



NSS **NORTHEAST**
SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Victoria Masse
420 Main Street #2, Sturbridge, MA 01566
860-306-2326
victoria@northeastsitesolutions.com

October 26, 2023

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

RE: Notice of Exempt Modification
82 Lovely St, Unionville (Farmington) CT 06085
Latitude: 41.7614 N
Longitude: -72.8875 W
Site#: BOBDL00107A

Dear Ms. Bachman:

Dish Wireless currently maintains three (3) antennas at the 88-foot level of the existing 100-foot monopole located at 82 Lovely St, Unionville CT. The tower is owned by EIP Communications LLC and property is owned by Southern New England. Dish now intends to install (1) MW Dish. The new antenna would be installed at the 88-foot level of the monopole.

Dish Wireless Planned Modifications:

Remove:
N/A

Remove and Replace:
N/A

Install New:
(1) Commscope-VHLP2-11W/B MW Dish
(1) Hybrid cable

Existing to Remain:
N/A



This facility was approved by the Town of Farmington in 1969, Dish was approved to install on the tower per TS-DISH-052-220118. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Kathleen A Blonski, Town Manager for the Town of Farmington, Shannon P.E. Rutherford, Town Planner for the Town of Farmington, as well as the property owner Southern New England and EIP Communications LLC, tower owner.

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, Dish respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Victoria Masse

Victoria Masse
Mobile: 860-306-2326
Fax: 413-521-0558
Office: 420 Main Street, Unit 2, Sturbridge MA 01566
Email: victoria@northeastsitesolutions.com



NSS

NORTHEAST
SITE SOLUTIONS

Turnkey Wireless Development

Attachments:

cc:

Kathleen A Blonski, Town Manager
Town of Farmington
1 Monteith Drive
Farmington, CT 06032

Shannon P.E. Rutherford
Town Planner
Town of Farmington
1 Monteith Drive
Farmington, CT 06032

Southern New England, Property Owner
401 Merritt 7
Norwalk, CT 06851

EIP Communications LLC, Tower Owner
Two Allegheny Center
Nova Tower 2, Suite 703
Pittsburgh, PA 15212

ATTACHMENT 1



Victoria Masse <victoria@northeastitesolutions.com>

Dish Wireless- Request for Original Tower Approval- 82 Lovely St, Farmington CT

Sandra Michaud <michauds@farmington-ct.org>

Wed, Jan 12, 2022 at 11:50 AM

To: Victoria Masse <victoria@northeastitesolutions.com>, Russ Arnold <ArnoldR@farmington-ct.org>, Shannon Rutherford <rutherford@farmington-ct.org>, Bruce Cyr <cyrb@farmington-ct.org>

Cc: Carolyn Seeley <cseeley@northeastitesolutions.com>, Jason Berry <jberry@northeastitesolutions.com>, Chuck Regulbuto <chuck@northeastitesolutions.com>

Good morning Victoria

I have researched the Town Planning & Zoning Office records for the zoning approval of the original build at [82 Lovely Street](#). Although I could not locate the original site plan, I was able to obtain a copy of the 1953 Town Plan & Zoning Commission minutes and decision letter.

In 1964 a Special Exception was granted for an addition and then in 1969 a Special Exception was granted for the installation of a 100-foot radio tower. Those plans are attached to this email.

If you need anything additional from the Planning Office please let me know.

Thank you

Sandy

Sandra Michaud

Land Use Coordinator

Planning Division

Town of Farmington

[1 Monteith Drive](#)

[Farmington, CT 06032](#)





(860) 675-2325

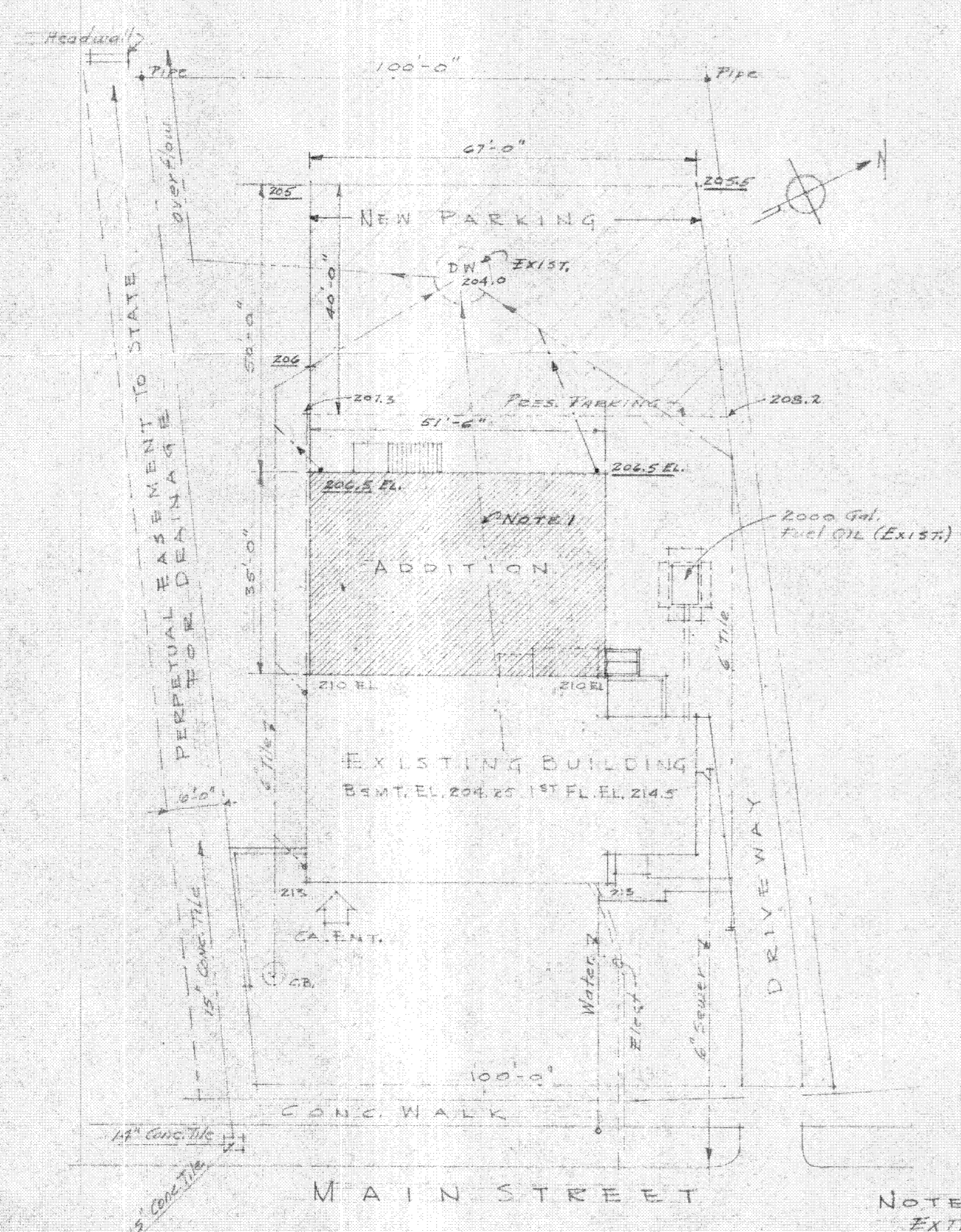
From: Victoria Masse <victoria@northeastsitesolutions.com>
Sent: Tuesday, January 11, 2022 4:39 PM
To: Russ Arnold <ArnoldR@farmington-ct.org>; Shannon Rutherford <rutherfords@farmington-ct.org>; Bruce Cyr <cyrb@farmington-ct.org>; Sandra Michaud <michauds@farmington-ct.org>
Cc: Carolyn Seeley <cseeley@northeastsitesolutions.com>; Jason Berry <jberry@northeastsitesolutions.com>; Chuck Regulbuto <chuck@northeastsitesolutions.com>
Subject: Dish Wireless- Request for Original Tower Approval- 82 Lovely St, Farmington CT

Good Afternoon,

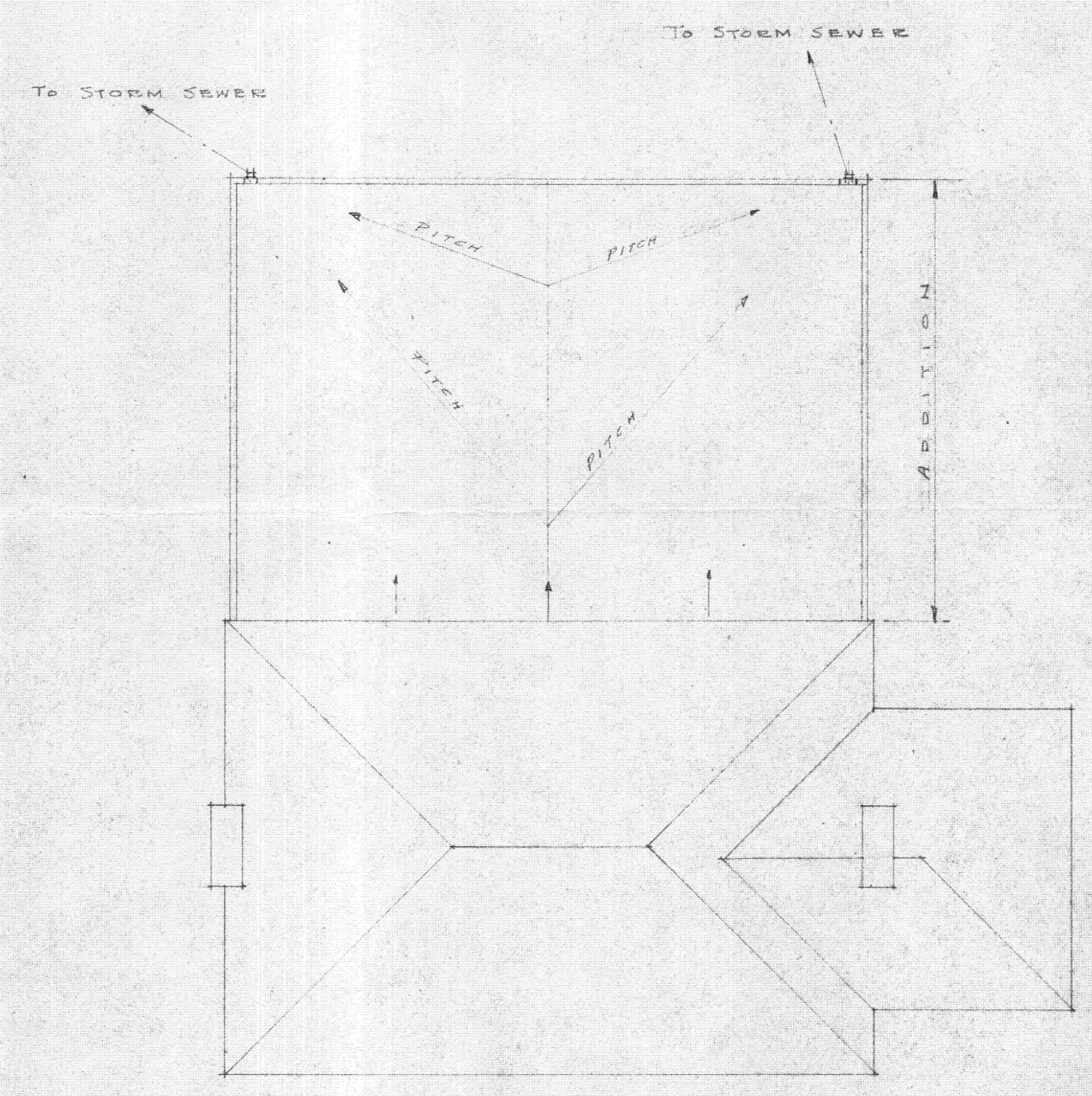
[Quoted text hidden]

4 attachments

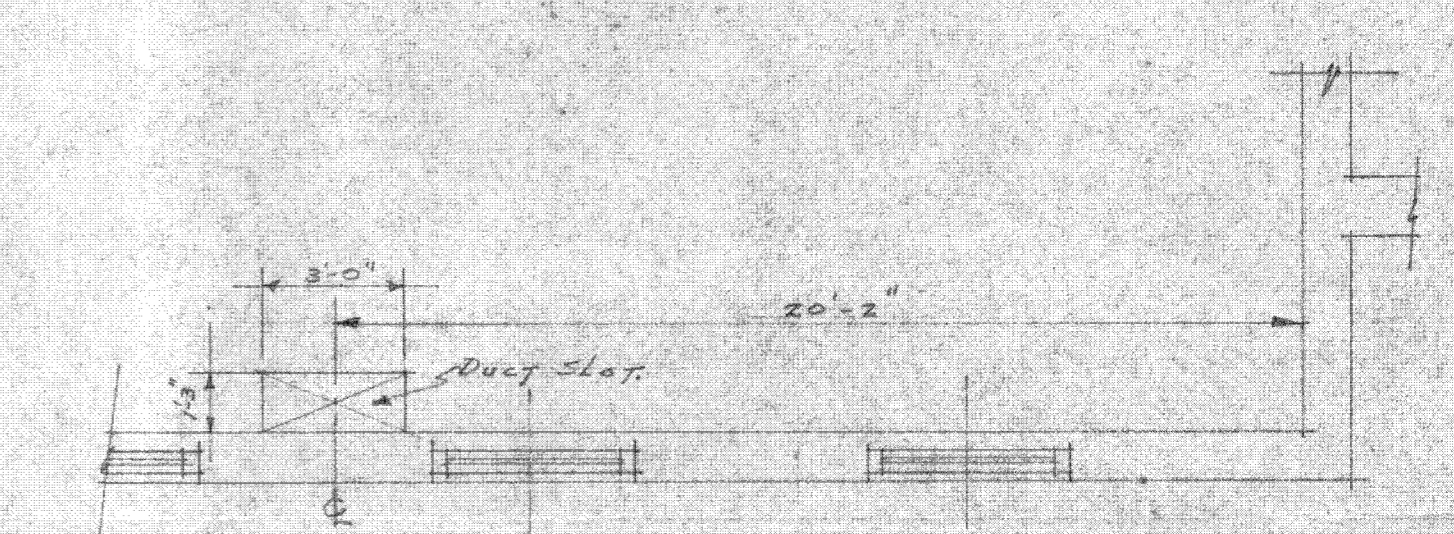
-  **1953 Decision Letter.pdf**
126K
-  **TPZ Minutes 07-13-1953 - Utility Company.pdf**
418K
-  **Z6922 - Special Exception for 100 foot radio tower.pdf**
526K
-  **Z6414 - Special Exception for Addition.pdf**
3022K



PLOT PLAN
SCALE 1" = 20'-0"



ROOF PLAN
SCALE 1/8" = 1'-0"



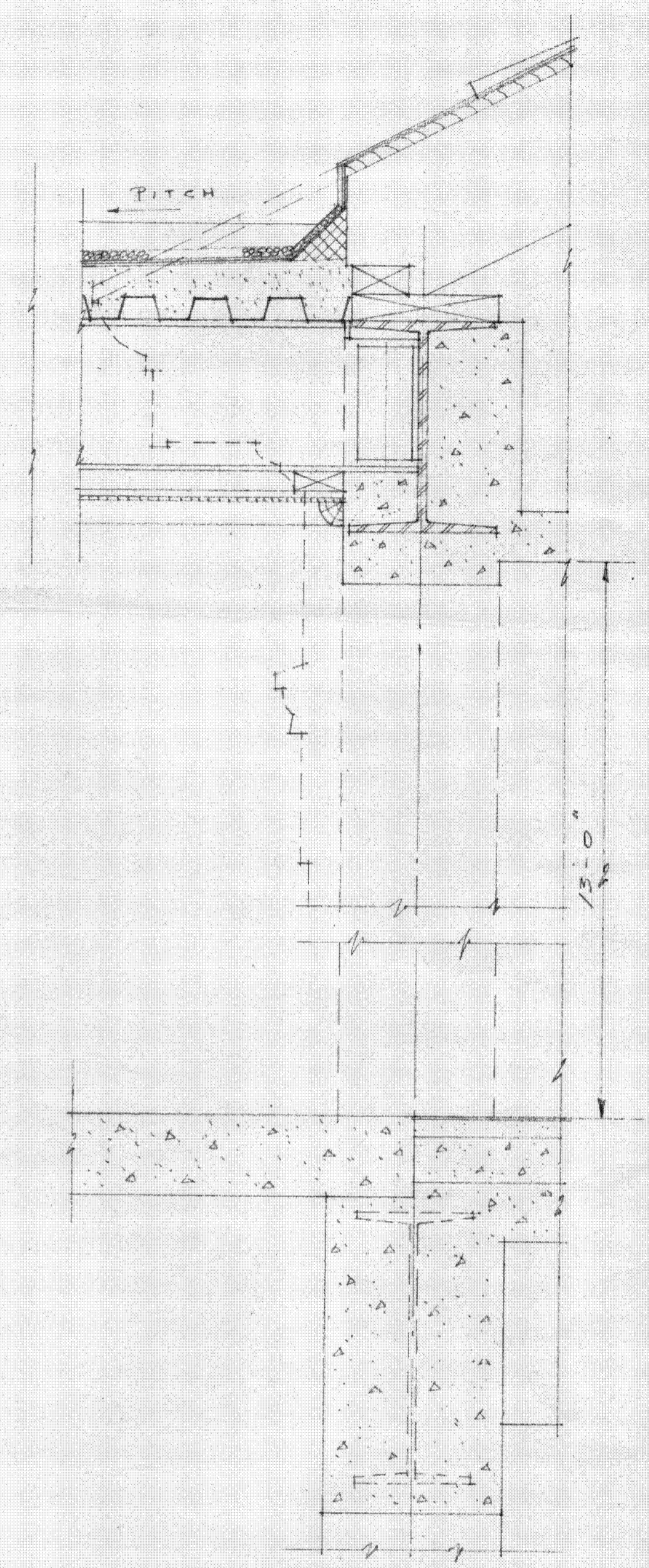
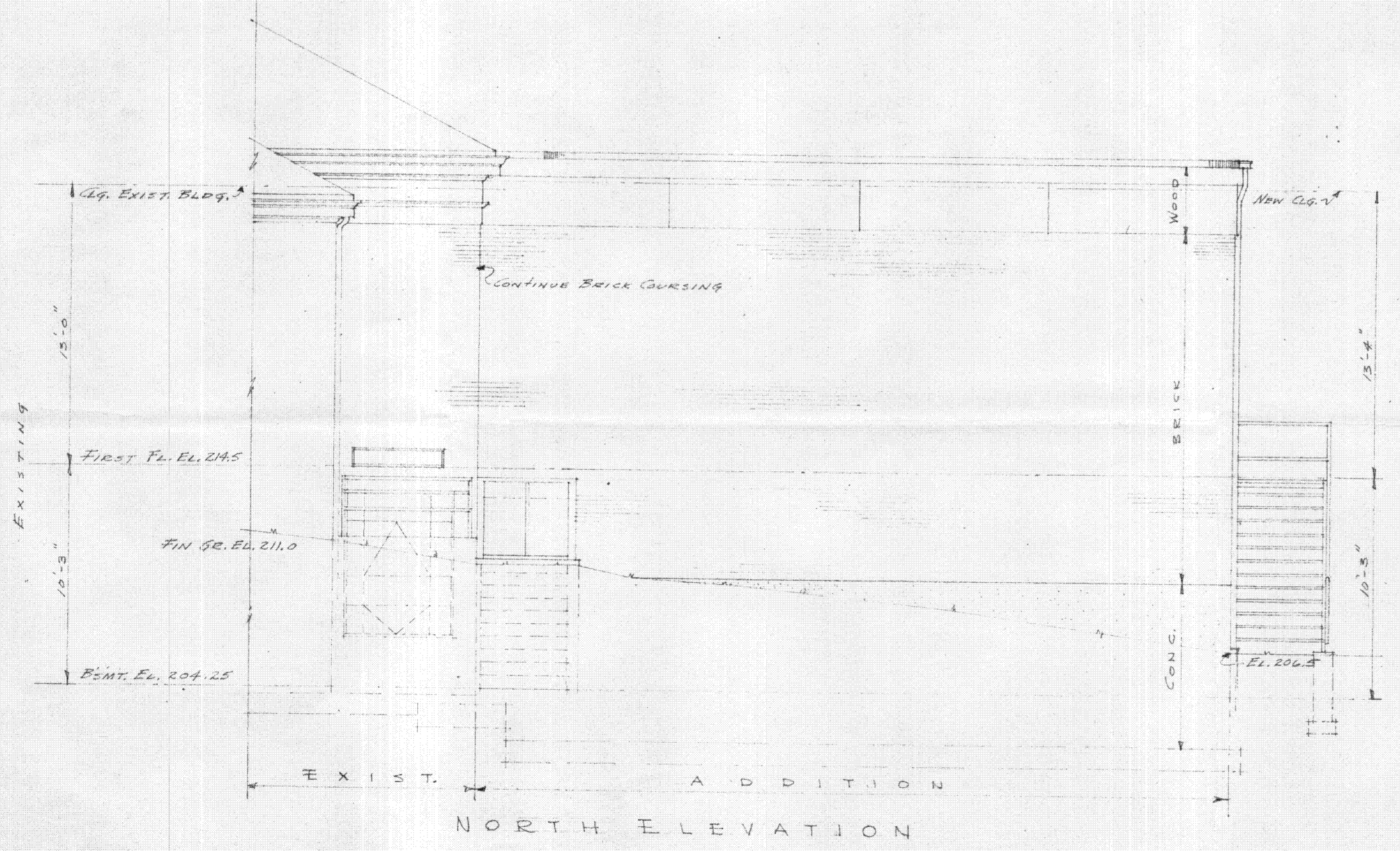
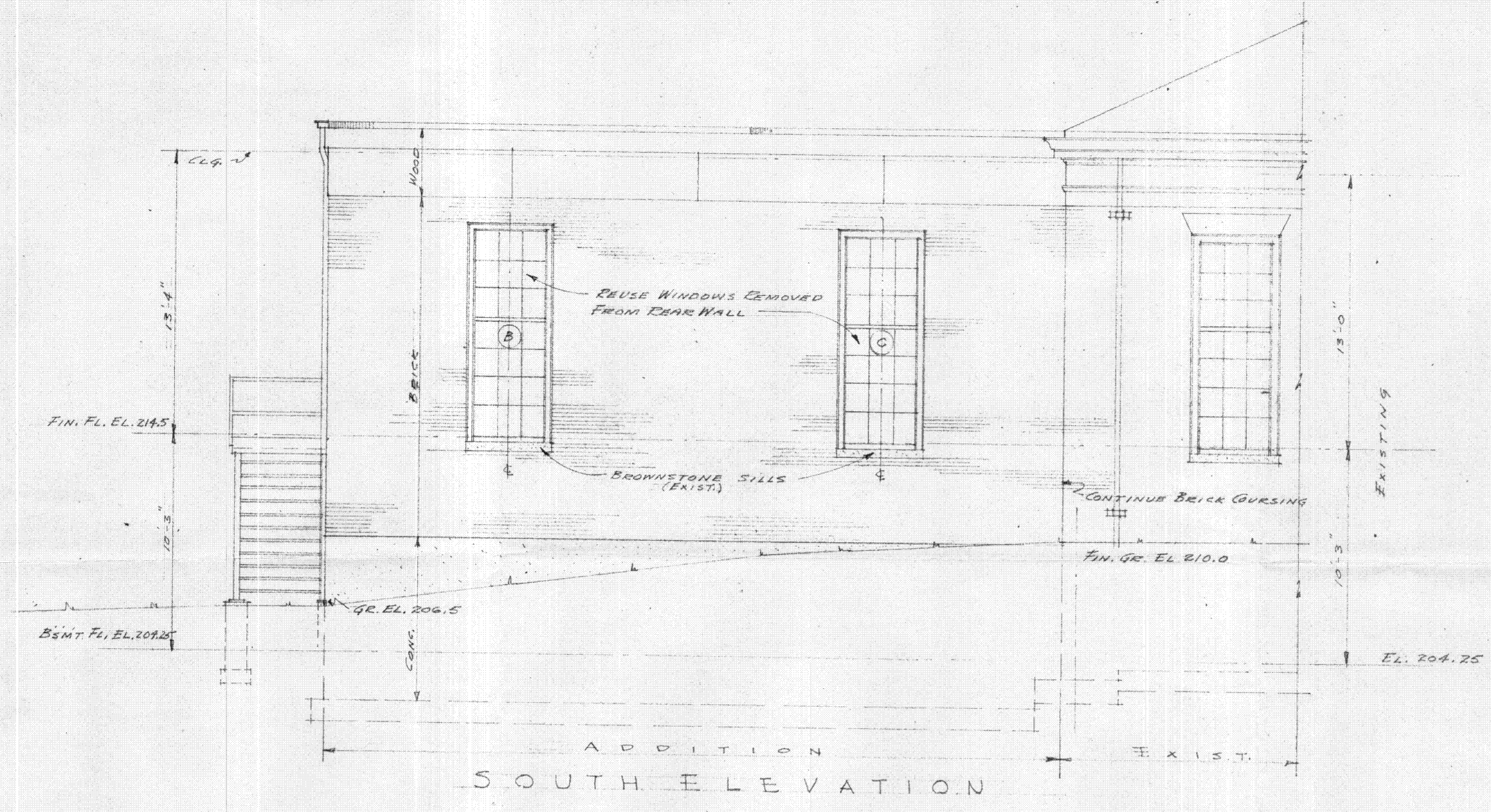
PARTIAL PLAN OF EXISTING BUILDING
SHOWING LOCATION OF A NEW DUCT SLOT TO BE CUT IN FIRST FLOOR
SCALE 1/4" = 1'-0"

The Southern New England Telephone Co.

FARMINGTON ADD.

DATE:	SCALE: As Shown
DRAWN BY:	
REVISIONS:	

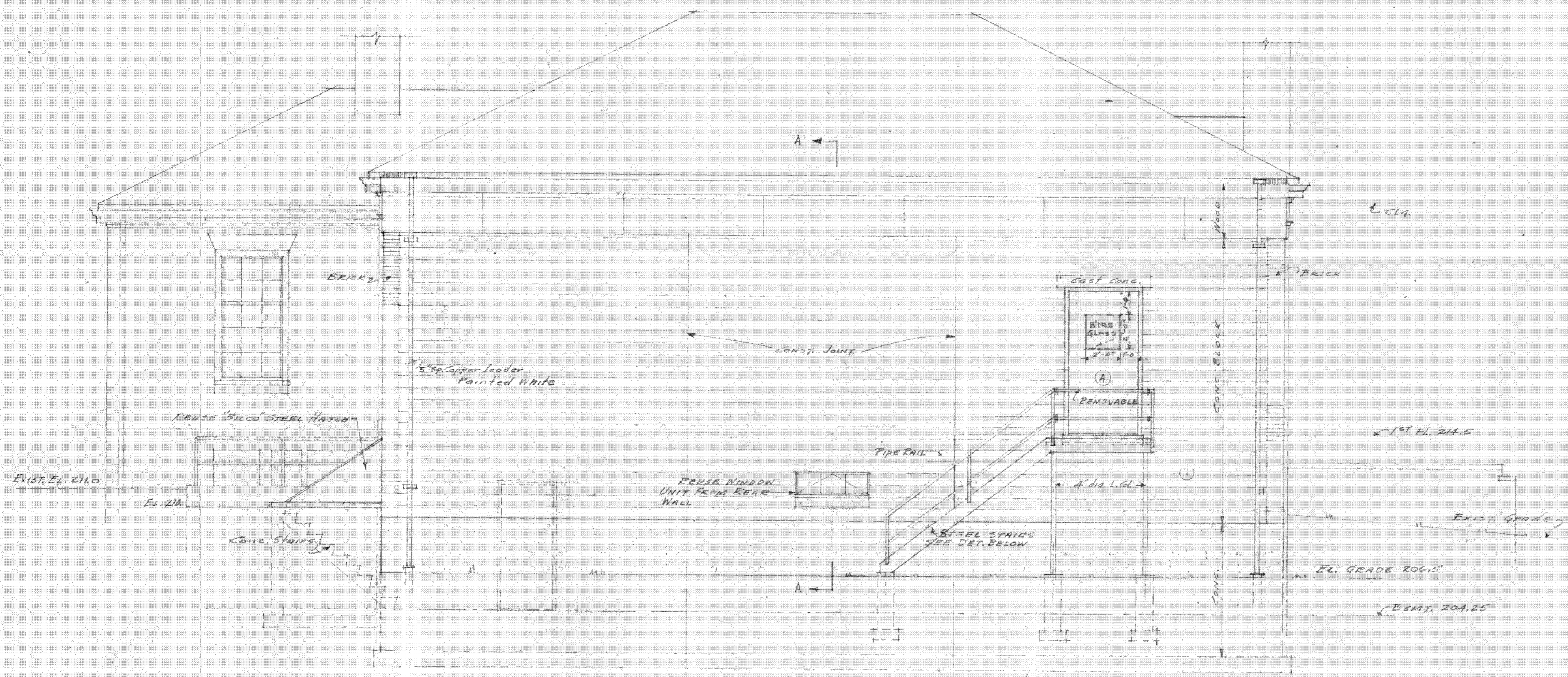
26414-1



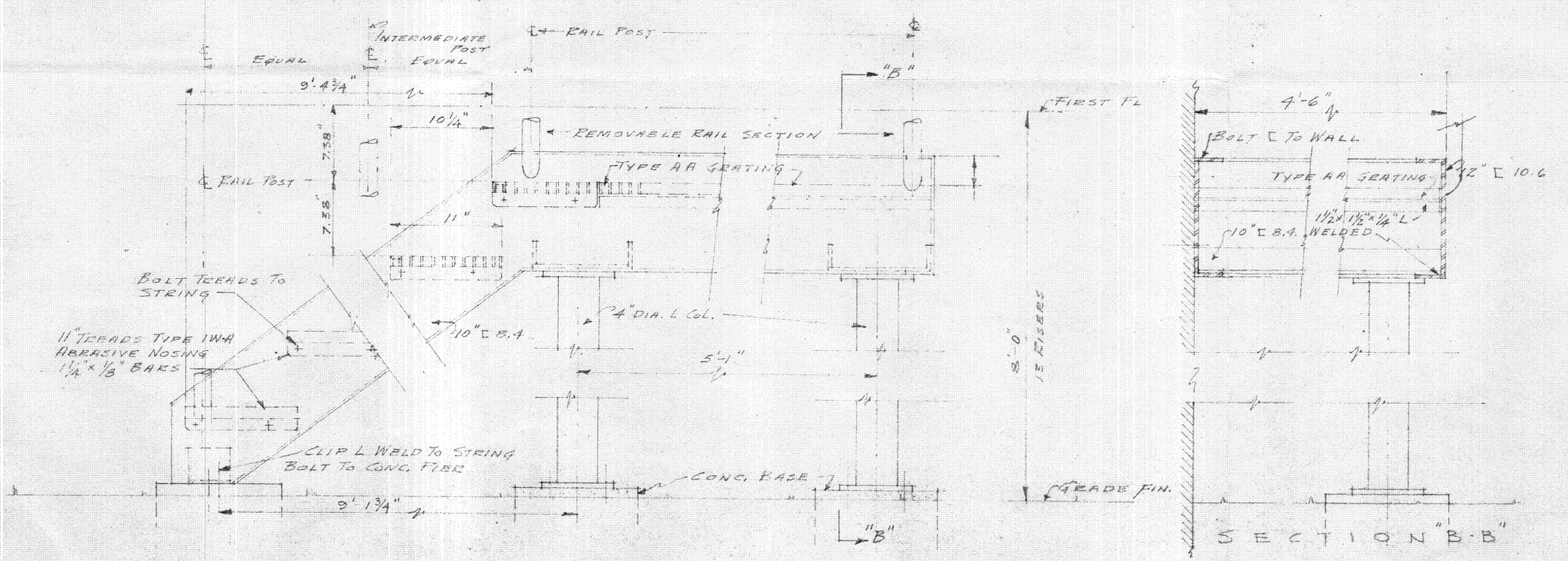
The Southern New England Telephone Co.
FARMINGTON ADD.
 DATE: _____ SCALE: 1/4" = 1'-0"
 DRAWN BY: _____
 REVISIONS: _____

3

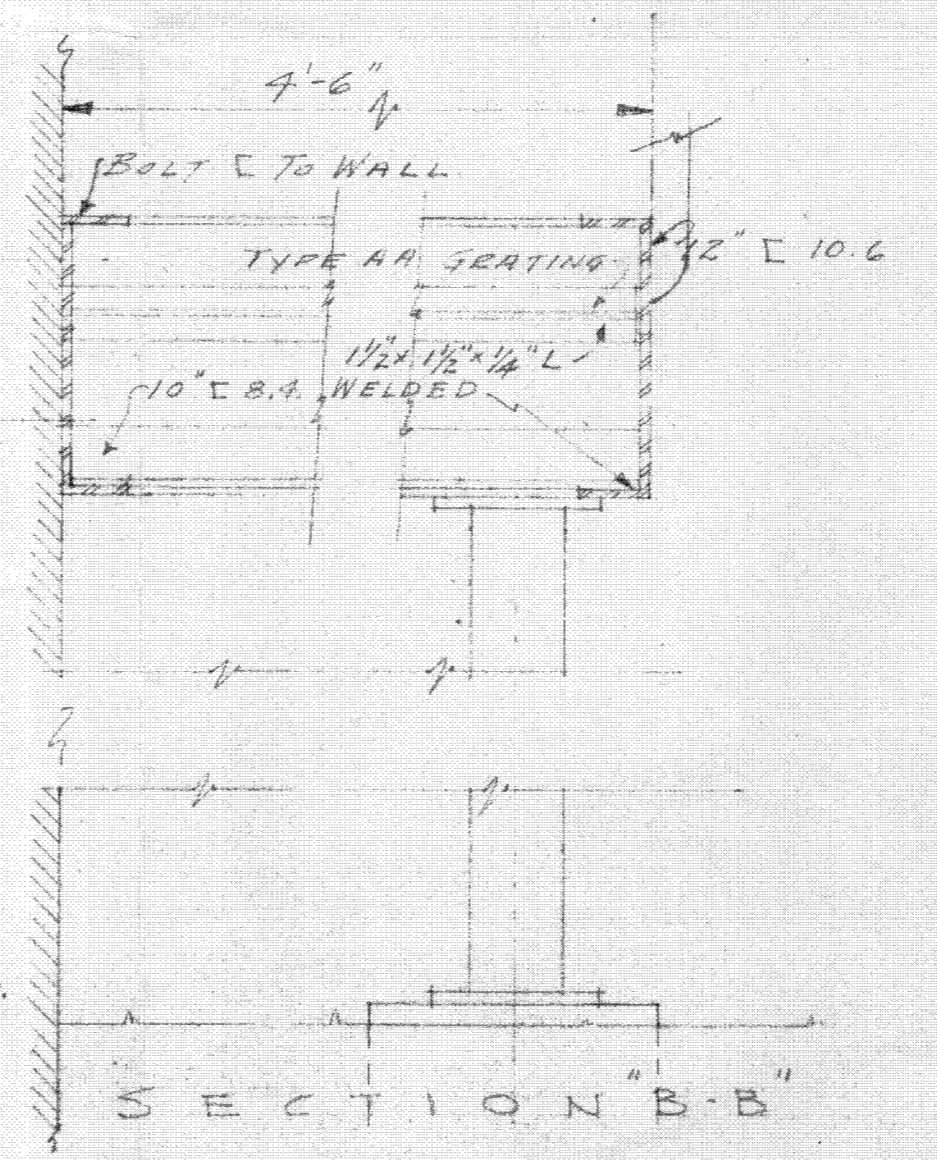
26414-2



WEST ELEVATION

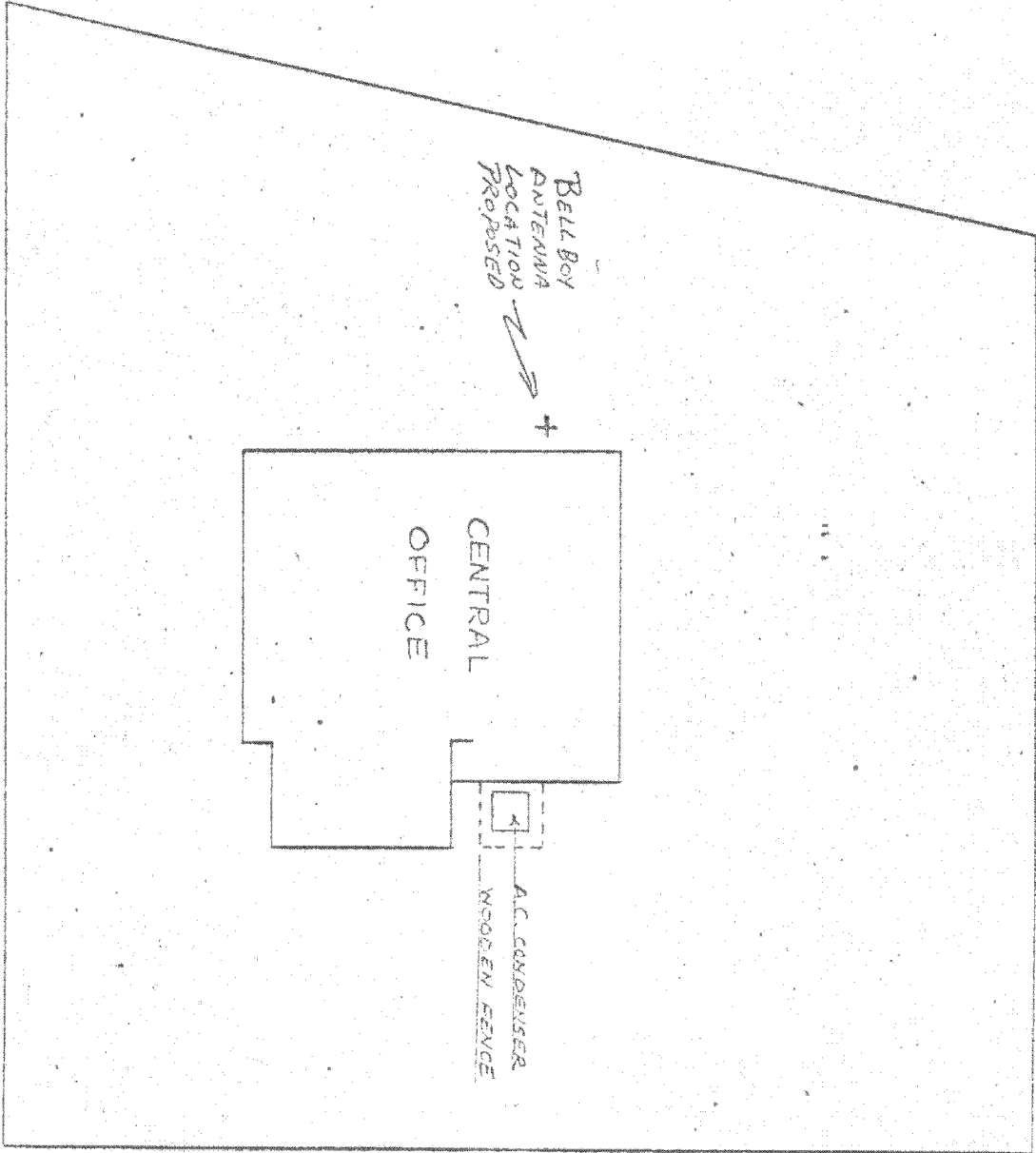
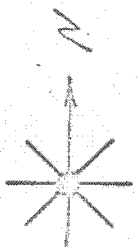


PLATFORM & STAIR DETAIL
SCALE 1/2" = 1'-0"



The Southern New England Telephone Co.

FARMINGTON ADD.	
DATE:	SCALE: As Shown.
DRAWN BY:	4
REVISIONS:	
Z-6914-3	



THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY - SPACE PLANNING ENGINEER

PARLINGTON-UNIONVILLE CENTRAL OFFICE

82 LOVELLY STREET

PILOT

ASSIGN AREA

GROSS AREA

FLOOR PLAN SCALE 1"=30'

ISSUED 12-18-61

REVISED 9-26-63

ENGR EPP

7-6922

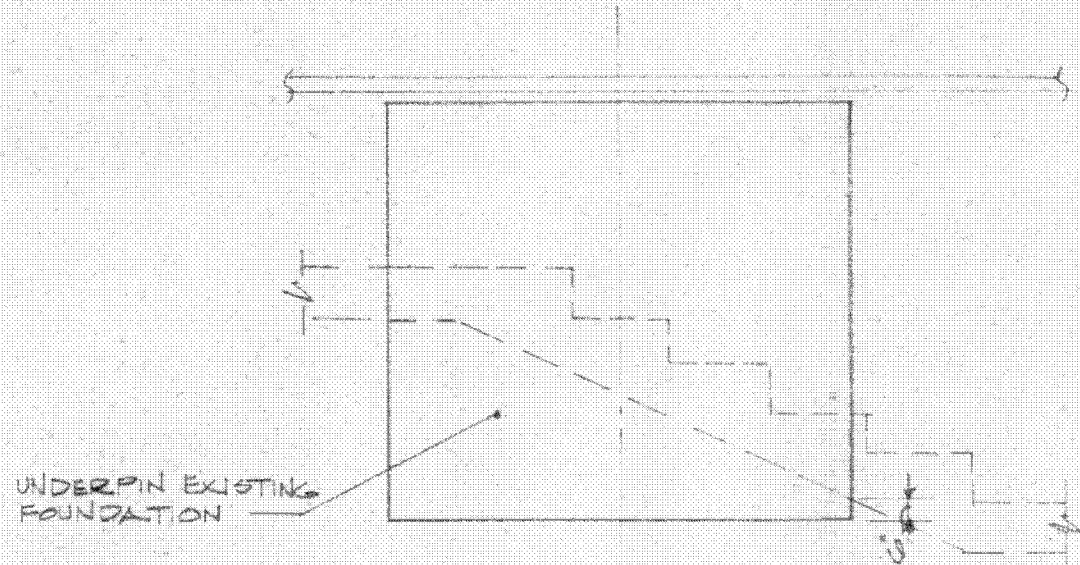
SYLVAN AVE.

LOVELLY STREET

185'



NOTE:
SEE DNG. 08-64-8 FOR
ANCHORAGE DETAIL AND
GENERAL NOTES

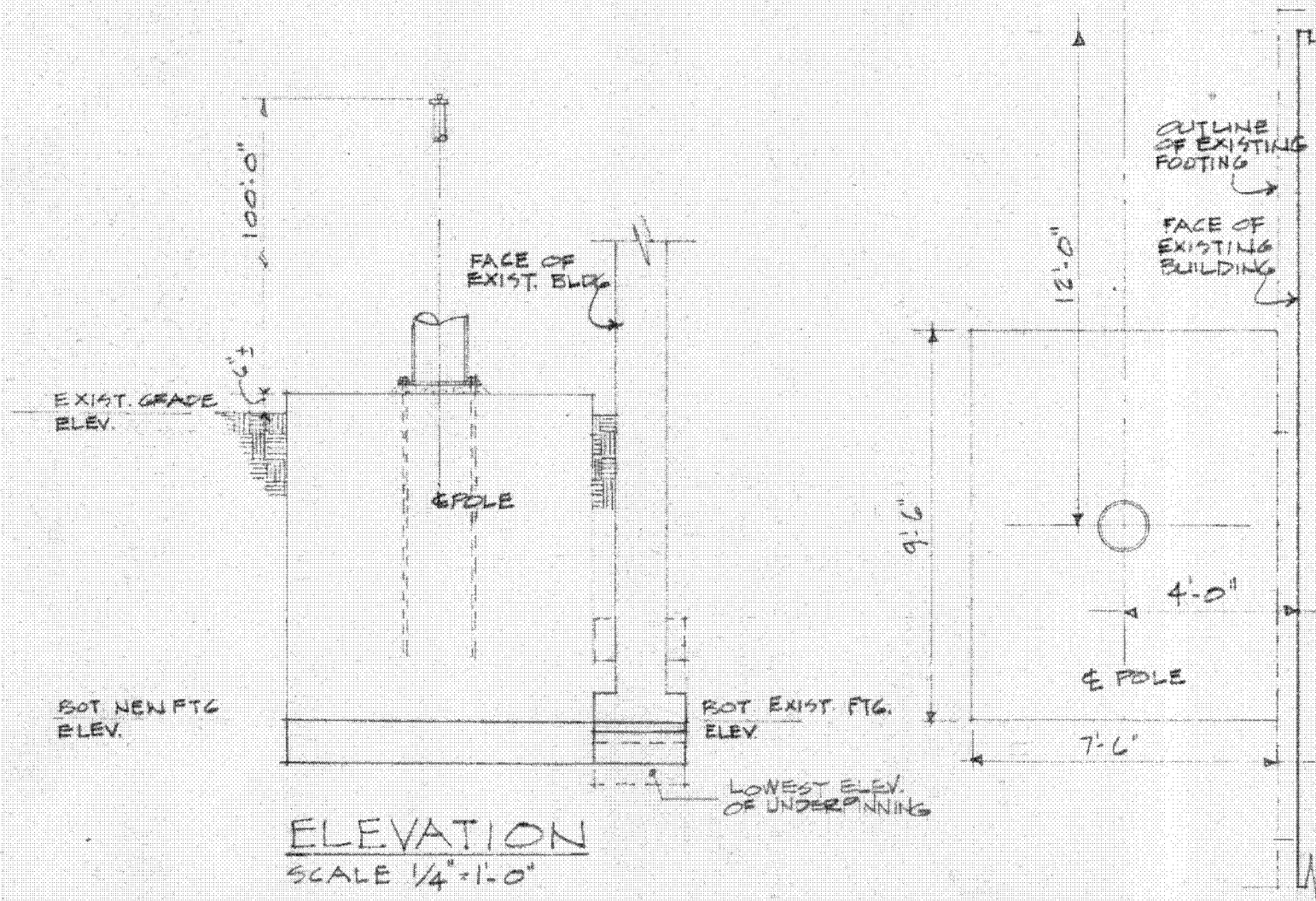


FARMINGTON-UNIONVILLE
THE SOUTHERN NEW ENGLAND
TELEPHONE COMPANY

POLE ANTENNA
FOUNDATION

HENRY A. PFISTERER
AND ASSOCIATES ENGINEERS
424 CHAPEL ST. NEW HAVEN, CONN.

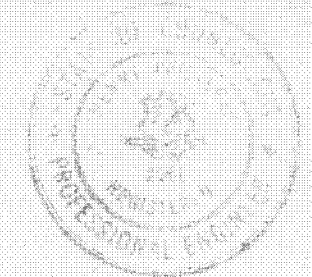
DRAWN BY: G.H.	DRAWING NO.
CHKD. BY: W.K.	08-64-5
SCALE: AS NOTED	
DATE: 4-1-69	



PART PLAN
SCALE 1/4" = 1'-0"



2-6927.2
KEY



GENERAL NOTES:

1. Detail for Antenna Pole Bases shown on Drawing RA-542-E1, The Union Metal Manufacturing Company, Canton, Ohio.
2. Concrete to have 3500 p.s.i. compressive strength at 28 days. Slump range 2" to 4". Coarse and fine aggregate to conform to ASTM C33. Min. cement content 6.25 sacks per cu. yd. Provide 5% air by use of air-entraining agent.
3. Cement - Type I or Type II. Reinf. bars (including S18 used for anchorage) ASTM A-615, Grade 60.
4. Conform to "Building Code Requirements for Concrete Construction", ACI 318-63, for fabricating, details of construction and erection.
5. Cover for bars - 1-1/2"; 2" for bars over #5 size.
6. Forms - plywood coated with lacquer or non-staining mineral oil; rough lumber may be used below grade.
7. Finish - float finish.
8. Backfill - Well graded run-of-bank gravel or acceptable granular material from excavation. Compact in layers not over 8" thick for full height. Use finer material or sand, if necessary, between foundation and present walls similarly placed and tamped in layers.
9. Excavation depth and foundation bearing to be approved by SNET Co. Engineer before placing concrete. Bearing to be on natural undisturbed material.

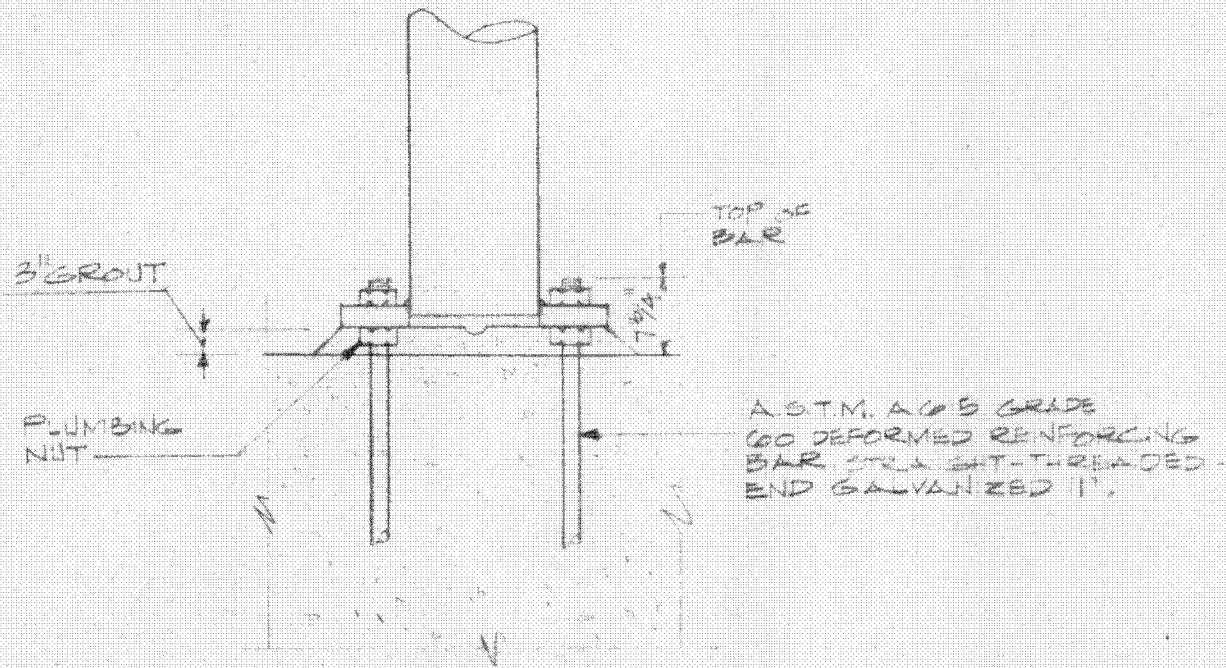
GENERAL REQUIREMENTS

THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY

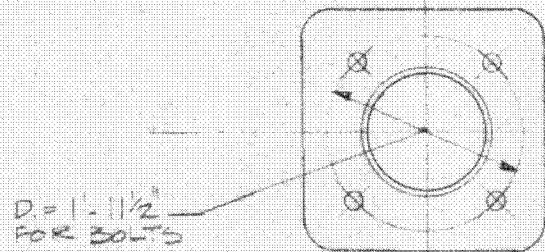
POLE ANTENNA FOUNDATION

HENRY A. PFISTERER AND ASSOCIATES ENGINEERS
424 CHAPEL ST. NEW HAVEN CONN.

DRAWN BY:	DRAWING NO.
CHKD. BY:	608-648
SCALE: AS NOTED	
DATE: 4-1-69	



TYPICAL BASE FOR 100' POLE



TYPICAL BOLT LAYOUT

2692E-3

PUBLIC HEARING, TOWN PLAN AND ZONING COMMISSION, TOWN HALL, UNIONVILLE,
JULY 13, 1953

The Public Hearing was called to order at 8:05 P.M. by Mrs. E. P. Dunne, Chairman. The Notice of Public Hearing was read by Mr. Sturdivant, Secretary, which is to hear the application of The Southern New England Telephone Company for authority to erect a branch office building on a parcel of land owned by Mae Y. Ritchie, located at the Northeast corner of Lovely Street and Sylvan Avenue, Unionville, with a frontage of about 180 feet on Lovely Street and 170 feet on Sylvan Avenue. The Notice was published in the Farmington Valley Herald, issues of July 2 and 9.

Charles F. Maloney, Building Engineer, represented the Telephone Company. He presented a plot plan showing location of the proposed building, keeping to the 40 ft. building line. The building would be 34' x 40' with 11' wing. He said the reason for it is to keep up with telephone growth; the most economical solution is a building in Unionville. It would be residential in character and appearance. They are not asking for a change of zone. The public will not be allowed in the building, just equipment, no business office, no storage, no motor vehicles, no sheds. A small area in back for a truck to come in to maintain the equipment, 2 or 3 trips a week. It will not be a disgrace to the neighborhood but will blend in with it; brick construction, fireproof, look like a large house; there are a number of trees on the property, they will blend it in with the trees.

Donald Lee who owns adjoining property asked if there are 2 lots in the plot. Mr. Maloney said he thinks 3 and this will take in all 3. The building would be put in the middle with good side yard clearance as they don't want anything right next to them that might be a fire hazard, don't want to take a chance on the equipment.

Harold Cromack spoke definitely in favor of the building.

Mr. Lee spoke in favor of it, as closest property owner.

Fred Anderson who also lives next to it favored it.

Ed Marsh, Sylvan Avenue, is in favor of it.

Mrs. Dunne asked if the building will be similar to the one in Farmington. Mr. Maloney said it will not and showed pictures of other buildings of similar size to the one proposed for Unionville.

Miss Martin of Sylvan Avenue asked what protection a property owner has buying in a residential district if the Commission makes these variances, or exceptions. Couldn't anyone come in and be given permission to have some other sort of business? After a bit of discussion Mr. Beach told her this is a permitted use under the zoning regulations after a Public Hearing; it is not a change of zone. Mr. Grouten added the Telephone Company could not sell the building for some other purpose after they have used it for a while.

Mr. Gunther said the area referred to is the only section he knows of where there is no commercial use of property. He wonders if this is the beginning of the end. Mr. Beach repeated his explanation. Mr. Gunther asked why this spot was chosen. Mr. Maloney said in the picking of a location all the lines are brought to a common center

TELEPHONE COMPANY HEARING, JULY 13, 1953-2

and this was it.

Mr. Lee asked if this is the last piece of available frontage from the center to the Avon Line on Lovely Street. Mr. Gunter said there is one more piece, between Parsons' and Hayes' but he thinks the town took it over for drainage.

Mr. Hodge said there was a sewer right of way there but the land has never been purchased by the Town.

Harry Simons asked if there would be any form of overhead service in connection with the building. Mr. Maloney said it will all be underground service into the building entirely, it will have no effect on television, that is guaranteed. He thinks Mr. Simons is thinking of a sub-station. The Telephone Company only uses 48 volts for the operation of the equipment.

The hearing was declared closed at 8:20 P.M.

Frederick Sturman
Secretary

Transcribed by Marion N. Keefe

July 15, 1953

The Southern New England Telephone Company
227 Church Street
New Haven, Connecticut

Att: Charles F. Maloney, Building Engineer

Gentlemen:

Your application for authority to erect a branch office building on a parcel of land located at the northeast corner of Lovely Street and Sylvan Avenue, Unionville, after being properly advertised, was presented at a Public Hearing in the Town Hall, Unionville, July 13, 1953.

Immediately following the Public Hearing, the Town Plan and Zoning Commission met in executive session, when your application was discussed further.

The members of the Commission voted unanimously to grant your application for authority to erect a branch office building on the parcel of land above referred to.

Very truly yours,

gs:mnk

Secretary, Farmington
Town Plan and Zoning Commission



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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

E-Mail: siting.council@ct.gov

Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

February 10, 2022

Carolyn Seeley
Northeast Site Solutions
1053 Farmington Avenue, Unit G
Farmington, CT 06032
cseeley@northeastsitesolutions.com

RE: **TS-DISH-052-220118** - Dish Wireless LLC request for an order to approve tower sharing at an existing telecommunications facility located at 82 Lovely Street, Farmington, Connecticut.

Dear Ms. Seeley:

At a public meeting held on February 10, 2022, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures with the following conditions:

1. Approval of any changes be delegated to Council staff;
2. Any deviation from the proposed installation as specified in the original tower share request and supporting materials with the Council shall render this decision invalid;
3. Any material changes to the proposed installation as specified in the original tower share request and supporting materials filed with the Council shall require an explicit request for modification to the Council pursuant to Connecticut General Statutes § 16-50aa, including all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65;
4. The Council shall be notified in writing at least two weeks prior to the commencement of site construction activities;
5. Not less than 45 days after completion of the proposed installation, the Council shall be notified in writing that the installation has been completed;
6. Deployment of any 5G services must comply with FCC and FAA guidance relative to air navigation, as applicable;
7. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by Dish Wireless LLC shall be removed within 60 days of the date the antenna ceased to function;
8. The validity of this action shall expire one year from the date of this letter; and

9. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

This decision is under the exclusive jurisdiction of the Council and applies only to this request for tower sharing dated January 13, 2022. This facility has been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower. Any deviation from the approved tower sharing request is enforceable under the provisions of Connecticut General Statutes § 16-50u.

The proposed shared use is to be implemented as specified in your letter January 13, 2022, including the placement of all necessary equipment and shelters within the tower compound.

Please be advised that the validity of this action shall expire one year from the date of this letter.

Thank you for your attention and cooperation.

Sincerely,



Melanie Bachman
Executive Director

MAB/IN/laf

c: The Honorable C. J. Thomas, Chairman, Town of Farmington (towncouncil@farmington-ct.org)
Kathleen Blonski, Town Manager, Town of Farmington (blonskik@farmington-ct.org)

ATTACHMENT 4



Town of Farmington, CT

Property Listing Report

Map Block Lot

006 1

Building # 1

Unique Identifier

11350082

Property Information

Property Location	82 LOVELY ST
Mailing Address	401 MERRITT 7 - TAX DEPT NORWALK CT 06851
Land Use	Utility Building
Zoning Code	R20
Neighborhood	95

Owner	SOUTHERN NEW ENGLAND
Co-Owner	
Book / Page	0114/0169
Land Class	Commercial
Census Tract	4603
Acreage	0.67

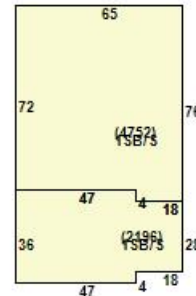
Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	359244	251470
Outbuildings	0	0
Land	243880	170720
Total	603124	422190

Utility Information

Electric	No
Gas	No
Sewer	No
Public Water	No
Well	No



Primary Construction Details

Year Built	1965
Building Desc.	Commercial
Building Style	
Stories	1
Exterior Walls	Brick
Exterior Walls 2	
Interior Walls	Painted Concrete
Interior Walls 2	
Interior Floors 1	Tile
Interior Floors 2	

Heating Fuel	Natural Gas
Heating Type	FHA
AC Type	Central
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	
Occupancy	0

Building Use	Light Industrial
Building Condition	Average
Frame Type	C+
Fireplaces	0
Bsmt Gar	0
Fin Bsmt Area	
Fin Bsmt Quality	
Building Grade	0
Roof Style	
Roof Cover	Arch Shingles

Report Created On

4/9/2020



Town of Farmington, CT

Property Listing Report

Map Block Lot

006 1

Building # 1

Unique Identifier

11350082

Detached Outbuildings

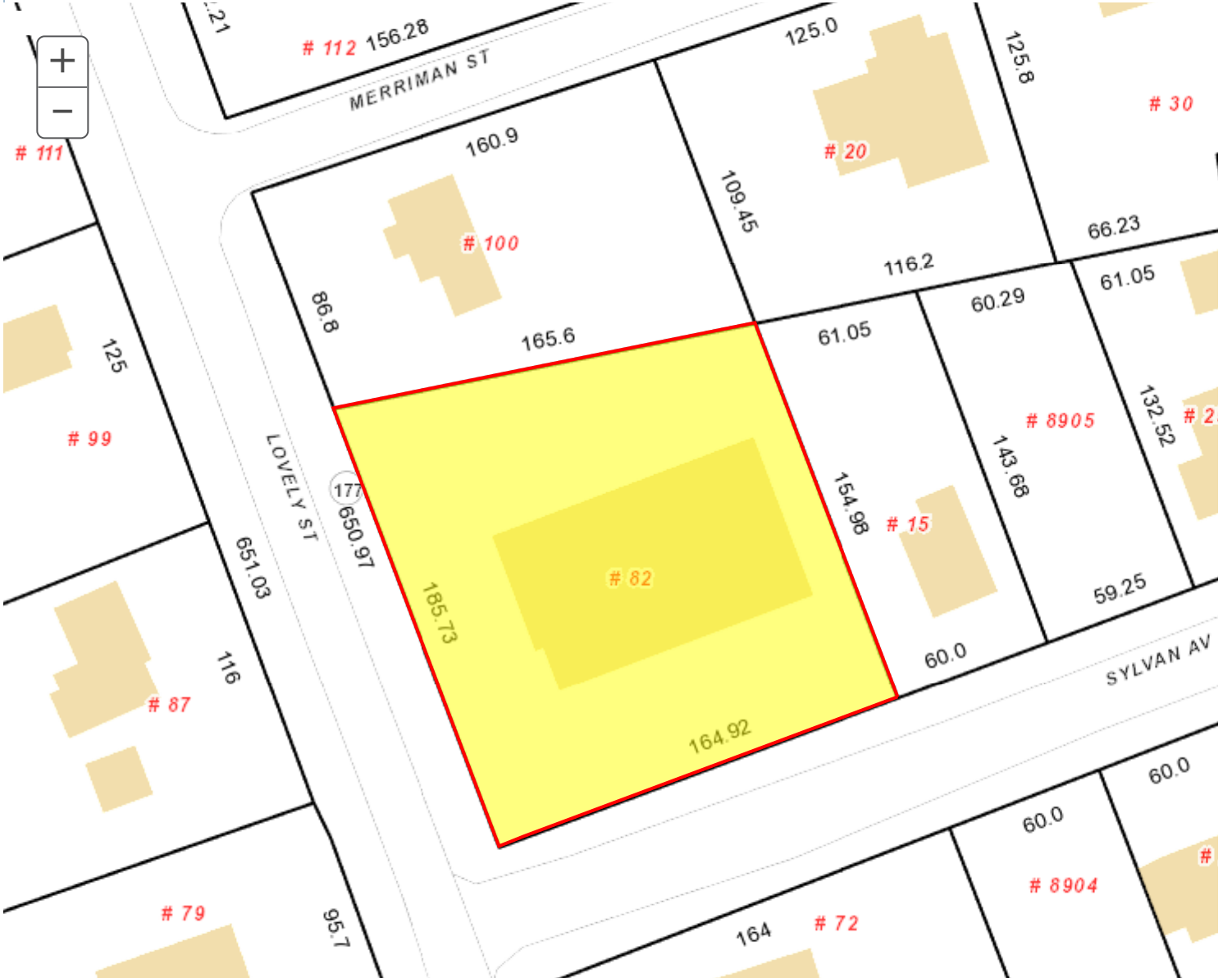
Type	Description	Area (sq ft)	Condition	Year Built

Attached Extra Features

Type	Description	Area (sq ft)	Condition	Year Built

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
SOUTHERN NEW ENGLAND	0114_0169	1/1/1900	0



ATTACHMENT 5



DISH Wireless L.L.C. SITE ID:
BOBDL00107A

DISH Wireless L.L.C. SITE ADDRESS:
**82 LOVELY ST
UNIONVILLE, CT 06085**

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 (1) PROPOSED MICROWAVE ANTENNA
- INSTALL (1) ODU
- INSTALL (1) HYBRID CABLES

GROUND SCOPE OF WORK:

- NONE

SITE INFORMATION

PROPERTY OWNER: SOUTHERN NEW ENGLAND
ADDRESS: PO BOX 2629
ADDISON TX 75001

TOWER TYPE: MONOPOLE

TOWER CO SITE ID: 701773

TOWER APP NUMBER: TBD

COUNTY: HARTFORD

LATITUDE (NAD 83): 41° 45' 40.97" N
41.76138

LONGITUDE (NAD 83): 72° 53' 15.20" W
-72.88756

ZONING JURISDICTION: CONNECTICUT SITING COUNCIL

ZONING DISTRICT: R20

PARCEL NUMBER: 006 1

OCCUPANCY GROUP: U

CONSTRUCTION TYPE: V-B

POWER COMPANY: EVERSOURCE

TELEPHONE COMPANY: AT&T

PROJECT DIRECTORY

APPLICANT: DISH Wireless L.L.C.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

TOWER OWNER: EIP
TWO ALLEGHENY CENTER
NOVA TOWER 2, SUITE 703
PITTSBURGH, PA 15212

SITE DESIGNER: FORESITE LLC
462 WALNUT ST. SUITE #1
NEWTON, MA 02460
617-212-3123
SMOSSAVAT@FORESITELLC.COM

SITE ACQUISITION: DAVID GOODFELLOW
DAVID.GOODFELLOW@DISH.COM

CONSTRUCTION MANAGER: CHAD WILCOX
CHAD.WILCOX@DISH.COM

RF ENGINEER: DIPESH PARIKH
DIPESH.PARIKH@DISH.COM



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

PROJECT MANAGER:



420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01568
PH: 203-275-6669

CONSULTANT:
FORESITE LLC
Architects. Engineers. Surveyors
462 WALNUT STREET, SUITE 1
NEWTON, MA 02446



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:
MC SM HV

RFDS REV #: 1

FINAL DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	10/24/2023	ISSUED FOR REVIEW
0	10/26/2023	FINAL ISSUED

A&E PROJECT NUMBER
BOBDL00107A

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00107A
82 LOVELY ST
UNIONVILLE, CT 06085

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

CONNECTICUT CODE OF COMPLIANCE

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

CODE TYPE	CODE
BUILDING	2022 CT STATE BUILDING CODE/2021 IBC W/ CT AMENDMENTS
MECHANICAL	2022 CT STATE BUILDING CODE/2021 IMC W/ CT AMENDMENTS
ELECTRICAL	2022 CT STATE BUILDING CODE/2020 NEC W/ CT AMENDMENTS

SITE PHOTO



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



GENERAL NOTES

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

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

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

DIRECTIONS

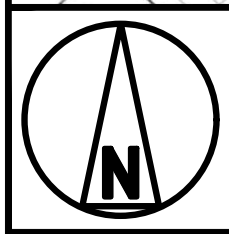
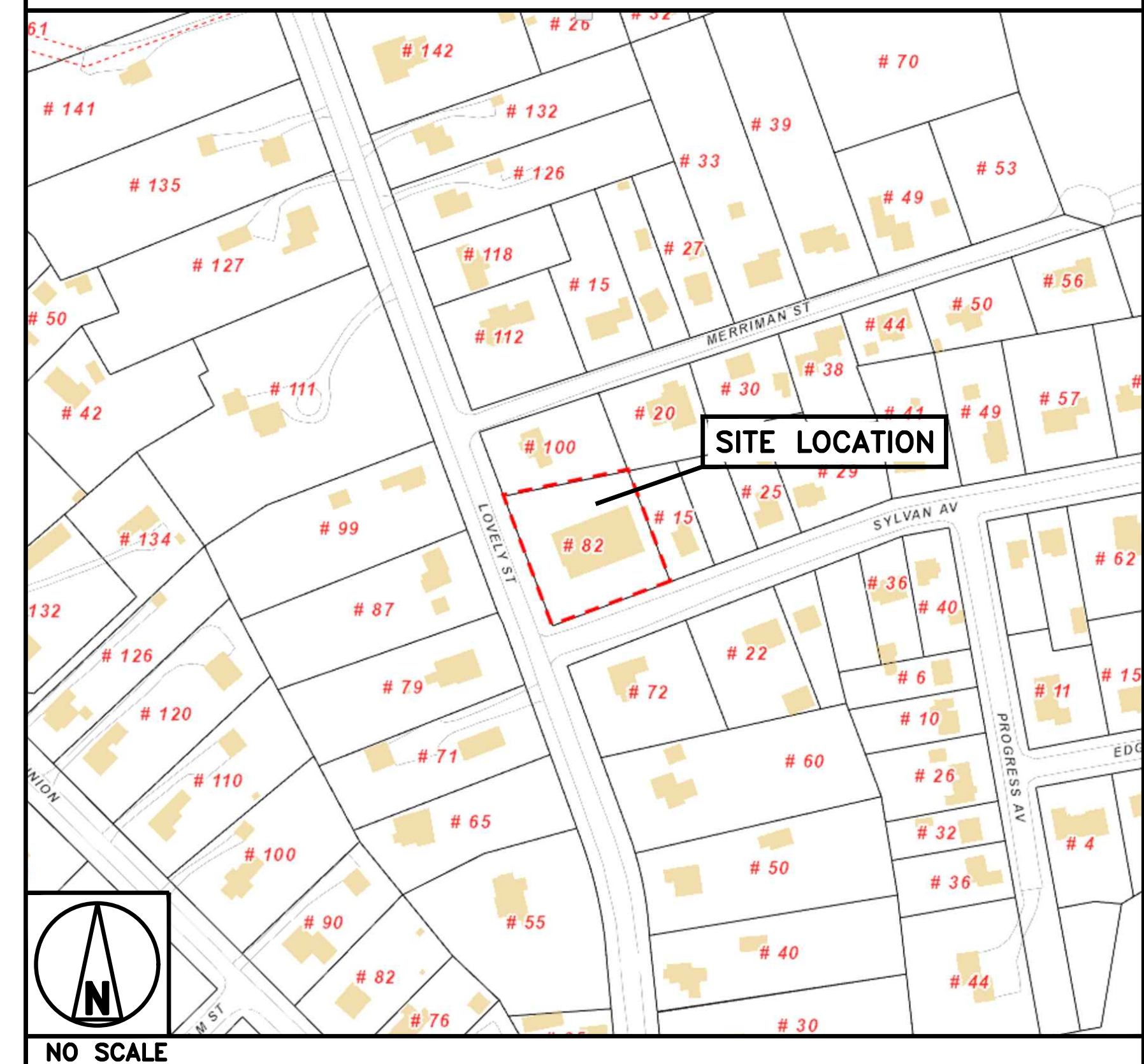
DIRECTIONS FROM 1 BRADLEY INTERNATIONAL AIRPORT
WINDSOR LOCKS, CT 06096

GET ON BRADLEY INTERNATIONAL AIRPORT CON, (0.6 MI).

TAKE I-91 S AND I-84 TO STATE HWY 508 IN FARMINGTON. TAKE EXIT 39 FROM I-84, (21.9 MI).

TAKE CT-4 W/FARMINGTON AVE TO LOVELY ST, (5.6 MI).
82 LOVELY ST, UNIONVILLE, CT 06085

VICINITY MAP



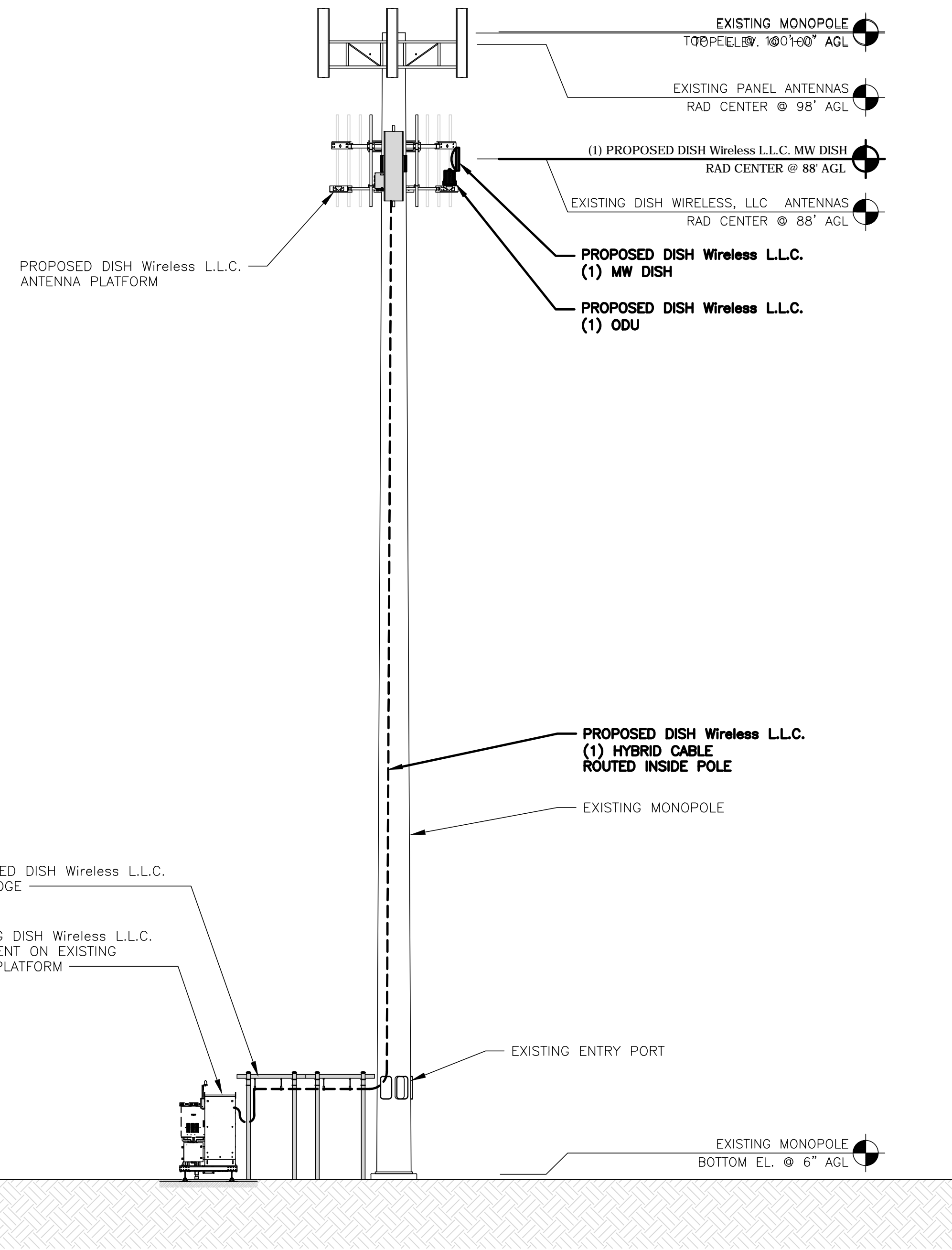
NO SCALE

SHEET INDEX

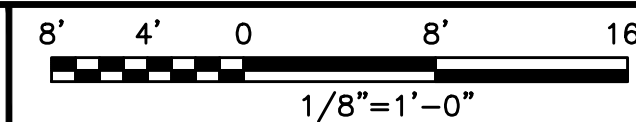
SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
A-1	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A-2	EQUIPMENT DETAILS
G-1	GROUNDING PLANS AND NOTES
RF-1	RF CABLE COLOR CODE
GN-1	LEGEND AND ABBREVIATIONS
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES

NOTES

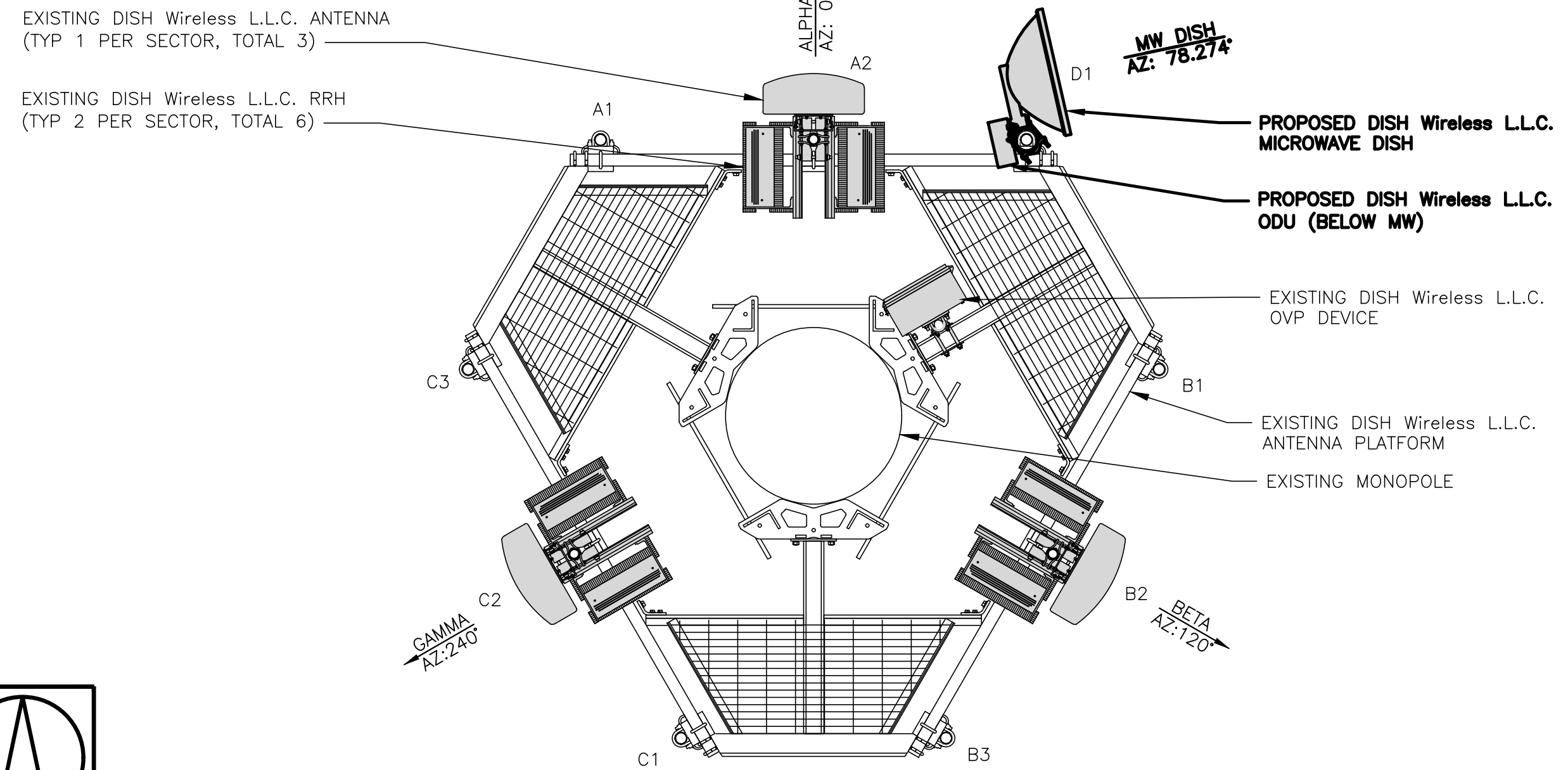
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



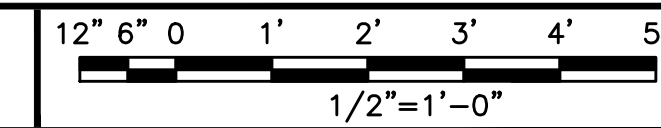
PROPOSED SOUTH ELEVATION



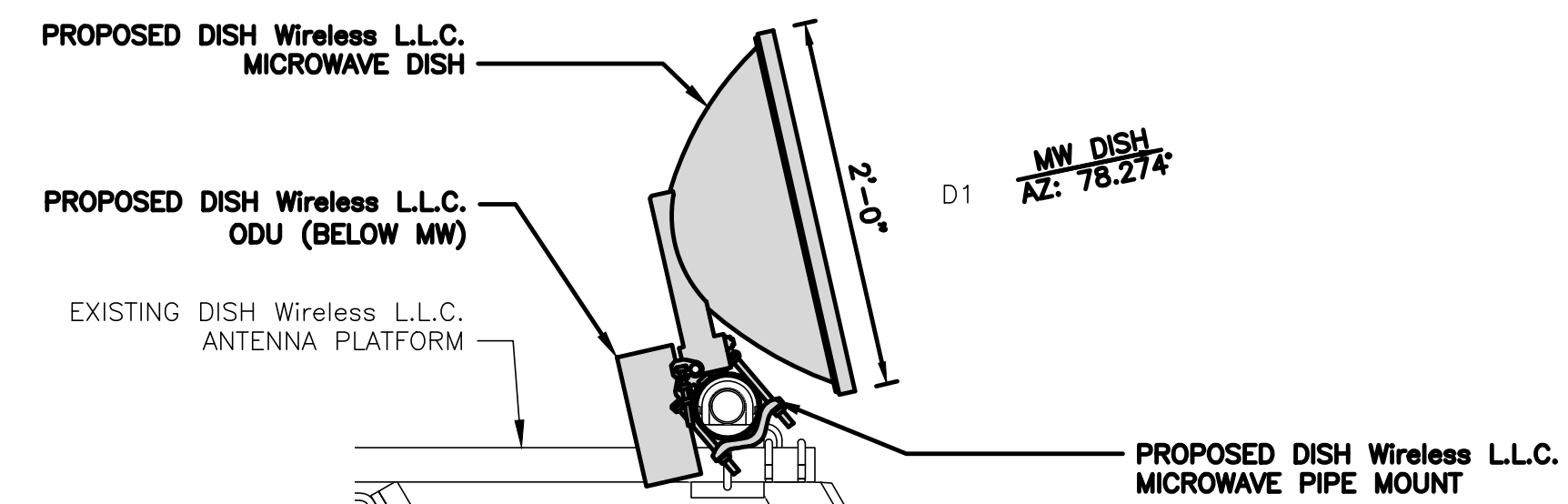
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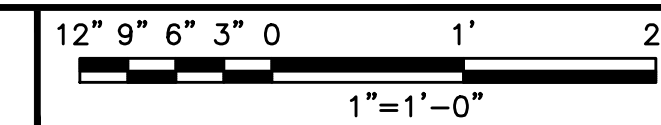
ANTENNA LAYOUT



2



MICROWAVE LAYOUT



3

SECTOR POS.	MICROWAVE DISH					TRANSMISSION CABLE FEED LINE TYPE AND LENGTH	NOTES
	EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECH	AZIMUTH	RAD CENTER		
D1	PROPOSED	COMMSCOPE - VHLP2-11WB	5G	78.274°	88'	TYPE TBD (105'± LONG)	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.
D2	PROPOSED	CERAGON - IP-50C (MW RADIO)	5G	N/A	88'		
D3	--	--	--	--	--		

ANTENNA & MW SCHEDULE

NO SCALE

4



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

PROJECT MANAGER:

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
 420 MAIN STREET, BLDG 4
 STURBRIDGE, MA 01568
 PH: 203-275-6669

CONSULTANT:

FORESITE LLC
 Architects. Engineers. Surveyors
 462 WALNUT STREET, SUITE 1
 NEWTON, MA 02446



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: MC CHECKED BY: SM APPROVED BY: HV

RFDS REV #: 1

FINAL DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	10/24/2023	ISSUED FOR REVIEW
0	10/26/2023	FINAL ISSUED

A&E PROJECT NUMBER
BOBDL00107A

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00107A
82 LOVELY ST
UNIONVILLE, CT 06085

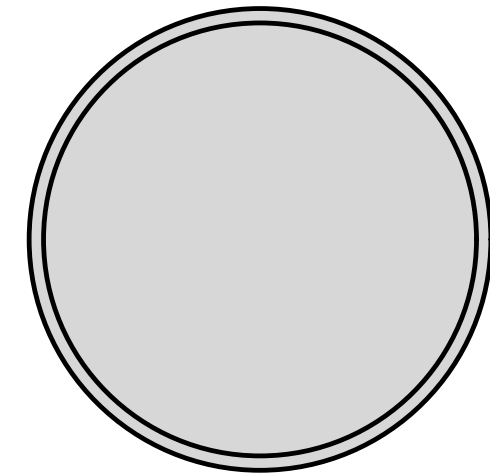
SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER

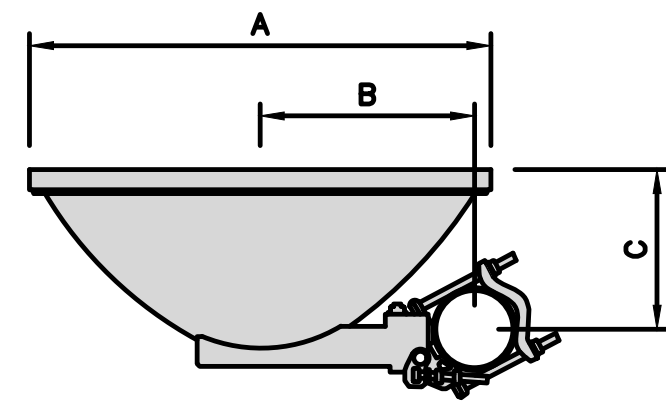
A-1

VHLP2-11WB DISH				
SIZE	A	B	C	D
	24"	12"	8.9"	1.8"

"D" IS WIDTH OF MOUNTING CLAMP



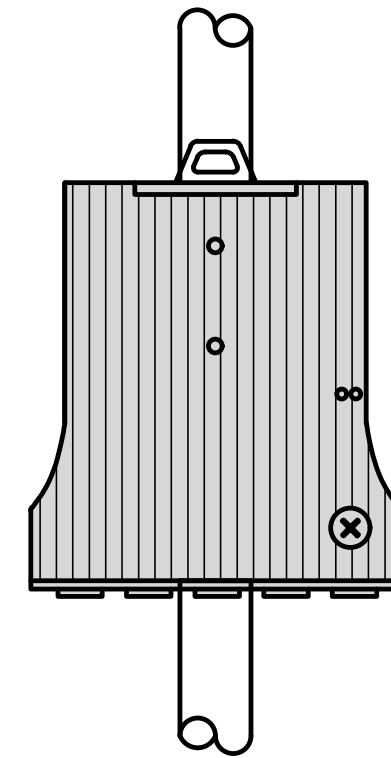
FRONT



TOP

TOTAL WEIGHT: 17.6 LBS

CERAGON IP-50C	
DIMENSIONS (HxWxD)	12.7"x8.93"x3.38"
WEIGHT	13.2 lbs



FRONT

MICROWAVE DETAIL	NO SCALE	1
------------------	----------	---

IP-50 UNIVERSAL RADIO DETAIL	NO SCALE	2
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NOT USED	NO SCALE	3
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NOT USED	NO SCALE	4
----------	----------	---

NOT USED	NO SCALE	5
----------	----------	---

NOT USED	NO SCALE	6
----------	----------	---

NOT USED	NO SCALE	7
----------	----------	---

NOT USED	NO SCALE	8
----------	----------	---

NOT USED	NO SCALE	9
----------	----------	---



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

PROJECT MANAGER:

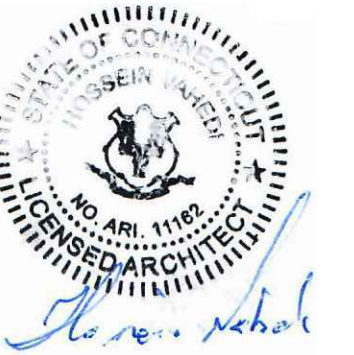


420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01568
PH: 203-275-6669

CONSULTANT:



462 WALNUT STREET, SUITE 1
NEWTON, MA 02446



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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00107A
82 LOVELY ST
UNIONVILLE, CT 06085

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-2

PROJECT MANAGER:



420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
PH: 203-275-6669

CONSULTANT:



Architects. Engineers. Surveyors
462 WALNUT STREET, SUITE 1
NEWTON, MA 02446



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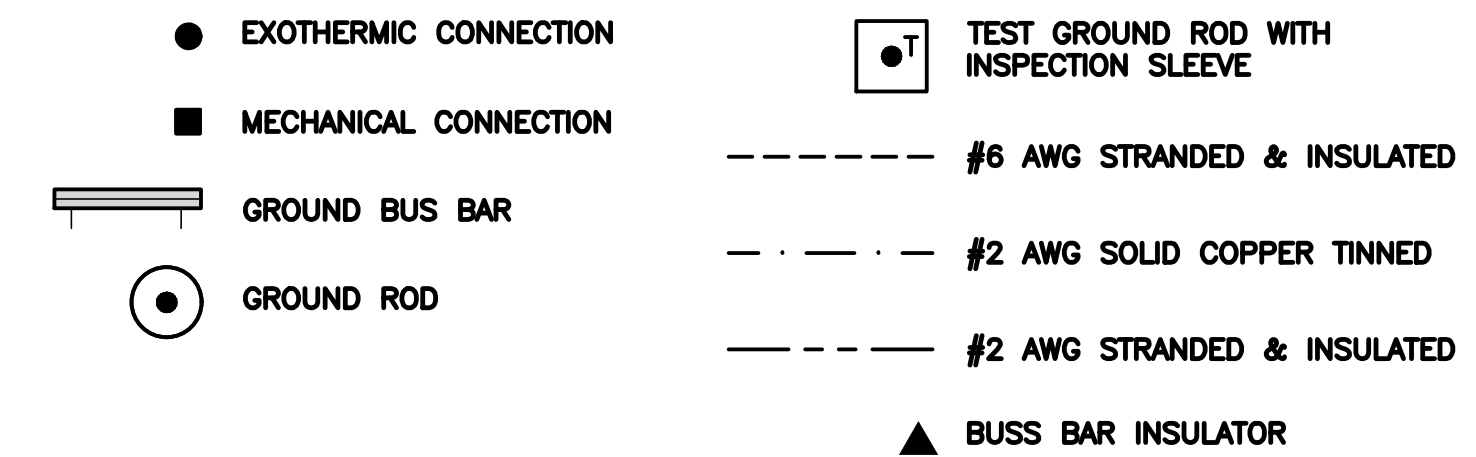
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00107A
82 LOVELY ST
UNIONVILLE, CT 06085

SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

G-1



GROUNDING LEGEND

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

GROUNDING KEY NOTES

- EXTERIOR GROUND RING:** #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- TOWER GROUND RING:** THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- INTERIOR GROUND RING:** #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- BOND TO INTERIOR GROUND RING:** #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.
- GROUND ROD:** UL LISTED COPPER CLAD STEEL, MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- CELL REFERENCE GROUND BAR:** POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- HATCH PLATE GROUND BAR:** BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- EXTERIOR CABLE ENTRY PORT GROUND BARS:** LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.
- TELCO GROUND BAR:** BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- FRAME BONDING:** THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- INTERIOR UNIT BONDS:** METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.
- FENCE AND GATE GROUNDING:** METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.
- EXTERIOR UNIT BONDS:** METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE
- ICE BRIDGE SUPPORTS:** EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.
- DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR**
- TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR. REFER TO DISH Wireless L.L.C. GROUNDING NOTES.**

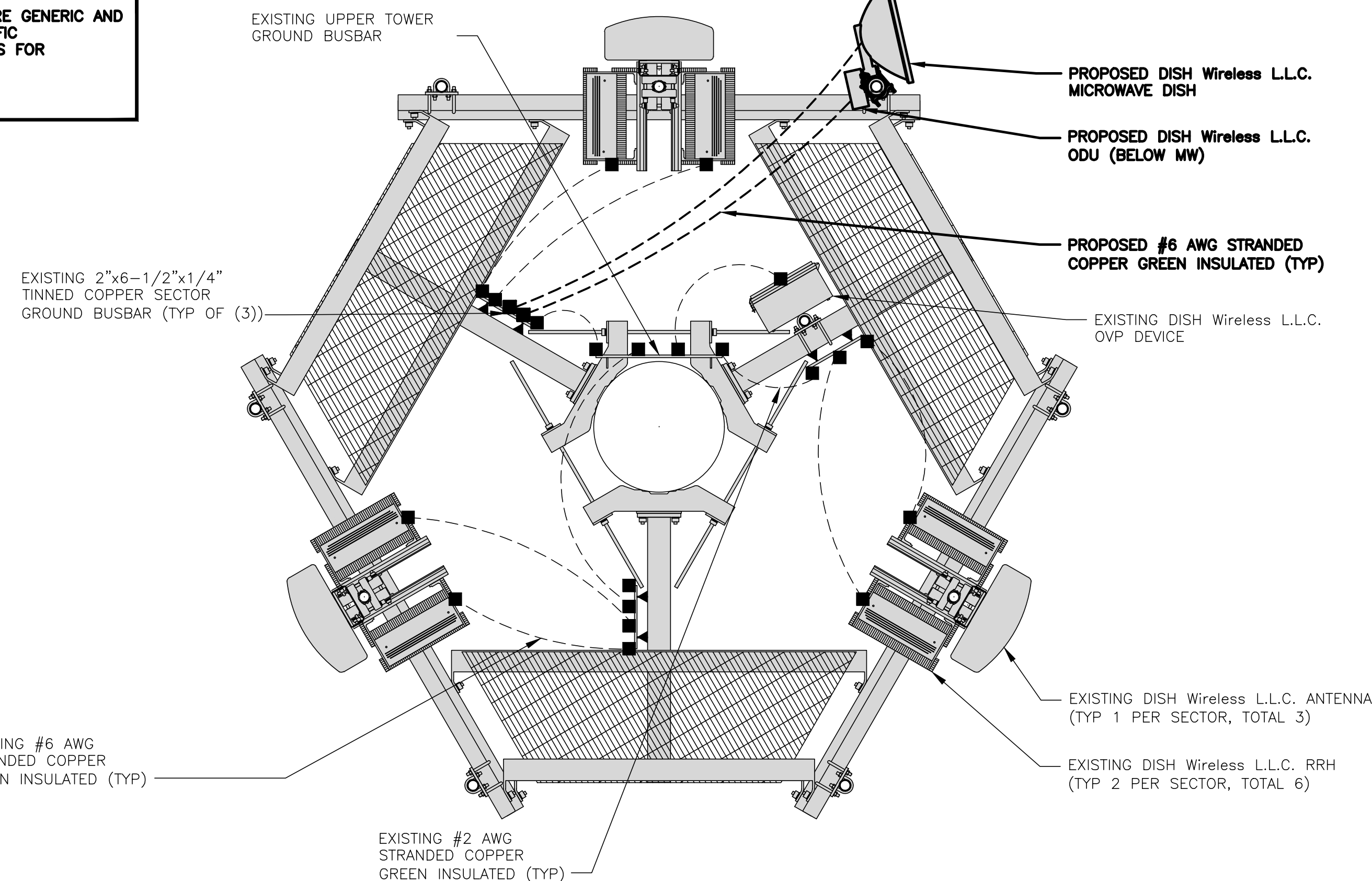
NOT USED

NO SCALE

1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE

2

GROUNDING KEY NOTES

NO SCALE

3

MICROWAVE RADIO LINKS	FORWARD AZIMUTH OF 0-120 DEGREES		FORWARD AZIMUTH OF 120-240 DEGREES		FORWARD AZIMUTH OF 240-359 DEGREES	
	PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY
<p>LINKS WILL HAVE A 1.5-2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE.</p> <p>ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.</p> <p>MICROWAVE CABLES WILL REQUIRE P-TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID'S.</p>	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
	RED	RED	BLUE	BLUE	GREEN	GREEN
	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
		RED	BLUE	BLUE	GREEN	GREEN
		WHITE	WHITE			WHITE

LOW BANDS (N71+N26)
OPTIONAL - (N29)

ORANGE

AWS
(N66+N70+H-BLOCK)

PURPLE

CBRS TECH
(3 GHz)

YELLOW

NEGATIVE SLANT PORT
ON ANT/RRH

WHITE

ALPHA SECTOR

RED

BETA SECTOR

BLUE

GAMMA SECTOR

GREEN

COLOR IDENTIFIER

NO SCALE

2

NOT USED

NO SCALE

3

RF CABLE COLOR CODES

NO SCALE

1

NOT USED

NO SCALE

4



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

PROJECT MANAGER:



420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01568
PH: 203-275-6669

CONSULTANT:



462 WALNUT STREET, SUITE 1
NEWTON, MA 02446



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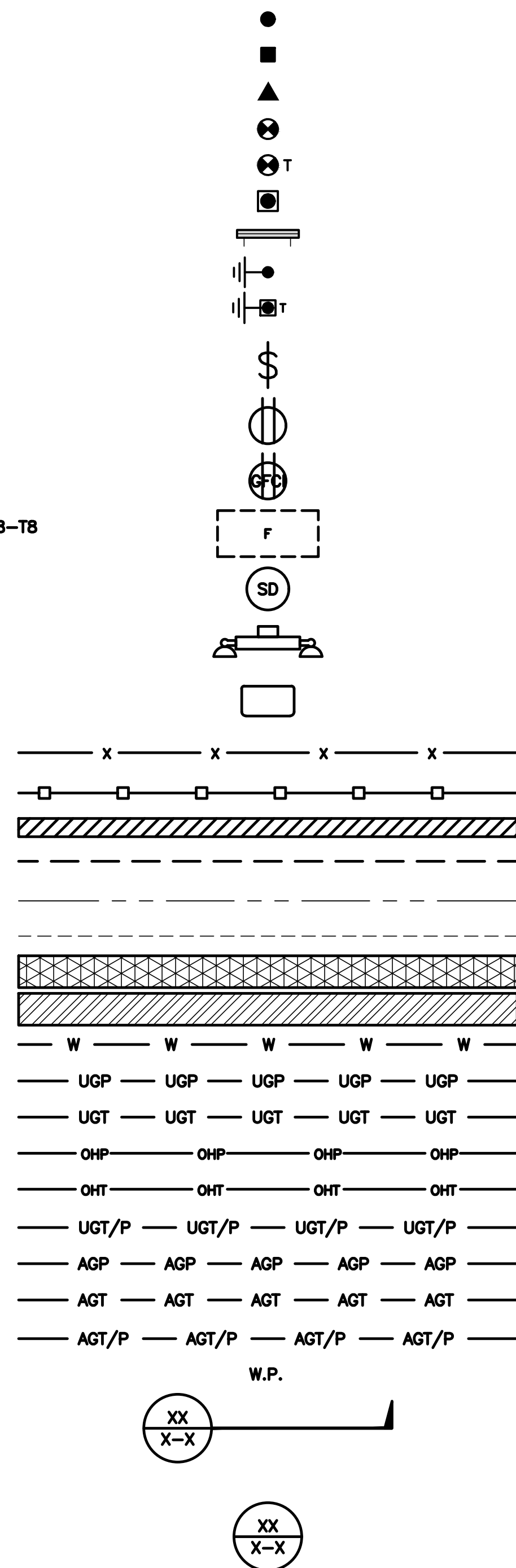
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00107A
82 LOVELY ST
UNIONVILLE, CT 06085

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

EXOTHERMIC CONNECTION
 MECHANICAL CONNECTION
 BUSS BAR INSULATOR
 CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 EXOTHERMIC WITH INSPECTION SLEEVE
 GROUNDING BAR
 GROUND ROD
 TEST GROUND ROD WITH INSPECTION SLEEVE
 SINGLE POLE SWITCH
 DUPLEX RECEPTACLE
 DUPLEX GFCI RECEPTACLE
 FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48-T8
 SMOKE DETECTION (DC)
 EMERGENCY LIGHTING (DC)
 SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW
 LED-1-25A400/51K-SR4-120-PE-DBBTXD
 CHAIN LINK FENCE
 WOOD/WROUGHT IRON FENCE
 WALL STRUCTURE
 LEASE AREA
 PROPERTY LINE (PL)
 SETBACKS
 ICE BRIDGE
 CABLE TRAY
 WATER LINE
 UNDERGROUND POWER
 UNDERGROUND TELCO
 OVERHEAD POWER
 OVERHEAD TELCO
 UNDERGROUND TELCO/POWER
 ABOVE GROUND POWER
 ABOVE GROUND TELCO
 ABOVE GROUND TELCO/POWER
 WORKPOINT
 SECTION REFERENCE
 DETAIL REFERENCE



LEGEND

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

ABBREVIATIONS



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

PROJECT MANAGER:



CONSULTANT:



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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00107A
82 LOVELY ST
UNIONVILLE, CT 06085

SHEET TITLE
LEGEND AND ABBREVIATIONS

SHEET NUMBER
GN-1

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.
2. "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:
THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA-322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA-1019-A-2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

- 1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
CARRIER:DISH Wireless L.L.C.
TOWER OWNER:TOWER OWNER
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



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PROJECT MANAGER:

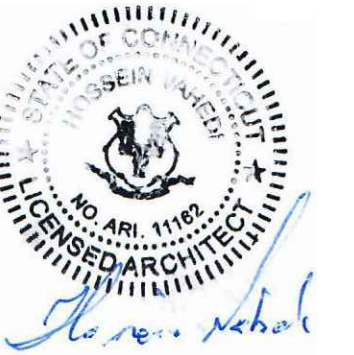


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DRAWN BY:	CHECKED BY:	APPROVED BY:
MC	SM	HV

RFDS REV #: 1

FINAL DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	10/24/2023	ISSUED FOR REVIEW
0	10/26/2023	FINAL ISSUED

A&E PROJECT NUMBER
BOBDL00107A

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00107A
82 LOVELY ST
UNIONVILLE, CT 06085

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

ELECTRICAL INSTALLATION NOTES:

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

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

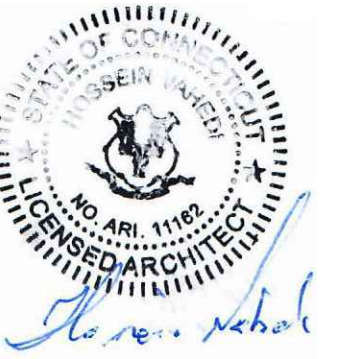


5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

PROJECT MANAGER:



CONSULTANT:



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DRAWN BY:	CHECKED BY:	APPROVED BY:
MC	SM	HV

RFDS REV #: 1

FINAL DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	10/24/2023	ISSUED FOR REVIEW
0	10/26/2023	FINAL ISSUED

A&E PROJECT NUMBER
BOBDL00107A

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00107A
82 LOVELY ST
UNIONVILLE, CT 06085

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-3

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

PROJECT MANAGER:



CONSULTANT:



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:
MC	SM	HV

RFDS REV #: 1

FINAL DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	10/24/2023	ISSUED FOR REVIEW
0	10/26/2023	FINAL ISSUED

A&E PROJECT NUMBER
BOBDL00107A

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00107A
82 LOVELY ST
UNIONVILLE, CT 06085

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

ATTACHMENT 6



Structural Analysis of a 100 ft Monopole
Maximum Combined Stress: 89%

Dish Wireless Site Number: BOBDL00107A
Everest: 701773
Site Name: Unionville CO
County: Hartford
Location: Unionville, CT

Checked By:

A handwritten signature in black ink that reads "Patrick Propert".

Patrick Propert
Structural Design Engineer III

A handwritten signature in black ink that reads "Kent Wang".

10/12/2023



Two Allegheny Ctr
Nova Tower 2, Suite 1002
Pittsburgh, PA 15212

October 2023

October 12, 2023

Vine Larson
Everest Infrastructure Partners
Two Allegheny Ctr
Nova Tower 2, Suite 1002
Pittsburgh, PA 15212



RE: Dish Wireless – BOBDL00107A
EIP – 701773 – Unionville CO
82 Lovely St, Unionville, CT

Vince:

Armor Tower has completed the structural analysis of the subject tower and **have found it to be adequate within the scope of this analysis to support the proposed antenna loading.** The tower was analyzed according to the code-specified wind and ice parameters outlined in Table 2.

The subject tower is a 100' Engineered Endeavors monopole tower consisting (3) slip-jointed tubular pole sections. Pole diameters range from 14.5" at the top to 27.5" at the base. Foundation capacities are based on a foundation mapping and geotechnical report by Wilkinson Engineering dated February 2010.

The loading used in the analysis consisted of the existing and proposed equipment and equipment changes shown in Table 1.

A synopsis of the analysis results is as follows:

- Pole stress: 89%
- Anchor bolts 62%
- Base Flange 88%
- Foundation 31%

The maximum displacement of the proposed microwave dish at service wind speed is 2.0°. We recommend a post-construction inspection be completed by a structural engineer to document that tower-mounted equipment has been placed in compliance with the requirements of this analysis. For a detailed listing of tower performance, please see page 14 of the calculations.

We appreciate the opportunity to provide our professional services to Everest Infrastructure and Dish Wireless and if you have any questions concerning this analysis, please contact us.

Sincerely,

ARMOR TOWER, INC.

A handwritten signature in blue ink that reads "Patrick Botimer".

Patrick Botimer
Structural Design Engineer V

A handwritten signature in blue ink that reads "Kurt Tilgner".

10/12/2023

TABLE 1 - Existing/Proposed/Reserved Antennas and Feed lines

Status	Mount Elev.	Ant. CL	QTY	Antenna Model	Mount Type	Coax QTY/Size	Coax Location	Owner/Tenant
Existing	98	98	2	TPA65R-BU8DA-K	SitePro VFA14-H10	(2) 2.32" Flex conduit. w. Power & Fiber, (12) 1-1/4" coax, (6) 7/8" power, (3) 3/8" fiber	Inside Pole	AT&T
			1	TPA65R-BU6DA-K				
			3	TT19-08BP111-001 TMA				
			3	Radio 8843 B25/B66A				
			3	Radio 4449 B5/B12				
			3	DC6-48-60-18-8F				
			2	OPA65R-BU8Dx				
			1	OPA65R-BU6Dx				
			3	Radio 4478 B14				
			3	AIR6419 B77G				
			3	AIR6449 B77D				
Existing Proposed	88	88	3	MX08FRO665-20	Valmont SNP8HR 396	(1) 1-5/8" hybrid (1) 1/2" fiber	Inside Pole	Dish Wireless
			3	TA0825-B604 RRU				
			3	TA0825-B605 RRU				
			1	RDIDC-9181-PF-48				
			1	VHLP2-11W				

TABLE 2 - CODE REQUIREMENTS

Governing code:	2022 CT State Building Code
Code basis/adoption:	2021 International Building Code
Referenced standard:	ANSI/TIA 222-H
Basic wind speed: (3-sec. gust):	V _{ult} : 120 mph with no ice 40 mph with 1-1/2" concurrent ice
County of site location:	Hartford
ASCE 7 Special wind region:	No
Structure/Risk Category:	II
Exposure Category:	B
Topographic Category: (Method 1)	1 - no topographic escalation
Crest Height/Tower Base AMSL Elevation:	0 ft/ 214 ft
Site Spectral Response:	S _s =0.183, S ₁ =0.054 * Does not control *

Source Documents Referenced for Analysis		
Document	Source	Date of Document
Prior Analysis	Armor Tower	May 2022
Colocation Application	Everest	July 2023
Geotechnical report	Everest	Feb 2010

PRIMARY ASSUMPTIONS CONSIDERED IN THIS PROJECT

1. Allowable steel stresses are defined by AISC-LRFD-99/360-16 and all welds conform to AWS D1.1 specification.
2. If reserved antennas/feed lines by other carriers are to be considered in this analysis, it is the responsibility of Everest and its affiliates to provide this information.
3. Any deviation from the analyzed antenna loading will require a re-analysis of the tower for verification of structural integrity. This analysis has considered the proposed feed lines to be located inside the pole.
4. This analysis assumes all tower members are galvanized adequately to prevent corrosion of the steel and that all tower members are in “like new” condition with no physical deterioration. This analysis also assumes the tower has been maintained properly per TIA 222-H Annex J recommended inspection and maintenance procedures for tower owners and is in a plumb condition. Armor Tower has not completed a condition assessment of the tower.
5. No accounting for residual stresses due to incorrect tower erection can be made. This analysis assumes all bolts are appropriately tightened providing necessary connection continuity and that the installation of the tower was performed by a qualified tower erector.
6. Foundation capacities are based on a foundation mapping and geotechnical report by Wilkinson Engineering.
7. No conclusions, expressed or implied, shall indicate that Armor Tower has made an evaluation of the original design, materials, fabrication, or potential installation or erection deficiencies. Any information contrary to that assumed for the purpose of preparing this analysis could alter the findings and conclusions stated herein.
8. Armor Tower reserves the right to add to or modify this report as more information becomes available.
9. The investigation of the load carrying capacities of the antenna supporting frames/mounts is outside the scope of this analysis. Antenna mount certification can be completed under a separate contract.
10. Armor Tower can assist the contractor in providing a Class IV rigging plan for equipment lifting.

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
TPA65R-BU8DA-K w. MtgPipe (AT&T-Alpha)	98	OPA65R-BU6Dx w. MtgPipe (AT&T-Gamma)	98
TPA65R-BU8DA-K w. MtgPipe (AT&T-Beta)	98	Ericsson Radio 4478 B14 (AT&T-Alpha)	98
TPA65R-BU6A w. Mtg Pipe (AT&T-Gamma)	98	Ericsson Radio 4478 B14 (AT&T-Beta)	98
PwrWv TT19-08BP111-001 TMA (AT&T-Alpha)	98	Ericsson Radio 4478 B14 (AT&T-Gamma)	98
PwrWv TT19-08BP111-001 TMA (AT&T-Beta)	98	Ericsson AIR6419 B77G RRU (AT&T-Alpha)	98
PwrWv TT19-08BP111-001 TMA (AT&T-Gamma)	98	Ericsson AIR6419 B77G RRU (AT&T-Beta)	98
Ericsson Radio 8843 B25/B66A (AT&T-Alpha)	98	Ericsson AIR6419 B77G RRU (AT&T-Gamma)	98
Ericsson Radio 8843 B25/B66A (AT&T-Beta)	98	Ericsson AIR6449 B77D RRU (AT&T-Alpha)	98
Ericsson Radio 8843 B25/B66A (AT&T-Gamma)	98	Ericsson AIR6449 B77D RRU (AT&T-Beta)	98
Ericsson Radio 4449 B5/B12 (AT&T-Alpha)	98	Ericsson AIR6449 B77D RRU (AT&T-Gamma)	98
Ericsson Radio 4449 B5/B12 (AT&T-Beta)	98	MX08FRO665-20 w. Mtg Pipe (DW-Alpha)	88
Ericsson Radio 4449 B5/B12 (AT&T-Gamma)	98	MX08FRO665-20 w. Mtg Pipe (DW-Beta)	88
DC6-48-60-18-8F Surge Suppressor (AT&T-Alpha)	98	MX08FRO665-20 w. Mtg Pipe (DW-Gamma)	88
DC6-48-60-18-8F Surge Suppressor (AT&T-Beta)	98	TA08025-B604 RRU (DW-Alpha)	88
DC6-48-60-18-8F Surge Suppressor (AT&T-Gamma)	98	TA08025-B604 RRU (DW-Beta)	88
SitePro1 VFA14-H10-2120 (E-AT&T)	98	TA08025-B604 RRU (DW-Gamma)	88
OPA65R-BU8Dx w. MtgPipe (AT&T-Alpha)	98	TA08025-B605 RRU (DW-Alpha)	88
OPA65R-BU8Dx w. MtgPipe (AT&T-Beta)	98	TA08025-B605 RRU (DW-Beta)	88
		TA08025-B605 RRU (DW-Gamma)	88
		RDIDC-9181-PF-48 (DW-Alpha)	88
		Valmont SNP8HR-396 Platform (DW)	88
		VHLP2-11W (P-DW)	88

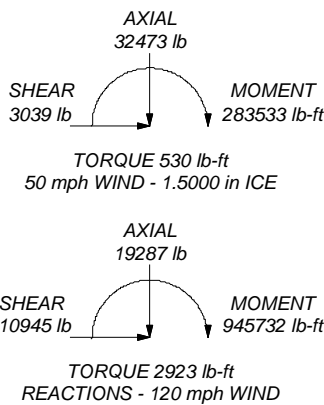
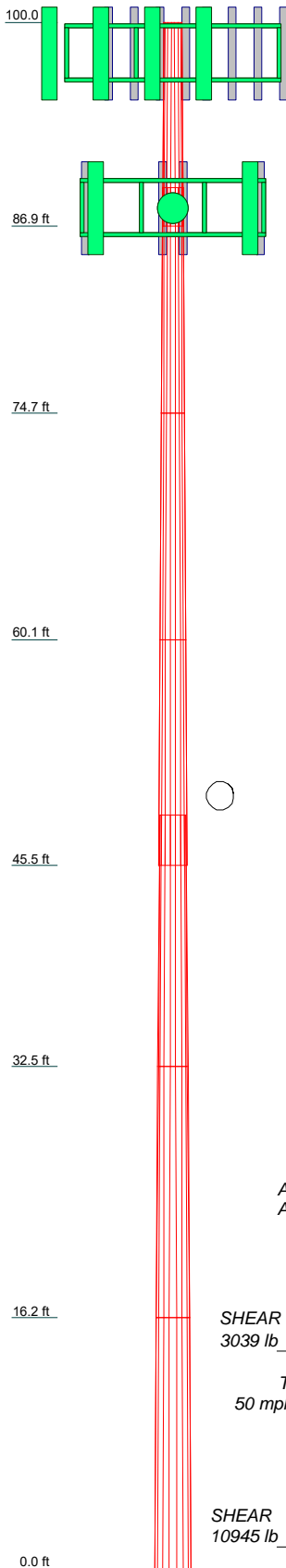
MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-H Standard.
2. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
8. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
9. Welds are fabricated with ER-70S-6 electrodes.
10. 120mph wind speed per 2022 CT SBC.
11. TOWER RATING: 89.3%


ALL REACTIONS ARE FACTORED



Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (lb)
1	13.15	18	0.1875	2.50	14.5000	16.3487	A572-65	425.9
2	14.63	18	0.2500	15.6221	17.6791	17.6791	A572-65	680.1
3	14.63	18	0.3125	17.6791	19.7360	19.7360	A572-65	953.5
4	14.63	18	0.3125	19.7360	21.7930	21.7930	A572-65	1060.1
5	16.24	18	0.3125	20.7109	22.9950	22.9950	A572-65	1239.8
6	16.24	18	0.3125	22.9950	25.2790	25.2790	A572-65	1371.3
7	16.24	18	0.3125	25.2790	27.5630	27.5630	A572-65	1502.8
								7233.5

ARMOR TOWER INC
 9 North Main St
 Cortland, NY 13045
 Phone: 607-591-5381
 FAX: 866-570-0840

Job: 100' MONOPOLE ANALYSIS
 Project: Dish Wireless BOBDL00107A - Unionville SBC CO, CT
 Client: Everest Infrastructure Partners - 701773
 Code: TIA-222-H
 Path: D:\ArmoTowerInc\Dropbox\ATI Team Folder\Projects\Everest\Info\atl00107A\Unionville\CO_CT2023-07\Drawn\Tallnet100mpy.dwg
 Drawn by: PB
 Date: 10/12/23
 Scale: NTS
 Dwg No. E-1

 ARMOR TOWER INC 9 North Main St Cortland, NY 13045 Phone: 607-591-5381 FAX: 866-570-0840	Job 100' MONOPOLE ANALYSIS	Page 1 of 14
	Project Dish Wireless BOBDL00107A - Unionville SBC CO, CT	Date 11:23:54 10/12/23
	Client Everest Infrastructure Partners - 701773	Designed by PB

Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

- Tower base elevation above sea level: 214.00 ft.
- Basic wind speed of 120 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.5000 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.
- Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
- Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- Welds are fabricated with ER-70S-6 electrodes.
- 120mph wind speed per 2022 CT SBC.**
- 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

- | | | |
|---|---|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile √ Include Bolts In Member Capacity √ Leg Bolts Are At Top Of Section √ Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric Distribute Leg Loads As Uniform | <ul style="list-style-type: none"> Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r Retension Guys To Initial Tension Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurtenances Alternative Appurt. EPA Calculation Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component √ Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs Use ASCE 10 X-Brace Ly Rules | <ul style="list-style-type: none"> √ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression √ All Leg Panels Have Same Allowable Offset Girt At Foundation Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <li style="text-align: center;">Poles Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known |
|---|---|---|

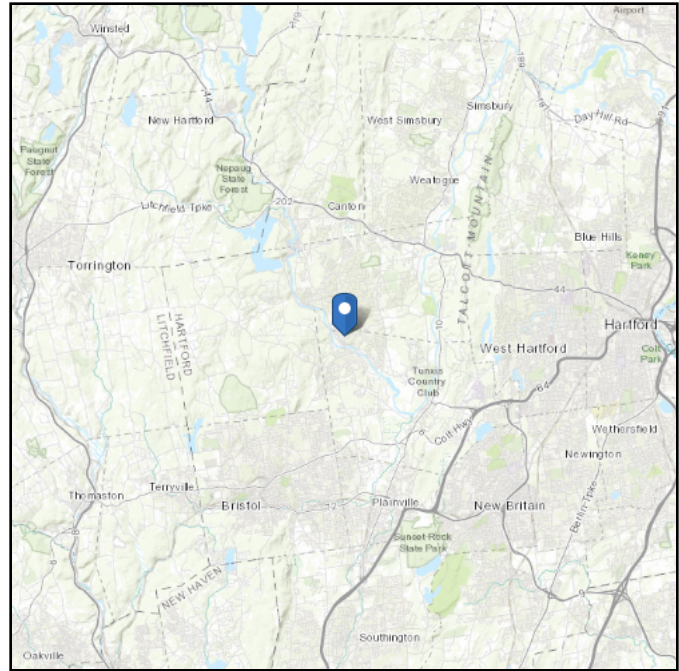
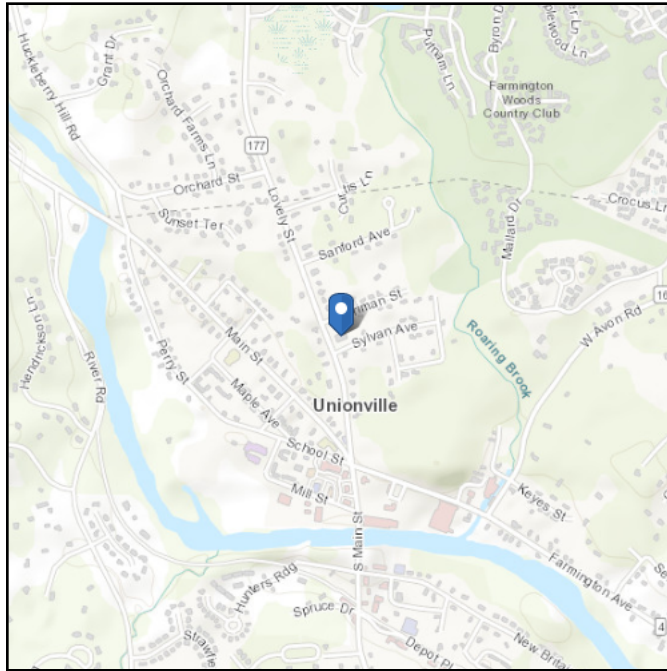
Tapered Pole Section Geometry

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Latitude: 41.761292
Longitude: -72.887409
Elevation: 213.92004442418136 ft (NAVD 88)



Wind

Results:

Wind Speed	116 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Thu Jul 27 2023

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

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

ATTACHMENT 7

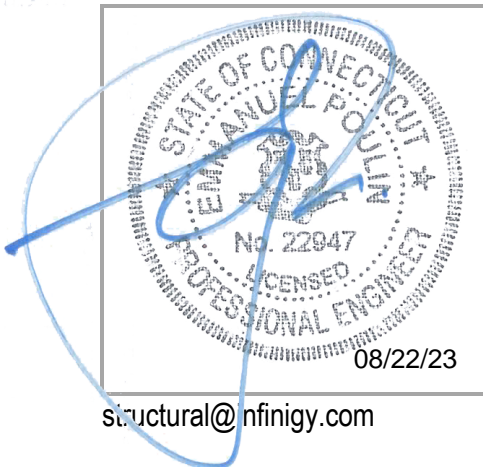
INFINIGY

MOUNT ANALYSIS REPORT

August 21, 2023

Dish Wireless Site ID	BOBDL00107A
Infinigy Job Number	1197-F0001-B
Client	Northeast Site Solutions
Carrier	Dish Wireless
Site Location	82 Lovely Street Farmington, CT 06085 Hartford County 41.7614° N NAD83 72.8875° W NAD83
Structure Type	Monpole
Structure Height	100.0 ft
Mount Type	8.0 ft Platform w/ Handrails
Mount Elevation	88.0 ft AGL
Structural Usage Ratio	85.1%
Overall Result	Pass

The enclosed structural analysis has been performed in accordance with the 2022 Connecticut State Building Code / 2021 IBC based on an ultimate 3-second gust wind speed of 116 mph. The evaluation criteria and applicable standards are presented in the next section of this report.



CONTENTS

1. Introduction
2. Design/Analysis Parameters
3. Proposed Loading Configuration
4. Supporting Documentation
5. Results
6. Recommendations
7. Assumptions
8. Liability Waiver and Limitations
9. Calculations

1. INTRODUCTION

Infinigy performed a structural analysis on the Dish Wireless existing telecommunication equipment supporting Platform w/ Handrails mounted to the existing structure located at the aforementioned address. All referenced supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using RISA 3D version 21.0.0 analysis software.

2. DESIGN/ANALYSIS PARAMETERS

Wind Speed	116 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 1.5" ice
Adopted Code	2022 Connecticut State Building Code / 2021 IBC
Standard(s)	TIA-222-H
Risk Category	II
Exposure Category	B
Topographic Factor	1.0
Seismic Spectral Response	$S_s = 0.183 \text{ g} / S_1 = 0.054 \text{ g}$
Live Load Wind Speed	60 mph
Man Live Load at Mid/End Points	500 lbs
Man Live Load at Mount Pipes	500 lbs
Ground Elevation (HMSL)	254.4 ft

3. PROPOSED LOADING CONFIGURATION - 88.0 ft. AGL Platform w/ Handrails

Centerline (ft)	Qty.	Appurtenance Manufacturers	Appurtenance Models
88.0	3	JMA Wireless	MX08FRO665-21
	3	Fujitsu	TA08025-B605
	3	Fujitsu	TA08025-B604
	1	Raycap	RDIDC-9181-PF-48
	1	Commscope	VHLP2-11W/B
	1	Ceragon	IP-50C

4. SUPPORTING DOCUMENTATION

Construction Drawings	Infinigy Engineering dated August 09, 2023
Dish Wireless Proposed Loading	Microwave Path Datasheet dated April 11, 2023
Mount Assembly Drawings	SitePro1 dated November 23, 2014
Previous Analysis Report	Infinigy Engineering dated July 30 2021

5. RESULTS

Components	Capacity	Pass/Fail
Standoff	85.1%	Pass
Horizontal	12.7%	Pass
Mount Pipe	50.4%	Pass
Handrail	17.5%	Pass
Connection	36.3%	Pass
RATING =	85.1%	Pass

Notes:

- See additional documentation in Appendix for calculations supporting the capacity consumed and detailed mount connection calculations.
- Rating per TIA-222-H, Section 15.5

6. RECOMMENDATIONS

Infinigy recommends installing Dish Wireless's proposed equipment loading configuration on the Platform w/ Handrails at 88.0 ft. The installation shall be performed in accordance with the construction documents issued for this site.

If you have any questions, require additional information, or believe the actual conditions differ from those detailed in this report, please contact us immediately.

Christopher H. Lee, MS, PE
Engineering Manager | **INFINIGY**

7. ASSUMPTIONS

The antenna mounting system was properly fabricated, installed and maintained in accordance with its original design and manufacturer's specifications.	
The configuration of antennas, mounts, and other appurtenances are as specified in the proposed loading configuration table.	
All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.	
The analysis will require revisions if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.	
Steel grades have been assumed as follows, unless noted otherwise:	
Channel, Solid Round, Angle, Plate	ASTM A36
HSS (Rectangular)	ASTM A500-B GR 46
HSS (Circular)	ASTM A500-B GR 42
Pipe	ASTM A53-B GR 35
Connection Bolts	ASTM A325
U-Bolts	ASTM A307
All bolted connections are pretensioned in accordance with Table 8.2 of the RCSC 2014 Standard.	

8. LIABILITY WAIVER AND LIMITATIONS

Our structural calculations are completed assuming all information provided to Infinigy is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition as erected and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure's condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report, Infinigy should be notified immediately to assess the impact on the results of this report.

Our evaluation is completed using industry standard methods and procedures. The structural results, conclusions and recommendations contained in this report are proprietary and should not be used by others as their own. Infinigy is not responsible for decisions made by others that are or are not based on the stated assumptions and conclusions in this report.

This report is an evaluation of the mount structure only and does not determine the adequacy of the supporting structure, other carrier mounts or cable mounting attachments. The analysis of these elements is outside the scope of this analysis, are assumed to be adequate for the purpose of this report and to have been installed per their manufacturer requirements. This document is not for construction purposes.

INFINIGY

Bolt Calculation Tool, V1.6.5

PROJECT DATA	
Site Name:	BOBDL00107A
Site Number:	BOBDL00107A
Connection Description:	Mount Standoff

ENVELOPE BOLT LOADS		
(LC32 M41) Bolt Tension:	7378.95	lbs
(LC101 M41) Bolt Shear:	1252.54	lbs

MAX BOLT USAGE LOADS ¹		
Bolt Tension:	7378.95	lbs
Bolt Shear:	500.96	lbs

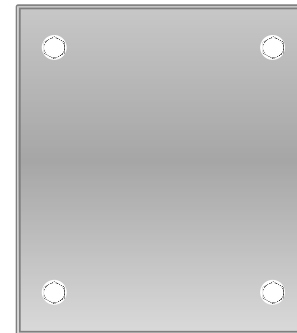
BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A325	-
# of Bolts:	4	-
Threads Excluded?	No	-

¹ Max bolt usage loads correspond to Load combination #32 on member M41 in RISA-3D, which causes the maximum demand on the bolts.

LC	Axial lb	y Shear lb	Z Shear lb	Torque lb-ft	y-y Moment lb-ft	z-z Moment lb-ft
(LC32 M41)	136.32	2506.22	138.72	337.55	-217.10	7195.93
(LC101 M41)	176.83	1627.94	-81.15	1301.36	106.09	7195.93

Member Information
I nodes of M1, M41, M73,

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Max Tensile Usage	36.3%	
Max Shear Usage	9.1%	
Interaction Check (Max Usage)	0.13	≤1.05
Result	Pass	

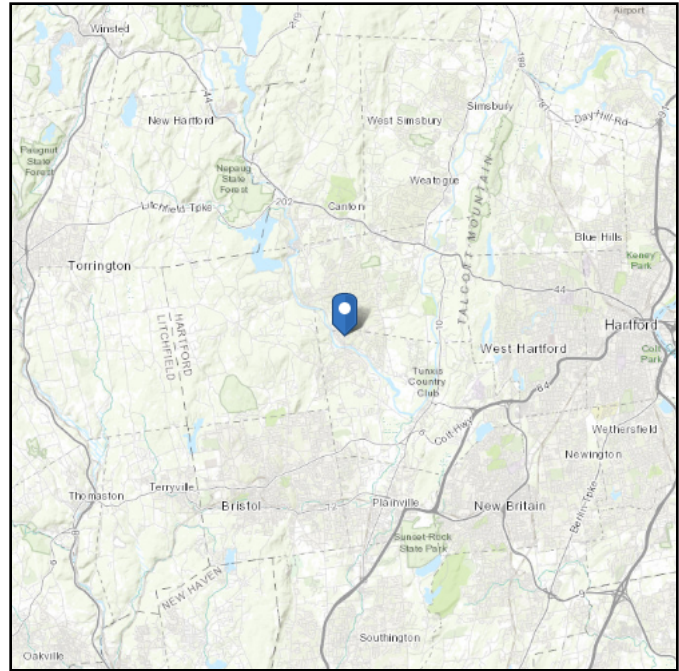
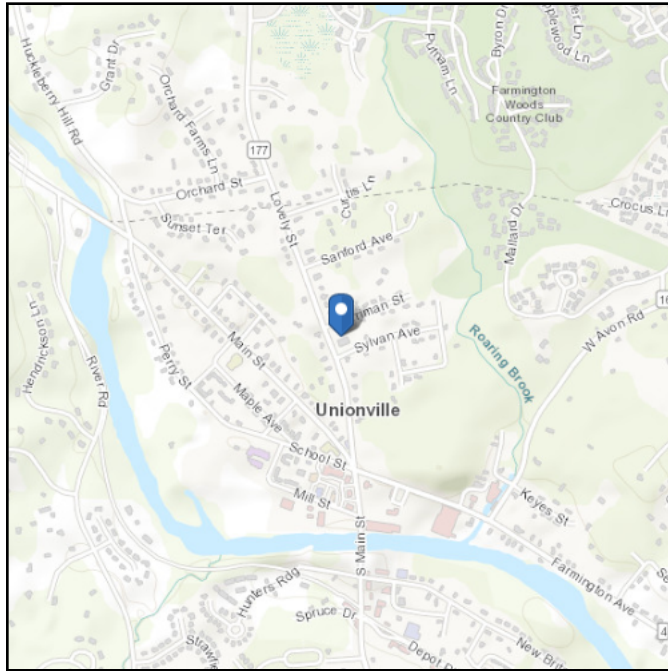


ASCE 7 Hazards Report

Address:
No Address at This Location

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

Latitude: 41.7614
Longitude: -72.8875
Elevation: 254.39275719568604 ft (NAVD 88)



Wind

Results:

Wind Speed	116 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Aug 21 2023

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

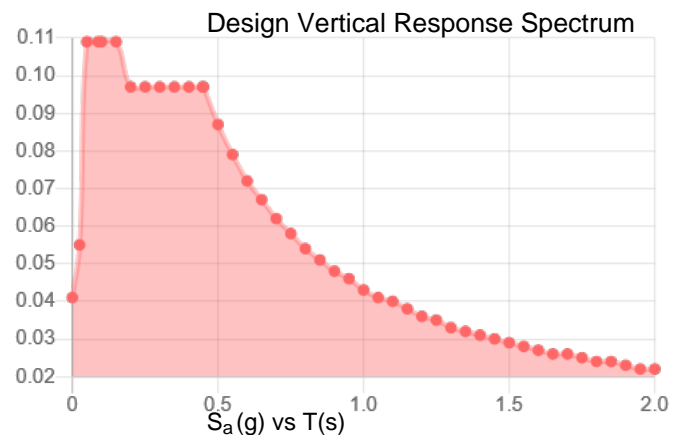
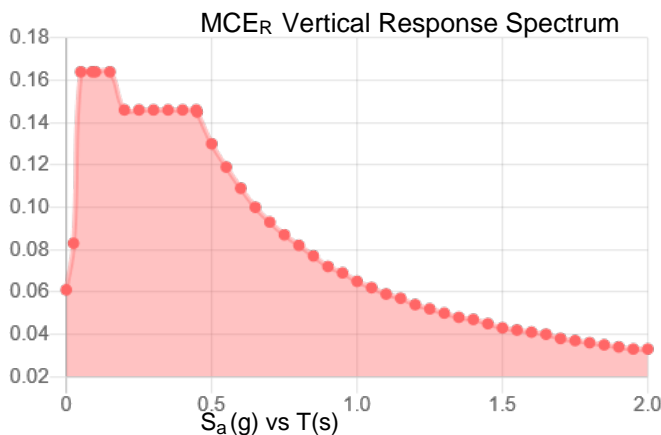
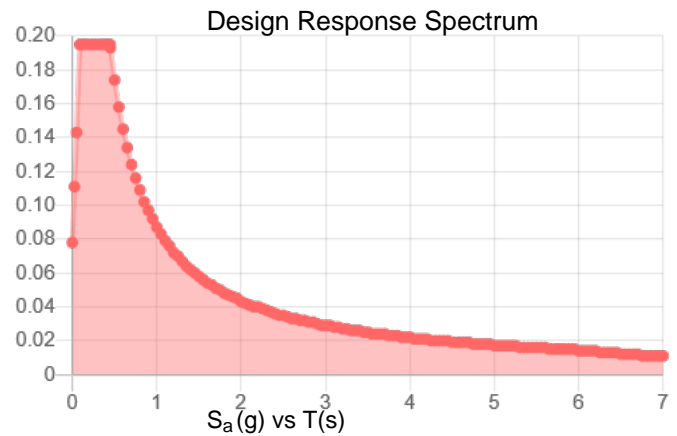
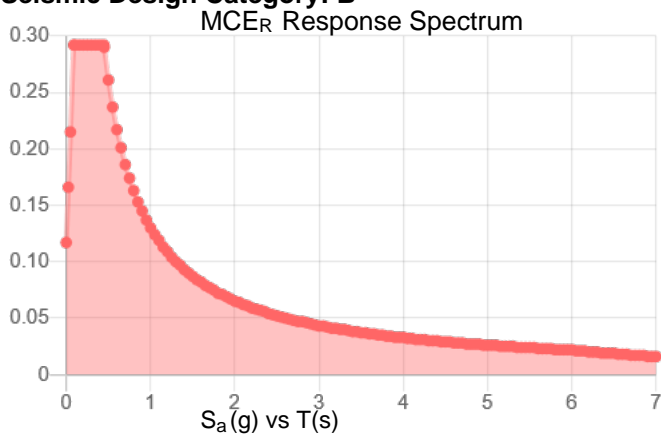
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class:

Results:

S_s :	0.183	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.098
F_v :	2.4	PGA _M :	0.157
S_{MS} :	0.292	F_{PGA} :	1.6
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.195	C_v :	0.7

Seismic Design Category: B



Data Accessed:

Mon Aug 21 2023

Date Source:

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

Ice

Results:

Ice Thickness: 1.50 in.

Concurrent Temperature: 5 F

Gust Speed 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Mon Aug 21 2023

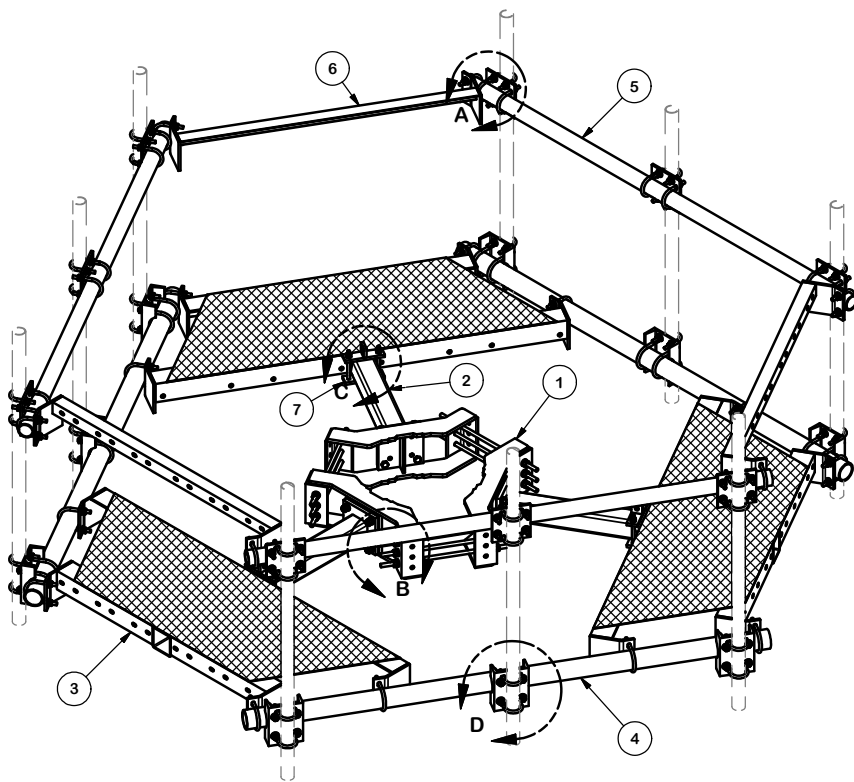
Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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

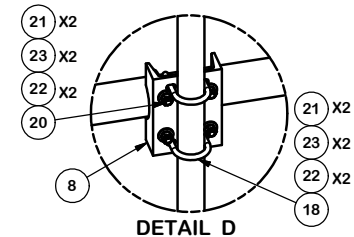
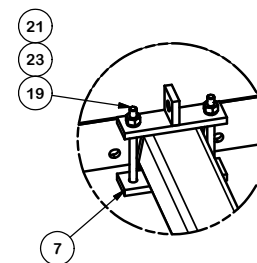
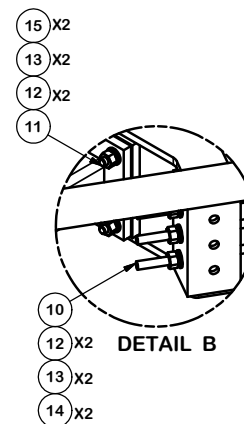
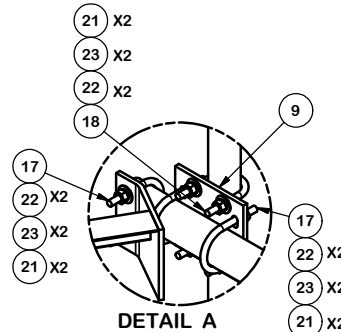
The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	3	X-SNP-ST8	SNB8 TELESCOPING ARM FOR GRATING		60.39	181.16
3	3	X-SNPC	CORNER GRATING WELDMENT		194.33	582.99
4	3	P396	3" SCH. 40 PIPE (3.5" O.D. x 0.216" WALL) A500	96.000 in	60.75	182.25
5	3	P3096	2-7/8" OD X 96" Sch 40 Galvanized Pipe		46.45	139.36
6	3	X-SNP-HRA	CORNER BRACKET FOR SNPX PLATFORMS		25.95	77.86
7	3	X-SNPP1G	CLAMP PLATE	7.250 in	2.03	6.10
8	9	X-SP219	SMALL SUPPORT CROSS PLATE	8.250 in	8.61	77.50
9	9	SCX2	CROSSOVER PLATE	7.000 in	4.80	43.17
10	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)		0.55	4.94
10	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)		0.55	4.94
11	12	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2.75	0.36	4.27
12	30	A58FW	5/8" HDG A325 FLATWASHER		0.03	1.02
13	30	G58LW	5/8" HDG LOCKWASHER		0.03	0.78
14	18	A58NUT	5/8" HDG A325 HEX NUT		0.13	2.34
15	12	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	1.56
16	12	X-UB1358	1/2" X 3-5/8" X 5-1/2" X 3" U-BOLT (HDG.)		0.73	8.78
17	24	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.73	17.56
18	36	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.73	26.34
19	6	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	7-1/2	0.41	2.46
20	18	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.73	13.17
21	186	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	13.32
22	180	G12FW	1/2" HDG USS FLATWASHER		0.03	6.13
23	186	G12LW	1/2" HDG LOCKWASHER		0.01	2.59
24	9	A	2" SCH. 40 PIPE (2.375" O.D. x 0.154" WALL) A500	B	C	D



2-3/8" O.D. VERTICAL MOUNTING PIPES					
ASSEMBLY NO.	PART NO. "A"	LENGTH "B"	UNIT WEIGHT "C"	NET WEIGHT "D"	TOTAL WEIGHT
SNP8HR-372	P272	6'-0"	23.07	207.63	1717.07
SNP8HR-384	P284	7'-0"	26.91	242.19	1751.63
SNP8HR-396	P296	8'-0"	30.76	276.84	1786.28
SNP8HR-3126	P2126	10'-6"	40.75	366.75	1876.19

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
 SAWED, SHEARED AND GAS CUT EDGES ($\pm 0.030"$)
 DRILLED AND GAS CUT HOLES ($\pm 0.030"$) - NO CONING OF HOLES
 LASER CUT EDGES AND HOLES ($\pm 0.010"$) - NO CONING OF HOLES
 BENDS ARE $\pm 1/2$ DEGREE
 ALL OTHER MACHINING ($\pm 0.030"$)
 ALL OTHER ASSEMBLY ($\pm 0.060"$)

PROPRIETARY NOTE:
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

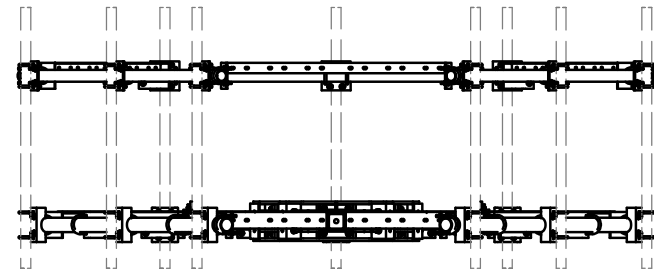
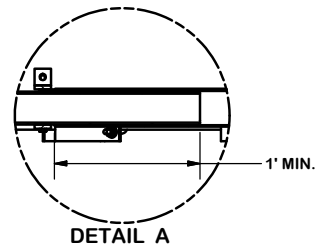
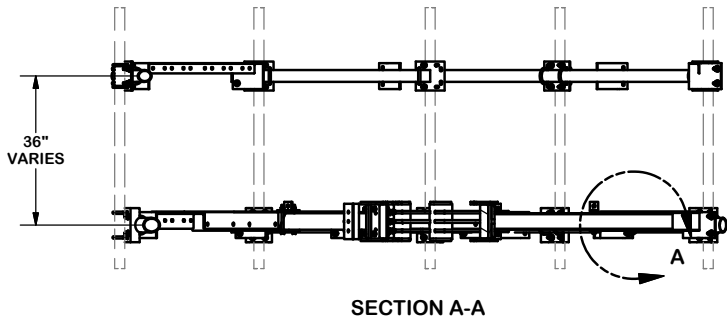
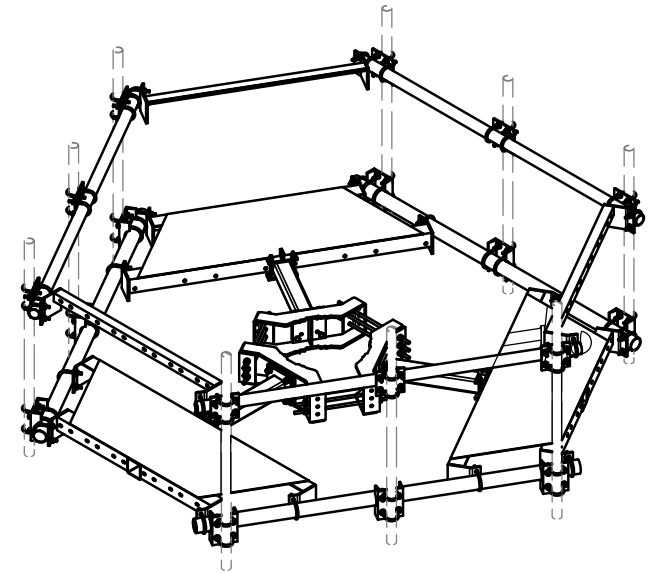
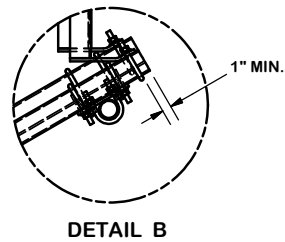
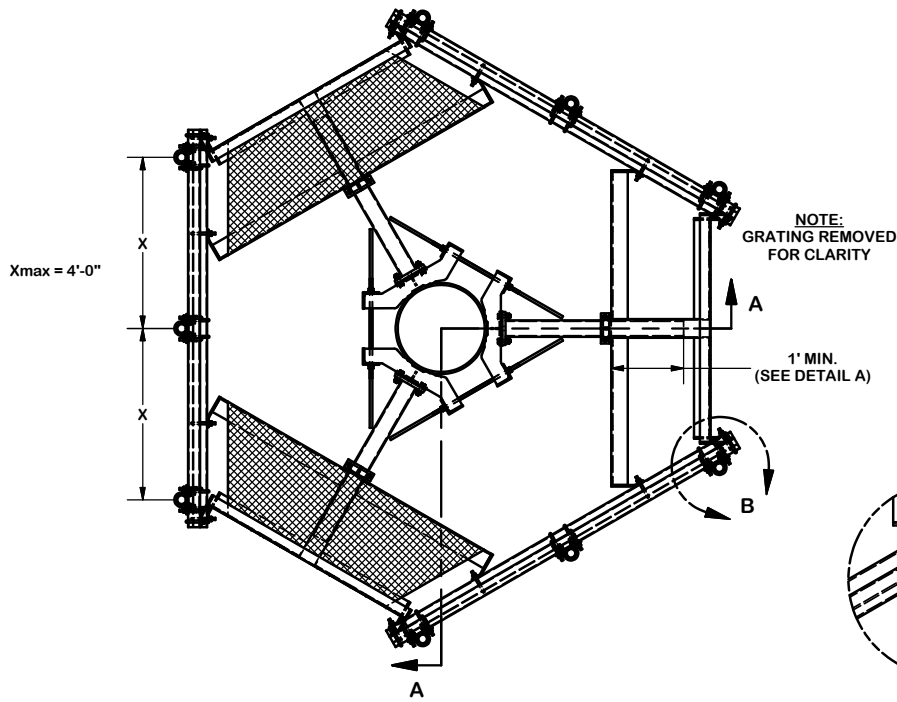
DESCRIPTION
**8' SNUB NOSE
 PLATFORM WITH
 HANDRAIL**

SITE PRO 1
 Engineering Support Team:
 1-888-753-7446

Locations:
 New York, NY
 Atlanta, GA
 Los Angeles, CA
 Plymouth, IN
 Salem, OR
 Dallas, TX

CPD NO.	DRAWN BY CEK 11/19/2014	ENG. APPROVAL
CLASS 81	SUB 02	DRAWING USAGE CUSTOMER
	CHECKED BY BMC 11/21/2014	

PART NO.	SEE ASSEMBLY NO.	PAGE 1 OF 2
DWG. NO.	SNP8HR-3XX	



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DESCRIPTION
**8" SNUB NOSE
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Engineering
 Support Team:
 1-888-753-7446

PART NO.	SEE ASSEMBLY NO.	PAGE 2 OF 2
DWG. NO.	SNP8HR-3XX	

ATTACHMENT 8

Radio Frequency Emissions Analysis Report



Site ID: BOBDL00107A

82 Lovely Street
Unionville, CT 06085

September 19, 2023

Fox Hill Telecom Project Number: 230927

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	15.74 %

September 19, 2023

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOBDL00107A**

Fox Hill Telecom, Inc (“Fox Hill”) was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **82 Lovely Street, Unionville, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and antenna installation located on this property are within specified federal limits.

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

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

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 600 MHz band is approximately $400 \mu\text{W}/\text{cm}^2$. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS / AWS-4) and 11 GHz microwave bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report the percentage of MPE rather than power density.



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

Additional details can be found in FCC OET 65.



CALCULATIONS

Calculations were performed for the proposed upgrades to the Dish Wireless antenna facility located at **82 Lovely Street, Unionville, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65 for far field modeling calculations.

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

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

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

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

Equation 9 per FCC OET65 for Far Field Modeling

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

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

ERP = Effective Radiated Power from antenna (watts)

R = Distance from the antenna (meters)

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



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

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
5G	n71 (600 MHz)	4	61.5
5G	n70 (AWS-4 / 1995-2020)	4	40
5G	n66 (AWS-4 / 2180-2200)	4	40
Microwave (Sector A)	11 GHz	1	1

Table 1: Channel Data Table



The following **Dish** antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz (n71) frequency band, the 2100 MHz (AWS 4) frequency bands at 1995-2020 MHz (n70), 2180-2200 MHz (n66) and the 11 GHz microwave bands. This is based on feedback from Dish regarding anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	JMA MX08FRO665-21	88
A	1	Andrew / Commscope VHLP2-11W/B	88
B	1	JMA MX08FRO665-21	88
C	1	JMA MX08FRO665-21	88

Table 2: Antenna Data

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



RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	5.06
Antenna A2	Andrew / Commscope VHLP2-11W/B	11 GHz	32.55	1	1	1,798.87	0.01
Sector A Composite MPE%							5.07
Antenna B1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	5.06
Sector B Composite MPE%							5.06
Antenna C1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	5.06
Sector C Composite MPE%							5.06

Table 3: Dish Emissions Levels



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

Site Composite MPE%	
Carrier	MPE%
Dish – Max Sector Value (Sector A)	5.07 %
AT&T	10.67 %
Site Total MPE %:	15.74 %

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	5.07 %
Dish Sector B Total:	5.06 %
Dish Sector C Total:	5.06 %
Site Total:	15.74 %

Table 5: Site MPE Summary



Table 6 below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated **Dish** sector(s). For this site, the sector with the largest calculated MPE% is **Sector A**.

Dish _ Frequency Band / Technology Max Power Values (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Dish n71 (600 MHz) 5G	4	858.77	88	13.36	n71 (600 MHz)	400	3.34%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,648.39	88	8.60	n70 (AWS-4 / 1995-2020)	1000	0.86%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,849.52	88	8.60	n66 (AWS-4 / 2180-2200)	1000	0.86%
Dish 11 GHz Microwave	1	1,798.87	88	0.10	11 GHz	1000	0.01%
						Total:	5.07 %

Table 6: Dish Maximum Sector MPE Power Values



Summary

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

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

Dish Sector	Power Density Value (%)
Sector A:	5.07 %
Sector B:	5.06 %
Sector C:	5.06 %
Dish Maximum Total (Sector A):	5.07 %
Site Total:	15.74 %
Site Compliance Status:	COMPLIANT

The anticipated composite emissions value for this site, assuming all carriers present, is **15.74 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon the far field calculations performed for all carriers identified in this report.

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

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

ATTACHMENT 9

LETTER OF AUTHORIZATION

I, Michael Ashley Culbert, the owner representative for the telecommunications tower located at 82 Lovely St, Unionville, Hartford County, Connecticut; as evidenced by Memorandum of Lease recorded in Hartford County Registry of Deeds, Document Number 01-18062822-OLT.

As owner of the above-referenced telecommunications tower, I hereby authorize DISH Wireless L.L.C., through its designated agent, Northeast Site Solutions, to apply for all necessary municipal, state, federal and other permits necessary to accommodate the installation of DISH Wireless L.L.C's antennas and ancillary equipment on the subject tower and base station equipment on the ground on our leasehold property.


EIP Communications I, LLC

Michael Ashley Culbert

Michael Ashley Culbert
Vice President of Site Development

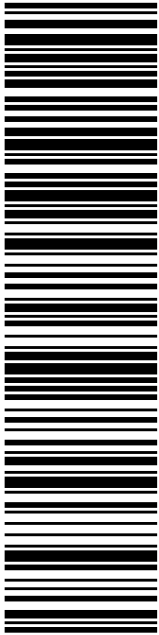
Date: October 4, 2023

ATTACHMENT 8



KATHLEEN A BLONSKI
FARMINGTON TOWN HALL- TOWN MANAGER
1 MONTIETH DR
FARMINGTON CT 06032-1082

USPS TRACKING #



9405 5036 9930 0619 9539 94

P

usps.com 9405 5036 9930 0619 9539 94 0096 5000 0020 6032
US POSTAGE \$9.65
 Flat Rate Envoy

U.S. POSTAGE PAID
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10/26/2023


PRIORITY MAIL®

Expected Delivery Date: 10/28/23
 Re#: DD00107A
0003

R001

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

Electronic Rate Approved #038555749





Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0619 9539 94

Trans. #: 596309988	Priority Mail® Postage: \$9.65
Print Date: 10/26/2023	Total: \$9.65
Ship Date: 10/26/2023	
Expected Delivery Date: 10/28/2023	

From: DEBORAH CHASE Re#: DD00107A
 NORTHEAST SITE SOLUTIONS
 STE 1
 420 MAIN ST
 STURBRIDGE MA 01566-1359


To: KATHLEEN A BLONSKI
 FARMINGTON TOWN HALL- TOWN MANAGER
 1 MONTIETH DR
 FARMINGTON CT 06032-1082

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



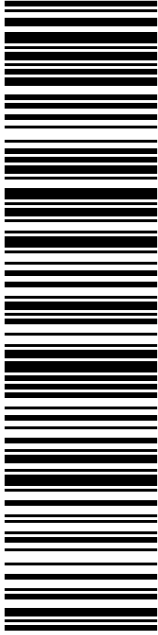
Thank you for shipping with the United States Postal Service!

Check the status of your shipment on the USPS Tracking® page at usps.com




SOUTHERN NEW ENGLAND
401 MERRITT 7
NORWALK CT 06851-1000


USPS TRACKING #



9405 5036 9930 0619 9540 69



Electronic Rate Approved #038555749



Click-N-Ship®

P

usps.com 9405 5036 9930 0619 9540 69 0096 5000 0020 6851
US POSTAGE \$9.65
 Flat Rate Envoy

U.S. POSTAGE PAID
 Click-N-Ship®

Mailed from 06032 986745498409037

PRIORITY MAIL®

DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE D
5 MELROSE DR
FARMINGTON CT 06032-2251

Expected Delivery Date: 10/28/23
Ref#: DD-00107A
0003

C007



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0619 9540 69

Trans. #: 596309988	Priority Mail® Postage: \$9.65
Print Date: 10/26/2023	Total: \$9.65
Ship Date: 10/26/2023	
Expected Delivery Date: 10/28/2023	


From: DEBORAH CHASE Ref#: DD-00107A
 NORTHEAST SITE SOLUTIONS
 STE D
 5 MELROSE DR
 FARMINGTON CT 06032-2251

To: SOUTHERN NEW ENGLAND
 401 MERRITT 7
 NORWALK CT 06851-1000

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

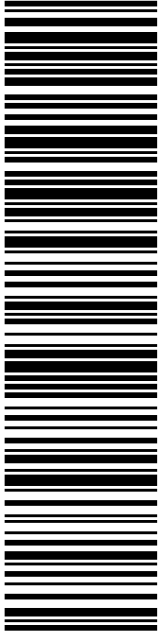


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SHANNON RUTHERFORD
CTING TOWN PLANNER-FARMINGTON
1 MONTIETH DR
FARMINGTON CT 06032-1082

USPS TRACKING #




9405 5036 9930 0619 9540 14

DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
5 MELROSE DR
FARMINGTON CT 06032-2251

Expected Delivery Date: 10/28/23
Ref#: DD-00107A
0003

R001




Click-N-Ship®

usps.com 9405 5036 9930 0619 9540 14 0096 5000 0010 6032
US POSTAGE \$9.65
 Flat Rate Envoy
U.S. POSTAGE PAID
 Click-N-Ship®
 Mailed from 06032 986745498412314
 10/26/2023

PRIORITY MAIL®

Electronic Rate Approved #038555749





Cut on dotted line.

Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0619 9540 14

Trans. #: 596309988	Priority Mail® Postage: \$9.65
Print Date: 10/26/2023	Total: \$9.65
Ship Date: 10/26/2023	
Expected Delivery Date: 10/28/2023	

From: DEBORAH CHASE Ref#: DD-00107A
 NORTHEAST SITE SOLUTIONS
 5 MELROSE DR
 FARMINGTON CT 06032-2251

To: SHANNON RUTHERFORD
 CTING TOWN PLANNER-FARMINGTON
 1 MONTIETH DR
 FARMINGTON CT 06032-1082

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



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BOB DL 00107 - Farmington



LINCOLN MALL
560 LINCOLN ST STE 8
WORCESTER, MA 01605-1925
(800)275-8777

10/27/2023

11:24 AM

Product	Qty	Unit Price	Price
Prepaid Mail Pittsburgh, PA 15212 Weight: 0 lb 12.00 oz Acceptance Date: Fri 10/27/2023 Tracking #: 9405 5036 9930 0619 9540 21	1		\$0.00
Prepaid Mail Farmington, CT 06032 Weight: 0 lb 12.00 oz Acceptance Date: Fri 10/27/2023 Tracking #: 9405 5036 9930 0619 9539 94	1		\$0.00
Prepaid Mail Norwalk, CT 06851 Weight: 0 lb 12.30 oz Acceptance Date: Fri 10/27/2023 Tracking #: 9405 5036 9930 0619 9540 69	1		\$0.00
Prepaid Mail Farmington, CT 06032 Weight: 0 lb 11.80 oz Acceptance Date: Fri 10/27/2023 Tracking #: 9405 5036 9930 0619 9540 14	1		\$0.00

Grand Total:

\$0.00

B0B12C00107A - Farmington
Union /
Stafford Spgs.
B0B20500933 A



LINCOLN MALL
560 LINCOLN ST STE 8
WORCESTER, MA 01605-1925
(800)275-8777

10/27/2023 11:23 AM

Product	Qty	Unit Price	Price
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Prepaid Mail	1		\$0.00
New Britain, CT 06051			
Weight: 5 lb 0.90 oz			
Acceptance Date:			
Fri 10/27/2023			
Tracking #:			
9405 5036 9930 0620 1640 68			

Grand Total: \$0.00

Text your tracking number to 28777 (2USPS) to get the latest status. Standard Message and Data rates may apply. You may also visit www.usps.com USPS Tracking or call 1-800-222-1811.

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or call 1-800-410-7420.

UFN: 249632-1106
Receipt #: 840-50180078-2-5455943-1
Clerk: 17