NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

December 17, 2021

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

RE: Tower Share Application
699 Old Main St., Rocky Hill, CT 06067
Latitude: 41.668269
Longitude: -72.638036
Site# 827050_Crown_Dish

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 699 Old Main Street in Rocky Hill, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900/2100 MHz antenna and six (6) RRUs, at the 120-foot level of the existing 150-foot monopole tower, one (1) Fiber cables will also be installed as well as an antenna platform mount. Dish Wireless LLC equipment cabinets will be placed within 7x5 lease area. Included are plans by Kimley Horn, dated December 14, 2021 Exhibit C. Also included is a structural analysis prepared by Crown Castle, dated September 23, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. This facility was approved by the Town of Rocky Hill planning and zoning commission on December 18, 1998. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Lisa J. Marotta, Mayor for the Town of Rocky Hill (property owner), Mr. John Mehr, Town Manager, Kimberley A. Ricci, Town Planner/Zoning Enforcement Officer, as well as the tower owner (Crown Castle).

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the tower is 150-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 120-feet.

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

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

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 30.47% as evidenced by Exhibit F.

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

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

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

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 120-foot level of the existing 150-foot monopole tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting Dish Wireless LLC proposed loading. Dish Wireless LLC is not aware of any public safety concerns relative to the proposed sharing of the existing monopole. 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 Rocky Hill.

Sincerely,

Denise Sabo

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

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments cc:

Lisa J. Marotta, Mayor (property owner)
Town of Rocky Hill
761 Old Main Street
Rocky Hill, CT 06067

Mr. John Mehr, Town Manager
Town of Rocky Hill
761 Old Main Street
Rocky Hill, CT 06067

Kimberley A. Ricci, Town Planner/Zoning Enforcement Officer
Town of Rocky Hill
761 Old Main Street
Rocky Hill, CT 06067

Crown Castle, Tower Owner (tower owner)

Exhibit A

Original Facility Approval

FINAL

CERTIFICATE

OF

ZONING COMPLIANCE

This is to certify that a final Certificate of Zoning Compliance is awarded to Omni Point CommunicationsInc. & Town of Rocky HIll for the development located at 699 OLd Main St. more specifically described as Omni POint Tower located at Rocky Hill Town Hall

The issuance of this certificate is evidence that an inspection of the development was conducted on November 5, 1999.

A final Certificate of Zoning Compliance is being issued on this 5 day of November in the year 1999.

Zoning Enforcement Officer

Diane K. Blackman

Diane K. Blackman
Assistant Town Planner/ZEO

Town

699 OLD MAIN STREET • PO BOX 657 • ROCKY HILL

P 200 717 074

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Omnipoint Comm	
Street & Number 100 Filley	
Post Office, State, & ZIP Code Bloomfield CT 06002	
Postage	$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form 3800, April 1995

CERTIFIED

December 18, 1998

Mr. Thomas Gilligan
Omnipoint Communications, Inc.
100 Filley St.
Bloomfield, CT 06002

Ms. Barbara Gilbert Interium Town Manager
Town of Rocky Hill
699 Old Main St.
Rocky Hill, CT 06067

RE: Site Plan Application, 150' monopole Antenna, 699 Old Main Street

Dear Mr. Gilligan and Ms. Gilbert,

The Rocky Hill Planning and Zoning Commission at their regular meeting of December 16, 1998 voted to approve the aforementioned application. The applicants at the meeting indicated that the fenced-in area could be screened with shrubs and that the antenna could be painted, etc. to better blend with the environment. Please contact the undersigned with your intentions for screening.

Please prepare and submit two (2) sets of the final plans for the Commission's signature. One set of plans is to conform with the enclosed Map Requirements, and the other can be mylar for filing with the Planning and Engineering Departments. The plans are to have signature blocks for the Commission. In addition, there is a $10.00 per sheet recording fee (one set only) due and payable to the Town of Rocky Hill. Upon receipt of the signed plans and the recording fee, Staff will gladly record the plans with the Town Clerk.

Should you have any questions, please do not hesitate to contact this office at 860-258-2761 or 860-258-2766.

Sincerely,

Kimberley A. Ricci, Town Planner/Assistant ZEO

KAR/mn

cc: Police Chief
Fire Chief

PLANNING AND ZONING COMMISSION

ROCKY HILL, CONNECTICUT

APPLICATION FOR SITE PLAN SUBMISSION

DATE: _____

Application is hereby made for the submission of a site plan ~~entitled~~: DEPICTING A PROPOSED 150' TOWER TO REPLACE THE EXISTING 77' GUIDE TOWER. OMNIPOINT COMMUNICATIONS, INC AND

1. Name and address of applicant: 100 FILLEY ST. BLOOMFIELD, CT
TOWN OF ROCKY HILL
699 OLD MAIN ST. ROCKY HILL, CT TEL. 860-692-7132 (7156) 258-2700

2. Name and address of owner of record: TOWN OF ROCKY HILL
699 OLD MAIN ST ROCKY HILL, CT TEL. 258-2700

3. Name and address of engineer of surveyor: LAPATKA ASSOCIATES
12 ROUTE 17 NORTH PARAMUS, NJ 07652 TEL. 201-587-1600

4. Location: 699 OLD MAIN ST. - MUNICIPAL COMPLEX

5. Tax Assessor's Map No.: 22 Lot No.: 008/3
Block No.: 01

6. Total area of proposed development 2500 S.F. No. of Lots: N/A

7. Is there any water course within or contiguous to the property? NO.

8. List any potential hazards within or contiguous to the property (Steep cliffs, easements for high pressure gas lines, power transmission lines, etc.) N/A

9. Does owner of record own or have any interest in a partnership or corporation owning abutting property? YES

10. Has any zoning variance been granted concerning this property?
NO

If so, please give full information: _____

NOV 1998
RECEIVED

PLANNING AND ZONING COMMISSION
(Cont'd)

11. Is there a proposed new street or improvement of existing street? NO

(a) If so are copies or road profile submitted?_____

(b) If so are copies of drainage plan submitted?_____

12. If not owner or record, has applicant been legally authorized to act as agent for the owner?_____

13. Has the application fee been submitted? N/A

Thomas M. Gilligan FOR OMNIPOINT COMM.
Tom Morgan
APPLICANT

NOTE: All applications and maps to be considered at a meeting of the Commission must be in the hands of the Secretary of the Commission at least twenty one (21) days before said meeting.

******* CERTIFICATE OF COMPLIANCE FORM, AS PER ROCKY HILL ORDINANCE #132-85, COMPLETED AND ATTACHED

_____ YES

_____ NO

(Application will be deemed as incomplete until such time as the Certificate of Compliance is submitted).

Exhibit B

Property Card


About
Layers
Find
Harbor View Drive
Harbor View Drive
Harbor View Drive
HARBOR VIEW DR
CT 99
SILAS DEANE HWY
Silas Deane Highway
Post Office
Rocky Hill Post Office
Library
9/11 Memorial
CHURCH ST
Old Main Street
Riverview Road
ESTHER RD
RIVERVIEW RD
Riverview Road
Laura Lane
WASHINGTON ST
Shipyard Park
Center Street
OLD MAIN ST
Rocky Hill Congregational Church
Rocky Hill Center
Glastonbury Avenue
GLASTONBURY AV
CT 160
Glastonbury Avenue
Elm Street
Elm Street Historic District
Mountain View Drive
MOUNTAIN VIEW DR
CHAPIN AV
Chapin Avenue
R021
Map Info

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	PARCEL ID: 6852	Class: 901	Card: 1 of 7	Printed: March 5, 2020

CURRENT OWNER

ROCKY HILL TOWN OF
MUNICIPAL COMPLEX
761 OLD MAIN STREET
ROCKY HILL CT 06067

GENERAL INFORMATION

Living Units	
Neighborhood	C
Alternate ID	007389
Vol / Pg	
Map/Lot	10-045
Zoning	R-20
Class	EXEMPT

Property Notes

10-045-002 12/07/2012

Land Information

Type		Size	Influence Factors	Influence %	Value
Primary	AC	8.5600			3,046,000

Total Acres: 8.56
Spot: Location:

Assessment Information

	Assessed	Appraised	Cost	Income	Market
Land	2,132,200	3,046,000	3,046,000	3,046,000	0
Building	6,736,520	9,623,600	9,623,600	2,670,400	0
Total	8,868,720	12,669,600	12,669,600	5,716,400	0

Value Flag COST APPROACH
Gross Building:

Manual Override Reason
Base Date of Value
Effective Date of Value

Entrance Information

Date	ID	Entry Code	Source
10/01/14	CL	Office Review Change	From Conversion
10/09/12	ST	Measured + 1visit	From Conversion
05/23/07	ST	Reval Inspection	Owner

Permit Information

Date Issued	Number	Price	Purpose	% Complete
07/25/19	2019-430	500	EL	Wired Electrical For Split Ac Unit F
07/18/19	2019-325	11,700	CA	Pd Modular Server Room - 3 Ton D
01/29/19	2019-170	1,000	EL	Installing A Double Duplex Outlet A
01/16/19	2019-228	20,000	CM	Sprint To Replace Three (3) Anten
12/20/18	2019-214	20,000	CM	Verizon To Replace Six (6) Antenn

Sales/Ownership History

Transfer Date	Price	Type	Validity	Deed Reference	Deed Type	Grantee
			No Consideration		No Consideration	ROCKY HILL TOWN OF

Inspection Witnessed By _____

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	Parcel Id: 6852	Class: 901	Card: 1 of 7	Printed: March 5, 2020

Building Information

Year Built/Eff Year	1965 /
Building #	1
Structure Type	Office Bldg L/R 1-4s
Identical Units	1
Total Units	1
Grade	C+
# Covered Parking	
# Uncovered Parking	
DBA	TOWN HALL/COMMUNITY

Building Other Features

Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units
1	Porch, Open		189	1		1
1	Porch, Enclosed		54	1		1
1	Porch, Enclosed		60	1		1
1	Elevator Hydraulic Pasngı		2,500	100	2	2

Interior/Exterior Information

Line	Level From	To	Int Fin	Area	Perim	Use Type	Wall Height	Ext Walls	Construction	Partitions	Heating	Cooling	Plumbing	Physical	Functional
1	01	01		28,902	680	Offices	12	Brick & Con	Fire Resistant	Normal	Hot Air	Central	Normal	5	3
2	02	02		18,196	540	Offices	12	Brick & Con	Fire Resistant	Normal	Hot Air	Central	Normal	4	3

Interior/Exterior Valuation Detail

Line	Area	Use Type	% Good	% Complete	Use Value/RCNLD
1	28,902	Offices	60		2,551,590
2	18,196	Offices	60		1,332,170

Outbuilding Data

Line	Type	Yr Blt	Meas1	Meas2	Qty	Area	Grade	Phy Fun	Value
1	Asph Pav	2002			1	127,781	C	G	175,700

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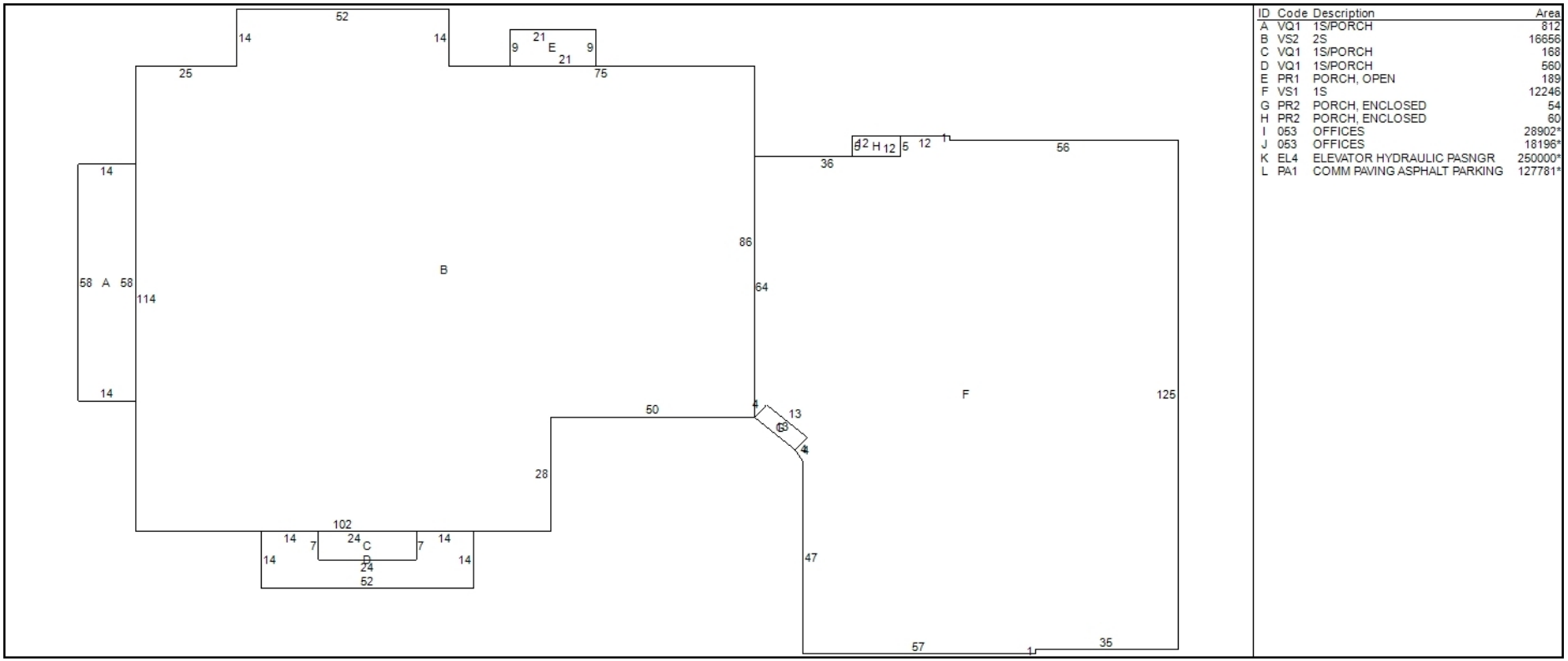
COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	Parcel Id: 6852	Class: 901	Card: 1 of 7	Printed: March 5, 2020



ID	Code	Description	Area
A	VQ1	1S/PORCH	812
B	VS2	2S	16656
C	VQ1	1S/PORCH	168
D	VQ1	1S/PORCH	560
E	PR1	PORCH, OPEN	189
F	VS1	1S	12246
G	PR2	PORCH, ENCLOSED	54
H	PR2	PORCH, ENCLOSED	60
I	053	OFFICES	28902*
J	053	OFFICES	18196*
K	EL4	ELEVATOR HYDRAULIC PASNGR	250000*
L	PA1	COMM PAVING ASPHALT PARKING	127781*

Addtional Property Photos

10-045-001 12/07/2012

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COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	Parcel Id: 6852	Class: 901	Card: 1 of 7	Printed: March 5, 2020

Income Detail (Includes all Buildings on Parcel)

Use Grp	Mod Type	Inc Mod	Model Description	Units	Net Area	Income Rate	Econ Adjust	Potential Gross Income	Vac Model	Vac Adj	Additional Income	Effective Gross Income	Expense Model %	Expense Adj %	Expense Adj	Other Expenses	Total Expenses	Net Operating Income
00	S	1	Shell Income Use Grou	0	53,448						0							
04	S	1	Office Low Rise 1-3 Sto	0	52,930	18.00		952,740	10		0	857,466	30			257,240	257,240	600,226

Apartment Detail - Building 1 of 7

Line	Use Type	Per Bldg	Beds	Baths	Units	Rent	Income

Building Cost Detail - Building 1 of 7

Total Gross Building Area	47,098
Replace, Cost New Less Depr	3,883,760
Percent Complete	100
Number of Identical Units	1
Economic Condition Factor	
Final Building Value	3,883,760
Value per SF	82.46

Notes - Building 1 of 7

Income Summary (Includes all Building on Parcel)

Total Net Income	600,226
Capitalization Rate	0.105000
Sub total	5,716,440
Residual Land Value	
Final Income Value	5,716,440
Total Gross Rent Area	52,930
Total Gross Building Area	106,378

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COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	PARCEL ID: 6852	Class: 901	Card: 2 of 7	Printed: March 5, 2020

CURRENT OWNER

ROCKY HILL TOWN OF
MUNICIPAL COMPLEX
761 OLD MAIN STREET
ROCKY HILL CT 06067

GENERAL INFORMATION

Living Units	
Neighborhood	C
Alternate ID	007389
Vol / Pg	
Map/Lot	10-045
Zoning	R-20
Class	EXEMPT

Property Notes

Land Information

Type		Size	Influence Factors	Influence %	Value
Primary	AC	8.5600			3,046,000

Total Acres: 8.56
Spot: Location:

Assessment Information

	Assessed	Appraised	Cost	Income	Market
Land	2,132,200	3,046,000	3,046,000	3,046,000	0
Building	6,736,520	9,623,600	9,623,600	2,670,400	0
Total	8,868,720	12,669,600	12,669,600	5,716,400	0

Value Flag COST APPROACH
Gross Building:

Manual Override Reason
Base Date of Value
Effective Date of Value

Entrance Information

Date	ID	Entry Code	Source
10/01/14	CL	Office Review Change	From Conversion
10/09/12	ST	Measured + 1visit	From Conversion
05/23/07	ST	Reval Inspection	Owner

Permit Information

Date Issued	Number	Price	Purpose	% Complete
07/25/19	2019-430	500	EL	Wired Electrical For Split Ac Unit F
07/18/19	2019-325	11,700	CA	Pd Modular Server Room - 3 Ton D
01/29/19	2019-170	1,000	EL	Installing A Double Duplex Outlet A
01/16/19	2019-228	20,000	CM	Sprint To Replace Three (3) Anten
12/20/18	2019-214	20,000	CM	Verizon To Replace Six (6) Antenn

Sales/Ownership History

Transfer Date	Price	Type	Validity	Deed Reference	Deed Type	Grantee
			No Consideration		No Consideration	ROCKY HILL TOWN OF

Inspection Witnessed By _____

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET | **Parcel Id: 6852** | **Class: 901** | Card: 2 of 7 | Printed: March 5, 2020

Building Information

Year Built/Eff Year	1954 /
Building #	2
Structure Type	Police/Fire Station
Identical Units	1
Total Units	1
Grade	C+
# Covered Parking	
# Uncovered Parking	
DBA	POLICE

Building Other Features

Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units
1	Porch, Open		45	1		1
1	Elevator Hydraulic Pasngı		2,500	100	2	1

Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units

Interior/Exterior Information

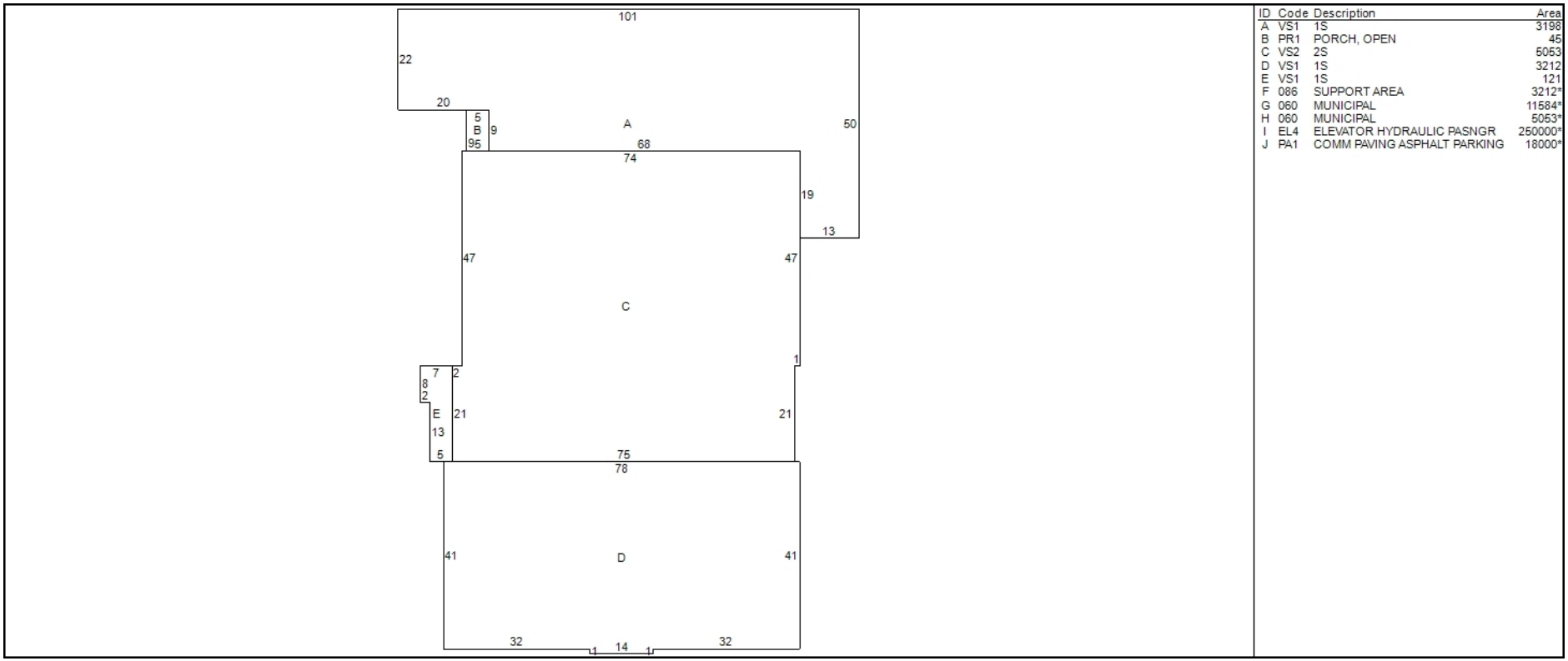
Line	Level From	To	Int Fin	Area	Perim	Use Type	Wall Height	Ext Walls	Construction	Partitions	Heating	Cooling	Plumbing	Physical	Functional
1	B1	B1		3,212	226	Support Area	12	Brick & Con	Wood Frame/Joist/B	Normal	Hot Air	Central	Normal	4	3
2	01	01		11,584	430	Municipal	12	Brick & Con	Wood Frame/Joist/B	Normal	Hot Air	Central	Normal	4	3
3	02	02		5,053	284	Municipal	12	Brick & Con	Wood Frame/Joist/B	Normal	Hot Air	Central	Normal	4	3

Interior/Exterior Valuation Detail

Line	Area	Use Type	% Good	% Complete	Use Value/RCNLD
1	3,212	Support Area	60		179,870
2	11,584	Municipal	60		897,350
3	5,053	Municipal	60		380,000

Outbuilding Data

Line	Type	Yr Blt	Meas1	Meas2	Qty	Area	Grade	Phy Fun	Value
1	Asph Pav	1970			1	18,000	C	G	24,750



ID	Code	Description	Area
A	VS1	1S	3198
B	PR1	PORCH, OPEN	45
C	VS2	2S	5053
D	VS1	1S	3212
E	VS1	1S	121
F	086	SUPPORT AREA	3212*
G	060	MUNICIPAL	11584*
H	060	MUNICIPAL	5053*
I	EL4	ELEVATOR HYDRAULIC PASNGR	250000*
J	PA1	COMM PAVING ASPHALT PARKING	18000*

Addtional Property Photos

10-045-001 12/07/2012

10-045-002 12/07/2012

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	Parcel Id: 6852	Class: 901	Card: 2 of 7	Printed: March 5, 2020

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04	S	1	Office Low Rise 1-3 Sto	0	52,930	18.00		952,740	10		0	857,466	30			257,240	257,240	600,226

Apartment Detail - Building 2 of 7

Line	Use Type	Per Bldg	Beds	Baths	Units	Rent	Income

Building Cost Detail - Building 2 of 7

Total Gross Building Area	19,849
Replace, Cost New Less Depr	1,457,220
Percent Complete	100
Number of Identical Units	1
Economic Condition Factor	
Final Building Value	1,457,220
Value per SF	73.42

Notes - Building 2 of 7

Income Summary (Includes all Building on Parcel)

Total Net Income	600,226
Capitalization Rate	0.105000
Sub total	5,716,440
Residual Land Value	
Final Income Value	5,716,440
Total Gross Rent Area	52,930
Total Gross Building Area	106,378

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	PARCEL ID: 6852	Class: 901	Card: 3 of 7	Printed: March 5, 2020

CURRENT OWNER

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MUNICIPAL COMPLEX
761 OLD MAIN STREET
ROCKY HILL CT 06067

GENERAL INFORMATION

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Neighborhood	C
Alternate ID	007389
Vol / Pg	
Map/Lot	10-045
Zoning	R-20
Class	EXEMPT

Property Notes

10-045-001 12/07/2012

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Total Acres: 8.56
Spot: Location:

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Total	8,868,720	12,669,600	12,669,600	5,716,400	0

Value Flag COST APPROACH
Gross Building:
Manual Override Reason
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Entrance Information

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			No Consideration		No Consideration	ROCKY HILL TOWN OF

Inspection Witnessed By _____

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	Parcel Id: 6852	Class: 901	Card: 3 of 7	Printed: March 5, 2020

Building Information

Year Built/Eff Year	1962 /
Building #	3
Structure Type	Police/Fire Station
Identical Units	1
Total Units	1
Grade	C+
# Covered Parking	
# Uncovered Parking	
DBA	FIRE STATION 1

Building Other Features

Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units
1	Porch, Open		80	1		1
1	Porch, Open		30	1		1

Interior/Exterior Information

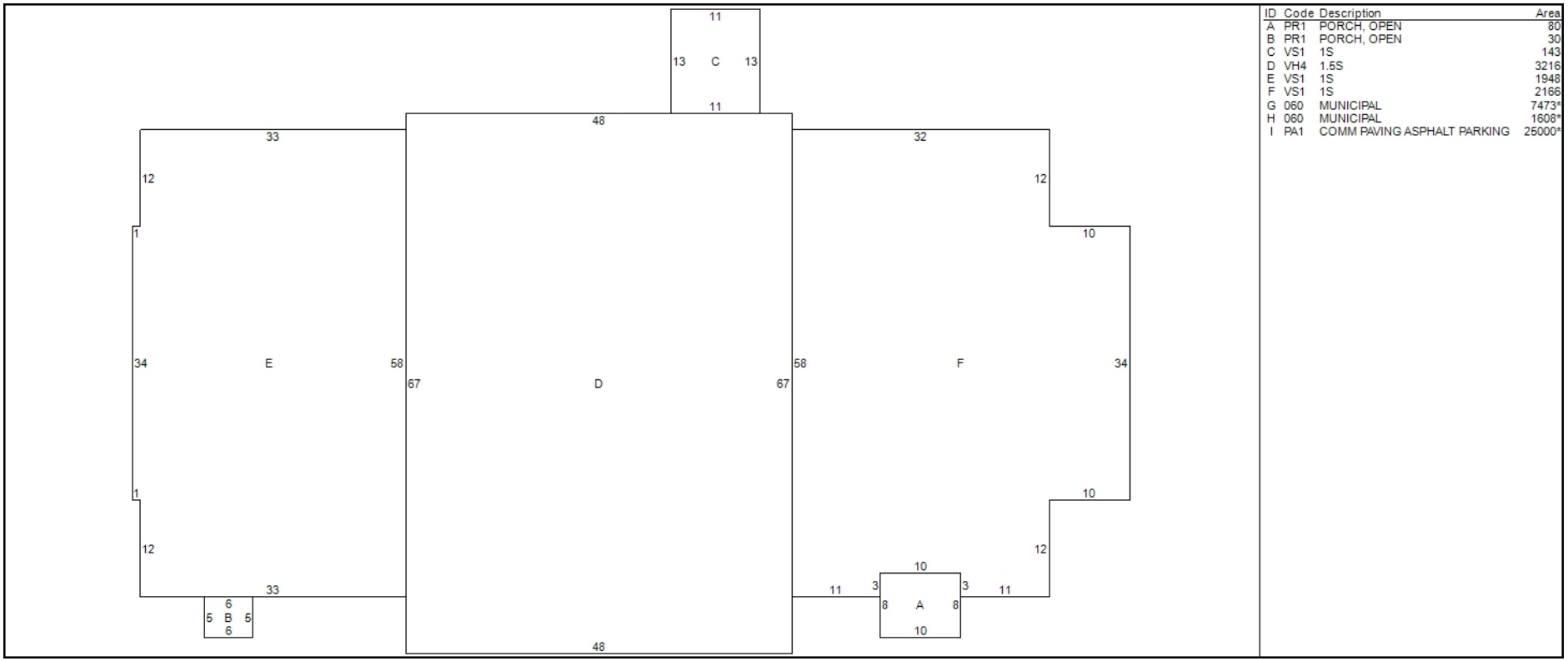
Line	Level From	To	Int Fin	Area	Perim	Use Type	Wall Height	Ext Walls	Construction	Partitions	Heating	Cooling	Plumbing	Physical	Functional
1	01	01		7,473	346	Municipal	12	Brick & Con	Fire Resistant	Normal	Hot Air	Central	Normal	5	3
2	02	02		1,608	160	Municipal	12	Brick & Con	Fire Resistant	Normal	Hot Air	Central	Normal	5	3

Interior/Exterior Valuation Detail

Line	Area	Use Type	% Good	% Complete	Use Value/RCNLD
1	7,473	Municipal	60		688,130
2	1,608	Municipal	60		146,050

Outbuilding Data

Line	Type	Yr Blt	Meas1	Meas2	Qty	Area	Grade	Phy Fun	Value
1	Asph Pav	1962			1	25,000	C	A	30,940



ID	Code	Description	Area
A	PR1	PORCH, OPEN	80
B	PR1	PORCH, OPEN	30
C	VS1	1S	143
D	VH4	1.5S	3216
E	VS1	1S	1948
F	VS1	1S	2166
G	060	MUNICIPAL	7473*
H	060	MUNICIPAL	1608*
I	PA1	COMM PAVING ASPHALT PARKING	25000*

Addtional Property Photos

10-045-002 12/07/2012

10-045-003 11/05/2012

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	Parcel Id: 6852	Class: 901	Card: 3 of 7	Printed: March 5, 2020

Income Detail (Includes all Buildings on Parcel)

Use Grp	Mod Type	Inc Mod	Model Description	Units	Net Area	Income Rate	Econ Adjust	Potential Gross Income	Vac Model	Vac Adj	Additional Income	Effective Gross Income	Expense Model %	Expense Adj %	Expense Adj	Other Expenses	Total Expenses	Net Operating Income
00	S	1	Shell Income Use Grou	0	53,448						0							
04	S	1	Office Low Rise 1-3 Sto	0	52,930	18.00		952,740	10		0	857,466	30			257,240	257,240	600,226

Apartment Detail - Building 3 of 7

Line	Use Type	Per Bldg	Beds	Baths	Units	Rent	Income

Building Cost Detail - Building 3 of 7

Total Gross Building Area	9,081
Replace, Cost New Less Depr	834,180
Percent Complete	100
Number of Identical Units	1
Economic Condition Factor	
Final Building Value	834,180
Value per SF	91.86

Notes - Building 3 of 7

Income Summary (Includes all Building on Parcel)

Total Net Income	600,226
Capitalization Rate	0.105000
Sub total	5,716,440
Residual Land Value	
Final Income Value	5,716,440
Total Gross Rent Area	52,930
Total Gross Building Area	106,378

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	PARCEL ID: 6852	Class: 901	Card: 4 of 7	Printed: March 5, 2020

CURRENT OWNER

ROCKY HILL TOWN OF
MUNICIPAL COMPLEX
761 OLD MAIN STREET
ROCKY HILL CT 06067

GENERAL INFORMATION

Living Units	
Neighborhood	C
Alternate ID	007389
Vol / Pg	
Map/Lot	10-045
Zoning	R-20
Class	EXEMPT

Property Notes

Land Information

Type		Size	Influence Factors	Influence %	Value
Primary	AC	8.5600			3,046,000

Total Acres: 8.56
Spot: Location:

Assessment Information

	Assessed	Appraised	Cost	Income	Market
Land	2,132,200	3,046,000	3,046,000	3,046,000	0
Building	6,736,520	9,623,600	9,623,600	2,670,400	0
Total	8,868,720	12,669,600	12,669,600	5,716,400	0

Value Flag COST APPROACH
Gross Building:

Manual Override Reason
Base Date of Value
Effective Date of Value

Entrance Information

Date	ID	Entry Code	Source
10/01/14	CL	Office Review Change	From Conversion
10/09/12	ST	Measured + 1visit	From Conversion
05/23/07	ST	Reval Inspection	Owner

Permit Information

Date Issued	Number	Price	Purpose	% Complete
07/25/19	2019-430	500	EL	Wired Electrical For Split Ac Unit F
07/18/19	2019-325	11,700	CA	Pd Modular Server Room - 3 Ton D
01/29/19	2019-170	1,000	EL	Installing A Double Duplex Outlet A
01/16/19	2019-228	20,000	CM	Sprint To Replace Three (3) Anten
12/20/18	2019-214	20,000	CM	Verizon To Replace Six (6) Antenn

Sales/Ownership History

Transfer Date	Price	Type	Validity	Deed Reference	Deed Type	Grantee
			No Consideration		No Consideration	ROCKY HILL TOWN OF

Inspection Witnessed By _____

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	Parcel Id: 6852	Class: 901	Card: 4 of 7	Printed: March 5, 2020

Building Information

Year Built/Eff Year	1801 /
Building #	4
Structure Type	Office Bldg H-R 5st
Identical Units	1
Total Units	1
Grade	C
# Covered Parking	
# Uncovered Parking	
DBA	HISTORICAL SOCIETY

Building Other Features

Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units	Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units

Interior/Exterior Information

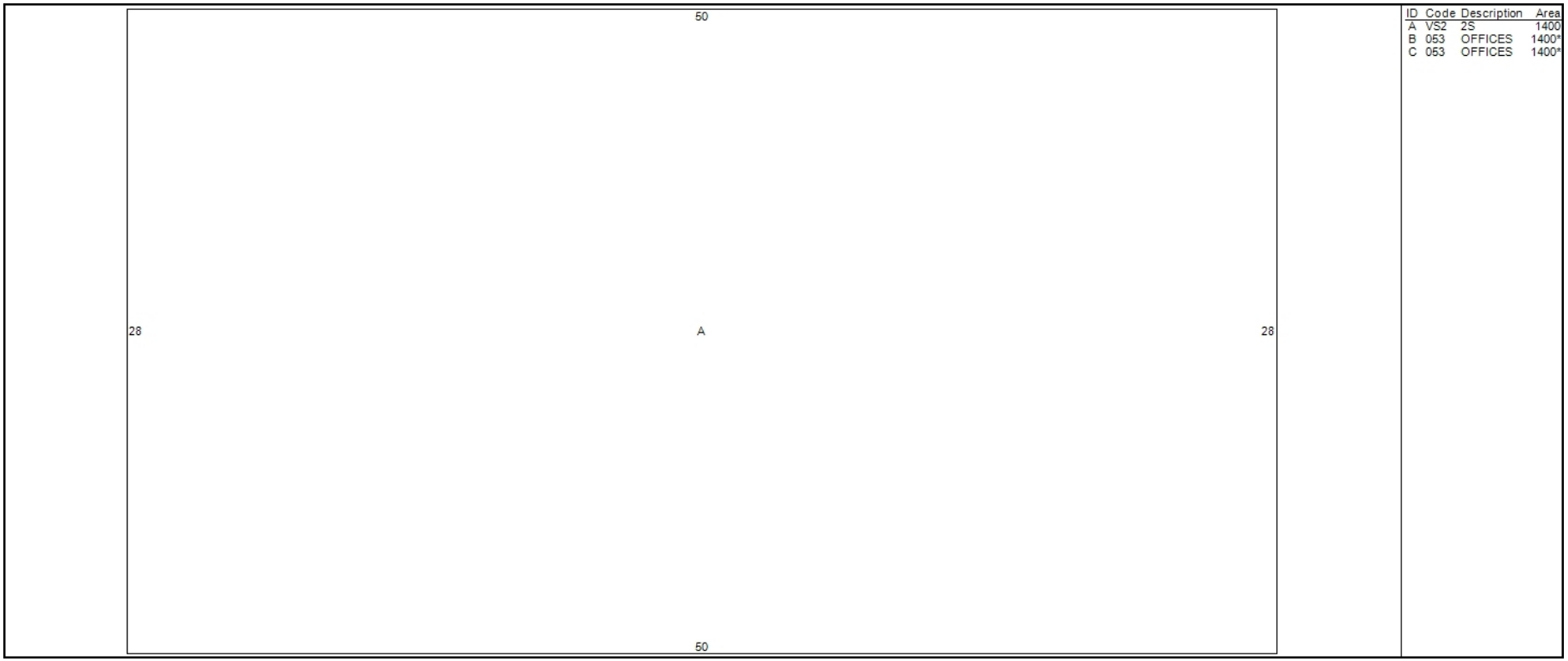
Line	Level From	To	Int Fin	Area	Perim	Use Type	Wall Height	Ext Walls	Construction	Partitions	Heating	Cooling	Plumbing	Physical	Functional
1	01	01		1,400	150	Offices	12	Brick & Con	Fire Resistant	Normal	Hot Water/St	None	Normal	5	3
2	02	02		1,400	150	Offices	12	Frame	Wood Frame/Joist/B	Normal	Hot Water/St	None	Normal	5	3

Interior/Exterior Valuation Detail

Line	Area	Use Type	% Good	% Complete	Use Value/RCNLD
1	1,400	Offices	60		132,280
2	1,400	Offices	60		99,340

Outbuilding Data

Line	Type	Yr Blt	Meas1	Meas2	Qty	Area	Grade	Phy Fun	Value



ID	Code	Description	Area
A	VS2	2S	1400
B	053	OFFICES	1400*
C	053	OFFICES	1400*

Addtional Property Photos

10-045-002 12/07/2012

10-045-003 11/05/2012

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	Parcel Id: 6852	Class: 901	Card: 4 of 7	Printed: March 5, 2020

Income Detail (Includes all Buildings on Parcel)

Use Grp	Mod Type	Inc Mod	Model Description	Units	Net Area	Income Rate	Econ Adjust	Potential Gross Income	Vac Model	Vac Adj	Additional Income	Effective Gross Income	Expense Model %	Expense Adj %	Expense Adj	Other Expenses	Total Expenses	Net Operating Income
00	S	1	Shell Income Use Grou	0	53,448						0							
04	S	1	Office Low Rise 1-3 Sto	0	52,930	18.00		952,740	10		0	857,466	30			257,240	257,240	600,226

Apartment Detail - Building 4 of 7

Line	Use Type	Per Bldg	Beds	Baths	Units	Rent	Income

Building Cost Detail - Building 4 of 7

Total Gross Building Area	2,800
Replace, Cost New Less Depr	231,620
Percent Complete	100
Number of Identical Units	1
Economic Condition Factor	
Final Building Value	231,620
Value per SF	82.72

Notes - Building 4 of 7

Income Summary (Includes all Building on Parcel)

Total Net Income	600,226
Capitalization Rate	0.105000
Sub total	5,716,440
Residual Land Value	
Final Income Value	5,716,440
Total Gross Rent Area	52,930
Total Gross Building Area	106,378

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	PARCEL ID: 6852	Class: 901	Card: 5 of 7	Printed: March 5, 2020

CURRENT OWNER

ROCKY HILL TOWN OF
MUNICIPAL COMPLEX
761 OLD MAIN STREET
ROCKY HILL CT 06067

GENERAL INFORMATION

Living Units	
Neighborhood	C
Alternate ID	007389
Vol / Pg	
Map/Lot	10-045
Zoning	R-20
Class	EXEMPT

Property Notes

10-045-002 12/07/2012

Land Information

Type		Size	Influence Factors	Influence %	Value
Primary	AC	8.5600			3,046,000

Total Acres: 8.56
Spot: Location:

Assessment Information

	Assessed	Appraised	Cost	Income	Market
Land	2,132,200	3,046,000	3,046,000	3,046,000	0
Building	6,736,520	9,623,600	9,623,600	2,670,400	0
Total	8,868,720	12,669,600	12,669,600	5,716,400	0

Value Flag COST APPROACH
Gross Building:

Manual Override Reason
Base Date of Value
Effective Date of Value

Entrance Information

Date	ID	Entry Code	Source
10/01/14	CL	Office Review Change	From Conversion
10/09/12	ST	Measured + 1visit	From Conversion
05/23/07	ST	Reval Inspection	Owner

Permit Information

Date Issued	Number	Price	Purpose	% Complete
07/25/19	2019-430	500	EL	Wired Electrical For Split Ac Unit F
07/18/19	2019-325	11,700	CA	Pd Modular Server Room - 3 Ton I
01/29/19	2019-170	1,000	EL	Installing A Double Duplex Outlet A
01/16/19	2019-228	20,000	CM	Sprint To Replace Three (3) Anten
12/20/18	2019-214	20,000	CM	Verizon To Replace Six (6) Antenn

Sales/Ownership History

Transfer Date	Price	Type	Validity	Deed Reference	Deed Type	Grantee
			No Consideration		No Consideration	ROCKY HILL TOWN OF

Inspection Witnessed By _____

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	Parcel Id: 6852	Class: 901	Card: 5 of 7	Printed: March 5, 2020

Building Information

Year Built/Eff Year	1967 /
Building #	5
Structure Type	Library
Identical Units	1
Total Units	1
Grade	B
# Covered Parking	
# Uncovered Parking	
DBA	LIBRARY

Building Other Features

Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units	Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units
1	Porch, Open		120	1		1							
1	Elevator Electric Pasngr		2,500	100	2	1							

Interior/Exterior Information

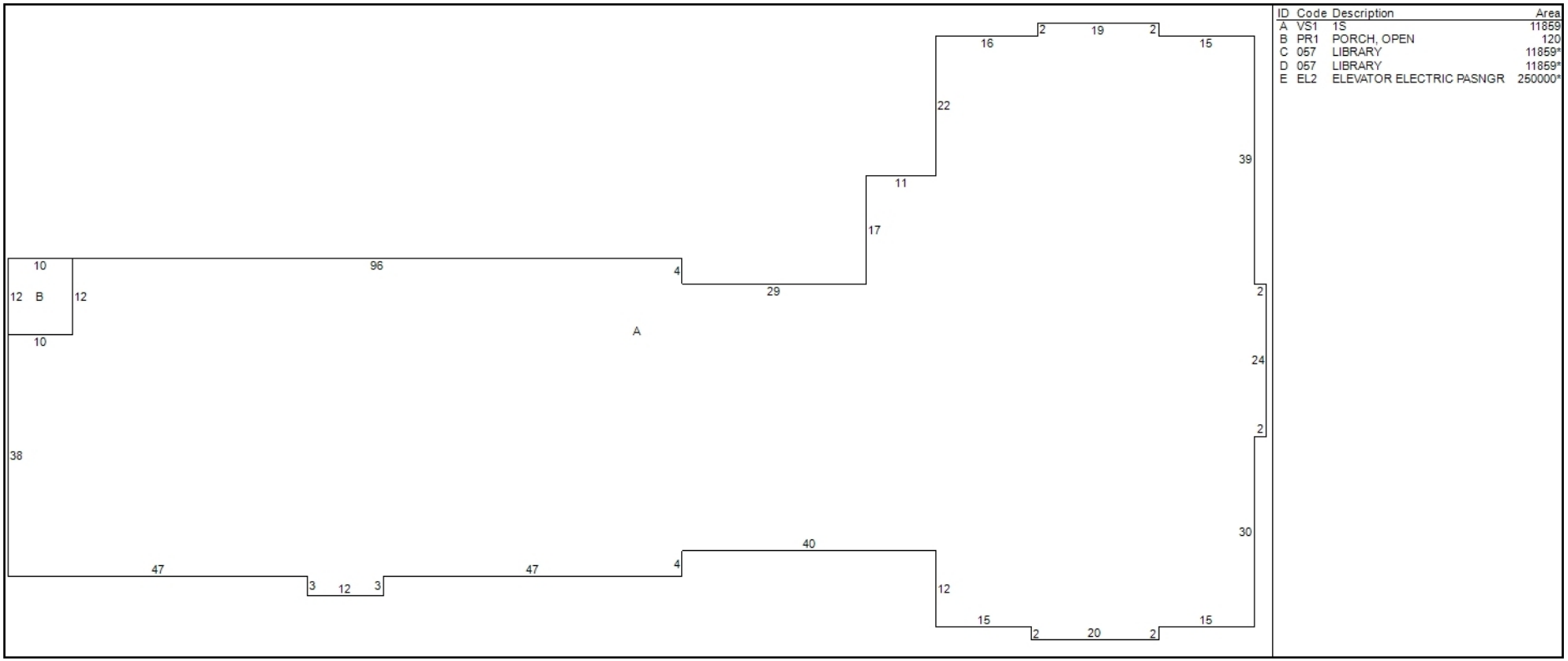
Line	Level From	To	Int Fin	Area	Perim	Use Type	Wall Height	Ext Walls	Construction	Partitions	Heating	Cooling	Plumbing	Physical	Functional
1	B1	B1		11,859	436	Library	12	Brick & Con	Fire Resistant	Normal	Hot Air	Central	Normal	4	3
2	01	01		11,859	436	Library	12	Brick & Con	Fire Resistant	Normal	Hot Air	Central	Normal	4	3

Interior/Exterior Valuation Detail

Line	Area	Use Type	% Good	% Complete	Use Value/RCNLD
1	11,859	Library	60		1,267,100
2	11,859	Library	60		1,346,600

Outbuilding Data

Line	Type	Yr Blt	Meas1	Meas2	Qty	Area	Grade	Phy Fun	Value



Addtional Property Photos

10-045-003 11/05/2012

10-045-004 12/07/2012

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	Parcel Id: 6852	Class: 901	Card: 5 of 7	Printed: March 5, 2020

Income Detail (Includes all Buildings on Parcel)

Use Grp	Mod Type	Inc Mod	Model Description	Units	Net Area	Income Rate	Econ Adjust	Potential Gross Income	Vac Model	Vac Adj	Additional Income	Effective Gross Income	Expense Model %	Expense Adj %	Expense Adj	Other Expenses	Total Expenses	Net Operating Income
00	S	1	Shell Income Use Grou	0	53,448						0							
04	S	1	Office Low Rise 1-3 Sto	0	52,930	18.00		952,740	10		0	857,466	30			257,240	257,240	600,226

Apartment Detail - Building 5 of 7

Line	Use Type	Per Bldg	Beds	Baths	Units	Rent	Income

Building Cost Detail - Building 5 of 7

Total Gross Building Area	23,718
Replace, Cost New Less Depr	2,613,700
Percent Complete	100
Number of Identical Units	1
Economic Condition Factor	
Final Building Value	2,613,700
Value per SF	110.20

Notes - Building 5 of 7

Income Summary (Includes all Building on Parcel)

Total Net Income	600,226
Capitalization Rate	0.105000
Sub total	5,716,440
Residual Land Value	
Final Income Value	5,716,440
Total Gross Rent Area	52,930
Total Gross Building Area	106,378

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	PARCEL ID: 6852	Class: 901	Card: 6 of 7	Printed: March 5, 2020

CURRENT OWNER

ROCKY HILL TOWN OF
MUNICIPAL COMPLEX
761 OLD MAIN STREET
ROCKY HILL CT 06067

GENERAL INFORMATION

Living Units	
Neighborhood	C
Alternate ID	007389
Vol / Pg	
Map/Lot	10-045
Zoning	R-20
Class	EXEMPT

Property Notes

10-045-003 11/05/2012

Land Information

Type		Size	Influence Factors	Influence %	Value
Primary	AC	8.5600			3,046,000

Total Acres: 8.56
Spot: Location:

Assessment Information

	Assessed	Appraised	Cost	Income	Market
Land	2,132,200	3,046,000	3,046,000	3,046,000	0
Building	6,736,520	9,623,600	9,623,600	2,670,400	0
Total	8,868,720	12,669,600	12,669,600	5,716,400	0

Value Flag COST APPROACH
Gross Building:

Manual Override Reason
Base Date of Value
Effective Date of Value

Entrance Information

Date	ID	Entry Code	Source
10/01/14	CL	Office Review Change	From Conversion
10/09/12	ST	Measured + 1visit	From Conversion
05/23/07	ST	Reval Inspection	Owner

Permit Information

Date Issued	Number	Price	Purpose	% Complete
07/25/19	2019-430	500	EL	Wired Electrical For Split Ac Unit F
07/18/19	2019-325	11,700	CA	Pd Modular Server Room - 3 Ton D
01/29/19	2019-170	1,000	EL	Installing A Double Duplex Outlet A
01/16/19	2019-228	20,000	CM	Sprint To Replace Three (3) Anten
12/20/18	2019-214	20,000	CM	Verizon To Replace Six (6) Antenn

Sales/Ownership History

Transfer Date	Price	Type	Validity	Deed Reference	Deed Type	Grantee
			No Consideration		No Consideration	ROCKY HILL TOWN OF

Inspection Witnessed By _____

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	Parcel Id: 6852	Class: 901	Card: 6 of 7	Printed: March 5, 2020

Building Information

Year Built/Eff Year	1920 /
Building #	6
Structure Type	Office Bldg H-R 5st
Identical Units	1
Total Units	1
Grade	A
# Covered Parking	
# Uncovered Parking	
DBA	FIRE MUSEUM

Building Other Features

Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units	Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units

Interior/Exterior Information

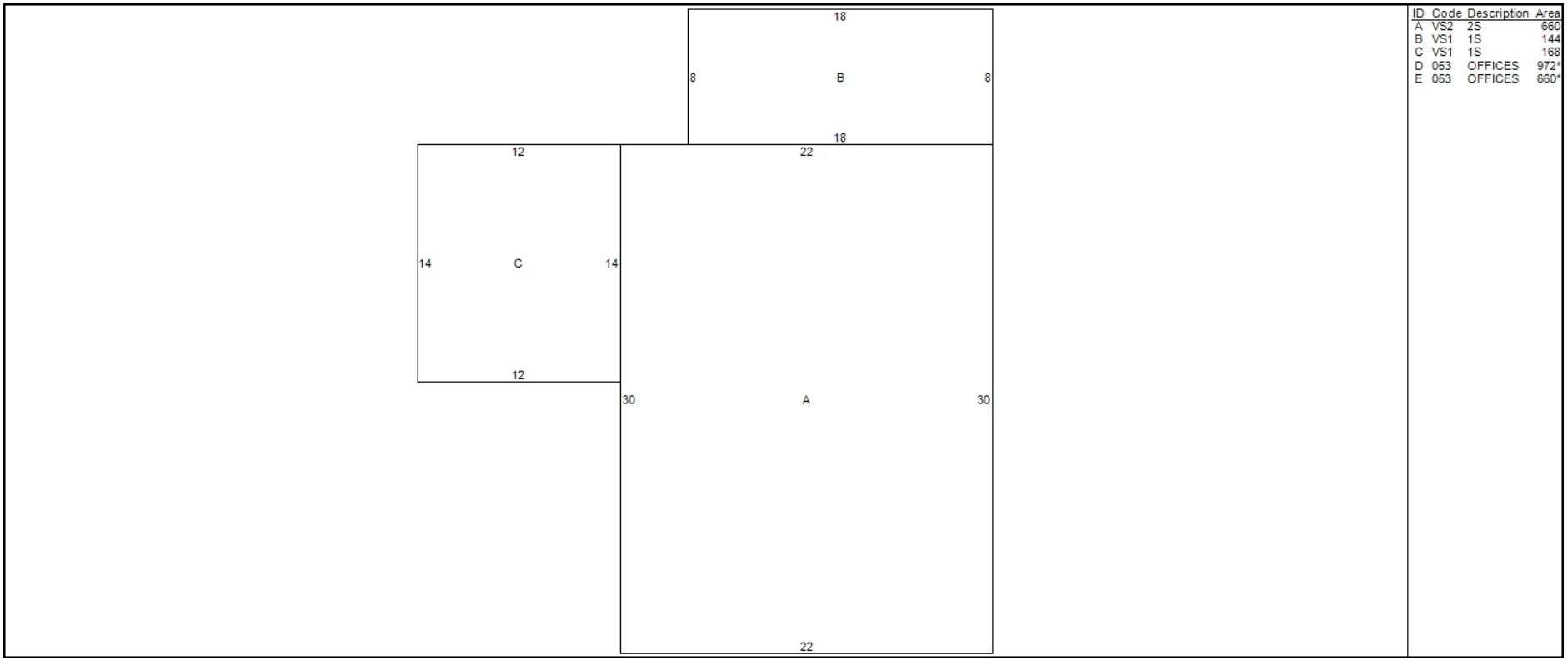
Line	Level From	To	Int Fin	Area	Perim	Use Type	Wall Height	Ext Walls	Construction	Partitions	Heating	Cooling	Plumbing	Physical	Functional
1	01	01		972	124	Offices	12	Brick & Con	Wood Frame/Joist/B	Normal	Electric	None	Normal	5	3
2	02	02		660	102	Offices	12	Brick & Con	Wood Frame/Joist/B	Normal	Electric	None	Normal	5	3

Interior/Exterior Valuation Detail

Line	Area	Use Type	% Good	% Complete	Use Value/RCNLD
1	972	Offices	60		128,880
2	660	Offices	60		88,390

Outbuilding Data

Line	Type	Yr Blt	Meas1	Meas2	Qty	Area	Grade	Phy Fun	Value



ID	Code	Description	Area
A	VS2	2S	660
B	VS1	1S	144
C	VS1	1S	168
D	053	OFFICES	972*
E	053	OFFICES	660*

Addtional Property Photos

10-045-004 12/07/2012

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	Parcel Id: 6852	Class: 901	Card: 6 of 7	Printed: March 5, 2020

Income Detail (Includes all Buildings on Parcel)

Use Grp	Mod Type	Inc Mod	Model Description	Units	Net Area	Income Rate	Econ Adjust	Potential Gross Income	Vac Model	Vac Adj	Additional Income	Effective Gross Income	Expense Model %	Expense Adj %	Expense Adj	Other Expenses	Total Expenses	Net Operating Income
00	S	1	Shell Income Use Grou	0	53,448						0							
04	S	1	Office Low Rise 1-3 Sto	0	52,930	18.00		952,740	10		0	857,466	30			257,240	257,240	600,226

Apartment Detail - Building 6 of 7

Line	Use Type	Per Bldg	Beds	Baths	Units	Rent	Income

Building Cost Detail - Building 6 of 7

Total Gross Building Area	1,632
Replace, Cost New Less Depr	217,270
Percent Complete	100
Number of Identical Units	1
Economic Condition Factor	
Final Building Value	217,270
Value per SF	133.13

Notes - Building 6 of 7

Income Summary (Includes all Building on Parcel)

Total Net Income	600,226
Capitalization Rate	0.105000
Sub total	5,716,440
Residual Land Value	
Final Income Value	5,716,440
Total Gross Rent Area	52,930
Total Gross Building Area	106,378

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	PARCEL ID: 6852	Class: 901	Card: 7 of 7	Printed: March 5, 2020

CURRENT OWNER

ROCKY HILL TOWN OF
MUNICIPAL COMPLEX
761 OLD MAIN STREET
ROCKY HILL CT 06067

GENERAL INFORMATION

Living Units	
Neighborhood	C
Alternate ID	007389
Vol / Pg	
Map/Lot	10-045
Zoning	R-20
Class	EXEMPT

Property Notes

Land Information

Type		Size	Influence Factors	Influence %	Value
Primary	AC	8.5600			3,046,000

Total Acres: 8.56
Spot: Location:

Assessment Information

	Assessed	Appraised	Cost	Income	Market
Land	2,132,200	3,046,000	3,046,000	3,046,000	0
Building	6,736,520	9,623,600	9,623,600	2,670,400	0
Total	8,868,720	12,669,600	12,669,600	5,716,400	0

Value Flag COST APPROACH
Gross Building:

Manual Override Reason
Base Date of Value
Effective Date of Value

Entrance Information

Date	ID	Entry Code	Source
10/01/14	CL	Office Review Change	From Conversion
10/09/12	ST	Measured + 1visit	From Conversion
05/23/07	ST	Reval Inspection	Owner

Permit Information

Date Issued	Number	Price	Purpose	% Complete
07/25/19	2019-430	500	EL	Wired Electrical For Split Ac Unit F
07/18/19	2019-325	11,700	CA	Pd Modular Server Room - 3 Ton D
01/29/19	2019-170	1,000	EL	Installing A Double Duplex Outlet A
01/16/19	2019-228	20,000	CM	Sprint To Replace Three (3) Anten
12/20/18	2019-214	20,000	CM	Verizon To Replace Six (6) Antenn

Sales/Ownership History

Transfer Date	Price	Type	Validity	Deed Reference	Deed Type	Grantee
			No Consideration		No Consideration	ROCKY HILL TOWN OF

Inspection Witnessed By _____

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET | **Parcel Id: 6852** | **Class: 901** | Card: 7 of 7 | Printed: March 5, 2020

Building Information

Year Built/Eff Year	1918 /
Building #	7
Structure Type	Office Bldg H-R 5st
Identical Units	1
Total Units	1
Grade	C
# Covered Parking	
# Uncovered Parking	
DBA	673 OLD MAIN ST - KENNEDY HOUS

Building Other Features

Line	Type	+/-	Meas1	Meas2	# Stops	Ident Units
1	Porch, Enclosed		80	1		1
1	Porch, Open		256	1		1

Interior/Exterior Information

Line	Level From	To	Int Fin	Area	Perim	Use Type	Wall Height	Ext Walls	Construction	Partitions	Heating	Cooling	Plumbing	Physical	Functional
1	B1	B1		800	114	Support Area	12	Brick Venee	Wood Frame/Joist/B	Normal	Hot Water/St	None	Normal	5	3
2	01	01		800	114	Offices	12	Brick Venee	Wood Frame/Joist/B	Normal	Hot Water/St	None	Normal	5	3
3	02	02		600	98	Offices	12	Brick Venee	Wood Frame/Joist/B	Normal	Hot Water/St	None	Normal	5	3

Interior/Exterior Valuation Detail

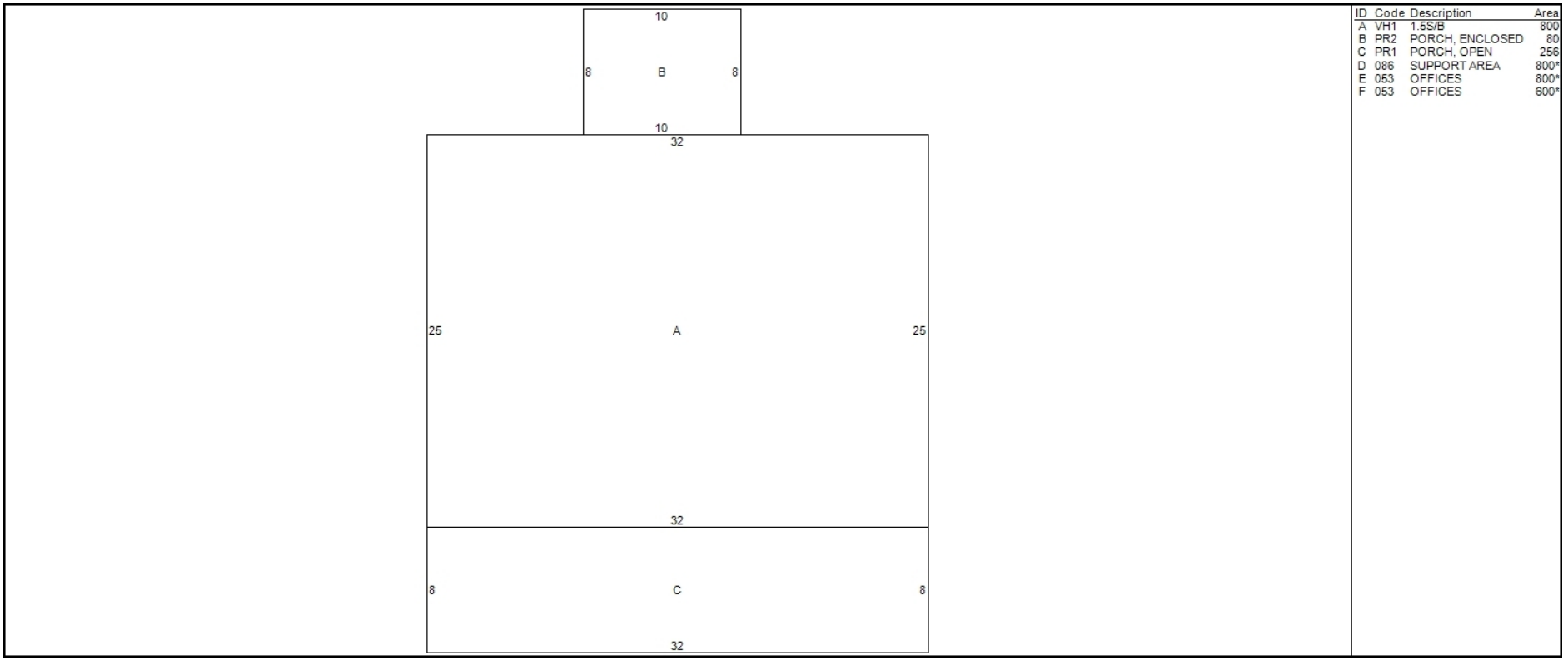
Line	Area	Use Type	% Good	% Complete	Use Value/RCNLD
1	800	Support Area	60		27,120
2	800	Offices	60		72,760
3	600	Offices	60		54,580

Outbuilding Data

Line	Type	Yr Blt	Meas1	Meas2	Qty	Area	Grade	Phy Fun	Value

tyler clt division **COMMERCIAL PROPERTY RECORD CARD** 2019 **TOWN OF ROCKY HILL**

Situs : 761 OLD MAIN STREET	Parcel Id: 6852	Class: 901	Card: 7 of 7	Printed: March 5, 2020



ID	Code	Description	Area
A	VH1	1.5S/B	800
B	PR2	PORCH, ENCLOSED	80
C	PR1	PORCH, OPEN	256
D	086	SUPPORT AREA	800*
E	053	OFFICES	800*
F	053	OFFICES	600*

Addtional Property Photos

10-045-004 12/07/2012

10-045-006 12/07/2012

tyler clt division

COMMERCIAL PROPERTY RECORD CARD 2019

TOWN OF ROCKY HILL

Situs : 761 OLD MAIN STREET	Parcel Id: 6852	Class: 901	Card: 7 of 7	Printed: March 5, 2020

Income Detail (Includes all Buildings on Parcel)

Use Grp	Mod Type	Inc Mod	Model Description	Units	Net Area	Income Rate	Econ Adjust	Potential Gross Income	Vac Model	Vac Adj	Additional Income	Effective Gross Income	Expense Model %	Expense Adj %	Expense Adj	Other Expenses	Total Expenses	Net Operating Income
00	S	1	Shell Income Use Grou	0	53,448						0							
04	S	1	Office Low Rise 1-3 Sto	0	52,930	18.00		952,740	10		0	857,466	30			257,240	257,240	600,226

Apartment Detail - Building 7 of 7

Line	Use Type	Per Bldg	Beds	Baths	Units	Rent	Income

Building Cost Detail - Building 7 of 7

Total Gross Building Area	2,200
Replace, Cost New Less Depr	154,460
Percent Complete	100
Number of Identical Units	1
Economic Condition Factor	
Final Building Value	154,460
Value per SF	70.21

Notes - Building 7 of 7

Income Summary (Includes all Building on Parcel)

Total Net Income	600,226
Capitalization Rate	0.105000
Sub total	5,716,440
Residual Land Value	
Final Income Value	5,716,440
Total Gross Rent Area	52,930
Total Gross Building Area	106,378

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOBDL00058A

DISH Wireless L.L.C. SITE ADDRESS:

699 OLD MAIN ST.
ROCKY HILL, CT 06067

CONNECTICUT CODE OF COMPLIANCE

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

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

SHEET INDEX

SCOPE OF WORK

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

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

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED METAL PLATFORM
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)
- DISH Wireless L.L.C. TO UTILIZE EXISTING EMPTY METER SOCKET
- DISH Wireless L.L.C. TO UTILIZE EXISTING DISCONNECT

SITE PHOTO

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

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	TOWN OF ROCKY HILL
ADDRESS:	761 OLD MAIN STREET ROCKY HILL, CT 06067
TOWER TYPE:	MONOPOLE
CROWN CASTLE SITE ID:	827050
CROWN CASTLE APP NUMBER:	556633
COUNTY:	HARTFORD
LATITUDE (NAD 83):	41° 40' 5.77" N 41.668269°
LONGITUDE (NAD 83):	72° 38' 16.93" W -72.638036°
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	ROCK-000010-000000-000045
PARCEL NUMBER:	10-045
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	NORTHEAST UTILITIES
TELEPHONE COMPANY:	LIGHTOWER

PROJECT DIRECTORY

APPLICANT:	DISH WIRELESS, LLC. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (877) 486-9377
SITE DESIGNER:	KIMLEY-HORN & ASSOCIATES 3875 EMBASSY PKWY, SUITE 280 AKRON, OH 44333 (216) 505-7771 COA #: PEC.0000738
SITE ACQUISITION:	VICTOR NUNEZ (917) 563-3682
CONSTRUCTION MANAGER:	JAVIER SOTO JAVIER.SOTO@DISH.COM
RF ENGINEER:	BOSSENER CHARLES BOSSENER.CHARLES@DISH.COM

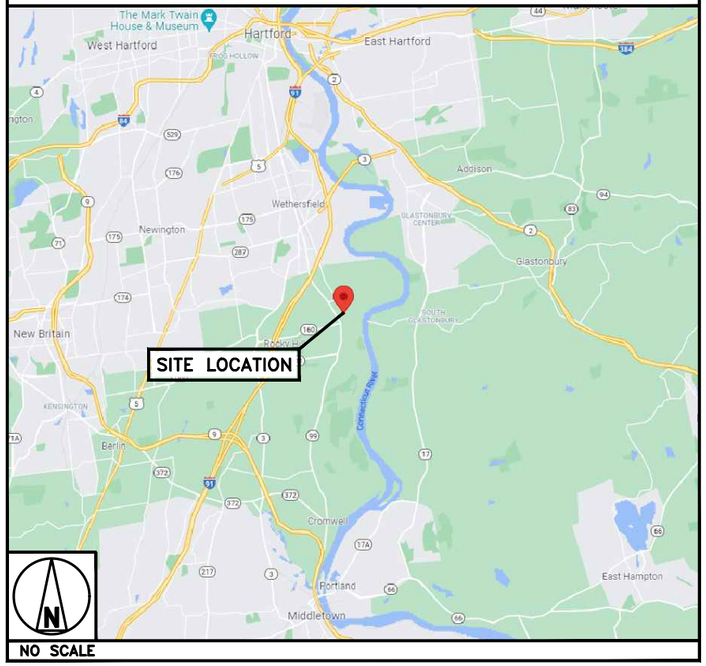
12/14/21
Exp. 01/31/22

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:

x CONTINUE TO EAST GRANBY
x TAKE I-91 S TO CT-99 S IN ROCKY HILL. TAKE EXIT 24 FROM I-91 S
x CONTINUE ON CT-99 S TO YOUR DESTINATION

VICINITY MAP



NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

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

STATE OF CONNECTICUT
BRIAN J. BREWER
29510
LICENSED
PROFESSIONAL ENGINEER

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/15/2021	ISSUED FOR REVIEW
0	12/14/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

KHCLE-17042

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

SHEET TITLE

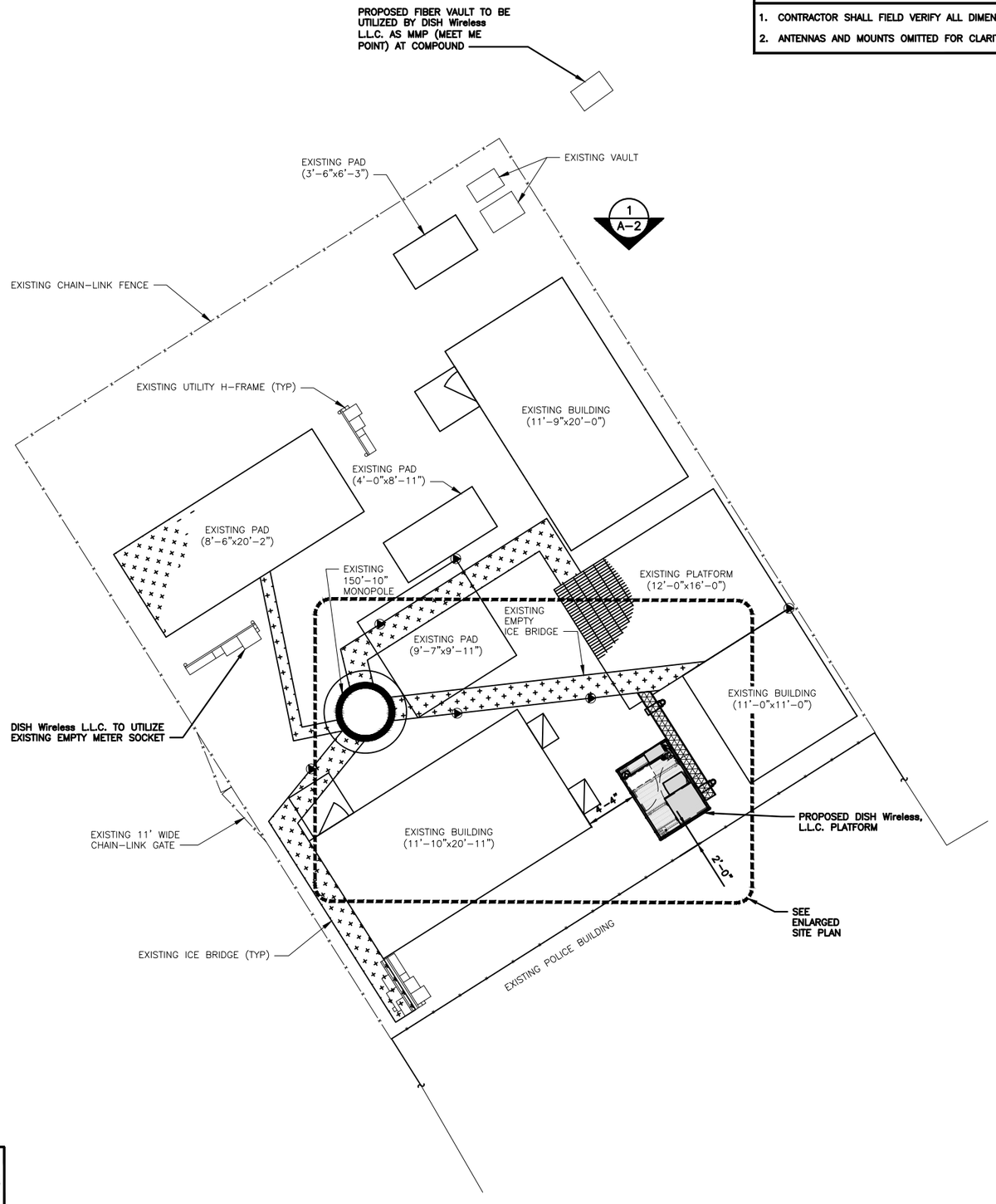
TITLE SHEET

SHEET NUMBER

T-1

NOTES

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



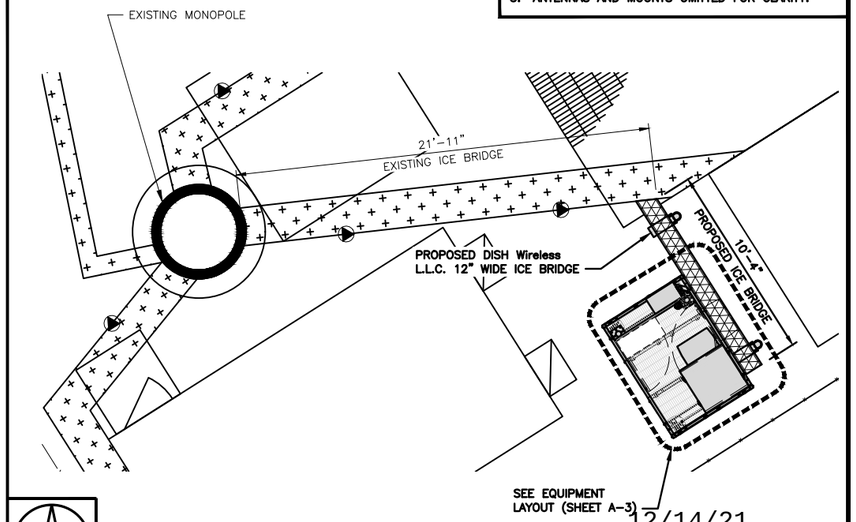
OVERALL SITE PLAN

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

1

NOTES

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

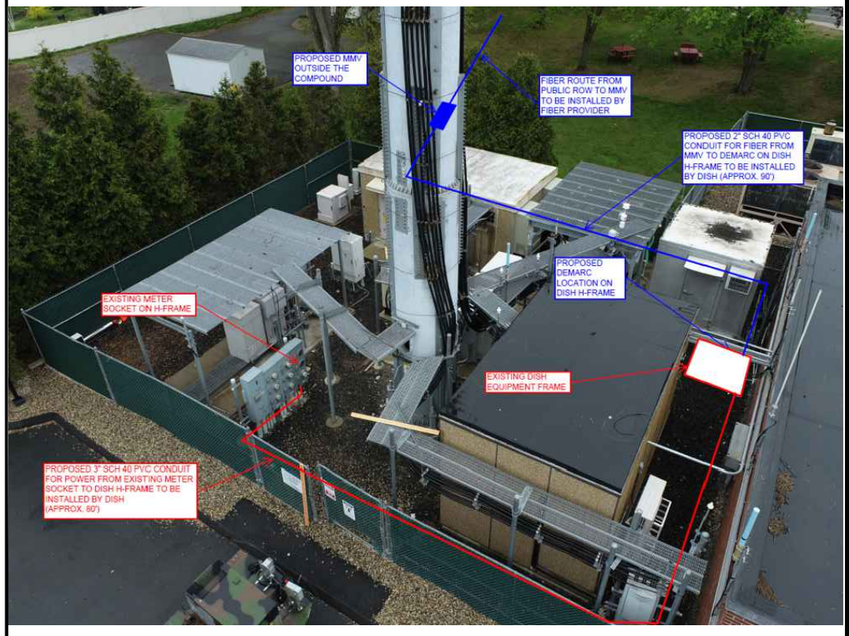


12/14/21
Exp. 01/31/22

ENLARGED SITE PLAN

12" 6" 0 1' 2' 3' 4' 5' 6' 7'
3/8"=1'-0"

2



OVERALL UTILITY ROUTE PLAN

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

STATE OF CONNECTICUT
BRIAN K. BREWER
29510
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	---

RFDS REV #: 1

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A&E PROJECT NUMBER

KHCLE-17042

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

SHEET TITLE

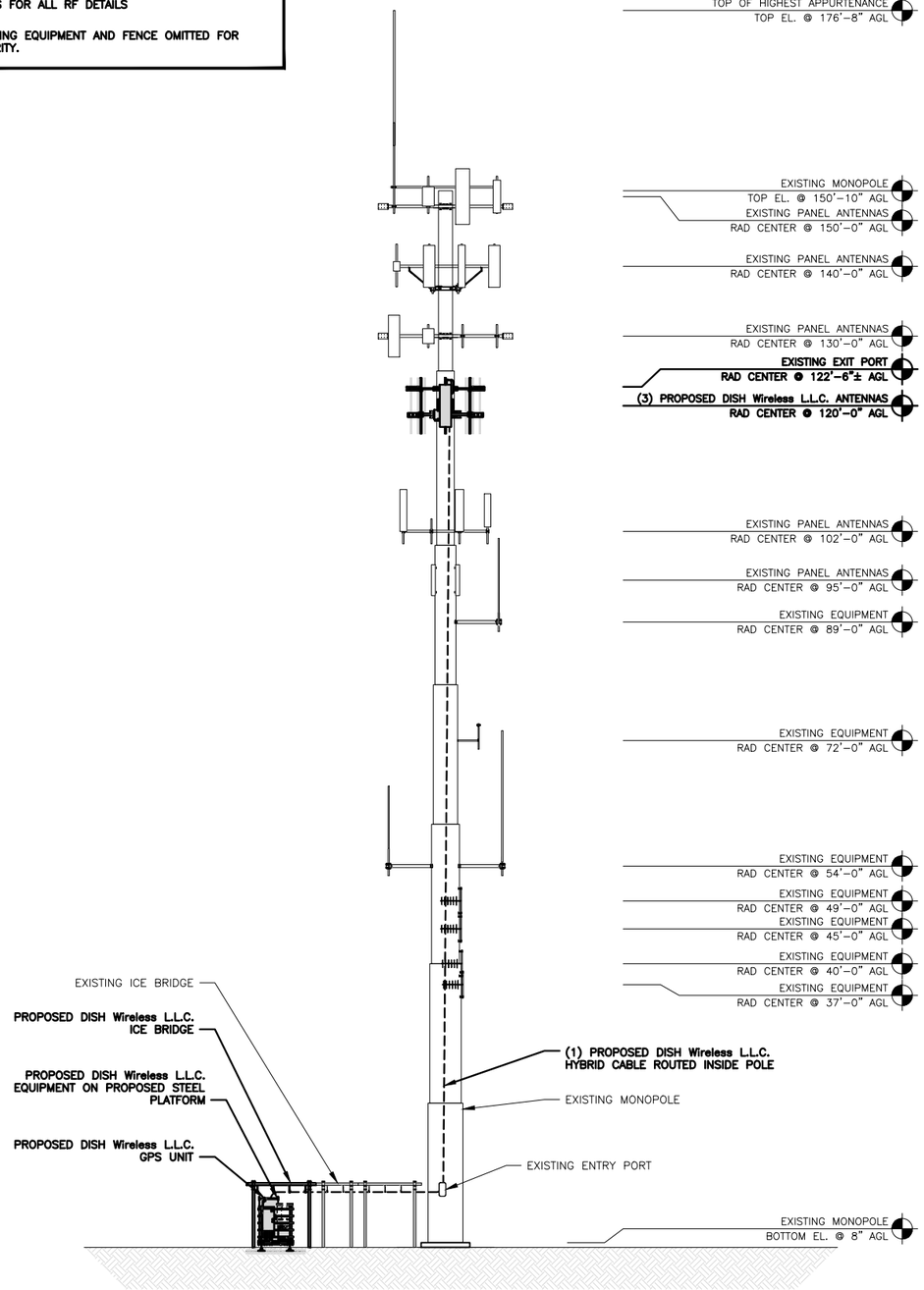
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

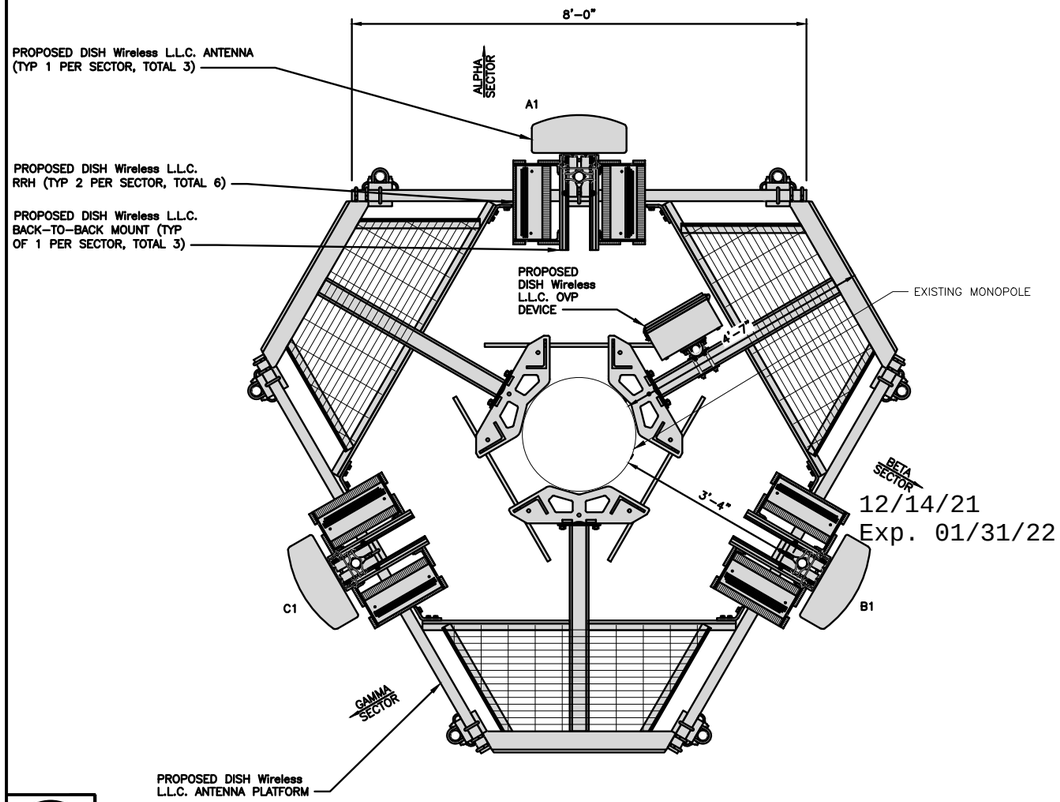
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED NORTH ELEVATION

12' 8' 4' 0 10' 20'
3/32"=1'-0"

1



ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	0°	120'-0"	(1) HIGH-CAPACITY HYBRID CABLE (180'-0" LONG)
BETA	B1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	120°	120'-0"	
GAMMA	C1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	240°	120'-0"	

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

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

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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

COA #: PEC.0000738
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RALEIGH, NC 27601

STATE OF CONNECTICUT
BRIAN K. BREWER
29510
LICENSED PROFESSIONAL ENGINEER

12/14/21
Exp. 01/31/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	---

RFDS REV #: 1

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DISH Wireless L.L.C.
PROJECT INFORMATION

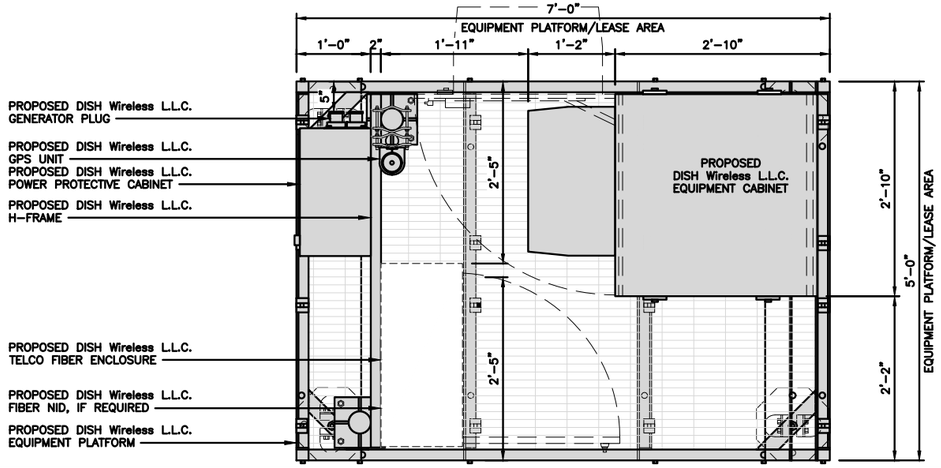
BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



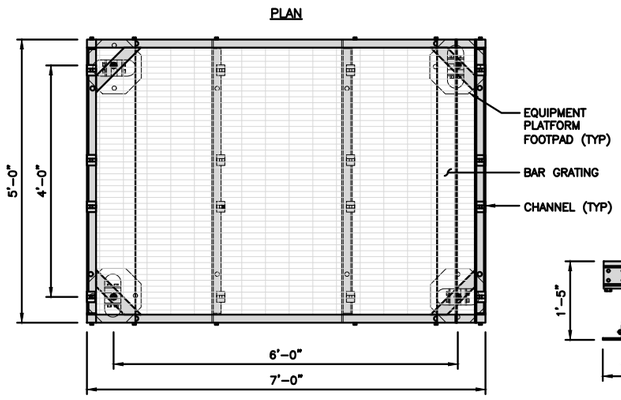
PLATFORM EQUIPMENT PLAN

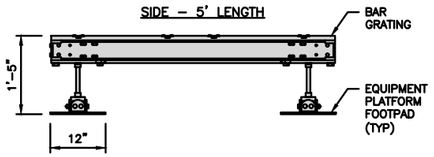
12" 9" 6" 3" 0 1' 2'
1"=1'-0"

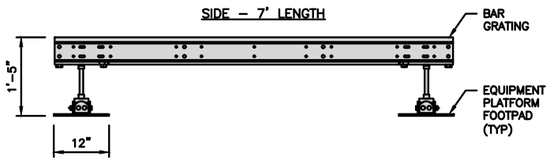
1

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

NOTE:
1. GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 17"
2. PLATFORM TO BE LEVEL WITHIN 1"





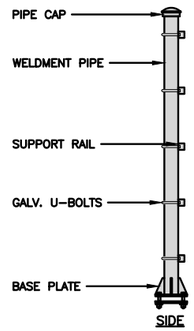


PLATFORM DETAIL

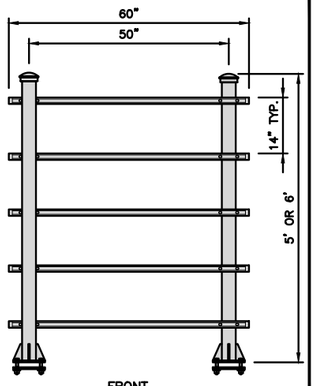
NO SCALE

2

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



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



H-FRAME DETAIL

NO SCALE

3

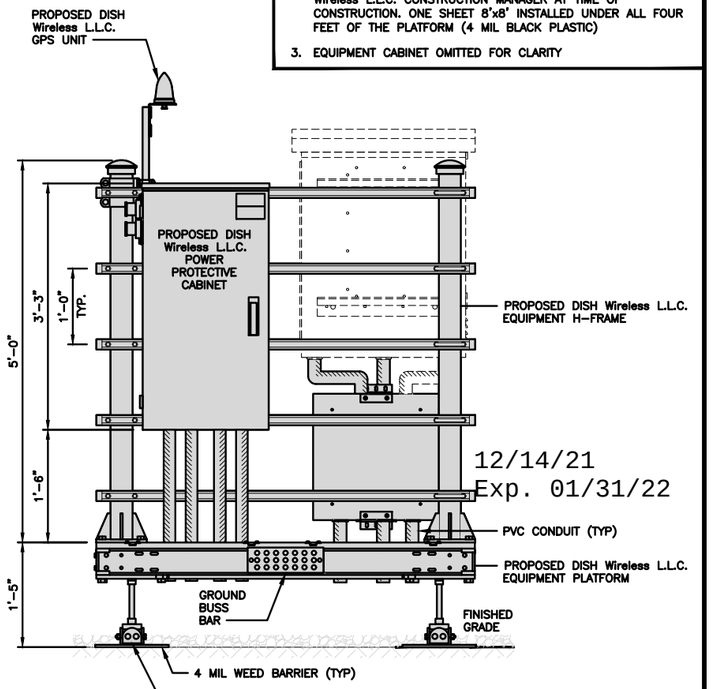
NOT USED

NO SCALE

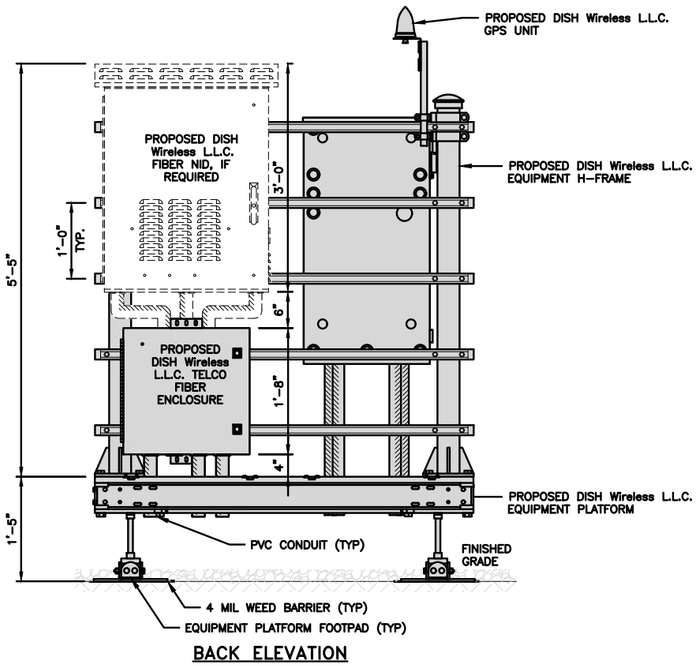
4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

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

5

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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn
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STATE OF CONNECTICUT
BRIAN J. BREWER
29510
LICENSED PROFESSIONAL ENGINEER

12/14/21
Exp. 01/31/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

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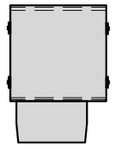
A&E PROJECT NUMBER
KHCLE-17042

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

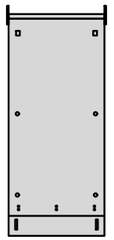
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

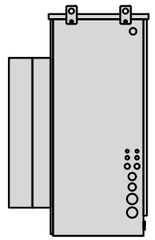
CHARLES INDUSTRY HEX CUBE–PM639155N4	
DIMENSIONS (HxWxD)	74"x32"x32"
POWER PLANT	–48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 lbs



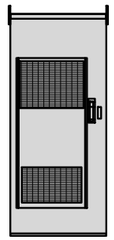
PLAN



BACK



SIDE

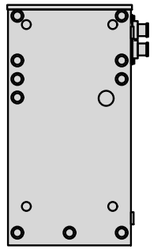


FRONT

CABINET DETAIL | NO SCALE | 1

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

TOP



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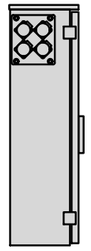
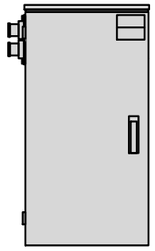
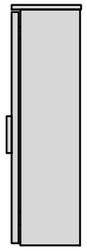


SIDE



FRONT



SIDE

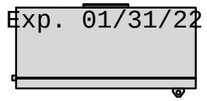
POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

NOT USED | NO SCALE | 3

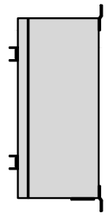
NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

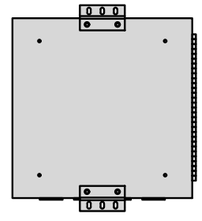
CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



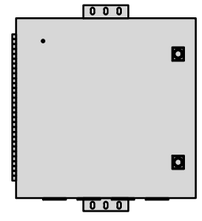
FRONT



SIDE



BACK

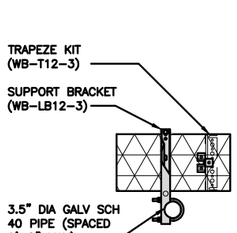


FRONT

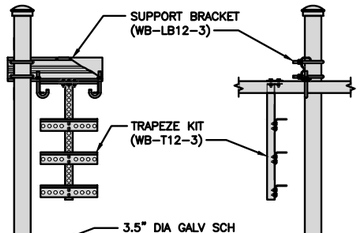
FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

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

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



PLAN



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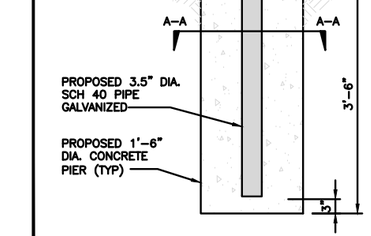
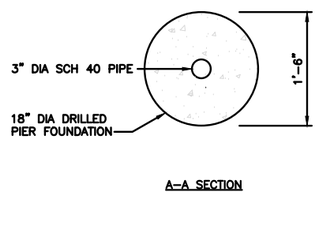


SIDE

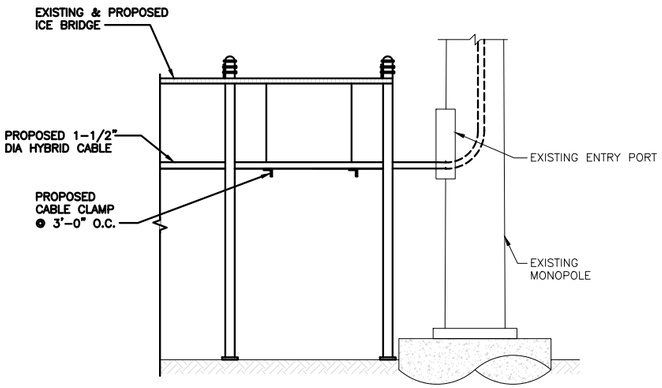
ICE BRIDGE DETAIL | NO SCALE | 7

CONCRETE PIER



A–A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

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

STATE OF CONNECTICUT · BRIAN D. BREWER · 29510 · LICENSED PROFESSIONAL ENGINEER

12/14/21
Exp. 01/31/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/15/2021	ISSUED FOR REVIEW
0	12/14/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

KHCLE–17042

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

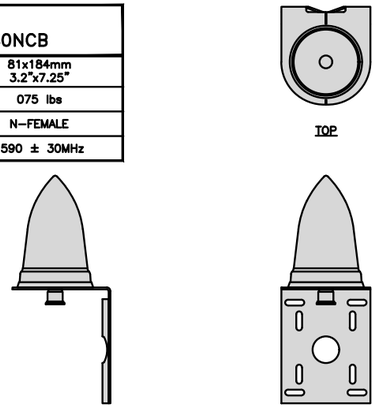
SHEET TITLE

EQUIPMENT DETAILS

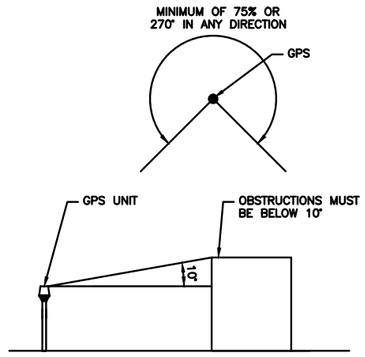
SHEET NUMBER

A-4

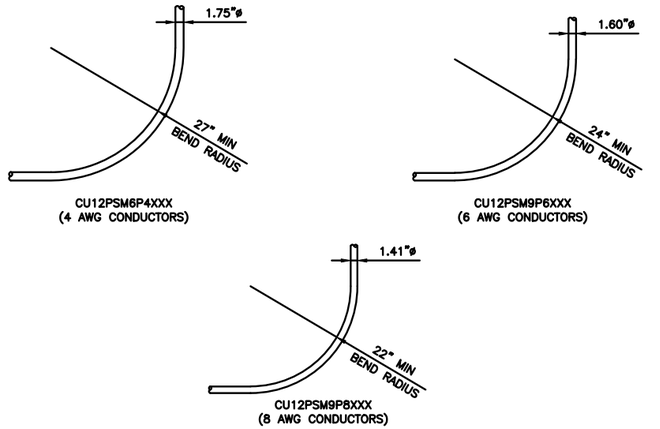
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

12/14/21
Exp. 01/31/22

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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LITTLETON, CO 80120

Kimley»Horn

COA #: PEC.0000738
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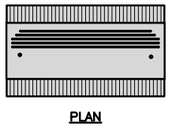
SHEET TITLE

EQUIPMENT DETAILS

SHEET NUMBER

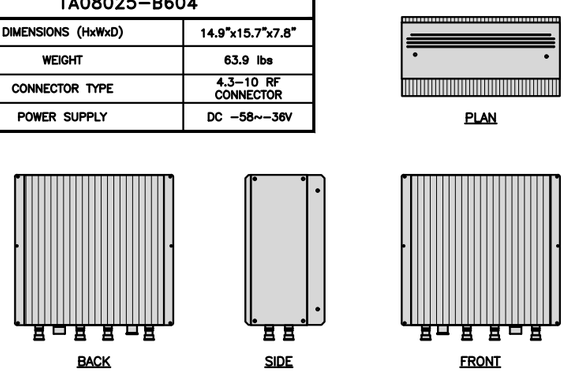
A-5

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



RRH DETAIL | NO SCALE | 1

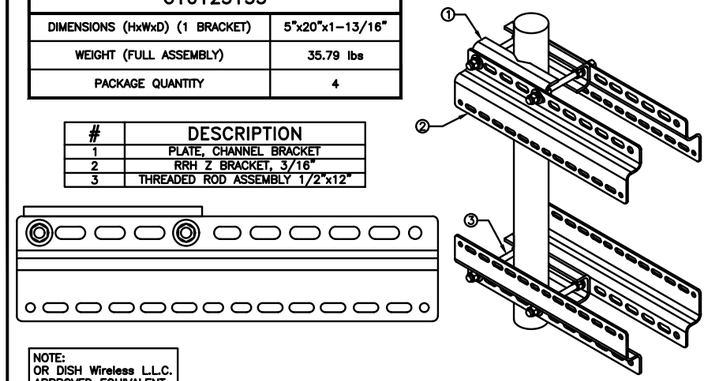
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



RRH DETAIL | NO SCALE | 2

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

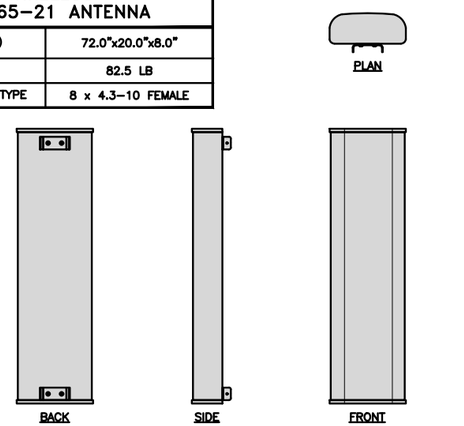
#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



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

RRH MOUNT DETAIL | NO SCALE | 3

JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	82.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE



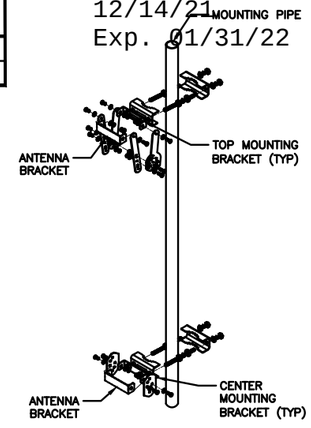
ANTENNA DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

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

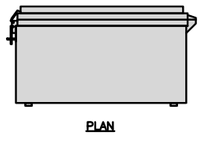
NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS FOR 4-,6-, AND 8-FOOT ANTENNAS

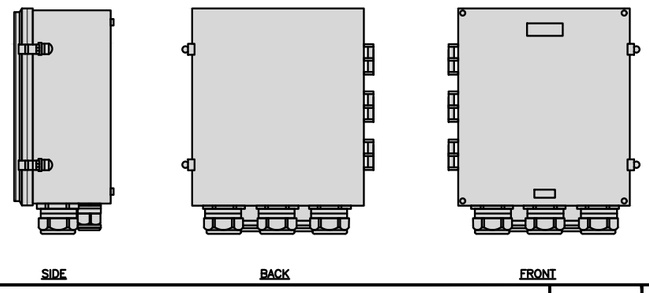
ANTENNA BRACKET NOT PART OF KIT



ANTENNA BRACKET DETAIL | NO SCALE | 6

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

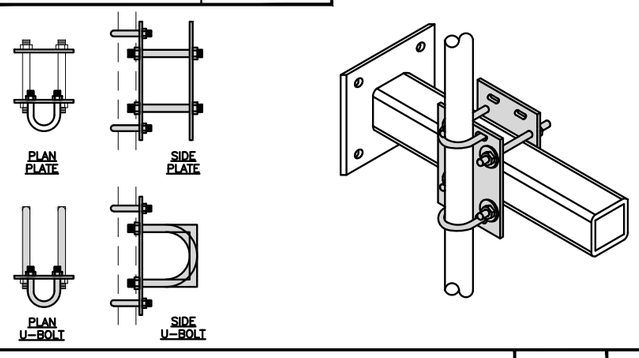




SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

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

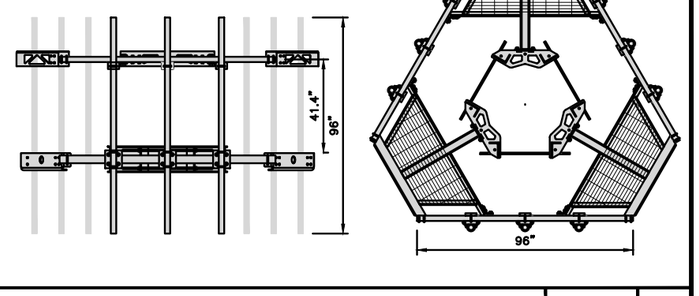
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT



RRH/OVP MOUNT DETAIL | NO SCALE | 8

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

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



ANTENNA PLATFORM DETAIL | NO SCALE | 9

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RALEIGH, NC 27601

12/14/21
Exp. 01/31/22

STATE OF CONNECTICUT
BRIAN J. BREWER
29510
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	---

RFDS REV #: 1

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A&E PROJECT NUMBER
KHCLE-17042

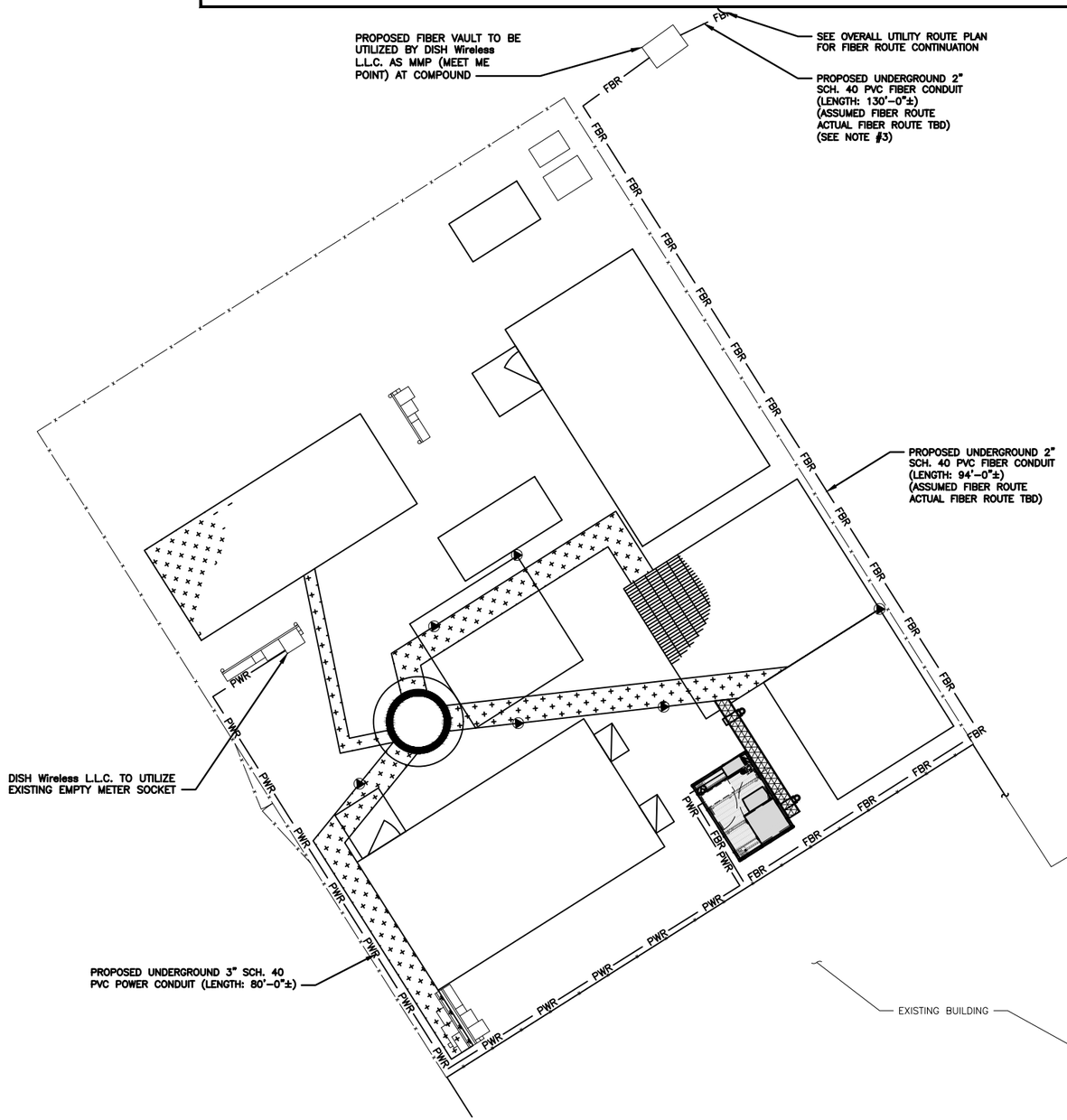
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. DUE TO UTILITY EASEMENT RIGHTS SPECIFIED IN THE GROUND LEASE, CUSTOMER MAY INSTALL EQUIPMENT WITHIN SPECIFIED UTILITY EASEMENT AREA. "PWR" AND "FBR" PATH DEPICTED ON A–1 AND E–1 REPRESENT PLANNED ROUTING BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO A SURVEY, EXHIBITS, METES AND BOUNDS OF THE UTILITY EASEMENT, FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPETY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS MATERIALLY INCONSISTENT WITH "PWR" AND "FBR" PATH DEPICTED ON A–1 AND E–1 AND SAID VARIANCE IS NOT NOTED ON CDs, PLEASE NOTIFY TOWER OWNER AS FURTHER COORDINATION MAY BE NEEDED.



UTILITY ROUTE PLAN

6' 4' 2' 0 5' 10'
3/16"=1'–0"

1

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

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

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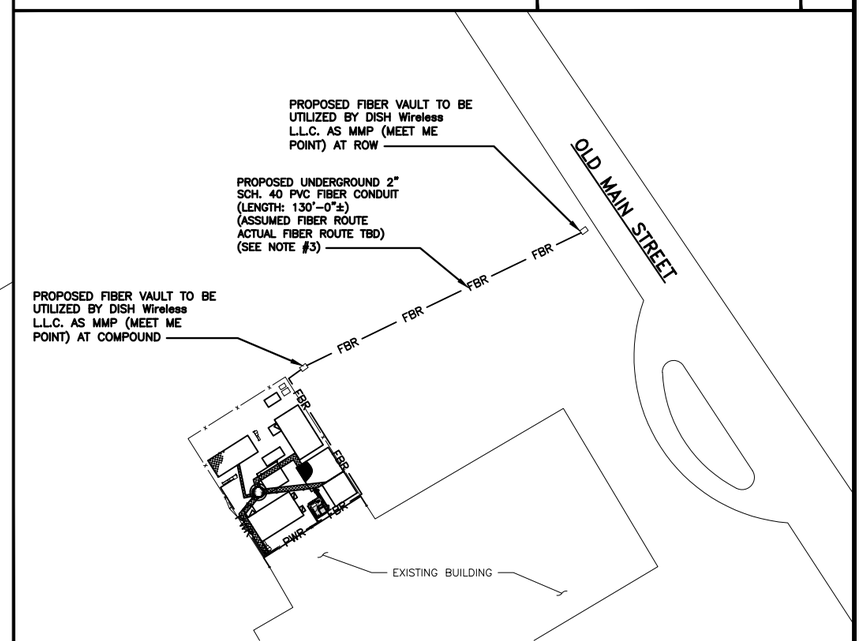
ELECTRICAL NOTES

NO SCALE

2



OVERALL UTILITY ROUTE PLAN

32' 24'16' 8' 0 32' 64'
1/32"=1'–0"

3

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DRD	MCK	---

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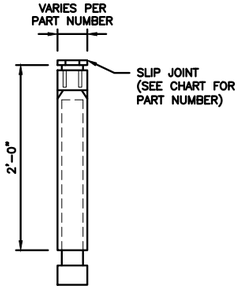
PROJECT INFORMATION
BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

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

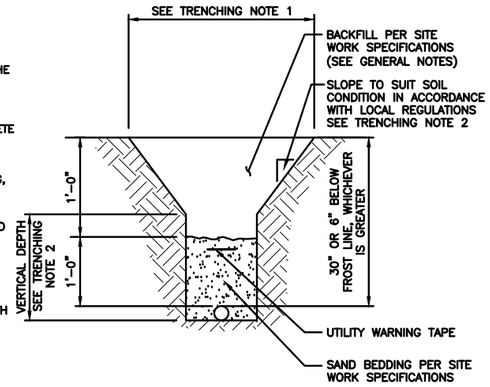


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

EXPANSION JOINT DETAIL | NO SCALE | 1

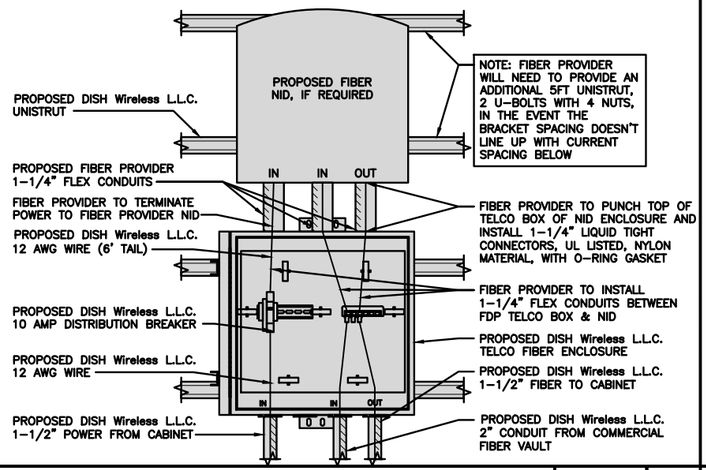
TRENCHING NOTES

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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2

NOT USED | NO SCALE | 3



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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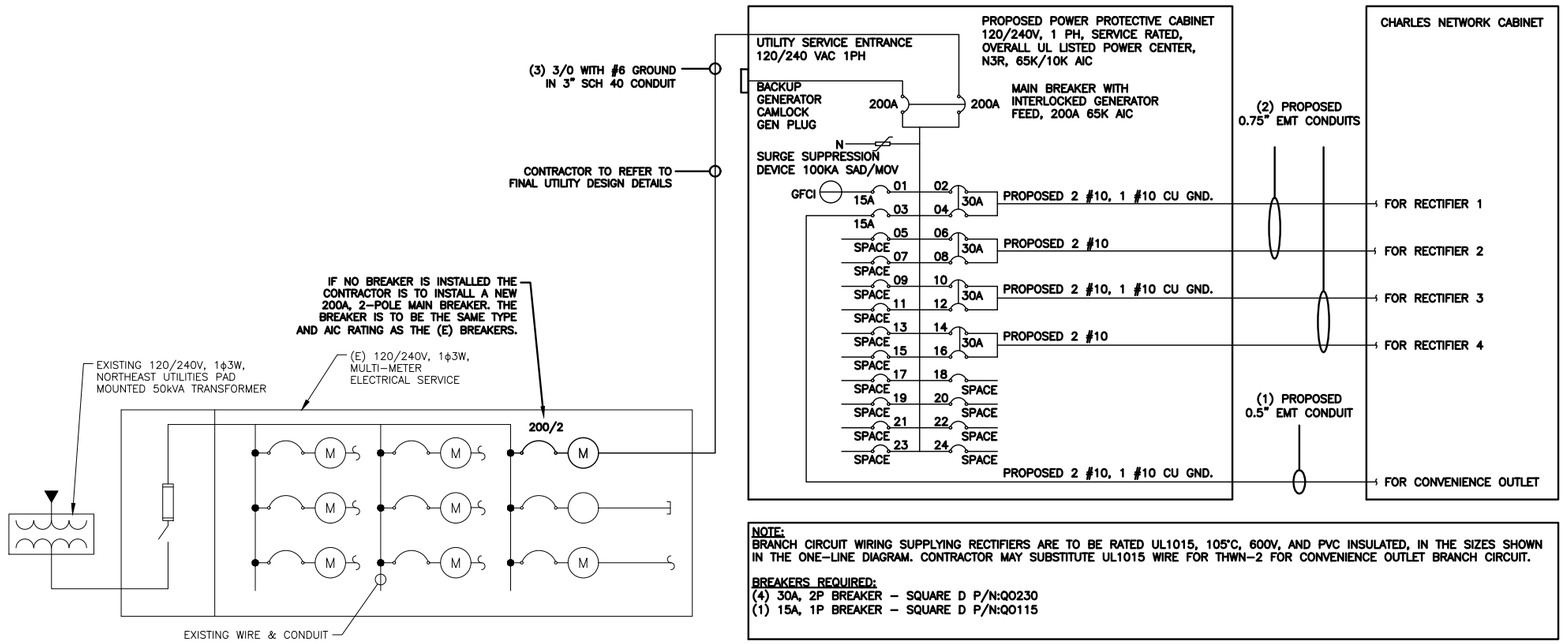
SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



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

BREAKERS REQUIRED:
(4) 30A, 2P BREAKER – SQUARE D P/N:QO230
(1) 15A, 1P BREAKER – SQUARE D P/N:QO115

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 ONE-LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
PPC GFCI OUTLET	180		15A	1	A	2	30A	2880		ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET		180	15A	3	B	4			2880	
-SPACE-				5	A	6	30A	2880		ABB/GE INFINITY RECTIFIER 2
-SPACE-				7	B	8			2880	
-SPACE-				9	A	10	30A	2880		ABB/GE INFINITY RECTIFIER 3
-SPACE-				11	B	12			2880	
-SPACE-				13	A	14	30A	2880		ABB/GE INFINITY RECTIFIER 4
-SPACE-				15	B	16			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, 1φ, 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

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

Kimley»Horn
COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
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STATE OF CONNECTICUT BRIAN K. BREWER 29510 LICENSED PROFESSIONAL ENGINEER
12/14/21
Exp. 01/31/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

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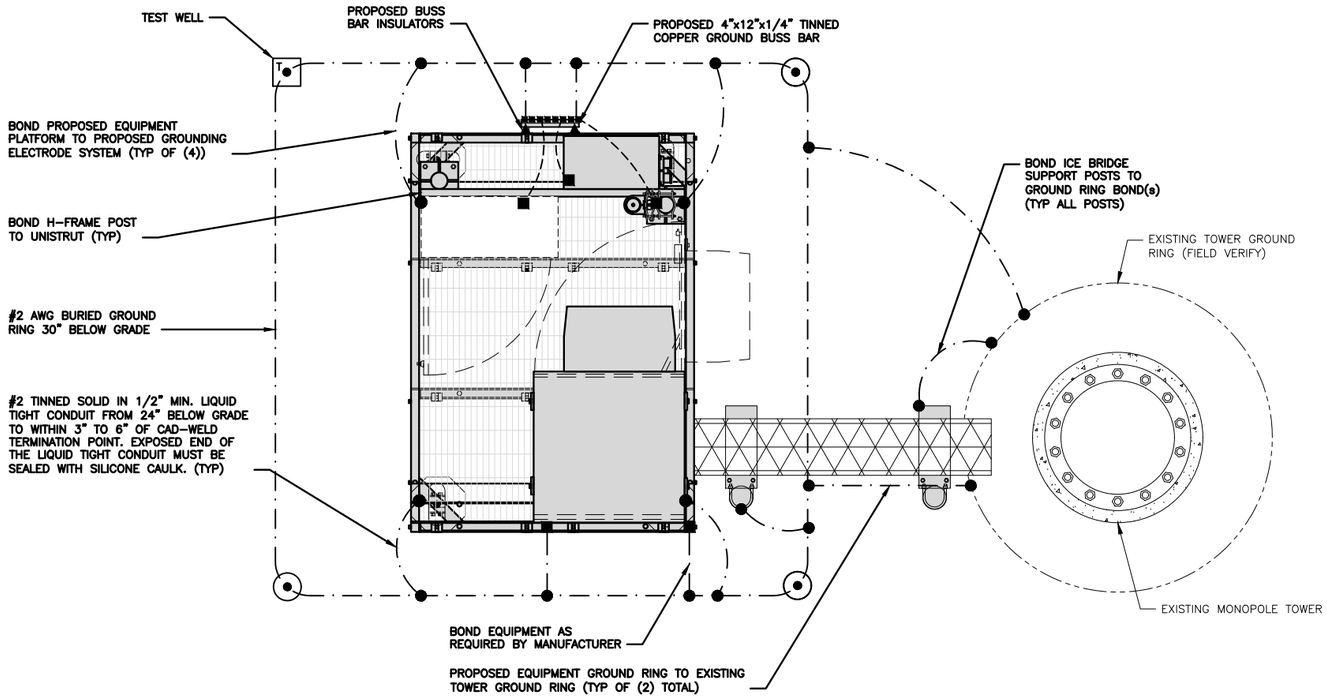
A&E PROJECT NUMBER
KHCLE-17042

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

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

SHEET NUMBER
E-3

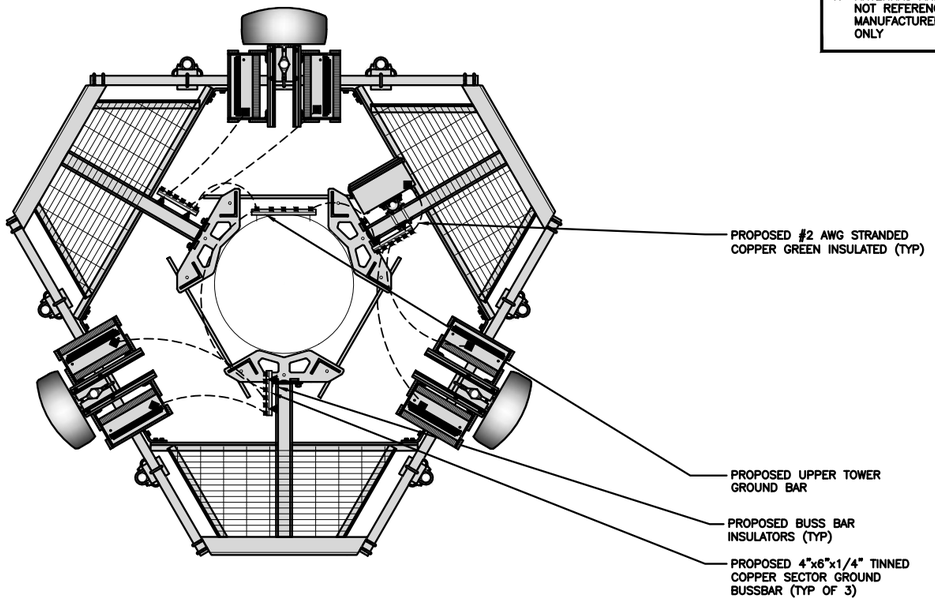


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GROUNDING KEY NOTES

NO SCALE | 3

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STATE OF CONNECTICUT
BRIAN K. BREWER
29510
LICENSED PROFESSIONAL ENGINEER
Exp. 01/31/22

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RFDS REV #: 1

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A&E PROJECT NUMBER
KHCLE-17042

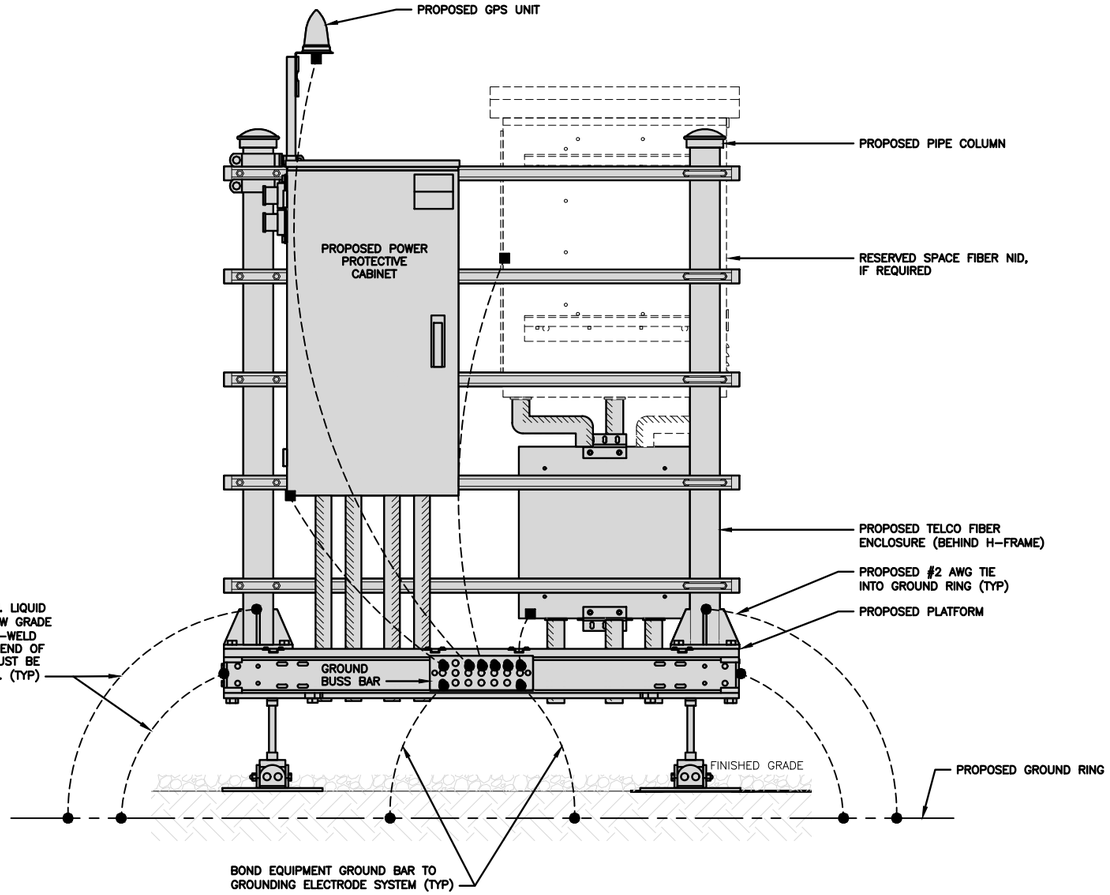
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

SHEET TITLE
GROUNDING PLANS AND NOTES

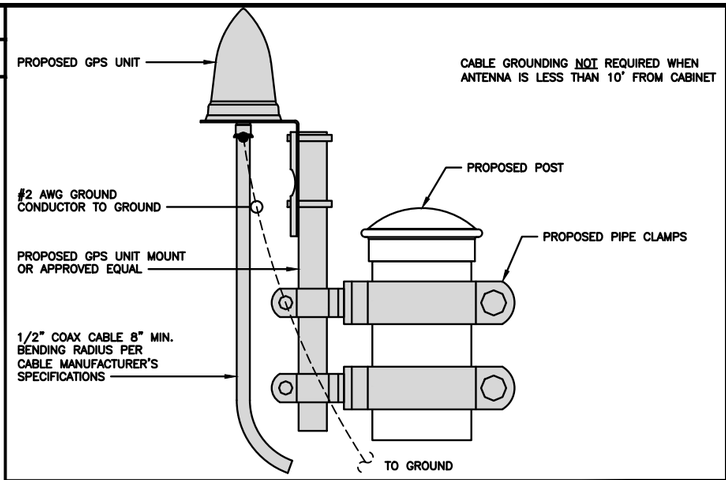
SHEET NUMBER
G-1

NOTES

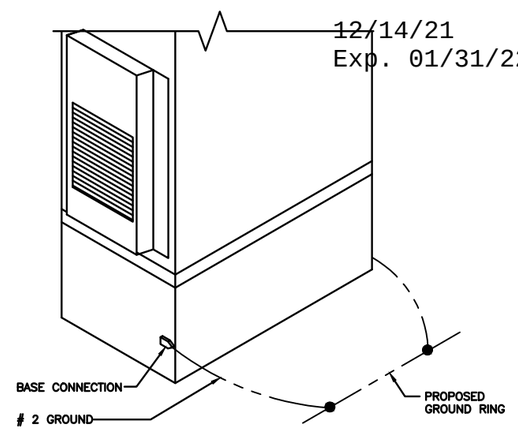
EQUIPMENT CABINET OMITTED FOR CLARITY



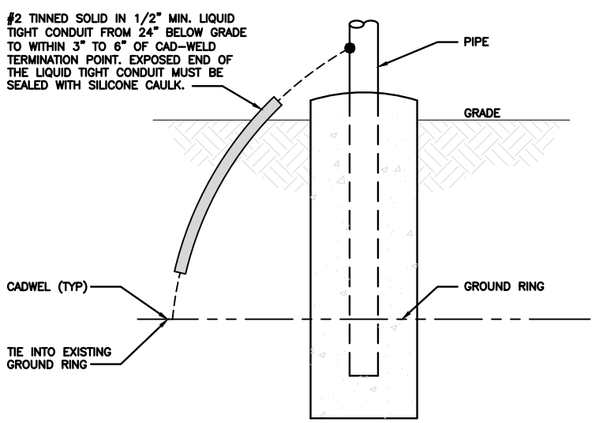
H-FRAME GROUNDING DETAIL | NO SCALE | 1



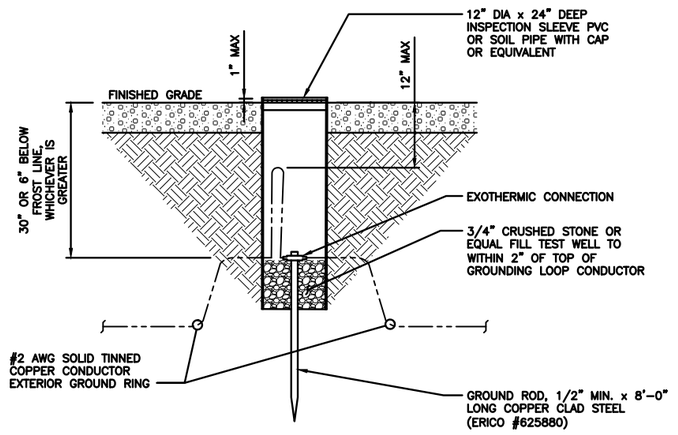
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



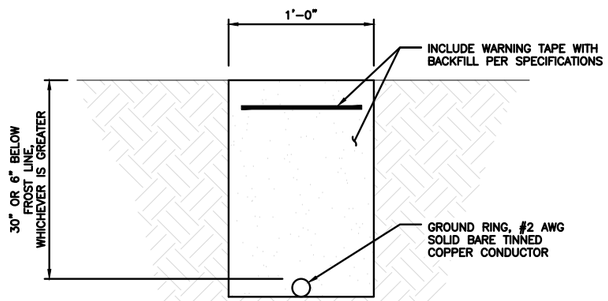
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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

dish wireless.

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STATE OF CONNECTICUT · BRIAN J. BREWER · 29510 · LICENSED PROFESSIONAL ENGINEER

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KHCLE-17042

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

SHEET TITLE

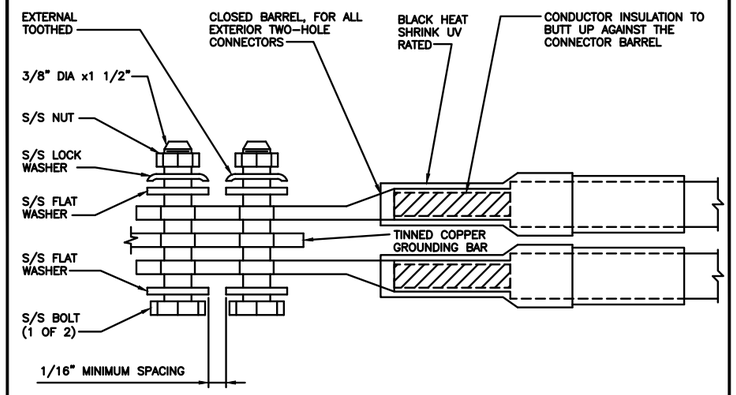
GROUNDING DETAILS

SHEET NUMBER

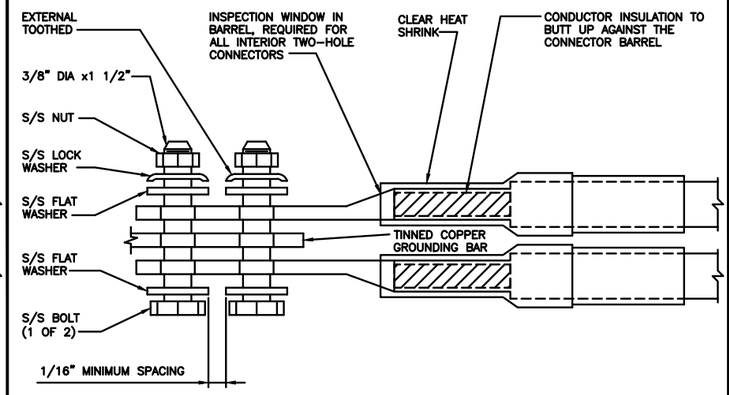
G-2

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

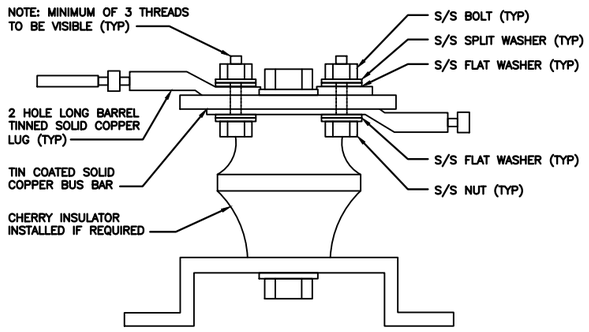
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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dish wireless.

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

G-3

HYBRID/DISCREET CABLES — 3/4" TAPE WIDTHS WITH 3/4" SPACING

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

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

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

MID–BAND RRH
(AWS BANDS N66+N70)

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

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

HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.

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

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

EXAMPLE 3 – MAIN COAX WITH GROUND MOUNTED RRHs.

EXAMPLE 1	EXAMPLE 2	EXAMPLE 3 COAX#1 (ALPHA)	CANISTER COAX #2 (ALPHA)
RED	RED	RED	RED
BLUE	BLUE		RED
GREEN	GREEN		
ORANGE	YELLOW		
PURPLE			

FIBER JUMPERS TO RRHs

LOW–BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.

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 POWER CABLES HAVE SECTOR STRIPE ONLY

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

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

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

ANTENNA 1 MID BAND IN	ANTENNA 1 LOW BAND IN	ANTENNA 1 MID BAND IN	ANTENNA 1 LOW BAND IN	ANTENNA 1 MID BAND IN	ANTENNA 1 LOW BAND IN
RED	RED	BLUE	BLUE	GREEN	GREEN
PURPLE	ORANGE	PURPLE	ORANGE	PURPLE	ORANGE

MICROWAVE RADIO LINKS

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

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

FORWARD AZIMUTH OF 0–120 DEGREES PRIMARY	FORWARD AZIMUTH OF 0–120 DEGREES SECONDARY	FORWARD AZIMUTH OF 120–240 DEGREES PRIMARY	FORWARD AZIMUTH OF 120–240 DEGREES SECONDARY	FORWARD AZIMUTH OF 240–359 DEGREES PRIMARY	FORWARD AZIMUTH OF 240–359 DEGREES SECONDARY
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
RED	RED	BLUE	BLUE	GREEN	GREEN
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
	RED		BLUE		GREEN
	WHITE		WHITE		WHITE

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

12/14/21
Exp. 01/31/22

NOT USED		3

RF CABLE COLOR CODES		1	NOT USED		4

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PROJECT INFORMATION
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699 OLD MAIN ST.
ROCKY HILL, CT 06067

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE — X — X — X — X —

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE — W — W — W — W — W —

UNDERGROUND POWER — UGP — UGP — UGP — UGP — UGP —

UNDERGROUND TELCO — UGT — UGT — UGT — UGT — UGT —

OVERHEAD POWER — OHP — OHP — OHP — OHP —

OVERHEAD TELCO — OHT — OHT — OHT — OHT —

UNDERGROUND TELCO/POWER — UGT/P — UGT/P — UGT/P — UGT/P —

ABOVE GROUND POWER — AGP — AGP — AGP — AGP — AGP —

ABOVE GROUND TELCO — AGT — AGT — AGT — AGT — AGT —

ABOVE GROUND TELCO/POWER — AGT/P — AGT/P — AGT/P — AGT/P —

WORKPOINT W.P.

SECTION REFERENCE XX / X–X

DETAIL REFERENCE XX / X–X

LEGEND

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

ABBREVIATIONS

12/14/21
Exp. 01/31/22

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

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421 FAYETTEVILLE ST, SUITE 600
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STATE OF CONNECTICUT · BRIAN J. BREWER · 29510 · LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/15/2021	ISSUED FOR REVIEW
0	12/14/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

KHCLE–17042

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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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.

dish wireless.

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DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/15/2021	ISSUED FOR REVIEW
0	12/14/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

KHCLE–17042

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Kimley»Horn
COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

STATE OF CONNECTICUT
BRIAN K. BREWER
29510
LICENSED
PROFESSIONAL ENGINEER

12/14/21
Exp. 01/31/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/15/2021	ISSUED FOR REVIEW
0	12/14/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

KHCLE-17042

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

12/14/21
Exp. 01/31/22

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	---

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

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A&E PROJECT NUMBER

KHCLE-17042

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00058A
699 OLD MAIN ST.
ROCKY HILL, CT 06067

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

Date: **September 23, 2021**

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate**	
	Site Number:	BOBDL00058A
	Site Name:	CT-CCI-T-827050
Crown Castle Designation:	**BU Number:**	827050
	Site Name:	Rocky Hill/ Rte 160_1
	JDE Job Number:	650047
	Work Order Number:	2020758
	Order Number:	556633 Rev. 0
Engineering Firm Designation:	**Crown Castle Project Number:**	2020758
Site Data:	**699 Old Main St., Rocky Hill, Hartford County, CT** **Latitude *41° 40' 5.77"*, Longitude *-72° 38' 16.93"*** **147.5 Foot - Monopole Tower**	

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

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

LC7: Proposed Equipment Configuration **Sufficient Capacity – 90.6%**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 118 mph. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Steven Hu

Respectfully submitted by:

Maribel Dentinger
Maribel Dentinger, P.E.
Senior Project Engineer

Maribel Dentinger
Digitally signed by Maribel Dentinger
Date: 2021.09.24 19:29:24 -04'00'

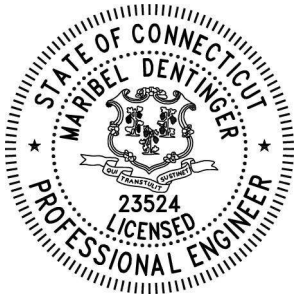


TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 147.5 ft Monopole tower designed by Pirod Manufactures Inc. The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	118 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
120.0	120.0	3	fujitsu	TA08025-B604	1	1-1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
150.0	167.0	2	dbspectra	DS4C06F36D-D	7 10	7/8 1-5/8
	154.0	1	rfs celwave	201-1N		
	150.0	3	commscope	SDX1926Q-43		
		3	ericsson	AIR 32 B2A/B66AA w/ Mount Pipe		
		3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	ericsson	KRY 112 144/1		
		3	ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	ericsson	RRUS 4415 B25		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		1	tower mounts	Platform Mount [LP 405-1_HR-1]		
140.0	140.0	6	commscope	NNHH-65B-R4 w/ Mount Pipe	1 7	1-1/4 1-5/8
		1	raycap	RVZDC-6627-PF-48		
		1	rfs celwave	DB-T1-6Z-8AB-0Z		
		3	samsung telecommunications	CBRS w/ Mount Pipe		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	samsung telecommunications	MT6407-77A w/ Mount Pipe		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
		1	tower mounts	Platform Mount [LP 303-1_KCKR]		
130.0	130.0	3	alcatel lucent	PCS 1900MHz 4x45W-65MHz	3 1	1-1/4 1-1/2
		6	alcatel lucent	RRH2X50-800		
		3	commscope	NNVV-65B-R4 w/ Mount Pipe		
		3	nokia	AAHC w/ Mount Pipe		
		1	tower mounts	Platform Mount [LP 405-1]		
102.0	105.0	1	cci antennas	DMP65R-BU6D w/ Mount Pipe	3 4 3 6	3/8 13/16 7/8 1-5/8
		2	cci antennas	DMP65R-BU8D w/ Mount Pipe		
		1	cci antennas	TPA65R-BU6D w/ Mount Pipe		
		2	cci antennas	TPA65R-BU8D w/ Mount Pipe		
		3	ericsson	AIR 6419 B77G w/ Mount Pipe		
		3	ericsson	AIR 6449 N77 w/ Mount Pipe		
		3	ericsson	RADIO 4478 B14		
		3	ericsson	RRUS 32 B30		
		3	ericsson	RRUS 32 B66		
		3	ericsson	RRUS 4415 B25		
		3	ericsson	RRUS 4449 B5/B12		
		2	raycap	DC6-48-60-18-8F		
		1	raycap	DC9-48-60-24-8C-EV		
	102.0	1	tower mounts	Platform Mount [LP 303-1]		
95.0	95.0	3	rfs celwave	APXV18-206516S-C	6	1-5/8
		1	tower mounts	Pipe Mount [PM 601-3]		
89.0	95.0	1	rfs celwave	1142-2C	1	1/2
	89.0	1	tower mounts	Side Arm Mount [SO 701-1]		
72.0	74.0	1	gps	GPS_A	-	-
	72.0	1	tower mounts	Side Arm Mount [SO 701-1]		
54.0	64.0	1	rfs celwave	220-8N	2	7/8
	61.0	1	rfs celwave	201-1N		
	54.0	2	tower mounts	Side Arm Mount [SO 701-1]		
49.0	49.0	1	tower mounts	Yagi Mount	1	7/8
		1	decibel	DB436-C		
45.0	45.0	1	tower mounts	Yagi Mount	1	7/8
		1	decibel	DB436-C		
40.0	40.0	1	tower mounts	Yagi Mount	1	7/8
		1	decibel	DB436-C		
37.0	37.0	1	tower mounts	Yagi Mount	1	7/8

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		1	decibel	DB436-C		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	3464587	CCISITES
4-POST-MODIFICATION INSPECTION	3774967	CCISITES
4-POST-MODIFICATION INSPECTION	3774968	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	3674483	CCISITES
4-TOWER MANUFACTURER DRAWINGS	3464619	CCISITES
4-TOWER PROPOSED REINFORCEMENT DESIGN/DRAWINGS/DATA	4424839	CCISITES
4-POST-MODIFICATION INSPECTION	5849862	CCISITES

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

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

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
147.5 - 142.5	Pole	TP24x24x0.375	Pole	8.7%	Pass
142.5 - 137.5	Pole	TP24x24x0.375	Pole	15.5%	Pass
137.5 - 132.5	Pole	TP24x24x0.375	Pole	23.6%	Pass
132.5 - 127.5	Pole	TP24x24x0.375	Pole	33.7%	Pass
127.5 - 125	Pole	TP24x24x0.375	Pole	39.2%	Pass
125 - 120	Pole	TP30x30x0.375	Pole	33.4%	Pass
120 - 115	Pole	TP30x30x0.375	Pole	42.9%	Pass
115 - 110	Pole	TP30x30x0.375	Pole	52.3%	Pass
110 - 105	Pole	TP30x30x0.375	Pole	61.9%	Pass
105 - 100	Pole	TP30x30x0.375	Pole	74.3%	Pass
100 - 95	Pole	TP36x36x0.375	Pole	61.8%	Pass
95 - 94.25	Pole	TP36x36x0.375	Pole	63.2%	Pass
94.25 - 94	Pole + Reinf.	TP36x36x0.4938	Reinf. 5 Tension Rupture	52.1%	Pass
94 - 89	Pole + Reinf.	TP36x36x0.4938	Reinf. 5 Tension Rupture	59.7%	Pass
89 - 84	Pole + Reinf.	TP36x36x0.4938	Reinf. 5 Tension Rupture	67.6%	Pass
84 - 80	Pole + Reinf.	TP36x36x0.4938	Reinf. 5 Tension Rupture	74.2%	Pass
80 - 79.75	Pole + Reinf.	TP42x42x0.575	Pole	44.4%	Pass
79.75 - 74.75	Pole + Reinf.	TP42x42x0.575	Pole	49.4%	Pass
74.75 - 69.75	Pole + Reinf.	TP42x42x0.575	Pole	54.6%	Pass
69.75 - 64.75	Pole + Reinf.	TP42x42x0.575	Pole	59.9%	Pass
64.75 - 60	Pole + Reinf.	TP42x42x0.575	Pole	65.2%	Pass
60 - 59.75	Pole + Reinf.	TP48x48x0.6125	Pole	47.8%	Pass
59.75 - 54.75	Pole + Reinf.	TP48x48x0.6125	Pole	52.0%	Pass
54.75 - 49.75	Pole + Reinf.	TP48x48x0.6125	Pole	56.4%	Pass
49.75 - 44.75	Pole + Reinf.	TP48x48x0.6125	Pole	60.8%	Pass
44.75 - 40	Pole + Reinf.	TP48x48x0.6125	Pole	65.2%	Pass
40 - 39.75	Pole + Reinf.	TP54x54x0.65	Pole	49.3%	Pass
39.75 - 34.75	Pole + Reinf.	TP54x54x0.65	Pole	52.9%	Pass
34.75 - 29.75	Pole + Reinf.	TP54x54x0.65	Pole	56.6%	Pass
29.75 - 24.75	Pole + Reinf.	TP54x54x0.65	Pole	60.3%	Pass
24.75 - 20	Pole + Reinf.	TP54x54x0.65	Pole	64.0%	Pass
20 - 19.75	Pole + Reinf.	TP60x60x0.625	Pole	55.0%	Pass
19.75 - 14.75	Pole + Reinf.	TP60x60x0.625	Pole	58.4%	Pass
14.75 - 9.75	Pole + Reinf.	TP60x60x0.625	Pole	61.9%	Pass
9.75 - 4.75	Pole + Reinf.	TP60x60x0.625	Pole	65.4%	Pass
4.75 - 0	Pole + Reinf.	TP60x60x0.625	Pole	68.8%	Pass

				Summary	
			Pole	74.3%	Pass
			Reinforcement	74.2%	Pass
			Overall	74.3%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	125	37.0	Pass
1,2	Flange Plate		39.2	Pass
1	Flange Bolts	100	73.9	Pass
1,2	Flange Plate		74.3	Pass
1	Flange Bolts	80	32.8	Pass
1	Flange Plate		37.3	Pass
1	Bridge Stiffener		79.3	Pass
1	Flange Bolts	60	33.0	Pass
1	Flange Plate		38.3	Pass
1	Bridge Stiffener		77.7	Pass
1	Flange Bolts	40	39.0	Pass
1	Flange Plate		44.7	Pass
1	Bridge Stiffener		90.6	Pass
1	Flange Bolts	20	34.8	Pass
1	Flange Plate		47.4	Pass
1	Bridge Stiffener		76.4	Pass
1	Anchor Rods	0	72.2	Pass
1	Base Plate		74.6	Pass
1	Base Foundation (Structure)		76.4	Pass
1	Base Foundation (Soil Interaction)		30.7	Pass

Structure Rating (max from all components) =	90.6%

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.
2) Flange plates are assumed to have the same capacity as their respective splice bolts or shaft.

4.1) Recommendations

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

APPENDIX A

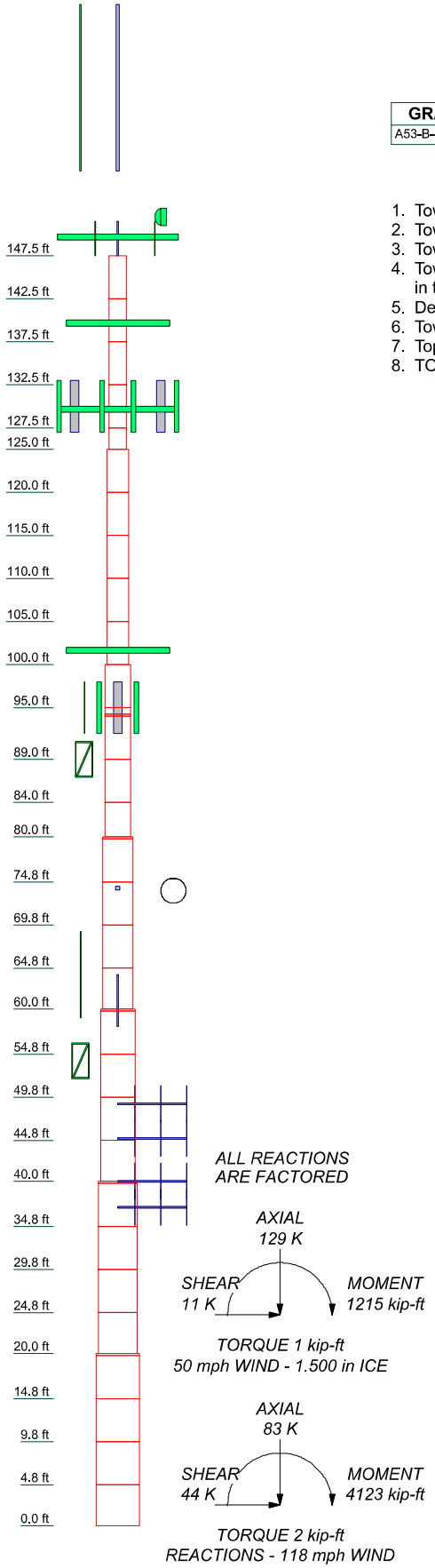
TNXTOWER OUTPUT

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 118 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 74.3%



Section	Size	Length (ft)	Grade	Weight (K)
1	P54x0.375	5.000	A53-B-42	0.5
2	P54x0.375	5.000		0.5
3	P54x0.375	5.000		0.5
4	P54x0.375	5.000		0.5
5	P54x0.375	2.500		0.2
6	P54x0.375	5.000		0.6
7	P54x0.375	5.000		0.6
8	P54x0.375	5.000		0.6
9	P54x0.375	5.000		0.6
10	P54x0.375	5.000		0.6
11	P54x0.375	5.000		0.7
12	P54x0.375	2.500		0.4
13	P54x0.375	5.000		0.9
14	P54x0.375	5.000		0.9
15	P54x0.375	5.000		0.9
16	P54x0.375	5.000		0.7
17	P54x0.375	2.500		0.4
18	P54x0.375	5.000		1.2
19	P54x0.375	5.000		1.2
20	P54x0.375	5.000		1.2
21	P54x0.375	2.500		0.6
22	P54x0.375	2.500		1.2
23	P54x0.375	5.000		1.5
24	P54x0.375	5.000		1.5
25	P54x0.375	5.000		1.5
26	P54x0.375	2.500		1.4
27	P54x0.375	2.500		0.7
28	P54x0.375	5.000		1.8
29	P54x0.375	5.000		1.8
30	P54x0.375	5.000		1.8
31	P54x0.375	2.500		1.7
32	P54x0.375	2.500		0.8
33	P54x0.375	5.000		1.9
34	P54x0.375	5.000		1.9
35	P54x0.375	5.000		1.9
36	P60x0.375	4.750		1.8
				34.4

CROWN CASTLE
The Pathway to Possible

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
Phone: (724) 416-2000
FAX: (724) 416-4623

Job: **827050**			
Project:			
Client: Crown Castle	Drawn by: Steven Hu		App'd:
Code: TIA-222-H	Date: 09/23/21		Scale: NTS
Path: C:\Users\SHu\Documents\WFH\827050\WO 2020758 - SA\Prod\827050_2020758.eri			Dwg No. E-1

Tower Input Data

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

1) Tower is located in Hartford County, Connecticut.
2) Tower base elevation above sea level: 97.000 ft.
3) Basic wind speed of 118 mph.
4) Risk Category II.
5) Exposure Category C.
6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
7) Topographic Category: 1.
8) Crest Height: 0.000 ft.
9) Nominal ice thickness of 1.500 in.
10) Ice thickness is considered to increase with height.
11) Ice density of 56.000 pcf.
12) A wind speed of 50 mph is used in combination with ice.
13) Temperature drop of 50.000 °F.
14) Deflections calculated using a wind speed of 60 mph.
15) TOWER RATING: 74.3%.
16) A non-linear (P-delta) analysis was used.
17) Pressures are calculated at each section.
18) Stress ratio used in pole design is 1.
19) Tower analysis based on target reliabilities in accordance with Annex S.
20) Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
21) Maximum demand-capacity ratio is: 1.05.
22) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

Pole Section Geometry

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	147.500-142.500	5.000	P24x0.375	A53-B-42 (42 ksi)	
L2	142.500-137.500	5.000	P24x0.375	A53-B-42 (42 ksi)	
L3	137.500-132.500	5.000	P24x0.375	A53-B-42 (42 ksi)	
L4	132.500-127.500	5.000	P24x0.375	A53-B-42 (42 ksi)	
L5	127.500-125.000	2.500	P24x0.375	A53-B-42 (42 ksi)	
L6	125.000-120.000	5.000	P30x0.375	A53-B-42 (42 ksi)	
L7	120.000-115.000	5.000	P30x0.375	A53-B-42 (42 ksi)	
L8	115.000-110.000	5.000	P30x0.375	A53-B-42 (42 ksi)	
L9	110.000-105.000	5.000	P30x0.375	A53-B-42 (42 ksi)	
L10	105.000-100.000	5.000	P30x0.375	A53-B-42 (42 ksi)	
L11	100.000-95.000	5.000	P36x0.375	A53-B-42 (42 ksi)	
L12	95.000-94.250	0.750	P36x0.375	A53-B-42 (42 ksi)	
L13	94.250-94.000	0.250	P36x0.49375	A53-B-42 (42 ksi)	
L14	94.000-89.000	5.000	P36x0.49375	A53-B-42 (42 ksi)	
L15	89.000-84.000	5.000	P36x0.49375	A53-B-42 (42 ksi)	
L16	84.000-80.000	4.000	P36x0.49375	A53-B-42 (42 ksi)	
L17	80.000-79.750	0.250	P42x0.575	A53-B-42 (42 ksi)	
L18	79.750-74.750	5.000	P42x0.575	A53-B-42 (42 ksi)	
L19	74.750-69.750	5.000	P42x0.575	A53-B-42 (42 ksi)	
L20	69.750-64.750	5.000	P42x0.575	A53-B-42 (42 ksi)	
L21	64.750-60.000	4.750	P42x0.575	A53-B-42 (42 ksi)	
L22	60.000-59.750	0.250	P48x0.6125	A53-B-42 (42 ksi)	
L23	59.750-54.750	5.000	P48x0.6125	A53-B-42 (42 ksi)	
L24	54.750-49.750	5.000	P48x0.6125	A53-B-42 (42 ksi)	
L25	49.750-44.750	5.000	P48x0.6125	A53-B-42 (42 ksi)	
L26	44.750-40.000	4.750	P48x0.6125	A53-B-42 (42 ksi)	
L27	40.000-39.750	0.250	P54x0.65	A53-B-42 (42 ksi)	
L28	39.750-34.750	5.000	P54x0.65	A53-B-42 (42 ksi)	
L29	34.750-29.750	5.000	P54x0.65	A53-B-42 (42 ksi)	
L30	29.750-24.750	5.000	P54x0.65	A53-B-42 (42 ksi)	
L31	24.750-20.000	4.750	P54x0.65	A53-B-42 (42 ksi)	
L32	20.000-19.750	0.250	P60x0.625	A53-B-42 (42 ksi)	
L33	19.750-14.750	5.000	P60x0.625	A53-B-42 (42 ksi)	
L34	14.750-9.750	5.000	P60x0.625	A53-B-42 (42 ksi)	
L35	9.750-4.750	5.000	P60x0.625	A53-B-42	

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L36	4.750-0.000	4.750	P60x0.625	(42 ksi) A53-B-42 (42 ksi)	

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 147.500-142.500				1	1	1			
L2 142.500-137.500				1	1	1			
L3 137.500-132.500				1	1	1			
L4 132.500-127.500				1	1	1			
L5 127.500-125.000				1	1	1			
L6 125.000-120.000				1	1	1			
L7 120.000-115.000				1	1	1			
L8 115.000-110.000				1	1	1			
L9 110.000-105.000				1	1	1			
L10 105.000-100.000				1	1	1			
L11 100.000-95.000				1	1	1			
L12 95.000-94.250				1	1	1			
L13 94.250-94.000				1	1	0.979915			
L14 94.000-89.000				1	1	0.979915			
L15 89.000-84.000				1	1	0.979915			
L16 84.000-80.000				1	1	0.979915			
L17 80.000-79.750				1	1	0.976046			
L18 79.750-74.750				1	1	0.976046			
L19 74.750-69.750				1	1	0.976046			
L20 69.750-64.750				1	1	0.976046			
L21 64.750-60.000				1	1	0.976046			
L22 60.000-59.750				1	1	0.971735			
L23 59.750-54.750				1	1	0.971735			
L24 54.750-49.750				1	1	0.971735			
L25 49.750-44.750				1	1	0.971735			
L26 44.750-40.000				1	1	0.971735			
L27 40.000-39.750				1	1	0.970011			
L28 39.750-34.750				1	1	0.970011			
L29 34.750-29.750				1	1	0.970011			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L30 29.750-24.750				1	1	0.970011			
L31 24.750-20.000				1	1	0.970011			
L32 20.000-19.750				1	1	0.967075			
L33 19.750-14.750				1	1	0.967075			
L34 14.750-9.750				1	1	0.967075			
L35 9.750-4.750				1	1	0.967075			
L36 4.750-0.000				1	1	0.967075			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
AVA5-50(7/8)	C	No	Surface Ar (CaAa)	147.500 - 0.000	7	7	0.250 0.320	1.102		0.000
**										
*										
LDF7-50A(1-5/8)	C	No	Surface Ar (CaAa)	95.000 - 0.000	6	6	-0.300 -0.100	1.980		0.001
*										
CCI 8.5" x 1.25" Plate	A	No	Surface Af (CaAa)	26.958 - 14.042	1	1	0.000 0.030	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate	A	No	Surface Af (CaAa)	26.958 - 14.042	1	1	0.000 0.030	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate	B	No	Surface Af (CaAa)	26.958 - 14.042	1	1	0.000 0.030	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate	C	No	Surface Af (CaAa)	26.958 - 14.042	1	1	0.000 0.030	8.500	19.500	0.036
*										
CCI 8.0" x 3.0" Plate	A	No	Surface Af (CaAa)	26.500 - 20.250	1	1	0.000 0.030	8.000	22.000	0.082
CCI 8.0" x 3.0" Plate	A	No	Surface Af (CaAa)	26.500 - 20.250	1	1	0.000 0.030	8.000	22.000	0.082
CCI 8.0" x 3.0" Plate	B	No	Surface Af (CaAa)	26.500 - 20.250	1	1	0.000 0.030	8.000	22.000	0.082
CCI 8.0" x 3.0" Plate	C	No	Surface Af (CaAa)	26.500 - 20.250	1	1	0.000 0.030	8.000	22.000	0.082
*										
CCI 6.5" x 1.25" Plate	A	No	Surface Af (CaAa)	46.042 - 35.458	1	1	0.000 0.030	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate	A	No	Surface Af (CaAa)	46.042 - 35.458	1	1	0.000 0.030	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate	B	No	Surface Af (CaAa)	46.042 - 35.458	1	1	0.000 0.030	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate	C	No	Surface Af (CaAa)	46.042 - 35.458	1	1	0.000 0.030	6.500	15.500	0.028
*										
CCI 6.0" x 3.0" Plate	A	No	Surface Af (CaAa)	45.500 - 40.250	1	1	0.000 0.030	6.000	18.000	0.061
CCI 6.0" x 3.0" Plate	A	No	Surface Af (CaAa)	45.500 - 40.250	1	1	0.000 0.030	6.000	18.000	0.061
CCI 6.0" x 3.0" Plate	B	No	Surface Af (CaAa)	45.500 - 40.250	1	1	0.000 0.030	6.000	18.000	0.061
CCI 6.0" x 3.0" Plate	C	No	Surface Af (CaAa)	45.500 - 40.250	1	1	0.000 0.030	6.000	18.000	0.061

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
*										
CCI 6.5" x 1.25" Plate	A	No	Surface Af (CaAa)	66.042 - 55.458	1	1	0.000 0.030	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate	A	No	Surface Af (CaAa)	66.042 - 55.458	1	1	0.000 0.030	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate	B	No	Surface Af (CaAa)	66.042 - 55.458	1	1	0.000 0.030	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate	C	No	Surface Af (CaAa)	66.042 - 55.458	1	1	0.000 0.030	6.500	15.500	0.028
*										
CCI 6.0" x 3.0" Plate	A	No	Surface Af (CaAa)	65.500 - 60.250	1	1	0.000 0.030	6.000	18.000	0.061
CCI 6.0" x 3.0" Plate	A	No	Surface Af (CaAa)	65.500 - 60.250	1	1	0.000 0.030	6.000	18.000	0.061
CCI 6.0" x 3.0" Plate	B	No	Surface Af (CaAa)	65.500 - 60.250	1	1	0.000 0.030	6.000	18.000	0.061
CCI 6.0" x 3.0" Plate	C	No	Surface Af (CaAa)	65.500 - 60.250	1	1	0.000 0.030	6.000	18.000	0.061
*										
CCI 6.0" x 1.0" Plate	A	No	Surface Af (CaAa)	84.917 - 76.333	1	1	0.000 0.030	6.000	14.000	0.020
CCI 6.0" x 1.0" Plate	A	No	Surface Af (CaAa)	84.917 - 76.333	1	1	0.000 0.030	6.000	14.000	0.020
CCI 6.0" x 1.0" Plate	B	No	Surface Af (CaAa)	84.917 - 76.333	1	1	0.000 0.030	6.000	14.000	0.020
CCI 6.0" x 1.0" Plate	C	No	Surface Af (CaAa)	84.917 - 76.333	1	1	0.000 0.030	6.000	14.000	0.020
*										
CCI 5.0" x 3.0" Plate	A	No	Surface Af (CaAa)	84.500 - 80.250	1	1	0.000 0.030	5.000	16.000	0.051
CCI 5.0" x 3.0" Plate	A	No	Surface Af (CaAa)	84.500 - 80.250	1	1	0.000 0.030	5.000	16.000	0.051
CCI 5.0" x 3.0" Plate	B	No	Surface Af (CaAa)	84.500 - 80.250	1	1	0.000 0.030	5.000	16.000	0.051
CCI 5.0" x 3.0" Plate	C	No	Surface Af (CaAa)	84.500 - 80.250	1	1	0.000 0.030	5.000	16.000	0.051
*										
CCI 8.5" x 1.25" Plate	A	No	Surface Af (CaAa)	19.750 - 0.000	1	1	0.050 0.100	8.500	19.500	0.000
CCI 8.5" x 1.25" Plate	A	No	Surface Af (CaAa)	19.750 - 0.000	1	1	0.050 0.100	8.500	19.500	0.000
CCI 8.5" x 1.25" Plate	B	No	Surface Af (CaAa)	19.750 - 0.000	1	1	0.050 0.100	8.500	19.500	0.000
CCI 8.5" x 1.25" Plate	C	No	Surface Af (CaAa)	19.750 - 0.000	1	1	0.050 0.100	8.500	19.500	0.000
*										
CCI 8.5" x 1.25" Plate	A	No	Surface Af (CaAa)	39.750 - 20.250	1	1	0.050 0.100	8.500	19.500	0.000
CCI 8.5" x 1.25" Plate	A	No	Surface Af (CaAa)	39.750 - 20.250	1	1	0.050 0.100	8.500	19.500	0.000
CCI 8.5" x 1.25" Plate	B	No	Surface Af (CaAa)	39.750 - 20.250	1	1	0.050 0.100	8.500	19.500	0.000
CCI 8.5" x 1.25" Plate	C	No	Surface Af (CaAa)	39.750 - 20.250	1	1	0.050 0.100	8.500	19.500	0.000
*										
CCI 6.5" x 1.25" Plate	A	No	Surface Af (CaAa)	59.750 - 40.250	1	1	0.050 0.100	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	A	No	Surface Af (CaAa)	59.750 - 40.250	1	1	0.050 0.100	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	B	No	Surface Af (CaAa)	59.750 - 40.250	1	1	0.050 0.100	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	C	No	Surface Af (CaAa)	59.750 - 40.250	1	1	0.050 0.100	6.500	15.500	0.000
*										
CCI 6" x 1" Plate	A	No	Surface Af (CaAa)	79.750 - 60.250	1	1	0.050 0.100	6.000	14.000	0.000
CCI 6" x 1" Plate	A	No	Surface Af (CaAa)	79.750 - 60.250	1	1	0.050 0.100	6.000	14.000	0.000

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
CCI 6" x 1" Plate	B	No	Surface Af (CaAa)	79.750 - 60.250	1	1	0.050 0.100	6.000	14.000	0.000
CCI 6" x 1" Plate *	C	No	Surface Af (CaAa)	79.750 - 60.250	1	1	0.050 0.100	6.000	14.000	0.000
CCI 4" x 0.75" Plate	A	No	Surface Af (CaAa)	95.250 - 80.250	1	1	0.050 0.100	4.000	9.500	0.000
CCI 4" x 0.75" Plate	A	No	Surface Af (CaAa)	95.250 - 80.250	1	1	0.050 0.100	4.000	9.500	0.000
CCI 4" x 0.75" Plate	B	No	Surface Af (CaAa)	95.250 - 80.250	1	1	0.050 0.100	4.000	9.500	0.000
CCI 4" x 0.75" Plate *	C	No	Surface Af (CaAa)	95.250 - 80.250	1	1	0.050 0.100	4.000	9.500	0.000
4.75" x 1.25" Plate	A	No	Surface Af (CaAa)	64.750 - 57.500	1	1	0.000 0.030	4.750	12.000	0.020
4.75" x 1.25" Plate	B	No	Surface Af (CaAa)	64.750 - 57.500	1	1	0.000 0.030	4.750	12.000	0.020
4.75" x 1.25" Plate *	C	No	Surface Af (CaAa)	64.750 - 57.500	1	1	0.000 0.030	4.750	12.000	0.020
4.75" x 3" Plate	A	No	Surface Af (CaAa)	64.750 - 60.250	1	1	0.000 0.030	4.750	15.500	0.048
4.75" x 3" Plate	B	No	Surface Af (CaAa)	64.750 - 60.250	1	1	0.000 0.030	4.750	15.500	0.048
4.75" x 3" Plate **	C	No	Surface Af (CaAa)	64.750 - 60.250	1	1	0.000 0.030	4.750	15.500	0.048
PWRT-606-S(7/8)	B	No	Surface Ar (CaAa)	102.000 - 0.000	7	5	0.250 0.400	0.920		0.001
FB-L98B-034-XXX(3/8)	B	No	Surface Ar (CaAa)	102.000 - 0.000	3	3	0.400 0.430	0.394		0.000
LDF7-50A(1-5/8)	B	No	Surface Ar (CaAa)	102.000 - 0.000	6	6	0.250 0.400	1.980		0.001

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
FLC 158-50J(1-5/8) **	B	No	No	Inside Pole	147.500 - 0.000	10	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
LDF7-50A(1-5/8) **	B	No	No	Inside Pole	140.000 - 0.000	8	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
MLC6C-06C-008R-008R(1-1/2)	C	No	No	Inside Pole	130.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.002 0.002 0.002 0.002
HB114-1-08U4-M5F(1-1/4) *	C	No	No	Inside Pole	130.000 - 0.000	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
LDF4-50A(1/2) *	B	No	No	Inside Pole	89.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
LCF78-50A(7/8)	B	No	No	Inside Pole	54.000 - 0.000	2	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
*									
LCF78-50A(7/8)	B	No	No	Inside Pole	49.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
*									
LCF78-50A(7/8)	B	No	No	Inside Pole	45.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
*									
LCF78-50A(7/8)	B	No	No	Inside Pole	40.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
*									
LCF78-50A(7/8)	B	No	No	Inside Pole	37.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
**									
CU12PSM9P6XXX (1-1/2)	C	No	No	Inside Pole	120.000 - 0.000	1	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
							2" Ice	0.000	0.002

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	147.500-142.500	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.046
		C	0.000	0.000	3.857	0.000	0.011
L2	142.500-137.500	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.062
		C	0.000	0.000	3.857	0.000	0.011
L3	137.500-132.500	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.079
		C	0.000	0.000	3.857	0.000	0.011
L4	132.500-127.500	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.079
		C	0.000	0.000	3.857	0.000	0.024
L5	127.500-125.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.039
		C	0.000	0.000	1.929	0.000	0.019
L6	125.000-120.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.079
		C	0.000	0.000	3.857	0.000	0.038
L7	120.000-115.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.079
		C	0.000	0.000	3.857	0.000	0.049
L8	115.000-110.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.079
		C	0.000	0.000	3.857	0.000	0.049
L9	110.000-105.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.079
		C	0.000	0.000	3.857	0.000	0.049

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L10	105.000-100.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	3.532	0.000	0.101
		C	0.000	0.000	3.857	0.000	0.049
L11	100.000-95.000	A	0.000	0.000	0.333	0.000	0.000
		B	0.000	0.000	8.997	0.000	0.135
		C	0.000	0.000	4.024	0.000	0.049
L12	95.000-94.250	A	0.000	0.000	1.000	0.000	0.000
		B	0.000	0.000	1.825	0.000	0.020
		C	0.000	0.000	1.970	0.000	0.011
L13	94.250-94.000	A	0.000	0.000	0.333	0.000	0.000
		B	0.000	0.000	0.608	0.000	0.007
		C	0.000	0.000	0.657	0.000	0.004
L14	94.000-89.000	A	0.000	0.000	6.667	0.000	0.000
		B	0.000	0.000	12.164	0.000	0.135
		C	0.000	0.000	13.130	0.000	0.074
L15	89.000-84.000	A	0.000	0.000	8.861	0.000	0.088
		B	0.000	0.000	13.261	0.000	0.180
		C	0.000	0.000	14.228	0.000	0.118
L16	84.000-80.000	A	0.000	0.000	16.481	0.000	0.546
		B	0.000	0.000	15.305	0.000	0.382
		C	0.000	0.000	16.078	0.000	0.332
L17	80.000-79.750	A	0.000	0.000	0.433	0.000	0.010
		B	0.000	0.000	0.658	0.000	0.012
		C	0.000	0.000	0.706	0.000	0.009
L18	79.750-74.750	A	0.000	0.000	15.914	0.000	0.139
		B	0.000	0.000	16.788	0.000	0.206
		C	0.000	0.000	17.754	0.000	0.144
L19	74.750-69.750	A	0.000	0.000	10.000	0.000	0.000
		B	0.000	0.000	13.831	0.000	0.136
		C	0.000	0.000	14.797	0.000	0.074
L20	69.750-64.750	A	0.000	0.000	13.637	0.000	0.163
		B	0.000	0.000	15.649	0.000	0.218
		C	0.000	0.000	16.616	0.000	0.156
L21	64.750-60.000	A	0.000	0.000	30.906	0.000	1.128
		B	0.000	0.000	26.818	0.000	0.850
		C	0.000	0.000	27.736	0.000	0.791
L22	60.000-59.750	A	0.000	0.000	0.663	0.000	0.019
		B	0.000	0.000	0.860	0.000	0.019
		C	0.000	0.000	0.908	0.000	0.016
L23	59.750-54.750	A	0.000	0.000	20.796	0.000	0.283
		B	0.000	0.000	20.011	0.000	0.300
		C	0.000	0.000	20.977	0.000	0.238
L24	54.750-49.750	A	0.000	0.000	10.833	0.000	0.000
		B	0.000	0.000	14.247	0.000	0.139
		C	0.000	0.000	15.214	0.000	0.074
L25	49.750-44.750	A	0.000	0.000	14.470	0.000	0.163
		B	0.000	0.000	16.066	0.000	0.223
		C	0.000	0.000	17.032	0.000	0.156
L26	44.750-40.000	A	0.000	0.000	25.703	0.000	0.814
		B	0.000	0.000	21.241	0.000	0.543
		C	0.000	0.000	22.159	0.000	0.477
L27	40.000-39.750	A	0.000	0.000	0.489	0.000	0.014
		B	0.000	0.000	0.686	0.000	0.014
		C	0.000	0.000	0.734	0.000	0.011
L28	39.750-34.750	A	0.000	0.000	22.564	0.000	0.237
		B	0.000	0.000	20.113	0.000	0.264
		C	0.000	0.000	21.079	0.000	0.193
L29	34.750-29.750	A	0.000	0.000	14.167	0.000	0.000
		B	0.000	0.000	15.914	0.000	0.146
		C	0.000	0.000	16.880	0.000	0.074
L30	29.750-24.750	A	0.000	0.000	23.103	0.000	0.446
		B	0.000	0.000	20.382	0.000	0.369
		C	0.000	0.000	21.348	0.000	0.297
L31	24.750-20.000	A	0.000	0.000	33.403	0.000	1.079
		B	0.000	0.000	25.091	0.000	0.678
		C	0.000	0.000	26.009	0.000	0.610
L32	20.000-19.750	A	0.000	0.000	0.626	0.000	0.018
		B	0.000	0.000	0.755	0.000	0.016
		C	0.000	0.000	0.803	0.000	0.013

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L33	19.750-14.750	A	0.000	0.000	26.690	0.000	0.362
		B	0.000	0.000	22.176	0.000	0.327
		C	0.000	0.000	23.142	0.000	0.255
L34	14.750-9.750	A	0.000	0.000	15.941	0.000	0.051
		B	0.000	0.000	16.801	0.000	0.172
		C	0.000	0.000	17.767	0.000	0.100
L35	9.750-4.750	A	0.000	0.000	14.167	0.000	0.000
		B	0.000	0.000	15.914	0.000	0.146
		C	0.000	0.000	16.880	0.000	0.074
L36	4.750-0.000	A	0.000	0.000	13.458	0.000	0.000
		B	0.000	0.000	15.118	0.000	0.139
		C	0.000	0.000	16.036	0.000	0.070

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	147.500-142.500	A	1.478	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.046
		C		0.000	0.000	6.669	0.000	0.075
L2	142.500-137.500	A	1.473	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.062
		C		0.000	0.000	6.663	0.000	0.075
L3	137.500-132.500	A	1.468	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.079
		C		0.000	0.000	6.656	0.000	0.074
L4	132.500-127.500	A	1.462	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.079
		C		0.000	0.000	6.649	0.000	0.088
L5	127.500-125.000	A	1.458	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.039
		C		0.000	0.000	3.322	0.000	0.050
L6	125.000-120.000	A	1.454	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.079
		C		0.000	0.000	6.638	0.000	0.101
L7	120.000-115.000	A	1.448	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.079
		C		0.000	0.000	6.631	0.000	0.112
L8	115.000-110.000	A	1.441	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.079
		C		0.000	0.000	6.623	0.000	0.112
L9	110.000-105.000	A	1.435	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.079
		C		0.000	0.000	6.615	0.000	0.112
L10	105.000-100.000	A	1.428	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	6.557	0.000	0.165
		C		0.000	0.000	6.606	0.000	0.111
L11	100.000-95.000	A	1.421	0.000	0.000	0.475	0.000	0.004
		B		0.000	0.000	16.604	0.000	0.297
		C		0.000	0.000	6.835	0.000	0.113
L12	95.000-94.250	A	1.417	0.000	0.000	1.425	0.000	0.012
		B		0.000	0.000	3.165	0.000	0.050
		C		0.000	0.000	3.081	0.000	0.040
L13	94.250-94.000	A	1.416	0.000	0.000	0.475	0.000	0.004
		B		0.000	0.000	1.055	0.000	0.017
		C		0.000	0.000	1.027	0.000	0.013
L14	94.000-89.000	A	1.412	0.000	0.000	9.490	0.000	0.082
		B		0.000	0.000	21.078	0.000	0.334
		C		0.000	0.000	20.521	0.000	0.268
L15	89.000-84.000	A	1.404	0.000	0.000	12.101	0.000	0.200
		B		0.000	0.000	22.354	0.000	0.393
		C		0.000	0.000	21.807	0.000	0.326
L16	84.000-80.000	A	1.396	0.000	0.000	20.938	0.000	0.777
		B		0.000	0.000	23.489	0.000	0.622
		C		0.000	0.000	23.059	0.000	0.568

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L17	80.000-79.750	A	1.393	0.000	0.000	0.507	0.000	0.015
		B		0.000	0.000	1.067	0.000	0.022
		C		0.000	0.000	1.040	0.000	0.019
L18	79.750-74.750	A	1.388	0.000	0.000	19.706	0.000	0.314
		B		0.000	0.000	26.097	0.000	0.448
		C		0.000	0.000	25.570	0.000	0.381
L19	74.750-69.750	A	1.379	0.000	0.000	12.758	0.000	0.103
		B		0.000	0.000	22.588	0.000	0.341
		C		0.000	0.000	22.073	0.000	0.274
L20	69.750-64.750	A	1.369	0.000	0.000	16.982	0.000	0.312
		B		0.000	0.000	24.663	0.000	0.445
		C		0.000	0.000	24.160	0.000	0.378
L21	64.750-60.000	A	1.359	0.000	0.000	37.472	0.000	1.525
		B		0.000	0.000	37.728	0.000	1.239
		C		0.000	0.000	37.262	0.000	1.175
L22	60.000-59.750	A	1.353	0.000	0.000	0.772	0.000	0.027
		B		0.000	0.000	1.297	0.000	0.031
		C		0.000	0.000	1.272	0.000	0.028
L23	59.750-54.750	A	1.347	0.000	0.000	25.052	0.000	0.504
		B		0.000	0.000	29.561	0.000	0.570
		C		0.000	0.000	29.085	0.000	0.504
L24	54.750-49.750	A	1.335	0.000	0.000	13.503	0.000	0.107
		B		0.000	0.000	22.796	0.000	0.340
		C		0.000	0.000	22.335	0.000	0.271
L25	49.750-44.750	A	1.322	0.000	0.000	17.700	0.000	0.314
		B		0.000	0.000	24.844	0.000	0.444
		C		0.000	0.000	24.400	0.000	0.373
L26	44.750-40.000	A	1.307	0.000	0.000	30.696	0.000	1.111
		B		0.000	0.000	30.492	0.000	0.829
		C		0.000	0.000	30.087	0.000	0.760
L27	40.000-39.750	A	1.299	0.000	0.000	0.559	0.000	0.019
		B		0.000	0.000	1.075	0.000	0.024
		C		0.000	0.000	1.054	0.000	0.020
L28	39.750-34.750	A	1.291	0.000	0.000	25.643	0.000	0.448
		B		0.000	0.000	28.699	0.000	0.512
		C		0.000	0.000	28.294	0.000	0.436
L29	34.750-29.750	A	1.272	0.000	0.000	16.041	0.000	0.120
		B		0.000	0.000	23.829	0.000	0.347
		C		0.000	0.000	23.447	0.000	0.271
L30	29.750-24.750	A	1.251	0.000	0.000	26.035	0.000	0.661
		B		0.000	0.000	28.746	0.000	0.614
		C		0.000	0.000	28.391	0.000	0.539
L31	24.750-20.000	A	1.226	0.000	0.000	37.527	0.000	1.406
		B		0.000	0.000	33.619	0.000	0.970
		C		0.000	0.000	33.310	0.000	0.898
L32	20.000-19.750	A	1.212	0.000	0.000	0.691	0.000	0.024
		B		0.000	0.000	1.125	0.000	0.026
		C		0.000	0.000	1.110	0.000	0.022
L33	19.750-14.750	A	1.195	0.000	0.000	29.855	0.000	0.585
		B		0.000	0.000	30.447	0.000	0.569
		C		0.000	0.000	30.161	0.000	0.494
L34	14.750-9.750	A	1.155	0.000	0.000	17.953	0.000	0.174
		B		0.000	0.000	24.345	0.000	0.359
		C		0.000	0.000	24.109	0.000	0.284
L35	9.750-4.750	A	1.096	0.000	0.000	15.942	0.000	0.101
		B		0.000	0.000	23.118	0.000	0.315
		C		0.000	0.000	22.956	0.000	0.241
L36	4.750-0.000	A	0.980	0.000	0.000	15.032	0.000	0.084
		B		0.000	0.000	21.493	0.000	0.281
		C		0.000	0.000	21.477	0.000	0.211

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	147.500-142.500	-2.760	4.062	-2.074	3.052
L2	142.500-137.500	-2.760	4.062	-2.074	3.051
L3	137.500-132.500	-2.760	4.062	-2.073	3.051
L4	132.500-127.500	-2.760	4.062	-2.073	3.050
L5	127.500-125.000	-2.760	4.062	-2.073	3.050
L6	125.000-120.000	-2.969	4.368	-2.267	3.336
L7	120.000-115.000	-2.969	4.368	-2.266	3.334
L8	115.000-110.000	-2.969	4.368	-2.265	3.333
L9	110.000-105.000	-2.969	4.368	-2.265	3.332
L10	105.000-100.000	1.454	3.967	1.261	2.969
L11	100.000-95.000	5.426	3.774	4.339	2.906
L12	95.000-94.250	3.118	3.520	2.935	3.026
L13	94.250-94.000	3.118	3.520	2.935	3.026
L14	94.000-89.000	3.118	3.520	2.935	3.026
L15	89.000-84.000	2.435	2.926	2.528	2.693
L16	84.000-80.000	0.223	0.923	0.942	1.404
L17	80.000-79.750	2.570	3.645	2.975	3.503
L18	79.750-74.750	0.980	1.473	1.821	2.088
L19	74.750-69.750	2.511	2.865	2.770	2.851
L20	69.750-64.750	1.346	1.775	2.150	2.355
L21	64.750-60.000	-0.236	0.379	0.505	0.950
L22	60.000-59.750	1.692	2.531	2.671	3.217
L23	59.750-54.750	0.533	1.096	1.488	1.833
L24	54.750-49.750	2.532	2.904	2.908	3.000
L25	49.750-44.750	1.589	2.130	2.251	2.479
L26	44.750-40.000	-0.386	0.422	0.592	1.177
L27	40.000-39.750	2.667	3.998	3.283	3.973
L28	39.750-34.750	0.217	0.787	1.414	1.786
L29	34.750-29.750	1.929	2.247	2.739	2.824
L30	29.750-24.750	0.134	0.723	1.330	1.723
L31	24.750-20.000	-1.104	-0.206	0.020	0.721
L32	20.000-19.750	2.002	3.507	2.951	3.790
L33	19.750-14.750	-0.302	0.432	0.964	1.492
L34	14.750-9.750	1.622	2.065	2.545	2.730
L35	9.750-4.750	2.081	2.426	2.849	2.969
L36	4.750-0.000	2.081	2.426	2.791	2.931

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	1	AVA5-50(7/8)	142.50 - 147.50	1.0000	1.0000
L2	1	AVA5-50(7/8)	137.50 - 142.50	1.0000	1.0000
L3	1	AVA5-50(7/8)	132.50 - 137.50	1.0000	1.0000
L4	1	AVA5-50(7/8)	127.50 - 132.50	1.0000	1.0000
L5	1	AVA5-50(7/8)	125.00 - 127.50	1.0000	1.0000
L6	1	AVA5-50(7/8)	120.00 - 125.00	1.0000	1.0000
L7	1	AVA5-50(7/8)	115.00 - 120.00	1.0000	1.0000
L8	1	AVA5-50(7/8)	110.00 - 115.00	1.0000	1.0000
L9	1	AVA5-50(7/8)	105.00 - 110.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L10	1	AVA5-50(7/8)	100.00 - 105.00	1.0000	1.0000
L10	104	PWRT-606-S(7/8)	100.00 - 102.00	1.0000	1.0000
L10	106	FB-L98B-034-XXX(3/8)	100.00 - 102.00	1.0000	1.0000
L10	108	LDF7-50A(1-5/8)	100.00 - 102.00	1.0000	1.0000
L11	1	AVA5-50(7/8)	95.00 - 100.00	1.0000	1.0000
L11	89	CCI 4" x 0.75" Plate	95.00 - 95.25	1.0000	1.0000
L11	90	CCI 4" x 0.75" Plate	95.00 - 95.25	1.0000	1.0000
L11	91	CCI 4" x 0.75" Plate	95.00 - 95.25	1.0000	1.0000
L11	92	CCI 4" x 0.75" Plate	95.00 - 95.25	1.0000	1.0000
L11	104	PWRT-606-S(7/8)	95.00 - 100.00	1.0000	1.0000
L11	106	FB-L98B-034-XXX(3/8)	95.00 - 100.00	1.0000	1.0000
L11	108	LDF7-50A(1-5/8)	95.00 - 100.00	1.0000	1.0000
L12	1	AVA5-50(7/8)	94.25 - 95.00	1.0000	1.0000
L12	15	LDF7-50A(1-5/8)	94.25 - 95.00	1.0000	1.0000
L12	89	CCI 4" x 0.75" Plate	94.25 - 95.00	1.0000	1.0000
L12	90	CCI 4" x 0.75" Plate	94.25 - 95.00	1.0000	1.0000
L12	91	CCI 4" x 0.75" Plate	94.25 - 95.00	1.0000	1.0000
L12	92	CCI 4" x 0.75" Plate	94.25 - 95.00	1.0000	1.0000
L12	104	PWRT-606-S(7/8)	94.25 - 95.00	1.0000	1.0000
L12	106	FB-L98B-034-XXX(3/8)	94.25 - 95.00	1.0000	1.0000
L12	108	LDF7-50A(1-5/8)	94.25 - 95.00	1.0000	1.0000
L13	1	AVA5-50(7/8)	94.00 - 94.25	1.0000	1.0000
L13	15	LDF7-50A(1-5/8)	94.00 - 94.25	1.0000	1.0000
L13	89	CCI 4" x 0.75" Plate	94.00 - 94.25	1.0000	1.0000
L13	90	CCI 4" x 0.75" Plate	94.00 - 94.25	1.0000	1.0000
L13	91	CCI 4" x 0.75" Plate	94.00 - 94.25	1.0000	1.0000
L13	92	CCI 4" x 0.75" Plate	94.00 - 94.25	1.0000	1.0000
L13	104	PWRT-606-S(7/8)	94.00 - 94.25	1.0000	1.0000
L13	106	FB-L98B-034-XXX(3/8)	94.00 - 94.25	1.0000	1.0000
L13	108	LDF7-50A(1-5/8)	94.00 - 94.25	1.0000	1.0000
L14	1	AVA5-50(7/8)	89.00 - 94.00	1.0000	1.0000
L14	15	LDF7-50A(1-5/8)	89.00 - 94.00	1.0000	1.0000
L14	89	CCI 4" x 0.75" Plate	89.00 - 94.00	1.0000	1.0000
L14	90	CCI 4" x 0.75" Plate	89.00 - 94.00	1.0000	1.0000
L14	91	CCI 4" x 0.75" Plate	89.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L14	92	CCI 4" x 0.75" Plate	94.00 89.00 -	1.0000	1.0000
L14	104	PWRT-606-S(7/8)	94.00 89.00 -	1.0000	1.0000
L14	106	FB-L98B-034-XXX(3/8)	94.00 89.00 -	1.0000	1.0000
L14	108	LDF7-50A(1-5/8)	94.00 89.00 -	1.0000	1.0000
L15	1	AVA5-50(7/8)	94.00 84.00 -	1.0000	1.0000
L15	15	LDF7-50A(1-5/8)	89.00 84.00 -	1.0000	1.0000
L15	59	CCI 6.0" x 1.0" Plate	89.00 84.00 -	1.0000	1.0000
L15	60	CCI 6.0" x 1.0" Plate	84.92 84.00 -	1.0000	1.0000
L15	61	CCI 6.0" x 1.0" Plate	84.92 84.00 -	1.0000	1.0000
L15	62	CCI 6.0" x 1.0" Plate	84.92 84.00 -	1.0000	1.0000
L15	64	CCI 5.0" x 3.0" Plate	84.92 84.00 -	1.0000	1.0000
L15	65	CCI 5.0" x 3.0" Plate	84.50 84.00 -	1.0000	1.0000
L15	66	CCI 5.0" x 3.0" Plate	84.50 84.00 -	1.0000	1.0000
L15	67	CCI 5.0" x 3.0" Plate	84.50 84.00 -	1.0000	1.0000
L15	89	CCI 4" x 0.75" Plate	84.50 84.00 -	1.0000	1.0000
L15	90	CCI 4" x 0.75" Plate	89.00 84.00 -	1.0000	1.0000
L15	91	CCI 4" x 0.75" Plate	89.00 84.00 -	1.0000	1.0000
L15	92	CCI 4" x 0.75" Plate	89.00 84.00 -	1.0000	1.0000
L15	104	PWRT-606-S(7/8)	89.00 84.00 -	1.0000	1.0000
L15	106	FB-L98B-034-XXX(3/8)	89.00 84.00 -	1.0000	1.0000
L15	108	LDF7-50A(1-5/8)	89.00 84.00 -	1.0000	1.0000
L16	1	AVA5-50(7/8)	89.00 80.00 -	1.0000	1.0000
L16	15	LDF7-50A(1-5/8)	84.00 80.00 -	1.0000	1.0000
L16	59	CCI 6.0" x 1.0" Plate	84.00 80.00 -	1.0000	1.0000
L16	60	CCI 6.0" x 1.0" Plate	84.00 80.00 -	1.0000	1.0000
L16	61	CCI 6.0" x 1.0" Plate	84.00 80.00 -	1.0000	1.0000
L16	62	CCI 6.0" x 1.0" Plate	84.00 80.00 -	1.0000	1.0000
L16	64	CCI 5.0" x 3.0" Plate	84.00 80.25 -	1.0000	1.0000
L16	65	CCI 5.0" x 3.0" Plate	84.00 80.25 -	1.0000	1.0000
L16	66	CCI 5.0" x 3.0" Plate	84.00 80.25 -	1.0000	1.0000
L16	67	CCI 5.0" x 3.0" Plate	84.00 80.25 -	1.0000	1.0000
L16	89	CCI 4" x 0.75" Plate	84.00 80.25 -	1.0000	1.0000
L16	90	CCI 4" x 0.75" Plate	84.00 80.25 -	1.0000	1.0000
L16	91	CCI 4" x 0.75" Plate	84.00 80.25 -	1.0000	1.0000
			84.00		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L16	92	CCI 4" x 0.75" Plate	80.25 - 84.00	1.0000	1.0000
L16	104	PWRT-606-S(7/8)	80.00 - 84.00	1.0000	1.0000
L16	106	FB-L98B-034-XXX(3/8)	80.00 - 84.00	1.0000	1.0000
L16	108	LDF7-50A(1-5/8)	80.00 - 84.00	1.0000	1.0000
L17	1	AVA5-50(7/8)	79.75 - 80.00	1.0000	1.0000
L17	15	LDF7-50A(1-5/8)	79.75 - 80.00	1.0000	1.0000
L17	59	CCI 6.0" x 1.0" Plate	79.75 - 80.00	1.0000	1.0000
L17	60	CCI 6.0" x 1.0" Plate	79.75 - 80.00	1.0000	1.0000
L17	61	CCI 6.0" x 1.0" Plate	79.75 - 80.00	1.0000	1.0000
L17	62	CCI 6.0" x 1.0" Plate	79.75 - 80.00	1.0000	1.0000
L17	104	PWRT-606-S(7/8)	79.75 - 80.00	1.0000	1.0000
L17	106	FB-L98B-034-XXX(3/8)	79.75 - 80.00	1.0000	1.0000
L17	108	LDF7-50A(1-5/8)	79.75 - 80.00	1.0000	1.0000
L18	1	AVA5-50(7/8)	74.75 - 79.75	1.0000	1.0000
L18	15	LDF7-50A(1-5/8)	74.75 - 79.75	1.0000	1.0000
L18	59	CCI 6.0" x 1.0" Plate	76.33 - 79.75	1.0000	1.0000
L18	60	CCI 6.0" x 1.0" Plate	76.33 - 79.75	1.0000	1.0000
L18	61	CCI 6.0" x 1.0" Plate	76.33 - 79.75	1.0000	1.0000
L18	62	CCI 6.0" x 1.0" Plate	76.33 - 79.75	1.0000	1.0000
L18	84	CCI 6" x 1" Plate	74.75 - 79.75	1.0000	1.0000
L18	85	CCI 6" x 1" Plate	74.75 - 79.75	1.0000	1.0000
L18	86	CCI 6" x 1" Plate	74.75 - 79.75	1.0000	1.0000
L18	87	CCI 6" x 1" Plate	74.75 - 79.75	1.0000	1.0000
L18	104	PWRT-606-S(7/8)	74.75 - 79.75	1.0000	1.0000
L18	106	FB-L98B-034-XXX(3/8)	74.75 - 79.75	1.0000	1.0000
L18	108	LDF7-50A(1-5/8)	74.75 - 79.75	1.0000	1.0000
L19	1	AVA5-50(7/8)	69.75 - 74.75	1.0000	1.0000
L19	15	LDF7-50A(1-5/8)	69.75 - 74.75	1.0000	1.0000
L19	84	CCI 6" x 1" Plate	69.75 - 74.75	1.0000	1.0000
L19	85	CCI 6" x 1" Plate	69.75 - 74.75	1.0000	1.0000
L19	86	CCI 6" x 1" Plate	69.75 - 74.75	1.0000	1.0000
L19	87	CCI 6" x 1" Plate	69.75 - 74.75	1.0000	1.0000
L19	104	PWRT-606-S(7/8)	69.75 - 74.75	1.0000	1.0000
L19	106	FB-L98B-034-XXX(3/8)	69.75 - 74.75	1.0000	1.0000
L19	108	LDF7-50A(1-5/8)	69.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L20	1	AVA5-50(7/8)	74.75 - 64.75	1.0000	1.0000
L20	15	LDF7-50A(1-5/8)	69.75 - 64.75	1.0000	1.0000
L20	49	CCI 6.5" x 1.25" Plate	69.75 - 64.75	1.0000	1.0000
L20	50	CCI 6.5" x 1.25" Plate	66.04 - 64.75	1.0000	1.0000
L20	51	CCI 6.5" x 1.25" Plate	66.04 - 64.75	1.0000	1.0000
L20	52	CCI 6.5" x 1.25" Plate	66.04 - 64.75	1.0000	1.0000
L20	54	CCI 6.0" x 3.0" Plate	66.04 - 64.75	1.0000	1.0000
L20	55	CCI 6.0" x 3.0" Plate	65.50 - 64.75	1.0000	1.0000
L20	56	CCI 6.0" x 3.0" Plate	65.50 - 64.75	1.0000	1.0000
L20	57	CCI 6.0" x 3.0" Plate	65.50 - 64.75	1.0000	1.0000
L20	84	CCI 6" x 1" Plate	65.50 - 64.75	1.0000	1.0000
L20	85	CCI 6" x 1" Plate	69.75 - 64.75	1.0000	1.0000
L20	86	CCI 6" x 1" Plate	69.75 - 64.75	1.0000	1.0000
L20	87	CCI 6" x 1" Plate	69.75 - 64.75	1.0000	1.0000
L20	104	PWRT-606-S(7/8)	69.75 - 64.75	1.0000	1.0000
L20	106	FB-L98B-034-XXX(3/8)	69.75 - 64.75	1.0000	1.0000
L20	108	LDF7-50A(1-5/8)	69.75 - 64.75	1.0000	1.0000
L21	1	AVA5-50(7/8)	69.75 - 60.00	1.0000	1.0000
L21	15	LDF7-50A(1-5/8)	64.75 - 60.00	1.0000	1.0000
L21	49	CCI 6.5" x 1.25" Plate	64.75 - 60.00	1.0000	1.0000
L21	50	CCI 6.5" x 1.25" Plate	64.75 - 60.00	1.0000	1.0000
L21	51	CCI 6.5" x 1.25" Plate	64.75 - 60.00	1.0000	1.0000
L21	52	CCI 6.5" x 1.25" Plate	64.75 - 60.00	1.0000	1.0000
L21	54	CCI 6.0" x 3.0" Plate	64.75 - 60.25	1.0000	1.0000
L21	55	CCI 6.0" x 3.0" Plate	64.75 - 60.25	1.0000	1.0000
L21	56	CCI 6.0" x 3.0" Plate	64.75 - 60.25	1.0000	1.0000
L21	57	CCI 6.0" x 3.0" Plate	64.75 - 60.25	1.0000	1.0000
L21	84	CCI 6" x 1" Plate	64.75 - 60.25	1.0000	1.0000
L21	85	CCI 6" x 1" Plate	64.75 - 60.25	1.0000	1.0000
L21	86	CCI 6" x 1" Plate	64.75 - 60.25	1.0000	1.0000
L21	87	CCI 6" x 1" Plate	64.75 - 60.25	1.0000	1.0000
L21	94	4.75" x 1.25" Plate	64.75 - 60.00	1.0000	1.0000
L21	95	4.75" x 1.25" Plate	64.75 - 60.00	1.0000	1.0000
L21	96	4.75" x 1.25" Plate	64.75 - 60.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L21	98	4.75" x 3" Plate	60.25 - 64.75	1.0000	1.0000
L21	99	4.75" x 3" Plate	60.25 - 64.75	1.0000	1.0000
L21	100	4.75" x 3" Plate	60.25 - 64.75	1.0000	1.0000
L21	104	PWRT-606-S(7/8)	60.00 - 64.75	1.0000	1.0000
L21	106	FB-L98B-034-XXX(3/8)	60.00 - 64.75	1.0000	1.0000
L21	108	LDF7-50A(1-5/8)	60.00 - 64.75	1.0000	1.0000
L22	1	AVA5-50(7/8)	59.75 - 60.00	1.0000	1.0000
L22	15	LDF7-50A(1-5/8)	59.75 - 60.00	1.0000	1.0000
L22	49	CCI 6.5" x 1.25" Plate	59.75 - 60.00	1.0000	1.0000
L22	50	CCI 6.5" x 1.25" Plate	59.75 - 60.00	1.0000	1.0000
L22	51	CCI 6.5" x 1.25" Plate	59.75 - 60.00	1.0000	1.0000
L22	52	CCI 6.5" x 1.25" Plate	59.75 - 60.00	1.0000	1.0000
L22	94	4.75" x 1.25" Plate	59.75 - 60.00	1.0000	1.0000
L22	95	4.75" x 1.25" Plate	59.75 - 60.00	1.0000	1.0000
L22	96	4.75" x 1.25" Plate	59.75 - 60.00	1.0000	1.0000
L22	104	PWRT-606-S(7/8)	59.75 - 60.00	1.0000	1.0000
L22	106	FB-L98B-034-XXX(3/8)	59.75 - 60.00	1.0000	1.0000
L22	108	LDF7-50A(1-5/8)	59.75 - 60.00	1.0000	1.0000
L23	1	AVA5-50(7/8)	54.75 - 59.75	1.0000	1.0000
L23	15	LDF7-50A(1-5/8)	54.75 - 59.75	1.0000	1.0000
L23	49	CCI 6.5" x 1.25" Plate	55.46 - 59.75	1.0000	1.0000
L23	50	CCI 6.5" x 1.25" Plate	55.46 - 59.75	1.0000	1.0000
L23	51	CCI 6.5" x 1.25" Plate	55.46 - 59.75	1.0000	1.0000
L23	52	CCI 6.5" x 1.25" Plate	55.46 - 59.75	1.0000	1.0000
L23	79	CCI 6.5" x 1.25" Plate	54.75 - 59.75	1.0000	1.0000
L23	80	CCI 6.5" x 1.25" Plate	54.75 - 59.75	1.0000	1.0000
L23	81	CCI 6.5" x 1.25" Plate	54.75 - 59.75	1.0000	1.0000
L23	82	CCI 6.5" x 1.25" Plate	54.75 - 59.75	1.0000	1.0000
L23	94	4.75" x 1.25" Plate	57.50 - 59.75	1.0000	1.0000
L23	95	4.75" x 1.25" Plate	57.50 - 59.75	1.0000	1.0000
L23	96	4.75" x 1.25" Plate	57.50 - 59.75	1.0000	1.0000
L23	104	PWRT-606-S(7/8)	54.75 - 59.75	1.0000	1.0000
L23	106	FB-L98B-034-XXX(3/8)	54.75 - 59.75	1.0000	1.0000
L23	108	LDF7-50A(1-5/8)	54.75 - 59.75	1.0000	1.0000
L24	1	AVA5-50(7/8)	49.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L24	15	LDF7-50A(1-5/8)	54.75 49.75 -	1.0000	1.0000
L24	79	CCI 6.5" x 1.25" Plate	54.75 49.75 -	1.0000	1.0000
L24	80	CCI 6.5" x 1.25" Plate	54.75 49.75 -	1.0000	1.0000
L24	81	CCI 6.5" x 1.25" Plate	54.75 49.75 -	1.0000	1.0000
L24	82	CCI 6.5" x 1.25" Plate	54.75 49.75 -	1.0000	1.0000
L24	104	PWRT-606-S(7/8)	54.75 49.75 -	1.0000	1.0000
L24	106	FB-L98B-034-XXX(3/8)	54.75 49.75 -	1.0000	1.0000
L24	108	LDF7-50A(1-5/8)	54.75 49.75 -	1.0000	1.0000
L25	1	AVA5-50(7/8)	54.75 44.75 -	1.0000	1.0000
L25	15	LDF7-50A(1-5/8)	49.75 44.75 -	1.0000	1.0000
L25	39	CCI 6.5" x 1.25" Plate	49.75 44.75 -	1.0000	1.0000
L25	40	CCI 6.5" x 1.25" Plate	46.04 44.75 -	1.0000	1.0000
L25	41	CCI 6.5" x 1.25" Plate	46.04 44.75 -	1.0000	1.0000
L25	42	CCI 6.5" x 1.25" Plate	46.04 44.75 -	1.0000	1.0000
L25	44	CCI 6.0" x 3.0" Plate	46.04 44.75 -	1.0000	1.0000
L25	45	CCI 6.0" x 3.0" Plate	45.50 44.75 -	1.0000	1.0000
L25	46	CCI 6.0" x 3.0" Plate	45.50 44.75 -	1.0000	1.0000
L25	47	CCI 6.0" x 3.0" Plate	45.50 44.75 -	1.0000	1.0000
L25	79	CCI 6.5" x 1.25" Plate	45.50 44.75 -	1.0000	1.0000
L25	80	CCI 6.5" x 1.25" Plate	49.75 44.75 -	1.0000	1.0000
L25	81	CCI 6.5" x 1.25" Plate	49.75 44.75 -	1.0000	1.0000
L25	82	CCI 6.5" x 1.25" Plate	49.75 44.75 -	1.0000	1.0000
L25	104	PWRT-606-S(7/8)	49.75 44.75 -	1.0000	1.0000
L25	106	FB-L98B-034-XXX(3/8)	49.75 44.75 -	1.0000	1.0000
L25	108	LDF7-50A(1-5/8)	49.75 44.75 -	1.0000	1.0000
L26	1	AVA5-50(7/8)	49.75 40.00 -	1.0000	1.0000
L26	15	LDF7-50A(1-5/8)	44.75 40.00 -	1.0000	1.0000
L26	39	CCI 6.5" x 1.25" Plate	44.75 40.00 -	1.0000	1.0000
L26	40	CCI 6.5" x 1.25" Plate	44.75 40.00 -	1.0000	1.0000
L26	41	CCI 6.5" x 1.25" Plate	44.75 40.00 -	1.0000	1.0000
L26	42	CCI 6.5" x 1.25" Plate	44.75 40.00 -	1.0000	1.0000
L26	44	CCI 6.0" x 3.0" Plate	44.75 40.25 -	1.0000	1.0000
L26	45	CCI 6.0" x 3.0" Plate	44.75 40.25 -	1.0000	1.0000
L26	46	CCI 6.0" x 3.0" Plate	44.75 40.25 -	1.0000	1.0000
			44.75		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L26	47	CCI 6.0" x 3.0" Plate	40.25 - 44.75	1.0000	1.0000
L26	79	CCI 6.5" x 1.25" Plate	40.25 - 44.75	1.0000	1.0000
L26	80	CCI 6.5" x 1.25" Plate	40.25 - 44.75	1.0000	1.0000
L26	81	CCI 6.5" x 1.25" Plate	40.25 - 44.75	1.0000	1.0000
L26	82	CCI 6.5" x 1.25" Plate	40.25 - 44.75	1.0000	1.0000
L26	104	PWRT-606-S(7/8)	40.00 - 44.75	1.0000	1.0000
L26	106	FB-L98B-034-XXX(3/8)	40.00 - 44.75	1.0000	1.0000
L26	108	LDF7-50A(1-5/8)	40.00 - 44.75	1.0000	1.0000
L27	1	AVA5-50(7/8)	39.75 - 40.00	1.0000	1.0000
L27	15	LDF7-50A(1-5/8)	39.75 - 40.00	1.0000	1.0000
L27	39	CCI 6.5" x 1.25" Plate	39.75 - 40.00	1.0000	1.0000
L27	40	CCI 6.5" x 1.25" Plate	39.75 - 40.00	1.0000	1.0000
L27	41	CCI 6.5" x 1.25" Plate	39.75 - 40.00	1.0000	1.0000
L27	42	CCI 6.5" x 1.25" Plate	39.75 - 40.00	1.0000	1.0000
L27	104	PWRT-606-S(7/8)	39.75 - 40.00	1.0000	1.0000
L27	106	FB-L98B-034-XXX(3/8)	39.75 - 40.00	1.0000	1.0000
L27	108	LDF7-50A(1-5/8)	39.75 - 40.00	1.0000	1.0000
L28	1	AVA5-50(7/8)	34.75 - 39.75	1.0000	1.0000
L28	15	LDF7-50A(1-5/8)	34.75 - 39.75	1.0000	1.0000
L28	39	CCI 6.5" x 1.25" Plate	35.46 - 39.75	1.0000	1.0000
L28	40	CCI 6.5" x 1.25" Plate	35.46 - 39.75	1.0000	1.0000
L28	41	CCI 6.5" x 1.25" Plate	35.46 - 39.75	1.0000	1.0000
L28	42	CCI 6.5" x 1.25" Plate	35.46 - 39.75	1.0000	1.0000
L28	74	CCI 8.5" x 1.25" Plate	34.75 - 39.75	1.0000	1.0000
L28	75	CCI 8.5" x 1.25" Plate	34.75 - 39.75	1.0000	1.0000
L28	76	CCI 8.5" x 1.25" Plate	34.75 - 39.75	1.0000	1.0000
L28	77	CCI 8.5" x 1.25" Plate	34.75 - 39.75	1.0000	1.0000
L28	104	PWRT-606-S(7/8)	34.75 - 39.75	1.0000	1.0000
L28	106	FB-L98B-034-XXX(3/8)	34.75 - 39.75	1.0000	1.0000
L28	108	LDF7-50A(1-5/8)	34.75 - 39.75	1.0000	1.0000
L29	1	AVA5-50(7/8)	29.75 - 34.75	1.0000	1.0000
L29	15	LDF7-50A(1-5/8)	29.75 - 34.75	1.0000	1.0000
L29	74	CCI 8.5" x 1.25" Plate	29.75 - 34.75	1.0000	1.0000
L29	75	CCI 8.5" x 1.25" Plate	29.75 - 34.75	1.0000	1.0000
L29	76	CCI 8.5" x 1.25" Plate	29.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L29	77	CCI 8.5" x 1.25" Plate	34.75 29.75 - 34.75	1.0000	1.0000
L29	104	PWRT-606-S(7/8)	29.75 - 34.75	1.0000	1.0000
L29	106	FB-L98B-034-XXX(3/8)	29.75 - 34.75	1.0000	1.0000
L29	108	LDF7-50A(1-5/8)	29.75 - 34.75	1.0000	1.0000
L30	1	AVA5-50(7/8)	24.75 - 29.75	1.0000	1.0000
L30	15	LDF7-50A(1-5/8)	24.75 - 29.75	1.0000	1.0000
L30	29	CCI 8.5" x 1.25" Plate	24.75 - 26.96	1.0000	1.0000
L30	30	CCI 8.5" x 1.25" Plate	24.75 - 26.96	1.0000	1.0000
L30	31	CCI 8.5" x 1.25" Plate	24.75 - 26.96	1.0000	1.0000
L30	32	CCI 8.5" x 1.25" Plate	24.75 - 26.96	1.0000	1.0000
L30	34	CCI 8.0" x 3.0" Plate	24.75 - 26.50	1.0000	1.0000
L30	35	CCI 8.0" x 3.0" Plate	24.75 - 26.50	1.0000	1.0000
L30	36	CCI 8.0" x 3.0" Plate	24.75 - 26.50	1.0000	1.0000
L30	37	CCI 8.0" x 3.0" Plate	24.75 - 26.50	1.0000	1.0000
L30	74	CCI 8.5" x 1.25" Plate	24.75 - 29.75	1.0000	1.0000
L30	75	CCI 8.5" x 1.25" Plate	24.75 - 29.75	1.0000	1.0000
L30	76	CCI 8.5" x 1.25" Plate	24.75 - 29.75	1.0000	1.0000
L30	77	CCI 8.5" x 1.25" Plate	24.75 - 29.75	1.0000	1.0000
L30	104	PWRT-606-S(7/8)	24.75 - 29.75	1.0000	1.0000
L30	106	FB-L98B-034-XXX(3/8)	24.75 - 29.75	1.0000	1.0000
L30	108	LDF7-50A(1-5/8)	24.75 - 29.75	1.0000	1.0000
L31	1	AVA5-50(7/8)	20.00 - 24.75	1.0000	1.0000
L31	15	LDF7-50A(1-5/8)	20.00 - 24.75	1.0000	1.0000
L31	29	CCI 8.5" x 1.25" Plate	20.00 - 24.75	1.0000	1.0000
L31	30	CCI 8.5" x 1.25" Plate	20.00 - 24.75	1.0000	1.0000
L31	31	CCI 8.5" x 1.25" Plate	20.00 - 24.75	1.0000	1.0000
L31	32	CCI 8.5" x 1.25" Plate	20.00 - 24.75	1.0000	1.0000
L31	34	CCI 8.0" x 3.0" Plate	20.25 - 24.75	1.0000	1.0000
L31	35	CCI 8.0" x 3.0" Plate	20.25 - 24.75	1.0000	1.0000
L31	36	CCI 8.0" x 3.0" Plate	20.25 - 24.75	1.0000	1.0000
L31	37	CCI 8.0" x 3.0" Plate	20.25 - 24.75	1.0000	1.0000
L31	74	CCI 8.5" x 1.25" Plate	20.25 - 24.75	1.0000	1.0000
L31	75	CCI 8.5" x 1.25" Plate	20.25 - 24.75	1.0000	1.0000
L31	76	CCI 8.5" x 1.25" Plate	20.25 - 24.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L31	77	CCI 8.5" x 1.25" Plate	20.25 - 24.75	1.0000	1.0000
L31	104	PWRT-606-S(7/8)	20.00 - 24.75	1.0000	1.0000
L31	106	FB-L98B-034-XXX(3/8)	20.00 - 24.75	1.0000	1.0000
L31	108	LDF7-50A(1-5/8)	20.00 - 24.75	1.0000	1.0000
L32	1	AVA5-50(7/8)	19.75 - 20.00	1.0000	1.0000
L32	15	LDF7-50A(1-5/8)	19.75 - 20.00	1.0000	1.0000
L32	29	CCI 8.5" x 1.25" Plate	19.75 - 20.00	1.0000	1.0000
L32	30	CCI 8.5" x 1.25" Plate	19.75 - 20.00	1.0000	1.0000
L32	31	CCI 8.5" x 1.25" Plate	19.75 - 20.00	1.0000	1.0000
L32	32	CCI 8.5" x 1.25" Plate	19.75 - 20.00	1.0000	1.0000
L32	104	PWRT-606-S(7/8)	19.75 - 20.00	1.0000	1.0000
L32	106	FB-L98B-034-XXX(3/8)	19.75 - 20.00	1.0000	1.0000
L32	108	LDF7-50A(1-5/8)	19.75 - 20.00	1.0000	1.0000
L33	1	AVA5-50(7/8)	14.75 - 19.75	1.0000	1.0000
L33	15	LDF7-50A(1-5/8)	14.75 - 19.75	1.0000	1.0000
L33	29	CCI 8.5" x 1.25" Plate	14.75 - 19.75	1.0000	1.0000
L33	30	CCI 8.5" x 1.25" Plate	14.75 - 19.75	1.0000	1.0000
L33	31	CCI 8.5" x 1.25" Plate	14.75 - 19.75	1.0000	1.0000
L33	32	CCI 8.5" x 1.25" Plate	14.75 - 19.75	1.0000	1.0000
L33	69	CCI 8.5" x 1.25" Plate	14.75 - 19.75	1.0000	1.0000
L33	70	CCI 8.5" x 1.25" Plate	14.75 - 19.75	1.0000	1.0000
L33	71	CCI 8.5" x 1.25" Plate	14.75 - 19.75	1.0000	1.0000
L33	72	CCI 8.5" x 1.25" Plate	14.75 - 19.75	1.0000	1.0000
L33	104	PWRT-606-S(7/8)	14.75 - 19.75	1.0000	1.0000
L33	106	FB-L98B-034-XXX(3/8)	14.75 - 19.75	1.0000	1.0000
L33	108	LDF7-50A(1-5/8)	14.75 - 19.75	1.0000	1.0000
L34	1	AVA5-50(7/8)	9.75 - 14.75	1.0000	1.0000
L34	15	LDF7-50A(1-5/8)	9.75 - 14.75	1.0000	1.0000
L34	29	CCI 8.5" x 1.25" Plate	14.04 - 14.75	1.0000	1.0000
L34	30	CCI 8.5" x 1.25" Plate	14.04 - 14.75	1.0000	1.0000
L34	31	CCI 8.5" x 1.25" Plate	14.04 - 14.75	1.0000	1.0000
L34	32	CCI 8.5" x 1.25" Plate	14.04 - 14.75	1.0000	1.0000
L34	69	CCI 8.5" x 1.25" Plate	9.75 - 14.75	1.0000	1.0000
L34	70	CCI 8.5" x 1.25" Plate	9.75 - 14.75	1.0000	1.0000
L34	71	CCI 8.5" x 1.25" Plate	9.75 - 14.75	1.0000	1.0000
L34	72	CCI 8.5" x 1.25" Plate	9.75 - 14.75	1.0000	1.0000
L34	104	PWRT-606-S(7/8)	9.75 - 14.75	1.0000	1.0000
L34	106	FB-L98B-034-XXX(3/8)	9.75 - 14.75	1.0000	1.0000
L34	108	LDF7-50A(1-5/8)	9.75 - 14.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L35	1	AVA5-50(7/8)	4.75 - 9.75	1.0000	1.0000
L35	15	LDF7-50A(1-5/8)	4.75 - 9.75	1.0000	1.0000
L35	69	CCI 8.5" x 1.25" Plate	4.75 - 9.75	1.0000	1.0000
L35	70	CCI 8.5" x 1.25" Plate	4.75 - 9.75	1.0000	1.0000
L35	71	CCI 8.5" x 1.25" Plate	4.75 - 9.75	1.0000	1.0000
L35	72	CCI 8.5" x 1.25" Plate	4.75 - 9.75	1.0000	1.0000
L35	104	PWRT-606-S(7/8)	4.75 - 9.75	1.0000	1.0000
L35	106	FB-L98B-034-XXX(3/8)	4.75 - 9.75	1.0000	1.0000
L35	108	LDF7-50A(1-5/8)	4.75 - 9.75	1.0000	1.0000
L36	1	AVA5-50(7/8)	0.00 - 4.75	1.0000	1.0000
L36	15	LDF7-50A(1-5/8)	0.00 - 4.75	1.0000	1.0000
L36	69	CCI 8.5" x 1.25" Plate	0.00 - 4.75	1.0000	1.0000
L36	70	CCI 8.5" x 1.25" Plate	0.00 - 4.75	1.0000	1.0000
L36	71	CCI 8.5" x 1.25" Plate	0.00 - 4.75	1.0000	1.0000
L36	72	CCI 8.5" x 1.25" Plate	0.00 - 4.75	1.0000	1.0000
L36	104	PWRT-606-S(7/8)	0.00 - 4.75	1.0000	1.0000
L36	106	FB-L98B-034-XXX(3/8)	0.00 - 4.75	1.0000	1.0000
L36	108	LDF7-50A(1-5/8)	0.00 - 4.75	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L11	89	CCI 4" x 0.75" Plate	95.00 - 95.25	Auto	1.0000
L11	90	CCI 4" x 0.75" Plate	95.00 - 95.25	Auto	1.0000
L11	91	CCI 4" x 0.75" Plate	95.00 - 95.25	Auto	1.0000
L11	92	CCI 4" x 0.75" Plate	95.00 - 95.25	Auto	1.0000
L12	89	CCI 4" x 0.75" Plate	94.25 - 95.00	Auto	1.0000
L12	90	CCI 4" x 0.75" Plate	94.25 - 95.00	Auto	1.0000
L12	91	CCI 4" x 0.75" Plate	94.25 - 95.00	Auto	1.0000
L12	92	CCI 4" x 0.75" Plate	94.25 - 95.00	Auto	1.0000
L13	89	CCI 4" x 0.75" Plate	94.00 - 94.25	Auto	1.0000
L13	90	CCI 4" x 0.75" Plate	94.00 - 94.25	Auto	1.0000
L13	91	CCI 4" x 0.75" Plate	94.00 - 94.25	Auto	1.0000
L13	92	CCI 4" x 0.75" Plate	94.00 - 94.25	Auto	1.0000
L14	89	CCI 4" x 0.75" Plate	89.00 - 94.00	Auto	1.0000
L14	90	CCI 4" x 0.75" Plate	89.00 - 94.00	Auto	1.0000
L14	91	CCI 4" x 0.75" Plate	89.00 - 94.00	Auto	1.0000
L14	92	CCI 4" x 0.75" Plate	89.00 - 94.00	Auto	1.0000
L15	59	CCI 6.0" x 1.0" Plate	84.00 - 84.92	Auto	1.0000
L15	60	CCI 6.0" x 1.0" Plate	84.00 - 84.92	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L15	61	CCI 6.0" x 1.0" Plate	84.00 - 84.92	Auto	1.0000
L15	62	CCI 6.0" x 1.0" Plate	84.00 - 84.92	Auto	1.0000
L15	64	CCI 5.0" x 3.0" Plate	84.00 - 84.50	Auto	1.0000
L15	65	CCI 5.0" x 3.0" Plate	84.00 - 84.50	Auto	1.0000
L15	66	CCI 5.0" x 3.0" Plate	84.00 - 84.50	Auto	1.0000
L15	67	CCI 5.0" x 3.0" Plate	84.00 - 84.50	Auto	1.0000
L15	89	CCI 4" x 0.75" Plate	84.00 - 89.00	Auto	1.0000
L15	90	CCI 4" x 0.75" Plate	84.00 - 89.00	Auto	1.0000
L15	91	CCI 4" x 0.75" Plate	84.00 - 89.00	Auto	1.0000
L15	92	CCI 4" x 0.75" Plate	84.00 - 89.00	Auto	1.0000
L16	59	CCI 6.0" x 1.0" Plate	80.00 - 84.00	Auto	1.0000
L16	60	CCI 6.0" x 1.0" Plate	80.00 - 84.00	Auto	1.0000
L16	61	CCI 6.0" x 1.0" Plate	80.00 - 84.00	Auto	1.0000
L16	62	CCI 6.0" x 1.0" Plate	80.00 - 84.00	Auto	1.0000
L16	64	CCI 5.0" x 3.0" Plate	80.25 - 84.00	Auto	1.0000
L16	65	CCI 5.0" x 3.0" Plate	80.25 - 84.00	Auto	1.0000
L16	66	CCI 5.0" x 3.0" Plate	80.25 - 84.00	Auto	1.0000
L16	67	CCI 5.0" x 3.0" Plate	80.25 - 84.00	Auto	1.0000
L16	89	CCI 4" x 0.75" Plate	80.25 - 84.00	Auto	1.0000
L16	90	CCI 4" x 0.75" Plate	80.25 - 84.00	Auto	1.0000
L16	91	CCI 4" x 0.75" Plate	80.25 - 84.00	Auto	1.0000
L16	92	CCI 4" x 0.75" Plate	80.25 - 84.00	Auto	1.0000
L17	59	CCI 6.0" x 1.0" Plate	79.75 - 80.00	Auto	1.0000
L17	60	CCI 6.0" x 1.0" Plate	79.75 - 80.00	Auto	1.0000
L17	61	CCI 6.0" x 1.0" Plate	79.75 - 80.00	Auto	1.0000
L17	62	CCI 6.0" x 1.0" Plate	79.75 - 80.00	Auto	1.0000
L18	59	CCI 6.0" x 1.0" Plate	76.33 - 79.75	Auto	1.0000
L18	60	CCI 6.0" x 1.0" Plate	76.33 - 79.75	Auto	1.0000
L18	61	CCI 6.0" x 1.0" Plate	76.33 - 79.75	Auto	1.0000
L18	62	CCI 6.0" x 1.0" Plate	76.33 - 79.75	Auto	1.0000
L18	84	CCI 6" x 1" Plate	74.75 - 79.75	Auto	1.0000
L18	85	CCI 6" x 1" Plate	74.75 - 79.75	Auto	1.0000
L18	86	CCI 6" x 1" Plate	74.75 - 79.75	Auto	1.0000
L18	87	CCI 6" x 1" Plate	74.75 - 79.75	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L19	84	CCI 6" x 1" Plate	69.75 - 74.75	Auto	1.0000
L19	85	CCI 6" x 1" Plate	69.75 - 74.75	Auto	1.0000
L19	86	CCI 6" x 1" Plate	69.75 - 74.75	Auto	1.0000
L19	87	CCI 6" x 1" Plate	69.75 - 74.75	Auto	1.0000
L20	49	CCI 6.5" x 1.25" Plate	64.75 - 66.04	Auto	1.0000
L20	50	CCI 6.5" x 1.25" Plate	64.75 - 66.04	Auto	1.0000
L20	51	CCI 6.5" x 1.25" Plate	64.75 - 66.04	Auto	1.0000
L20	52	CCI 6.5" x 1.25" Plate	64.75 - 66.04	Auto	1.0000
L20	54	CCI 6.0" x 3.0" Plate	64.75 - 65.50	Auto	1.0000
L20	55	CCI 6.0" x 3.0" Plate	64.75 - 65.50	Auto	1.0000
L20	56	CCI 6.0" x 3.0" Plate	64.75 - 65.50	Auto	1.0000
L20	57	CCI 6.0" x 3.0" Plate	64.75 - 65.50	Auto	1.0000
L20	84	CCI 6" x 1" Plate	64.75 - 69.75	Auto	1.0000
L20	85	CCI 6" x 1" Plate	64.75 - 69.75	Auto	1.0000
L20	86	CCI 6" x 1" Plate	64.75 - 69.75	Auto	1.0000
L20	87	CCI 6" x 1" Plate	64.75 - 69.75	Auto	1.0000
L21	49	CCI 6.5" x 1.25" Plate	60.00 - 64.75	Auto	1.0000
L21	50	CCI 6.5" x 1.25" Plate	60.00 - 64.75	Auto	1.0000
L21	51	CCI 6.5" x 1.25" Plate	60.00 - 64.75	Auto	1.0000
L21	52	CCI 6.5" x 1.25" Plate	60.00 - 64.75	Auto	1.0000
L21	54	CCI 6.0" x 3.0" Plate	60.25 - 64.75	Auto	1.0000
L21	55	CCI 6.0" x 3.0" Plate	60.25 - 64.75	Auto	1.0000
L21	56	CCI 6.0" x 3.0" Plate	60.25 - 64.75	Auto	1.0000
L21	57	CCI 6.0" x 3.0" Plate	60.25 - 64.75	Auto	1.0000
L21	84	CCI 6" x 1" Plate	60.25 - 64.75	Auto	1.0000
L21	85	CCI 6" x 1" Plate	60.25 - 64.75	Auto	1.0000
L21	86	CCI 6" x 1" Plate	60.25 - 64.75	Auto	1.0000
L21	87	CCI 6" x 1" Plate	60.25 - 64.75	Auto	1.0000
L21	94	4.75" x 1.25" Plate	60.00 - 64.75	Auto	1.0000
L21	95	4.75" x 1.25" Plate	60.00 - 64.75	Auto	1.0000
L21	96	4.75" x 1.25" Plate	60.00 - 64.75	Auto	1.0000
L21	98	4.75" x 3" Plate	60.25 - 64.75	Auto	1.0000
L21	99	4.75" x 3" Plate	60.25 - 64.75	Auto	1.0000
L21	100	4.75" x 3" Plate	60.25 - 64.75	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L22	49	CCI 6.5" x 1.25" Plate	59.75 - 60.00	Auto	1.0000
L22	50	CCI 6.5" x 1.25" Plate	59.75 - 60.00	Auto	1.0000
L22	51	CCI 6.5" x 1.25" Plate	59.75 - 60.00	Auto	1.0000
L22	52	CCI 6.5" x 1.25" Plate	59.75 - 60.00	Auto	1.0000
L22	94	4.75" x 1.25" Plate	59.75 - 60.00	Auto	1.0000
L22	95	4.75" x 1.25" Plate	59.75 - 60.00	Auto	1.0000
L22	96	4.75" x 1.25" Plate	59.75 - 60.00	Auto	1.0000
L23	49	CCI 6.5" x 1.25" Plate	55.46 - 59.75	Auto	1.0000
L23	50	CCI 6.5" x 1.25" Plate	55.46 - 59.75	Auto	1.0000
L23	51	CCI 6.5" x 1.25" Plate	55.46 - 59.75	Auto	1.0000
L23	52	CCI 6.5" x 1.25" Plate	55.46 - 59.75	Auto	1.0000
L23	79	CCI 6.5" x 1.25" Plate	54.75 - 59.75	Auto	1.0000
L23	80	CCI 6.5" x 1.25" Plate	54.75 - 59.75	Auto	1.0000
L23	81	CCI 6.5" x 1.25" Plate	54.75 - 59.75	Auto	1.0000
L23	82	CCI 6.5" x 1.25" Plate	54.75 - 59.75	Auto	1.0000
L23	94	4.75" x 1.25" Plate	57.50 - 59.75	Auto	1.0000
L23	95	4.75" x 1.25" Plate	57.50 - 59.75	Auto	1.0000
L23	96	4.75" x 1.25" Plate	57.50 - 59.75	Auto	1.0000
L24	79	CCI 6.5" x 1.25" Plate	49.75 - 54.75	Auto	1.0000
L24	80	CCI 6.5" x 1.25" Plate	49.75 - 54.75	Auto	1.0000
L24	81	CCI 6.5" x 1.25" Plate	49.75 - 54.75	Auto	1.0000
L24	82	CCI 6.5" x 1.25" Plate	49.75 - 54.75	Auto	1.0000
L25	39	CCI 6.5" x 1.25" Plate	44.75 - 46.04	Auto	1.0000
L25	40	CCI 6.5" x 1.25" Plate	44.75 - 46.04	Auto	1.0000
L25	41	CCI 6.5" x 1.25" Plate	44.75 - 46.04	Auto	1.0000
L25	42	CCI 6.5" x 1.25" Plate	44.75 - 46.04	Auto	1.0000
L25	44	CCI 6.0" x 3.0" Plate	44.75 - 45.50	Auto	1.0000
L25	45	CCI 6.0" x 3.0" Plate	44.75 - 45.50	Auto	1.0000
L25	46	CCI 6.0" x 3.0" Plate	44.75 - 45.50	Auto	1.0000
L25	47	CCI 6.0" x 3.0" Plate	44.75 - 45.50	Auto	1.0000
L25	79	CCI 6.5" x 1.25" Plate	44.75 - 49.75	Auto	1.0000
L25	80	CCI 6.5" x 1.25" Plate	44.75 - 49.75	Auto	1.0000
L25	81	CCI 6.5" x 1.25" Plate	44.75 - 49.75	Auto	1.0000
L25	82	CCI 6.5" x 1.25" Plate	44.75 - 49.75	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L26	39	CCI 6.5" x 1.25" Plate	40.00 - 44.75	Auto	1.0000
L26	40	CCI 6.5" x 1.25" Plate	40.00 - 44.75	Auto	1.0000
L26	41	CCI 6.5" x 1.25" Plate	40.00 - 44.75	Auto	1.0000
L26	42	CCI 6.5" x 1.25" Plate	40.00 - 44.75	Auto	1.0000
L26	44	CCI 6.0" x 3.0" Plate	40.25 - 44.75	Auto	1.0000
L26	45	CCI 6.0" x 3.0" Plate	40.25 - 44.75	Auto	1.0000
L26	46	CCI 6.0" x 3.0" Plate	40.25 - 44.75	Auto	1.0000
L26	47	CCI 6.0" x 3.0" Plate	40.25 - 44.75	Auto	1.0000
L26	79	CCI 6.5" x 1.25" Plate	40.25 - 44.75	Auto	1.0000
L26	80	CCI 6.5" x 1.25" Plate	40.25 - 44.75	Auto	1.0000
L26	81	CCI 6.5" x 1.25" Plate	40.25 - 44.75	Auto	1.0000
L26	82	CCI 6.5" x 1.25" Plate	40.25 - 44.75	Auto	1.0000
L27	39	CCI 6.5" x 1.25" Plate	39.75 - 40.00	Auto	1.0000
L27	40	CCI 6.5" x 1.25" Plate	39.75 - 40.00	Auto	1.0000
L27	41	CCI 6.5" x 1.25" Plate	39.75 - 40.00	Auto	1.0000
L27	42	CCI 6.5" x 1.25" Plate	39.75 - 40.00	Auto	1.0000
L28	39	CCI 6.5" x 1.25" Plate	35.46 - 39.75	Auto	1.0000
L28	40	CCI 6.5" x 1.25" Plate	35.46 - 39.75	Auto	1.0000
L28	41	CCI 6.5" x 1.25" Plate	35.46 - 39.75	Auto	1.0000
L28	42	CCI 6.5" x 1.25" Plate	35.46 - 39.75	Auto	1.0000
L28	74	CCI 8.5" x 1.25" Plate	34.75 - 39.75	Auto	1.0000
L28	75	CCI 8.5" x 1.25" Plate	34.75 - 39.75	Auto	1.0000
L28	76	CCI 8.5" x 1.25" Plate	34.75 - 39.75	Auto	1.0000
L28	77	CCI 8.5" x 1.25" Plate	34.75 - 39.75	Auto	1.0000
L29	74	CCI 8.5" x 1.25" Plate	29.75 - 34.75	Auto	1.0000
L29	75	CCI 8.5" x 1.25" Plate	29.75 - 34.75	Auto	1.0000
L29	76	CCI 8.5" x 1.25" Plate	29.75 - 34.75	Auto	1.0000
L29	77	CCI 8.5" x 1.25" Plate	29.75 - 34.75	Auto	1.0000
L30	29	CCI 8.5" x 1.25" Plate	24.75 - 26.96	Auto	1.0000
L30	30	CCI 8.5" x 1.25" Plate	24.75 - 26.96	Auto	1.0000
L30	31	CCI 8.5" x 1.25" Plate	24.75 - 26.96	Auto	1.0000
L30	32	CCI 8.5" x 1.25" Plate	24.75 - 26.96	Auto	1.0000
L30	34	CCI 8.0" x 3.0" Plate	24.75 - 26.50	Auto	1.0000
L30	35	CCI 8.0" x 3.0" Plate	24.75 - 26.50	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L30	36	CCI 8.0" x 3.0" Plate	24.75 - 26.50	Auto	1.0000
L30	37	CCI 8.0" x 3.0" Plate	24.75 - 26.50	Auto	1.0000
L30	74	CCI 8.5" x 1.25" Plate	24.75 - 29.75	Auto	1.0000
L30	75	CCI 8.5" x 1.25" Plate	24.75 - 29.75	Auto	1.0000
L30	76	CCI 8.5" x 1.25" Plate	24.75 - 29.75	Auto	1.0000
L30	77	CCI 8.5" x 1.25" Plate	24.75 - 29.75	Auto	1.0000
L31	29	CCI 8.5" x 1.25" Plate	20.00 - 24.75	Auto	1.0000
L31	30	CCI 8.5" x 1.25" Plate	20.00 - 24.75	Auto	1.0000
L31	31	CCI 8.5" x 1.25" Plate	20.00 - 24.75	Auto	1.0000
L31	32	CCI 8.5" x 1.25" Plate	20.00 - 24.75	Auto	1.0000
L31	34	CCI 8.0" x 3.0" Plate	20.25 - 24.75	Auto	1.0000
L31	35	CCI 8.0" x 3.0" Plate	20.25 - 24.75	Auto	1.0000
L31	36	CCI 8.0" x 3.0" Plate	20.25 - 24.75	Auto	1.0000
L31	37	CCI 8.0" x 3.0" Plate	20.25 - 24.75	Auto	1.0000
L31	74	CCI 8.5" x 1.25" Plate	20.25 - 24.75	Auto	1.0000
L31	75	CCI 8.5" x 1.25" Plate	20.25 - 24.75	Auto	1.0000
L31	76	CCI 8.5" x 1.25" Plate	20.25 - 24.75	Auto	1.0000
L31	77	CCI 8.5" x 1.25" Plate	20.25 - 24.75	Auto	1.0000
L32	29	CCI 8.5" x 1.25" Plate	19.75 - 20.00	Auto	1.0000
L32	30	CCI 8.5" x 1.25" Plate	19.75 - 20.00	Auto	1.0000
L32	31	CCI 8.5" x 1.25" Plate	19.75 - 20.00	Auto	1.0000
L32	32	CCI 8.5" x 1.25" Plate	19.75 - 20.00	Auto	1.0000
L33	29	CCI 8.5" x 1.25" Plate	14.75 - 19.75	Auto	1.0000
L33	30	CCI 8.5" x 1.25" Plate	14.75 - 19.75	Auto	1.0000
L33	31	CCI 8.5" x 1.25" Plate	14.75 - 19.75	Auto	1.0000
L33	32	CCI 8.5" x 1.25" Plate	14.75 - 19.75	Auto	1.0000
L33	69	CCI 8.5" x 1.25" Plate	14.75 - 19.75	Auto	1.0000
L33	70	CCI 8.5" x 1.25" Plate	14.75 - 19.75	Auto	1.0000
L33	71	CCI 8.5" x 1.25" Plate	14.75 - 19.75	Auto	1.0000
L33	72	CCI 8.5" x 1.25" Plate	14.75 - 19.75	Auto	1.0000
L34	29	CCI 8.5" x 1.25" Plate	14.04 - 14.75	Auto	1.0000
L34	30	CCI 8.5" x 1.25" Plate	14.04 - 14.75	Auto	1.0000
L34	31	CCI 8.5" x 1.25" Plate	14.04 - 14.75	Auto	1.0000
L34	32	CCI 8.5" x 1.25" Plate	14.04 - 14.75	Auto	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L34	69	CCI 8.5" x 1.25" Plate	9.75 - 14.75	Auto	1.0000
L34	70	CCI 8.5" x 1.25" Plate	9.75 - 14.75	Auto	1.0000
L34	71	CCI 8.5" x 1.25" Plate	9.75 - 14.75	Auto	1.0000
L34	72	CCI 8.5" x 1.25" Plate	9.75 - 14.75	Auto	1.0000
L35	69	CCI 8.5" x 1.25" Plate	4.75 - 9.75	Auto	1.0000
L35	70	CCI 8.5" x 1.25" Plate	4.75 - 9.75	Auto	1.0000
L35	71	CCI 8.5" x 1.25" Plate	4.75 - 9.75	Auto	1.0000
L35	72	CCI 8.5" x 1.25" Plate	4.75 - 9.75	Auto	1.0000
L36	69	CCI 8.5" x 1.25" Plate	0.00 - 4.75	Auto	1.0000
L36	70	CCI 8.5" x 1.25" Plate	0.00 - 4.75	Auto	1.0000
L36	71	CCI 8.5" x 1.25" Plate	0.00 - 4.75	Auto	1.0000
L36	72	CCI 8.5" x 1.25" Plate	0.00 - 4.75	Auto	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment ° °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Lightning Rod 5/8" x 4'	A	From Leg	2.000 0.000 0.000	0.000	149.500	No Ice 1/2" Ice 1" Ice 2" Ice	0.250 0.664 0.973 1.494	0.250 0.664 0.973 1.494	0.031 0.034 0.039 0.059
Lightning Rod 5/8" x 4'	B	From Leg	4.000 0.000 0.000	0.000	149.500	No Ice 1/2" Ice 1" Ice 2" Ice	0.250 0.664 0.973 1.494	0.250 0.664 0.973 1.494	0.031 0.034 0.039 0.059
Lightning Rod 5/8" x 4'	C	From Leg	2.000 0.000 0.000	0.000	149.500	No Ice 1/2" Ice 1" Ice 2" Ice	0.250 0.664 0.973 1.494	0.250 0.664 0.973 1.494	0.031 0.034 0.039 0.059
4' x 2" Pipe Mount	A	From Leg	2.000 0.000 0.000	0.000	147.500	No Ice 1/2" Ice 1" Ice 2" Ice	0.785 1.028 1.281 1.814	0.785 1.028 1.281 1.814	0.029 0.035 0.044 0.072
4' x 2" Pipe Mount	C	From Leg	2.000 0.000 0.000	0.000	147.500	No Ice 1/2" Ice 1" Ice 2" Ice	0.785 1.028 1.281 1.814	0.785 1.028 1.281 1.814	0.029 0.035 0.044 0.072
*									
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.760 4.120 4.480 5.240	3.150 3.490 3.840 4.580	0.194 0.252 0.320 0.485
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.760 4.120 4.480 5.240	3.150 3.490 3.840 4.580	0.194 0.252 0.320 0.485
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice 1/2" Ice Ice	3.760 4.120 4.480	3.150 3.490 3.840	0.194 0.252 0.320

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	5.240	4.580	0.485
						2" Ice			
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice	14.690	6.870	0.186
						1/2" Ice	15.460	7.550	0.315
						1" Ice	16.230	8.250	0.458
						2" Ice	17.820	9.670	0.788
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice	14.690	6.870	0.186
						1/2" Ice	15.460	7.550	0.315
						1" Ice	16.230	8.250	0.458
						2" Ice	17.820	9.670	0.788
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice	14.690	6.870	0.186
						1/2" Ice	15.460	7.550	0.315
						1" Ice	16.230	8.250	0.458
						2" Ice	17.820	9.670	0.788
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice	5.190	2.710	0.128
						1/2" Ice	5.590	3.040	0.174
						1" Ice	6.020	3.380	0.227
						2" Ice	6.900	4.120	0.354
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice	5.190	2.710	0.128
						1/2" Ice	5.590	3.040	0.174
						1" Ice	6.020	3.380	0.227
						2" Ice	6.900	4.120	0.354
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice	5.190	2.710	0.128
						1/2" Ice	5.590	3.040	0.174
						1" Ice	6.020	3.380	0.227
						2" Ice	6.900	4.120	0.354
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice	1.970	1.587	0.073
						1/2" Ice	2.147	1.749	0.093
						1" Ice	2.331	1.918	0.116
						2" Ice	2.721	2.280	0.170
RADIO 4449 B71 B85A_T-MOBILE	B	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice	1.970	1.587	0.073
						1/2" Ice	2.147	1.749	0.093
						1" Ice	2.331	1.918	0.116
						2" Ice	2.721	2.280	0.170
RADIO 4449 B71 B85A_T-MOBILE	C	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice	1.970	1.587	0.073
						1/2" Ice	2.147	1.749	0.093
						1" Ice	2.331	1.918	0.116
						2" Ice	2.721	2.280	0.170
KRY 112 144/1	A	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice	0.350	0.175	0.011
						1/2" Ice	0.426	0.234	0.014
						1" Ice	0.509	0.301	0.019
						2" Ice	0.698	0.456	0.032
KRY 112 144/1	B	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice	0.350	0.175	0.011
						1/2" Ice	0.426	0.234	0.014
						1" Ice	0.509	0.301	0.019
						2" Ice	0.698	0.456	0.032
KRY 112 144/1	C	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice	0.350	0.175	0.011
						1/2" Ice	0.426	0.234	0.014
						1" Ice	0.509	0.301	0.019
						2" Ice	0.698	0.456	0.032
RRUS 4415 B25	A	From Leg	4.000 0.000 0.000	0.000	150.000	No Ice	1.644	0.679	0.044
						1/2" Ice	1.804	0.791	0.056
						Ice	1.972	0.913	0.071

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	2.329	1.183	0.109
						2" Ice			
RRUS 4415 B25	B	From Leg	4.000	0.000	150.000	No Ice	1.644	0.679	0.044
			0.000			1/2" Ice	1.804	0.791	0.056
			0.000			1" Ice	1.972	0.913	0.071
						2" Ice	2.329	1.183	0.109
RRUS 4415 B25	C	From Leg	4.000	0.000	150.000	No Ice	1.644	0.679	0.044
			0.000			1/2" Ice	1.804	0.791	0.056
			0.000			1" Ice	1.972	0.913	0.071
						2" Ice	2.329	1.183	0.109
SDX1926Q-43	A	From Leg	4.000	0.000	150.000	No Ice	0.241	0.101	0.006
			0.000			1/2" Ice	0.306	0.144	0.009
			0.000			1" Ice	0.379	0.195	0.012
						2" Ice	0.547	0.318	0.023
SDX1926Q-43	B	From Leg	4.000	0.000	150.000	No Ice	0.241	0.101	0.006
			0.000			1/2" Ice	0.306	0.144	0.009
			0.000			1" Ice	0.379	0.195	0.012
						2" Ice	0.547	0.318	0.023
SDX1926Q-43	C	From Leg	4.000	0.000	150.000	No Ice	0.241	0.101	0.006
			0.000			1/2" Ice	0.306	0.144	0.009
			0.000			1" Ice	0.379	0.195	0.012
						2" Ice	0.547	0.318	0.023
Platform Mount [LP 405-1_HR-1]	C	None		0.000	150.000	No Ice	25.330	25.330	2.056
						1/2" Ice	33.790	33.790	2.634
						1" Ice	42.160	42.160	3.360
						2" Ice	58.770	58.770	5.254
*									
DS4C06F36D-D	A	From Leg	4.000	0.000	150.000	No Ice	5.820	5.820	0.050
			0.000			1/2" Ice	7.793	7.793	0.092
			17.000			1" Ice	9.783	9.783	0.146
						2" Ice	13.813	13.813	0.292
DS4C06F36D-D	C	From Leg	4.000	0.000	150.000	No Ice	5.820	5.820	0.050
			0.000			1/2" Ice	7.793	7.793	0.092
			17.000			1" Ice	9.783	9.783	0.146
						2" Ice	13.813	13.813	0.292
201-1N	B	From Leg	4.000	0.000	150.000	No Ice	1.489	1.489	0.006
			0.000			1/2" Ice	2.408	2.408	0.018
			4.000			1" Ice	3.344	3.344	0.036
						2" Ice	4.751	4.751	0.089
4' x 2" Pipe Mount	A	From Leg	4.000	0.000	150.000	No Ice	0.785	0.785	0.029
			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
4' x 2" Pipe Mount	B	From Leg	4.000	0.000	150.000	No Ice	0.785	0.785	0.029
			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
4' x 2" Pipe Mount	C	From Leg	4.000	0.000	150.000	No Ice	0.785	0.785	0.029
			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
*									
MT6407-77A w/ Mount	A	From Leg	4.000	0.000	140.000	No Ice	4.907	2.682	0.096

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Pipe			0.000 0.000			1/2" Ice 1" Ice 2" Ice	5.256 5.615 6.362	3.145 3.624 4.631	0.136 0.180 0.288
MT6407-77A w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice Ice 1" Ice 2" Ice	4.907 5.256 5.615 6.362	2.682 3.145 3.624 4.631	0.096 0.136 0.180 0.288
MT6407-77A w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice Ice 1" Ice 2" Ice	4.907 5.256 5.615 6.362	2.682 3.145 3.624 4.631	0.096 0.136 0.180 0.288
(2) NNHH-65B-R4 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.110 0.197 0.296 0.529
(2) NNHH-65B-R4 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.110 0.197 0.296 0.529
(2) NNHH-65B-R4 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.110 0.197 0.296 0.529
CBRS w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.450 1.670 1.900 2.420	0.990 1.180 1.390 1.850	0.032 0.048 0.068 0.123
CBRS w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.450 1.670 1.900 2.420	0.990 1.180 1.390 1.850	0.032 0.048 0.068 0.123
CBRS w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.450 1.670 1.900 2.420	0.990 1.180 1.390 1.850	0.032 0.048 0.068 0.123
RVZDC-6627-PF-48	A	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice Ice 1" Ice 2" Ice	3.792 4.044 4.303 4.844	2.514 2.727 2.947 3.417	0.032 0.063 0.099 0.181
DB-T1-6Z-8AB-0Z	B	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice Ice 1" Ice 2" Ice	4.800 5.070 5.348 5.926	2.000 2.193 2.393 2.815	0.044 0.080 0.120 0.213
RFV01U-D1A	B	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.875 2.045 2.223 2.601	1.250 1.393 1.543 1.865	0.084 0.103 0.124 0.175
(2) RFV01U-D1A	C	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.875 2.045 2.223 2.601	1.250 1.393 1.543 1.865	0.084 0.103 0.124 0.175
(2) RFV01U-D2A	A	From Leg	4.000	0.000	140.000	No Ice	1.875	1.013	0.070

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment ° °	Placement ft ft		C_AA_A Front ft^2 ft^2	C_AA_A Side ft^2 ft^2	Weight K K
			0.000 0.000			1/2" Ice 1" Ice 2" Ice	2.045 2.223 2.601	1.145 1.284 1.585	0.087 0.106 0.153
RFV01U-D2A	B	From Leg	4.000 0.000 0.000	0.000	140.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.875 2.045 2.223 2.601	1.013 1.145 1.284 1.585	0.070 0.087 0.106 0.153
Platform Mount [LP 303-1_KCKR] *	C	None		0.000	140.000	No Ice 1/2" Ice 1" Ice 2" Ice	25.910 32.230 38.730 52.330	25.910 32.230 38.730 52.330	1.525 1.986 2.540 3.937
NNVV-65B-R4 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.110 0.197 0.296 0.529
NNVV-65B-R4 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.110 0.197 0.296 0.529
NNVV-65B-R4 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.550 8.040 8.530 9.560	4.230 4.670 5.120 6.050	0.110 0.197 0.296 0.529
AAHC w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.409 4.727 5.055 5.743	2.691 3.079 3.486 4.359	0.115 0.156 0.202 0.310
AAHC w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.409 4.727 5.055 5.743	2.691 3.079 3.486 4.359	0.115 0.156 0.202 0.310
AAHC w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.409 4.727 5.055 5.743	2.691 3.079 3.486 4.359	0.115 0.156 0.202 0.310
(2) RRH2X50-800	A	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.701 1.864 2.035 2.398	1.282 1.428 1.580 1.908	0.053 0.070 0.090 0.138
(2) RRH2X50-800	B	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.701 1.864 2.035 2.398	1.282 1.428 1.580 1.908	0.053 0.070 0.090 0.138
(2) RRH2X50-800	A	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.701 1.864 2.035 2.398	1.282 1.428 1.580 1.908	0.053 0.070 0.090 0.138
PCS 1900MHz 4x45W-65MHz	A	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.322 2.527 2.739 3.185	2.238 2.441 2.651 3.093	0.060 0.083 0.110 0.173

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
PCS 1900MHz 4x45W-65MHz	B	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.322 2.527 2.739 3.185	2.238 2.441 2.651 3.093	0.060 0.083 0.110 0.173
PCS 1900MHz 4x45W-65MHz	C	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.322 2.527 2.739 3.185	2.238 2.441 2.651 3.093	0.060 0.083 0.110 0.173
(2) 4' x 2" Pipe Mount	A	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.785 1.028 1.281 1.814	0.785 1.028 1.281 1.814	0.029 0.035 0.044 0.072
(2) 4' x 2" Pipe Mount	B	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.785 1.028 1.281 1.814	0.785 1.028 1.281 1.814	0.029 0.035 0.044 0.072
(2) 4' x 2" Pipe Mount	C	From Leg	4.000 0.000 0.000	0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.785 1.028 1.281 1.814	0.785 1.028 1.281 1.814	0.029 0.035 0.044 0.072
Platform Mount [LP 405-1]	C	None		0.000	130.000	No Ice 1/2" Ice 1" Ice 2" Ice	20.880 28.890 37.040 53.730	20.880 28.890 37.040 53.730	1.800 2.277 2.868 4.394
*									
Ice Shields	C	From Leg	0.500 0.000 0.000	0.000	128.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.700 2.904 3.115 3.559	3.600 3.837 4.081 4.593	0.020 0.060 0.105 0.207
**									
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.010 8.520 9.040 10.110	4.230 4.690 5.160 6.120	0.108 0.194 0.292 0.522
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.010 8.520 9.040 10.110	4.230 4.690 5.160 6.120	0.108 0.194 0.292 0.522
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.010 8.520 9.040 10.110	4.230 4.690 5.160 6.120	0.108 0.194 0.292 0.522
TA08025-B604	A	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	0.981 1.112 1.250 1.548	0.064 0.081 0.100 0.148
TA08025-B604	B	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	0.981 1.112 1.250 1.548	0.064 0.081 0.100 0.148
TA08025-B604	C	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice 1/2" Ice	1.964 2.138 2.320	0.981 1.112 1.250	0.064 0.081 0.100

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	2.705	1.548	0.148
						2" Ice			
TA08025-B605	A	From Leg	4.000	0.000	120.000	No Ice	1.964	1.129	0.075
			0.000			1/2" Ice	2.138	1.267	0.093
			0.000			1" Ice	2.320	1.411	0.114
						2" Ice	2.705	1.723	0.164
TA08025-B605	B	From Leg	4.000	0.000	120.000	No Ice	1.964	1.129	0.075
			0.000			1/2" Ice	2.138	1.267	0.093
			0.000			1" Ice	2.320	1.411	0.114
						2" Ice	2.705	1.723	0.164
TA08025-B605	C	From Leg	4.000	0.000	120.000	No Ice	1.964	1.129	0.075
			0.000			1/2" Ice	2.138	1.267	0.093
			0.000			1" Ice	2.320	1.411	0.114
						2" Ice	2.705	1.723	0.164
RDIDC-9181-PF-48	A	From Leg	4.000	0.000	120.000	No Ice	2.312	1.293	0.022
			0.000			1/2" Ice	2.502	1.448	0.041
			0.000			1" Ice	2.700	1.610	0.063
						2" Ice	3.118	1.957	0.117
Commscope MC-PK8-DSH	C	None		0.000	120.000	No Ice	34.240	34.240	1.749
						1/2" Ice	62.950	62.950	2.099
						1" Ice	91.660	91.660	2.450
						2" Ice	149.080	149.080	3.151
(2) 8' x 2" Mount Pipe	A	From Leg	4.000	0.000	120.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
						2" Ice	4.396	4.396	0.119
(2) 8' x 2" Mount Pipe	B	From Leg	4.000	0.000	120.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
						2" Ice	4.396	4.396	0.119
(2) 8' x 2" Mount Pipe	C	From Leg	4.000	0.000	120.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
						2" Ice	4.396	4.396	0.119
**									
DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.000	0.000	102.000	No Ice	11.960	5.970	0.115
			0.000			1/2" Ice	12.700	6.630	0.201
			3.000			1" Ice	13.460	7.300	0.298
						2" Ice	15.020	8.690	0.529
DMP65R-BU8D w/ Mount Pipe	B	From Leg	4.000	0.000	102.000	No Ice	15.890	7.890	0.139
			0.000			1/2" Ice	16.810	8.740	0.252
			3.000			1" Ice	17.760	9.600	0.380
						2" Ice	19.700	11.370	0.679
DMP65R-BU8D w/ Mount Pipe	C	From Leg	4.000	0.000	102.000	No Ice	15.890	7.890	0.139
			0.000			1/2" Ice	16.810	8.740	0.252
			3.000			1" Ice	17.760	9.600	0.380
						2" Ice	19.700	11.370	0.679
TPA65R-BU6D w/ Mount Pipe	A	From Leg	4.000	0.000	102.000	No Ice	12.250	6.050	0.098
			0.000			1/2" Ice	13.000	6.710	0.185
			3.000			1" Ice	13.760	7.390	0.284
						2" Ice	15.340	8.790	0.517
TPA65R-BU8D w/ Mount Pipe	B	From Leg	4.000	0.000	102.000	No Ice	15.940	7.910	0.120
			0.000			1/2" Ice	16.870	8.760	0.235

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			3.000			Ice	17.820	9.630	0.364
						1" Ice	19.760	11.400	0.667
						2" Ice			
TPA65R-BU8D w/ Mount Pipe	C	From Leg	4.000 0.000 3.000	0.000	102.000	No Ice 1/2" Ice 1" Ice 2" Ice	15.940 16.870 17.820 19.760	7.910 8.760 9.630 11.400	0.120 0.235 0.364 0.667
AIR 6419 B77G w/ Mount Pipe	A	From Leg	4.000 0.000 3.000	0.000	102.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.320 4.740 5.170 6.090	2.490 2.840 3.210 4.000	0.078 0.110 0.147 0.241
AIR 6419 B77G w/ Mount Pipe	B	From Leg	4.000 0.000 3.000	0.000	102.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.320 4.740 5.170 6.090	2.490 2.840 3.210 4.000	0.078 0.110 0.147 0.241
AIR 6419 B77G w/ Mount Pipe	C	From Leg	4.000 0.000 3.000	0.000	102.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.320 4.740 5.170 6.090	2.490 2.840 3.210 4.000	0.078 0.110 0.147 0.241
AIR 6449 N77 w/ Mount Pipe	A	From Leg	4.000 0.000 3.000	0.000	102.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.650 3.990 4.350 5.110	2.720 3.030 3.360 4.050	0.110 0.150 0.196 0.310
AIR 6449 N77 w/ Mount Pipe	B	From Leg	4.000 0.000 3.000	0.000	102.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.650 3.990 4.350 5.110	2.720 3.030 3.360 4.050	0.110 0.150 0.196 0.310
AIR 6449 N77 w/ Mount Pipe	C	From Leg	4.000 0.000 3.000	0.000	102.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.650 3.990 4.350 5.110	2.720 3.030 3.360 4.050	0.110 0.150 0.196 0.310
RADIO 4478 B14	A	From Leg	4.000 0.000 3.000	0.000	102.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.021 2.200 2.386 2.780	1.246 1.396 1.554 1.891	0.059 0.077 0.097 0.147
RADIO 4478 B14	B	From Leg	4.000 0.000 3.000	0.000	102.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.021 2.200 2.386 2.780	1.246 1.396 1.554 1.891	0.059 0.077 0.097 0.147
RADIO 4478 B14	C	From Leg	4.000 0.000 3.000	0.000	102.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.021 2.200 2.386 2.780	1.246 1.396 1.554 1.891	0.059 0.077 0.097 0.147
RRUS 4415 B25	A	From Leg	4.000 0.000 3.000	0.000	102.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.644 1.804 1.972 2.329	0.679 0.791 0.913 1.183	0.044 0.056 0.071 0.109
RRUS 4415 B25	B	From Leg	4.000 0.000 3.000	0.000	102.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.644 1.804 1.972 2.329	0.679 0.791 0.913 1.183	0.044 0.056 0.071 0.109
RRUS 4415 B25	C	From Leg	4.000 0.000	0.000	102.000	No Ice 1/2"	1.644 1.804	0.679 0.791	0.044 0.056

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			3.000			Ice	1.972	0.913	0.071
						1" Ice	2.329	1.183	0.109
						2" Ice			
RRUS 4449 B5/B12	A	From Leg	4.000	0.000	102.000	No Ice	1.968	1.408	0.071
			0.000			1/2"	2.144	1.564	0.090
			3.000			Ice	2.328	1.727	0.111
						1" Ice	2.718	2.075	0.163
						2" Ice			
RRUS 4449 B5/B12	B	From Leg	4.000	0.000	102.000	No Ice	1.968	1.408	0.071
			0.000			1/2"	2.144	1.564	0.090
			3.000			Ice	2.328	1.727	0.111
						1" Ice	2.718	2.075	0.163
						2" Ice			
RRUS 4449 B5/B12	C	From Leg	4.000	0.000	102.000	No Ice	1.968	1.408	0.071
			0.000			1/2"	2.144	1.564	0.090
			3.000			Ice	2.328	1.727	0.111
						1" Ice	2.718	2.075	0.163
						2" Ice			
DC9-48-60-24-8C-EV	A	From Leg	4.000	0.000	102.000	No Ice	1.145	1.145	0.026
			0.000			1/2"	1.792	1.792	0.047
			3.000			Ice	2.002	2.002	0.070
						1" Ice	2.451	2.451	0.125
						2" Ice			
RRUS 32 B30	A	From Leg	4.000	0.000	102.000	No Ice	2.692	1.573	0.060
			0.000			1/2"	2.912	1.756	0.080
			3.000			Ice	3.138	1.945	0.104
						1" Ice	3.614	2.346	0.161
						2" Ice			
RRUS 32 B30	B	From Leg	4.000	0.000	102.000	No Ice	2.692	1.573	0.060
			0.000			1/2"	2.912	1.756	0.080
			3.000			Ice	3.138	1.945	0.104
						1" Ice	3.614	2.346	0.161
						2" Ice			
RRUS 32 B30	C	From Leg	4.000	0.000	102.000	No Ice	2.692	1.573	0.060
			0.000			1/2"	2.912	1.756	0.080
			3.000			Ice	3.138	1.945	0.104
						1" Ice	3.614	2.346	0.161
						2" Ice			
RRUS 32 B66	A	From Leg	4.000	0.000	102.000	No Ice	2.743	1.668	0.053
			0.000			1/2"	2.965	1.855	0.074
			3.000			Ice	3.194	2.049	0.098
						1" Ice	3.675	2.458	0.157
						2" Ice			
RRUS 32 B66	B	From Leg	4.000	0.000	102.000	No Ice	2.743	1.668	0.053
			0.000			1/2"	2.965	1.855	0.074
			3.000			Ice	3.194	2.049	0.098
						1" Ice	3.675	2.458	0.157
						2" Ice			
RRUS 32 B66	C	From Leg	4.000	0.000	102.000	No Ice	2.743	1.668	0.053
			0.000			1/2"	2.965	1.855	0.074
			3.000			Ice	3.194	2.049	0.098
						1" Ice	3.675	2.458	0.157
						2" Ice			
DC6-48-60-18-8F	A	From Leg	4.000	0.000	102.000	No Ice	1.212	1.212	0.020
			0.000			1/2"	1.892	1.892	0.042
			3.000			Ice	2.105	2.105	0.067
						1" Ice	2.570	2.570	0.126
						2" Ice			
DC6-48-60-18-8F	B	From Leg	4.000	0.000	102.000	No Ice	1.212	1.212	0.020
			0.000			1/2"	1.892	1.892	0.042
			3.000			Ice	2.105	2.105	0.067
						1" Ice	2.570	2.570	0.126
						2" Ice			
4' x 2" Pipe Mount	A	From Leg	2.000	0.000	102.000	No Ice	0.785	0.785	0.029
			0.000			1/2"	1.028	1.028	0.035

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			Ice	1.281	1.281	0.044
						1" Ice	1.814	1.814	0.072
						2" Ice			
4' x 2" Pipe Mount	B	From Leg	2.000	0.000	102.000	No Ice	0.785	0.785	0.029
			0.000			1/2"	1.028	1.028	0.035
			0.000			Ice	1.281	1.281	0.044
						1" Ice	1.814	1.814	0.072
						2" Ice			
4' x 2" Pipe Mount	C	From Leg	2.000	0.000	102.000	No Ice	0.785	0.785	0.029
			0.000			1/2"	1.028	1.028	0.035
			0.000			Ice	1.281	1.281	0.044
						1" Ice	1.814	1.814	0.072
						2" Ice			
Side Arm Mount [SO 102-3]	C	None		0.000	102.000	No Ice	3.600	3.600	0.075
						1/2"	4.180	4.180	0.105
						Ice	4.750	4.750	0.135
						1" Ice	5.900	5.900	0.195
						2" Ice			
Platform Mount [LP 303-1]	C	None		0.000	102.000	No Ice	14.690	14.690	1.250
						1/2"	18.010	18.010	1.569
						Ice	21.340	21.340	1.942
						1" Ice	28.080	28.080	2.852
						2" Ice			
*									
APXV18-206516S-C	A	From Leg	1.000	0.000	95.000	No Ice	2.560	1.210	0.019
			0.000			1/2"	3.000	1.630	0.039
			0.000			Ice	3.460	2.050	0.063
						1" Ice	4.410	2.960	0.126
						2" Ice			
APXV18-206516S-C	B	From Leg	1.000	0.000	95.000	No Ice	2.560	1.210	0.019
			0.000			1/2"	3.000	1.630	0.039
			0.000			Ice	3.460	2.050	0.063
						1" Ice	4.410	2.960	0.126
						2" Ice			
APXV18-206516S-C	C	From Leg	1.000	0.000	95.000	No Ice	2.560	1.210	0.019
			0.000			1/2"	3.000	1.630	0.039
			0.000			Ice	3.460	2.050	0.063
						1" Ice	4.410	2.960	0.126
						2" Ice			
Pipe Mount [PM 601-3]	C	None		0.000	95.000	No Ice	3.170	3.170	0.195
						1/2"	3.790	3.790	0.232
						Ice	4.420	4.420	0.279
						1" Ice	5.760	5.760	0.401
						2" Ice			
*									
1142-2C	C	From Leg	3.000	0.000	89.000	No Ice	2.092	2.092	0.024
			0.000			1/2"	3.374	3.374	0.041
			6.000			Ice	4.673	4.673	0.066
						1" Ice	7.320	7.320	0.140
						2" Ice			
4' x 2" Pipe Mount	C	From Leg	3.000	0.000	89.000	No Ice	0.785	0.785	0.029
			0.000			1/2"	1.028	1.028	0.035
			0.000			Ice	1.281	1.281	0.044
						1" Ice	1.814	1.814	0.072
						2" Ice			
Side Arm Mount [SO 701-1]	C	From Leg	3.000	0.000	89.000	No Ice	0.850	1.670	0.065
			0.000			1/2"	1.140	2.340	0.079
			0.000			Ice	1.430	3.010	0.093
						1" Ice	2.010	4.350	0.121
						2" Ice			
*									
GPS_A	A	From Leg	1.500	0.000	72.000	No Ice	0.255	0.255	0.001
			0.000			1/2"	0.320	0.320	0.005
			2.000			Ice	0.393	0.393	0.010
						1" Ice	0.561	0.561	0.025

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice			
Side Arm Mount [SO 701-1]	A	From Leg	1.500 0.000 0.000	0.000	72.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.850 1.140 1.430 2.010	1.670 2.340 3.010 4.350	0.065 0.079 0.093 0.121
*									
201-1N	A	From Leg	3.000 0.000 7.000	0.000	54.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.489 2.408 3.344 4.751	1.489 2.408 3.344 4.751	0.006 0.018 0.036 0.089
220-8N	C	From Leg	3.000 0.000 10.000	0.000	54.000	No Ice 1/2" Ice 1" Ice 2" Ice	5.179 7.094 9.025 12.938	5.179 7.094 9.025 12.938	0.021 0.059 0.108 0.244
Side Arm Mount [SO 701-1]	A	From Leg	3.000 0.000 0.000	0.000	54.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.850 1.140 1.430 2.010	1.670 2.340 3.010 4.350	0.065 0.079 0.093 0.121
Side Arm Mount [SO 701-1]	C	From Leg	3.000 0.000 0.000	0.000	54.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.850 1.140 1.430 2.010	1.670 2.340 3.010 4.350	0.065 0.079 0.093 0.121
*									
DB436-C	A	From Leg	4.000 0.000 0.000	0.000	49.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.450 0.810 1.170 1.890	0.450 0.810 1.170 1.890	0.007 0.009 0.011 0.015
Yagi Mount	A	From Leg	0.500 0.000 0.000	0.000	49.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.320 1.580 1.840 2.400	1.320 1.580 1.840 2.400	0.065 0.077 0.093 0.134
*									
DB436-C	A	From Leg	4.000 0.000 0.000	0.000	45.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.450 0.810 1.170 1.890	0.450 0.810 1.170 1.890	0.007 0.009 0.011 0.015
Yagi Mount	A	From Leg	0.500 0.000 0.000	0.000	45.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.320 1.580 1.840 2.400	1.320 1.580 1.840 2.400	0.065 0.077 0.093 0.134
*									
DB436-C	A	From Leg	4.000 0.000 0.000	0.000	40.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.450 0.810 1.170 1.890	0.450 0.810 1.170 1.890	0.007 0.009 0.011 0.015
Yagi Mount	A	From Leg	0.500 0.000 0.000	0.000	40.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.320 1.580 1.840 2.400	1.320 1.580 1.840 2.400	0.065 0.077 0.093 0.134
*									
DB436-C	A	From Leg	4.000 0.000 0.000	0.000	37.000	No Ice 1/2" Ice 1" Ice	0.450 0.810 1.170 1.890	0.450 0.810 1.170 1.890	0.007 0.009 0.011 0.015

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Yagi Mount	A	From Leg	0.500	0.000	0.000	37.000	2" Ice			
			0.000				No Ice	1.320	1.320	0.065
			0.000				1/2" Ice	1.580	1.580	0.077
							1" Ice	1.840	1.840	0.093
							2" Ice	2.400	2.400	0.134
*										

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
HPD2-4.7	B	Paraboloid w/Shroud (HP)	From Leg	4.000	4.000	90.000		148.000	2.042	No Ice	3.274	0.027
				0.000						1/2" Ice	3.547	0.045
										1" Ice	3.819	0.063
										2" Ice	4.365	0.100
*												

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	147.5 - 142.5	Pole	Max Tension	26	0.000	0.000	-0.000
			Max. Compression	26	-11.829	0.409	0.167
			Max. Mx	20	-5.486	52.995	-0.542
			Max. My	2	-5.479	-0.500	53.599
			Max. Vy	8	6.039	-52.882	1.037
			Max. Vx	2	-6.095	-0.500	53.599
			Max. Torque	16			-0.374
L2	142.5 - 137.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-21.145	-0.247	0.215
			Max. Mx	8	-9.598	-94.036	1.337
			Max. My	2	-9.601	-0.836	94.812
			Max. Vy	8	10.360	-94.036	1.337
			Max. Vx	2	-10.422	-0.836	94.812
			Max. Torque	25			-0.547
L3	137.5 - 132.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-22.113	-0.256	0.150
			Max. Mx	8	-10.269	-146.615	1.596
			Max. My	2	-10.273	-0.908	147.685
			Max. Vy	8	10.673	-146.615	1.596
			Max. Vx	2	-10.734	-0.908	147.685
			Max. Torque	25			-0.547
L4	132.5 - 127.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-30.851	-1.124	1.809
			Max. Mx	8	-14.581	-208.889	2.713
			Max. My	2	-14.584	-1.444	210.786
			Max. Vy	8	14.141	-208.889	2.713
			Max. Vx	2	-14.267	-1.444	210.786
			Max. Torque	25			-1.250
L5	127.5 - 125	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-31.350	-1.129	1.779
			Max. Mx	8	-14.945	-244.408	2.764
			Max. My	2	-14.948	-1.399	246.614
			Max. Vy	8	14.283	-244.408	2.764
			Max. Vx	2	-14.409	-1.399	246.614
			Max. Torque	25			-0.998
L6	125 - 120	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-32.545	-1.138	1.699
			Max. Mx	8	-15.804	-316.727	2.862

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-15.808	-1.309	319.542
			Max. Vy	8	14.651	-316.727	2.862
			Max. Vx	2	-14.776	-1.309	319.542
			Max. Torque	25			-0.997
L7	120 - 115	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-39.634	-1.148	2.103
			Max. Mx	8	-19.733	-407.122	3.086
			Max. My	2	-19.738	-1.218	410.857
			Max. Vy	8	18.257	-407.122	3.086
			Max. Vx	2	-18.416	-1.218	410.857
			Max. Torque	11			1.207
L8	115 - 110	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.840	-1.150	2.009
			Max. Mx	8	-20.632	-499.215	3.184
			Max. My	2	-20.639	-1.126	503.725
			Max. Vy	8	18.589	-499.215	3.184
			Max. Vx	2	-18.746	-1.126	503.725
			Max. Torque	11			1.207
L9	110 - 105	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.044	-1.150	1.912
			Max. Mx	8	-21.546	-592.903	3.280
			Max. My	2	-21.554	-1.033	598.181
			Max. Vy	8	18.898	-592.903	3.280
			Max. Vx	2	-19.055	-1.033	598.181
			Max. Torque	11			1.206
L10	105 - 100	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.865	-1.692	1.436
			Max. Mx	8	-26.628	-711.594	3.346
			Max. My	2	-26.648	-1.069	716.745
			Max. Vy	8	24.516	-711.594	3.346
			Max. Vx	2	-24.529	-1.069	716.745
			Max. Torque	11			1.206
L11	100 - 95	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-54.497	-1.999	1.502
			Max. Mx	8	-27.763	-835.133	3.491
			Max. My	2	-27.784	-1.065	840.302
			Max. Vy	8	24.880	-835.133	3.491
			Max. Vx	2	-24.898	-1.065	840.302
			Max. Torque	25			-1.097
L12	95 - 94.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.431	-2.038	1.489
			Max. Mx	8	-28.225	-854.106	3.506
			Max. My	2	-28.249	-1.064	859.251
			Max. Vy	8	25.344	-854.106	3.506
			Max. Vx	14	25.347	-1.218	-855.867
			Max. Torque	25			-1.097
L13	94.25 - 94	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.539	-2.051	1.484
			Max. Mx	8	-28.298	-860.450	3.511
			Max. My	2	-28.323	-1.064	865.577
			Max. Vy	8	25.379	-860.450	3.511
			Max. Vx	14	25.382	-1.230	-862.208
			Max. Torque	25			-1.097
L14	94 - 89	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.689	-2.309	1.395
			Max. Mx	8	-29.681	-989.365	3.609
			Max. My	2	-29.722	-1.059	993.082
			Max. Vy	8	26.158	-989.365	3.609
			Max. Vx	14	26.159	-1.476	-991.052
			Max. Torque	25			-1.097
L15	89 - 84	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.389	-1.382	0.733
			Max. Mx	8	-31.431	-1122.980	3.372
			Max. My	14	-31.431	-1.206	-1125.570
			Max. Vy	8	27.116	-1122.980	3.372
			Max. Vx	14	27.131	-1.206	-1125.570
			Max. Torque	25			-1.097
L16	84 - 80	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.745	-1.028	1.007

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-33.871	-1232.550	3.662
			Max. My	14	-33.872	-1.018	-1235.296
			Max. Vy	8	27.874	-1232.550	3.662
			Max. Vx	14	27.883	-1.018	-1235.296
			Max. Torque	16			-0.591
L17	80 - 79.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.901	-1.032	1.008
			Max. Mx	8	-33.992	-1239.517	3.669
			Max. My	14	-33.993	-1.025	-1242.264
			Max. Vy	8	27.911	-1239.517	3.669
			Max. Vx	14	27.920	-1.025	-1242.264
			Max. Torque	16			-0.573
L18	79.75 - 74.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.001	-1.129	1.032
			Max. Mx	8	-36.091	-1381.461	3.765
			Max. My	14	-36.093	-1.236	-1384.185
			Max. Vy	8	28.882	-1381.461	3.765
			Max. Vx	14	28.882	-1.236	-1384.185
			Max. Torque	16			-0.573
L19	74.75 - 69.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-69.751	-1.406	1.374
			Max. Mx	8	-37.949	-1528.326	4.031
			Max. My	14	-37.952	-1.573	-1530.614
			Max. Vy	8	29.835	-1528.326	4.031
			Max. Vx	14	29.797	-1.573	-1530.614
			Max. Torque	16			-0.703
L20	69.75 - 64.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-72.848	-1.491	1.405
			Max. Mx	8	-40.133	-1679.637	4.141
			Max. My	14	-40.136	-1.757	-1681.690
			Max. Vy	8	30.724	-1679.637	4.141
			Max. Vx	14	30.681	-1.757	-1681.690
			Max. Torque	16			-0.703
L21	64.75 - 60	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-79.099	-0.817	1.897
			Max. Mx	8	-44.920	-1827.873	4.631
			Max. My	14	-44.928	-1.307	-1829.335
			Max. Vy	8	31.992	-1827.873	4.631
			Max. Vx	14	31.698	-1.307	-1829.335
			Max. Torque	16			-0.703
L22	60 - 59.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-79.306	-0.818	1.901
			Max. Mx	8	-45.085	-1835.866	4.640
			Max. My	14	-45.094	-1.310	-1837.254
			Max. Vy	8	32.031	-1835.866	4.640
			Max. Vx	14	31.737	-1.310	-1837.254
			Max. Torque	16			-0.703
L23	59.75 - 54.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-83.263	-0.791	2.011
			Max. Mx	8	-47.911	-1998.502	4.807
			Max. My	14	-47.919	-1.413	-1998.393
			Max. Vy	8	33.084	-1998.502	4.807
			Max. Vx	14	32.783	-1.413	-1998.393
			Max. Torque	16			-0.703
L24	54.75 - 49.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.684	0.108	2.084
			Max. Mx	8	-50.204	-2169.954	4.930
			Max. My	14	-50.212	-1.402	-2168.436
			Max. Vy	8	34.368	-2169.954	4.930
			Max. Vx	14	34.048	-1.402	-2168.436
			Max. Torque	16			-1.704
L25	49.75 - 44.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-90.397	0.024	2.888

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-52.891	-2344.281	5.463
			Max. My	14	-52.899	-1.649	-2340.622
			Max. Vy	8	35.416	-2344.281	5.463
			Max. Vx	14	35.091	-1.649	-2340.622
			Max. Torque	16			-1.932
L26	44.75 - 40	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-95.556	0.793	3.448
			Max. Mx	8	-56.872	-2514.013	5.946
			Max. My	14	-56.878	-1.176	-2509.026
			Max. Vy	8	36.394	-2514.013	5.946
			Max. Vx	14	36.060	-1.176	-2509.026
			Max. Torque	16			-1.936
L27	40 - 39.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-95.889	0.793	3.831
			Max. Mx	8	-57.122	-2523.120	6.195
			Max. My	14	-57.129	-1.182	-2517.805
			Max. Vy	8	36.495	-2523.120	6.195
			Max. Vx	14	36.161	-1.182	-2517.805
			Max. Torque	16			-2.048
L28	39.75 - 34.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-100.148	0.846	4.381
			Max. Mx	8	-60.240	-2708.159	6.570
			Max. My	14	-60.246	-1.339	-2700.872
			Max. Vy	8	37.595	-2708.159	6.570
			Max. Vx	14	37.251	-1.339	-2700.872
			Max. Torque	16			-2.164
L29	34.75 - 29.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-103.517	0.537	4.295
			Max. Mx	8	-62.718	-2898.484	6.507
			Max. My	14	-62.723	-1.776	-2889.351
			Max. Vy	8	38.500	-2898.484	6.507
			Max. Vx	14	38.152	-1.776	-2889.351
			Max. Torque	16			-2.164
L30	29.75 - 24.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-108.133	0.863	4.599
			Max. Mx	8	-66.273	-3092.891	6.773
			Max. My	14	-66.277	-1.677	-3082.086
			Max. Vy	8	39.443	-3092.891	6.773
			Max. Vx	14	39.087	-1.677	-3082.086
			Max. Torque	16			-2.164
L31	24.75 - 20	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-114.323	2.089	5.451
			Max. Mx	8	-71.229	-3281.280	7.509
			Max. My	14	-71.233	-0.796	-3269.134
			Max. Vy	8	40.396	-3281.280	7.509
			Max. Vx	14	40.025	-0.796	-3269.134
			Max. Torque	16			-2.194
L32	20 - 19.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-114.542	2.096	5.460
			Max. Mx	8	-71.412	-3291.364	7.521
			Max. My	14	-71.415	-0.795	-3279.128
			Max. Vy	8	40.426	-3291.364	7.521
			Max. Vx	14	40.055	-0.795	-3279.128
			Max. Torque	16			-2.193
L33	19.75 - 14.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-119.127	2.359	5.734
			Max. Mx	8	-74.901	-3495.509	7.743
			Max. My	14	-74.904	-0.775	-3481.439
			Max. Vy	8	41.373	-3495.509	7.743
			Max. Vx	14	40.990	-0.775	-3481.439
			Max. Torque	16			-2.193
L34	14.75 - 9.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-122.742	2.119	5.696
			Max. Mx	8	-77.658	-3704.440	7.715
			Max. My	14	-77.660	-1.159	-3688.343

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	8	42.190	-3704.440	7.715
			Max. Vx	14	41.803	-1.159	-3688.343
			Max. Torque	16			-2.193
L35	9.75 - 4.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-126.154	1.805	5.608
			Max. Mx	8	-80.299	-3917.443	7.643
			Max. My	14	-80.300	-1.610	-3899.274
			Max. Vy	8	42.977	-3917.443	7.643
			Max. Vx	14	42.587	-1.610	-3899.274
			Max. Torque	16			-2.193
L36	4.75 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-129.306	1.523	5.530
			Max. Mx	8	-82.814	-4123.396	7.574
			Max. My	14	-82.814	-2.039	-4103.246
			Max. Vy	8	43.711	-4123.396	7.574
			Max. Vx	14	43.319	-2.039	-4103.246
			Max. Torque	16			-2.193

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	129.306	-0.000	0.000
	Max. H_x	20	82.824	38.320	0.048
	Max. H_z	2	82.824	0.048	38.117
	Max. M_x	2	3881.246	0.048	38.117
	Max. M_z	8	4123.396	-43.691	-0.010
	Max. Torsion	4	1.971	-19.647	34.093
	Min. Vert	19	62.118	32.919	-18.973
	Min. H_x	8	82.824	-43.691	-0.010
	Min. H_z	14	82.824	-0.060	-43.299
	Min. M_x	14	-4103.246	-0.060	-43.299
	Min. M_z	20	-3883.378	38.320	0.048
	Min. Torsion	16	-2.193	21.192	-36.769

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	69.020	0.000	0.000	-4.290	2.860	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	82.824	-0.048	-38.117	-3881.246	7.087	-1.338
0.9 Dead+1.0 Wind 0 deg - No Ice	62.118	-0.048	-38.117	-3848.555	6.191	-1.327
1.2 Dead+1.0 Wind 30 deg - No Ice	82.824	19.647	-34.093	-3419.412	-1960.474	-1.971
0.9 Dead+1.0 Wind 30 deg - No Ice	62.118	19.647	-34.093	-3390.700	-1945.642	-1.965
1.2 Dead+1.0 Wind 60 deg - No Ice	82.824	37.389	-21.569	-2056.749	-3544.495	-1.869
0.9 Dead+1.0 Wind 60 deg - No Ice	62.118	37.389	-21.569	-2039.234	-3517.498	-1.871
1.2 Dead+1.0 Wind 90 deg - No Ice	82.824	43.691	0.010	-7.574	-4123.396	-1.162
0.9 Dead+1.0 Wind 90 deg - No Ice	62.118	43.691	0.010	-6.171	-4091.952	-1.170
1.2 Dead+1.0 Wind 120 deg - No Ice	82.824	37.494	21.704	2057.063	-3550.670	-0.541
0.9 Dead+1.0 Wind 120 deg	62.118	37.494	21.704	2042.189	-3523.639	-0.554

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
- No Ice 1.2 Dead+1.0 Wind 150 deg	82.824	21.755	37.647	3566.735	-2055.969	0.556
- No Ice 0.9 Dead+1.0 Wind 150 deg	62.118	21.755	37.647	3540.022	-2040.708	0.542
- No Ice 1.2 Dead+1.0 Wind 180 deg	82.824	0.060	43.299	4103.246	-2.039	1.611
- No Ice 0.9 Dead+1.0 Wind 180 deg	62.118	0.060	43.299	4072.299	-2.887	1.599
- No Ice 1.2 Dead+1.0 Wind 210 deg	82.824	-21.192	36.769	3538.192	2042.142	2.193
- No Ice 0.9 Dead+1.0 Wind 210 deg	62.118	-21.192	36.769	3511.707	2025.267	2.188
- No Ice 1.2 Dead+1.0 Wind 240 deg	82.824	-32.919	18.973	1923.495	3342.871	2.027
- No Ice 0.9 Dead+1.0 Wind 240 deg	62.118	-32.919	18.973	1909.252	3315.041	2.029
- No Ice 1.2 Dead+1.0 Wind 270 deg	82.824	-38.320	-0.048	-9.040	3883.378	1.271
- No Ice 0.9 Dead+1.0 Wind 270 deg	62.118	-38.320	-0.048	-7.669	3851.244	1.280
- No Ice 1.2 Dead+1.0 Wind 300 deg	82.824	-34.478	-19.923	-1985.546	3426.465	0.341
- No Ice 0.9 Dead+1.0 Wind 300 deg	62.118	-34.478	-19.923	-1968.348	3398.224	0.354
- No Ice 1.2 Dead+1.0 Wind 330 deg	82.824	-19.520	-33.853	-3409.293	1958.980	-0.319
- No Ice 0.9 Dead+1.0 Wind 330 deg	62.118	-19.520	-33.853	-3380.599	1942.449	-0.305
- No Ice 1.2 Dead+1.0 Ice+1.0 Temp	129.306	0.000	-0.000	-5.530	1.523	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	129.306	-0.014	-11.001	-1194.961	2.419	-0.704
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	129.306	5.695	-9.879	-1054.709	-602.344	-0.859
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	129.306	9.688	-5.586	-604.351	-1034.025	-0.816
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	129.306	11.320	0.006	-6.250	-1202.238	-0.478
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	129.306	9.713	5.621	595.412	-1035.499	-0.116
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	129.306	5.646	9.766	1036.668	-599.687	0.356
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	129.306	0.017	11.209	1192.405	0.169	0.760
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	129.306	-5.743	9.962	1046.501	607.320	0.904
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	129.306	-9.512	5.482	586.904	1027.778	0.852
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	129.306	-11.078	-0.014	-6.719	1193.525	0.509
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	129.306	-9.602	-5.548	-602.972	1034.154	0.075
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	129.306	-5.566	-9.646	-1043.480	598.360	-0.305
Dead+Wind 0 deg - Service	69.020	-0.012	-9.286	-943.944	3.772	-0.322
Dead+Wind 30 deg - Service	69.020	4.786	-8.306	-832.025	-473.196	-0.483
Dead+Wind 60 deg - Service	69.020	9.108	-5.254	-501.735	-857.255	-0.463
Dead+Wind 90 deg - Service	69.020	10.643	0.003	-4.946	-997.613	-0.292
Dead+Wind 120 deg - Service	69.020	9.133	5.287	495.584	-858.755	-0.145
Dead+Wind 150 deg - Service	69.020	5.299	9.171	861.585	-496.391	0.121
Dead+Wind 180 deg - Service	69.020	0.015	10.548	991.652	1.557	0.382
Dead+Wind 210 deg - Service	69.020	-5.162	8.957	854.663	497.141	0.532
Dead+Wind 240 deg - Service	69.020	-8.019	4.622	463.145	812.381	0.502
Dead+Wind 270 deg -	69.020	-9.335	-0.012	-5.307	943.411	0.326

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Service						
Dead+Wind 300 deg - Service	69.020	-8.399	-4.853	-484.440	832.682	0.101
Dead+Wind 330 deg - Service	69.020	-4.755	-8.247	-829.564	476.939	-0.066

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.000	-69.020	0.000	0.000	69.020	0.000	0.000%
2	-0.048	-82.824	-38.117	0.048	82.824	38.117	0.000%
3	-0.048	-62.118	-38.117	0.048	62.118	38.117	0.000%
4	19.647	-82.824	-34.093	-19.647	82.824	34.093	0.000%
5	19.647	-62.118	-34.093	-19.647	62.118	34.093	0.000%
6	37.389	-82.824	-21.569	-37.389	82.824	21.569	0.000%
7	37.389	-62.118	-21.569	-37.389	62.118	21.569	0.000%
8	43.691	-82.824	0.010	-43.691	82.824	-0.010	0.000%
9	43.691	-62.118	0.010	-43.691	62.118	-0.010	0.000%
10	37.494	-82.824	21.704	-37.494	82.824	-21.704	0.000%
11	37.494	-62.118	21.704	-37.494	62.118	-21.704	0.000%
12	21.755	-82.824	37.647	-21.755	82.824	-37.647	0.000%
13	21.755	-62.118	37.647	-21.755	62.118	-37.647	0.000%
14	0.060	-82.824	43.299	-0.060	82.824	-43.299	0.000%
15	0.060	-62.118	43.299	-0.060	62.118	-43.299	0.000%
16	-21.192	-82.824	36.769	21.192	82.824	-36.769	0.000%
17	-21.192	-62.118	36.769	21.192	62.118	-36.769	0.000%
18	-32.919	-82.824	18.973	32.919	82.824	-18.973	0.000%
19	-32.919	-62.118	18.973	32.919	62.118	-18.973	0.000%
20	-38.320	-82.824	-0.048	38.320	82.824	0.048	0.000%
21	-38.320	-62.118	-0.048	38.320	62.118	0.048	0.000%
22	-34.478	-82.824	-19.923	34.478	82.824	19.923	0.000%
23	-34.478	-62.118	-19.923	34.478	62.118	19.923	0.000%
24	-19.520	-82.824	-33.853	19.520	82.824	33.853	0.000%
25	-19.520	-62.118	-33.853	19.520	62.118	33.853	0.000%
26	0.000	-129.306	0.000	-0.000	129.306	0.000	0.000%
27	-0.014	-129.306	-11.001	0.014	129.306	11.001	0.000%
28	5.695	-129.306	-9.879	-5.695	129.306	9.879	0.000%
29	9.688	-129.306	-5.586	-9.688	129.306	5.586	0.000%
30	11.320	-129.306	0.006	-11.320	129.306	-0.006	0.000%
31	9.713	-129.306	5.621	-9.713	129.306	-5.621	0.000%
32	5.646	-129.306	9.766	-5.646	129.306	-9.766	0.000%
33	0.017	-129.306	11.209	-0.017	129.306	-11.209	0.000%
34	-5.743	-129.306	9.962	5.743	129.306	-9.962	0.000%
35	-9.512	-129.306	5.482	9.512	129.306	-5.482	0.000%
36	-11.078	-129.306	-0.014	11.078	129.306	0.014	0.000%
37	-9.602	-129.306	-5.548	9.602	129.306	5.548	0.000%
38	-5.566	-129.306	-9.646	5.566	129.306	9.646	0.000%
39	-0.012	-69.020	-9.286	0.012	69.020	9.286	0.000%
40	4.786	-69.020	-8.306	-4.786	69.020	8.306	0.000%
41	9.108	-69.020	-5.254	-9.108	69.020	5.254	0.000%
42	10.643	-69.020	0.003	-10.643	69.020	-0.003	0.000%
43	9.133	-69.020	5.287	-9.133	69.020	-5.287	0.000%
44	5.299	-69.020	9.171	-5.299	69.020	-9.171	0.000%
45	0.015	-69.020	10.548	-0.015	69.020	-10.548	0.000%
46	-5.162	-69.020	8.957	5.162	69.020	-8.957	0.000%
47	-8.019	-69.020	4.622	8.019	69.020	-4.622	0.000%
48	-9.335	-69.020	-0.012	9.335	69.020	0.012	0.000%
49	-8.399	-69.020	-4.853	8.399	69.020	4.853	0.000%
50	-4.755	-69.020	-8.247	4.755	69.020	8.247	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00009308
3	Yes	5	0.00000001	0.00003937
4	Yes	6	0.00000001	0.00006986
5	Yes	5	0.00000001	0.00078574
6	Yes	6	0.00000001	0.00007613
7	Yes	5	0.00000001	0.00085247
8	Yes	5	0.00000001	0.00009141
9	Yes	5	0.00000001	0.00003817
10	Yes	6	0.00000001	0.00007392
11	Yes	5	0.00000001	0.00082764
12	Yes	6	0.00000001	0.00007440
13	Yes	5	0.00000001	0.00083325
14	Yes	5	0.00000001	0.00010016
15	Yes	5	0.00000001	0.00004313
16	Yes	6	0.00000001	0.00007541
17	Yes	5	0.00000001	0.00084486
18	Yes	6	0.00000001	0.00006789
19	Yes	5	0.00000001	0.00076579
20	Yes	5	0.00000001	0.00009501
21	Yes	5	0.00000001	0.00004080
22	Yes	6	0.00000001	0.00007247
23	Yes	5	0.00000001	0.00081487
24	Yes	6	0.00000001	0.00007124
25	Yes	5	0.00000001	0.00080123
26	Yes	4	0.00000001	0.00007947
27	Yes	6	0.00000001	0.00019249
28	Yes	6	0.00000001	0.00020824
29	Yes	6	0.00000001	0.00020729
30	Yes	6	0.00000001	0.00019205
31	Yes	6	0.00000001	0.00020580
32	Yes	6	0.00000001	0.00020584
33	Yes	6	0.00000001	0.00019069
34	Yes	6	0.00000001	0.00020627
35	Yes	6	0.00000001	0.00020363
36	Yes	6	0.00000001	0.00019063
37	Yes	6	0.00000001	0.00020621
38	Yes	6	0.00000001	0.00020714
39	Yes	4	0.00000001	0.00035949
40	Yes	4	0.00000001	0.00079314
41	Yes	4	0.00000001	0.00089769
42	Yes	4	0.00000001	0.00036534
43	Yes	4	0.00000001	0.00083639
44	Yes	4	0.00000001	0.00084851
45	Yes	4	0.00000001	0.00036884
46	Yes	4	0.00000001	0.00088860
47	Yes	4	0.00000001	0.00076411
48	Yes	4	0.00000001	0.00035949
49	Yes	4	0.00000001	0.00084034
50	Yes	4	0.00000001	0.00081813

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	147.5 - 142.5	13.789	41	0.912	0.001
L2	142.5 - 137.5	12.838	42	0.905	0.001
L3	137.5 - 132.5	11.898	42	0.893	0.001
L4	132.5 - 127.5	10.975	42	0.871	0.001
L5	127.5 - 125	10.080	42	0.840	0.001
L6	125 - 120	9.646	42	0.819	0.001
L7	120 - 115	8.802	42	0.794	0.001

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L8	115 - 110	7.988	42	0.761	0.001
L9	110 - 105	7.212	42	0.720	0.001
L10	105 - 100	6.484	42	0.671	0.001
L11	100 - 95	5.811	42	0.612	0.000
L12	95 - 94.25	5.190	42	0.572	0.000
L13	94.25 - 94	5.101	42	0.566	0.000
L14	94 - 89	5.071	42	0.564	0.000
L15	89 - 84	4.499	42	0.527	0.000
L16	84 - 80	3.968	42	0.486	0.000
L17	80 - 79.75	3.577	42	0.448	0.000
L18	79.75 - 74.75	3.553	42	0.447	0.000
L19	74.75 - 69.75	3.100	42	0.419	0.000
L20	69.75 - 64.75	2.677	42	0.388	0.000
L21	64.75 - 60	2.289	42	0.353	0.000
L22	60 - 59.75	1.955	42	0.318	0.000
L23	59.75 - 54.75	1.938	42	0.317	0.000
L24	54.75 - 49.75	1.620	42	0.291	0.000
L25	49.75 - 44.75	1.330	42	0.263	0.000
L26	44.75 - 40	1.070	42	0.233	0.000
L27	40 - 39.75	0.854	42	0.202	0.000
L28	39.75 - 34.75	0.844	42	0.200	0.000
L29	34.75 - 29.75	0.646	42	0.177	0.000
L30	29.75 - 24.75	0.473	42	0.152	0.000
L31	24.75 - 20	0.327	42	0.126	0.000
L32	20 - 19.75	0.215	42	0.099	0.000
L33	19.75 - 14.75	0.210	42	0.098	0.000
L34	14.75 - 9.75	0.119	42	0.075	0.000
L35	9.75 - 4.75	0.053	42	0.051	0.000
L36	4.75 - 0	0.013	42	0.026	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
152.000	HPD2-4.7	41	13.789	0.912	0.001	29754
150.000	AIR 32 B2A/B66AA w/ Mount Pipe	41	13.789	0.912	0.001	29754
149.500	Lightning Rod 5/8" x 4'	41	13.789	0.912	0.001	29754
147.500	4' x 2" Pipe Mount	41	13.789	0.912	0.001	29754
140.000	MT6407-77A w/ Mount Pipe	42	12.366	0.900	0.001	21447
130.000	NNVV-65B-R4 w/ Mount Pipe	42	10.523	0.857	0.001	8933
128.000	Ice Shields	42	10.168	0.844	0.001	8307
120.000	MX08FRO665-21 w/ Mount Pipe	42	8.802	0.794	0.001	9837
102.000	DMP65R-BU6D w/ Mount Pipe	42	6.073	0.634	0.000	5397
95.000	APXV18-206516S-C	42	5.190	0.572	0.000	7234
89.000	1142-2C	42	4.499	0.527	0.000	7271
72.000	GPS_A	42	2.863	0.402	0.000	9131
54.000	201-1N	42	1.574	0.287	0.000	10531
49.000	DB436-C	42	1.289	0.259	0.000	9713
45.000	DB436-C	42	1.082	0.234	0.000	9133
40.000	DB436-C	42	0.854	0.202	0.000	10274
37.000	DB436-C	42	0.732	0.188	0.000	11849

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	147.5 - 142.5	57.060	12	3.769	0.005
L2	142.5 - 137.5	53.130	12	3.741	0.005

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L3	137.5 - 132.5	49.241	12	3.690	0.005
L4	132.5 - 127.5	45.425	12	3.602	0.005
L5	127.5 - 125	41.721	12	3.473	0.004
L6	125 - 120	39.926	12	3.390	0.004
L7	120 - 115	36.431	12	3.286	0.004
L8	115 - 110	33.061	12	3.151	0.003
L9	110 - 105	29.849	12	2.982	0.003
L10	105 - 100	26.832	12	2.779	0.002
L11	100 - 95	24.046	12	2.537	0.002
L12	95 - 94.25	21.475	12	2.371	0.002
L13	94.25 - 94	21.105	12	2.344	0.002
L14	94 - 89	20.983	12	2.337	0.002
L15	89 - 84	18.614	12	2.185	0.002
L16	84 - 80	16.417	8	2.011	0.002
L17	80 - 79.75	14.798	8	1.856	0.001
L18	79.75 - 74.75	14.701	8	1.851	0.001
L19	74.75 - 69.75	12.824	8	1.735	0.001
L20	69.75 - 64.75	11.075	8	1.605	0.001
L21	64.75 - 60	9.469	8	1.463	0.001
L22	60 - 59.75	8.086	8	1.315	0.001
L23	59.75 - 54.75	8.018	8	1.310	0.001
L24	54.75 - 49.75	6.701	8	1.203	0.001
L25	49.75 - 44.75	5.501	8	1.087	0.001
L26	44.75 - 40	4.427	8	0.962	0.001
L27	40 - 39.75	3.533	8	0.834	0.001
L28	39.75 - 34.75	3.489	8	0.829	0.001
L29	34.75 - 29.75	2.671	8	0.733	0.001
L30	29.75 - 24.75	1.956	8	0.630	0.001
L31	24.75 - 20	1.353	8	0.520	0.000
L32	20 - 19.75	0.890	8	0.409	0.000
L33	19.75 - 14.75	0.869	8	0.405	0.000
L34	14.75 - 9.75	0.493	8	0.311	0.000
L35	9.75 - 4.75	0.220	8	0.211	0.000
L36	4.75 - 0	0.053	8	0.106	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
152.000	HPD2-4.7	12	57.060	3.769	0.006	7281
150.000	AIR 32 B2A/B66AA w/ Mount Pipe	12	57.060	3.769	0.006	7281
149.500	Lightning Rod 5/8" x 4'	12	57.060	3.769	0.006	7281
147.500	4' x 2" Pipe Mount	12	57.060	3.769	0.006	7281
140.000	MT6407-77A w/ Mount Pipe	12	51.179	3.720	0.005	5241
130.000	NNVV-65B-R4 w/ Mount Pipe	12	43.556	3.545	0.005	2189
128.000	Ice Shields	12	42.085	3.489	0.004	2040
120.000	MX08FRO665-21 w/ Mount Pipe	12	36.431	3.286	0.004	2406
102.000	DMP65R-BU6D w/ Mount Pipe	12	25.133	2.628	0.002	1313
95.000	APXV18-206516S-C	12	21.475	2.371	0.002	1758
89.000	1142-2C	12	18.614	2.185	0.002	1764
72.000	GPS_A	8	11.846	1.664	0.001	2208
54.000	201-1N	8	6.513	1.186	0.001	2543
49.000	DB436-C	8	5.331	1.070	0.001	2346
45.000	DB436-C	8	4.478	0.969	0.001	2206
40.000	DB436-C	8	3.533	0.834	0.001	2482
37.000	DB436-C	8	3.027	0.778	0.001	2863

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
L1	147.5 - 142.5 (1)	P24x0.375	5.000	0.000	0.0	27.833	-5.477	1052.070	0.005
L2	142.5 - 137.5 (2)	P24x0.375	5.000	0.000	0.0	27.833	-9.602	1052.070	0.009
L3	137.5 - 132.5 (3)	P24x0.375	5.000	0.000	0.0	27.833	-10.273	1052.070	0.010
L4	132.5 - 127.5 (4)	P24x0.375	5.000	0.000	0.0	27.833	-14.584	1052.070	0.014
L5	127.5 - 125 (5)	P24x0.375	2.500	0.000	0.0	27.833	-14.948	1052.070	0.014
L6	125 - 120 (6)	P30x0.375	5.000	0.000	0.0	34.901	-15.808	1311.060	0.012
L7	120 - 115 (7)	P30x0.375	5.000	0.000	0.0	34.901	-19.738	1311.060	0.015
L8	115 - 110 (8)	P30x0.375	5.000	0.000	0.0	34.901	-20.639	1311.060	0.016
L9	110 - 105 (9)	P30x0.375	5.000	0.000	0.0	34.901	-21.554	1311.060	0.016
L10	105 - 100 (10)	P30x0.375	5.000	0.000	0.0	34.901	-26.648	1311.060	0.020
L11	100 - 95 (11)	P36x0.375	5.000	0.000	0.0	41.970	-27.784	1490.100	0.019
L12	95 - 94.25 (12)	P36x0.375	0.750	0.000	0.0	41.970	-28.249	1490.100	0.019
L13	94.25 - 94 (13)	P36x0.49375	0.250	0.000	0.0	55.076	-28.323	2081.870	0.014
L14	94 - 89 (14)	P36x0.49375	5.000	0.000	0.0	55.076	-29.722	2081.870	0.014
L15	89 - 84 (15)	P36x0.49375	5.000	0.000	0.0	55.076	-31.428	2081.870	0.015
L16	84 - 80 (16)	P36x0.49375	4.000	0.000	0.0	55.076	-33.869	2081.870	0.016
L17	80 - 79.75 (17)	P42x0.575	0.250	0.000	0.0	74.831	-33.990	2828.600	0.012
L18	79.75 - 74.75 (18)	P42x0.575	5.000	0.000	0.0	74.831	-36.090	2828.600	0.013
L19	74.75 - 69.75 (19)	P42x0.575	5.000	0.000	0.0	74.831	-37.949	2828.600	0.013
L20	69.75 - 64.75 (20)	P42x0.575	5.000	0.000	0.0	74.831	-40.133	2828.600	0.014
L21	64.75 - 60 (21)	P42x0.575	4.750	0.000	0.0	74.831	-44.921	2828.600	0.016
L22	60 - 59.75 (22)	P48x0.6125	0.250	0.000	0.0	91.184	-45.086	3446.760	0.013
L23	59.75 - 54.75 (23)	P48x0.6125	5.000	0.000	0.0	91.184	-47.913	3446.760	0.014
L24	54.75 - 49.75 (24)	P48x0.6125	5.000	0.000	0.0	91.184	-50.206	3446.760	0.015
L25	49.75 - 44.75 (25)	P48x0.6125	5.000	0.000	0.0	91.184	-52.893	3446.760	0.015
L26	44.75 - 40 (26)	P48x0.6125	4.750	0.000	0.0	91.184	-56.874	3446.760	0.017
L27	40 - 39.75 (27)	P54x0.65	0.250	0.000	0.0	108.943	-57.124	4042.520	0.014
L28	39.75 - 34.75 (28)	P54x0.65	5.000	0.000	0.0	108.943	-60.242	4042.520	0.015
L29	34.75 - 29.75 (29)	P54x0.65	5.000	0.000	0.0	108.943	-62.718	4042.520	0.016
L30	29.75 - 24.75 (30)	P54x0.65	5.000	0.000	0.0	108.943	-66.273	4042.520	0.016
L31	24.75 - 20 (31)	P54x0.65	4.750	0.000	0.0	108.943	-71.228	4042.520	0.018
L32	20 - 19.75 (32)	P60x0.625	0.250	0.000	0.0	116.583	-71.412	4139.150	0.017
L33	19.75 - 14.75 (33)	P60x0.625	5.000	0.000	0.0	116.583	-74.901	4139.150	0.018
L34	14.75 - 9.75 (34)	P60x0.625	5.000	0.000	0.0	116.583	-77.658	4139.150	0.019
L35	9.75 - 4.75 (35)	P60x0.625	5.000	0.000	0.0	116.583	-80.299	4139.150	0.019
L36	4.75 - 0 (36)	P60x0.625	4.750	0.000	0.0	116.583	-82.814	4139.150	0.020

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	147.5 - 142.5 (1)	P24x0.375	53.684	623.717	0.086	0.000	623.717	0.000
L2	142.5 - 137.5 (2)	P24x0.375	94.951	623.717	0.152	0.000	623.717	0.000
L3	137.5 - 132.5 (3)	P24x0.375	147.688	623.717	0.237	0.000	623.717	0.000
L4	132.5 - 127.5 (4)	P24x0.375	210.792	623.717	0.338	0.000	623.717	0.000
L5	127.5 - 125 (5)	P24x0.375	246.618	623.717	0.395	0.000	623.717	0.000
L6	125 - 120 (6)	P30x0.375	319.544	947.858	0.337	0.000	947.858	0.000
L7	120 - 115 (7)	P30x0.375	410.858	947.858	0.433	0.000	947.858	0.000
L8	115 - 110 (8)	P30x0.375	503.726	947.858	0.531	0.000	947.858	0.000
L9	110 - 105 (9)	P30x0.375	598.182	947.858	0.631	0.000	947.858	0.000
L10	105 - 100 (10)	P30x0.375	716.746	947.858	0.756	0.000	947.858	0.000
L11	100 - 95 (11)	P36x0.375	840.300	1338.808	0.628	0.000	1338.808	0.000
L12	95 - 94.25 (12)	P36x0.375	859.250	1338.808	0.642	0.000	1338.808	0.000
L13	94.25 - 94 (13)	P36x0.49375	865.575	1816.958	0.476	0.000	1816.958	0.000
L14	94 - 89 (14)	P36x0.49375	993.083	1816.958	0.547	0.000	1816.958	0.000
L15	89 - 84 (15)	P36x0.49375	1127.058	1816.958	0.620	0.000	1816.958	0.000
L16	84 - 80 (16)	P36x0.49375	1236.767	1816.958	0.681	0.000	1816.958	0.000
L17	80 - 79.75 (17)	P42x0.575	1243.742	2879.408	0.432	0.000	2879.408	0.000
L18	79.75 - 74.75 (18)	P42x0.575	1385.775	2879.408	0.481	0.000	2879.408	0.000
L19	74.75 - 69.75 (19)	P42x0.575	1532.408	2879.408	0.532	0.000	2879.408	0.000
L20	69.75 - 64.75 (20)	P42x0.575	1683.600	2879.408	0.585	0.000	2879.408	0.000
L21	64.75 - 60 (21)	P42x0.575	1831.592	2879.408	0.636	0.000	2879.408	0.000
L22	60 - 59.75 (22)	P48x0.6125	1839.567	3972.717	0.463	0.000	3972.717	0.000
L23	59.75 - 54.75 (23)	P48x0.6125	2001.825	3972.717	0.504	0.000	3972.717	0.000
L24	54.75 - 49.75 (24)	P48x0.6125	2172.917	3972.717	0.547	0.000	3972.717	0.000
L25	49.75 - 44.75 (25)	P48x0.6125	2346.333	3972.717	0.591	0.000	3972.717	0.000
L26	44.75 - 40 (26)	P48x0.6125	2515.467	3972.717	0.633	0.000	3972.717	0.000
L27	40 - 39.75 (27)	P54x0.65	2524.333	5300.683	0.476	0.000	5300.683	0.000
L28	39.75 - 34.75 (28)	P54x0.65	2708.417	5300.683	0.511	0.000	5300.683	0.000
L29	34.75 - 29.75 (29)	P54x0.65	2898.492	5300.683	0.547	0.000	5300.683	0.000
L30	29.75 - 24.75 (30)	P54x0.65	3092.900	5300.683	0.583	0.000	5300.683	0.000
L31	24.75 - 20 (31)	P54x0.65	3281.292	5300.683	0.619	0.000	5300.683	0.000
L32	20 - 19.75 (32)	P60x0.625	3291.375	6198.183	0.531	0.000	6198.183	0.000
L33	19.75 - 14.75 (33)	P60x0.625	3495.517	6198.183	0.564	0.000	6198.183	0.000
L34	14.75 - 9.75 (34)	P60x0.625	3704.450	6198.183	0.598	0.000	6198.183	0.000
L35	9.75 - 4.75 (35)	P60x0.625	3917.450	6198.183	0.632	0.000	6198.183	0.000
L36	4.75 - 0 (36)	P60x0.625	4123.400	6198.183	0.665	0.000	6198.183	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	147.5 - 142.5 (1)	P24x0.375	6.111	315.621	0.019	0.169	655.568	0.000
L2	142.5 - 137.5 (2)	P24x0.375	10.393	315.621	0.033	0.033	655.568	0.000
L3	137.5 - 132.5 (3)	P24x0.375	10.734	315.621	0.034	0.264	655.568	0.000
L4	132.5 - 127.5 (4)	P24x0.375	14.267	315.621	0.045	0.666	655.568	0.001
L5	127.5 - 125 (5)	P24x0.375	14.409	315.621	0.046	0.447	655.568	0.001
L6	125 - 120 (6)	P30x0.375	14.776	395.779	0.037	0.447	994.725	0.000
L7	120 - 115 (7)	P30x0.375	18.416	395.779	0.047	0.447	994.725	0.000
L8	115 - 110 (8)	P30x0.375	18.746	395.779	0.047	0.447	994.725	0.000
L9	110 - 105 (9)	P30x0.375	19.055	395.779	0.048	0.447	994.725	0.000
L10	105 - 100 (10)	P30x0.375	24.529	395.779	0.062	0.651	994.725	0.001
L11	100 - 95 (11)	P36x0.375	24.898	454.187	0.055	0.651	1094.275	0.001
L12	95 - 94.25 (12)	P36x0.375	25.302	454.187	0.056	0.651	1094.275	0.001
L13	94.25 - 94 (13)	P36x0.49375	25.317	624.561	0.041	0.651	1949.658	0.000
L14	94 - 89 (14)	P36x0.49375	25.699	624.561	0.041	0.651	1949.658	0.000
L15	89 - 84 (15)	P36x0.49375	27.176	624.561	0.044	0.069	1949.658	0.000
L16	84 - 80 (16)	P36x0.49375	27.907	624.561	0.045	0.069	1949.658	0.000
L17	80 - 79.75 (17)	P42x0.575	27.943	848.581	0.033	0.069	3090.550	0.000
L18	79.75 - 74.75 (18)	P42x0.575	28.903	848.581	0.034	0.069	3090.550	0.000
L19	74.75 - 69.75 (19)	P42x0.575	29.825	848.581	0.035	0.061	3090.550	0.000
L20	69.75 - 64.75 (20)	P42x0.575	30.704	848.581	0.036	0.061	3090.550	0.000
L21	64.75 - 60 (21)	P42x0.575	31.937	848.581	0.038	0.054	3090.550	0.000
L22	60 - 59.75 (22)	P48x0.6125	31.975	1034.030	0.031	0.052	4306.692	0.000
L23	59.75 - 54.75 (23)	P48x0.6125	33.009	1034.030	0.032	0.052	4306.692	0.000
L24	54.75 - 49.75 (24)	P48x0.6125	34.287	1034.030	0.033	1.013	4306.692	0.000
L25	49.75 - 44.75 (25)	P48x0.6125	35.322	1034.030	0.034	0.898	4306.692	0.000
L26	44.75 - 40 (26)	P48x0.6125	36.268	1034.030	0.035	0.785	4306.692	0.000
L27	40 - 39.75 (27)	P54x0.65	36.368	1235.410	0.029	0.785	5711.983	0.000
L28	39.75 - 34.75 (28)	P54x0.65	37.456	1235.410	0.030	0.556	5711.983	0.000
L29	34.75 - 29.75 (29)	P54x0.65	38.500	1235.410	0.031	1.163	5711.983	0.000
L30	29.75 - 24.75 (30)	P54x0.65	39.443	1235.410	0.032	1.162	5711.983	0.000
L31	24.75 - 20 (31)	P54x0.65	40.396	1235.410	0.033	1.162	5711.983	0.000
L32	20 - 19.75 (32)	P60x0.625	40.426	1322.050	0.031	1.162	5985.250	0.000
L33	19.75 - 14.75 (33)	P60x0.625	41.373	1322.050	0.031	1.162	5985.250	0.000
L34	14.75 - 9.75 (34)	P60x0.625	42.190	1322.050	0.032	1.162	5985.250	0.000
L35	9.75 - 4.75 (35)	P60x0.625	42.977	1322.050	0.033	1.162	5985.250	0.000
L36	4.75 - 0 (36)	P60x0.625	43.711	1322.050	0.033	1.162	5985.250	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	147.5 - 142.5 (1)	0.005	0.086	0.000	0.019	0.000	0.092	1.050	4.8.2
L2	142.5 - 137.5 (2)	0.009	0.152	0.000	0.033	0.000	0.162	1.050	4.8.2
L3	137.5 - 132.5 (3)	0.010	0.237	0.000	0.034	0.000	0.248	1.050	4.8.2
L4	132.5 - 127.5 (4)	0.014	0.338	0.000	0.045	0.001	0.354	1.050	4.8.2
L5	127.5 - 125 (5)	0.014	0.395	0.000	0.046	0.001	0.412	1.050	4.8.2
L6	125 - 120 (6)	0.012	0.337	0.000	0.037	0.000	0.351	1.050	4.8.2
L7	120 - 115 (7)	0.015	0.433	0.000	0.047	0.000	0.451	1.050	4.8.2
L8	115 - 110 (8)	0.016	0.531	0.000	0.047	0.000	0.549	1.050	4.8.2
L9	110 - 105 (9)	0.016	0.631	0.000	0.048	0.000	0.650	1.050	4.8.2
L10	105 - 100 (10)	0.020	0.756	0.000	0.062	0.001	0.780	1.050	4.8.2
L11	100 - 95 (11)	0.019	0.628	0.000	0.055	0.001	0.649	1.050	4.8.2
L12	95 - 94.25 (12)	0.019	0.642	0.000	0.056	0.001	0.664	1.050	4.8.2
L13	94.25 - 94 (13)	0.014	0.476	0.000	0.041	0.000	0.492	1.050	4.8.2
L14	94 - 89 (14)	0.014	0.547	0.000	0.041	0.000	0.563	1.050	4.8.2
L15	89 - 84 (15)	0.015	0.620	0.000	0.044	0.000	0.637	1.050	4.8.2
L16	84 - 80 (16)	0.016	0.681	0.000	0.045	0.000	0.699	1.050	4.8.2
L17	80 - 79.75 (17)	0.012	0.432	0.000	0.033	0.000	0.445	1.050	4.8.2
L18	79.75 - 74.75 (18)	0.013	0.481	0.000	0.034	0.000	0.495	1.050	4.8.2
L19	74.75 - 69.75 (19)	0.013	0.532	0.000	0.035	0.000	0.547	1.050	4.8.2
L20	69.75 - 64.75 (20)	0.014	0.585	0.000	0.036	0.000	0.600	1.050	4.8.2
L21	64.75 - 60 (21)	0.016	0.636	0.000	0.038	0.000	0.653	1.050	4.8.2
L22	60 - 59.75 (22)	0.013	0.463	0.000	0.031	0.000	0.477	1.050	4.8.2
L23	59.75 - 54.75 (23)	0.014	0.504	0.000	0.032	0.000	0.519	1.050	4.8.2
L24	54.75 - 49.75 (24)	0.015	0.547	0.000	0.033	0.000	0.563	1.050	4.8.2
L25	49.75 - 44.75 (25)	0.015	0.591	0.000	0.034	0.000	0.607	1.050	4.8.2
L26	44.75 - 40 (26)	0.017	0.633	0.000	0.035	0.000	0.651	1.050	4.8.2
L27	40 - 39.75 (27)	0.014	0.476	0.000	0.029	0.000	0.491	1.050	4.8.2
L28	39.75 - 34.75 (28)	0.015	0.511	0.000	0.030	0.000	0.527	1.050	4.8.2
L29	34.75 - 29.75 (29)	0.016	0.547	0.000	0.031	0.000	0.563	1.050	4.8.2
L30	29.75 - 24.75 (30)	0.016	0.583	0.000	0.032	0.000	0.601	1.050	4.8.2
L31	24.75 - 20 (31)	0.018	0.619	0.000	0.033	0.000	0.638	1.050	4.8.2
L32	20 - 19.75 (32)	0.017	0.531	0.000	0.031	0.000	0.549	1.050	4.8.2
L33	19.75 - 14.75 (33)	0.018	0.564	0.000	0.031	0.000	0.583	1.050	4.8.2
L34	14.75 - 9.75 (34)	0.019	0.598	0.000	0.032	0.000	0.617	1.050	4.8.2
L35	9.75 - 4.75 (35)	0.019	0.632	0.000	0.033	0.000	0.653	1.050	4.8.2
L36	4.75 - 0 (36)	0.020	0.665	0.000	0.033	0.000	0.686	1.050	4.8.2

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria

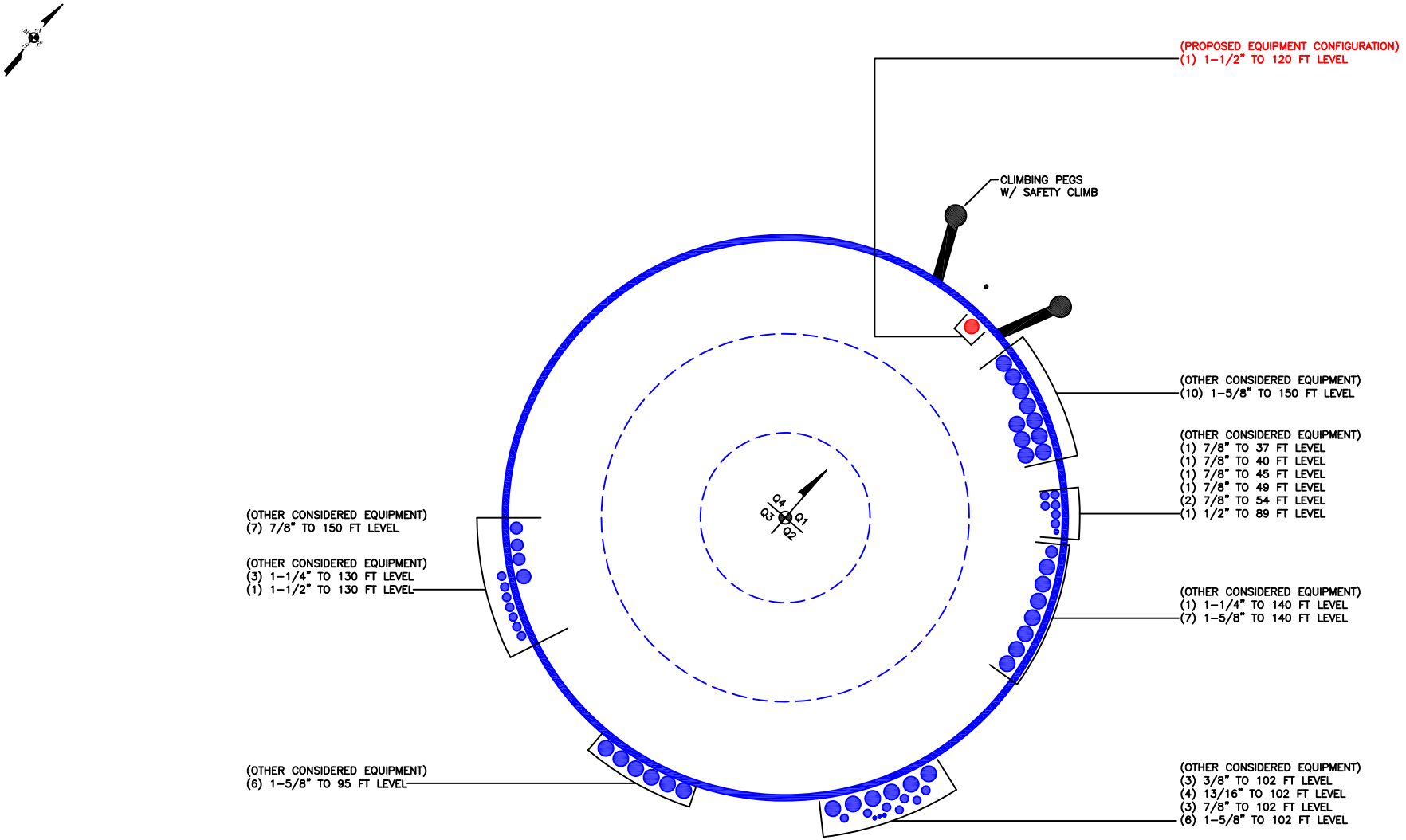
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	147.5 - 142.5	Pole	P24x0.375	1	-5.477	1104.673	8.7	Pass
L2	142.5 - 137.5	Pole	P24x0.375	2	-9.602	1104.673	15.5	Pass
L3	137.5 - 132.5	Pole	P24x0.375	3	-10.273	1104.673	23.6	Pass
L4	132.5 - 127.5	Pole	P24x0.375	4	-14.584	1104.673	33.7	Pass
L5	127.5 - 125	Pole	P24x0.375	5	-14.948	1104.673	39.2	Pass
L6	125 - 120	Pole	P30x0.375	6	-15.808	1376.613	33.4	Pass
L7	120 - 115	Pole	P30x0.375	7	-19.738	1376.613	42.9	Pass
L8	115 - 110	Pole	P30x0.375	8	-20.639	1376.613	52.3	Pass
L9	110 - 105	Pole	P30x0.375	9	-21.554	1376.613	61.9	Pass
L10	105 - 100	Pole	P30x0.375	10	-26.648	1376.613	74.3	Pass
L11	100 - 95	Pole	P36x0.375	11	-27.784	1564.605	61.8	Pass
L12	95 - 94.25	Pole	P36x0.375	12	-28.249	1564.605	63.2	Pass
L13	94.25 - 94	Pole	P36x0.49375	13	-28.323	2185.963	46.8	Pass
L14	94 - 89	Pole	P36x0.49375	14	-29.722	2185.963	53.6	Pass
L15	89 - 84	Pole	P36x0.49375	15	-31.428	2185.963	60.7	Pass
L16	84 - 80	Pole	P36x0.49375	16	-33.869	2185.963	66.6	Pass
L17	80 - 79.75	Pole	P42x0.575	17	-33.990	2970.030	42.4	Pass
L18	79.75 - 74.75	Pole	P42x0.575	18	-36.090	2970.030	47.2	Pass
L19	74.75 - 69.75	Pole	P42x0.575	19	-37.949	2970.030	52.1	Pass
L20	69.75 - 64.75	Pole	P42x0.575	20	-40.133	2970.030	57.2	Pass
L21	64.75 - 60	Pole	P42x0.575	21	-44.921	2970.030	62.2	Pass
L22	60 - 59.75	Pole	P48x0.6125	22	-45.086	3619.098	45.4	Pass
L23	59.75 - 54.75	Pole	P48x0.6125	23	-47.913	3619.098	49.4	Pass
L24	54.75 - 49.75	Pole	P48x0.6125	24	-50.206	3619.098	53.6	Pass
L25	49.75 - 44.75	Pole	P48x0.6125	25	-52.893	3619.098	57.8	Pass
L26	44.75 - 40	Pole	P48x0.6125	26	-56.874	3619.098	62.0	Pass
L27	40 - 39.75	Pole	P54x0.65	27	-57.124	4244.646	46.8	Pass
L28	39.75 - 34.75	Pole	P54x0.65	28	-60.242	4244.646	50.2	Pass
L29	34.75 - 29.75	Pole	P54x0.65	29	-62.718	4244.646	53.6	Pass
L30	29.75 - 24.75	Pole	P54x0.65	30	-66.273	4244.646	57.2	Pass
L31	24.75 - 20	Pole	P54x0.65	31	-71.228	4244.646	60.7	Pass
L32	20 - 19.75	Pole	P60x0.625	32	-71.412	4346.107	52.3	Pass
L33	19.75 - 14.75	Pole	P60x0.625	33	-74.901	4346.107	55.5	Pass
L34	14.75 - 9.75	Pole	P60x0.625	34	-77.658	4346.107	58.8	Pass
L35	9.75 - 4.75	Pole	P60x0.625	35	-80.299	4346.107	62.1	Pass
L36	4.75 - 0	Pole	P60x0.625	36	-82.814	4346.107	65.4	Pass
							Summary	
						Pole (L10)	74.3	Pass
						RATING =	**74.3**	**Pass**

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

APPENDIX B

BASE LEVEL DRAWING


(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1-1/2" TO 120 FT LEVEL
CLIMBING PEGS
W/ SAFETY CLIMB
(OTHER CONSIDERED EQUIPMENT)
(10) 1-5/8" TO 150 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 7/8" TO 37 FT LEVEL
(1) 7/8" TO 40 FT LEVEL
(1) 7/8" TO 45 FT LEVEL
(1) 7/8" TO 49 FT LEVEL
(2) 7/8" TO 54 FT LEVEL
(1) 1/2" TO 89 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1-1/4" TO 140 FT LEVEL
(7) 1-5/8" TO 140 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(3) 3/8" TO 102 FT LEVEL
(4) 13/16" TO 102 FT LEVEL
(3) 7/8" TO 102 FT LEVEL
(6) 1-5/8" TO 102 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(6) 1-5/8" TO 95 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(3) 1-1/4" TO 130 FT LEVEL
(1) 1-1/2" TO 130 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(7) 7/8" TO 150 FT LEVEL
Q1
Q2
Q3
Q4

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 827050

Work Order: 2020758

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	147.5	22.5		0	24	24	0.375		A53-B-42
2	125	25		0	30.00	30	0.375		A53-B-42
3	100	20		0	36.00	36	0.375		A53-B-42
4	80	20		0	42.00	42	0.375		A53-B-42
5	60	20		0	48.00	48	0.375		A53-B-42
6	40	20		0	54.00	54	0.375		A53-B-42
7	20	20		0	60.00	60	0.375		A53-B-42

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	20	plate	CCI-AFP-085125	4	60	150	240	330														
2	20	40	plate	CCI-AFP-085125	4	50	140	230	320														
3	40	60	plate	CCI-SFP-065125	4	50	140	230	320														
4	60	80	plate	CCI-SFP-060100	4	50	140	230	320														
5	80	94.25	plate	CCI-SFP-040075	4	50	140	230	320														
6																							
7																							
8																							
9																							
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in2)	Bolt Hole Size (in)	Reinforcement Material
1	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	51	PC 8.8 - M20 (100)	51.000	17.000	9.063	1.1875	A572-65
2	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	51	PC 8.8 - M20 (100)	51.000	17.000	9.063	1.1875	A572-65
3	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
4	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
5	4	0.75	3	0.375	PC 8.8 - M20 (100)	12	PC 8.8 - M20 (100)	12.000	16.000	2.063	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5 Export to TNX

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	147.5 - 142.5	5		0	24.000	24.000	0.375	A53-B-42	1.000
2	142.5 - 137.5	5		0	24.000	24.000	0.375	A53-B-42	1.000
3	137.5 - 132.5	5		0	24.000	24.000	0.375	A53-B-42	1.000
4	132.5 - 127.5	5		0	24.000	24.000	0.375	A53-B-42	1.000
5	127.5 - 125	2.5	0	0	24.000	24.000	0.375	A53-B-42	1.000
6	125 - 120	5		0	30.000	30.000	0.375	A53-B-42	1.000
7	120 - 115	5		0	30.000	30.000	0.375	A53-B-42	1.000
8	115 - 110	5		0	30.000	30.000	0.375	A53-B-42	1.000
9	110 - 105	5		0	30.000	30.000	0.375	A53-B-42	1.000
10	105 - 100	5	0	0	30.000	30.000	0.375	A53-B-42	1.000
11	100 - 95	5		0	36.000	36.000	0.375	A53-B-42	1.000
12	95 - 94.25	0.75		0	36.000	36.000	0.375	A53-B-42	1.000
13	94.25 - 94	0.25		0	36.000	36.000	0.49375	A53-B-42	0.980
14	94 - 89	5		0	36.000	36.000	0.49375	A53-B-42	0.980
15	89 - 84	5		0	36.000	36.000	0.49375	A53-B-42	0.980
16	84 - 80	4	0	0	36.000	36.000	0.49375	A53-B-42	0.980
17	80 - 79.75	0.25		0	42.000	42.000	0.575	A53-B-42	0.976
18	79.75 - 74.75	5		0	42.000	42.000	0.575	A53-B-42	0.976
19	74.75 - 69.75	5		0	42.000	42.000	0.575	A53-B-42	0.976
20	69.75 - 64.75	5		0	42.000	42.000	0.575	A53-B-42	0.976
21	64.75 - 60	4.75	0	0	42.000	42.000	0.575	A53-B-42	0.976
22	60 - 59.75	0.25		0	48.000	48.000	0.6125	A53-B-42	0.972
23	59.75 - 54.75	5		0	48.000	48.000	0.6125	A53-B-42	0.972
24	54.75 - 49.75	5		0	48.000	48.000	0.6125	A53-B-42	0.972
25	49.75 - 44.75	5		0	48.000	48.000	0.6125	A53-B-42	0.972
26	44.75 - 40	4.75	0	0	48.000	48.000	0.6125	A53-B-42	0.972
27	40 - 39.75	0.25		0	54.000	54.000	0.65	A53-B-42	0.970
28	39.75 - 34.75	5		0	54.000	54.000	0.65	A53-B-42	0.970
29	34.75 - 29.75	5		0	54.000	54.000	0.65	A53-B-42	0.970
30	29.75 - 24.75	5		0	54.000	54.000	0.65	A53-B-42	0.970
31	24.75 - 20	4.75	0	0	54.000	54.000	0.65	A53-B-42	0.970
32	20 - 19.75	0.25		0	60.000	60.000	0.625	A53-B-42	0.967
33	19.75 - 14.75	5		0	60.000	60.000	0.625	A53-B-42	0.967
34	14.75 - 9.75	5		0	60.000	60.000	0.625	A53-B-42	0.967
35	9.75 - 4.75	5		0	60.000	60.000	0.625	A53-B-42	0.967
36	4.75 - 0	4.75		0	60.000	60.000	0.625	A53-B-42	0.967

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	147.5 - 142.5	5.48	53.68	6.11
2	142.5 - 137.5	9.60	94.95	10.39
3	137.5 - 132.5	10.27	147.69	10.73
4	132.5 - 127.5	14.58	210.79	14.27
5	127.5 - 125	14.95	246.62	14.41
6	125 - 120	15.81	319.54	14.78
7	120 - 115	19.74	410.86	18.42
8	115 - 110	20.64	503.73	18.75
9	110 - 105	21.55	598.18	19.05
10	105 - 100	26.65	716.75	24.53
11	100 - 95	27.78	840.30	24.90
12	95 - 94.25	28.25	859.25	25.30
13	94.25 - 94	28.32	865.58	25.32
14	94 - 89	29.72	993.08	25.70
15	89 - 84	31.43	1127.06	27.18
16	84 - 80	33.87	1236.77	27.91
17	80 - 79.75	33.99	1243.74	27.94
18	79.75 - 74.75	36.09	1385.77	28.90
19	74.75 - 69.75	37.95	1532.41	29.83
20	69.75 - 64.75	40.13	1683.60	30.70
21	64.75 - 60	44.92	1831.59	31.94
22	60 - 59.75	45.09	1839.57	31.97
23	59.75 - 54.75	47.91	2001.82	33.01
24	54.75 - 49.75	50.21	2172.92	34.29
25	49.75 - 44.75	52.89	2346.33	35.32
26	44.75 - 40	56.87	2515.47	36.27
27	40 - 39.75	57.12	2524.33	36.37
28	39.75 - 34.75	60.24	2708.41	37.46
29	34.75 - 29.75	62.72	2898.49	38.50
30	29.75 - 24.75	66.27	3092.90	39.44
31	24.75 - 20	71.23	3281.29	40.40
32	20 - 19.75	71.41	3291.37	40.43
33	19.75 - 14.75	74.90	3495.52	41.37
34	14.75 - 9.75	77.66	3704.45	42.19
35	9.75 - 4.75	80.30	3917.45	42.98
36	4.75 - 0	82.81	4123.40	43.71

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
147.5 - 142.5	Pole	TP24x24x0.375	Pole	8.7%	Pass
142.5 - 137.5	Pole	TP24x24x0.375	Pole	15.5%	Pass
137.5 - 132.5	Pole	TP24x24x0.375	Pole	23.6%	Pass
132.5 - 127.5	Pole	TP24x24x0.375	Pole	33.7%	Pass
127.5 - 125	Pole	TP24x24x0.375	Pole	39.2%	Pass
125 - 120	Pole	TP30x30x0.375	Pole	33.4%	Pass
120 - 115	Pole	TP30x30x0.375	Pole	42.9%	Pass
115 - 110	Pole	TP30x30x0.375	Pole	52.3%	Pass
110 - 105	Pole	TP30x30x0.375	Pole	61.9%	Pass
105 - 100	Pole	TP30x30x0.375	Pole	74.3%	Pass
100 - 95	Pole	TP36x36x0.375	Pole	61.8%	Pass
95 - 94.25	Pole	TP36x36x0.375	Pole	63.2%	Pass
94.25 - 94	Pole + Reinf.	TP36x36x0.4938	Reinf. 5 Tension Rupture	52.1%	Pass
94 - 89	Pole + Reinf.	TP36x36x0.4938	Reinf. 5 Tension Rupture	59.7%	Pass
89 - 84	Pole + Reinf.	TP36x36x0.4938	Reinf. 5 Tension Rupture	67.6%	Pass
84 - 80	Pole + Reinf.	TP36x36x0.4938	Reinf. 5 Tension Rupture	74.2%	Pass
80 - 79.75	Pole + Reinf.	TP42x42x0.575	Pole	44.4%	Pass
79.75 - 74.75	Pole + Reinf.	TP42x42x0.575	Pole	49.4%	Pass
74.75 - 69.75	Pole + Reinf.	TP42x42x0.575	Pole	54.6%	Pass
69.75 - 64.75	Pole + Reinf.	TP42x42x0.575	Pole	59.9%	Pass
64.75 - 60	Pole + Reinf.	TP42x42x0.575	Pole	65.2%	Pass
60 - 59.75	Pole + Reinf.	TP48x48x0.6125	Pole	47.8%	Pass
59.75 - 54.75	Pole + Reinf.	TP48x48x0.6125	Pole	52.0%	Pass
54.75 - 49.75	Pole + Reinf.	TP48x48x0.6125	Pole	56.4%	Pass
49.75 - 44.75	Pole + Reinf.	TP48x48x0.6125	Pole	60.8%	Pass
44.75 - 40	Pole + Reinf.	TP48x48x0.6125	Pole	65.2%	Pass
40 - 39.75	Pole + Reinf.	TP54x54x0.65	Pole	49.3%	Pass
39.75 - 34.75	Pole + Reinf.	TP54x54x0.65	Pole	52.9%	Pass
34.75 - 29.75	Pole + Reinf.	TP54x54x0.65	Pole	56.6%	Pass
29.75 - 24.75	Pole + Reinf.	TP54x54x0.65	Pole	60.3%	Pass
24.75 - 20	Pole + Reinf.	TP54x54x0.65	Pole	64.0%	Pass
20 - 19.75	Pole + Reinf.	TP60x60x0.625	Pole	55.0%	Pass
19.75 - 14.75	Pole + Reinf.	TP60x60x0.625	Pole	58.4%	Pass
14.75 - 9.75	Pole + Reinf.	TP60x60x0.625	Pole	61.9%	Pass
9.75 - 4.75	Pole + Reinf.	TP60x60x0.625	Pole	65.4%	Pass
4.75 - 0	Pole + Reinf.	TP60x60x0.625	Pole	68.8%	Pass
				Summary	
			Pole	74.3%	Pass
			Reinforcement	74.2%	Pass
			Overall	74.3%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*					
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5
147.5 - 142.5	1942	n/a	1942	27.83	n/a	27.83	8.7%					
142.5 - 137.5	1942	n/a	1942	27.83	n/a	27.83	15.5%					
137.5 - 132.5	1942	n/a	1942	27.83	n/a	27.83	23.6%					
132.5 - 127.5	1942	n/a	1942	27.83	n/a	27.83	33.7%					
127.5 - 125	1942	n/a	1942	27.83	n/a	27.83	39.2%					
125 - 120	3829	n/a	3829	34.90	n/a	34.90	33.4%					
120 - 115	3829	n/a	3829	34.90	n/a	34.90	42.9%					
115 - 110	3829	n/a	3829	34.90	n/a	34.90	52.3%					
110 - 105	3829	n/a	3829	34.90	n/a	34.90	61.9%					
105 - 100	3829	n/a	3829	34.90	n/a	34.90	74.3%					
100 - 95	6659	n/a	6659	41.97	n/a	41.97	61.8%					
95 - 94.25	6659	n/a	6659	41.97	n/a	41.97	63.2%					
94.25 - 94	6659	2034	8693	41.97	12.00	53.97	48.6%					52.1%
94 - 89	6659	2034	8693	41.97	12.00	53.97	55.6%					59.7%
89 - 84	6659	2034	8693	41.97	12.00	53.97	63.0%					67.6%
84 - 80	6659	2034	8693	41.97	12.00	53.97	69.1%					74.2%
80 - 79.75	10622	5584	16206	49.04	24.00	73.04	44.4%				40.9%	
79.75 - 74.75	10622	5584	16206	49.04	24.00	73.04	49.4%				45.5%	
74.75 - 69.75	10622	5584	16206	49.04	24.00	73.04	54.6%				50.2%	
69.75 - 64.75	10622	5584	16206	49.04	24.00	73.04	59.9%				55.1%	
64.75 - 60	10622	5584	16206	49.04	24.00	73.04	65.2%				60.0%	
60 - 59.75	15908	9913	25821	56.11	32.50	88.61	47.8%			42.7%		
59.75 - 54.75	15908	9913	25821	56.11	32.50	88.61	52.0%			46.4%		
54.75 - 49.75	15908	9913	25821	56.11	32.50	88.61	56.4%			50.3%		
49.75 - 44.75	15908	9913	25821	56.11	32.50	88.61	60.8%			54.3%		
44.75 - 40	15908	9913	25821	56.11	32.50	88.61	65.2%			58.2%		
40 - 39.75	22710	16347	39057	63.18	42.50	105.68	49.3%		41.3%			
39.75 - 34.75	22710	16347	39057	63.18	42.50	105.68	52.9%		44.2%			
34.75 - 29.75	22710	16347	39057	63.18	42.50	105.68	56.6%		47.3%			
29.75 - 24.75	22710	16347	39057	63.18	42.50	105.68	60.3%		50.5%			
24.75 - 20	22710	16347	39057	63.18	42.50	105.68	64.0%		53.6%			
20 - 19.75	31217	20061	51278	70.24	42.50	112.74	55.0%	45.5%				
19.75 - 14.75	31217	20061	51278	70.24	42.50	112.74	58.4%	48.3%				
14.75 - 9.75	31217	20061	51278	70.24	42.50	112.74	61.9%	51.2%				
9.75 - 4.75	31217	20061	51278	70.24	42.50	112.74	65.4%	54.1%				
4.75 - 0	31217	20061	51278	70.24	42.50	112.74	68.8%	56.9%				

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

Monopole Flange Plate Connection

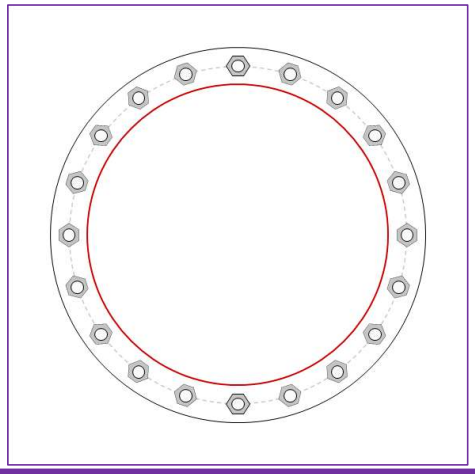
Elevation = 125 ft.

BU #	827050
Site Name	Rocky Hill/ Rte 160_1
Order #	556633 Rev. 0
TIA-222 Revision	H

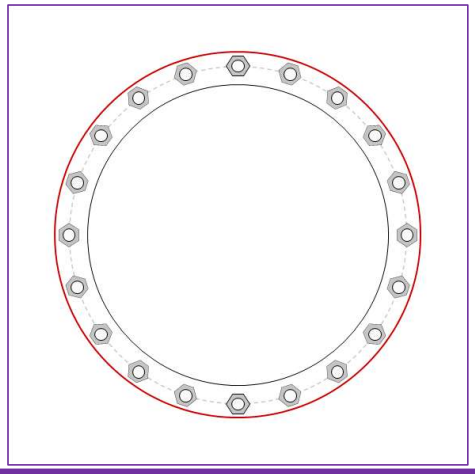
Applied Loads	
Moment (kip-ft)	246.62
Axial Force (kips)	14.95
Shear Force (kips)	14.41

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(20) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 27" BC

Top Plate Data

30" OD x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

24" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

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

Bottom Pole Data

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

Analysis Results

Bolt Capacity

Max Load (kips)	21.16	
Allowable (kips)	54.53	
Stress Rating:	**37.0%**	Pass

Top Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	**N/A**
Tension Side Stress Rating:	**N/A**

Bottom Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	**N/A**
Tension Side Stress Rating:	**N/A**

Monopole Flange Plate Connection

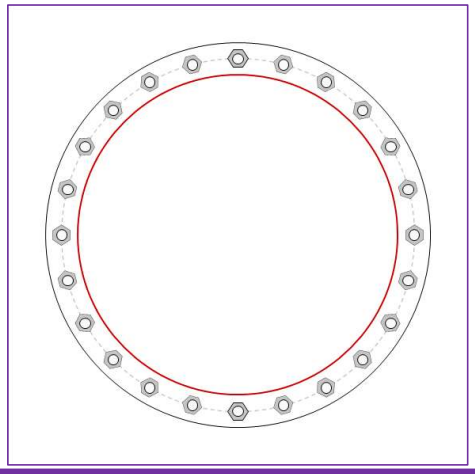
Elevation = 100 ft.

BU #	827050
Site Name	Rocky Hill/ Rte 160_1
Order #	556633 Rev. 0
TIA-222 Revision	H

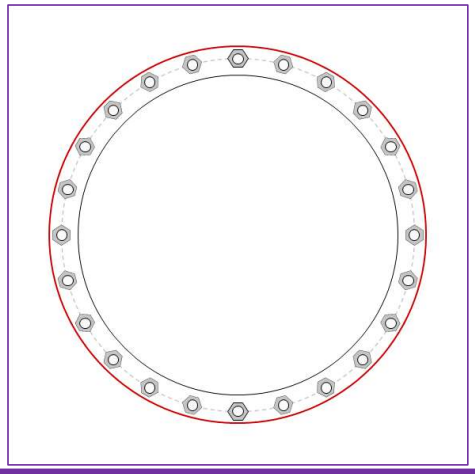
Applied Loads	
Moment (kip-ft)	716.75
Axial Force (kips)	26.65
Shear Force (kips)	24.53

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(24) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 33" BC

Top Plate Data

36" OD x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

30" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

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

Bottom Pole Data

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

Analysis Results

Bolt Capacity

Max Load (kips)	42.31	
Allowable (kips)	54.52	
Stress Rating:	**73.9%**	Pass

Top Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	**N/A**
Tension Side Stress Rating:	**N/A**

Bottom Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	**N/A**
Tension Side Stress Rating:	**N/A**

Monopole Flange Plate Connection

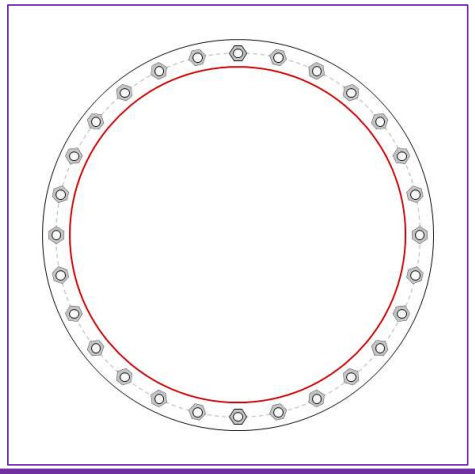
Elevation = 80 ft.

BU #	827050
Site Name	Rocky Hill/ Rte 160_1
Order #	556633 Rev. 0
TIA-222 Revision	H

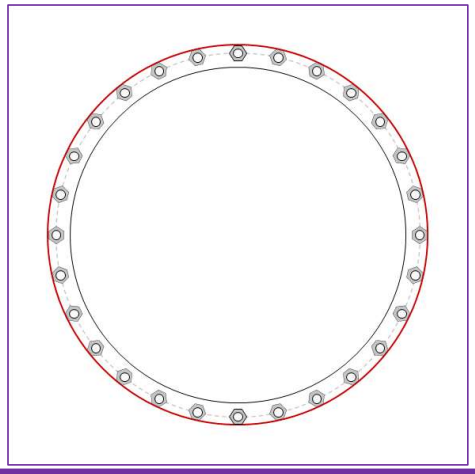
Applied Loads to Flange Connections		Applied Loads to Bridge Stiffeners	
Moment (kip-ft)	454.79	Moment (kip-ft)	781.98
Axial Force (kips)	33.87	Axial Force (kips)	0.00
Shear Force (kips)	27.91	Shear Force (kips)	0.00

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(28) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 39" BC

Top Plate Data

42" OD x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

36" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

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

Bottom Pole Data

42" x 0.575" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bridge Stiffener Group 1 Data

(4) Bolted, 6''x1'', A572-65, Lu=16", Neglect Flange in MOI: No

Analysis Results

Bolt Capacity

Max Load (kips)	18.78	
Allowable (kips)	54.52	
Stress Rating:	**32.8%**	Pass

Top Plate Capacity

Max Stress (ksi):	12.69	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**37.3%**	Pass
Tension Side Stress Rating:	**12.5%**	Pass

Bottom Plate Capacity

Max Stress (ksi):	10.95	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**32.2%**	Pass
Tension Side Stress Rating:	**N/A**	

Bridge Stiffener Group 1 Analysis Capacity

Max Compression (kip):	218.23	
Max Tension (kip):	218.23	
Comp. Capacity (kip):	262.12	
Tens. Capacity (kip):	285.00	(Rupture)
Comp. Stress Rating:	**79.3%**	Pass
Tens. Stress Rating:	**72.9%**	Pass

Monopole Flange Plate Connection

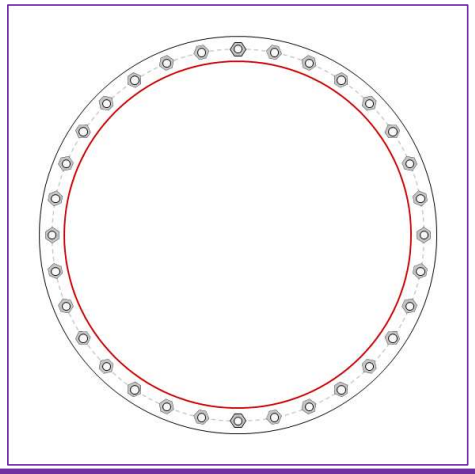
Elevation = 60 ft.

BU #	827050
Site Name	Rocky Hill/ Rte 160_1
Order #	556633 Rev. 0
TIA-222 Revision	H

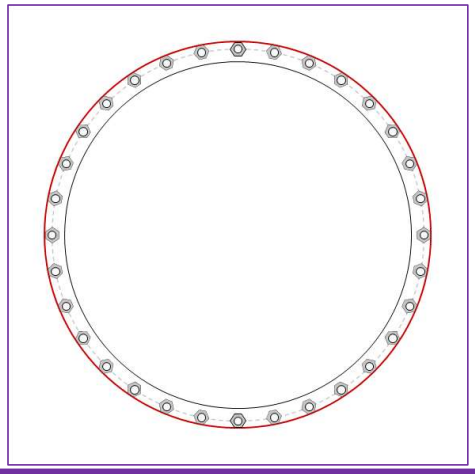
Applied Loads to Flange Connections		Applied Loads to Bridge Stiffeners	
Moment (kip-ft)	609.02	Moment (kip-ft)	1222.58
Axial Force (kips)	44.92	Axial Force (kips)	0.00
Shear Force (kips)	31.94	Shear Force (kips)	0.00

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(32) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 45" BC

Top Plate Data

48" OD x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

42" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

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

Bottom Pole Data

48" x 0.6125" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bridge Stiffener Group 1 Data

(4) Bolted, 6.5''x1.25'', A572-65, Lu=19", Neglect Flange in MOI: No

Analysis Results

Bolt Capacity

Max Load (kips)	18.89	
Allowable (kips)	54.52	
Stress Rating:	**33.0%**	Pass

Top Plate Capacity

Max Stress (ksi):	13.03	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**38.3%**	Pass
Tension Side Stress Rating:	**12.3%**	Pass

Bottom Plate Capacity

Max Stress (ksi):	10.84	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**31.9%**	Pass
Tension Side Stress Rating:	**N/A**	

Bridge Stiffener Group 1 Analysis Capacity

Max Compression (kip):	297.89	
Max Tension (kip):	297.89	
Comp. Capacity (kip):	365.20	
Tens. Capacity (kip):	393.75	(Rupture)
Comp. Stress Rating:	**77.7%**	Pass
Tens. Stress Rating:	**72.1%**	Pass

Monopole Flange Plate Connection

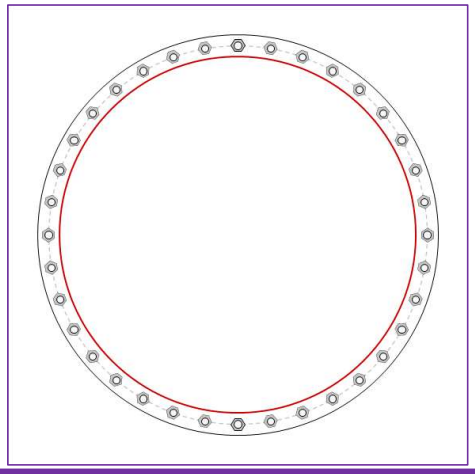
Elevation = 40 ft.

BU #	827050
Site Name	Rocky Hill/ Rte 160_1
Order #	556633 Rev. 0
TIA-222 Revision	H

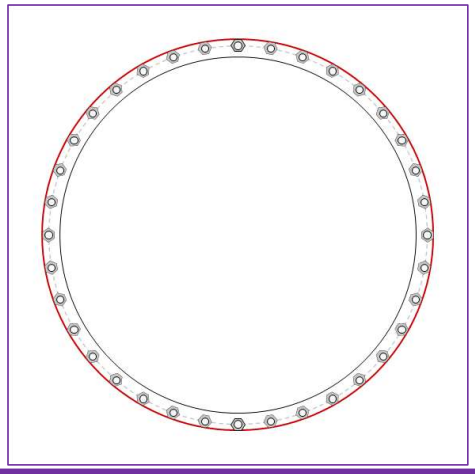
Applied Loads to Flange Connections		Applied Loads to Bridge Stiffeners	
Moment (kip-ft)	915.26	Moment (kip-ft)	1600.21
Axial Force (kips)	56.87	Axial Force (kips)	0.00
Shear Force (kips)	36.27	Shear Force (kips)	0.00

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(36) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 51" BC

Top Plate Data

54" OD x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

48" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

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

Bottom Pole Data

54" x 0.65" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bridge Stiffener Group 1 Data

(4) Bolted, 6.5''x1.25'', A572-65, Lu=19", Neglect Flange in MOI: No

Analysis Results

Bolt Capacity

Max Load (kips)	22.34	
Allowable (kips)	54.52	
Stress Rating:	**39.0%**	Pass

Top Plate Capacity

Max Stress (ksi):	15.22	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**44.7%**	Pass
Tension Side Stress Rating:	**14.3%**	Pass

Bottom Plate Capacity

Max Stress (ksi):	12.61	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**37.1%**	Pass
Tension Side Stress Rating:	**N/A**	

Bridge Stiffener Group 1 Analysis Capacity

Max Compression (kip):	347.56	
Max Tension (kip):	347.56	
Comp. Capacity (kip):	365.20	
Tens. Capacity (kip):	393.75	(Rupture)
Comp. Stress Rating:	**90.6%**	Pass
Tens. Stress Rating:	**84.1%**	Pass

Monopole Flange Plate Connection

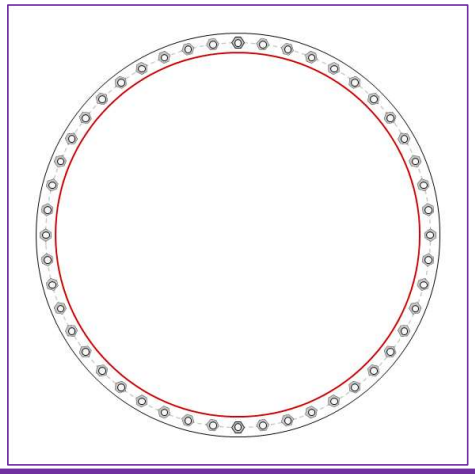
Elevation = 20 ft.

BU #	827050
Site Name	Rocky Hill/ Rte 160_1
Order #	556633 Rev. 0
TIA-222 Revision	H

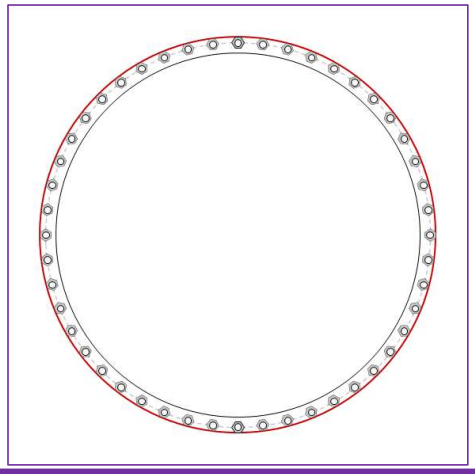
Applied Loads to Flange Connections		Applied Loads to Bridge Stiffeners	
Moment (kip-ft)	1221.13	Moment (kip-ft)	2060.16
Axial Force (kips)	71.23	Axial Force (kips)	0.00
Shear Force (kips)	40.40	Shear Force (kips)	0.00

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(48) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 57" BC

Top Plate Data

60" OD x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

54" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

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

Bottom Pole Data

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

Bridge Stiffener Group 1 Data

(4) Bolted, 8.5''x1.25'', A572-65, Lu=17", Neglect Flange in MOI: No

Analysis Results

Bolt Capacity

Max Load (kips)	19.94	
Allowable (kips)	54.52	
Stress Rating:	**34.8%**	Pass

Top Plate Capacity

Max Stress (ksi):	16.12	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**47.4%**	Pass
Tension Side Stress Rating:	**15.5%**	Pass

Bottom Plate Capacity

Max Stress (ksi):	13.34	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**39.2%**	Pass
Tension Side Stress Rating:	**N/A**	

Bridge Stiffener Group 1 Analysis Capacity

Max Compression (kip):	403.62	
Max Tension (kip):	403.62	
Comp. Capacity (kip):	503.34	
Tens. Capacity (kip):	543.75	(Rupture)
Comp. Stress Rating:	**76.4%**	Pass
Tens. Stress Rating:	**70.7%**	Pass

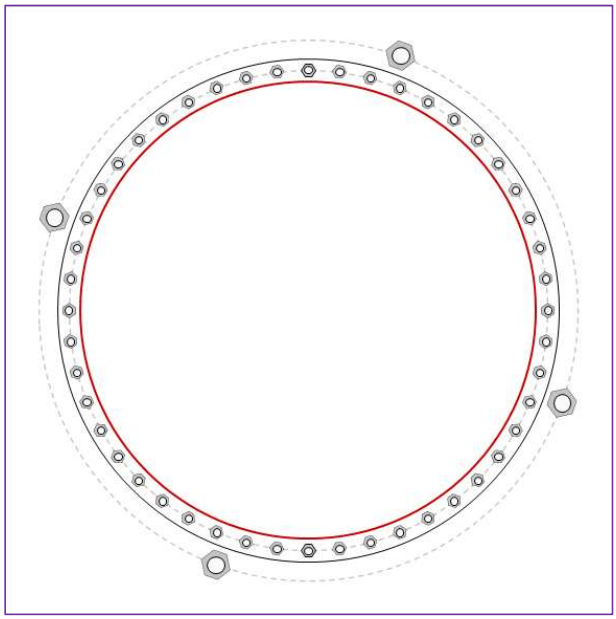
Monopole Base Plate Connection

Site Info	
BU #	827050
Site Name	Rocky Hill/ Rte 160_1
Order #	556633 Rev. 0

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

Applied Loads	
Moment (kip-ft)	4123.40
Axial Force (kips)	82.81
Shear Force (kips)	43.71

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (48) 1" ø bolts (A687 N; Fy=105 ksi, Fu=125 ksi) on 63" BC

GROUP 2: (4) 2-1/4" ø bolts (Williams N; Fy=125 ksi, Fu=125 ksi) on 71" BC

Base Plate Data

66" OD x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Stiffener Data

N/A

Pole Data

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

Analysis Results

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

GROUP 1:		
Pu_t = 36.48	ϕPn_t = 56.81	**Stress Rating**
Vu = 0.91	ϕVn = 36.82	**61.2%**
Mu = 0.89	ϕMn = 15.75	**Pass**
GROUP 2:		
Pu_t = 289.9	ϕPn_t = 382.5	**Stress Rating**
Vu = 0	ϕVn = 191.25	**72.2%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	25.37	(Flexural)
Allowable Stress (ksi):	32.4	
Stress Rating:	**74.6%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

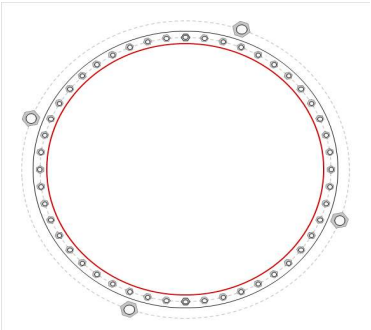
note: Bending interaction not considered when Grout Considered = "Yes"

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

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	0	1	A687	63	0.5	1.5	N-Included		No
2	1	7.5	1	A687	63	0.5	1.5	N-Included		No
3	1	15	1	A687	63	0.5	1.5	N-Included		No
4	1	22.5	1	A687	63	0.5	1.5	N-Included		No
5	1	30	1	A687	63	0.5	1.5	N-Included		No
6	1	37.5	1	A687	63	0.5	1.5	N-Included		No
7	1	45	1	A687	63	0.5	1.5	N-Included		No
8	1	52.5	1	A687	63	0.5	1.5	N-Included		No
9	1	60	1	A687	63	0.5	1.5	N-Included		No
10	1	67.5	1	A687	63	0.5	1.5	N-Included		No
11	1	75	1	A687	63	0.5	1.5	N-Included		No
12	1	82.5	1	A687	63	0.5	1.5	N-Included		No
13	1	90	1	A687	63	0.5	1.5	N-Included		No
14	1	97.5	1	A687	63	0.5	1.5	N-Included		No
15	1	105	1	A687	63	0.5	1.5	N-Included		No
16	1	112.5	1	A687	63	0.5	1.5	N-Included		No
17	1	120	1	A687	63	0.5	1.5	N-Included		No
18	1	127.5	1	A687	63	0.5	1.5	N-Included		No
19	1	135	1	A687	63	0.5	1.5	N-Included		No
20	1	142.5	1	A687	63	0.5	1.5	N-Included		No
21	1	150	1	A687	63	0.5	1.5	N-Included		No
22	1	157.5	1	A687	63	0.5	1.5	N-Included		No
23	1	165	1	A687	63	0.5	1.5	N-Included		No
24	1	172.5	1	A687	63	0.5	1.5	N-Included		No
25	1	180	1	A687	63	0.5	1.5	N-Included		No
26	1	187.5	1	A687	63	0.5	1.5	N-Included		No
27	1	195	1	A687	63	0.5	1.5	N-Included		No
28	1	202.5	1	A687	63	0.5	1.5	N-Included		No
29	1	210	1	A687	63	0.5	1.5	N-Included		No
30	1	217.5	1	A687	63	0.5	1.5	N-Included		No
31	1	225	1	A687	63	0.5	1.5	N-Included		No
32	1	232.5	1	A687	63	0.5	1.5	N-Included		No
33	1	240	1	A687	63	0.5	1.5	N-Included		No
34	1	247.5	1	A687	63	0.5	1.5	N-Included		No
35	1	255	1	A687	63	0.5	1.5	N-Included		No
36	1	262.5	1	A687	63	0.5	1.5	N-Included		No
37	1	270	1	A687	63	0.5	1.5	N-Included		No
38	1	277.5	1	A687	63	0.5	1.5	N-Included		No
39	1	285	1	A687	63	0.5	1.5	N-Included		No
40	1	292.5	1	A687	63	0.5	1.5	N-Included		No
41	1	300	1	A687	63	0.5	1.5	N-Included		No
42	1	307.5	1	A687	63	0.5	1.5	N-Included		No
43	1	315	1	A687	63	0.5	1.5	N-Included		No
44	1	322.5	1	A687	63	0.5	1.5	N-Included		No
45	1	330	1	A687	63	0.5	1.5	N-Included		No
46	1	337.5	1	A687	63	0.5	1.5	N-Included		No
47	1	345	1	A687	63	0.5	1.5	N-Included		No
48	1	352.5	1	A687	63	0.5	1.5	N-Included		No
49	2	70	2.25	Williams	71	0.5	0	N-Included	4.08	No
50	2	160	2.25	Williams	71	0.5	0	N-Included	4.08	No
51	2	250	2.25	Williams	71	0.5	0	N-Included	4.08	No
52	2	340	2.25	Williams	71	0.5	0	N-Included	4.08	No

Plot Graphic



Drilled Pier Foundation

BU # :	827050
Site Name:	Rocky Hill/ Rte 160_1
Order Number:	556633 Rev. 0
TIA-222 Revison:	H
Tower Type:	Monopole

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	☐
Shear Design Options	
Check Shear along Depth of Pier:	☑
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

Go to Soil Calculations

Applied Loads	Comp.	Uplift
Moment (kip-ft)	4123.4	
Axial Force (kips)	82.82	
Shear Force (kips)	43.69	

Material Properties			Rebar 2, Fy Override (ksi)
Concrete Strength, f'c:	3	ksi	
Rebar Strength, Fy:	60	ksi	
Tie Yield Strength, Fyt:	60	ksi	

Pier Design Data		
Depth	36	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 23' below grade		
Pier Diameter	7	ft
Rebar Quantity	28	
Rebar Size	9	
Clear Cover to Ties	3	in
Tie Size	4	
Tie Spacing	18	in
Rebar Quantity	4	
Rebar Size	18	
Rebar Cage Diameter	71	in
Pier Section 2		
From 23' below grade to 36' below grade		
Pier Diameter	7	ft
Rebar Quantity	28	
Rebar Size	9	
Clear Cover to Ties	3	in
Tie Size	4	
Tie Spacing	18	in

Rebar & Pier Options
Embedded Pole Inputs
Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{y=0}$ (ft from TOC)	8.18	-
Soil Safety Factor	4.13	-
Max Moment (kip-ft)	4427.48	-
Rating*	*30.7%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	543.46	-
End Bearing (kips)	5157.89	-
Weight of Concrete (kips)	165.23	-
Total Capacity (kips)	5701.34	-
Axial (kips)	248.05	-
Rating*	*4.1%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	17.32	-
Critical Moment (kip-ft)	3820.47	-
Critical Moment Capacity	4765.23	-
Rating*	*76.4%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	34.88	-
Critical Shear (kip)	397.27	-
Critical Shear Capacity	773.18	-
Rating*	*48.9%*	-

Structural Foundation Rating*	**76.4%**
Soil Interaction Rating*	**30.7%**

*Rating per TIA-222-H Section 15.5

Soil Profile

Groundwater Depth	5.6

# of Layers	11

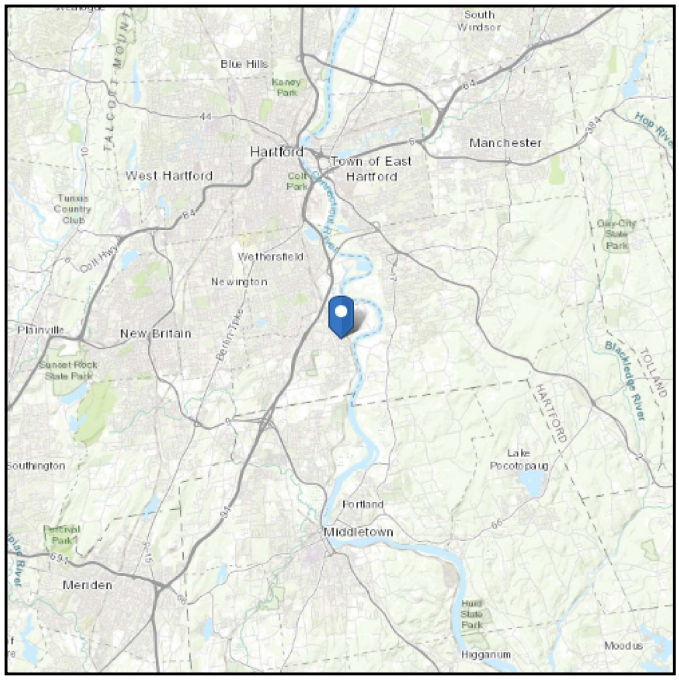
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	2	2	126	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	2	3.5	1.5	117	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	3.5	4	0.5	117	150	0	31	0.000	0.000	0.00	0.00			Cohesionless
4	4	5.6	1.6	124	150	0	35	0.000	0.000	0.88	0.88			Cohesionless
5	5.6	6	0.4	61.5	87.6	0	35	0.000	0.000	0.88	0.88			Cohesionless
6	6	8	2	57.5	87.6	0	33	0.000	0.000	0.88	0.88			Cohesionless
7	8	10	2	55.5	87.6	0	32	0.00	0.00	0.88	0.88			Cohesionless
8	10	15	5	52.5	87.6	0	29	0.00	0.00	0.49	0.49			Cohesionless
9	15	30	15	42.5	87.6	0.5	0	0.28	0.28	0.50	0.50			Cohesive
10	30	34	4	53.5	87.6	0	31	0.00	0.00	0.83	0.83			Cohesionless
11	34	36	2	92.5	87.6	20	0	9.00	9.00	7.20	7.20	178.7		Cohesive

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 97.46 ft (NAVD 88)
Latitude: 41.668269
Longitude: -72.638036



Wind

Results:

Wind Speed:	118 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Thu Sep 23 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

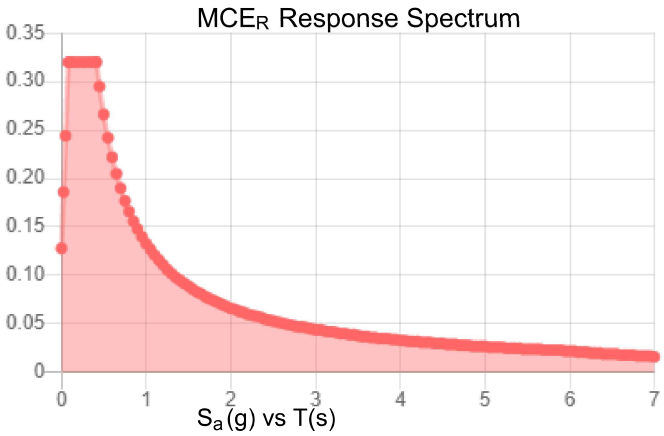
Seismic

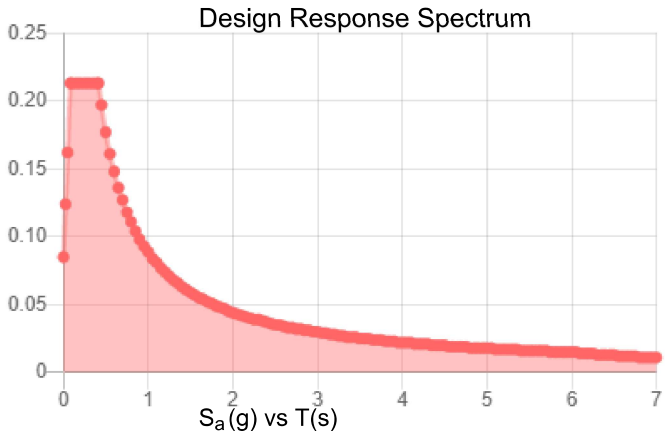
Site Soil Class: D - Default (see Section 11.4.3)

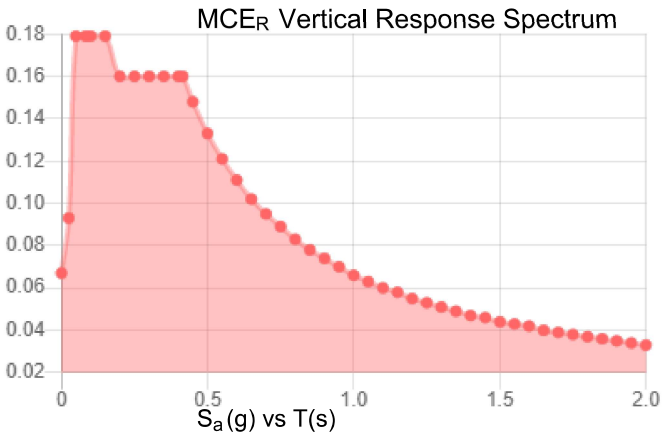
Results:

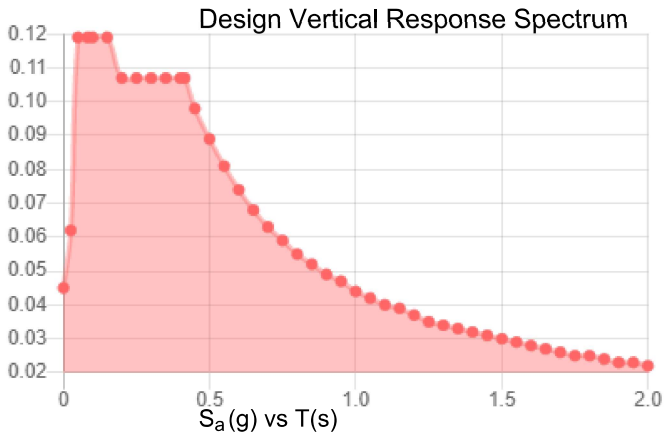
S_S :	0.2	S_{D1} :	0.089
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.11
F_v :	2.4	PGA_M :	0.173
S_{MS} :	0.32	F_{PGA} :	1.581
S_{M1} :	0.133	I_e :	1
S_{DS} :	0.213	C_v :	0.7

Seismic Design Category B









Data Accessed: Thu Sep 23 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.50 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Thu Sep 23 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit E

Mount Analysis

Date: **November 2, 2021**

Kimley-Horn and Associates, Inc.
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919) 677-2000
CrownMounts@kimley-horn.com

Subject:	**Mount Replacement Analysis Report**	
Carrier Designation:	**DISH Network Equipment Change-Out**	
	Carrier Site Number:	BOBDL00058A
	Carrier Site Name:	CT-CCI-T-827050
Crown Castle Designation:	**BU Number:**	827050
	Site Name:	Rocky Hill/ Rte 160_1
	JDE Job Number:	650047
	Order Number:	556633, Rev. 0
Engineering Firm Designation:	**Kimley-Horn Project Number:**	019558057
Site Data:	**699 Old Main St., Rocky Hill, Hartford County, CT 06067** **Latitude 41° 40' 5.77" Longitude -72° 38' 16.93"**	
Structure Information:	**Tower Height & Type:**	**150.8 ft Monopole**
	Mount Elevation:	**120 ft**
	Mount Type:	**8 ft Platform w/ Support Rails**

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

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

Platform w/ Support Rails **Sufficient**

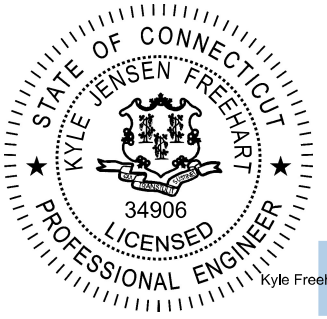
This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 118 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Saja Alkhafaji, E.I.

Respectfully Submitted by:

Kyle Freehart, P.E.

Lic. #PEN.0034906, Exp. 1/31/2022
Kimley-Horn and Associates, Inc. COA #PEC.0000738



Kyle Freehart

TABLE OF CONTENTS

1) INTRODUCTION

The mounting configuration consists of a proposed 8 ft Platform w/ Support Rails designed by CommScope.

2) ANALYSIS CRITERIA

Building Code:	2018 Connecticut State Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	118 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 – Proposed Equipment Configuration

Elevation (ft)		Antennas			Mount / Modification Details
Mount	Centerline	#	Manufacturer	Model	
120	120	3	Fujitsu	TA08025-B604	Proposed 8 ft Platform w/ Support Rails designed by CommScope
		3	Fujitsu	TA08025-B605	
		3	Jma wireless	MX08FRO665-21	
		1	Raycap	RDIDC-9181-PF-48	

3) ANALYSIS PROCEDURE

Table 2 – Documents Provided

Document	Remarks	Reference	Source
Mount Design Drawings	Commscope	MC-PK8-DSH	On File
Photos	-	-	CCISites

3.1) Analysis Method

RISA-3D (version 17.02.00), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

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

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Mount Analysis* (Revision D).

3.2) Assumptions

1) The antenna mounting system (including any considered modifications) was properly fabricated, installed and maintained in good condition in accordance with its original design, TIA standards, and/or manufacturer specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the provided reference information.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members that could not be verified at this time.
5) Any referenced prior structural modifications to the tower mounting system are assumed to be installed as shown per available data unless noted otherwise.
6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (Gr. 36)
HSS (Rectangular)	ASTM A36 (Gr. 36)
Pipe	ASTM A53 (Gr. B-35)
Connection Bolts	ASTM A325
Threaded Rods	ASTM A36 (Gr. 36)

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

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1, 2	Connections	-	120	33%	Pass
1, 2	Stand Off Horizontals	M12		21%	Pass
1, 2	Mount Pipes	MP8		20%	Pass
1, 2	Support Rails	M25		13%	Pass
1, 2	Platform Base	M48		10%	Pass

Structure Rating (max from all components) =	33%

Notes:
1) See additional documentation in Appendix C and Appendix D for calculations supporting the % capacity consumed.
2) Rating per TIA-222-H, Section 15.5.

4.1) Recommendations

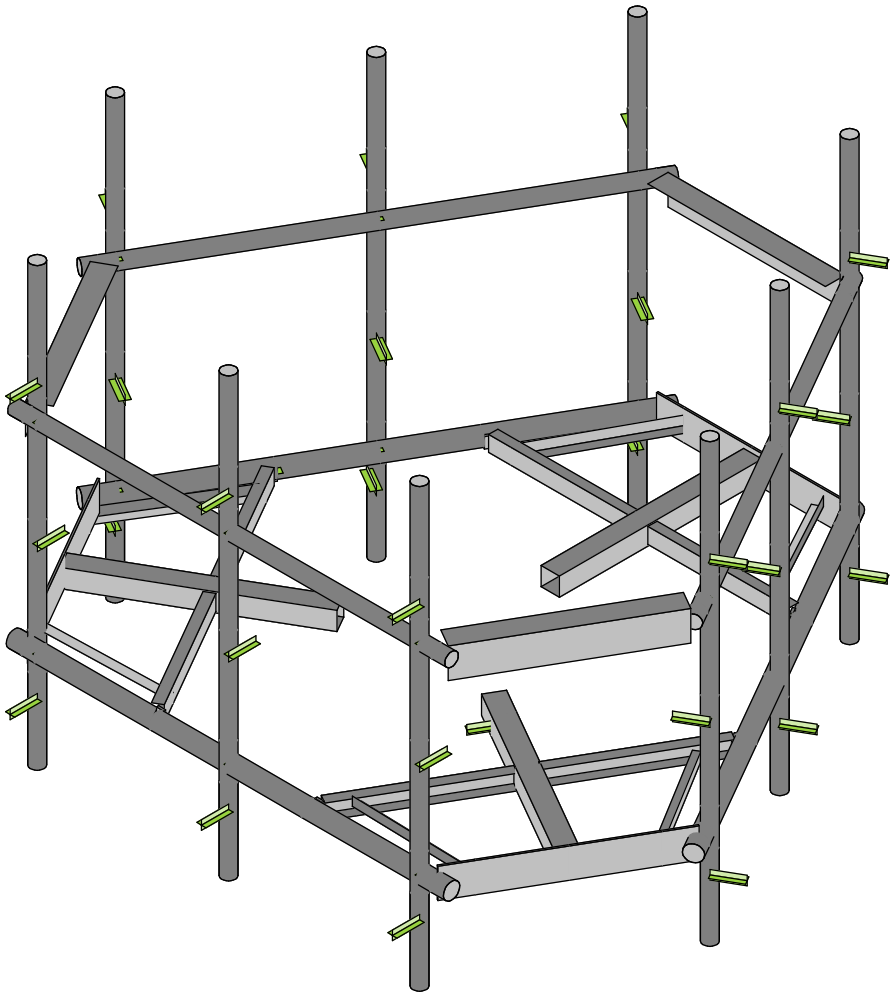
The proposed mounting configuration will have sufficient capacity to carry the referenced loading. In order for the results of this analysis to be considered valid, the following mounting configuration shall be installed:

- **Install new CommScope MC-PK8-DSH platform. Vertically center antennas and mount pipes on mount face horizontals.**

Beyond the mount replacement, no structural modifications are required at this time, provided that the above-listed changes are implemented.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

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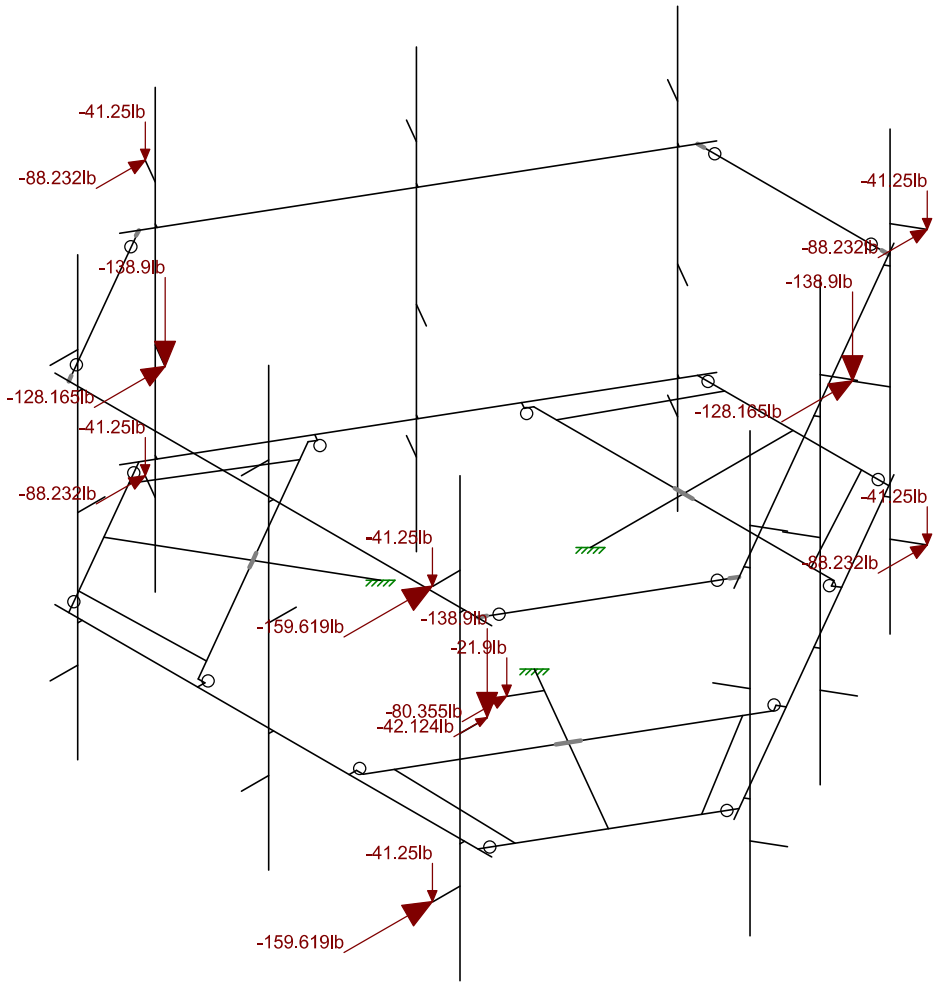


Loads: LC 1, Summary: 1.0D + 1.0W
Envelope Only Solution

Kimley-Horn and Associates, Inc.	827050	SK - 2
SSA		Nov 2, 2021 at 8:10 AM
019558057		827050.r3d

APPENDIX B

SOFTWARE INPUT CALCULATIONS

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)	97.46
Ground Effect Factor, K_e	1.00

Mount & Structure Criteria	
Mount Elevation (AGL) (ft)	120.00
Structure Height (ft)	150.80
Structure Type	Monopole

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

Wind Summary	
Basic Wind Speed w/o Ice, V (mph)	118.00
Velocity Pressure Coeff., K_z	1.32
Velocity Pressure, q_z (w/o Ice) (psf)	44.38

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)	7.97
Escalated Ice Thick. @ Mount, t_{iz} (in)	1.71

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

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

Kimley»Horn

Date	November 02, 2021
Client	Crown Castle
Site #	827050
Site Name	Rocky Hill/ Rte 160_1
Project #	19558057

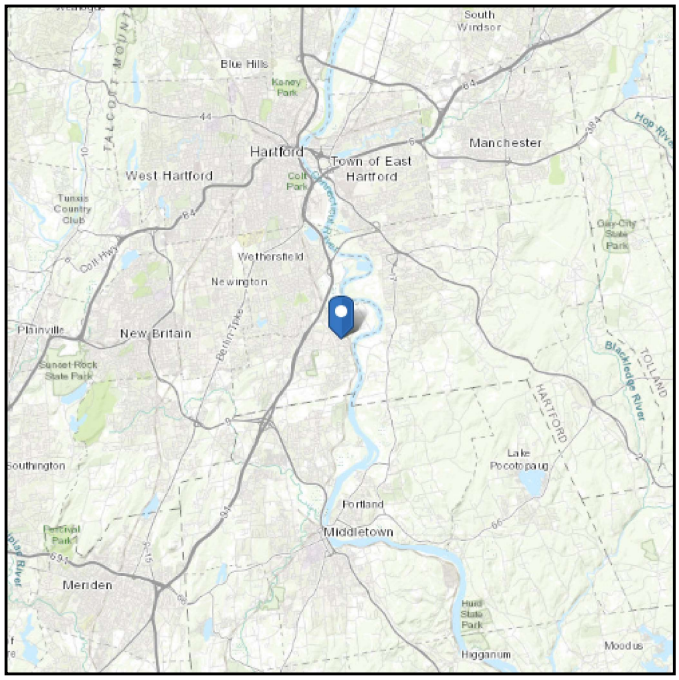
Antenna Name	Qty	Shape	Dimensions (in)			Weight (lb)	Joint Labels								EPA (ft²)		Wind Force, F_A (lb)			
																	No Ice		With Ice	
			H	W	D		Alpha		Beta		Gamma		Delta		Front	Side	Front	Side	Front	Side
MX08FRO665-21	3	Flat	72	20	8	82.5	A1B	A1T	B1B	B1T	G1B	G1T			7.99	3.23	319.24	128.87	69.33	32.59
TA08025-B604	3	Flat	15	15.8	7.9	63.9	A1R		B1R		G1R				0.49	1.96	19.59	78.42	6.19	21.04
TA08025-B605	3	Flat	15	15.8	9.1	75	A1R		B1R		G1R				0.56	1.96	22.53	78.42	6.84	21.04
RDIDC-9181-PF-48	1	Flat	16.6	14.6	8.5	21.9	RC								2.01	1.17	80.35	46.66	21.48	14.18

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 97.46 ft (NAVD 88)
Latitude: 41.668269
Longitude: -72.638036



Wind

Results:

Wind Speed:	118 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Mon Nov 01 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

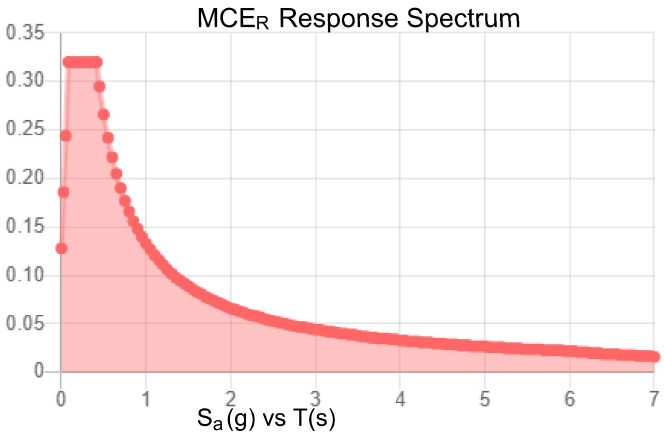
Seismic

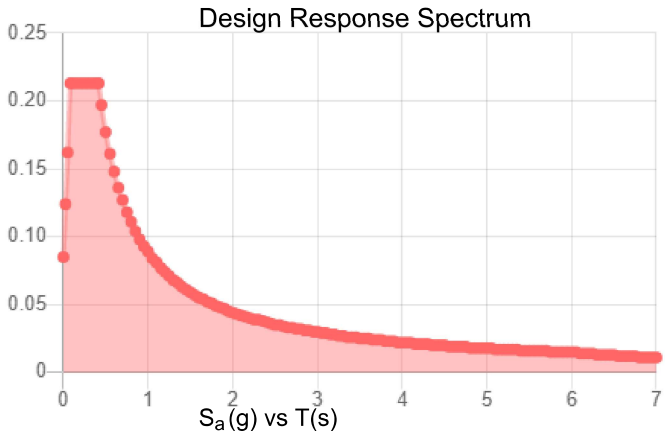
Site Soil Class: D - Stiff Soil

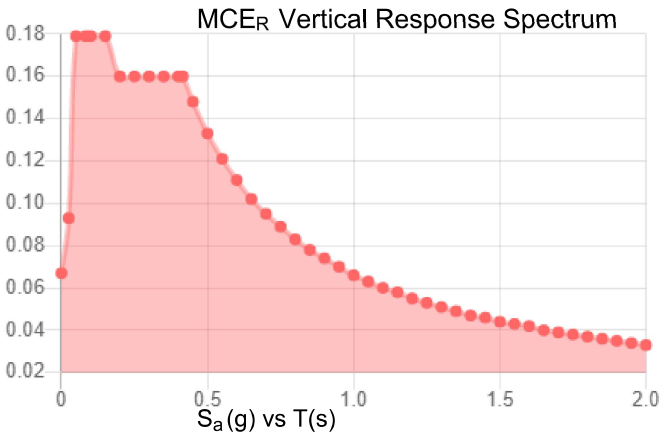
Results:

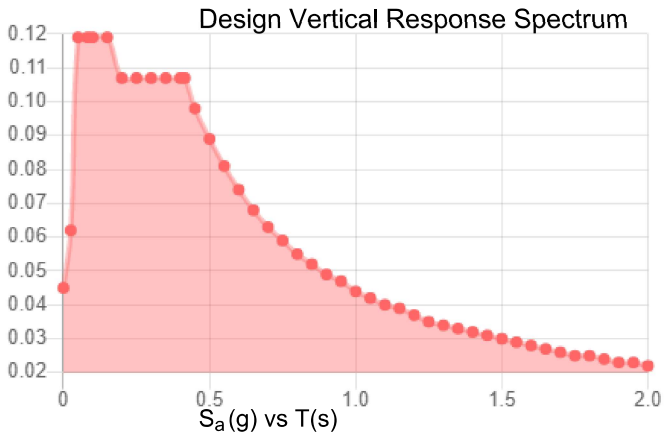
S_S :	0.2	S_{D1} :	0.089
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.11
F_v :	2.4	PGA_M :	0.173
S_{MS} :	0.32	F_{PGA} :	1.581
S_{M1} :	0.133	I_e :	1
S_{DS} :	0.213	C_v :	0.7

Seismic Design Category B









Data Accessed: Mon Nov 01 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.50 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Mon Nov 01 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E..Density[lb/f...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	490	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	490	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	490	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	490	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	490	50	1.4	65	1.3
8	A913 Gr.65	29000	11154	.3	.65	490	65	1.1	80	1.1
9	A500 Gr.C Rnd	29000	11154	.3	.65	490	46	1.6	62	1.2
10	A500 Gr.C Rect	29000	11154	.3	.65	490	50	1.5	62	1.2
11	A529 Gr. 50	29000	11154	.3	.65	490	50	1.1	65	1.1
12	A1011-33 ksi	29000	11154	.3	.65	490	33	1.5	58	1.2
13	A1011 36 ksi	29000	11154	.3	.65	490	36	1.5	58	1.2
14	A1018 50 ksi	29000	11154	.3	.65	490	50	1.5	65	1.2
15	Q235	29000	11154	.3	.65	490	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

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M3	Grating Horiz	27.295			Lbyy						Lateral
2	M8	Grating Horiz	27.295			Lbyy						Lateral
3	M13	Grating Horiz	27.295			Lbyy						Lateral
4	M28	SR Corner ...	42			Lbyy						Lateral
5	M29	SR Corner ...	42			Lbyy						Lateral
6	M30	SR Corner ...	42			Lbyy						Lateral
7	M63A	Cross Horiz	33			Lbyy						Lateral
8	M61B	Cross Horiz	33			Lbyy						Lateral
9	M63B	Cross Horiz	33			Lbyy						Lateral
10	M25	Support Rail	96			Lbyy						Lateral
11	M51	Support Rail	96			Lbyy						Lateral
12	M65A	Support Rail	96			Lbyy						Lateral
13	M2	Stand-Off H...	44.5			Lbyy						Lateral
14	M7	Stand-Off H...	44.5			Lbyy						Lateral
15	M12	Stand-Off H...	44.5			Lbyy						Lateral
16	MP9	Mount Pipe	96			Lbyy						Lateral
17	MP7	Mount Pipe	96			Lbyy						Lateral
18	MP8	Mount Pipe	96			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
19	MP3	Mount Pipe	96			Lbyy						Lateral
20	MP1	Mount Pipe	96			Lbyy						Lateral
21	MP6	Mount Pipe	96			Lbyy						Lateral
22	MP4	Mount Pipe	96			Lbyy						Lateral
23	MP2	Mount Pipe	96			Lbyy						Lateral
24	MP5	Mount Pipe	96			Lbyy						Lateral
25	M4	Grating Horiz	27.295			Lbyy						Lateral
26	M9	Grating Horiz	27.295			Lbyy						Lateral
27	M14	Grating Horiz	27.295			Lbyy						Lateral
28	M18	Face Horiz	96			Lbyy						Lateral
29	M48	Face Horiz	96			Lbyy						Lateral
30	M62	Face Horiz	96			Lbyy						Lateral
31	M61A	Cross Horiz	33			Lbyy						Lateral
32	M60A	Cross Horiz	33			Lbyy						Lateral
33	M62A	Cross Horiz	33			Lbyy						Lateral
34	M5	Corner Plate	42			Lbyy						Lateral
35	M10	Corner Plate	42			Lbyy						Lateral
36	M15	Corner Plate	42			Lbyy						Lateral
37	M88A	Side Plate	1.5			Lbyy						Lateral
38	M89A	Side Plate	1.5			Lbyy						Lateral
39	M90A	Side Plate	1.5			Lbyy						Lateral
40	M91A	Side Plate	1.5			Lbyy						Lateral
41	M92A	Side Plate	1.5			Lbyy						Lateral
42	M93A	Side Plate	1.5			Lbyy						Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
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		
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 (0)	None						84		
13	Structure Wind w/ Ice (30)	None						84		
14	Structure Wind w/ Ice (45)	None						84		
15	Structure Wind w/ Ice (60)	None						84		
16	Structure Wind w/ Ice (90)	None						84		
17	Structure Wind w/ Ice (120)	None						84		
18	Structure Wind w/ Ice (135)	None						84		
19	Structure Wind w/ Ice (150)	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				

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area (Me...	Surface(...
25	Antenna Wind (120)	None				26				
26	Antenna Wind (135)	None				26				
27	Antenna Wind (150)	None				26				
28	Antenna Wind w/ Ice (0)	None				26				
29	Antenna Wind w/ Ice (30)	None				26				
30	Antenna Wind w/ Ice (45)	None				26				
31	Antenna Wind w/ Ice (60)	None				26				
32	Antenna Wind w/ Ice (90)	None				26				
33	Antenna Wind w/ Ice (120)	None				26				
34	Antenna Wind w/ Ice (135)	None				26				
35	Antenna Wind w/ Ice (150)	None				26				
36	Maintenance Live Lm (1)	OL1				1				
37	Maintenance Live Lm (2)	OL2				1				
38	Maintenance Live Lm (3)	OL3				1				
41	Maintenance Live Lv (1)	OL6					1			

Load Combinations

	Description	So..	P...	SRSS	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 + 1...	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																
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														

Load Combinations (Continued)

	Description	So..	P...	SRSS	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
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 + 1.5Lm(1) + ...	Yes	Y		DL	1.2	4	.065	20	.065	OL1	1.5														
36	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	5	.065	21	.065	OL1	1.5														
37	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	6	.065	22	.065	OL1	1.5														
38	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	7	.065	23	.065	OL1	1.5														
39	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	8	.065	24	.065	OL1	1.5														
40	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	9	.065	25	.065	OL1	1.5														
41	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	10	.065	26	.065	OL1	1.5														
42	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	11	.065	27	.065	OL1	1.5														
43	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	4	-.065	20	-.065	OL1	1.5														
44	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	5	-.065	21	-.065	OL1	1.5														
45	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	6	-.065	22	-.065	OL1	1.5														
46	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	7	-.065	23	-.065	OL1	1.5														
47	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	8	-.065	24	-.065	OL1	1.5														
48	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	9	-.065	25	-.065	OL1	1.5														
49	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	10	-.065	26	-.065	OL1	1.5														
50	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	11	-.065	27	-.065	OL1	1.5														
51	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	4	.065	20	.065	OL2	1.5														
52	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	5	.065	21	.065	OL2	1.5														
53	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	6	.065	22	.065	OL2	1.5														
54	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	7	.065	23	.065	OL2	1.5														
55	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	8	.065	24	.065	OL2	1.5														
56	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	9	.065	25	.065	OL2	1.5														
57	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	10	.065	26	.065	OL2	1.5														
58	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	11	.065	27	.065	OL2	1.5														
59	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	4	-.065	20	-.065	OL2	1.5														
60	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	5	-.065	21	-.065	OL2	1.5														
61	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	6	-.065	22	-.065	OL2	1.5														
62	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	7	-.065	23	-.065	OL2	1.5														
63	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	8	-.065	24	-.065	OL2	1.5														
64	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	9	-.065	25	-.065	OL2	1.5														
65	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	10	-.065	26	-.065	OL2	1.5														
66	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	11	-.065	27	-.065	OL2	1.5														
67	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	4	.065	20	.065	OL3	1.5														
68	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	5	.065	21	.065	OL3	1.5														
69	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	6	.065	22	.065	OL3	1.5														
70	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	7	.065	23	.065	OL3	1.5														
71	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	8	.065	24	.065	OL3	1.5														
72	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	9	.065	25	.065	OL3	1.5														
73	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	10	.065	26	.065	OL3	1.5														
74	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	11	.065	27	.065	OL3	1.5														
75	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	4	-.065	20	-.065	OL3	1.5														
76	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	5	-.065	21	-.065	OL3	1.5														
77	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	6	-.065	22	-.065	OL3	1.5														
78	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	7	-.065	23	-.065	OL3	1.5														
79	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	8	-.065	24	-.065	OL3	1.5														
80	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	9	-.065	25	-.065	OL3	1.5														
81	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	10	-.065	26	-.065	OL3	1.5														
82	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	11	-.065	27	-.065	OL3	1.5														
83	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	4	.065	20	.065	OL6	1.5														
84	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	5	.065	21	.065	OL6	1.5														

Load Combinations (Continued)

	Description	So..	P...	SRSS	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
85	1.2D + 1.5Lv(1) + 1..	Yes	Y		DL	1.2	6	.065	22	.065	OL6	1.5												
86	1.2D + 1.5Lv(1) + 1..	Yes	Y		DL	1.2	7	.065	23	.065	OL6	1.5												
87	1.2D + 1.5Lv(1) + 1..	Yes	Y		DL	1.2	8	.065	24	.065	OL6	1.5												
88	1.2D + 1.5Lv(1) + 1..	Yes	Y		DL	1.2	9	.065	25	.065	OL6	1.5												
89	1.2D + 1.5Lv(1) + 1..	Yes	Y		DL	1.2	10	.065	26	.065	OL6	1.5												
90	1.2D + 1.5Lv(1) + 1..	Yes	Y		DL	1.2	11	.065	27	.065	OL6	1.5												
91	1.2D + 1.5Lv(1) + 1..	Yes	Y		DL	1.2	4	-.065	20	-.065	OL6	1.5												
92	1.2D + 1.5Lv(1) + 1..	Yes	Y		DL	1.2	5	-.065	21	-.065	OL6	1.5												
93	1.2D + 1.5Lv(1) + 1..	Yes	Y		DL	1.2	6	-.065	22	-.065	OL6	1.5												
94	1.2D + 1.5Lv(1) + 1..	Yes	Y		DL	1.2	7	-.065	23	-.065	OL6	1.5												
95	1.2D + 1.5Lv(1) + 1..	Yes	Y		DL	1.2	8	-.065	24	-.065	OL6	1.5												
96	1.2D + 1.5Lv(1) + 1..	Yes	Y		DL	1.2	9	-.065	25	-.065	OL6	1.5												
97	1.2D + 1.5Lv(1) + 1..	Yes	Y		DL	1.2	10	-.065	26	-.065	OL6	1.5												
98	1.2D + 1.5Lv(1) + 1..	Yes	Y		DL	1.2	11	-.065	27	-.065	OL6	1.5												

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	P24	max	1097.837	18	918.05	16	1941.302	30	389.585	6	480.023	6	1891.957	18
2		min	-1096.165	10	-917.31	8	10.982	6	-4809.352	30	-2781.763	78	-1885.683	10
3	P13	max	701.509	3	1275.428	15	1895.724	19	900.978	31	4964.133	19	1849.92	7
4		min	-712.151	11	-1280.765	7	1.207	11	67.093	7	-575.774	11	-1846.75	15
5	P1	max	1256.986	3	845.828	15	1949.01	24	3714.394	24	91.993	16	1835.189	12
6		min	-1249.379	11	-839.907	7	18.38	16	-651.988	16	-3306.914	40	-1843.897	4
7	Totals:	max	3043.695	3	3010.189	15	5237.602	26						
8		min	-3043.692	11	-3010.188	7	1663.567	1						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt ...	phi*Mn ...	phi*Mn ...	Cb	Eqn
1	M62A	C3.38x2.06...	.277	0	30	.059	26.1...	y	21	48281.4...	56700	2203.138	5751	1...	H1-1b
2	M61A	C3.38x2.06...	.269	0	24	.058	26.1...	y	32	48281.4...	56700	2203.138	5751	1...	H1-1b
3	M63A	C3.38x2.06...	.266	0	9	.039	0	y	19	48281.4...	56700	2203.138	5751	1...	H1-1b
4	M60A	C3.38x2.06...	.265	0	19	.057	26.1...	y	27	48281.4...	56700	2203.138	5751	1...	H1-1b
5	M61B	C3.38x2.06...	.262	0	3	.039	0	y	29	48281.4...	56700	2203.138	5751	1...	H1-1b
6	M63B	C3.38x2.06...	.254	0	14	.038	0	y	24	48281.4...	56700	2203.138	5751	1...	H1-1b
7	M10	PL6-1/2x3/8	.243	21	3	.132	36.0...	y	31	3658.14	78975	616.993	8104.15	1...	H1-1b
8	M15	PL6-1/2x3/8	.238	21	14	.115	36.0...	y	8	3658.14	78975	616.993	8099.435	1...	H1-1b
9	M5	PL6-1/2x3/8	.230	21	8	.121	36.0...	y	3	3658.14	78975	616.993	8109.356	1...	H1-1b
10	M12	HSS4X4X6	.220	44.5	31	.074	23.8...	y	27	201121....	215100	23962.5	23962.5	2...	H1-1b
11	M7	HSS4X4X6	.216	44.5	21	.076	23.8...	y	32	201121....	215100	23962.5	23962.5	2...	H1-1b
12	MP8	HSS2.875x...	.207	26.2...	4	.060	26.2...		12	22397.2...	43014.6	3142.95	3142.95	4...	H1-1b
13	M2	HSS4X4X6	.207	44.5	23	.097	44.5	y	39	201121....	215100	23962.5	23962.5	2...	H1-1b
14	M93A	PL2-3/8x1/2	.206	1.5	3	.247	0	y	22	38256.8...	38475	400.783	1903.711	1...	H1-1b
15	M89A	PL2-3/8x1/2	.205	1.5	16	.255	0	y	27	38256.8...	38475	400.783	1903.711	2...	H1-1b
16	M91A	PL2-3/8x1/2	.203	1.5	5	.249	0	y	34	38256.8...	38475	400.783	1903.711	2...	H1-1b
17	M92A	PL2-3/8x1/2	.202	1.5	18	.173	0	y	21	38256.8...	38475	400.783	1903.711	2...	H1-1b
18	MP2	HSS2.875x...	.199	26.2...	15	.063	26.2...		7	22397.2...	43014.6	3142.95	3142.95	4...	H1-1b
19	M88A	PL2-3/8x1/2	.198	1.5	7	.192	0	y	58	38256.8...	38475	400.783	1903.711	2...	H1-1b
20	M90A	PL2-3/8x1/2	.195	1.5	12	.182	0	y	31	38256.8...	38475	400.783	1903.711	2...	H1-1b
21	MP6	HSS2.875x...	.190	26.2...	10	.064	26.2...		7	22397.2...	43014.6	3142.95	3142.95	3...	H1-1b

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt ...	phi*Mn ...	phi*Mn ...	Cb	Eqn
22	MP5	HSS2.875x...	.190	26.2...	10	.069	26.2...		18	22397.2...	43014.6	3142.95	3142.95	4...	H1-1b
23	MP3	HSS2.875x...	.182	26.2...	7	.065	26.2...		13	22397.2...	43014.6	3142.95	3142.95	3...	H1-1b
24	M8	L2x2x4	.182	0	3	.013	0	y	11	29527.5...	42480	959.63	2190.068	2...	H2-1
25	MP9	HSS2.875x...	.179	26.2...	4	.082	26.2...		3	22397.2...	43014.6	3142.95	3142.95	3...	H1-1b
26	MP4	HSS2.875x...	.176	26.2...	18	.066	26.2...		12	22397.2...	43014.6	3142.95	3142.95	3...	H1-1b
27	M3	L2x2x4	.170	0	9	.012	0	y	16	29527.5...	42480	959.63	2190.068	2...	H2-1
28	M13	L2x2x4	.167	0	14	.012	0	y	6	29527.5...	42480	959.63	2190.068	2...	H2-1
29	MP1	HSS2.875x...	.164	26.2...	7	.069	26.2...		9	22397.2...	43014.6	3142.95	3142.95	4...	H1-1b
30	MP7	HSS2.875x...	.160	26.2...	12	.070	26.2...		15	22397.2...	43014.6	3142.95	3142.95	4...	H1-1b
31	M29	L6.6x4.46x...	.159	39	3	.022	39	z	11	51434.5...	87561	2464.809	7125.374	1...	H2-1
32	M30	L6.6x4.46x...	.151	39	8	.022	39	z	16	51434.5...	87561	2464.809	7125.374	1...	H2-1
33	M28	L6.6x4.46x...	.146	0	8	.022	39	z	6	51434.5...	87561	2464.809	7125.374	1...	H2-1
34	M4	L2x2x4	.143	0	16	.019	27.2...	y	20	29527.5...	42480	959.63	2190.068	2...	H2-1
35	M14	L2x2x4	.143	0	6	.019	27.2...	y	26	29527.5...	42480	959.63	2190.068	2...	H2-1
36	M25	HSS2.875x...	.139	6.063	12	.064	92.4...		9	22397.2...	43014.6	3142.95	3142.95	1...	H1-1b
37	M65A	HSS2.875x...	.136	6.063	18	.065	92.4...		7	22397.2...	43014.6	3142.95	3142.95	1...	H1-1b
38	M51	HSS2.875x...	.133	6.063	7	.062	3.537		16	22397.2...	43014.6	3142.95	3142.95	1...	H1-1b
39	M9	L2x2x4	.131	0	11	.019	27.2...	y	31	29527.5...	42480	959.63	2190.068	2...	H2-1
40	M62	HSS3.500x...	.110	31.3...	3	.048	48		17	45873.0...	71580.6	6337.65	6337.65	1...	H1-1b
41	M48	HSS3.500x...	.107	31.3...	8	.046	48		15	45873.0...	71580.6	6337.65	6337.65	2...	H1-1b
42	M18	HSS3.500x...	.107	31.3...	14	.039	48		5	45873.0...	71580.6	6337.65	6337.65	1...	H1-1b

APPENDIX D

ADDITIONAL CALCULATIONS

Square/Rectangular Flange Connection

TIA-222-H

Kimley»Horn

Site Number	827050
Job number	19558057
Code	TIA-222-H

Member/Node Under Consideration	P24
Controlling Load Combination (X-Direction)	LC 30
Controlling Load Combination (Y-Direction)	

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

X and Y Reactions Simultaneous?	No

REACTIONS (ABOUT X - HORIZONTAL)	
Moment, Mu (kip-ft)	5.094
Axial, Pu (kips) - *Negative for tension*	-0.178
Shear, Vu (kips)	1.941

REACTIONS (ABOUT Y - VERTICAL)	
Moment, Mu (kip-ft)	0.089
Axial, Pu (kips) - *Negative for tension*	0.730
Shear, Vu (kips)	0.061

BOLT CONFIGURATION	
Bolt Quantity, n_b	4
Bolt Diameter, d_b (in)	0.625
Bolt Grade	A325
Width between bolts, s (in)	7.00

BOLT USAGE	
Maximum Tension in Bolt, Tub (kip)	4.411
Nominal Tensile Strength, ϕRnt (kip)	20.340
Tensile Usage (Section 4.9.6.1)	**21%**

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

PLATE USAGE	
Ultimate flexural load in plate, Mu (kip-in)	9.908
Factored flexural capacity, ϕMn (kip-in)	28.430
Flexural Usage	**33%**

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

SUPPORT ARM USAGE	
Ultimate flexural load in member, Mu (kip-ft)	5.094
Factored flexural capacity, ϕMn (kip-ft)	27.817
Flexural Usage	**17%**

Stiffeners present?	☐

APPENDIX E

SUPPLEMENTAL DRAWINGS

NOTES:

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

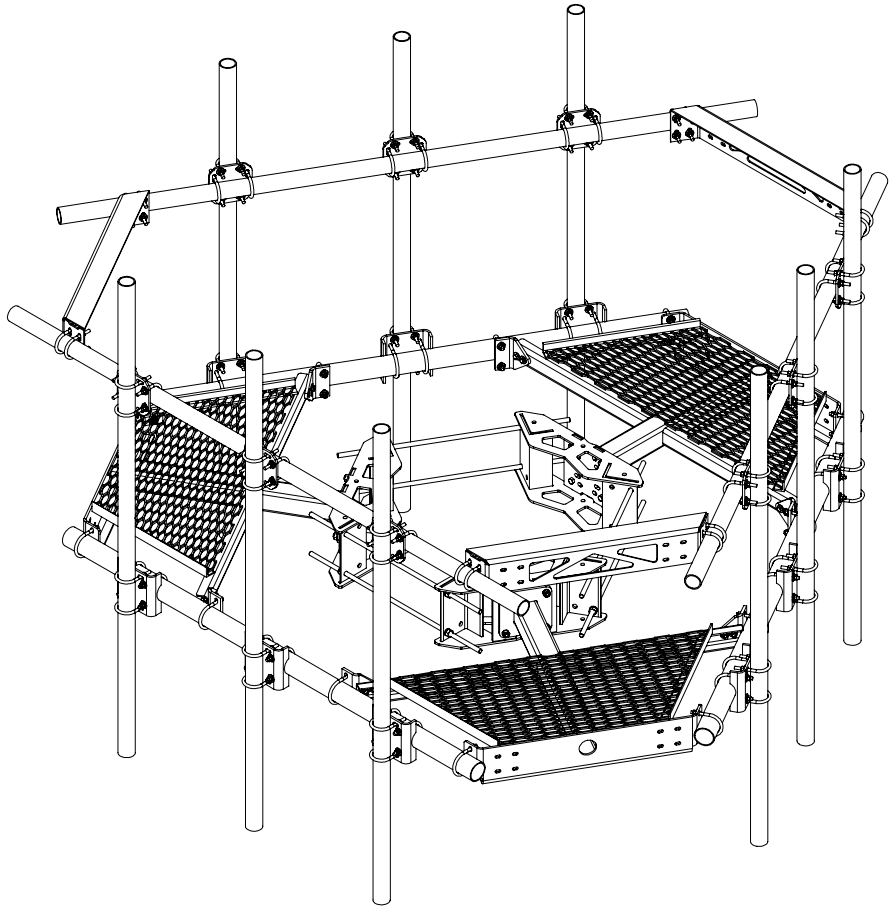
2.0 DESIGN NOTES
- 2.1 TORQUE U-BOLTS TO 44 FT-LBS

3.0 MANUFACTURING/SPECIAL REQUIREMENTS

4.0 TEST

5.0 PACKAGING

REVISIONS				
REV.	ECN	DESCRIPTION	BY	DATE
A	10272PC	INITIAL RELEASE	HDAI	03/08/2021



PATENT PENDING

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

COMMSCOPE, INC. OF NORTH CAROLINA

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

SAP MATERIAL MASTER: MC-PK8-DSH

FINISH: GALV A123

MATERIAL: A500, A1011/A1018

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

	NAME	DATE
CE	MRC	02/17/20
RW	ROGHANSON	03/16/2021
AD	BCROSS	03/17/2021
RE	FA1024	02/27/2020
ECN	10272PC	

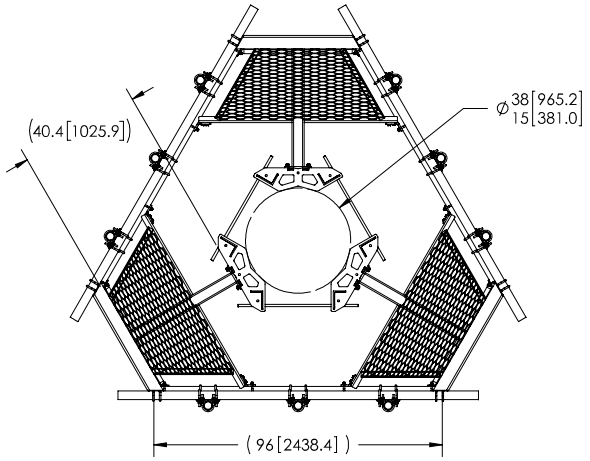
TITLE: **LOW PROFILE PLATFORM FACE**

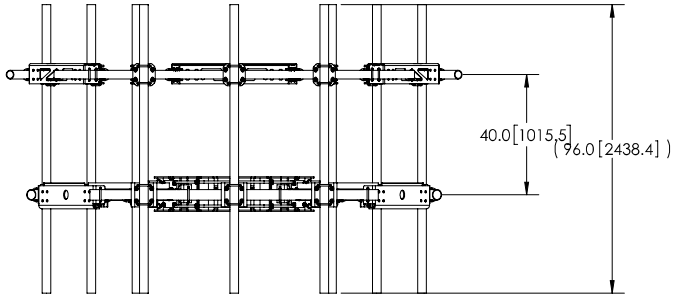
SCALE: 1:32

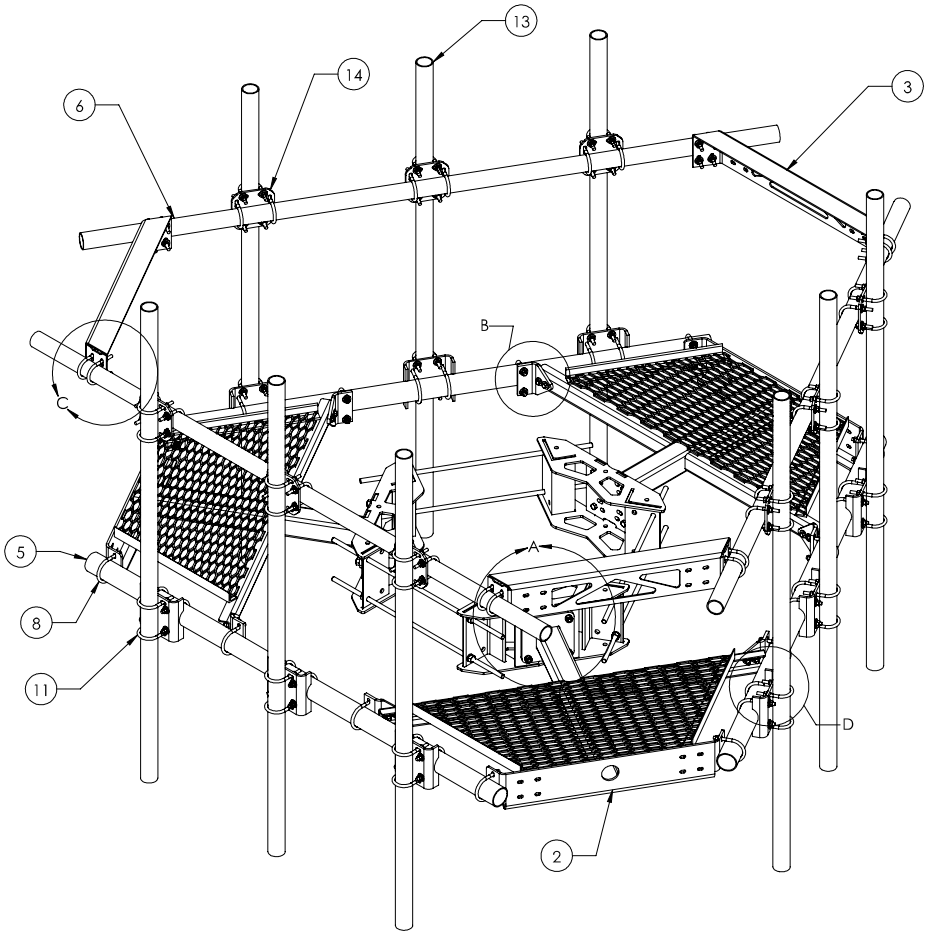
DOCUMENT NO.: MC-PK8-DSH

SIZE	Auth Group	MODEL			DRAWING			SHEET
	INSL	VERSION	STATUS	REVISION	VERSION	STATUS	REVISION	
C		01	AD		00	AD	A	1 OF 3

NOTES:







ITEM	PART NO.	DESCRIPTION	QTY.
1	MC-RM1550-3	12" - 50" OD RINGMOUNT	1
2	MTC300602	SECTOR WELDMENT FOR SNUB NOSE PLATFORM	3
3	MT195801	Corner Weldment Snub Nose Handrail	3
4	GB-0520A	5/8" X 2" GALV BOLT KIT (A325)	12
5	MT54796	3.50" OD X 96" GALV PIPE	3
6	MT546120	2.875" O.D. X 120" PIPE	3
7	GWF-04	1/2" GALV FLAT WASHER	12
8	GUB-4355	1/2" X 3-5/8" X 5" GALV U-BOLT	12
9	MTC300618	MOUNTING PLATE FOR MT-196	6
10	GB-04205	1/2" X 2" GALV BOLT KIT	12
11	MT-219M-H	3.5" OD X 2-7/8" OD Clamp Bracket Assembly	9
12	GUB-4352	1/2" X 3" X 5-1/4" GALV U-BOLT	12
13	MT54696	Ø2.875" O.D. X 96 PIPE	9
14	XP-2525	CROSSOVER PLATE KIT, 2-7/8 OD X 2-7/8 OD	9

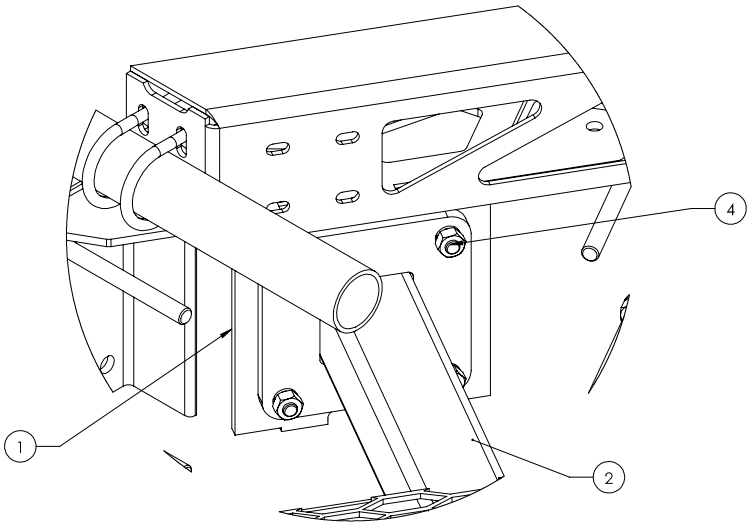
COMMSCOPE, INC. OF NORTH CAROLINA

TITLE

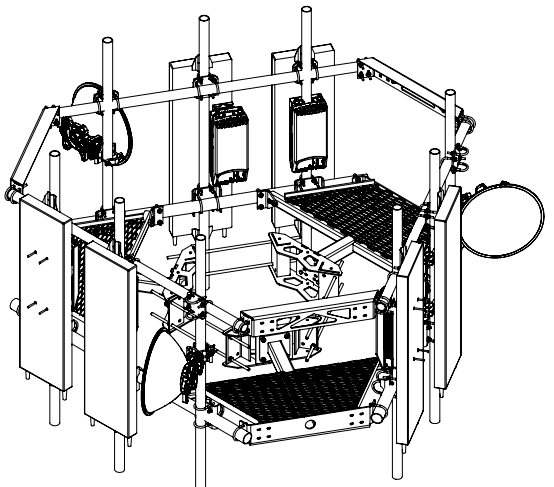
LOW PROFILE PLATFORM FACE

SIZE	SCALE	DOCUMENT NO.			
C	1:32	MC-PK8-DSH			
		DRAWING			SHEET
		VERSION	STATUS	REVISION	
		00	AD	A	

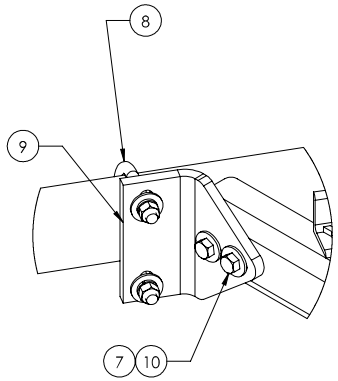
NOTES:



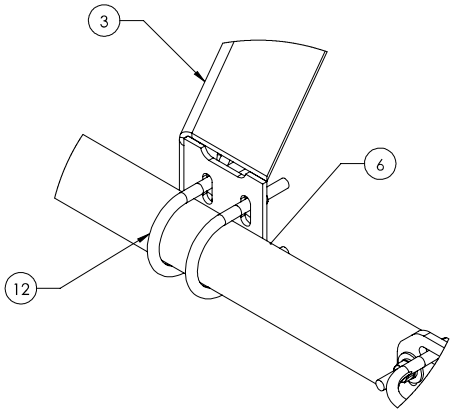
DETAIL A
SCALE 1 : 4



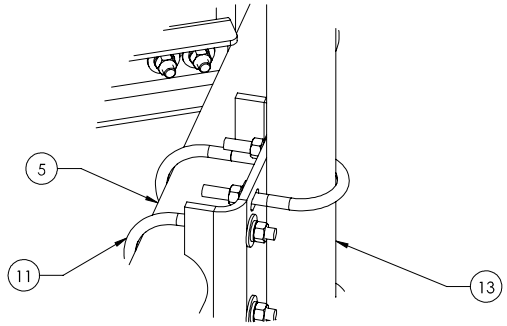
WITH ANTENNAS



DETAIL B
SCALE 1 : 4



DETAIL C
SCALE 1 : 4



DETAIL D
SCALE 1 : 4

COMMSCOPE, INC. OF NORTH CAROLINA			
TITLE: LOW PROFILE PLATFORM FACE			
SIZE: C	SCALE: 1:24	DOCUMENT NO.: MC-PK8-DSH	
		DRAWING: VERSION 00 / STATUS AD / REVISION A	SHEET: 3 OF 3

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

Dish Wireless Existing Facility

Site ID: BOBDL00058A

827050
699 Old Main Street
Rocky Hill, Connecticut 06067

November 18, 2021

EBI Project Number: 6221007181

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**30.47%**

November 18, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00058A - 827050

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **699 Old Main Street** in **Rocky Hill, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless Wireless antenna facility located at 699 Old Main Street in Rocky Hill, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 4 n71 channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

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

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

4) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

5) The antennas used in this modeling are the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector B, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

6) The antenna mounting height centerline of the proposed antennas is 120 feet above ground level (AGL).

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

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

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz
Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd
Height (AGL):	120 feet	Height (AGL):	120 feet	Height (AGL):	120 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts
ERP (W):	3,065.51	ERP (W):	3,065.51	ERP (W):	3,065.51
Antenna A1 MPE %:	**1.22%**	Antenna B1 MPE %:	**1.22%**	Antenna C1 MPE %:	**1.22%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	1.22%
Various Others	2.85%
Sprint	3.33%
T-Mobile	9.84%
Metro PCS	1.54%
AT&T	6.33%
Verizon	4.72%
Nextel	0.64%
Site Total MPE % :	30.47%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	1.22%
Dish Wireless Sector B Total:	1.22%
Dish Wireless Sector C Total:	1.22%
Site Total MPE % :	30.47%

Dish Wireless Maximum MPE Power Values (Sector A)

Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	120.0	2.48	600 MHz n71	400	0.62%
Dish Wireless 1900 MHz n70	4	542.70	120.0	6.01	1900 MHz n70	1000	0.60%
						Total:	**1.22%**

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

Summary

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

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

Dish Wireless Sector	Power Density Value (%)
Sector A:	1.22%
Sector B:	1.22%
Sector C:	1.22%
Dish Wireless Maximum MPE % (Sector A):	1.22%
Site Total:	30.47%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **30.47%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Exhibit G

Letter of Authorization

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

Phone: (585) 445-5896
Fax: (724) 416-4461
www.crowncastle.com

Crown Castle Letter of Authorization

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

Re: Tower Share Application
Crown Castle telecommunications site at:
699 OLD MAIN ST., ROCKY HILL, CT 06067

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

Crown Site ID/Name: **827050/Rocky Hill/ Rte 160_1**
Customer Site ID: **BOBDL00058A/CT-CCI-T-827050**
Site Address: **699 Old Main St., Rocky Hill, CT 06067**

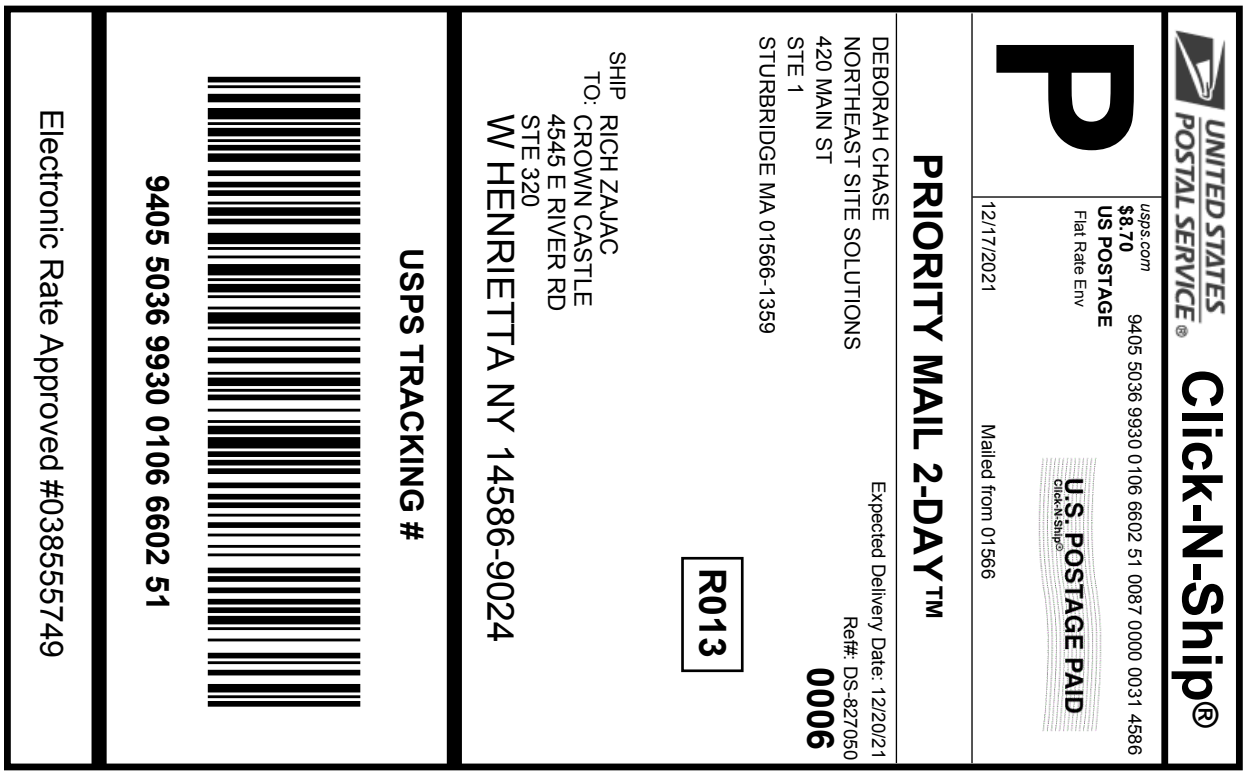
Crown Castle

By: _____ Date: 12/16/2021

Richard Zajac
Site Acquisition Specialist

Exhibit H

Recipient Mailings



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0106 6602 51

Trans. #:	551652728
Print Date:	12/17/2021
Ship Date:	12/17/2021
Expected Delivery Date:	12/20/2021

Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

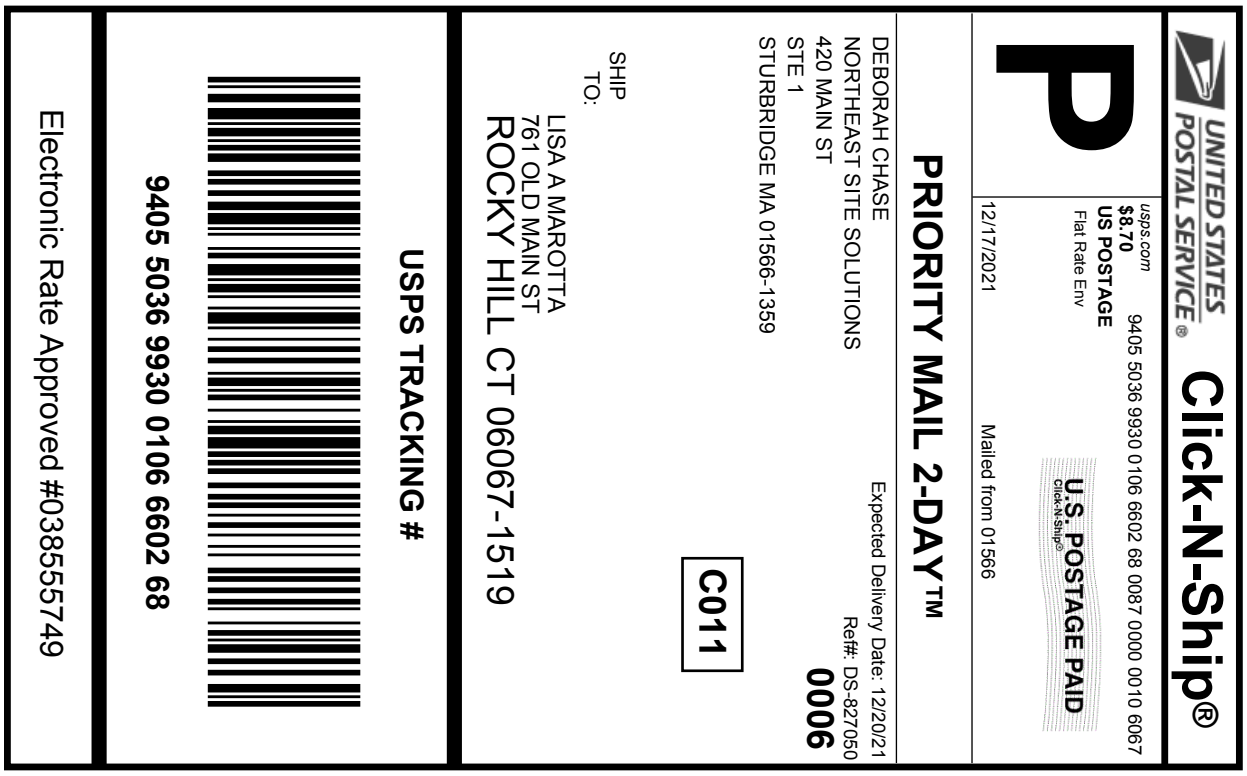
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-827050

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

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

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



Cut on dotted line.

Instructions

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2. **Place your label so it does not wrap around the edge of the package.**
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4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0106 6602 68

Trans. #:	551652728
Print Date:	12/17/2021
Ship Date:	12/17/2021
Expected Delivery Date:	12/20/2021

Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

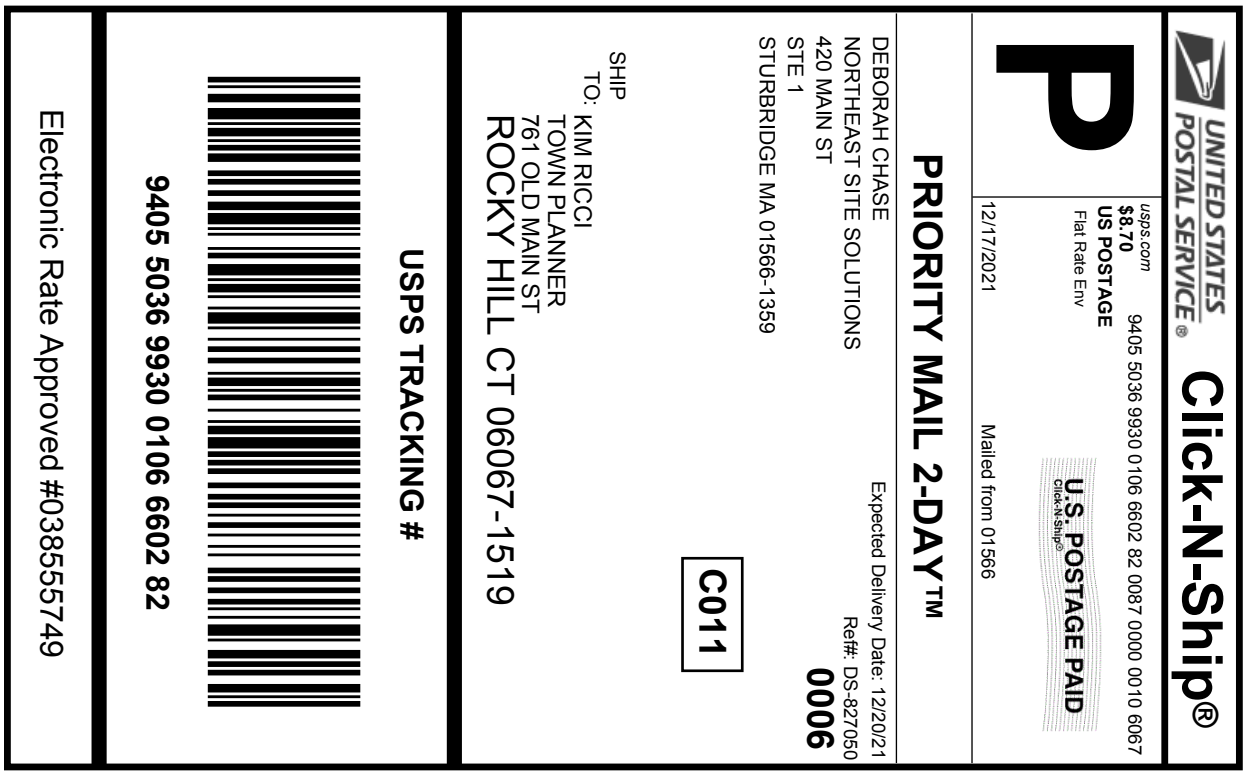
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-827050

To: LISA A MAROTTA
761 OLD MAIN ST
ROCKY HILL CT 06067-1519

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

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



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0106 6602 82

Trans. #:	551652728
Print Date:	12/17/2021
Ship Date:	12/17/2021
Expected Delivery Date:	12/20/2021

Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

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

Ref#: DS-827050

To: KIM RICCI
TOWN PLANNER
761 OLD MAIN ST
ROCKY HILL CT 06067-1519

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

Thank you for shipping with the United States Postal Service!
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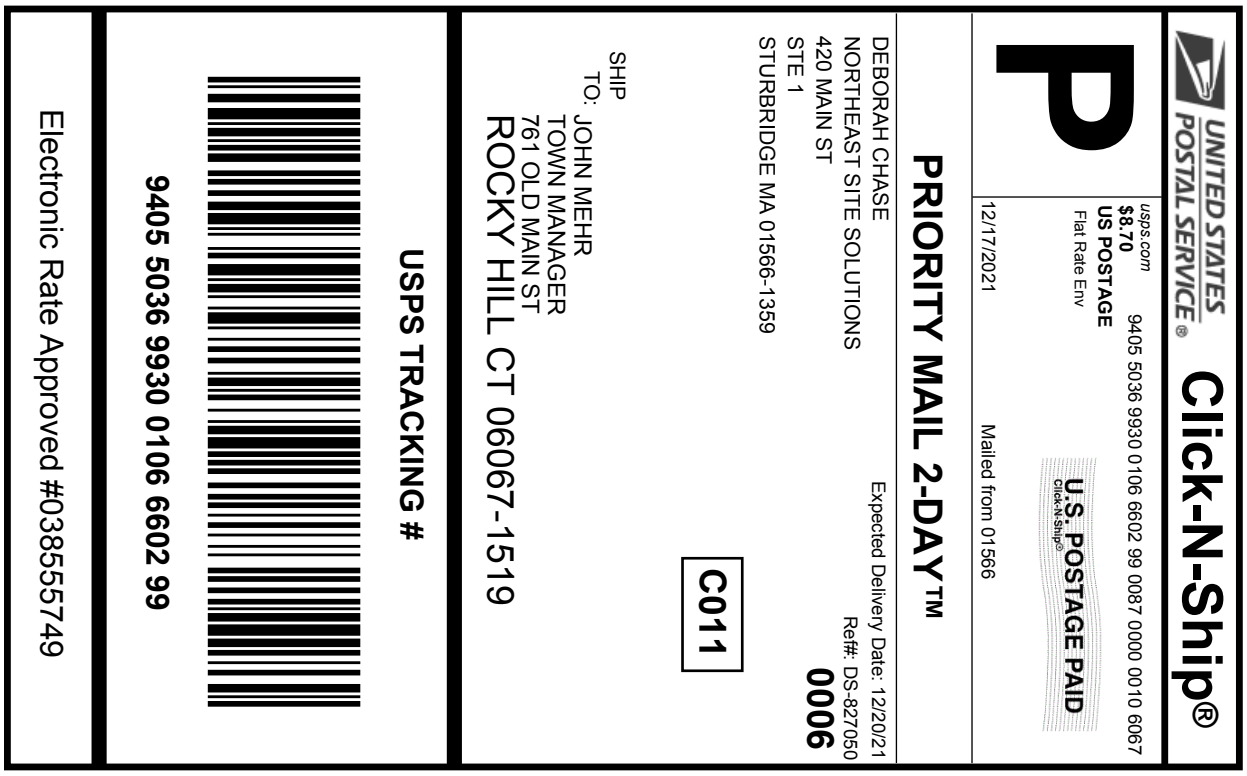

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USPS TRACKING # :
9405 5036 9930 0106 6602 99

Trans. #:	551652728
Print Date:	12/17/2021
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Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

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

Ref#: DS-827050

To: JOHN MEHR
TOWN MANAGER
761 OLD MAIN ST
ROCKY HILL CT 06067-1519

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827050

UNITED STATES POSTAL SERVICE.

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

12/23/2021 08:42 AM

Product	Qty	Unit Price	Price
Prepaid Mail West Henrietta, NY 14586 Weight: 0 lb 2.00 oz Acceptance Date: Thu 12/23/2021 Tracking #: 9405 5036 9930 0106 6602 51	1		$0.00
Prepaid Mail Rocky Hill, CT 06067 Weight: 0 lb 10.40 oz Acceptance Date: Thu 12/23/2021 Tracking #: 9405 5036 9930 0106 6602 68	1		$0.00
Prepaid Mail Rocky Hill, CT 06067 Weight: 0 lb 10.30 oz Acceptance Date: Thu 12/23/2021 Tracking #: 9405 5036 9930 0106 6602 82	1		$0.00
Prepaid Mail Rocky Hill, CT 06067 Weight: 0 lb 10.40 oz Acceptance Date: Thu 12/23/2021 Tracking #: 9405 5036 9930 0106 6602 99	1		$0.00
Grand Total:			$0.00

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USPS is experiencing unprecedented volume
increases and limited employee
availability due to the impacts of