New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067

Tim Whalen
Real Estate Consultant
95 Ryan Drive, Suite #1
Raynham, MA 02767
Phone: (781)375-8318
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August 11, 2017

Chairman Robert Stein
and Members of the Connecticut Siting Council
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: **Request for Tower Share – Notice**
New Cingular Wireless PCS, LLC ("AT&T") Request for Approval of the Shared Use of an Existing Wireless Facility 100 Sunset Ridge East Hartford, CT 06108.
AT&T site number: CT3438

Dear Chairman Stein and Members of the Council:

AT&T proposes to share an existing wireless facility located at 100 Sunset Ridge East Hartford, CT 06108 (the "Facility"). The subject parcel is identified by the Town of East Hartford as Map 57 Lot 134A. The property is owned by the Town of East Hartford and is roughly 1.46+/- acres.

Pursuant to Connecticut General Statues Section 16-50aa (the Statute), AT&T requests a finding from the Connecticut Siting Council that the shared use of this facility is technically, legally, environmentally and economically feasible, will meet safety concerns, will avoid the unnecessary proliferation of towers and is in the public interest. AT&T further requests an order approving the shared use of this Facility.

Siting Council Jurisdiction Over the Existing Facility

AT&T is a telecommunication provider licensed by the FCC to provide service in the State of Connecticut, including but not limited to Hartford County. AT&T in the process of entering into an agreement with the owner of this Facility, The Town of East Hartford, for the location of this proposed equipment on the tower so that it may provide telecommunications services to the surrounding community.

Pursuant to Connecticut General Statutes § 16-50aa, the Council may approve the shared use of a telecommunications facility provided that such shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns.

The Facility currently hold the Towns EMS equipment at the 120' and 155' level with equipment attached to and running down different parts of the existing Tower at 100 Sunset Ridge. This regulation of the Facility extended not only to the antennas on the tower but also the associated equipment and connections elsewhere on the site. In essence, the building was legally made as a tower and primarily the support structure for and part of the Facility as a whole. As such, we understand that AT&T's antennas and equipment at this Facility are regulated by the Siting Council.

The purpose of this request is to use an existing Facility to develop AT&T's wireless broadband network to provide high speed wireless data and to develop wireless service within the State of Connecticut and in this part of East Hartford, CT: thus avoiding the need for an additional tower in East Hartford. As the Council is aware AT&T is licensed by the Federal Communications Commission ("FCC") to provide multiple technologies, including Global Systems for Mobile Communications ("GSM" or "2G"), Universal Mobile Telecommunications Service ("UMTS" or "3G") and long-term evolution ("4G" or "LTE") services in Hartford County. AT&T is building and enhancing its network to take advantage of its licensed spectrum, and improve its broadband high speed wireless voice and data services. By issuing an order approving AT&T's shared use of this Facility, AT&T will be able to proceed with obtaining a building permit for the proposed installation.

Existing Facility and Proposed Collocation

The existing Facility is a 140' tower located at 100 Sunset Ridge in East Hartford. The Town's Fire an EMS equipment is currently on the facility. A site plan of the facility is included in the drawings, prepared by Advanced Engineering Group with a last revision date of May 4, 2017 attached hereto.

AT&T intends to install three (3) Kathrein 800-107-99 panel antennas, twelve (12) Ericsson RRUs and three (3) Surge arrestors with associated cabling mounted on new antenna frames on the existing tower. AT&T has leased space for ground equipment which will be installed at grade level next to the existing tower.

Consistent with the requirements of the Statute, it is feasible for AT&T to collocate at this facility. AT&T is proposing to add new equipment to an existing Facility. Included with this application is a Structural Analysis Report from Advanced Engineering Group with a last revision date of May 4, 2017, which shows that the existing tower can support AT&T's proposed equipment.

The Proposed Facility Will Not Have a Substantial Adverse Environmental Impact

Pursuant to Statute, the proposal will be environmentally feasible for the following reasons:

- There will be little increase in the visibility of the Facility with the addition of the antennas and associated equipment on the tower.

- There will be no increased impact on air quality because no air pollutants will be generated during normal operation of the facility.

- During construction, the proposed project will generate a small amount of traffic and noise as construction takes place. Upon completion, traffic will be limited to an average of one trip per month for maintenance and inspections.

- There will be no adverse impact to the health and safety of the surrounding community or workers at the facility due to the addition of AT&T's antennas to the Facility. AT&T has performed an analysis of the radio frequency field emanating from the transmitting antennas on the tower to ensure compliance with the National Council on Radiation Protection and measurements (NCRP) standard for maximum permissible exposure (MPE) adopted by the FCC. The analysis dated June 6, 2017 indicates that AT&T and other antennas on Facility will cumulatively emit 13.42% of the NCRP standard for maximum permissible exposure. The report indicates that maximum level of exposure will be well below the FCC's mandated radio frequency exposure limits. The report is attached hereto and the calculations are below.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Sector Value	**6.35 %**
T-Mobile	3.74 %
Clearwire	0.21 %
Public Works	0.62 %
Fire	0.41 %
Fire Admin	0.41 %
Police Channels 1&2	1.02 %
Parks & Rec	0.17 %
Health	0.25 %
800	0.24 %
Site Total MPE %:	**13.42 %**

- AT&T expects to enhance safety in this portion of East Hartford by improving wireless telecommunications for local residents and travelers. AT&T continues to develop its network to provide its customers with quality and reliable coverage to comply with their FCC license, the site is a necessary part of AT&T's network development.

- The overall visual impact on the Town of East Hartford will be decreased with the sharing of a single Facility versus the proliferation in different locations.

- This proposal is designed to provide reliable wireless coverage for this section of East Hartford, Connecticut.

Conclusion:

For the reasons stated above, the collocation of AT&T's antennas and associated equipment to at this approved Facility would meet all the requirements set forth in the Statute. The proposal is legally, technically, economically and environmentally feasible and meets all public safety concerns. Therefore, AT&T respectfully requests that the Council approve this request for the shared use of this Facility located at 100 Sunset Ridge, East Hartford CT.

Respectfully yours,

Tim Whalen
Real Estate Consultant

CC: *Mayor Marcia Leclerc, Town of East Hartford (landlord and governing body)*
- *UPS tracking: 1Z9Y45030320836878*

Peter Bonzani, Chair, Planning and Zoning Commission
- *UPS tracking: 1Z9Y45030327779267*

Milton Gregory Grew, Director of Inspections and Permits
- *UPS tracking: 1Z9Y45030328787489*

CENTERLINE COMMUNICATIONS

LETTER OF AUTHORIZATION

AT&T SITE No.: 10578403

AT&T SITE NAME: CT3438

ADDRESS: 100 Sunset Ridge, East Hartford CT

MARCIA A. LECLERC, MAYOR of TOWN OF EAST HARTFORD in East Hartford CT, authorize AT&T and/or their agent, to act as our non-exclusive agent for the sole purpose of filing and consummating any land use or building permit application(s) necessary to obtain approval of the applicable jurisdiction for the AT&T installation of telecommunications equipment on the above-described property.

We understand that this application may be denied, modified or approved with conditions, and that any such conditions of approval or modifications will be the sole responsibility of the carrier and will be complied with prior to issuance of a permit.

Landlord Printed Name:

By (signature):

Town of East Hartford Property Summary Report

100 SUNSET RIDGE DR

MAP LOT:	57-134A	**CAMA PID:**	13740
LOCATION:	100 SUNSET RIDGE DR		
OWNER NAME:	TOWN OF EAST HARTFORD / VETERANS MEMORIAL CLUBHSE		

13740 03/24/2016

OWNER OF RECORD
TOWN OF EAST HARTFORD
VETERANS MEMORIAL CLUBHSE
740 MAIN STREET
EAST HARTFORD, CT 06108

LIVING AREA:	6169	**ZONING:**	R2	**ACREAGE:**	1.64

SALES HISTORY

OWNER	BOOK / PAGE	SALE DATE	SALE PRICE
TOWN OF EAST HARTFORD VETERANS MEMORIAL CLUBHSE	159/ 39	01-Jan-1900	$0.00

CURRENT PARCEL ASSESSMENT

TOTAL:	$836,930.00	**IMPROVEMENTS:**	$738,230.00	**LAND:**	$98,700.00

ASSESSING HISTORY

FISCAL YEAR	TOTAL VALUE	IMPROVEMENT VALUE	LAND VALUE
2016	$836,930.00	$738,230.00	$98,700.00
2015	$807,050.00	$708,350.00	$98,700.00
2014	$807,050.00	$708,350.00	$98,700.00
2013	$807,050.00	$708,350.00	$98,700.00
2012	$807,050.00	$708,350.00	$98,700.00

Town of East Hartford Property Summary Report

100 SUNSET RIDGE DR

MAP LOT:	57-134A	**CAMA PID:**	13740
LOCATION:	100 SUNSET RIDGE DR		
OWNER NAME:	TOWN OF EAST HARTFORD / VETERANS MEMORIAL CLUBHSE		

BUILDING # 1

YEAR BUILT	1930	**EXT WALL 1**	Stone/Masonry
STYLE	Cultural Facility	**INT WALLS 1**	Plaster
MODEL	Comm/Ind	**HEAT FUEL**	Other
STORIES	1.0	**HEAT TYPE**	Steam
OCCUPANCY	Exempt	**AC TYPE**	None
ROOF	Drmrs/Ex Gable	**BEDROOMS**	
ROOF COVER	Asphalt	**FULL BATHS**	15
FLOOR COVER 1	Hardwood	**HALF BATHS**	
% BSMT	null	**TOTAL ROOMS**	0
% FIN BSMT	null	**% REC RM**	null
% SEMI FIN BSMT	null	**% ATTIC FINISH**	null
BSMT GARAGE	null	**FIREPLACES**	null

13740 03/24/2016

EXTRA FEATURES

DESCRIPTION	CODE	UNITS
Fin Bsmt	FBM	1567 S.F.
Fireplace	FPL	1 UNITS


I 384
57-89
2.00000000000 ac
57-133
111
57-132
105
57-131
99
57-130
0.93000000000 ac
89
57-134A
1.64000000000 ac
148
57-134
16.30000000000 ac
57-136
94
57-137
88
57-138
82
57-135
150
57-90
57-91
0.73000000000 ac
160
154
57-92
148
57-129
81
57-128
75
74
57-93
0.35000000000 ac
140
155
145
135
57-94
134
57-95
57-127
67
64
60
57-141
Ridgewood Rd
Sunset

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT3438

East Hartford Sunset Ridge
100 Sunset Ridge
East Hartford, CT 6108

June 12, 2017

Centerline Communications Project Number: 950012-004

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**13.42 %**

June 12, 2017

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT3438 – East Hartford Sunset Ridge**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **100 Sunset Ridge, East Hartford, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **100 Sunset Ridge, East Hartford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

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

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE	700 MHz	2	60
LTE	850 MHz	2	60
LTE	2300 MHz (WCS)	2	60
LTE	1900 MHz (PCS)	2	60

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Kathrein 800-10799	110
B	1	Kathrein 800-10799	110
C	1	Kathrein 800-10799	110

Table 2: Antenna Data

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

RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Kathrein 800-10799	700 MHz / 850 MHz / 2300 MHz (WCS) / 1900 MHz (PCS)	13.75 / 14.35 / 14.55/15.05	8	480	13,372.79	6.35
						Sector A Composite MPE%	**6.35**
Antenna B1	Kathrein 800-10799	700 MHz / 850 MHz / 2300 MHz (WCS) / 1900 MHz (PCS)	13.75 / 14.35 / 14.55 / 15.05	8	480	13,372.79	6.35
						Sector B Composite MPE%	**6.35**
Antenna C1	Kathrein 800-10799	700 MHz / 850 MHz / 2300 MHz (WCS) / 1900 MHz (PCS)	13.75 / 14.35 / 14.55 / 15.05	8	480	13,372.79	6.35
						Sector C Composite MPE%	**6.35**

Table 3: AT&T Emissions Levels

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

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Sector Value	**6.35 %**
T-Mobile	3.74 %
Clearwire	0.21 %
Public Works	0.62 %
Fire	0.41 %
Fire Admin	0.41 %
Police Channels 1&2	1.02 %
Parks & Rec	0.17 %
Health	0.25 %
800	0.24 %
Site Total MPE %:	**13.42 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	6.35 %
AT&T Sector B Total:	6.35 %
AT&T Sector C Total:	6.35 %
Site Total:	13.42 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 700 MHz LTE	2	1,422.82	110	9.46	700 MHz	467	2.03%
AT&T 850 MHz LTE	2	1,633.62	110	10.86	850 MHz	567	1.92%
AT&T 2300 MHz (WCS) LTE	2	1,710.61	110	11.37	2300 MHz (WCS)	1000	1.14%
AT&T 1900 MHz (PCS) LTE	2	1,919.34	110	12.76	1900 MHz (PCS)	1000	1.28%
						Total:	**6.35%**

Table 6: AT&T Maximum Sector MPE Power Values

Summary

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

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	6.35 %
Sector B:	6.35 %
Sector C:	6.35 %
AT&T Maximum Total (per sector):	6.35 %
Site Total:	13.42 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **13.42 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Scott Heffernan
RF Engineering Director
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

Structural Analysis Report

140’ Self-Supporting Tower
100 Sunset Ridge
East Hartford, Connecticut 06108

AT&T Site Number: CT3438

May 4, 2017

Prepared By:

ADVANCED ENGINEERING GROUP, P.C.
500 North Broadway
East Providence, RI 02914

Prepared for
Centerline Communications
95 Ryan Drive
Raynham MA 02767

ADVANCED
ENGINEERING GROUP, P.C.

500 North Broadway
East Providence, RI 02914
Ph: 401-354-2403
Fax: 401-354-2397

May 4, 2017

Mr. Jeffery Dellicolli
Project Manager
Centerline Communications
95 Ryan Drive
Raynham MA 02767

STRUCTURAL ANALYSIS

Structure	140' Self-Supporting Tower
Client	Centerline Communications
Location	100 Sunset Ridge, East Hartford, CT

EXECUTIVE SUMMARY

Advanced Engineering Group, P.C. (AEG) has performed a structural analysis of the existing 140'± self-supporting tower (SST) at the above-referenced address in order to ascertain the structural capacity of the tower with the proposed AT&T inventory consisting of:

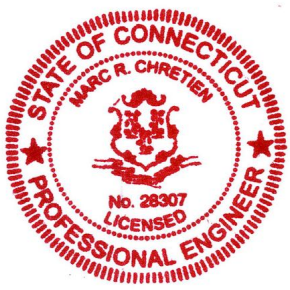
- Three (3) Kathrein 800-10799 panel antennas (1 per sector)
- Six (6) Ericsson RRUS 11 Remote Radio Heads (RRHs) (2 per sector)
- Six (6) RRUS 32 RRHs (2 per sector)
- Three (3) DC-6-48-60-18 surge suppressors (1 per sector)
- Three (3) Sector Frames
- One (1) 1/2" fiber cable
- Four (4) 1/2" DC cables

Based on the analysis performed, **the existing self-supporting tower is structurally adequate and is in conformance with the ANSI/TIA 222-G standard** when analyzed for the existing tower inventory and the proposed AT&T inventory referenced above.

If you have any questions, of if we can be of further assistance, please do not hesitate to contact us.

Very truly yours

Marc R. Chretien, P.E.
Advanced Engineering Group. P.C.



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INTRODUCTION

At the request of Jeffery Dellicolli, Centerline Communications, on behalf of AT&T, Advanced Engineering Group, P.C. (AEG) has performed a structural analysis of the existing 140'± SST at the above-referenced address in order to ascertain the structural capacity of the tower with the proposed AT&T inventory with respect to the ANSI/TIA-222-G Standard, "Structural Standard for Antenna Supporting Structures and Antennas". The scope of this independent analysis is to determine the overall stability and the adequacy of structural members and member connections, as available and stated. This analysis assumes that the structure has been properly installed and maintained with no structural defects. Installation procedures and related loading are not within the scope of this analysis and should be performed and evaluated by a competent person of the erection contractor.

SOURCES

	Source	Information	Reference
Tower	AEG Records	Previous report by URS Corporation (URS), dated 3/18/09	URS Project No.: 36917334/HPC-024
Foundation	AEG Records	Previous report by URS Corporation (URS), dated 3/18/09	URS Project No.: 36917334/HPC-024
Existing Inventory	AEG Records AEG, visual inspection from grade	Previous report by URS Corporation (URS), dated 3/18/09 Antennas and mount heights	URS Project No.: 36917334/HPC-024 Field inspection, 2/24/14
Proposed Inventory	Centerline Communications	RFDS Document	NEW-ENGLAND_CONNECTICUT_S3438A_2017-New-Site_New_ra9161_2051677677_10578403_156889_07-18-2016_Preliminary-In-Progress_v1.00.pdf

Note: Unless otherwise noted, all information regarding the structural elements of the existing tower is based on the above-referenced URS report. This office performed a site inspection on February 24, 2014, and conducted a visual survey of the tower and appurtenances from the ground. Since the tower was not climbed, a conditional assessment was not performed during the survey. The existing tower

inventory is based on the visual inspection by this office on 2/24/14. Any inventory that could not be positively identified is based on information contained in the URS report. If any discrepancies are found to exist between the as-built tower (and inventory) and the information contained in this report, the results of this report are to be considered void and invalid, and this office is to be contacted so that the analysis can be revised.

ANALYSIS

The structural analysis was done in accordance with EIA/TIA-222-G, "Structural Standard for Antenna Supporting Structures and Antennas", and the American Institute of Steel Construction (AISC), Manual of Steel Construction, Allowable Stress Design, Ninth Edition. The computer program used to model the structure is tnxTower (ver. 7.0.7.0), a commercially available program developed and maintained by Tower Numerics, Inc. The latticed structures members are modeled using beam/truss and cable members and the pole members using tubular beam elements. Stresses are internally calculated for various dead, live, wind, and ice load cases and then applied as external loads on the structure. Any applicable exemptions, as per Section 15.6 of the TIA-222-G Standard for existing structures originally designed in accordance with a previous revision of the TIA-222 Standard, have been taken. Selected output from the analysis is included in Appendix C. The analysis was conducted using the following parameters:

Load Cases	Full Wind	105 mph w/o ice
	Ice	50 mph w/ 1" radial ice
	Service	60 mph
Structure Criteria	Structure Classification	Class II
	Exposure Category	B

Existing Tower Inventory

Elevation	Quantity	Make	Mount	Lines	Size & Location
137'	3	2"x8' omni whip	4' stand-off	3	7/8" / T-bracket
137'	1	2"x20' omni whip	4' stand-off	1	7/8" / T-bracket
133'	1	2' Dish	Stand-off	1	1/2" / Tower Face

Elevation	Quantity	Make	Mount	Lines	Size & Location
120	6 3	AIR21 TMA	Sector Frames	12	1-5/8" / T-bracket
120	3	2.5"x20' omni whip	Sector Frames	3	7/8" / T-bracket
110	3	HBX-6516DS-T0M (1)	Leg	6	1-5/8" / Tower Face (1)
100	3 1 1	12"x72" panel 2' dish 3' dish	Dual Stand-off	2 2	1/2" / Tower Face 2" Flex Conduit
80	1	8' omni whip	4' stand-off	1	1/2" / Tower Face

(1) To be removed

Proposed Tower Inventory

Elevation	Quantity	Make	Mount	Lines	Size & Location
110	3 6 6 3	Kathrein 800-10799 RRUS-11 RRUS-32 DC6-48-60-18	(3) Sabre 12' V-Boom w/ tie-backs	1 4	Fiber trunk DC line On face of Tower

The following table summarizes the results of the analysis based on stresses of individual members:

Member	Capacity	Location	Results
Leg	56.6	60'-80'	**Pass**
Horizontal	3.7	140'	**Pass**
Diagonal	65.7	100'-120'	**Pass**

Foundation as-built information was not available nor provided for this report. Therefore, the in-place capacity of the foundation could not be verified. A more thorough and accurate assessment of the foundation capacity will require site-specific foundation information. However, since the tower stresses are well below the allowable, it is the opinion of this office that the foundation can be considered structurally adequate..

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the structural analysis, it is the opinion of this office that the existing 140'± SST located at the above-referenced address is capable of supporting the proposed AT&T loads without structural modifications.

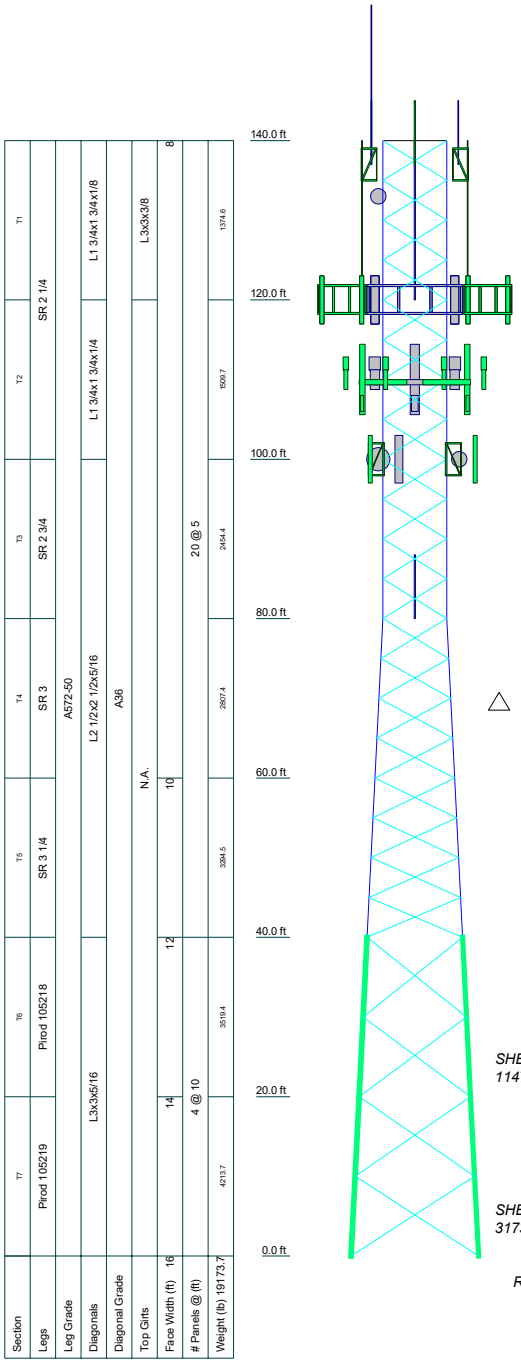
LIMITATIONS AND ASSUMPTIONS

This engineering analysis is based on the theoretical capacity of the members and is not a condition assessment of the structure. This analysis is based on information supplied, and therefore, its results are based on and as accurate as that supplied data. AEG has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural stress analysis:

- This existing tower is assumed, for the purpose of this analysis, to have been properly maintained and to be in good condition with no structural defects and with no deterioration to its member capacities ('as-new' condition).
- The tower member sizes and configuration are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated.
- The appurtenances configuration is as supplied and/or as stated in the report. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
- Some assumptions are made regarding antennas and mounts sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type & industry practice.
- Mounts/Platforms are considered adequate to support the loading. No actual analysis of the platform/ mount itself is performed, with the analysis being limited to analyzing the structure.
- The soil parameters are as per data supplied or as assumed and stated in the calculations. Refer to the Appendix. If no data is available, the foundation system is assumed to support the structure with its new reactions.
- All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report. All guy cable assemblies, as applicable, are assumed to develop the rated breaking strength of the wire.
- All prior structural modifications, if any, are assumed to be as per data supplied/available, and to have been properly installed and to be fully effective.

If any of the above assumptions are not valid or have been made in error, this analysis results may be invalided, AEG should be contacted to review any contradictory information to determine its effect.

APPENDIX A – Tower Schematic



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Pirod 4' Side Mount Standoff (1)	137	800-10799	110
Pirod 4' Side Mount Standoff (1)	137	800-10799	110
Pirod 4' Side Mount Standoff (1)	137	800-10799	110
2"x8' Omni Whip	137	(2) RRUS 11	110
20'x2.5" Omni Whip	137	(2) RRUS 11	110
2"x8' Omni Whip	137	(2) RRUS 11	110
2"x8' Omni Whip	137	(2) RRUS 32	110
P2F-52	133	(2) RRUS 32	110
Pirod 12' T-Frame Sector Mount (1)	120	(2) RRUS 32	110
Pirod 12' T-Frame Sector Mount (1)	120	DC-6-48-60-18	110
(2) AIR21 w/Mount Pipe	120	DC-6-48-60-18	110
(2) AIR21 w/Mount Pipe	120	DC-6-48-60-18	110
(2) AIR21 w/Mount Pipe	120	Pirod 4' Side Mount Standoff (1)	100
20'x2.5" Omni Whip	120	Pirod 4' Side Mount Standoff (1)	100
20'x2.5" Omni Whip	120	12"x72" Panel	100
20'x2.5" Omni Whip	120	12"x72" Panel	100
RFS Twin TMA	120	12"x72" Panel	100
RFS Twin TMA	120	Pirod 4' Side Mount Standoff (1)	100
RFS Twin TMA	120	P3F-52	100
Pirod 12' T-Frame Sector Mount (1)	120	P2F-52	100
Pirod 12' T-Frame Sector Mount (1)	110	2"x8' Omni Whip	80
Pirod 12' T-Frame Sector Mount (1)	110	Pirod 4' Side Mount Standoff (1)	80
Pirod 12' T-Frame Sector Mount (1)	110		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50000 psi	65000 psi	A36	36000 psi	58000 psi

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 105 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. Weld together tower sections have flange connections.
9. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
10. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
11. Welds are fabricated with ER-70S-6 electrodes.
12. TOWER RATING: 65.7%

ALL REAR

MAX. CORNER REACTIONS AT BASE:

DOWN: 196241 lb
SHEAR: 20826 lb

UPLIFT: -167982 lb
SHEAR: 18386 lb

AXIAL
126754 lb

SHEAR
11472 lb

MOMENT
1075 kip-ft

TORQUE 6 kip-ft
50 mph WIND - 1.00 in ICE

AXIAL
32999 lb

SHEAR
31730 lb

MOMENT
2567 kip-ft

TORQUE 16 kip-ft
REACTIONS - 105 mph WIND

Advanced Engineering Group
500 North Broadway
East Providence, RI 02914
Phone: 401-354-2403
FAX:

Job: ***CT3438A***			
Project: ***East Hartford Sunset Ridge***			
Client: Centerline Communications	Drawn by: MRC	App'd:	
Code: TIA-222-G	Date: 05/04/17	Scale: NTS	
Path: X:\RISA\CT3438A ATT NSB SA 042517 140' Pirod SST.eri		Dwg No. E-1	

APPENDIX B – Photos

Existing Antennas

Existing tower base

Tower Overview

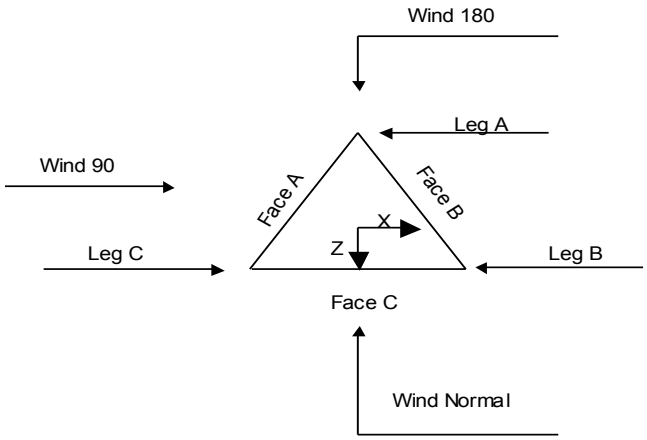
Existing cables, typ.

APPENDIX C – Calculations

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 140.00 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 8.00 ft at the top and 16.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
Basic wind speed of 105 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 1.00 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Weld together tower sections have flange connections..
Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..
Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..
Welds are fabricated with ER-70S-6 electrodes..
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

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	140.00-120.00			8.00	1	20.00
T2	120.00-100.00			8.00	1	20.00
T3	100.00-80.00			8.00	1	20.00
T4	80.00-60.00			8.00	1	20.00
T5	60.00-40.00			10.00	1	20.00
T6	40.00-20.00		U14.0 105218	12.00	1	20.00
T7	20.00-0.00	pirod	U16.0 105219	14.00	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
	ft	ft				in	in
T1	140.00-120.00	5.00	X Brace	No	No	0.00	0.00
T2	120.00-100.00	5.00	X Brace	No	No	0.00	0.00
T3	100.00-80.00	5.00	X Brace	No	No	0.00	0.00
T4	80.00-60.00	5.00	X Brace	No	No	0.00	0.00
T5	60.00-40.00	5.00	X Brace	No	No	0.00	0.00
T6	40.00-20.00	10.00	X Brace	No	No	0.00	0.00
T7	20.00-0.00	10.00	X Brace	No	No	0.00	0.00

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 140.00-120.00	Solid Round	2 1/4	A572-50 (50000 psi)	Single Angle	L1 3/4x1 3/4x1/8	A36 (36000 psi)
T2 120.00-100.00	Solid Round	2 1/4	A572-50 (50000 psi)	Single Angle	L1 3/4x1 3/4x1/4	A36 (36000 psi)
T3 100.00-80.00	Solid Round	2 3/4	A572-50 (50000 psi)	Single Angle	L2 1/2x2 1/2x5/16	A36 (36000 psi)
T4 80.00-60.00	Solid Round	3	A572-50 (50000 psi)	Single Angle	L2 1/2x2 1/2x5/16	A36 (36000 psi)
T5 60.00-40.00	Solid Round	3 1/4	A572-50 (50000 psi)	Single Angle	L2 1/2x2 1/2x5/16	A36 (36000 psi)
T6 40.00-20.00	Truss Leg	Pirod 105218	A572-50 (50000 psi)	Single Angle	L3x3x5/16	A36 (36000 psi)
T7 20.00-0.00	Truss Leg	Pirod 105219	A572-50 (50000 psi)	Single Angle	L3x3x5/16	A36 (36000 psi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 140.00-120.00	Single Angle	L3x3x3/8	A36 (36000 psi)	Single Angle		A36 (36000 psi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 140.00-120.00	0.00	0.00	A36 (36000 psi)	1	1	1.05	36.00	36.00	36.00
T2 120.00-100.00	0.00	0.00	A36 (36000 psi)	1	1	1.05	36.00	36.00	36.00
T3 100.00-80.00	0.00	0.00	A36 (36000 psi)	1	1	1.05	36.00	36.00	36.00
T4 80.00-60.00	0.00	0.00	A36 (36000 psi)	1	1	1.05	36.00	36.00	36.00
T5 60.00-40.00	0.00	0.00	A36 (36000 psi)	1	1	1.05	36.00	36.00	36.00
T6 40.00-20.00	0.00	0.00	A36 (36000 psi)	1	1	1.05	36.00	36.00	36.00
T7 20.00-0.00	0.00	0.00	A36 (36000 psi)	1	1	1.05	36.00	36.00	36.00

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 140.00-120.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T2 120.00-100.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T3 100.00-80.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T4 80.00-60.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T5 60.00-40.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T6 40.00-20.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T7 20.00-0.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Truss-Leg K Factors: Truss-Legs Used As Leg Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals	Truss-Legs Used As Inner Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals
T6 40.00-20.00	1	0.5	0.85	1	0.5	0.85
T7 20.00-0.00	1	0.5	0.85	1	0.5	0.85

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	U	Diagonal Net Width Deduct in	U	Top Girt Net Width Deduct in	U	Bottom Girt Net Width Deduct in	U	Mid Girt Net Width Deduct in	U	Long Horizontal Net Width Deduct in	U	Short Horizontal Net Width Deduct in	U
T1 140.00-120.00	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T2 120.00-100.00	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T3 100.00-80.00	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T4 80.00-60.00	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T5 60.00-40.00	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T6 40.00-20.00	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1
T7 20.00-0.00	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight plf
LDF7-50A (1-5/8 FOAM)	A	No	CaAa (In Face)	120.00 - 6.00	-2.00	0.45	12	No Ice	0.20	0.82
								1/2" Ice	0.30	2.33
								1" Ice	0.40	4.46
LDF7-50A (1-5/8 FOAM)	A	No	CaAa (In Face)	120.00 - 6.00	-4.00	0.4	6	No Ice	0.20	0.82
								1/2" Ice	0.30	2.33
								1" Ice	0.40	4.46
LDF5-50A (7/8 FOAM)	B	No	CaAa (In Face)	140.00 - 6.00	-3.00	-0.4	7	No Ice	0.11	0.33
								1/2" Ice	0.21	1.30
								1" Ice	0.31	2.88
LDF4RN-50A (1/2 FOAM)	B	No	CaAa (In Face)	100.00 - 6.00	2.00	0.42	2	No Ice	0.06	0.15
								1/2" Ice	0.16	0.84
								1" Ice	0.26	2.14
2" Rigid Conduit	B	No	CaAa (In Face)	100.00 - 6.00	2.00	0.45	2	No Ice	0.20	2.80
								1/2" Ice	0.30	4.33
								1" Ice	0.40	6.47
LDF4.5-50 (5/8 FOAM)	C	No	CaAa (In Face)	110.00 - 6.00	3.00	0	6	No Ice	0.09	0.15
								1/2" Ice	0.19	0.99
								1" Ice	0.29	2.43

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	140.00-120.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	15.260	0.000	46.20
		C	0.000	0.000	0.000	0.000	0.00
T2	120.00-100.00	A	0.000	0.000	71.280	0.000	295.20
		B	0.000	0.000	15.260	0.000	46.20
		C	0.000	0.000	5.220	0.000	9.00
T3	100.00-80.00	A	0.000	0.000	71.280	0.000	295.20
		B	0.000	0.000	25.780	0.000	164.20
		C	0.000	0.000	10.440	0.000	18.00
T4	80.00-60.00	A	0.000	0.000	71.280	0.000	295.20
		B	0.000	0.000	25.780	0.000	164.20
		C	0.000	0.000	10.440	0.000	18.00
T5	60.00-40.00	A	0.000	0.000	71.280	0.000	295.20
		B	0.000	0.000	25.780	0.000	164.20
		C	0.000	0.000	10.440	0.000	18.00
T6	40.00-20.00	A	0.000	0.000	71.280	0.000	295.20
		B	0.000	0.000	25.780	0.000	164.20
		C	0.000	0.000	10.440	0.000	18.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T7	20.00-0.00	A	0.000	0.000	49.896	0.000	206.64
		B	0.000	0.000	18.046	0.000	114.94
		C	0.000	0.000	7.308	0.000	12.60

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	140.00-120.00	A	2.294	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	79.489	0.000	1459.64
		C		0.000	0.000	0.000	0.000	0.00
T2	120.00-100.00	A	2.256	0.000	0.000	233.703	0.000	4694.31
		B		0.000	0.000	78.425	0.000	1413.56
		C		0.000	0.000	32.290	0.000	558.63
T3	100.00-80.00	A	2.211	0.000	0.000	230.476	0.000	4537.01
		B		0.000	0.000	123.068	0.000	2276.12
		C		0.000	0.000	63.505	0.000	1072.12
T4	80.00-60.00	A	2.156	0.000	0.000	226.525	0.000	4344.41
		B		0.000	0.000	120.653	0.000	2170.34
		C		0.000	0.000	62.188	0.000	1016.85
T5	60.00-40.00	A	2.085	0.000	0.000	221.388	0.000	4094.01
		B		0.000	0.000	117.514	0.000	2032.81
		C		0.000	0.000	60.476	0.000	944.99
T6	40.00-20.00	A	1.981	0.000	0.000	213.913	0.000	3754.64
		B		0.000	0.000	112.946	0.000	1847.97
		C		0.000	0.000	57.984	0.000	848.76
T7	20.00-0.00	A	1.775	0.000	0.000	139.351	0.000	2312.23
		B		0.000	0.000	72.714	0.000	1131.80
		C		0.000	0.000	37.126	0.000	512.28

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	140.00-120.00	0.21	-4.30	0.27	-5.57
T2	120.00-100.00	-0.07	-8.72	-0.02	-8.28
T3	100.00-80.00	0.84	-6.53	1.05	-5.89
T4	80.00-60.00	0.90	-7.23	1.14	-6.59
T5	60.00-40.00	1.00	-8.60	1.32	-7.94
T6	40.00-20.00	1.04	-9.32	1.37	-8.55
T7	20.00-0.00	0.97	-8.96	1.33	-8.50

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	3	LDF5-50A (7/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T2	1	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T2	2	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T2	3	LDF5-50A (7/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T2	7	LDF4.5-50 (5/8 FOAM)	100.00 - 110.00	0.6000	0.6000
T3	1	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T3	2	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T3	3	LDF5-50A (7/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T3	5	LDF4RN-50A (1/2 FOAM)	80.00 - 100.00	0.6000	0.6000
T3	6	2" Rigid Conduit	80.00 - 100.00	0.6000	0.6000
T3	7	LDF4.5-50 (5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T4	1	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T4	2	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T4	3	LDF5-50A (7/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T4	5	LDF4RN-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.6000
T4	6	2" Rigid Conduit	60.00 - 80.00	0.6000	0.6000
T4	7	LDF4.5-50 (5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T5	1	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T5	2	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T5	3	LDF5-50A (7/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T5	5	LDF4RN-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.6000
T5	6	2" Rigid Conduit	40.00 - 60.00	0.6000	0.6000
T5	7	LDF4.5-50 (5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T6	1	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T6	2	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T6	3	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T6	5	LDF4RN-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.6000
T6	6	2" Rigid Conduit	20.00 - 40.00	0.6000	0.6000
T6	7	LDF4.5-50 (5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T7	1	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T7	2	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T7	3	LDF5-50A (7/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T7	5	LDF4RN-50A (1/2 FOAM)	6.00 - 20.00	0.6000	0.6000
T7	6	2" Rigid Conduit	6.00 - 20.00	0.6000	0.6000
T7	7	LDF4.5-50 (5/8 FOAM)	6.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Pirod 4' Side Mount Standoff (1)	A	From Leg	2.00 0.00 0.00	0.00	137.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	50.00 89.00 128.00
Pirod 4' Side Mount Standoff (1)	B	From Leg	2.00 0.00	0.00	137.00	No Ice 1/2" Ice	2.72 4.91	2.72 4.91	50.00 89.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1" Ice	7.10	7.10	128.00
Pirod 4' Side Mount Standoff (1)	C	From Leg	2.00	0.00	137.00	No Ice	2.72	2.72	50.00
			0.00			1/2" Ice	4.91	4.91	89.00
			0.00			1" Ice	7.10	7.10	128.00
2"x8' Omni Whip	A	From Face	4.00	0.00	137.00	No Ice	1.60	1.60	30.00
			0.00			1/2" Ice	2.42	2.42	42.45
			4.00			1" Ice	3.24	3.24	60.14
20'x2.5" Omni Whip	A	From Face	4.00	0.00	137.00	No Ice	5.00	5.00	50.00
			0.00			1/2" Ice	7.03	7.03	86.96
			10.00			1" Ice	9.07	9.07	136.55
2"x8' Omni Whip	B	From Face	4.00	0.00	137.00	No Ice	1.60	1.60	30.00
			0.00			1/2" Ice	2.42	2.42	42.45
			4.00			1" Ice	3.24	3.24	60.14
2"x8' Omni Whip	C	From Face	4.00	0.00	137.00	No Ice	1.60	1.60	30.00
			0.00			1/2" Ice	2.42	2.42	42.45
			4.00			1" Ice	3.24	3.24	60.14
Pirod 12' T-Frame Sector Mount (1)	A	None		0.00	120.00	No Ice	13.60	13.60	465.00
						1/2" Ice	18.40	18.40	600.00
						1" Ice	23.20	23.20	735.00
Pirod 12' T-Frame Sector Mount (1)	B	None		0.00	120.00	No Ice	13.60	13.60	465.00
						1/2" Ice	18.40	18.40	600.00
						1" Ice	23.20	23.20	735.00
Pirod 12' T-Frame Sector Mount (1)	C	None		0.00	120.00	No Ice	13.60	13.60	465.00
						1/2" Ice	18.40	18.40	600.00
						1" Ice	23.20	23.20	735.00
(2) AIR21 w/Mount Pipe	A	From Leg	3.00	0.00	120.00	No Ice	6.05	5.43	99.03
			0.00			1/2" Ice	6.42	6.07	153.35
			0.00			1" Ice	6.80	6.72	214.19
(2) AIR21 w/Mount Pipe	B	From Leg	3.00	0.00	120.00	No Ice	6.05	5.43	99.03
			0.00			1/2" Ice	6.42	6.07	153.35
			0.00			1" Ice	6.80	6.72	214.19
(2) AIR21 w/Mount Pipe	C	From Leg	3.00	0.00	120.00	No Ice	6.05	5.43	99.03
			0.00			1/2" Ice	6.42	6.07	153.35
			0.00			1" Ice	6.80	6.72	214.19
20'x2.5" Omni Whip	A	From Leg	3.00	0.00	120.00	No Ice	5.00	5.00	50.00
			0.00			1/2" Ice	7.03	7.03	86.96
			10.00			1" Ice	9.07	9.07	136.55
20'x2.5" Omni Whip	B	From Leg	3.00	0.00	120.00	No Ice	5.00	5.00	50.00
			0.00			1/2" Ice	7.03	7.03	86.96
			10.00			1" Ice	9.07	9.07	136.55
20'x2.5" Omni Whip	C	From Leg	3.00	0.00	120.00	No Ice	5.00	5.00	50.00
			0.00			1/2" Ice	7.03	7.03	86.96
			10.00			1" Ice	9.07	9.07	136.55
RFS Twin TMA	A	From Leg	3.00	0.00	120.00	No Ice	1.00	0.41	13.00
			0.00			1/2" Ice	1.13	0.50	20.62
			0.00			1" Ice	1.26	0.59	30.11
RFS Twin TMA	B	From Leg	3.00	0.00	120.00	No Ice	1.00	0.41	13.00
			0.00			1/2" Ice	1.13	0.50	20.62
			0.00			1" Ice	1.26	0.59	30.11
RFS Twin TMA	C	From Leg	3.00	0.00	120.00	No Ice	1.00	0.41	13.00
			0.00			1/2" Ice	1.13	0.50	20.62
			0.00			1" Ice	1.26	0.59	30.11
Pirod 4' Side Mount Standoff (1)	A	From Leg	1.00	0.00	100.00	No Ice	2.72	2.72	50.00
			0.00			1/2" Ice	4.91	4.91	89.00
			0.00			1" Ice	7.10	7.10	128.00
Pirod 4' Side Mount Standoff (1)	B	From Leg	1.00	0.00	100.00	No Ice	2.72	2.72	50.00
			0.00			1/2" Ice	4.91	4.91	89.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1" Ice	7.10	7.10	128.00
Pirod 4' Side Mount Standoff (1)	C	From Leg	1.00	0.00	100.00	No Ice	2.72	2.72	50.00
			0.00			1/2" Ice	4.91	4.91	89.00
			0.00			1" Ice	7.10	7.10	128.00
12"x72" Panel	A	From Leg	3.00	0.00	100.00	No Ice	8.13	4.96	71.90
			-2.00			1/2" Ice	8.59	5.89	129.56
			0.00			1" Ice	9.05	6.71	194.80
12"x72" Panel	B	From Leg	3.00	0.00	100.00	No Ice	8.13	4.96	71.90
			-2.00			1/2" Ice	8.59	5.89	129.56
			0.00			1" Ice	9.05	6.71	194.80
12"x72" Panel	C	From Leg	3.00	0.00	100.00	No Ice	8.13	4.96	71.90
			-2.00			1/2" Ice	8.59	5.89	129.56
			0.00			1" Ice	9.05	6.71	194.80
Pirod 12' T-Frame Sector Mount (1)	A	From Leg	0.00	0.00	110.00	No Ice	13.60	13.60	465.00
			0.00			1/2" Ice	18.40	18.40	600.00
			0.00			1" Ice	23.20	23.20	735.00
Pirod 12' T-Frame Sector Mount (1)	B	From Leg	0.00	0.00	110.00	No Ice	13.60	13.60	465.00
			0.00			1/2" Ice	18.40	18.40	600.00
			0.00			1" Ice	23.20	23.20	735.00
Pirod 12' T-Frame Sector Mount (1)	C	From Leg	0.00	0.00	110.00	No Ice	13.60	13.60	465.00
			0.00			1/2" Ice	18.40	18.40	600.00
			0.00			1" Ice	23.20	23.20	735.00
800-10799	A	From Leg	3.00	0.00	110.00	No Ice	15.39	10.53	141.46
			0.00			1/2" Ice	16.10	12.12	246.83
			0.00			1" Ice	16.80	13.74	362.98
800-10799	B	From Leg	3.00	0.00	110.00	No Ice	15.39	10.53	141.46
			0.00			1/2" Ice	16.10	12.12	246.83
			0.00			1" Ice	16.80	13.74	362.98
800-10799	C	From Leg	3.00	0.00	110.00	No Ice	15.39	10.53	141.46
			0.00			1/2" Ice	16.10	12.12	246.83
			0.00			1" Ice	16.80	13.74	362.98
(2) RRUS 11	A	From Leg	2.50	0.00	110.00	No Ice	2.79	1.19	51.00
			0.00			1/2" Ice	3.00	1.34	71.87
			2.00			1" Ice	3.21	1.50	95.78
(2) RRUS 11	B	From Leg	2.50	0.00	110.00	No Ice	2.79	1.19	51.00
			0.00			1/2" Ice	3.00	1.34	71.87
			2.00			1" Ice	3.21	1.50	95.78
(2) RRUS 11	C	From Leg	2.50	0.00	110.00	No Ice	2.79	1.19	51.00
			0.00			1/2" Ice	3.00	1.34	71.87
			2.00			1" Ice	3.21	1.50	95.78
(2) RRUS 32	A	From Leg	2.50	0.00	110.00	No Ice	3.33	2.43	77.00
			0.00			1/2" Ice	3.57	2.65	105.00
			0.00			1" Ice	3.82	2.87	136.63
(2) RRUS 32	B	From Leg	2.50	0.00	110.00	No Ice	3.33	2.43	77.00
			0.00			1/2" Ice	3.57	2.65	105.00
			0.00			1" Ice	3.82	2.87	136.63
(2) RRUS 32	C	From Leg	2.50	0.00	110.00	No Ice	3.33	2.43	77.00
			0.00			1/2" Ice	3.57	2.65	105.00
			0.00			1" Ice	3.82	2.87	136.63
DC-6-48-60-18	A	From Leg	3.00	0.00	110.00	No Ice	0.81	0.81	20.00
			0.00			1/2" Ice	1.30	1.30	35.38
			-3.00			1" Ice	1.48	1.48	53.11
DC-6-48-60-18	B	From Leg	3.00	0.00	110.00	No Ice	0.81	0.81	20.00
			0.00			1/2" Ice	1.30	1.30	35.38
			-3.00			1" Ice	1.48	1.48	53.11
DC-6-48-60-18	C	From Leg	3.00	0.00	110.00	No Ice	0.81	0.81	20.00
			0.00			1/2" Ice	1.30	1.30	35.38

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			-3.00			1" Ice	1.48	1.48	53.11
Pirod 4' Side Mount Standoff (1)	A	From Leg	1.00 0.00 0.00	0.00	80.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	50.00 89.00 128.00
2"x8' Omni Whip	A	From Leg	4.00 0.00 4.00	0.00	80.00	No Ice 1/2" Ice 1" Ice	1.60 2.42 3.24	1.60 2.42 3.24	30.00 42.45 60.14

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
P2F-52	A	Paraboloid w/o Radome	From Face	3.00 0.00 0.03	0.00		133.00	2.00	No Ice 1/2" Ice 1" Ice	3.10 3.41 3.71	17.00 34.49 51.98
P3F-52	A	Paraboloid w/o Radome	From Face	3.00 0.00 0.03	0.00		100.00	3.00	No Ice 1/2" Ice 1" Ice	7.10 7.46 7.83	90.00 128.31 166.62
P2F-52	B	Paraboloid w/o Radome	From Face	3.00 2.00 0.03	0.00		100.00	2.00	No Ice 1/2" Ice 1" Ice	3.10 3.41 3.71	17.00 34.49 51.98

Truss-Leg Properties

Section Designation	Area in^2	Area Ice in^2	Self Weight lb	Ice Weight lb	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in^2
Pirod 105218	2263.47	6856.27	754.52	2409.82	7.86	23.81	7.22
Pirod 105219	2441.87	6746.07	944.27	2340.82	8.48	23.42	9.42

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	140 - 120	2 1/4	20.00	5.00	106.7	3.98	-5284.06	77870.40	0.068 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	120 - 100	2 1/4	20.00	5.00	106.7 K=1.00	3.98	-32306.30	77870.40	0.415 [1]
T3	100 - 80	2 3/4	20.00	5.00	87.3 K=1.00	5.94	-77732.60	153147.00	0.508 [1]
T4	80 - 60	3	20.03	5.01	80.1 K=1.00	7.07	-112536.00	198902.00	0.566 [1]
T5	60 - 40	3 1/4	20.03	5.01	74.0 K=1.00	8.30	-141211.00	250223.00	0.564 [1]
T6	40 - 20	Pirod 105218	20.03	10.02	32.4 K=1.00	7.22	-164635.00	300681.00	0.548 [1]
T7	20 - 0	Pirod 105219	20.03	10.02	28.4 K=1.00	9.42	-189025.00	399868.00	0.473 [1]

[1] P_u / ϕP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n lb	A in^2	V_u lb	ϕV_n lb	Stress Ratio
T6	40 - 20	0.5	1.46	119.0	324713.00	0.20	622.70	3377.71	0.184
T7	20 - 0	0.625	1.45	94.4	424115.00	0.31	921.38	6957.62	0.132

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	140 - 120	L1 3/4x1 3/4x1/8	9.43	4.61	159.4 K=1.00	0.42	-1436.75	3751.65	0.383 [1]
T2	120 - 100	L1 3/4x1 3/4x1/4	9.43	4.61	161.9 K=1.00	0.81	-4595.68	6999.86	0.657 [1]
T3	100 - 80	L2 1/2x2 1/2x5/16	9.43	4.58	112.4 K=1.00	1.46	-6414.08	24313.80	0.264 [1]
T4	80 - 60	L2 1/2x2 1/2x5/16	10.52	5.26	129.1 K=1.00	1.46	-4618.35	19680.00	0.235 [1]
T5	60 - 40	L2 1/2x2 1/2x5/16	12.31	6.15	150.8 K=1.00	1.46	-4620.43	14501.70	0.319 [1]
T6	40 - 20	L3x3x5/16	16.01	7.70	156.9 K=1.00	1.78	-5785.65	16326.10	0.354 [1]
T7	20 - 0	L3x3x5/16	18.45	8.93	181.9 K=1.00	1.78	-6863.28	12157.80	0.565 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	140 - 120	L3x3x3/8	8.00	7.81	159.7 K=1.00	2.11	-693.44	18687.70	0.037 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	140 - 120	2 1/4	20.00	5.00	106.7	3.98	2971.06	178924.00	0.017 [1] ✔
T2	120 - 100	2 1/4	20.00	5.00	106.7	3.98	25038.00	178924.00	0.140 [1] ✔
T3	100 - 80	2 3/4	20.00	5.00	87.3	5.94	66743.50	267281.00	0.250 [1] ✔
T4	80 - 60	3	20.03	5.01	80.1	7.07	97547.70	318086.00	0.307 [1] ✔
T5	60 - 40	3 1/4	20.03	5.01	74.0	8.30	122239.00	373310.00	0.327 [1] ✔
T6	40 - 20	Pirod 105218	20.03	10.02	32.4	7.22	142109.00	324713.00	0.438 [1] ✔
T7	20 - 0	Pirod 105219	20.03	10.02	28.4	9.42	162137.00	424115.00	0.382 [1] ✔

[1] P_u / ϕP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n lb	A in^2	V_u lb	ϕV_n lb	Stress Ratio
T6	40 - 20	0.5	1.46	119.0	324713.00	0.20	622.70	3377.71	0.184 ✔
T7	20 - 0	0.625	1.45	94.4	424115.00	0.31	921.38	6957.62	0.132 ✔

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	140 - 120	L1 3/4x1 3/4x1/8	9.43	4.61	101.3	0.42	1276.80	13668.80	0.093 [1] ✔
T2	120 - 100	L1 3/4x1 3/4x1/4	9.43	4.61	104.5	0.81	4566.09	26325.00	0.173 [1] ✔
T3	100 - 80	L2 1/2x2 1/2x5/16	9.43	4.58	72.3	1.46	6207.57	47304.00	0.131 [1] ✔
T4	80 - 60	L2 1/2x2 1/2x5/16	10.08	5.04	79.5	1.46	4586.17	47304.00	0.097 [1] ✔
T5	60 - 40	L2 1/2x2 1/2x5/16	12.77	6.37	100.5	1.46	4461.81	47304.00	0.094 [1] ✔
T6	40 - 20	L3x3x5/16	16.01	7.70	100.3	1.78	5361.72	57672.00	0.093 [1] ✔
T7	20 - 0	L3x3x5/16	18.45	8.93	116.2	1.78	6266.13	57672.00	0.109 [1] ✔

[1] $P_u / \phi P_n$ controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	140 - 120	L3x3x3/8	8.00	7.81	102.7	2.11	459.63	68364.00	0.007 [1] ✔

[1] $P_u / \phi P_n$ controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	140 - 120	Leg	2 1/4	3	-5284.06	77870.40	6.8	Pass
T2	120 - 100	Leg	2 1/4	33	-32306.30	77870.40	41.5	Pass
T3	100 - 80	Leg	2 3/4	60	-77732.60	153147.00	50.8	Pass
T4	80 - 60	Leg	3	87	-112536.00	198902.00	56.6	Pass
T5	60 - 40	Leg	3 1/4	114	-141211.00	250223.00	56.4	Pass
T6	40 - 20	Leg	Pirod 105218	141	-164635.00	300681.00	54.8	Pass
T7	20 - 0	Leg	Pirod 105219	156	-189025.00	399868.00	47.3	Pass
T1	140 - 120	Diagonal	L1 3/4x1 3/4x1/8	9	-1436.75	3751.65	38.3	Pass
T2	120 - 100	Diagonal	L1 3/4x1 3/4x1/4	35	-4595.68	6999.86	65.7	Pass
T3	100 - 80	Diagonal	L2 1/2x2 1/2x5/16	62	-6414.08	24313.80	26.4	Pass
T4	80 - 60	Diagonal	L2 1/2x2 1/2x5/16	98	-4618.35	19680.00	23.5	Pass
T5	60 - 40	Diagonal	L2 1/2x2 1/2x5/16	125	-4620.43	14501.70	31.9	Pass
T6	40 - 20	Diagonal	L3x3x5/16	152	-5785.65	16326.10	35.4	Pass
T7	20 - 0	Diagonal	L3x3x5/16	161	-6863.28	12157.80	56.5	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	140 - 120	Top Girt	L3x3x3/8	4	-693.44	18687.70	3.7	Pass
							Summary	
						Leg (T4)	56.6	Pass
						Diagonal (T2)	65.7	Pass
						Top Girt (T1)	3.7	Pass
						RATING =	**65.7**	**Pass**

PROJECT INFORMATION

SCOPE OF WORK:	UNMANNED TELECOMMUNICATIONS FACILITY MODIFICATIONS
SITE ADDRESS:	100 SUNSET RIDGE EAST HARTFORD, CT 06108
LATITUDE: LONGITUDE:	41° 46' 19" N 72° 35' 26" W
JURISDICTION:	NATIONAL, STATE & LOCAL CODES OR ORDINANCES
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
DESIGN GUIDELINE:	LTE NSB

SITE NUMBER: S3438

SITE NAME: EAST HARTFORD SUNSET RIDGE

100 SUNSET RIDGE
EAST HARTFORD, CT 06108
HARTFORD COUNTY

APPROVED
By Radu Alecsandru at 3:43 pm, May 25, 2017

DRAWING INDEX

LOCUS MAP

DRIVING DIRECTIONS FROM 550 COCHITUATE ROAD, FRAMINGHAM, MA:

1. Head west on Cochituate Rd toward Burr St
2. Turn right onto Burr St
3. Make a U-turn at Leggatt McCall Conn
4. Turn left at the 1st cross street onto Cochituate Rd
5. Use the right lane to take the ramp to I-90 E/Masspike W/Springfield/Boston
6. Keep left at the fork, follow signs for Interstate 90 W/Massachusetts Turnpike/Worchester/Springfield and merge onto I-90 W/Massachusetts Turnpike
7. Merge onto I-90 W/Massachusetts Turnpike
8. Use the right 2 lanes to take exit 9 for I-84 toward US-20/Hartford/New York City
9. Continue onto I-84
10. Take exit 59 for Spencer Street
11. Turn right onto State Hwy 502/Silver Ln
12. Turn right onto Ridgewood Rd
13. Slight right onto Sunset Ridge Dr

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 REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

STATE OF CONNECTICUT
MARC R. CHRETIEN
No. 29307
LICENSED
PROFESSIONAL ENGINEER

CONNECTICUT
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UNDERGROUND SERVICE ALERT

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East Providence, RI 02914 Fax: (401) 633-6354

CENTERLINE COMMUNICATIONS
95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767

SITE NUMBER: S3438
SITE NAME: EAST HARTFORD SUNSET RIDGE
100 SUNSET RIDGE
EAST HARTFORD, CT 06108
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD, SUITE 13,
FRAMINGHAM, MA 01701-4681

NO.	DATE	REVISIONS	BY	CHK
0	03/15/17	ISSUED FOR REVIEW	AAB	MRC
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3	05/04/17	REVISION	AAB	MRC

TITLE SHEET

SHEET NO. T-1

GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.

2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE LESEE/LICENSEE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.

4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.

5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS / CONTRACT DOCUMENTS.

7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.

9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.

12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.

13. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.

14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.

15. THE CONTRACTOR SHALL NOTIFY THE LESEE/LICENSEE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE LESEE/LICENSEE REPRESENTATIVE.

16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.

17. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION NOTIFICATION 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY: DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 1-888-344-7233 CALL BEFORE YOU DIG (CT): 1-800-922-4455

18. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS SHOWN HEREIN.

19. ALL DIMENSIONS SHOWN THUS ± ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS WHICH EFFECT THE CONTRACTORS WORK. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH PROJECT OWNER PRIOR TO CONSTRUCTION.

20. NORTH ARROW SHOWN ON PLANS REFERS TO APPROXIMATE TRUE NORTH. PRIOR TO THE START OF CONSTRUCTION, ORDERING OR FABRICATING OF ANTENNA MOUNTS, CONTRACTOR SHALL CONSULT WITH PROJECT OWNER'S RF ENGINEER AND FIELD VERIFY ALL ANTENNA SECTOR LOCATIONS AND ANTENNA AZIMUTHS.

21. THE CONTRACTOR AND OR HIS SUB CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.

22. ANTENNA INSTALLATION SHALL BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY AND ERECTION OF RADIO ANTENNAS, TRANSMISSION LINES AND SUPPORT STRUCTURES.

23. COAXIAL CABLE CONNECTORS AND TRANSMITTER EQUIPMENT SHALL BE PROVIDED BY THE PROJECT OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. A SCHEDULE OF PROJECT OWNER SUPPLIED MATERIALS IS ATTACHED TO THE BID DOCUMENTS (SEE EXHIBIT 3). ALL OTHER HARDWARE TO BE PROVIDED BY THE CONTRACTOR. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.

24. WHEN "PAINT TO MATCH" IS SPECIFIED FOR ANTENNA CONCEALMENT, PAINT PRODUCT FOR ANTENNA RADOME SHALL BE SHERWIN WILLIAMS COROTHANE II. SURFACE PREPARATION AND APPLICATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND PROJECT OWNER'S GUIDELINE'S.

25. COORDINATION, LAYOUT, AND FURNISHING OF CONDUIT, CABLE AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

26. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.

27. ALL (E)ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.

28. ALL (E)INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF UTILITY COMPANY ENGINEERING. THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE EQUIPMENT, DRIVEWAY OR

29. GRAVEL, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED AND COVERED WITH MULCH UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN SOIL EROSION AND SEDIMENTATION CONTROLS AT ALL TIMES

30. DURING CONSTRUCTION. PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE IS REQUIRED TO MEET NATIONWIDE STANDARDS

31. FOR WIRELESS COMMUNICATIONS SYSTEMS. PROJECT OWNER'S IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT AND ANTENNAS GENERALLY DEPICTED ON THIS PLAN, ATTACHED TO OR MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINETS. PROJECT OWNER RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO E911 EQUIPMENT AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIRED SPECIFICATIONS.

32. 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:

2009 INTERNATIONAL BUILDING CODE
2005 CT STATE BUILDING CODE
ELECTRICAL CODE: NEC 2014
LIGHTING CODE: NEC 2014

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, NINTH EDITION;

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

ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

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.

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.

2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.

3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.

4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.

5. 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.

6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.

7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THHN INSULATION.

8. 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.

9. 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 AND GREENLEE CONDUIT MEASURING TAPE IN EACH INSTALLED TELCO CONDUIT.

10. 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.

11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.

12. PPC SUPPLIED BY PROJECT OWNER.

13. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".

14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.

15. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.

16. 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.

17. 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 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.

18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.

19. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.

20. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.

21. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXISTING TOWER/ (E) MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.

22. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MAXIMUM RESISTANCE REQUIRED.

23.CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

STATE OF CONNECTICUT
MARC R. CHRETIEN
No. 28307
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ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCEIVER STATION	(P)	PROPOSED/NEW	TBR	TO BE REMOVED
(E)	EXISTING	N.T.S.	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE		
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED	TYP	TYPICAL
(F)	FUTURE				

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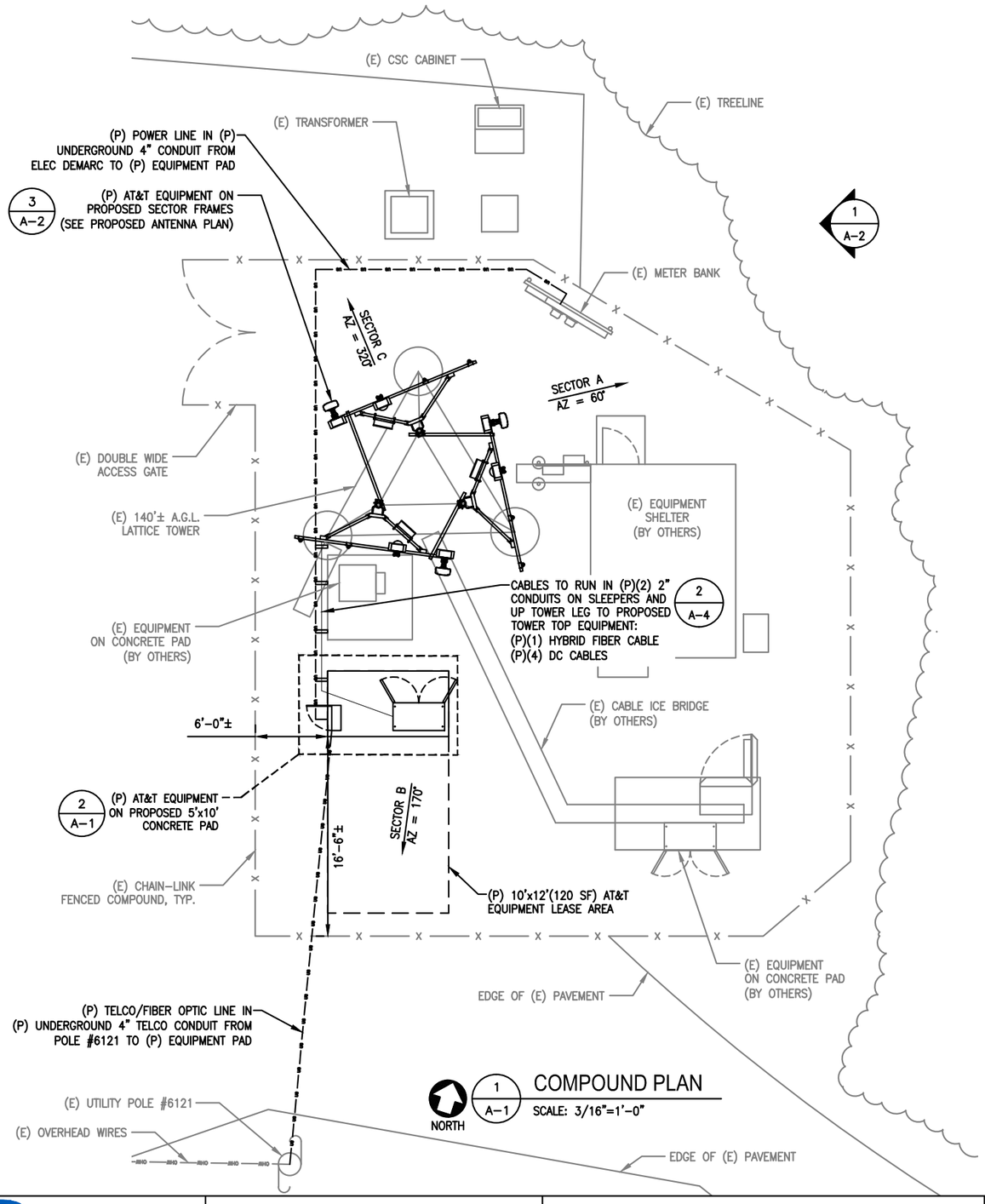
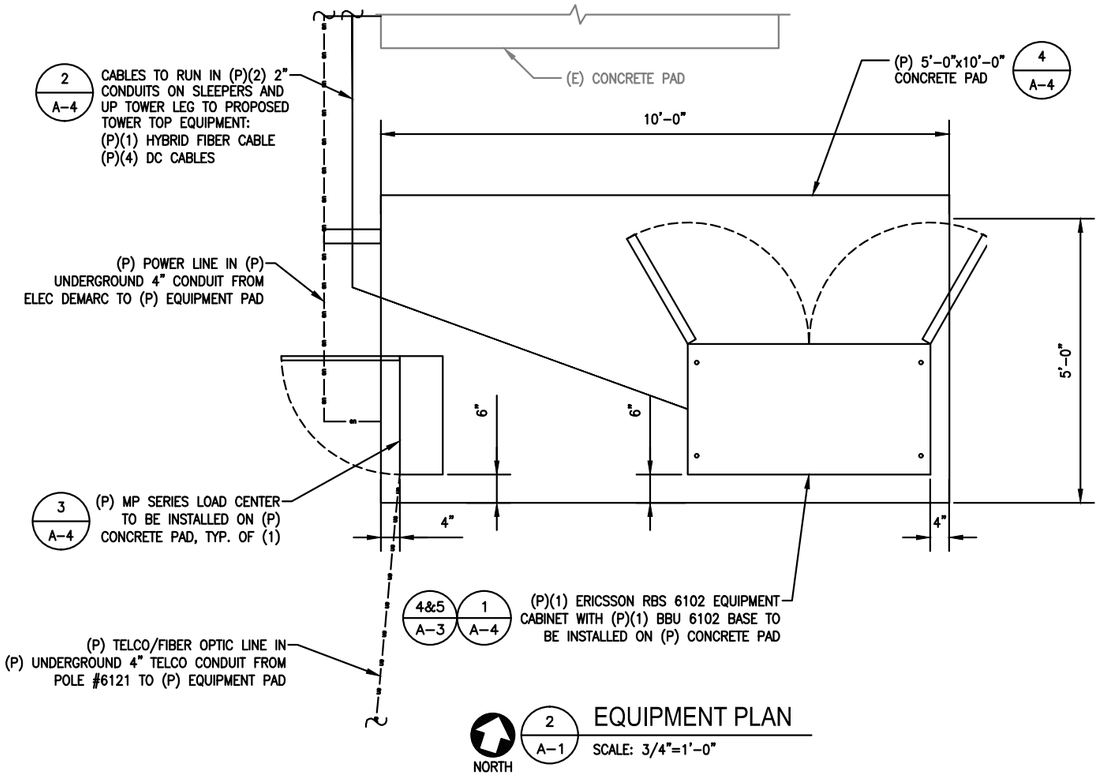
GENERAL NOTES

SHEET NO. GN-1

HALF SIZE PRINT
THIS DRAWING IS SCALEABLE AT HALF THE NOTED SCALE





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COMPOUND AND EQUIPMENT PLANS

SHEET NO. A-1

HALF SIZE PRINT
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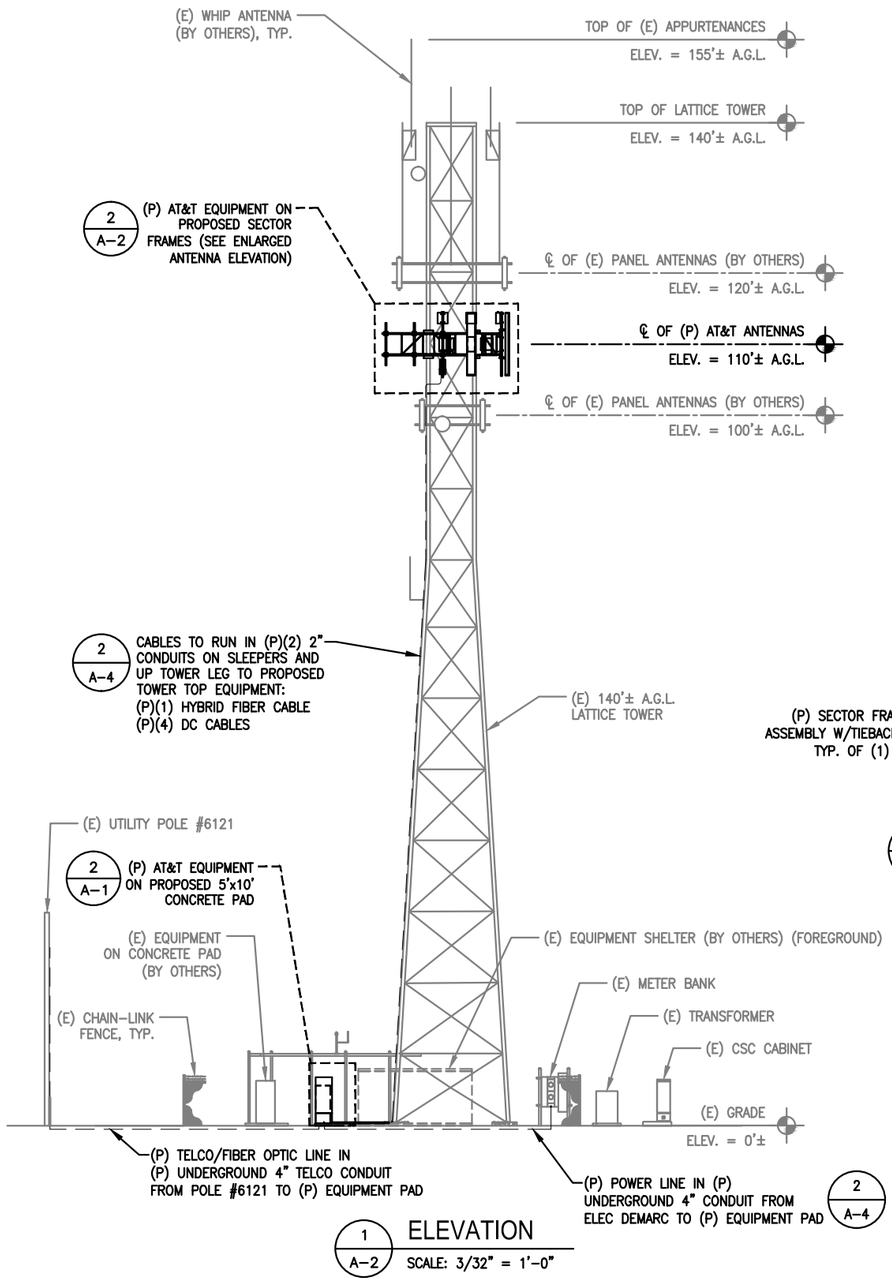
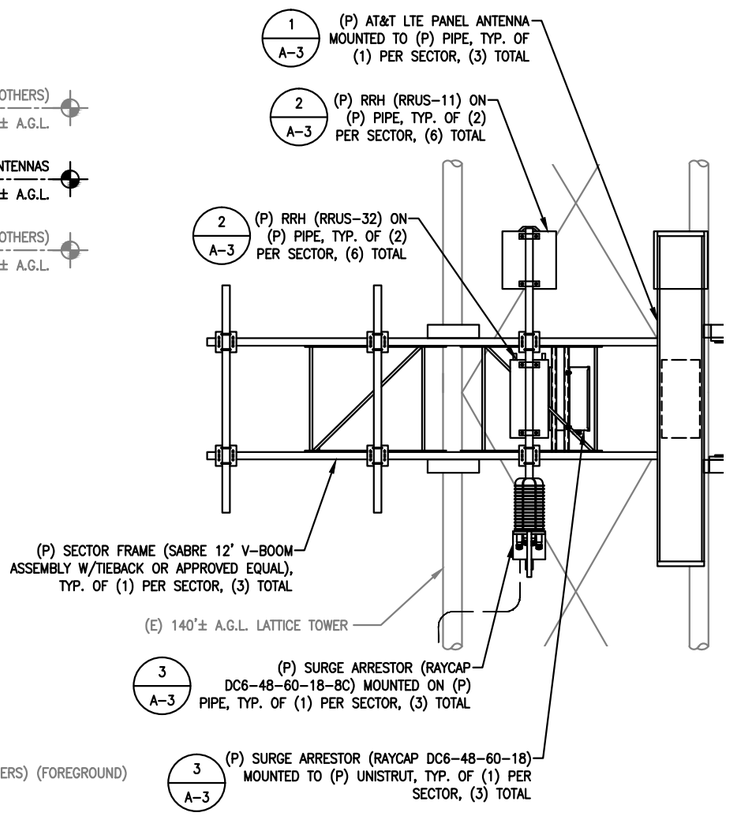
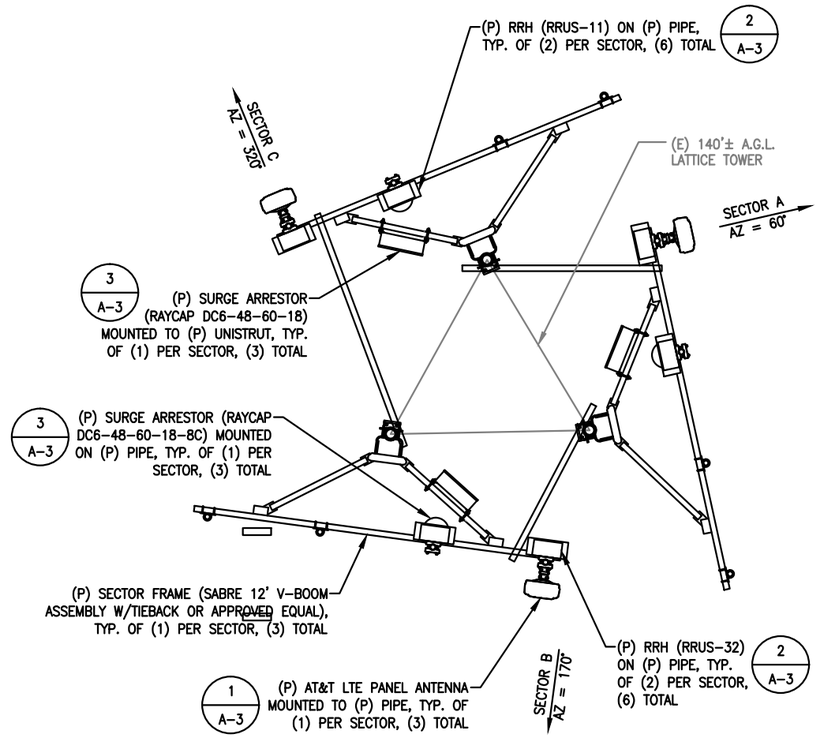


1 A-2 ELEVATION
SCALE: 3/32" = 1'-0"



2 A-2 ENLARGED ANTENNA ELEVATION
SCALE: 1/2" = 1'-0"



NORTH
3 A-2 PROPOSED ANTENNA PLAN
SCALE: 3/8" = 1'-0"

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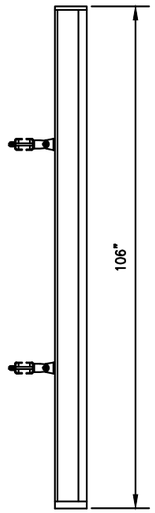
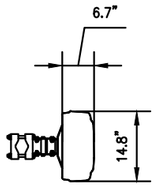
ELEVATIONS AND ANTENNA PLANS

SHEET NO. A-2



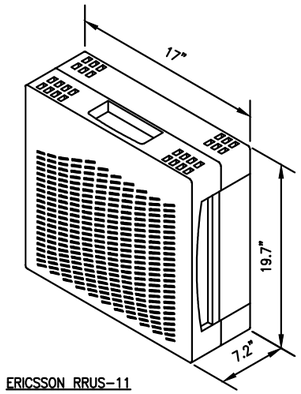


800-107-99

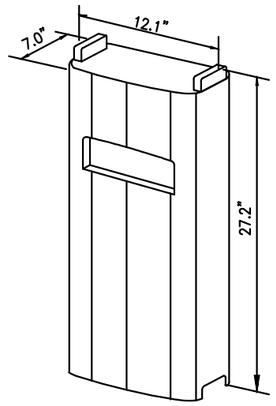
MANUFACTURER: KATHREIN
DIMENSIONS: (HxWxD) 106"x14.8"x6.7"
WEIGHT: 10.8 LBS.

1 A-3 ANTENNA DETAILS

SCALE: 3/4" = 1'-0"



ERICSSON RRUS-11
-DIMENSIONS (H x W x D):
19.7" x 17.0" x 7.2" (INCLUDES SUNSHIELD)
-WEIGHT: 50 LBS
-CLIMATE: -40°C TO +55°C
(SELF CONVECTION SILENT, NO FANS, IP55)
-POWER CONSUMPTION: 200 WATTS (TYP.)



ERICSSON RRUS-32 B2
-DIMENSIONS (H x W x D):
27.2" x 12.1" x 7.0"
-WEIGHT: 53 LBS

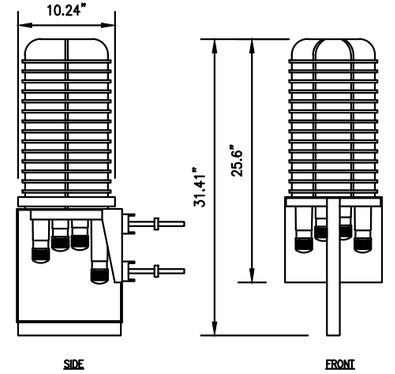
NOTES:
RRU CAN ONLY BE PAINTED ON SOLAR SHIELD.

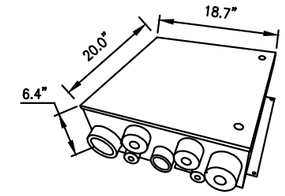
2 A-3 REMOTE RADIO HEAD (RRH) DETAILS

SCALE: N.T.S.

RAYCAP DC6-48-60-18-8c

NUMBER OF RADIOS PROTECTED:	6
SUPPRESSION CONNECTION METHOD:	COMPRESSION LUG, #2-#14 AWG
COPPER, #2-#12	ALUMINUM
ENVIRONMENTAL RATING:	IP 68, 7M 72HRS
WEIGHT:	26.2 LBS





DC SURGE SUPPRESSOR
RAYCAP MODEL#
DC6-48-60-18

3 A-3 SURGE ARRESTOR DETAILS

SCALE: N.T.S.

RBS 6102 OUTDOOR DIMENSIONS

CABINET	DEPTH x WIDTH x HEIGHT
OUTDOOR RBS 6102	27.5" x 51.125" x 57"

RBS 6102 OUTDOOR WEIGHT

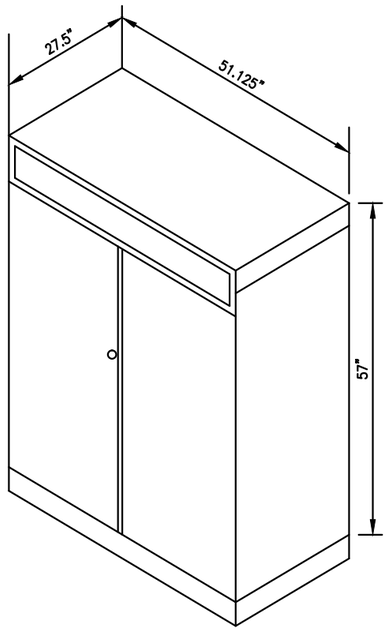
CABINET	APPROX. MAX WEIGHT	MAX. FLOOR LOADING
OUTDOOR RBS 6102	1028 LBS.	

RBS 6102 MINIMUM CLEARANCE

DIRECTION	MINIMUM CLEARANCE
CABINET REAR	8"
CABINET SIDES	4"
ABOVE THE CABINET	20"
IN FRONT OF THE CABINET	28"

4 A-3 RBS 6102 CABINET

SCALE: N.T.S.



BBU 6102 OUTDOOR DIMENSIONS

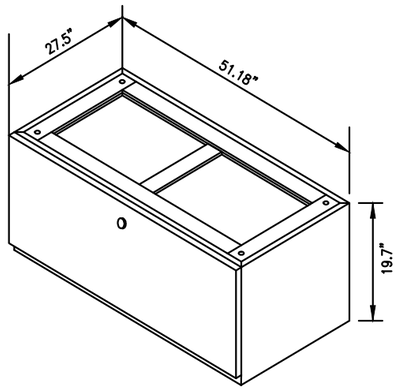
CABINET	DEPTH x WIDTH x HEIGHT
OUTDOOR RBS 6102	27.5" x 51.18" x 19.7"

BBU 6102 MINIMUM CLEARANCE

DIRECTION	MINIMUM CLEARANCE
CABINET REAR	8"
CABINET SIDES	4"
ABOVE THE CABINET	20"
IN FRONT OF THE CABINET	28"

5 A-3 BBU 6102 CABINET

SCALE: N.T.S.



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CENTERLINE COMMUNICATIONS
95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767

SITE NUMBER: S3438
SITE NAME: EAST HARTFORD SUNSET RIDGE
100 SUNSET RIDGE
EAST HARTFORD, CT 06108
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD, SUITE 13,
FRAMINGHAM, MA 01701-4681

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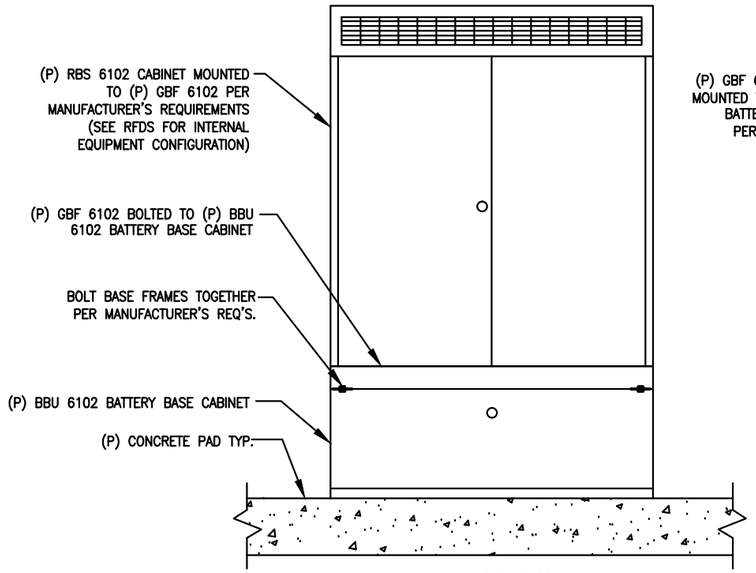
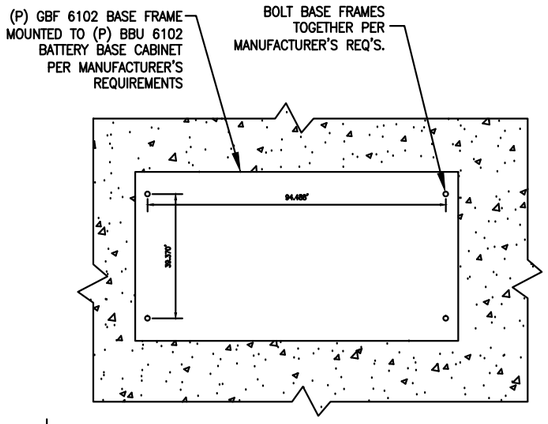
DETAILS

SHEET NO. A-3



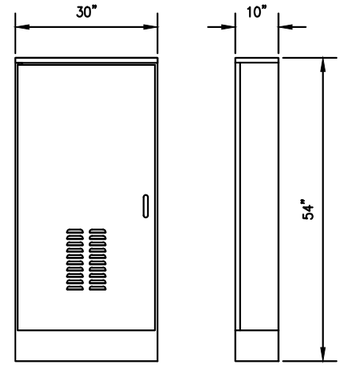
ELEVATION



PLAN

1 / A–4 RBS 6102 MOUNTING DETAIL

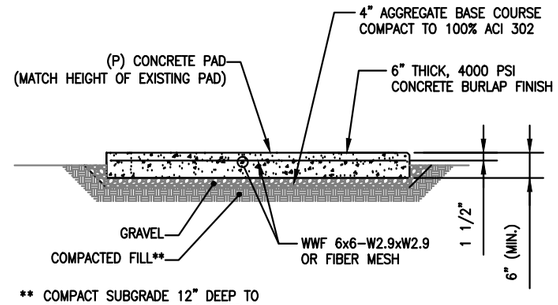
SCALE: 1"=2'–0"



PPC CABINET
DIMENSIONS (H x W x D): 54" x 30" x 10"

3 / A–4 MP SERIES LOAD CENTER DETAIL

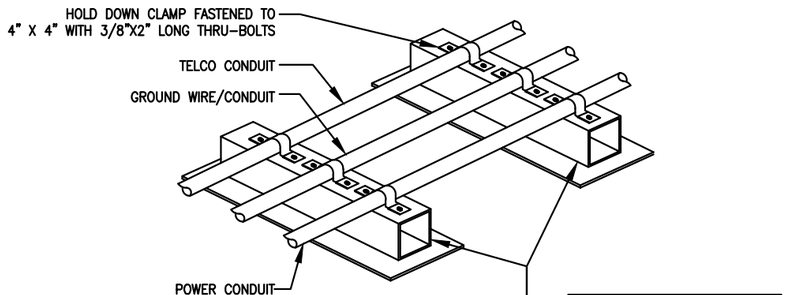
SCALE: N.T.S.



** COMPACT SUBGRADE 12" DEEP TO 95% RELATIVE COMPACTION PER ASTM D1557.

4 / A–4 CONCRETE PAD DETAIL

SCALE: N.T.S.



NOTE:
PVC SLEEPERS TO BE FILLED WITH CONCRETE EVERY 4'–0"

2 / A–4 CONDUIT SUPPORT

SCALE: N.T.S.

RF SYSTEM SCHEDULE & B.O.M.

RRH INFORMATION					ANTENNA INFORMATION								
	MAKE	MODEL	(P) QTY	(F) QTY	SECTOR	MAKE	MODEL	FEED	AZIMUTH	RAD CTR (AGL)	FIBER/POWER LENGTH	FEEDERS	MECHANICAL DOWNTILT
ALPHA	ERICSSON	RRUS–11	2	0	IA	KATHREIN	800–107–99 (P)	BOTTOM	60°	110±	130±	FIBER/DC POWER	0°
	ERICSSON	RRUS–12	0	0	IIA	--	--	--	--	--	--	--	--
	ERICSSON	RRUS–A2	0	0	IIIA	--	--	--	--	--	--	--	--
	ERICSSON	RRUS–E2	0	0	IVA	--	--	--	--	--	--	--	--
	ERICSSON	RRUS–32	2	0									
BETA	ERICSSON	RRUS–11	2	0	IB	KATHREIN	800–107–99 (P)	BOTTOM	170°	110±	130±	FIBER/DC POWER	0°
	ERICSSON	RRUS–12	0	0	IIB	--	--	--	--	--	--	--	--
	ERICSSON	RRUS–A2	0	0	IIIB	--	--	--	--	--	--	--	--
	ERICSSON	RRUS–E2	0	0	IVB	--	--	--	--	--	--	--	--
	ERICSSON	RRUS–32	2	0									
GAMMA	ERICSSON	RRUS–11	2	0	IC	KATHREIN	800–107–99 (P)	BOTTOM	320°	110±	130±	FIBER/DC POWER	0°
	ERICSSON	RRUS–12	0	0	IIC	--	--	--	--	--	--	--	--
	ERICSSON	RRUS–A2	0	0	IIIC	--	--	--	--	--	--	--	--
	ERICSSON	RRUS–E2	0	0	IVC	--	--	--	--	--	--	--	--
	ERICSSON	RRUS–32	2	0									

* CONTRACTOR TO VERIFY FINAL RFDS AND CABLE LENGTHS PRIOR TO CONSTRUCTION

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RAYNHAM, MA 02767

SITE NUMBER: S3438

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HARTFORD COUNTY

at&t
550 COCHITUATE ROAD, SUITE 13,
FRAMINGHAM, MA 01701–4681

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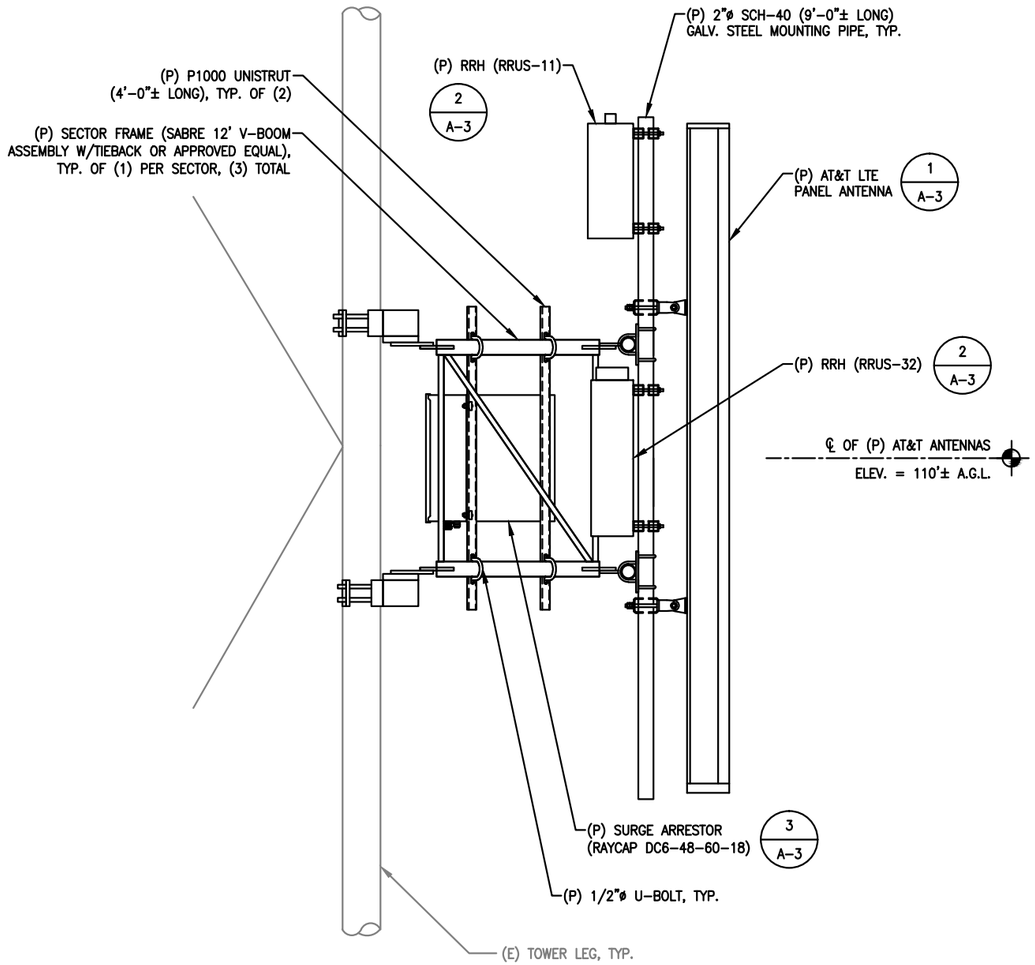
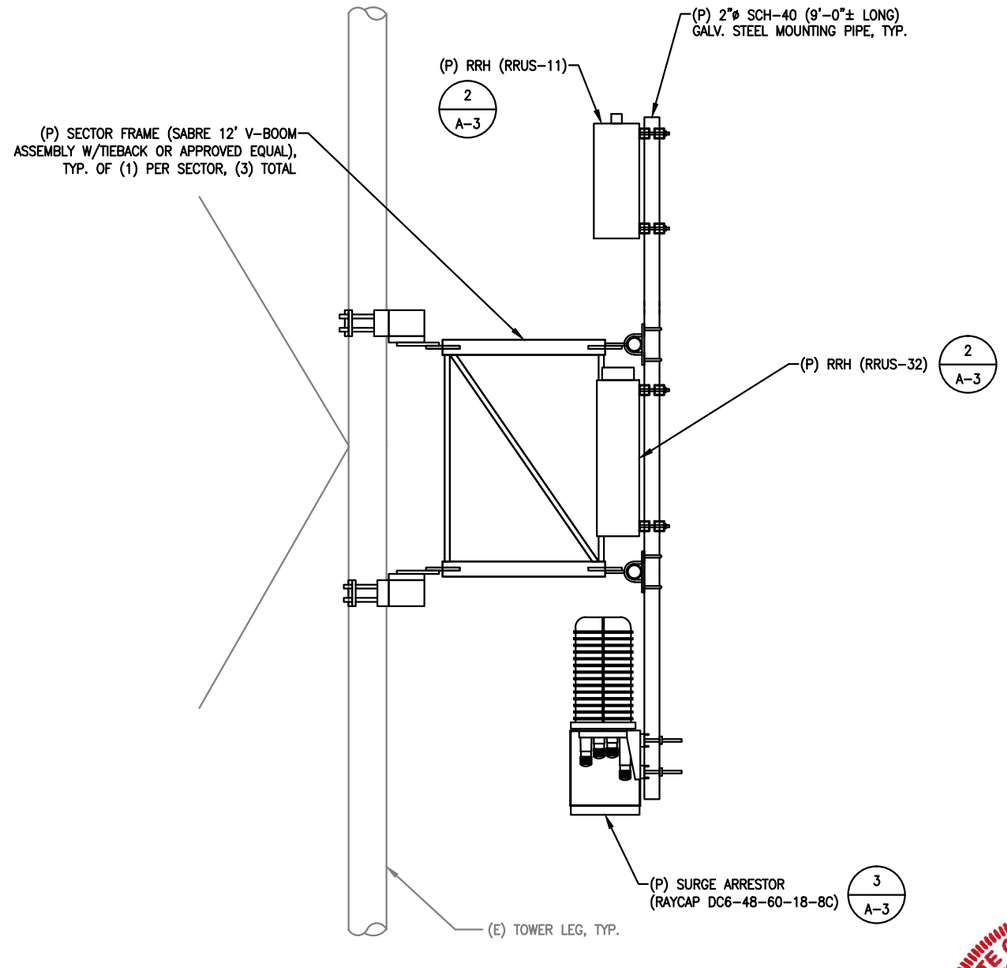
DETAILS

SHEET NO. A-4





1 S-1 MOUNTING DETAILS
SCALE: 1"= 1'-0"

STATE OF CONNECTICUT
MARC R. CHRETIEN
No. 29307
LICENSED
PROFESSIONAL ENGINEER

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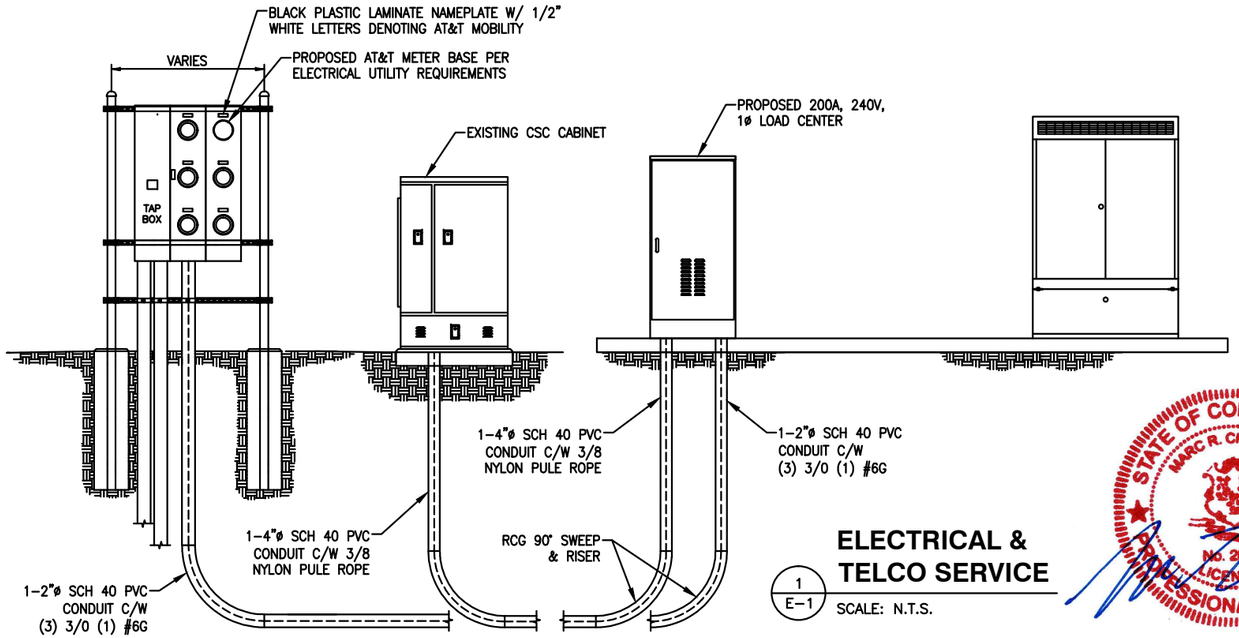
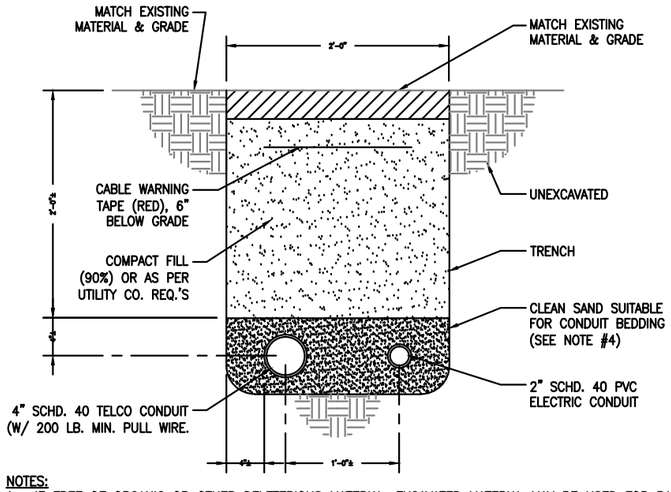
STRUCTURAL DETAILS

SHEET NO. S-1



ELECTRICAL & TELCO SERVICE

1 / E-1 SCALE: N.T.S.



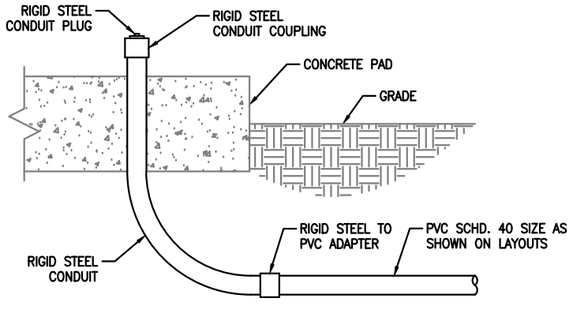
NOTES:
1. IF FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL
2. IF NOT, PROVIDE CLEAN MATERIAL & COMPACT IN 8" LIFTS. REMOVE ANY LARGE ROCKS PRIOR TO BACKFILLING. CONTRACTOR TO VERIFY LOCATION OF EXISTING U/G UTILITIES PRIOR TO DIGGING.
3. IF CURRENT AS-BUILT DRAWINGS ARE NOT AVAILABLE CONTRACTOR SHALL HAND DIG U/G TRENCHING.
4. ENCASE CONDUIT IN CONCRETE WHEN TRENCHING UNDER ROADS/DRIVEWAYS.

ELECTRIC & TELEPHONE/FIBER JOINT SERVICE TRENCH CONDUIT

2 / E-1 SCALE: N.T.S.

ELECTRICAL AND TELEPHONE GENERAL NOTES

1. FOLLOWING COMPLETION OF WORK, PROVIDE OWNER WITH AS-BUILT DRAWINGS SHOWING TELEPHONE AND ELECTRIC LOCATIONS.
2. WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE, NEC 2008.
3. COORDINATE WITH UTILITY AND LOCAL ELECTRICAL INSPECTOR FOR FINAL POWER CONNECTION.
4. UTILITY WILL SUPPLY METER. COORDINATE WITH UTILITY FOR METER TYPE AND INTERCONNECTION.
5. ALL EXISTING UNDERGROUND LINES ON SITE TO BE LOCATED PRIOR TO CONSTRUCTION. CALL 1-888-DIG-SAFE PRIOR TO CONSTRUCTION.
6. SEAL ALL SERVICE ENTRANCES INTO SHELTER FOLLOWING INSTALLATION.
7. SEE PAGE G-1 FOR GENERAL GROUNDING NOTES.
8. COORDINATE WITH LOCAL TELEPHONE COMPANY FOR ALL ROUTING AND DESIGN.
9. CONTRACTOR TO VERIFY CONTROL WIRING SIZE WITH GENERATOR MANUFACTURER PRIOR TO CONSTRUCTION.



UNDERGROUND CONDUIT STUB UP DETAIL

3 / E-1 SCALE: N.T.S.

GENERAL ELECTRICAL NOTES

1. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY AND LOCAL CODES, O.S.H.A.. NEC 2008, NFPA P70, AT&T MOBILITY SPECIFICATIONS. AND THE SPECIFICATIONS DETAILED IN THESE PLANS.
2. SUBMITTAL OF BID INDICATES CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS AND WORK TO BE PERFORMED UNDER THIS CONTRACT.
3. CONTRACTOR SHALL PERFORM ALL VERIFICATION, OBSERVATION, TESTS. AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE PROJECT MANAGER LISTING ALL MALFUNCTIONS. FAULTY EQUIPMENT. AND DISCREPANCIES.
4. THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE. CONTRACTOR SHALL ENSURE THAT ACCESS TO EQUIPMENT IS MAINTAINED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS AND ALL APPLICABLE CODES.
5. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANELBOARD, PULLBOX. J--BOX, SWITCH BOX, ETC.. IN COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
6. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION. ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM, ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS. AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
7. ALL MATER1ALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITER'S LABORATORY AND SHALL BEAR THE INSPECTION LABEL 'J' WHERE SUBJECT TO SUCH APPROVAL MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES NAN1NG JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI. NEMA, IEEE, AND NFPA.
8. ALL CONDUIT INSTALLED MAY BE SURFACE MOUNTED UNLESS OTHERWISE NOTED.
9. COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE BY OWNER. ANY WORK, MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE. UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
10. ALL "CONDUIT ONLY" (CO.) INSTALLATIONS SHALL HAVE A 3/8" PULL WIRE OR ROPE.
11. CONTRACTOR SHALL PROVIDE AT&T MOBILITY MANAGER WITH ONE SET OF COMPLETE ELECTRICAL 'AS INSTALLED' DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROISINGS, AND CIRCUITS,
12. ALL BROCHURES. OPERATING MANUALS. CATALOGS, SHOP DRAWINGS. ETC. SHALL BE TURNED OVER TO OWNER AT JOB COMPLETION.
13. POWER WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID.
14. ALL CONDUCTORS LARGER THAN 110 AWG SHALL BE STRANDED COPPER WITH THWN 600V INSULATION. UNLESS NOTED OTHERWISE.
15. ALL MATING SURFACES OF GROUND CONNECTIONS SHALL BE CLEANED SMOOTH AND COATED WITH ANTIOXIDANT PRIOR TO ATTACHMENT,
16. ALL GROUND CONNECTIONS BELOW GRADE MUST BE EXOTHERMICALLY WELDED (CAD WELD OR APPROVED EQUAL)
17. ALL EXTERIOR GROUNDING CONDUCTORS SHALL BE 2 AND SOLID TINNED BARE COPPER WIRE UNLESS NOTED OTHERWISE.
18. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C. COORDINATE SHORT CIRCUIT REQUIREMENTS WITH LOCAL UTILITY COMPANY.
19. CONTRACTOR SHALL PATCH. REPAIR. AND PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
20. IN DRILLING HOLES INTO CONCRETE WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS, M PIPE RUNS, ETC., IT MUST BE CLEARLY UNDERSTOOD THAT TENDONS AND/OR REINFORCING STEEL WILL NOT BE DRILLED INTO, CUT OR DAMAGED UNDER ANY CIRCUMSTANCES.
21. LOCATION OF TENDONS AND/OR REINFORCING STEEL ARE NOT DEFINITELY KNOWN AND, THEREFORE, MUST BE SEARCHED FOR BY APPROPRIATE METHODS AND EQUIPMENT VIA X-RAY OR OTHER DEVICES THAT CAN ACCURATELY LOCATE THE REINFORCING AND/OR STEEL TENDONS.
22. PENETRATIONS IN FIRE RATED WALLS SHALL BE SEALED IN ACCORDANCE WITH ALL APPLICABLE CODES.
23. ALL MATERIALS SHALL BE U.L. LISTED
24. CONDUIT:
a. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS. IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED WRAPPED WITH HUNTS WRAP PROCESS NO. 3.
b. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL FITTINGS SHALL BE GLAND RING COMPRESSION TYPE EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
c. FLEXIBLE METALLIC CONDUIT SHALL NAVE U.L. LISTED LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE 'JAKE' OR 'SQUEEZE' TYPE, SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT SHALL NAVE FULL SIZE GROUND WIRE
d. CONDUIT RUNS MAY BE SURFACE MOUNTED IN CEILINGS OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH ENGINEER PRIOR TO INSTALLING.
25. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
26. CONTRACTOR SHALL COORDINATE THE ELECTRICAL SERVICE ATTN AT&T MOBILITY" AND LOCAL UTILITY.
27. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY NEC AND ALL APPLICABLE CODES.
28. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE OWNER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE. CONTRACTOR SHALL SUBMIT TO THE PROJECT MANAGER ALL TEST REPORTS AND ONE COMPLETE SET OF PRINTS SHOWING 'INSTALLED WORK'.
29. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK AND LEAVE WORK IN A COMPLETE AND UNDAMAGED CONDITION.
30. ALL EXPOSED GROUND WIRES ROUTED ALONG THE SIDE OF EQUIPMENT SHELTERS OR ROUTED OVER CONCRETE FOUNDATIONS OR OTHER EXISI1NG STRUCTURES SHALL BE INSTALLED IN PROPERLY ANCHORED 3/4"ø (MIN.) PVC CONDUIT.
31. CONTRACTOR SHALL NOT DISTURB EXISTING GROUNDING SYSTEM. ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY AT NO ADDITIONAL COST.
32. ALL ELEMENTS OF ICE BRIDGE AND AT&T MOBILITY UTILITY BACKBOARD MUST BE BONDED AND JUMPERED TO GROUNDED COMPONENTS OF THESE SYSTEMS.
33. ALL INTERIOR CABLES AND WIRING SHALL BE NEATLY ROUTED IN OVERHEAD LADDER RACK AND FASTENED TO LADDER RACK.
34. ALL GROUNDING CONDUCTORS SHALL BE ROUTED DOWNWARDS FROM POINT OF ORIGIN TO TERMINATION POINT (GROUND BAR, GROUND RING, ETC.
35. GROUNDING CONDUCTORS SHALL NOT REVERSE DIRECTION (EXCEPT HALO & BURIED GROUND RINGS). OTHER EXCEPTIONS NEED TO BE APPROVED BY AT&T MOBILITY CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
36. GROUNDING CONDUCTORS SHALL HAVE A MINIMUM BENDING RADIUS OF 8".
37. ALL CONNECTIONS TO GROUND PLATES SHALL BE CAD WELDED TO THE CENTER OF THE PLATE. ALL DETAILS SHOWING CONNECTIONS TO GROUND RODS ARE ALSO VALID FOR SIMILAR CONNECTIONS TO GROUND PLATES.

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ELECTRICAL DETAILS AND ONE LINE DIAGRAM

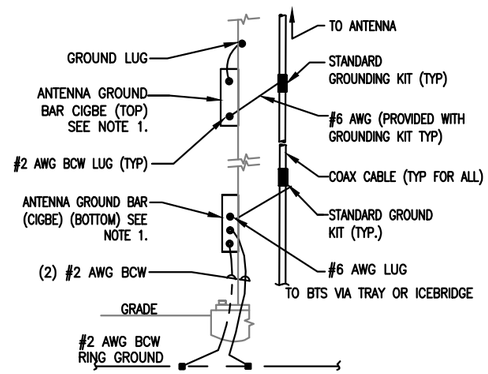
SHEET NO. **E-1**

CIRCUIT BREAKER	
E	ELECTRIC BOX
———	ELECTRICAL CONDUIT
■	EXOTHERMIC CONNECTION (CADWELD) TO GROUND RING AND COMPRESSION TO GROUND HALO
	DISCONNECT SWITH
⊗	GROUND ROD
⊠	GROUND ROD WITH ACCESS
•	MECHANICAL GROUND CONN.
⊠	GROUND ACCESS WELL
— G —	GROUNDING WIRE
G	GENERATOR
	FUSE
	GROUND BUS BAR
	REVISION
T	TELEPHONE BOX
M	UTILITY METER
	XIT GROUND ROD

ACCA	ANTENNA CABLE COVER ASSEMBLY
AWG	AMERICAN WIRE GAUGE
BTCW	BARE TINNED COPPER WIRE
C	CONDUIT
CIGBE	COAX INSULATED GROUND BAR EXTERNAL
CO	CONDUIT ONLY
DWG	DRAWING
EGB	EXTERNAL GROUND BAR
EMT	ELECTRICAL METALLIC TUBING
(E)	EXISTING
(F)	FUTURE
GEN	GENERATOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GPS	GLOBAL POSITIONING SYSTEM
GR	GROWTH
IGR	INTERIOR GROUND RING (HALO)
MIGB	MASTER ISOLATED GROUND BAR
(P)	PROPOSED, NEW (PROVIDE AND INSTALL UNLESS NOTED OTHERWISE)
PCS	PERSONAL COMMUNICATION SERVICE
PPC	POWER PROTECTION CABINET
PRC	PRIMARY RADIO CABINET
PVC	POLYVINYL CHLORIDE CONDUIT
RGS	RIGID GALVANIZED STEEL
RWY	RACEWAY
S.L.D.	SINGLE LINE DIAGRAM
TEL	TELEPHONE
TYP.	TYPICAL
WP	WEATHERPROOF EQUIPMENT

1 G-1 ELEC. / GROUNDING LEGEND

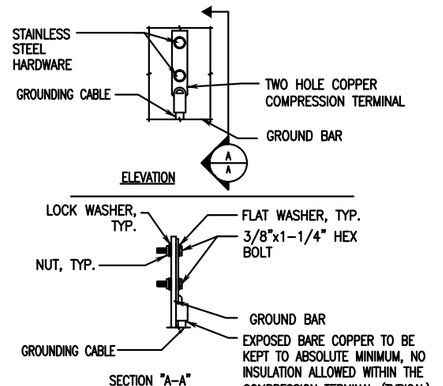
SCALE: N.T.S.



NOTE:
1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER. ANTENNA LOCATION AND CONNECTION ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

2 G-1 TYP. ANTENNA CABLE GROUNDING

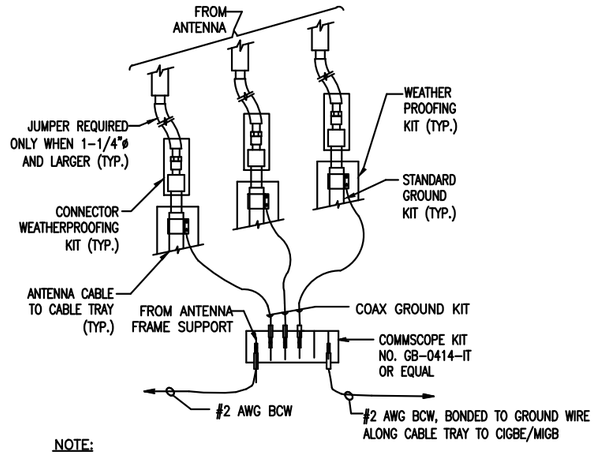
SCALE: N.T.S.



NOTES:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.
4. ALL GROUND LUGS MUST BE HEAT SHRUNK AT WIRE/LUG CONNECTION

3 G-1 TYP. GROUND BAR CONNECTION

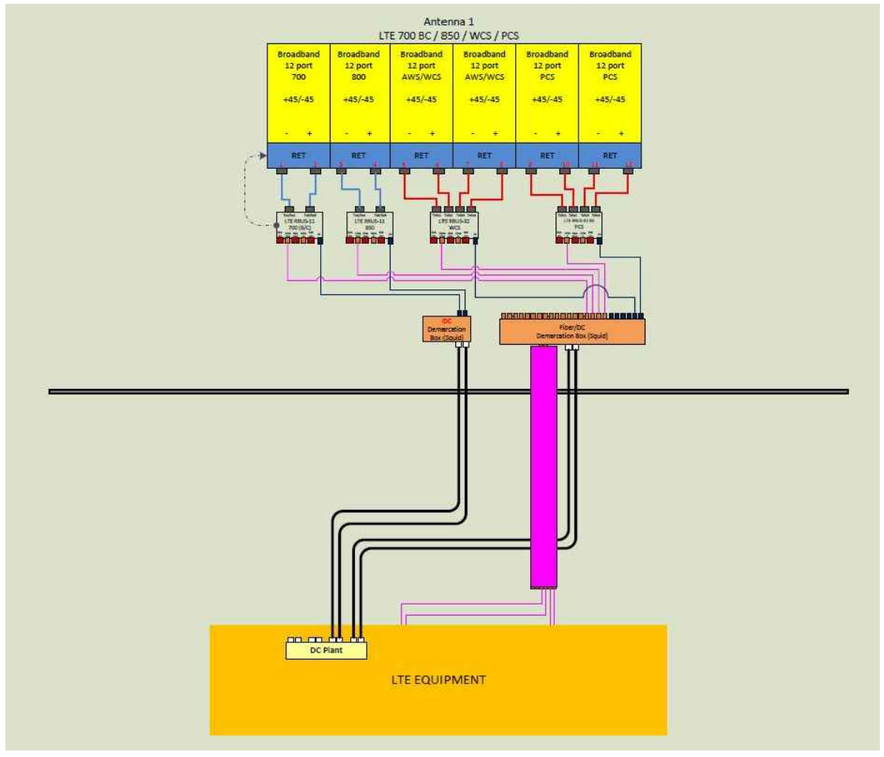
SCALE: N.T.S.



NOTE:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

4 G-1 TYP. GROUND WIRE TO GROUND BAR CONN.

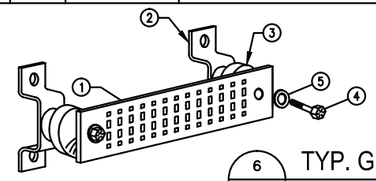
SCALE: N.T.S.



5 G-1 ONE LINE PLUMBING DIAGRAM

SCALE: N.T.S.

WIRELESS SOLUTIONS INC.			
NO.	REQ.	PART NO.	DESCRIPTION
1	1	HLGB-0420-IS	SOLID GND. BAR (20"x4"x1/4")
2	2	———	WALL MTG. BRKT.
3	2	———	INSULATORS
4	4	———	5/8"-11x1" H.H.C.S.
5	4	———	5/8 LOCKWASHER



6 G-1 TYP. GROUND BAR CONN.

SCALE: N.T.S.

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

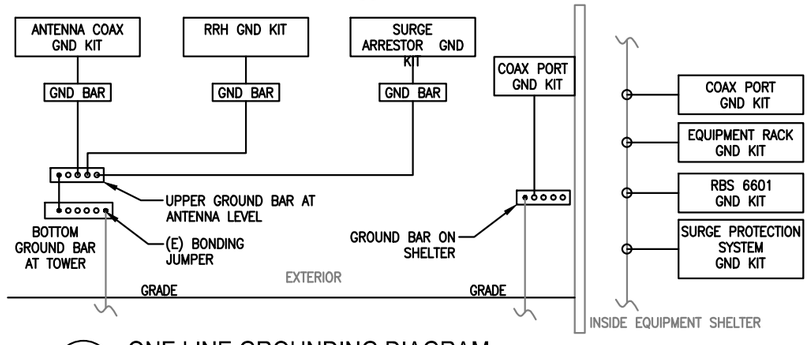
SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

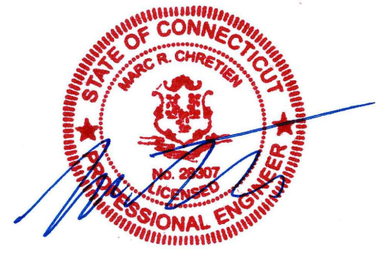
INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)

GROUNDING NOTES:
ALL GROUNDING SHALL BE DONE IN ACCORDANCE WITH THE AT&T MOBILITY GROUNDING GUIDE.



7 G-1 ONE LINE GROUNDING DIAGRAM

SCALE: N.T.S.



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CENTERLINE COMMUNICATIONS
95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767

SITE NUMBER: S3438
SITE NAME: EAST HARTFORD SUNSET RIDGE
100 SUNSET RIDGE
EAST HARTFORD, CT 06108
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD, SUITE 13,
FRAMINGHAM, MA 01701-4681

NO.	DATE	REVISIONS	BY	CHK
0	03/15/17	ISSUED FOR REVIEW	AAB	MRC
1	03/28/17	REVISION	AAB	MRC
2	04/07/17	REVISION	AAB	MRC
3	05/04/17	REVISION	AAB	MRC

GROUNDING DETAILS AND ONE LINE DIAGRAM

SHEET NO. **G-1**