	16.06A	45.2
	0.01D	0.18I	0.01I	0.18I	YES	13.72A	45.2
48.00	0.01D	0.18I	0.01I	0.19I	YES	14.34A	45.2
	0.01D	0.19I	0.01I	0.20I	YES	14.04A	45.2
36.00	0.01D	0.19I	0.00I	0.20I	YES	15.47A	45.2
	0.01D	0.19I	0.00I	0.20I	YES	15.47A	45.2
24.00	0.01D	0.20I	0.00I	0.20I	YES	16.90A	45.2
	0.01D	0.20I	0.00I	0.20I	YES	16.90A	45.2
12.00	0.01D	0.20I	0.00I	0.21I	YES	18.33A	45.2
	0.01D	0.20I	0.00I	0.21I	YES	18.33A	45.2
0.00	0.01D	0.20I	0.00I	0.21I	YES	19.75A	45.2

MAXIMUM LOADS ONTO FOUNDATION(w.r.t. wind direction)

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DOWN	SHEAR.w.r.t.WIND.DIR		MOMENT.w.r.t.WIND.DIR		TORSION
kip	ALONG	ACROSS	ALONG	ACROSS	ft-kip
	kip	kip	ft-kip	ft-kip	
36.20	10.77	0.02	-1034.29	-2.31	0.03
D	I	F	I	F	I

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Seismic Load Effects
Equivalent Lateral Force Procedure
ANSI/TIA-222-H

Parameters	Description	h _i (ft.)	w _i (kips)	W _n (kips)	Vertical Distribution of Seismic Forces				
					$\frac{w_i h_i}{\sum w_i h_i}$	$\frac{F_x \text{ or } E_h}{\sum F_x \text{ or } E_h}$ (kips)	$\frac{E_v}{\sum E_v}$ (kips)	$\frac{1.2 D + 1.0 E_v}{\sum (1.2 D + 1.0 E_v)}$ (kips)	$\frac{0.9 D - 1.0 E_v}{\sum (0.9 D - 1.0 E_v)}$ (kips)
Risk Category II	Antenna Load	137.00	0.5000	0.5000	8,589.1496	0.0405	0.0109	0.6109	0.4391
R 1.500	Line Deadload	128.00	1.0650	0.0000	15,989.6798	0.0755	0.0232	1.3012	0.9353
S _s 0.182	Step Bolts/Safety Climb Load	125.00	0.0140	0.0000	200.5412	0.0009	0.0003	0.0171	0.0123
S ₁ 0.064	Antenna Load	121.50	2.0000	2.0000	27,080.7182	0.1278	0.0436	2.4436	1.7564
Site Class B	Line Deadload	121.50	1.0109	0.0000	13,687.9490	0.0646	0.0220	1.2351	0.8878
T _L (sec) 6.000	Step Bolts/Safety Climb Load	115.00	0.0140	0.0000	169.9930	0.0008	0.0003	0.0171	0.0123
F _a 0.900	Structure - Section 1	114.12	1.5774	0.0000	18,863.9593	0.0890	0.0344	1.9273	1.3853
F _v 0.800	Antenna Load	109.00	2.2500	2.2500	24,567.5493	0.1159	0.0490	2.7490	1.9760
S _{MS} 0.164	Line Deadload	109.00	0.9069	0.0000	9,902.3602	0.0467	0.0198	1.1081	0.7964
S _{M1} 0.051	Step Bolts/Safety Climb Load	105.00	0.0140	0.0000	141.9467	0.0007	0.0003	0.0171	0.0123
S _{PS} 0.109	Antenna Load	99.00	2.2500	2.2500	20,301.6564	0.0958	0.0490	2.7490	1.9760
S _{D1} 0.034	Line Deadload	99.00	0.8237	0.0000	7,432.2108	0.0351	0.0180	1.0064	0.7233
T _s 0.312	Step Bolts/Safety Climb Load	95.00	0.0140	0.0000	116.4062	0.0005	0.0003	0.0171	0.0123
I _e 1.000	Antenna Load	89.00	2.5000	2.5000	18,265.4763	0.0862	0.0545	3.0545	2.1955
Ω 1.500	Line Deadload	89.00	0.7405	0.0000	5,410.2341	0.0255	0.0161	0.9047	0.6504
C _s 0.030	Step Bolts/Safety Climb Load	85.00	0.0140	0.0000	93.3762	0.0004	0.0003	0.0171	0.0123
E (ksi) 29,000	Antenna Load	79.00	2.2500	0.0000	12,980.1411	0.0613	0.0490	2.7490	1.9760
I _{top} (in ⁴) 261	Line Deadload	79.00	0.9859	0.0000	5,687.6094	0.0268	0.0215	1.2046	0.8658
I _{bot} (in ⁴) 22,922	Step Bolts/Safety Climb Load	75.00	0.0140	0.0000	72.8617	0.0003	0.0003	0.0171	0.0123
I _{avg} (in ⁴) 11,592	Structure - Section 2	74.75	6.3623	0.0000	32,893.6098	0.1552	0.1387	7.7735	5.5874
g (in/s ²) 386.4	Step Bolts/Safety Climb Load	65.00	0.0140	0.0000	54.8684	0.0003	0.0003	0.0171	0.0123
W _t (kips) 36.143	Step Bolts/Safety Climb Load	55.00	0.0140	0.0000	39.4028	0.0002	0.0003	0.0171	0.0123
W _n (kips) 9.500	Step Bolts/Safety Climb Load	45.00	0.0140	0.0000	26.4725	0.0001	0.0003	0.0171	0.0123
W _L (kips) 26.643	Step Bolts/Safety Climb Load	35.00	0.0140	0.0000	16.0868	0.0001	0.0003	0.0171	0.0123
L _p (in) 1560	Structure - Section 3	26.62	10.7520	0.0000	7,182.1027	0.0339	0.2344	13.1368	9.4424
f ₁ (Hertz) 0.406	Step Bolts/Safety Climb Load	25.00	0.0140	0.0000	8.2574	0.0000	0.0003	0.0171	0.0123
T (sec) 2.464	Step Bolts/Safety Climb Load	15.00	0.0140	0.0000	3.0001	0.0000	0.0003	0.0171	0.0123
k _e 1.9820	Σ		36.14	9.5000	229,777.62	1.08	0.79	44.16	31.74

V_s (kips) 1.084
Seismic Design Category A

Round Base Plate and Anchor Rods, per ANSI/TIA 222-H

Pole Data

Diameter:	51.140	in (flat to flat)
Thickness:	0.4375	in
Yield (Fy):	65	ksi
# of Sides:	18	"0" IF Round
Strength (Fu):	80	ksi

Reactions

Moment, Mu:	4630.55	ft-kips
Axial, Pu:	43.46	kips
Shear, Vu:	48.17	kips

Anchor Rod Data

Quantity:	18	
Diameter:	2.25	in
Rod Material:	A615	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
BC Diam. (in):	58	BC Override: 58

Plate Data

Diameter (in):	63.75	Dia. Override: 63.75
Thickness:	2.25	in
Yield (Fy):	50	ksi
Eff Width/Rod:	9.02	in
Drain Hole:	2.625	in. diameter
Drain Location:	23.25	in. center of pole to center of drain hole
Center Hole:	38.5	in. diameter

Anchor Rod Results

(per 4.9.9)

Maximum Put:	211.09 Kips
Φt^*Rnt :	243.75 Kips
Vu:	2.68 Kips
Φv^*Rnv :	149.10 Kips
Tension Interaction Ratio:	0.75
Maximum Puc:	215.31 Kips
Φc^*Rnc :	268.39 Kips
Vu:	2.68 Kips
Φc^*Rncv :	120.77 Kips
Compression Interaction Ratio:	0.80
Maximum Interaction Ratio:	80.3% Pass

Base Plate Results

Base Plate (Mu/Z):	41.0 ksi
Allowable Φ^*Fy :	45.0 ksi (per AISC)
Base Plate Interaction Ratio:	91.1% Pass

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LPILE for Windows, Version 2019-11.009

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

Path to file locations:
\Program Files (x86)\Ensoft\Lpile2019\files\

Name of input data file:
521586A.lp11d

Name of output report file:
521586A.lp11o

Name of plot output file:
521586A.lp11p

Name of runtime message file:
521586A.lp11r

Date and Time of Analysis

Date: June 29, 2023

Time: 15:18:01

Problem Title

Site : Burlington Avon Landfill, CT

Tower : 131' Monopole

Prepared for : SBA NETWORK SERVICES INC

Job Number : 521586 Revision A

Engineer : KJT

Program Options and Settings

Computational Options:

- Conventional Analysis

Engineering Units Used for Data Input and Computations:

- US Customary System Units (pounds, feet, inches)

Analysis Control Options:

- Maximum number of iterations allowed = 999
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 100.0000 in
- Number of pile increments = 100

Loading Type and Number of Cycles of Loading:

- Static loading specified
- Use of p-y modification factors for p-y curves not selected
- Analysis uses layering correction (Method of Georgiadis)
- No distributed lateral loads are entered
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Input of moment resistance at the pile tip not selected
- Input of side resistance moment along pile not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:

- Output files use decimal points to denote decimal symbols.
- Report only summary tables of pile-head deflection, maximum bending moment, and maximum shear force in output report file.
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

Number of pile sections defined = 1
Total length of pile = 19.500 ft
Depth of ground surface below top of pile = 0.5000 ft

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

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

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	84.0000
2	19.500	84.0000

Input Structural Properties for Pile Sections:

Pile Section No. 1:

Section 1 is a round drilled shaft, bored pile, or CIDH pile

Length of section	=	19.500000 ft
Shaft Diameter	=	84.000000 in
Shear capacity of section	=	0.0000 lbs

Ground Slope and Pile Batter Angles

Ground Slope Angle	=	0.000 degrees
	=	0.000 radians
Pile Batter Angle	=	0.000 degrees
	=	0.000 radians

Soil and Rock Layering Information

The soil profile is modelled using 6 layers

Layer 1 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer	=	0.500000 ft
Distance from top of pile to bottom of layer	=	2.500000 ft
Effective unit weight at top of layer	=	115.000000 pcf
Effective unit weight at bottom of layer	=	115.000000 pcf
Undrained cohesion at top of layer	=	14.400000 psf
Undrained cohesion at bottom of layer	=	14.400000 psf
Epsilon-50 at top of layer	=	0.100000
Epsilon-50 at bottom of layer	=	0.100000

Layer 2 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer	=	2.500000 ft
Distance from top of pile to bottom of layer	=	4.500000 ft
Effective unit weight at top of layer	=	120.000000 pcf
Effective unit weight at bottom of layer	=	120.000000 pcf
Undrained cohesion at top of layer	=	14.400000 psf
Undrained cohesion at bottom of layer	=	14.400000 psf
Epsilon-50 at top of layer	=	0.100000
Epsilon-50 at bottom of layer	=	0.100000

Layer 3 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	4.500000 ft
Distance from top of pile to bottom of layer	=	6.500000 ft
Effective unit weight at top of layer	=	120.000000 pcf
Effective unit weight at bottom of layer	=	120.000000 pcf
Friction angle at top of layer	=	35.000000 deg.
Friction angle at bottom of layer	=	35.000000 deg.
Subgrade k at top of layer	=	90.000000 pci
Subgrade k at bottom of layer	=	90.000000 pci

Layer 4 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	6.500000 ft
Distance from top of pile to bottom of layer	=	8.500000 ft
Effective unit weight at top of layer	=	120.000000 pcf

Effective unit weight at bottom of layer = 120.000000 pcf
 Friction angle at top of layer = 36.000000 deg.
 Friction angle at bottom of layer = 36.000000 deg.
 Subgrade k at top of layer = 225.000000 pci
 Subgrade k at bottom of layer = 225.000000 pci

Layer 5 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer = 8.500000 ft
 Distance from top of pile to bottom of layer = 13.500000 ft
 Effective unit weight at top of layer = 130.000000 pcf
 Effective unit weight at bottom of layer = 130.000000 pcf
 Friction angle at top of layer = 41.000000 deg.
 Friction angle at bottom of layer = 41.000000 deg.
 Subgrade k at top of layer = 225.000000 pci
 Subgrade k at bottom of layer = 225.000000 pci

Layer 6 is strong rock (vuggy limestone)

Distance from top of pile to top of layer = 13.500000 ft
 Distance from top of pile to bottom of layer = 19.500000 ft
 Effective unit weight at top of layer = 150.000000 pcf
 Effective unit weight at bottom of layer = 150.000000 pcf
 Uniaxial compressive strength at top of layer = 16700. psi
 Uniaxial compressive strength at bottom of layer = 16700. psi

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

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

Values entered for effective unit weight of rock were outside the limits of 50 pcf to 150 pcf.

The maximum input value, in layer 1, for effective unit weight = 150.00 pcf

This data may be erroneous. Please check your data.

Summary of Input Soil Properties

Layer	Soil Type	Layer	Effective	Cohesion	Angle of	Uniaxial	E50	
Num.	Name	Depth	Unit Wt.		Friction	qu	or	kpy
	(p-y Curve Type)	ft	pcf	psf	deg.	psi	krm	pci
1	Soft	0.5000	115.0000	14.4000	--	--	0.10000	--
	Clay	2.5000	115.0000	14.4000	--	--	0.10000	--
2	Soft	2.5000	120.0000	14.4000	--	--	0.10000	--
	Clay	4.5000	120.0000	14.4000	--	--	0.10000	--
3	Sand	4.5000	120.0000	--	35.0000	--	--	
90.0000	(Reese, et al.)	6.5000	120.0000	--	35.0000	--	--	
90.0000								
4	Sand	6.5000	120.0000	--	36.0000	--	--	
225.0000								

225.0000	(Reese, et al.)	8.5000	120.0000	--	36.0000	--	--
5	Sand	8.5000	130.0000	--	41.0000	--	--
225.0000	(Reese, et al.)	13.5000	130.0000	--	41.0000	--	--
225.0000	Strong Rock	13.5000	150.0000	--	--	16700.	--
6	(Vuggy Limestone)	19.5000	150.0000	--	--	16700.	--

Static Loading Type

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

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 2

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length	Run Analysis
1	1	V = 67607. lbs	M = 77988211. in-lbs	60996.	No	Yes
2	1	V = 11337. lbs	M = 13064716. in-lbs	38105.	No	Yes

V = shear force applied normal to pile axis

M = bending moment applied to pile head

y = lateral deflection normal to pile axis

S = pile slope relative to original pile batter angle

R = rotational stiffness applied to pile head

Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).

Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

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

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft (Bored Pile):

Length of Section	=	19.500000 ft
Shaft Diameter	=	84.000000 in
Concrete Cover Thickness (to edge of long. rebar)	=	3.875000 in
Number of Reinforcing Bars	=	46 bars
Yield Stress of Reinforcing Bars	=	60000. psi
Modulus of Elasticity of Reinforcing Bars	=	29000000. psi
Gross Area of Shaft	=	5542. sq. in.
Total Area of Reinforcing Steel	=	58.271360 sq. in.
Area Ratio of Steel Reinforcement	=	1.05 percent
Edge-to-Edge Bar Spacing	=	3.846816 in
Maximum Concrete Aggregate Size	=	0.750000 in
Ratio of Bar Spacing to Aggregate Size	=	5.13

Offset of Center of Rebar Cage from Center of Pile = 0.0000 in

Axial Structural Capacities:

Nom. Axial Structural Capacity = $0.85 F_c A_c + F_y A_s$ = 24470.662 kips
Tensile Load for Cracking of Concrete = -2609.093 kips
Nominal Axial Tensile Capacity = -3496.282 kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches
1	1.270000	1.266769	37.490000	0.00000
2	1.270000	1.266769	37.140816	5.104888
3	1.270000	1.266769	36.099769	10.114681
4	1.270000	1.266769	34.386252	14.936057
5	1.270000	1.266769	32.032183	19.479202
6	1.270000	1.266769	29.081416	23.659487
7	1.270000	1.266769	25.588917	27.399040
8	1.270000	1.266769	21.619745	30.628201
9	1.270000	1.266769	17.247838	33.286817
10	1.270000	1.266769	12.554637	35.325362
11	1.270000	1.266769	7.627566	36.705862
12	1.270000	1.266769	2.558408	37.402602
13	1.270000	1.266769	-2.558408	37.402602
14	1.270000	1.266769	-7.627566	36.705862
15	1.270000	1.266769	-12.554637	35.325362
16	1.270000	1.266769	-17.247838	33.286817
17	1.270000	1.266769	-21.619745	30.628201
18	1.270000	1.266769	-25.588917	27.399040
19	1.270000	1.266769	-29.081416	23.659487
20	1.270000	1.266769	-32.032183	19.479202
21	1.270000	1.266769	-34.386252	14.936057
22	1.270000	1.266769	-36.099769	10.114681
23	1.270000	1.266769	-37.140816	5.104888
24	1.270000	1.266769	-37.490000	0.00000
25	1.270000	1.266769	-37.140816	-5.104888
26	1.270000	1.266769	-36.099769	-10.114681
27	1.270000	1.266769	-34.386252	-14.936057
28	1.270000	1.266769	-32.032183	-19.479202
29	1.270000	1.266769	-29.081416	-23.659487
30	1.270000	1.266769	-25.588917	-27.399040
31	1.270000	1.266769	-21.619745	-30.628201
32	1.270000	1.266769	-17.247838	-33.286817
33	1.270000	1.266769	-12.554637	-35.325362
34	1.270000	1.266769	-7.627566	-36.705862
35	1.270000	1.266769	-2.558408	-37.402602
36	1.270000	1.266769	2.558408	-37.402602
37	1.270000	1.266769	7.627566	-36.705862
38	1.270000	1.266769	12.554637	-35.325362
39	1.270000	1.266769	17.247838	-33.286817
40	1.270000	1.266769	21.619745	-30.628201
41	1.270000	1.266769	25.588917	-27.399040
42	1.270000	1.266769	29.081416	-23.659487
43	1.270000	1.266769	32.032183	-19.479202
44	1.270000	1.266769	34.386252	-14.936057
45	1.270000	1.266769	36.099769	-10.114681
46	1.270000	1.266769	37.140816	-5.104888

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

Minimum spacing between any two bars not equal to zero = 3.847 inches
between bars 31 and 32.

Ratio of bar spacing to maximum aggregate size = 5.13

Concrete Properties:

Compressive Strength of Concrete	=	4500. psi
Modulus of Elasticity of Concrete	=	3823676. psi
Modulus of Rupture of Concrete	=	-503.115295 psi
Compression Strain at Peak Stress	=	0.002001
Tensile Strain at Fracture of Concrete	=	-0.0001152
Maximum Coarse Aggregate Size	=	0.750000 in

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

Number	Axial Thrust Force kips
-----	-----
1	38.105
2	60.996

Summary of Results for Nominal Moment Capacity for Section 1

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

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
-----	-----	-----	-----
1	38.105	120807.238	0.00300000
2	60.996	121469.864	0.00300000

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

In ACI 318, the value of the strength reduction factor depends on whether the transverse reinforcing steel bars are tied hoops (0.65) or spirals (0.75).

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

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

Axial Load No.	Resist. Factor	Nominal Ax. Thrust kips	Nominal Moment Cap in-kips	Ult. (Fac) Ax. Thrust kips	Ult. (Fac) Moment Cap in-kips	Bend. Stiff. at Ult Mom kip-in^2
-----	-----	-----	-----	-----	-----	-----
1	0.65	38.105263	120807.	24.768421	78525.	2.3996E+09
2	0.65	60.996491	121470.	39.647719	78955.	2.4140E+09
1	0.75	38.105263	120807.	28.578947	90605.	2.3176E+09
2	0.75	60.996491	121470.	45.747368	91102.	2.3318E+09
1	0.90	38.105263	120807.	34.294737	108727.	1.5656E+09
2	0.90	60.996491	121470.	54.896842	109323.	1.5769E+09

Layering Correction Equivalent Depths of Soil & Rock Layers

Top of Equivalent

Layer No.	Layer Below Pile Head ft	Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	0.5000	0.00	N.A.	No	0.00	1589.
2	2.5000	2.0001	Yes	No	1589.	1814.
3	4.5000	0.8985	No	No	3404.	35214.
4	6.5000	2.8178	Yes	No	38618.	82234.
5	8.5000	4.1757	Yes	No	120852.	565730.
6	13.5000	13.0000	No	Yes	N.A.	N.A.

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

Summary of Pile-head Responses for Conventional Analyses

Definitions of Pile-head Loading Conditions:

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

Load Case No.	Load Type	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	67607.	M, in-lb	7.80E+07	60996.	0.6135	-0.00644	-1839836.	8.40E+07
2	V, lb	11337.	M, in-lb	1.31E+07	38105.	0.02646	-2.48E-04	-298155.	1.42E+07

Maximum pile-head deflection = 0.6135234298 inches
Maximum pile-head rotation = -0.0064376210 radians = -0.368849 deg.

The analysis ended normally.

IBC 1807.3.2.1

Moment (ft·k)	4,874.26	
Shear (k)	50.71	
Caisson diameter (ft)	7	
Caisson height above ground (ft)	0.5	
Caisson height below ground (ft)	26	
Lateral soil pressure (lb/ft ²)	386.54	
Ground to application of force, h (ft)	96.63	
Applied lateral force, P (lb)	50,705	
Lateral soil bearing pressure, S ₁ (lb/ft)	3,350.00	
Diameter, b (ft)	7	
A	5.06	$= (2.34P)/(S_1 b)$
Minimum depth of embedment, d (ft)	25.75	$= 0.5A [1 + (1 + (4.36h / A))^{1/2}]$

EXHIBIT 9

Antenna Mount Analysis

Mount Analysis for



Proposed Platform with Support Rails
Commscope Part #: MC-PK8-DSH

June 6, 2023

Site Name: Burlington – Avon Landfill
SBA Site Number: CT46143-A
Dish Site Number: BOBDL00139A
Site Address: 277 Huckleberry Road
Avon, CT 06013
Hartford County
Site Coordinates: 41.788219°, -72.918272°

Kimley-Horn Job Number: 180000025.1.202
Kimley-Horn JIRA Ticket: KHCLE-40087

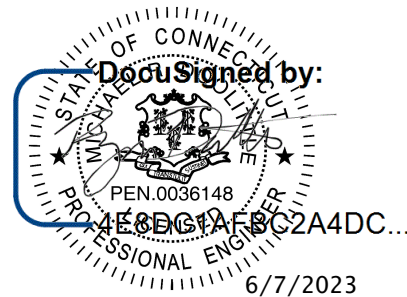
Analysis Results

Proposed Platform with Support Rails	24.5%	Sufficient
Mount Connections	25.0%	Sufficient

See additional details in the Conclusions and Recommendation section.

Prepared By:
Kevin Fraleigh, P.E.

Reviewed and Signed By:
Michael R. Doolittle, P.E.
Lic. #PEN.0036148, Exp. 01/31/2024
Kimley-Horn and Associates, Inc. COA #PEC.0000738



▪ SUPPORTING DOCUMENTATION

Information on existing and proposed antennas as well as mount geometry was provided to Kimley-Horn and Associates in the documents listed below. It is assumed that all information provided to Kimley-Horn & Associates, Inc. is accurate. In the absence of information to the contrary, we assume the structure has been properly erected and maintained per the original design drawings and the capacity has not significantly changed from the “as new” condition.

Tenant Loading	Dish Wireless Collo App, dated 5/31/2023
Mount Design	Commscope Part #: MC-PK8-DSH, dated 10/16/2020

▪ ANALYSIS CRITERIA

Code	ANSI/TIA-222-H / 2021 IBC / ASCE 7-16
Basic Wind Speed	116 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice	50 mph (3-sec Gust) with 1.5” radial ice (escalating)
Risk Category	II
Exposure Category	C
Topographic Factor	$K_{zt} = 1.0$

This analysis utilizes an ultimate 3-second gust wind speed of 116 mph as required by the 2022 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

▪ APPURTENANCE LISTING

The tables below will show the final equipment configuration considered in the analysis. If the final equipment observed in the field deviates from the information shown below, Kimley-Horn & Associates, Inc. should be contacted to perform an analysis revision immediately.

Final Equipment Configuration:

Antenna RAD (ft)	Description	Feedlines	Mount Type	Mount Elevation (ft)	Carrier
70	(3) JMA Wireless MX08FR0665-21 (3) Fujitsu TA08025-B605 RRU (3) Fujitsu TA08025-B604 RRU (1) Raycap RDIDC-9181-PF-48 OVP	(1) 1.411” Hybrid	Platform with Support Rails	70	Dish

▪ CONCLUSIONS AND RECOMMENDATIONS

Per our rigorous structural analysis, the proposed Platform with Support Rails have been found to be **SUFFICIENT**. The mount can support the referenced loading in accordance with the structural strength requirements of ANSI/TIA-222-H and 2021 IBC with local amendments.

▪ ASSUMPTIONS AND LIMITATIONS

This report is not a condition assessment of the mount; It is an engineering analysis based upon the theoretical capacity of the structure. Unless told otherwise, we assume the mount components and connections to be in “like new” condition. If these assumptions are not accurate, Kimley-Horn & Associates, Inc. should be notified immediately to perform a revised analysis.

All services are performed, results obtained, and recommendation made in accordance with generally accepted engineering principles and practices. Kimley-Horn & Associates, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information in this report.

Kimley-Horn makes no warranties, expressed or implied in connection with this report and disclaims any liability arising from original design, material, fabrication, section deficiencies, corrosion, or insufficient maintenance of the structure.

APPENDIX

General Criteria	
TIA Standard	H
IBC Edition	2018
Structure Class	-
Risk Category	II

Site-Specific Criteria	
Exposure Category	C
Topographic Factor, K_{zt}	1.00
Structure Base Elev. (AMSL), z_s (ft)	467.00
Ground Effect Factor, K_e	0.98

Mount & Structure Criteria	
Mount Elevation (AGL) (ft)	70.00
Structure Height (ft)	100.00
Structure Type	Guyed Tower

Constants	
Wind Direction Probability Factor, K_d	0.95
Gust Effect Factor, G_h	1
Shielding Factor, K_s (antenna)	0.9
Shielding Factor, K_s (mount)	0.9

Wind Summary	
Basic Wind Speed w/o Ice, V (mph)	116.00
Velocity Pressure Coeff., K_z	1.17
Velocity Pressure, q_z (w/o Ice) (psf)	37.78

Ice Load Summary	
Basic Wind Speed w/ Ice, V_i (mph)	50.00
Design Ice Thick. (ASCE 7-16) , t_i (in)	1.5
Velocity Pressure, q_z (w/ Ice) (psf)	7.02
Escalated Ice Thick. @ Mount, t_{iz} (in)	1.62

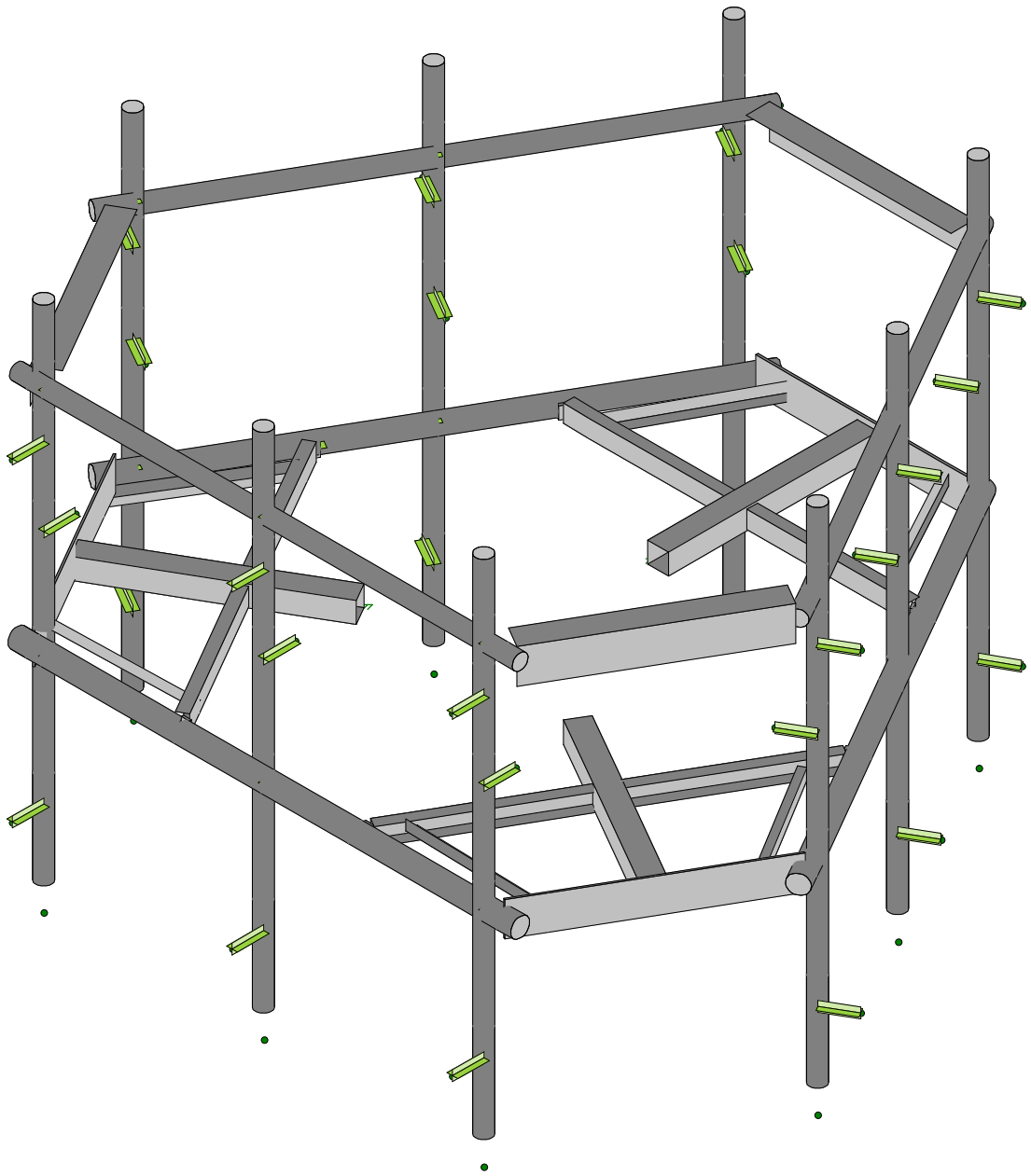
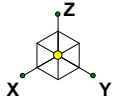
Seismic Load Summary	
Spectral Response (Short Periods), S_s	0.179
Spectral Response (1-Sec. Period), S_1	0.054
Site Class	D
Seismic Design Category	B
Seismic Risk Category	II

Snow Load Summary	
Ground Snow Load, p_g (psf)	-
Snow Load on Flat Roofs, p_f (psf)	-



Date	June 06, 2023
Client	SBA
Site #	CT46143-A
Site Name	Burlington - Avon Landfill
Project #	KHCLE-40084

Antenna Name	Qty	Shape	Dimensions (in)			Weight (lb)	Joint Labels								EPA (ft²)		Wind Force, F _A (lb)			
			H	W	D		Alpha	Beta	Gamma	Delta	Front	Side	No Ice		With Ice					
													Front	Side	Front	Side				
MX08FRO665-21	3	Flat	72	20	8	64.5	A2T	A2B	B2T	B2B	G2T	G2B			12.49	5.87	424.62	199.46	94.53	51.41
TA08025-B604	3	Flat	15.8	15	7.9	63.9	A2R		B2R		G2R				0.52	1.96	17.56	66.76	5.55	18.18
TA08025-B605	3	Flat	15.8	15	9.1	75	A2R		B2R		G2R				0.59	1.96	20.19	66.76	6.14	18.18
RDIDC-9181-PF-48	1	Flat	16.6	14.6	8.5	21.9	P26								2.01	1.17	68.4	39.72	18.56	12.19



Envelope Only Solution

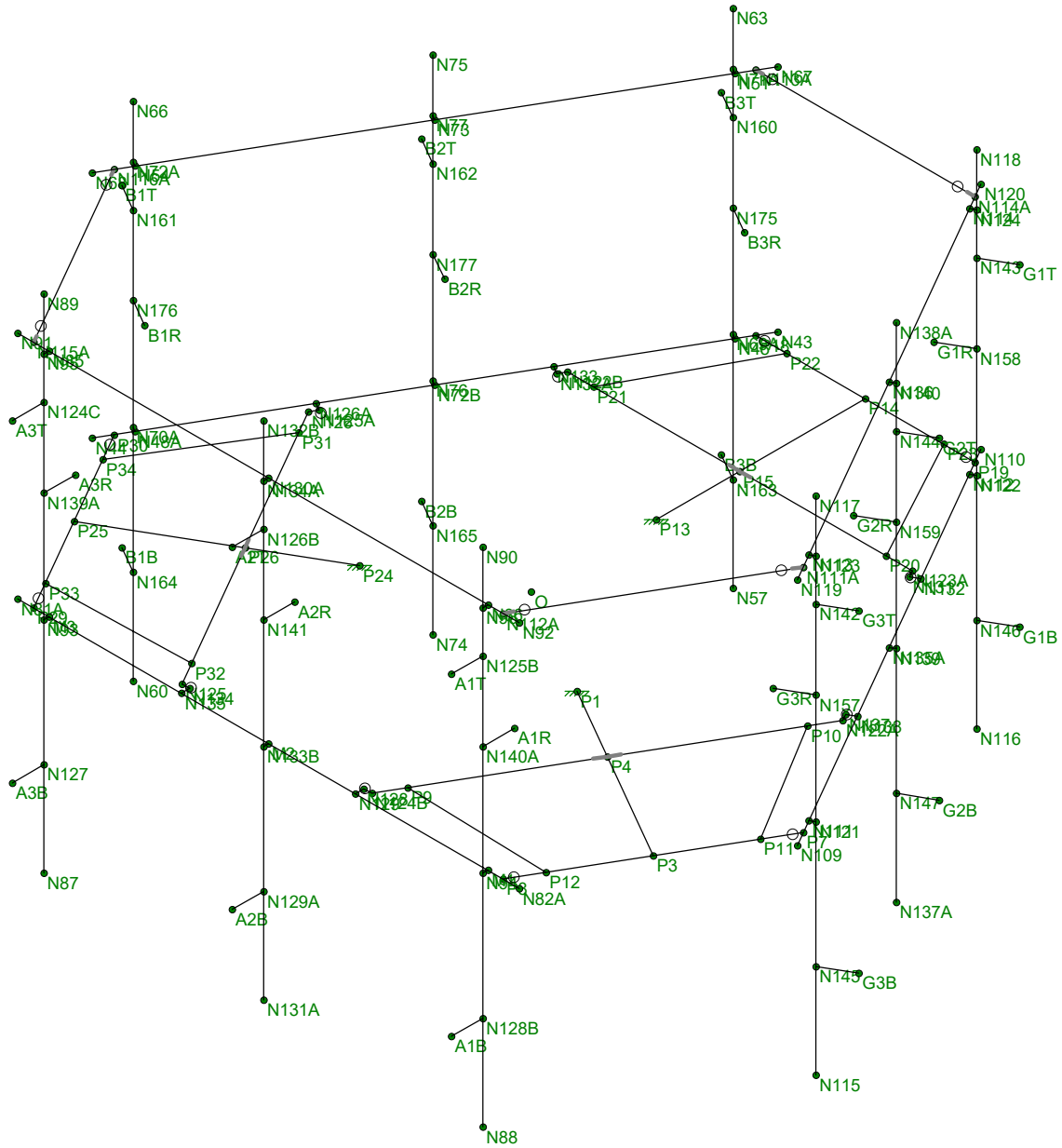
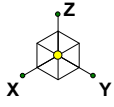
Kimley-Horn and Associate...

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SK - 2

June 6, 2023 at 4:55 PM

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Envelope Only Solution

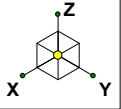
Kimley-Horn and Associate...

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June 6, 2023 at 4:55 PM

CommScope MC-PK8-DSH.r3d



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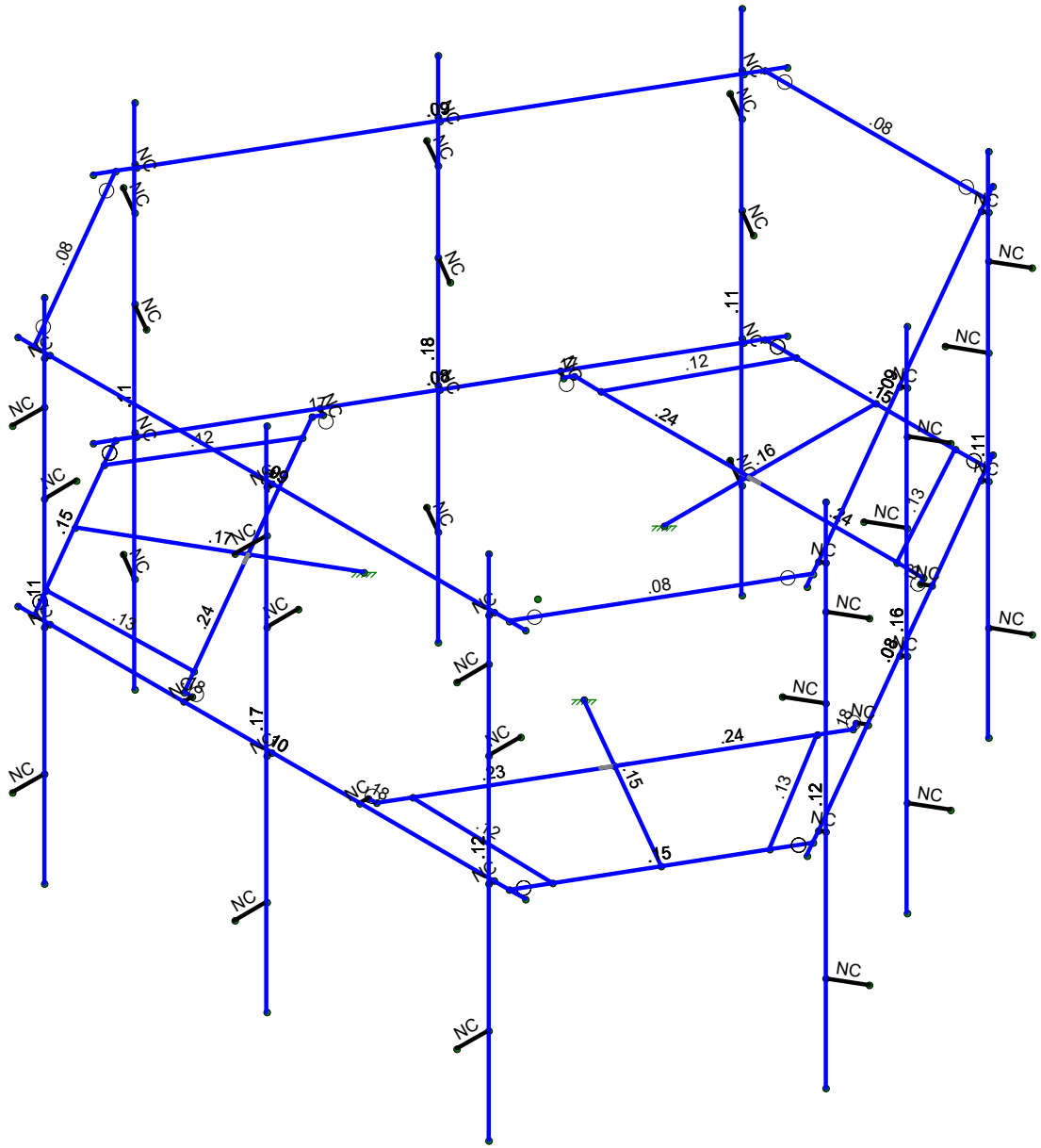
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Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Kimley-Horn and Associate...

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SK - 3

June 6, 2023 at 4:55 PM

CommScope MC-PK8-DSH.r3d

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt	
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B Rnd	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
8	A913 Gr.65	29000	11154	.3	.65	.49	65	1.1	80	1.1
9	A500 Gr.C Rnd	29000	11154	.3	.65	.49	46	1.6	62	1.2
10	A500 Gr.C Rect	29000	11154	.3	.65	.49	50	1.5	62	1.2
11	A529 Gr. 50	29000	11154	.3	.65	.49	50	1.1	65	1.1
12	A1011-33 ksi	29000	11154	.3	.65	.49	33	1.5	58	1.2
13	A1011 36 ksi	29000	11154	.3	.65	.49	36	1.5	58	1.2
14	A1018 50 ksi	29000	11154	.3	.65	.49	50	1.5	65	1.2
15	Q235	29000	11154	.3	.65	.49	35	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Corner Plate	PL6-1/2x3/8	Beam	None	A1011 36 ksi	Typical	2.438	.029	8.582	.11
2	Side Plate	PL2-3/8x1/2	Beam	None	A1011 36 ksi	Typical	1.188	.025	.558	.086
3	Grating Horiz	L2x2x4	Beam	None	A529 Gr. 50	Typical	.944	.346	.346	.021
4	Face Horiz	HSS3.500x0.1...	Beam	None	A500 Gr.C Rnd	Typical	1.729	2.409	2.409	4.819
5	Mount Pipe	HSS2.875x0.1...	Column	None	A500 Gr.C Rnd	Typical	1.039	.987	.987	1.975
6	Cross Horiz	C3.38x2.06x1/4	Beam	None	A1011 36 ksi	Typical	1.75	.715	3.026	.034
7	Stand-Off Horiz	HSS4X4X6	Beam	None	A500 Gr.C Rect	Typical	4.78	10.3	10.3	17.5
8	Support Rail	HSS2.875x0.1...	Beam	None	A500 Gr.C Rnd	Typical	1.039	.987	.987	1.975
9	SR Corner Brace	L6.6x4.46x0.25	Beam	None	A1011 36 ksi	Typical	2.703	4.759	12.473	.055

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	P1	12.	20.78461	-0.	0	
2	O	0	0	0	0	
3	P3	32.	55.425626	-0.	0	
4	P4	20.	34.641016	-0.	0	
5	P7	13.813467	65.925626	0.	0	
6	P8	50.186533	44.925626	-0.	0	
7	P9	44.248711	20.641016	-0.	0	
8	P10	-4.248711	48.641016	0.	0	
9	P11	19.009619	62.925626	0.	0	
10	P12	44.990381	47.925626	-0.	0	
11	P13	-24	0.	0.	0	
12	P14	-64	-0.	0.	0	
13	P15	-40	0.	0.	0	
14	P18	-64.	-21.	0.	0	
15	P19	-64.	21.	0.	0	
16	P20	-40	28	0.	0	
17	P21	-40	-28	0.	0	
18	P22	-64	-15.	0.	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
123	N128B	51.186533	42.	-24	0	
124	N129A	51.186533	0.	-24	0	
125	A3T	57.186533	-42.	36	0	
126	A1T	57.186533	42.	36	0	
127	A2T	57.186533	0.	36	0	
128	A3B	57.186533	-42.	-24	0	
129	A1B	57.186533	42.	-24	0	
130	A2B	57.186533	0.	-24	0	
131	A3R	45.186533	-42.	21	0	
132	A1R	45.186533	42.	21	0	
133	A2R	45.186533	0.	21	0	
134	N139A	51.186533	-42.	21	0	
135	N140A	51.186533	42.	21	0	
136	N141	51.186533	0.	21	0	
137	N142	10.7798	65.328838	36	0	
138	N143	-61.966334	23.328838	36	0	
139	N144	-25.593267	44.328838	36	0	
140	N145	10.7798	65.328838	-24	0	
141	N146	-61.966334	23.328838	-24	0	
142	N147	-25.593267	44.328838	-24	0	
143	G3T	7.7798	70.524991	36	0	
144	G1T	-64.966334	28.524991	36	0	
145	G2T	-28.593267	49.524991	36	0	
146	G3B	7.7798	70.524991	-24	0	
147	G1B	-64.966334	28.524991	-24	0	
148	G2B	-28.593267	49.524991	-24	0	
149	G3R	13.7798	60.132686	21	0	
150	G1R	-58.966334	18.132686	21	0	
151	G2R	-22.593267	39.132686	21	0	
152	N157	10.7798	65.328838	21	0	
153	N158	-61.966334	23.328838	21	0	
154	N159	-25.593267	44.328838	21	0	
155	N160	-61.966333	-23.328838	36	0	
156	N161	10.7798	-65.328838	36	0	
157	N162	-25.593267	-44.328838	36	0	
158	N163	-61.966333	-23.328838	-24	0	
159	N164	10.7798	-65.328838	-24	0	
160	N165	-25.593267	-44.328838	-24	0	
161	B3T	-64.966333	-28.524991	36	0	
162	B1T	7.7798	-70.524991	36	0	
163	B2T	-28.593267	-49.524991	36	0	
164	B3B	-64.966333	-28.524991	-24	0	
165	B1B	7.7798	-70.524991	-24	0	
166	B2B	-28.593267	-49.524991	-24	0	
167	B3R	-58.966333	-18.132686	21	0	
168	B1R	13.7798	-60.132686	21	0	
169	B2R	-22.593267	-39.132686	21	0	
170	N175	-61.966333	-23.328838	21	0	
171	N176	10.7798	-65.328838	21	0	
172	N177	-25.593267	-44.328838	21	0	

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M3	P9	P12		270	Grating Horiz	Beam	None	A529 Gr. 50	Typical
2	M8	P20	P23		270	Grating Horiz	Beam	None	A529 Gr. 50	Typical
3	M13	P31	P34		270	Grating Horiz	Beam	None	A529 Gr. 50	Typical
4	M28	N114A	N113A		180	SR Corner Bra...	Beam	None	A1011 36 ...	Typical
5	M29	N112A	N111A		180	SR Corner Bra...	Beam	None	A1011 36 ...	Typical
6	M30	N116A	N115A		180	SR Corner Bra...	Beam	None	A1011 36 ...	Typical
7	M63A	P4	N124B		180	Cross Horiz	Beam	None	A1011 36 ...	Typical
8	M61B	P15	N123A		180	Cross Horiz	Beam	None	A1011 36 ...	Typical
9	M63B	P26	N126		180	Cross Horiz	Beam	None	A1011 36 ...	Typical
10	M25	N67	N68			Support Rail	Beam	None	A500 Gr.C...	Typical
11	M51	N91	N92			Support Rail	Beam	None	A500 Gr.C...	Typical
12	M65A	N119	N120			Support Rail	Beam	None	A500 Gr.C...	Typical
13	M2	P3	P1			Stand-Off Horiz	Beam	None	A500 Gr.C...	Typical
14	M7	P14	P13			Stand-Off Horiz	Beam	None	A500 Gr.C...	Typical
15	M12	P25	P24			Stand-Off Horiz	Beam	None	A500 Gr.C...	Typical
16	M32	N48A	N70A			RIGID	None	None	RIGID	Typical
17	M35	N45	N69A			RIGID	None	None	RIGID	Typical
18	M36	N51	N71A			RIGID	None	None	RIGID	Typical
19	M39A	N54	N72A			RIGID	None	None	RIGID	Typical
20	M64	N126A	N125A			RIGID	None	None	RIGID	Typical
21	M66	N129	N128			RIGID	None	None	RIGID	Typical
22	M68	N132	N131			RIGID	None	None	RIGID	Typical
23	M70	N133	N132A			RIGID	None	None	RIGID	Typical
24	M72	N135	N134			RIGID	None	None	RIGID	Typical
25	M74	N138	N137			RIGID	None	None	RIGID	Typical
26	M43	N72B	N76			RIGID	None	None	RIGID	Typical
27	M44	N73	N77			RIGID	None	None	RIGID	Typical
28	M52	M1	N94			RIGID	None	None	RIGID	Typical
29	M53	M3	N93			RIGID	None	None	RIGID	Typical
30	M54	N85	N95			RIGID	None	None	RIGID	Typical
31	M55	N86	N96			RIGID	None	None	RIGID	Typical
32	M66A	N112	N122			RIGID	None	None	RIGID	Typical
33	M67A	N111	N121			RIGID	None	None	RIGID	Typical
34	M68A	N113	N123			RIGID	None	None	RIGID	Typical
35	M69A	N114	N124			RIGID	None	None	RIGID	Typical
36	M68B	M2	N133B			RIGID	None	None	RIGID	Typical
37	M69B	N130A	N134A			RIGID	None	None	RIGID	Typical
38	M71B	N135A	N139			RIGID	None	None	RIGID	Typical
39	M72B	N136	N140			RIGID	None	None	RIGID	Typical
40	M67B	A1B	N128B			RIGID	None	None	RIGID	Typical
41	M68C	A2B	N129A			RIGID	None	None	RIGID	Typical
42	M69C	A3B	N127			RIGID	None	None	RIGID	Typical
43	M70A	A3T	N124C			RIGID	None	None	RIGID	Typical
44	M71A	A2T	N126B			RIGID	None	None	RIGID	Typical
45	M72A	A1T	N125B			RIGID	None	None	RIGID	Typical
46	M73A	N139A	A3R			RIGID	None	None	RIGID	Typical
47	M74A	N141	A2R			RIGID	None	None	RIGID	Typical
48	M75A	N140A	A1R			RIGID	None	None	RIGID	Typical
49	M76	G1B	N146			RIGID	None	None	RIGID	Typical
50	M77	G2B	N147			RIGID	None	None	RIGID	Typical
51	M78	G3B	N145			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
52	M79	G3T	N142			RIGID	None	None	RIGID	Typical
53	M80	G2T	N144			RIGID	None	None	RIGID	Typical
54	M81	G1T	N143			RIGID	None	None	RIGID	Typical
55	M82	N157	G3R			RIGID	None	None	RIGID	Typical
56	M83	N159	G2R			RIGID	None	None	RIGID	Typical
57	M84	N158	G1R			RIGID	None	None	RIGID	Typical
58	M85	B1B	N164			RIGID	None	None	RIGID	Typical
59	M86	B2B	N165			RIGID	None	None	RIGID	Typical
60	M87	B3B	N163			RIGID	None	None	RIGID	Typical
61	M88	B3T	N160			RIGID	None	None	RIGID	Typical
62	M89	B2T	N162			RIGID	None	None	RIGID	Typical
63	M90	B1T	N161			RIGID	None	None	RIGID	Typical
64	M91	N175	B3R			RIGID	None	None	RIGID	Typical
65	M92	N177	B2R			RIGID	None	None	RIGID	Typical
66	M93	N176	B1R			RIGID	None	None	RIGID	Typical
67	MP9	N60	N66			Mount Pipe	Column	None	A500 Gr.C...	Typical
68	MP7	N57	N63			Mount Pipe	Column	None	A500 Gr.C...	Typical
69	MP8	N74	N75			Mount Pipe	Column	None	A500 Gr.C...	Typical
70	MP3	N88	N90			Mount Pipe	Column	None	A500 Gr.C...	Typical
71	MP1	N87	N89			Mount Pipe	Column	None	A500 Gr.C...	Typical
72	MP6	N116	N118			Mount Pipe	Column	None	A500 Gr.C...	Typical
73	MP4	N115	N117			Mount Pipe	Column	None	A500 Gr.C...	Typical
74	MP2	N131A	N132B			Mount Pipe	Column	None	A500 Gr.C...	Typical
75	MP5	N137A	N138A			Mount Pipe	Column	None	A500 Gr.C...	Typical
76	M4	P10	P11			Grating Horiz	Beam	None	A529 Gr. 50	Typical
77	M9	P21	P22			Grating Horiz	Beam	None	A529 Gr. 50	Typical
78	M14	P32	P33			Grating Horiz	Beam	None	A529 Gr. 50	Typical
79	M18	N43	N44			Face Horiz	Beam	None	A500 Gr.C...	Typical
80	M48	N81A	N82A			Face Horiz	Beam	None	A500 Gr.C...	Typical
81	M62	N109	N110			Face Horiz	Beam	None	A500 Gr.C...	Typical
82	M61A	P4	N122A			Cross Horiz	Beam	None	A1011 36 ...	Typical
83	M60A	P15	N122B			Cross Horiz	Beam	None	A1011 36 ...	Typical
84	M62A	P26	N125			Cross Horiz	Beam	None	A1011 36 ...	Typical
85	M5	P7	P8			Corner Plate	Beam	None	A1011 36 ...	Typical
86	M10	P18	P19			Corner Plate	Beam	None	A1011 36 ...	Typical
87	M15	P29	P30			Corner Plate	Beam	None	A1011 36 ...	Typical
88	M88A	N124B	N128			Side Plate	Beam	None	A1011 36 ...	Typical
89	M89A	N125	N134			Side Plate	Beam	None	A1011 36 ...	Typical
90	M90A	N126	N125A			Side Plate	Beam	None	A1011 36 ...	Typical
91	M91A	N122B	N132A			Side Plate	Beam	None	A1011 36 ...	Typical
92	M92A	N123A	N131			Side Plate	Beam	None	A1011 36 ...	Typical
93	M93A	N122A	N137			Side Plate	Beam	None	A1011 36 ...	Typical

Basic Load Cases

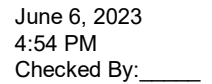
	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
1	Dead	DL			-1	13			
2	Dead of Ice	RL				13		42	
4	Structure Wind (0)	None						84	
5	Structure Wind (30)	None						84	
6	Structure Wind (45)	None						84	

Basic Load Cases (Continued)

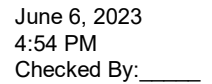
	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
7	Structure Wind (60)	None						84	
8	Structure Wind (90)	None						84	
9	Structure Wind (120)	None						84	
10	Structure Wind (135)	None						84	
11	Structure Wind (150)	None						84	
12	Structure Wind w/ Ice...	None						84	
13	Structure Wind w/ Ice...	None						84	
14	Structure Wind w/ Ice...	None						84	
15	Structure Wind w/ Ice...	None						84	
16	Structure Wind w/ Ice...	None						84	
17	Structure Wind w/ Ice...	None						84	
18	Structure Wind w/ Ice...	None						84	
19	Structure Wind w/ Ice...	None						84	
20	Antenna Wind (0)	None				26			
21	Antenna Wind (30)	None				26			
22	Antenna Wind (45)	None				26			
23	Antenna Wind (60)	None				26			
24	Antenna Wind (90)	None				26			
25	Antenna Wind (120)	None				26			
26	Antenna Wind (135)	None				26			
27	Antenna Wind (150)	None				26			
28	Antenna Wind w/ Ice ...	None				26			
29	Antenna Wind w/ Ice ...	None				26			
30	Antenna Wind w/ Ice ...	None				26			
31	Antenna Wind w/ Ice ...	None				26			
32	Antenna Wind w/ Ice ...	None				26			
33	Antenna Wind w/ Ice ...	None				26			
34	Antenna Wind w/ Ice ...	None				26			
35	Antenna Wind w/ Ice ...	None				26			
36	Seismic X	ELX				13		42	
37	Seismic Y	ELY				13		42	
38	Maintenance Live Lm ...	OL1				1			
39	Maintenance Live Lm ...	OL2				1			
40	Maintenance Live Lm ...	OL3				1			

Load Combinations

	Description	So...	P...	S...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...
1	Summary: 1.0D + ...	Yes	Y		DL	1	20	1												
2	1.4D	Yes	Y		DL	1.4														
3	1.2D + 1.0W(0)	Yes	Y		DL	1.2	4	1	20	1										
4	1.2D + 1.0W(30)	Yes	Y		DL	1.2	5	1	21	1										
5	1.2D + 1.0W(45)	Yes	Y		DL	1.2	6	1	22	1										
6	1.2D + 1.0W(60)	Yes	Y		DL	1.2	7	1	23	1										
7	1.2D + 1.0W(90)	Yes	Y		DL	1.2	8	1	24	1										
8	1.2D + 1.0W(120)	Yes	Y		DL	1.2	9	1	25	1										
9	1.2D + 1.0W(135)	Yes	Y		DL	1.2	10	1	26	1										
10	1.2D + 1.0W(150)	Yes	Y		DL	1.2	11	1	27	1										
11	1.2D + 1.0W(180)	Yes	Y		DL	1.2	4	-1	20	-1										
12	1.2D + 1.0W(210)	Yes	Y		DL	1.2	5	-1	21	-1										
13	1.2D + 1.0W(225)	Yes	Y		DL	1.2	6	-1	22	-1										



	Description	So...	P...	S...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...
14	1.2D + 1.0W(240)	Yes	Y		DL 1.2	7	-1	23	-1									
15	1.2D + 1.0W(270)	Yes	Y		DL 1.2	8	-1	24	-1									
16	1.2D + 1.0W(300)	Yes	Y		DL 1.2	9	-1	25	-1									
17	1.2D + 1.0W(315)	Yes	Y		DL 1.2	10	-1	26	-1									
18	1.2D + 1.0W(330)	Yes	Y		DL 1.2	11	-1	27	-1									
19	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	12	1	28	1							
20	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	13	1	29	1							
21	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	14	1	30	1							
22	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	15	1	31	1							
23	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	16	1	32	1							
24	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	17	1	33	1							
25	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	18	1	34	1							
26	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	19	1	35	1							
27	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	12	-1	28	-1							
28	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	13	-1	39	-1							
29	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	14	-1	30	-1							
30	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	15	-1	31	-1							
31	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	16	-1	32	-1							
32	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	17	-1	33	-1							
33	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	18	-1	34	-1							
34	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	RL	1	19	-1	35	-1							
35	1.2D + 1.0E(0)	Yes	Y		DL 1.2	ELX	-1	ELY										
36	1.2D + 1.0E(30)	Yes	Y		DL 1.2	ELX	-.866	ELY	.5									
37	1.2D + 1.0E(45)	Yes	Y		DL 1.2	ELX	-.707	ELY	.707									
38	1.2D + 1.0E(60)	Yes	Y		DL 1.2	ELX	-.5	ELY	.866									
39	1.2D + 1.0E(90)	Yes	Y		DL 1.2	ELX	-2.2...	ELY	1									
40	1.2D + 1.0E(120)	Yes	Y		DL 1.2	ELX	.5	ELY	.866									
41	1.2D + 1.0E(135)	Yes	Y		DL 1.2	ELX	.707	ELY	.707									
42	1.2D + 1.0E(150)	Yes	Y		DL 1.2	ELX	.866	ELY	.5									
43	1.2D + 1.0E(180)	Yes	Y		DL 1.2	ELX	1	ELY	4.5...									
44	1.2D + 1.0E(210)	Yes	Y		DL 1.2	ELX	.866	ELY	-.5									
45	1.2D + 1.0E(225)	Yes	Y		DL 1.2	ELX	.707	ELY	-.707									
46	1.2D + 1.0E(240)	Yes	Y		DL 1.2	ELX	.5	ELY	-.866									



	Description	So...	P...	S...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...
66	0.9D + 1.0E(330)	Yes	Y		DL	.9	ELX	-.866	ELY	-.5								
67	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	4	.067	20	.067	OL1	1.5						
68	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	5	.067	21	.067	OL1	1.5						
69	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	6	.067	22	.067	OL1	1.5						
70	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	7	.067	23	.067	OL1	1.5						
71	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	8	.067	24	.067	OL1	1.5						
72	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	9	.067	25	.067	OL1	1.5						
73	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	10	.067	26	.067	OL1	1.5						
74	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	11	.067	27	.067	OL1	1.5						
75	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	4	-.067	20	-.067	OL1	1.5						
76	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	5	-.067	21	-.067	OL1	1.5						
77	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	6	-.067	22	-.067	OL1	1.5						
78	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	7	-.067	23	-.067	OL1	1.5						
79	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	8	-.067	24	-.067	OL1	1.5						
80	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	9	-.067	25	-.067	OL1	1.5						
81	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	10	-.067	26	-.067	OL1	1.5						
82	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	11	-.067	27	-.067	OL1	1.5						
83	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	4	.067	20	.067	OL2	1.5						
84	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	5	.067	21	.067	OL2	1.5						
85	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	6	.067	22	.067	OL2	1.5						
86	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	7	.067	23	.067	OL2	1.5						
87	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	8	.067	24	.067	OL2	1.5						
88	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	9	.067	25	.067	OL2	1.5						
89	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	10	.067	26	.067	OL2	1.5						
90	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	11	.067	27	.067	OL2	1.5						
91	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	4	-.067	20	-.067	OL2	1.5						
92	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	5	-.067	21	-.067	OL2	1.5						
93	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	6	-.067	22	-.067	OL2	1.5						
94	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	7	-.067	23	-.067	OL2	1.5						
95	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	8	-.067	24	-.067	OL2	1.5						
96	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	9	-.067	25	-.067	OL2	1.5						
97	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	10	-.067	26	-.067	OL2	1.5						
98	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	11	-.067	27	-.067	OL2	1.5						
99	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	4	.067	20	.067	OL3	1.5						
100	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	5	.067	21	.067	OL3	1.5						
101	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	6	.067	22	.067	OL3	1.5						
102	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	7	.067	23	.067	OL3	1.5						
103	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	8	.067	24	.067	OL3	1.5						
104	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	9	.067	25	.067	OL3	1.5						
105	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	10	.067	26	.067	OL3	1.5						
106	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	11	.067	27	.067	OL3	1.5						
107	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	4	-.067	20	-.067	OL3	1.5						
108	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	5	-.067	21	-.067	OL3	1.5						
109	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	6	-.067	22	-.067	OL3	1.5						
110	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	7	-.067	23	-.067	OL3	1.5						
111	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	8	-.067	24	-.067	OL3	1.5						
112	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	9	-.067	25	-.067	OL3	1.5						
113	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	10	-.067	26	-.067	OL3	1.5						
114	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	11	-.067	27	-.067	OL3	1.5						

Joint Loads and Enforced Displacements (BLC 1 : Dead)

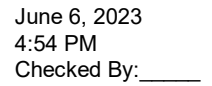
	Joint Label	L,D,M	Direction	Magnitude(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	Z	-32.25
2	A2B	L	Z	-32.25
3	B2T	L	Z	-32.25
4	B2B	L	Z	-32.25
5	G2T	L	Z	-32.25
6	G2B	L	Z	-32.25
7	A2R	L	Z	-63.9
8	B2R	L	Z	-63.9
9	G2R	L	Z	-63.9
10	A2R	L	Z	-75
11	B2R	L	Z	-75
12	G2R	L	Z	-75
13	P26	L	Z	-21.9

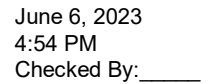
Joint Loads and Enforced Displacements (BLC 2 : Dead of Ice)

	Joint Label	L,D,M	Direction	Magnitude(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	Z	-127.351
2	A2B	L	Z	-127.351
3	B2T	L	Z	-127.351
4	B2B	L	Z	-127.351
5	G2T	L	Z	-127.351
6	G2B	L	Z	-127.351
7	A2R	L	Z	-60.301
8	B2R	L	Z	-60.301
9	G2R	L	Z	-60.301
10	A2R	L	Z	-64.414
11	B2R	L	Z	-64.414
12	G2R	L	Z	-64.414
13	P26	L	Z	-63.462

Joint Loads and Enforced Displacements (BLC 20 : Antenna Wind (0))

	Joint Label	L,D,M	Direction	Magnitude(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-212.308
2	A2T	L	Y	0
3	A2B	L	X	-212.308
4	A2B	L	Y	0
5	B2T	L	X	-127.876
6	B2T	L	Y	0
7	B2B	L	X	-127.876
8	B2B	L	Y	0
9	G2T	L	X	-127.876
10	G2T	L	Y	0
11	G2B	L	X	-127.876
12	G2B	L	Y	0
13	A2R	L	X	-17.56
14	A2R	L	Y	0
15	B2R	L	X	-54.458
16	B2R	L	Y	0
17	G2R	L	X	-54.458
18	G2R	L	Y	0

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Joint Loads and Enforced Displacements (BLC 26 : Antenna Wind (135))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...]
1	A2T	L	X	110.323
2	A2T	L	Y	110.323
3	A2B	L	X	110.323
4	A2B	L	Y	110.323
5	B2T	L	X	144.792
6	B2T	L	Y	144.792
7	B2B	L	X	144.792
8	B2B	L	Y	144.792
9	G2T	L	X	75.853
10	G2T	L	Y	75.853
11	G2B	L	X	75.853
12	G2B	L	Y	75.853
13	A2R	L	X	29.811
14	A2R	L	Y	29.811
15	B2R	L	X	14.747
16	B2R	L	Y	14.747
17	G2R	L	X	44.875
18	G2R	L	Y	44.875
19	A2R	L	X	30.742
20	A2R	L	Y	30.742
21	B2R	L	X	16.484
22	B2R	L	Y	16.484
23	G2R	L	X	44.999
24	G2R	L	Y	44.999
25	P26	L	X	38.226
26	P26	L	Y	38.226

Joint Loads and Enforced Displacements (BLC 27 : Antenna Wind (150))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...]
1	A2T	L	X	159.49
2	A2T	L	Y	92.082
3	A2B	L	X	159.49
4	A2B	L	Y	92.082
5	B2T	L	X	159.49
6	B2T	L	Y	92.082
7	B2B	L	X	159.49
8	B2B	L	Y	92.082
9	G2T	L	X	86.37
10	G2T	L	Y	49.866
11	G2B	L	X	86.37
12	G2B	L	Y	49.866
13	A2R	L	X	25.859
14	A2R	L	Y	14.93
15	B2R	L	X	25.859
16	B2R	L	Y	14.93
17	G2R	L	X	57.814
18	G2R	L	Y	33.379
19	A2R	L	X	27.569
20	A2R	L	Y	15.917
21	B2R	L	X	27.569
22	B2R	L	Y	15.917

Joint Loads and Enforced Displacements (BLC 27 : Antenna Wind (150)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude(lb,k-ft), (in,rad), (lb*s^2...
23	G2R	L	X	57.814
24	G2R	L	Y	33.379
25	P26	L	X	53.028
26	P26	L	Y	30.616

Joint Loads and Enforced Displacements (BLC 28 : Antenna Wind w/ Ice (0))

	Joint Label	L,D,M	Direction	Magnitude(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-47.265
2	A2T	L	Y	0
3	A2B	L	X	-47.265
4	A2B	L	Y	0
5	B2T	L	X	-31.094
6	B2T	L	Y	0
7	B2B	L	X	-31.094
8	B2B	L	Y	0
9	G2T	L	X	-31.094
10	G2T	L	Y	0
11	G2B	L	X	-31.094
12	G2B	L	Y	0
13	A2R	L	X	-5.548
14	A2R	L	Y	0
15	B2R	L	X	-15.024
16	B2R	L	Y	0
17	G2R	L	X	-15.024
18	G2R	L	Y	0
19	A2R	L	X	-6.138
20	A2R	L	Y	0
21	B2R	L	X	-15.171
22	B2R	L	Y	0
23	G2R	L	X	-15.171
24	G2R	L	Y	0
25	P26	L	X	-18.561
26	P26	L	Y	0

Joint Loads and Enforced Displacements (BLC 29 : Antenna Wind w/ Ice (30))

	Joint Label	L,D,M	Direction	Magnitude(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-36.265
2	A2T	L	Y	20.937
3	A2B	L	X	-36.265
4	A2B	L	Y	20.937
5	B2T	L	X	-22.26
6	B2T	L	Y	12.852
7	B2B	L	X	-22.26
8	B2B	L	Y	12.852
9	G2T	L	X	-36.265
10	G2T	L	Y	20.937
11	G2B	L	X	-36.265
12	G2B	L	Y	20.937
13	A2R	L	X	-7.54
14	A2R	L	Y	4.353
15	B2R	L	X	-15.746

Joint Loads and Enforced Displacements (BLC 29 : Antenna Wind w/ Ice (30)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
16	B2R	L	Y	9.091
17	G2R	L	X	-7.54
18	G2R	L	Y	4.353
19	A2R	L	X	-7.923
20	A2R	L	Y	4.575
21	B2R	L	X	-15.746
22	B2R	L	Y	9.091
23	G2R	L	X	-7.923
24	G2R	L	Y	4.575
25	P26	L	X	-14.695
26	P26	L	Y	8.484

Joint Loads and Enforced Displacements (BLC 30 : Antenna Wind w/ Ice (45))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-25.798
2	A2T	L	Y	25.798
3	A2B	L	X	-25.798
4	A2B	L	Y	25.798
5	B2T	L	X	-19.196
6	B2T	L	Y	19.196
7	B2B	L	X	-19.196
8	B2B	L	Y	19.196
9	G2T	L	X	-32.4
10	G2T	L	Y	32.4
11	G2B	L	X	-32.4
12	G2B	L	Y	32.4
13	A2R	L	X	-8.39
14	A2R	L	Y	8.39
15	B2R	L	X	-12.258
16	B2R	L	Y	12.258
17	G2R	L	X	-4.522
18	G2R	L	Y	4.522
19	A2R	L	X	-8.598
20	A2R	L	Y	8.598
21	B2R	L	X	-12.286
22	B2R	L	Y	12.286
23	G2R	L	X	-4.911
24	G2R	L	Y	4.911
25	P26	L	X	-10.873
26	P26	L	Y	10.873

Joint Loads and Enforced Displacements (BLC 31 : Antenna Wind w/ Ice (60))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-15.547
2	A2T	L	Y	26.928
3	A2B	L	X	-15.547
4	A2B	L	Y	26.928
5	B2T	L	X	-15.547
6	B2T	L	Y	26.928
7	B2B	L	X	-15.547
8	B2B	L	Y	26.928

Joint Loads and Enforced Displacements (BLC 31 : Antenna Wind w/ Ice (60)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
9	G2T	L	X	-23.633
10	G2T	L	Y	40.933
11	G2B	L	X	-23.633
12	G2B	L	Y	40.933
13	A2R	L	X	-7.512
14	A2R	L	Y	13.011
15	B2R	L	X	-7.512
16	B2R	L	Y	13.011
17	G2R	L	X	-2.774
18	G2R	L	Y	4.805
19	A2R	L	X	-7.586
20	A2R	L	Y	13.139
21	B2R	L	X	-7.586
22	B2R	L	Y	13.139
23	G2R	L	X	-3.069
24	G2R	L	Y	5.316
25	P26	L	X	-6.892
26	P26	L	Y	11.937

Joint Loads and Enforced Displacements (BLC 32 : Antenna Wind w/ Ice (90))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-5.829e-6
2	A2T	L	Y	25.704
3	A2B	L	X	-5.829e-6
4	A2B	L	Y	25.704
5	B2T	L	X	-9.497e-6
6	B2T	L	Y	41.875
7	B2B	L	X	-9.497e-6
8	B2B	L	Y	41.875
9	G2T	L	X	-9.497e-6
10	G2T	L	Y	41.875
11	G2B	L	X	-9.497e-6
12	G2B	L	Y	41.875
13	A2R	L	X	-4.124e-6
14	A2R	L	Y	18.182
15	B2R	L	X	-1.975e-6
16	B2R	L	Y	8.707
17	G2R	L	X	-1.975e-6
18	G2R	L	Y	8.707
19	A2R	L	X	-4.124e-6
20	A2R	L	Y	18.182
21	B2R	L	X	-2.075e-6
22	B2R	L	Y	9.149
23	G2R	L	X	-2.075e-6
24	G2R	L	Y	9.149
25	P26	L	X	-2.765e-6
26	P26	L	Y	12.191

Joint Loads and Enforced Displacements (BLC 33 : Antenna Wind w/ Ice (120))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	15.547

Joint Loads and Enforced Displacements (BLC 33 : Antenna Wind w/ Ice (120)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
2	A2T	L	Y	26.928
3	A2B	L	X	15.547
4	A2B	L	Y	26.928
5	B2T	L	X	23.633
6	B2T	L	Y	40.933
7	B2B	L	X	23.633
8	B2B	L	Y	40.933
9	G2T	L	X	15.547
10	G2T	L	Y	26.928
11	G2B	L	X	15.547
12	G2B	L	Y	26.928
13	A2R	L	X	7.512
14	A2R	L	Y	13.011
15	B2R	L	X	2.774
16	B2R	L	Y	4.805
17	G2R	L	X	7.512
18	G2R	L	Y	13.011
19	A2R	L	X	7.586
20	A2R	L	Y	13.139
21	B2R	L	X	3.069
22	B2R	L	Y	5.316
23	G2R	L	X	7.586
24	G2R	L	Y	13.139
25	P26	L	X	6.892
26	P26	L	Y	11.937

Joint Loads and Enforced Displacements (BLC 34 : Antenna Wind w/ Ice (135))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	25.798
2	A2T	L	Y	25.798
3	A2B	L	X	25.798
4	A2B	L	Y	25.798
5	B2T	L	X	32.4
6	B2T	L	Y	32.4
7	B2B	L	X	32.4
8	B2B	L	Y	32.4
9	G2T	L	X	19.196
10	G2T	L	Y	19.196
11	G2B	L	X	19.196
12	G2B	L	Y	19.196
13	A2R	L	X	8.39
14	A2R	L	Y	8.39
15	B2R	L	X	4.522
16	B2R	L	Y	4.522
17	G2R	L	X	12.258
18	G2R	L	Y	12.258
19	A2R	L	X	8.598
20	A2R	L	Y	8.598
21	B2R	L	X	4.911
22	B2R	L	Y	4.911
23	G2R	L	X	12.286

Joint Loads and Enforced Displacements (BLC 34 : Antenna Wind w/ Ice (135)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...]
24	G2R	L	Y	12.286
25	P26	L	X	10.873
26	P26	L	Y	10.873

Joint Loads and Enforced Displacements (BLC 35 : Antenna Wind w/ Ice (150))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...]
1	A2T	L	X	36.265
2	A2T	L	Y	20.937
3	A2B	L	X	36.265
4	A2B	L	Y	20.937
5	B2T	L	X	36.265
6	B2T	L	Y	20.937
7	B2B	L	X	36.265
8	B2B	L	Y	20.937
9	G2T	L	X	22.26
10	G2T	L	Y	12.852
11	G2B	L	X	22.26
12	G2B	L	Y	12.852
13	A2R	L	X	7.54
14	A2R	L	Y	4.353
15	B2R	L	X	7.54
16	B2R	L	Y	4.353
17	G2R	L	X	15.746
18	G2R	L	Y	9.091
19	A2R	L	X	7.923
20	A2R	L	Y	4.575
21	B2R	L	X	7.923
22	B2R	L	Y	4.575
23	G2R	L	X	15.746
24	G2R	L	Y	9.091
25	P26	L	X	14.695
26	P26	L	Y	8.484

Joint Loads and Enforced Displacements (BLC 36 : Seismic X)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...]
1	A2T	L	X	3.079
2	A2B	L	X	3.079
3	B2T	L	X	3.079
4	B2B	L	X	3.079
5	G2T	L	X	3.079
6	G2B	L	X	3.079
7	A2R	L	X	6.1
8	B2R	L	X	6.1
9	G2R	L	X	6.1
10	A2R	L	X	7.16
11	B2R	L	X	7.16
12	G2R	L	X	7.16
13	P26	L	X	2.091

Joint Loads and Enforced Displacements (BLC 37 : Seismic Y)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...]
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Joint Loads and Enforced Displacements (BLC 37 : Seismic Y) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	Y	3.079
2	A2B	L	Y	3.079
3	B2T	L	Y	3.079
4	B2B	L	Y	3.079
5	G2T	L	Y	3.079
6	G2B	L	Y	3.079
7	A2R	L	Y	6.1
8	B2R	L	Y	6.1
9	G2R	L	Y	6.1
10	A2R	L	Y	7.16
11	B2R	L	Y	7.16
12	G2R	L	Y	7.16
13	P26	L	Y	2.091

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Live Lm (1))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	M3	L	Z	-500

Joint Loads and Enforced Displacements (BLC 39 : Maintenance Live Lm (2))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	M2	L	Z	-500

Joint Loads and Enforced Displacements (BLC 40 : Maintenance Live Lm (3))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	M1	L	Z	-500

Member Point Loads

Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
No Data to Print ...			

Member Distributed Loads (BLC 2 : Dead of Ice)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M3	Z	-8.008	-8.008	0	0
2	M8	Z	-8.008	-8.008	0	0
3	M13	Z	-8.008	-8.008	0	0
4	M28	Z	-16.888	-16.888	0	0
5	M29	Z	-16.888	-16.888	0	0
6	M30	Z	-16.888	-16.888	0	0
7	M63A	Z	-11.877	-11.877	0	0
8	M61B	Z	-11.877	-11.877	0	0
9	M63B	Z	-11.877	-11.877	0	0
10	M25	Z	-8.875	-8.875	0	0
11	M51	Z	-8.875	-8.875	0	0
12	M65A	Z	-8.875	-8.875	0	0
13	M2	Z	-13.257	-13.257	0	0
14	M7	Z	-13.257	-13.257	0	0
15	M12	Z	-13.257	-13.257	0	0

Member Distributed Loads (BLC 2 : Dead of Ice) (Continued)

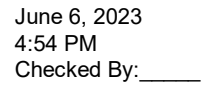
	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
16	MP9	Z	-8.875	-8.875	0	0
17	MP7	Z	-8.875	-8.875	0	0
18	MP8	Z	-8.875	-8.875	0	0
19	MP3	Z	-8.875	-8.875	0	0
20	MP1	Z	-8.875	-8.875	0	0
21	MP6	Z	-8.875	-8.875	0	0
22	MP4	Z	-8.875	-8.875	0	0
23	MP2	Z	-8.875	-8.875	0	0
24	MP5	Z	-8.875	-8.875	0	0
25	M4	Z	-8.008	-8.008	0	0
26	M9	Z	-8.008	-8.008	0	0
27	M14	Z	-8.008	-8.008	0	0
28	M18	Z	-10.11	-10.11	0	0
29	M48	Z	-10.11	-10.11	0	0
30	M62	Z	-10.11	-10.11	0	0
31	M61A	Z	-11.877	-11.877	0	0
32	M60A	Z	-11.877	-11.877	0	0
33	M62A	Z	-11.877	-11.877	0	0
34	M5	Z	-11.842	-11.842	0	0
35	M10	Z	-11.842	-11.842	0	0
36	M15	Z	-11.842	-11.842	0	0
37	M88A	Z	-6.811	-6.811	0	0
38	M89A	Z	-6.811	-6.811	0	0
39	M90A	Z	-6.811	-6.811	0	0
40	M91A	Z	-6.811	-6.811	0	0
41	M92A	Z	-6.811	-6.811	0	0
42	M93A	Z	-6.811	-6.811	0	0

Member Distributed Loads (BLC 4 : Structure Wind (0))

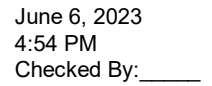
	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
1	M3	X	-11.325	-11.325	0	0
2	M3	Y	0	0	0	0
3	M8	X	-2.571	-2.571	0	0
4	M8	Y	0	0	0	0
5	M13	X	-3.104	-3.104	0	0
6	M13	Y	0	0	0	0
7	M28	X	-37.399	-37.399	0	0
8	M28	Y	0	0	0	0
9	M29	X	-9.35	-9.35	0	0
10	M29	Y	0	0	0	0
11	M30	X	-9.35	-9.35	0	0
12	M30	Y	0	0	0	0
13	M63A	X	-4.788	-4.788	0	0
14	M63A	Y	0	0	0	0
15	M61B	X	-19.153	-19.153	0	0
16	M61B	Y	0	0	0	0
17	M63B	X	-4.788	-4.788	0	0
18	M63B	Y	0	0	0	0
19	M25	X	-2.444	-2.444	0	0
20	M25	Y	0	0	0	0
21	M51	X	-9.775	-9.775	0	0

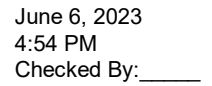
Member Distributed Loads (BLC 4 : Structure Wind (0)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
22	M51	Y	0	0	0	0
23	M65A	X	-2.444	-2.444	0	0
24	M65A	Y	0	0	0	0
25	M2	X	-17	-17	0	0
26	M2	Y	0	0	0	0
27	M7	X	-2.096e-25	-2.096e-25	0	0
28	M7	Y	0	0	0	0
29	M12	X	-17	-17	0	0
30	M12	Y	0	0	0	0
31	MP9	X	-9.775	-9.775	0	0
32	MP9	Y	0	0	0	0
33	MP7	X	-9.775	-9.775	0	0
34	MP7	Y	0	0	0	0
35	MP8	X	-9.775	-9.775	0	0
36	MP8	Y	0	0	0	0
37	MP3	X	-9.775	-9.775	0	0
38	MP3	Y	0	0	0	0
39	MP1	X	-9.775	-9.775	0	0
40	MP1	Y	0	0	0	0
41	MP6	X	-9.775	-9.775	0	0
42	MP6	Y	0	0	0	0
43	MP4	X	-9.775	-9.775	0	0
44	MP4	Y	0	0	0	0
45	MP2	X	-9.775	-9.775	0	0
46	MP2	Y	0	0	0	0
47	MP5	X	-9.775	-9.775	0	0
48	MP5	Y	0	0	0	0
49	M4	X	-3.104	-3.104	0	0
50	M4	Y	0	0	0	0
51	M9	X	-2.571	-2.571	0	0
52	M9	Y	0	0	0	0
53	M14	X	-11.325	-11.325	0	0
54	M14	Y	0	0	0	0
55	M18	X	-2.975	-2.975	0	0
56	M18	Y	0	0	0	0
57	M48	X	-11.9	-11.9	0	0
58	M48	Y	0	0	0	0
59	M62	X	-2.975	-2.975	0	0
60	M62	Y	0	0	0	0
61	M61A	X	-4.788	-4.788	0	0
62	M61A	Y	0	0	0	0
63	M60A	X	-19.153	-19.153	0	0
64	M60A	Y	0	0	0	0
65	M62A	X	-4.788	-4.788	0	0
66	M62A	Y	0	0	0	0
67	M5	X	-9.208	-9.208	0	0
68	M5	Y	0	0	0	0
69	M10	X	-36.833	-36.833	0	0
70	M10	Y	0	0	0	0
71	M15	X	-9.208	-9.208	0	0
72	M15	Y	0	0	0	0
73	M88A	X	-13.458	-13.458	0	0

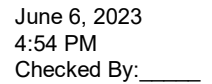


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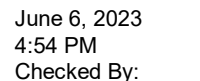




	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
2	M3	Y	4.225	4.225	0	0
3	M8	X	-7.363	-7.363	0	0
4	M8	Y	7.363	7.363	0	0
5	M13	X	-.433	-.433	0	0
6	M13	Y	.433	.433	0	0
7	M28	X	-13.223	-13.223	0	0
8	M28	Y	13.223	13.223	0	0
9	M29	X	-1.772	-1.772	0	0
10	M29	Y	1.772	1.772	0	0
11	M30	X	-24.674	-24.674	0	0
12	M30	Y	24.674	24.674	0	0
13	M63A	X	-.907	-.907	0	0
14	M63A	Y	.907	.907	0	0
15	M61B	X	-6.772	-6.772	0	0
16	M61B	Y	6.772	6.772	0	0
17	M63B	X	-12.636	-12.636	0	0
18	M63B	Y	12.636	12.636	0	0
19	M25	X	-.463	-.463	0	0
20	M25	Y	.463	.463	0	0
21	M51	X	-3.456	-3.456	0	0
22	M51	Y	3.456	3.456	0	0
23	M65A	X	-6.449	-6.449	0	0
24	M65A	Y	6.449	6.449	0	0
25	M2	X	-14.954	-14.954	0	0
26	M2	Y	14.954	14.954	0	0
27	M7	X	-8.014	-8.014	0	0
28	M7	Y	8.014	8.014	0	0
29	M12	X	-1.074	-1.074	0	0
30	M12	Y	1.074	1.074	0	0
31	MP9	X	-6.912	-6.912	0	0
32	MP9	Y	6.912	6.912	0	0
33	MP7	X	-6.912	-6.912	0	0
34	MP7	Y	6.912	6.912	0	0
35	MP8	X	-6.912	-6.912	0	0
36	MP8	Y	6.912	6.912	0	0
37	MP3	X	-6.912	-6.912	0	0
38	MP3	Y	6.912	6.912	0	0
39	MP1	X	-6.912	-6.912	0	0
40	MP1	Y	6.912	6.912	0	0
41	MP6	X	-6.912	-6.912	0	0
42	MP6	Y	6.912	6.912	0	0
43	MP4	X	-6.912	-6.912	0	0
44	MP4	Y	6.912	6.912	0	0
45	MP2	X	-6.912	-6.912	0	0
46	MP2	Y	6.912	6.912	0	0
47	MP5	X	-6.912	-6.912	0	0
48	MP5	Y	6.912	6.912	0	0
49	M4	X	-7.581	-7.581	0	0
50	M4	Y	7.581	7.581	0	0
51	M9	X	-.651	-.651	0	0
52	M9	Y	.651	.651	0	0
53	M14	X	-3.789	-3.789	0	0



	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M3	X	-1.552	-1.552	0	0
2	M3	Y	2.688	2.688	0	0
3	M8	X	-5.662	-5.662	0	0
4	M8	Y	9.808	9.808	0	0
5	M13	X	-1.285	-1.285	0	0
6	M13	Y	2.226	2.226	0	0
7	M28	X	-4.675	-4.675	0	0
8	M28	Y	8.097	8.097	0	0
9	M29	X	-4.675	-4.675	0	0
10	M29	Y	8.097	8.097	0	0
11	M30	X	-18.7	-18.7	0	0
12	M30	Y	32.389	32.389	0	0
13	M63A	X	-2.394	-2.394	0	0
14	M63A	Y	4.147	4.147	0	0
15	M61B	X	-2.394	-2.394	0	0
16	M61B	Y	4.147	4.147	0	0
17	M63B	X	-9.577	-9.577	0	0



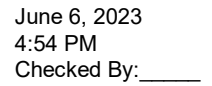
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Member Distributed Loads (BLC 7 : Structure Wind (60)) (Continued)

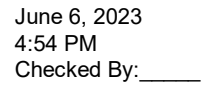
	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
70	M10	Y	7.975	7.975	0	0
71	M15	X	-18.416	-18.416	0	0
72	M15	Y	31.898	31.898	0	0
73	M88A	X	-1.682	-1.682	0	0
74	M88A	Y	2.914	2.914	0	0
75	M89A	X	-1.682	-1.682	0	0
76	M89A	Y	2.914	2.914	0	0
77	M90A	X	-1.682	-1.682	0	0
78	M90A	Y	2.914	2.914	0	0
79	M91A	X	-1.682	-1.682	0	0
80	M91A	Y	2.914	2.914	0	0
81	M92A	X	-6.729	-6.729	0	0
82	M92A	Y	11.655	11.655	0	0
83	M93A	X	-6.729	-6.729	0	0
84	M93A	Y	11.655	11.655	0	0

Member Distributed Loads (BLC 8 : Structure Wind (90))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M3	X	-1.898e-9	-1.898e-9	0	0
2	M3	Y	.008	.008	0	0
3	M8	X	-1.987e-6	-1.987e-6	0	0
4	M8	Y	8.762	8.762	0	0
5	M13	X	-1.866e-6	-1.866e-6	0	0
6	M13	Y	8.229	8.229	0	0
7	M28	X	-4.363e-19	-4.363e-19	0	0
8	M28	Y	1.924e-12	1.924e-12	0	0
9	M29	X	-6.361e-6	-6.361e-6	0	0
10	M29	Y	28.05	28.05	0	0
11	M30	X	-6.361e-6	-6.361e-6	0	0
12	M30	Y	28.05	28.05	0	0
13	M63A	X	-3.258e-6	-3.258e-6	0	0
14	M63A	Y	14.365	14.365	0	0
15	M61B	X	-2.335e-19	-2.335e-19	0	0
16	M61B	Y	1.03e-12	1.03e-12	0	0
17	M63B	X	-3.258e-6	-3.258e-6	0	0
18	M63B	Y	14.365	14.365	0	0
19	M25	X	-1.663e-6	-1.663e-6	0	0
20	M25	Y	7.331	7.331	0	0
21	M51	X	-1.14e-19	-1.14e-19	0	0
22	M51	Y	5.028e-13	5.028e-13	0	0
23	M65A	X	-1.663e-6	-1.663e-6	0	0
24	M65A	Y	7.331	7.331	0	0
25	M2	X	-1.285e-6	-1.285e-6	0	0
26	M2	Y	5.667	5.667	0	0
27	M7	X	-5.141e-6	-5.141e-6	0	0
28	M7	Y	22.666	22.666	0	0
29	M12	X	-1.285e-6	-1.285e-6	0	0
30	M12	Y	5.667	5.667	0	0
31	MP9	X	-2.217e-6	-2.217e-6	0	0
32	MP9	Y	9.775	9.775	0	0
33	MP7	X	-2.217e-6	-2.217e-6	0	0

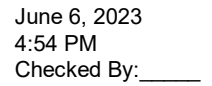


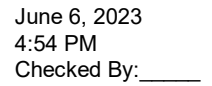
	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M3	X	1.285	1.285	0	0
2	M3	Y	2.226	2.226	0	0
3	M8	X	1.552	1.552	0	0
4	M8	Y	2.688	2.688	0	0
5	M13	X	5.662	5.662	0	0
6	M13	Y	9.808	9.808	0	0
7	M28	X	4.675	4.675	0	0
8	M28	Y	8.097	8.097	0	0
9	M29	X	18.7	18.7	0	0
10	M29	Y	32.389	32.389	0	0
11	M30	X	4.675	4.675	0	0
12	M30	Y	8.097	8.097	0	0
13	M63A	X	9.577	9.577	0	0
14	M63A	Y	16.587	16.587	0	0
15	M61B	X	2.394	2.394	0	0
16	M61B	Y	4.147	4.147	0	0
17	M63B	X	2.394	2.394	0	0
18	M63B	Y	4.147	4.147	0	0
19	M25	X	4.887	4.887	0	0
20	M25	Y	8.465	8.465	0	0
21	M51	X	1.222	1.222	0	0
22	M51	Y	2.116	2.116	0	0
23	M65A	X	1.222	1.222	0	0
24	M65A	Y	2.116	2.116	0	0
25	M2	X	1.036e-12	1.036e-12	0	0
26	M2	Y	1.795e-12	1.795e-12	0	0
27	M7	X	8.5	8.5	0	0
28	M7	Y	14.722	14.722	0	0
29	M12	X	8.5	8.5	0	0
30	M12	Y	14.722	14.722	0	0
31	MP9	X	4.887	4.887	0	0
32	MP9	Y	8.465	8.465	0	0
33	MP7	X	4.887	4.887	0	0
34	MP7	Y	8.465	8.465	0	0
35	MP8	X	4.887	4.887	0	0
36	MP8	Y	8.465	8.465	0	0
37	MP3	X	4.887	4.887	0	0
38	MP3	Y	8.465	8.465	0	0
39	MP1	X	4.887	4.887	0	0
40	MP1	Y	8.465	8.465	0	0
41	MP6	X	4.887	4.887	0	0
42	MP6	Y	8.465	8.465	0	0
43	MP4	X	4.887	4.887	0	0
44	MP4	Y	8.465	8.465	0	0
45	MP2	X	4.887	4.887	0	0
46	MP2	Y	8.465	8.465	0	0
47	MP5	X	4.887	4.887	0	0
48	MP5	Y	8.465	8.465	0	0
49	M4	X	1.285	1.285	0	0
50	M4	Y	2.226	2.226	0	0
51	M9	X	5.662	5.662	0	0
52	M9	Y	9.808	9.808	0	0

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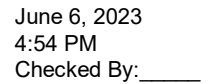
Member Distributed Loads (BLC 10 : Structure Wind (135)) (Continued)

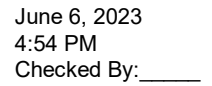
	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
17	M63B	X	.907	.907	0	0
18	M63B	Y	.907	.907	0	0
19	M25	X	6.449	6.449	0	0
20	M25	Y	6.449	6.449	0	0
21	M51	X	3.456	3.456	0	0
22	M51	Y	3.456	3.456	0	0
23	M65A	X	.463	.463	0	0
24	M65A	Y	.463	.463	0	0
25	M2	X	1.074	1.074	0	0
26	M2	Y	1.074	1.074	0	0
27	M7	X	8.014	8.014	0	0
28	M7	Y	8.014	8.014	0	0
29	M12	X	14.954	14.954	0	0
30	M12	Y	14.954	14.954	0	0
31	MP9	X	6.912	6.912	0	0
32	MP9	Y	6.912	6.912	0	0
33	MP7	X	6.912	6.912	0	0
34	MP7	Y	6.912	6.912	0	0
35	MP8	X	6.912	6.912	0	0
36	MP8	Y	6.912	6.912	0	0
37	MP3	X	6.912	6.912	0	0
38	MP3	Y	6.912	6.912	0	0
39	MP1	X	6.912	6.912	0	0
40	MP1	Y	6.912	6.912	0	0
41	MP6	X	6.912	6.912	0	0
42	MP6	Y	6.912	6.912	0	0
43	MP4	X	6.912	6.912	0	0
44	MP4	Y	6.912	6.912	0	0
45	MP2	X	6.912	6.912	0	0
46	MP2	Y	6.912	6.912	0	0
47	MP5	X	6.912	6.912	0	0
48	MP5	Y	6.912	6.912	0	0
49	M4	X	.433	.433	0	0
50	M4	Y	.433	.433	0	0
51	M9	X	7.363	7.363	0	0
52	M9	Y	7.363	7.363	0	0
53	M14	X	4.225	4.225	0	0
54	M14	Y	4.225	4.225	0	0
55	M18	X	7.851	7.851	0	0
56	M18	Y	7.851	7.851	0	0
57	M48	X	4.207	4.207	0	0
58	M48	Y	4.207	4.207	0	0
59	M62	X	.564	.564	0	0
60	M62	Y	.564	.564	0	0
61	M61A	X	12.636	12.636	0	0
62	M61A	Y	12.636	12.636	0	0
63	M60A	X	6.772	6.772	0	0
64	M60A	Y	6.772	6.772	0	0
65	M62A	X	.907	.907	0	0
66	M62A	Y	.907	.907	0	0
67	M5	X	24.3	24.3	0	0
68	M5	Y	24.3	24.3	0	0

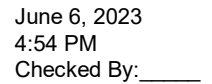


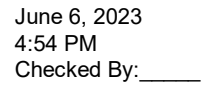


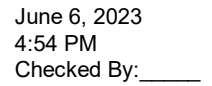
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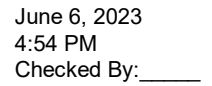


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Member Distributed Loads (BLC 16 : Structure Wind w/ Ice (90)) (Continued)

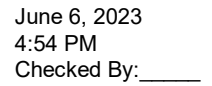
	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
17	M63B	X	-3.98e-7	-3.98e-7	0	0
18	M63B	Y	1.755	1.755	0	0
19	M25	X	-6.564e-7	-6.564e-7	0	0
20	M25	Y	2.894	2.894	0	0
21	M51	X	-4.502e-20	-4.502e-20	0	0
22	M51	Y	1.985e-13	1.985e-13	0	0
23	M65A	X	-6.564e-7	-6.564e-7	0	0
24	M65A	Y	2.894	2.894	0	0
25	M2	X	-1.357e-7	-1.357e-7	0	0
26	M2	Y	.598	.598	0	0
27	M7	X	-5.429e-7	-5.429e-7	0	0
28	M7	Y	2.394	2.394	0	0
29	M12	X	-1.357e-7	-1.357e-7	0	0
30	M12	Y	.598	.598	0	0
31	MP9	X	-8.752e-7	-8.752e-7	0	0
32	MP9	Y	3.859	3.859	0	0
33	MP7	X	-8.752e-7	-8.752e-7	0	0
34	MP7	Y	3.859	3.859	0	0
35	MP8	X	-8.752e-7	-8.752e-7	0	0
36	MP8	Y	3.859	3.859	0	0
37	MP3	X	-8.752e-7	-8.752e-7	0	0
38	MP3	Y	3.859	3.859	0	0
39	MP1	X	-8.752e-7	-8.752e-7	0	0
40	MP1	Y	3.859	3.859	0	0
41	MP6	X	-8.752e-7	-8.752e-7	0	0
42	MP6	Y	3.859	3.859	0	0
43	MP4	X	-8.752e-7	-8.752e-7	0	0
44	MP4	Y	3.859	3.859	0	0
45	MP2	X	-8.752e-7	-8.752e-7	0	0
46	MP2	Y	3.859	3.859	0	0
47	MP5	X	-8.752e-7	-8.752e-7	0	0
48	MP5	Y	3.859	3.859	0	0
49	M4	X	-3.653e-7	-3.653e-7	0	0
50	M4	Y	1.611	1.611	0	0
51	M9	X	-3.89e-7	-3.89e-7	0	0
52	M9	Y	1.715	1.715	0	0
53	M14	X	-3.715e-10	-3.715e-10	0	0
54	M14	Y	.002	.002	0	0
55	M18	X	-7.236e-7	-7.236e-7	0	0
56	M18	Y	3.19	3.19	0	0
57	M48	X	-4.962e-20	-4.962e-20	0	0
58	M48	Y	2.188e-13	2.188e-13	0	0
59	M62	X	-7.236e-7	-7.236e-7	0	0
60	M62	Y	3.19	3.19	0	0
61	M61A	X	-3.98e-7	-3.98e-7	0	0
62	M61A	Y	1.755	1.755	0	0
63	M60A	X	-2.609e-20	-2.609e-20	0	0
64	M60A	Y	1.15e-13	1.15e-13	0	0
65	M62A	X	-3.98e-7	-3.98e-7	0	0
66	M62A	Y	1.755	1.755	0	0
67	M5	X	-1.047e-6	-1.047e-6	0	0
68	M5	Y	4.617	4.617	0	0

Member Distributed Loads (BLC 16 : Structure Wind w/ Ice (90)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
69	M10	X	-7.181e-20	-7.181e-20	0	0
70	M10	Y	3.166e-13	3.166e-13	0	0
71	M15	X	-1.047e-6	-1.047e-6	0	0
72	M15	Y	4.617	4.617	0	0
73	M88A	X	-4.172e-20	-4.172e-20	0	0
74	M88A	Y	1.839e-13	1.839e-13	0	0
75	M89A	X	-4.172e-20	-4.172e-20	0	0
76	M89A	Y	1.839e-13	1.839e-13	0	0
77	M90A	X	-6.083e-7	-6.083e-7	0	0
78	M90A	Y	2.682	2.682	0	0
79	M91A	X	-6.083e-7	-6.083e-7	0	0
80	M91A	Y	2.682	2.682	0	0
81	M92A	X	-6.083e-7	-6.083e-7	0	0
82	M92A	Y	2.682	2.682	0	0
83	M93A	X	-6.083e-7	-6.083e-7	0	0
84	M93A	Y	2.682	2.682	0	0

Member Distributed Loads (BLC 17 : Structure Wind w/ Ice (120))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
1	M3	X	.252	.252	0	0
2	M3	Y	.436	.436	0	0
3	M8	X	.304	.304	0	0
4	M8	Y	.526	.526	0	0
5	M13	X	1.108	1.108	0	0
6	M13	Y	1.92	1.92	0	0
7	M28	X	.328	.328	0	0
8	M28	Y	.568	.568	0	0
9	M29	X	1.311	1.311	0	0
10	M29	Y	2.271	2.271	0	0
11	M30	X	.328	.328	0	0
12	M30	Y	.568	.568	0	0
13	M63A	X	1.17	1.17	0	0
14	M63A	Y	2.026	2.026	0	0
15	M61B	X	.292	.292	0	0
16	M61B	Y	.507	.507	0	0
17	M63B	X	.292	.292	0	0
18	M63B	Y	.507	.507	0	0
19	M25	X	1.93	1.93	0	0
20	M25	Y	3.342	3.342	0	0
21	M51	X	.482	.482	0	0
22	M51	Y	.836	.836	0	0
23	M65A	X	.482	.482	0	0
24	M65A	Y	.836	.836	0	0
25	M2	X	1.095e-13	1.095e-13	0	0
26	M2	Y	1.896e-13	1.896e-13	0	0
27	M7	X	.898	.898	0	0
28	M7	Y	1.555	1.555	0	0
29	M12	X	.898	.898	0	0
30	M12	Y	1.555	1.555	0	0
31	MP9	X	1.93	1.93	0	0
32	MP9	Y	3.342	3.342	0	0



	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M3	X	.742	.742	0	0
2	M3	Y	.742	.742	0	0
3	M8	X	.127	.127	0	0
4	M8	Y	.127	.127	0	0
5	M13	X	1.484	1.484	0	0
6	M13	Y	1.484	1.484	0	0
7	M28	X	.927	.927	0	0
8	M28	Y	.927	.927	0	0
9	M29	X	1.73	1.73	0	0
10	M29	Y	1.73	1.73	0	0
11	M30	X	.124	.124	0	0
12	M30	Y	.124	.124	0	0
13	M63A	X	1.544	1.544	0	0
14	M63A	Y	1.544	1.544	0	0
15	M61B	X	.827	.827	0	0
16	M61B	Y	.827	.827	0	0
17	M63B	X	.111	.111	0	0
18	M63B	Y	.111	.111	0	0
19	M25	X	2.546	2.546	0	0
20	M25	Y	2.546	2.546	0	0
21	M51	X	1.364	1.364	0	0
22	M51	Y	1.364	1.364	0	0
23	M65A	X	.183	.183	0	0
24	M65A	Y	.183	.183	0	0
25	M2	X	.113	.113	0	0
26	M2	Y	.113	.113	0	0
27	M7	X	.846	.846	0	0
28	M7	Y	.846	.846	0	0
29	M12	X	1.579	1.579	0	0
30	M12	Y	1.579	1.579	0	0
31	MP9	X	2.729	2.729	0	0
32	MP9	Y	2.729	2.729	0	0
33	MP7	X	2.729	2.729	0	0
34	MP7	Y	2.729	2.729	0	0
35	MP8	X	2.729	2.729	0	0
36	MP8	Y	2.729	2.729	0	0
37	MP3	X	2.729	2.729	0	0
38	MP3	Y	2.729	2.729	0	0
39	MP1	X	2.729	2.729	0	0
40	MP1	Y	2.729	2.729	0	0
41	MP6	X	2.729	2.729	0	0
42	MP6	Y	2.729	2.729	0	0
43	MP4	X	2.729	2.729	0	0
44	MP4	Y	2.729	2.729	0	0
45	MP2	X	2.729	2.729	0	0
46	MP2	Y	2.729	2.729	0	0
47	MP5	X	2.729	2.729	0	0
48	MP5	Y	2.729	2.729	0	0
49	M4	X	.085	.085	0	0
50	M4	Y	.085	.085	0	0
51	M9	X	1.441	1.441	0	0
52	M9	Y	1.441	1.441	0	0

Member Distributed Loads (BLC 18 : Structure Wind w/ Ice (135)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
53	M14	X	.827	.827	0	0
54	M14	Y	.827	.827	0	0
55	M18	X	2.806	2.806	0	0
56	M18	Y	2.806	2.806	0	0
57	M48	X	1.504	1.504	0	0
58	M48	Y	1.504	1.504	0	0
59	M62	X	.201	.201	0	0
60	M62	Y	.201	.201	0	0
61	M61A	X	1.544	1.544	0	0
62	M61A	Y	1.544	1.544	0	0
63	M60A	X	.827	.827	0	0
64	M60A	Y	.827	.827	0	0
65	M62A	X	.111	.111	0	0
66	M62A	Y	.111	.111	0	0
67	M5	X	4.061	4.061	0	0
68	M5	Y	4.061	4.061	0	0
69	M10	X	2.176	2.176	0	0
70	M10	Y	2.176	2.176	0	0
71	M15	X	.292	.292	0	0
72	M15	Y	.292	.292	0	0
73	M88A	X	1.264	1.264	0	0
74	M88A	Y	1.264	1.264	0	0
75	M89A	X	1.264	1.264	0	0
76	M89A	Y	1.264	1.264	0	0
77	M90A	X	2.359	2.359	0	0
78	M90A	Y	2.359	2.359	0	0
79	M91A	X	2.359	2.359	0	0
80	M91A	Y	2.359	2.359	0	0
81	M92A	X	.169	.169	0	0
82	M92A	Y	.169	.169	0	0
83	M93A	X	.169	.169	0	0
84	M93A	Y	.169	.169	0	0

Member Distributed Loads (BLC 19 : Structure Wind w/ Ice (150))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
1	M3	X	1.395	1.395	0	0
2	M3	Y	.805	.805	0	0
3	M8	X	.001	.001	0	0
4	M8	Y	.000819	.000819	0	0
5	M13	X	1.485	1.485	0	0
6	M13	Y	.858	.858	0	0
7	M28	X	1.703	1.703	0	0
8	M28	Y	.983	.983	0	0
9	M29	X	1.703	1.703	0	0
10	M29	Y	.983	.983	0	0
11	M30	X	3.051e-13	3.051e-13	0	0
12	M30	Y	1.762e-13	1.762e-13	0	0
13	M63A	X	1.52	1.52	0	0
14	M63A	Y	.877	.877	0	0
15	M61B	X	1.52	1.52	0	0
16	M61B	Y	.877	.877	0	0

Member Distributed Loads (BLC 19 : Structure Wind w/ Ice (150)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
69	M10	X	3.998	3.998	0	0
70	M10	Y	2.308	2.308	0	0
71	M15	X	7.164e-13	7.164e-13	0	0
72	M15	Y	4.136e-13	4.136e-13	0	0
73	M88A	X	2.323	2.323	0	0
74	M88A	Y	1.341	1.341	0	0
75	M89A	X	2.323	2.323	0	0
76	M89A	Y	1.341	1.341	0	0
77	M90A	X	2.323	2.323	0	0
78	M90A	Y	1.341	1.341	0	0
79	M91A	X	2.323	2.323	0	0
80	M91A	Y	1.341	1.341	0	0
81	M92A	X	4.425e-13	4.425e-13	0	0
82	M92A	Y	2.555e-13	2.555e-13	0	0
83	M93A	X	4.425e-13	4.425e-13	0	0
84	M93A	Y	2.555e-13	2.555e-13	0	0

Member Distributed Loads (BLC 36 : Seismic X)

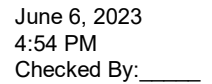
	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
1	M3	X	.307	.307	0	0
2	M8	X	.307	.307	0	0
3	M13	X	.307	.307	0	0
4	M28	X	.878	.878	0	0
5	M29	X	.878	.878	0	0
6	M30	X	.878	.878	0	0
7	M63A	X	.568	.568	0	0
8	M61B	X	.568	.568	0	0
9	M63B	X	.568	.568	0	0
10	M25	X	.338	.338	0	0
11	M51	X	.338	.338	0	0
12	M65A	X	.338	.338	0	0
13	M2	X	1.553	1.553	0	0
14	M7	X	1.553	1.553	0	0
15	M12	X	1.553	1.553	0	0
16	MP9	X	.338	.338	0	0
17	MP7	X	.338	.338	0	0
18	MP8	X	.338	.338	0	0
19	MP3	X	.338	.338	0	0
20	MP1	X	.338	.338	0	0
21	MP6	X	.338	.338	0	0
22	MP4	X	.338	.338	0	0
23	MP2	X	.338	.338	0	0
24	MP5	X	.338	.338	0	0
25	M4	X	.307	.307	0	0
26	M9	X	.307	.307	0	0
27	M14	X	.307	.307	0	0
28	M18	X	.562	.562	0	0
29	M48	X	.562	.562	0	0
30	M62	X	.562	.562	0	0
31	M61A	X	.568	.568	0	0
32	M60A	X	.568	.568	0	0

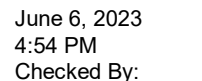
Member Distributed Loads (BLC 36 : Seismic X) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
33	M62A	X	.568	.568	0	0
34	M5	X	.792	.792	0	0
35	M10	X	.792	.792	0	0
36	M15	X	.792	.792	0	0
37	M88A	X	.386	.386	0	0
38	M89A	X	.386	.386	0	0
39	M90A	X	.386	.386	0	0
40	M91A	X	.386	.386	0	0
41	M92A	X	.386	.386	0	0
42	M93A	X	.386	.386	0	0

Member Distributed Loads (BLC 37 : Seismic Y)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
1	M3	Y	.307	.307	0	0
2	M8	Y	.307	.307	0	0
3	M13	Y	.307	.307	0	0
4	M28	Y	.878	.878	0	0
5	M29	Y	.878	.878	0	0
6	M30	Y	.878	.878	0	0
7	M63A	Y	.568	.568	0	0
8	M61B	Y	.568	.568	0	0
9	M63B	Y	.568	.568	0	0
10	M25	Y	.338	.338	0	0
11	M51	Y	.338	.338	0	0
12	M65A	Y	.338	.338	0	0
13	M2	Y	1.553	1.553	0	0
14	M7	Y	1.553	1.553	0	0
15	M12	Y	1.553	1.553	0	0
16	MP9	Y	.338	.338	0	0
17	MP7	Y	.338	.338	0	0
18	MP8	Y	.338	.338	0	0
19	MP3	Y	.338	.338	0	0
20	MP1	Y	.338	.338	0	0
21	MP6	Y	.338	.338	0	0
22	MP4	Y	.338	.338	0	0
23	MP2	Y	.338	.338	0	0
24	MP5	Y	.338	.338	0	0
25	M4	Y	.307	.307	0	0
26	M9	Y	.307	.307	0	0
27	M14	Y	.307	.307	0	0
28	M18	Y	.562	.562	0	0
29	M48	Y	.562	.562	0	0
30	M62	Y	.562	.562	0	0
31	M61A	Y	.568	.568	0	0
32	M60A	Y	.568	.568	0	0
33	M62A	Y	.568	.568	0	0
34	M5	Y	.792	.792	0	0
35	M10	Y	.792	.792	0	0
36	M15	Y	.792	.792	0	0
37	M88A	Y	.386	.386	0	0
38	M89A	Y	.386	.386	0	0

Page 50



Square/Rectangular Flange Connection

TIA-222-H



Site Number	CT46143-A
Job number	KHCLE-40084
Code	TIA-222-H

Member/Node Under Consideration	
Controlling Load Combination	

Normalize usages per TIA-222-H, Sec. 15.5

☐

REACTIONS	
Moment, Mu (kip-ft)	3.328
Axial, Pu (kips) - <i>Negative for tension</i>	-1.276
Shear, Vu (kips)	1.833

About X

BOLT CONFIGURATION	
Bolt Quantity, n _b	4
Bolt Diameter, d _b (in)	0.625
Bolt Grade	A325
Width between bolts, s (in)	7.00

PLATE CONFIGURATION	
Plate Grade	A572-50
Thickness of plate, t (in)	0.750
Width of plate, w (in)	9.00

SUPPORT ARM CONFIGURATION	
Member Shape	Square
Member Grade	A500-50
Thickness of Member, t (in)	0.375
Width of member, w (in)	4.000

Stiffeners present?

☐

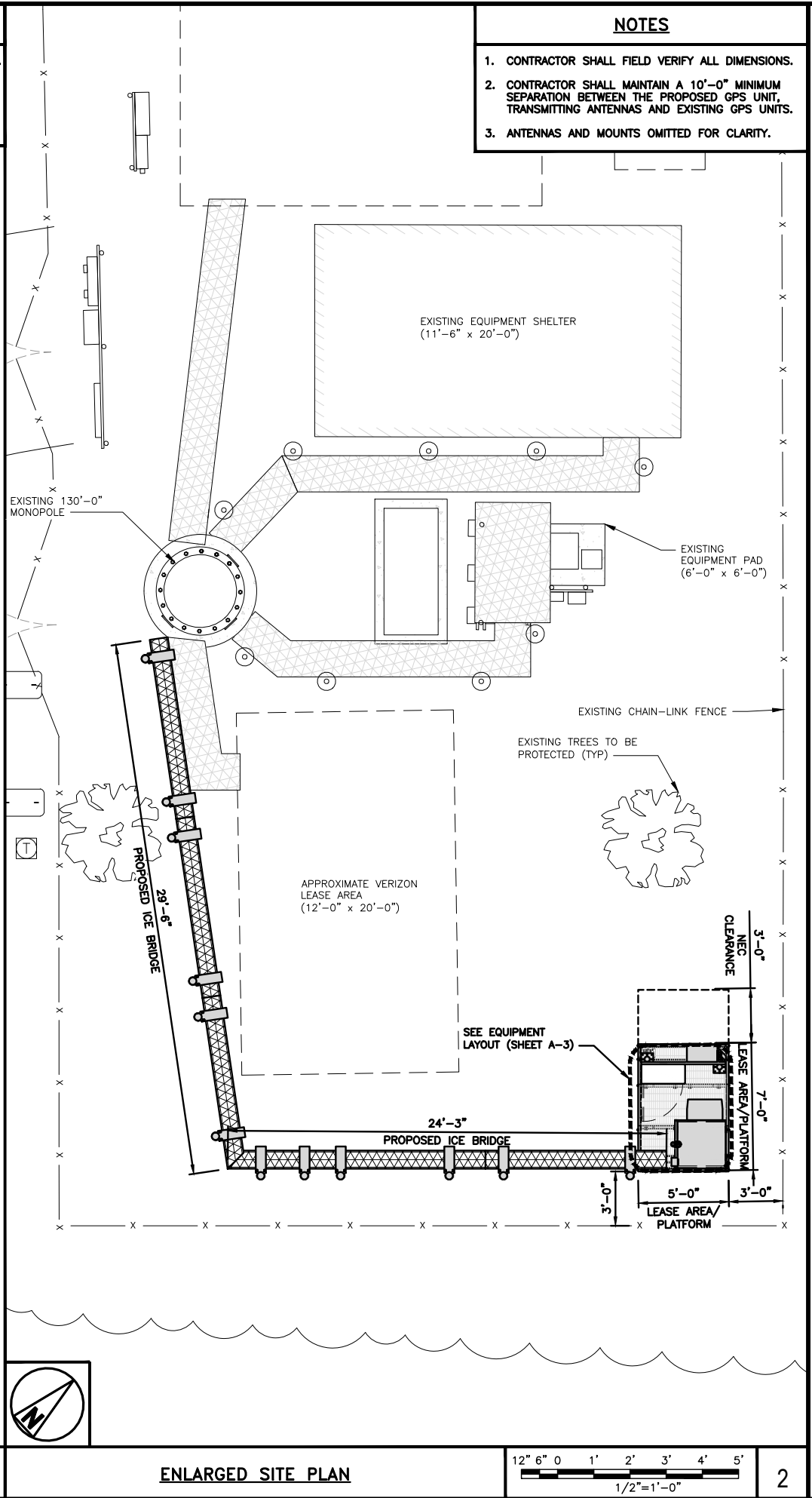
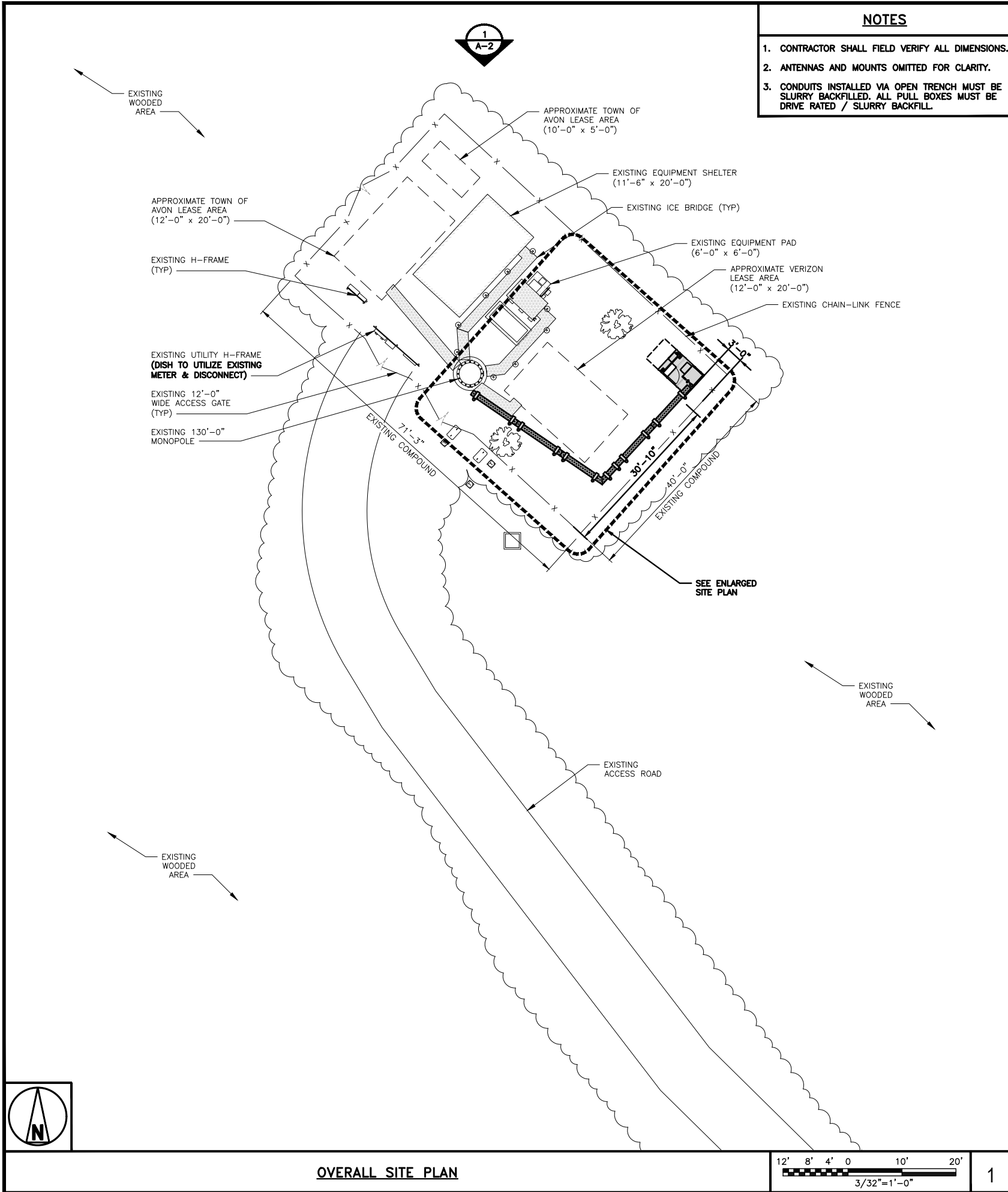
BOLT USAGE	
Maximum Tension in Bolt, T _{ub} (kip)	4.353
Nominal Tensile Strength, φR _{nt} (kip)	20.340
Tensile Usage (Section 4.9.6.1)	21%

PLATE USAGE	
Ultimate flexural load in plate, Mu (kip-in)	7.124
Factored flexural capacity, φM _n (kip-in)	28.430
Flexural Usage	25%

SUPPORT ARM USAGE	
Ultimate flexural load in member, Mu (kip-ft)	3.328
Factored flexural capacity, φM _n (kip-ft)	27.817
Flexural Usage	12%

EXHIBIT 10

Construction Drawings



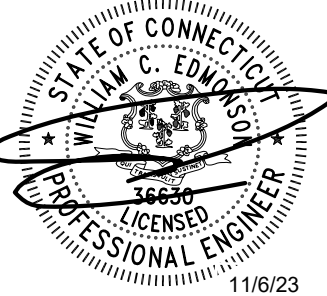
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



COA: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601



470 DAVIDSON ROAD
PITTSBURGH, PA 15239
TEL: (740) 260-9710



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DRAWN BY: CHECKED BY: APPROVED BY:

LMS WRS KJC

APPLICATION REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	06/21/2023	ISSUED FOR REVIEW
B	06/27/2023	REVISED PER NEW SITE INFO
0	06/03/2023	ISSUED FOR PERMIT
1	06/22/2023	REVISED PER NEW LAYOUT
2	11/06/2023	REVISED PER NEW FIBER ROUTE

A&E PROJECT NUMBER

KHCL-40084

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00139A
277 HUCKLEBERRY HILL ROAD
AVON, CT 06013

SHEET TITLE
OVERALL AND ENLARGED
SITE PLAN

SHEET NUMBER

A-1

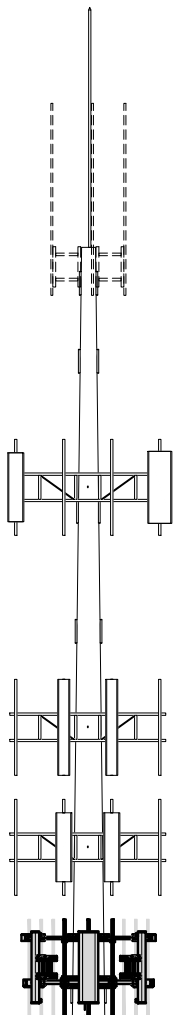
- NOTES
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

2. ANTENNA SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS

3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.

4. ANTENNAS TO BE INSTALLED VERTICALLY CENTERED ON MOUNTS. SAFETY CLIMB AND CLIMBING PATH MUST REMAIN CLEAR.

5. ALL FUTURE INSTALLATIONS ON TOWER TO BE PERMITTED AND INSTALLED SEPARATELY FROM THIS PROJECT



- EXISTING LIGHTNING ROD
TOP EL. @ 150'-0" AGL

FUTURE ANTENNAS
TOP EL. @ 142'-0" AGL

FUTURE PANEL ANTENNAS
RAD CENTER @ 134'-0" AGL

EXISTING MONOPOLE
TOP EL. @ 130'-0" AGL

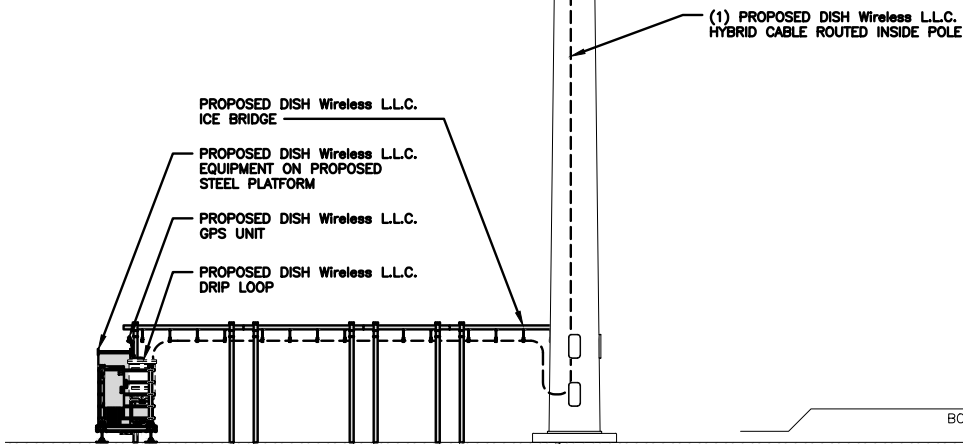
FUTURE PANEL ANTENNAS
RAD CENTER @ 110'-0" AGL

EXISTING PANEL ANTENNAS
RAD CENTER @ 90'-0" AGL

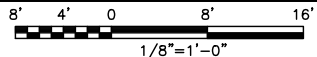
EXISTING PANEL ANTENNAS
RAD CENTER @ 80'-0" AGL

(3) PROPOSED DISH Wireless L.L.C. ANTENNAS
RAD CENTER @ 70'-0" AGL

EXISTING Dish Wireless L.L.C. ENTRY PORT
RAD CENTER @ ±68'-0" AGL
TO BE VERIFIED BY CONTRACTOR/OWNER
PRIOR TO CONSTRUCTION MOBILIZATION



PROPOSED NORTH ELEVATION

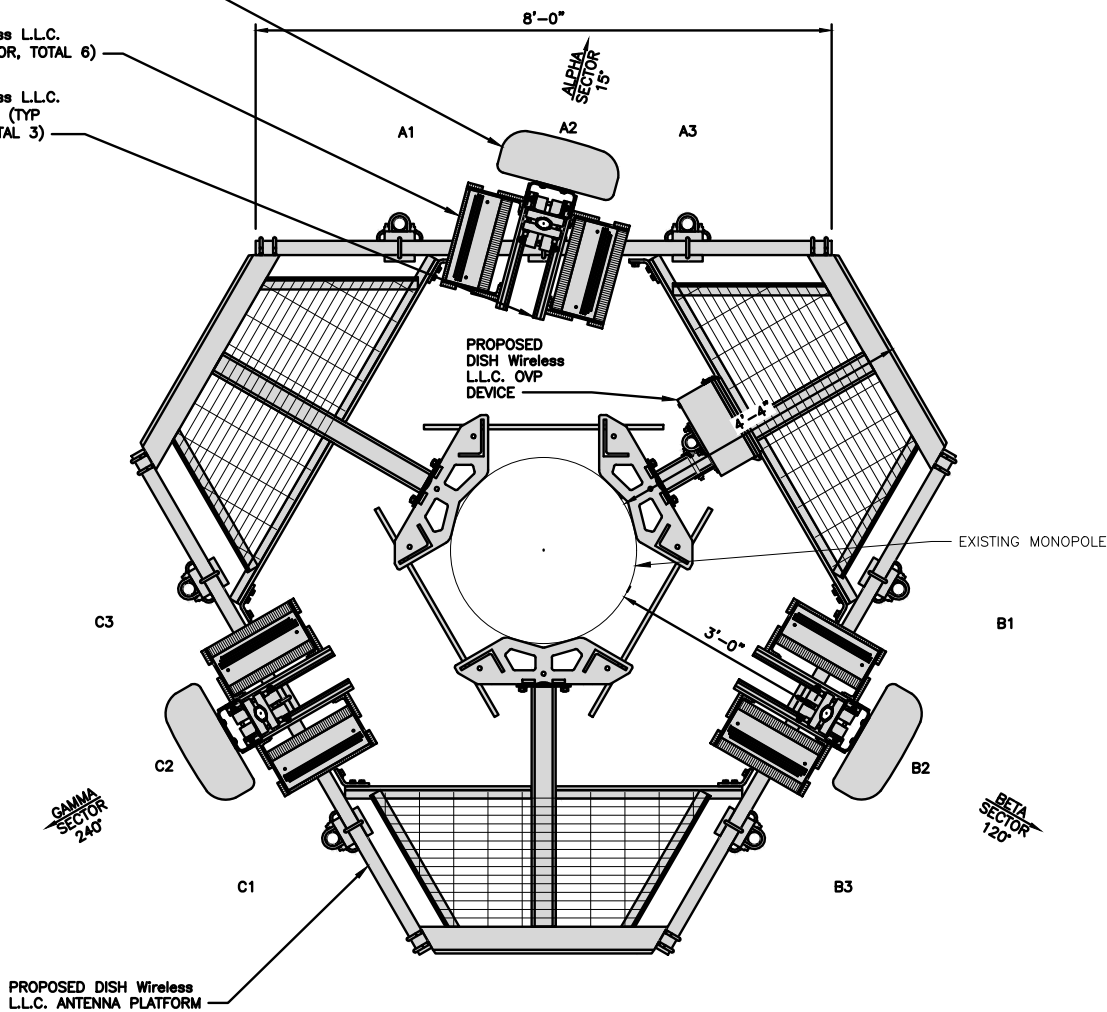


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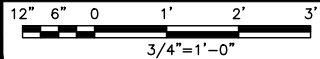
PROPOSED DISH Wireless L.L.C. ANTENNA
(TYP 1 PER SECTOR, TOTAL 3)

PROPOSED DISH Wireless L.L.C.
RRH (TYP 2 PER SECTOR, TOTAL 6)

PROPOSED DISH Wireless L.L.C.
BACK-TO-BACK MOUNT (TYP
OF 1 PER SECTOR, TOTAL 3)



ANTENNA LAYOUT



2

SECTOR POS.	ANTENNA					TRANSMISSION CABLE FEED LINE TYPE AND LENGTH	RRH			OVP MANUFACTURER MODEL
	EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECH	AZIMUTH	RAD CENTER		MANUFACTURER - MODEL NUMBER	TECH	POS	
A-1	---	---	---	---	---	(1) HIGH-CAPACITY HYBRID CABLE (160' LONG)	FUJITSU - TA08025-B604	5G	A2	RAYCAP RDIDC - 9181-PF-48
A-2	PROPOSED	JMA - MX08FR0685-21	5G	15°	70'-0"		FUJITSU - TA08025-B605	5G	A2	
A-3	---	---	---	---	---		---	---	---	
B-1	---	---	---	---	---	SHARED W/ALPHA	FUJITSU - TA08025-B604	5G	B2	SHARED W/ALPHA
B-2	PROPOSED	JMA - MX08FR0685-21	5G	120°	70'-0"		FUJITSU - TA08025-B605	5G	B2	
B-3	---	---	---	---	---		---	---	---	
C-1	---	---	---	---	---	SHARED W/ALPHA	FUJITSU - TA08025-B604	5G	C2	SHARED W/ALPHA
C-2	PROPOSED	JMA - MX08FR0685-21	5G	240°	70'-0"		FUJITSU - TA08025-B605	5G	C2	
C-3	---	---	---	---	---		---	---	---	

- NOTES
1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.

2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.

ANTENNA SCHEDULE

NO SCALE

3

dish
wireless.

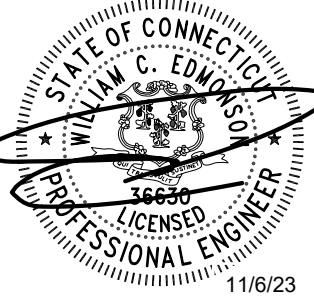
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

COA: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601



470 DAVIDSON ROAD
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LMS WRS KJC

APPLICATION REV #: 1

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1	09/22/2023	REVISED PER NEW LAYOUT
2	11/06/2023	REVISED PER NEW FIBER ROUTE

A&E PROJECT NUMBER

KHCLC-40084

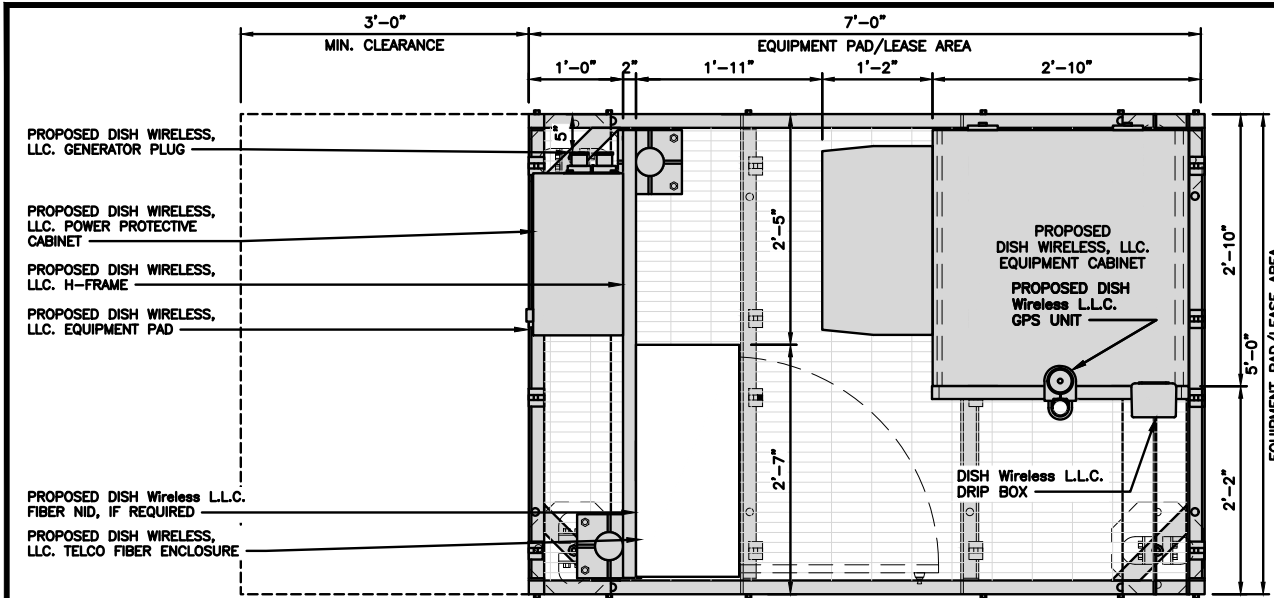
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00139A
277 HUCKLEBERRY HILL
ROAD
AVON, CT 06013

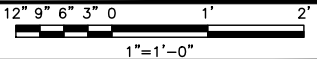
SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



PLATFORM EQUIPMENT PLAN

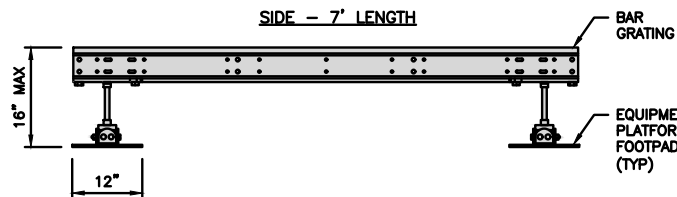
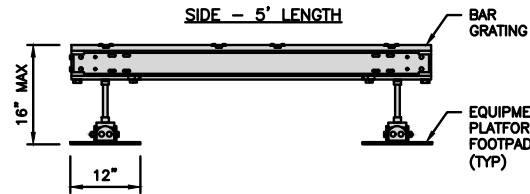
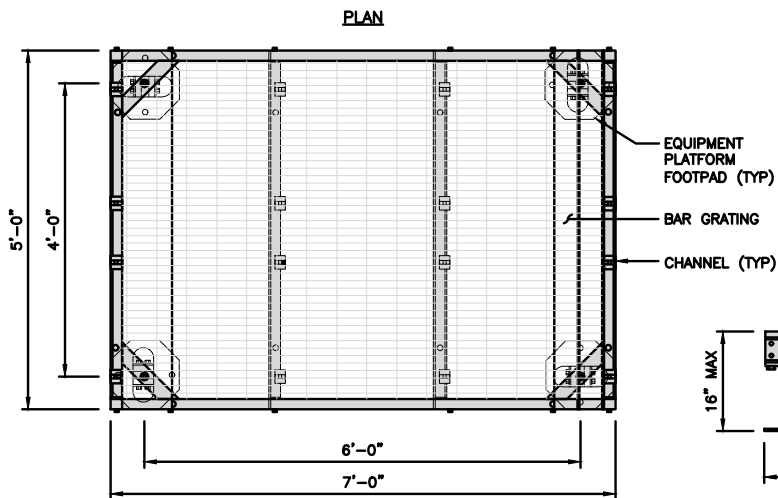


1

- NOTES**
1. INSTALL POSTS BASES TO GRATING JUST INSIDE PLATFORM FRAME. NO DRILLING REQUIRED.
 2. GPS MAY BE MOVED TO ICE BRIDGE OR H-FRAME.
 3. ALL CONDUIT TO BE ROUTED THROUGH PLATFORM GRATING USING LIQUIDTIGHT, EMT, RIGID OR PVC COUPLERS. CONDUIT QUANTITY AND SIZES ARE PER ONE-LINE DIAGRAM ON E-3 SHEET OF CDS. (DC PLANT DEPENDENT.)
 4. CONTRACTOR MAY FIELD INSTALL CONDUIT HOLES IN BOTTOM OF PPC CABINET TO MATCH CONDUIT SIZES. (SEAL TO PPC MANUFACTURER SPECIFICATIONS).
 5. H-FRAME POSTS ARE STAGGERED TO ALLOW FIBER NID BOXES TO BE INSTALLED CLOSE TO PERIMETER FRAME OF PLATFORM.
 6. CONDUITS FROM PPC/FIBER DEMARK CABINETS TO EQUIPMENT CABINET (BBU) SHALL BE INSTALLED INSIDE PERIMETER OF PLATFORM AND UNDER GRATING.
 7. KIMLEY-HORN DID NOT EVALUATE THE PLATFORM STRUCTURE TO SUPPORT THE PROPOSED EQUIPMENT CONFIGURATION. CONTRACTOR TO OBTAIN PASSING PLATFORM ANALYSIS REPORT PRIOR TO INSTALLING THE PROPOSED PLATFORM.

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

- NOTE:**
1. GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 16"
 2. PLATFORM TO BE LEVEL WITHIN 1"

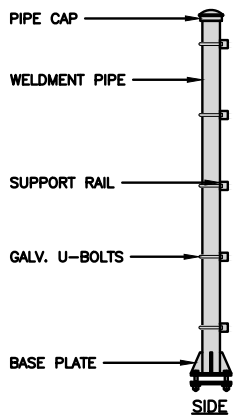


PLATFORM DETAIL

NO SCALE

2

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

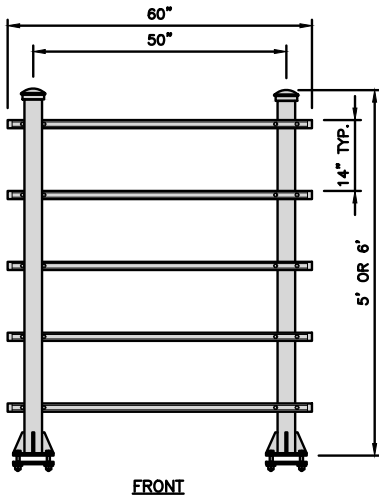


H-FRAME DETAIL

NO SCALE

3

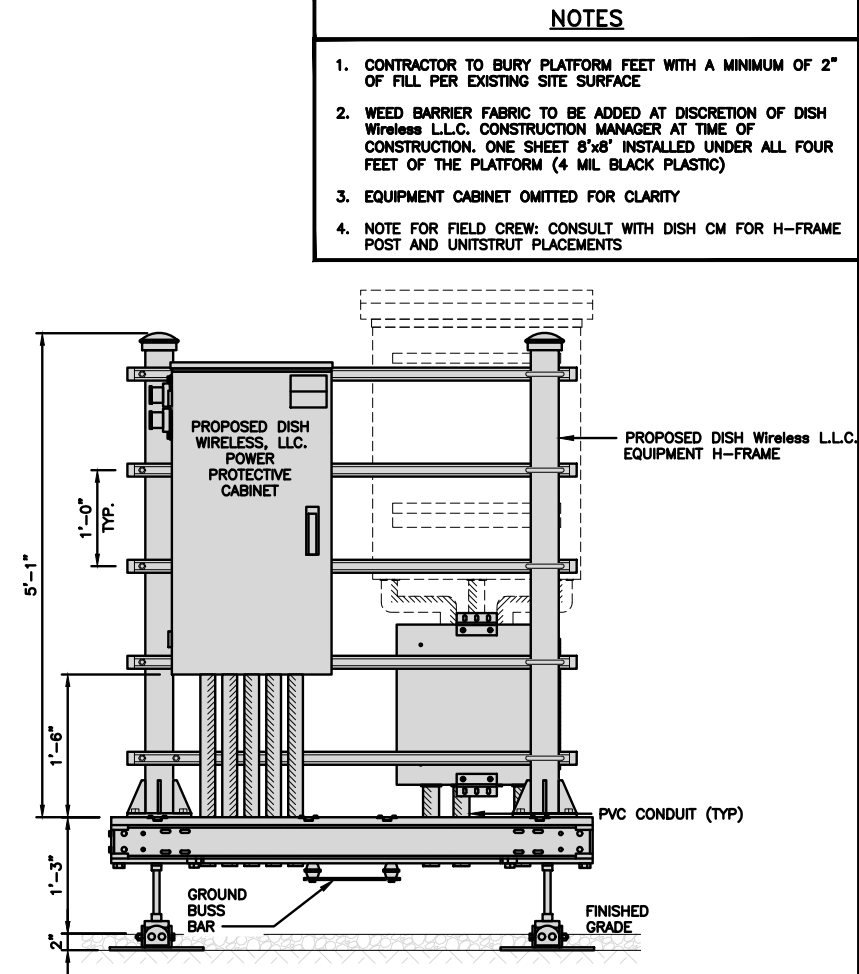
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT



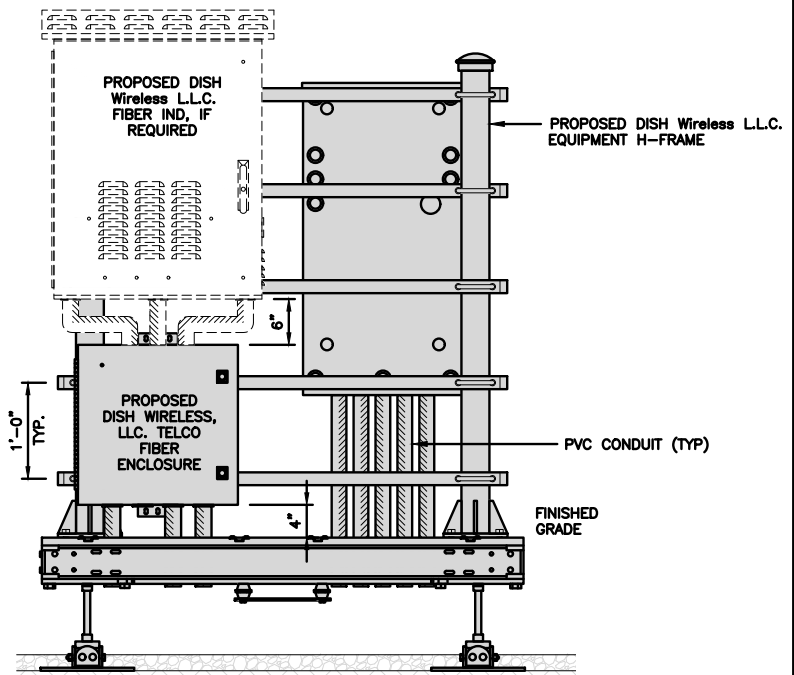
NOT USED

NO SCALE

4

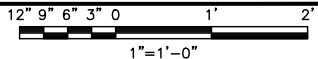


FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION



5

- NOTES**
1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
 2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
 3. EQUIPMENT CABINET OMITTED FOR CLARITY
 4. NOTE FOR FIELD CREW: CONSULT WITH DISH CM FOR H-FRAME POST AND UNISTRUT PLACEMENTS

dish
wireless.

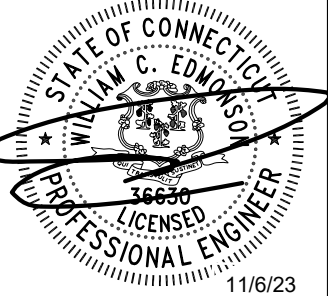
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

COA: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

SBA

470 DAVIDSON ROAD
PITTSBURGH, PA 15239
TEL: (740) 260-9710



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A&E PROJECT NUMBER

KHCLC-40084

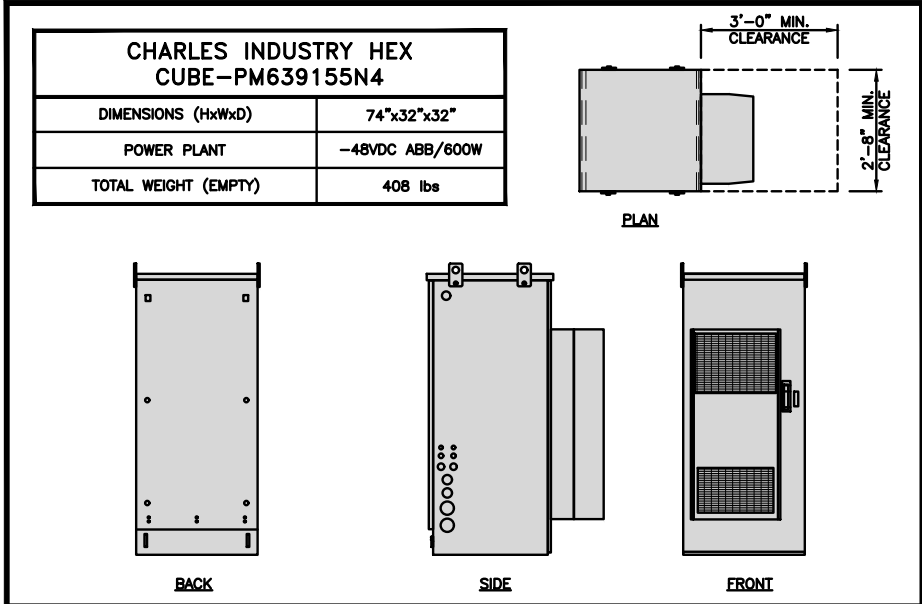
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00139A
277 HUCKLEBERRY HILL
ROAD
AVON, CT 06013

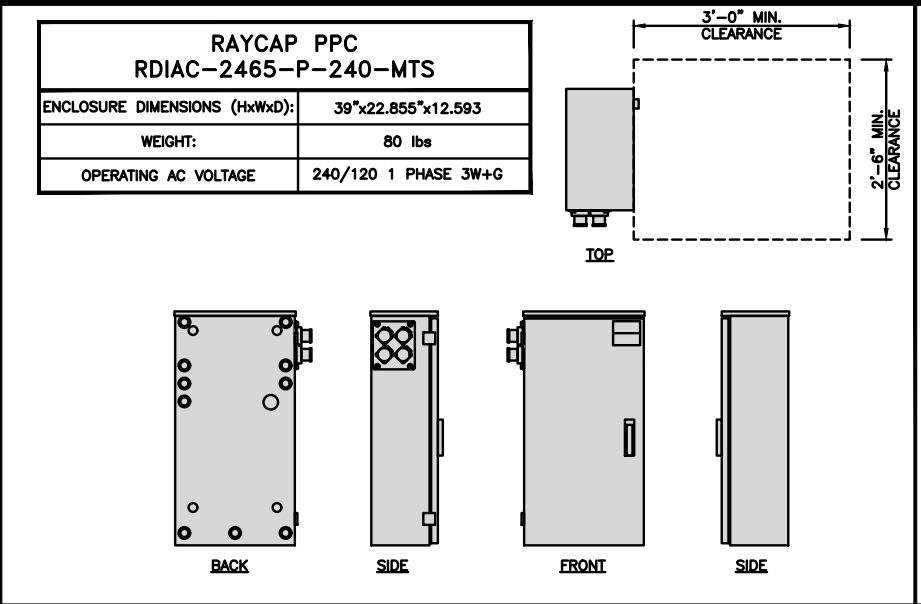
SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER

A-3



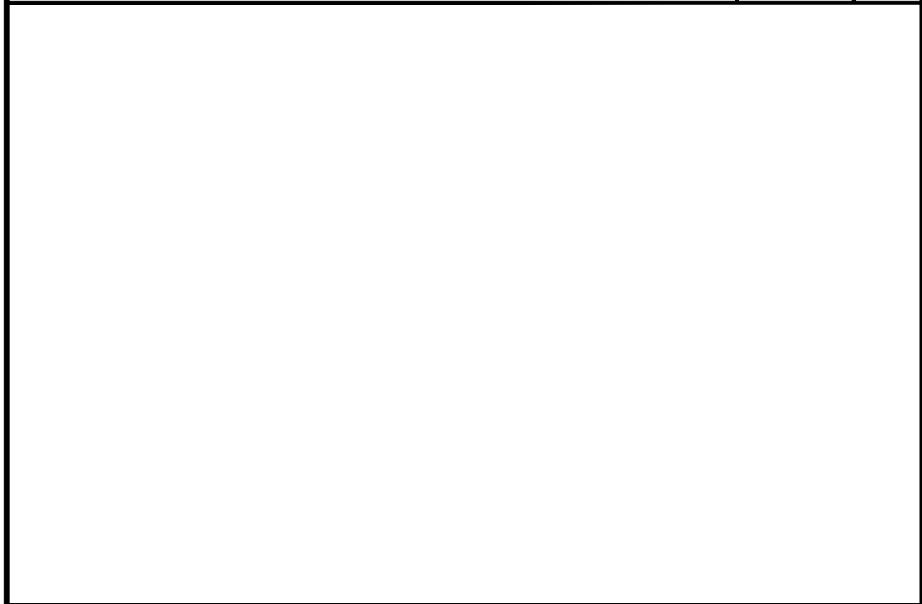
CABINET DETAIL	NO SCALE	1
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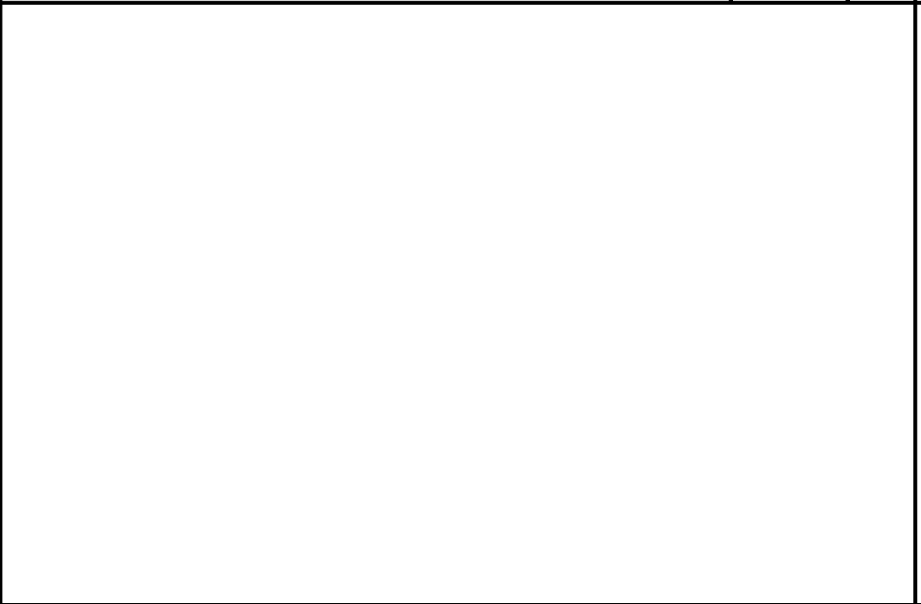
POWER PROTECTION CABINET (PPC) DETAIL	NO SCALE	2
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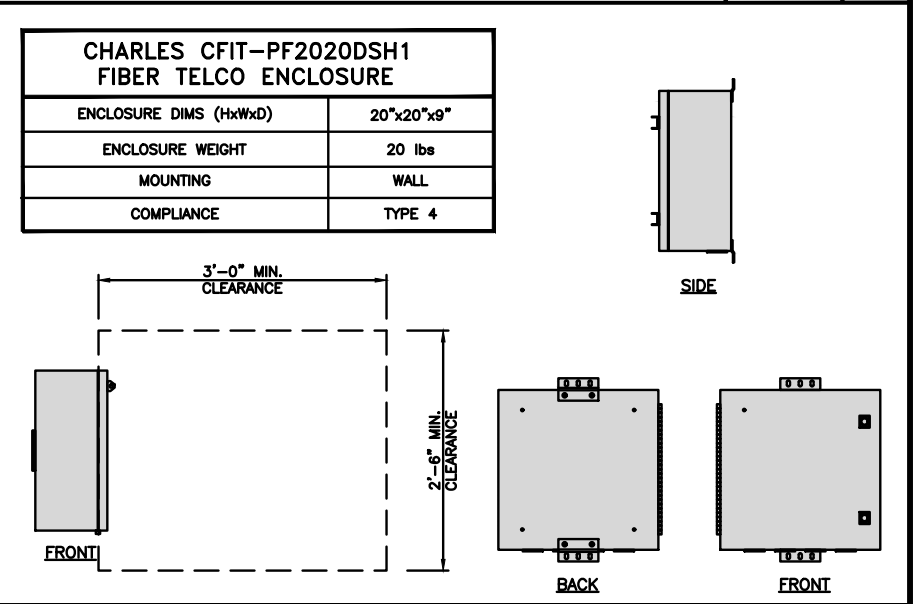
NOT USED	NO SCALE	3
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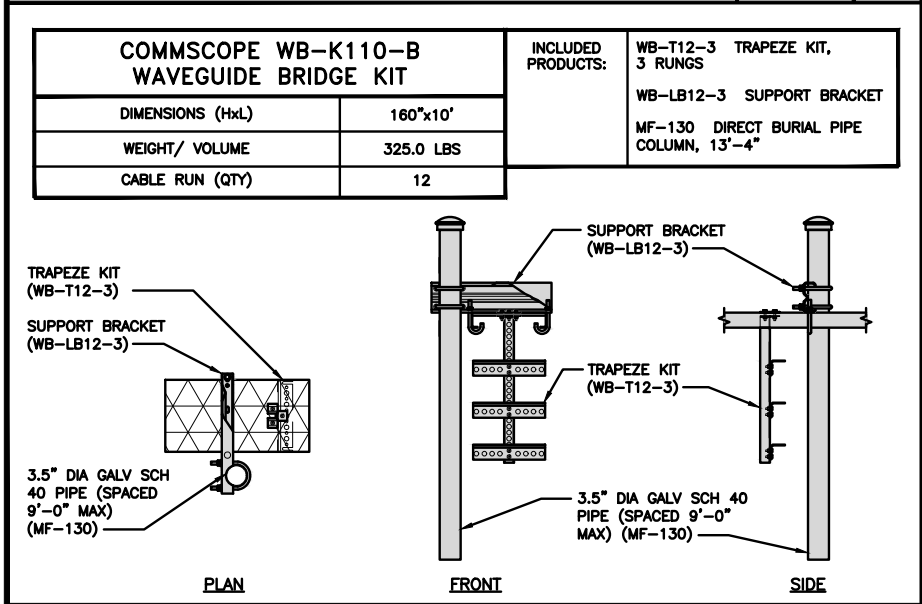
NOT USED	NO SCALE	4
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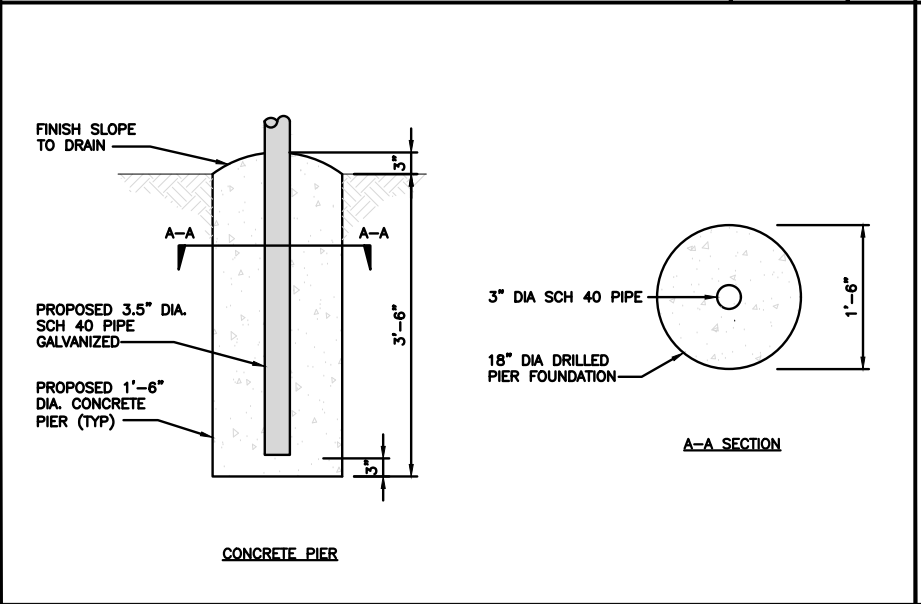
NOT USED	NO SCALE	5
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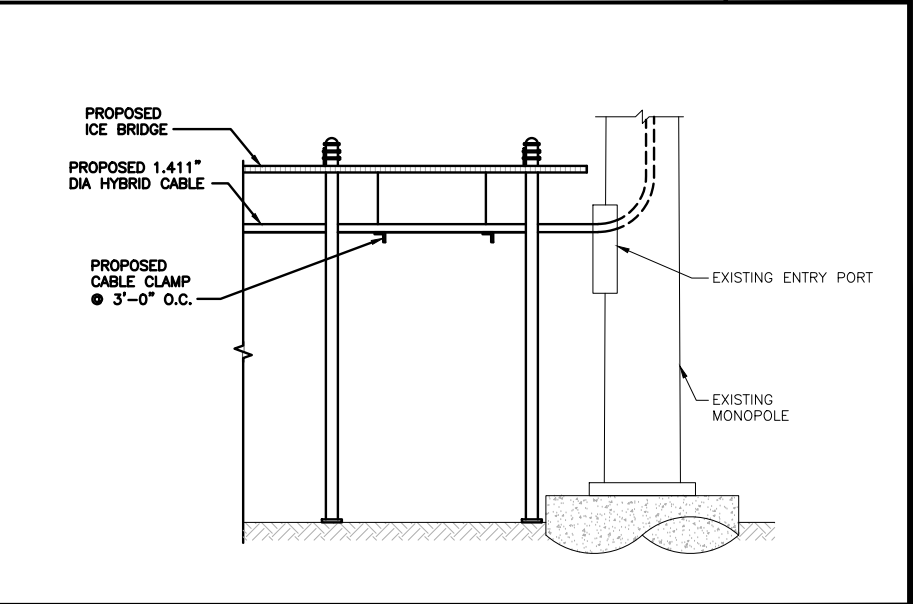
FIBER TELCO ENCLOSURE DETAIL	NO SCALE	6
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ICE BRIDGE DETAIL	NO SCALE	7
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TYPICAL ICE BRIDGE CONCRETE PIER DETAIL	NO SCALE	8
-----------------------------------------	----------	---



HYBRID CABLE RUN	NO SCALE	9
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DISH Wireless L.L.C.
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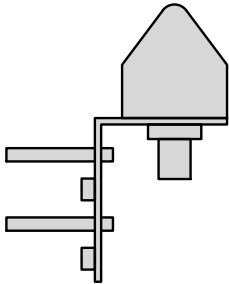
BOBDL00139A
277 HUCKLEBERRY HILL
ROAD
AVON, CT 06013

SHEET TITLE
EQUIPMENT DETAILS

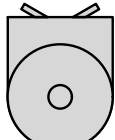
SHEET NUMBER

A-4

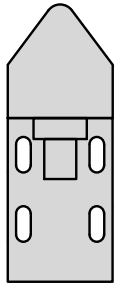
AMPHENOL GNS 2020-D	
DIMENSIONS (DIAxH)	1.97"x3.94"
WEIGHT W/ACCESSORIES	1 lb
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1559-1610.5 MHz



SIDE



TOP

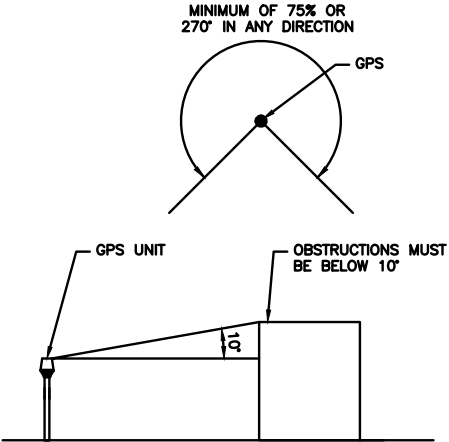


FRONT

GPS DETAIL

NO SCALE

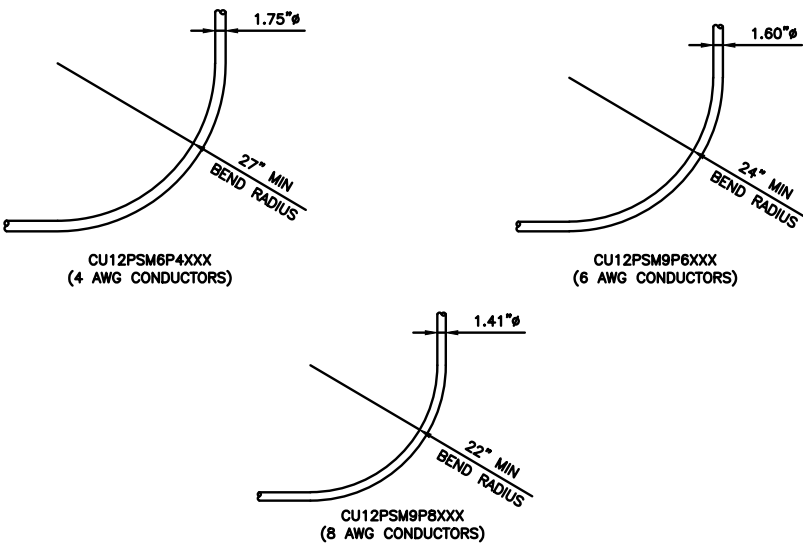
1



GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

2



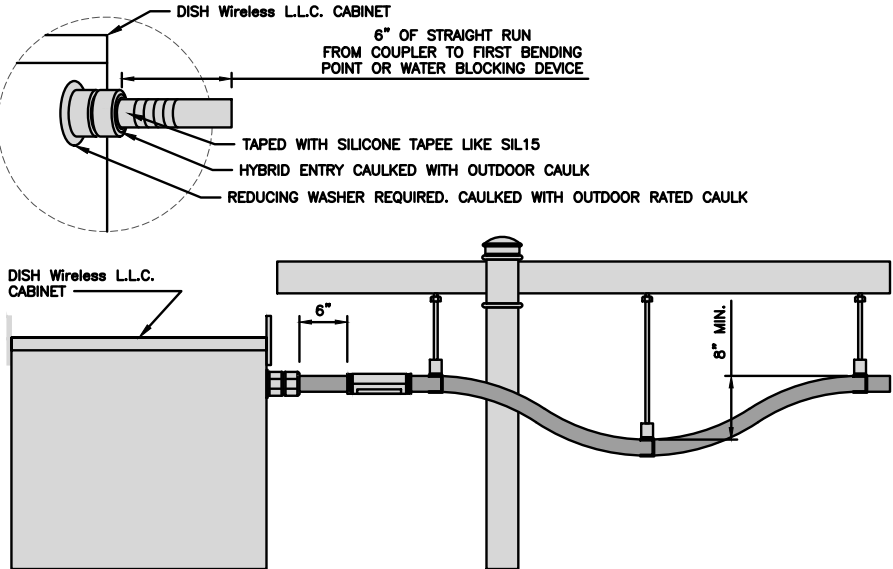
CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUS

NO SCALE

3

NOTE:

CONTRACTOR SHALL NOT LOOP EXCESS HYBRID OUTSIDE CABINET. EXCESS HYBRID LENGTH IS TO BE ADJUSTED BY STRIPPING JACKET AND SHIELDING AND TERMINATING DC CABLE TO LENGTH. FIBER EXCESS IS TO BE COILED IN FIBER SLACK TRAY INSIDE NETWORK CABINET.

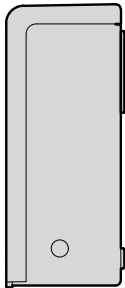


HYBRID CABLE INSTALLATION DETAIL

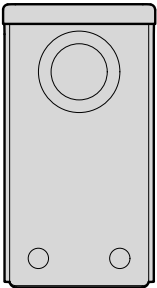
NO SCALE

5

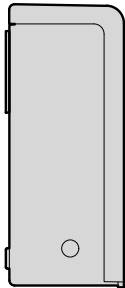
DISH Wireless L.L.C. DRIP BOX	
DIMENSIONS (HxWxD)	10-1/4" x 5-5/8" x 4-3/8"
ESTIMATED WEIGHT	<5 lbs



SIDE



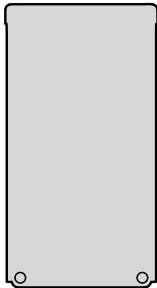
BACK



SIDE



PLAN



FRONT

DISH Wireless L.L.C. DRIP BOX DETAIL

NO SCALE

6

dish
wireless.

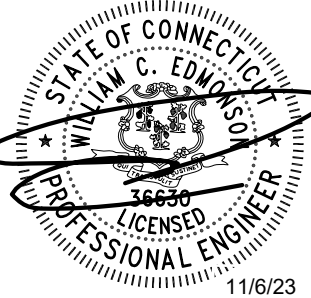
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A&E PROJECT NUMBER

KHCL-40084

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00139A
277 HUCKLEBERRY HILL
ROAD
AVON, CT 06013

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-5

NOT USED

NO SCALE

7

NOT USED

NO SCALE

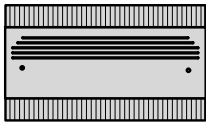
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NOT USED

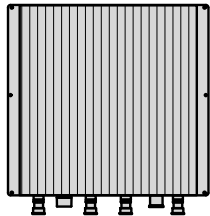
NO SCALE

9

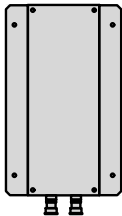
FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



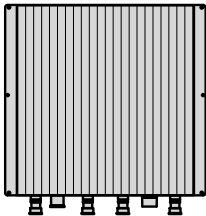
PLAN



BACK

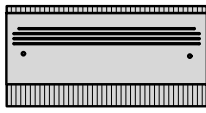


SIDE

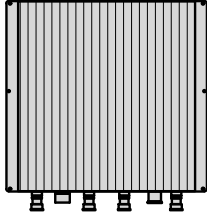


FRONT

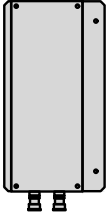
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



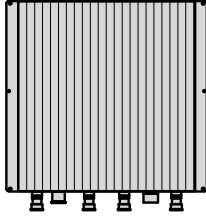
PLAN



BACK



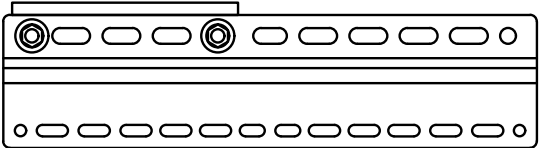
SIDE



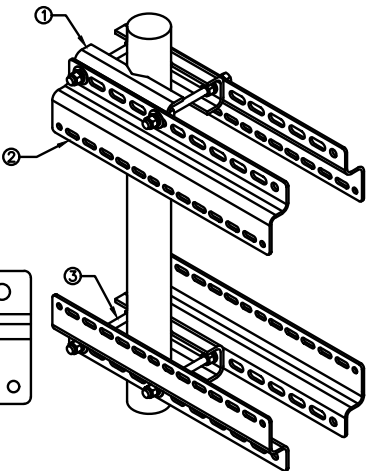
FRONT

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 DETAIL

NO SCALE

1

RRH DETAIL

NO SCALE

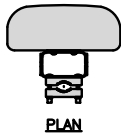
2

RRH MOUNT DETAIL

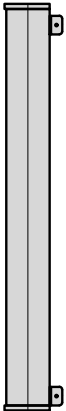
NO SCALE

3

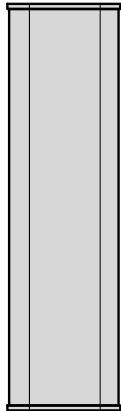
JMA MX08FRO665-21	
DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



PLAN



SIDE

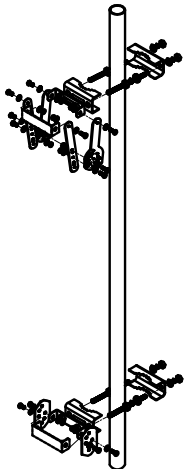


FRONT

JMA ANTENNA MOUNT BRACKET
#91900318

TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

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



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

ANTENNA DETAIL

NO SCALE

4

NOT USED

NO SCALE

5

ANTENNA BRACKET DETAIL

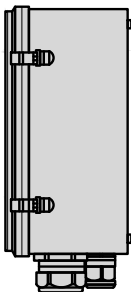
NO SCALE

6

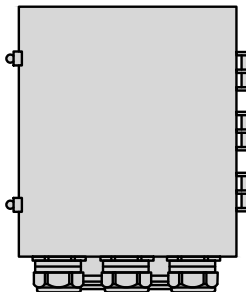
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



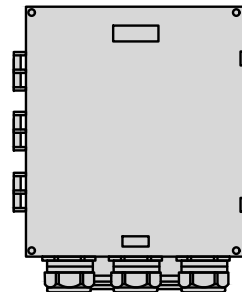
PLAN



SIDE



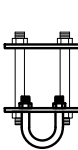
BACK



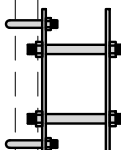
FRONT

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

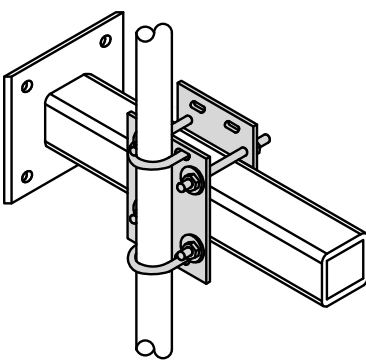
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT



PLAN
U-BOLT



SIDE
U-BOLT

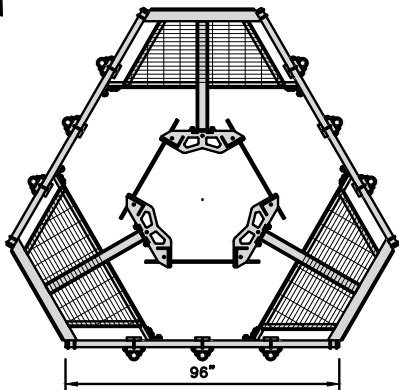
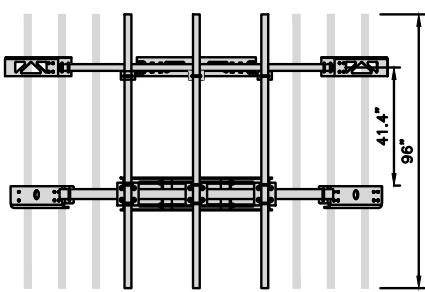


COMMSCOPE
MC-PK8-DSH

FACE WIDTH	96"
WEIGHT	1373.08 lbs

NOTE: 15" TO 38" O.D.

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



SURGE SUPPRESSION DETAIL

NO SCALE

7

RRH/OVP MOUNT DETAIL

NO SCALE

8

ANTENNA PLATFORM DETAIL

NO SCALE

9

dish
wireless.

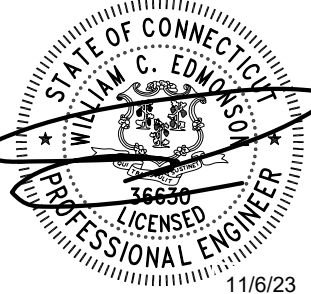
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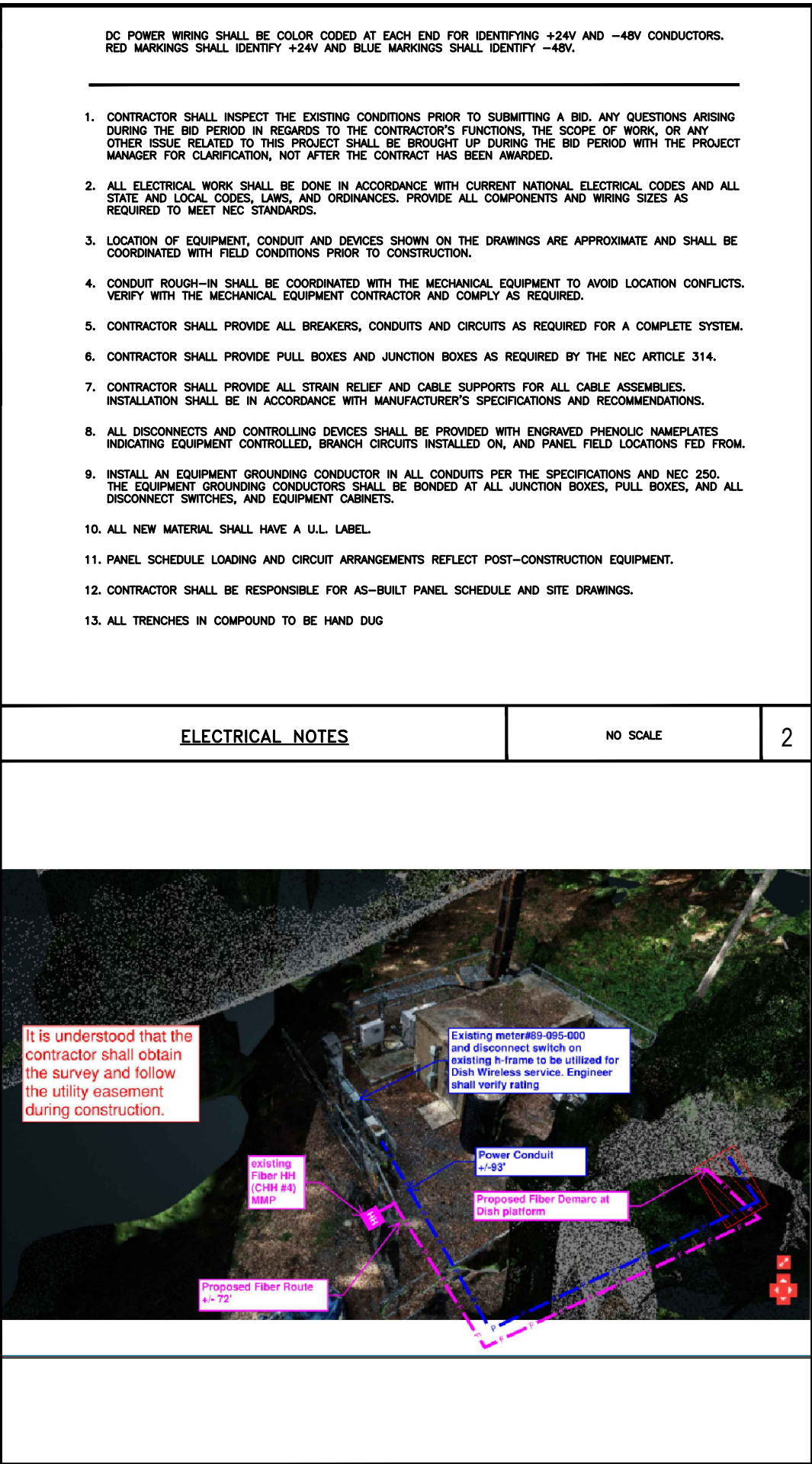
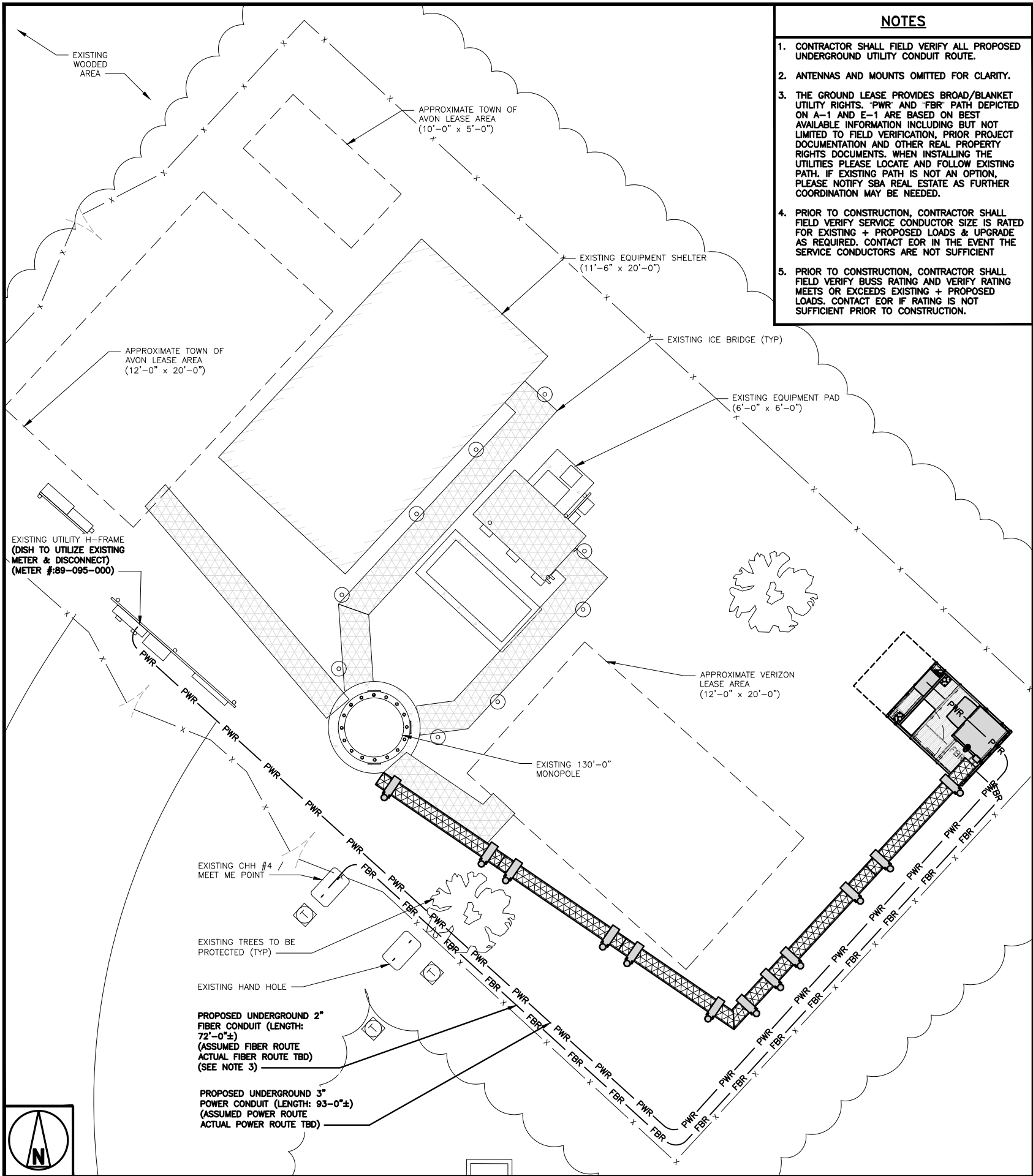
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00139A
277 HUCKLEBERRY HILL
ROAD
AVON, CT 06013

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-6



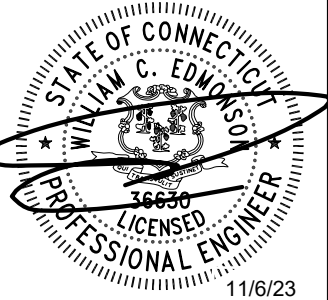
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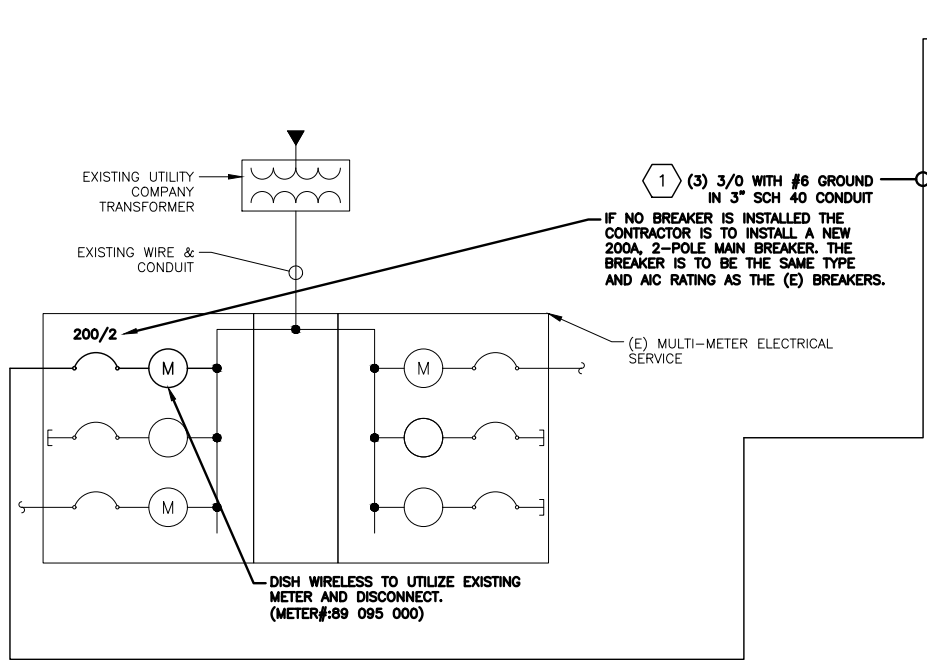
A&E PROJECT NUMBER
KHCL-40084

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00139A
277 HUCKLEBERRY HILL ROAD
AVON, CT 06013

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

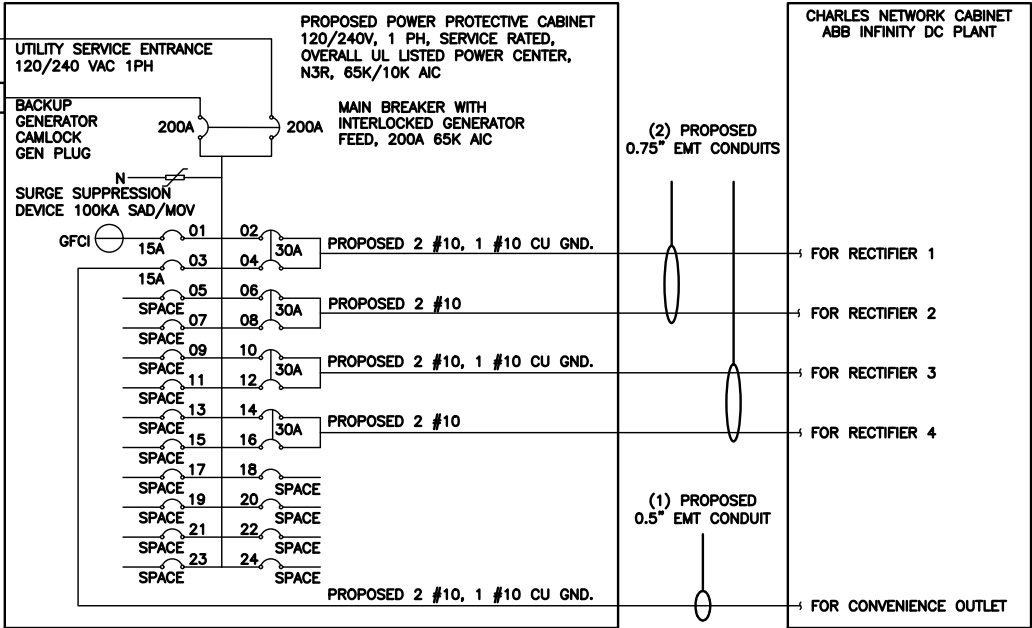
SHEET NUMBER

E-1



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

BREAKERS REQUIRED:
(4) 30A, 2P BREAKER - SQUARE D P/N:Q0230
(2) 15A, 1P BREAKER - SQUARE D P/N:Q0115



SERVICE/FEEDER CONDUCTOR LENGTH TABLE (BASED ON INDUSTRY STANDARD 3% VOLTAGE DROP AND 5% NEC ALLOWABLE LIMIT)						
DESIGN LOADS	CONDUCTOR SIZES					
	250 kcmil AL	300 kcmil AL	3/0 CU	4/0 CU	250 kcmil CU	300 kcmil CU
DISH Wireless L.L.C. MAXIMUM CONTINUOUS LOAD (180A) (NEC ARTICLE 220 & 230 3% VOLTAGE DROP)	130'	155'	145'	180'	215'	255'
DISH Wireless L.L.C. MAXIMUM CONTINUOUS LOAD (180A) (NEC ARTICLE 220 & 230 5% VOLTAGE DROP)	220'	260'	240'	300'	360'	425'

NOTES:

- 250 MCM/KCMIL AL + #2 AL GRD MAY BE USED AS A REPLACEMENT FOR 3/0 CU + #6 CU GRD SERVICE CONDUCTOR FROM THE DISH Wireless L.L.C. FIRST MEANS OF DISCONNECT/UTILITY COMPANY MEET-ME POINT. REFER TO VALUES ABOVE TO LIMIT VOLTAGE DROP TO 3%.
- ALUMINUM/COPPER CONDUCTORS MUST BE RATED 75°C.
- ALUMINUM TO COPPER BUSS CONNECTIONS MUST MEET AND CONFORM TO ANSI AND BE UL LISTED. USE ANTI CORROSION CONDUCTIVE LUBRICANT ON CONNECTIONS
- PPC MAIN DISCONNECT CIRCUIT BREAKERS ACCEPT #4 - 300KCMIL AL OR CU CONDUCTORS.
- VOLTAGE DROP FOR SINGLE METER ENCLOSURE FED FROM TRANSFORMER WITH MULTIPLE CUSTOMERS IS CALCULATED FROM THE TRANSFORMER TO PPC. (SERVICE AND FEEDER CONDUCTOR LENGTH)
- VOLTAGE DROP FOR MULTI-METER ENCLOSURE IS CALCULATED FROM THE METER TO PPC. (FEEDER CONDUCTOR LENGTH)
- VOLTAGE DROP CALCULATIONS ARE BASED ON A POWER FACTOR OF 1, A LINE TO GROUND VOLTAGE PER CONDUCTOR OF 120V, NO CORRECTION FACTOR FOR AMBIENT TEMPERATURE OR ADJUSTMENT FACTOR FOR MORE THAN THREE CURRENT-CARRYING CONDUCTORS IN A SINGLE CONDUCT OR RACEWAY. A POWER FACTOR LESS THAN 1 OR VOLTAGE LESS THAN 120 WILL RESULT IN SHORTER DISTANCES THAN SHOWN IN TABLE.

NOTES

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

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

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)(a) 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 FEED CONDUCTORS (1 CONDUIT): USING THWN, AL.

250kcmil AL - 0.3970 SQ. IN X 3 = 1.191 SQ. IN
#4 AL - 0.0824 SQ. IN X 1 = 0.0824 SQ. IN <GROUND
TOTAL = 1.2734 SQ. IN

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



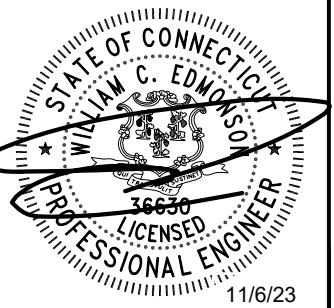
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A&E PROJECT NUMBER

KHCLC-40084

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00139A
277 HUCKLEBERRY HILL
ROAD
AVON, CT 06013

SHEET TITLE
ELECTRICAL ONE-LINE
& PANEL SCHEDULE

SHEET NUMBER

E-3

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		15A	1	A	2	30A	2880		ABB/GE INFINITY RECTIFIER 1	
CHARLES GFCI OUTLET		180	15A	3	B	4		2880	2880		
-SPACE-				5	A	6	30A	2880		ABB/GE INFINITY RECTIFIER 2	
-SPACE-				7	B	8		2880	2880		
-SPACE-				9	A	10	30A	2880		ABB/GE INFINITY RECTIFIER 3	
-SPACE-				11	B	12		2880	2880		
-SPACE-				13	A	14	30A	2880		ABB/GE INFINITY RECTIFIER 4	
-SPACE-				15	B	16		2880	2880		
-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, 1, 24 SPACE, 120/240V				L1	L2						
MB RATING: 65,000 AIC				11700	11700			VOLTAGE AMPS			
				98	98			AMPS			
				98				MAX AMPS			
				123				MAX 125%			

PANEL SCHEDULE

NO SCALE

2

NOT USED

NO SCALE

3

NOTES:

- HAZARD OF ELECTRICAL SHOCK OR BURN. TURN OFF POWER SUPPLYING THIS EQUIPMENT BEFORE WORKING INSIDE.
- 100 OR 200 AMP, 240 VOLTS, SINGLE PHASE ALTERNATING CURRENT CIRCUIT ONLY
- GENERATOR SHORT CIRCUIT RATING: 10,000 / 20,000 AMPS RMS SYMMETRICAL, AMPERES AT 240 VOLTS
- UTILITY SHORT CIRCUIT RATING: 65,000 AMPS RMS SYMMETRICAL, AMPERES AT 240 VOLTS
- SUITABLE FOR USE AS SERVICE EQUIPMENT
- SUITABLE FOR USE IN ACCORDANCE WITH ARTICLE 702 OF THE NATIONAL ELECTRIC CODE ANSI/NFPA 70
- BONDED NEUTRAL WHEN INSTALLED AS SHOWN IN WIRING DIAGRAM
- RAIN PROOF TYPE 3R
- USE CU-AL WIRE 60-75 °C
- EQUIPPED WITH SLIDE BAR MECHANICAL INTERLOCK
- INTERLOCK PROHIBITS BOTH POWER SOURCES FROM BEING IN THE ON POSITION SIMULTANEOUSLY
- EQUIPPED WITH SQUARE D BREAKERS OR ALTERNATIVE MANUFACTURER EQUIVALENT
- WHEN REPLACE LOAD CENTER BREAKERS, USE ONLY SQUARE D (QO TYPE) OF THE SAME RATING OR EQUIVALENT
- WHEN RESETTING BREAKERS TURN TO OFF POSITION, THEN TO ON POSITION
- WARNING: MAKE CONTINUITY CHECK WITH OHM METER TO VERIFY CORRECT PHASING AND GROUNDING CONNECTIONS BEFORE POWER UP
- VERIFY PIN OUT CONFIGURATION OF GENERATOR PRIOR TO USE.
- RISK OF ELECTRIC SHOCK, BOTH ENDS OF DISCONNECTING MEANS MAY BE ENERGIZED. TEST BEFORE SERVICING
- THIS SWITCH BOARD MAY CONTAIN A TAP ON THE SERVICE SIDE OF THE MAIN POWER DISCONNECT FOR REMOTE MONITORING OF UTILITY/STANDBY POWER
- THE NORMAL AC POWER MONITORING CIRCUIT MUST UTILIZE A DISCONNECTING MEANS WITH A SHORT CIRCUIT RATING GREATER THAN THE AVAILABLE INTERRUPTING CURRENT
- A RED PUSH-TO-TRIP BUTTON PROVIDES A MEANS TO MECHANICALLY TRIP THE CIRCUIT BREAKER. THIS ACTION EXERCISES THE TRIPPING PORTION OF THE MECHANISM AND ALLOWS MAINTENANCE CHECK ON THE BREAKER

SUITABLE FOR USE AS SERVICE EQUIPMENT	
ELECTRICAL RATING 120/240 VOLTS SINGLE PHASE 60 Hz	
NORMAL AC POWER	GENERATOR POWER
100A□	100A□
200A□	200A□

CAUTION:

- THE OPERATING HANDLE ASSUMES A CENTER POSITION WHEN THE CIRCUIT BREAKER IS TRIPPED
- THE BREAKER CAN BE RESET BY OPERATING THE HANDLE TO THE EXTREME OFF POSITION AND THEN TO ON
- SLIDE BAR MECHANICAL INTERLOCK TRANSFERS NORMAL AC POWER TO GENERATOR POWER. THE SLIDE BAR MECHANICAL INTERLOCK PROHIBITS BOTH POWER SOURCES FROM BEING IN THE ON POSITION SIMULTANEOUSLY
- TO TRANSFER FROM ON POWER SOURCE TO THE OTHER POWER SOURCE, SWITCH ON BREAKER TO THE OFF POSITION, MOVE THE SLIDE BAR TO THE OTHER SIDE AND THE SWITCH THE OTHER BREAKER TO THE ON POSITION

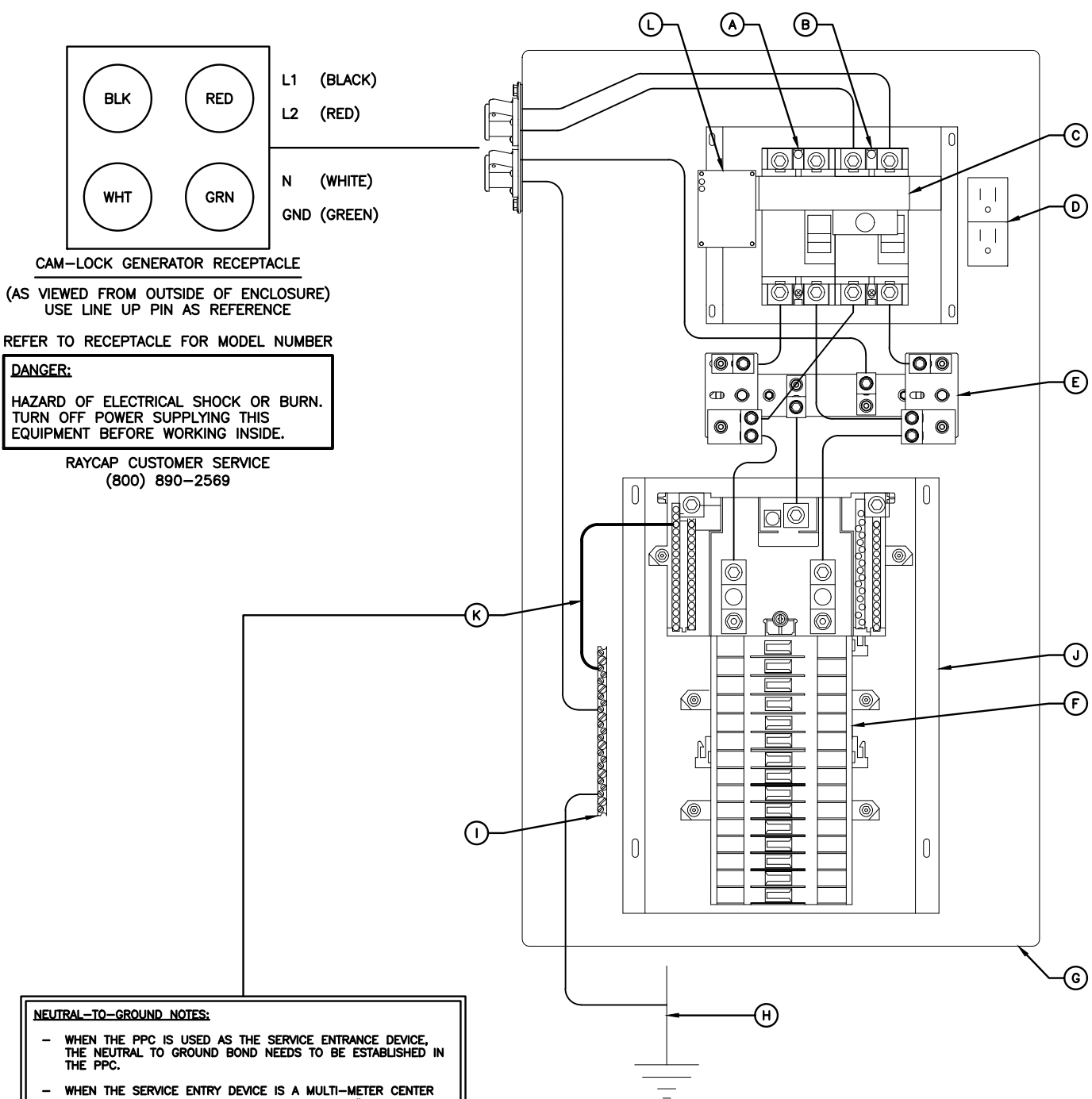
THIS SWITCHBOARD UTILITY MAIN BREAKER IS SUITABLE FOR USE ON CIRCUIT CAPABLE OF DELIVERING NOT MORE THAN 65,000 RMS SYMMETRICAL AMPS, 240 VOLTS MAXIMUM.

THIS SWITCHBOARD GENERATOR POWER CIRCUIT IS SUITABLE FOR USE ON A CIRCUIT CAPABLE OF DELIVERING NOT MORE THAN 10,000 RMS SYMMETRICAL AMPS, 240 VOLTS MAXIMUM.

MAXIMUM CONTINUOUS LOADS NOT TO EXCEED 80% OF THE OVER-CURRENT PROTECTIVE DEVICE (CIRCUIT BREAKER AND FUSES) RATINGS EMPLOYED IN OTHER THAN MOTOR CIRCUITS, EXCEPT FOR THOSE CIRCUITS EMPLOYING CIRCUIT BREAKERS MARKED AS SUITABLE FOR CONTINUOUS OPERATION AT 100% OF THEIR RATINGS. CONDUCTORS ARE NOT TO ENTER OR LEAVE THE ENCLOSURE DIRECTLY OPPOSITE THE WIRING TERMINAL

200A UTILITY FEED					LINE SIDE MAIN CIRCUIT BREAKER				
MFR.	TYPE	POLES	AMP RATING		MFR.	TYPE	AMP RATING	SYMMET. AMP RMS	VOLTS AC
SQ-D	QO	1 2	15-100A		SQ-D	QGL	200A	65,000A	240V

200A GENERATOR FEED					LINE SIDE MAIN CIRCUIT BREAKER				
MFR.	TYPE	POLES	AMP RATING		MFR.	TYPE	AMP RATING	SYMMET. AMP RMS	VOLTS AC
SQ-D	QO	1 2	15-100A		SQ-D	QGL	200A	65,000A	240V



NEUTRAL-TO-GROUND NOTES:

- WHEN THE PPC IS USED AS THE SERVICE ENTRANCE DEVICE, THE NEUTRAL TO GROUND BOND NEEDS TO BE ESTABLISHED IN THE PPC.
- WHEN THE SERVICE ENTRY DEVICE IS A MULTI-METER CENTER OR A PRE-PPC DISCONNECT IS USED AND HAS "NEUTRAL TO GROUND" ACCOMMODATIONS, THE NEUTRAL TO GROUND WIRE IN THE PPC IS NOT REQUIRED.
- THE GREEN #6 WIRE IS PROVIDED WITH THE PPC CABINET AS A SEPARATE UNINSTALLED PART TO BE INSTALLED BY CONTRACTOR IF NEEDED.

NEUTRAL-TO-GROUND BONDING JUMPER

INSTALLATION INSTRUCTIONS:

- IF REQUIRED, THE N-G BONDING KIT SHOULD BE INSTALLED BY QUALIFIED PERSONNEL
- ENSURE THE MAIN BREAKERS ARE OFF
- USE THE GREEN #6 WIRE PROVIDED WITH THE PPC
- INSTALL THE JUMPER AS SHOWN IN THE WIRING DIAGRAM
- TIGHTEN TERMINALS TO TORQUE VALUE SHOWN IN TORQUE TABLE
- PLACE THE PROVIDED "SERVICE" LABEL IN THE SPACE BELOW THE WORDS "AC POWER" LOCATED ABOVE THE MAIN CIRCUIT BREAKER IN THE UPPER PORTION OF THE DEAD FRONT

LEGEND:

- UTILITY DISCONNECT (SERVICE RATED)
- GENERATOR DISCONNECT
- MAIN DISCONNECT CIRCUIT BREAKERS W/ MECHANICAL INTERLOCK
- GFCI RECEPTACLE 15A
- SPD STRIKESORB KELVIN CONNECTION (TYP OF 2)
- BREAKER PANEL - 24 POSITION (CONTRACTOR TO ADD APPROPRIATE BREAKER PER ONE-LINE DIAGRAM PANEL SCHEDULE)
- POWER PROTECTION CABINET (PPC) (FULLY ASSEMBLED FROM MANUFACTURER)
- CONTRACTOR TO ATTACH TO UNDERGROUND GROUNDING HALO OR INSTALL GROUND ROD WHEN REQUIRED BY CODE
- GROUND BAR
- SQUARE D Q SERIES LOAD CENTER
- NEUTRAL-TO-GROUND (N-G) BONDING JUMPER (CONTRACTOR INSTALLED IF REQUIRED)
- OPTIONAL SPD STATUS INDICATORS

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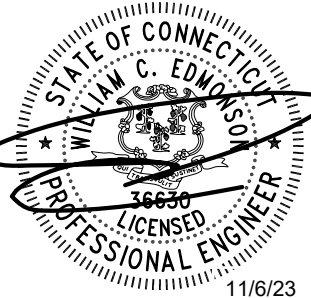
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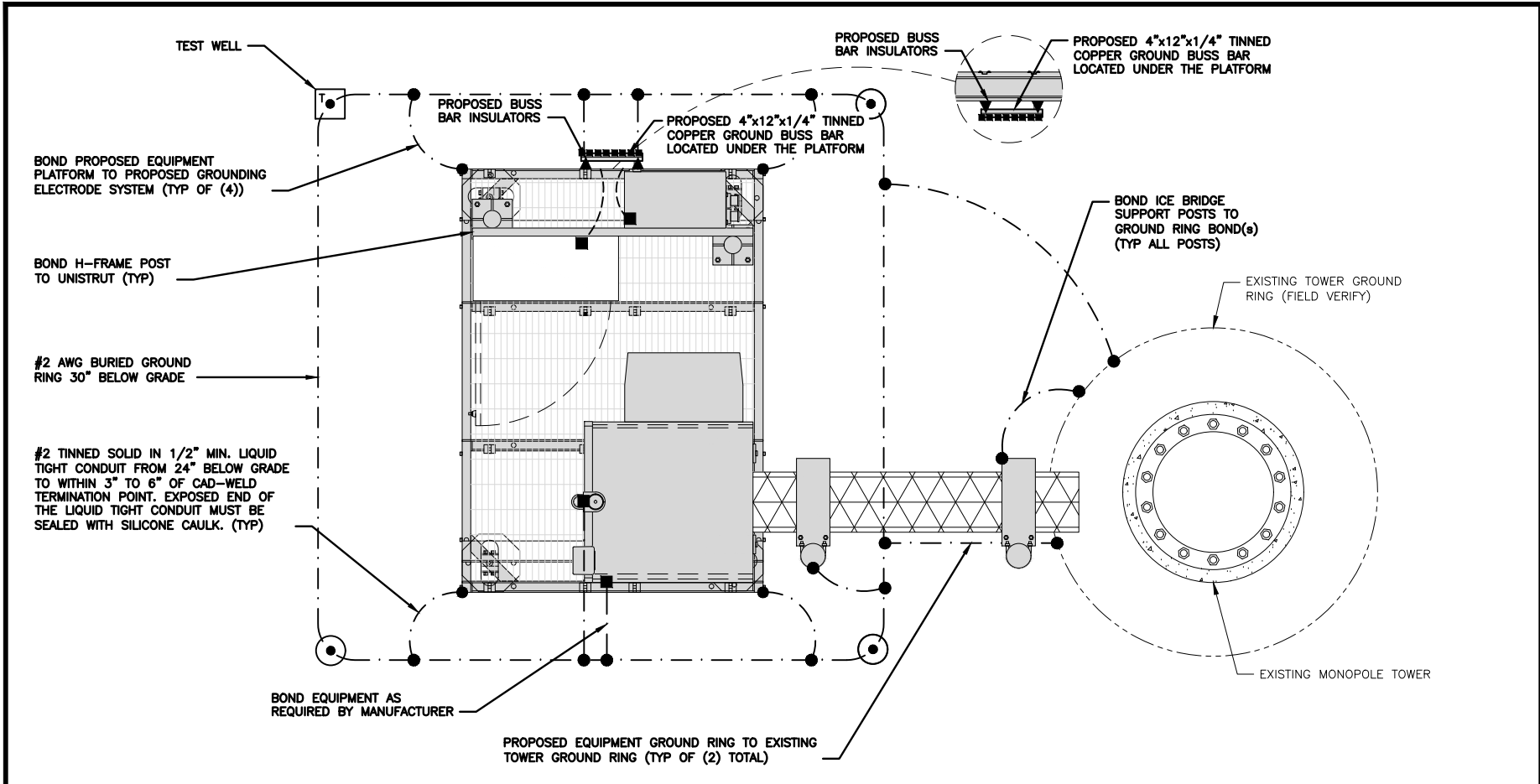
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00139A
277 HUCKLEBERRY HILL
ROAD
AVON, CT 06013

SHEET TITLE
PPC NEUTRAL-TO-GROUND
SCHEMATIC

SHEET NUMBER

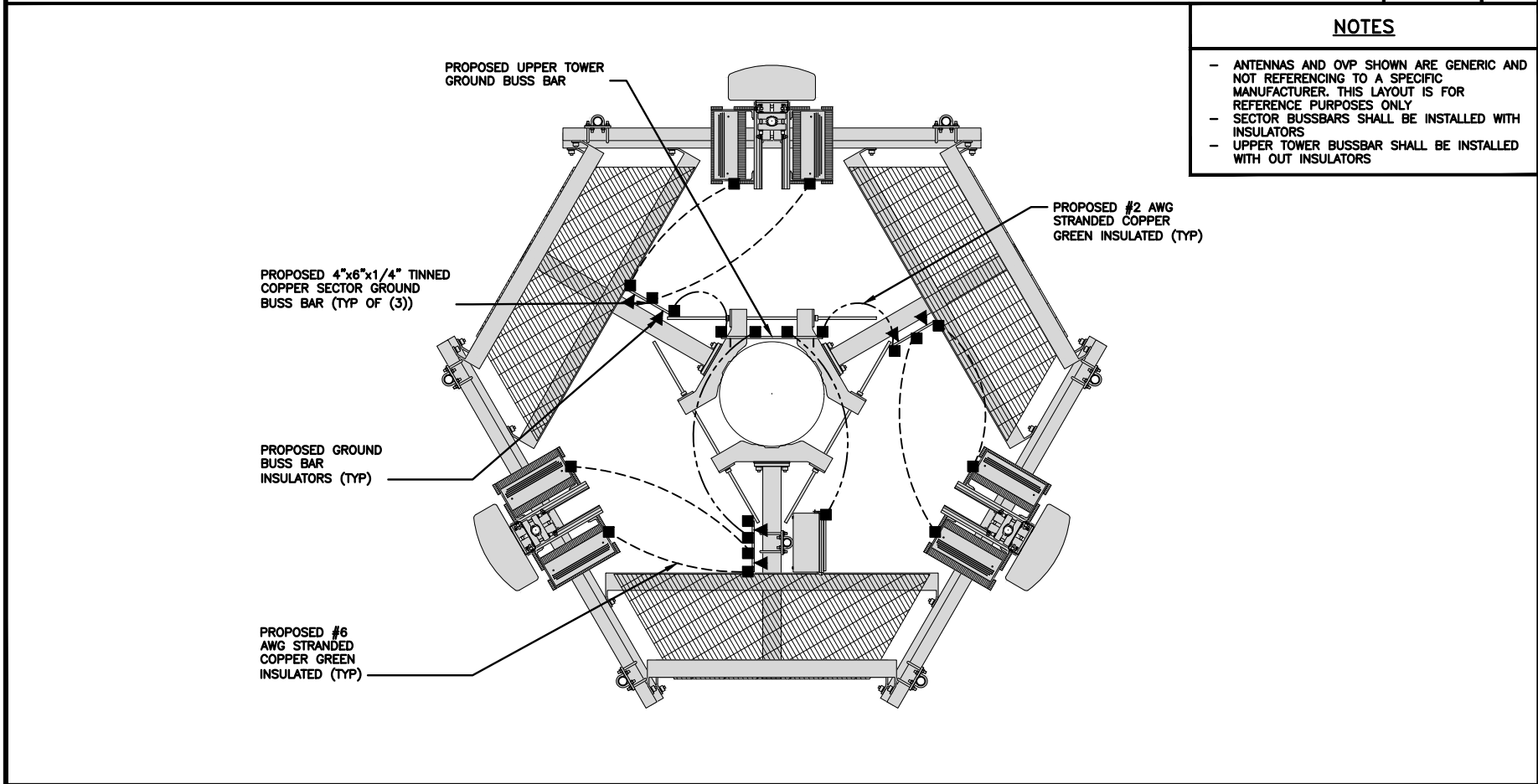
E-4



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE

1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE

2

<div><div><div><div>●</div><div>EXOTHERMIC CONNECTION</div></div><div><div>■</div><div>MECHANICAL CONNECTION</div></div><div><div><div></div></div><div>GROUND BUS BAR</div></div><div><div><div></div></div><div>GROUND ROD</div></div></div><div><div><div><div>⬢</div><div>TEST GROUND ROD WITH INSPECTION SLEEVE</div></div><div><div>----</div><div>#6 AWG STRANDED & INSULATED</div></div><div><div>----</div><div>#2 AWG SOLID COPPER TINNED</div></div><div><div>▲</div><div>BUSS BAR INSULATOR</div></div></div></div></div>		
GROUNDING LEGEND		
<div><div>1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.</div><div>2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH Wireless L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.</div><div>3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.</div></div>		
GROUNDING KEY NOTES		
<div><div><div>A</div><div>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.</div></div><div><div>B</div><div>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.</div></div><div><div>C</div><div>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.</div></div><div><div>D</div><div>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.</div></div><div><div>E</div><div>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.</div></div><div><div>F</div><div>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.</div></div><div><div>G</div><div>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.</div></div><div><div>H</div><div>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.</div></div><div><div>I</div><div>TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.</div></div><div><div>J</div><div>FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.</div></div><div><div>K</div><div>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.</div></div><div><div>L</div><div>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.</div></div><div><div>M</div><div>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</div></div><div><div>N</div><div>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.</div></div><div><div>O</div><div>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</div></div><div><div>P</div><div>TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR. REFER TO DISH Wireless L.L.C. GROUNDING NOTES.</div></div></div>		
GROUNDING KEY NOTES		
NO SCALE		
3		

dish

wireless.

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STATE OF CONNECTICUT
WILLIAM C. EDMONSON
36630
LICENSED PROFESSIONAL ENGINEER
11/6/23

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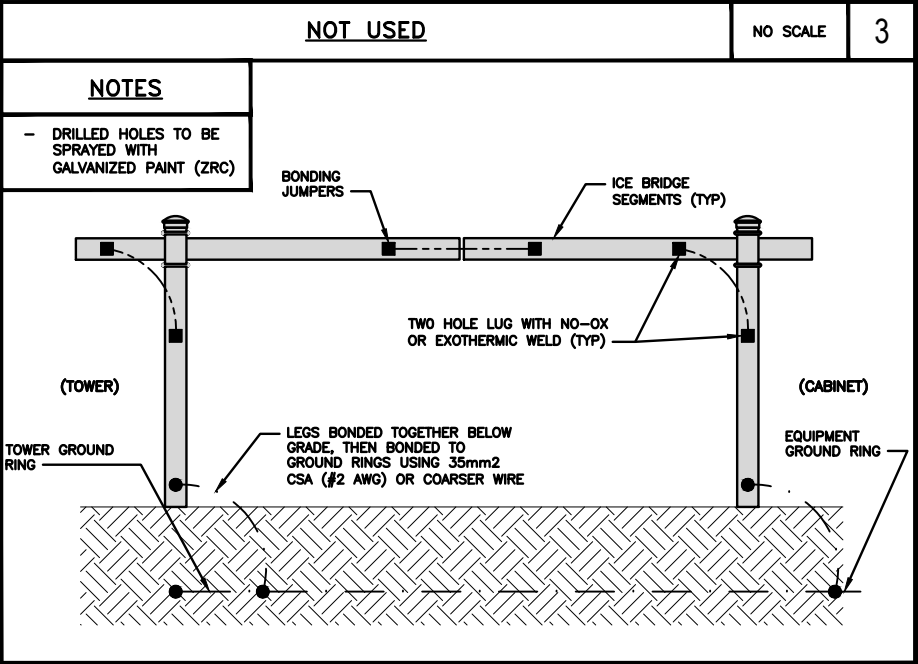
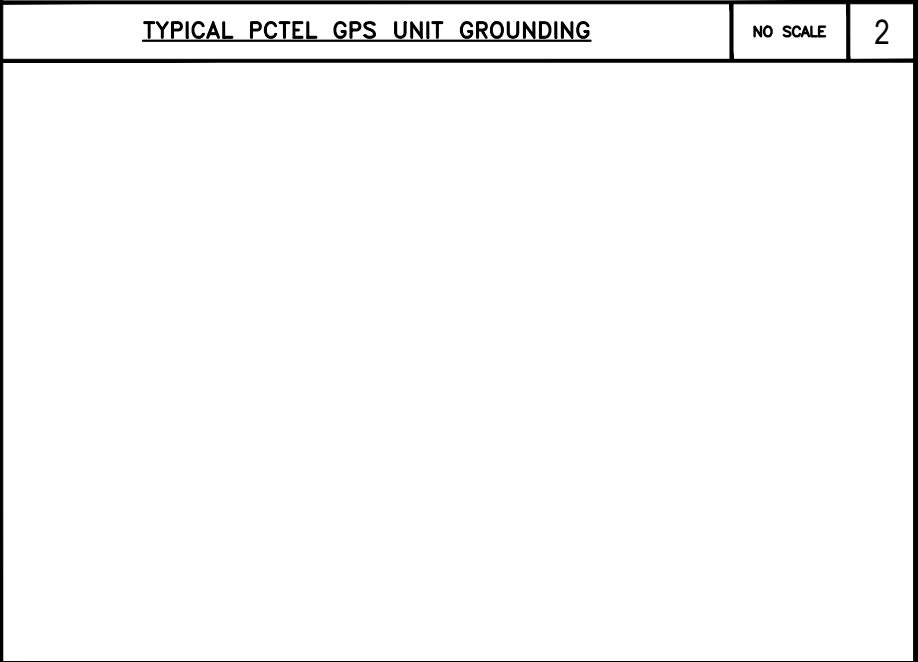
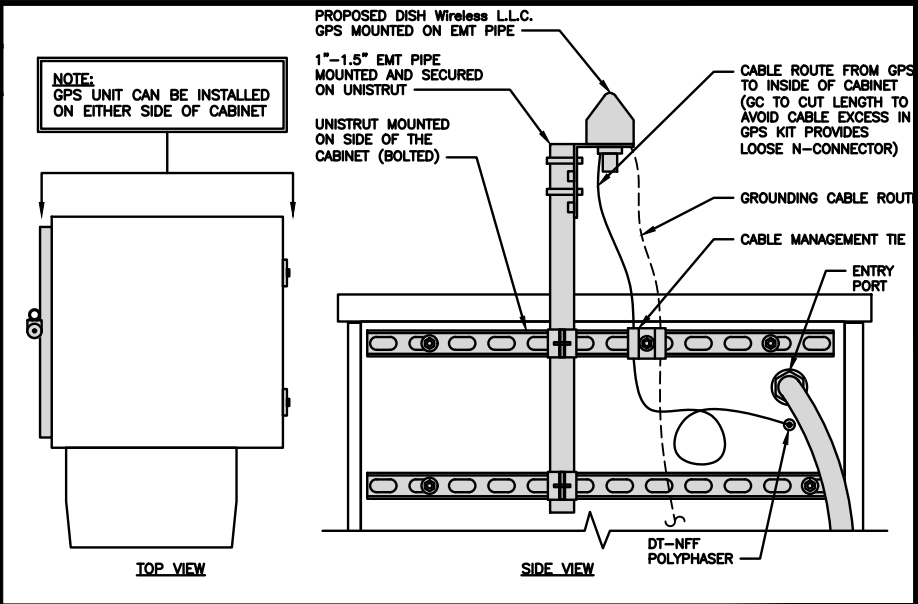
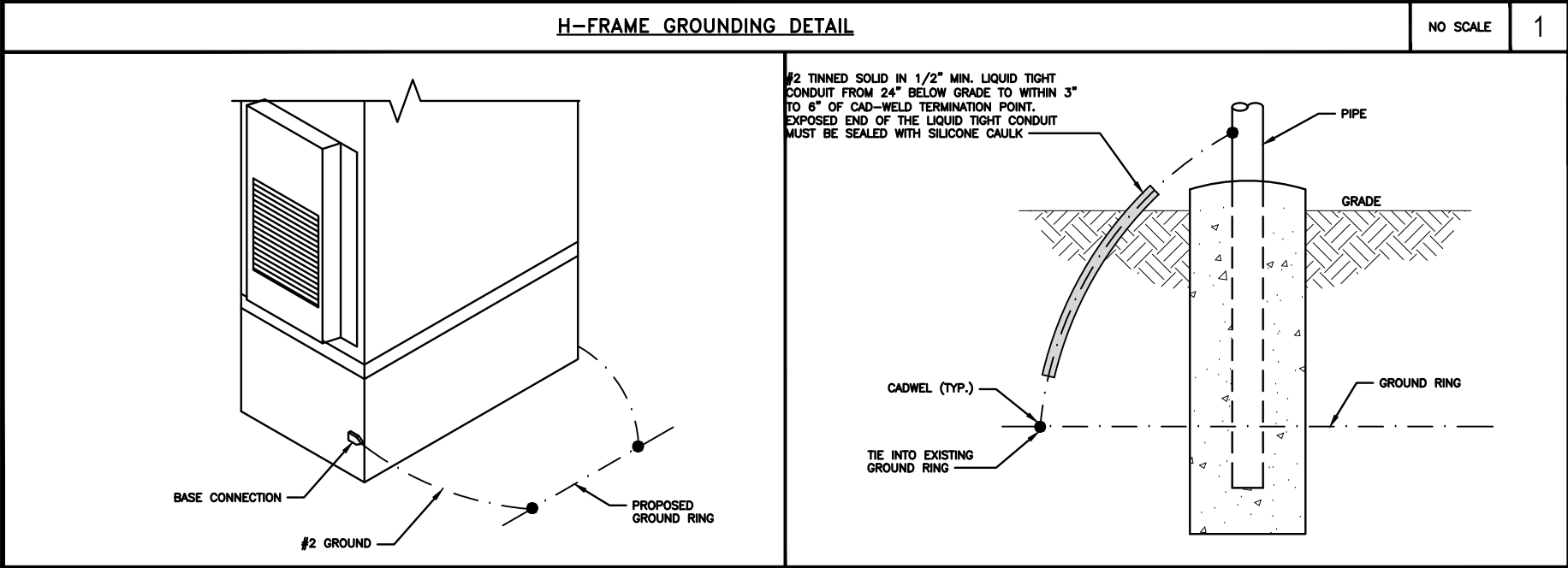
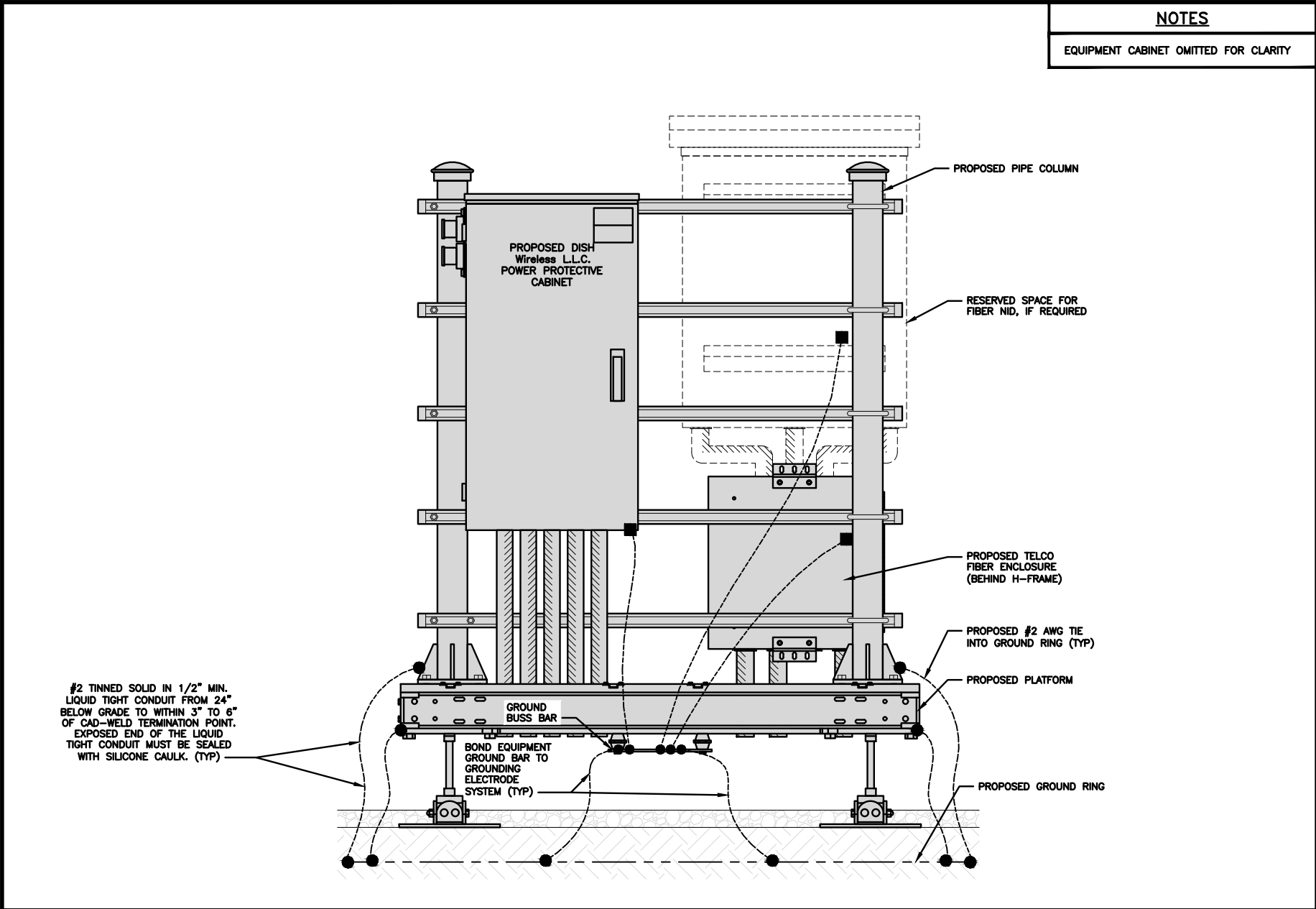
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SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1



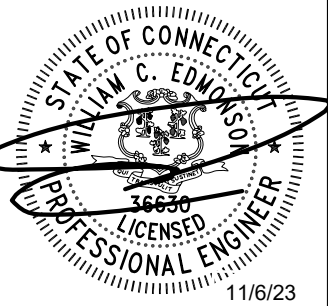
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CONSTRUCTION DOCUMENTS

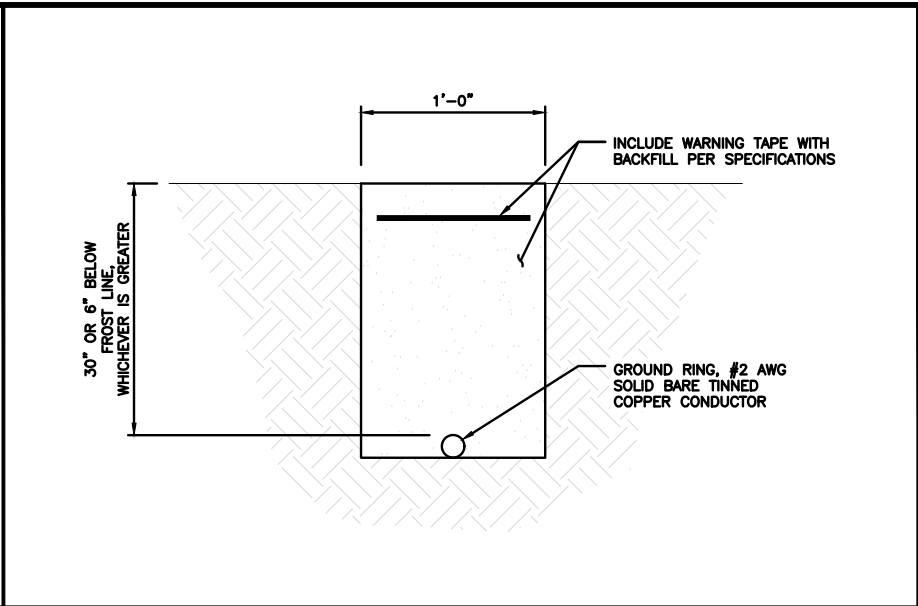
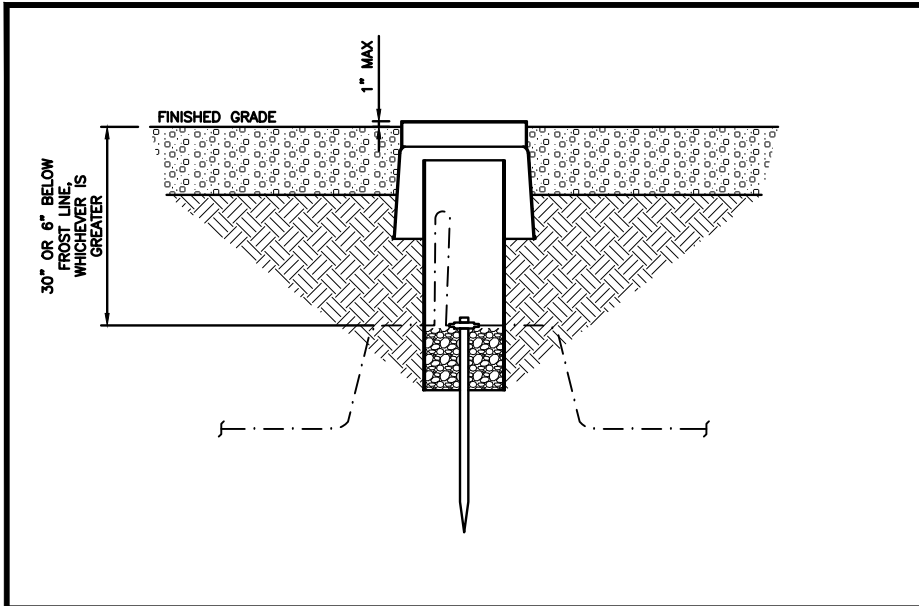
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A&E PROJECT NUMBER
KHCL-40084

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00139A
277 HUCKLEBERRY HILL ROAD
AVON, CT 06013

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-2

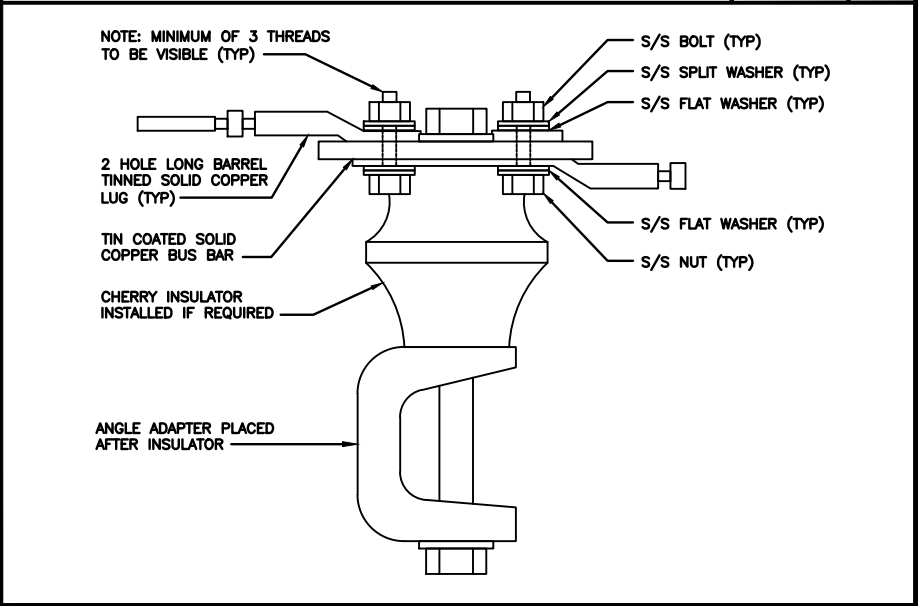
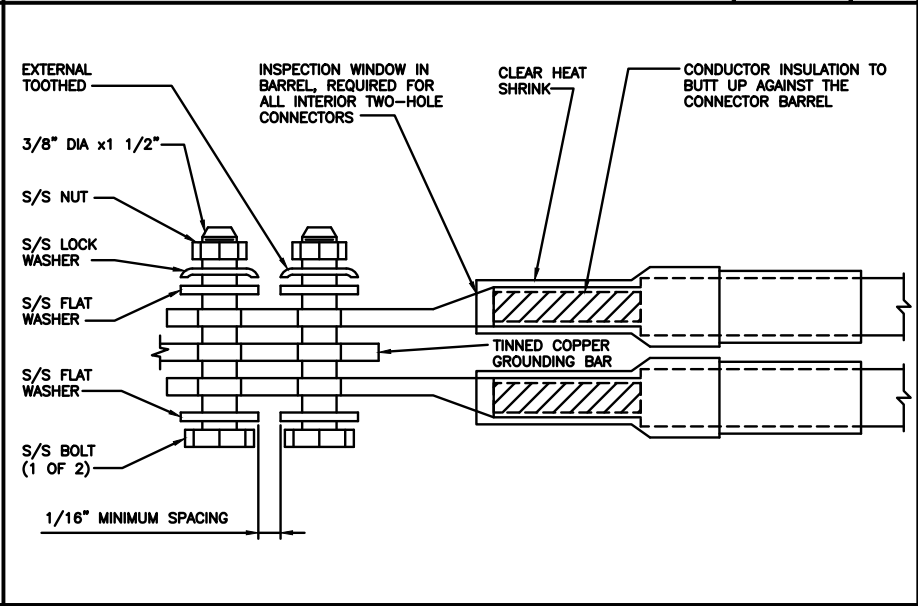
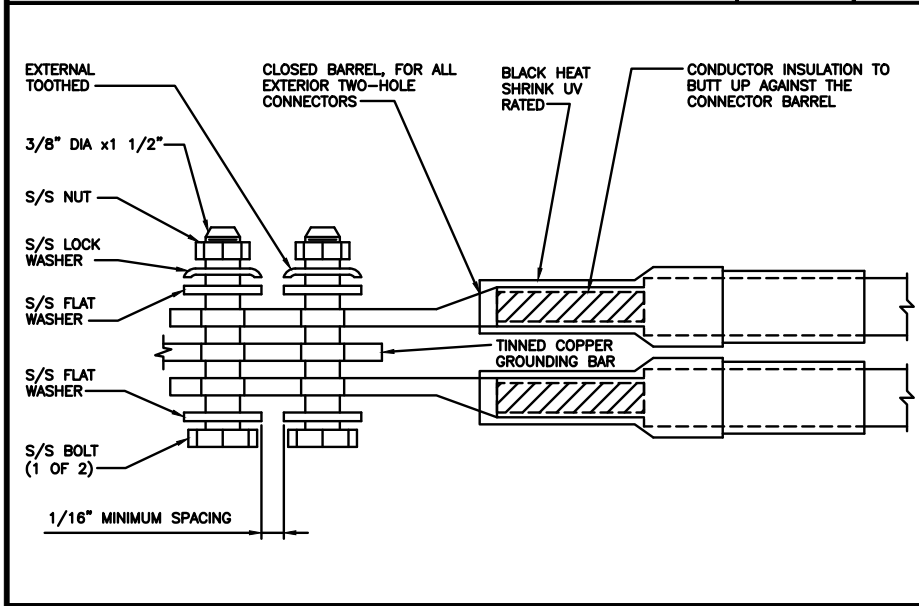


1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, 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 TEST GROUND ROD WITH INSPECTION SLEEVE

TYPICAL GROUND RING TRENCH

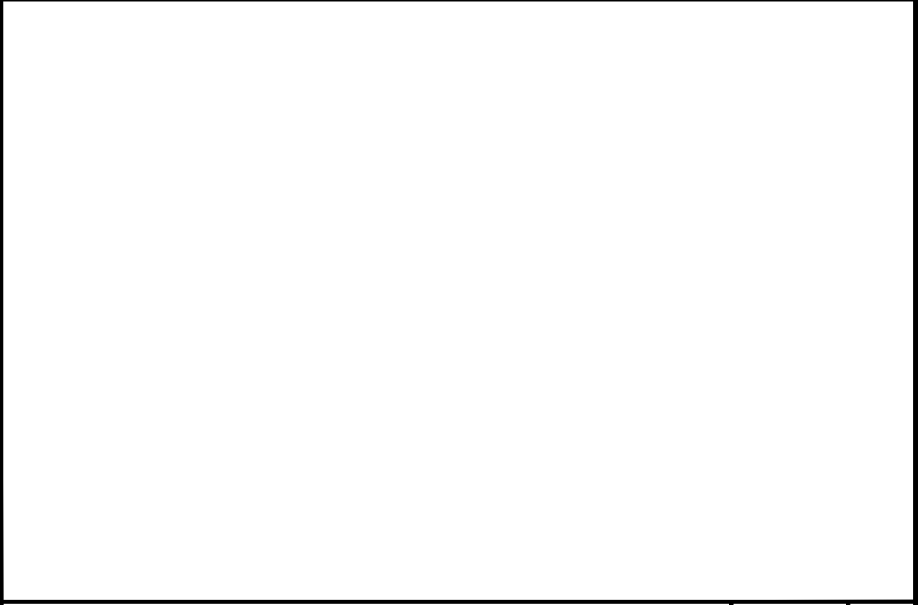
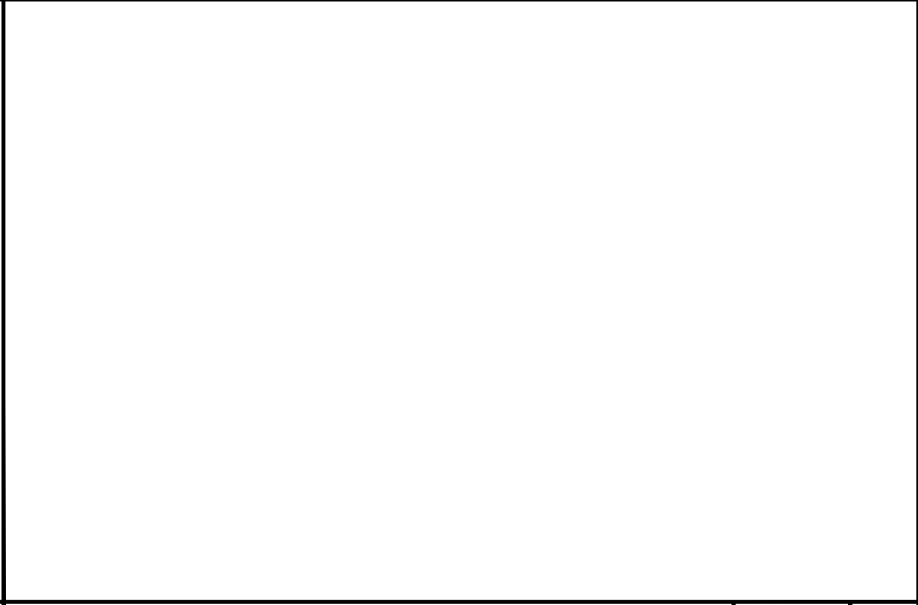
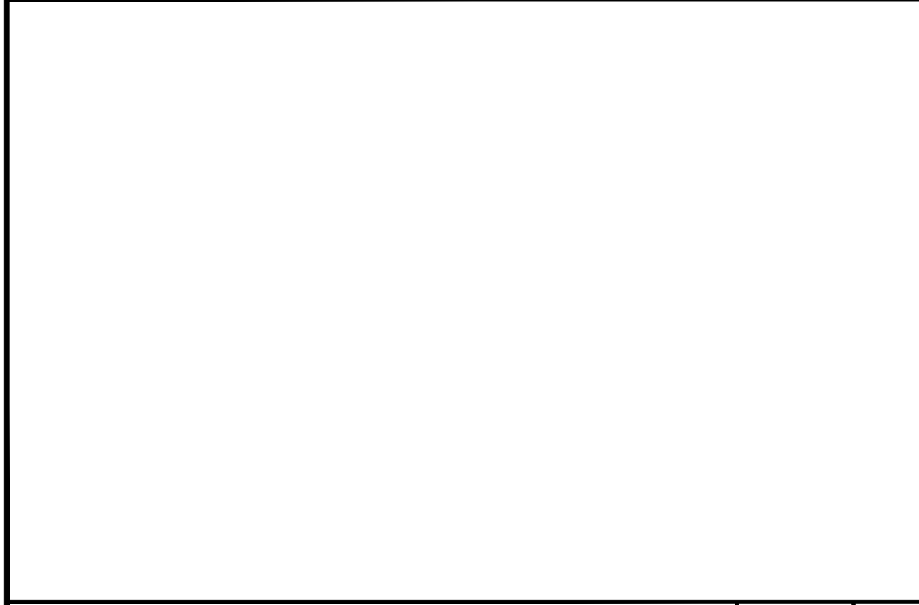
TYPICAL GROUNDING NOTES



TYPICAL EXTERIOR TWO HOLE LUG

TYPICAL INTERIOR TWO HOLE LUG

LUG DETAIL



NOT USED

NOT USED

NOT USED

dish
wireless.

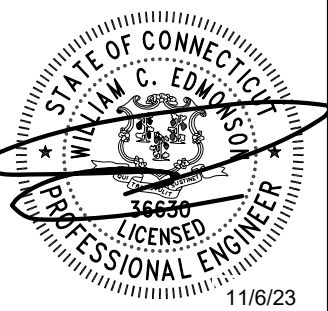
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

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APPLICATION REV #: 1

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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00139A
277 HUCKLEBERRY HILL
ROAD
AVON, CT 06013

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

HYBRID/DISCREET CABLES				3/4" TAPE WIDTHS WITH 3/4" SPACING											
<p>LOW-BAND RRH (600 MHz N71 BASEBAND) + (850 MHz N26 BAND) + (700 MHz N29 BAND) – OPTIONAL PER MARKET</p> <p>ADD FREQUENCY COLOR TO SECTOR BAND (CBRS WILL USE YELLOW BAND)</p>				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
<p>MID-BAND RRH (AWS BANDS N66+N70)</p> <p>ADD FREQUENCY COLOR TO SECTOR BAND (CBRS WILL USE YELLOW BANDS)</p>					WHITE (–) PORT	ORANGE	ORANGE		WHITE (–) PORT	ORANGE	ORANGE		WHITE (–) PORT	ORANGE	ORANGE
HYBRID/DISCREET CABLES				EXAMPLE 1		EXAMPLE 2		EXAMPLE 3 COAX #1 (ALPHA)		CANISTER COAX #2 (ALPHA)					
<p>INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.</p> <p>EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS.</p> <p>EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS.</p> <p>EXAMPLE 3 – MAIN COAX WITH GROUND MOUNTED RRHs.</p>				RED		RED		RED		RED					
				BLUE		BLUE									
				GREEN		GREEN									
				ORANGE											
FIBER JUMPERS TO RRHs				LOW BAND RRH		MID BAND RRH		LOW BAND RRH		MID BAND RRH		LOW BAND RRH		MID BAND RRH	
				RED		RED		BLUE		BLUE		GREEN		GREEN	
				ORANGE		PURPLE		ORANGE		PURPLE		ORANGE		PURPLE	
POWER CABLES TO RRHs				LOW BAND RRH		MID BAND RRH		LOW BAND RRH		MID BAND RRH		LOW BAND RRH		MID BAND RRH	
				RED		RED		BLUE		BLUE		GREEN		GREEN	
				ORANGE		PURPLE		ORANGE		PURPLE		ORANGE		PURPLE	
RET MOTORS AT ANTENNAS				ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND	ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND	ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND	ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND	ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND	ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND
				IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
				RED	RED	BLUE	BLUE	GREEN	GREEN	PURPLE	PURPLE	PURPLE	PURPLE	PURPLE	PURPLE
				PURPLE	ORANGE	PURPLE	ORANGE	PURPLE	ORANGE	PURPLE	ORANGE	PURPLE	ORANGE	PURPLE	ORANGE
MICROWAVE RADIO LINKS				FORWARD AZIMUTH OF 0–120 DEGREES				FORWARD AZIMUTH OF 120–240 DEGREES				FORWARD AZIMUTH OF 240–359 DEGREES			
				PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY				
				WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE				
				RED	RED	BLUE	BLUE	GREEN	GREEN	WHITE	WHITE				
<p>LINKS WILL HAVE A 1.5–2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE.</p> <p>ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.</p> <p>MICROWAVE CABLES WILL REQUIRE P-TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID's.</p>				WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE				
				RED	RED	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE				
						RED	RED								
						WHITE	WHITE								

LOW BANDS (N71+N26)
OPTIONAL – (N29)

ORANGE

AWS
(N66+N70+H-BLOCK)

PURPLE

CBRS TECH
(3 GHz)

YELLOW

NEGATIVE SLANT PORT
ON ANT/RRH

WHITE

ALPHA SECTOR

RED

BETA SECTOR

BLUE

GAMMA SECTOR

GREEN

COLOR IDENTIFIER

2

NOT USED

3

NOT USED

dish
wireless.

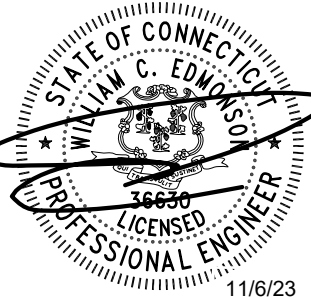
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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00139A
277 HUCKLEBERRY HILL
ROAD
AVON, CT 06013

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

SIGN TYPES		
TYPE	COLOR	COLOR CODE PURPOSE
INFORMATION	GREEN	"INFORMATIONAL SIGN" TO NOTIFY OTHERS OF SITE OWNERSHIP & CONTACT NUMBER AND POTENTIAL RF EXPOSURE.
NOTICE	BLUE	"NOTICE BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
CAUTION	YELLOW	"CAUTION BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
WARNING	ORANGE/RED	"WARNING BEYOND THIS POINT" RF FIELDS AT THIS SITE EXCEED FCC RULES FOR HUMAN EXPOSURE. FAILURE TO OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS COULD RESULT IN SERIOUS INJURY. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)

SIGN PLACEMENT:

- RF SIGNAGE PLACEMENT SHALL FOLLOW THE RECOMMENDATIONS OF AN EXISTING EME REPORT, CREATED BY A THIRD PARTY PREVIOUSLY AUTHORIZED BY DISH Wireless L.L.C.
- INFORMATION SIGN (GREEN) SHALL BE LOCATED ON EXISTING DISH Wireless L.L.C. EQUIPMENT.
 - A) IF THE INFORMATION SIGN IS A STICKER, IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C. EQUIPMENT CABINET.
 - B) IF THE INFORMATION SIGN IS A METAL SIGN IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C. H-FRAME WITH A SECURE ATTACH METHOD.
- IF EME REPORT IS NOT AVAILABLE AT THE TIME OF CREATION OF CONSTRUCTION DOCUMENTS; PLEASE CONTACT DISH Wireless L.L.C. CONSTRUCTION MANAGER FOR FURTHER INSTRUCTION ON HOW TO PROCEED.

NOTES:

1. FOR DISH Wireless L.L.C. LOGO, SEE DISH Wireless L.L.C. DESIGN SPECIFICATIONS (PROVIDED BY DISH Wireless L.L.C.)
2. SITE ID SHALL BE APPLIED TO SIGNS USING "LASER ENGRAVING" OR ANY OTHER WEATHER RESISTANT METHOD (DISH Wireless L.L.C. APPROVAL REQUIRED)
3. TEXT FOR SIGNAGE SHALL INDICATE CORRECT SITE NAME AND NUMBER AS PER DISH Wireless L.L.C. CONSTRUCTION MANAGER RECOMMENDATIONS.
4. CABINET/SHELTER MOUNTING APPLICATION REQUIRES ANOTHER PLATE APPLIED TO THE FACE OF THE CABINET WITH WATER PROOF POLYURETHANE ADHESIVE
5. ALL SIGNS WILL BE SECURED WITH EITHER STAINLESS STEEL ZIP TIES OR STAINLESS STEEL TECH SCREWS
6. ALL SIGNS TO BE 8.5"x11" AND MADE WITH 0.04" OF ALUMINUM MATERIAL

INFORMATION

This is an access point to an area with transmitting antennas.

Obey all signs and barriers beyond this point.
Call the DISH Wireless L.L.C. NOC at 1-866-624-6874

Site ID: BOBDL00139A



THIS SIGN IS FOR REFERENCE PURPOSES ONLY

NOTICE



Transmitting Antenna(s)

Radio frequency fields beyond this point MAY EXCEED the FCC Occupational exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: BOBDL00139A

dish

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CAUTION



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dish
wireless.

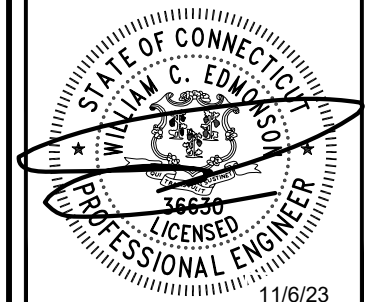
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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00139A
277 HUCKLEBERRY HILL
ROAD
AVON, CT 06013

SHEET TITLE
RF
SIGNAGE

SHEET NUMBER
GN-2

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.



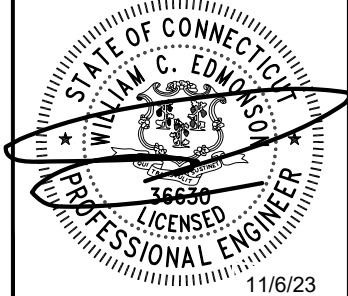
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A&E PROJECT NUMBER

KHCL–40084

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00139A
277 HUCKLEBERRY HILL
ROAD
AVON, CT 06013

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
#4 BARS AND SMALLER 40 ksi
#5 BARS AND LARGER 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
 - CONCRETE EXPOSED TO EARTH OR WEATHER:
 - #6 BARS AND LARGER 2"
 - #5 BARS AND SMALLER 1-1/2"
 - CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
 - SLAB AND WALLS 3/4"
 - BEAMS AND COLUMNS 1-1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- 4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. TIE WRAPS ARE NOT ALLOWED.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



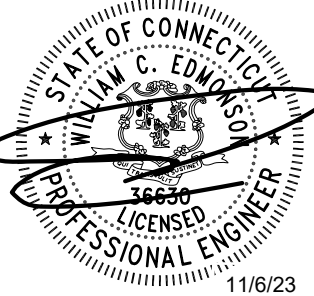
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A&E PROJECT NUMBER
KHCLC-40084

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00139A
277 HUCKLEBERRY HILL
ROAD
AVON, CT 06013

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

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.



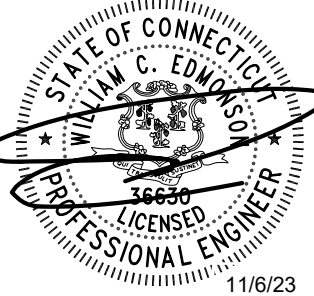
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GENERAL NOTES

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GN-5