Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE

Tectonic Engineering
Theresa Ranciato-Viele
63-3 N. Branford Road
Branford, CT 06405
Tranciato@Tectonicengineering.com
203-606-5127

July 11, 2022

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

RE: **Notice of Exempt Modification to an existing 175'monopole tower located at 302 Ball Pond Road, New Fairfield, Connecticut**

Latitude: 41.4647 / Longitude: 73.497

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless, LLC ("Dish"). Dish plans to install antennas and related equipment to the tower site at the existing 175'monopole tower facility located at 302 Ball Pond, New Fairfield, Connecticut (See Original Facility Approval attached as Exhibit A) ("Facility"). The property is owned by The Town of New Fairfield (See New Fairfield Assessor Property Card attached hereto as Exhibit B).

Dish proposes to install three (3) 600/1900/2100 MHz JMA – MX08Fr0665-21 antennas and six (6) FUJITSU TA08025 RRUs on the tower at the one hundred sixty five foot (165') centerline AGL. Dish further proposes to install one (1) 1.5" Hybrid Cable. Dish will also install its equipment cabinets on a 5' X 7' platform within its 10' X 15' lease area. The installation is shown on plans completed by Tectonic Engineering, dated June 10, 2022, and attached hereto as Exhibit C.

Dish requests that the Connecticut Siting Council ("Council") find that the proposed shared use of this Facility satisfies the criteria of C.G.S. sec. 16-50aa and accordingly issue an order approving the proposed shared use. This proposed installation constitutes an exempt modification pursuant to R.C.S.A. 16-50j-89. Pursuant to R.C.S.A. 16-50j-73, Dish is providing notice to Patricia DelMonaco, First Selectperson of the Town of New Fairfield, Evan White, Zoning Enforcement Officer for the Town of New Fairfield and the property owner, Town of New Fairfield.

Under the Council's regulations, Dish's plans do not constitute a modification subject to the Council's review in that:

Dish will not change the existing 175' height of the Tower as the Dish antennas will be installed at a height of 165'.

The proposed installation will not extend the existing boundaries of the approved compound as depicted in Exhibit C;

The proposed installation will not increase the noise levels at the facility by six (6) decibels or more, or to levels that exceed local and state criteria; and

The proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. The attached Exhibit F indicates that the combined site operations will result in a total power density of 3.2501%.

Tower

The Facility consists of a one hundred seventy five (175') foot monopole tower located at 302 Ball Pond Road, New Fairfield, Connecticut. As indicated above, the tower is owned by the Town of New Fairfield. The tower currently supports Town of New Fairfield equipment at the one hundred seventy six foot (176') centerline, Sprint at the one hundred fifty three foot (153') centerline, T-Mobile at the one hundred forty three and 7/10 foot (143.7') centerline, AT&T at the one hundred thirty six and 8/10 foot (136.8') centerline, and Verizon Wireless at the one hundred twenty three and 8/10 foot (123.8') centerline AGL. The antenna locations are set forth on Sheet A-2 of the attached drawings in Exhibit C.

A. TECHNICAL FEASIBILTY

The existing monopole has been deemed structurally capable of supporting the proposed Dish loading. The structural and mount analyses are attached hereto as Exhibit D.

B. LEGAL FEASIBILITY

C.G.S. Se. 16-50aa authorizes the Council to issue orders approving the shared use of existing towers such as the above referenced tower. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish to obtain a building permit from the Town of New Fairfield to proceed with the proposed installation. Additionally, a Supplement to The Master Lease Agreement is attached as Exhibit E, granting Dish the authority from the tower owner to proceed with this application for shared use.

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C. ENVIRONMENTAL FEASIBILITY

The proposed shared use of this Facility would have a minimal environmental impact. The installation of the Dish equipment at the 165' level of the existing tower would have an insignificant visual impact on the area surrounding the tower. The proposed Dish ground equipment would be installed within the existing Facility compound. The Dish installation would not cause any significant alteration to the physical or environmental characteristics of the existing Facility. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase the radio frequency emissions to a level at or above the Federal Communications Commission safety standards.

D. ECONOMIC FEASIBILTY

Dish has entered into a Lease Agreement (Exhibit G) with the Facility owner for the proposed colocation. Therefore, this shared use is economically feasible.

E. PUBLIC SAFETY CONCERNS

As set forth above, the tower is structurally capable of supporting the proposed Dish loading. Dish is not aware of any public safety concerns relative to the proposed sharing of the existing tower.

For the reasons set forth herein, the proposed shared use of the existing tower at 302 Ball Pond Road, New Fairfield, satisfies the criteria stated in C.G.S. sec. 16-50aa, and supports the general goal of preventing the unnecessary proliferation of tower sites in Connecticut. Dish respectfully requests the Council issue an order approving the proposed shared use.

Respectfully submitted,
Dish Wireless, LLC

By _____
Theresa Ranciato-Viele, consultant
63-3 N. Branford Road
Branford, CT 06405
Tranciato@Tectonicengineering.com
203-606-5127

cc: New Fairfield First Selectperson, Honorable Patricia DelMonaco
4 Brush Hill Road
New Fairfield, CT 06812

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New Fairfield Zoning Enforcement Officer, Evan White
4 Brush Hill Road
New Fairfield, CT 06812

Tower Owner: Town of New Fairfield
4 Brush Hill Road
New Fairfield, CT 06812

Exhibit A

Original Facility Approval

The Planning Commission

Town of New Fairfield
New Fairfield, Connecticut 06812

Regular Meeting
Monday, March 25, 2002
Town Hall Conference Rooms, 7:30pm

MINUTES - REVISED

Commissioners Present: Jim Piskura, Ron Stoddard, Chris Gould, Dale Holly

Alternates Present: Jim Mitchell, Joe Longo

Staff Present: Jeannine Fitzgerald

Commissioners Absent: Bill DiTullio, Mike Verrico

Call to Order: 7:37 pm

Appt of Alternates
Chris Gould made motion to elevate Jim Mitchell to full voting status. Seconded by Dale Holly.

Approval of Minutes:
Dale Holly made motion to accept Feb 25th minutes as is. Chris Gould seconded. All in favor.
Dale Holly made motion to accept Mar 11th special minutes. Chris Gould seconded. All in favor. Ron Stoddard abstained.

Correspondence/Announcements:
1. Email from Tony Iadarola re: updates, etc.
2. Email from Tony March 24, 2002 re: Pine Hill
3. Email from Jeannine re: vacation next month. Need someone to take care of agenda, minutes, legal notices and votes.

Jim Piksura will not be at the April 8, 2002 Planimetrics meeting at 7pm.
Jeannine to republish the notice again in CN for next Weds. April 3rd.

OLD BUSINESS
Chelsea Drive - waiting for correspondence
Somneborn Estates - pending
Pine Hill Subdivision- pending

NEW BUSINESS
Communication Tower – 302 Ball Pond Road Referral
Location is behind Fire House & Police Station
Russ Strilowich, Chairman of the Permanent Building Committee present.

8.24 Referral to Zoning sought

>Chris Gould made motion to grant a positive referral to the PBC. Dale Holly seconded. All in favor.

3:30

The Planning Commission

Town of New Fairfield
New Fairfield, Connecticut 06812

MEMO

TO: Permanent Building Committee

FROM: Jeannine Fitzgerald

RE: Referral for Amendment to Zoning Regulations

DATE: March 26, 2002

The Planning Commission of New Fairfield granted a positive referral to the Communication Tower at 302 Ball Pond Road.

Call me or Jim Piskura at 746-1180 if you have any questions.

cc: Jim Piskura
Maria Haunsherr-Hughes
First Selectman's Office

Hand Delivered to Mail Box

ZONING PERMIT

ZONING COMMISSION

TOWN OF NEW FAIRFIELD
4 BRUSH HILL ROAD
NEW FAIRFIELD, CT 06812
203-746-8140

PROPERTY OWNER: Town Of New Fairfield

OWNER'S ADDRESS: 302 Ball Pond Road
New Fairfield, CT 06812

PROPERTY ADDRESS: 302 Ball Pond Road

ZONE: R **MAP:** 23 **BLOCK:** 16 **LOT:** 15-16

LOT SIZE: **FRONTAGE:**

PROJECT DESCRIPTION: CONSTRUCTION OF ACCESS ROAD TO 100' X 100' COMPOUND FOR 175 FOOT COMMUNICATION TOWER FOR TOWN EMS ANTENNAS

CONSTRUCTION MAY NOT PROCEED UNTIL
A BUILDING PERMIT HAS BEEN OBTAINED

THIS PERMIT MUST BE POSTED ON THE PREMISES

PERMIT VOID IF CONSTRUCTION AUTHORIZED IN NOT COMPLETED WITHIN ONE (1) YEAR OF ISSUANCE.

THIS PERMIT IF ISSUED, IS BASED UPON THE PLOT PLAN SUBMITTED. FALSIFICATION, BY MISREPRESENTATION OR OMISSION, OR FAILURE TO COMPLY WITH THE CONDITIONS OF APPROVAL OF THIS PERMIT SHALL CONSTITUTE A VIOLATION OF THE NEW FAIRFIELD ZONING REGULATIONS.

CONDITIONS OF APPROVAL:
Permit for structure only - Town Emergency Tower/Antenna exempt under section 2.13.10 of the New Fairfield Zoning Regulations.

PERMIT NO. 20-01-120

DATE ISSUED 07/03/02

FEE waived
(INCLUDES $10. STATE SURCHARGE)

Maria Haussherr-Hughes
Maria Haussherr-Hughes
Zoning Enforcement Officer

TOWN OF NEW FAIRFIELD
4 BRUSH HILL ROAD, NEW FAIRFIELD, CT
203-312-5646

BUILDING PERMIT

POST THIS PERMIT CONSPICUOUSLY

Owner: Town Of New Fairfield
Address: 302 Ball Pond Road
Project Description: CONSTRUCTION OF ACCESS ROAD TO 100' X 100' COMPOUND FOR 175 FOOT COMMUNICATION TOWER FOR TOWN EMS ANTENNAS
Map: 23 **Block:** 16 **Lot:** 15-16

In accordance with application, plans and specifications submitted to the New Fairfield building department, this project will be completed subject to the State of Connecticut building code. Otherwise this permit will be null and void. Occupancy of this new building or addition prior to issuance of certification of occupancy will be considered a violation of the state building code.

Permit No: 02-133 **Fee $:** 0.00

Expires in six months if constructions is not then commenced

Ronald N. Malmberg, Building Official

Inspections:

Date Issued: 07/09/02

1. **Footings**
2. **Footing Drains**
3. **Framing (Rough)**
4. **Plumbing (Rough with Test)**
5. **Electrical**
6. **Insulation**
7. **Gas or Oil Burner**
8. **Final Elec. and Plumbing**
9. **Deck**
10. **Final - Fire Separation, Exits, etc.**

Conditions:

•

Exhibit B

Property Card

302 BALL POND RD

Location	302 BALL POND RD	**Mblu**	23/ 16/ 15/ /
Acct#	00037200	**Owner**	NEW FAIRFIELD TOWN OF
Assessment	$10,521,800	**Appraisal**	$15,031,100
PID	378	**Building Count**	6

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$12,550,500	$2,480,600	$15,031,100
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$8,785,400	$1,736,400	$10,521,800

Owner of Record

Owner	NEW FAIRFIELD TOWN OF
Co-Owner	CONSOLIDATED SCHOOL & FIREHOUSE
Address	4 BRUSH HILL RD NEW FAIRFIELD, CT 06812

Sale Price	$0
Certificate	
Book & Page	0461/1055
Sale Date	03/18/2010
Instrument	29

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
NEW FAIRFIELD TOWN OF	$0		0461/1055	29	03/18/2010
NEW FAIRFIELD TOWN OF	$0		0000/0000		01/01/1900

Building Information

Building 1 : Section 1

Year Built:	1940
Living Area:	91,801
Replacement Cost:	$14,753,798
Building Percent Good:	55

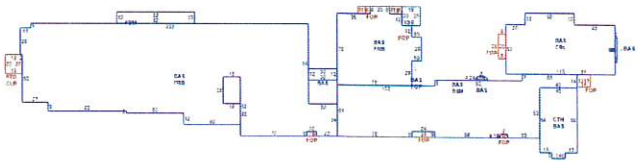
Replacement Cost
Less Depreciation: $8,114,600

Building Attributes	
Field	**Description**
Style:	Public School
Model	Commercial
Grade	B
Stories:	1
Occupancy	1.00
Exterior Wall 1	Vinyl
Exterior Wall 2	Brick/Masonry
Roof Structure	Gable/Hip
Roof Cover	Asphalt Shngl.
Interior Wall 1	Drywall/Sheet
Interior Wall 2	Minim/Masonry
Interior Floor 1	Inlaid Sht Gds
Interior Floor 2	Carpet
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Partial
Struct Class	
Bldg Use	Education
1st Floor Use:	903
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	12.00
% Comn Wall	0.00

Building Photo

(https://images.vgsi.com/photos/NewFairfieldCTPhotos/\00\00\57\41.jpg)

Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	59,749	59,749
FRB	FRB	36,898	31,363
FBM	FBM	984	689
BSM	Basement	12,618	0
CLP	Loading Platform Covered	360	0
CRL	Crawl Space	6,604	0
CTH	Cathedral	2,804	0
FOP	Open Porch	1,204	0
PTO	Patio	360	0
		121,581	91,801

Building 2 : Section 1

Year Built: 1981
Living Area: 13,681
Replacement Cost: $1,868,793
Building Percent Good: 82
Replacement Cost
Less Depreciation: $1,532,400

Building Attributes : Bldg 2 of 6	
Field	**Description**
Style:	Fire Station
Model	Commercial

Grade	B
Stories:	2
Occupancy	1.00
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Mansard
Roof Cover	Wood Shingle
Interior Wall 1	Plastered
Interior Wall 2	Plywood Panel
Interior Floor 1	Dirt/None
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Oil
Heating Type	Hot Water
AC Type	None
Struct Class	
Bldg Use	Fire Vol.
1st Floor Use:	903
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	14.00
% Comn Wall	0.00

Building Photo

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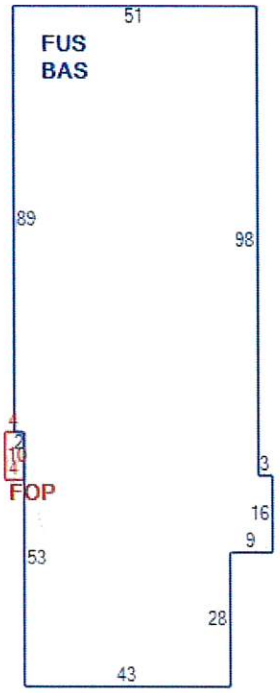
Building Layout



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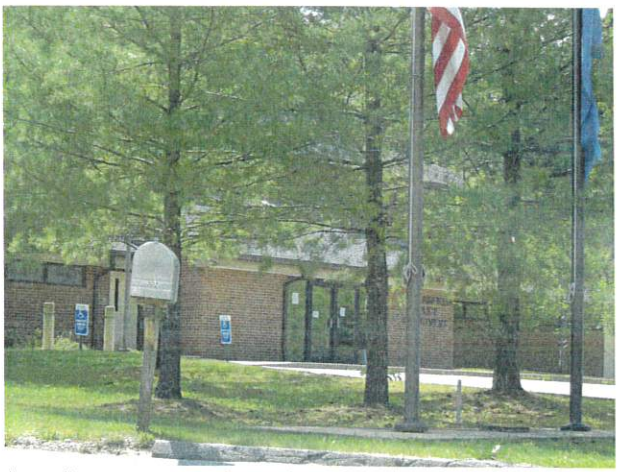
Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	7,016	7,016
FUS	Finished Upper Story	7,016	6,665
FOP	Open Porch	40	0
		14,072	13,681

Building 3 : Section 1

Year Built: 1989
Living Area: 11,951
Replacement Cost: $1,503,675
Building Percent Good: 86
Replacement Cost Less Depreciation: $1,293,200

Building Attributes : Bldg 3 of 6	
Field	**Description**
Style:	Police
Model	Commercial
Grade	C
Stories:	2
Occupancy	1.00
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asphalt Shngl.
Interior Wall 1	Drywall/Sheet
Interior Wall 2	Minim/Masonry
Interior Floor 1	Ceram Clay Til
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	Municipal-Comm
1st Floor Use:	903
Heat/AC	HEAT/AC PKGS
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	14.00
% Comn Wall	0.00

Building Photo



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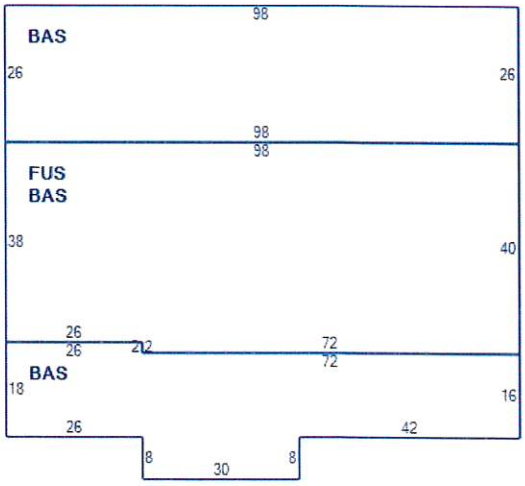
Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	8,276	8,276
FUS	Finished Upper Story	3,868	3,675
		12,144	11,951

Building 4 : Section 1

Year Built: 2004
Living Area: 360
Replacement Cost: $42,689
Building Percent Good: 87

Replacement Cost
Less Depreciation: $37,100

Building Attributes : Bldg 4 of 6	
Field	**Description**
Style:	Tower support
Model	Commercial
Grade	C
Stories:	1
Occupancy	0.00
Exterior Wall 1	Brick Veneer
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	Misc
1st Floor Use:	
Heat/AC	HEAT/AC SPLIT
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	LIGHT
Wall Height	8.00
% Comn Wall	0.00

Building 5 : Section 1

Year Built: 2004
Living Area: 300
Replacement Cost: $35,574
Building Percent Good: 87
Replacement Cost
Less Depreciation: $30,900

Building Attributes : Bldg 5 of 6	
Field	**Description**
Style:	Tower support
Model	Commercial
Grade	C

Building Photo

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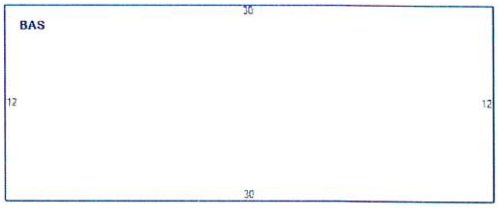
Building Layout



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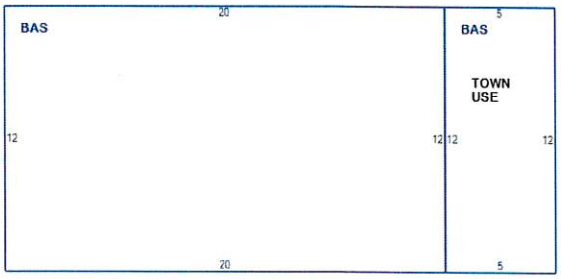
Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	360	360
		360	360

Stories:	1
Occupancy	0.00
Exterior Wall 1	Brick Veneer
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	Misc
1st Floor Use:	
Heat/AC	HEAT/AC SPLIT
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	LIGHT
Wall Height	8.00
% Comn Wall	0.00

Building Photo

(https://images.vgsi.com/photos/NewFairfieldCTPhotos//default.jpg)

Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	300	300
		300	300

Building 6 : Section 1

Year Built: 2004
Living Area: 200
Replacement Cost: $65,002
Building Percent Good: 87
Replacement Cost Less Depreciation: $56,600

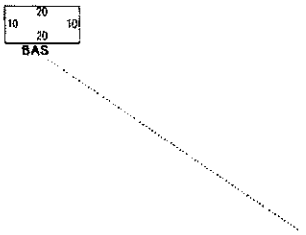
Building Attributes : Bldg 6 of 6	
Field	Description
Style:	Tower support
Model	Commercial
Grade	C
Stories:	1
Occupancy	

Building Photo

(https://images.vgsi.com/photos/NewFairfieldCTPhotos//default.jpg)

Exterior Wall 1	Brick Veneer
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	Municipal-Comm
1st Floor Use:	
Heat/AC	HEAT/AC SPLIT
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	LIGHT
Wall Height	8.00
% Comn Wall	

Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	200	200
		200	200

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
SPR3	SPRINKLERS-DRY	6604.00 S.F.	$10,000	1
ELV3	Residential Elevator	1.00 UNITS	$16,500	1
GEN	Generator	1.00 UNITS	$2,500	2
GEN	Generator	1.00 UNITS	$3,000	1

Land

Land Use

Use Code 909
Description Education
Zone 2
Neighborhood C
Alt Land Appr No
Category

Land Line Valuation

Size (Acres) 38.23
Depth
Assessed Value $1,736,400
Appraised Value $2,480,600

Outbuildings

Outbuildings	Legend

Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV2	PAVING-CONC			100.00 S.F.	$300	1
PAV1	PAVING-ASPHALT			103000.00 S.F.	$92,700	1
CNP2	CANOPY-GOOD			546.00 S.F.	$6,800	1
SHD1	Shed			476.00 S.F.	$3,300	1
SHD1	Shed			80.00 S.F.	$600	1
CELL	Cell Tenant			5.00 UNITS	$1,350,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$12,550,500	$2,480,600	$15,031,100
2020	$12,547,500	$2,480,600	$15,028,100
2018	$14,116,500	$2,070,500	$16,187,000

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$8,785,400	$1,736,400	$10,521,800
2020	$8,783,300	$1,736,400	$10,519,700
2018	$9,881,500	$1,449,300	$11,330,800

Exhibit C

Project Plans

dish wireless.

DISH Wireless L.L.C. SITE ID:

NJJER01134A

DISH Wireless L.L.C. SITE ADDRESS:

302 BALL POND ROAD
NEW FAIRFIELD, CT 06812

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 (6) PROPOSED PANEL ANTENNAS (2 PER SECTOR)
- INSTALL (1) PROPOSED ANTENNA PLATFORM
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRHs (2 PER SECTOR)
- INSTALL (1) PROPOSED OVP DEVICE
- 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 SAFETY SWITCH (IF REQUIRED)
- INSTALL (1) PROPOSED CIENA BOX (IF REQUIRED)
- INSTALL (1) PROPOSED METER SOCKET

SITE INFORMATION

PROPERTY OWNER:	TOWN OF NEW FAIRFIELD
ADDRESS:	302 BALL POND ROAD NEW FAIRFIELD, CT 06812
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	N/A
TOWER APP NUMBER:	N/A
COUNTY:	FAIRFIELD
LATITUDE (NAD 83):	41° 27' 53.08" N 41.464744° N
LONGITUDE (NAD 83):	73° 29' 49.05" W 73.496958° W
ZONING JURISDICTION:	TOWN OF NEW FAIRFIELD/ CT SITING COUNCIL
ZONING DISTRICT:	N/A
PARCEL NUMBER:	23--16--15
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II--B
POWER COMPANY:	EVERSOURCE
TELEPHONE COMPANY:	T.B.D.

PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	TOWN OF NEW FAIRFIELD 4 BRUSH HILL ROAD #2619 NEW FAIRFIELD, CT 06812
SITE DESIGNER:	TECTONIC ENGINEERING CONSULTANTS, GEOLOGISTS & LAND SURVEYORS, D.P.C., INC 1279 ROUTE 300 NEWBURGH, NY 12550
SITE ACQUISITION:	TECTONIC ENGINEERING CONSULTANTS, GEOLOGISTS & LAND SURVEYORS, D.P.C., INC (845) 567--6856
CONSTRUCTION MANAGER:	RAFAL ROSOLOWSKI RAFAL.ROSOLOWSKI@DISH.COM
RF ENGINEER:	PAWAN MADAHAR PAWAN.MADAHAR@DISH.COM

CONNECTICUT CODE COMPLIANCE

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

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

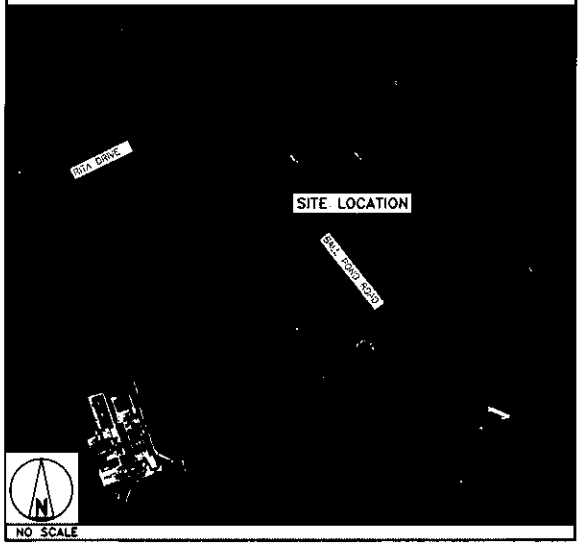
SITE PHOTO

DIRECTIONS

DIRECTIONS FROM 3 ADP BOULEVARD ROSELAND, NJ 07068:

TURN RIGHT ONTO CHOCTAW WAY AND USE LEFT LANE TO TURN RIGHT ONTO LIVINGSTON AVE. USE THE RIGHT LANE TO MERGE ONTO I-280 E VIA THE RAMP TO PARSIPPANY. TAKE EXIT 12 OFF I-280 E AND FOLLOW SIGNS FOR GARDEN STATE PKWY. CONTINUE ON GARDEN STATE PKWY AND TAKE EXIT 14 TO MERGE ON I-287 E/ I-87 S. FOLLOW SIGNS FOR WHITE PLAINS/ RYE NY AND TAKE EXIT 8A TOWARD I-684 N. FOLLOW I-684 N TO NY-22 N. MILLTOWN RD. TURN RIGHT ONTO MILLTOWN ROAD AND THEN LEFT TO CT-35. NEXT TURN RIGHT ONTO GILLOTI RD TO BARNUM RD S IN NEW FAIRFIELD. TURN LEFT ONTO BALL POND RD. DESTINATION WILL BE ON THE LEFT.

VICINITY MAP



SHEET INDEX

SHEET NO.	SHEET TITLE
T--1	TITLE SHEET
A--1	OVERALL AND ENLARGED SITE PLAN
A--2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A--3	EQUIPMENT PLATFORM AND H-FRAME DETAILS
A--4	EQUIPMENT DETAILS
A--5	EQUIPMENT DETAILS
GN--1	LEGEND AND ABBREVIATIONS
GN--2	GENERAL NOTES

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

811

GENERAL NOTES

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

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

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

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LITTLETON, CO 80120

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Newburgh, NY 12550
Phone: (845) 567--6856
(800) 836--8321
www.tectonicengineering.com

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MANOJKUMAR PATEL
PEN.0022038
LICENSED
PROFESSIONAL ENGINEER
4/30/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
CC	JQ	JQ

RFDS REV #: ----

ZONING DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	05/17/22	ISSUED FOR FILING
1	04/30/22	ISSUED FOR ZONING

A&E PROJECT NUMBER

10710.NJJER01134A

DISH Wireless L.L.C. PROJECT INFORMATION

NJJER01134A

302 BALL POND ROAD
NEW FAIRFIELD, CT 06812

SHEET TITLE

TITLE SHEET

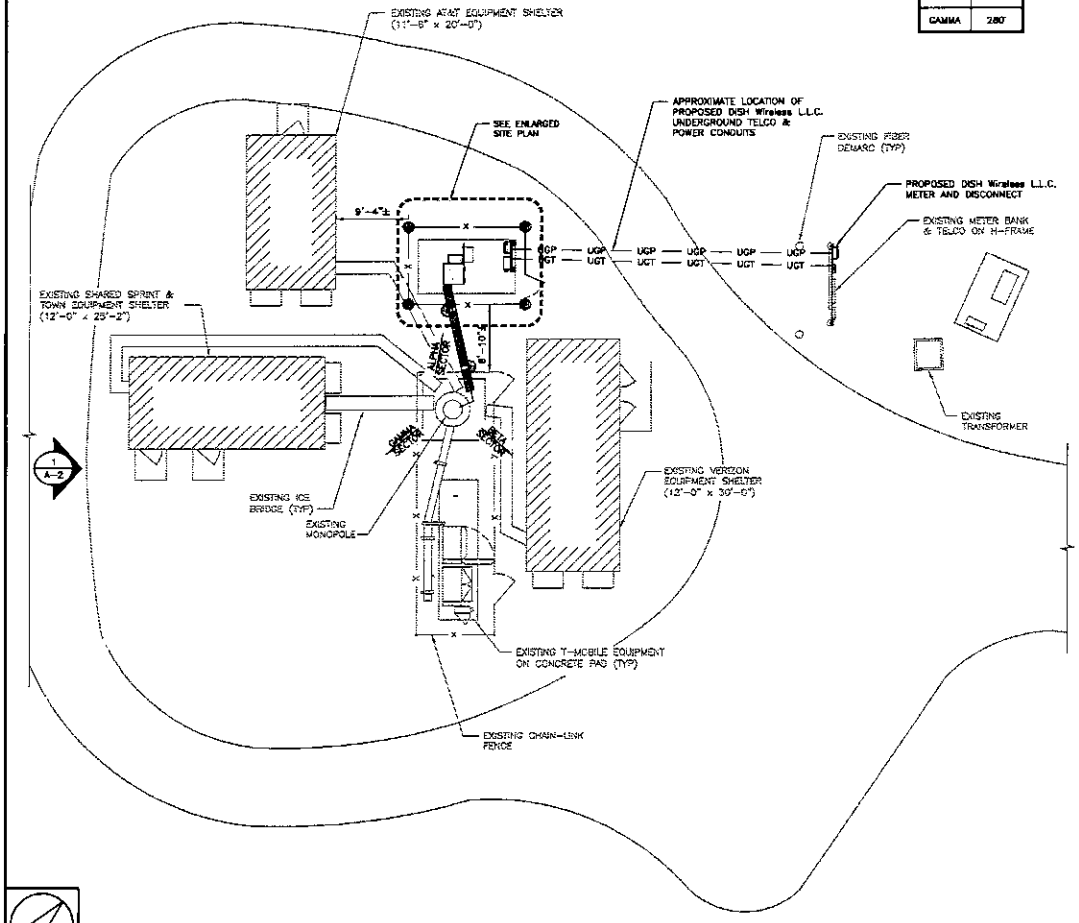
SHEET NUMBER

T-1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. REFER TO STRUCTURAL ANALYSIS REPORT BY TECTONIC ENGINEERING DATED 08/15/22

ANTENNA AZIMUTHS	
ALPHA	60°
BETA	180°
GAMMA	280°



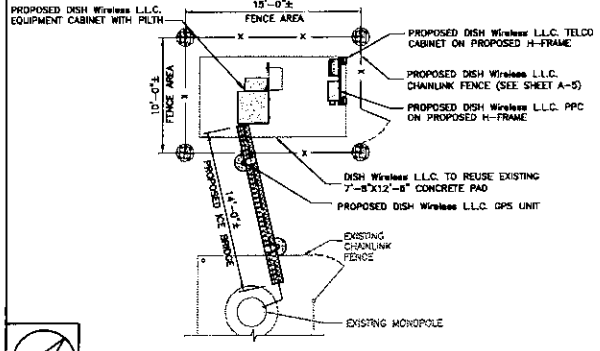
OVERALL SITE PLAN

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.
4. REFER TO STRUCTURAL ANALYSIS REPORT BY TECTONIC ENGINEERING DATED 08/15/22



ENLARGED SITE PLAN

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

2

NOT USED

3

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10/30/22

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Dish Wireless L.L.C. PROJECT INFORMATION

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302 BALL POND ROAD
NEW FAIRFIELD, CT 06812

SHEET TITLE

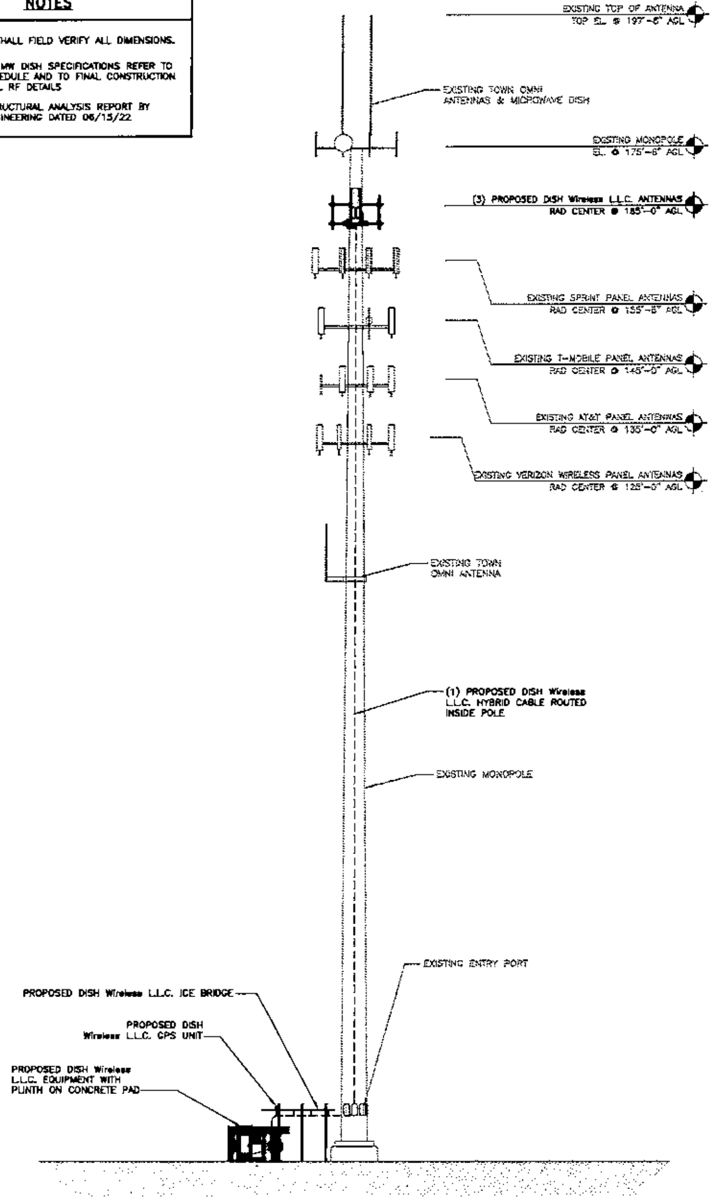
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

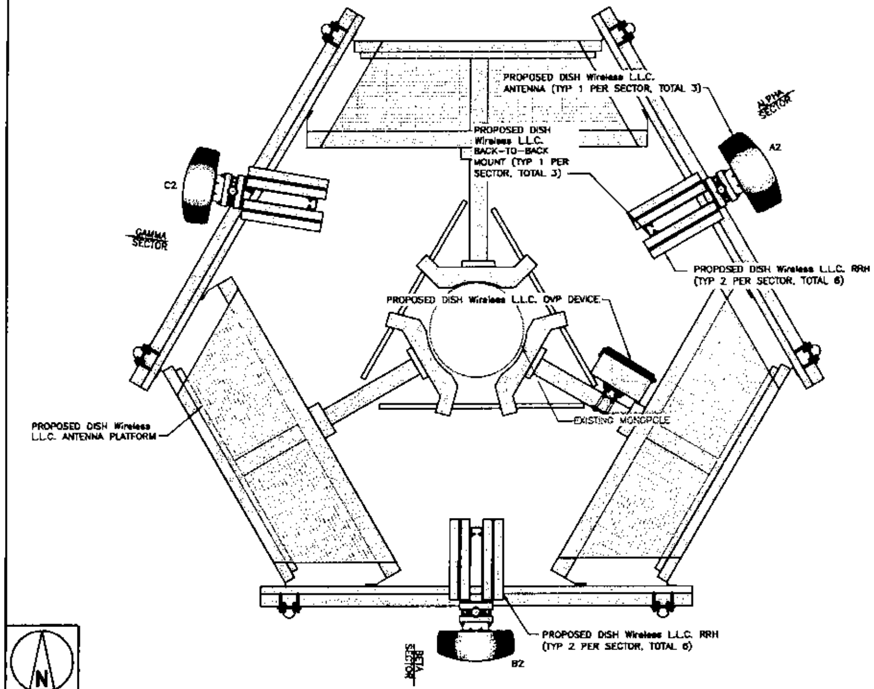
NOTES

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.
4. REFER TO STRUCTURAL ANALYSIS REPORT BY TECTONIC ENGINEERING DATED 06/15/22.



PROPOSED NORTH ELEVATION — 1

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



ANTENNA LAYOUT — 2

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

SECTOR POS.	ANTENNA: EXISTING OR PROPOSED	ANTENNA: MANUFACTURER – MODEL NUMBER	ANTENNA: TECH	ANTENNA: AZIMUTH	ANTENNA: RAD CENTER	TRANSMISSION CABLE: FEED LINE TYPE AND LENGTH	RRH: MANUFACTURER – MODEL NUMBER	RRH: TECH	RRH: POS.	RRH: MANUFACTURER MODEL
A1	—	—	—	—	—	(1) HIGH-CAPACITY HYBRID CABLE (180' LONG)	FUJITSU – TA08025-B604	5G	A2	RAYCAP-RDIDC-9181-PF-48
A2	PROPOSED	JMA – MX08FRO665-21	5G	60°	185'-0"		FUJITSU – TA08025-B605	5G	A2	
A3	—	—	—	—	—		—	—	—	
B1	—	—	—	—	—	SHARED W/ALPHA	FUJITSU – TA08025-B604	5G	B2	SHARED W/ALPHA
B2	PROPOSED	JMA – MX08FRO665-21	5G	180°	185'-0"		FUJITSU – TA08025-B605	5G	B2	
B3	—	—	—	—	—		—	—	—	
C1	—	—	—	—	—	SHARED W/ALPHA	FUJITSU – TA08025-B604	5G	C2	SHARED W/ALPHA
C2	PROPOSED	JMA – MX08FRO665-21	5G	280°	185'-0"		FUJITSU – TA08025-B605	5G	C2	
C3	—	—	—	—	—		—	—	—	

NOTES

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.
3. AZIMUTHS ARE SUBJECT TO CHANGE AND NEED TO BE CONFIRMED WITH THE LATEST RFDS PRIOR TO THE START OF CONSTRUCTION.

ANTENNA SCHEDULE — NO SCALE — 3

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PROFESSIONAL ENGINEER
6/30/22

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
CC	JQ	JQ

RFDS REV #: ——

ZONING DOCUMENTS

SUBMITTALS

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0	06/17/22	ISSUED FOR FILING
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A&E PROJECT NUMBER
10710.NJJER01134A

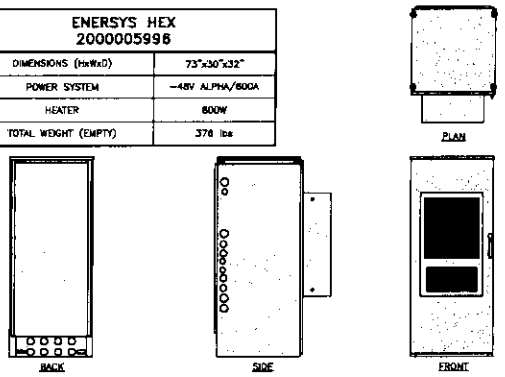
Dish Wireless L.L.C. PROJECT INFORMATION
NJJER01134A

302 BALL POND ROAD
NEW FAIRFIELD, CT 06812

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

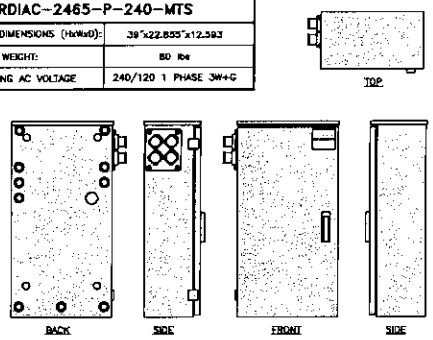
SHEET NUMBER
A-2

ENERSYS HEX 2000005998	
DIMENSIONS (HxWxD)	73"x30"x32"
POWER SYSTEM	-48V ALPHA/800A
HEATER	800W
TOTAL WEIGHT (EMPTY)	378 lbs



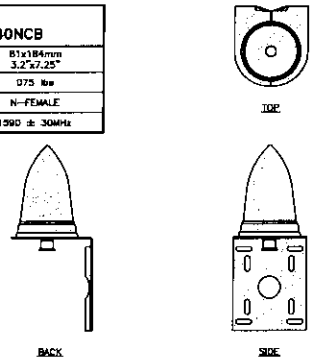
CABINET DETAIL | NO SCALE | 1

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

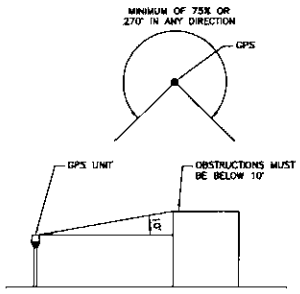


CABINET DETAIL | NO SCALE | 2

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

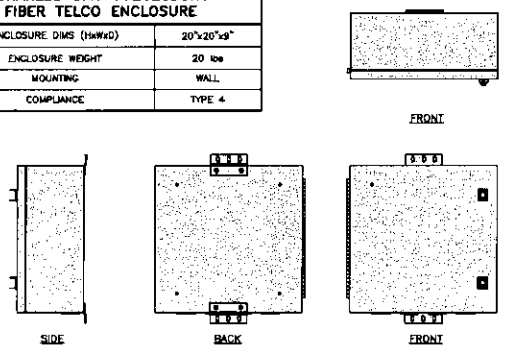


GPS DETAIL | NO SCALE | 3



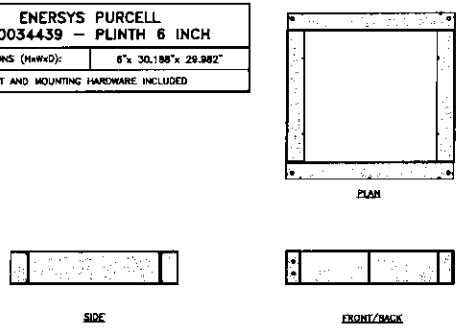
GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 4

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



FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 5

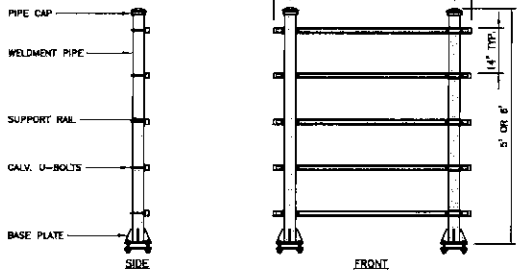
ENERSYS PURCELL 1000034439 - PLINTH 6 INCH	
DIMENSIONS (HxWxD):	6"x 30.188"x 29.982"
NOTE: GASKET AND MOUNTING HARDWARE INCLUDED	



PLINTH DETAIL | NO SCALE | 6

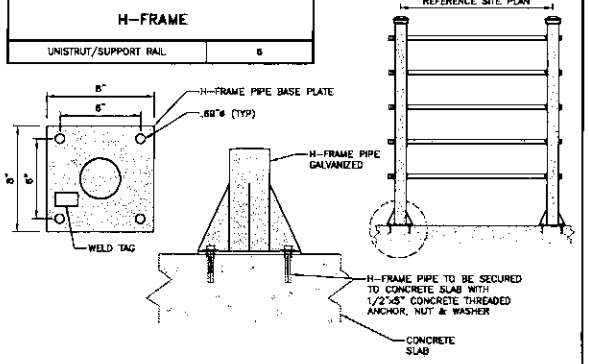
COMMSCOPE MTC4045HFLD H-FRAME	
UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	±59.74 lbs

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



H-FRAME DETAIL | NO SCALE | 7

H-FRAME	
UNISTRUT/SUPPORT RAIL	5



H-FRAME CONCRETE SLAB INSTALLATION DETAIL | NO SCALE | 8

NO SCALE | 9

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4/30/22

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ZONING DOCUMENTS

SUBMITTALS

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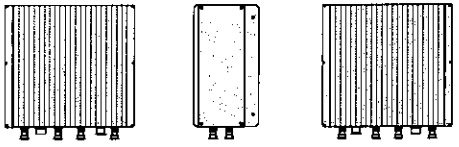
A&E PROJECT NUMBER
10710.NJJER01134A

Dish Wireless L.L.C. PROJECT INFORMATION
NJJER01134A
302 BALL POND ROAD
NEW FAIRFIELD, CT 06812

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

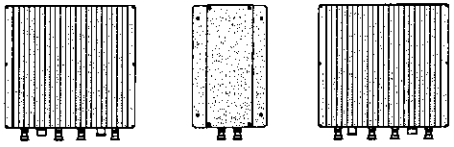
SHEET NUMBER
A-3

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~-38V



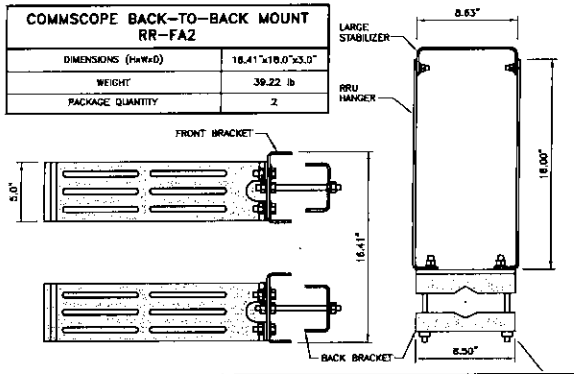
RRH DETAIL | NO SCALE | 1

FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.85 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-38V



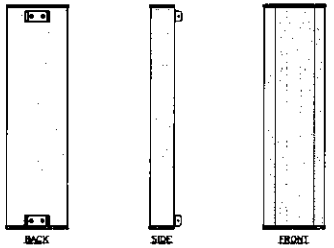
RRH DETAIL | NO SCALE | 2

COMMSCOPE BACK-TO-BACK MOUNT RR-FA2	
DIMENSIONS (HxWxD)	16.41"x16.0"x3.0"
WEIGHT	39.22 lb
PACKAGE QUANTITY	2



REMOTE RADIO MOUNT DETAIL | NO SCALE | 3

JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	84.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE



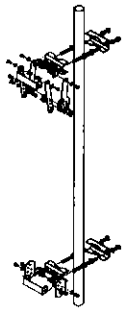
ANTENNA DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

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

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

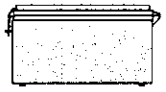
ANTENNA BRACKET NOT PART OF KIT

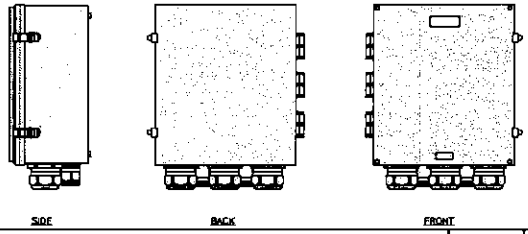


NOTE:
OR DISH Wireless L.L.C. APPROVED EQUIVALENT

ANTENNA BRACKET DETAIL | NO SCALE | 6

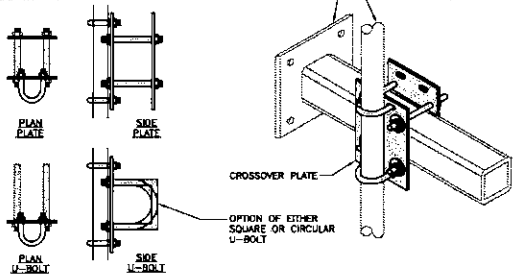
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS





SURGE SUPPRESSION DETAIL | NO SCALE | 7

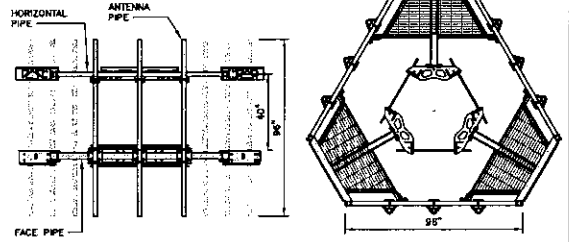
COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11.023 LBS



RRH/OVP MOUNT DETAIL | NO SCALE | 8

COMMSCOPE MC-PK8-DSH	
FACE WIDTH	98"
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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Dish Wireless L.L.C. PROJECT INFORMATION
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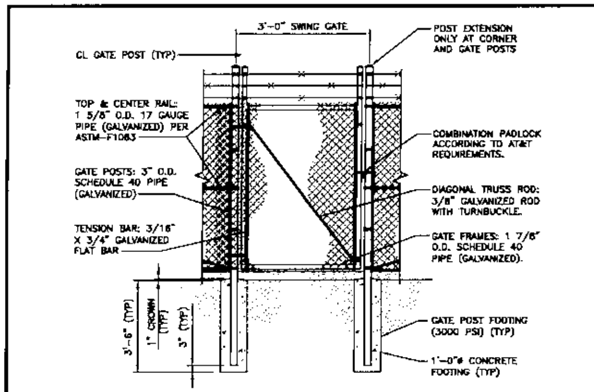
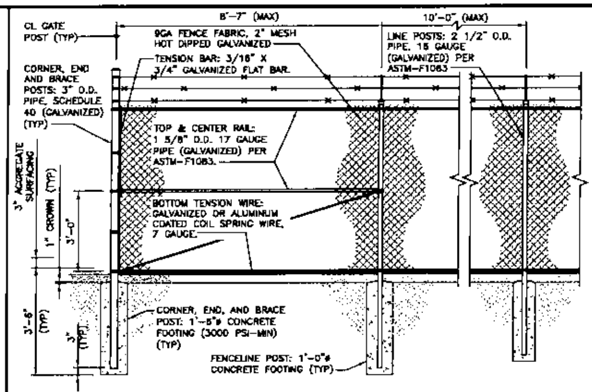
NEW FAIRFIELD, CT 06812

SHEET TITLE
EQUIPMENT DETAILS

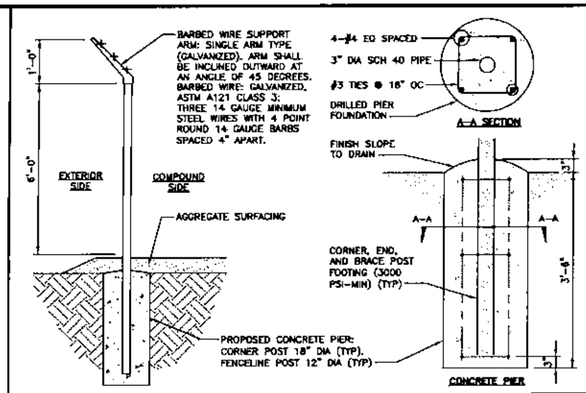
SHEET NUMBER
A-4



TYPICAL MAN-GATE ELEVATION DETAIL — NO SCALE — 1



TYPICAL FENCE DETAIL — NO SCALE — 2



TYPICAL FENCE & CONCRETE PIER SECTION — NO SCALE — 3

NO SCALE — 4

NO SCALE — 5

NO SCALE — 6

NO SCALE — 7

NO SCALE — 8

NO SCALE — 9

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0	05/17/22	ISSUED FOR FILING
1	06/30/22	ISSUED FOR ZONING

A&E PROJECT NUMBER
10710.NJJER01134A

Dish Wireless L.L.C. PROJECT INFORMATION
NJJER01134A
302 BALL POND ROAD
NEW FAIRFIELD, CT 06812

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE
(2) TWO LAMPS 48-T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

SECTION REFERENCE

DETAIL REFERENCE

ABBREVIATIONS

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

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Dish Wireless L.L.C. PROJECT INFORMATION

NJJER01134A

302 BALL POND ROAD
NEW FAIRFIELD, CT 06812

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 AND TOWER OWNER NOC & THE DISH WIRELESS AND TOWER OWNER CONSTRUCTION MANAGER.

2. "LOOK UP" – DISH WIRELESS 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 AND DISH WIRELESS 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 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 AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH WIRELESS 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 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 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

TOWER OWNER:TOWER OWNER

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

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

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

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

6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.

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

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

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

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

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

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

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

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

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A&E PROJECT NUMBER
10710.NJJER01134A

Dish Wireless L.L.C. PROJECT INFORMATION
NJJER01134A

302 BALL POND ROAD
NEW FAIRFIELD, CT 06812

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-2

Exhibit D

Structural Analysis

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Date: **June 15, 2022**

Structural Analysis Report

Carrier: Dish Wireless

Site Number: NJJER01134A
Site Data: 302 Ball Pond Rd, New Fairfield, Fairfield County, CT 06812
Latitude *41.46473°*, Longitude *-73.497°*
175 Foot - Monopole

Tectonic Project Number: 10710.NJJER01134A, Revision 2

Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C. Inc. 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 to be:

Structure: **Sufficient – 74.1%**
Foundation: **Sufficient – 66%**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 115 mph converted to a nominal 3-second gust wind speed of 89 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B with a maximum topographic factor, Kzt, of 1.0 and Risk Category III were used in this analysis.

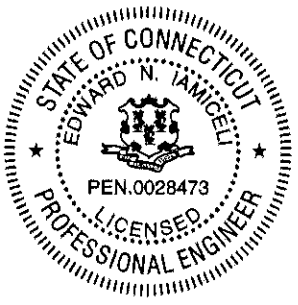
All modifications and equipment proposed in this report shall be installed in accordance with this analysis for the determined available structural capacity to be effective.

We at Tectonic appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: Ian Marinaccio

Respectfully submitted by:
Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C. Inc.

Edward N. Iamiceli, P.E.
Managing Director - Structural



Project Contact Info

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1) INTRODUCTION

This tower is a 175 ft Monopole tower designed by Fred A. Nudd Corporation in February of 2003. The tower was previously reinforced multiple times with anchor and baseplate modifications.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-G
Risk Category:	III
Wind Speed:	89 mph
Exposure Category:	B
Topographic Factor:	1.0
Ice Thickness:	0.75 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Carrier	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
165.0	Dish Wireless	1	Commscope	8' Platform Mount P/N: MC-PK8-C w/ Top Rail	3	1.75" Hybrid	-
		3	Fujitsu	TA08025-B604			
		6	Fujitsu	TA08025-B605			
		3	JMA Wireless	MX08FRO665-21			
		3	Raycap	RDIDC-9181-PF-48			

Table 2 - Existing Antenna and Cable Information

Mounting Level (ft)	Carrier	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
176.0	Town	4	Celwave	PD220	2 2	3/8 7/8	1
		1	-	1 ft Square Dish			
		1	Andrew	HPD3-4.7NS			
		1	Tower Mounts	13' Low-Profile Platform			
153.0	Sprint	3	-	DNR	4 3	1-1/4 7/8	1
		3	KMW Communications	ET-X-TU-42-15-37-18-1R-RA			
		6	Alcatel Lucent	1900 MHz RRH			
		6	Alcatel Lucent	800 MHz RRH			
		1	Tower Mounts	13' Low Profile Platform			
143.7	T-Mobile	3	RFS	APXVAALL24_43	3	6x24 Fiber	2
		3	Ericsson	AIR6419			
		3	Commscope	VV-65A-R1			
		3	Ericsson	4480			
		3	Ericsson	4460			
		3	Tower Mounts	10' T-Arms w/ Handrail Mod			
		-	-	-	1	9x18 Hybrid	1

Mounting Level (ft)	Carrier	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
136.8	AT&T	2	CCI Antennas	HPA-65R-BUU-H6	12 4 2	1-5/8 7/8 3/8	1
		1	CCI Antennas	HPA-65R-BUU-H8			
		3	Ericsson	RRUS 32			
		3	Ericsson	RRUS 32 B2			
		3	Ericsson	RRUS 4449 B5/B12			
		3	Kathrein	80010966			
		3	Powerwave	7770.00			
		6	Powerwave	LGP21401			
		1	Raycap	DC6-48-60-0-8C			
		1	Raycap	DC6-48-60-18-8F			
		3	Tower Mounts	10' T-Arms			
		3	Tower Mounts	Mount Reinforcing			
123.8	Verizon Wireless	3	Samsung	MT6407-77A	1	12X24 Hybrid	2
		6	JMA Wireless	MX06FRO660-03			
		3	Samsung	B2/B66A RRH-BR049			
		3	Samsung	B5/B13 RRH-BR04C			
		1	Raycap	RVZDC-6627-PF-48			
		3	Tower Mounts	10' T-Arms			
98.0	Town	1	Celwave	PD220	1	7/8	1
		1	Tower Mounts	4' Standoff			
84.3	Sprint	1	Tower Mounts	Collar Mount	-	-	1

Notes:
1) Existing Equipment to Remain
2) Reserved Equipment to be installed by others.

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Prepared by:	Dated
Structural Analysis Report	All-Points Technology Corporation	07/30/14
Anchor Modification Drawing	Infinigy	04/24/15
Structural Analysis Report	Maser Consulting – Connecticut	06/12/20
Mount Analysis Report	CommScope	02/18/21
Site Photos	Tectonic	03/31/21
Structural Analysis Report – Rev 0	Tectonic	08/25/21
Lease Exhibit	Tectonic	09/08/21
Colocation Application	Dish Wireless	04/08/22
Structural Analysis Report	Centek Engineering, Inc.	04/21/22
Structural Analysis Report – Rev 3	All-Points Technology Corporation, P.C.	05/20/22

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.

3.2) Assumptions

1) Tower and structures were built and maintained in accordance with the manufacturer's specifications.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2.
3) Original design documentation was not available at the time of this analysis. Therefore, the tower geometry, foundation information, and existing load configurations are based solely on the previous tower analysis report by Maser Consulting, referenced above.
4) The reserved T-Mobile configuration is based on the previous report by Centek Engineering, Inc., referenced above.
5) The reserved Verizon Wireless configuration is based on the previous report by All-Points Technology Corporation, referenced above.
6) The tower baseplate has been reinforced in accordance with the reinforcement design drawings. The reinforcing members have been adequately sized, so as their individual capacity does not govern.
7) The proposed load configuration is based on the Colocation Application by Dish Wireless, referenced above.
8) The proposed mount has been designed by CommScope to support the proposed loading.

This analysis is solely for the supporting tower structure, and it may be affected if any assumptions are not valid or have been made in error. Tectonic should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	175 - 160	Pole	TP27.5627x24x0.25	1	-6.18	1573.07	9.6	Pass
L2	160 - 145	Pole	TP31.1253x27.5627x0.25	2	-10.31	1713.21	21.6	Pass
L3	145 - 130	Pole	TP34.688x31.1253x0.25	3	-16.99	1798.30	33.1	Pass
L4	130 - 120	Pole	TP36.5067x33.0004x0.3125	4	-22.49	2561.80	39.6	Pass
L5	120 - 105	Pole	TP40.013x36.5067x0.3125	5	-25.64	2727.66	52.0	Pass
L6	105 - 85	Pole	TP44.688x40.013x0.3125	6	-28.91	2869.34	61.3	Pass
L7	85 - 76	Pole	TP46.2123x42.6605x0.375	7	-34.29	3828.03	55.6	Pass
L8	76 - 61	Pole	TP49.7642x46.2123x0.375	8	-38.68	4020.92	60.6	Pass
L9	61 - 41	Pole	TP54.5x49.7642x0.375	9	-42.71	4176.03	64.2	Pass
L10	41 - 33	Pole	TP55.9698x52.0925x0.375	10	-49.32	4322.14	68.8	Pass
L11	33 - 18	Pole	TP59.8472x55.9698x0.375	11	-54.48	4487.22	71.3	Pass
L12	18 - 3	Pole	TP63.7245x59.8472x0.375	12	-59.93	4634.52	73.7	Pass
L13	3 - 0	Pole	TP64.5x63.7245x0.375	13	-61.05	4661.85	74.1	Pass
							Summary	
						Pole (L13)	74.1	Pass
						Rating =	74.1	Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	66.8	Pass
1	Base Foundation (Soil Interaction)	0	66	Pass
1	Base Foundation (Structure)	0	40.6	Pass

Structure Rating (max from all components) =	**74.1 %**

Note:
1) See additional documentation in "Appendix B – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

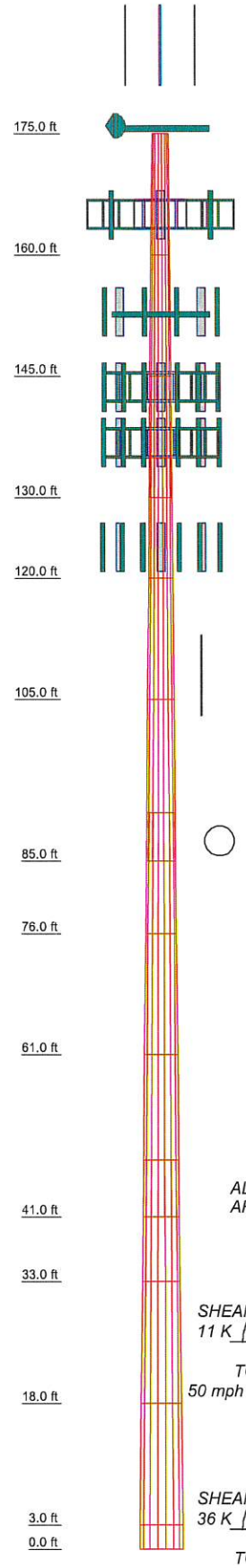
The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time. The proposed CommScope platform mount is adequate to support the new Dish Wireless installation.

Contractor shall field verify existing conditions and recommendations as noted on the construction drawings and notify the design engineer of any discrepancies prior to construction. Any further changes to the antenna and/or appurtenance configuration should be reviewed with respect to their effect on structural loads prior to implementation.

APPENDIX A

TNXTOWER OUTPUT

Section	1	2	3	4	5	6	7	8	9	10	11	12	13
Length (ft)	15.00	15.00	15.00	15.00	15.00	20.00	15.00	15.00	20.00	15.00	15.00	15.00	3.00
Number of Sides	18	18	18	18	18	18	18	18	18	18	18	18	18
Thickness (in)	0.2500	0.2500	0.2500	0.3125	0.3125	0.3125	0.3750	0.3750	0.3750	0.3750	0.3750	0.3750	0.3750
Socket Length (ft)			5.00			6.00			7.00				
Top Dia (in)	24.0000	27.5627	31.1253	33.0004	36.5067	40.0130	42.6605	46.2123	49.7642	52.0925	55.9698	59.8472	63.7245
Bot Dia (in)	27.5627	31.1253	34.6880	36.5067	40.0130	44.6880	46.2123	49.7642	54.5000	55.9698	59.8472	63.7245	64.5000
Grade	A572-65												
Weight (K)	1.0	1.2	1.3	1.7	1.9	2.8	2.7	2.9	4.2	3.3	3.5	3.7	0.8



ALL REACTIONS ARE FACTORED

AXIAL 124 K

SHEAR 11 K

MOM 1551

TORQUE 1 kip-ft
50 mph WIND - 0.7500 in ICE

AXIAL 61 K

SHEAR 36 K

MOMENT 4483 kip-ft

TORQUE 2 kip-ft
REACTIONS - 89 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) PD220	176	RADIO 4460 B25+B66	143.7
PD220	176	RADIO 4480 B71 + B85A	143.7
PD220	176	RADIO 4480 B71 + B85A	143.7
1 ft Square Dish	176	RADIO 4480 B71 + B85A	143.7
13' Low-Profile Platform	176	10' horizontal x 2" Pipe Mount	143.7
(2) 6' x 2" Mount Pipe	176	10' horizontal x 2" Pipe Mount	143.7
(2) 6' x 2" Mount Pipe	176	10' horizontal x 2" Pipe Mount	143.7
(2) 6' x 2" Mount Pipe	176	10' T-Arms	143.7
HPD3-4.7NS	176	HPA-65R-BUU-H6_TIA w/ Mount Pipe	136.8
MX08FRO665-21 w/ Mount Pipe	165	HPA-65R-BUU-H6_TIA w/ Mount Pipe	136.8
MX08FRO665-21 w/ Mount Pipe	165	7770.00 w/ Mount Pipe	136.8
TA08025-B604	165	7770.00 w/ Mount Pipe	136.8
TA08025-B604	165	7770.00 w/ Mount Pipe	136.8
TA08025-B604	165	80010966_TIA w/ Mount Pipe	136.8
(2) TA08025-B605	165	80010966_TIA w/ Mount Pipe	136.8
(2) TA08025-B605	165	80010966_TIA w/ Mount Pipe	136.8
(2) TA08025-B605	165	DC6-48-60-0-8C	136.8
RDIDC-9181-PF-48	165	RRUS 4449 B5/B12	136.8
RDIDC-9181-PF-48	165	RRUS 4449 B5/B12	136.8
RDIDC-9181-PF-48	165	RRUS 4449 B5/B12	136.8
MC-PK8-C w/ Top Rail	165	RRUS 32	136.8
(2) 6' x 2" Mount Pipe	165	RRUS 32	136.8
(2) 6' x 2" Mount Pipe	165	RRUS 32	136.8
(2) 6' x 2" Mount Pipe	165	RRUS 32 B2	136.8
MX08FRO665-21 w/ Mount Pipe	165	RRUS 32 B2	136.8
ET-X-TU-42-15-37-18-iR-RA_TIA w/ Mount Pipe	153	RRUS 32 B2	136.8
		(2) LGP21401	136.8
ET-X-TU-42-15-37-18-iR-RA_TIA w/ Mount Pipe	153	(2) LGP21401	136.8
		(2) LGP21401	136.8
(2) 1900 MHz RRH	153	DC6-48-60-18-8F	136.8
(2) 1900 MHz RRH	153	10' T-Arms	136.8
(2) 1900 MHz RRH	153	Mount Reinforcing	136.8
(2) 800 MHz RRH	153	HPA-65R-BUU-H8-K_TIA w/ Mount Pipe	136.8
(2) 800 MHz RRH	153		
(2) 800 MHz RRH	153	MT6407-77A	123.8
DNR w/ Mount Pipe	153	MT6407-77A	123.8
DNR w/ Mount Pipe	153	MT6407-77A	123.8
DNR w/ Mount Pipe	153	(2) MX06FRO660-02_TIA w/ Mount Pipe	123.8
13' Low Profile Platform	153		
6' x 2" Mount Pipe	153	(2) MX06FRO660-02_TIA w/ Mount Pipe	123.8
6' x 2" Mount Pipe	153		
6' x 2" Mount Pipe	153	(2) MX06FRO660-02_TIA w/ Mount Pipe	123.8
ET-X-TU-42-15-37-18-iR-RA_TIA w/ Mount Pipe	153	B2/B66A RRH-BR049 (RFV01U-D1A)	123.8
APXVAALL24_43-U-NA20 w/ Mount Pipe	143.7	B2/B66A RRH-BR049 (RFV01U-D1A)	123.8
		B2/B66A RRH-BR049 (RFV01U-D1A)	123.8
APXVAALL24_43-U-NA20 w/ Mount Pipe	143.7	B5/B13 RRH-BR04C (RFV01U-D2A)	123.8
		B5/B13 RRH-BR04C (RFV01U-D2A)	123.8
APXVAALL24_43-U-NA20 w/ Mount Pipe	143.7	B5/B13 RRH-BR04C (RFV01U-D2A)	123.8
		RVZDC-6627-PF-48	123.8
AIR 6419 B41 w/ Mount Pipe	143.7	2" STD Pipe (2.375 OD)x6'-0"	123.8
AIR 6419 B41 w/ Mount Pipe	143.7	2" STD Pipe (2.375 OD)x6'-0"	123.8
AIR 6419 B41 w/ Mount Pipe	143.7	2" STD Pipe (2.375 OD)x6'-0"	123.8
VV-65A-R1 w/ Mount Pipe	143.7	10' T-Arms	123.8
VV-65A-R1 w/ Mount Pipe	143.7	4' Standoff	98
VV-65A-R1 w/ Mount Pipe	143.7	PD220	98
RADIO 4460 B25+B66	143.7	Collar Mount	85
RADIO 4460 B25+B66	143.7		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 89 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increas in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class III.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 74.1%

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Job: *175' Monopole*			
Project: *10710.NJJER013341A, Revision 2*			
Client: Dish Wireless	Drawn by: Ian Marinaccio		App'd:
Code: TIA-222-G	Date: 06/13/22		Scale: N
Path: G:\Newburgh Projects\10710 - Dish (OP15-1501)\NJJER01134A (NYNYC03061B)\Structural\Rev 2\10710.NJJER01134A R2.eri			Dwg No.

Tower Input Data

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

- Tower is located in Fairfield County, Connecticut.
- Basic wind speed of 89 mph.
- Structure Class III.
- Exposure Category B.
- Topographic Category 1.
- Crest Height 0.00 ft.
- Nominal ice thickness of 0.7500 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- 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-G Bracing Resist. Exemption
	Include Bolts In Member Capacity	√	Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	175.00-160.00	15.00	0.00	18	24.0000	27.5627	0.2500	1.0000	A572-65 (65 ksi)
L2	160.00-145.00	15.00	0.00	18	27.5627	31.1253	0.2500	1.0000	A572-65 (65 ksi)
L3	145.00-130.00	15.00	5.00	18	31.1253	34.6880	0.2500	1.0000	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L4	130.00-120.00	15.00	0.00	18	33.0004	36.5067	0.3125	1.2500	(65 ksi) A572-65 (65 ksi)
L5	120.00-105.00	15.00	0.00	18	36.5067	40.0130	0.3125	1.2500	A572-65 (65 ksi)
L6	105.00-85.00	20.00	6.00	18	40.0130	44.6880	0.3125	1.2500	A572-65 (65 ksi)
L7	85.00-76.00	15.00	0.00	18	42.6605	46.2123	0.3750	1.5000	A572-65 (65 ksi)
L8	76.00-61.00	15.00	0.00	18	46.2123	49.7642	0.3750	1.5000	A572-65 (65 ksi)
L9	61.00-41.00	20.00	7.00	18	49.7642	54.5000	0.3750	1.5000	A572-65 (65 ksi)
L10	41.00-33.00	15.00	0.00	18	52.0925	55.9698	0.3750	1.5000	A572-65 (65 ksi)
L11	33.00-18.00	15.00	0.00	18	55.9698	59.8472	0.3750	1.5000	A572-65 (65 ksi)
L12	18.00-3.00	15.00	0.00	18	59.8472	63.7245	0.3750	1.5000	A572-65 (65 ksi)
L13	3.00-0.00	3.00		18	63.7245	64.5000	0.3750	1.5000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	24.3317	18.8456	1342.9976	8.4313	12.1920	110.1540	2687.7623	9.4246	3.7840	15.136
	27.9493	21.6726	2042.5689	9.6960	14.0018	145.8787	4087.8254	10.8384	4.4110	17.644
L2	27.9493	21.6726	2042.5689	9.6960	14.0018	145.8787	4087.8254	10.8384	4.4110	17.644
	31.5669	24.4996	2950.6611	10.9607	15.8117	186.6129	5905.2048	12.2521	5.0381	20.152
L3	31.5669	24.4996	2950.6611	10.9607	15.8117	186.6129	5905.2048	12.2521	5.0381	20.152
	35.1846	27.3266	4094.4743	12.2255	17.6215	232.3567	8194.3362	13.6659	5.6651	22.66
L4	34.6481	32.4224	4376.8051	11.6042	16.7642	261.0801	8759.3694	16.2143	5.2581	16.826
	37.0217	35.9001	5941.7139	12.8489	18.5454	320.3873	11891.246 1	17.9535	5.8752	18.801
L5	37.0217	35.9001	5941.7139	12.8489	18.5454	320.3873	11891.246 1	17.9535	5.8752	18.801
	40.5820	39.3779	7841.1832	14.0937	20.3266	385.7598	15692.684 1	19.6927	6.4923	20.775
L6	40.5820	39.3779	7841.1832	14.0937	20.3266	385.7598	15692.684 1	19.6927	6.4923	20.775
	45.3292	44.0149	10950.253 5	15.7533	22.7015	482.3581	21914.915 6	22.0117	7.3151	23.408
L7	44.7034	50.3303	11369.721 7	15.0114	21.6715	524.6386	22754.404 0	25.1699	6.8482	18.262
	46.8674	54.5579	14482.182 1	16.2723	23.4759	616.8965	28983.420 2	27.2841	7.4734	19.929
L8	46.8674	54.5579	14482.182 1	16.2723	23.4759	616.8965	28983.420 2	27.2841	7.4734	19.929
	50.4740	58.7855	18116.384 8	17.5332	25.2802	716.6231	36256.607 5	29.3983	8.0985	21.596
L9	50.4740	58.7855	18116.384 8	17.5332	25.2802	716.6231	36256.607 5	29.3983	8.0985	21.596
	55.2829	64.4223	23843.465 0	19.2144	27.6860	861.2102	47718.303 8	32.2173	8.9320	23.819
L10	54.6756	61.5567	20801.154 0	18.3597	26.4630	786.0475	41629.678 6	30.7842	8.5083	22.689
	56.7754	66.1717	25839.176 7	19.7362	28.4327	908.7848	51712.353 3	33.0922	9.1907	24.509
L11	56.7754	66.1717	25839.176 7	19.7362	28.4327	908.7848	51712.353 3	33.0922	9.1907	24.509
	60.7126	70.7868	31631.306 3	21.1126	30.4024	1040.4225	63304.233 8	35.4001	9.8731	26.328
L12	60.7126	70.7868	31631.306 3	21.1126	30.4024	1040.4225	63304.233 8	35.4001	9.8731	26.328

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
	64.6497	75.4018	38230.1332	22.4891	32.3721	1180.9608	76510.5706	37.7081	10.5555	28.148
L13	64.6497	75.4018	38230.1332	22.4891	32.3721	1180.9608	76510.5706	37.7081	10.5555	28.148
	65.4372	76.3248	39651.3314	22.7644	32.7660	1210.1365	79354.8371	38.1696	10.6920	28.512

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 175.00-160.00				1	1	1			
L2 160.00-145.00				1	1	1			
L3 145.00-130.00				1	1	1			
L4 130.00-120.00				1	1	1			
L5 120.00-105.00				1	1	1			
L6 105.00-85.00				1	1	1			
L7 85.00-76.00				1	1	1			
L8 76.00-61.00				1	1	1			
L9 61.00-41.00				1	1	1			
L10 41.00-33.00				1	1	1			
L11 33.00-18.00				1	1	1			
L12 18.00-3.00				1	1	1			
L13 3.00-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8	A	Yes	Surface Ar (CaAa)	175.00 - 0.00	1	1	0.000 0.000	0.3750		0.22
Step Bolts	A	Yes	Surface Ar (CaAa)	175.00 - 0.00	1	1	0.000 0.000	0.3750		2.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
*									
LDF2-50A(3/8)	C	No	Yes	Inside Pole	175.00 - 0.00	2	No Ice	0.00	0.08
							1/2" Ice	0.00	0.08
							1" Ice	0.00	0.08
LDF5-50A(7/8)	C	No	Yes	Inside Pole	175.00 - 0.00	2	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
LDF6-50A(1-1/4)	C	No	Yes	Inside Pole	153.00 - 0.00	4	No Ice	0.00	0.60

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
							1/2" Ice	0.00	0.60
							1" Ice	0.00	0.60
LDF5-50A(7/8)	C	No	Yes	Inside Pole	153.00 - 0.00	3	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
6x24 Hybrid Cable	C	No	Yes	Inside Pole	145.00 - 0.00	3	No Ice	0.00	2.65
							1/2" Ice	0.00	2.65
							1" Ice	0.00	2.65
MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	C	No	Yes	Inside Pole	145.00 - 0.00	1	No Ice	0.00	1.07
							1/2" Ice	0.00	1.07
							1" Ice	0.00	1.07
LDF7-50A(1-5/8)	C	No	Yes	Inside Pole	136.80 - 0.00	12	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
LDF5-50A(7/8)	C	No	Yes	Inside Pole	136.80 - 0.00	4	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
LDF2-50A(3/8)	C	No	Yes	Inside Pole	136.80 - 0.00	2	No Ice	0.00	0.08
							1/2" Ice	0.00	0.08
							1" Ice	0.00	0.08
MLCh HYBRID 12X24(1-11/16")	C	No	Yes	Inside Pole	123.80 - 0.00	1	No Ice	0.00	3.04
							1/2" Ice	0.00	3.04
							1" Ice	0.00	3.04
LDF5-50A(7/8)	C	No	Yes	Inside Pole	98.00 - 0.00	1	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
DISH Hybrid Cable	C	No	Yes	Inside Pole	165.00 - 0.00	3	No Ice	0.00	2.72
							1/2" Ice	0.00	2.72
							1" Ice	0.00	2.72

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	175.00-160.00	A	0.000	0.000	1.125	0.000	0.03
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.05
L2	160.00-145.00	A	0.000	0.000	1.125	0.000	0.03
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.16
L3	145.00-130.00	A	0.000	0.000	1.125	0.000	0.03
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.38
L4	130.00-120.00	A	0.000	0.000	0.750	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.33
L5	120.00-105.00	A	0.000	0.000	1.125	0.000	0.03
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.52
L6	105.00-85.00	A	0.000	0.000	1.500	0.000	0.04
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.70
L7	85.00-76.00	A	0.000	0.000	0.675	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.31
L8	76.00-61.00	A	0.000	0.000	1.125	0.000	0.03
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.52
L9	61.00-41.00	A	0.000	0.000	1.500	0.000	0.04
		B	0.000	0.000	0.000	0.000	0.00

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
		C	0.000	0.000	0.000	0.000	0.70
L10	41.00-33.00	A	0.000	0.000	0.600	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.28
L11	33.00-18.00	A	0.000	0.000	1.125	0.000	0.03
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.52
L12	18.00-3.00	A	0.000	0.000	1.125	0.000	0.03
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.52
L13	3.00-0.00	A	0.000	0.000	0.225	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.10

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	175.00-160.00	A	2.205	0.000	0.000	14.358	0.000	0.24
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05
L2	160.00-145.00	A	2.185	0.000	0.000	14.234	0.000	0.24
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.16
L3	145.00-130.00	A	2.162	0.000	0.000	14.099	0.000	0.23
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.38
L4	130.00-120.00	A	2.142	0.000	0.000	9.400	0.000	0.16
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.33
L5	120.00-105.00	A	2.119	0.000	0.000	13.842	0.000	0.23
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.52
L6	105.00-85.00	A	2.084	0.000	0.000	18.170	0.000	0.29
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.70
L7	85.00-76.00	A	2.050	0.000	0.000	8.176	0.000	0.13
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.31
L8	76.00-61.00	A	2.017	0.000	0.000	13.226	0.000	0.21
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.52
L9	61.00-41.00	A	1.958	0.000	0.000	17.163	0.000	0.27
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.70
L10	41.00-33.00	A	1.896	0.000	0.000	6.865	0.000	0.11
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.28
L11	33.00-18.00	A	1.827	0.000	0.000	12.085	0.000	0.18
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.52
L12	18.00-3.00	A	1.671	0.000	0.000	11.150	0.000	0.16
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.52
L13	3.00-0.00	A	1.376	0.000	0.000	1.876	0.000	0.02
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.10

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	1	Safety Line 3/8	160.00 - 175.00	1.0000	1.0000
L1	2	Step Bolts	160.00 - 175.00	1.0000	1.0000
L2	1	Safety Line 3/8	145.00 - 160.00	1.0000	1.0000
L2	2	Step Bolts	145.00 - 160.00	1.0000	1.0000
L3	1	Safety Line 3/8	130.00 - 145.00	1.0000	1.0000
L3	2	Step Bolts	130.00 - 145.00	1.0000	1.0000
L4	1	Safety Line 3/8	120.00 - 130.00	1.0000	1.0000
L4	2	Step Bolts	120.00 - 130.00	1.0000	1.0000
L5	1	Safety Line 3/8	105.00 - 120.00	1.0000	1.0000
L5	2	Step Bolts	105.00 - 120.00	1.0000	1.0000
L6	1	Safety Line 3/8	85.00 - 105.00	1.0000	1.0000
L6	2	Step Bolts	85.00 - 105.00	1.0000	1.0000
L7	1	Safety Line 3/8	76.00 - 85.00	1.0000	1.0000
L7	2	Step Bolts	76.00 - 85.00	1.0000	1.0000
L8	1	Safety Line 3/8	61.00 - 76.00	1.0000	1.0000
L8	2	Step Bolts	61.00 - 76.00	1.0000	1.0000
L9	1	Safety Line 3/8	41.00 - 61.00	1.0000	1.0000
L9	2	Step Bolts	41.00 - 61.00	1.0000	1.0000
L10	1	Safety Line 3/8	33.00 - 41.00	1.0000	1.0000
L10	2	Step Bolts	33.00 - 41.00	1.0000	1.0000
L11	1	Safety Line 3/8	18.00 - 33.00	1.0000	1.0000
L11	2	Step Bolts	18.00 - 33.00	1.0000	1.0000
L12	1	Safety Line 3/8	3.00 - 18.00	1.0000	1.0000
L12	2	Step Bolts	3.00 - 18.00	1.0000	1.0000
L13	1	Safety Line 3/8	0.00 - 3.00	1.0000	1.0000
L13	2	Step Bolts	0.00 - 3.00	1.0000	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
Town									
(2) PD220	A	From Leg	4.00 0.00 10.00	0.0000	176.00	No Ice 1/2" Ice	3.56 7.13 10.70	3.56 7.13 10.70	0.02 0.05 0.07

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			
PD220	B	From Leg	4.00	0.0000	176.00	No Ice	3.56	3.56	0.02
			0.00			1/2"	7.13	7.13	0.05
			10.00			Ice	10.70	10.70	0.07
						1" Ice			
PD220	C	From Leg	4.00	0.0000	176.00	No Ice	3.56	3.56	0.02
			0.00			1/2"	7.13	7.13	0.05
			10.00			Ice	10.70	10.70	0.07
						1" Ice			
1 ft Square Dish	B	From Leg	4.00	0.0000	176.00	No Ice	4.80	0.52	0.03
			0.00			1/2"	5.07	0.67	0.05
			2.00			Ice	5.35	0.83	0.08
						1" Ice			
13' Low-Profile Platform	C	None		0.0000	176.00	No Ice	24.04	24.04	1.65
						1/2"	28.93	28.93	2.17
						Ice	33.88	33.88	2.76
						1" Ice			
(2) 6' x 2" Mount Pipe	A	From Leg	4.00	0.0000	176.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice			
(2) 6' x 2" Mount Pipe	B	From Leg	4.00	0.0000	176.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice			
(2) 6' x 2" Mount Pipe	C	From Leg	4.00	0.0000	176.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice			
DISH MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00	0.0000	165.00	No Ice	12.96	7.77	0.09
			0.00			1/2"	13.67	9.05	0.19
			0.00			Ice	14.34	10.19	0.29
						1" Ice			
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00	0.0000	165.00	No Ice	12.96	7.77	0.09
			0.00			1/2"	13.67	9.05	0.19
			0.00			Ice	14.34	10.19	0.29
						1" Ice			
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00	0.0000	165.00	No Ice	12.96	7.77	0.09
			0.00			1/2"	13.67	9.05	0.19
			0.00			Ice	14.34	10.19	0.29
						1" Ice			
TA08025-B604	A	From Leg	4.00	0.0000	165.00	No Ice	1.96	1.03	0.06
			0.00			1/2"	2.14	1.17	0.08
			0.00			Ice	2.32	1.31	0.10
						1" Ice			
TA08025-B604	B	From Leg	4.00	0.0000	165.00	No Ice	1.96	1.03	0.06
			0.00			1/2"	2.14	1.17	0.08
			0.00			Ice	2.32	1.31	0.10
						1" Ice			
TA08025-B604	C	From Leg	4.00	0.0000	165.00	No Ice	1.96	1.03	0.06
			0.00			1/2"	2.14	1.17	0.08
			0.00			Ice	2.32	1.31	0.10
						1" Ice			
(2) TA08025-B605	A	From Leg	4.00	0.0000	165.00	No Ice	1.96	1.19	0.07
			0.00			1/2"	2.14	1.33	0.09
			0.00			Ice	2.32	1.48	0.11
						1" Ice			
(2) TA08025-B605	B	From Leg	4.00	0.0000	165.00	No Ice	1.96	1.19	0.07
			0.00			1/2"	2.14	1.33	0.09
			0.00			Ice	2.32	1.48	0.11
						1" Ice			
(2) TA08025-B605	C	From Leg	4.00	0.0000	165.00	No Ice	1.96	1.19	0.07
			0.00			1/2"	2.14	1.33	0.09
			0.00			Ice	2.32	1.48	0.11

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			
RDIDC-9181-PF-48	A	From Leg	4.00	0.0000	165.00	No Ice	1.87	1.07	0.02
			0.00			1/2"	2.04	1.20	0.04
			0.00			Ice	2.21	1.35	0.06
						1" Ice			
RDIDC-9181-PF-48	B	From Leg	4.00	0.0000	165.00	No Ice	1.87	1.07	0.02
			0.00			1/2"	2.04	1.20	0.04
			0.00			Ice	2.21	1.35	0.06
						1" Ice			
RDIDC-9181-PF-48	C	From Leg	4.00	0.0000	165.00	No Ice	1.87	1.07	0.02
			0.00			1/2"	2.04	1.20	0.04
			0.00			Ice	2.21	1.35	0.06
						1" Ice			
MC-PK8-C w/ Top Rail	C	None		0.0000	165.00	No Ice	26.80	26.80	1.51
						1/2"	32.20	32.20	1.81
						Ice	37.60	37.60	2.11
						1" Ice			
(2) 6' x 2" Mount Pipe	A	From Leg	4.00	0.0000	165.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice			
(2) 6' x 2" Mount Pipe	B	From Leg	4.00	0.0000	165.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice			
(2) 6' x 2" Mount Pipe	C	From Leg	4.00	0.0000	165.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice			
SPRINT ET-X-TU-42-15-37-18-iR-RA_TIA w/ Mount Pipe	A	From Leg	4.00	0.0000	153.00	No Ice	7.52	4.48	0.07
			0.00			1/2"	7.94	5.08	0.13
			0.00			Ice	8.36	5.70	0.19
						1" Ice			
ET-X-TU-42-15-37-18-iR-RA_TIA w/ Mount Pipe	B	From Leg	4.00	0.0000	153.00	No Ice	7.52	4.48	0.07
			0.00			1/2"	7.94	5.08	0.13
			0.00			Ice	8.36	5.70	0.19
						1" Ice			
ET-X-TU-42-15-37-18-iR-RA_TIA w/ Mount Pipe	C	From Leg	4.00	0.0000	153.00	No Ice	7.52	4.48	0.07
			0.00			1/2"	7.94	5.08	0.13
			0.00			Ice	8.36	5.70	0.19
						1" Ice			
(2) 1900 MHz RRH	A	From Leg	1.00	0.0000	153.00	No Ice	2.31	2.39	0.06
			2.00			1/2"	2.51	2.60	0.08
			0.00			Ice	2.73	2.82	0.11
						1" Ice			
(2) 1900 MHz RRH	B	From Leg	1.00	0.0000	153.00	No Ice	2.31	2.39	0.06
			2.00			1/2"	2.51	2.60	0.08
			0.00			Ice	2.73	2.82	0.11
						1" Ice			
(2) 1900 MHz RRH	C	From Leg	1.00	0.0000	153.00	No Ice	2.31	2.39	0.06
			2.00			1/2"	2.51	2.60	0.08
			0.00			Ice	2.73	2.82	0.11
						1" Ice			
(2) 800 MHz RRH	A	From Leg	1.00	0.0000	153.00	No Ice	2.06	1.36	0.05
			2.00			1/2"	2.24	1.52	0.07
			0.00			Ice	2.43	1.68	0.09
						1" Ice			
(2) 800 MHz RRH	B	From Leg	1.00	0.0000	153.00	No Ice	2.06	1.36	0.05
			2.00			1/2"	2.24	1.52	0.07
			0.00			Ice	2.43	1.68	0.09
						1" Ice			
(2) 800 MHz RRH	C	From Leg	1.00	0.0000	153.00	No Ice	2.06	1.36	0.05
			2.00			1/2"	2.24	1.52	0.07
			0.00			Ice	2.43	1.68	0.09

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			
DNR w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice 1" Ice	5.81 6.23 6.65	3.43 4.13 4.79	0.05 0.09 0.14
DNR w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice 1" Ice	5.81 6.23 6.65	3.43 4.13 4.79	0.05 0.09 0.14
DNR w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice 1" Ice	5.81 6.23 6.65	3.43 4.13 4.79	0.05 0.09 0.14
13' Low Profile Platform	C	None		0.0000	153.00	No Ice 1/2" Ice 1" Ice	14.69 18.01 21.34	14.69 18.01 21.34	1.25 1.57 1.94
6' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
TMO 10' T-Arms	C	None		0.0000	143.70	No Ice 1/2" Ice 1" Ice	12.56 15.36 18.04	12.56 15.36 18.04	0.73 0.94 1.21
APXVAALL24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	143.70	No Ice 1/2" Ice 1" Ice	20.24 20.89 21.55	10.63 12.06 13.34	0.15 0.28 0.43
APXVAALL24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	143.70	No Ice 1/2" Ice 1" Ice	20.24 20.89 21.55	10.63 12.06 13.34	0.15 0.28 0.43
APXVAALL24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	143.70	No Ice 1/2" Ice 1" Ice	20.24 20.89 21.55	10.63 12.06 13.34	0.15 0.28 0.43
AIR 6419 B41 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	143.70	No Ice 1/2" Ice 1" Ice	7.50 8.34 9.09	4.78 5.85 6.78	0.11 0.18 0.25
AIR 6419 B41 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	143.70	No Ice 1/2" Ice 1" Ice	7.50 8.34 9.09	4.78 5.85 6.78	0.11 0.18 0.25
AIR 6419 B41 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	143.70	No Ice 1/2" Ice 1" Ice	7.50 8.34 9.09	4.78 5.85 6.78	0.11 0.18 0.25
VV-65A-R1 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	143.70	No Ice 1/2" Ice 1" Ice	6.27 6.75 7.21	4.18 5.02 5.74	0.05 0.10 0.15
VV-65A-R1 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	143.70	No Ice 1/2" Ice 1" Ice	6.27 6.75 7.21	4.18 5.02 5.74	0.05 0.10 0.15

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			
VV-65A-R1 w/ Mount Pipe	C	From Leg	4.00	0.0000	143.70	No Ice	6.27	4.18	0.05
			0.00			1/2"	6.75	5.02	0.10
			0.00			Ice	7.21	5.74	0.15
						1" Ice			
RADIO 4460 B25+B66	A	From Leg	4.00	0.0000	143.70	No Ice	2.56	1.98	0.11
			0.00			1/2"	2.76	2.16	0.13
			0.00			Ice	2.97	2.34	0.16
						1" Ice			
RADIO 4460 B25+B66	B	From Leg	4.00	0.0000	143.70	No Ice	2.56	1.98	0.11
			0.00			1/2"	2.76	2.16	0.13
			0.00			Ice	2.97	2.34	0.16
						1" Ice			
RADIO 4460 B25+B66	C	From Leg	4.00	0.0000	143.70	No Ice	2.56	1.98	0.11
			0.00			1/2"	2.76	2.16	0.13
			0.00			Ice	2.97	2.34	0.16
						1" Ice			
RADIO 4480 B71 + B85A	A	From Leg	4.00	0.0000	143.70	No Ice	2.85	1.38	0.08
			0.00			1/2"	3.06	1.54	0.11
			0.00			Ice	3.28	1.71	0.13
						1" Ice			
RADIO 4480 B71 + B85A	B	From Leg	4.00	0.0000	143.70	No Ice	2.85	1.38	0.08
			0.00			1/2"	3.06	1.54	0.11
			0.00			Ice	3.28	1.71	0.13
						1" Ice			
RADIO 4480 B71 + B85A	C	From Leg	4.00	0.0000	143.70	No Ice	2.85	1.38	0.08
			0.00			1/2"	3.06	1.54	0.11
			0.00			Ice	3.28	1.71	0.13
						1" Ice			
10' horizontal x 2" Pipe Mount	A	From Leg	4.00	0.0000	143.70	No Ice	0.83	0.83	0.10
			0.00			1/2"	1.76	1.76	0.48
			0.00			Ice	2.37	2.37	0.88
						1" Ice			
10' horizontal x 2" Pipe Mount	B	From Leg	4.00	0.0000	143.70	No Ice	0.83	0.83	0.10
			0.00			1/2"	1.76	1.76	0.48
			0.00			Ice	2.37	2.37	0.88
						1" Ice			
10' horizontal x 2" Pipe Mount	C	From Leg	4.00	0.0000	143.70	No Ice	0.83	0.83	0.10
			0.00			1/2"	1.76	1.76	0.48
			0.00			Ice	2.37	2.37	0.88
						1" Ice			
AT&T HPA-65R-BUU-H8-K_TIA w/ Mount Pipe	A	From Leg	4.00	0.0000	136.80	No Ice	13.21	9.58	0.10
			0.00			1/2"	13.90	11.05	0.20
			0.00			Ice	14.59	12.50	0.31
						1" Ice			
HPA-65R-BUU-H6_TIA w/ Mount Pipe	B	From Leg	4.00	0.0000	136.80	No Ice	9.72	7.15	0.07
			0.00			1/2"	10.30	8.34	0.15
			0.00			Ice	10.84	9.24	0.23
						1" Ice			
HPA-65R-BUU-H6_TIA w/ Mount Pipe	C	From Leg	4.00	0.0000	136.80	No Ice	9.72	7.15	0.07
			0.00			1/2"	10.30	8.34	0.15
			0.00			Ice	10.84	9.24	0.23
						1" Ice			
7770.00 w/ Mount Pipe	A	From Leg	4.00	0.0000	136.80	No Ice	5.75	4.25	0.06
			0.00			1/2"	6.18	5.01	0.10
			0.00			Ice	6.61	5.71	0.16
						1" Ice			
7770.00 w/ Mount Pipe	A	From Leg	4.00	0.0000	136.80	No Ice	5.75	4.25	0.06
			0.00			1/2"	6.18	5.01	0.10
			0.00			Ice	6.61	5.71	0.16
						1" Ice			
7770.00 w/ Mount Pipe	C	From Leg	4.00	0.0000	136.80	No Ice	5.75	4.25	0.06
			0.00			1/2"	6.18	5.01	0.10
			0.00			Ice	6.61	5.71	0.16

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			
80010966_TIA w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	17.60 18.33 19.07	9.64 11.15 12.70	0.16 0.27 0.40
80010966_TIA w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	17.60 18.33 19.07	9.64 11.15 12.70	0.16 0.27 0.40
80010966_TIA w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	17.60 18.33 19.07	9.64 11.15 12.70	0.16 0.27 0.40
DC6-48-60-0-8C	C	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	2.04 2.23 2.42	2.04 2.23 2.42	0.02 0.04 0.06
RRUS 4449 B5/B12	A	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
RRUS 4449 B5/B12	B	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
RRUS 4449 B5/B12	C	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
RRUS 32	A	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	2.73 2.95 3.18	1.67 1.86 2.05	0.05 0.07 0.10
RRUS 32	B	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	2.73 2.95 3.18	1.67 1.86 2.05	0.05 0.07 0.10
RRUS 32	C	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	2.73 2.95 3.18	1.67 1.86 2.05	0.05 0.07 0.10
RRUS 32 B2	A	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	2.71 2.93 3.16	1.66 1.85 2.04	0.05 0.07 0.10
RRUS 32 B2	B	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	2.71 2.93 3.16	1.66 1.85 2.04	0.05 0.07 0.10
RRUS 32 B2	C	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	2.71 2.93 3.16	1.66 1.85 2.04	0.05 0.07 0.10
(2) LGP21401	A	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.21 0.27 0.35	0.01 0.02 0.03
(2) LGP21401	B	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.21 0.27 0.35	0.01 0.02 0.03
(2) LGP21401	C	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.21 0.27 0.35	0.01 0.02 0.03

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
DC6-48-60-18-8F	C	From Leg	4.00 0.00 0.00	0.0000	136.80	No Ice 1/2" Ice 1" Ice	0.92 1.46 1.64	0.92 1.46 1.64	0.02 0.04 0.06
10' T-Arms	C	None		0.0000	136.80	No Ice 1/2" Ice 1" Ice	12.56 15.36 18.04	12.56 15.36 18.04	0.73 0.94 1.21
Mount Reinforcing	C	None		0.0000	136.80	No Ice 1/2" Ice 1" Ice	4.56 6.39 8.18	4.56 6.39 8.18	0.25 0.31 0.40
VZW 10' T-Arms	C	None		0.0000	123.80	No Ice 1/2" Ice 1" Ice	12.56 15.36 18.04	12.56 15.36 18.04	0.73 0.94 1.21
MT6407-77A	A	From Leg	4.00 0.00 0.00	0.0000	123.80	No Ice 1/2" Ice 1" Ice	4.71 5.00 5.29	1.84 2.07 2.30	0.09 0.12 0.15
MT6407-77A	B	From Leg	4.00 0.00 0.00	0.0000	123.80	No Ice 1/2" Ice 1" Ice	4.71 5.00 5.29	1.84 2.07 2.30	0.09 0.12 0.15
MT6407-77A	C	From Leg	4.00 0.00 0.00	0.0000	123.80	No Ice 1/2" Ice 1" Ice	4.71 5.00 5.29	1.84 2.07 2.30	0.09 0.12 0.15
(2) MX06FRO660-02_TIA w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	123.80	No Ice 1/2" Ice 1" Ice	10.11 10.68 11.22	8.99 10.15 11.03	0.08 0.17 0.27
(2) MX06FRO660-02_TIA w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	123.80	No Ice 1/2" Ice 1" Ice	10.11 10.68 11.22	8.99 10.15 11.03	0.08 0.17 0.27
(2) MX06FRO660-02_TIA w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	123.80	No Ice 1/2" Ice 1" Ice	10.11 10.68 11.22	8.99 10.15 11.03	0.08 0.17 0.27
B2/B66A RRH-BR049 (RFV01U-D1A)	A	From Leg	4.00 0.00 0.00	0.0000	123.80	No Ice 1/2" Ice 1" Ice	2.61 2.81 3.02	1.96 2.14 2.33	0.08 0.11 0.14
B2/B66A RRH-BR049 (RFV01U-D1A)	B	From Leg	4.00 0.00 0.00	0.0000	123.80	No Ice 1/2" Ice 1" Ice	2.61 2.81 3.02	1.96 2.14 2.33	0.08 0.11 0.14
B2/B66A RRH-BR049 (RFV01U-D1A)	C	From Leg	4.00 0.00 0.00	0.0000	123.80	No Ice 1/2" Ice 1" Ice	2.61 2.81 3.02	1.96 2.14 2.33	0.08 0.11 0.14
B5/B13 RRH-BR04C (RFV01U-D2A)	A	From Leg	4.00 0.00 0.00	0.0000	123.80	No Ice 1/2" Ice 1" Ice	2.61 2.81 3.02	1.65 1.82 1.99	0.09 0.11 0.14
B5/B13 RRH-BR04C (RFV01U-D2A)	B	From Leg	4.00 0.00 0.00	0.0000	123.80	No Ice 1/2" Ice 1" Ice	2.61 2.81 3.02	1.65 1.82 1.99	0.09 0.11 0.14
B5/B13 RRH-BR04C (RFV01U-D2A)	C	From Leg	4.00 0.00 0.00	0.0000	123.80	No Ice 1/2" Ice 1" Ice	2.61 2.81 3.02	1.65 1.82 1.99	0.09 0.11 0.14

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
RVZDC-6627-PF-48	A	From Leg	4.00	0.00	0.0000	123.80	No Ice	3.79	2.51	0.03
			0.00	0.00			1/2" Ice	4.04	2.73	0.06
			0.00	0.00			1" Ice	4.30	2.95	0.10
2" STD Pipe (2.375 OD)x6'-0"	A	From Leg	4.00	0.00	0.0000	123.80	No Ice	1.43	1.43	0.02
			0.00	0.00			1/2" Ice	1.92	1.92	0.03
			0.00	0.00			1" Ice	2.29	2.29	0.05
2" STD Pipe (2.375 OD)x6'-0"	B	From Leg	4.00	0.00	0.0000	123.80	No Ice	1.43	1.43	0.02
			0.00	0.00			1/2" Ice	1.92	1.92	0.03
			0.00	0.00			1" Ice	2.29	2.29	0.05
2" STD Pipe (2.375 OD)x6'-0"	C	From Leg	4.00	0.00	0.0000	123.80	No Ice	1.43	1.43	0.02
			0.00	0.00			1/2" Ice	1.92	1.92	0.03
							1" Ice	2.29	2.29	0.05
Town PD220	B	From Leg	4.00	0.00	0.0000	98.00	No Ice	3.56	3.56	0.02
			0.00	0.00			1/2" Ice	7.13	7.13	0.05
			10.00	10.00			1" Ice	10.70	10.70	0.07
4' Standoff	B	From Leg	2.00	0.00	0.0000	98.00	No Ice	0.85	1.67	0.07
			0.00	0.00			1/2" Ice	1.14	2.34	0.08
			0.00	0.00			1" Ice	1.43	3.01	0.09
Sprint Collar Mount	C	None			0.0000	85.00	No Ice	7.64	7.64	0.23
							1/2" Ice	8.80	8.80	0.36
							1" Ice	10.16	10.16	0.52

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
HPD3-4.7NS	C	Paraboloid w/Radome	From Leg	4.00	0.00	Worst		176.00	3.00	No Ice	12.57	0.14
				0.00	0.00					1/2" Ice	13.10	0.28
										1" Ice	13.62	0.42

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice

Comb. No.	Description
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	175 - 160	Pole	Max Tension	45	0.00	-0.00	0.00
			Max. Compression	26	-17.27	2.24	-1.45
			Max. Mx	20	-6.19	80.70	1.22
			Max. My	14	-6.20	-1.13	-78.73
			Max. Vy	20	-7.58	80.70	1.22
			Max. Vx	14	7.49	-1.13	-78.73
			Max. Torque	2			2.09
L2	160 - 145	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.39	2.35	-1.43
			Max. Mx	20	-10.32	226.85	2.54
			Max. My	14	-10.33	-2.40	-223.40
			Max. Vy	20	-11.72	226.85	2.54
			Max. Vx	2	-11.62	3.31	222.66
			Max. Torque	2			2.09
L3	145 - 130	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.45	5.22	1.34
			Max. Mx	20	-17.00	392.20	3.94
			Max. My	2	-17.00	4.66	387.31
			Max. Vy	20	-21.17	392.20	3.94
			Max. Vx	2	-21.18	4.66	387.31
			Max. Torque	2			3.22

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L4	130 - 120	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.01	5.43	2.54
			Max. Mx	20	-22.51	733.28	5.15
			Max. My	2	-22.50	5.75	728.93
			Max. Vy	20	-26.03	733.28	5.15
			Max. Vx	2	-26.08	5.75	728.93
			Max. Torque	16			-3.41
L5	120 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.76	5.60	2.62
			Max. Mx	20	-25.65	1132.66	6.19
			Max. My	2	-25.64	6.82	1129.13
			Max. Vy	20	-27.25	1132.66	6.19
			Max. Vx	2	-27.30	6.82	1129.13
			Max. Torque	16			-3.41
L6	105 - 85	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78.76	4.66	2.06
			Max. Mx	20	-28.92	1523.99	6.86
			Max. My	2	-28.92	7.36	1521.52
			Max. Vy	20	-28.54	1523.99	6.86
			Max. Vx	2	-28.61	7.36	1521.52
			Max. Torque	16			-3.40
L7	85 - 76	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-87.39	4.66	2.06
			Max. Mx	20	-34.30	1965.28	7.68
			Max. My	2	-34.29	8.20	1963.89
			Max. Vy	20	-30.18	1965.28	7.68
			Max. Vx	2	-30.25	8.20	1963.89
			Max. Torque	16			-2.33
L8	76 - 61	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-93.58	4.66	2.06
			Max. Mx	20	-38.69	2426.52	8.48
			Max. My	2	-38.68	9.01	2426.21
			Max. Vy	20	-31.35	2426.52	8.48
			Max. Vx	2	-31.42	9.01	2426.21
			Max. Torque	16			-2.33
L9	61 - 41	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-99.22	4.66	2.06
			Max. Mx	20	-42.72	2839.95	9.17
			Max. My	2	-42.72	9.70	2840.58
			Max. Vy	20	-32.29	2839.95	9.17
			Max. Vx	2	-32.36	9.70	2840.58
			Max. Torque	16			-2.33
L10	41 - 33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-108.69	4.66	2.06
			Max. Mx	20	-49.33	3333.57	9.95
			Max. My	2	-49.32	10.49	3335.29
			Max. Vy	20	-33.45	3333.57	9.95
			Max. Vx	2	-33.52	10.49	3335.29
			Max. Torque	16			-2.33
L11	33 - 18	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-115.73	4.66	2.06
			Max. Mx	20	-54.49	3841.70	10.71
			Max. My	2	-54.49	11.25	3844.50
			Max. Vy	20	-34.34	3841.70	10.71
			Max. Vx	2	-34.41	11.25	3844.50
			Max. Torque	16			-2.33
L12	18 - 3	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-122.96	4.66	2.05
			Max. Mx	20	-59.93	4363.42	11.46
			Max. My	2	-59.93	11.99	4367.30
			Max. Vy	20	-35.26	4363.42	11.46
			Max. Vx	2	-35.33	11.99	4367.30
			Max. Torque	16			-2.33
L13	3 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-124.38	4.66	2.05
			Max. Mx	20	-61.05	4469.43	11.60
			Max. My	2	-61.05	12.14	4473.52
			Max. Vy	20	-35.45	4469.43	11.60
			Max. Vx	2	-35.52	12.14	4473.52

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	16			-2.33

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	124.38	0.00	0.00
	Max. H_x	20	61.06	35.43	0.05
	Max. H_z	2	61.06	0.05	35.50
	Max. M_x	2	4473.52	0.05	35.50
	Max. M_z	8	4467.80	-35.43	-0.05
	Max. Torsion	4	2.32	-17.67	30.72
	Min. Vert	7	45.80	-30.66	17.71
	Min. H_x	8	61.06	-35.43	-0.05
	Min. H_z	14	61.06	-0.05	-35.50
	Min. M_x	14	-4472.99	-0.05	-35.50
	Min. M_z	20	-4469.43	35.43	0.05
	Min. Torsion	16	-2.33	17.67	-30.72

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	50.89	0.00	0.00	-0.20	0.62	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	61.06	-0.05	-35.50	-4473.52	12.14	-2.28
0.9 Dead+1.6 Wind 0 deg - No Ice	45.80	-0.05	-35.50	-4419.90	11.74	-2.27
1.2 Dead+1.6 Wind 30 deg - No Ice	61.06	17.67	-30.72	-3868.57	-2223.71	-2.32
0.9 Dead+1.6 Wind 30 deg - No Ice	45.80	17.67	-30.72	-3822.21	-2197.30	-2.32
1.2 Dead+1.6 Wind 60 deg - No Ice	61.06	30.66	-17.71	-2227.07	-3863.49	-1.75
0.9 Dead+1.6 Wind 60 deg - No Ice	45.80	30.66	-17.71	-2200.38	-3817.41	-1.75
1.2 Dead+1.6 Wind 90 deg - No Ice	61.06	35.43	0.05	11.09	-4467.80	-0.72
0.9 Dead+1.6 Wind 90 deg - No Ice	45.80	35.43	0.05	10.97	-4414.46	-0.73
1.2 Dead+1.6 Wind 120 deg - No Ice	61.06	30.71	17.79	2246.16	-3874.76	0.49
0.9 Dead+1.6 Wind 120 deg - No Ice	45.80	30.71	17.79	2219.30	-3828.51	0.47
1.2 Dead+1.6 Wind 150 deg - No Ice	61.06	17.76	30.77	3879.32	-2243.32	1.57
0.9 Dead+1.6 Wind 150 deg - No Ice	45.80	17.76	30.77	3832.93	-2216.60	1.55
1.2 Dead+1.6 Wind 180 deg - No Ice	61.06	0.05	35.50	4472.99	-10.55	2.24
0.9 Dead+1.6 Wind 180 deg - No Ice	45.80	0.05	35.50	4419.51	-10.58	2.23
1.2 Dead+1.6 Wind 210 deg - No Ice	61.06	-17.67	30.72	3868.06	2225.30	2.33
0.9 Dead+1.6 Wind 210 deg - No Ice	45.80	-17.67	30.72	3821.84	2198.46	2.33
1.2 Dead+1.6 Wind 240 deg - No Ice	61.06	-30.66	17.71	2226.57	3865.10	1.79
0.9 Dead+1.6 Wind 240 deg	45.80	-30.66	17.71	2200.02	3818.59	1.80

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
- No Ice						
1.2 Dead+1.6 Wind 270 deg - No Ice	61.06	-35.43	-0.05	-11.60	4469.43	0.76
0.9 Dead+1.6 Wind 270 deg - No Ice	45.80	-35.43	-0.05	-11.35	4415.65	0.77
1.2 Dead+1.6 Wind 300 deg - No Ice	61.06	-30.71	-17.79	-2246.70	3876.39	-0.49
0.9 Dead+1.6 Wind 300 deg - No Ice	45.80	-30.71	-17.79	-2219.70	3829.70	-0.48
1.2 Dead+1.6 Wind 330 deg - No Ice	61.06	-17.76	-30.77	-3879.87	2244.92	-1.61
0.9 Dead+1.6 Wind 330 deg - No Ice	45.80	-17.76	-30.77	-3833.33	2217.77	-1.59
1.2 Dead+1.0 Ice+1.0 Temp	124.38	-0.00	-0.00	-2.05	4.66	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	124.38	-0.01	-11.28	-1544.57	7.59	-0.04
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	124.38	5.63	-9.77	-1336.66	-764.64	-0.30
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	124.38	9.77	-5.63	-771.18	-1330.63	-0.47
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	124.38	11.28	0.01	0.35	-1538.72	-0.52
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	124.38	9.77	5.65	771.19	-1333.19	-0.43
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	124.38	5.65	9.78	1334.80	-769.07	-0.22
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	124.38	0.01	11.28	1540.13	2.46	0.04
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	124.38	-5.63	9.77	1332.23	774.68	0.30
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	124.38	-9.77	5.63	766.75	1340.67	0.47
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	124.38	-11.28	-0.01	-4.77	1548.76	0.52
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	124.38	-9.77	-5.65	-775.61	1343.24	0.43
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	124.38	-5.65	-9.78	-1339.22	779.12	0.22
Dead+Wind 0 deg - Service	50.89	-0.01	-7.85	-982.09	3.16	-0.51
Dead+Wind 30 deg - Service	50.89	3.91	-6.79	-849.31	-487.60	-0.52
Dead+Wind 60 deg - Service	50.89	6.78	-3.91	-489.01	-847.53	-0.39
Dead+Wind 90 deg - Service	50.89	7.83	0.01	2.26	-980.17	-0.16
Dead+Wind 120 deg - Service	50.89	6.79	3.93	492.87	-850.01	0.11
Dead+Wind 150 deg - Service	50.89	3.92	6.80	851.35	-491.91	0.35
Dead+Wind 180 deg - Service	50.89	0.01	7.85	981.65	-1.81	0.50
Dead+Wind 210 deg - Service	50.89	-3.91	6.79	848.87	488.95	0.52
Dead+Wind 240 deg - Service	50.89	-6.78	3.91	488.57	848.87	0.40
Dead+Wind 270 deg - Service	50.89	-7.83	-0.01	-2.71	981.52	0.17
Dead+Wind 300 deg - Service	50.89	-6.79	-3.93	-493.31	851.36	-0.11
Dead+Wind 330 deg - Service	50.89	-3.92	-6.80	-851.79	493.25	-0.36

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-50.89	0.00	0.00	50.89	0.00	0.000%
2	-0.05	-61.06	-35.50	0.05	61.06	35.50	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
3	-0.05	-45.80	-35.50	0.05	45.80	35.50	0.000%
4	17.67	-61.06	-30.72	-17.67	61.06	30.72	0.000%
5	17.67	-45.80	-30.72	-17.67	45.80	30.72	0.000%
6	30.66	-61.06	-17.71	-30.66	61.06	17.71	0.000%
7	30.66	-45.80	-17.71	-30.66	45.80	17.71	0.000%
8	35.43	-61.06	0.05	-35.43	61.06	-0.05	0.000%
9	35.43	-45.80	0.05	-35.43	45.80	-0.05	0.000%
10	30.71	-61.06	17.79	-30.71	61.06	-17.79	0.000%
11	30.71	-45.80	17.79	-30.71	45.80	-17.79	0.000%
12	17.76	-61.06	30.77	-17.76	61.06	-30.77	0.000%
13	17.76	-45.80	30.77	-17.76	45.80	-30.77	0.000%
14	0.05	-61.06	35.50	-0.05	61.06	-35.50	0.000%
15	0.05	-45.80	35.50	-0.05	45.80	-35.50	0.000%
16	-17.67	-61.06	30.72	17.67	61.06	-30.72	0.000%
17	-17.67	-45.80	30.72	17.67	45.80	-30.72	0.000%
18	-30.66	-61.06	17.71	30.66	61.06	-17.71	0.000%
19	-30.66	-45.80	17.71	30.66	45.80	-17.71	0.000%
20	-35.43	-61.06	-0.05	35.43	61.06	0.05	0.000%
21	-35.43	-45.80	-0.05	35.43	45.80	0.05	0.000%
22	-30.71	-61.06	-17.79	30.71	61.06	17.79	0.000%
23	-30.71	-45.80	-17.79	30.71	45.80	17.79	0.000%
24	-17.76	-61.06	-30.77	17.76	61.06	30.77	0.000%
25	-17.76	-45.80	-30.77	17.76	45.80	30.77	0.000%
26	0.00	-124.38	0.00	0.00	124.38	0.00	0.000%
27	-0.01	-124.38	-11.28	0.01	124.38	11.28	0.000%
28	5.63	-124.38	-9.77	-5.63	124.38	9.77	0.000%
29	9.77	-124.38	-5.63	-9.77	124.38	5.63	0.000%
30	11.28	-124.38	0.01	-11.28	124.38	-0.01	0.000%
31	9.77	-124.38	5.65	-9.77	124.38	-5.65	0.000%
32	5.65	-124.38	9.78	-5.65	124.38	-9.78	0.000%
33	0.01	-124.38	11.28	-0.01	124.38	-11.28	0.000%
34	-5.63	-124.38	9.77	5.63	124.38	-9.77	0.000%
35	-9.77	-124.38	5.63	9.77	124.38	-5.63	0.000%
36	-11.28	-124.38	-0.01	11.28	124.38	0.01	0.000%
37	-9.77	-124.38	-5.65	9.77	124.38	5.65	0.000%
38	-5.65	-124.38	-9.78	5.65	124.38	9.78	0.000%
39	-0.01	-50.89	-7.85	0.01	50.89	7.85	0.000%
40	3.91	-50.89	-6.79	-3.91	50.89	6.79	0.000%
41	6.78	-50.89	-3.91	-6.78	50.89	3.91	0.000%
42	7.83	-50.89	0.01	-7.83	50.89	-0.01	0.000%
43	6.79	-50.89	3.93	-6.79	50.89	-3.93	0.000%
44	3.92	-50.89	6.80	-3.92	50.89	-6.80	0.000%
45	0.01	-50.89	7.85	-0.01	50.89	-7.85	0.000%
46	-3.91	-50.89	6.79	3.91	50.89	-6.79	0.000%
47	-6.78	-50.89	3.91	6.78	50.89	-3.91	0.000%
48	-7.83	-50.89	-0.01	7.83	50.89	0.01	0.000%
49	-6.79	-50.89	-3.93	6.79	50.89	3.93	0.000%
50	-3.92	-50.89	-6.80	3.92	50.89	6.80	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	0.00045180
3	Yes	5	0.00000001	0.00021518
4	Yes	6	0.00000001	0.00030956
5	Yes	6	0.00000001	0.00010281
6	Yes	6	0.00000001	0.00033045
7	Yes	6	0.00000001	0.00011055
8	Yes	5	0.00000001	0.00010618
9	Yes	5	0.00000001	0.00004442
10	Yes	6	0.00000001	0.00032957
11	Yes	6	0.00000001	0.00010973
12	Yes	6	0.00000001	0.00031790

13	Yes	6	0.00000001	0.00010546
14	Yes	5	0.00000001	0.00035835
15	Yes	5	0.00000001	0.00017095
16	Yes	6	0.00000001	0.00033401
17	Yes	6	0.00000001	0.00011180
18	Yes	6	0.00000001	0.00031317
19	Yes	6	0.00000001	0.00010406
20	Yes	5	0.00000001	0.00017864
21	Yes	5	0.00000001	0.00008196
22	Yes	6	0.00000001	0.00032410
23	Yes	6	0.00000001	0.00010765
24	Yes	6	0.00000001	0.00033570
25	Yes	6	0.00000001	0.00011191
26	Yes	4	0.00000001	0.00019676
27	Yes	6	0.00000001	0.00079484
28	Yes	7	0.00000001	0.00018056
29	Yes	7	0.00000001	0.00018427
30	Yes	6	0.00000001	0.00078921
31	Yes	7	0.00000001	0.00018163
32	Yes	7	0.00000001	0.00018240
33	Yes	6	0.00000001	0.00079041
34	Yes	7	0.00000001	0.00018589
35	Yes	7	0.00000001	0.00018249
36	Yes	6	0.00000001	0.00080092
37	Yes	7	0.00000001	0.00018793
38	Yes	7	0.00000001	0.00018677
39	Yes	4	0.00000001	0.00049130
40	Yes	5	0.00000001	0.00006768
41	Yes	5	0.00000001	0.00008023
42	Yes	4	0.00000001	0.00032208
43	Yes	5	0.00000001	0.00007712
44	Yes	5	0.00000001	0.00007037
45	Yes	4	0.00000001	0.00047587
46	Yes	5	0.00000001	0.00008340
47	Yes	5	0.00000001	0.00006916
48	Yes	4	0.00000001	0.00032929
49	Yes	5	0.00000001	0.00007379
50	Yes	5	0.00000001	0.00008221

Maximum Tower Deflections - Service Wind

Section No.	*Elevation*	*Horz. Deflection*	*Gov. Load*	*Tilt*	*Twist*
	ft	*in*	*Comb.*	*°*	*°*
L1	175 - 160	23.904	49	1.1608	0.0054
L2	160 - 145	20.283	49	1.1398	0.0039
L3	145 - 130	16.780	49	1.0848	0.0029
L4	135 - 120	14.564	49	1.0276	0.0024
L5	120 - 105	11.451	49	0.9400	0.0017
L6	105 - 85	8.693	50	0.8127	0.0011
L7	91 - 76	6.501	50	0.6817	0.0008
L8	76 - 61	4.499	50	0.5783	0.0006
L9	61 - 41	2.882	50	0.4517	0.0004
L10	48 - 33	1.799	50	0.3440	0.0003
L11	33 - 18	0.843	50	0.2495	0.0002
L12	18 - 3	0.246	50	0.1319	0.0001
L13	3 - 0	0.007	50	0.0213	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation	*Appurtenance*	*Gov. Load*	*Deflection*	*Tilt*	*Twist*	*Radius of Curvature*
ft		*Comb.*	*in*	*°*	*°*	*ft*
176.00	HPD3-4.7NS	49	23.904	1.1608	0.0054	70399

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
165.00	MX08FRO665-21 w/ Mount Pipe	49	21.483	1.1492	0.0044	35199
153.00	ET-X-TU-42-15-37-18-iR-RA_TIA w/ Mount Pipe	49	18.626	1.1196	0.0034	15336
143.70	10' T-Arms	49	16.486	1.0779	0.0028	11294
136.80	HPA-65R-BUU-H8-K_TIA w/ Mount Pipe	49	14.956	1.0381	0.0025	11889
123.80	10' T-Arms	49	12.211	0.9645	0.0019	8290
98.00	PD220	50	7.554	0.7443	0.0009	6848
85.00	Collar Mount	50	5.658	0.6385	0.0007	7682

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	175 - 160	108.792	22	5.2870	0.0248
L2	160 - 145	92.335	22	5.1934	0.0179
L3	145 - 130	76.406	22	4.9439	0.0132
L4	135 - 120	66.331	22	4.6834	0.0107
L5	120 - 105	52.170	24	4.2854	0.0078
L6	105 - 85	39.615	24	3.7058	0.0051
L7	91 - 76	29.628	24	3.1085	0.0034
L8	76 - 61	20.505	24	2.6374	0.0027
L9	61 - 41	13.133	24	2.0594	0.0019
L10	48 - 33	8.198	24	1.5682	0.0013
L11	33 - 18	3.841	24	1.1371	0.0009
L12	18 - 3	1.119	24	0.6011	0.0004
L13	3 - 0	0.030	24	0.0971	0.0001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
176.00	HPD3-4.7NS	22	108.792	5.2870	0.0248	16051
165.00	MX08FRO665-21 w/ Mount Pipe	22	97.789	5.2356	0.0200	8025
153.00	ET-X-TU-42-15-37-18-iR-RA_TIA w/ Mount Pipe	22	84.801	5.1019	0.0155	3441
143.70	10' T-Arms	22	75.069	4.9124	0.0128	2520
136.80	HPA-65R-BUU-H8-K_TIA w/ Mount Pipe	22	68.110	4.7309	0.0111	2657
123.80	10' T-Arms	24	55.628	4.3968	0.0086	1848
98.00	PD220	24	34.427	3.3937	0.0042	1514
85.00	Collar Mount	24	25.784	2.9116	0.0031	1694

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	175 - 160 (1)	TP27.5627x24x0.25	15.00	0.00	0.0	21.672 6	-6.18	1573.07	0.004

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L2	160 - 145 (2)	TP31.1253x27.5627x0.25	15.00	0.00	0.0	24.4996	-10.31	1713.21	0.006
L3	145 - 130 (3)	TP34.688x31.1253x0.25	15.00	0.00	0.0	26.3842	-16.99	1798.30	0.009
L4	130 - 120 (4)	TP36.5067x33.0004x0.3125	15.00	0.00	0.0	35.9001	-22.49	2561.80	0.009
L5	120 - 105 (5)	TP40.013x36.5067x0.3125	15.00	0.00	0.0	39.3779	-25.64	2727.66	0.009
L6	105 - 85 (6)	TP44.688x40.013x0.3125	20.00	0.00	0.0	42.6238	-28.91	2869.34	0.010
L7	85 - 76 (7)	TP46.2123x42.6605x0.375	15.00	0.00	0.0	54.5579	-34.29	3828.03	0.009
L8	76 - 61 (8)	TP49.7642x46.2123x0.375	15.00	0.00	0.0	58.7855	-38.68	4020.92	0.010
L9	61 - 41 (9)	TP54.5x49.7642x0.375	20.00	0.00	0.0	62.4494	-42.71	4176.03	0.010
L10	41 - 33 (10)	TP55.9698x52.0925x0.375	15.00	0.00	0.0	66.1717	-49.32	4322.14	0.011
L11	33 - 18 (11)	TP59.8472x55.9698x0.375	15.00	0.00	0.0	70.7868	-54.48	4487.22	0.012
L12	18 - 3 (12)	TP63.7245x59.8472x0.375	15.00	0.00	0.0	75.4018	-59.93	4634.52	0.013
L13	3 - 0 (13)	TP64.5x63.7245x0.375	3.00	0.00	0.0	76.3248	-61.05	4661.85	0.013

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	175 - 160 (1)	TP27.5627x24x0.25	81.32	882.36	0.092	0.00	882.36	0.000
L2	160 - 145 (2)	TP31.1253x27.5627x0.25	228.24	1087.46	0.210	0.00	1087.46	0.000
L3	145 - 130 (3)	TP34.688x31.1253x0.25	394.37	1229.98	0.321	0.00	1229.98	0.000
L4	130 - 120 (4)	TP36.5067x33.0004x0.3125	736.52	1905.21	0.387	0.00	1905.21	0.000
L5	120 - 105 (5)	TP40.013x36.5067x0.3125	1137.00	2226.76	0.511	0.00	2226.76	0.000
L6	105 - 85 (6)	TP44.688x40.013x0.3125	1529.24	2537.02	0.603	0.00	2537.02	0.000
L7	85 - 76 (7)	TP46.2123x42.6605x0.375	1971.50	3607.02	0.547	0.00	3607.02	0.000
L8	76 - 61 (8)	TP49.7642x46.2123x0.375	2433.70	4084.75	0.596	0.00	4084.75	0.000
L9	61 - 41 (9)	TP54.5x49.7642x0.375	2848.34	4508.73	0.632	0.00	4508.73	0.000
L10	41 - 33 (10)	TP55.9698x52.0925x0.375	3343.45	4946.58	0.676	0.00	4946.58	0.000
L11	33 - 18 (11)	TP59.8472x55.9698x0.375	3853.06	5496.09	0.701	0.00	5496.09	0.000
L12	18 - 3 (12)	TP63.7245x59.8472x0.375	4376.23	6048.92	0.723	0.00	6048.92	0.000
L13	3 - 0 (13)	TP64.5x63.7245x0.375	4482.52	6159.51	0.728	0.00	6159.51	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	175 - 160 (1)	TP27.5627x24x0.25	7.64	786.53	0.010	1.47	1769.32	0.001
L2	160 - 145 (2)	TP31.1253x27.5627x0.25	11.77	856.61	0.014	1.47	2180.24	0.001
L3	145 - 130 (3)	TP34.688x31.1253x0.25	21.23	899.15	0.024	0.88	2465.78	0.000
L4	130 - 120 (4)	TP36.5067x33.0004x0.3125	26.10	1280.90	0.020	0.49	3820.05	0.000

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 $\frac{T_u}{\phi T_n}$
L5	120 - 105 (5)	TP40.013x36.5067x0.3125	27.32	1363.83	0.020	0.49	4464.26	0.000
L6	105 - 85 (6)	TP44.688x40.013x0.3125	28.61	1434.67	0.020	0.49	5085.82	0.000
L7	85 - 76 (7)	TP46.2123x42.6605x0.375	30.24	1914.01	0.016	0.49	7231.77	0.000
L8	76 - 61 (8)	TP49.7642x46.2123x0.375	31.41	2010.46	0.016	0.49	8188.86	0.000
L9	61 - 41 (9)	TP54.5x49.7642x0.375	32.38	2088.02	0.016	1.61	9038.25	0.000
L10	41 - 33 (10)	TP55.9698x52.0925x0.375	33.55	2161.07	0.016	1.61	9915.33	0.000
L11	33 - 18 (11)	TP59.8472x55.9698x0.375	34.44	2243.61	0.015	1.61	11016.08	0.000
L12	18 - 3 (12)	TP63.7245x59.8472x0.375	35.36	2317.26	0.015	1.61	12123.50	0.000
L13	3 - 0 (13)	TP64.5x63.7245x0.375	35.54	2330.93	0.015	1.61	12345.00	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	175 - 160 (1)	0.004	0.092	0.000	0.010	0.001	0.096 ✔	1.000	4.8.2 ✔
L2	160 - 145 (2)	0.006	0.210	0.000	0.014	0.001	0.216 ✔	1.000	4.8.2 ✔
L3	145 - 130 (3)	0.009	0.321	0.000	0.024	0.000	0.331 ✔	1.000	4.8.2 ✔
L4	130 - 120 (4)	0.009	0.387	0.000	0.020	0.000	0.396 ✔	1.000	4.8.2 ✔
L5	120 - 105 (5)	0.009	0.511	0.000	0.020	0.000	0.520 ✔	1.000	4.8.2 ✔
L6	105 - 85 (6)	0.010	0.603	0.000	0.020	0.000	0.613 ✔	1.000	4.8.2 ✔
L7	85 - 76 (7)	0.009	0.547	0.000	0.016	0.000	0.556 ✔	1.000	4.8.2 ✔
L8	76 - 61 (8)	0.010	0.596	0.000	0.016	0.000	0.606 ✔	1.000	4.8.2 ✔
L9	61 - 41 (9)	0.010	0.632	0.000	0.016	0.000	0.642 ✔	1.000	4.8.2 ✔
L10	41 - 33 (10)	0.011	0.676	0.000	0.016	0.000	0.688 ✔	1.000	4.8.2 ✔
L11	33 - 18 (11)	0.012	0.701	0.000	0.015	0.000	0.713 ✔	1.000	4.8.2 ✔
L12	18 - 3 (12)	0.013	0.723	0.000	0.015	0.000	0.737 ✔	1.000	4.8.2 ✔
L13	3 - 0 (13)	0.013	0.728	0.000	0.015	0.000	0.741 ✔	1.000	4.8.2 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	175 - 160	Pole	TP27.5627x24x0.25	1	-6.18	1573.07	9.6	Pass
L2	160 - 145	Pole	TP31.1253x27.5627x0.25	2	-10.31	1713.21	21.6	Pass
L3	145 - 130	Pole	TP34.688x31.1253x0.25	3	-16.99	1798.30	33.1	Pass
L4	130 - 120	Pole	TP36.5067x33.0004x0.3125	4	-22.49	2561.80	39.6	Pass
L5	120 - 105	Pole	TP40.013x36.5067x0.3125	5	-25.64	2727.66	52.0	Pass
L6	105 - 85	Pole	TP44.688x40.013x0.3125	6	-28.91	2869.34	61.3	Pass
L7	85 - 76	Pole	TP46.2123x42.6605x0.375	7	-34.29	3828.03	55.6	Pass
L8	76 - 61	Pole	TP49.7642x46.2123x0.375	8	-38.68	4020.92	60.6	Pass
L9	61 - 41	Pole	TP54.5x49.7642x0.375	9	-42.71	4176.03	64.2	Pass
L10	41 - 33	Pole	TP55.9698x52.0925x0.375	10	-49.32	4322.14	68.8	Pass
L11	33 - 18	Pole	TP59.8472x55.9698x0.375	11	-54.48	4487.22	71.3	Pass
L12	18 - 3	Pole	TP63.7245x59.8472x0.375	12	-59.93	4634.52	73.7	Pass
L13	3 - 0	Pole	TP64.5x63.7245x0.375	13	-61.05	4661.85	74.1	Pass
							Summary	
						Pole (L13)	74.1	Pass
						RATING =	**74.1**	**Pass**

APPENDIX B

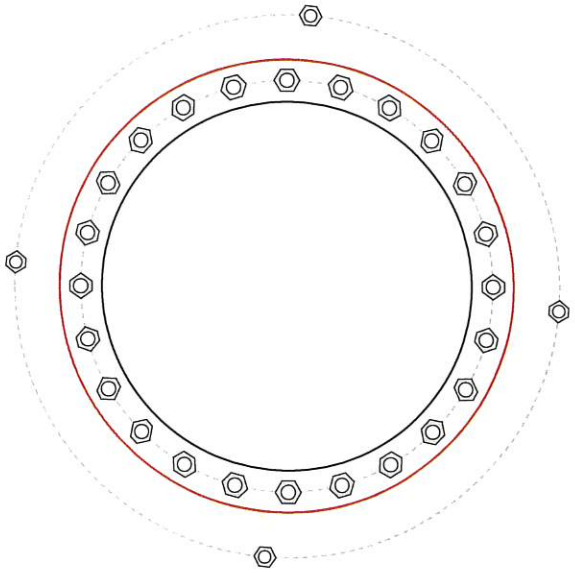
ADDITIONAL CALCULATIONS

Monopole Base Plate Connection

Site Info	
WO #	10710.NJJER013341A
Site ID	NJJER013341A
	2

Analysis Considerations	
TIA-222 Revision	G
Grout Considered:	Yes
l_{ar} (in)	0
Eta Factor, η	0.7

Applied Loads	
Moment (kip-ft)	4482.52
Axial Force (kips)	61.05
Shear Force (kips)	35.54



Connection Properties

Anchor Rod Data

GROUP 1: (24) 2" ø bolts (A687 N; Fy=105 ksi, Fu=125 ksi) on 58" BC

GROUP 2: (4) 1-3/4" ø bolts (A1035 Gr 120 N; Fy=120 ksi, Fu=125 ksi) on 76.5" BC

Base Plate Data

52" ID x 1.5" Plate (A572-42; Fy=42 ksi, Fu=60 ksi)

Stiffener Data

N/A

Pole Data

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

Analysis Results

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

GROUP 1:

Pu_t = 124.06	ϕPn_t = 250	**Stress Rating**
Vu = 1.48	ϕVn = n/a	**50.5%**
Mu = n/a	ϕMn = n/a	**Pass**

GROUP 2:

Pu_t = 126.91	ϕPn_t = 190	**Stress Rating**
Vu = 0	ϕVn = n/a	**66.8%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

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

Pier and Pad Foundation

WO # :	10710.NJJER01134A
Site Name:	NJJER01134A
Revision:	2

TIA-222 Revision:	G
Tower Type:	Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp}:	61.06	kips
Base Shear, Vu_comp:	35.53	kips
Moment, M_u:	4482.53	ft-kips
Tower Height, **H**:	175	ft
BP Dist. Above Fdn, bp_{dist}:	3	in

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, **dpier**:	7	ft
Ext. Above Grade, **E**:	0.25	ft
Pier Rebar Size, **Sc**:	11	
Pier Rebar Quantity, **mc**:	50	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	3	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	6	ft
Pad Width, W_1:	27.5	ft
Pad Thickness, **T**:	4	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	10	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	32	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	3	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	100	pcf
Ultimate Gross Bearing, Qult:	8.000	ksf
Cohesion, **Cu**:		ksf
Friction Angle, φ:	30	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:		
Neglected Depth, **N**:	3.50	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks				
	Capacity	**Demand**	**Rating**	**Check**
Lateral (Sliding) (kips)	235.91	35.53	**15.1%**	**Pass**
Bearing Pressure (ksf)	6.00	2.18	**36.3%**	**Pass**
*Overturning (kip*ft)*	7139.42	4713.48	**66.0%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	11244.45	4562.47	**40.6%**	**Pass**
Pier Compression (kip)	18370.97	76.65	**0.4%**	**Pass**
*Pad Flexure (kip*ft)*	7616.25	1836.50	**24.1%**	**Pass**
Pad Shear - 1-way (kips)	1168.40	235.05	**20.1%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.027	**16.3%**	**Pass**

Soil Rating:	**66.0%**
Structural Rating:	**40.6%**

Exhibit E

Lease Agreement

LICENSE AGREEMENT

THIS LICENSE AGREEMENT (this "***Agreement***") is entered on _____ (the "***Effective Date***"), by and between DISH Wireless L.L.C., a Colorado limited liability company having a place of business at 9601 S. Meridian Blvd., Englewood, Colorado 80112 ("***Licensee***"), and the Town of New Fairfield, a Connecticut municipality having a place of business at 4 Brush Hill Road, New Fairfield, Connecticut 06812 ("***Licensor***"). Unless otherwise defined in the body of this Agreement, capitalized terms are defined in Schedule 1 attached hereto and incorporated herein by reference.

The parties hereto agree as follows:

1. **LICENSE**

1.1 Tower Facility. Licensor is the owner or otherwise has rights to a certain Tower Facility situated on real property located at 302 Ball Pond Road, New Fairfield, Connecticut ("***Property***"), subject to and more particularly described on **Exhibit A**, attached hereto and incorporated herein by reference.

1.2 License. Subject to the terms of this Agreement, Licensor hereby grants to Licensee a non-exclusive (except for the Tower Space), limited, non-sublicensable, non-transferable (except as set forth in this Agreement) license during the Term to utilize a portion of the Tower Facility for the sole purpose of transmitting and receiving Licensee's radio frequencies ("***Permitted Frequencies***") at the power levels specified on **Exhibit B** for wireless voice and data communications ("***Permitted Use***") by installing, operating and maintaining certain Equipment on the tower at the designated height ("***Tower Space***") and connecting the tower-mounted equipment from the Tower Space to designated space on the ground ("***Ground Space***") with designated cables between the Tower Space and Ground Space ("***Cable Space***") and connecting the equipment on the ground to power and communications services (i.e., telephone or fiber) located within the Tower Facility or from the public way ("***Utility Space***"), as further described in, and subject to, the Site Plans attached hereto and incorporated herein as **Exhibit B** (the Tower Space, Ground Space, Cable Space and Utility Space collectively, the "***Licensed Space***"). Such license is expressly limited to the installation, operation and maintenance of Equipment consistent with the specifications, frequencies and in the locations identified in **Exhibit B** and for no other purpose. Licensor reserves all other rights not otherwise granted herein. Notwithstanding anything to the contrary herein, (i) Licensee acknowledges and agrees that portions of the **Licensed Space**, including, without limitation, **Tower Space**, **Ground Space**, **Cable Space** and **Utility Space** were previously occupied by New Cingular Wireless PCS, LLC (and its successors or assigns) (hereunder "**Former Tenant**"); (ii) Licensor and Licensee acknowledge that the **Former Tenant** terminated its contract for use and occupancy pursuant to the Notice of Non-Renewal/Termination-Communication Tower Lease Agreement dated June 23, 2006 ("**Former Agreement**"); and (iii) Licensee agrees to defend, indemnify and hold Licensor harmless from any claims made by **Former Tenant** that the **Licensed Space** is still subject to a right of occupancy or claim of rights of ownership to its property abandoned under that certain **Former Agreement**, including, without limitation, the concrete pad within the **Ground Space.**

2. **PRE AND POST CONSTRUCTION ACTIVITIES, APPROVALS**

2.1 Drawings. Licensee shall provide Licensor with plans, specifications and renderings prepared by a professional engineer licensed and in good standing in the jurisdiction where the Tower Facility is located showing the Equipment (in both hard copy, if requested by Licensor, and electronic form) ("***Construction Drawings***"); such Construction Drawings shall include the size, weight, color, quantity and location of any and all antennas, radios, platforms, mounts, shelters, cabinets, grounding rings, cables, and utility lines associated with Licensee's use of the Tower Facility. Upon receipt Licensor will have a reasonable period of time to review the Construction Drawings, which may include having Licensor seek professional review and following such review, Licensee will provide comments, if any, to the Construction Drawings. If Licensor elects to perform the review of the Construction Drawings, Licensee agrees to remit payment to Licensor for all reasonable costs and expenses incurred by Licensor for such review ("***Construction Drawings Fee***") within thirty (30) days following receipt of an invoice from Licensor. Licensor agrees that the costs for said review shall not exceed $3,500, unless a higher amount has been agreed to by Licensee. Upon Licensor's approval of the Construction Drawings, Licensor will attach or update the Construction Drawings and incorporate into this Agreement as **Exhibit C**. In the event Licensee has to make changes to the Construction Drawings in any manner whatsoever while performing the Work during the Construction Period, Licensee will seek Licensor's written approval to any proposed change, and upon Licensor's approval, such change shall be incorporated into the Construction Drawings ("***CD Changes***"). Licensee hereby acknowledges and agrees that installation of the Equipment must be in strict accordance with the approved Construction Drawings and **Exhibit A** and **Exhibit B**. Notwithstanding the forgoing, Licensee shall not infer nor shall acceptance of the Construction Drawings by Licensor be deemed to be a representation by Licensor that (i) such Construction Drawings or the plans and specifications described therein are in compliance with federal, state or local laws, ordinances, rules or regulations, (ii) that such installation shall not cause impermissible or unlawful interference with the Permitted Frequencies,

or (iii) that such Installation is consistent with Licensee's Permitted Use as specifically set forth herein.

2.2 Government Approvals and Reports. Promptly following the Effective Date, Licensee shall commence and diligently complete any and all work necessary to obtain permits and approvals as required by federal, state, county and municipal authorities to the extent such laws relate to Licensee's use of the Licensed Space (collectively the "***Governmental Approvals***"). Nothing herein is intended to, nor shall excuse Licensee's compliance with all Governmental Approvals, including, but not limited to, zoning authorizations and building permits. Licensee agrees that Licensee's ability to use the Licensed Space is contingent upon it obtaining all Governmental Approvals that may be required by any federal, state or local authorities as well as a satisfactory environmental, historic preservation, tribal review, geological, NEPA, Phase I, FAA, AM detuning studies, intermodulation and permissible emissions reports, structural analysis, soil tests and any and all other usual and customary reviews and reports obtained consistent with the wireless telecommunications industry (hereinafter "***Reports***") which will permit Licensee's use of the Licensed Space for the Permitted Purpose as set forth in this Agreement. Licensor shall cooperate with Licensee, at Licensee's sole cost and expense, in its effort to obtain such approvals and shall take no action which would adversely affect the status of the Licensed Space with respect to the Permitted Use. Licensee shall provide the Licensor will all such Reports and Governmental Approvals the earlier of (i) ten (10) days from Licensee's receipt thereof or (ii) thirty (30) days prior to the start of any Work.

2.3 Notice to Proceed. Prior to the commencement of any inspection or construction activity on the Property, Licensed Space or Tower Facility, Licensee shall provide at least ten (10) days' prior written notice ("***work authorization***") informing the Licensor of the proposed start date, duration and the scope of the Work involved ("***Site Work Activity***"). Licensor shall promptly review the proposed notice and issue a notice to proceed to Licensee in order to commence the Site Work Activity ("***NTP***"), unless the Licensor requests additional information, clarification or reschedules the Site Work Activity as provided for herein. Licensee shall not commence Work on the Property or Licensed Space until Licensor issues to Licensee an NTP. In order for an NTP to be requested by Licensee, Licensee shall submit to Licensor the following complete and accurate documentation: (i) evidence that Licensee has obtained all required Governmental Approvals including, but not limited to, zoning approvals, building permits, and any applicable environmental approvals including copies of the same; (ii) a copy of the plans and specifications that have been approved by Licensor for the proposed installation; (iii) evidence that any party that will be performing the Work have valid and current workers' compensation and general liability insurance certificates on file with Licensor naming Licensor as an additional insured and which otherwise satisfy the insurance coverage requirements set forth in this Agreement; and (iv) a construction schedule. In no event will an NTP be issued prior to the payment by Licensee of any outstanding charges or fees. Notwithstanding anything to the contrary in this Agreement, Licensor reserves the right, in its sole discretion, to refuse to permit any person to climb the Tower.

(a) Structural Analysis. Prior to the commencement of any initial or subsequent Work on the tower by or for the benefit of Licensee, Licensee shall provide, or Licensor may, in its reasonable discretion, perform or cause to be performed, a Structural Analysis or require a professional engineer's certified letter to determine the availability of capacity at the Tower Facility for the installation or modification of any Equipment on the tower at the Tower Space by Licensee. If Licensor elects to perform the Structural Analysis, Licensee agrees to remit payment to Licensor for the Structural Analysis Fee within thirty (30) days following receipt of an invoice from Licensor. In the event a Structural Analysis is performed after the Effective Date and prior to the installation of the Equipment, and such analysis indicates that the tower cannot accommodate the proposed installation of Licensee's Equipment without a modification to the tower, Licensee shall be responsible for making such modification, or if Licensor elects, Licensor will provide Licensee with the estimated cost to complete such modification (which fee shall be a reasonable estimate of Licensor's actual cost of making such modifications). Such modification shall become part of the Tower Facility and be Licensor's sole property. If Licensee elects not to make such modification or pay such fee, at Licensor's election, and Licensee and Licensor do not otherwise reach an agreement regarding the costs of such modification, Licensee or Licensor may terminate this Agreement within thirty (30) days from Licensor's notice to Licensee.

(b) Interference Study. Prior to the commencement and any subsequent modification of Licensee's Permitted Frequencies propagated from the Tower Facility, Licensee will provide, or Licensor may, in its reasonable discretion, elect to perform, an Interference Study and, if Licensor performs the Interference Study, Licensee agrees to remit payment to Licensor for the Interference Study Fee within thirty (30) days following receipt of an invoice from Licensor. In the event an Interference Study is performed after the execution of this Agreement by Licensor but prior to the installation of Licensee's Equipment, and such Interference Study indicates that the proposed installation of Licensee's Equipment is acceptable, such an indication in no way relieves Licensee of its obligations under this Agreement.

2.4 Permitting. Licensee must provide Licensor with copies of any zoning or permitting applications before submitting to the applicable zoning authority. Licensor shall respond to Licensee with its approval or rejection of such application within a reasonable period of time following its receipt of full and final copies thereof. Licensor reserves the right to (i) require that it be named as co-applicant on any such application or (ii) require revisions to any such application. Licensor also reserves the

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right, prior to any decision by the applicable zoning authority, to approve or reject any conditions of approval, limitations or other obligations that would apply, as a condition of such zoning authority's approval; *provided, however,* Licensor shall not unreasonably withhold approval of any such conditions of approval, limitations or other obligations. Licensee shall be solely responsible for all costs and expenses associated with (a) any application submitted by Licensee, (b) making any improvements or performing any other obligations required as a condition of approval with respect to same and (c) any other related expenses.

2.5 Construction. Upon receipt of the NTP, Licensee shall perform the Site Work Activity in an expeditious and good workmanlike effort within the Construction Period. Licensee warrants that all Work shall be completed by licensed and qualified contractors, shall be done with good materials and performed in a professional manner consistent with best industry practices and in a lien-free manner, and shall be done in full compliance with all applicable laws and governmental regulations. Licensee's failure to start the Site Activity Work as provided in the NTP or completion of the Site Work Activity within the Construction Period shall result in Licensee resubmitting the work authorization request in order to proceed with or re-start the Site Activity Work. Licensee shall coordinate any and all Site Work Activity, to the extent possible, in an effort to minimize multiple work parties within the Tower Facility at the same time, or if such Site Work Activity will likely cause disruption with the Property. Except for emergency situations, the Licensor reserves the right to reschedule Site Work Activity within the Licensed Space by providing Licensee with no less than two (2) days' prior written notice. All construction shall be performed in compliance with the approved Construction Drawings, and no Work may materially interfere with existing uses on the Tower Facility, nor render the Tower Facility materially unfit for use by the Licensor or damage any existing facilities on the Tower Facility or the Property.

2.6 Performance of Work. Licensee shall be responsible for installing Licensee's Equipment, making approved Modifications to Licensee's Equipment, or removing Licensee's Equipment from the Tower Facility (the "***Work***") in accordance with and subject to the Construction Drawings; provided, Licensee shall (i) only engage a Subcontractor approved by Licensor to perform the Work and (ii) should Licensor elect to have the Work inspected ("***Inspection***"), then Licensee agrees to remit payment to Licensor for all reasonable costs and expenses incurred by Licensor for such Inspection, such costs and expenses not to exceed $2,500, unless said amount had be previously agreed to by Licensee, ("***Inspection Fee***") within thirty (30) days following receipt of an invoice from Licensor . Notwithstanding Licensor's inspection of any Work, Licensor shall not in any way be liable for any defect in the Work or any of the materials used, and Licensee shall not rely on Licensor's inspection of the Work as confirmation that no defects exist. Licensee shall keep the worksite clean during any Site Work Activity.

2.7 Subcontractors. Licensee shall remain fully responsible for all Work, and for performance of its obligations under the this Agreement, regardless of Licensee's use of any Subcontractors, and Licensor will not be liable for any payments due to any Subcontractor. Licensee's obligations under this Agreement shall be binding upon each person that Licensee may use to perform the Work for Licensee, and Licensee shall be responsible for (i) informing those persons of such obligations, (ii) contractually requiring each such person's compliance with obligations appropriate both to the Work, and all other obligations under this Agreement; and (iii) ensuring each such party's compliance with the foregoing. Licensee shall be responsible for any act or omission of a Subcontractor that would be deemed a breach of this Agreement, as if Licensee committed such act or omission. Licensee shall not allow, and shall contractually prohibit, each Subcontractor from further subcontracting any Work or other obligations, or any portion thereof under this Agreement.

2.8 Tower-Mounted Equipment. With respect to the installation of any tower-mounted equipment, if Licensee does not install all of its tower-mounted equipment within the Construction Period, then the right to install any such tower-mounted equipment not installed shall be deemed waived, with no reduction of the Monthly Recurring Charge. No capacity or rights will be reserved for future installation of such tower-mounted equipment after expiry of the Construction Period; provided, however, Licensee may thereafter install the remainder of the permitted, but uninstalled, tower-mounted equipment for no additional increase to the Monthly Recurring Charge, subject to available tower capacity, as determined by Licensor. Licensee shall notify Licensor in writing and coordinate with Licensor prior to installing any portion of the remainder of the permitted, but uninstalled, tower-mounted equipment after expiry of the Construction Period. Licensee acknowledges and agrees that Licensor may require that Licensee submit a new Application with respect to the installation of the remainder of such permitted, but uninstalled, tower-mounted equipment. In the event that Licensor determines that the tower cannot accommodate such permitted, but uninstalled, tower-mounted equipment without requiring modifications thereto, then the parties may negotiate terms and conditions pursuant to which the modifications to the tower will be made for the purpose of accommodating such permitted, but uninstalled, tower-mounted equipment.

2.9 Reduction of Available Capacity. If Licensor determines that the tower no longer has sufficient capacity to accommodate any permitted, but uninstalled, tower-mounted equipment, due to a change in the applicable Code after the date of the subject Structural Analysis and prior to Licensee's completion of installation of any tower-mounted equipment, then the right to install any such tower-mounted equipment not installed shall be deemed waived, with no reduction of the Monthly Recurring Charge. No capacity or rights will be reserved for future installation of such tower-mounted equipment after

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such change in such applicable Code; provided, however, the parties may negotiate terms and conditions pursuant to which the modifications to the Tower Facility or tower will be made for the purpose of accommodating any such permitted, but uninstalled, tower-mounted equipment. Notwithstanding anything to the contrary in this Agreement, the offer expressed to Licensee in this Agreement shall automatically become null and void with no further obligation by either party hereto if a Structural Analysis completed after the execution of this Agreement by Licensor, but before the commencement of the installation of Licensee's Equipment, indicates that the tower is not suitable for Licensee's Equipment unless Licensor and Licensee mutually agree that structural modifications or repairs shall be made to the tower on mutually agreeable terms.

2.10 Conditions Precedent to Installation or Modification. The parties agree that, notwithstanding anything to the contrary herein, Licensee's right to install Equipment or make a Modification to Equipment at the Tower Facility shall not commence until the following conditions are satisfied: (i) Licensor has received any written consent required under the Underlying Agreement to allow Licensor to license the Licensed Space to Licensee, if such consent is required, or Licensor has determined that no such written consent is required; (ii) Licensor has received and approved Licensee's Construction Drawings showing the proposed installation of or Modification to the Equipment; (iii) Licensee has received and provided to Licensor (and Licensor has reviewed and accepted) copies of (a) all required permits, if any, for its installation of or Modification to the Equipment and (b) all required regulatory or Governmental Approvals pertaining to Licensee's proposed use of the Tower Facility; (iv) any and all Non-Recurring Charges have been paid; and (v) an NTP pertaining to such installation or Modification has been issued by Licensor. With respect to Licensee's initial installation of Equipment on the Tower Facility, if any applicable conditions precedent are not satisfied within ninety (90) days after the Effective Date of this Agreement, either party shall have the right to terminate this Agreement upon written notice to the other party; provided, however, the foregoing right to terminate this Agreement shall expire upon satisfaction of all applicable conditions precedent if said termination right was not previously exercised by either party. Licensor and Licensee shall cooperate to satisfy any conditions precedent.

2.11 Closeout Documentation. Licensee shall provide to Licensor all Closeout Documentation with respect to such Work within forty-five (45) days after completion of the Site Work Activity.

2.12 Undocumented Installation or Modification. In the event that Licensee installs Equipment or makes a Modification other than as permitted hereunder, it shall constitute a material breach of this Agreement and Licensor shall, in addition to other remedies available to Licensor hereunder, including, without limitation, charge Licensee for the unauthorized installation and use thereof, have the right to terminate this Agreement and require Licensee to immediately vacate the Tower Facility.

2.13 Modifications. Licensee shall have the right to make Modifications, repairs or replacements so long as such modifications, repairs or replacements: (i) result in a like-for-like configuration (identical in length, width, height, weight, quantity and use of Permitted Frequencies), and (ii) do not materially change the visual and aesthetic layout of the Tower Facility as currently depicted in the Site Plans (***"Minor Modifications"***). Minor Modifications shall be handled pursuant to the work authorization request and NTP process provided herein. Licensee shall obtain the Licensor's prior written approval for all other modifications, repairs or replacements (***"Major Modifications"***). Any tower replacement, relocation or expansion shall require written consent of the Licensor. A Structural Analysis, AM Detuning Study or an Interference Study may be required in connection with a proposed Modification, and Licensee will be liable for providing the Structural Analysis, AM Detuning Study or Interference Study, as applicable, or, at Licensor's option, should Licensor choose to undertake such Structural Analysis, AM Detuning Study or Interference Study, paying Licensor the Structural Analysis Fee, AM Detuning Study Fee or Interference Study Fee. Any approved Modification shall be evidenced by an amendment to this Agreement. Licensee agrees that any Modification, or change in Licensee's use of the Licensed Space, as approved herein, may entitle Licensor to additional compensation.

3. ACCESS, USE OF SITE, PERMITTING APPROVAL, UTILITIES

3.1 Access to Tower Facility. Subject to any restrictions in the Underlying Agreement or easement, Licensor hereby grants to Licensee a non-exclusive license for pedestrian and vehicular ingress to and egress from the Tower Facility over the designated access area as described in Section 3.1(a) and 3.1(b) below for the purposes of maintaining, operating and repairing the Equipment, together with a license to maintain, operate and repair utility lines, wires, cables, pipes, lines, or any other means of providing utility service, including electric and telephone service, to the Licensed Space. Licensor shall have no duty to remove snow, ice or otherwise maintain the access area.

(a) The Licensor hereby grants to Licensee the right of entry and access between the hours of 7:00 a.m. and 4:00 p.m., Monday through Friday (***"normal business hours"***) only, on foot or by motor vehicle, including trucks over or along the Property, for all purposes necessary during the Site Work Activity as depicted on the Site Plans (the ***"Temporary Construction Access"***). Licensee shall provide a list of all workers and Subcontractors that may need access to the Property during construction. The Temporary Construction Access shall terminate upon the issuance of a certificate of occupancy or its equivalent. Any subsequent Modifications shall be subject to the Temporary Construction Access time periods within which Work may be performed.

(b) Maintenance and Operations Access. Upon completion of the Work, Licensor hereby grants to Licensee the right of ingress and egress, seven days per week, 24 hours per day during an emergency, otherwise during normal business hours, on foot or by motor vehicle, including trucks (subject to the limitations set forth below) over or along the Property as depicted on the Site Plans (the "***Maintenance and Operations Access***" and together with the Temporary Construction Access, the "***Access Rights***"). All vehicular access utilizing the Maintenance and Operations Access shall be limited to "class 2" vehicles (as defined by the Federal Highway Administration), not exceeding 15,000 pounds gross vehicle weight and shall remain on and within the access way at all times. The Licensee and its respective agents, employee's, and Subcontractors shall be responsible for the repair of any damage to the Property, including but not limited to, sidewalks, landscaping, storm drain, erosion control and perimeter walls, caused by the use of the Access Rights.

3.2 Right of Entry. Licensor shall have the right to enter the Licensed Space during the Term hereof in the event of an emergency, inspection of the Licensed Space and other purposes as may be required to carry out the terms and conditions of this Agreement.

3.3 Maintenance. Except as otherwise expressly provided herein, Licensee shall be solely responsible, at its sole cost and expense, for all improvements to and maintenance of the Licensed Space and for the construction, maintenance, up-keep, or repairs necessary to keep the Licensed Space safe and serviceable for its Permitted Use. Such maintenance to include, but not be limited to, maintaining the access way free and clear of snow and ice, as well as maintaining the Licensed Space by keeping it clear from weeds, vegetative overgrowth, replacing shrubs or other vegetation if dead or diseased, debris and repairing/painting any weathered or chipped/peeled painting of equipment, shelters, utility lines, etc. Licensor neither assumes, nor shall it have, any responsibility for the condition of the Licensed Space. In the event the Licensee fails to maintain the Licensed Space in a condition acceptable to the Licensor, then the Licensor shall have the right, but not the obligation, to maintain the Licensed Space at Licensee's sole cost and expense. Licensor shall have the right to offset/charge the Licensee for any and all costs incurred by the Licensor. Such costs and expenses to be reimbursed by Licensee within thirty (30) days from receipt of invoice from Licensor.

3.4 Utilities. All utility services installed on the Tower Facility for the use or benefit of Licensee shall be separately metered from Licensor's utilities and Licensee shall pay the cost of all utility service necessary to install, maintain and operate the Equipment. Licensee shall be solely responsible for extending utilities to the Tower Facility as necessary for the operation of the Equipment and for the payment of utility charges including connection charges and security deposits incurred by Licensee. Licensee shall obtain and pay the cost of telephone and/or fiber backhaul connections, the installation of which shall be in compliance with best industry practices and procedures for installation and maintenance of Equipment.

3.5 Noise. Licensee shall comply with local noise ordinances and, if none are in effect, then not allow any excessive or objectionable levels of audible noise as determined by the Licensor to be generated by the Licensee's Equipment at all times during the Term of this Agreement.

3.6 Notice to Licensor. Licensee agrees to provide prior notice of any access to be made by Licensee or its Subcontractors to the Tower Facility by calling Licensor at (203) 312-5701 (or by providing notice as otherwise directed by Licensor via email at mevans@newfarfild.org). For safety reasons, access to the Tower Facility is restricted to times when elevated work is not being performed at the Tower Facility by any other person.

4. TERM

4.1 Term of Agreement. The initial term of this Agreement shall commence on the Effective Date and continue for a period of sixty (60) months (the "***Initial Term***").

4.2 Renewal Term. The Initial Term of this Agreement may be extended for up to four (4) successive terms of sixty (60) months each (individually referred to as a "***Renewal Term***" and collectively the "***Renewal Terms***" and together with the Initial Term, the "***Term***") on the same terms and conditions as set forth herein, unless Licensee delivers to the Licensor written notice at least twelve (12) months prior to the expiration of the Initial Term or any then-current Renewal Term, as applicable, of its election not to exercise any renewal and *provided, that* at the time of each such Renewal Term, (i) Licensee is not in default hereunder and no condition exists which if left uncured would, with the passage of time or the giving of notice, result in a default by Licensee hereunder. Provided that the foregoing conditions are satisfied, this Agreement shall automatically renew for each successive Renewal Term.

4.3 Term Subject to Underlying Agreement. Notwithstanding anything to the contrary herein, if an Underlying Agreement applies to the Tower Facility, and the term of the Underlying Agreement expires or terminates sooner than the expiration or termination of this Agreement, and Licensor has not assigned (and is not obligated to assign) its rights hereunder to the Owner, then the Term of this Agreement shall continue and remain in effect only as long as Licensor retains its interest under the

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Underlying Agreement.

4.4 Holdover Term. If Licensee fails to remove the Equipment at the expiration of the Term, such failure shall be deemed to extend the Term of this Agreement on a month-to-month basis under the same terms and conditions herein except that (i) the MRC shall be due on or before the first day of every calendar month during such month-to-month term in an amount equal to one hundred twenty-five percent (125%) of the MRC in effect for the last month of the Term ("***Holdover Fee***"), such Holdover Fee to escalate annually on the anniversary of the MRC Commencement Date by an amount equal to six percent (6%) of the Holdover Fee in effect for the month immediately prior to the month in which such escalation takes place, and (ii) the month-to-month extension shall be terminable upon thirty (30) days' prior written notice from either Licensor or Licensee to the other; provided, however, nothing contained herein shall grant Licensee the unilateral right to extend the Term of this Agreement after the expiration of the Term.

5. **CHARGES AND FEES**

5.1 Monthly Recurring Charge. Subject to adjustment in accordance with Section 5.2 below, Licensee shall pay to Licensor an annual amount of Forty Seven Thousand One Hundred and 00/100 Dollars ($47,100.00), payable in equal monthly payments of Three Thousand Nine Hundred Twenty-Five ($3,925.00) (the "***Monthly Recurring Charge***" or "***MRC***") for its license and use of the Licensed Space. The MRC shall be paid in advance and without demand, commencing on the MRC Commencement Date, and on the first day of each month thereafter, continuing for the Term, subject to extensions as provided for herein. Payments shall be made by check or electronic funds transfer as designated by Licensor. Payments for any partial month shall be prorated.

5.2 Adjustments to Monthly Recurring Charge and Other Fees. The Monthly Recurring Charge and all other fees and charges herein that are expressed as fixed dollar amounts shall be increased on the first anniversary of the MRC Commencement Date and every anniversary of such date thereafter (the "***Adjustment Date***") by three and one-half percent (3.5%). Licensor's failure to demand any such increase shall not be construed as a waiver of any right thereto and Licensee shall be obligated to remit all increases notwithstanding any lack of notice or demand thereof.

5.3 Regulatory Compliance Costs. In the event that Licensor incurs Regulatory Compliance Costs at the Tower Facility during the Term, then, at Licensor's election, Licensee shall pay to Licensor its Pro Rata Share of such Regulatory Compliance Costs within thirty (30) days of receipt of Licensor's invoice for same (together with supporting documentation).

5.4 Taxes, Fees and Assessments. Licensee shall pay directly to the applicable Government Entity, or to Licensor, if Licensor is invoiced by such Government Entity, if and when due, all taxes, fees, assessments or other charges assessed by such Government Entity against the Equipment or Licensee's use of the Tower Facility or the Licensed Space. Licensee shall pay to Licensor or the appropriate taxing authority, if and when due, any sales, use, ad valorem or other similar taxes or assessments which are assessed or due by reason of this Agreement or Licensee's use of the Tower Facility or the Licensed Space. At Licensor's election, Licensee shall also pay to Licensor its Pro Rata Share of all taxes, fees, assessments or charges assessed by any Government Entity against the Tower Facility itself or against Licensor's improvements thereon. Licensor shall provide notice (together with supporting documentation) of any assessments to be paid by Licensee promptly upon receipt. Licensor shall invoice Licensee annually, indicating the amount of the assessment, Licensee's Pro Rata Share and the amount due. Said invoices shall be paid within thirty (30) days of Licensee's receipt.

5.5 Common Expenses. Licensee shall reimburse Licensor for Licensee's Pro Rata Share of all common expenses (the "***Common Expenses***") incurred by Licensor in the installation, operation, maintenance and repair of the Tower Facility, including, but not limited to, insurance, common utilities and real property taxes and actual costs of operating and maintaining the Tower Facility. Licensee shall reimburse Licensor for Common Expenses within thirty (30) days following receipt of an invoice from Licensor. Licensor shall provide Licensee with an accounting for any amounts invoiced hereunder.

5.6 Non Recurring Charge. Any and all charges, fees, costs and expenses other than the Monthly Recurring Charge including, without limitation, Application, Structural Analysis Fee, Interference Study Fee, AM Detuning Study Fee, Common Expenses, taxes, Regulatory Compliance Costs, and professional advisors fees are deemed non-recurring charges to be paid or payable by Licensee ("***Non Recurring Charge***" or "***NRC***").

5.7 No Setoffs. All MRCs and NRCs shall be paid in full directly to the Licensor without demand or deduction, offset, abatement, diminution or reduction of any description. Licensee expressly waives any right of setoff.

5.8 Late Fee. Should the MRC or NRC not be paid within twenty (20) days following the date due, a five percent (5%) late fee shall be added to the amount due. Furthermore, any and all amounts payable by Licensee under this Agreement that are not paid within thirty (30) days following the date due shall accrue interest at the rate of one percent (1%) per month or the maximum permitted by law from the date the amount first came due until paid. Licensee expressly agrees that the foregoing represents reasonable estimates of the Licensor's costs in the event of delay in payment of the License Fee, and is not a penalty.

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Licensee expressly acknowledges that this Agreement is a commercial transaction. Licensee agrees to be liable for costs of collection and reasonable attorneys' fees in any such action.

6. **INTERFERENCE**

6.1 Definitions. For purposes of this Section, the following capitalized terms shall have the meanings set forth herein:

(a) **"Interference"** includes any performance degradation, misinterpretation, or loss of information to a radio communications system caused by unwanted energy emissions, radiations, or inductions, but shall not include permissible interference as defined by the FCC, and in addition, with regard to Unlicensed Frequencies, congestion.

(b) **"Licensed Frequencies"** are those certain channels or frequencies of the radio frequency spectrum that are licensed by the FCC in the geographic area where the Tower Facility is located.

(c) A **"Licensed User"** is any user of the Tower Facility, including Licensee, which transmits and/or receives Licensed Frequencies at the Tower Facility, but only with respect to such Licensed Frequencies.

(d) A **"Priority User"** is any Licensed User of the Tower Facility that holds a priority position in relationship to Licensee for protection from Interference, as determined in this Section, which status is subject to change as set forth herein.

(e) A **"Subsequent User"** is any user of the Tower Facility that holds a subordinate position in relationship to Licensee for protection from Interference, as determined in this Section, which status is subject to change as set forth herein.

(f) **"Unlicensed Frequencies"** are those certain channels or frequencies of the radio frequency spectrum that are not licensed by the FCC and are available for use by the general public in the geographic area where the Tower Facility is located.

(g) An **"Unlicensed User"** is any user of the Tower Facility, including Licensee, which transmits and/or receives Unlicensed Frequencies at the Tower Facility, but only with respect to such Unlicensed Frequencies.

6.2 Information. Licensee shall cooperate with Licensor and with other lessees, licensees or occupants of the Tower Facility for purposes of avoiding Interference and/or investigating claims of Interference. Upon request, Licensee, within ten (10) days of Licensor's request, shall provide Licensor with a list of Licensee's Permitted Frequencies and Equipment specifications necessary to resolve or investigate claims of Interference.

6.3 Unlicensed Frequencies. Notwithstanding any other provision contained herein, as by and among Licensor, Licensee and other users of the Tower or Tower Facility, (i) an Unlicensed User shall have no priority with respect to any other FCC Unlicensed Users with respect to Interference; and (ii) an Unlicensed User's rights and obligations with respect to such Interference shall be determined and governed by FCC Rules and Regulations and any other applicable Law. Licensor expressly disclaims any and all warranties and accepts no responsibility for management, mediation, mitigation or resolution of Interference by and among FCC Unlicensed Users operating at the Tower Facility and shall have no liability therefor.

6.4 Licensed Frequencies. Subject to FCC Rules and Regulations and other applicable Law, the parties acknowledge and agree that the accepted industry standard for priority protection from Interference between multiple Licensed Users has been based on the priority of occupancy of each user to another user of the Tower Facility, which priority has been based on the order of submittal of its Application by each user. Should the application of FCC Rules and Regulations and other applicable Law not resolve any claims of Interference consistent with this Section by and among Licensor, Licensee and other users of the Tower Facility, (i) each Licensed User's priority shall be maintained so long as the Licensed User does not change the equipment and/or frequency that it is entitled to use at the Tower Facility at the time of its initial occupancy; and (ii) Licensee acknowledges and agrees that if Licensee replaces its Equipment or alters the Permitted Frequencies, Licensee will lose its priority position for protection from Interference operating at the new frequency in its relationship to other Licensed Users which are in place as of the date Licensee replaces its Equipment or alters its radio frequency, consistent with this Section.

6.5 Correction.

(a) Licensee. Licensee agrees not to cause Interference with the operations of any other user of the Tower Facility and to comply with all other terms and provisions of this Section imposed upon Licensee. If Licensor determines, in its reasonable discretion based on standard and accepted engineering practices, that Licensee's Equipment is causing Interference to the installations of Licensor or a Priority User, Licensee shall, within 48 hours of notification from Licensor, commence such actions as are necessary to mitigate or eliminate the Interference, with the exception of ceasing Licensee's operations. If Licensee cannot mitigate or eliminate such Interference within the 48 hour period, Licensor may file a complaint with the FCC (currently the FCC's Enforcement Bureau, Spectrum Enforcement Division) or if such other user of the Tower Facility which is subject to Interference from Licensee's Approved Equipment is a Priority User, then upon the request of such Priority User

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consistent with Licensor's contractual obligations owed to the Priority User, Licensor may require that Licensee turn off or power down its interfering Approved Equipment and only power up or use such Approved Equipment during off-peak hours specified by Licensor in order to test whether such Interference continues or has been satisfactorily eliminated. If Licensee is unable to resolve or eliminate, to the satisfaction of Licensor, such Interference within thirty (30) days from Licensee's initial notification thereof, Licensee will immediately remove or cease operations of the interfering Approved Equipment.

(b) Licensor. Upon the request of Licensee, Licensor hereby covenants to take commercially reasonable efforts to prohibit a Subsequent User from causing Interference with the operations of Licensee to the extent Licensee is a Priority User pursuant this Section.

6.6 FCC Requirements Regarding Interference. Nothing herein shall prejudice, limit or impair Licensee's rights under applicable Law, including, but not limited to, FCC Rules and Regulations to redress any Interference independently of the terms of this Section. Notwithstanding anything herein to the contrary, the provisions set forth in this Section shall be interpreted in a manner so as not to be inconsistent with applicable Law, including, but not limited to, FCC Rules and Regulations and nothing herein relieves Licensee from complying with all applicable Laws governing the propagation of radio frequencies and/or radio frequency interference. The parties acknowledge that currently FCC Rules and Regulations govern the obligations of wireless telecommunication service providers with respect to the operation of equipment and use of frequencies. Licensee shall observe good engineering practice and standard industry protocols, applying such commercially reasonable techniques as constitute best practices among licensees, in the deployment of their frequencies and the operation of the Equipment.

AM Detuning. The parties acknowledge that the FCC Rules and Regulations govern the obligations of Licensee with respect to the operation of the Equipment. Consequently, the provisions set forth in this Agreement are expressly subject to the FCC Rules and Regulations. Licensee agrees, at Licensee's sole cost, to comply with the foregoing as well as any and all other FCC Rules, Regulations and public guidance relating to AM detuning as such provisions currently exist or are hereafter modified. Licensee shall be fully responsible for any pre and/or post installation testing for AM interference at the Tower Facility and for the installation of any new detuning apparatus or the adjustment of any existing detuning apparatus that may be necessary to prevent adverse effects on the radiation pattern of any AM station caused by the installation of the Equipment. Licensee shall provide Licensor with such AM Detuning Study of such compliance. In the event that Licensee determines that pre or post-installation testing for AM interference is not required at the Tower Facility, such a determination shall be at Licensee's sole risk. If Licensee or Licensor receives a complaint of interference from an AM broadcast station after the Equipment is added to a tower or a tower is modified to accommodate Licensee, Licensee shall eliminate such interference within thirty (30) calendar days of the receipt of such complaint. Licensee's failure to eliminate such interference within such thirty (30) day period shall constitute a default under this Agreement and Licensor shall have the right to eliminate such interference at Licensee's expense. Licensee further agrees to indemnify Licensor in the event that Licensee's failure to comply with the FCC Rules and Regulations prior to installation/modification of the Equipment results in any administrative investigation, proceeding or adjudication with respect to Licensor.

7. **RELOCATION OF EQUIPMENT BY LICENSOR**

7.1 Relocation of Equipment at Licensor's Option. Licensor shall have the right to change the location of the Equipment (including re-location of Equipment on the tower to an elevation used by other licensees, or re-location of Equipment to another tower located or to be constructed on the Property) upon sixty (60) days written notice to Licensee, provided that (i) said change does not, when complete, materially alter the coverage or signal pattern of the Equipment existing prior to the change, and (ii) the prior approval of the FCC is secured before the implementation of such change, if required. Licensee shall (i) immediately take any action needed to obtain such approval upon Licensor's request, (ii) promptly notify Licensor of any response by the FCC, and (iii) fully cooperate with Licensor in order to obtain such FCC approval in a timely manner. Any such relocation shall be performed at Licensor's expense and with reasonably minimal disruption to Licensee's operations and shall be evidenced by an amendment to this Agreement.

7.2 Replacement of Tower. Licensor may, at its election, replace or rebuild the tower or a portion thereof. Such replacement will (i) be at Licensor's sole cost and (ii) not result in an interruption of Licensee's communications services beyond that which is necessary to replace the existing tower. If Licensee, in Licensee's reasonable discretion, cannot operate the Equipment from the existing tower during such replacement or rebuild of the tower, Licensee may establish, at Licensee's sole cost, a temporary facility on the Tower Facility to provide such services as Licensee deems necessary during any such construction by Licensor so long as adequate space is then available. The location of such temporary facilities shall be subject to Licensor's approval. At the request of either Party, Licensor and Licensee shall enter into an amendment to this Agreement to clarify the rights of Licensor and Licensee to the new Tower Facility.

7.3 Tower Removal. If during the term of this Agreement Licensor determines based on engineering structural standards generally applied to communications towers that the tower is or has become structurally unsound such that pursuant to

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generally accepted industry safety standards the tower or a portion thereof must be removed, then, upon ninety (90) days' prior written notice to Licensee, Licensor may, in its sole discretion either (i) remove the tower and terminate this Agreement effective as of the date of such removal, or (ii) modify the tower and relocate Licensee's Equipment to an alternative location on the modified tower. If Licensee and Licensor are not able to agree on an alternative location on the modified tower for the installation of Licensee's Equipment within the foregoing ninety (90) day notice period, then Licensee or Licensor may elect to terminate this Agreement.

8. **RF EXPOSURE**

8.1 Licensee agrees to reduce power or suspend operation of its Equipment if necessary and upon reasonable notice to prevent exposure of workers or the public to RF radiation in excess of the then-existing regulatory standards. If antenna power output ("***RF Emissions***") is presently or hereafter becomes subject to any restrictions imposed by the FCC or other Governmental Entity for RF Emissions standards on Maximum Permissible Exposure ("***MPE***") limits, or if the Tower Facility otherwise becomes subject to federal, state or local rules, regulations, restrictions or ordinances, Licensee shall comply with Licensor's reasonable requests for modifications to the Equipment which are reasonably necessary to comply with such limits, rules, regulations, restrictions or ordinances and Licensor shall use commercially reasonable efforts to cause all other licensees of the Tower Facility to promptly comply. If Licensor requires an engineering evaluation or other power density study be performed to evaluate RF Emissions compliance with MPE limits, then all reasonable costs of such an evaluation or study shall be paid proportionately by Licensee and all other licensees of the tower within thirty (30) days of Licensor's request therefor. If said study or a study sponsored by any governmental agency indicates that RF Emissions at the Tower Facility do not comply with MPE limits, then Licensee and Licensor, each for itself, shall immediately take any and all steps necessary to ensure that it is individually in compliance with such limits, up to and including cessation of operation, until a maintenance program or other mitigating measures can be implemented to comply with MPE and in addition, Licensor shall use commercially reasonable efforts to cause all other licensees of the tower to take similar steps necessary to ensure that they are individually in compliance with such limits.

9. **LIENS**

9.1 Licensee agrees that it will pay or cause to be paid all costs for Work done by it or caused to be done by it on the Property, Tower Facility or Licensed Space, and will keep the Property, Tower Facility or Licensed Space free and clear of all mechanics' liens on account of work done by Licensee or persons claiming under it. Licensee may contest the validity or amount of any such lien and may appeal any adverse judgment or decree, *provided, however,* that at the written request of Licensor, Licensee shall post a bond sufficient to remove such lien pending contest against the enforcement of the lien against Licensor. If Licensee shall default in paying any charge for which a mechanic's lien and suit to foreclose the lien have been filed, and shall not be taking appropriate actions to contest the validity or amount of such lien within thirty (30) days of the filing of such lien, Licensor may, after written notice to Licensee, pay said claim and the amount so paid shall be immediately due and owing from Licensee, and Licensee shall pay the same to Licensor upon demand.

10. **INDEMNIFICATION**

10.1 Indemnification. To the extent permitted by law, Licensee shall indemnify, defend and hold harmless the Licensor, and each board member, council member, officer, employee or agent thereof (the Licensor, and any such person being herein called an "***Indemnified Party***") for, from and against any and all losses, claims, damages, liabilities, costs and expenses (including, but not limited to reasonable attorneys' fees, consultants, experts and court costs) to which any such Indemnified Party may become subject, on account of: (i) any damages, injury to person or property, or death of any person arising out of any negligent acts, intentional misconduct, errors, omissions, work, or services of Licensee, Subcontractors or other persons working on behalf of Licensee and their respective employees, agents, representatives, consultants and subcontractors on the Property, Tower Facility or within the Licensed Space; (ii) any workers' compensation claims, unemployment compensation claims or unemployment disability compensation claims of employees of Licensee or claims under similar such laws or obligations to the extent arising out of Licensee's use of the Licensed Space; (iii) any breach of the terms or conditions of this Agreement; or (iv) action properly taken by the Licensor pursuant to this Agreement. This indemnification obligation shall not extend to any loss, claim, damage, injury or death, liability, costs, and expenses to the extent caused by the gross negligence or willful misconduct of the Indemnified Party. The provisions of this section shall survive termination or expiration of this Agreement.

10.2 Indemnification Process. The Indemnified Party: (i) shall promptly provide Licensee with written notice of any claim, demand, lawsuit, or the like for which it seeks indemnification pursuant to this section and provide Licensee with copies of any demands, notices, summonses, or legal papers received in connection with such claim, demand, lawsuit, or the like; (ii) shall not settle any such claim, demand, lawsuit, or the like without the prior written consent of the Licensee; and (iii) shall fully cooperate with the Licensee, at the Licensee's cost, in the defense of the claim, demand, lawsuit, or the like.

10.3 Licensee Release. Licensee agrees that the Licensor and each of their respective board members, elected officials, council members, officers, employees and agents (collectively, the "***Licensor Parties***") shall not be liable to Licensee, and Licensee hereby releases the Licensor Parties, for any personal injury or damage to or loss of personal property from any cause whatsoever unless such damage, loss or injury is the result of the gross negligence or willful misconduct of the Licensor Parties. The Licensor Parties shall in no event be liable to Licensee for any consequential, incidental, exemplary or punitive damages in connection with the foregoing.

11. DISCLAIMER OF WARRANTY, LIMITATION OF LIABILITY

11.1 Property. By executing and delivering this Agreement, Licensee: (i) accepts the Property, Licensed Space and Tower Facility, including any improvements located thereon, as suitable for the Permitted Use and for all purposes for which the Licensed Space is licensed to Licensee hereunder; (ii) accepts the Property, Licensed Space and Tower Facility, including any improvements located thereon, and every part and appurtenance thereof in their "AS IS, WHERE IS, WITH ALL FAULTS" condition; and (iii) waives any claims against Licensor related to defects in the Property, Licensed Space or Tower Facility, including any improvements located thereon, and their habitability or suitability for any permitted purposes. LICENSOR HEREBY EXPRESSLY DISCLAIMS ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ASSOCIATED WITH THE TOWER FACILITY OR THE LICENSED SPACE.

11.2 EXCEPT FOR LICENSEES INDEMNIFICATION OBLIGATIONS, NEITHER PARTY SHALL BE LIABLE TO THE OTHER, OR ANY OF THEIR RESPECTIVE AGENTS, REPRESENTATIVES OR EMPLOYEES, FOR ANY LOST REVENUE, LOST PROFITS, LOSS OF TECHNOLOGY, RIGHTS OR SERVICES, INCIDENTAL, PUNITIVE, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, LOSS OF DATA OR INTERRUPTION OR LOSS OF USE OF SERVICE, EVEN IF ADVISED BY THE POSSIBILITY OF SUCH DAMAGES, WHETHER UNDER THEORY OF CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE. THE MAXIMUM LIABILITY FOR LICENSOR FOR ALL CLAIMS IN THE AGGREGATE SHALL NOT EXCEED THE AMOUNTS RECEIVED FROM LICENSEE FOR THE 12 MONTHS PRECEDING THE ALLEGED EVENT GIVING RISE TO THE CLAIM OR THE AMOUNT OF INSURANCE COVERAGE COVERING SUCH CLAIM, WHICHEVER IS GREATER. If Licensor shall fail to perform or observe any term, condition, covenant or obligation required to be performed or observed by it under this Agreement, and if Licensee shall, as a consequence thereof, recover a money judgment against Licensor (whether compensatory or punitive in nature), Licensee agrees that it shall look solely to Licensor's right, title and interest in and to the Tower Facility for the collection of such judgment, and Licensee further agrees that no other assets of Licensor shall be subject to levy, execution or other process for the satisfaction of Licensee's judgment, and that Licensor shall not be personally liable for any deficiency.

12. INSURANCE

12.1 General. Licensee shall maintain commercial general liability insurance covering its occupancy and use of the Tower Facility. The liability insurance policies (automobile, commercial general liability, and umbrella) shall be endorsed to cover Licensor, and Owner (as required by the terms of the Underlying Agreement, if applicable) as an additional insured on a primary and non-contributory basis such that the umbrella liability policy, primary auto liability and commercial general liability all apply as primary with regard to any primary and excess/umbrella liability insurance maintained by the subject additional insured on a form that does not exclude the concurrent negligence of the additional insured.

12.2 Minimum Limits. At a minimum, Licensee shall obtain and maintain the following insurance coverage, covering itself, its employees and its agents:

(i) statutory workers' compensation including employer's liability with the following limits: $1,000,000 per accident; $1,000,000 disease, each employee; and $1,000,000 disease policy limit;

(ii) commercial general liability covering bodily injury, death and property damage including coverage for products/completed operations, and not excluding coverage for explosion, collapse and underground exposures (XCU), with limits not less than $1,000,000 per occurrence, combined single limit with a $2,000,000 general policy aggregate and a separate products/completed operations aggregate of $2,000,000;

(iii) automobile liability covering all owned, hired and non-owned vehicles with combined single limits not less than $1,000,000 per accident;

(iv) umbrella liability insurance of $5,000,000; and

(v) commercial all risk of loss fire with extended coverage insurance covering all of Licensee's equipment and improvements at the Tower Facility.

Licensee must ensure that all independent contractors accessing the Tower Facility for or on behalf ofLicensee maintain insurance as separately specified by Licensor.

12.3 Increases to and Application of Limits. Licensor reserves the right to require reasonable increases in the commercial general liability limits and umbrella liability limits identified above, which increases shall be reflective of then-current industry exposures. Licensor shall exercise such right by providing written notice thereof to Licensee, in which event Licensee shall become compliant within thirty (30) days after receipt of written notice of the subject increases to such limits. All insurers must be licensed or authorized to do business in the state where the Tower Facility is located.

12.4 Policies and Certificates. All policies required to be provided pursuant to this Section shall contain a waiver of subrogation in favor of Licensor and Owner (as applicable). The insurance requirements in this Agreement shall not be construed to limit or otherwise affect the liability of the Licensee. Licensee shall provide certificates of insurance evidencing said coverage to Licensor upon execution of this Agreement and at least annually as the policies renew. Any failure on the part of Licensor to request the required certificates of insurance shall not in any way be construed as a waiver of any of the aforesaid insurance requirements. All policies required hereunder shall provide that the insurer shall notify Licensor of any policy cancellation not less than thirty (30) days in advance of the effective date of such cancelation, or, if such cancelation is due to non-payment of premium, not less than ten (10) days in advance of the effective date of such cancellation.

12.5 Licensor's Insurance. Licensor shall carry Comprehensive Commercial General Liability Insurance in an aggregate amount of at least Two Million and no/100 Dollars ($2,000,000.00), with an insurance provider that has at least an "A-" rating with A.M. Best, or any successor thereto, and is licensed to do business in the State of Connecticut.

13. CASUALTY OR CONDEMNATION

13.1 Casualty. In the event that the Tower Facility, or any part thereof, is damaged by fire or other casualty not caused by Licensee, then Licensor shall have (i) ninety (90) days from the date of damage, if the damage is less than total destruction of the Tower Facility, in which to make repairs, and (ii) one hundred eighty (180) days from date of destruction, if the Tower Facility (including the tower) is destroyed, in which to replace the destroyed portion of the Tower Facility. If Licensor fails for any reason to make such repair or restoration within the stipulated period and the damage or destruction effectively precludes Licensee's use of the Tower Facility as authorized under this Agreement, then either party may, at its option, terminate this Agreement without further liability of the parties, as of the date of partial or complete destruction. Notwithstanding the foregoing, (i) Licensee may, at Licensee's sole cost and expense, install temporary facilities pending such reconstruction or repair, provided such temporary facilities do not interfere with the construction, rebuilding or operation of the tower, (ii) Licensor agrees to provide Licensee alternative space, if available, on the tower or at the Tower Facility during such reconstruction/repair period and (iii) should Licensor not substantially restore or replace the Tower in a fashion sufficient to allow Licensee to resume operations thereon within one hundred eighty (180) days of the date of casualty, provided that such 180-day period shall be automatically extended for so long as Licensor has commenced and diligently continues to restore or replace such tower, and Licensee's operation has been materially disrupted for sixty (60) or more consecutive days, then Licensee, upon thirty (30) days' prior written notice to Licensor, may terminate this Agreement. If, for any reason whatsoever, Licensee's use of the Tower Facility is interrupted due to casualty, Licensee's sole remedy for such interruption of use shall be proportional abatement of the Monthly Recurring Charge for the period during which Licensee's use of the Tower Facility is interrupted unless Licensee has deployed a temporary solution which is operating under the Permitted Frequencies. Except with regard to repair of the Tower Facility as stated in this Section, Licensor shall not be responsible for any damage caused by vandalism or events of Force Majeure. In no event shall Licensor be liable to Licensee for damage to the Equipment or interruption or termination of Licensee's operations caused by events of Force Majeure.

13.2 Condemnation. If the whole or any substantial part of the Tower Facility shall be taken by any public authority under the power of eminent domain or in deed or conveyance in lieu of condemnation so as to materially interfere with Licensee's use thereof and benefits from the Licensed Space, then this Agreement shall terminate on the part so taken on the date of possession by such authority of that part, and Licensor or Licensee shall have the right to terminate this Agreement and any unearned Monthly Recurring Charge paid in advance of such termination shall be refunded by Licensor to Licensee within sixty (60) days following such termination. Notwithstanding the foregoing, Licensor may elect to rebuild the Tower or other improvements affected by such condemnation at an alternate location or property owned, leased or managed by Licensor, in which case Licensee and Licensor shall remain bound hereby. Upon such relocation of the Tower Facility, the Licensed Space shall be modified to include the new Tower Facility location and the property on which the same are located and this Agreement shall be amended accordingly to clarify the rights of Licensor and Licensee with respect to the Licensed Space. Licensee agrees not to make a claim to the condemning authority for any condemnation award to the extent such claim shall diminish or affect the award made to Licensor with regard to such condemnation.

14. DEFAULT, REMEDIES, WAIVER OF CONSEQUENTIAL DAMAGES

14.1 Each of the following shall constitute an Event of Default hereunder: (i) Licensee's failure to pay any amount due hereunder within ten (10) days after receipt of written notice from Licensor that said payment is delinquent; (ii) Licensee's

breach of this Agreement by installing Equipment or making a Modification other than as permitted hereunder; (iii) Licensee's violation of the Tower Facility or tower access limitations; (iv) Licensee's failure to stop its Equipment from causing RF interference to Licensor or other pre-existing uses of users of the Tower Facility in violation of the requirements; and (v) either party's failure to cure any breach of any other covenant of such party herein within thirty (30) days after receipt of written notice from the non-breaching party of said breach, provided, however, such thirty (30) day cure period shall be extended upon the breaching party's request if deemed by the non-breaching party to be reasonably necessary to permit the breaching party to complete the cure, and further provided that the breaching party shall commence any cure within the thirty (30) day period and thereafter continuously and diligently pursue and complete such cure. In the Event of Default by Licensee, upon Licensor's demand, Licensee shall immediately make full payment of all amounts that Licensor would have been entitled to receive hereunder for the remainder of the then-current Term, and Licensor shall have the right to accelerate and collect said payments, which right is in addition to all other remedies available to Licensor hereunder or at law, including the right to terminate this Agreement as set forth in Section 19.3 below. Licensee agrees that, if any payment to be made under this Agreement is not received by Licensor by the date it is due, Licensee will pay Licensor a late fee of Thirty-Five Dollars ($35.00) for each month or partial month that elapses until said payment is received by Licensor. Said amount shall be adjusted as set forth in Section 5.2 above. Imposition of late fees is not a waiver of Licensor's right to declare this Agreement in default if the Monthly Recurring Charge or any other payment is not made when due. Except as otherwise provided in Section 2.7 above, neither party shall be liable to the other for consequential, indirect, special, punitive or exemplary damages for any cause of action whether in contract, tort or otherwise, hereunder to the extent allowed by law.

15. USE OF HAZARDOUS CHEMICALS

15.1 Licensee shall defend, hold the Licensor harmless from and indemnify the Licensor against any damage, loss, expense, response costs or liability, including consultant fees and reasonable attorneys' fees, resulting from hazardous substances generated, stored, disposed of or transported to, on or under the Licensed Space by Licensee, Licensee's agents, employees, contractors, Sublicensees or other occupants, except to the extent such damage, loss, expense, costs or liability arises from the act or omission of the Licensor or the Licensor's employees, contractors, or agents. For purposes of this Agreement, hazardous substances shall mean (i) any substance which contains gasoline, diesel fuel or other petroleum hydrocarbons, (ii) any substance which is flammable, radioactive, corrosive or carcinogenic, (iii) any substance the presence of which on the Licensed Space causes or threatens to cause a nuisance or health hazard affecting human health, the environment, the Licensed Space or property adjacent thereto or (iv) any substance the presence of which on the Licensed Space requires investigation or remediation under any hazardous substance law, as the same may hereafter be amended. "Hazardous substance law" means the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §9601 *et seq.*; the Resource Conservation and Recovery Act, 42 U.S.C. §6901 *et seq.*; the Hazardous Materials Transportation Act, 49 U.S.C. §5101 *et seq.*; the Clean Water Act, 33 U.S.C. §1251 *et seq.*; the Clean Air Act, 42 U.S.C. §7401 *et seq.*; the Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. §136 *et seq.*; the Toxic Substances Control Act, 15 U.S.C. §2601 *et seq.*; the Emergency Planning and Community Right to Know Act (SARA Title III) 42 U.S.C. §11001 *et seq.*; and any similar and applicable state law or regulation.

16. ASSIGNMENT, SUBLEASE, SHARING

16.1 Licensee may not, directly or indirectly, assign this Agreement as a whole, or any portion of Licensee's rights, title and interests hereunder without Licensor's prior written consent; provided, however, that Licensor's consent will not be required for any assignment to (i) any person or entity which is directly or indirectly (through one or more subsidiaries) controlled by, controlling or under common control with Licensee, (ii) is the successor or surviving entity by a merger or consolidation of such entity pursuant to applicable Law, or (iii) purchases all or substantially all of the assets of Licensee (collectively, a "***Permitted Affiliate***") For the purpose of this Section, "control" means ownership, directly or indirectly, of fifty percent (50%) or more of the voting stock, equity or beneficial interest or a general partner of any partnership, and the ability to effectively control or direct the business of Licensee. Licensee shall give written notice to Licensor of an assignment to a Permitted Affiliate as soon as reasonably practicable following the date of such assignment. In no event may Licensee sublet, sublease, sublicense or permit any use of the Tower Facility or Licensed Space by any other party. Any permitted assignee shall expressly assume, and become bound by, all of Licensee's obligations under this Agreement. Licensor may freely assign, transfer, or sublease this Agreement and, in such event, Licensor shall be relieved of all of its obligations under this Agreement from and after the date of such assignment or transfer. Licensee shall pay Licensor its reasonable out of pocket costs in each instance in which Licensee requests Licensor to consent to an assignment of this Agreement or in which Licensee seeks an estoppel certificate, non-disturbance agreement, subordination agreement or other similar agreement to defray the administrative cost incurred by Licensor to process such requests and prepare and process any necessary documentation. An estimate of such fee will be provided to Licensee and such fee is due upon submission of Licensor's request. Any balance of the costs will be invoiced to Licensee following completion of the assignment, estoppel certificate, non-disturbance agreement, subordination agreement or other similar agreement. Notwithstanding anything to the contrary, Licensor may condition its consent to any assignment,

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on among other things, (i) requiring that the assignee execute a new form of license agreement so long as the Monthly License Fee and Initial and Renewal Terms of such agreement are consistent with those set forth in this Agreement, and (ii) requiring the assignee to demonstrate that it maintains at the time of such assignment, as evidenced by current financial statements provided to Licensor, a financial position reasonably demonstrating the ability of such assignee to meet and perform the obligations of Licensee hereunder through the unexpired balance of the then current Initial Term or Renewal Term. Any purported assignment by Licensee in violation of the terms of this Agreement shall be void. This Agreement shall be binding upon the successors and permitted assigns of both parties.

17. **UNDERLYING AGREEMENT**

17.1 Licensor and Licensee acknowledge that Licensee's use of the Tower Facility is subject and subordinate to the Underlying Agreement, if any, a summary copy of which, if applicable, will be attached to this Agreement as **Exhibit D**. Licensee agrees to be bound by and to perform all of the duties and responsibilities required of the lessee, sublessee, licensee or grantee as set forth in the Underlying Agreement to the extent they are applicable to Licensee's access to and use of the Tower Facility.

18. **TERMINATION**

18.1 Withdrawal or Termination of Tower Facility Zoning Approval or Permit. In the event that any Tower Facility zoning approval or any of Licensor's permits to operate the Tower Facility as a communications facility is withdrawn or terminated, this Agreement shall terminate effective as of the termination of such Tower Facility zoning approval or permit.

18.2 Termination of Underlying Agreement. If an Underlying Agreement applies to the Tower Facility and the Underlying Agreement terminates for any reason, this Agreement shall terminate effective as of the termination of the Underlying Agreement.

18.3 Termination in the Event of Default. In the Event of Default by either party (the "***defaulting party***"), the other party (the "***non-defaulting party***") may terminate this Agreement by providing written notice of such termination to the defaulting party. Such written notice shall describe (i) the Event of Default, and (ii) the defaulting party's failure to cure such breach within the stipulated cure period. The non-defaulting party's right to terminate this Agreement pursuant to this Section is in addition to any other rights and remedies provided to the non-defaulting party by law or under this Agreement.

18.4 Further, Licensee shall have the right, but not the obligation, to terminate this Agreement upon thirty (30) days prior written Notice to Landlord due to any one or more of the following: (i) changes in Applicable Law which prohibit Licensee's ability to operate Licensee's Equipment at the Premises; (ii) Licensee, in its sole discretion, determines that Licensee's Permitted Use of the Premises is obsolete or unnecessary; (iii) Landlord or a third party installs any structure, equipment, or other item on the Structure or Property which blocks, hinders, limits, or prevents Licensee from being able to use the Licensee Equipment for Licensee's Permitted Use; provided that in the event Licensee elects to terminate under this Section 18.4, then, in addition to all other obligations under this Agreement, Licensee shall pay Licensor for the remainder of the then current Term.

19. **NON-DISCLOSURE**

19.1 The parties agree that, except to the extent otherwise required by law, without the express written consent of the other party, neither party shall reveal, disclose or publish to any third party the terms of this Agreement or any portion thereof, except to such party's auditor, accountant, lender or attorney or to a Government Entity if required by regulation, subpoena or government order to do so. Notwithstanding the foregoing, either party may disclose the terms of this Agreement to any of its affiliated entities, and Licensor may disclose the terms of this Agreement (or relevant portions thereof) to (i) Owner, if a Underlying Agreement applies to the Tower Facility, (ii) any of its lenders or creditors, or (iii) third parties that are existing or potential lessees or licensees of space at the Tower Facility, to the extent such disclosure to such potential lessees or licensees is reasonably necessary for the operation, leasing, licensing and marketing of the Tower Facility. The terms that may be disclosed to such potential lessees or licensees may include terms relating to Licensee's permitted frequencies for the purposes of RF compliance tests, and terms relating to Licensee's Equipment (if any) installed, or to be installed, on the tower for the purposes of Structural Analysis.

20. **SURRENDER OF LICENSED SPACE, REMOVAL OF EQUIPMENT**

20.1 Licensee shall remove all of its Equipment and other personal property from the Tower Facility prior to, and shall surrender the Licensed Space upon, the termination or expiration of this Agreement. The removal of Licensee's Equipment and other personal property shall be performed in such a manner as not to interfere with the continuing use of the Tower Facility by Licensor and others. Licensee shall, at Licensee's sole expense, promptly repair any damage caused by such removal, reasonable wear and tear excepted, to the Tower Facility, to the Licensed Space or to the equipment of any third party on the Tower Facility. Should any of Licensee's Equipment or other property remain on the Tower Facility after the expiration or termination of this Agreement, then:

(a) no tenancy or interest in the Tower Facility shall result, and all such Equipment and other property shall be subject to immediate removal;

(b) in addition to any other rights or remedies that Licensor may have hereunder or at law or inequity:

(i) Licensee shall, upon demand, pay to Licensor the Holdover Fee for each month or partial month during which any portion of Licensee's Equipment remains at the Tower Facility after the expiration or termination of this Agreement,

(ii) Licensee shall pay to Licensor all expenses that Licensor may incur by reason of such Equipment or other property remaining at the Tower Facility after the expiration or termination of this Agreement, and

(iii) Licensee shall indemnify and hold Licensor harmless from and against all claims made against Licensor by any third party founded upon delay by Licensor in delivering possession of the Tower Facility to such third party or upon the improper or inadequate condition of the Tower Facility, to the extent that such delay or improper or inadequate condition is occasioned by the failure of Licensee to perform its said surrender obligations or timely surrender of the Licensed Space; and

(c) at any time, Licensor shall have the right, but not the obligation, to remove the Equipment or other property and store it, all at Licensee's expense, subject to the following terms:

(i) Licensor's liability for any damage to the Equipment or other property occasioned by such removal and storage is expressly waived by Licensee,

(ii) Equipment so removed shall be returned to Licensee upon payment in full of all removal and storage costs and any other fees owing under this Agreement, and

(iii) notwithstanding the foregoing, any Equipment not retrieved by Licensee within ninety (90) days after its removal shall be deemed abandoned by Licensee, provided that such abandonment shall not relieve Licensee of liability for the costs of removal, storage and disposal of the Equipment, and Licensee shall reimburse Licensor for all costs and expenses of disposing of abandoned Equipment.

21. **COMPLIANCE WITH LAWS**

21.1 All installations and operations by Licensee in connection with this Agreement shall meet and comply with all applicable Laws, including all applicable local codes and regulations, and all applicable rules and regulations promulgated by the FCC and the FAA. Licensee shall promptly notify Licensor when Licensee becomes aware of a violation of any such Laws at the Tower Facility.

22. **GENERAL AND MISCELLANEOUS**

22.1 Counterparts and Electronic Signature. This Agreement may be executed by original, facsimile, or electronic signatures and in any number of counterparts which shall be considered one instrument. Counterparts, signed facsimile and electronic copies of this Agreement shall legally bind the parties to the same extent as original documents. Upon the termination or expiration of this Agreement, Licensee shall immediately upon the request of Licensor deliver a release of any instruments of record evidencing such Agreement. The parties agree that a scanned or electronically reproduced copy or image of this Agreement shall be deemed an original and may be introduced or submitted in any action or proceeding as a competent evidence of the execution, terms and existence of this Agreement notwithstanding the failure or inability to produce or tender an original, executed counterpart of this Agreement and without the requirement that the unavailability of such original, executed counterpart of this first be proven.

22.2 Survival. The provisions of this Agreement, which by their terms or by implication are to have continuing effect after any termination or the expiration of the Agreement, shall survive such termination or expiration.

22.3 The offer of license expressed in this Agreement shall automatically expire and become void if unaltered counterparts of this Agreement, executed by Licensee, are not delivered to Licensor within thirty (30) days after the date this Agreement is delivered to Licensee for review and examination, and in no event shall this Agreement become effective as to either party until executed by both parties.

22.4 No provision of this Agreement will be deemed to have been waived by either party unless the waiver is in writing and signed by the party against whom enforcement is attempted.

22.5 This Agreement constitutes the entire agreement of the parties hereto concerning the subject matter herein and shall supersede all prior offers, negotiations and agreements, whether written or oral. No revision of this Agreement shall be valid unless made in writing and signed by authorized representatives of both parties.

22.6 Upon Licensor's written request, Licensee shall promptly furnish Licensor with complete and accurate information in

response to any reasonable request by Licensor for information about any of the Equipment or utilities utilized by Licensee at the Tower Facility or any of the channels and frequencies utilized by Licensee thereon.

22.7 Tower Facility Rules and Regulations. Licensee agrees to comply with the reasonable rules and regulations established from time to time at the Tower Facility by Licensor, which may be modified by Licensor from time to time upon receipt by Licensee of such revised rules and regulations. Such rules and regulations will not unreasonably interfere with Licensee's use, access, quiet enjoyment or Term of the Licensed Space as set forth in this Agreement.

22.8 Notices. Except for notices of access which are to be provided as set forth above, all notices hereunder shall be in writing and shall be given by (i) established express delivery service which maintains delivery records, (ii) hand delivery or (iii) certified or registered mail, postage prepaid, return receipt requested. Notices are effective upon receipt, or upon attempted delivery if delivery is refused or if delivery is impossible. The notices shall be sent to the parties at the following addresses:

As to Licensee:

Town of New Fairfield
4 Brush Hill Road
New Fairfield, Connecticut 06812
Attn: First Selectman

As to Licensee:

DISH Wireless L.L.C.

Attn: Lease Administration

If by overnight courier service:
5701 South Santa Fe Drive
Littleton, Colorado 80120

If by first-class certified mail:
5701 South Santa Fe Drive
Littleton, Colorado 80120
If by facsimile:
Fax #: (303) 723-2050

cc: DISH Wireless L.L.C.

Attn: Office of the General Counsel

If by overnight courier service:
9601 South Meridian Blvd.
Englewood, Colorado 80112

If by first-class certified mail:
P.O. Box 6655
Englewood, Colorado 80155
If by facsimile:
Fax #: (303) 723-1699

Email: mevans@newfairfild.org

Tel: (203) 312-5701

Licensor or Licensee may from time to time designate any other address for this purpose by giving written notice to the other party.

22.9 Mortgages and Liens. At the Licensor's option, this Agreement shall be subordinate to any mortgage by the Licensor which may now or hereafter affect all of the Licensor's property including the Property, provided that any such mortgage shall recognize the validity of this Agreement in the event of foreclosure of the Licensor's interest and also recognize Licensee's right to remain in possession and have access to the Property. Licensee shall execute whatever instruments may reasonably be required to evidence this subordination clause.

22.10 Governing Law. The laws of the State of Connecticut, regardless of conflict of law principles, shall govern this Agreement, and any dispute related to this Agreement shall be resolved state or federal courts in the county and state where the Tower Facility is situated.

22.11 Gender; Number; Section Headings. As used in this Agreement, the plural shall be substituted for the singular, and the singular for the plural, where appropriate; and words of any gender shall include any other gender. The section and paragraph headings contained in this Agreement are solely for reference purposes, and shall not affect in any way the meaning or

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interpretation of this Agreement.

22.12 Recording. If requested by Licensee, Licensor and Licensee agree to execute a Memorandum of Lease that Licensee may record, at Licensee's sole cost and expense, with the appropriate recording officer. The date set forth in the Memorandum of Lease is for recording purposes only, and bears no reference to commencement of either the Term or rent payments of any kind. Licensee shall pay for any filing acknowledging the termination of this Agreement within thirty (30) days from the date of termination.

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ATTACHMENTS:

Schedule 1:	Definitions
Exhibit A:	List of Approved Equipment and location of the Licensed Space
Exhibit B:	Tower Facility Drawings indicating the location of Licensed Space for Licensee's equipment shelter or space in Licensor's building (as applicable)
Exhibit C:	Preliminary Construction Drawings to be attached and As-Built Drawings to update the Construction Drawings
Exhibit D:	Underlying Agreement

[Signature page follows]

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IN WITNESS WHEREOF, each party in consideration of the mutual covenants contained herein, and for other good and valuable consideration, intending to be legally bound, has caused this Agreement to be executed by its duly authorized representative as of the day and year written below; *provided, however,* that this Agreement shall not become effective as to either party until executed by both parties.

TOWN OF NEW FAIRFIELD

By: Patricia Del Monaco
Name: Patricia Del Monaco
Its: First Selectman
Date: 5/27/2022

DISH WIRELESS L.L.C.

By: David Mayo
Name: David Mayo
Its: EVP
Date: 6/9/2022

DS
MF
5/27/2022

SCHEDULE 1
Defined Terms

"AM Detuning Study" means a study to determine whether measures must be taken to avoid disturbance of an AM radio station signal pattern.

"AM Detuning Study Fee" means the fee payable by Licensee to Licensor to defray Licensor's costs incurred in preparing or obtaining an AM Detuning Study. The amount of the Fee shall be reasonably commensurate with the scope and complexity of the subject AM Detuning Study.

"Application" means the application which shall be submitted to Licensor by Licensee when Licensee desires to apply for a license to install Equipment for the first time or make a Modification to Equipment. The Application is attached to this Agreement as part of **Exhibit B**.

"Application Fee" means the fee payable by Licensee to Licensor in the amount of Seven Hundred Fifty and 00/100 Dollars ($750.00) to defray Licensor's costs incurred in evaluating an Application. Said amount is subject to adjustment.

"Closeout Documentation" means the as-built drawings and other installation documentation required by Licensor with respect to the subject installation of or Modification to Equipment. Licensee shall provide Licensor with a certification that there were no changes to the Construction Drawings, or if any changes, a complete list of the CD Changes along with all final changes made to the Construction Drawings (***"As-built Construction Drawings"***). In the event that Licensee fails to deliver the As-built Construction Drawings, and Licensor elects to have the As-built Construction Drawings prepared, Licensee agrees to remit payment to Licensor for all reasonable costs and expenses incurred by Licensor for such As-built Construction Drawings (***"As-built CD Fee"***) within thirty (30) days following receipt of an invoice from Licensor.

"Code" means TIA-222-X, where the "X" refers to whatever revision of TIA-222 is currently adopted by the jurisdiction in which the Tower Facility is located.

"Construction Period" means the ninety (90) day period commencing with the issuance of the NTP during which time Licensee is authorized to perform Work on the tower and Tower Facility within the Licensed Space.

"Equipment" means Licensee's communications equipment placed on the Tower Facility, including Licensee's antennas, cables, connectors, wires, radios, radio shelter or cabinet and related transmission and reception hardware and software, and other personal property.

"Event of Default" means any material breach of this Agreement for which no cure period applies, or any other breach of this Agreement that is not cured within the applicable cure period stipulated herein.

"FAA" means the Federal Aviation Administration.

"FCC" means the Federal Communications Commission.

"FCC Rules and Regulations" means all of the rules, regulations, public guidance, written policies and decisions governing telecommunications generally and wireless telecommunications specifically as promulgated and administered by the FCC, which on the Effective Date includes, but is not limited to, those administered by the Wireless Telecommunications Bureau of the FCC and more specifically referenced as the Code of Federal Regulations, title 47, parts 0 through 101, as amended.

"Force Majeure" means acts of God, flood, extreme weather, fire, natural calamity, terrorism, change in Law, action or inaction of any Governmental Entity or civil or military authority, power or utility failures, national emergencies, insurrection, riots, wars, material shortages or similar circumstances or conditions.

"Government Entity" means any federal, state or local governmental unit or agency thereof with jurisdiction applicable to the Tower Facility.

"Interference Study" means a study to determine whether an RF interference problem may arise.

"Interference Study Fee" means the fee payable by Licensee to Licensor to defray Licensor's costs incurred in preparing or obtaining an Interference Study. The amount of the Interference Study Fee shall be reasonably commensurate with the scope and complexity of the subject Interference Study.

"Law" means any and all laws, regulations, rules, or requirements promulgated by Government Entities.

"Modification" means (i) any addition of equipment outside the boundaries of any permitted equipment pads on the ground,

(ii) any addition of antennas or antenna structures on the ground or on any equipment pads, (iii) any use of space on the ground or on the tower outside of the Licensed Space, (iv) any change to the shape or location of the Licensed Space on the ground or on the tower, as applicable, (v)any addition, modification, or replacement of equipment on the tower other than as may be specified herein, (vi) any change to the frequency ranges specified herein or the use of any frequency outside of the frequency ranges specified herein, or (vii) any use of power in excess of the power level specified herein. Notwithstanding the foregoing, the replacement of any of Licensee's equipment (if any) on the tower with new, identical equipment (i.e., equipment of the same quantity, make, model, size and weight), in the same location as the previously permitted equipment, shall not constitute a "Modification", provided that such replacement does not negatively affect the tower's loading capacity, as determined by Licensor.

"MRC Commencement Date" means the earlier of: (i) the first day of the month following Licensor's issuance of written notice to proceed with the installation of Licensee's Equipment at the Tower Facility, or (ii) ninety (90) days from the Effective Date.

"**NEPA**" means National Environmental Policy Act.

"Owner" means the lessor, sublessor, or licensor under the Underlying Agreement, if applicable.

For the purposes of this Agreement, "**person**" means and includes, as the context permits, an individual, a corporation, partnership, limited liability company, association, trust, unincorporated organization, and/or other legal entity or organization, or a government body.

"Pro Rata Share" means the costs and expenses determined based on the number of licensees or other occupants using the Tower Facility (or with respect to a shared shelter or building, the number of licensees using Licensor's shelter or building) on the first day of the month in which an invoice is mailed to Licensee.

"Regulatory Compliance Costs" means the reasonable costs, including reasonable attorneys' fees, incurred by Licensor at the Tower Facility after the Effective Date in order to comply with any applicable Law.

"RF" means radio frequency.

"Site Plans" means the plans or drawings, attached hereto as **Exhibit B**.

"Structural Analysis" means an engineering analysis performed to determine whether the physical and structural capacity of the tower is sufficient to accommodate the proposed tower-mounted equipment. Such engineering analysis takes into consideration factors such as weight, wind loading and physical space requirements.

"Structural Analysis Fee" means the fee payable by Licensee to Licensor to defray Licensor's costs incurred with respect to its performance of a Structural Analysis with respect to the installation of Licensee's tower-mounted equipment described herein or with respect to any Modification to Licensee's Equipment.

"Subcontractor" means any third party (other than an employee of Licensor) which Licensor uses in connection with this Agreement.

"Tower Facility" means the tower and space located at or near the base of the tower for the placement of equipment situated on property which is owned, leased, or otherwise controlled by Licensor and which contains the Licensed Space.

"**Underlying Agreement**" means the lease(s), sublease(s), or other similar prior agreement(s) from which Licensor's rights in any portion of the Tower Facility are derived, and which may contain restrictions on use of the Tower Facility.

"Unlicensed Equipment" means, if applicable, Licensee's permitted equipment installed at the Tower Facility that is transmitting or receiving signals within frequencies that do not require an FCC license, to the extent that such equipment is transmitting or receiving signals within such frequencies.

"Work" means the all work relating to the construction, installation, relocation and reconfiguration of Licensee's Equipment at the Tower Facility, construction of an approved Modification to Equipment at the Tower Facility, or removal of Equipment from the Tower Facility, including without limitation, construction management, construction of an equipment pad, installation or Modification of lines, antennas, shelters and equipment cabinets.

Exhibit A
Property Description

Parcel A

All that certain piece or parcel of land Town of New Fairfield, County of Fairfield, State of Connecticut containing 30 acres, more or less, situated on the Westerly side of Route #39, and bounded and described as follows:

Northerly 2000 feet more or less, by other land of. Jane MacBean. Easterly 800 feet more or less, by the Highway known as Route #39. Southerly 2000 feet more or less, by other property of the Town of New Fairfield and land of the Congregational Church, each in part, and Westerly 655 feet more or less by land of Peter Gillotti. The Southerly and Westerly boundary lines being marked by a stonewall and the Northeasterly comer of premises herein conveyed being marked by an iron pipe driven in the ground and the Northeasterly comer of premises herein conveyed being the Northeasterly comer of premises now or formerly of Peter Gillotti.

Being the same premises described at Volume 54 page 556 of the New Fairfield Land Records; Reference should be had to a certain map entitled "MAP SHOWING PROPERTY CONVEYED TO THE TOWN OF NEW FAIRFIELD BYE.JANE MAC BEAN NEW FAIRFIELD, CONN. SCALE l" = 60' AREA =36.10 AC" prepared by Tomas Keane, Surveyor, dated May 3, 1959 and filed as map 698 on the New Fairfield Land Records.

Parcel B

A certain piece or parcel of land, with the buildings thereon, situated in the Town of New Fairfield containing ten (10) acres, more or less, known as the Parsonage Tract located at the Northwest comer of the Crossroads at the top of Brush's Hill, being at the intersection of Route #39 and the Town Road to Balls Pond and bounded to described as follows:
Beginning at said Northwest comer and thence running Northerly along Route
#39, 800 feet, more or less; thence in a Westerly direction, 450 feet, more or less; thence in a Southerly direction, 700 feet; more or less, to a point on the Town Road, 650 feet, more or less from said Northwest comer of the Crossroads; thence running along said Town Road in a Northeasterly direction 650 feet, more or less, to the point or place of beginning.

Exhibit B

List of Equipment and location of the Licensed Space
Tower Facility Drawing

Licensee shall not commence installation until Licensor has approved in writing said drawing and attached it hereto

Exhibit C
Construction Drawings

As-built Construction Drawings to update Construction Drawings within forty-five (45) days after the Commencement Date.

KG

Exhibit D
Underlying Agreement

Not applicable

Exhibit F

Emissions Report

APPROVED
By Pawan Madahar at 3:05 pm, Jul 08, 2022

Pinnacle Telecom Group

Professional and Technical Services

Antenna Site FCC RF Compliance Assessment and Report for Municipal Submission

Prepared for:	DISH Wireless, LLC
Site ID:	NJJER01134A
Site Address:	302 Ball Pond Road New Fairfield, CT
Latitude:	N 41.4647
Longitude:	W 73.497
Structure type:	Monopole
Report date:	July 6, 2022
Compliance Conclusion:	DISH Wireless, LLC will be in compliance with the rules and regulations as described in OET Bulletin 65, following the implementation of the proposed mitigation as detailed in the report.

14 Ridgedale Avenue - Suite 260 • Cedar Knolls, NJ 07927 • 973-451-1630

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Certification

Appendix A. Documents Used to Prepare the Analysis

Appendix B. Background on the FCC MPE Limit

Appendix C. Proposed Signage

Appendix D. Summary of Expert Qualifications

Introduction and Summary

At the request of DISH Wireless, LLC ("DISH"), Pinnacle Telecom Group has performed an independent expert assessment of radiofrequency (RF) levels and related FCC compliance for proposed wireless base station antenna operations on an existing monopole located at 302 Ball Pond Road in New Fairfield CT. DISH refers to the antenna site by the code "NJJER01134A", and its proposed operation involves directional panel antennas and transmission in the 600 MHz, 2000 MHz and 2100 MHz frequency bands licensed to it by the FCC.

The FCC requires all wireless antenna operators to perform an assessment of potential human exposure to radiofrequency (RF) fields emanating from all the transmitting antennas at a site whenever antenna operations are added or modified, and to ensure compliance with the Maximum Permissible Exposure (MPE) limit in the FCC's regulations. In this case, the compliance assessment needs to take into account the RF effects of other existing antenna operations at the site by AT&T, Sprint, T-Mobile, Verizon Wireless and the Town of New Fairfield. Note that FCC regulations require any future antenna collocators to assess and assure continuing compliance based on the cumulative effects of all then-proposed and then-existing antennas at the site.

This report describes a mathematical analysis of RF levels resulting around the site in areas of unrestricted public access, that is, at street level around the site. The compliance analysis employs a standard FCC formula for calculating the effects of the antennas in a very conservative manner, in order to overstate the RF levels and to ensure "safe-side" conclusions regarding compliance with the FCC limit for safe continuous exposure of the general public.

The results of a compliance assessment can be described in layman's terms by expressing the calculated RF levels as simple percentages of the FCC MPE limit. If the normalized reference for that limit is 100 percent, then calculated RF levels higher than 100 percent indicate the MPE limit is exceeded and there is a need to mitigate the potential exposure. On the other hand, calculated RF levels consistently below 100 percent serve as a clear and sufficient demonstration of

compliance with the MPE limit. We can (and will) also describe the overall worst-case result via the "plain-English" equivalent "times-below-the-limit" factor.

The result of the RF compliance assessment in this case is as follows:

- At street level, the conservatively calculated maximum RF level from the combination of proposed and existing antenna operations at the site is 3.2501 percent of the FCC general population MPE limit – well below the 100-percent reference for compliance. In other words, the worst-case calculated RF level – intentionally and significantly overstated by the calculations – is still more than 30 times below the FCC limit for safe, continuous exposure of the general public.
- A supplemental analysis of the RF levels at the same height as the DISH antennas indicate that the FCC MPE limit is potentially exceeded. Therefore, it is recommended that two Caution signs and NOC Information signs be installed at the base of the monopole.
- The results of the calculations, along with the proposed mitigation, combine to satisfy the FCC requirements and associated guidelines on RF compliance at street level around the site and on the subject roof. Moreover, because of the significant conservatism incorporated in the analysis, RF levels actually caused by the antennas will be lower than these calculations indicate.

The remainder of this report provides the following:

- relevant technical data on the proposed DISH antenna operations at the site, as well as on the other existing antenna operations;
- a description of the applicable FCC mathematical model for calculating RF levels, and application of the relevant technical data to that model;
- analysis of the results of the calculations against the FCC MPE limit, and the compliance conclusion for the site.

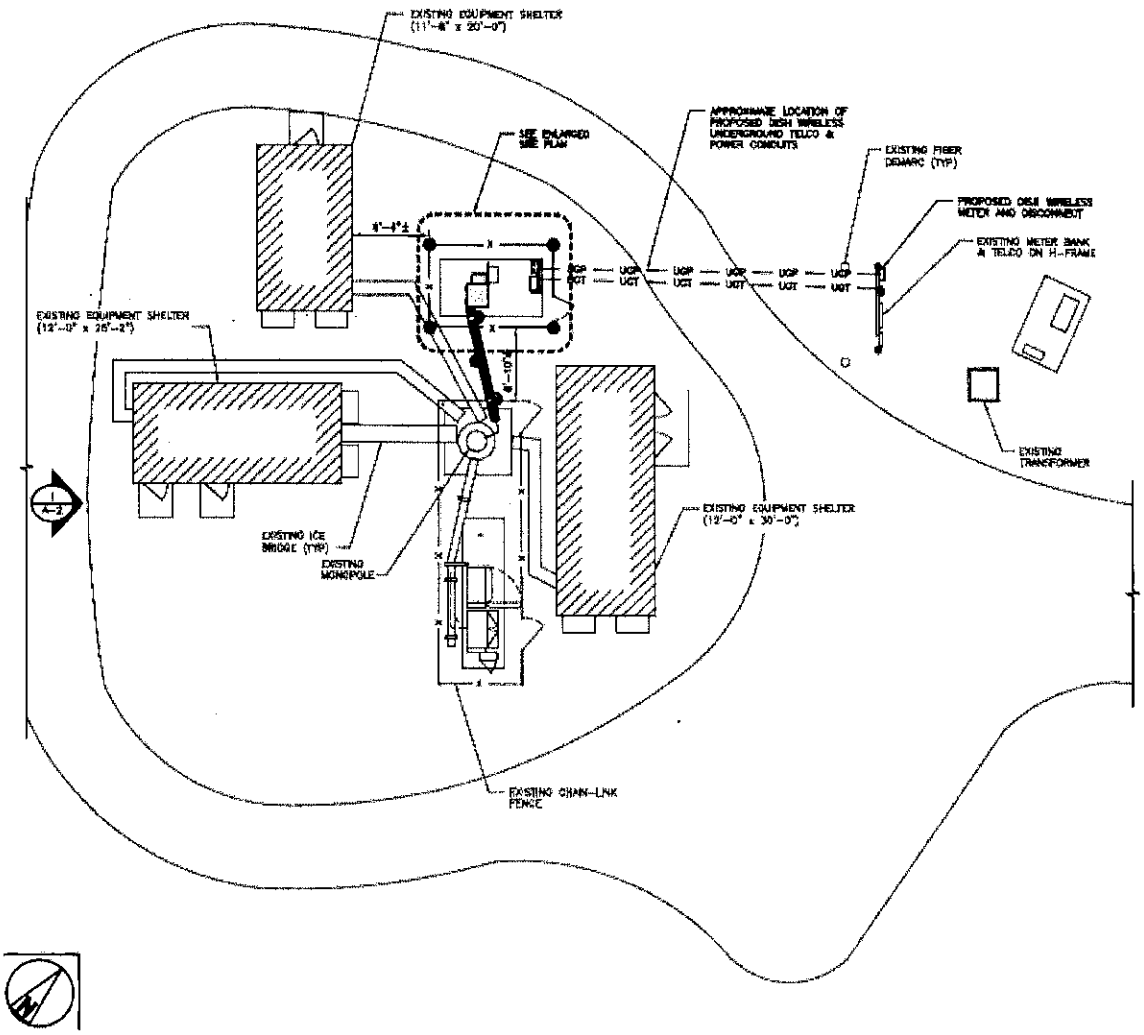
In addition, four Appendices are included. Appendix A provides information on the documents used to prepare the analysis. Appendix B provides background on the

FCC MPE limit. Appendix C details the proposed mitigation to satisfy the FCC requirements and associated guidelines on RF compliance. Appendix D provides a summary of the qualifications of the expert certifying FCC compliance for this site.

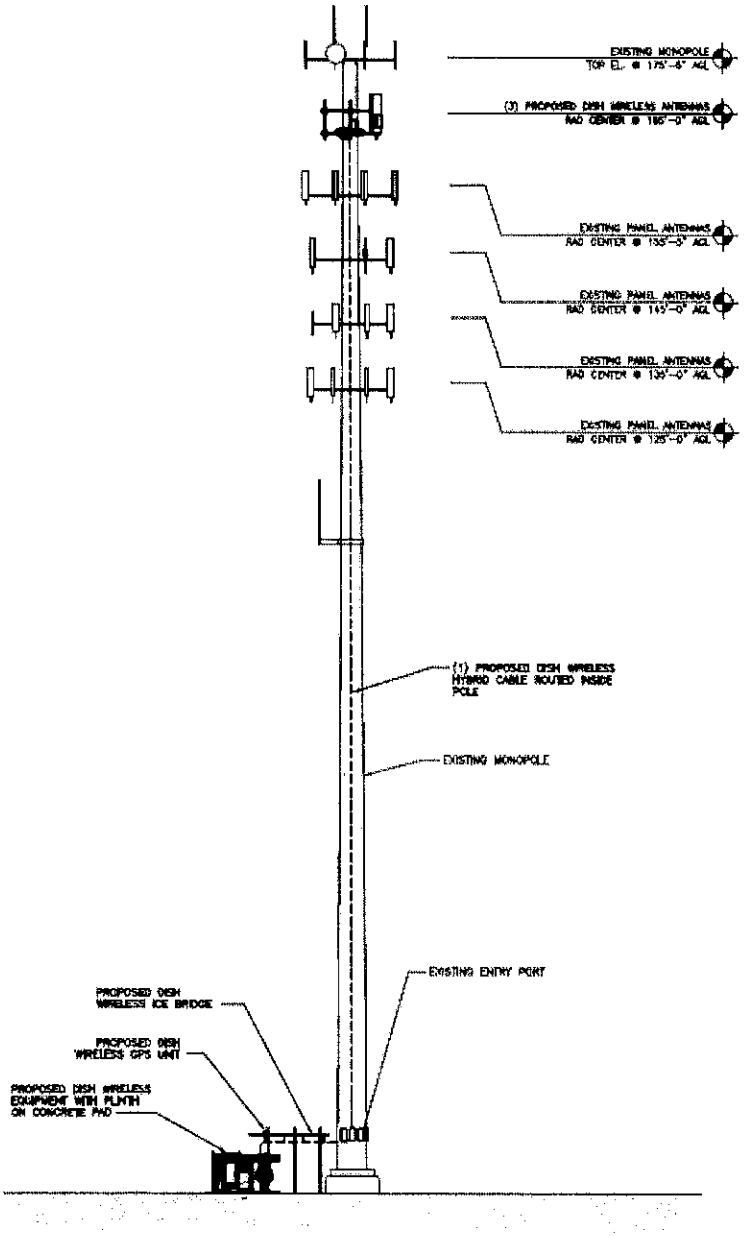
Antenna and Transmission Data

The plan and elevation views that follow, extracted from the site drawings, illustrate the mounting positions of the DISH antennas at the site.

Plan View:



Elevation View:



The table that follows summarizes the relevant data for the proposed DISH antenna operations. Note that the "Z" height references the centerline of the antenna.

Ant. ID	Carrier	Antenna Manufacturer	Antenna Model	Type	Freq (MHz)	Ant. Dim. (ft.)	Total Input Power (watts)	Total ERP (watts)	Z AGL (ft)	Ant. Gain (dBd)	B/W	Azimuth	EDT	MDT
❶	DISH	JMA Wireless	MX08FRO665-21	Panel	600	6	120	1637	165.0	11.46	68	60	2	0
❶	DISH	JMA Wireless	MX08FRO665-21	Panel	2000	6	160	6011	165.0	16.16	62	60	2	0
❶	DISH	JMA Wireless	MX08FRO665-21	Panel	2100	6	160	7567	165.0	16.66	64	60	2	0
❷	DISH	JMA Wireless	MX08FRO665-21	Panel	600	6	120	1637	165.0	11.46	68	180	2	0
❷	DISH	JMA Wireless	MX08FRO665-21	Panel	2000	6	160	6011	165.0	16.16	62	180	2	0
❷	DISH	JMA Wireless	MX08FRO665-21	Panel	2100	6	160	7567	165.0	16.66	64	180	2	0
❶	DISH	JMA Wireless	MX08FRO665-21	Panel	600	6	120	1637	165.0	11.46	68	280	2	0
❶	DISH	JMA Wireless	MX08FRO665-21	Panel	2000	6	160	6011	165.0	16.16	62	280	2	0
❶	DISH	JMA Wireless	MX08FRO665-21	Panel	2100	6	160	7567	165.0	16.66	64	280	2	0

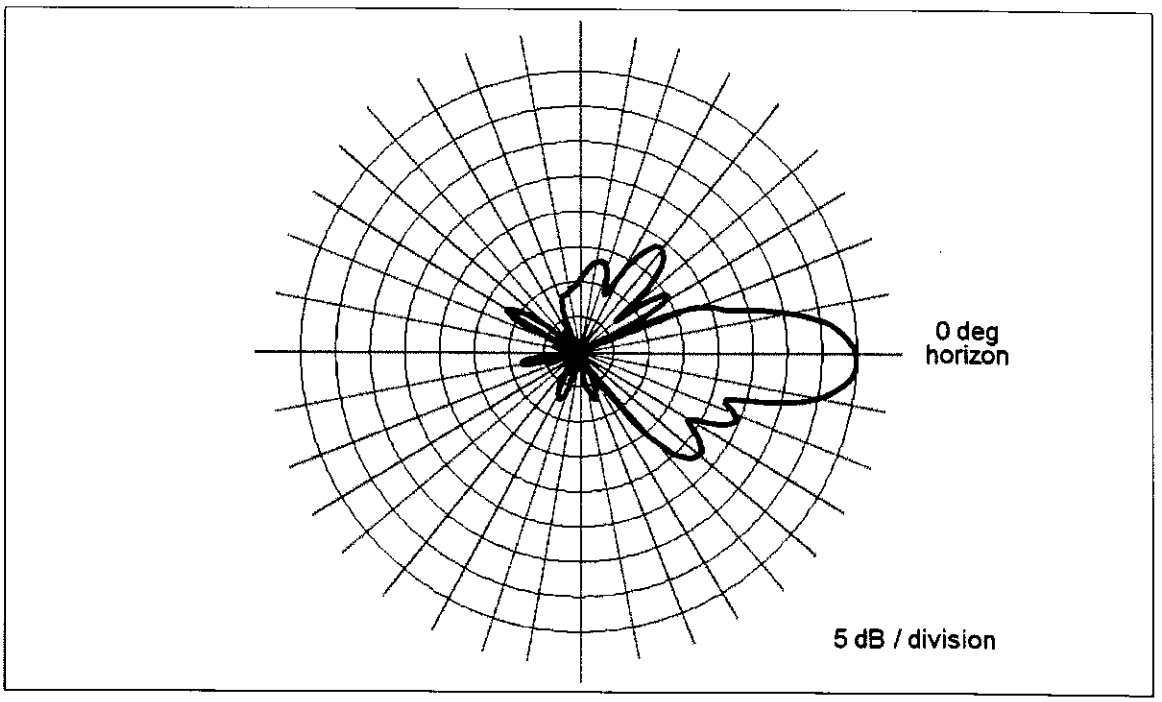
The area below the antennas, at street level, is of interest in terms of potential "uncontrolled" exposure of the general public, so the antenna's vertical-plane emission characteristic is used in the calculations, as it is a key determinant of the relative amount of RF emissions in the "downward" direction.

By way of illustration, Figure 1 that follows shows the vertical-plane radiation pattern of the proposed antenna model in the 600 MHz frequency band. In this type of antenna radiation pattern diagram, the antenna is effectively pointed at the three o'clock position (the horizon) and the relative strength of the pattern at different angles is described using decibel units.

Note that the use of a decibel scale to describe the relative pattern at different angles actually serves to significantly understate the actual focusing effects of the antenna. Where the antenna pattern reads 20 dB the relative RF energy emitted at the corresponding downward angle is 1/100th of the maximum that occurs in the main beam (at 0 degrees); at 30 dB, the energy is only 1/1000th of the maximum.

Finally, note that the automatic pattern-scaling feature of our internal software may skew side-by-side visual comparisons of different antenna models, or even different parties' depictions of the same antenna model.

Figure 1. JMA Wireless MX08FRO665-21– 600 MHz Vertical-plane Pattern



As noted at the outset, there are existing antenna operations to include in the compliance assessment. For each of the wireless operators, we will conservatively assume operation with maximum channel capacity and at maximum transmitter power per channel to be used by each wireless operator in each of their respective FCC-licensed frequency bands. For the other operator, we will rely on the transmission parameters in its associated FCC licenses.

The table that follows summarizes the relevant data for the collocated antenna operations.

Carrier	Antenna Manufacturer	Antenna Model	Type	Freq (MHz)	Total ERP (watts)	Ant Gain (dBd)	Azimuth
AT&T	Generic	Generic	Panel	700	4945	11.26	N/A
AT&T	Generic	Generic	Panel	850	2400	11.76	N/A
AT&T	Generic	Generic	Panel	1900	5756	15.56	N/A
AT&T	Generic	Generic	Panel	2100	5890	15.66	N/A
AT&T	Generic	Generic	Panel	2300	4131	16.16	N/A
Sprint	Generic	Generic	Panel	800	2168	13.36	N/A
Sprint	Generic	Generic	Panel	1900	6168	15.86	N/A
Sprint	Generic	Generic	Panel	2500	4669	15.90	N/A
T-Mobile	Generic	Generic	Panel	600	3163	12.96	N/A
T-Mobile	Generic	Generic	Panel	700	867	13.36	N/A
T-Mobile	Generic	Generic	Panel	1900	4123	15.36	N/A
T-Mobile	Generic	Generic	Panel	1900	1452	15.60	N/A
T-Mobile	Generic	Generic	Panel	2100	4626	15.86	N/A
T-Mobile	Generic	Generic	Panel	1900	1419	15.50	N/A
T-Mobile	Generic	Generic	Panel	2500	12804	22.35	N/A
Verizon Wireless	Generic	Generic	Panel	746	2400	11.76	N/A
Verizon Wireless	Generic	Generic	Panel	869	5166	12.36	N/A
Verizon Wireless	Generic	Generic	Panel	1900	5372	15.26	N/A
Verizon Wireless	Generic	Generic	Panel	2100	5625	15.46	N/A
Town of New Fairfield	Generic	Generic	Omnidirectional	154	33	3.86	N/A
Town of New Fairfield	Generic	Generic	Omnidirectional	4952	17	6.86	N/A

Compliance Analysis

FCC Office of Engineering and Technology Bulletin 65 ("OET Bulletin 65") provides guidelines for mathematical models to calculate the RF levels at various points around transmitting antennas. Different models apply in different areas around antennas, with one model applying to street level around a site, and another applying to the rooftop near the antennas. We will address each area of interest in turn in the subsections that follow.

Street Level Analysis

At street-level around an antenna site (in what is called the "far field" of the antennas), the RF levels are directly proportional to the total antenna input power and the relative antenna gain in the downward direction of interest – and the levels are otherwise inversely proportional to the square of the straight-line distance to the antenna.

Conservative calculations also assume the potential RF exposure is enhanced by reflection of the RF energy from the intervening ground. Our calculations will assume a 100% "perfect", mirror-like reflection, which is the absolute worst-case scenario.

The formula for street-level compliance assessment for any given wireless antenna operation is as follows:

$$MPE\% = (100 * Chans * TxPower * 10^{(Gmax-Vdisc/10)} * 4) / (MPE * 4\pi * R^2)$$

where

MPE%	=	RF level, expressed as a percentage of the MPE limit applicable to continuous exposure of the general public
100	=	factor to convert the raw result to a percentage
Chans	=	maximum number of RF channels per sector
TxPower	=	maximum transmitter power per channel, in milliwatts

$10^{(Gmax-Vdisc/10)}$	=	numeric equivalent of the relative antenna gain in the downward direction of interest; data on the antenna vertical-plane pattern is taken from manufacturer specifications
4	=	factor to account for a 100-percent-efficient energy reflection from the ground, and the squared relationship between RF field strength and power density ($2^2 = 4$)
MPE	=	FCC general population MPE limit
R	=	straight-line distance from the RF source to the point of interest, centimeters

The MPE% calculations are performed out to a distance of 500 feet from the facility to points 6.5 feet (approximately two meters, the FCC-recommended standing height) off the ground, as illustrated in Figure 2, below.

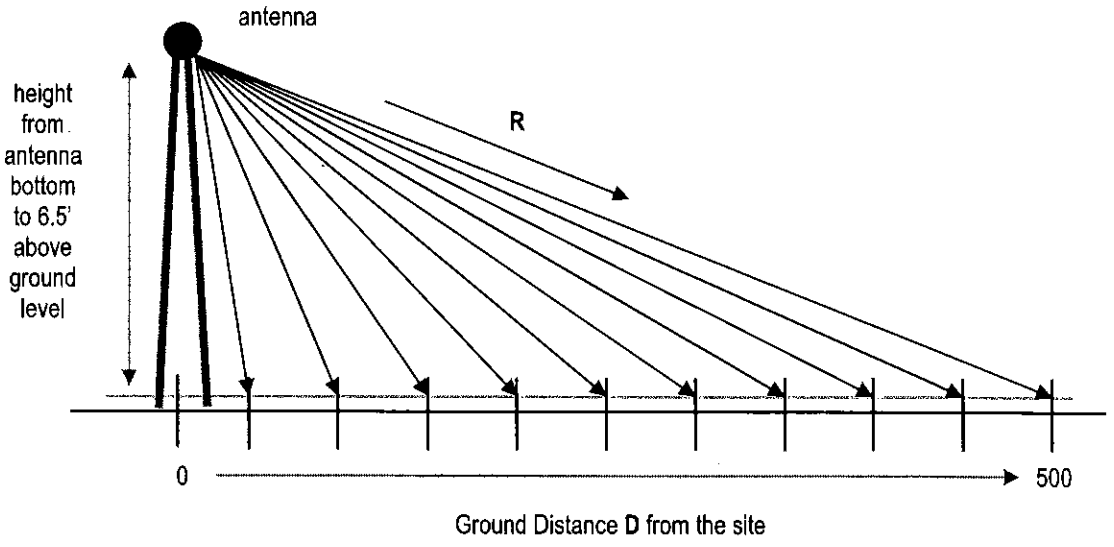


Figure 2. Street-level MPE% Calculation Geometry

It is popularly understood that the farther away one is from an antenna, the lower the RF level – which is generally but not universally correct. The results of MPE% calculations fairly close to the site will reflect the variations in the vertical-plane antenna pattern as well as the variation in straight-line distance to the antenna.

Therefore, RF levels may actually increase slightly with increasing distance within the range of zero to 500 feet from the site. As the distance approaches 500 feet and beyond, though, the antenna pattern factor becomes less significant, the RF levels become primarily distance-controlled and, as a result, the RF levels generally decrease with increasing distance. In any case, the RF levels more than 500 feet from a wireless antenna site are well understood to be sufficiently low to be comfortably in compliance.

According to the FCC, when directional antennas (such as panels) are used, compliance assessments are based on the RF effect of a single (facing) antenna sector, as the effects of directional antennas pointed away from the point(s) of interest are considered insignificant. If the different parameters apply in the different sectors, compliance is based on the worst-case parameters.

Street level FCC compliance for a collocated antenna site is assessed in the following manner. At each distance point along the ground, an MPE% calculation is made for each antenna operation (including each frequency band), and the sum of the individual MPE% contributions at each point is compared to 100 percent, the normalized reference for compliance with the MPE limit. We refer to the sum of the individual MPE% contributions as "total MPE%", and any calculated total MPE% result exceeding 100 percent is, by definition, higher than the FCC limit and represents non-compliance and a need to mitigate the potential exposure. If all results are consistently below 100 percent, on the other hand, that set of results serves as a clear and sufficient demonstration of compliance with the MPE limit.

Note that the following conservative methodology and assumptions are incorporated into the MPE% calculations on a general basis:

1. The antennas are assumed to be operating continuously at maximum power and maximum channel capacity.
2. The power-attenuation effects of shadowing or other obstructions to the line-of-sight path from the antenna to the point of interest are ignored.
3. The calculations intentionally minimize the distance factor (R) by assuming a 6'6" human and performing the calculations from the bottom (rather than

the centerline) of each operator's lowest-mounted antenna, as applicable.

4. The calculations also conservatively take into account, when applicable, the different technical characteristics and related RF effects of the use of multiple antennas for transmission in the same frequency band.
5. The RF exposure at ground level is assumed to be 100-percent enhanced (increased) via a "perfect" field reflection from the intervening ground.

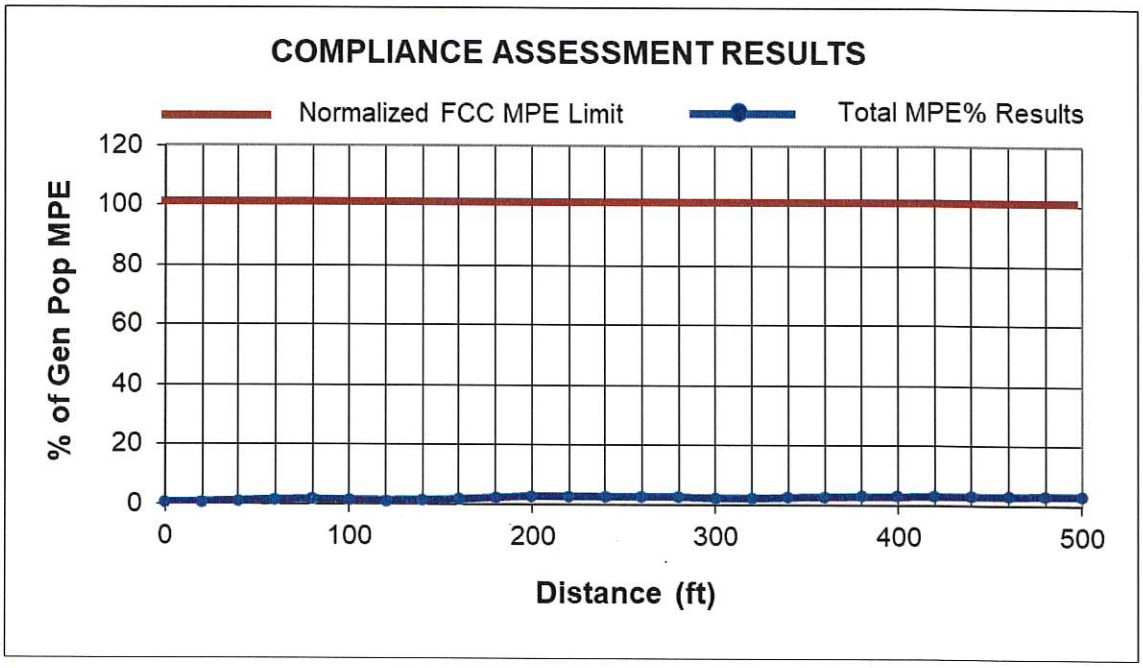
The net result of these assumptions is to intentionally and significantly overstate the calculated RF levels relative to the levels that will actually result from the antenna operations – and the purpose of this conservatism is to allow very "safe-side" conclusions about compliance.

The table that follows provides the results of the MPE% calculations for each antenna operation, with the overall worst-case calculated result highlighted in bold in the last column. Note that the transmission parameters for each DISH antenna sector are identical, and the calculations reflect the worst-case result for any/all sectors.

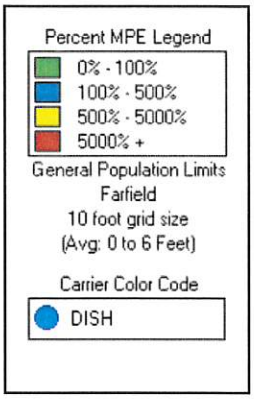
Ground Distance (ft)	DISH 600 MHz MPE%	DISH 2000 MHz MPE%	DISH 2100 MHz MPE%	AT&T MPE%	Sprint MPE%	T-Mobile MPE%	Verizon Wireless MPE%	Town of New Fairfield MPE%	Total MPE%
0	0.0006	0.0008	0.0000	0.0680	0.0191	0.2222	0.0255	0.0031	0.3393
20	0.0014	0.0023	0.0005	0.0690	0.0117	0.3218	0.0334	0.1162	0.5563
40	0.0034	0.0076	0.0049	0.1530	0.0087	0.4800	0.1026	0.2345	0.9947
60	0.0039	0.0097	0.0056	0.2385	0.0100	0.7675	0.1719	0.3214	1.5285
80	0.0014	0.0084	0.0084	0.4067	0.0297	0.6385	0.1864	0.3525	1.6320
100	0.0013	0.0057	0.0131	0.3758	0.0261	0.4304	0.1342	0.3305	1.3171
120	0.0093	0.0030	0.0108	0.2190	0.0507	0.2887	0.2982	0.2981	1.1778
140	0.0357	0.0022	0.0848	0.1712	0.0429	0.3891	0.3303	0.2489	1.3051
160	0.0655	0.0096	0.1670	0.3656	0.0462	0.4730	0.3261	0.2183	1.6713
180	0.0709	0.1222	0.2124	0.5662	0.0851	0.5773	0.4821	0.1835	2.2997
200	0.0520	0.2053	0.1557	0.7235	0.1217	0.8521	0.5659	0.1570	2.8332
220	0.0341	0.0975	0.0587	0.6876	0.0930	1.3281	0.4751	0.1342	2.9083
240	0.0191	0.0061	0.0056	0.6009	0.0438	1.6230	0.3446	0.1157	2.7588
260	0.0209	0.0050	0.0140	0.5070	0.0284	1.8941	0.1957	0.1028	2.7679
280	0.0241	0.0028	0.0069	0.4263	0.0241	1.9776	0.1179	0.0899	2.6696
300	0.0351	0.0258	0.0041	0.3576	0.0403	1.6998	0.0601	0.0790	2.3018
320	0.0438	0.0498	0.0261	0.2035	0.0449	1.8155	0.0333	0.0705	2.2874
340	0.0425	0.0334	0.0231	0.1241	0.0564	2.1972	0.0604	0.0630	2.6001
360	0.0395	0.0118	0.0116	0.0931	0.0608	2.4443	0.1167	0.0573	2.8351
380	0.0336	0.0014	0.0046	0.1321	0.0618	2.4862	0.1976	0.0526	2.9699
400	0.0274	0.0067	0.0092	0.2246	0.0534	2.4445	0.1798	0.0496	2.9952
420	0.0214	0.0177	0.0185	0.3577	0.0355	2.3766	0.2785	0.0452	3.1511
440	0.0168	0.0215	0.0205	0.3284	0.0326	2.1805	0.3956	0.0416	3.0375
460	0.0155	0.0165	0.0128	0.4646	0.0158	2.1232	0.3640	0.0382	3.0506
480	**0.0189**	**0.0116**	**0.0071**	**0.5948**	**0.0109**	**2.0779**	**0.4939**	**0.0350**	**3.2501**
500	0.0176	0.0108	0.0066	0.5510	0.0101	1.9247	0.6319	0.0323	3.1850

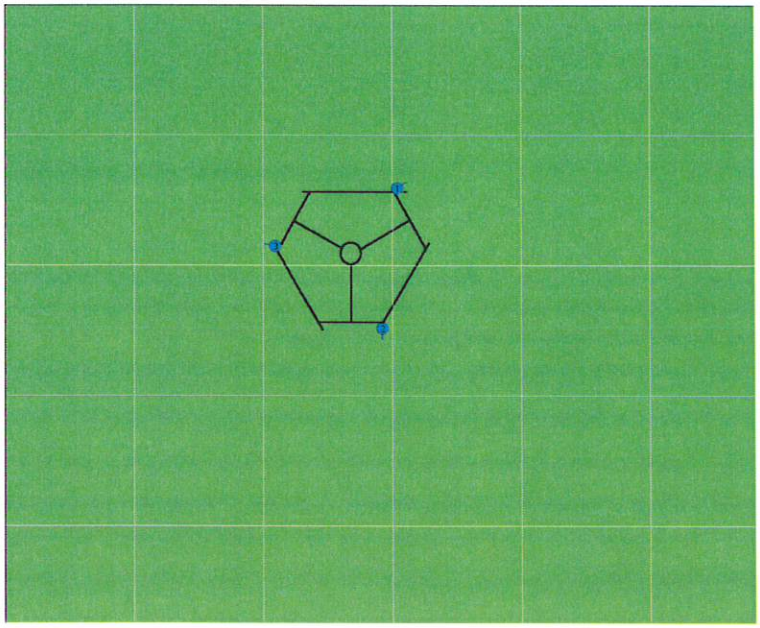
As indicated, the maximum calculated overall RF level is 3.2501 percent of the FCC MPE limit – well below the 100-percent reference for compliance.

A graph of the overall calculation results, shown below, perhaps provides a clearer *visual* illustration of the relative compliance of the calculated RF levels. The line representing the overall calculation results shows an obviously clear, consistent margin to the FCC MPE limit.



The graphic output for the areas at street level surrounding the site is reproduced on the next page.



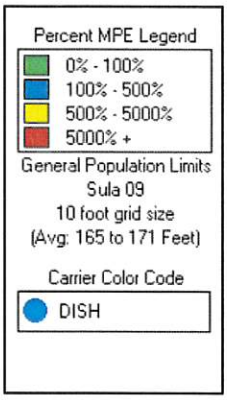


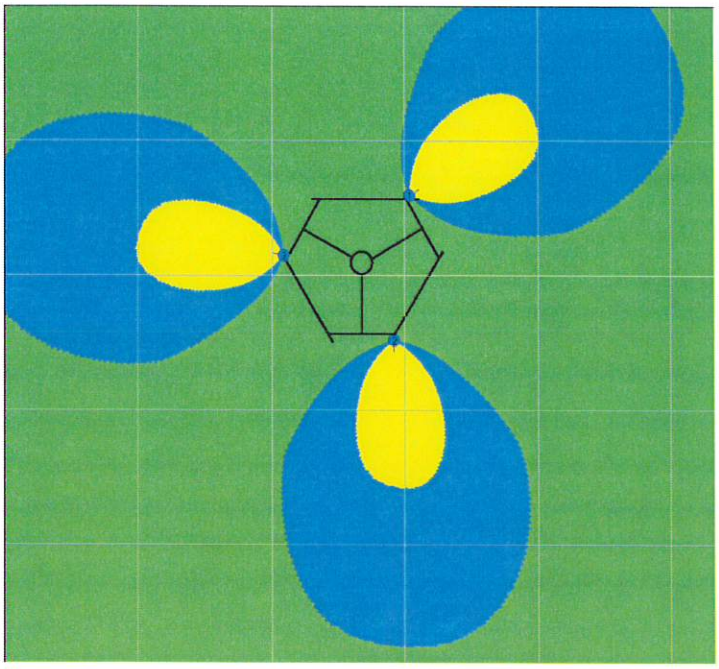
Near-field Analysis

The compliance analysis for the same height as the antennas is performed using the RoofMaster program by Waterford Consultants.

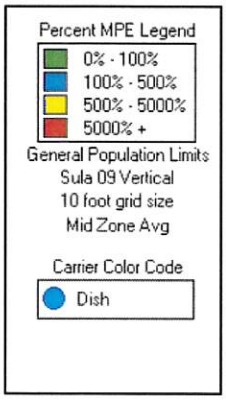
RF levels in the near field of an antenna depend on the power input to the antenna, the antenna's length and horizontal beamwidth, the mounting height of the antenna above nearby roof, and one's position and distance from the antenna. RF levels in front of a directional antenna are higher than they are to the sides or rear, and in any given horizontal direction are inversely proportional to the straight-line distance to the antenna.

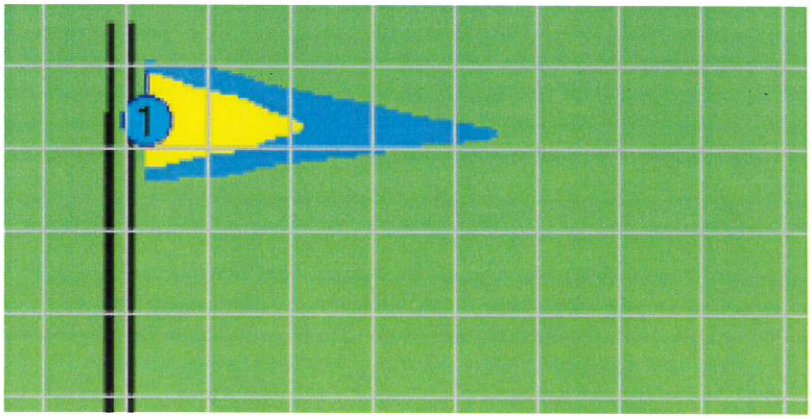
The RoofMaster graphic outputs for the same height as the DISH antennas are reproduced on the next page.





RoofMaster – Same Height as the Antennas – Alpha / Beta / Gamma sectors





RoofMaster – Same Height as the Antennas – Alpha / Beta / Gamma sectors

Compliance Conclusion

According to the FCC, the MPE limit has been constructed in such a manner that continuous human exposure to RF fields up to and including 100 percent of the MPE limit is acceptable and safe.

The conservative analysis in this case shows that the maximum calculated RF level from the combination of proposed and existing antenna operations at street level around the site is 3.2501 percent of the FCC general population MPE limit. At the same height as the antennas, the analysis shows that the calculated RF levels potentially exceed the FCC MPE limit. Per DISH guidelines, and consistent with FCC guidance on compliance, it is recommended that two Caution signs and NOC Information signs be installed at the base of the monopole.

The results of the calculations, along with the described RF mitigation, combine to satisfy the FCC's RF compliance requirements and associated guidelines on compliance.

Moreover, because of the extremely conservative calculation methodology and operational assumptions we applied in the analysis, RF levels actually caused by the antennas will be significantly lower than the calculation results here indicate.

Certification

It is the policy of Pinnacle Telecom Group that all FCC RF compliance assessments are reviewed, approved, and signed by the firm's Chief Technical Officer who certifies as follows:

1. I have read and fully understand the FCC regulations concerning RF safety and the control of human exposure to RF fields (47 CFR 1.1301 *et seq*).
2. To the best of my knowledge, the statements and information disclosed in this report are true, complete and accurate.
3. The analysis of site RF compliance provided herein is consistent with the applicable FCC regulations, additional guidelines issued by the FCC, and industry practice.
4. The results of the analysis indicate that the subject antenna operations will be in compliance with the FCC regulations concerning the control of potential human exposure to the RF emissions from antennas.

Daniel C. Collins
Chief Technical Officer
Pinnacle Telecom Group, LLC

7/6/22
Date

Appendix A. Documents Used to Prepare the Analysis

RFDS: RFDS-NJJER01134A-Preliminary-20211202-v.1_20211203153520 (1)

CD: NJJER01134A_ZD_20210830120904

Appendix B. Background on the FCC MPE Limit

As directed by the Telecommunications Act of 1996, the FCC has established limits for maximum continuous human exposure to RF fields.

The FCC maximum permissible exposure (MPE) limits represent the consensus of federal agencies and independent experts responsible for RF safety matters. Those agencies include the National Council on Radiation Protection and Measurements (NCRP), the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the American National Standards Institute (ANSI), the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA). In formulating its guidelines, the FCC also considered input from the public and technical community – notably the Institute of Electrical and Electronics Engineers (IEEE).

The FCC's RF exposure guidelines are incorporated in Section 1.301 *et seq* of its Rules and Regulations (47 CFR 1.1301-1.1310). Those guidelines specify MPE limits for both occupational and general population exposure.

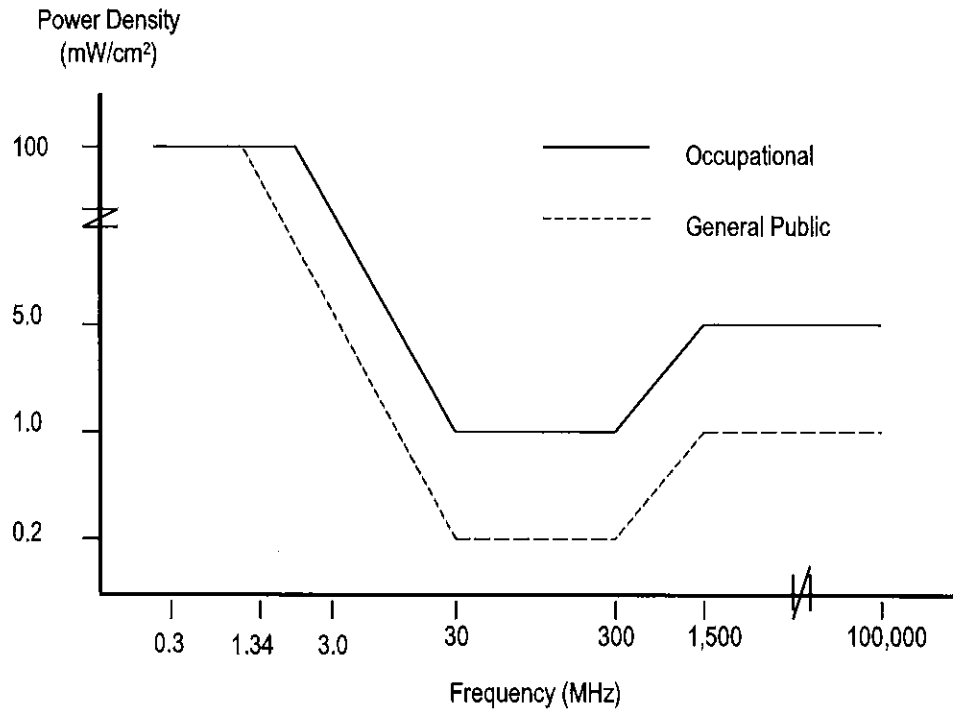
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in the form of heat). The occupational MPE guidelines incorporate a safety factor of 10 or greater with respect to RF levels known to represent a health hazard, and an additional safety factor of five is applied to the MPE limits for general population exposure. Thus, the general population MPE limit has a built-in safety factor of more than 50. The limits were constructed to appropriately protect humans of both sexes and all ages and sizes and under all conditions – and continuous exposure at levels equal to or below the applicable MPE limits is considered to result in no adverse health effects or even health risk.

The reason for *two* tiers of MPE limits is based on an understanding and assumption that members of the general public are unlikely to have had appropriate RF safety training and may not be aware of the exposures they receive; occupational exposure in controlled environments, on the other hand, is assumed to involve individuals who have had such training, are aware of the exposures, and know how to maintain a safe personal work environment.

The FCC's RF exposure limits are expressed in two equivalent forms, using alternative units of field strength (expressed in volts per meter, or V/m), and power density (expressed in milliwatts per square centimeter, or mW/cm^2). The table on the next page lists the FCC limits for both occupational and general population exposures, using the mW/cm^2 reference, for the different radio frequency ranges.

Frequency Range (F) (MHz)	Occupational Exposure (mW/cm^2)	General Public Exposure (mW/cm^2)
0.3 - 1.34	100	100
1.34 - 3.0	100	$180 / F^2$
3.0 - 30	$900 / F^2$	$180 / F^2$
30 - 300	1.0	0.2
300 - 1,500	F / 300	F / 1500
1,500 - 100,000	5.0	1.0

The diagram below provides a graphical illustration of both the FCC's occupational and general population MPE limits.



Because the FCC's RF exposure limits are frequency-shaped, the exact MPE limits applicable to the instant situation depend on the frequency range used by the systems of interest.

The most appropriate method of determining RF compliance is to calculate the RF power density attributable to a particular system and compare that to the MPE limit applicable to the operating frequency in question. The result is usually expressed as a percentage of the MPE limit.

For potential exposure from multiple systems, the respective percentages of the MPE limits are added, and the total percentage compared to 100 (percent of the limit). If the result is less than 100, the total exposure is in compliance; if it is more than 100, exposure mitigation measures are necessary to achieve compliance.

Note that the FCC "categorically excludes" all "non-building-mounted" wireless antenna operations whose mounting heights are more than 10 meters (32.8 feet) from the routine requirement to demonstrate compliance with the MPE limit, because such operations "are deemed, individually and cumulatively, to have no significant effect on the human environment". The categorical exclusion also applies to *all* point-to-point antenna operations, regardless of the type of structure they're mounted on. Note that the FCC considers any facility qualifying for the categorical exclusion to be automatically in compliance.

In addition, FCC Rules and Regulations Section 1.1307(b)(3) describes a provision known in the industry as "the 5% rule". It describes that when a specific location – like a spot on a rooftop – is subject to an overall exposure level exceeding the applicable MPE limit, operators with antennas whose MPE% contributions at the point of interest are less than 5% are exempted from the obligation otherwise shared by all operators to bring the site into compliance, and those antennas are automatically deemed by the FCC to satisfy the rooftop compliance requirement.

FCC References on RF Compliance

47 CFR, FCC Rules and Regulations, Part 1 (Practice and Procedure), Section 1.1310 (Radiofrequency radiation exposure limits).

FCC Second Memorandum Opinion and Order and Notice of Proposed Rulemaking (FCC 97-303), *In the Matter of Procedures for Reviewing Requests for Relief From State and Local Regulations Pursuant to Section 332(c)(7)(B)(v) of the Communications Act of 1934 (WT Docket 97-192), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (ET Docket 93-62), and Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Amendment of the Commission's Rules to Preempt State and Local Regulation of Commercial Mobile Radio Service Transmitting Facilities*, released August 25, 1997.

FCC First Memorandum Opinion and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released December 24, 1996.

FCC Report and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released August 1, 1996.

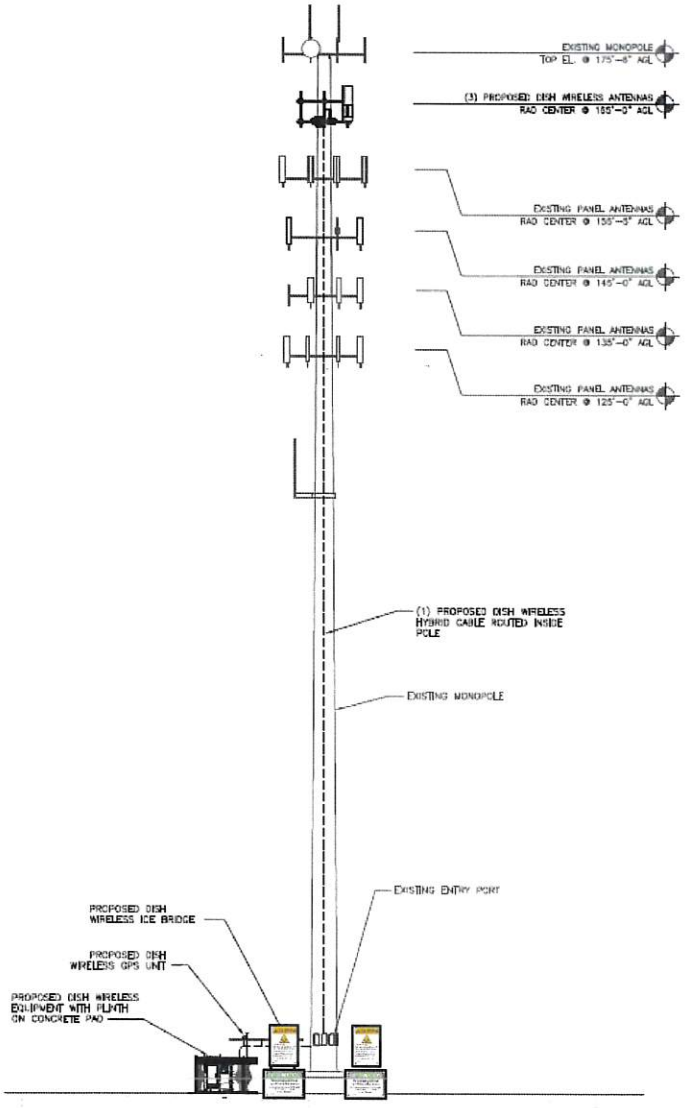
FCC Report and Order, Notice of Proposed Rulemaking, Memorandum Opinion and Order (FCC 19-126), *Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields; Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies,* released December 4, 2019.

FCC Office of Engineering and Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 97-01, August 1997.

FCC Office of Engineering and Technology (OET) Bulletin 56, "Questions and Answers About Biological Effects and Potential Hazards of RF Radiation", edition 4, August 1999.

Appendix C. Proposed Signage

Final Compliance Configuration							
	GUIDELINES	NOTICE	CAUTION	WARNING	NOC INFO	BARRIER/MARKER	
Access Point(s)	2	0	2	0	2	0	dimensions
Alpha	0	0	0	0	0	0	dimensions
Beta	0	0	0	0	0	0	dimensions
Gamma	0	0	0	0	0	0	dimensions



Appendix D. Summary of Expert Qualifications

Daniel J. Collins, Chief Technical Officer, Pinnacle Telecom Group, LLC

Synopsis:	• 40+ years of experience in all aspects of wireless system engineering, related regulation, and RF exposure • Has performed or led RF exposure compliance assessments on more than 20,000 antenna sites since the latest FCC regulations went into effect in 1997 • Has provided testimony as an RF compliance expert more than 1,500 times since 1997 • Have been accepted as an FCC compliance expert in New York, New Jersey, Connecticut, Pennsylvania and more than 40 other states, as well as by the FCC
Education:	• B.E.E., City College of New York (Sch. Of Eng.), 1971 • M.B.A., 1982, Fairleigh Dickinson University, 1982 • Bronx High School of Science, 1966
Current Responsibilities:	• Leads all PTG staff work involving RF safety and FCC compliance, microwave and satellite system engineering, and consulting on wireless technology and regulation
Prior Experience:	• Edwards & Kelcey, VP – RF Engineering and Chief Information Technology Officer, 1996-99 • Bellcore (a Bell Labs offshoot after AT&T's 1984 divestiture), Executive Director – Regulation and Public Policy, 1983-96 • AT&T (Corp. HQ), Division Manager – RF Engineering, and Director – Radio Spectrum Management, 1977-83 • AT&T Long Lines, Group Supervisor – Microwave Radio System Design, 1972-77
Specific RF Safety / Compliance Experience:	• Involved in RF exposure matters since 1972 • Have had lead corporate responsibility for RF safety and compliance at AT&T, Bellcore, Edwards & Kelcey, and PTG • While at AT&T, helped develop the mathematical models for calculating RF exposure levels • Have been relied on for compliance by all major wireless carriers, as well as by the federal government, several state and local governments, equipment manufacturers, system integrators, and other consulting / engineering firms
Other Background:	• Author, *Microwave System Engineering* (AT&T, 1974) • Co-author and executive editor, *A Guide to New Technologies and Services* (Bellcore, 1993) • National Spectrum Management Association (NSMA) – former three-term President and Chairman of the Board of Directors; was founding member, twice-elected Vice President, long-time member of the Board, and was named an NSMA Fellow in 1991 • Have published more than 35 articles in industry magazines

Exhibit G

Mailing Receipts

FROM:
LEV MAYZLER
(203) 488-0712
CONSTRUCTION SERVICES OF BRANF
63-3 NORTH BRANFORD ROAD
BRANFORD CT 06405-2848

CT 068 0-01

SHIP TO:

EVAN WHITE
NEW FAIRFIELD ZONING DEPT.
4 BRUSH HILL ROAD
NEW FAIRFIELD CT 06812

UPS 2ND DAY AIR **2**

TRACKING #: 1Z E05 345 02 6230 3223

BILLING: P/P

WS 22.0.17 SHARP MX-3070 27.0A 06/2022

Fold here and place in label pouch

☆

Your shipment
1ZE053450262303223

Delivered On
Wednesday, July 13 **at 12:13 P.M. at Receiver**

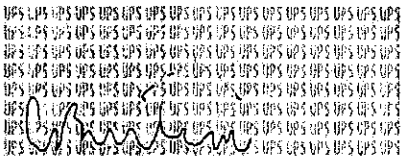
Delivered To

TOWN CLERK
4 BRUSH HILL RD
NEW FAIRFIELD, CT 06812 US

Received By:

TOWN CLERK

Proof of Delivery



Get Updates ›

View Details

Track Another Package

Track

Ask UPS

FROM:
LEV MAYZLER
(203) 488-0712
CONSTRUCTION SERVICES OF BRANF
63-3 NORTH BRANFORD ROAD
BRANFORD CT 06405-2848

SHIP TO:

HONORABLE PATRICIA DELMONACO
4 BRUSH HILL ROAD
NEW FAIRFIELD CT 06812

CT 068 0-01

UPS 2ND DAY AIR **2**

TRACKING #: 1Z E05 345 02 6297 2215

BILLING: P/P

WS 22.0.17 SHARP MX-3070 27.0A 06/2022

Fold here and place in label pouch

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number

1ZE053450262972215

Service

UPS 2nd Day Air®

Delivered On

07/13/2022 12:14 P.M.

Delivered To

4 BRUSH HILL RD
NEW FAIRFIELD, CT, 06812, US

Received By

TOWN CLERK

Left At

Receiver

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 07/14/2022 7:49 A.M. EST