

STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

IN RE:

APPLICATION OF NEW CINGULAR WIRELESS PCS,  
LLC (AT&T) FOR A CERTIFICATE OF  
ENVIRONMENTAL COMPATIBILITY AND PUBLIC  
NEED FOR THE CONSTRUCTION, MAINTENANCE,  
AND OPERATION OF A WIRELESS  
TELECOMMUNICATIONS FACILITY AT 499 MILE  
LANE, CITY OF MIDDLETOWN, CONNECTICUT

DOCKET NO. 506

December 13, 2021

NEW CINGULAR WIRELESS PCS, LLC d/b/a AT&T  
SUPPLEMENTAL SUBMISSION AND REDIRECT TESTIMONY

SUPPLEMENTAL AT&T SUBMISSIONS

AT&T (the "Applicant") respectfully submits the following supplemental information to the Connecticut Siting Council in the above-referenced proceeding:

1. Legal Memorandum Regarding Tower Sharing & Statutory Considerations

*Included as Attachment 1 is a legal memorandum providing the Applicant's: 1) overview of the State of Connecticut statutory considerations raised in Docket 506; and 2) notice of its invocation of Section 16-50aa(c)(2) in collaboration with the City of Middletown which owns the underlying property and existing tower at 499 Mile Lane.*

2. FAA Compliance

*Included in Attachment 2 is Form 7460, Notice of Proposed Construction or Alteration, that was filed on behalf of the City with the Federal Aviation Administration ("FAA") for the existing tower. Also enclosed in Attachment 2 is the August 15, 2017 Determination of No Hazard to Air Navigation issued for the City's existing lattice tower. Additionally, attached is a FAA report run for the proposed adjacent new tower and which states that notice to the FAA is not required for purposes of its location, height, slope or air traffic purposes.*

3. Existing Tower Modifications

*Included in Attachment 3 is a report by AT&T's Professional Engineers which was commissioned to identify the full extent of modifications and costs associated with collocation on the existing tower with the intention of developing it as a possible alternative. As set forth therein, it is the Professional Engineer's opinion that the existing tower cannot be modified in accordance with the State Building*

*Code and/or accepted engineering practices and they do not recommend it regardless of the City's public safety considerations.*

4. New Lattice Tower Alternative – Specifications and Photosimulations

*Included in Attachment 4 are photosimulations for an alternative neither AT&T or the City support and which involves a complete relocation of the existing tower, construction of a new lattice tower meeting public safety and commercial wireless carrier requirements and which would involve removal of the existing light duty tower ("Lattice Tower Relocation"). This Lattice Tower Relocation would involve a much bigger physical footprint for the tower and would be similar to Connecticut State Police towers built for both public safety and commercial wireless purposes.*

*Also included in Attachment 4 are two photographs of existing lattice towers with CT State Police equipment to demonstrate the approximate size, design and location of the municipal communications equipment that would be installed on the Lattice Tower Relocation.*

5. Lattice Tower Alternative - Concept Plan

*Included in Attachment 5 is a concept plan for the Lattice Tower Relocation alternative that neither AT&T or the City support.*

6. Updated Site Drawings

*Included in Attachment 6 are updated Site Drawings depicting the location of wetland setbacks in relation to the proposed adjacent new tower and additional engineering details.*

SUPPLEMENTAL INFORMATION REQUESTED BY THE SITING COUNCIL

AT&T (the "Applicant") respectfully submits the following exhibits and information in response to the Connecticut Siting Council's request for additional information dated December 1, 2021:

- a) Estimate the number of small cell facilities on utility poles that would be necessary to provide AT&T's target coverage.

*Martin Lavin - Small cells would not adequately meet AT&T's objectives in this Docket given the limited coverage area of each, the demographics and density of the service area and inability to support backup power requirements for FirstNet. I did a desktop review of this only to assess from a RF perspective a numerical answer to the question. I estimate 42 to 48 at a minimum which would likely increase based on field conditions. In my professional opinion, small cells are not technically implicated as an alternative in this Docket.*

- b) Provide a map depicting the prime farmland soils on the subject property and the proposed compound expansion area.

*Brian Gaudet - Included in Attachment 7 is a map depicting the location of prime farmland soils on the subject property. The nearest Prime Farmland Soils on site are located at the corners of the property over 508' to the northeast of the proposed compound expansion area. The proposed Facility would not impact Prime Farmland Soils.*

- c) Provide a map of wetlands on the subject property and the proposed compound expansion area.

*Brian Gaudet – Included in Attachment 8 is a map which depicts the location of wetlands on the subject property and in relation to the existing tower site and proposed compound expansion area.*

- d) Provide a copy of any wetland delineation/inspection reports for the subject property.

*Brian Gaudet - Included in Attachment 9 is the Wetland Inspection Report. It notes that that the wetland is man-made and associated with prior grading with the former U.S. Army Reserve Training Center use of the site. The wetlands are part of a disturbed area and there are no likely adverse impacts provided typical erosion and sedimentation control measures are used during construction.*

- e) Provide an updated noise study taking into account the proposed compound expansion area location and generator model and fuel source.

*Scott Pike - Included in Attachment 10 is an updated noise study prepared by Reuter Associates LLC, dated December 10, 2021, with updated calculations reflecting the site modifications proposed by AT&T and noting noise at the property lines from the generator would not exceed 35 dBA.*

- f) Provide statistics on dropped calls and/or ineffective attempts in the vicinity of the proposed facility.

*Martin Lavin – As requested by the Council, I reviewed AT&T proprietary IA/DC statistics with their in-house RF engineers for surrounding sites. That data correlates to my testimony that there is a gap in coverage in the area of the proposed site which led to it being proposed for FirstNet and AT&T services. Voice and data sessions for surrounding sites and sectors in the direction of the proposed site are performing below AT&T's standards and network planning goals.*

- g) Provide a review of the Natural Diversity Database regarding possible impacts to state-listed species and any associated mitigation measures.

*Brian Gaudet – APT performed an evaluation to assess the presence of any federally- and state-listed, threatened, or endangered species; species of special concern; or, critical*



*habitats. No known areas of state-listed species are currently depicted on the most recent NDDB maps within the Subject Property. The proposed Facility is not anticipated to adversely impact any listed species or critical habitat. Included in Attachment 11 is a USFWS/NDDB Compliance Memorandum documenting this information. AT&T would consider following USFWS voluntary conservation measures, where appropriate and the project schedule allows, to reduce any unlikely potential for impact to northern long-eared bat.*

- h) Determine if the increase in centerline height from approximately 150 feet to 180 feet associated with co-locating on the existing lattice tower would reduce the need for additional AT&T facilities in the area, and if yes, indicate in which areas this would occur, and provide any cost benefits associated with fewer needed facilities.

*Martin Lavin – Increasing the height of the proposed monopole from 150' to 180' would expand the coverage footprint and provide additional wide area coverage in this part of Middletown. Principally, that would occur in an area almost uniformly distributed in a “ribbon” of coverage roughly a few hundred feet wide at the edges of the predicted coverage area achieved at 150' AGL which lower height is adequate. At this point in time, I do not believe the added height would obviate the need for additional AT&T facilities, but certainly the added coverage could be beneficial to FirstNet and AT&T customers if approved by the Council.*



**CERTIFICATE OF SERVICE**

I hereby certify that on this day an original and fifteen (15) copies of the foregoing were sent via overnight mail and electronically to the Connecticut Siting Council.

December 13, 2021



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Kristen Motel  
Cuddy & Feder LLP  
445 Hamilton Ave, 14<sup>th</sup> Floor  
White Plains, NY 10601  
(914)-761-1300  
Attorneys for the Applicant

cc: Christopher J. Forte, Esq., City of Middletown Office of the Attorney General  
AT&T, Smartlink Group

# **ATTACHMENT 1**

See **FP-ATT-083-211214** - New Cingular Wireless PCS, LLC (AT&T) Request to Initiate Feasibility Proceeding for shared use of an existing municipal communications tower located at 499 Mile Lane, Middletown, Connecticut.



# **ATTACHMENT 2**



**UNITED STATES OF AMERICA  
FEDERAL COMMUNICATIONS COMMISSION  
ANTENNA STRUCTURE REGISTRATION**



OWNER: City of Middletown

FCC Registration Number (FRN): 0003567773

<b>ATTN: Wayne S. Bartolotta, Director</b> <b>City of Middletown</b> <b>169 Cross Street</b> <b>Middletown, CT 06457</b>	<b>Antenna Structure Registration Number</b> <p align="center">1303628</p>
	<b>Issue Date</b> <p align="center">10/05/2017</p>
<b>Location of Antenna Structure</b> <b>499 Mile Lane</b> <b>Middletown, CT 06457</b>  <b>County: MIDDLESEX</b>	<b>Ground Elevation (AMSL)</b> <p align="right">33.5 meters</p>
	<b>Overall Height Above Ground (AGL)</b> <p align="right">56.4 meters</p>
<b>Latitude</b> <p align="center">41- 34- 48.3 N</p>	<b>Longitude</b> <p align="center">072- 41- 09.4 W</p>
	<p align="center">NAD83</p>
<b>Center of Array Coordinates</b> <p align="center">N/A</p>	<b>Overall Height Above Mean Sea Level (AMSL)</b> <p align="right">89.9 meters</p>
	<b>Type of Structure</b> <p align="center">LTOWER Lattice Tower</p>
<b>Painting and Lighting Requirements:</b> FAA Chapters NONE	
<b>Conditions:</b>	

This registration is effective upon completion of the described antenna structure and notification to the Commission. **YOU MUST NOTIFY THE COMMISSION WITHIN 24 HOURS OF COMPLETION OF CONSTRUCTION OR CANCELLATION OF YOUR PROJECT, please file FCC Form 854.** To file electronically, connect to the antenna structure registration system by pointing your web browser to <http://wireless.fcc.gov/antenna>. Electronic filing is recommended. You may also file manually by submitting a paper copy of FCC Form 854. Use purpose code "NT" for notification of completion of construction; use purpose code "CA" to cancel your registration.

The Antenna Structure Registration is not an authorization to construct radio facilities or transmit radio signals. It is necessary that all radio equipment on this structure be covered by a valid FCC license or construction permit.

**You must immediately provide a copy of this Registration to all tenant licensees and permittees sited on the structure described on this Registration (although not required, you may want to use Certified Mail to obtain proof of receipt), and display your Registration Number at the site. See reverse for important information about the Commission's Antenna Structure Registration rules.**

You must comply with all applicable FCC obstruction marking and lighting requirements, as set forth in Part 17 of the Commission's Rules (47 C.F.R. Part 17). These rules include, but are not limited to:

**Posting the Registration Number:** The Antenna Structure Registration Number must be displayed in a conspicuous place so that it is readily visible near the base of the antenna structure. Materials used to display the Registration Number must be weather-resistant and of sufficient size to be easily seen at the base of the antenna structure. Exceptions exist for certain historic structures. See 47 C.F.R. 17.4(g)-(h).

**Inspecting lights and equipment:** The obstruction lighting must be observed at least every 24 hours in order to detect any outages or malfunctions. Lighting equipment, indicators, and associated devices must be inspected at least once every three months.

**Reporting outages and malfunctions:** When any top steady-burning light or a flashing light (in any position) burns out or malfunctions, the outage must be reported to the nearest FAA Flight Service Station, unless corrected within 30 minutes. The FAA must again be notified when the light is restored. The owner must also maintain a log of these outages and malfunctions.

**Maintaining assigned painting:** The antenna structure must be repainted as often as necessary to maintain good visibility.

**Complying with environmental rules:** If you certified that grant of this registration would not have a significant environmental impact, you must nevertheless maintain all pertinent records and be ready to provide documentation supporting this certification and compliance with the rules, in the event that such information is requested by the Commission pursuant to 47 C.F.R. 1.1307(d).

**Updating information:** The owner must notify the FCC of proposed modifications to this structure; of any change in ownership; or, within 30 days of dismantlement of the structure.

You can find additional information at [\[insert link\]](#) or by calling (877) 480-3201 (TTY 717-338-2824).





Mail Processing Center  
 Federal Aviation Administration  
 Southwest Regional Office  
 Obstruction Evaluation Group  
 10101 Hillwood Parkway  
 Fort Worth, TX 76177

Aeronautical Study No.  
 2017-ANE-3032-OE

Issued Date: 08/15/2017

C/O Pyramid Network Services - Rob Baumeister  
 City of Middletown  
 6615Towpath Road  
 East Syracuse, NY 13057

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:           Antenna Tower Mile Lane  
 Location:           Middletown, CT  
 Latitude:           41-34-48.36N NAD 83  
 Longitude:          72-41-09.42W  
 Heights:            110 feet site elevation (SE)  
                           185 feet above ground level (AGL)  
                           295 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 1.

This determination expires on 02/15/2019 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission (FCC) because the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (817) 222-5932, or [joan.tengowski@faa.gov](mailto:joan.tengowski@faa.gov). On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2017-ANE-3032-OE.

**Signature Control No: 339971713-340855495**

( DNE )

Joan Tengowski  
Technician

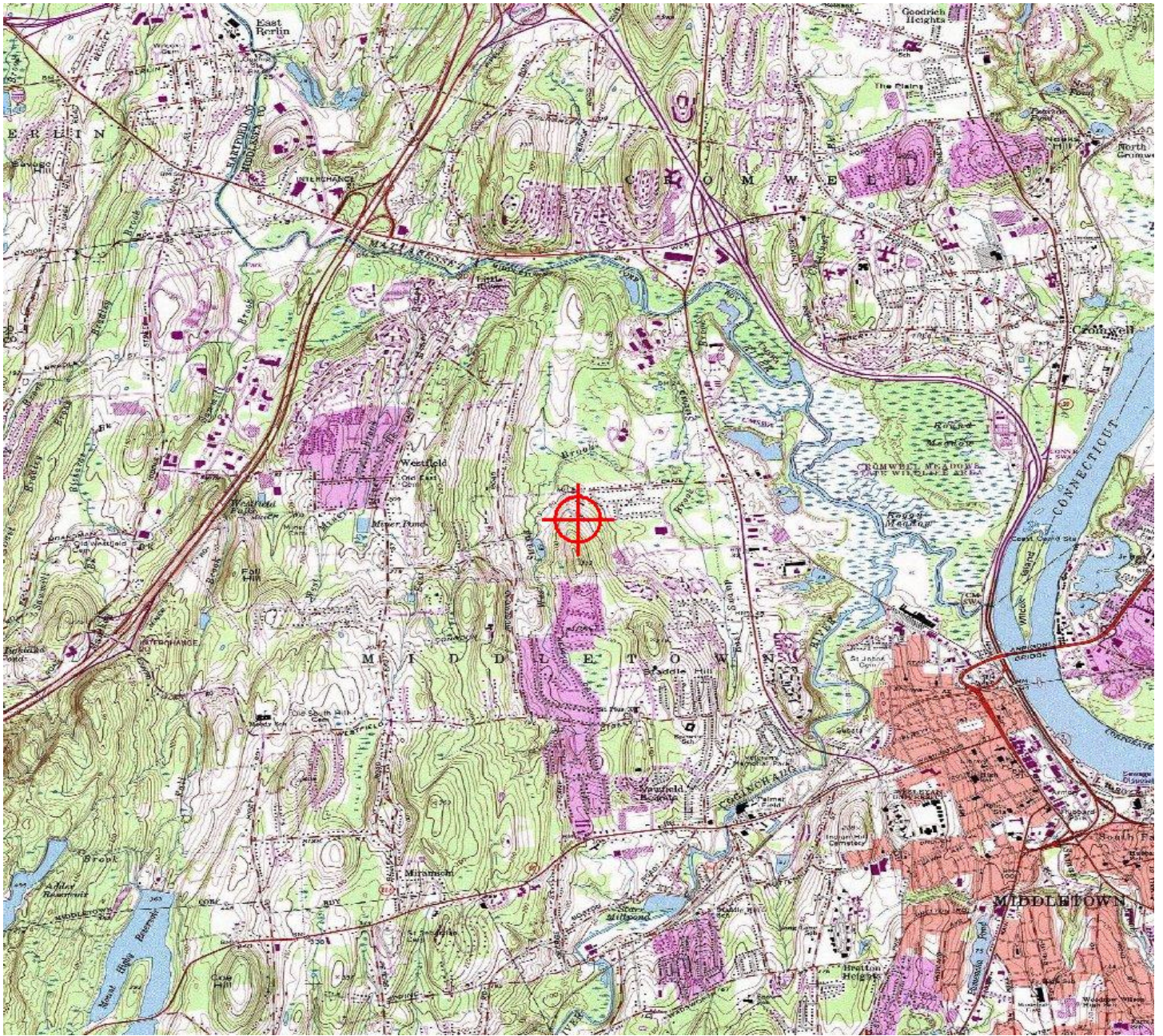
Attachment(s)  
Frequency Data  
Map(s)

cc: FCC

**Frequency Data for ASN 2017-ANE-3032-OE**

<b>LOW FREQUENCY</b>	<b>HIGH FREQUENCY</b>	<b>FREQUENCY UNIT</b>	<b>ERP</b>	<b>ERP UNIT</b>
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W







\*\*\*\*\*  
\* Federal Airways & Airspace \*  
\* Summary Report: New Construction \*  
\* Antenna Structure \*  
\*\*\*\*\*

Airspace User: Not Identified

File: 10578361

Location: Middle, CT

Latitude: 41°-34'-48.0" Longitude: 72°-41'-8.8"

SITE ELEVATION AMSL.....108 ft.  
STRUCTURE HEIGHT.....160 ft.  
OVERALL HEIGHT AMSL.....268 ft.

NOTICE CRITERIA

FAR 77.9(a): NNR (DNE 200 ft AGL)  
FAR 77.9(b): NNR (DNE Notice Slope)  
FAR 77.9(c): NNR (Not a Traverse Way)  
FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for MMK  
FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for HFD  
FAR 77.9(d): NNR (Off Airport Construction)

NR = Notice Required  
NNR = Notice Not Required  
PNR = Possible Notice Required (depends upon actual IFR procedure)  
For new construction review Air Navigation Facilities at bottom  
of this report.

Notice to the FAA is not required at the analyzed location and height for  
slope, height or Straight-In procedures. Please review the 'Air Navigation'  
section for notice requirements for offset IFR procedures and EMI.

OBSTRUCTION STANDARDS

FAR 77.17(a)(1): DNE 499 ft AGL  
FAR 77.17(a)(2): DNE - Airport Surface  
FAR 77.19(a): DNE - Horizontal Surface  
FAR 77.19(b): DNE - Conical Surface  
FAR 77.19(c): DNE - Primary Surface  
FAR 77.19(d): DNE - Approach Surface  
FAR 77.19(e): DNE - Approach Transitional Surface  
FAR 77.19(e): DNE - Abeam Transitional Surface

VFR TRAFFIC PATTERN AIRSPACE FOR: MMK: MERIDEN MARKHAM MUNI

Type: A RD: 46759.27 RE: 103  
FAR 77.17(a)(1): DNE  
FAR 77.17(a)(2): Does Not Apply.  
VFR Horizontal Surface: DNE

VFR Conical Surface: DNE  
 VFR Primary Surface: DNE  
 VFR Approach Surface: DNE  
 VFR Transitional Surface: DNE

VFR TRAFFIC PATTERN AIRSPACE FOR: HFD: HARTFORD-BRAINARD

Type: A RD: 55522.27 RE: 17  
 FAR 77.17(a)(1): DNE  
 FAR 77.17(a)(2): DNE - Greater Than 5.99 NM.  
 VFR Horizontal Surface: DNE  
 VFR Conical Surface: DNE  
 VFR Primary Surface: DNE  
 VFR Approach Surface: DNE  
 VFR Transitional Surface: DNE

TERPS DEPARTURE PROCEDURE (FAA Order 8260.3, Volume 4)

FAR 77.17(a)(3) Departure Surface Criteria (40:1)  
 DNE Departure Surface

MINIMUM OBSTACLE CLEARANCE ALTITUDE (MOCA)

FAR 77.17(a)(4) MOCA Altitude Enroute Criteria  
 The Maximum Height Permitted is 1000 ft AMSL

PRIVATE LANDING FACILITIES

FACIL	BEARING	RANGE	DELTA ARP	FAA
IDENT TYP NAME	To FACIL	IN NM	ELEVATION	IFR
-----	-----	-----	-----	---
OCT6 HEL MIDDLETOWN No Impact to Private Landing Facility Structure is beyond notice limit by 2960 feet.	319.95	1.31	+155	
CT98 HEL MIDDLESEX HOSPITAL No Impact to Private Landing Facility Structure is beyond notice limit by 9157 feet.	130.02	2.33	+211	
01CT HEL BERLIN FAIRGROUNDS No Impact to Private Landing Facility Structure is beyond notice limit by 15659 feet.	326.46	3.4	+208	
CT92 HEL BEMER No Impact to Private Landing Facility Structure is beyond notice limit by 23011 feet.	56.2	4.61	+108	
CT28 HEL CT DEPT OF VETERANS AFFAIRS No Impact to Private Landing Facility Structure is beyond notice limit by 25380 feet.	20.13	5.00	+118	
CT21 HEL C N FLAGG No Impact to Private Landing Facility Structure 65 ft below heliport.	221.38	5.77	-65	

AIR NAVIGATION ELECTRONIC FACILITIES



FAC IDNT	TYPE	ST AT	FREQ	VECTOR	DIST (ft)	DELTA ELEVA	ST	LOCATION	GRND ANGLE	APCH BEAR
HFD	VOR/DME	R	114.9	59.49	43899	-581	CT	HARTFORD	-.76	
MAD	VOR/DME	I	110.4	181.04	96989	+52	CT	MADISON	.03	
BDL	RADAR	I		.39	130657	+32	CT	BRADLEY INTL	.01	
BDL	VORTAC	D	109.0	359.67	131547	+108	CT	BRADLEY	.05	
ORW	VOR/DME	I	110.0	92.85	188046	-42	CT	NORWICH	-.01	
BDR	VOR/DME	R	108.8	218.1	194530	+262	CT	BRIDGEPORT	.08	
GON	VOR/DME	R	110.8	117.84	196111	+259	CT	GROTON	.08	
BAF	VORTAC	R	113.0	357.77	212221	+1	MA	BARNES	0.00	

CFR Title 47, §1.30000-§1.30004

AM STUDY NOT REQUIRED: Structure is not near a FCC licensed AM station.  
Movement Method Proof as specified in §73.151(c) is not required.  
Please review 'AM Station Report' for details.

Nearest AM Station: WMRD @ 6063 meters.

Airspace® Summary Version 21.11.621

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12-09-2021  
13:53:03

# ATTACHMENT 3

# STRUCTURAL ANALYSIS REPORT

For

**SITE NUMBER: CT3470**  
**SITE NAME: MIDDLETOWN\_MILE LANE**

499 Mile Lane  
Middletown, CT 06457

## Antennas Mounted on the Tower



Prepared for:



Dated: December 9, 2021

Prepared by:



45 Beechwood Drive  
North Andover, MA 01845  
(P) 978.557.5553 (F) 978.336.5586  
[www.hudsondesigngroupllc.com](http://www.hudsondesigngroupllc.com)



### **SCOPE OF WORK:**

Hudson Design Engineering, PLLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the 180' self-supporting tower supporting the proposed AT&T's antennas located at elevation 180' above the ground level.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's existing and proposed antennas listed below.

The following documents were used for our reference:

- Tower and Foundation Design Drawings prepared by Valmont dated September 15, 2017.

### **CONCLUSION SUMMARY:**

Based on our evaluation, we have determined that the existing tower **is NOT in conformance** with the ANSI/TIA-222-G Standard for the loading considered under the criteria listed in this report. The tower structure is rated at 292.0 % - (Legs at Tower Section T3 from EL.120' to EL.140' Controlling).

### **FOUNDATION SUMMARY:**

Based on our evaluation, we have determined that the existing foundation **is NOT in conformance** with the ANSI/TIA-222-G Standard for the loading considered under the criteria listed in this report.

**Note:** The existing tower is not capable of supporting the proposed loading generated by AT&T. The tower was designed to support the existing equipment which consists primarily of municipal whip and dish antennas. To modify the existing tower, the tower legs would require to be reinforced from the bottom to the top of the tower. The modifications would involve welding split pipes to the existing legs. In addition, the leg and diagonal bolt connections would require modifications which would include increasing the bolt sizes and/or adding new bolts, this would result in modifying the existing plates to accommodate the increased bolt sizes. This amount of welding required to achieve these modification concerns HDG with the potential damage it could cause to the legs, along with the other members and appurtenances that are in the vicinity of modifications. In our analysis review, we have determined that the foundation would require substantial modifications due to the fact that the proposed reactions generated by a modified tower are substantially higher than the original design reactions. To complete this type of project there will be a great amount of disruption to the existing site and tower. In conclusion, HDG does not recommend reinforcing the existing tower and instead recommends that the proposed AT&T equipment be installed elsewhere.



**APPURTENANCES CONFIGURATION:**

Tenant	Appurtenances	Elev.	Mount
	(1) 4' Lighting Rod	182'	
AT&T	<b>(3) TPA65R-BU8DA-K Antennas</b>	180'	<b>Sector Frame</b>
AT&T	<b>(3) HPA65R-BU8A Antennas</b>	180'	<b>Sector Frame</b>
AT&T	<b>(3) DMP65R-BU8DA-K Antennas</b>	180'	<b>Sector Frame</b>
AT&T	<b>(3) B14 4478 RRH's</b>	180'	<b>Sector Frame</b>
AT&T	<b>(3) 4415 B30 RRH's</b>	180'	<b>Sector Frame</b>
AT&T	<b>(3) RRUS-E2 B29's</b>	180'	<b>Sector Frame</b>
AT&T	<b>(3) 4449 B5/B12 RRH's</b>	180'	<b>Sector Frame</b>
AT&T	<b>(3) B2/B66A 8843 RRH's</b>	180'	<b>Sector Frame</b>
AT&T	<b>(3) Squid Surge Arrestors</b>	180'	<b>Sector Frame</b>
	(1) Sinclair SC479-HF1LDF	157.23'	
	(1) Motorola TTA (DS428E83I01T)	150'	
	(1) Sinclair SC479-HF1LDF	137.23'	
	(1) HP3-11 Dish Antenna	130'	
	(1) HP3-11 Dish Antenna	95'	

*\*Proposed AT&T Appurtenances shown in Bold.*

**AT&T EXISTING/PROPOSED COAX CABLES:**

Tenant	Coax Cables	Elev.	Mount
AT&T	<b>(6) DC Power Cables</b>	180'	Tower Face
AT&T	<b>(2) Fiber Cable</b>	180'	Tower Face

*\*Proposed AT&T Coax Cables shown in Bold.*



**ANALYSIS RESULTS SUMMARY (EXISTING CONDITIONS):**

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
<b>Legs</b>	<b>94.4 %</b>	60 – 80	PASS	<b>Controlling</b>
<b>Diagonals</b>	61.7 %	80 – 100	PASS	
<b>Top Girt</b>	0.6 %	160 – 180	PASS	
<b>Bolts</b>	73.5 %	-	PASS	

**Note:** HDG conducted a structural evaluation internally of the tower as it stands to establish a base line from as-built condition.

**ANALYSIS RESULTS SUMMARY (PROPOSED CONDITIONS):**

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
<b>Legs</b>	<b>292.0 %</b>	120 – 140	FAIL	<b>Controlling</b>
<b>Diagonals</b>	122.1 %	120 – 140	FAIL	
<b>Top Girt</b>	21.4 %	160 – 180	PASS	
<b>Bolts</b>	166.9 %	-	FAIL	

**FOUNDATION COMPARISON SUMMARY:**

	Design Reactions	Proposed Reactions	Stress Ratio	Pass/Fail
<b>Axial</b>	15.1 kips	25.0 kips	165.6 %	FAIL
<b>Shear</b>	23.1 kips	40.8 kips	176.6 %	FAIL
<b>Moment</b>	2151.8 kip-ft	4570.4 kip-ft	212.4 %	FAIL
<b>Compression</b>	196.2 kips	414.3 kips	211.2 %	FAIL
<b>Uplift</b>	-174.9 kips	-376.5 kips	215.3 %	FAIL





### **DESIGN CRITERIA:**

1. EIA/TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

County: Middlesex  
Ultimate Wind Speed: 130 mph (3 second gust)  
Nominal Wind Speed: 101 mph  
Minimum Basic Wind Speed: 100 mph (per TIA-222-G)  
Structural Class: III  
Exposure Category: C  
Topographic Category: 1  
Nominal Ice Thickness: 0.75 inch

2. Approximate height above grade to proposed antennas: 180'

**\*Calculations and referenced documents are attached.**

### **ASSUMPTIONS:**

1. The appurtenances configuration is as stated in this report. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
2. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.
3. The foundation of the tower was not checked due to lack of information. A geotechnical report would be required to determine whether the foundation is capable of supporting the proposed loadings.

### **SUPPORT RECOMMENDATIONS:**

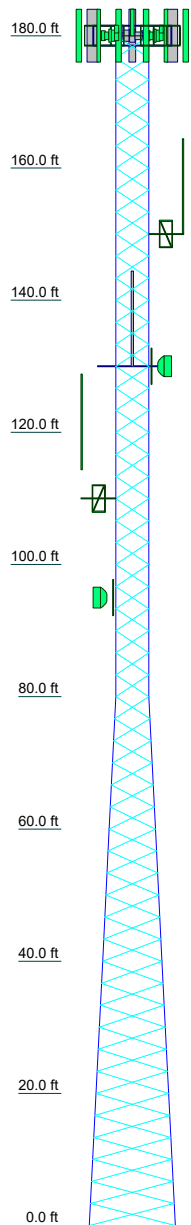
HDG recommends that the proposed antennas, RRHs and surge arrestors be mounted on a new tower.



**HUDSON**  
Design Group LLC

## CALCULATIONS

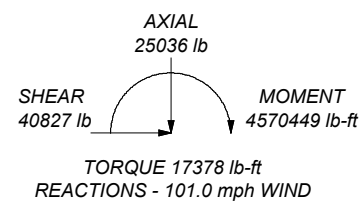
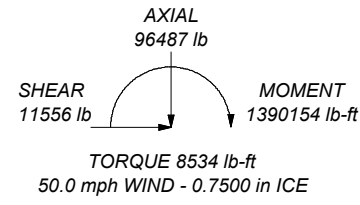
Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	13
Legs	P2.5x.203		P4x.237		P5x.258		P6x.28		13	
Leg Grade	A572-50		A572-50		A572-50		A572-50		13	
Diagonals	L2x2x1/8		L2x2x1/8		L2x2x3/16		L2 1/2x2 1/2x3/16		13	
Diagonal Grade	A36		A36		A36		A36		13	
Top Girts	L2x2x3/16		N.A.		N.A.		N.A.		13	
Face Width (ft)	5		7		9		11		13	
# Panels @ (ft)	54 @ 3.33333		54 @ 3.33333		54 @ 3.33333		54 @ 3.33333		54 @ 3.33333	
Weight (lb)	741.0	704.5	704.5	1174.4	1404.2	1481.1	1900.8	2064.9	2517.7	12693.0



△ ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT  
 DOWN: 414303 lb  
 SHEAR: 27950 lb

UPLIFT: -376488 lb  
 SHEAR: 25526 lb



### DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 4"x.5"	182	4449 B5/B12 RRH	180
12"-6" Sector Frame	180	4449 B5/B12 RRH	180
12"-6" Sector Frame	180	B2/B66A 8843 RRH	180
12"-6" Sector Frame	180	B2/B66A 8843 RRH	180
TPA65R-BU8DA-K Antenna w/ Mounting Pipe	180	B2/B66A 8843 RRH	180
TPA65R-BU8DA-K Antenna w/ Mounting Pipe	180	Squid Surge Arrestor	180
TPA65R-BU8DA-K Antenna w/ Mounting Pipe	180	Squid Surge Arrestor	180
HPA65R-BU8A Antenna w/ Mounting Pipe	180	Squid Surge Arrestor	180
HPA65R-BU8A Antenna w/ Mounting Pipe	180	Sinclair SC479-HF1LDF	157.23
HPA65R-BU8A Antenna w/ Mounting Pipe	180	SO602-1	150
DMP65R-BU8DA-K Antenna w/ Mounting Pipe	180	2" STD x 10.5' Stiff Arm	150
DMP65R-BU8DA-K Antenna w/ Mounting Pipe	180	Motorola TTA (DS428E83I01T)	150
DMP65R-BU8DA-K Antenna w/ Mounting Pipe	180	Sinclair SC479-HF1LDF	137.23
B14 4478 RRH	180	4 STD x 66" Dish Pipe Mount	130
B14 4478 RRH	180	SO602-1	130
B14 4478 RRH	180	2" STD x 10.5' Stiff Arm	130
4415 B30 RRH	180	HP3-11 Dish Antenna	130
4415 B30 RRH	180	Sinclair SC479-HF1LDF	121.58
4415 B30 RRH	180	SO602-1	110
RRUS-E2 B29	180	2" STD x 10.5' Stiff Arm	110
RRUS-E2 B29	180	4 STD x 66" Dish Pipe Mount	95
RRUS-E2 B29	180	HP3-11 Dish Antenna	95
4449 B5/B12 RRH	180		

### MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

### TOWER DESIGN NOTES

1. Tower is located in Middlesex County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 101.0 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50.0 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.0 mph wind.
6. Tower Structure Class III.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 292%

<b>Hudson Design Group</b> 45 Beechwood Drive North Andover, MA Phone: 978.557.5553 FAX: 978.336.5586	Job: <b>180' SST</b>		
	Project: <b>CT370</b>		
	Client: AT&T	Drawn by: JD	App'd:
	Code: TIA-222-G	Date: 12/09/21	Scale: NTS
	Path:		Dwg No. E-1

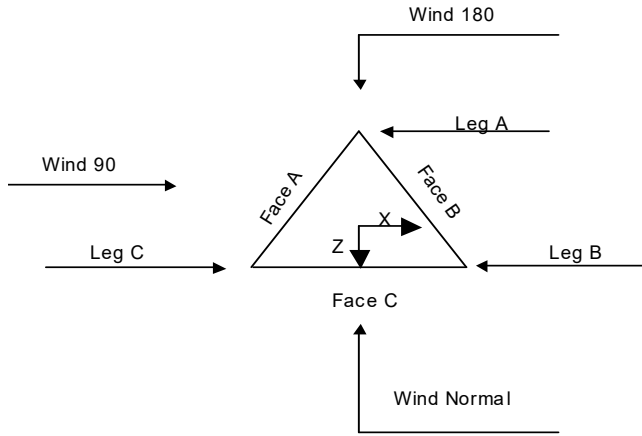
<p><b>tnxTower</b></p> <p><b>Hudson Design Group</b>  45 Beechwood Drive  North Andover, MA  Phone: 978.557.5553  FAX: 978.336.5586</p>	<b>Job</b> 180' SST	<b>Page</b> 1 of 19
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	<b>Client</b> AT&T	<b>Designed by</b> ID

**Tower Input Data**

The main tower is a 3x free standing tower with an overall height of 180.00 ft above the ground line.  
The base of the tower is set at an elevation of 0.00 ft above the ground line.  
The face width of the tower is 5.00 ft at the top and 13.00 ft at the base.  
This tower is designed using the TIA-222-G standard.

The following design criteria apply:

- Tower is located in Middlesex County, Connecticut.
- Basic wind speed of 101.0 mph.
- Structure Class III.
- Exposure Category C.
- Topographic Category 1.
- Crest Height 0.00 ft.
- Nominal ice thickness of 0.7500 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.0 pcf.
- A wind speed of 50.0 mph is used in combination with ice.
- Temperature drop of 50.0 °F.
- Deflections calculated using a wind speed of 60.0 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in tower member design is 1.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.



**Triangular Tower**

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### Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	180.00-160.00			5.00	1	20.00
T2	160.00-140.00			5.00	1	20.00
T3	140.00-120.00			5.00	1	20.00
T4	120.00-100.00			5.00	1	20.00
T5	100.00-80.00			5.00	1	20.00
T6	80.00-60.00			5.00	1	20.00
T7	60.00-40.00			7.00	1	20.00
T8	40.00-20.00			9.00	1	20.00
T9	20.00-0.00			11.00	1	20.00

### Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	180.00-160.00	3.33	X Brace	No	No	0.0000	0.0000
T2	160.00-140.00	3.33	X Brace	No	No	0.0000	0.0000
T3	140.00-120.00	3.33	X Brace	No	No	0.0000	0.0000
T4	120.00-100.00	3.33	X Brace	No	No	0.0000	0.0000
T5	100.00-80.00	3.33	X Brace	No	No	0.0000	0.0000
T6	80.00-60.00	3.33	X Brace	No	No	0.0000	0.0000
T7	60.00-40.00	3.33	X Brace	No	No	0.0000	0.0000
T8	40.00-20.00	3.33	X Brace	No	No	0.0000	0.0000
T9	20.00-0.00	3.33	X Brace	No	No	0.0000	0.0000

### Tower Section Geometry (cont'd)

Tower Elevation	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
<i>ft</i>						
T1 180.00-160.00	Pipe	P2.5x.203	A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T2 160.00-140.00	Pipe	P2.5x.203	A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T3 140.00-120.00	Pipe	P2.5x.203	A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T4 120.00-100.00	Pipe	P4x.237	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T5 100.00-80.00	Pipe	P5x.258	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T6 80.00-60.00	Pipe	P5x.258	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T7 60.00-40.00	Pipe	P6x.28	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T8 40.00-20.00	Pipe	P6x.28	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T9 20.00-0.00	Pipe	P6x.28	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)







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### Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 180.00-160.00	Flange	0.7500 A325N	4	0.7500 A325N	1	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 160.00-140.00	Flange	0.7500 A325N	4	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 140.00-120.00	Flange	0.7500 A325N	4	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 120.00-100.00	Flange	1.0000 A325N	6	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 100.00-80.00	Flange	0.7500 A325N	8	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 80.00-60.00	Flange	0.7500 A325N	8	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 60.00-40.00	Flange	0.7500 A325N	8	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 40.00-20.00	Flange	0.7500 A325N	8	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 20.00-0.00	Flange	0.7500 A325N	8	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

### Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Feedline Ladder *****	C	No	No	Af (CaAa)	180.00 - 8.00	1	1	3.0000	3.0000		8.40
LDF4-50A (1/2 FOAM)	C	No	No	Ar (CaAa)	150.00 - 8.00	1	1	0.6300	0.6300		0.15
LDF5-50A (7/8 FOAM)	C	No	No	Ar (CaAa)	150.00 - 8.00	1	1	1.0900	1.0900		0.33
LDF5-50A (7/8 FOAM)	C	No	No	Ar (CaAa)	130.00 - 8.00	1	1	1.0900	1.0900		0.33
EW90	C	No	No	Ar (CaAa)	130.00 - 8.00	1	1	0.9869	0.9869		0.32
LDF5-50A (7/8 FOAM)	C	No	No	Ar (CaAa)	110.00 - 8.00	1	1	1.0900	1.0900		0.33
EW90 *****	C	No	No	Ar (CaAa)	95.00 - 8.00	1	1	0.9869	0.9869		0.32
Fiber Cable (1-1/4")	C	No	No	Ar (CaAa)	180.00 - 8.00	2	2	1.2500	1.2500		0.48
DC Cable	C	No	No	Ar (CaAa)	180.00 - 8.00	6	3	0.9570	0.9570		0.88

### Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C <sub>A</sub> A <sub>A</sub> ft <sup>2</sup> /ft	Weight plf	
***** Step Pegs	C	No	No	CaAa (Out Of Face)	60.00 - 8.00	1	No Ice 1/2" Ice	0.06 0.16	2.50 3.19

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C <sub>AA</sub> ft <sup>2</sup> /ft	Weight plf
Step Pegs	C	No	No	CaAa (Out Of Face)	60.00 - 8.00	1	1" Ice	0.26	4.49
							No Ice	0.06	2.50
							1/2" Ice	0.16	3.19
Step Pegs	C	No	No	CaAa (Out Of Face)	160.00 - 8.00	1	1" Ice	0.26	4.49
							No Ice	0.06	2.50
							1/2" Ice	0.16	3.19
Safety Line 3/8	C	No	No	CaAa (Out Of Face)	180.00 - 0.00	1	1" Ice	0.26	4.49
							No Ice	0.04	0.22
							1/2" Ice	0.14	0.75
							1" Ice	0.24	1.28

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight lb
T1	180.00-160.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	26.484	0.750	297.00
T2	160.00-140.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	28.204	2.000	351.80
T3	140.00-120.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	32.001	2.000	363.10
T4	120.00-100.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	35.168	2.000	372.90
T5	100.00-80.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	37.738	2.000	381.00
T6	80.00-60.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	38.232	2.000	382.60
T7	60.00-40.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	38.232	4.500	482.60
T8	40.00-20.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	38.232	4.500	482.60
T9	20.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	22.939	3.000	291.32

### Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight lb
T1	180.00-160.00	A	2.209	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	73.040	9.586	1420.99
T2	160.00-140.00	A	2.182	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00

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Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight lb
T3	140.00-120.00	C		0.000	0.000	82.993	19.452	1777.98
		A	2.151	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
T4	120.00-100.00	C		0.000	0.000	103.312	19.204	2086.39
		A	2.115	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
T5	100.00-80.00	C		0.000	0.000	118.101	18.919	2300.18
		A	2.073	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
T6	80.00-60.00	C		0.000	0.000	129.524	18.583	2447.76
		A	2.021	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
T7	60.00-40.00	C		0.000	0.000	129.932	18.171	2409.75
		A	1.955	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
T8	40.00-20.00	C		0.000	0.000	127.125	35.773	2661.52
		A	1.857	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
T9	20.00-0.00	C		0.000	0.000	123.041	34.216	2509.35
		A	1.664	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	68.963	21.637	1347.82

### Feed Line Center of Pressure

Section	Elevation ft	CP <sub>X</sub> in	CP <sub>Z</sub> in	CP <sub>X</sub> Ice in	CP <sub>Z</sub> Ice in
T1	180.00-160.00	-0.3614	5.3703	-2.1872	5.8632
T2	160.00-140.00	-0.9541	5.9724	-4.0756	7.4232
T3	140.00-120.00	-0.9208	6.4167	-3.7905	8.1292
T4	120.00-100.00	-0.8556	6.4142	-3.5241	8.1179
T5	100.00-80.00	-0.8187	6.4988	-3.3324	8.1674
T6	80.00-60.00	-0.9088	7.2800	-3.6349	9.8362
T7	60.00-40.00	-2.2976	8.9261	-7.7439	13.4956
T8	40.00-20.00	-2.5495	9.9332	-8.5810	15.9318
T9	20.00-0.00	-1.7428	6.3023	-6.9274	12.2349

### Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
T1	1	Feedline Ladder	160.00 - 180.00	0.6000	0.4331
T1	15	Fiber Cable (1-1/4")	160.00 - 180.00	0.6000	0.4331
T1	16	DC Cable	160.00 - 180.00	0.6000	0.4331
T2	1	Feedline Ladder	140.00 - 160.00	0.6000	0.4598
T2	3	LDF4-50A (1/2 FOAM)	140.00 - 150.00	0.6000	0.4598
T2	4	LDF5-50A (7/8 FOAM)	140.00 - 150.00	0.6000	0.4598
T2	15	Fiber Cable (1-1/4")	140.00 -	0.6000	0.4598

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice
T2	16	DC Cable	160.00 - 140.00	0.6000	0.4598
T3	1	Feedline Ladder	160.00 - 120.00	0.6000	0.4644
T3	3	LDF4-50A (1/2 FOAM)	140.00 - 120.00	0.6000	0.4644
T3	4	LDF5-50A (7/8 FOAM)	140.00 - 120.00	0.6000	0.4644
T3	5	LDF5-50A (7/8 FOAM)	140.00 - 120.00	0.6000	0.4644
T3	6	EW90	130.00 - 120.00	0.6000	0.4644
T3	15	Fiber Cable (1-1/4")	130.00 - 120.00	0.6000	0.4644
T3	16	DC Cable	140.00 - 120.00	0.6000	0.4644
T4	1	Feedline Ladder	100.00 - 120.00	0.6000	0.4437
T4	3	LDF4-50A (1/2 FOAM)	120.00 - 100.00	0.6000	0.4437
T4	4	LDF5-50A (7/8 FOAM)	120.00 - 100.00	0.6000	0.4437
T4	5	LDF5-50A (7/8 FOAM)	120.00 - 100.00	0.6000	0.4437
T4	6	EW90	120.00 - 100.00	0.6000	0.4437
T4	7	LDF5-50A (7/8 FOAM)	120.00 - 100.00	0.6000	0.4437
T4	15	Fiber Cable (1-1/4")	110.00 - 100.00	0.6000	0.4437
T4	16	DC Cable	120.00 - 100.00	0.6000	0.4437
T5	1	Feedline Ladder	80.00 - 100.00	0.6000	0.4330
T5	3	LDF4-50A (1/2 FOAM)	100.00 - 80.00	0.6000	0.4330
T5	4	LDF5-50A (7/8 FOAM)	100.00 - 80.00	0.6000	0.4330
T5	5	LDF5-50A (7/8 FOAM)	100.00 - 80.00	0.6000	0.4330
T5	6	EW90	100.00 - 80.00	0.6000	0.4330
T5	7	LDF5-50A (7/8 FOAM)	100.00 - 80.00	0.6000	0.4330
T5	8	EW90	95.00 - 80.00	0.6000	0.4330
T5	15	Fiber Cable (1-1/4")	100.00 - 80.00	0.6000	0.4330
T5	16	DC Cable	100.00 - 80.00	0.6000	0.4330
T6	1	Feedline Ladder	60.00 - 80.00	0.6000	0.4827
T6	3	LDF4-50A (1/2 FOAM)	80.00 - 60.00	0.6000	0.4827
T6	4	LDF5-50A (7/8 FOAM)	80.00 - 60.00	0.6000	0.4827
T6	5	LDF5-50A (7/8 FOAM)	80.00 - 60.00	0.6000	0.4827
T6	6	EW90	80.00 - 60.00	0.6000	0.4827
T6	7	LDF5-50A (7/8 FOAM)	80.00 - 60.00	0.6000	0.4827
T6	8	EW90	80.00 - 60.00	0.6000	0.4827
T6	15	Fiber Cable (1-1/4")	80.00 - 60.00	0.6000	0.4827
T6	16	DC Cable	80.00 - 60.00	0.6000	0.4827
T7	1	Feedline Ladder	40.00 - 60.00	0.6000	0.5334
T7	3	LDF4-50A (1/2 FOAM)	60.00 - 40.00	0.6000	0.5334
T7	4	LDF5-50A (7/8 FOAM)	60.00 - 40.00	0.6000	0.5334
T7	5	LDF5-50A (7/8 FOAM)	60.00 - 40.00	0.6000	0.5334
T7	6	EW90	60.00 - 40.00	0.6000	0.5334
T7	7	LDF5-50A (7/8 FOAM)	60.00 - 40.00	0.6000	0.5334
T7	8	EW90	60.00 - 40.00	0.6000	0.5334
T7	15	Fiber Cable (1-1/4")	60.00 - 40.00	0.6000	0.5334
T7	16	DC Cable	60.00 - 40.00	0.6000	0.5334
T8	1	Feedline Ladder	20.00 - 40.00	0.6000	0.5791
T8	3	LDF4-50A (1/2 FOAM)	40.00 - 20.00	0.6000	0.5791

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice
T8	4	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.5791
T8	5	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.5791
T8	6	EW90	20.00 - 40.00	0.6000	0.5791
T8	7	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.5791
T8	8	EW90	20.00 - 40.00	0.6000	0.5791
T8	15	Fiber Cable (1-1/4")	20.00 - 40.00	0.6000	0.5791
T8	16	DC Cable	20.00 - 40.00	0.6000	0.5791
T9	1	Feedline Ladder	8.00 - 20.00	0.6000	0.6000
T9	3	LDF4-50A (1/2 FOAM)	8.00 - 20.00	0.6000	0.6000
T9	4	LDF5-50A (7/8 FOAM)	8.00 - 20.00	0.6000	0.6000
T9	5	LDF5-50A (7/8 FOAM)	8.00 - 20.00	0.6000	0.6000
T9	6	EW90	8.00 - 20.00	0.6000	0.6000
T9	7	LDF5-50A (7/8 FOAM)	8.00 - 20.00	0.6000	0.6000
T9	8	EW90	8.00 - 20.00	0.6000	0.6000
T9	15	Fiber Cable (1-1/4")	8.00 - 20.00	0.6000	0.6000
T9	16	DC Cable	8.00 - 20.00	0.6000	0.6000

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	$C_{AA}$ Front	$C_{AA}$ Side	Weight
			ft ft ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb
Lightning Rod 4"x.5"	C	None		0.0000	182.00	No Ice 1.09 1/2" Ice 1.69 1" Ice 1.95	1.09 1.69 1.95	5.00 19.36 36.82
SO602-1	B	From Leg	3.00 0.00 0.00	0.0000	150.00	No Ice 2.72 1/2" Ice 4.11 1" Ice 5.50	12.93 17.82 22.71	145.70 223.26 300.82
2" STD x 10.5' Stiff Arm	B	From Leg	3.00 0.00 0.00	0.0000	150.00	No Ice 1.04 1/2" Ice 2.08 1" Ice 2.72	1.04 2.08 2.72	38.43 464.25 903.17
Sinclair SC479-HF1LDF	B	From Leg	6.00 0.00 0.00	0.0000	157.23	No Ice 4.34 1/2" Ice 6.54 1" Ice 8.04	4.34 6.54 8.04	34.00 69.82 114.98
Motorola TTA (DS428E83I01T)	B	From Leg	3.00 0.00 0.00	0.0000	150.00	No Ice 0.46 1/2" Ice 0.55 1" Ice 0.64	0.40 0.48 0.57	8.90 13.94 20.50
SO602-1	A	From Leg	3.00 0.00 0.00	0.0000	130.00	No Ice 2.72 1/2" Ice 4.11 1" Ice 5.50	12.93 17.82 22.71	145.70 223.26 300.82
2" STD x 10.5' Stiff Arm	A	From Leg	3.00 0.00 0.00	0.0000	130.00	No Ice 1.04 1/2" Ice 2.08 1" Ice 2.72	1.04 2.08 2.72	38.43 464.25 903.17
Sinclair SC479-HF1LDF	A	From Leg	6.00 0.00 0.00	0.0000	137.23	No Ice 4.40 1/2" Ice 6.54 1" Ice 8.04	4.40 6.54 8.04	34.00 69.82 114.98
4 STD x 66" Dish Pipe Mount	B	From Leg	0.50 0.00 0.00	0.0000	130.00	No Ice 1.53 1/2" Ice 2.34 1" Ice 2.69	1.53 2.34 2.69	59.40 76.97 98.51
SO602-1	C	From Leg	3.00 0.00 0.00	0.0000	110.00	No Ice 2.72 1/2" Ice 4.11 1" Ice 5.50	12.93 17.82 22.71	145.70 223.26 300.82
2" STD x 10.5' Stiff Arm	C	From Leg	3.00 0.00 0.00	0.0000	110.00	No Ice 1.04 1/2" Ice 2.08 1" Ice 2.72	1.04 2.08 2.72	38.43 464.25 903.17

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight lb
Sinclair SC479-HF1LDF	C	From Leg	6.00 0.00 0.00	0.0000	121.58	No Ice 4.46 1/2" Ice 6.54 1" Ice 8.04	4.46 6.54 8.04	34.00 69.82 114.98
4 STD x 66" Dish Pipe Mount	C	From Leg	0.50 0.00 0.00	0.0000	95.00	No Ice 1.56 1/2" Ice 2.34 1" Ice 2.69	1.56 2.34 2.69	59.40 76.97 98.51
**								
12'-6" Sector Frame	A	From Leg	2.00 0.00 0.00	0.0000	180.00	No Ice 13.50 1/2" Ice 20.00 1" Ice 26.00	9.50 15.00 20.00	700.00 850.00 1050.00
12'-6" Sector Frame	B	From Leg	2.00 0.00 0.00	0.0000	180.00	No Ice 13.50 1/2" Ice 20.00 1" Ice 26.00	9.50 15.00 20.00	700.00 850.00 1050.00
12'-6" Sector Frame	C	From Leg	2.00 0.00 0.00	0.0000	180.00	No Ice 13.50 1/2" Ice 20.00 1" Ice 26.00	9.50 15.00 20.00	700.00 850.00 1050.00
TPA65R-BU8DA-K Antenna w/ Mounting Pipe	A	From Leg	3.00 6.00 0.00	0.0000	180.00	No Ice 17.87 1/2" Ice 18.50 1" Ice 19.14	10.02 11.44 12.72	116.20 234.88 363.91
TPA65R-BU8DA-K Antenna w/ Mounting Pipe	B	From Leg	3.00 6.00 0.00	0.0000	180.00	No Ice 17.87 1/2" Ice 18.50 1" Ice 19.14	10.02 11.44 12.72	116.20 234.88 363.91
TPA65R-BU8DA-K Antenna w/ Mounting Pipe	C	From Leg	3.00 6.00 0.00	0.0000	180.00	No Ice 17.87 1/2" Ice 18.50 1" Ice 19.14	10.02 11.44 12.72	116.20 234.88 363.91
HPA65R-BU8A Antenna w/ Mounting Pipe	A	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 11.23 1/2" Ice 11.85 1" Ice 12.47	9.94 11.37 12.64	83.20 170.99 268.54
HPA65R-BU8A Antenna w/ Mounting Pipe	B	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 11.23 1/2" Ice 11.85 1" Ice 12.47	9.94 11.37 12.64	83.20 170.99 268.54
HPA65R-BU8A Antenna w/ Mounting Pipe	C	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 11.23 1/2" Ice 11.85 1" Ice 12.47	9.94 11.37 12.64	83.20 170.99 268.54
DMP65R-BU8DA-K Antenna w/ Mounting Pipe	A	From Leg	3.00 -6.00 0.00	0.0000	180.00	No Ice 17.87 1/2" Ice 18.50 1" Ice 19.14	10.02 11.44 12.72	125.20 243.88 372.91
DMP65R-BU8DA-K Antenna w/ Mounting Pipe	B	From Leg	3.00 -6.00 0.00	0.0000	180.00	No Ice 17.87 1/2" Ice 18.50 1" Ice 19.14	10.02 11.44 12.72	125.20 243.88 372.91
DMP65R-BU8DA-K Antenna w/ Mounting Pipe	C	From Leg	3.00 -6.00 0.00	0.0000	180.00	No Ice 17.87 1/2" Ice 18.50 1" Ice 19.14	10.02 11.44 12.72	125.20 243.88 372.91
B14 4478 RRH	A	From Leg	1.00 2.00 0.00	0.0000	180.00	No Ice 2.02 1/2" Ice 2.20 1" Ice 2.39	1.25 1.40 1.56	60.00 77.66 98.08
B14 4478 RRH	B	From Leg	1.00 2.00 0.00	0.0000	180.00	No Ice 2.02 1/2" Ice 2.20 1" Ice 2.39	1.25 1.40 1.56	60.00 77.66 98.08
B14 4478 RRH	C	From Leg	1.00 2.00 0.00	0.0000	180.00	No Ice 2.02 1/2" Ice 2.20 1" Ice 2.39	1.25 1.40 1.56	60.00 77.66 98.08
4415 B30 RRH	A	From Leg	1.00 1.00 0.00	0.0000	180.00	No Ice 1.64 1/2" Ice 1.80 1" Ice 1.97	0.68 0.79 0.91	44.00 56.41 71.18
4415 B30 RRH	B	From Leg	1.00 1.00 0.00	0.0000	180.00	No Ice 1.64 1/2" Ice 1.80 1" Ice 1.97	0.68 0.79 0.91	44.00 56.41 71.18

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz Lateral	Vert						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb	
4415 B30 RRH	C	From Leg	0.00		0.0000	180.00	1" Ice	1.97	0.91	71.18
			1.00				No Ice	1.64	0.68	44.00
			1.00				1/2" Ice	1.80	0.79	56.41
RRUS-E2 B29	A	From Leg	0.00		0.0000	180.00	1" Ice	1.97	0.91	71.18
			1.00				No Ice	3.15	1.29	53.00
			-1.00				1/2" Ice	3.36	1.44	76.22
RRUS-E2 B29	B	From Leg	0.00		0.0000	180.00	1" Ice	3.59	1.60	102.64
			1.00				No Ice	3.15	1.29	53.00
			-1.00				1/2" Ice	3.36	1.44	76.22
RRUS-E2 B29	C	From Leg	0.00		0.0000	180.00	1" Ice	3.59	1.60	102.64
			1.00				No Ice	3.15	1.29	53.00
			-1.00				1/2" Ice	3.36	1.44	76.22
4449 B5/B12 RRH	A	From Leg	0.00		0.0000	180.00	1" Ice	3.59	1.60	102.64
			1.00				No Ice	1.97	1.40	7.20
			-2.00				1/2" Ice	2.15	1.56	25.68
4449 B5/B12 RRH	B	From Leg	0.00		0.0000	180.00	1" Ice	2.33	1.72	46.97
			1.00				No Ice	1.97	1.40	7.20
			-2.00				1/2" Ice	2.15	1.56	25.68
4449 B5/B12 RRH	C	From Leg	0.00		0.0000	180.00	1" Ice	2.33	1.72	46.97
			1.00				No Ice	1.97	1.40	7.20
			-2.00				1/2" Ice	2.15	1.56	25.68
B2/B66A 8843 RRH	A	From Leg	0.00		0.0000	180.00	1" Ice	2.33	1.72	46.97
			1.00				No Ice	1.64	1.35	72.00
			-2.00				1/2" Ice	1.80	1.50	89.60
B2/B66A 8843 RRH	B	From Leg	0.00		0.0000	180.00	1" Ice	1.97	1.65	109.91
			1.00				No Ice	1.64	1.35	72.00
			-2.00				1/2" Ice	1.80	1.50	89.60
B2/B66A 8843 RRH	C	From Leg	0.00		0.0000	180.00	1" Ice	1.97	1.65	109.91
			1.00				No Ice	1.64	1.35	72.00
			-2.00				1/2" Ice	1.80	1.50	89.60
Squid Surge Arrestor	A	From Leg	0.00		0.0000	180.00	1" Ice	1.97	1.65	109.91
			1.00				No Ice	0.81	0.81	33.00
			0.00				1/2" Ice	1.30	1.30	48.38
Squid Surge Arrestor	B	From Leg	0.00		0.0000	180.00	1" Ice	1.48	1.48	66.11
			1.00				No Ice	0.81	0.81	33.00
			0.00				1/2" Ice	1.30	1.30	48.38
Squid Surge Arrestor	C	From Leg	0.00		0.0000	180.00	1" Ice	1.48	1.48	66.11
			1.00				No Ice	0.81	0.81	33.00
			0.00				1/2" Ice	1.30	1.30	48.38
**										

## Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz Lateral	Vert							
			ft	ft	°	°	ft	ft	ft <sup>2</sup>	lb		
HP3-11 Dish Antenna	B	Paraboloid w/Shroud (HP)	From Leg	1.50		0.0000		130.00	3.20	No Ice	8.04	50.00
				0.00						1/2" Ice	8.47	93.48
				0.00						1" Ice	8.89	136.96
HP3-11 Dish Antenna	C	Paraboloid	From	1.50		0.0000		95.00	3.20	No Ice	8.04	50.00



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Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft <sup>2</sup>	Weight lb
	w/Shroud (HP)		Leg	0.00				1/2" Ice	8.47	93.48
				0.00				1" Ice	8.89	136.96

## Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	1.2D+1.6W (pattern 1) 0 deg - No Ice
4	1.2D+1.6W (pattern 2) 0 deg - No Ice
5	0.9 Dead+1.6 Wind 0 deg - No Ice
6	1.2 Dead+1.6 Wind 30 deg - No Ice
7	1.2D+1.6W (pattern 1) 30 deg - No Ice
8	1.2D+1.6W (pattern 2) 30 deg - No Ice
9	0.9 Dead+1.6 Wind 30 deg - No Ice
10	1.2 Dead+1.6 Wind 60 deg - No Ice
11	1.2D+1.6W (pattern 1) 60 deg - No Ice
12	1.2D+1.6W (pattern 2) 60 deg - No Ice
13	0.9 Dead+1.6 Wind 60 deg - No Ice
14	1.2 Dead+1.6 Wind 90 deg - No Ice
15	1.2D+1.6W (pattern 1) 90 deg - No Ice
16	1.2D+1.6W (pattern 2) 90 deg - No Ice
17	0.9 Dead+1.6 Wind 90 deg - No Ice
18	1.2 Dead+1.6 Wind 120 deg - No Ice
19	1.2D+1.6W (pattern 1) 120 deg - No Ice
20	1.2D+1.6W (pattern 2) 120 deg - No Ice
21	0.9 Dead+1.6 Wind 120 deg - No Ice
22	1.2 Dead+1.6 Wind 150 deg - No Ice
23	1.2D+1.6W (pattern 1) 150 deg - No Ice
24	1.2D+1.6W (pattern 2) 150 deg - No Ice
25	0.9 Dead+1.6 Wind 150 deg - No Ice
26	1.2 Dead+1.6 Wind 180 deg - No Ice
27	1.2D+1.6W (pattern 1) 180 deg - No Ice
28	1.2D+1.6W (pattern 2) 180 deg - No Ice
29	0.9 Dead+1.6 Wind 180 deg - No Ice
30	1.2 Dead+1.6 Wind 210 deg - No Ice
31	1.2D+1.6W (pattern 1) 210 deg - No Ice
32	1.2D+1.6W (pattern 2) 210 deg - No Ice
33	0.9 Dead+1.6 Wind 210 deg - No Ice
34	1.2 Dead+1.6 Wind 240 deg - No Ice
35	1.2D+1.6W (pattern 1) 240 deg - No Ice
36	1.2D+1.6W (pattern 2) 240 deg - No Ice
37	0.9 Dead+1.6 Wind 240 deg - No Ice
38	1.2 Dead+1.6 Wind 270 deg - No Ice
39	1.2D+1.6W (pattern 1) 270 deg - No Ice
40	1.2D+1.6W (pattern 2) 270 deg - No Ice
41	0.9 Dead+1.6 Wind 270 deg - No Ice
42	1.2 Dead+1.6 Wind 300 deg - No Ice
43	1.2D+1.6W (pattern 1) 300 deg - No Ice
44	1.2D+1.6W (pattern 2) 300 deg - No Ice
45	0.9 Dead+1.6 Wind 300 deg - No Ice
46	1.2 Dead+1.6 Wind 330 deg - No Ice
47	1.2D+1.6W (pattern 1) 330 deg - No Ice
48	1.2D+1.6W (pattern 2) 330 deg - No Ice
49	0.9 Dead+1.6 Wind 330 deg - No Ice

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<i>Comb. No.</i>	<i>Description</i>
50	1.2 Dead+1.0 Ice+1.0 Temp
51	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
52	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
53	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
54	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
55	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
56	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
57	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
58	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
59	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
60	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
61	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
62	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
63	Dead+Wind 0 deg - Service
64	Dead+Wind 30 deg - Service
65	Dead+Wind 60 deg - Service
66	Dead+Wind 90 deg - Service
67	Dead+Wind 120 deg - Service
68	Dead+Wind 150 deg - Service
69	Dead+Wind 180 deg - Service
70	Dead+Wind 210 deg - Service
71	Dead+Wind 240 deg - Service
72	Dead+Wind 270 deg - Service
73	Dead+Wind 300 deg - Service
74	Dead+Wind 330 deg - Service

### Maximum Member Forces

<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Axial lb</i>	<i>Major Axis Moment lb-ft</i>	<i>Minor Axis Moment lb-ft</i>
T1	180 - 160	Leg	Max Tension	26	43715.11	-14.18	-120.13
			Max. Compression	34	-47292.96	119.63	-45.91
			Max. Mx	14	-40937.52	-137.35	18.06
			Max. My	2	21161.46	-13.48	147.76
			Max. Vy	38	3146.37	-0.01	0.07
		Diagonal	Max. Vx	2	3150.45	-0.10	-0.01
			Max Tension	38	4958.36	0.00	0.00
			Max. Compression	14	-5014.76	0.00	0.00
			Max. Mx	34	248.91	139.08	-13.13
			Max. My	34	-93.84	138.53	15.96
		Top Girt	Max. Vy	34	48.77	139.08	-13.13
			Max. Vx	34	5.41	0.00	0.00
			Max Tension	34	1667.99	0.00	0.00
			Max. Compression	10	-1646.18	0.00	0.00
			Max. Mx	57	-452.77	-51.61	0.00
			Max. My	34	-827.30	0.00	-0.01
			Max. Vy	57	41.29	0.00	0.00
T2	160 - 140	Leg	Max. Vx	34	0.00	0.00	0.00
			Max Tension	26	107147.84	2.17	-262.20
			Max. Compression	34	-112918.00	225.74	-146.47
			Max. Mx	14	-1201.72	-288.17	2.42
			Max. My	2	54172.16	3.47	274.09
		Diagonal	Max. Vy	34	376.96	138.10	-54.42
			Max. Vx	30	-632.42	60.85	-107.58
			Max Tension	14	6854.81	0.00	0.00
			Max. Compression	38	-7143.24	0.00	0.00
			Max. Mx	34	553.40	139.81	-11.22
			Max. My	34	-905.26	137.62	20.61

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft			
T3	140 - 120	Leg	Max. Vy	34	49.01	139.81	-11.22			
			Max. Vx	34	6.95	0.00	0.00			
			Max Tension	10	186710.33	-270.97	159.29			
			Max. Compression	34	-196521.16	648.89	-343.76			
			Max. Mx	38	-166922.47	714.23	-0.55			
			Max. My	2	-195548.29	-54.69	729.82			
		Diagonal	Max. Vy	38	817.86	317.88	-7.28			
			Max. Vx	43	436.58	253.32	126.35			
			Max Tension	46	7700.99	0.00	0.00			
			Max. Compression	38	-8613.08	0.00	0.00			
			Max. Mx	30	4361.02	139.50	-1.98			
			Max. My	34	-956.87	131.47	19.27			
			Max. Vy	30	48.97	139.50	-1.98			
			Max. Vx	34	6.50	0.00	0.00			
T4	120 - 100	Leg	Max Tension	10	282072.96	-1205.93	687.23			
			Max. Compression	34	-298723.86	1719.87	-993.23			
			Max. Mx	38	244046.71	1925.79	-10.53			
			Max. My	2	-296020.01	-5.17	1964.22			
			Max. Vy	22	-323.61	-592.14	-1035.97			
			Max. Vx	46	559.43	597.96	1029.03			
		Diagonal	Max Tension	38	9451.11	0.00	0.00			
			Max. Compression	38	-10542.86	0.00	0.00			
			Max. Mx	30	4907.04	144.58	-2.35			
			Max. My	30	-4452.86	64.48	14.36			
			Max. Vy	30	51.85	144.58	-2.35			
			Max. Vx	30	4.87	0.00	0.00			
			T5	100 - 80	Leg	Max Tension	10	390904.90	-1876.40	1089.57
						Max. Compression	34	-414293.09	6509.78	-3512.03
Max. Mx	34	-414293.09				6509.78	-3512.03			
Max. My	2	-410851.49				-21.04	7311.05			
Max. Vy	34	-1495.91				6509.78	-3512.03			
Max. Vx	2	-1657.69				-21.04	7311.05			
Diagonal	Max Tension	38			10756.37	0.00	0.00			
	Max. Compression	18			-12347.02	0.00	0.00			
	Max. Mx	30			-3027.54	-130.76	-6.34			
	Max. My	18			-10202.31	-53.40	-25.48			
	Max. Vy	30			47.11	0.00	0.00			
	Max. Vx	18			8.50	0.00	0.00			
	T6	80 - 60			Leg	Max Tension	10	398117.07	-6628.45	-215.94
						Max. Compression	34	-422338.58	1843.57	-19.38
Max. Mx			34	-422260.01		7391.65	213.37			
Max. My			38	-1720.72		-89.50	-4731.62			
Max. Vy			34	1697.61		7391.65	213.37			
Max. Vx			38	720.07		-87.79	-4731.58			
Diagonal			Max Tension	16	5162.68	0.00	0.00			
			Max. Compression	36	-6549.94	92.83	-5.55			
			Max. Mx	10	-2630.70	124.92	5.01			
			Max. My	38	-2609.30	98.91	21.64			
			Max. Vy	10	43.33	124.92	5.01			
			Max. Vx	38	-7.40	98.27	21.63			
			T7	60 - 40	Leg	Max Tension	10	375959.59	-2629.65	-6.10
						Max. Compression	34	-403268.41	3487.09	-2.05
Max. Mx	34	-403268.41				3487.09	-2.05			
Max. My	38	-3468.58				-6.59	-3099.63			
Max. Vy	34	-264.79				3487.09	-2.05			
Max. Vx	22	131.40				16.20	-2909.73			
Diagonal	Max Tension	36			2855.58	0.00	0.00			
	Max. Compression	32			-3272.20	0.00	0.00			
	Max. Mx	34			-2318.06	54.03	4.21			
	Max. My	55			-373.10	40.83	-6.87			
	Max. Vy	57			41.88	46.09	-5.42			

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T8	40 - 20	Leg	Max. Vx	55	2.44	0.00	0.00
			Max Tension	10	370435.29	-2096.39	2.02
			Max. Compression	34	-403896.46	2256.70	90.40
			Max. Mx	34	-399646.29	2624.84	-5.49
			Max. My	38	-4485.76	-4.53	-2552.74
			Max. Vy	3	-68.22	2036.79	19.89
			Max. Vx	19	83.46	-1027.76	-1805.61
		Diagonal	Max Tension	19	1839.34	0.00	0.00
			Max. Compression	19	-2159.54	0.00	0.00
			Max. Mx	59	-106.81	58.04	6.55
			Max. My	55	-417.00	54.37	-7.97
			Max. Vy	57	47.34	57.96	-6.90
			Max. Vx	55	2.52	0.00	0.00
			T9	20 - 0	Leg	Max Tension	13
Max. Compression	34	-413430.11				0.01	-0.69
Max. Mx	59	-153917.75				3843.20	-24.21
Max. My	38	-7076.19				-36.19	-2644.20
Max. Vy	53	-1382.69				-1883.57	-13.13
Max. Vx	30	821.57				-34.26	2620.26
Diagonal	Max Tension	61				3723.17	0.00
	Max. Compression	19			-3872.82	0.00	0.00
	Max. Mx	59			-1125.28	90.80	11.18
	Max. My	61			-2111.69	74.58	12.39
	Max. Vy	57			58.85	90.01	-11.14
	Max. Vx	61			-3.25	0.00	0.00

### Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load Allowable	Allowable Ratio	Criteria	
T1	180	Leg	A325N	0.7500	4	880.03	29820.60	0.030	✓	1	Bolt Tension
		Diagonal	A325N	0.7500	1	4958.36	6307.50	0.786	✓	1	Member Bearing
		Top Girt	A325N	0.7500	1	1667.99	9461.25	0.176	✓	1	Member Bearing
T2	160	Leg	A325N	0.7500	4	13266.80	29820.60	0.445	✓	1	Bolt Tension
		Diagonal	A325N	0.7500	1	6854.81	6307.50	1.087	✗	1	Member Bearing
T3	140	Leg	A325N	0.7500	4	29813.80	29820.60	1.000	✓	1	Bolt Tension
		Diagonal	A325N	0.7500	1	7700.99	6307.50	1.221	✗	1	Member Bearing
T4	120	Leg	A325N	1.0000	6	33650.80	53014.40	0.635	✓	1	Bolt Tension
		Diagonal	A325N	0.7500	1	9451.11	9461.25	0.999	✓	1	Member Bearing
T5	100	Leg	A325N	0.7500	8	37429.10	29820.60	1.255	✗	1	Bolt Tension
		Diagonal	A325N	0.7500	1	10756.40	9461.25	1.137	✗	1	Member Bearing
T6	80	Leg	A325N	0.7500	8	49764.60	29820.60	1.669	✗	1	Bolt Tension
		Diagonal	A325N	0.7500	1	5162.68	9461.25	0.546	✓	1	Member Bearing
T7	60	Leg	A325N	0.7500	8	46994.90	29820.60	1.576	✗	1	Bolt Tension
		Diagonal	A325N	0.7500	1	2855.58	9461.25	0.302	✓	1	Member Bearing
T8	40	Leg	A325N	0.7500	8	46159.50	29820.60	1.548	✗	1	Bolt Tension
		Diagonal	A325N	0.7500	1	1839.34	9461.25	0.194	✓	1	Member Bearing
T9	20	Leg	A325N	0.7500	8	46389.20	29820.60	1.556	✗	1	Bolt Tension

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load Allowable	Allowable Ratio	Criteria
		Diagonal	A325N	0.7500	1	3723.17	9461.25	0.394 ✓	1	Member Bearing

### Compression Checks

### Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> lb	φP <sub>n</sub> lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	P2.5x.203	20.00	3.33	42.2 K=1.00	1.7040	-47293.00	67311.90	0.703 <sup>1</sup> ✓
T2	160 - 140	P2.5x.203	20.00	3.33	42.2 K=1.00	1.7040	-112918.00	67311.90	1.678 <sup>1</sup> ✗
T3	140 - 120	4.8.1 (1.68 CR) - 43 P2.5x.203	20.00	3.33	42.2 K=1.00	1.7040	-196521.00	67311.90	2.920 <sup>1</sup> ✗
T4	120 - 100	4.8.1 (2.92 CR) - 82 P4x.237	20.00	3.33	26.5 K=1.00	3.1741	-298724.00	135684.00	2.202 <sup>1</sup> ✗
T5	100 - 80	4.8.1 (2.20 CR) - 121 P5x.258	20.00	3.33	21.3 K=1.00	4.2999	-414293.00	187180.00	2.213 <sup>1</sup> ✗
T6	80 - 60	4.8.1 (2.21 CR) - 160 P5x.258	20.03	3.34	21.3 K=1.00	4.2999	-422339.00	187159.00	2.257 <sup>1</sup> ✗
T7	60 - 40	4.8.1 (2.26 CR) - 199/5 P6x.28	20.03	3.34	17.8 K=1.00	5.5813	-403268.00	245382.00	1.643 <sup>1</sup> ✗
T8	40 - 20	4.8.1 (1.64 CR) - 238/5 P6x.28	20.03	3.34	17.8 K=1.00	5.5813	-403896.00	245382.00	1.646 <sup>1</sup> ✗
T9	20 - 0	4.8.1 (1.65 CR) - 277 P6x.28	20.03	3.34	17.8 K=1.00	5.5813	-413430.00	245382.00	1.685 <sup>1</sup> ✗
		4.8.1 (1.68 CR) - 316							

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> lb	φP <sub>n</sub> lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L2x2x1/8	6.01	2.86	86.4 K=1.00	0.4844	-5014.76	10376.90	0.483 <sup>1</sup> ✓
T2	160 - 140	L2x2x1/8	6.01	2.86	86.4 K=1.00	0.4844	-7143.24	10376.90	0.688 <sup>1</sup> ✓
T3	140 - 120	L2x2x1/8	6.01	2.86	86.4	0.4844	-8613.08	10376.90	0.830 <sup>1</sup>



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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> lb	φP <sub>n</sub> lb	Ratio $\frac{P_u}{\phi P_n}$
T4	120 - 100	L2x2x3/16	6.01	2.78	K=1.00 84.6	0.7150	-10542.90	15886.50	0.664 <sup>1</sup> ✓
T5	100 - 80	L2x2x3/16	6.01	2.73	K=1.00 83.0	0.7150	-12347.00	16115.50	0.766 <sup>1</sup> ✓
T6	80 - 60	L2x2x3/16	6.15	2.92	K=1.00 88.8	0.7150	-6549.94	15293.90	0.428 <sup>1</sup> ✓
T7	60 - 40	L2x2x3/16	7.90	3.75	K=1.00 114.2	0.7150	-3272.20	11661.30	0.281 <sup>1</sup> ✓
T8	40 - 20	L2x2x3/16	11.34	5.47	K=1.00 166.5	0.7150	-2159.54	5828.52	0.371 <sup>1</sup> ✓
T9	20 - 0	L2 1/2x2 1/2x3/16	13.26	6.43	K=1.00 155.9	0.9020	-3872.82	8384.62	0.462 <sup>1</sup> ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> lb	φP <sub>n</sub> lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L2x2x3/16	5.00	4.76	K=1.00 145.0	0.7150	-1646.18	7683.97	0.214 <sup>1</sup> ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Tension Checks

### Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> lb	φP <sub>n</sub> lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	P2.5x.203	20.00	3.33	42.2	1.7040	43715.10	76682.30	0.570 <sup>1</sup> ✓
T2	160 - 140	P2.5x.203	20.00	3.33	42.2	1.7040	107148.00	76682.30	1.397 <sup>1</sup> ✗
T3	140 - 120	4.8.1 (1.67 CR) - 45 P2.5x.203	20.00	3.33	42.2	1.7040	186710.00	76682.30	2.435 <sup>1</sup> ✗
T4	120 - 100	4.8.1 (2.92 CR) - 82 P4x.237	20.00	3.33	26.5	3.1741	282073.00	142832.00	1.975 <sup>1</sup> ✗
T5	100 - 80	4.8.1 (2.20 CR) - 121 P5x.258	20.00	3.33	21.3	4.2999	390905.00	193494.00	2.020 <sup>1</sup> ✗
T6	80 - 60	4.8.1 (2.21 CR) - 160 P5x.258	20.03	3.34	21.3	4.2999	398117.00	193494.00	2.058 <sup>1</sup> ✗

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> lb	φP <sub>n</sub> lb	Ratio $\frac{P_u}{\phi P_n}$
T7	60 - 40	4.8.1 (2.26 CR) - 199/5 P6x.28	20.03	3.34	17.8	5.5813	375960.00	251161.00	1.497 <sup>1</sup> ✗
T8	40 - 20	4.8.1 (1.64 CR) - 238/5 P6x.28	20.03	3.34	17.8	5.5813	370435.00	251161.00	1.475 <sup>1</sup> ✗
T9	20 - 0	4.8.1 (1.65 CR) - 277 P6x.28	20.03	3.34	17.8	5.5813	376005.00	251161.00	1.497 <sup>1</sup> ✗
		4.8.1 (1.68 CR) - 316							✗

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> lb	φP <sub>n</sub> lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L2x2x1/8	6.01	2.86	54.8	0.2813	4958.36	12234.40	0.405 <sup>1</sup> ✓
T2	160 - 140	L2x2x1/8	6.01	2.86	54.8	0.2813	6854.81	12234.40	0.560 <sup>1</sup> ✓
T3	140 - 120	L2x2x1/8	6.01	2.86	54.8	0.2813	7700.99	12234.40	0.629 <sup>1</sup> ✓
T4	120 - 100	L2x2x3/16	6.01	2.78	54.1	0.4132	9451.11	17974.30	0.526 <sup>1</sup> ✓
T5	100 - 80	L2x2x3/16	6.01	2.73	53.0	0.4132	10756.40	17974.30	0.598 <sup>1</sup> ✓
T6	80 - 60	L2x2x3/16	6.15	2.92	56.7	0.4132	5162.68	17974.30	0.287 <sup>1</sup> ✓
T7	60 - 40	L2x2x3/16	7.90	3.75	72.9	0.4132	2855.58	17974.30	0.159 <sup>1</sup> ✓
T8	40 - 20	L2x2x3/16	11.34	5.47	106.3	0.4132	1839.34	17974.30	0.102 <sup>1</sup> ✓
T9	20 - 0	L2 1/2x2 1/2x3/16	13.26	6.43	99.2	0.5535	3723.17	24075.20	0.155 <sup>1</sup> ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> lb	φP <sub>n</sub> lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L2x2x3/16	5.00	4.76	92.6	0.4132	1667.99	17974.30	0.093 <sup>1</sup> ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

<p><b>tnxTower</b></p> <p><b>Hudson Design Group</b>  45 Beechwood Drive  North Andover, MA  Phone: 978.557.5553  FAX: 978.336.5586</p>	<b>Job</b>	180' SST	<b>Page</b>	19 of 19
	<b>Project</b>	CT370	<b>Date</b>	15:50:52 12/09/21
	<b>Client</b>	AT&T	<b>Designed by</b>	ID

**Section Capacity Table**

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$\phi P_{allow}$ lb	% Capacity	Pass Fail	
T1	180 - 160	Leg	P2.5x.203	1	-47293.00	67311.90	70.3	Pass	
T2	160 - 140	Leg	P2.5x.203	43	-112918.00	67311.90	167.8	Fail <b>X</b>	
T3	140 - 120	Leg	P2.5x.203	82	-196521.00	67311.90	292.0	Fail <b>X</b>	
T4	120 - 100	Leg	P4x.237	121	-298724.00	135684.00	220.2	Fail <b>X</b>	
T5	100 - 80	Leg	P5x.258	160	-414293.00	187180.00	221.3	Fail <b>X</b>	
T6	80 - 60	Leg	P5x.258	199	-422339.00	187159.00	225.7	Fail <b>X</b>	
T7	60 - 40	Leg	P6x.28	238	-403268.00	245382.00	164.3	Fail <b>X</b>	
T8	40 - 20	Leg	P6x.28	277	-403896.00	245382.00	164.6	Fail <b>X</b>	
T9	20 - 0	Leg	P6x.28	316	-413430.00	245382.00	168.5	Fail <b>X</b>	
T1	180 - 160	Diagonal	L2x2x1/8	8	-5014.76	10376.90	48.3	Pass	
T2	160 - 140	Diagonal	L2x2x1/8	46	-7143.24	10376.90	78.6 (b)	Fail <b>X</b>	
T3	140 - 120	Diagonal	L2x2x1/8	85	-8613.08	10376.90	83.0	Fail <b>X</b>	
T4	120 - 100	Diagonal	L2x2x3/16	124	-10542.90	15886.50	66.4	Pass	
T5	100 - 80	Diagonal	L2x2x3/16	164	-12347.00	16115.50	76.6	Fail <b>X</b>	
T6	80 - 60	Diagonal	L2x2x3/16	236	-6549.94	15293.90	42.8	Pass	
T7	60 - 40	Diagonal	L2x2x3/16	275	-3272.20	11661.30	28.1	Pass	
T8	40 - 20	Diagonal	L2x2x3/16	281	-2159.54	5828.52	37.1	Pass	
T9	20 - 0	Diagonal	L2 1/2x2 1/2x3/16	320	-3872.82	8384.62	46.2	Pass	
T1	180 - 160	Top Girt	L2x2x3/16	5	-1646.18	7683.97	21.4	Pass	
							Summary		
							Leg (T3)	292.0	Fail <b>X</b>
							Diagonal (T3)	122.1	Fail <b>X</b>
							Top Girt (T1)	21.4	Pass
							Bolt Checks	166.9	Fail <b>X</b>
							<b>RATING =</b>	<b>292.0</b>	<b>Fail <b>X</b></b>

# ATTACHMENT 4



**EXISTING**

PHOTO

1

LOCATION

**MILE LANE**

ORIENTATION

**SOUTH**

DISTANCE TO EXISTING LOCATION

**+/- 0.16 MILE**





**PROPOSED**

PHOTO

1

LOCATION

**MILE LANE**

ORIENTATION

**SOUTH**

DISTANCE TO PROPOSED LOCATION

**+/- 0.19 MILE**





**EXISTING**

PHOTO

2

LOCATION

**TALIAS TRAIL**

ORIENTATION

**SOUTHEAST**

DISTANCE TO EXISTING LOCATION

**+/- 0.12 MILE**





**PROPOSED**

PHOTO

2

LOCATION

**TALIAS TRAIL**

ORIENTATION

**SOUTHEAST**

DISTANCE TO PROPOSED LOCATION

**+/- 0.16 MILE**





**EXISTING**

PHOTO

3

LOCATION

**MIDDLETOWN HIGH SCHOOL**

ORIENTATION

**NORTHWEST**

DISTANCE TO EXISITNG LOCATION

**+/- 0.45 MILE**





**PROPOSED**

PHOTO

3

LOCATION

**MIDDLETOWN HIGH SCHOOL**

ORIENTATION

**NORTHWEST**

DISTANCE TO PROPOSED LOCATION

**+/- 0.40 MILE**





**EXISTING**

PHOTO

4

LOCATION

**SPRUCE STREET AT HEMLOCK PLACE**

ORIENTATION

**WEST**

DISTANCE TO EXISTING LOCATION

**+/- 0.37 MILE**





**PROPOSED**

PHOTO

4

LOCATION

**SPRUCE STREET AT HEMLOCK PLACE**

ORIENTATION

**WEST**

DISTANCE TO PROPOSED LOCATION

**+/- 0.32 MILE**



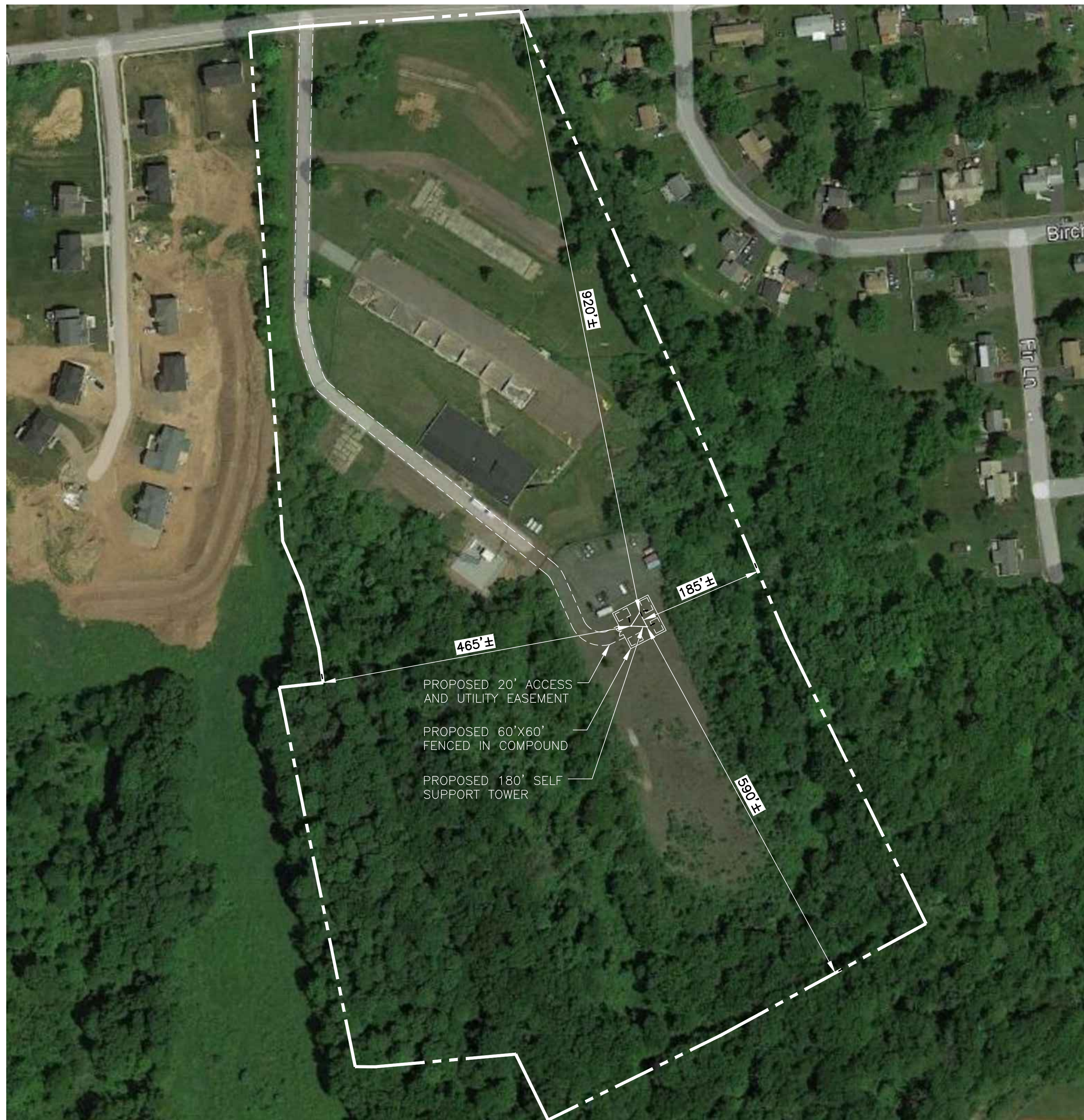






# ATTACHMENT 5





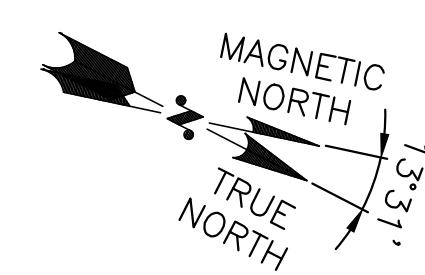
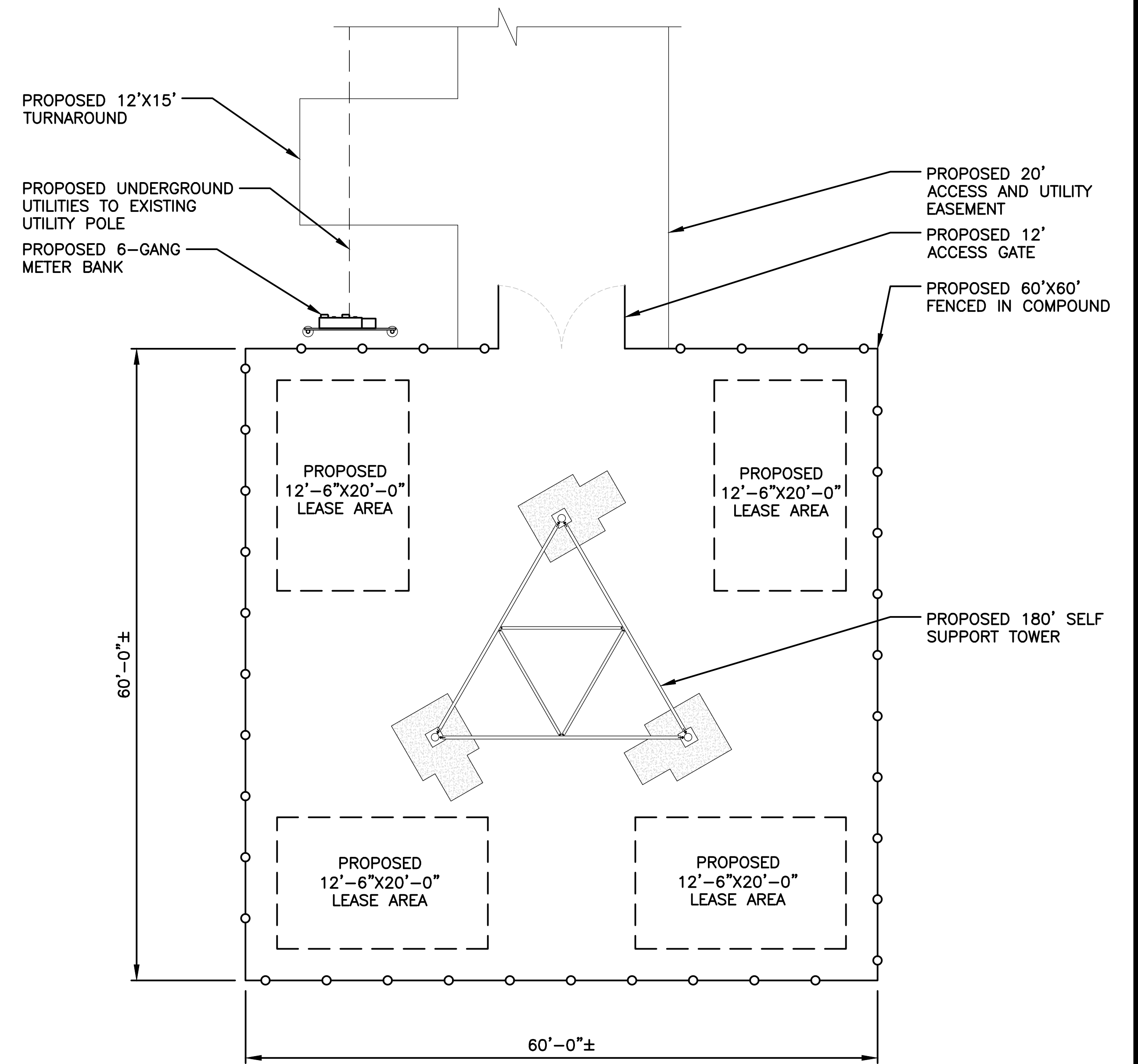
**SITE PLAN**

22x34 SCALE: 1"=100'  
11x17 SCALE: 1"=200'

1  
LE-1



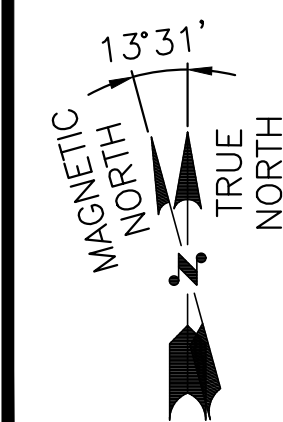
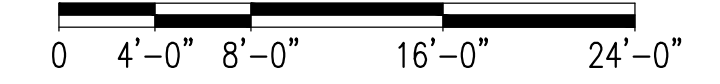
NOTE:  
PROPOSED SITE LOCATION WAS DETERMINED USING CITY AND STATE GIS MAPS. A WETLAND DELINEATION OF THE PROPOSED TOWER LOCATION WAS NOT PERFORMED.



**COMPOUND PLAN**

22x34 SCALE: 1/8"=1'-0"  
11x17 SCALE: 1/16"=1'-0"

2  
LE-1



45 BEECHWOOD DRIVE  
NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5586



1997 ANNAPOLIS EXCHANGE PKWY  
SUITE 200  
ANNAPOLIS, MD 21401

SITE NUMBER: CT3470A  
SITE NAME: MIDDLETOWN\_MILE LANE

499 MILE LANE  
MIDDLETOWN, CT 06457  
MIDDLESEX COUNTY



550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

0	12/10/21	ISSUED FOR REVIEW	CC	JC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: CC/VP		

AT&T		
SITE & COMPOUND PLANS (NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT3470A	LE-1	3



# ATTACHMENT 6



**PROJECT INFORMATION**

SCOPE OF WORK: TELECOMMUNICATIONS FACILITY (NSB A PROPOSED 150'-0" A.G.L. TALL MONOPOLE, PROPOSED WALK-IN CABINET, AND GENERATOR WILL BE INSTALLED AT GRADE INSIDE A EXISTING FENCED-IN COMPOUND. PROPOSED (3) TPA65R-BU8DA-K ANTENNAS, (3) HPA65R-BU8A ANTENNAS, (3) DMP65R-BU8DA-K ANTENNAS, (3) 4478-B14 RRH'S, (3) FUTURE E2 RRH'S, (3) 4415 B30 RRH'S, (3) 4449 B5/B12 RRH'S, (3) 8843 B2/B66A RRH'S, (2) DC6-48-60-18-8C-EV SURGE ARRESTORS, & (1) DC6-48-60-0-8C-EV WILL BE INSTALLED AT A HEIGHT OF 150'-0" A.G.L.):

SITE ADDRESS: 499 MILE LANE  
MIDDLETOWN, CT 06457

APPLICANT: AT&T  
550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

SITE OWNER: CITY OF MIDDLETOWN  
245 DEKOVEN DRIVE  
MIDDLETOWN, CT 06457

LATITUDE: 41.58026 N, 41° 34' 48.9" N

LONGITUDE: 72.68606 W, 72° 41' 09.8" W

TYPE OF SITE: MONOPOLE/ WALK-IN CABINET

TOWER HEIGHT: 150'-0"±

RAD CENTER: 150'-0"±

APPLICABLE CODES: ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE CT STATE BUILDING CODE, NATIONAL ELECTRIC CODE (NEC 2017), ANSI/EIA/TIA-222 H & COMPLY WITH AT&T MOBILITY SPECIFICATIONS



**SITE NUMBER: CT3470A**

**SITE NAME: MIDDLETOWN\_MILE LANE**

**FA CODE:10578361**

**PACE ID: MRCTB033524, MRCTB036341, MRCTB036593, MRCTB036513, MRCTB036367, MRCTB047889**

**PROJECT: NSB**

**DRAWING INDEX**

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	4
GN-1	GENERAL NOTES	4
SN-1	STRUCTURAL NOTES	4
C-1	ABUTTERS PLAN	4
C-2	EXISTING CONDITIONS PLAN	4
C-3	WETLAND SETBACKS	4
A-1	COMPOUND & EQUIPMENT PLAN	4
A-2	ELEVATION & ANTENNA PLAN	4
A-3	DETAILS & ANTENNA SCHEDULE	4
A-4	EQUIPMENT DETAILS	4
A-5	EQUIPMENT DETAILS	4
E-1	ELECTRICAL NOTES & ONE-LINE DIAGRAM	4
G-1	GROUNDING DETAILS	4
RF-1	RF PLUMBING DIAGRAM	4

**VICINITY MAP**

**DIRECTIONS TO SITE:**  
DEPART NORTHEAST, TURN RIGHT AND THEN IMMEDIATELY TURN LEFT ONTO LEGGATT MCCALL CONNECTOR ROAD, BEAR LEFT ONTO BURR ST, TURN LEFT ONTO MA-30 / COCHITUATE RD, TAKE RAMP RIGHT FOR I-90 EAST / I-90 WEST TOWARD BOSTON / SPRINGFIELD, AT EXIT 9 TAKE RAMP RIGHT FOR I-84 TOWARD HARTFORD / NEW YORK CITY, KEEP LEFT ONTO CT-15 S / WILBUR CROSS HWY S, KEEP STRAIGHT ONTO US-5 S / CT-15 S / WILBUR CROSS HIGHWAY S, AT EXIT 86 TAKE RAMP RIGHT FOR I-91 SOUTHBOUND, AT EXIT 21 TAKE RAMP RIGHT FOR CT-372 TOWARD CROMWELL / MIDDLETOWN, TURN LEFT ONTO CT-372 / BERLIN ROAD TOWARD CROMWELL / MIDDLETOWN, TURN RIGHT ONTO CT-217 / EAST STREET, TURN LEFT ONTO RIDGEWOOD RD, ARRIVE AT RIDGEWOOD ROAD



**GENERAL NOTES**

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

**72 HOURS**



**CALL BEFORE YOU DIG**



CALL TOLL FREE 1-800-922-4455

OR CALL 811

**UNDERGROUND SERVICE ALERT**



45 BEECHWOOD DRIVE  
NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5586



1997 ANNAPOLIS EXCHANGE PKWY  
SUITE 200  
ANNAPOLIS, MD 21401

**SITE NUMBER: CT3470A**  
**SITE NAME: MIDDLETOWN\_MILE LANE**

499 MILE LANE  
MIDDLETOWN, CT 06457  
MIDDLESEX COUNTY



550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

4	12/10/21	ISSUED FOR REVIEW	CC	JC	DPH
3	11/22/21	ISSUED FOR REVIEW	CC	JC	DPH
2	11/16/21	ISSUED FOR REVIEW	AR	JC	DPH
1	09/22/21	ISSUED FOR REVIEW	AR	JC	DPH
0	04/07/21	ISSUED FOR REVIEW	VP	JC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: CC/VP		

**AT&T**

**TITLE SHEET (NSB)**

SITE NUMBER	DRAWING NUMBER	REV
CT3470A	T-1	4



**GROUNDING NOTES**

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. 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.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. 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.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

**GENERAL NOTES**

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
 CONTRACTOR – SMARTLINK  
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)  
 OWNER – AT&T MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR 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 CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR 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.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR 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.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. **APPLICABLE BUILDING CODES:**  
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

**BUILDING CODE: IBC 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS  
 ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)**

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

**AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;**

**AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;**

**TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL**

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

**ABBREVIATIONS**

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		



45 BEECHWOOD DRIVE  
 NORTH ANDOVER, MA 01845  
 TEL: (978) 557-5553  
 FAX: (978) 336-5586



1997 ANNAPOLIS EXCHANGE PKWY  
 SUITE 200  
 ANNAPOLIS, MD 21401

**SITE NUMBER: CT3470A  
 SITE NAME: MIDDLETOWN\_MILE LANE**

499 MILE LANE  
 MIDDLETOWN, CT 06457  
 MIDDLESEX COUNTY



550 COCHITUATE ROAD  
 FRAMINGHAM, MA 01701

4	12/10/21	ISSUED FOR REVIEW	CC	JC	DPH
3	11/22/21	ISSUED FOR REVIEW	CC	JC	DPH
2	11/16/21	ISSUED FOR REVIEW	AR	JC	DPH
1	09/22/21	ISSUED FOR REVIEW	AR	JC	DPH
0	04/07/21	ISSUED FOR REVIEW	VP	JC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: CC/VP		

**AT&T**

**GENERAL NOTES  
 (NSB)**

SITE NUMBER	DRAWING NUMBER	REV
CT3470A	GN-1	4



**STRUCTURAL NOTES:**

- DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
- DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
- STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
- FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL", 14TH EDITION.
- INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
- UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
- EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
- EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
- WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
- ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

**SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):**

**GENERAL:** WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

**NOTES:**

- ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"Ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
- VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
- CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
- EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

**NOTES:**

- REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
- PROVIDED BY MANUFACTURER; REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
- PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
- HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
- ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
- AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

**SPECIAL INSPECTION CHECKLIST**

**BEFORE CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	ENGINEER OF RECORD APPROVED SHOP DRAWINGS <sup>1</sup>
<b>REQUIRED</b>	MATERIAL SPECIFICATIONS REPORT <sup>2</sup>
N/A	FABRICATOR NDE INSPECTION
<b>REQUIRED</b>	PACKING SLIPS <sup>3</sup>

ADDITIONAL TESTING AND INSPECTIONS:

**DURING CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS <sup>4</sup>
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION <sup>5</sup>
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT

ADDITIONAL TESTING AND INSPECTIONS:

**AFTER CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS <sup>6</sup>
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
<b>REQUIRED</b>	PHOTOGRAPHS

ADDITIONAL TESTING AND INSPECTIONS:



45 BEECHWOOD DRIVE  
NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5586



1997 ANNAPOLIS EXCHANGE PKWY  
SUITE 200  
ANNAPOLIS, MD 21401

**SITE NUMBER: CT3470A**  
**SITE NAME: MIDDLETOWN\_MILE LANE**

499 MILE LANE  
MIDDLETOWN, CT 06457  
MIDDLESEX COUNTY



550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

4	12/10/21	ISSUED FOR REVIEW	CC	JC	DPH
3	11/22/21	ISSUED FOR REVIEW	CC	JC	DPH
2	11/16/21	ISSUED FOR REVIEW	AR	JC	DPH
1	09/22/21	ISSUED FOR REVIEW	AR	JC	DPH
0	04/07/21	ISSUED FOR REVIEW	VP	JC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: CC/VP		

AT&T

STRUCTURAL NOTES  
(NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT3470A	SN-1	4





**LEGEND**

- PROPERTY LINE - SUBJECT PARCEL
- - - ABUTTERS PROPERTY LINE
- - - EASEMENT LINE
- IRON ROD/PIPE FOUND
- BOUND FOUND
- △ CALCULATED POINT
- N/F NOW OR FORMERLY
- 10-6/067 ASSESSOR'S ID
- ⊙ TOWER CONTROL POINT

**SITE SPECIFIC NOTES:**

1. FIELD SURVEY DATE: 10/15/2021
2. HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD83)
3. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
4. OWNER: CITY OF MIDDLETOWN  
245 DEKOVEN DRIVE  
MIDDLETOWN, CT 06457
5. SITE NAME: MIDDLETOWN\_MILE LANE
6. SITE ADDRESS: 499 MILE LANE  
MIDDLETOWN, CT 06457  
MIDDLESEX COUNTY
7. APPLICANT: AT&T
8. TAX ID: 10-0030
9. DEED REFERENCE: DEED BOOK 1771 PAGE 194
10. PLAN REFERENCE: PLAN 20 OF 20019  
PLAN 80 OF 2014  
PLAN #2243
11. ZONING DISTRICT: R-15
12. THE HORIZONTAL DATUM AND VERTICAL DATUM WERE DERIVED FROM A DUAL FREQUENCY GPS SURVEY.
13. ALL UNDERGROUND UTILITY INFORMATION PRESENTED HEREON WAS DETERMINED FROM SURFACE EVIDENCE AND PLANS OF RECORD. ALL UNDERGROUND UTILITIES SHOULD BE LOCATED IN THE FIELD PRIOR TO COMMENCEMENT OF ALL SITE WORK. CALL DIGSAFE 1-800-322-4844 A MINIMUM OF 72 HOURS PRIOR TO PLANNED ACTIVITY.
14. ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS, THE PROPOSED IMPROVEMENTS ON THIS PROPERTY ARE LOCATED IN AN AREA DESIGNATED AS ZONE X (UNSHADED), AREA OF MINIMAL FLOOD HAZARD. MAP NO. 09007C 0108 G EFFECTIVE DATE: 8/28/2008
15. FIELD SURVEY BY EDM TOTAL STATION & RTK GPS.
16. WETLAND DELINEATION WAS PERFORMED AND LOCATED BY ALL-POINTS TECHNOLOGY CORP.

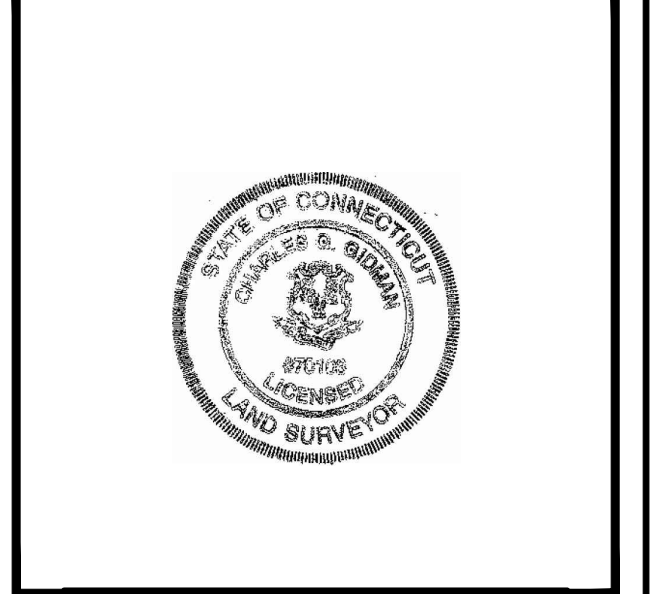
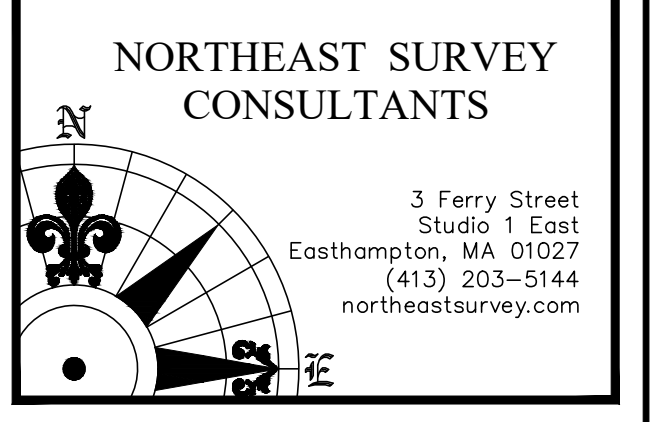
THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300B-1 THROUGH 20-300B-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS INC. ON SEPTEMBER 26, 1997.

TYPE OF SURVEY: IMPROVEMENT LOCATION SURVEY  
 BOUNDARY SURVEY CATEGORY: DEPENDENT RESURVEY  
 CLASS OF ACCURACY: HORIZONTAL CLASS D  
 VERTICAL CLASS V-2  
 TOPOGRAPHIC CLASS T-2  
 PURPOSE OF SURVEY: PROPOSED CELLULAR UTILITIES

THIS DOCUMENT AND COPIES THEREOF ARE VALID ONLY IF THEY BEAR THE LIVE SIGNATURE AND EMBOSSED SEAL OF THE DESIGNATED PROFESSIONAL. UNAUTHORIZED ALTERATIONS RENDER ANY DECLARATION NULL AND VOID.

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

*Charles G. Gidman*  
 CHARLES G. GIDMAN, P.L.S. #70103



CHECKED BY: BCF

APPROVED BY: CCG

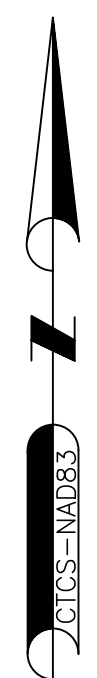
SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
0	11/23/2021	ISSUED FOR REVIEW	JDG

SITE NUMBER:  
 CT3470A  
 SITE NAME:  
 MIDDLETOWN\_MILE LANE  
 SITE ADDRESS:  
 499 MILE LANE  
 MIDDLETOWN, CT 06457  
 MIDDLESEX COUNTY

SHEET TITLE  
 ABUTTERS PLAN

SHEET NUMBER  
 C-1





CONTROL POINT B  
-IRON ROD SET-  
N: 772282.74  
E: 1017352.25

### LEGEND

- PROPERTY LINE - SUBJECT PARCEL
- ABUTTERS PROPERTY LINE
- EASEMENT LINE
- CONTOUR LINE
- TREELINE
- CHAIN LINK FENCE
- WETLAND DELINEATION
- N/F
- 10-0030
- TOWER CONTROL POINT
- UTILITY POLE
- ELECTRIC MANHOLE
- HYDRANT
- WATER GATE VALVE
- WETLAND FLAG

550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

45 BEECHWOOD DRIVE N. ANDOVER, MA 01845 TEL: (978) 557-5553 FAX: (978) 336-5586

### NORTHEAST SURVEY CONSULTANTS

3 Ferry Street  
Studio 1 East  
Easthampton, MA 01027  
(413) 203-5144  
northeastsurvey.com



CHECKED BY: BCF

APPROVED BY: CCG

### SUBMITTALS

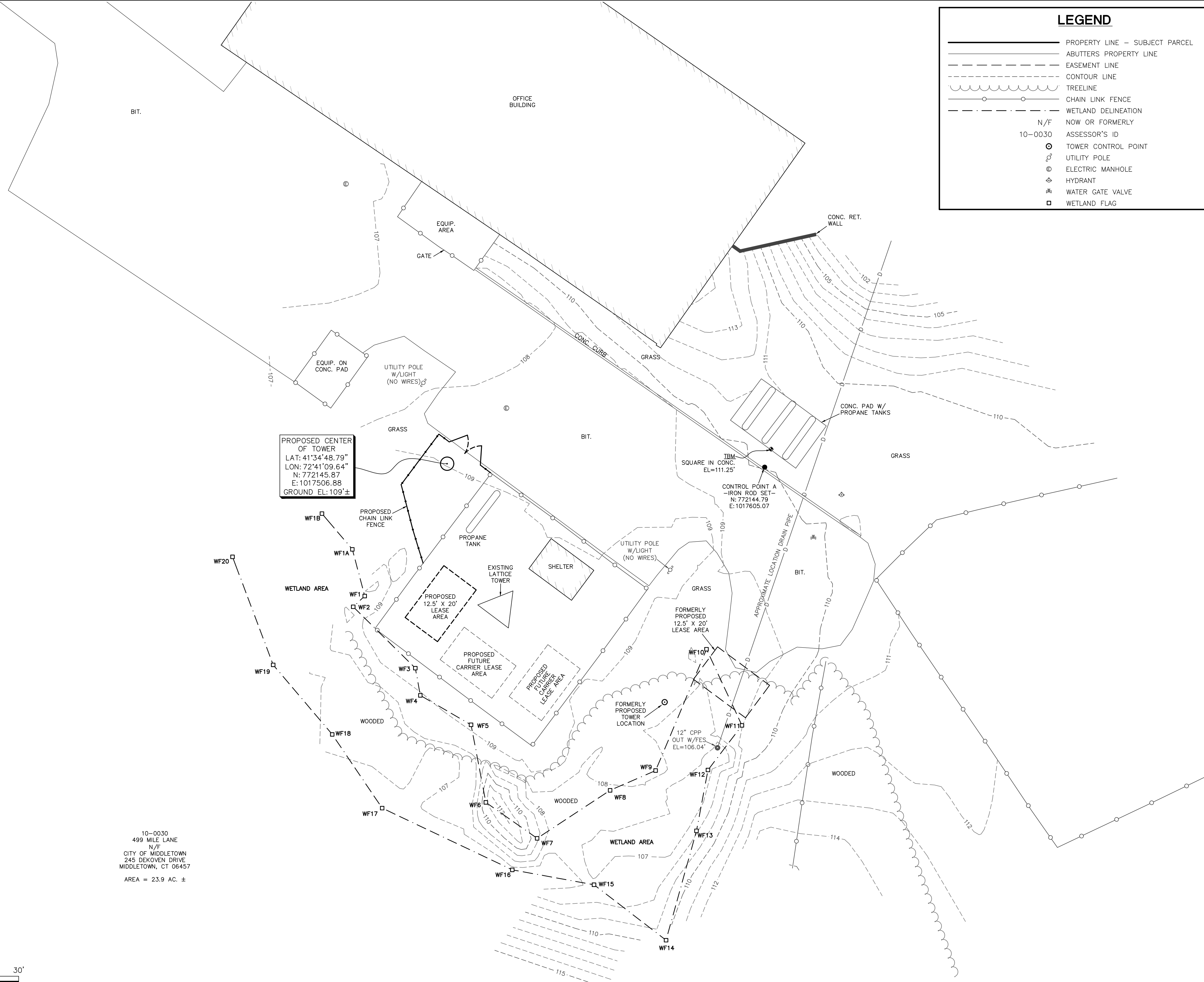
REV.	DATE	DESCRIPTION	BY
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MIDDLESEX COUNTY

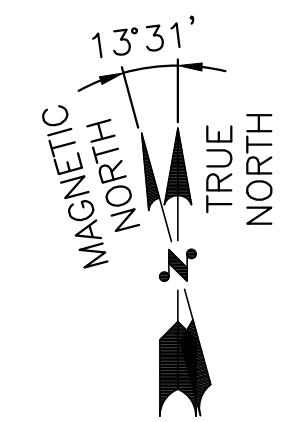
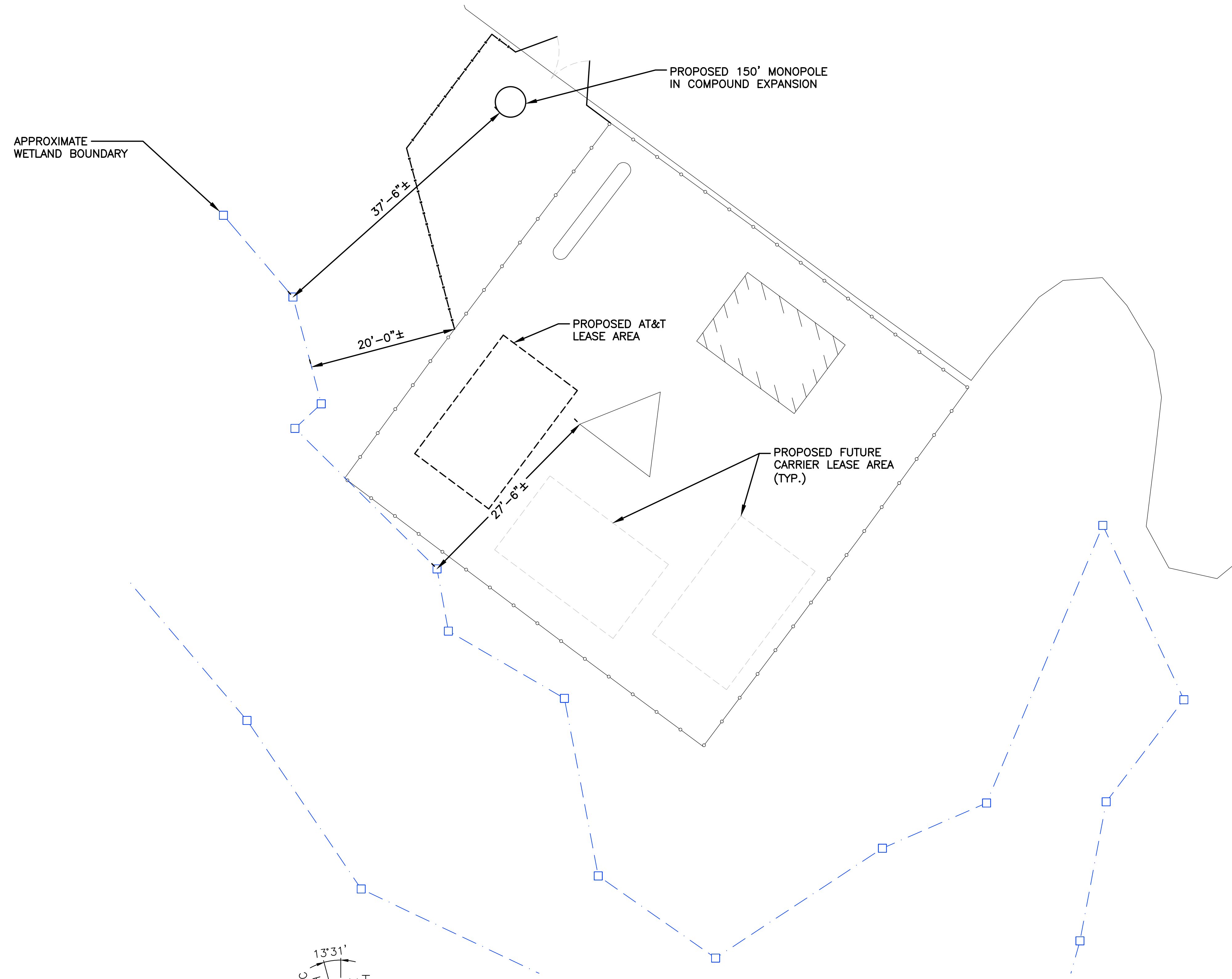
SHEET TITLE  
EXISTING CONDITIONS  
PLAN

SHEET NUMBER  
**C-2**

10-0030  
499 MILE LANE  
N/F  
CITY OF MIDDLETOWN  
245 DEKOVEN DRIVE  
MIDDLETOWN, CT 06457  
AREA = 23.9 AC. ±



NOTE:  
 SITE PLAN TAKEN FROM SURVEY BY  
 NORTHEAST SURVEY CONSULTANTS  
 DATED: 11/18/2021  
 WETLAND DELINEATION WAS  
 PERFORMED AND LOCATED BY  
 ALL-POINTS TECHNOLOGY CORP.



**WETLAND SETBACKS** 1  
 C-3  
 22x34 SCALE: 1/8"=1'-0"  
 11x17 SCALE: 1/16"=1'-0"  
 0 4'-0" 8'-0" 16'-0" 24'-0"

**HG HUDSON**  
 Design Group LLC  
 45 BEECHWOOD DRIVE  
 NORTH ANDOVER, MA 01845  
 TEL: (978) 557-5553  
 FAX: (978) 336-5586

**smartlink**  
 1997 ANNAPOLIS EXCHANGE PKWY  
 SUITE 200  
 ANNAPOLIS, MD 21401

**SITE NUMBER: CT3470A**  
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 MIDDLESEX COUNTY

**at&t**  
 550 COCHITUATE ROAD  
 FRAMINGHAM, MA 01701

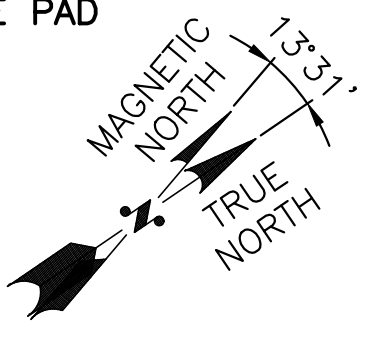
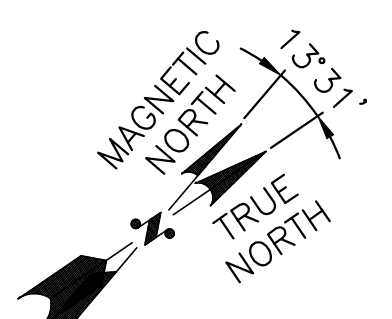
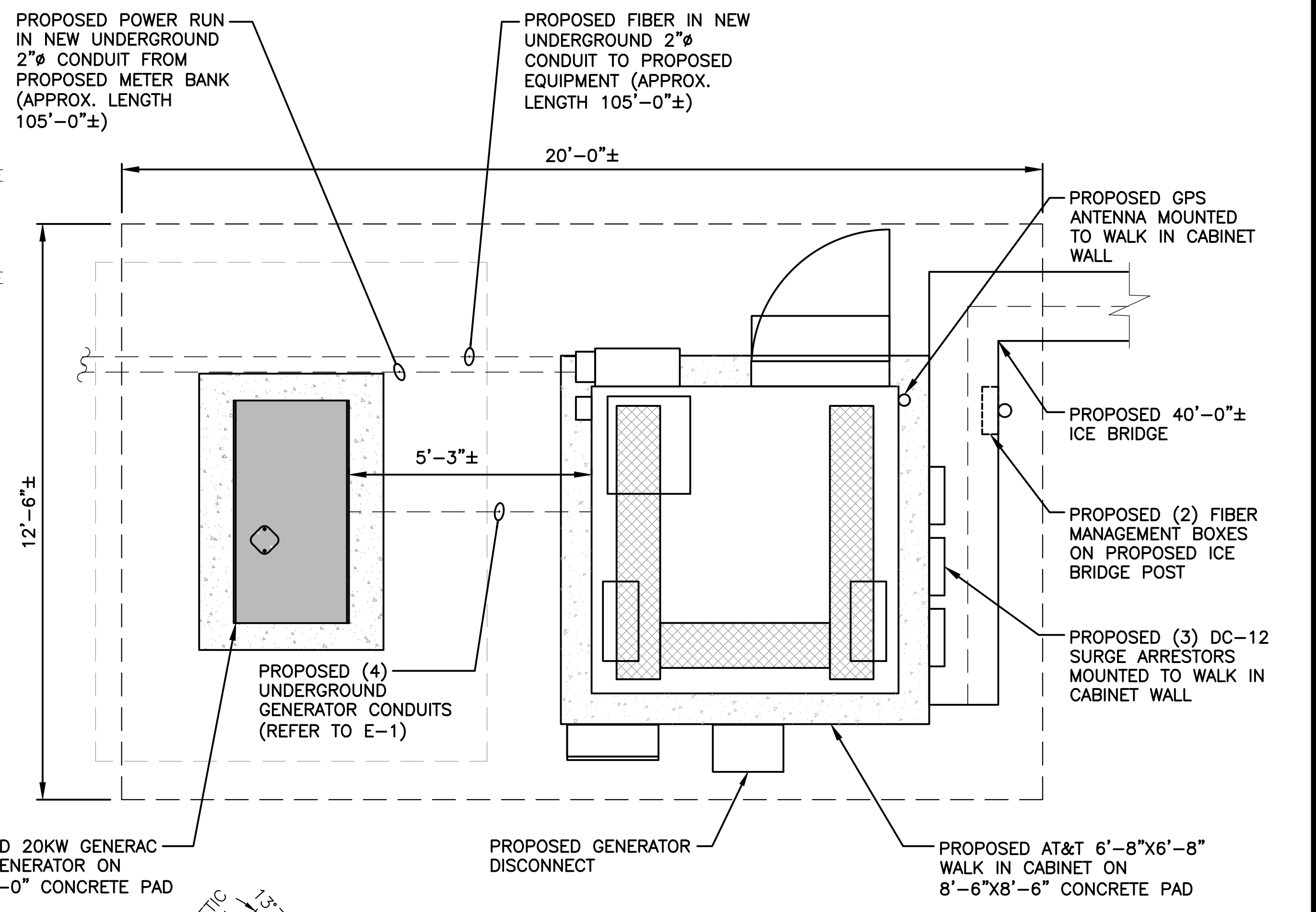
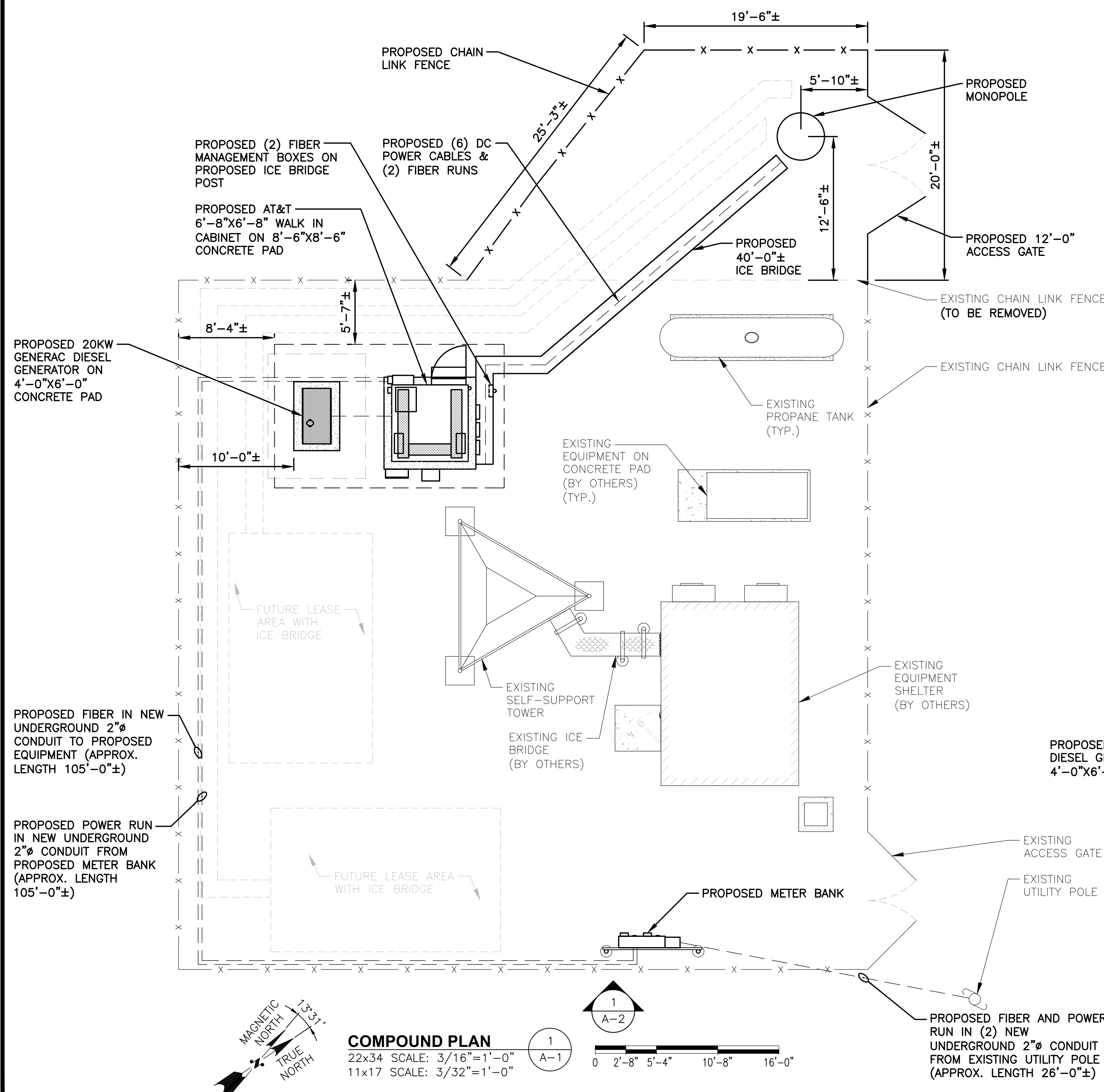
NO.	DATE	REVISIONS	BY	CHK	APP'D
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0	04/07/21	ISSUED FOR REVIEW	VP	JC	DPH

SCALE: AS SHOWN    DESIGNED BY: JC    DRAWN BY: CC/VP

AT&T		
WETLAND SETBACKS (NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT3470A	C-3	4



NOTE:  
REFER TO THE FINAL RF DATA SHEET  
FOR FINAL ANTENNA SETTINGS.



4	12/10/21	ISSUED FOR REVIEW	CC	JC	DPH
3	11/22/21	ISSUED FOR REVIEW	CC	JC	DPH
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NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: CC/VP		



TOP OF EXISTING TOWER  
ELEV. = 180'-0"± A.G.L

EXISTING TOWER

TOP OF PROPOSED MONOPOLE & C OF PROPOSED AT&T ANTENNAS  
ELEV. = 150'-0"± A.G.L

PROPOSED AT&T 6'-8"x6'-8" WALK IN CABINET ON 8'-6"x8'-6" CONCRETE PAD

PROPOSED 20KW GENERAC DIESEL GENERATOR ON 4'-0"x6'-0" CONCRETE PAD

GROUND LEVEL  
ELEV. = 0'-0"± A.G.L

**ELEVATION**

22x34 SCALE: 3/32"=1'-0"  
11x17 SCALE: 3/64"=1'-0"

1  
A-2

0 5'-4" 10'-8" 21'-4" 32'-0"

PROPOSED SURGE ARRESTOR (TOTAL OF 3)

PROPOSED AT&T ANTENNAS (TYP. OF 3 PER SECTOR, TOTAL OF 9)

PROPOSED AT&T RRH'S (TYP. OF 4 PER SECTOR, TOTAL OF 12)

FUTURE AT&T RRH'S (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PROPOSED MONOPOLE

PROPOSED 40'-0"± ICE BRIDGE

EXISTING EQUIPMENT SHELTER (BY OTHERS)

PROPOSED METER BANK

EXISTING PROPANE TANK (BY OTHERS)

EXISTING CHAIN LINK FENCE

PROPOSED AT&T RRH'S (TYP. OF 4 PER SECTOR, TOTAL OF 12)

PROPOSED 3" STD. (3.5" O.D.) 6'-0" LONG PIPE MAST (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PROPOSED 2' STAND-OFF VALMONT PART# MM02 (TOTAL OF 2 PER SECTOR, TOTAL OF 6)

PROPOSED MONOPOLE

PROPOSED AT&T ANTENNAS (TYP. OF 3 PER SECTOR, TOTAL OF 9)

PROPOSED SECTOR FRAME VALMONT PART# VFA12-WLL-30120 (TYP. OF 1 PER SECTOR, TOTAL OF 3)

FUTURE AT&T RRH'S (BELOW) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PROPOSED COLLAR MOUNT VALMONT PART# LWRM (TOTAL OF 2)

PROPOSED SURGE ARRESTOR (TYP. OF 1 PER SECTOR, TOTAL OF 3)

NOTE:  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

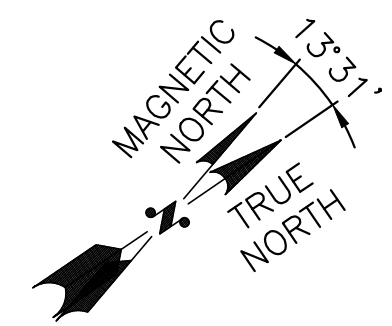
NOTE:  
HDG RECOMMENDS THE PROPOSED ANTENNA MOUNT BE MAPPED IN ITS ENTIRETY & A STRUCTURAL ANALYSIS BE PERFORMED PRIOR TO THE ANTENNA INSTALLATION.

NOTE:  
AN ANALYSIS FOR THE CAPACITY OF THE PROPOSED STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

SECTOR C  
220°

SECTOR A  
15°

SECTOR B  
110°



**PROPOSED ANTENNA LAYOUT DESIGN**

SCALE: N.T.S

2  
A-2



45 BEECHWOOD DRIVE  
NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5586



1997 ANNAPOLIS EXCHANGE PKWY  
SUITE 200  
ANNAPOLIS, MD 21401

SITE NUMBER: CT3470A  
SITE NAME: MIDDLETOWN\_MILE LANE

499 MILE LANE  
MIDDLETOWN, CT 06457  
MIDDLESEX COUNTY



550 COCHITUATE ROAD  
FRAMINGHAM, MA 01701

4	12/10/21	ISSUED FOR REVIEW	CC	JC	DPH
3	11/22/21	ISSUED FOR REVIEW	CC	JC	DPH
2	11/16/21	ISSUED FOR REVIEW	AR	JC	DPH
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NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: CC/VP		

AT&T		
ELEVATION AND ANTENNA PLAN (NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT3470A	A-2	4



**NOTE:**  
HDG RECOMMENDS THE PROPOSED ANTENNA MOUNT BE MAPPED IN ITS ENTIRETY & A STRUCTURAL ANALYSIS BE PERFORMED PRIOR TO THE ANTENNA INSTALLATION.

**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE PROPOSED STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

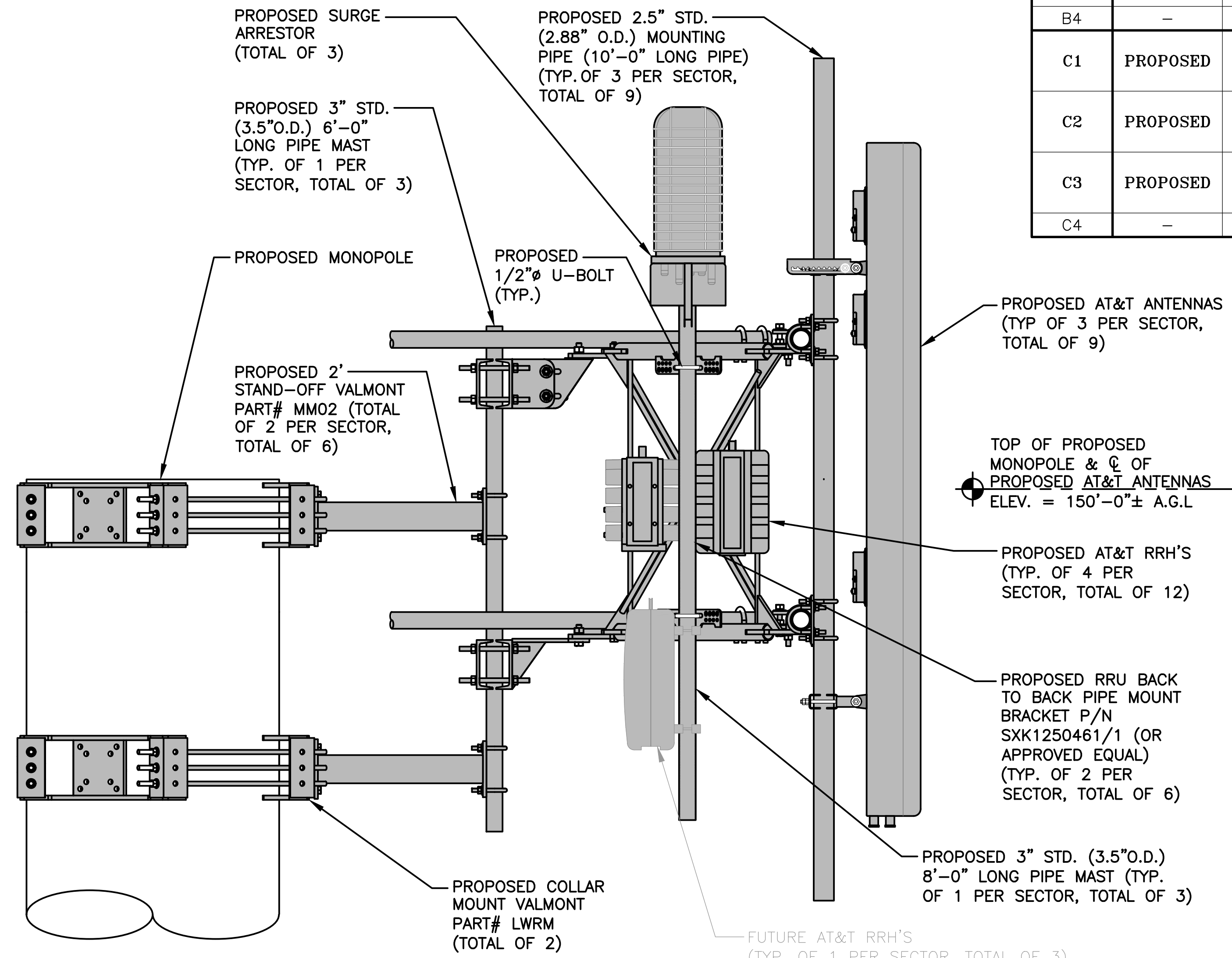
**NOTE:**  
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

**NOTE:**  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

**PROPOSED RRUS DETAIL** 1  
SCALE: N.T.S.

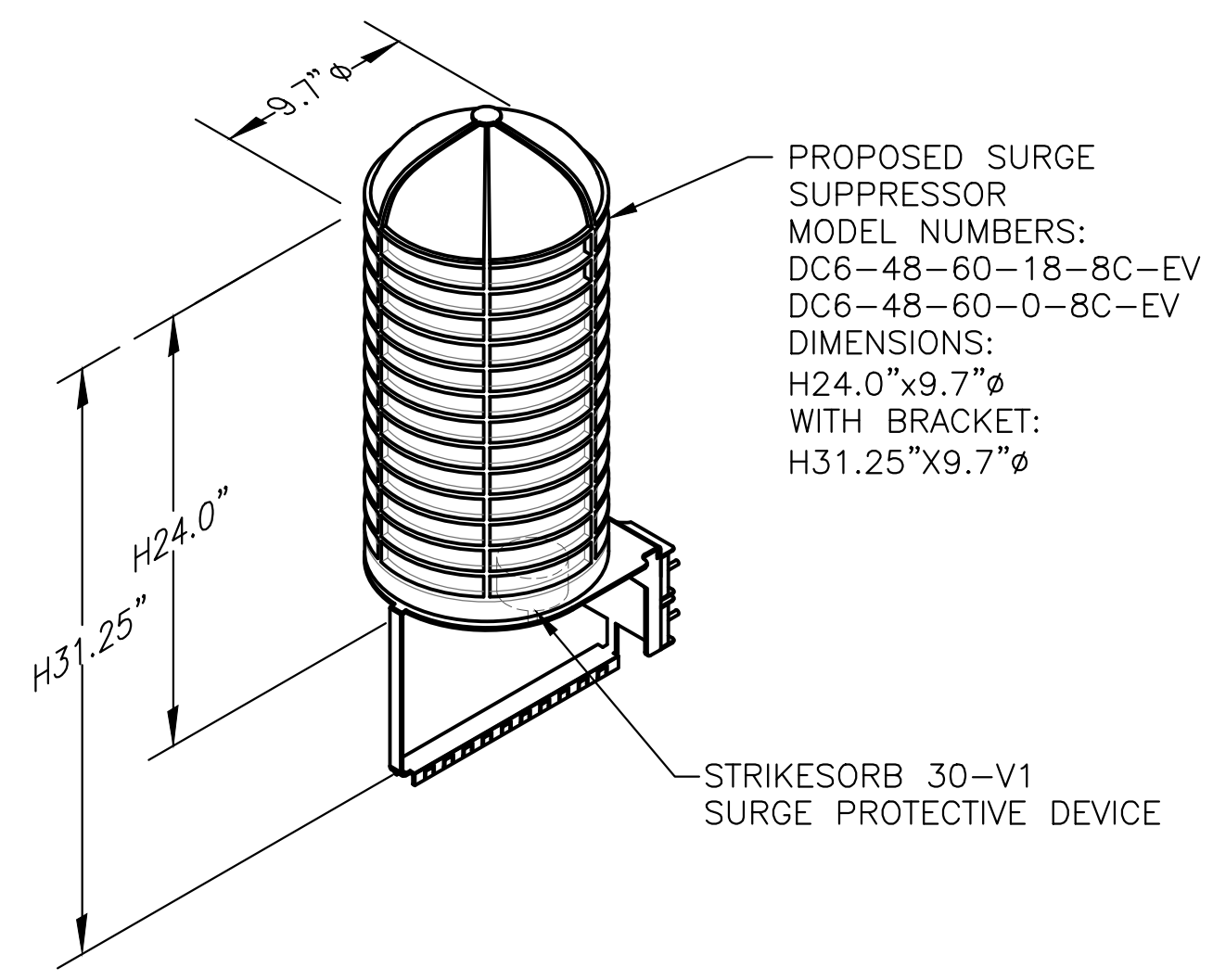
ANTENNA SCHEDULE											
SECTOR	EXISTING/PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA Q. HEIGHT	AZIMUTH	TMA/DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	PROPOSED	LTE B14/AWS	TPA65R-BU8DA-K	96X21X7.8	150'-0"	15°	-	(P) (1) 4478 B14	18.1X13.4X8.3	-	(P) (1) RAYCAP DC6-48-60-18-8C-EV
A2	PROPOSED	LTE DE/WCS	HPA65R-BU8A	96X11.7X7.6	150'-0"	15°	-	(P) (1) 4415 B30 (F) E-2	16.5X13.4X5.9 20.4X18.5X7.5	-	
A3	PROPOSED	LTE 700 BC/580/PCS	DMP65R-BU8DA-K	96X20.7X7.7	150'-0"	15°	-	(P) (1) 4449 B5/B12 (P) (1) 8843 B2/B66A	14.9X13.2X10.4 14.9X13.2X10.9	-	
A4	-	-	-	-	-	-	-	-	-	-	
B1	PROPOSED	LTE B14/AWS	TPA65R-BU8DA-K	96X21X7.8	150'-0"	110°	-	(P) (1) 4478 B14	18.1X13.4X8.3	-	(P) (1) RAYCAP DC6-48-60-18-8C-EV
B2	PROPOSED	LTE DE/WCS	HPA65R-BU8A	96X11.7X7.6	150'-0"	110°	-	(P) (1) 4415 B30 (F) E-2	16.5X13.4X5.9 20.4X18.5X7.5	-	
B3	PROPOSED	LTE 700 BC/580/PCS	DMP65R-BU8DA-K	96X20.7X7.7	150'-0"	110°	-	(P) (1) 4449 B5/B12 (P) (1) 8843 B2/B66A	14.9X13.2X10.4 14.9X13.2X10.9	-	
B4	-	-	-	-	-	-	-	-	-	-	
C1	PROPOSED	LTE B14/AWS	TPA65R-BU8DA-K	96X21X7.8	150'-0"	220°	-	(P) (1) 4478 B14	18.1X13.4X8.3	-	(P) (1) RAYCAP DC6-48-60-0-8C-EV
C2	PROPOSED	LTE DE/WCS	HPA65R-BU8A	96X11.7X7.6	150'-0"	220°	-	(P) (1) 4415 B30 (F) E-2	16.5X13.4X5.9 20.4X18.5X7.5	-	
C3	PROPOSED	LTE 700 BC/580/PCS	DMP65R-BU8DA-K	96X20.7X7.7	150'-0"	220°	-	(P) (1) 4449 B5/B12 (P) (1) 8843 B2/B66A	14.9X13.2X10.4 14.9X13.2X10.9	-	
C4	-	-	-	-	-	-	-	-	-	-	



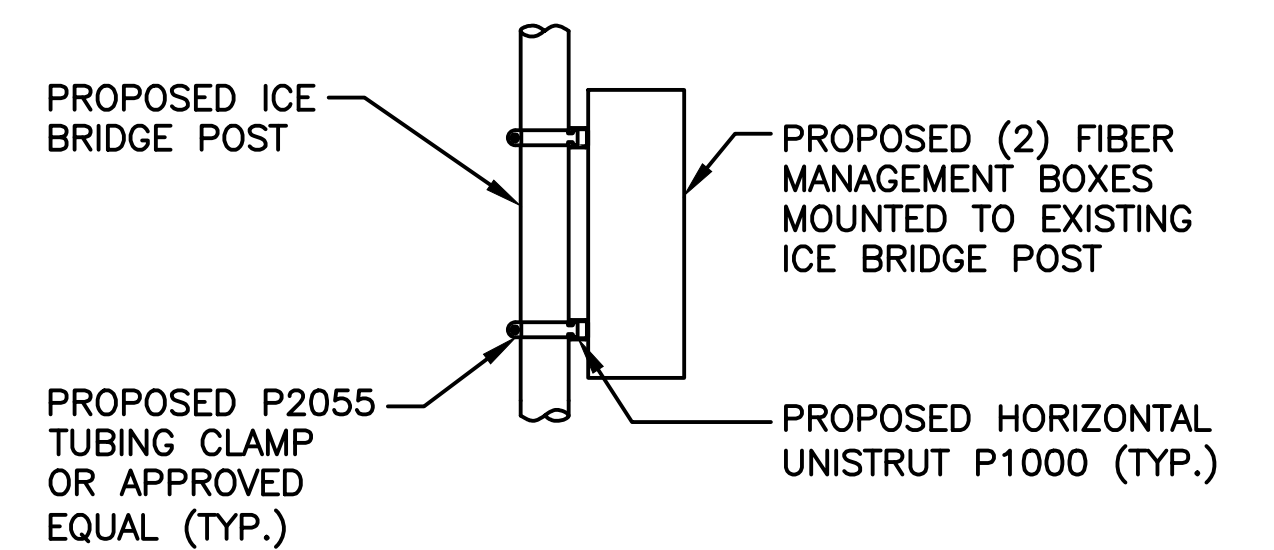
**PROPOSED SECTOR FRAME, ANTENNA, SURGE SUPPRESSOR & RRH'S MOUNTING DETAIL** 3  
22x34 SCALE: 1"=1'-0"  
11x17 SCALE: 1/2"=1'-0"

**NOTE:**  
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

**FINAL ANTENNA SCHEDULE** 2  
SCALE: N.T.S.



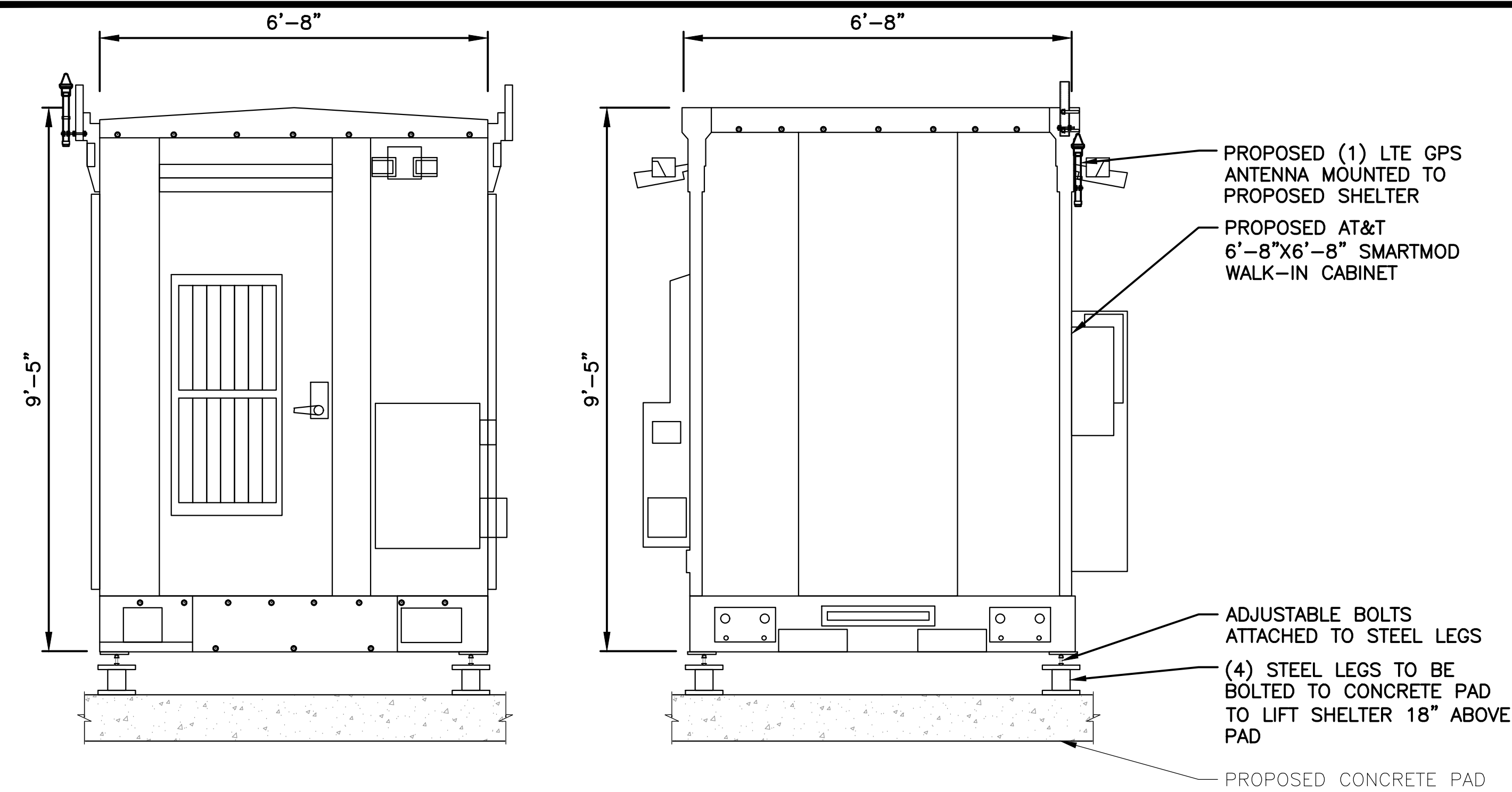
**DC SURGE SUPPRESSOR DETAIL** 4  
SCALE: N.T.S.



**PROPOSED FIBER MANAGEMENT BOX MOUNTING DETAIL** 5  
SCALE: N.T.S.

<p>45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845 TEL: (978) 557-5553 FAX: (978) 336-5586</p>	<p>1997 ANNAPOLIS EXCHANGE PKWY SUITE 200 ANNAPOLIS, MD 21401</p>	<p><b>SITE NUMBER: CT3470A</b> <b>SITE NAME: MIDDLETOWN_MILE LANE</b></p> <p>499 MILE LANE MIDDLETOWN, CT 06457 MIDDLESEX COUNTY</p>	<p>550 COCHITUATE ROAD FRAMINGHAM, MA 01701</p>	<table border="1"> <tr> <td>4</td> <td>12/10/21</td> <td>ISSUED FOR REVIEW</td> <td>CC</td> <td>JC</td> <td>DPH</td> </tr> <tr> <td>3</td> <td>11/22/21</td> <td>ISSUED FOR REVIEW</td> <td>CC</td> <td>JC</td> <td>DPH</td> </tr> <tr> <td>2</td> <td>11/16/21</td> <td>ISSUED FOR REVIEW</td> <td>AR</td> <td>JC</td> <td>DPH</td> </tr> <tr> <td>1</td> <td>09/22/21</td> <td>ISSUED FOR REVIEW</td> <td>AR</td> <td>JC</td> <td>DPH</td> </tr> <tr> <td>0</td> <td>04/07/21</td> <td>ISSUED FOR REVIEW</td> <td>VP</td> <td>JC</td> <td>DPH</td> </tr> </table>	4	12/10/21	ISSUED FOR REVIEW	CC	JC	DPH	3	11/22/21	ISSUED FOR REVIEW	CC	JC	DPH	2	11/16/21	ISSUED FOR REVIEW	AR	JC	DPH	1	09/22/21	ISSUED FOR REVIEW	AR	JC	DPH	0	04/07/21	ISSUED FOR REVIEW	VP	JC	DPH	<p>AT&amp;T DETAILS &amp; ANTENNA SCHEDULE (NSB)</p> <table border="1"> <tr> <td>SITE NUMBER</td> <td>DRAWING NUMBER</td> <td>REV</td> </tr> <tr> <td>CT3470A</td> <td>A-3</td> <td>4</td> </tr> </table>	SITE NUMBER	DRAWING NUMBER	REV	CT3470A	A-3	4
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CT3470A	A-3	4																																							
<p>SCALE: AS SHOWN    DESIGNED BY: JC    DRAWN BY: CC/VP</p>																																									





NOTE:  
SHELTER SHALL BE MOUNTED PER  
MANUFACTURER'S SPECIFICATIONS.

**TYPICAL SHELTER DETAIL**  
SCALE: N.T.S.

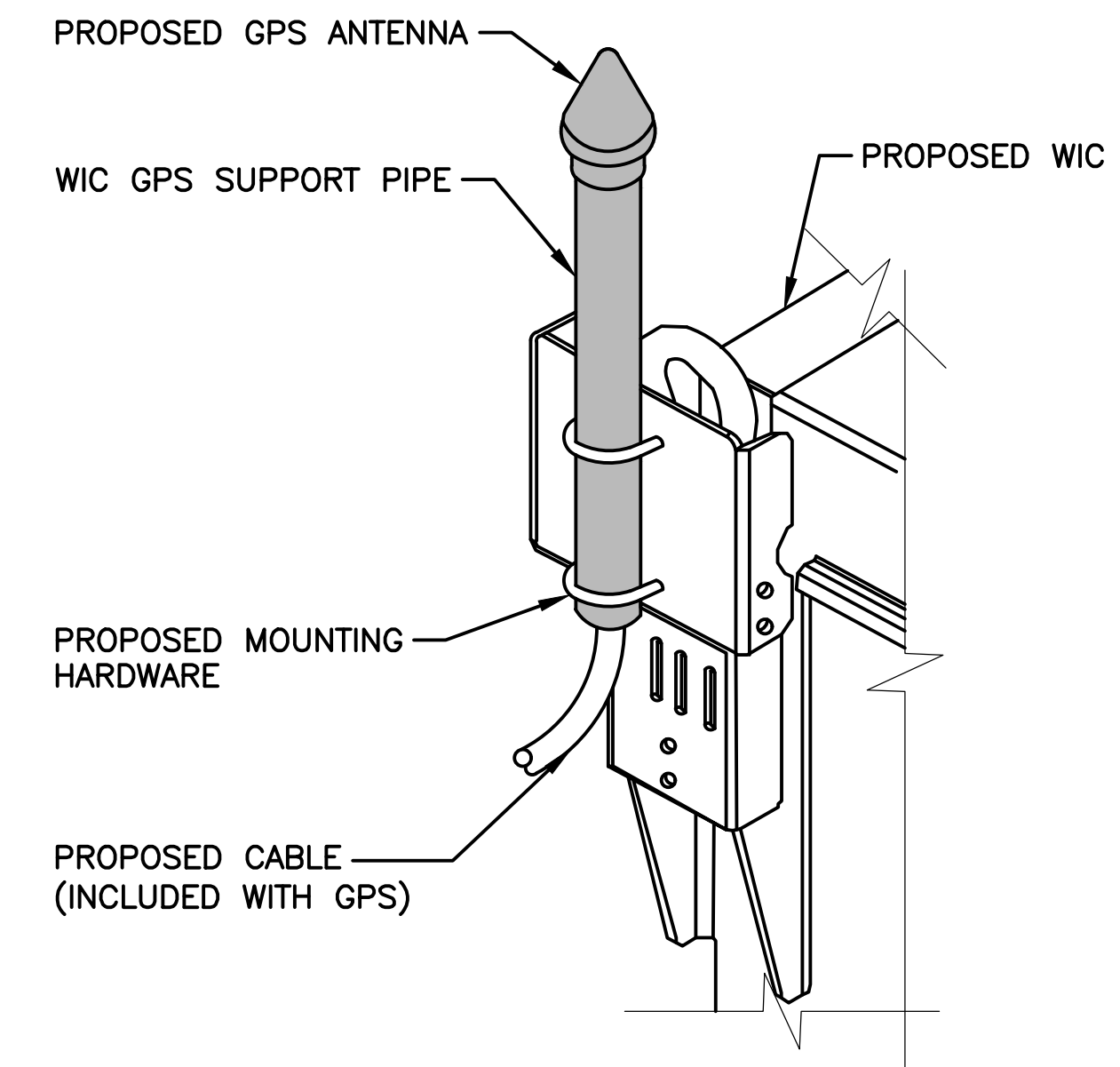
1  
A-4

20 KW GENERATOR DIMENSIONS	
MODEL #	G007098-0
MANUF.	GENERAC
HEIGHT	90"
WIDTH	36"
LENGTH	48"



**GENERATOR DETAIL**  
SCALE: N.T.S.

4  
A-4

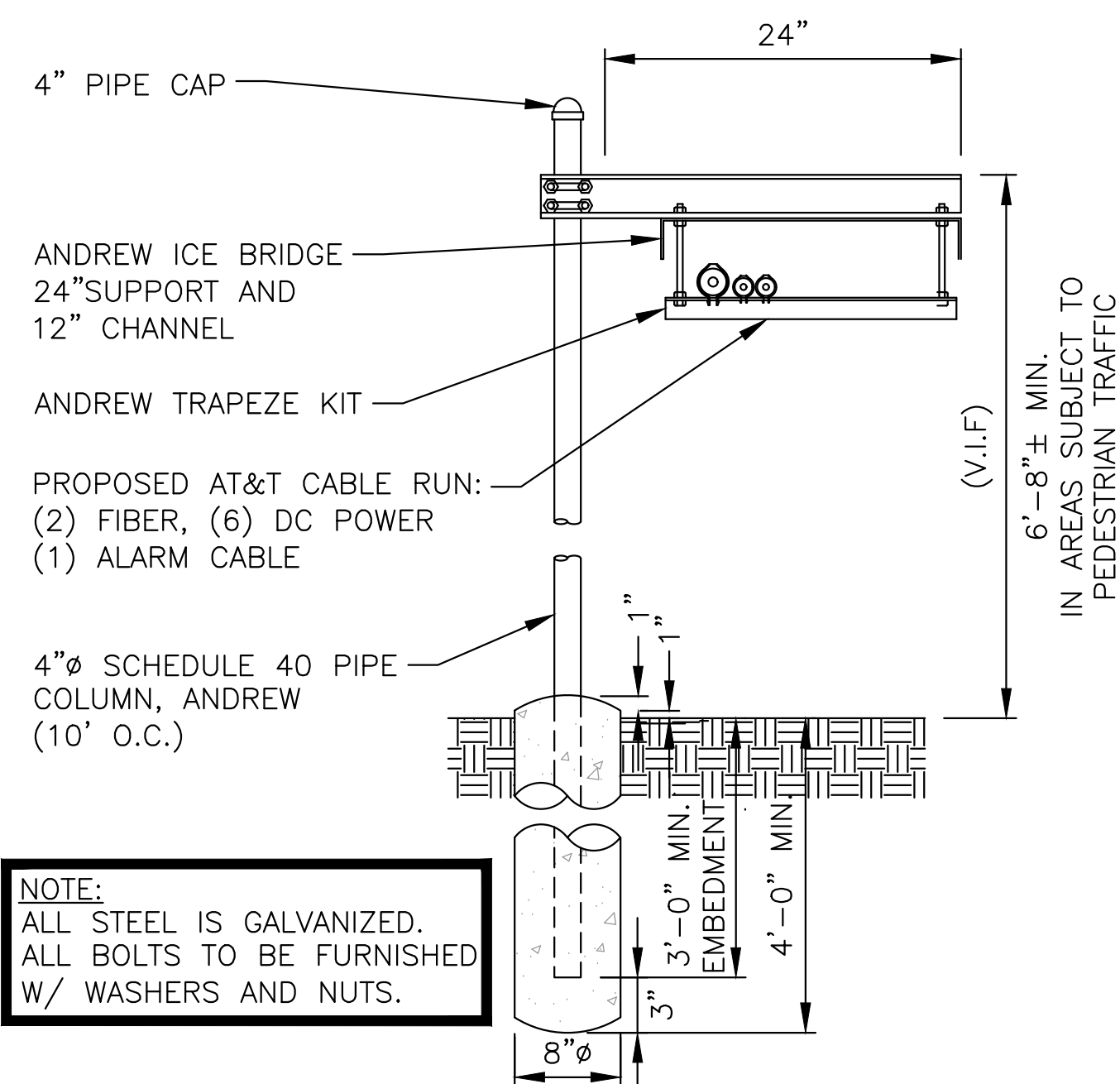


**GPS MOUNTING DETAIL**  
N.T.S.

2  
A-4

**FOUNDATION NOTES & CONCRETE SPECIFICATIONS:**

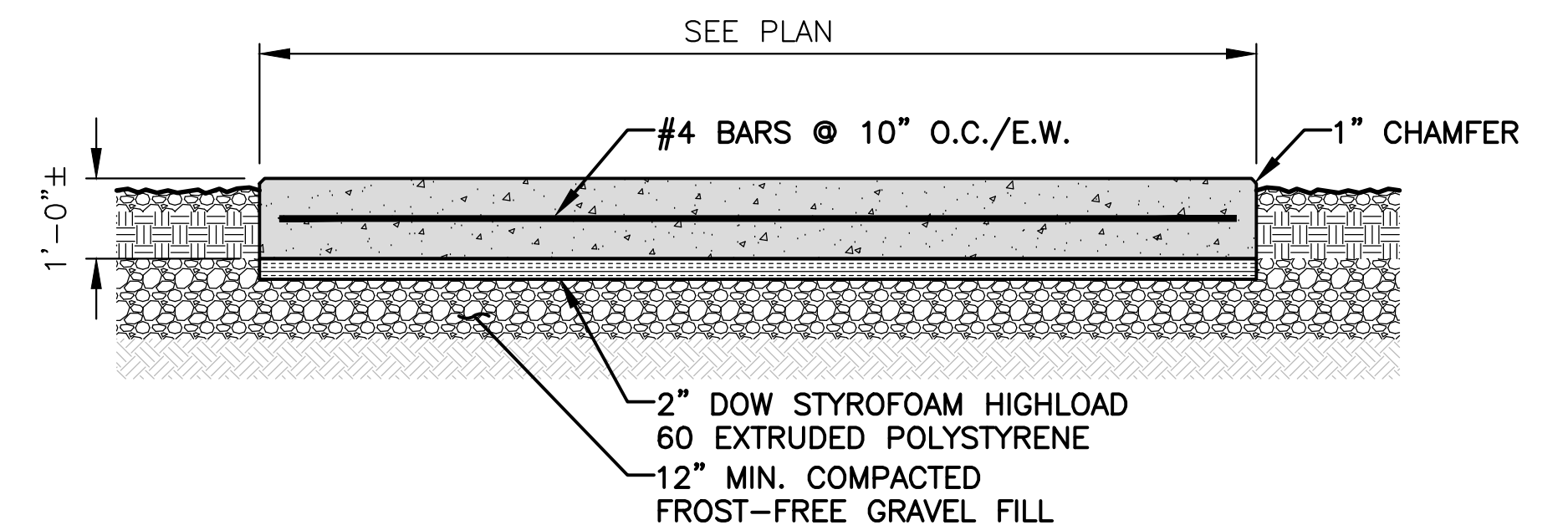
- FOUNDATION AREA SHALL BE EXCAVATED TO THE DEPTH AND DIMENSIONS SHOWN ON THE PLANS. EXISTING LEDGE AND ALL OTHER EXISTING UNSUITABLE MATERIAL SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE. THE SUBGRADE SHALL BE ROLLED WITH A 1-TON, VIBRATORY, WALK-BEHIND ROLLER AT A SPEED OF LESS THAN 2 FPS, 6 PASSES MINIMUM, TO PROVIDE UNYIELDING SURFACE.
- UNDERCUT SOFT OR "WEAVING" AREAS A MINIMUM OF 12 INCHES DEEP. BACKFILL UNDERCUT AREA WITH FILL MEETING THE SPECIFICATIONS OF STRUCTURAL FILL.
- CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c)=4000 psi. CONCRETE TO BE AIR ENTRAINED, DESIRED AIR CONTENT TO BE 6% (PLUS OR MINUS 2%)
- REINFORCING BAR TO BE ASTM A615 GRADE 60.
- WELDED WIRE FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A185. WIRES FOR FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A82.
- COORDINATE WITH MANUFACTURER OF PREFABRICATED SHELTER FOR LOCATION OF ATTACHMENTS TO BASE SLAB.
- ALL REINFORCING TO HAVE MINIMUM CONCRETE COVER PER ACI SPECIFICATIONS.
- ALL CONCRETE MATERIALS AND WORKMANSHIP SHALL CONFORM TO LATEST EDITION OF ACI 318 AND APPLICABLE STATE BUILDING CODE.



NOTE:  
ALL STEEL IS GALVANIZED.  
ALL BOLTS TO BE FURNISHED  
W/ WASHERS AND NUTS.

**ICE BRIDGE DETAIL**  
SCALE: N.T.S.

3  
A-4



**CONCRETE PAD DETAIL**  
22x34 SCALE: N.T.S.

5  
A-4



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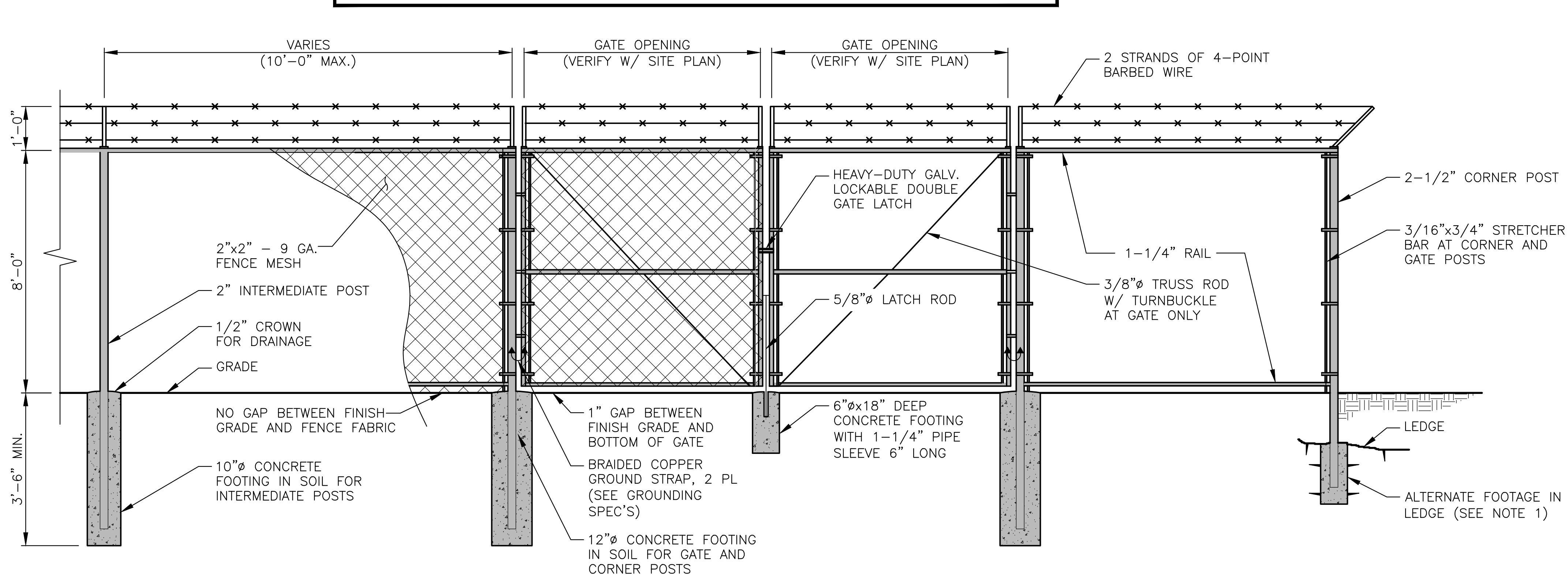
AT&T  
EQUIPMENT DETAILS  
(NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT3470A	A-4	4

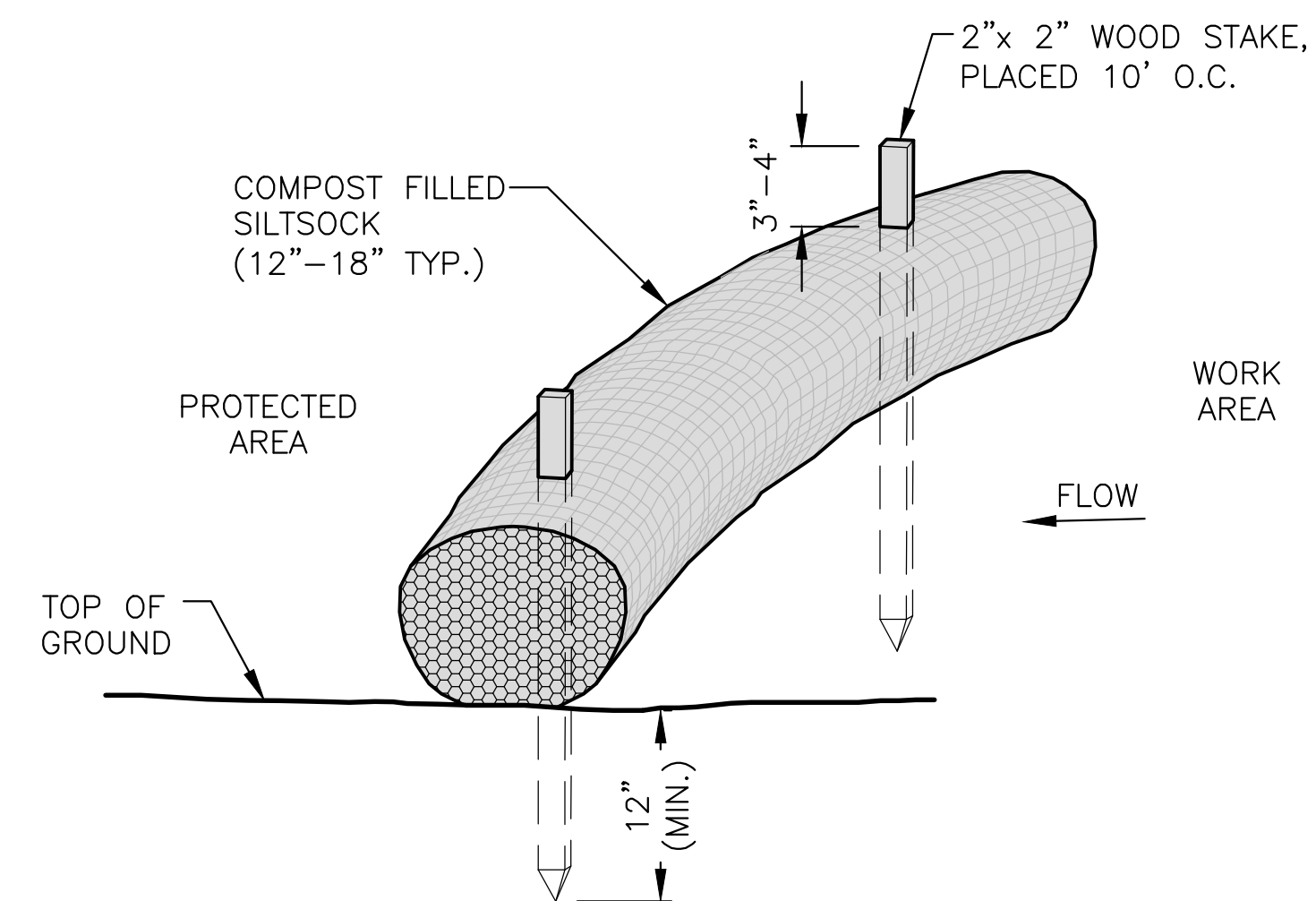


**FENCE NOTES**

1. ALTERNATE FOOTINGS FOR ALL FENCE POSTS IN LEDGE: IF LEDGE IS ENCOUNTERED AT GRADE, OR AT A DEPTH SHALLOWER THAN 3'-6", CORE DRILL AN 8" DIA HOLE 18" INTO THE LEDGE. CENTER POST IN THE HOLE AND FILL WITH CONCRETE OR GROUT. IF LEDGE IS BELOW FINISH GRADE, COAT BACKFILLED SECTION OF POST WITH COAL TAR, AND BACKFILL WITH WELL-DRAINING GRAVEL.
2. ATTACH EACH GATE WITH 1-1/2" PAIR OF NON-LIFT-OFF TYPE, MALLEABLE IRON OR FORGING, PIN-TYPE HINGES. ASSEMBLIES SHALL ALLOW FOR 180° OF GATE TRAVEL.



**CHAINLINK FENCE DETAIL** 1  
SCALE: N.T.S. A-5



- NOTES:**
1. SILT SOCK SHALL BE FILTREXX SILT SOCK, OR APPROVED EQUAL.
  2. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.
  3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
  4. SEE SPECIFICATIONS FOR SOCK SIZE, AND COMPOST FILL, REQUIREMENTS.

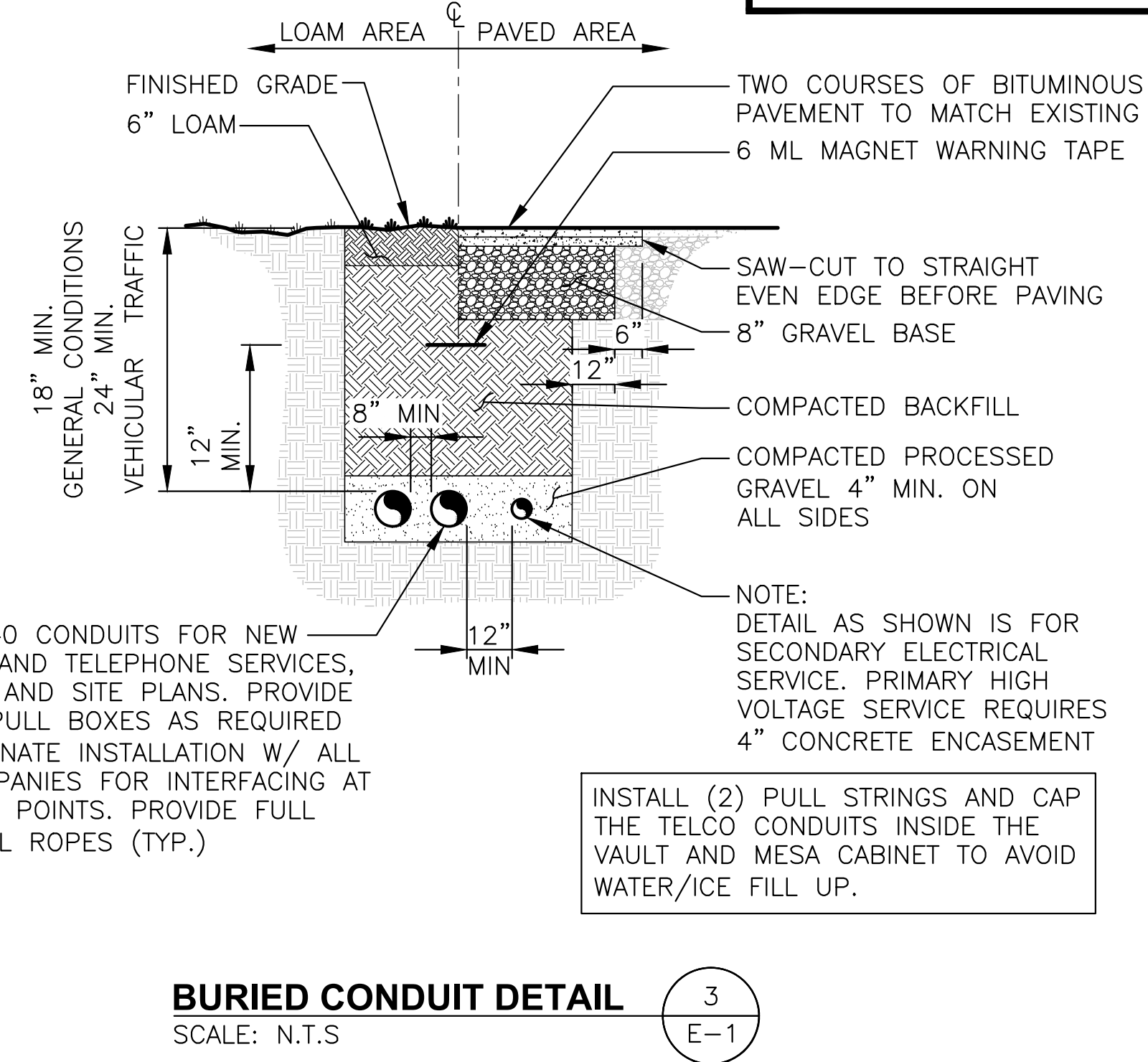
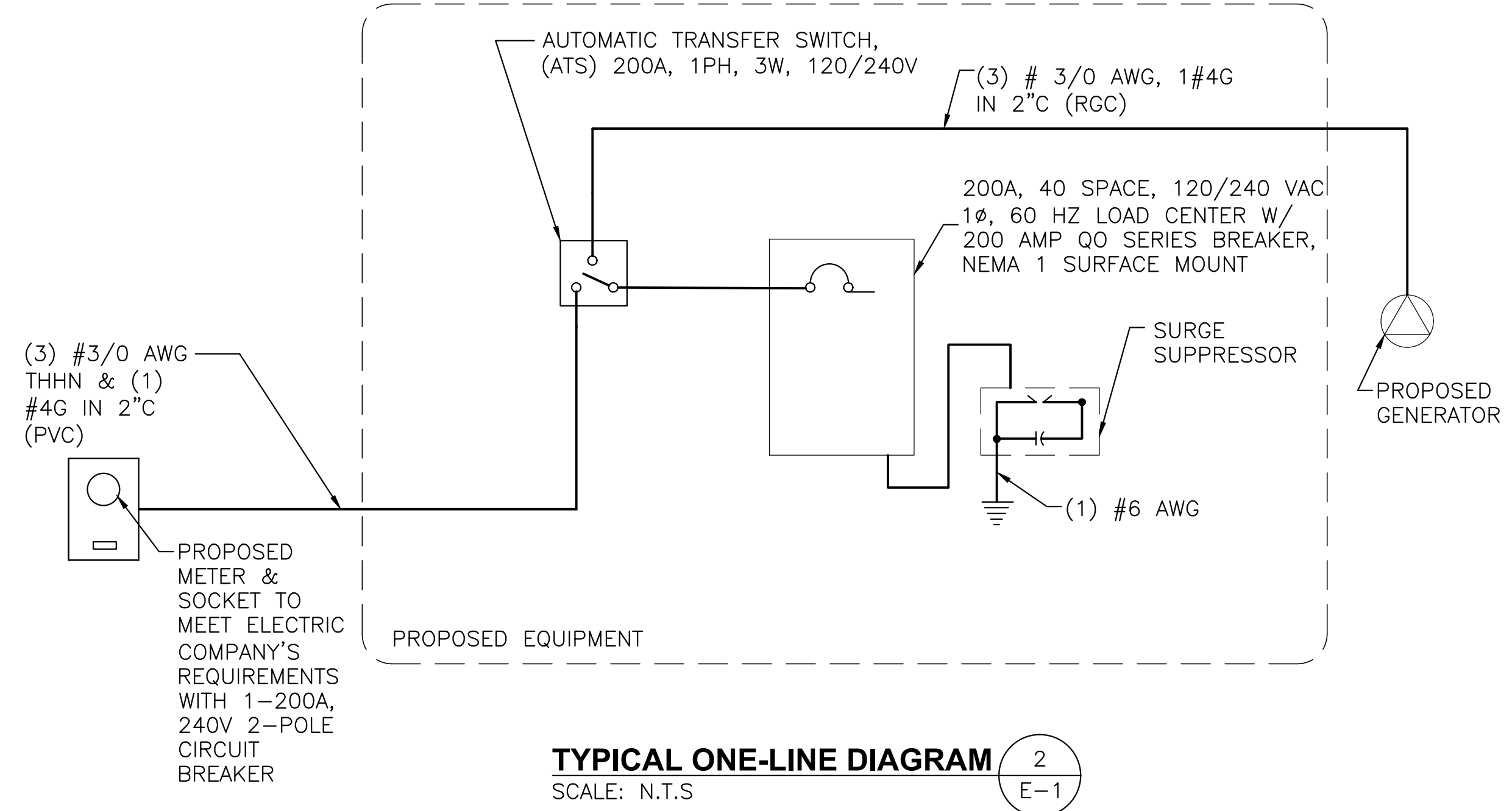
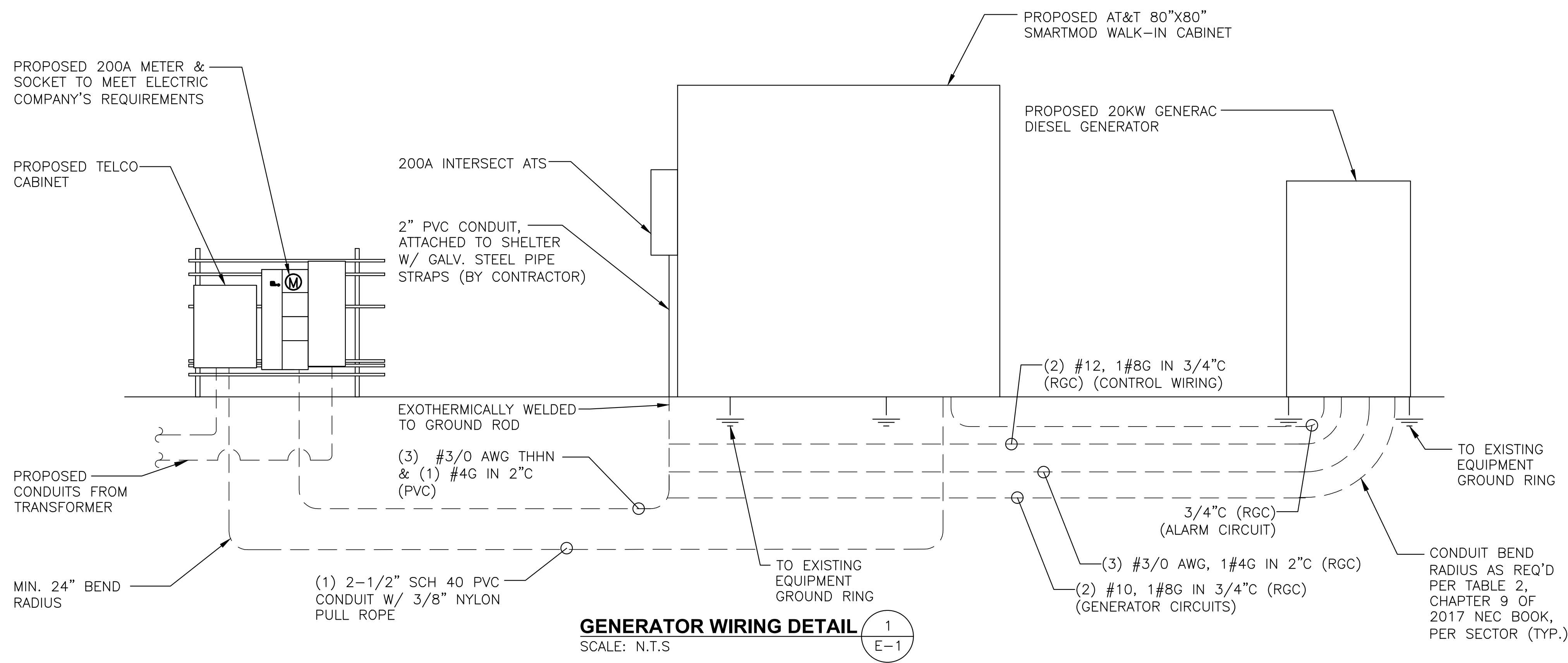
**SILT SOCK DETAIL** 2  
SCALE: N.T.S. A-5

4	12/10/21	ISSUED FOR REVIEW	CC	JC	DPH
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<b>AT&amp;T</b>		
<b>EQUIPMENT DETAILS (NSB)</b>		
SITE NUMBER	DRAWING NUMBER	REV
CT3470A	A-5	4



NOTES:  
 1. GROUND [ATS] TO EXISTING GROUND BAR  
 2. GROUND GENERATOR TO EXISTING GROUND RING WITH (2) #2 AWG GROUND WIRES.



### ELECTRICAL LEGEND & ABBREVIATIONS

	NEW PANEL BOARD, SURFACE MOUNTED		METER
	EXISTING PANEL BOARD, SURFACE MOUNTED		CIRCUIT BREAKER
	DRY TYPE TRANSFORMER		NON-FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.
	METER		FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.
	CIRCUIT BREAKER		TRANSIENT VOLTAGE SURGE SUPPRESSOR WITH BUILT-IN FUSES, SURFACE MOUNTED
	NON-FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.		DUPLEX OUTLET, SURFACE MOUNTED, 20 AMPS, 125 VOLTS, SINGLE PHASE
	FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.		JUNCTION BOX, SURFACE MOUNTED 18" A.F.F.
	TRANSIENT VOLTAGE SURGE SUPPRESSOR WITH BUILT-IN FUSES, SURFACE MOUNTED		EXPOSED WIRING
	DUPLEX OUTLET, SURFACE MOUNTED, 20 AMPS, 125 VOLTS, SINGLE PHASE		HOME RUNS, MINIMUM 2#10 + 1#8G IN 3/4" CONDUIT U.O.N.
	JUNCTION BOX, SURFACE MOUNTED 18" A.F.F.	A.F.F.	ABOVE FINISHED FLOOR
	EXPOSED WIRING	U.O.N.	UNLESS OTHERWISE NOTED
	HOME RUNS, MINIMUM 2#10 + 1#8G IN 3/4" CONDUIT U.O.N.	WP	WEATHERPROOF
A.F.F.	ABOVE FINISHED FLOOR	GFI	GROUND FAULT INTERRUPTER
U.O.N.	UNLESS OTHERWISE NOTED	A	AMPERE
WP	WEATHERPROOF	V	VOLT
GFI	GROUND FAULT INTERRUPTER	KWH	KILOWATT - HOUR
A	AMPERE	C	CONDUIT
V	VOLT	PVC	POLYVINYL CHLORIDE
KWH	KILOWATT - HOUR	HZ	HERTZ
C	CONDUIT	PH, Ø	PHASE
PVC	POLYVINYL CHLORIDE	W	WATTS
HZ	HERTZ	NEC	NATIONAL ELECTRIC CODE
PH, Ø	PHASE	PPC	POWER PROTECTION CABINET
W	WATTS	UL	UNDERWRITER LABORATORIES
NEC	NATIONAL ELECTRIC CODE	PTS	POWER TRANSFER SWITCH
PPC	POWER PROTECTION CABINET	QO	QUICK OPEN GALVANIZED RIGID CONDUIT
UL	UNDERWRITER LABORATORIES	GRC	GALVANIZED RIGID CONDUIT
PTS	POWER TRANSFER SWITCH	G	GROUND
QO	QUICK OPEN GALVANIZED RIGID CONDUIT	⊕	MECHANICAL CONNECTION
GRC	GALVANIZED RIGID CONDUIT	⊕	CADWELD CONNECTION
G	GROUND	—	GROUND COPPER WIRE, SIZE AS NOTED
⊕	MECHANICAL CONNECTION	—	EXPOSED WIRING
⊕	CADWELD CONNECTION	—	COAXIAL CABLE
—	GROUND COPPER WIRE, SIZE AS NOTED	—	5/8"x8" COPPER CLAD STAINLESS STEEL GROUND ROD
—	EXPOSED WIRING	—	● EXOTHERMIC (CAD WELD) OR ○ MECHANICAL (COMPRESSION TYPE) CONNECTION
—	COAXIAL CABLE	PF	POWER FACTOR
—	5/8"x8" COPPER CLAD STAINLESS STEEL GROUND ROD		
—	● EXOTHERMIC (CAD WELD) OR ○ MECHANICAL (COMPRESSION TYPE) CONNECTION		

- ### ELECTRICAL AND GROUNDING NOTES
- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
  - ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
  - THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
  - GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
  - ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
  - BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
  - ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THININSULATION.
  - RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
  - RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
  - WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
  - ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
  - PPC SUPPLIED BY PROJECT OWNER.
  - GROUNDING SHALL COMPLY WITH NEC ART. 250.
  - GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
  - USE #6 AWG COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 AWG SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
  - ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
  - ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 AWG WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
  - CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
  - APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
  - BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
  - BOND ANTENNA EGB'S AND MGB TO GROUND RING.
  - CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
  - CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE-TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.
  - ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL, MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50.

**HGD HUDSON Design Group LLC**  
 45 BEECHWOOD DRIVE  
 NORTH ANDOVER, MA 01845  
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 FAX: (978) 336-5586

**smartlink**  
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 MIDDLETOWN, CT 06457  
 MIDDLESEX COUNTY

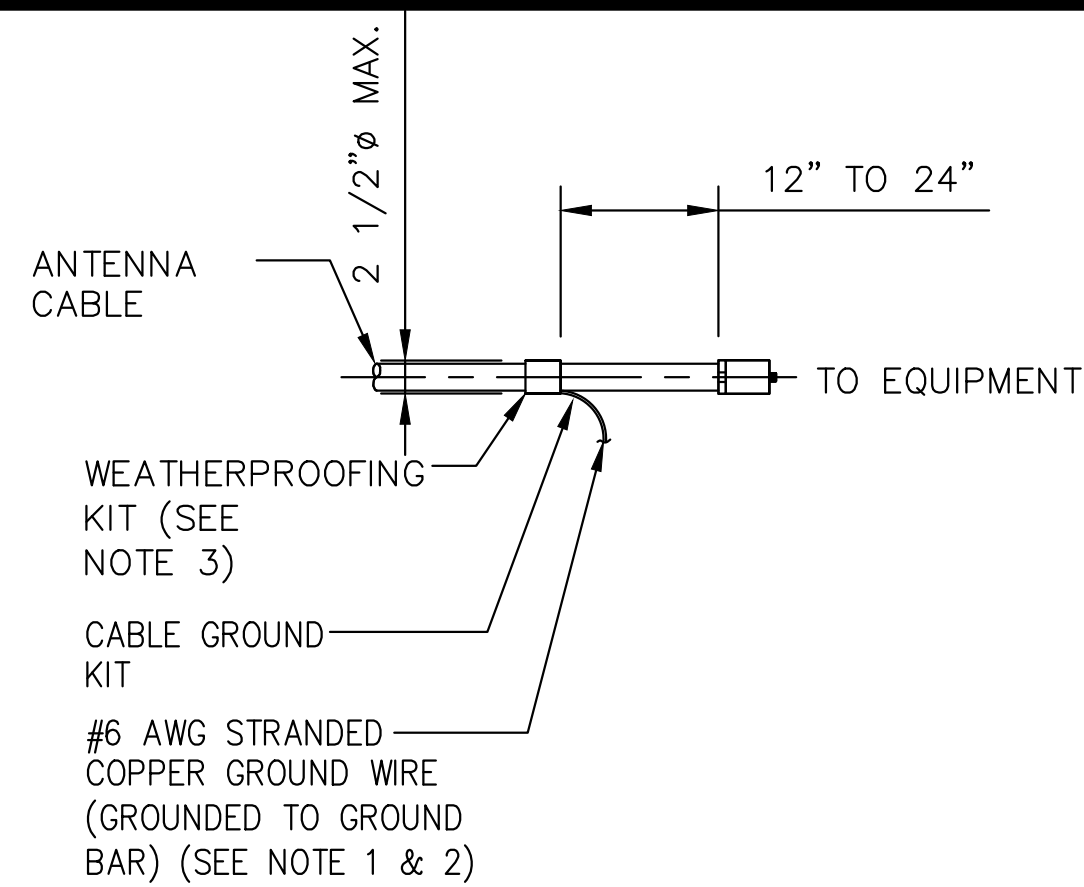
**at&t**  
 550 COCHITUATE ROAD  
 FRAMINGHAM, MA 01701

4	12/10/21	ISSUED FOR REVIEW	CC	JC	DPH
3	11/22/21	ISSUED FOR REVIEW	CC	JC	DPH
2	11/16/21	ISSUED FOR REVIEW	AR	JC	DPH
1	09/22/21	ISSUED FOR REVIEW	AR	JC	DPH
0	04/07/21	ISSUED FOR REVIEW	VP	JC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: CC/VP		

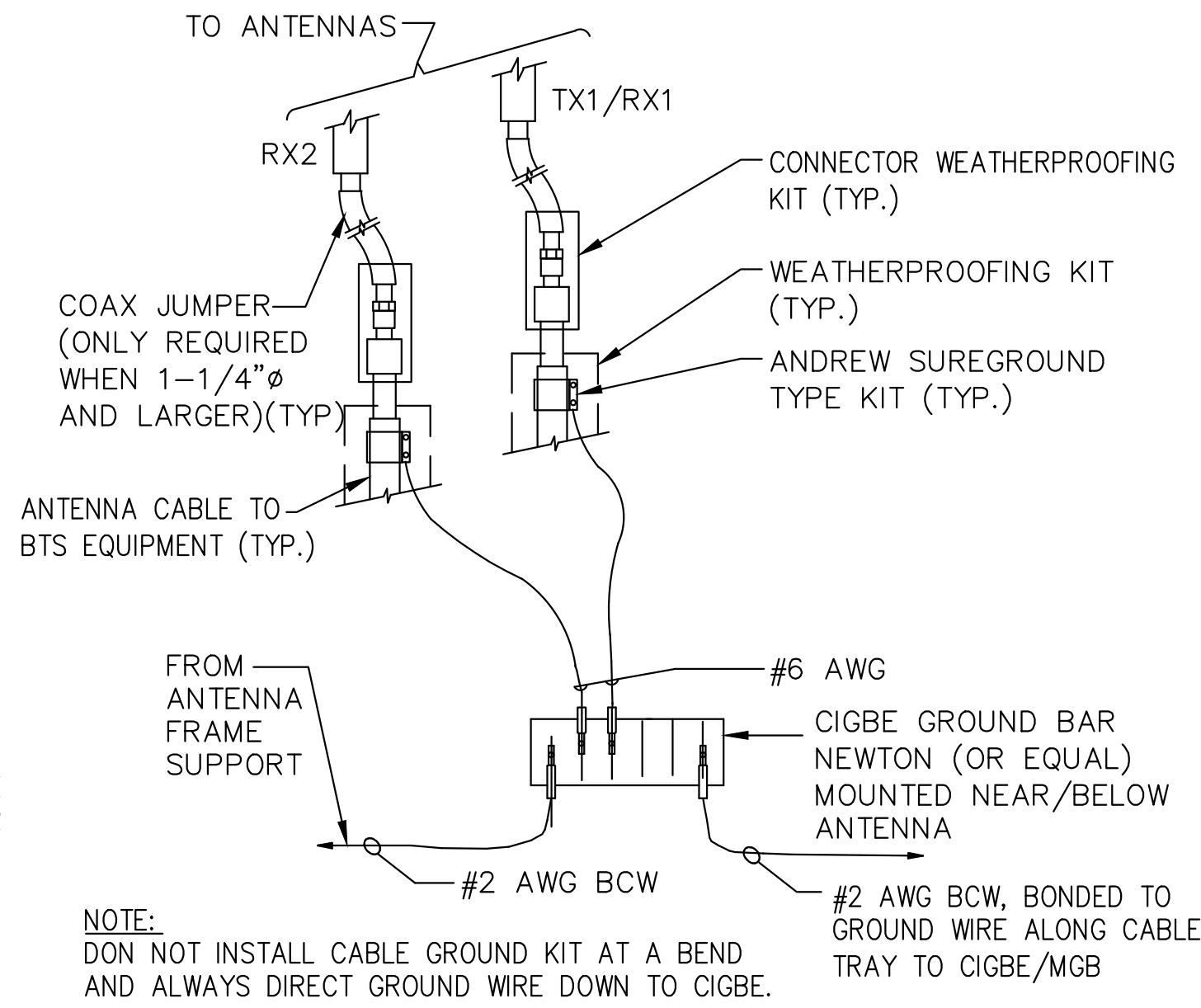
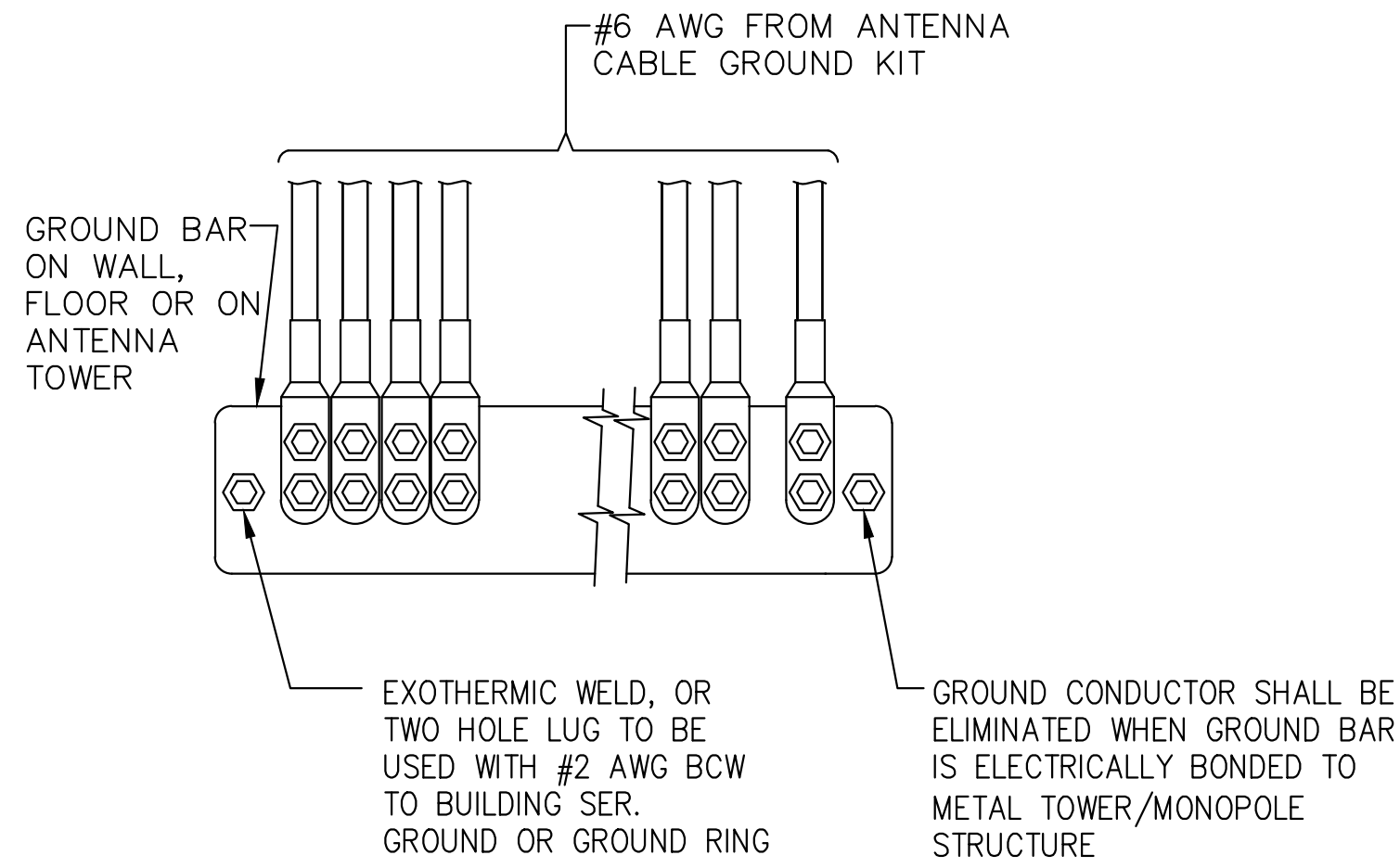
**AT&T**  
**ELECTRICAL NOTES & ONE-LINE DIAGRAM (NSB)**

SITE NUMBER	DRAWING NUMBER	REV
CT3470A	E-1	4





- NOTES:
- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
  - GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
  - WEATHER PROOFING SHALL BE TWO-PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED.



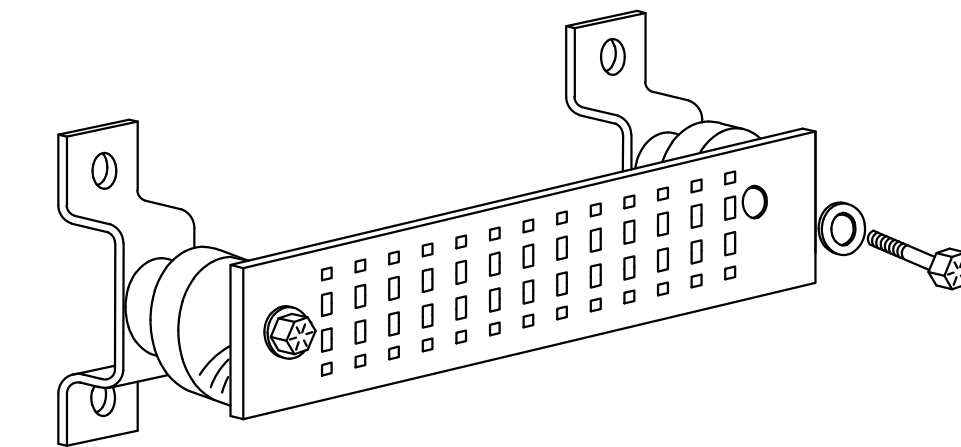
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

- CABLE ENTRY PORTS (HATCH PLATES) (#2 AWG)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2 AWG)
- +24V POWER SUPPLY RETURN BAR (#2 AWG)
- 48V POWER SUPPLY RETURN BAR (#2 AWG)
- RECTIFIER FRAMES.

SECTION "A" - SURGE ABSORBERS

- INTERIOR GROUND RING (#2 AWG)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2 AWG)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2 AWG)
- BUILDING STEEL (IF AVAILABLE) (#2 AWG)



GROUND BAR - DETAIL  
SCALE: N.T.S.

CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE

1  
G-1

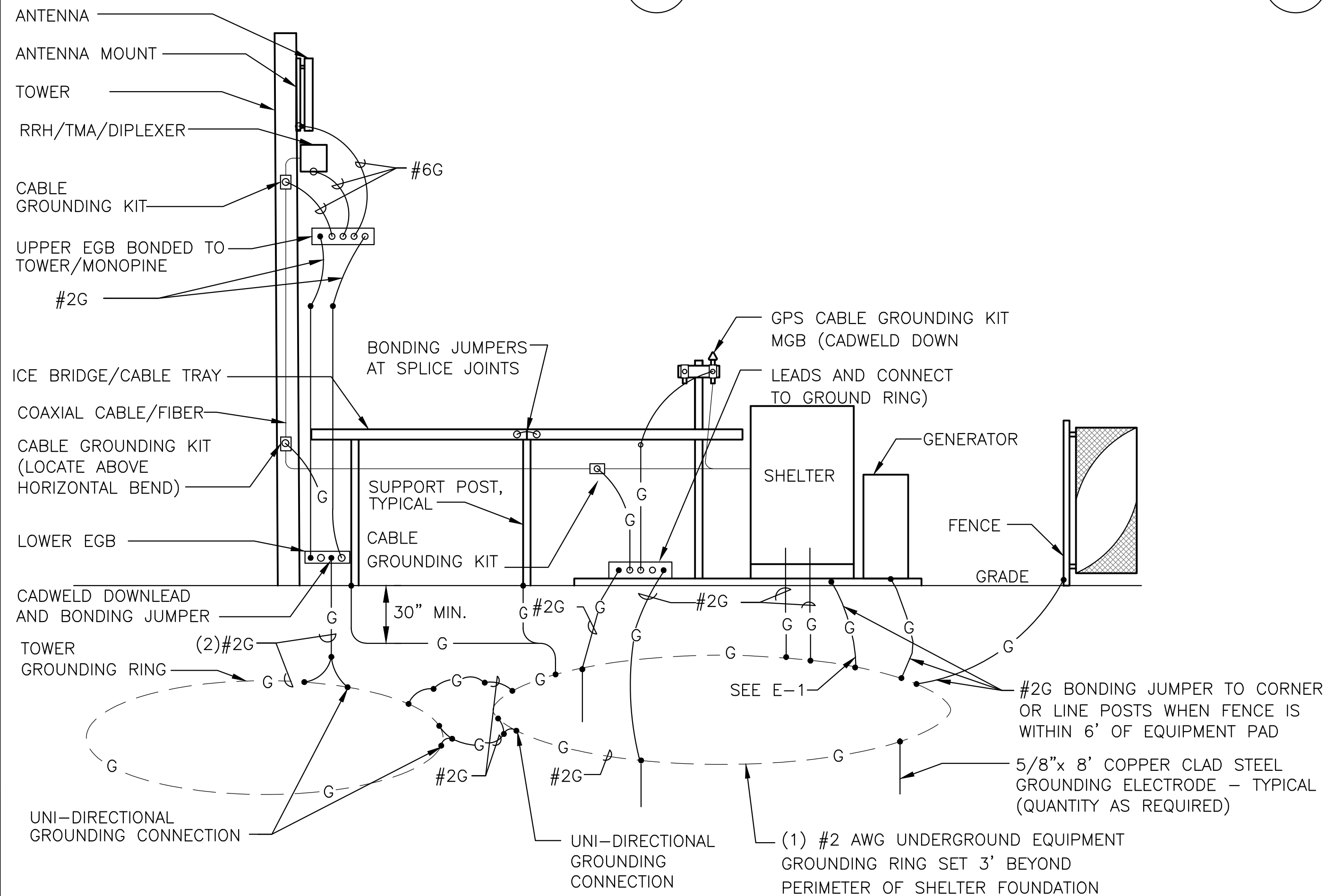
INSTALLATION OF GROUND WIRE TO GROUND BAR

2  
G-1

INSTALLATION OF GROUND WIRE TO GROUNDING BAR TOWER

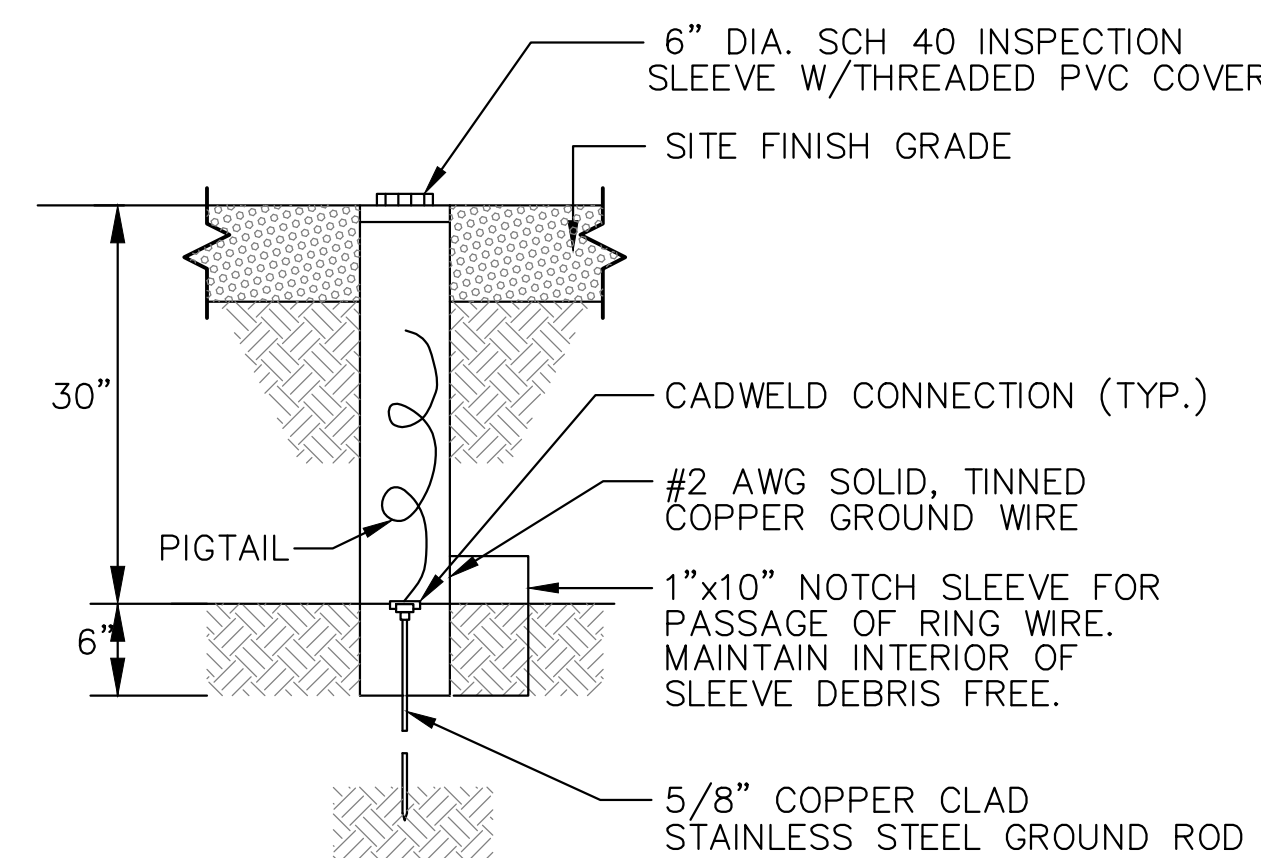
3  
G-1

GROUND BAR - DETAIL  
SCALE: N.T.S.



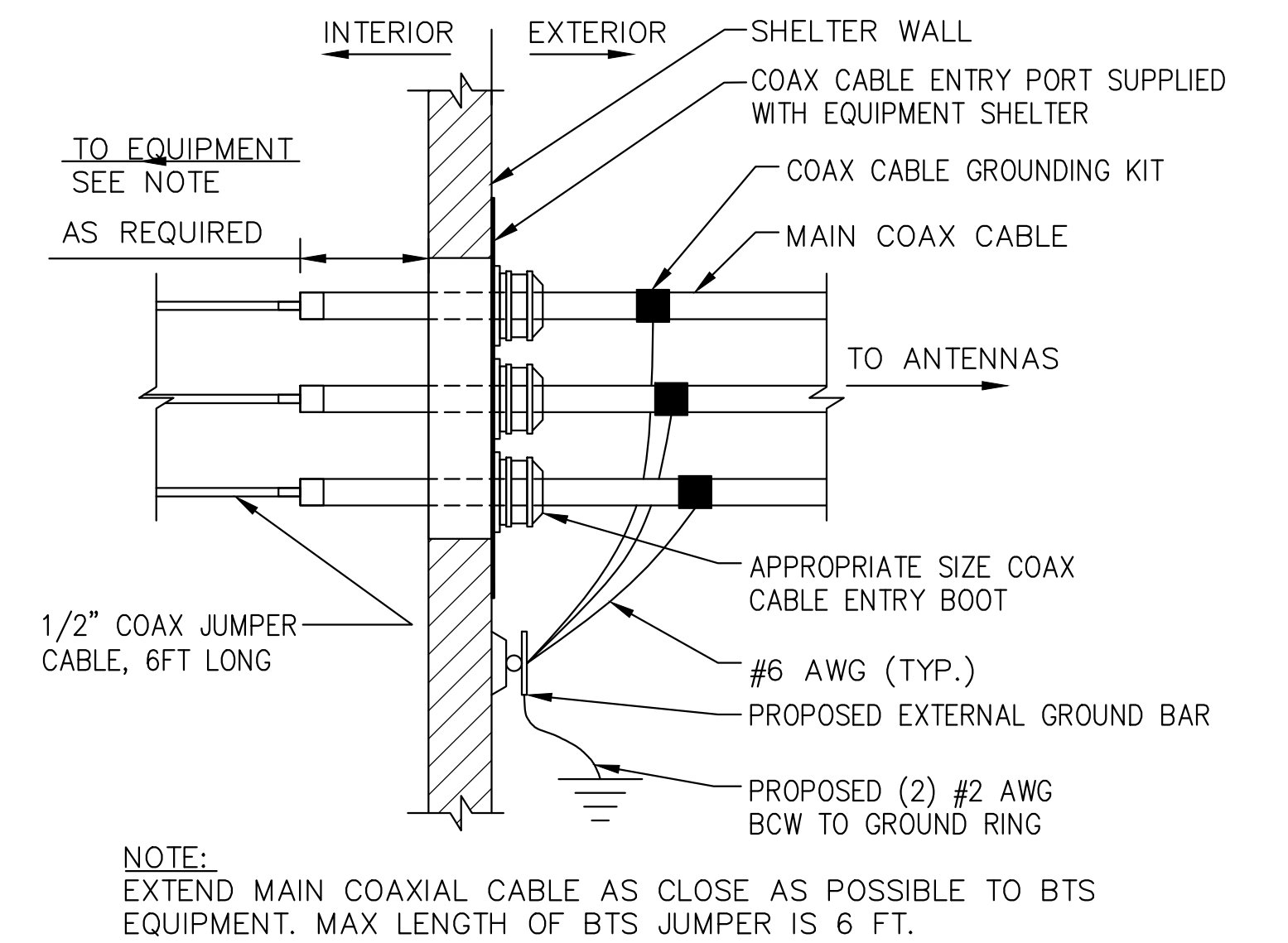
GROUNDING ONE-LINE DIAGRAM  
SCALE: N.T.S.

5  
G-1



GROUND ROD TEST WELL DETAIL  
SCALE: N.T.S.

6  
G-1



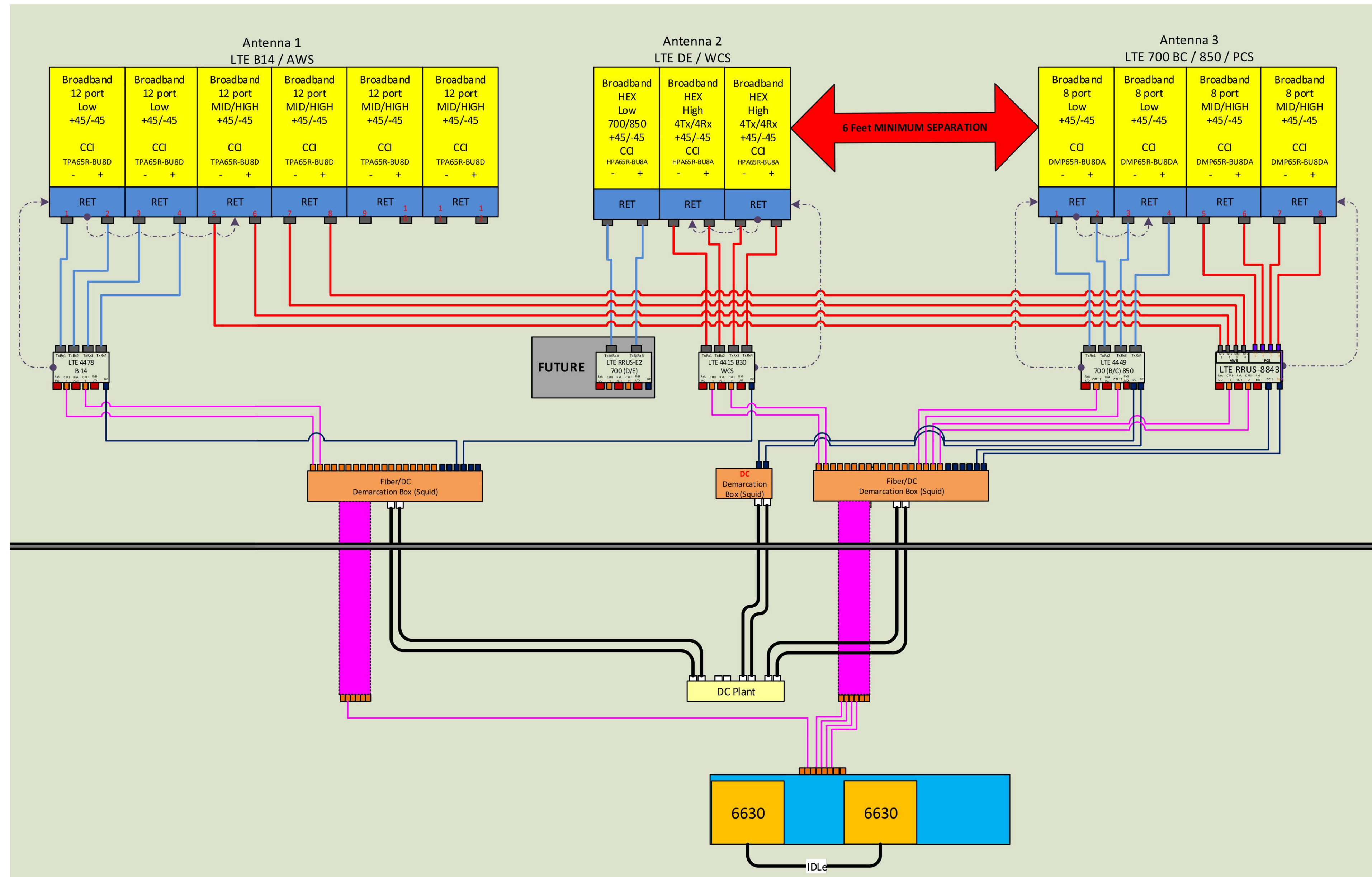
INSTALLATION OF GROUND WIRE TO GROUND BAR

SCALE: N.T.S.

7  
G-1

4	12/10/21	ISSUED FOR REVIEW	CC	JC	DPH
3	11/22/21	ISSUED FOR REVIEW	CC	JC	DPH
2	11/16/21	ISSUED FOR REVIEW	AR	JC	DPH
1	09/22/21	ISSUED FOR REVIEW	AR	JC	DPH
0	04/07/21	ISSUED FOR REVIEW	VP	JC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: CC/VP		





**RF PLUMBING DIAGRAM** 1  
SCALE: N.T.S. RF-1

**NOTE:**  
1. CONTRACTOR TO CONFIRM ALL PARTS.  
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

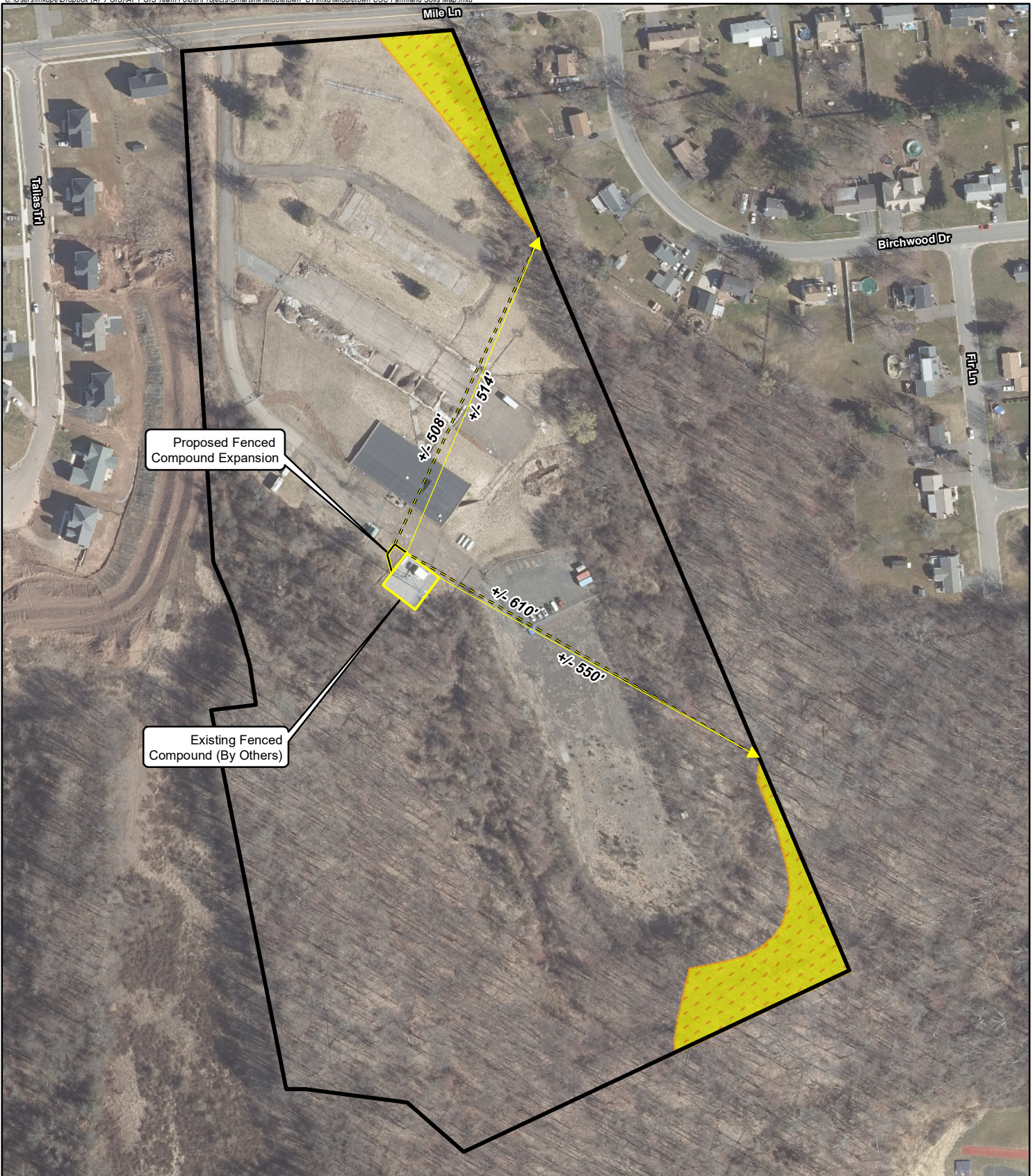
NO.	DATE	REVISIONS	BY	CHK	APP'D
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3	11/22/21	ISSUED FOR REVIEW	CC	JC	DPH
2	11/16/21	ISSUED FOR REVIEW	AR	JC	DPH
1	09/22/21	ISSUED FOR REVIEW	AR	JC	DPH
0	04/07/21	ISSUED FOR REVIEW	VP	JC	DPH

SCALE: AS SHOWN    DESIGNED BY: JC    DRAWN BY: CC/VP

AT&T		
RF PLUMBING DIAGRAM (NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT3470A	RF-1	4

# ATTACHMENT 7

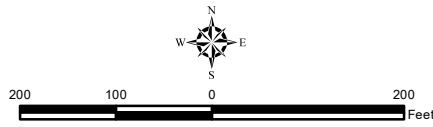




- Legend**
- Subject Property
  - Prime Farmland Soils
  - Existing Fenced Compound (By Others)
  - Proposed Fenced Compound Expansion
- Distance to Prime Farmland Soils**
- Distance Measurement from Existing Compound
  - Distance Measurement from Proposed Compound Extension

**Subject Property Farmland Soils**  
 Proposed Wireless  
 Telecommunications Facility  
 Middletown\_Mile Lane  
 499 Mile Lane  
 Middletown, Connecticut

**Map Notes:**  
 Base Map Source: 2019 Aerial Photograph (CTECO)  
 Map Scale: 1 inch = 200 feet  
 Map Date: December 2021





# ATTACHMENT 8



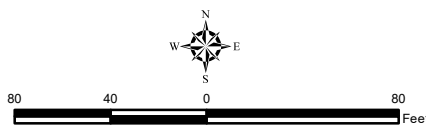


**Legend**

- x-x-x Proposed Fenced Compound Expansion
- Proposed Equipment Lease Area
- Proposed Equipment
- Subject Property
- Wetland Flag
- Approximate Wetland Area
- 100-Foot Upland Review Area
- Approximate Field Identified Wetland Boundary
- Delineated Wetland Boundary

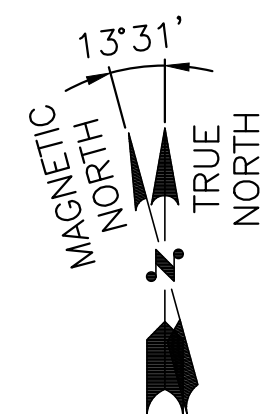
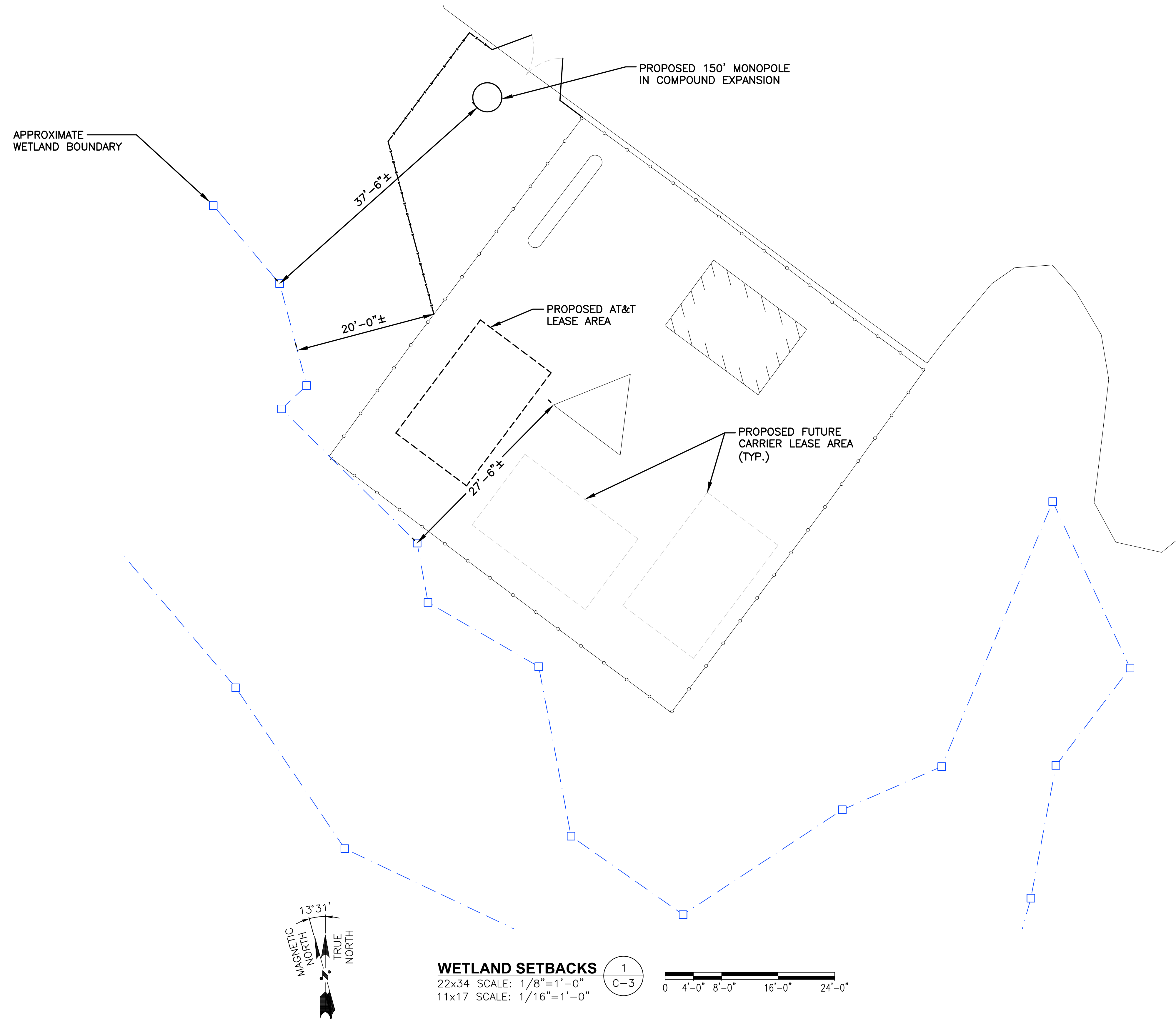
**Wetland Inspection Map**

Proposed Wireless  
Telecommunications Facility  
Middletown\_Mile Lane  
499 Mile Lane  
Middletown, Connecticut





NOTE:  
 SITE PLAN TAKEN FROM SURVEY BY  
 NORTHEAST SURVEY CONSULTANTS  
 DATED: 11/18/2021  
 WETLAND DELINEATION WAS  
 PERFORMED AND LOCATED BY  
 ALL-POINTS TECHNOLOGY CORP.



**WETLAND SETBACKS** 1  
 22x34 SCALE: 1/8"=1'-0"  
 11x17 SCALE: 1/16"=1'-0"  
 0 4'-0" 8'-0" 16'-0" 24'-0"

**HG HUDSON**  
 Design Group LLC  
 45 BEECHWOOD DRIVE  
 NORTH ANDOVER, MA 01845  
 TEL: (978) 557-5553  
 FAX: (978) 336-5586

**smartlink**  
 1997 ANNAPOLIS EXCHANGE PKWY  
 SUITE 200  
 ANNAPOLIS, MD 21401

**SITE NUMBER: CT3470A**  
**SITE NAME: MIDDLETOWN\_MILE LANE**  
 499 MILE LANE  
 MIDDLETOWN, CT 06457  
 MIDDLESEX COUNTY

**at&t**  
 550 COCHITUATE ROAD  
 FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
4	12/10/21	ISSUED FOR REVIEW	CC	JC	DPH
3	11/22/21	ISSUED FOR REVIEW	CC	JC	DPH
2	11/16/21	ISSUED FOR REVIEW	AR	JC	DPH
1	09/22/21	ISSUED FOR REVIEW	AR	JC	DPH
0	04/07/21	ISSUED FOR REVIEW	VP	JC	DPH

SCALE: AS SHOWN    DESIGNED BY: JC    DRAWN BY: CC/VP

AT&T		
WETLAND SETBACKS (NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT3470A	C-3	4

# ATTACHMENT 9

December 9, 2021

APT Project No.: CT415520

**Prepared For:** Smartlink  
85 Rangeway Road, Bldg. 3, Suite 102  
Billerica, MA 01862

**Site Name:** CT3470A Middletown

**Site Address:** 499 Mile Lane, Middletown, Connecticut

**Date of Investigation:** 11/11/2021

**Field Conditions:** **Weather:** partly sunny, mid 50's  
**Soil Moisture:** moist

**Wetland/Watercourse Delineation Methodology<sup>1</sup>:**

Connecticut Inland Wetlands and Watercourses

**Municipal Upland Review Area:**

**Wetlands:** 100 feet **Watercourses:** 100 feet

The wetlands inspection was performed by<sup>2</sup>:



Dean Gustafson, Professional Soil Scientist

Enclosures: Wetland Delineation Field Form & Wetland Inspection Map

*This report is provided as a brief summary of findings from APT's wetland investigation of the referenced Study Area that consists of proposed development activities and areas generally within 200 feet.<sup>3</sup> If applicable, APT is available to provide a more comprehensive wetland impact analysis upon receipt of site plans depicting the proposed development activities and surveyed location of identified wetland and watercourse resources.*

---

<sup>1</sup> Wetlands and watercourses were delineated in accordance with applicable local, state and federal statutes, regulations and guidance.

<sup>2</sup> All established wetlands boundary lines are subject to change until officially adopted by local, state, or federal regulatory agencies.

<sup>3</sup> APT has relied upon the accuracy of information provided by Smartlink and its contractors regarding proposed lease area and access road/utility easement locations for identifying wetlands and watercourses within the study area.



---

# Attachments

- Wetland Delineation Field Form
- Wetland Inspection Map

### Wetland Delineation Field Form

Wetland I.D.:	Wetland 1	
Flag #'s:	WF 1b to 20	
Flag Location Method:	Site Sketch <input checked="" type="checkbox"/>	GPS (sub-meter) located <input checked="" type="checkbox"/>

**WETLAND HYDROLOGY:**

**NONTIDAL**

Intermittently Flooded <input type="checkbox"/>	Artificially Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated/seepage <input checked="" type="checkbox"/>	Seasonally Saturated/perched <input checked="" type="checkbox"/>
Comments: None		

**TIDAL**

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Irregularly Flooded <input type="checkbox"/>		
Comments: None		

**WETLAND TYPE:**

**SYSTEM:**

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments: None		

**CLASS:**

Emergent <input type="checkbox"/>	Scrub-shrub <input checked="" type="checkbox"/>	Forested <input checked="" type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input checked="" type="checkbox"/>	Wet Meadow <input type="checkbox"/>
Comments: Wetland was created by historic slope cut that intercepted the seasonal high groundwater table that seeps from the toe of cut slope with water contained within a shallow swale feature that supports this disturbed man-made wetland.		

**WATERCOURSE TYPE:**

Perennial <input type="checkbox"/>	Intermittent <input checked="" type="checkbox"/>	Tidal <input type="checkbox"/>
Watercourse Name: Unnamed		
Comments: Embedded in the interior is a conveyance feature that provides seasonal flow.		

**Wetland Delineation Field Form (Cont.)**

**SPECIAL AQUATIC HABITAT:**

Vernal Pool Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Potential <input type="checkbox"/>	Other <input type="checkbox"/>
Vernal Pool Habitat Type: None	
Comments: None	

**SOILS:**

Are field identified soils consistent with NRCS mapped soils?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
---	---	-----------------------------

**DOMINANT PLANTS:**

Black Willow ( <i>Salix nigra</i> )	Red Maple ( <i>Acer rubrum</i> )
Bush Honeysuckles* ( <i>Lonicera</i> spp.)	Multiflora Rose* ( <i>Rosa multiflora</i> )

\* denotes Connecticut Invasive Species Council invasive plant species

**GENERAL COMMENTS:**

All-Points Technology Corp., P.C. ("APT") understands that Smartlink proposes to install a wireless communications facility ("Facility") within and adjacent to an existing telecommunications facility in the central portion of the City of Middletown-owned property. The location of the proposed Facility consists of an existing developed and disturbed area associated with historic development in this part of the property and development of the existing telecommunications facility. Access would be gained via an existing paved access drive to the north off Mile Lane.

A man-made wetland is located around the south, east and west sides of the existing telecommunications facility and would be located ±20 feet south of the proposed Facility's compound expansion off the west side of the existing facility. This wetland was apparently created by previous grading activities associated with the former U.S. Army Reserve Training Center development which created a large slope cut located south of the proposed Facility and the existing telecommunications facility. That slope cut intercepted the seasonal high groundwater table, resulting in seasonal groundwater seepage that collects in a relatively shallow swale feature. The swale was found to contain wetland characteristics (e.g., poorly drained soils, sustained wetland hydrology, wetland vegetation) that satisfies definition requirements under the Connecticut Inland Wetlands and Watercourses Act regulations.

APT recommends that erosion and sedimentation controls be designed, installed and maintained during construction in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control* in order to protect the nearby wetland. Considering the disturbed and developed nature of the proposed Facility site, its proximity to an existing telecommunications facility, and the disturbed man-made nature of the nearby wetland, provided appropriate erosion and sedimentation control measures are properly designed, installed and maintained throughout construction, no likely adverse impact to the nearby wetland would be anticipated.



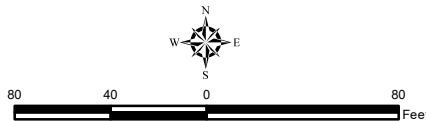


**Legend**

- x-x-x Proposed Fenced Compound Expansion
- Proposed Equipment Lease Area
- Proposed Equipment
- Subject Property
- Wetland Flag
- Approximate Wetland Area
- 100-Foot Upland Review Area
- Approximate Field Identified Wetland Boundary
- Delineated Wetland Boundary

**Wetland Inspection Map**  
 Proposed Wireless Telecommunications Facility  
 Middletown\_Mile Lane  
 499 Mile Lane  
 Middletown, Connecticut

**Map Notes:**  
 Base Map Source: 2019 Aerial Photograph (CTECO)  
 Map Scale: 1 inch = 80 feet  
 Map Date: December 2021



# **ATTACHMENT 10**

December 10, 2021

Scott Pike  
SmartLink  
85 Rangeway Road  
Bldg. 3, Suite 102  
Billerica, MA 01862

SUBJECT: AT&T CT3470A Middletown Mile Lane – Generator Noise Study

Dear Scott,

At your request, I have conducted a study of potential noise impacts from the proposed backup generator at 499 Mile Lane in Middletown, CT. This study was limited to the generator and did not include any other existing or proposed equipment on the site. A generator is generally the loudest equipment at a wireless site.

This revised report reflects the new proposed generator location.

#### *Noise Criteria*

This parcel and all abutters are in residential zones. The City of Middletown Code, Chapter 206 *Noise*, section 9, part D limits noise levels, measured at the property line, to 55 dBA during the day and 45 dBA at night.

Chapter 442, Sec. 22a-69-2 of the Connecticut Statutes defines Noise Zones, based on land use. The Class A and Class B noise zones are relevant to this project. They are defined as follows:

- Lands designated Class A shall generally be residential areas where human beings sleep or areas where serenity and tranquility are essential to the intended use of the land.
- Lands designated Class B shall generally be commercial in nature, areas where human beings converse, and such conversation is essential to the intended use of the land.

The project site is a government facility and falls under Class B. The surrounding properties are all residential, and thus Class A.

Sec. 22a-69-3.5 limits property-line sound levels emitted from a Class B Noise Zone and received within a Class A Noise Zone to 55 dBA during the day and 45 dBA at night.

The City and State limits are identical.



*Generator Sound Levels*

This proposed generator is a Generac SDC20 (part number 7098-0) with a Level 2 sound enclosure. Generac has provided sound level data for this unit. This generator runs on diesel fuel.

Based on these data, the proposed equipment locations, and site topography, a computer model of the site was constructed in SoundPLAN, an industry- standard application for modeling outdoor noise propagation. Calculations were based on ISO 9613-2 *Attenuation of Sound During Propagation Outdoors*.

Figure 1, attached, presents a plot of predicted sound levels. The generator is not expected to exceed 35 dBA at any property boundary.

*Conclusion*

The proposed generator is expected to comply with the limits of both the City of Middletown and State of Connecticut.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric Reuter", with a long horizontal flourish extending to the right.

Eric L. Reuter, FASA, INCE Bd. Cert.  
*Principal*

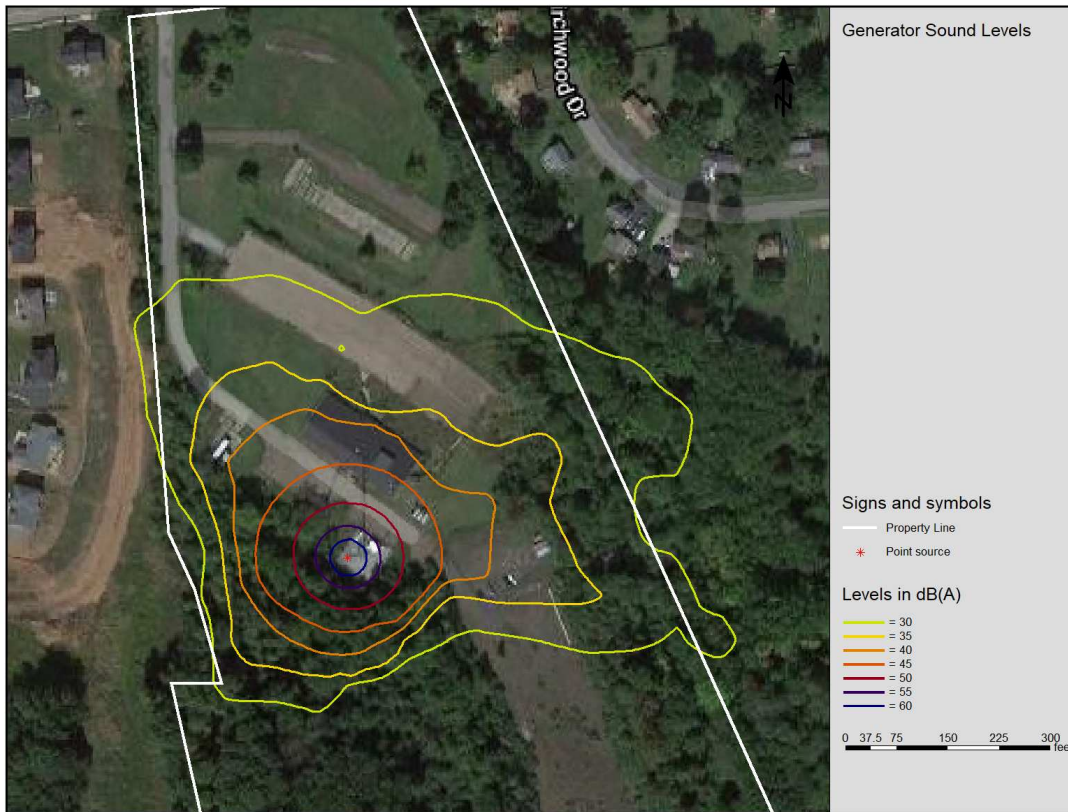


Figure 1 – Predicted Sound Levels

# **ATTACHMENT 11**





## USFWS & NDDB COMPLIANCE

December 9, 2021

Smartlink LLC  
1997 Annapolis Exchange Pkwy #200  
Annapolis, MD 21401

Re: Site #CT3470A. 499 Mile Road, Middletown, Connecticut  
APT Job No: 415520

On behalf of Smartlink LLC, All-Points Technology Corporation, P.C. ("APT") performed an evaluation with respect to possible federally- and state-listed, threatened, endangered or special concern species in order to determine if the proposed referenced telecommunication facility ("Facility") would result in a potential adverse effect to listed species.

APT understands that Smartlink LLC proposes the construction of a wireless telecommunications facility within the central portion of property at 499 Mile Road in Middletown, CT ("Subject Property"). The Subject Property is developed and owned by the City of Middletown. The proposed Smartlink Facility will include a new monopole tower within an expansion to an existing telecommunications facility compound. No tree removal is anticipated for the compound expansion. The new tower and equipment compound will allow for the future collocation of multiple service providers.

### **USFWS**

The federal consultation was completed in accordance with Federal Communications Commission ("FCC") rules implementing the National Environmental Policy Act ("NEPA") and Section 7 of the Endangered Species Act through the U.S. Fish and Wildlife Service's ("USFWS") Information, Planning, and Conservation System ("IPaC"). Based on the results of the IPaC review, one federally-listed<sup>1</sup> threatened species is known to occur in the vicinity of the Subject Property documented as the northern long-eared bat ("NLEB"; *Myotis septentrionalis*). As a result of this preliminary finding, APT performed an evaluation to determine if the proposed referenced Facility would result in a likely adverse effect to NLEB.

The proposed Facility would be located within a previously developed and cleared area with no tree clearing anticipated; trees potentially provide NLEB habitat. Consultation with the Connecticut Department of Energy & Environmental Protection ("CTDEEP") Wildlife Division Natural Diversity Data Base ("NDDB") revealed that the proposed Facility is not within 150 feet of a known occupied NLEB maternity roost tree and is not within 0.25 mile of a known NLEB hibernaculum. The nearest NLEB habitat resource to the proposed Facility is located  $\pm$ 14 miles to the south in North Branford.

---

<sup>1</sup> Listing under the federal Endangered Species Act

APT submitted the effects determination using the NLEB key within the IPaC system for the proposed Facility (the "Action"). This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the USFWS's January 5, 2016, intra-Service Programmatic Biological Opinion ("PBO") on the Final 4(d) Rule for the NLEB for Section 7(a)(2) compliance.

Based upon the IPaC submission, the Action is consistent with activities analyzed in the PBO; please refer to the enclosed December 2, 2021, USFWS letter. The Action may affect NLEB; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). If the USFWS does not respond within 30 days from the date of the letter (January 2, 2022), one may presume that the IPaC-assisted determination was correct and that the PBO satisfies and concludes Smartlink's responsibilities for this Action under ESA Section 7(a)(2) with respect to NLEB. It is anticipated the Action will comply with ESA Section 7(a)(2) with respect to NLEB. If a response is received from USFWS, APT will amend this document accordingly.

In addition, Smartlink LLC would consider the following USFWS voluntary conservation measures, where appropriate and as the project schedule allows, as encouraged in the April 29, 2016, FCC Public Notice<sup>2</sup>, to reduce the potential for impact to NLEB.

- Conduct tree removal activities outside of the NLEB pup season (June 1-July 31) and active season (April 1-October 31) to minimize impacts to pups at roosts not yet identified. NOT APPLICABLE.
- Avoid clearing suitable spring staging and fall swarming habitat within a five-mile radius of known or assumed NLEB hibernacula during the staging and swarming seasons (April 1-May 15 and August 15-November 14, respectively). NOT APPLICABLE.
- Maintain dead trees (snags) and large trees when possible. NOT APPLICABLE.
- Use herbicides and pesticides only if unavoidable. If necessary, spot treatment is preferred over aerial application.
- Minimize exterior lighting, opting for down-shielded, motion-sensor security lights instead of constant illumination.

## **NDDB**

No known areas of state-listed species are currently depicted on the most recent CTDEEP NDDB Maps in the location of the proposed Smartlink's Facility or on the Subject Property. Please refer to the enclosed NDDB Map which depicts the nearest NDDB buffer ±0.13-mile west of the proposed Facility and just west of the Subject Property. Since the proposed Facility and Subject Property are not located within a NDDB buffer area, consultation with DEEP is not required in accordance with their review policy<sup>3</sup> or the Connecticut Siting Council's review policy.

---

<sup>2</sup> Federal Communications Commission. *Tower Construction Guidance for Protection of Northern Long-Eared Bat Under the Endangered Species Act*. Public Notice DA 16-476. April 29, 2016

<sup>3</sup> DEEP Requests for NDDB State Listed Species Reviews.

[http://www.ct.gov/deep/cwp/view.asp?a=2702&q=323466&deepNav\\_GID=1628%20](http://www.ct.gov/deep/cwp/view.asp?a=2702&q=323466&deepNav_GID=1628%20)

Therefore, the proposed Smartlink LLC Facility is not anticipated to adversely impact any federal or state threatened, endangered or species of special concern.

Sincerely,  
All-Points Technology Corporation, P.C.



Dean Gustafson  
Senior Biologist

Enclosures



# USFWS NLEB Letter

---



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New England Ecological Services Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301-5094  
Phone: (603) 223-2541 Fax: (603) 223-0104  
<http://www.fws.gov/newengland>

IPaC Record Locator: 702-107927743

December 02, 2021

Subject: Consistency letter for the 'Smartlink Middletown\_Mile Lane' project indicating that any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Dear Deborah Gustafson:

The U.S. Fish and Wildlife Service (Service) received on December 02, 2021 your effects determination for the 'Smartlink Middletown\_Mile Lane' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. You indicated that no Federal agencies are involved in funding or authorizing this Action. This IPaC key assists users in determining whether a non-Federal action may cause “take”<sup>[1]</sup> of the northern long-eared bat that is prohibited under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Please report to our office any changes to the information about the Action that you entered into IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation.

If your Action proceeds as described and no additional information about the Action’s effects on species protected under the ESA becomes available, no further coordination with the Service is required with respect to the northern long-eared bat.

The IPaC-assisted determination for the northern long-eared bat **does not** apply to the following ESA-protected species that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species listed above.

---

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

---



## Action Description

You provided to IPaC the following name and description for the subject Action.

### 1. Name

Smartlink Middletown\_Mile Lane

### 2. Description

The following description was provided for the project 'Smartlink Middletown\_Mile Lane':

AT&T is proposing a telecommunications facility with a +/- 150-foot monopole and walk-in equipment cabinet located at 499 Mile Lane in Middletown, Connecticut.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.5800533,-72.68568013279284,14z>



### Determination Key Result

This non-Federal Action may affect the northern long-eared bat; however, any take of this species that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o).

### Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on **May 15, 2017**. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for non-Federal actions is to assist determinations as to whether proposed actions are excepted from take prohibitions under the northern long-eared bat 4(d) rule.

If a non-Federal action may cause prohibited take of northern long-eared bats or other ESA-listed animal species, we recommend that you coordinate with the Service.

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## Determination Key Result

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

## Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

*No*

2. Will your activity purposefully **Take** northern long-eared bats?

*No*

3. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?

**Automatically answered**

*No*

4. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at [www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html](http://www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html).

*Yes*

5. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

*No*

6. Will the action involve Tree Removal?

*No*

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## Project Questionnaire

**If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.**

1. Estimated total acres of forest conversion:

0

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

**If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.**

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

**If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.**

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

**If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.**

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

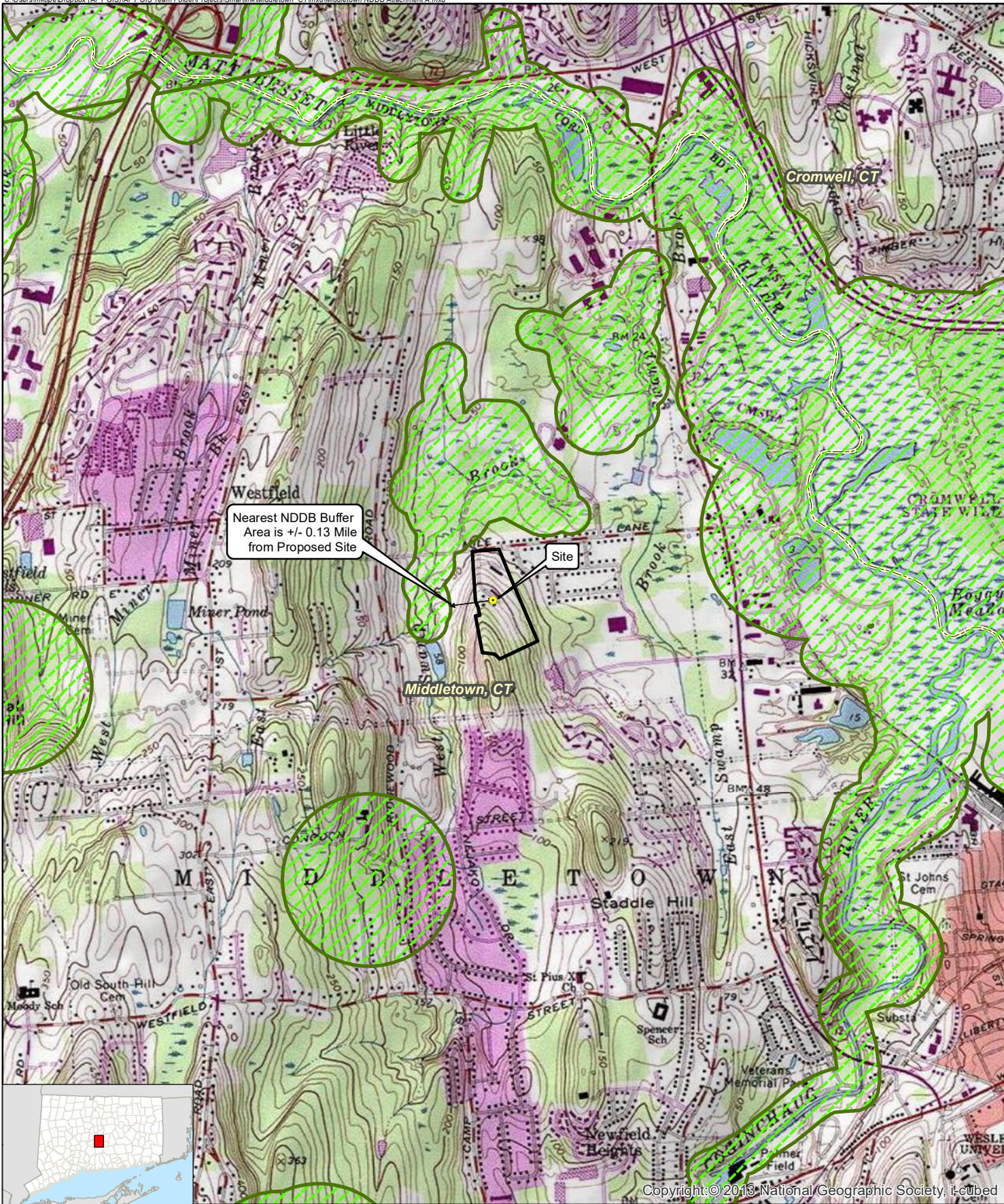
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# NDDDB Map

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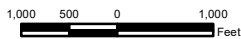


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**Legend**

- Proposed Monopole Tower
- Subject Property
- Natural Diversity Database (updated June 2021)
- Municipal Boundary

**Map Notes:**  
 Base Map Source: USGS 7.5 Minute Topographic  
 Quadrangle Map, Middletown, CT (1992)  
 Map Scale: 1:24,000  
 Map Date: December 2021



**NDDB Map**

Proposed Wireless  
 Telecommunications Facility  
 Middletown\_Mile Lane  
 499 Mile Lane  
 Middletown, Connecticut

