Transcend Wireless

10 Industrial Ave. Suite 3
Mahwah, NJ 07430
Phone: 201.684.0055
Fax: 201.684.0066

March 23, 2018

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Notice of Exempt Modification
374 Three Miles Road
Glastonbury, CT 06033
Latitude: 41' 41' 36.93"N
Longitude: 72' 32' 50.45"W

Dear Ms. Bachman,

Sprint currently maintains one Dish Antenna and one Panel Antenna at the 95' level of 145' Monopole at 374 Three Miles Road Glastonbury, CT 06033. The tower is owned by Crown Castle. Sprint now intends to swap one existing panel antenna for one new antenna. Sprint also plans to install one Mini Macro (radio) behind said antenna. Sprint will also install one new UE Relay at the same 95' level. For structural reasons, Sprint will replace the existing ring mount with a similar lightweight quad ring mount in order to accommodate all equipment at the same 95' level.

The facility was approved by the Town of Glastonbury and CSC, please see attached documentation for your reference.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50j-73, for constructions that constitutes an exempt modifications pursuant to R.C.S.A 16-50j-72(b)(2). In accordance with R.C.S.A. 16-50j-73, a copy of this letter is being sent to Richard J Johnson, Town Manager, Town of Glastonbury, as well as the property owner/tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A 16-50j-72(b)(2).
1.The proposed modification will not result in an increase in the height of the existing structure.
2.The proposed modifications will not require the extension of the site boundary.
3.The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4.The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5.The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6.The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Jennifer Ardis

Jennifer Ardis
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, NJ 07430
Cell: 201-704-8157
jardis@TranscendWireless.com

Attachments:

Cc: Richard J Johnson, Town Manager, Town of Glastonbury
Crown Castle - as tower and property owner
Town of Glastonbury, Zoning Department

Transcend Wireless

10 Industrial Ave. Suite 3
Mahwah, NJ 07430
Phone: 201.684.0055
Fax: 201.684.0066

March 23, 2018

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Notice of Exempt Modification
374 Three Miles Road
Glastonbury, CT 06033
Latitude: 41' 41' 36.93"N
Longitude: 72' 32' 50.45"W

Dear Ms. Bachman,

Sprint currently maintains one Dish Antenna and one Panel Antenna at the 95' level of 145' Monopole at 374 Three Miles Road Glastonbury, CT 06033. The tower is owned by Crown Castle. Sprint now intends to swap one existing panel antenna for one new antenna. Sprint also plans to install one Mini Macro (radio) behind said antenna. Sprint will also install one new UE Relay at the same 95' level. For structural reasons, Sprint will replace the existing ring mount with a similar lightweight quad ring mount in order to accommodate all equipment at the same 95' level.

The facility was approved by the Town of Glastonbury and CSC, please see attached documentation for your reference.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50j-73, for constructions that constitutes an exempt modifications pursuant to R.C.S.A 16-50j-72(b)(2). In accordance with R.C.S.A. 16-50j-73, a copy of this letter is being sent to Richard J Johnson, Town Manager, Town of Glastonbury, as well as the property owner/tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A 16-50j-72(b)(2).
1.The proposed modification will not result in an increase in the height of the existing structure.
2.The proposed modifications will not require the extension of the site boundary.
3.The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4.The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5.The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6.The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Jennifer Ardis

Jennifer Ardis
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, NJ 07430
Cell: 201-704-8157
jardis@TranscendWireless.com

Attachments:

Cc: Richard J Johnson, Town Manager, Town of Glastonbury
Crown Castle - as tower and property owner
Town of Glastonbury, Zoning Department

Transcend Wireless

10 Industrial Ave. Suite 3
Mahwah, NJ 07430
Phone: 201.684.0055
Fax: 201.684.0066

March 23, 2018

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Notice of Exempt Modification
374 Three Miles Road
Glastonbury, CT 06033
Latitude: 41' 41' 36.93"N
Longitude: 72' 32' 50.45"W

Dear Ms. Bachman,

Sprint currently maintains one Dish Antenna and one Panel Antenna at the 95' level of 145' Monopole at 374 Three Miles Road Glastonbury, CT 06033. The tower is owned by Crown Castle. Sprint now intends to swap one existing panel antenna for one new antenna. Sprint also plans to install one Mini Macro (radio) behind said antenna. Sprint will also install one new UE Relay at the same 95' level. For structural reasons, Sprint will replace the existing ring mount with a similar lightweight quad ring mount in order to accommodate all equipment at the same 95' level.

The facility was approved by the Town of Glastonbury and CSC, please see attached documentation for your reference.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50j-73, for constructions that constitutes an exempt modifications pursuant to R.C.S.A 16-50j-72(b)(2). In accordance with R.C.S.A. 16-50j-73, a copy of this letter is being sent to Richard J Johnson, Town Manager, Town of Glastonbury, as well as the property owner/tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A 16-50j-72(b)(2).
1.The proposed modification will not result in an increase in the height of the existing structure.
2.The proposed modifications will not require the extension of the site boundary.
3.The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4.The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5.The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6.The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Jennifer Ardis

Jennifer Ardis
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, NJ 07430
Cell: 201-704-8157
jardis@TranscendWireless.com

Attachments:

Cc: Richard J Johnson, Town Manager, Town of Glastonbury
Crown Castle - as tower and property owner
Town of Glastonbury, Zoning Department

Transcend Wireless

10 Industrial Ave. Suite 3
Mahwah, NJ 07430
Phone: 201.684.0055
Fax: 201.684.0066

March 23, 2018

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Notice of Exempt Modification
374 Three Miles Road
Glastonbury, CT 06033
Latitude: 41' 41' 36.93"N
Longitude: 72' 32' 50.45"W

Dear Ms. Bachman,

Sprint currently maintains one Dish Antenna and one Panel Antenna at the 95' level of 145' Monopole at 374 Three Miles Road Glastonbury, CT 06033. The tower is owned by Crown Castle. Sprint now intends to swap one existing panel antenna for one new antenna. Sprint also plans to install one Mini Macro (radio) behind said antenna. Sprint will also install one new UE Relay at the same 95' level. For structural reasons, Sprint will replace the existing ring mount with a similar lightweight quad ring mount in order to accommodate all equipment at the same 95' level.

The facility was approved by the Town of Glastonbury and CSC, please see attached documentation for your reference.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50j-73, for constructions that constitutes an exempt modifications pursuant to R.C.S.A 16-50j-72(b)(2). In accordance with R.C.S.A. 16-50j-73, a copy of this letter is being sent to Richard J Johnson, Town Manager, Town of Glastonbury, as well as the property owner/tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A 16-50j-72(b)(2).
1.The proposed modification will not result in an increase in the height of the existing structure.
2.The proposed modifications will not require the extension of the site boundary.
3.The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4.The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5.The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6.The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Jennifer Ardis

Jennifer Ardis
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, NJ 07430
Cell: 201-704-8157
jardis@TranscendWireless.com

Attachments:

Cc: Richard J Johnson, Town Manager, Town of Glastonbury
Crown Castle - as tower and property owner
Town of Glastonbury, Zoning Department

Transcend Wireless

10 Industrial Ave. Suite 3
Mahwah, NJ 07430
Phone: 201.684.0055
Fax: 201.684.0066

March 23, 2018

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Notice of Exempt Modification
374 Three Miles Road
Glastonbury, CT 06033
Latitude: 41' 41' 36.93"N
Longitude: 72' 32' 50.45"W

Dear Ms. Bachman,

Sprint currently maintains one Dish Antenna and one Panel Antenna at the 95' level of 145' Monopole at 374 Three Miles Road Glastonbury, CT 06033. The tower is owned by Crown Castle. Sprint now intends to swap one existing panel antenna for one new antenna. Sprint also plans to install one Mini Macro (radio) behind said antenna. Sprint will also install one new UE Relay at the same 95' level. For structural reasons, Sprint will replace the existing ring mount with a similar lightweight quad ring mount in order to accommodate all equipment at the same 95' level.

The facility was approved by the Town of Glastonbury and CSC, please see attached documentation for your reference.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50j-73, for constructions that constitutes an exempt modifications pursuant to R.C.S.A 16-50j-72(b)(2). In accordance with R.C.S.A. 16-50j-73, a copy of this letter is being sent to Richard J Johnson, Town Manager, Town of Glastonbury, as well as the property owner/tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A 16-50j-72(b)(2).
1.The proposed modification will not result in an increase in the height of the existing structure.
2.The proposed modifications will not require the extension of the site boundary.
3.The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4.The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5.The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6.The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Jennifer Ardis

Jennifer Ardis
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, NJ 07430
Cell: 201-704-8157
jardis@TranscendWireless.com

Attachments:

Cc: Richard J Johnson, Town Manager, Town of Glastonbury
Crown Castle - as tower and property owner
Town of Glastonbury, Zoning Department

EBI Consulting
environmental | engineering | due diligence

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

SPRINT Existing Facility

Site ID: CT33XR081

Glastonbury
374 Three Miles Road
Glastonbury, CT 06033

March 11, 2018

EBI Project Number: 6218001900

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	15.574 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

March 11, 2018

SPRINT
Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Emissions Analysis for Site: **CT33XR081 - Glastonbury**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **374 Three Miles Road, Glastonbury, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT 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.

General population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 1900 MHz (PCS) and 2500 MHz (BRS) bands is 1000 $\mu W/cm^2$.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed SPRINT Wireless antenna facility located at **374 Three Miles Road, Glastonbury, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since SPRINT 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.

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

1) 1 LTE channel (1900 MHz (PCS)) was considered for the proposed single sector installation. This Channel has a transmit power of 1 Watt from the existing 1900 MHz repeater installed at this facility.

2) 2 LTE channels (2500 MHz (BRS)) were considered for the proposed single sector installation. These Channels have a transmit power of 20 Watts per Channel from the proposed Nokia Mini Macro radio.

3) 1 LTE channel (2500 MHz (BRS)) was considered for the proposed LTE Relay backhaul link. This Channel has a transmit power of 0.20 Watts per Channel.

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

5) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

6) The antenna used in this modeling is the **Commscope HT65A-F-2x2** for transmission in the 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands and the **Airspan iRelay 460** integrated antenna for 2500 MHz (BRS) LTE Relay. 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.

7) The antenna mounting height centerlines of the proposed antenna and Airspan 460 UE Relay are **97 feet** above ground level (AGL) for **Sector A**.

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

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

SPRINT Site Inventory and Power Data by Antenna

Sector:	A
Antenna #:	**1**
Make / Model:	Commscope HT65A-F-2x2
Gain:	14.75 / 15.65 dBd
Height (AGL):	**97 feet**
Frequency Bands	1900 MHz (PCS) / 2500 MHz (BRS)
Channel Count	3
Total TX Power(W):	41 Watts
ERP (W):	1,498.98
Antenna A1 MPE%	**0.651 %**
Antenna #:	**2**
Make / Model:	Airspan iRelay 460
Gain:	10 dBd
Height (AGL):	**97 feet**
Frequency Bands	2500 MHz (BRS)
Channel Count	1
Total TX Power(W):	0.2 Watts
ERP (W):	6.40
Antenna A2 MPE%	**0.003 %**

Site Composite MPE%	
Carrier	**MPE%**
SPRINT – Max per sector	**0.654 %**
Nextel	0.400 %
T-Mobile	3.270 %
Verizon Wireless	4.070 %
AT&T	3.390 %
XM Satellite Radio	3.790 %
Site Total MPE %:	**15.574 %**

SPRINT Sector A Total:	0.654 %
Site Total:	**15.574 %**

SPRINT _ 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
Sprint 1900 MHz (PCS) LTE	1	29.85	97	0.13	1900 MHz (PCS)	1000	0.013%
Sprint 2500 MHz (BRS) LTE	2	734.56	97	6.38	2500 MHz (BRS)	1000	0.638%
Sprint 2500 MHz (BRS) LTE RELAY	1	6.40	97	0.03	2500 MHz (BRS)	1000	0.003%
						Total:	**0.654%**

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 SPRINT 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:

SPRINT Sector	Power Density Value (%)
Sector A:	0.654 %
SPRINT Maximum Total (per sector):	0.654 %
Site Total:	15.574 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **15.574 %** 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.

SPECIAL CONSTRUCTION NOTE:
SPRINT TOWER TOP WORK IS CONTINGENT ON THE FOLLOWING:
* COMPLETION OF A GLOBAL STRUCTURAL STABILITY ANALYSIS (PROVIDED BY TOWER OWNER).
* COMPLETION OF AN ANTENNA MOUNT ASSESSMENT.

Sprint

SITE NAME: GLASTONBURY
SITE NUMBER: CT33XR081
CROWN ID: 806368
SITE ADDRESS: 374 THREE MILES ROAD
GLASTONBURY, CT 06033
JURISDICTION: TOWN OF GLASTONBURY, CT
SITE TYPE: MONOPOLE
PROGRAM: REPEATER ADD

PROJECT INFORMATION

COUNTY:	HARTFORD COUNTY
SITE NAME:	GLASTONBURY
SITE NUMBER:	CT33XR081
SITE ADDRESS:	374 THREE MILES ROAD GLASTONBURY, CT 06033
TAX MAP PARCEL#	70600374
LATITUDE:	41° 41' 36.93" N.
LONGITUDE:	72° 32' 50.45" W.
GROUND ELEVATION:	627.8'-0"± (AMSL)
PROPERTY OWNER:	FLANAGAN JOSEPHINE I + JOHN R 366 THREE MILE ROAD GLASTONBURY, CT 06033
STRUCTURE OWNER:	CROWN CASTLE 500 WEST CUMMINGS PARK, SUITE 3600 WOBURN, MA 01801
APPLICANT:	TRANSCEND WIRELESS ON BEHALF OF SPRINT

VICINITY MAP

LOCATION MAP

DRAWING INDEX

SHEET	DESCRIPTION	REV.
T-1	TITLE SHEET	2
SP-1	OUTLINE SPECIFICATIONS	2
SP-2	OUTLINE SPECIFICATIONS	2
SP-3	OUTLINE SPECIFICATIONS	2
A-1	COMPOUND & EQUIPMENT PLANS	2
A-2	ANTENNA LAYOUTS & ELEVATION	2
A-3	DETAILS	2
E-1	ELECTRICAL DETAILS AND NOTES	2
G-1	GROUNDING DETAILS AND NOTES	2

PROJECT CONSULTANTS

PROJECT MANAGEMENT:	TRANSCEND WIRELESS 10 INDUSTRIAL AVE MAHWAH, NJ 07430
PROFESSIONAL ENGINEER:	HUDSON DESIGN GROUP LLC 45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845 PHONE: 978-557-5553 FAX: 978-336-5586
SITE ACQUISITION CONSULTANT:	TRANSCEND WIRELESS 10 INDUSTRIAL AVE MAHWAH, NJ 07430
CONSTRUCTION MANAGER:	STEVE CAMARA steven.camara@sprint.com 781-953-6081

SCOPE OF WORK

- REPLACE EXISTING (1) SPRINT ANTENNA WITH (1) NEW SPRINT REPEATER ANTENNA (MODEL# HT65A-F-2X2)
- INSTALL (1) NEW SPRINT 2500 MINI MACRO (MODEL# 473603A)
- INSTALL (1) NEW SPRINT UE RELAY (MODEL# 460)

DIRECTIONS

DIRECTIONS FROM 3 ENTERPRISE DR, ALBANY, NY:
HEAD NORTHWEST ON ENTERPRISE DR AND TURN RIGHT ONTO ERIE BLVD. CONTINUE ONTO CANAL RD S AND TURN LEFT ONTO SIMMONS LANE. TURN RIGHT ONTO BROADWAY. TURN RIGHT AND MERGE ONTO I-787 S. CONTINUE ON I-787 S THEN TAKE EXIT 5 TO MERGE ONTO I-90 E TOWARD BOSTON. CONTINUE ON I-90 E THEN TAKE EXIT 4 TO MERGE ONTO I-91 S TOWARD SPRINGFIELD. CONTINUE ON I-91 S. TAKE EXIT 30 AND MERGE ONTO I-84 E. CONTINUE ON I-84 E THEN TAKE EXIT 55 FOR CT-2 E. CONTINUE ON CT-2 E. TAKE EXIT 10 FOR CT-83 TOWARD MANCHESTER/E GLASTONBURY. TURN RIGHT ONTO CT-83 E. TURN RIGHT ONTO NEW LONDON TURNPIKE. TURN RIGHT ONTO THREE MILE ROAD. ACCESS DRIVE TO COMPOUND LOCATED ON THE LEFT.

CODE COMPLIANCE

DEVELOPMENT AND USE OF THE SITE WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES:

- BUILDING CODE: IBC 2012 WITH 2016 CT STATE BUILDING CODE AMENDMENTS
- ELECTRICAL CODE: 2014 NATIONAL ELECTRICAL CODE
- STRUCTURAL CODE: TIA/EIA-222-G OR LATEST EDITION

GENERAL NOTES

1. THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION:
   - HANDICAPPED ACCESS NOT REQUIRED
   - POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED
   - NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED
2. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACES THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.

811 Know what's below. Call before you dig. www.call811.com

APPROVALS

DISCIPLINE	SIGNATURE	DATE
LANDLORD:		

Sprint
3 ENTERPRISE DRIVE
ALBANY, NY 12204

Transcend Wireless
TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH, NJ 07430
TEL: (201) 684-0055
FAX:(201) 684-0066

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 29155
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: RP

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	12/04/17	ISSUED FOR PERMITTING	VP
1	11/06/17	ISSUED FOR PERMITTING	VP
0	10/04/17	ISSUED FOR REVIEW	VP

SITE NUMBER:
CT33XR081
SITE NAME:
GLASTONBURY
CROWN ID:
806368
SITE ADDRESS:
374 THREE MILES ROAD
GLASTONBURY, CT 06033
HARTFORD COUNTY COUNTY

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

THESE OUTLINE SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS, INCLUDING CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

SECTION 01 100 – SCOPE OF WORK

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT CONSTRUCTION STANDARDS FOR WIRELESS SITES, CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 PRECEDENCE: SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES INCLUDING THE STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, INFORMATION ON THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE. NOTIFY SPRINT CONSTRUCTION MANAGER IF THIS OCCURS.

1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:

A. THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL AND LOCAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
1. GR–78–CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
2. GR–1089 CORE, ELECTROMAGNETIC COMPATIBILITY AND ELECTRICAL SAFETY –GENERIC CRITERIA FOR NETWORK TELECOMMUNICATIONS EQUIPMENT.
3. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC") AND NFPA 101 (LIFE SAFETY CODE).
4. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM)
5. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE)
6. AMERICAN CONCRETE INSTITUTE (ACI)
7. AMERICAN WIRE PRODUCERS ASSOCIATION (AWPA)
8. CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
9. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
10. PORTLAND CEMENT ASSOCIATION (PCA)
11. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
12. BRICK INDUSTRY ASSOCIATION (BIA)
13. AMERICAN WELDING SOCIETY (AWS)
14. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
15. SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
16. DOOR AND HARDWARE INSTITUTE (DHI)
17. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
18. APPLICABLE BUILDING CODES INCLUDING UNIFORM BUILDING CODE, SOUTHERN BUILDING CODE, BOCA, AND THE INTERNATIONAL BUILDING CODE.

1.5 DEFINITIONS:

A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
B. COMPANY: SPRINT CORPORATION
C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.
F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.
G. CONSTRUCTION MANAGER – ALL PROJECTS RELATED COMMUNICATION TO FLOW THROUGH SPRINT REPRESENTATIVE IN CHARGE OF PROJECT...

1.6 SITE FAMILIARITY: CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE SPRINT CONSTRUCTION MANAGER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OR FIELD CONDITIONS.

1.7 POINT OF CONTACT: COMMUNICATION BETWEEN SPRINT AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE SPRINT CONSTRUCTION MANAGER APPOINTED TO MANAGE THE PROJECT FOR SPRINT.

1.8 ON–SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.

1.9 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.

A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN RED PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS–BUILT" DRAWINGS.
B. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. CONTRACTOR SHALL NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY VARIATIONS PRIOR TO PROCEEDING WITH THE WORK.
C . DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. SPACING BETWEEN EQUIPMENT IS THE REQUIRED CLEARANCE. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE SPRINT CONSTRUCTION MANAGER PRIOR TO PROCEEDING WITH THE WORK.

1.10 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.

1.11 UTILITIES SERVICES: WHERE NECESSARY TO CUT EXISTING PIPES, ELECTRICAL WIRES, CONDUITS, CABLES, ETC., OF UTILITY SERVICES, OR OF FIRE PROTECTION OR COMMUNICATIONS SYSTEMS, THEY SHALL BE CUT AND CAPPED AT SUITABLE PLACES OR WHERE SHOWN. ALL SUCH ACTIONS SHALL BE COORDINATED WITH THE UTILITY COMPANY INVOLVED:

1.12 PERMITS / FEES: WHEN REQUIRED THAT A PERMIT OR CONNECTION FEE BE PAID TO A PUBLIC UTILITY PROVIDER FOR NEW SERVICE TO THE CONSTRUCTION PROJECT, PAYMENT OF SUCH FEE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

1.13 CONTRACTOR SHALL TAKE ALL MEASURES AND PROVIDE ALL MATERIAL NECESSARY FOR PROTECTING EXISTING EQUIPMENT AND PROPERTY.

1.14 METHODS OF PROCEDURE (MOPS) FOR CONSTRUCTION: CONTRACTOR SHALL PERFORM WORK AS DESCRIBED IN THE FOLLOWING INSTALLATION AND COMMISSIONING MOPS.

A. TOP HAT
B. HOW TO INSTALL A NEW CABINET
C. BASE BAND UNIT IN EXISTING UNIT
D. INSTALLATION OF BATTERIES
E. INSTALLATION OF HYBRID CABLE
F. INSTALLATION OF RRH'S
G. CABLING
H. SPRINT TS–0200 (CURRENT VERSION) – ANTENNA LINE ACCEPTANCE STANDARDS
I. SPRINT CELL SITE ENGINEERING NOTICE – EN 2012–001, REV 1.
J. COMMISSIONING MOPS
K. SPRINT CELL SITE ENGINEERING NOTICE – EN–2013–002
L. SPRINT ENGINEERING LETTER – EL–0504
M. SPRINT ENGINEERING LETTER – EL–0568
N. SPRINT TECHNICAL SPECIFICATION – TS–0193

1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

A. CONTRACTOR WILL UTILIZE ITS BEST EFFORTS TO WORK WITH SPRINT ELECTRONIC PROJECT MANAGEMENT SYSTEMS. CONTRACTOR UNDERSTANDS THAT SUFFICIENT INTERNET ACCESS, EQUIVALENT TO "BROADBAND" OR BETTER, IS REQUIRED TO TIMELY AND EFFECTIVELY UTILIZE SPRINT DATA AND DOCUMENT MANAGEMENT SYSTEMS AND AGREES TO MAINTAIN APPROPRIATE CONNECTIONS FOR CONTRACTOR'S STAFF AND OFFICES THAT ARE COMPATIBLE WITH SPRINT DATA AND DOCUMENT MANAGEMENT SYSTEMS

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.

3.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.

3.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD–PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

3.4 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.

3.5 EXISTING CONDITIONS: NOTIFY THE SPRINT CONSTRUCTION MANAGER OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 RECEIPT OF MATERIAL AND EQUIPMENT:

A. COMPANY FURNISHED MATERIAL AND EQUIPMENT IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DOCUMENTS.

B. THE CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
1. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
2. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
3. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
4. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY–FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
5. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
6. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF–LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

3.2 DELIVERABLES:

A. COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.

B. IF APPLICABLE, COMPLETE LOST/STOLEN/DAMAGED DOCUMENTATION REPORT AS NECESSARY IN ACCORDANCE WITH COMPANY PRACTICE, AND AS DIRECTED BY COMPANY.

C. UPLOAD DOCUMENTATION INTO SPRINT SITE MANAGEMENT SYSTEM (SMS) AND/OR PROVIDE HARD COPY DOCUMENTATION AS REQUESTED.

SECTION 01 300 – CELL SITE CONSTRUCTION

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 NOTICE TO PROCEED:

A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF THE WORK ORDER.

B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT WITH AN OPERATIONAL WIRELESS FACILITY.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 FUNCTIONAL REQUIREMENTS:

A. THE ACTIVITIES DESCRIBED IN THIS PARAGRAPH REPRESENT MINIMUM ACTIONS AND PROCESSES REQUIRED TO SUCCESSFULLY COMPLETE THE WORK. THE ACTIVITIES DESCRIBED ARE NOT EXHAUSTIVE, AND CONTRACTOR SHALL TAKE ANY AND ALL ACTIONS AS NECESSARY TO SUCCESSFULLY COMPLETE THE CONSTRUCTION OF A FULLY FUNCTIONING WIRELESS FACILITY AT THE SITE IN ACCORDANCE WITH COMPANY PROCESSES.

B. SUBMIT SPECIFIC DOCUMENTATION AS INDICATED HEREIN, AND OBTAIN REQUIRED APPROVALS WHILE THE WORK IS BEING PERFORMED.

C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES

D. PROVIDE CONSTRUCTION ACTIVITIES TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
1. PERFORM ANY REQUIRED SITE ENVIRONMENTAL MITIGATION.
2. PREPARE GROUND SITES; PROVIDE DE–GRUBBING; AND ROUGH AND FINAL GRADING, AND COMPOUND SURFACE TREATMENTS.
3. MANAGE AND CONDUCT ALL ACTIVITIES FOR INSTALLATION OF UTILITIES INCLUDING ELECTRICAL AND TELCO BACKHAUL.
4. INSTALL UNDERGROUND FACILITIES INCLUDING UNDERGROUND POWER AND COMMUNICATIONS CONDUITS, AND UNDERGROUND GROUNDING SYSTEM.
5. INSTALL ABOVE GROUND GROUNDING SYSTEMS.
6. PROVIDE NEW HVAC INSTALLATIONS AND MODIFICATIONS.
7. INSTALL "H–FRAMES', CABINETS AND SHELTERS AS INDICATED.
8. INSTALL ROADS, ACCESS WAYS, CURBS AND DRAINS AS INDICATED.
9. ACCOMPLISH REQUIRED MODIFICATION OF EXISTING FACILITIES.
10. PROVIDE ANTENNA SUPPORT STRUCTURE FOUNDATIONS.
11. PROVIDE SLABS AND EQUIPMENT PLATFORMS.
12. INSTALL COMPOUND FENCING, SIGHT SHIELDING, LANDSCAPING AND ACCESS BARRIERS.
13. PERFORM INSPECTION AND MATERIAL TESTING AS REQUIRED HEREINAFTER.
14. CONDUCT SITE RESISTANCE TO EARTH TESTING AS REQUIRED HEREINAFTER
15. INSTALL FIXED GENERATOR SETS AND OTHER STANDBY POWER SOLUTIONS.
16. INSTALL TOWERS, ANTENNA SUPPORT STRUCTURES AND PLATFORMS ON EXISTING TOWERS AS REQUIRED.
17. INSTALL CELL SITE RADIOS, MICROWAVE, GPS, COAXIAL MAINLINE, ANTENNAS, CROSS BAND COUPLERS, TOWER TOP AMPLIFIERS, LOW NOISE AMPLIFIERS AND RELATED EQUIPMENT.
18. PERFORM, DOCUMENT, AND CLOSE OUT ANY CONSTRUCTION CONTROL DOCUMENTS THAT MAY BE REQUIRED BY GOVERNMENT AGENCIES AND LANDLORDS.
19. PERFORM ANTENNAL AND COAX SWEEP TESTING AND MAKE ANY AND ALL NECESSARY CORRECTIONS.
20. REMAIN ON SITE MOBILIZED THROUGHOUT HAND–OFF AND INTEGRATION TO ASSIST AS NEEDED UNTIL SITE IS DEEMED SUBSTANTIALLY COMPLETE AND PLACED "ON AIR."

3.2 GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:

A. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.

B. EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.

C. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
1. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
2. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.

D. CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION

E. CONDUCT TESTING AS REQUIRED HEREIN.

3.3 DELIVERABLES:

A. CONTRACTOR SHALL REVIEW, APPROVE, AND SUBMIT TO SPRINT SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND SIMILAR SUBMITTALS AS REQUIRED HEREINAFTER

B. PROVIDE DOCUMENTATION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING. DOCUMENTATION SHALL BE FORWARDED IN ORIGINAL FORMAT AND/OR UPLOADED INTO SMS.
1. ALL CORRESPONDENCE AND PRELIMINARY CONSTRUCTION REPORTS.
2. PROJECT PROGRESS REPORTS.
3. CIVIL CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
4. ELECTRICAL SERVICE COMPLETION DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
5. LINES AND ANTENNA INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
6. POWER INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
7. TELCO READY DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
8. PPC (OR SHELTER) INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
9. TOWER CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
10. TOWER CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
11. BTS AND RADIO EQUIPMENT DELIVERED AT SITE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
12. NETWORK OPERATIONS HANDOFF CHECKLIST (HOC WALK) COMPLETE (UPLOAD FORM IN SMS)
13. CIVIL CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
14. SITE CONSTRUCTION PROGRESS PHOTOS UNLOADED INTO SMS.

CONTINUE SHEET SP–2

Sprint
3 ENTERPRISE DRIVE
ALBANY, NY 12204

Transcend Wireless
TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH, NJ 07430
TEL: (201) 684-0055
FAX:(201) 684-0066

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 23554
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: RP

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	12/04/17	ISSUED FOR PERMITTING	VP
1	11/06/17	ISSUED FOR PERMITTING	VP
0	10/04/17	ISSUED FOR REVIEW	VP

SITE NUMBER:
CT33XR081

SITE NAME:
GLASTONBURY

CROWN ID:
806368

SITE ADDRESS:
374 THREE MILES ROAD
GLASTONBURY, CT 06033
HARTFORD COUNTY COUNTY

SHEET TITLE
OUTLINE SPECIFICATIONS

SHEET NUMBER
SP-1

CONTINUED FROM SP-1:

SECTION 01 400 – SUBMITTALS, TESTS, AND INSPECTIONS

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 SUBMITTALS:

A. THE WORK IN ALL ASPECTS SHALL COMPLY WITH THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS.

B. SUBMIT THE FOLLOWING TO COMPANY REPRESENTATIVE FOR APPROVAL.
1. CONCRETE MIX–DESIGNS FOR TOWER FOUNDATIONS, ANCHORS PIERS, AND CONCRETE PAVING.
2. CONCRETE BREAK TESTS AS SPECIFIED HEREIN.
3. SPECIAL FINISHES FOR INTERIOR SPACES, IF ANY.
4. ALL EQUIPMENT AND MATERIALS SO IDENTIFIED ON THE CONSTRUCTION DRAWINGS.
5. CHEMICAL GROUNDING DESIGN.

C. ALTERNATES: AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO BEING SHIPPED TO SITE. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED. SUBMITTAL FOR APPROVAL SHALL INCLUDE A STATEMENT OF COST REDUCTION PROPOSED FOR USE OF ALTERNATE PRODUCT.

1.4 TESTS AND INSPECTIONS:

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.

B. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
1. COAX SWEEPS AND FIBER TESTS PER SPRINT TS–0200 (CURRENT VERSION) ANTENNA LINE ACCEPTANCE STANDARDS.
2. AGL, AZIMUTH AND DOWNTILT USING ELECTRONIC COMMERCIAL MADE–FOR–THE–PURPOSE ANTENNA ALIGNMENT TOOL.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

C. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING;
1. AZIMUTH, DOWNTILT, AGL – UPLOAD REPORT FROM ANTENNA ALIGNMENT TOOL TO SITERRA TASK 465. INSTALLED AZIMUTH, DOWNTILT, AND AGL MUST CONFORM TO THE RF DATA SHEETS. SWEEP AND FIBER TESTS
2. SCANABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
3. ALL AVAILABLE JURISDICTIONAL INFORMATION
4. PDF SCAN OF REDLINES PRODUCED IN FIELD
5. ELECTRONIC AS–BUILT DRAWINGS IN AUTOCAD AND PDF FORMATS. ANY FIELD CHANGE MUST BE REFLECTED BY MODIFYING THE PLANS, ELEVATIONS, AND DETAILS IN THE DRAWING SETS. GENERAL NOTES INDICATING MODIFICATIONS WILL NOT BE ACCEPTED. CHANGES SHALL BE HIGHLIGHTED AS "CLOUDS" IDENTIFIED AS THE "AS–BUILT" CONDITION.
6. LIEN WAIVERS
7. FINAL PAYMENT APPLICATION
8. REQUIRED FINAL CONSTRUCTION PHOTOS
9. CONSTRUCTION AND COMMISSIONING CHECKLIST COMPLETE WITH NO DEFICIENT ITEMS
10. ALL POST NTP TASKS INCLUDING DOCUMENT UPLOADS COMPLETED IN SITERRA (SPRINTS DOCUMENT REPOSITORY OF RECORD).

1.5 COMMISSIONING: PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPS

1.6 INTEGRATION: PERFORM ALL INTEGRATION ACTIVITIES AS REQUIRED BY APPLICABLE MOPS

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 REQUIREMENTS FOR TESTING:

A. THIRD PARTY TESTING AGENCY: WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
1. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
2. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.
3. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.

3.2 REQUIRED TESTS:

A. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
1. CONCRETE CYLINDER BREAK TESTS FOR THE TOWER AND ANCHOR FOUNDATIONS AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
2. ASPHALT ROADWAY COMPACTED THICKNESS, SURFACE SMOOTHNESS, AND COMPACTED DENSITY TESTING AS SPECIFIED IN SECTION: HOT MIX ASPHALT PAVING.
3. FIELD QUALITY CONTROL TESTING AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
4. TESTING REQUIRED UNDER SECTION: AGGREGATE BASE FOR ACCESS ROADS, PADS AND ANCHOR LOCATIONS
5. STRUCTURAL BACKFILL COMPACTION TESTS FOR THE TOWER FOUNDATION.
6. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
7. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
8. GROUNDING AT ANTENNA MASTS FOR GPS AND ANTENNAS
9. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

3.3 REQUIRED INSPECTIONS:

A. SCHEDULE INSPECTIONS WITH COMPANY REPRESENTATIVE.

B. CONDUCT INSPECTIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
1. GROUNDING SYSTEM INSTALLATION PRIOR TO EARTH CONCEALMENT DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
2. FORMING FOR CONCRETE AND REBAR PLACEMENT PRIOR TO POUR DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
3. COMPACTION OF BACKFILL MATERIALS; AGGREGATE BASE FOR ROADS, PADS, AND ANCHORS; ASPHALT PAVING; AND SHAFT BACKFILL FOR CONCRETE AND WOOD POLES, BY INDEPENDENT THIRD PARTY AGENCY.
4. PRE– AND POST–CONSTRUCTION ROOFTOP AND STRUCTURAL INSPECTIONS ON EXISTING FACILITIES.
5. TOWER ERECTION SECTION STACKING AND PLATFORM ATTACHMENT DOCUMENTED BY DIGITAL PHOTOGRAPHS BY THIRD PARTY AGENCY.
6. ANTENNA AZIMUTH , DOWN TILT AND PER SUNLIGHT TOOL SUNSIGHT INSTRUMENTS – ANTENNALIGN ALIGNMENT TOOL (AAT)
7. VERIFICATION DOCUMENTED WITH THE ANTENNA CHECKLIST REPORT, BY A&E, SITE DEVELOPMENT REP, OR RF REP.
8. FINAL INSPECTION CHECKLIST AND HANDOFF WALK (HOC.). SIGNED FORM SHOWING ACCEPTANCE BY FIELD OPS IS TO BE UPLOADED INTO SMS.
9. COAX SWEEP AND FIBER TESTING DOCUMENTS SUBMITTED VIA SMS FOR RF APPROVAL.
10. SCAN–ABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
11. ALL AVAILABLE JURISDICTIONAL INFORMATION
12. PDF SCAN OF REDLINES PRODUCED IN FIELD

E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

F. CONSTRUCTION INSPECTIONS AND CORRECTIVE MEASURES SHALL BE DOCUMENTED BY THE CONTRACTOR WITH WRITTEN REPORTS AND PHOTOGRAPHS. PHOTOGRAPHS MUST BE DIGITAL AND OF SUFFICIENT QUALITY TO CLEARLY SHOW THE SITE CONSTRUCTION. PHOTOGRAPHS MUST CLEARLY IDENTIFY THE PHOTOGRAPHED ITEM AND BE LABELED WITH THE SITE CASCADE NUMBER, SITE NAME, DESCRIPTION, AND DATE.

3.4 DELIVERABLES: TEST AND INSPECTION REPORTS AND CLOSEOUT DOCUMENTATION SHALL BE UPLOADED TO THE SMS AND/OR FORWARDED TO SPRINT FOR INCLUSION INTO THE PERMANENT SITE FILES.

A. THE FOLLOWING TEST AND INSPECTION REPORTS SHALL BE PROVIDED AS APPLICABLE.
1. CONCRETE MIX AND CYLINDER BREAK REPORTS.
2. STRUCTURAL BACKFILL COMPACTION REPORTS.
3. SITE RESISTANCE TO EARTH TEST.
4. ANTENNA AZIMUTH AND DOWN TILT VERIFICATION
5. TOWER ERECTION INSPECTIONS AND MEASUREMENTS DOCUMENTING TOWER INSTALLED PER SUPPLIER'S REQUIREMENTS AND THE APPLICABLE SECTIONS HEREIN.
6. COAX CABLE SWEEP TESTS PER COMPANY'S "ANTENNA LINE ACCEPTANCE STANDARDS".

B. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES THE FOLLOWING;
1. TEST WELLS AND TRENCHES: PHOTOGRAPHS OF ALL TEST WELLS; PHOTOGRAPHS SHOWING ALL OPEN EXCAVATIONS AND TRENCHING PRIOR TO BACKFILLING SHOWING A TAPE MEASURE VISIBLE IN THE EXCAVATIONS INDICATING DEPTH.
2. CONDUITS, CONDUCTORS AND GROUNDING: PHOTOGRAPHS SHOWING TYPICAL INSTALLATION OF CONDUCTORS AND CONNECTORS; PHOTOGRAPHS SHOWING TYPICAL BEND RADIUS OF INSTALLED GROUND WIRES AND GROUND ROD SPACING;
3. CONCRETE FORMS AND REINFORCING: CONCRETE FORMING AT TOWER AND EQUIPMENT/SHELTER PAD/FOUNDATIONS – PHOTOGRAPHS SHOWING ALL REINFORCING STEEL, UTILITY AND CONDUIT STUB OUTS; PHOTOGRAPHS SHOWING CONCRETE POUR OF SHELTER SLAB/FOUNDATION, TOWER FOUNDATION AND GUY ANCHORS WITH VIBRATOR IN USE; PHOTOGRAPHS SHOWING EACH ANCHOR ON GUYED TOWERS, BEFORE CONCRETE POUR.
4. TOWER, ANTENNAS AND MAINLINE: INSPECTION AND PHOTOGRAPHS OF SECTION STACKING; INSPECTION AND PHOTOGRAPHS OF PLATFORM COMPONENT ATTACHMENT POINTS; PHOTOGRAPHS OF TOWER TOP GROUNDING; PHOTOS OF TOWER COAX LINE COLOR CODING AT THE TOP AND AT GROUND LEVEL; INSPECTION AND PHOTOGRAPHS OF OPERATIONAL OF TOWER LIGHTING, AND PLACEMENT OF FAA REGISTRATION SIGN; PHOTOGRAPHS SHOWING ADDITIONAL GROUNDING POINTS FOR TOWERS GREATER THAN 200 FEET.; PHOTOS OF ANTENNA GROUND BAR, EQUIPMENT GROUND BAR, AND MASTER GROUND BAR; PHOTOS OF GPS ANTENNA(S); PHOTOS OF EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA; PHOTOS OF COAX WEATHERPROOFING – TOP AND BOTTOM; PHOTOS OF COAX GROUNDING––TOP AND BOTTOM; PHOTOS OF ANTENNA AND MAST GROUNDING; PHOTOS OF COAX CABLE ENTRY INTO SHELTER; PHOTOS OF PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.
5. ROOF TOPS: PRE–CONSTRUCTION AND POST–CONSTRUCTION VISUAL INSPECTION AND PHOTOGRAPHS OF THE ROOF AND INTERIOR TO DETERMINE AND DOCUMENT CONDITIONS; ROOF TOP CONSTRUCTION INSPECTIONS AS REQUIRED BY THE JURISDICTION; PHOTOGRAPHS OF CABLE TRAY AND/OR ICE BRIDGE; PHOTOGRAPHS OF DOGHOUSE/CABLE EXIT FROM ROOF;
6. SITE LAYOUT – PHOTOGRAPHS OF THE OVERALL COMPOUND, INCLUDING EQUIPMENT PLATFORM FROM ALL FOUR CORNERS.
7. FINISHED UTILITIES: CLOSE–UP PHOTOGRAPHS OF THE PPC BREAKER PANEL; CLOSE–UP PHOTOGRAPH OF THE INSIDE OF THE TELCO PANEL AND NIU; CLOSE–UP PHOTOGRAPH OF THE POWER METER AND DISCONNECT; PHOTOS OF POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE; PHOTOGRAPHS AT METER BOX AND/OR FACILITY DISTRIBUTION PANEL.
8. REQUIRED MATERIALS CERTIFICATIONS: CONCRETE MIX DESIGNS; MILL CERTIFICATION FOR ALL REINFORCING AND STRUCTURAL STEEL; AND ASPHALT PAVING MIX DESIGN.
9. ANY AND ALL SUBMITTALS BY THE JURISDICTION OR COMPANY.

SECTION 01 500 – PROJECT REPORTING

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 WEEKLY REPORTS:

A. CONTRACTOR SHALL PROVIDE SPRINT WITH WEEKLY REPORTS SHOWING PROJECT STATUS. THIS STATUS REPORT FORMAT WILL BE PROVIDED TO THE CONTRACTOR BY SPRINT. THE REPORT WILL CONTAIN SITE ID NUMBER, THE MILESTONES FOR EACH SITE, INCLUDING THE BASELINE DATE, ESTIMATED COMPLETION DATE AND ACTUAL COMPLETION DATE.

B. REPORT INFORMATION WILL BE TRANSMITTED TO SPRINT VIA ELECTRONIC MEANS AS REQUIRED. THIS INFORMATION WILL PROVIDE A BASIS FOR PROGRESS MONITORING AND PAYMENT.

3.2 PROJECT CONFERENCE CALLS:

A. SPRINT MAY HOLD WEEKLY PROJECT CONFERENCE CALLS. CONTRACTOR WILL BE REQUIRED TO COMMUNICATE SITE STATUS, MILESTONE COMPLETIONS AND UPCOMING MILESTONE PROJECTIONS, AND ANSWER ANY OTHER SITE STATUS QUESTIONS AS NECESSARY.

3.3 PROJECT TRACKING IN SMS:

A. CONTRACTOR SHALL PROVIDE SCHEDULE UPDATES AND PROJECTIONS IN THE SMS SYSTEM ON A WEEKLY BASIS.

3.4 ADDITIONAL REPORTING:

A. ADDITIONAL OR ALTERNATE REPORTING REQUIREMENTS MAY BE ADDED TO THE REPORT AS DETERMINED TO BE REASONABLY NECESSARY BY COMPANY.

3.5 PROJECT PHOTOGRAPHS:

A. FILE DIGITAL PHOTOGRAPHS OF COMPLETED SITE IN JPEG FORMAT IN THE SMS PHOTO LIBRARY FOR THE RESPECTIVE SITE. PHOTOGRAPHS SHALL BE CLEARLY LABELED WITH SITE NUMBER, NAME AND DESCRIPTION, AND SHALL INCLUDE AT A MINIMUM THE FOLLOWING AS APPLICABLE:
1. SHELTER AND TOWER OVERVIEW.
2. TOWER FOUNDATION(S) – FORMS AND STEEL BEFORE POUR (EACH ANCHOR ON GUYED TOWERS).
3. TOWER FOUNDATION(S) POUR WITH VIBRATOR IN USE (EACH ANCHOR ON GUYED TOWERS).
4. TOWER STEEL AS BEING INSTALLED INTO HOLE (SHOW ANCHOR STEEL ON GUYED TOWERS).
5. PHOTOS OF TOWER SECTION STACKING.
6. CONCRETE TESTING / SAMPLES.
7. PLACING OF ANCHOR BOLTS IN TOWER FOUNDATION.
8. BUILDING/WATER TANK FROM ROAD FOR TENANT IMPROVEMENTS OR COMMENTS.
9. SHELTER FOUNDATION––FORMS AND STEEL BEFORE POURING.
10. SHELTER FOUNDATION POUR WITH VIBRATOR IN USE.
11. COAX CABLE ENTRY INTO SHELTER.
12. PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.
13. ROOFTOP PRE AND POST CONSTRUCTION PHOTOS TO INCLUDE PENETRATIONS AND INTERIOR CEILING.
14. PHOTOS OF TOWER TOP COAX LINE COLOR CODING AND COLOR CODING AT GROUND LEVEL.
15. PHOTOS OF ALL APPROPRIATE COMPANY OR REGULATORY SIGNAGE.
16. PHOTOS OF EQUIPMENT BOLT DOWN INSIDE SHELTER.
17. POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE AND POWER AND TELCO SUPPLY LOCATIONS INCLUDING METER/DISCONNECT.
18. ELECTRICAL TRENCH(S) WITH ELECTRICAL / CONDUIT BEFORE BACKFILL.
19. ELECTRICAL TRENCH(S) WITH FOIL–BACKED TAPE BEFORE FURTHER BACKFILL.
20. TELCO TRENCH WITH TELEPHONE / CONDUIT BEFORE BACKFILL.
21. TELCO TRENCH WITH FOIL–BACKED TAPE BEFORE FURTHER BACKFILL.
22. SHELTER GROUND–RING TRENCH WITH GROUND–WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).
23. TOWER GROUND–RING TRENCH WITH GROUND–WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).
24. FENCE GROUND–RING TRENCH WITH GROUND–WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).
25. ALL BTS GROUND CONNECTIONS.
26. ALL GROUND TEST WELLS.
27. ANTENNA GROUND BAR AND EQUIPMENT GROUND BAR.
28. ADDITIONAL GROUNDING POINTS ON TOWERS ABOVE 200'.
29. HVAC UNITS INCLUDING CONDENSERS ON SPLIT SYSTEMS.
30. GPS ANTENNAS.
31. CABLE TRAY AND/OR WAVEGUIDE BRIDGE.
32. DOGHOUSE/CABLE EXIT FROM ROOF.
33. EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA.
34. MASTER BUS BAR.
35. TELCO BOARD AND NIU.
36. ELECTRICAL DISTRIBUTION WALL.
37. CABLE ENTRY WITH SURGE SUPPRESSION.
38. ENTRANCE TO EQUIPMENT ROOM.
39. COAX WEATHERPROOFING–TOP AND BOTTOM OF TOWER.
40. COAX GROUNDING –TOP AND BOTTOM OF TOWER.
41. ANTENNA AND MAST GROUNDING.
42. LANDSCAPING – WHERE APPLICABLE.

3.6 FINAL PROJECT ACCEPTANCE: COMPLETE ALL REQUIRED REPORTING TASKS PER CONTRACT, CONTRACT DOCUMENTS OR THE SPRINT INTEGRATED CONSTRUCTION STANDARDS FOR WIRELESS SITES AND UPLOAD INTO SITERRA.

SECTION 07 500 – ROOF CUTTING, PATCHING AND REPAIR

SUMMARY:
THIS SECTION SPECIFIES CUTTING AND PATCHING EXISTING ROOFING SYSTEMS WHERE CONDUIT OR CABLES EXIT THE BUILDING ONTO THE ROOF OR BUILDING–MOUNTED ANTENNAS, AND AS REQUIRED FOR WATERTIGHT PERFORMANCE. ROOFTOP ENTRY OPENINGS IN MEMBRANE ROOFTOPS SHALL BE CONSTRUCTED TO COMPLY WITH LANDLORD, ANY EXISTING WARRANTY, AND LOCAL JURISDICTIONAL STANDARDS.

1.4 SUBMITTALS:

A. PRE–CONSTRUCTION ROOF PHOTOS: COMPLETE A ROOF INSPECTION PRIOR TO THE INSTALLATION OF SPRINT EQUIPMENT ON ANY ROOFTOP BUILD. AT A MINIMUM INSPECT AND PHOTOGRAPH (MINIMUM 3 EA.) ALL AREAS IMPACTED BY THE ADDITION OF THE SPRINT EQUIPMENT.

B. PROVIDE SIMILAR PHOTOGRAPHS SHOWING ROOF CONDITIONS AFTER CONSTRUCTION (MINIMUM 3 EA.)

C. ROOF INSPECTION PHOTOGRAPHS SHOULD BE UPLOADED WITH CLOSEOUT PHOTOGRAPHS.

SECTION 09 900 – PAINTING

QUALITY ASSURANCE:

A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. COMPLY WITH ALL ENVIRONMENTAL REGULATIONS FOR VOLATILE ORGANIC COMPOUNDS.

CONTINUE SHEET SP–3

Sprint
3 ENTERPRISE DRIVE
ALBANY, NY 12204

Transcend Wireless
TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH, NJ 07430
TEL: (201) 684-0055
FAX:(201) 684-0066

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 29554
LICENSED
PROFESSIONAL ENGINEER

CHECKED BY: RP

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	12/04/17	ISSUED FOR PERMITTING	VP
1	11/06/17	ISSUED FOR PERMITTING	VP
0	10/04/17	ISSUED FOR REVIEW	VP

SITE NUMBER:
CT33XR081
SITE NAME:
GLASTONBURY
CROWN ID:
806368
SITE ADDRESS:
374 THREE MILES ROAD
GLASTONBURY, CT 06033
HARTFORD COUNTY COUNTY

SHEET TITLE
OUTLINE SPECIFICATIONS

SHEET NUMBER
SP-2

CONTINUED FROM SP-2:

MATERIALS:

A. MANUFACTURERS: BENJAMIN MOORE, ICI DEVOE COATINGS, PPG, SHERWIN WILLIAMS OR APPROVED EQUAL. PROVIDE PREMIUM GRADE, PROFESSIONAL-QUALITY PRODUCTS FOR COATING SYSTEMS.

PAINT SCHEDULE:

A. EXTERIOR ANTENNAE AND ANTENNA MOUNTING HARDWARE: ONE COAT OF PRIMER AND TWO FINISH COATS. PAINT FOR ANTENNAE SHALL BE NON-METALLIC BASED AND CONTAIN NO METALLIC PARTICLES. PROVIDE COLORS AND PATTERNS AS REQUIRED TO MASK APPEARANCE OF ANTENNAE ON ADJACENT BUILDING SURFACES AND AS ACCEPTABLE TO THE OWNER. REFER TO ANTENNA MANUFACTURER'S INSTRUCTIONS WHENEVER POSSIBLE.

B. ROOF TOP CONSTRUCTION: TOUCH UP – PREPARE SURFACES TO BE REPAIRED. FOLLOW INDUSTRY STANDARDS AND REQUIREMENTS OF OWNER TO MATCH EXISTING COATING AND FINISH.

PAINTING APPLICATION:

1. INSPECT SURFACES, REPORT UNSATISFACTORY CONDITIONS IN WRITING; BEGINNING WORK MEANS ACCEPTANCE OF SUBSTRATE.
2. COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS FOR PREPARATION, PRIMING AND COATING WORK. COORDINATE WITH WORK OF OTHER SECTIONS.
3. MATCH APPROVED MOCK-UPS FOR COLOR, TEXTURE, AND PATTERN. RE-COAT OR REMOVE AND REPLACE WORK WHICH DOES NOT MATCH OR SHOWS LOSS OF ADHESION.
4. CLEAN UP, TOUCH UP AND PROTECT WORK.

TOUCHUP PAINTING:

1. GALVANIZING DAMAGE AND ALL BOLTS AND NUTS SHALL BE TOUCHED UP AFTER TOWER ERECTION WITH "GALVANOX," "DRY GALV," OR "ZINC-IT."
2. FIELD TOUCHUP PAINT SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. ALL METAL COMPONENTS SHALL BE HANDLED WITH CARE TO PREVENT DAMAGE TO THE COMPONENTS, THEIR PROTECTIVE TREATMENT, OR THEIR PROTECTIVE COATINGS.

SECTION 11 700 – ANTENNA ASSEMBLY, REMOTE RADIO HEADS AND CABLE INSTALLATION

SUMMARY:
THIS SECTION SPECIFIES INSTALLATION OF ANTENNAS, RRH'S, AND CABLE EQUIPMENT, INSTALLATION, AND TESTING OF COAXIAL FIBER CABLE.

ANTENNAS AND RRH'S:
THE NUMBER AND TYPE OF ANTENNAS AND RRH'S TO BE INSTALLED IS DETAILED ON THE CONSTRUCTION DRAWINGS.

HYBRID CABLE:
HYBRID CABLE WILL BE DC/FIBER AND FURNISHED FOR INSTALLATION AT EACH SITE. CABLE SHALL BE INSTALLED PER THE CONSTRUCTION DRAWINGS AND THE APPLICABLE MANUFACTURER'S REQUIREMENTS.

JUMPERS AND CONNECTORS:
FURNISH AND INSTALL 1/2" COAX JUMPER CABLES BETWEEN THE RRH'S AND ANTENNAS. JUMPERS SHALL BE TYPE LDF 4, FLC 12-50, CR 540, OR FXL 540. SUPER-FLEX CABLES ARE NOT ACCEPTABLE. JUMPERS BETWEEN THE RRH'S AND ANTENNAS OR TOWER TOP AMPLIFIERS SHALL CONSIST OF 1/2 INCH FOAM DIELECTRIC, OUTDOOR RATED COAXIAL CABLE. DO NOT USE SUPERFLEX OUTDOORS. JUMPERS SHALL BE FACTORY FABRICATED IN APPROPRIATE LENGTHS WITH A MAXIMUM OF 4 FEET EXCESS PER JUMPER AND HAVE CONNECTORS AT EACH END, MANUFACTURED BY SUPPLIER. IF JUMPERS ARE FIELD FABRICATED, FOLLOW MANUFACTURER'S REQUIREMENTS FOR INSTALLATION OF CONNECTORS

REMOTE ELECTRICAL TILT (RET) CABLES:

MISCELLANEOUS:
INSTALL SPLITTERS, COMBINERS, FILTERS PER RF DATA SHEET, FURNISHED BY SPRINT.

ANTENNA INSTALLATION:
THE CONTRACTOR SHALL ASSEMBLE ALL ANTENNAS ONSITE IN ACCORDANCE WITH THE INSTRUCTIONS SUPPLIED BY THE MANUFACTURER. ANTENNA HEIGHT, AZIMUTH, AND FEED ORIENTATION INFORMATION SHALL BE A DESIGNATED ON THE CONSTRUCTION DRAWINGS.

A. THE CONTRACTOR SHALL POSITION THE ANTENNA ON TOWER PIPE MOUNTS SO THAT THE BOTTOM STRUT IS LEVEL. THE PIPE MOUNTS SHALL BE PLUMB TO WITHIN 1 DEGREE.

B. ANTENNA MOUNTING REQUIREMENTS: PROVIDE ANTENNA MOUNTING HARDWARE AS INDICATED ON THE DRAWINGS.

HYBRID CABLES INSTALLATION:

A. THE CONTRACTOR SHALL ROUTE, TEST, AND INSTALL ALL CABLES AS INDICATED ON THE CONSTRUCTION DRAWINGS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

B. THE INSTALLED RADIUS OF THE CABLES SHALL NOT BE LESS THAN THE MANUFACTURER'S SPECIFICATIONS FOR BENDING RADII.

C. EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE CABLES DURING HANDLING AND INSTALLATION.
1. FASTENING MAIN HYBRID CABLES: ALL CABLES SHALL BE PERMANENTLY FASTENED TO THE COAX LADDER AT 4'-0" OC USING NON-MAGNETIC STAINLESS STEEL CLIPS.
2. FASTENING INDIVIDUAL FIBER AND DC CABLES ABOVE BREAKOUT ENCLOSURE (MEDUSA), WITHIN THE MMBTS CABINET AND ANY INTERMEDIATE DISTRIBUTION BOXES:
   a. FIBER: SUPPORT FIBER BUNDLES USING ½" VELCRO STRAPS OF THE REQUIRED LENGTH @ 18" OC. STRAPS SHALL BE UV, OIL AND WATER RESISTANT AND SUITABLE FOR INDUSTRIAL INSTALLATIONS AS MANUFACTURED BY TEXTOL OR APPROVED EQUAL.
   b. DC: SUPPORT DC BUNDLES WITH ZIP TIES OF THE ADEQUATE LENGTH. ZIP TIES TO BE UV STABILIZED, BLACK NYLON, WITH TENSILE STRENGTH AT 12,000 PSI AS MANUFACTURED BY NELCO PRODUCTS OR EQUAL.
3. FASTENING JUMPERS: SECURE JUMPERS TO THE SIDE ARMS OR HEAD FRAMES USING STAINLESS STEEL TIE WRAPS OR STAINLESS STEEL BUTTERFLY CLIPS.
4. CABLE INSTALLATION:
   a. INSPECT CABLE PRIOR TO USE FOR SHIPPING DAMAGE, NOTIFY THE CONSTRUCTION MANAGER.
   b. CABLE ROUTING: CABLE INSTALLATION SHALL BE PLANNED TO ENSURE THAT THE LINES WILL BE PROPERLY ROUTED IN THE CABLE ENVELOP AS INDICATED ON THE DRAWINGS. AVOID TWISTING AND CROSSOVERS.
   c. HOIST CABLE USING PROPER HOISTING GRIPS. DO NOT EXCEED MANUFACTURES RECOMMENDED MAXIMUM BEND RADIUS.
5. GROUNDING OF TRANSMISSION LINES: ALL TRANSMISSION LINES SHALL BE GROUNDED AS INDICATED ON DRAWINGS.
6. HYBRID CABLE COLOR CODING: ALL COLOR CODING SHALL BE AS REQUIRED IN TS 0200 REV 4.
7. HYBRID CABLE LABELING: INDIVIDUAL HYBRID AND DC BUNDLES SHALL BE LABELED ALPHA-NUMERICALLY ACCORDING TO SPRINT CELL SITE ENGINEERING NOTICE – EN 2012-001, REV 1

WEATHERPROOFING EXTERIOR CONNECTORS AND HYBRID CABLE GROUND KITS:

A. ALL FIBER & COAX CONNECTORS AND GROUND KITS SHALL BE WEATHERPROOFED.

B. WEATHERPROOFED USING ONE OF THE FOLLOWING METHODS. ALL INSTALLATIONS MUST BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INDUSTRY BEST PRACTICES.
1. COLD SHRINK: ENCOMPASS CONNECTOR IN COLD SHRINK TUBING AND PROVIDE A DOUBLE WRAP OF 2" ELECTRICAL TAPE EXTENDING 2" BEYOND TUBING. PROVIDE 3M COLD SHRINK CXS SERIES OR EQUAL.
2. SELF-AMALGAMATING TAPE: CLEAN SURFACES. APPLY A DOUBLE WRAP OF SELF-AMALGAMATING TAPE 2" BEYOND CONNECTOR. APPLY A SECOND WRAP OF SELF-AMALGAMATING TAPE IN OPPOSITE DIRECTION. APPLY DOUBLE WRAP OF 2" WIDE ELECTRICAL TAPE EXTENDING 2" BEYOND THE SELF-AMALGAMATING TAPE.
3. 3M SLIM LOCK CLOSURE 716: SUBSTITUTIONS WILL NOT BE ALLOWED.
4. OPEN FLAME ON JOB SITE IS NOT ACCEPTABLE

SECTION 11 800 – INSTALLATION OF MULTIMODAL BASE STATIONS (MMBTS) AND RELATED EQUIPMENT

SUMMARY:

A. THIS SECTION SPECIFIES MMBTS CABINETS, POWER CABINETS, AND INTERNAL EQUIPMENT INCLUDING BY NOT LIMITED TO RECTIFIERS, POWER DISTRIBUTION UNITS, BASE BAND UNITS, SURGE ARRESTORS, BATTERIES, AND SIMILAR EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR (OFCI).

B. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND PROVIDE ALL LABOR REQUIRED FOR INSTALLATION EQUIPMENT IN EXISTING CABINET OR NEW CABINET AS SHOWN ON DRAWINGS AND AS REQUIRE BY THE APPLICABLE INSTALLATION MOPS.

C. COMPLY WITH MANUFACTURERS INSTALLATION AND START-UP REQUIREMENTS

DC CIRCUIT BREAKER LABELING

A. LABEL CIRCUIT BREAKERS ACCORDING TO SPRINT CELL SITE ENGINEERING NOTICE – EN 2012-001, REV 1.

SECTION 11 800 – INSTALLATION OF MULTIMODAL BASE TRANSCIEVER STATIONS (MMBTS) AND RELATED EQUIPMENT

SUMMARY:

A. THIS SECTION SPECIFIES MMBTS CABINETS, POWER CABINETS, AND INTERNAL EQUIPMENT INCLUDING BY NOT LIMITED TO RECTIFIERS, POWER DISTRIBUTION UNITS, BASE BAND UNITS, SURGE ARRESTORS, BATTERIES, AND SIMILAR EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR (OFCI).

B. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND PROVIDE ALL LABOR REQUIRED FOR INSTALLATION EQUIPMENT IN EXISTING CABINET OR NEW CABINET AS SHOWN ON DRAWINGS AND AS REQUIRE BY THE APPLICABLE INSTALLATION MOPS.

C. COMPLY WITH MANUFACTURERS INSTALLATION AND START-UP REQUIREMENTS

SUPPORTING DEVICES:

A. MANUFACTURED STRUCTURAL SUPPORT MATERIALS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING:
1. ALLIED TUBE AND CONDUIT
2. B-LINE SYSTEM
3. UNISTRUT DIVERSIFIED PRODUCTS
4. THOMAS & BETTS

B. FASTENERS: TYPES, MATERIALS, AND CONSTRUCTION FEATURES AS FOLLOWS:
1. EXPANSION ANCHORS: CARBON STEEL WEDGE OR SLEEVE TYPE.
2. POWER-DRIVEN THREADED STUDS: HEAT-TREATED STEEL, DESIGNED SPECIFICALLY FOR THE INTENDED SERVICE.
3. FASTEN BY MEANS OF WOOD SCREWS ON WOOD.
4. TOGGLE BOLTS ON HOLLOW MASONRY UNITS.
5. CONCRETE INSERTS OR EXPANSION BOLTS ON CONCRETE OR SOLID MASONRY.
6. MACHINE SCREWS, WELDED THREADED STUDS, OR SPRING-TENSION CLAMPS ON STEEL.
7. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE SHALL NOT BE PERMITTED.
8. DO NOT WELD CONDUIT, PIPE STRAPS, OR ITEMS OTHER THAN THREADED STUDS TO STEEL STRUCTURES.
9. IN PARTITIONS OF LIGHT STEEL CONSTRUCTION, USE SHEET METAL SCREWS.

SUPPORTING DEVICES:

A. INSTALL SUPPORTING DEVICES TO FASTEN ELECTRICAL COMPONENTS SECURELY AND PERMANENTLY IN ACCORDANCE WITH NEC.

B. COORDINATE WITH THE BUILDING STRUCTURAL SYSTEM AND WITH OTHER TRADES.

C. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTING HARDWARE SECURELY TO THE STRUCTURE IN ACCORDANCE WITH THE FOLLOWING:

D. ENSURE THAT THE LOAD APPLIED BY ANY FASTENER DOES NOT EXCEED 25 PERCENT OF THE PROOF TEST LOAD.

E. USE VIBRATION AND SHOCK-RESISTANT FASTENERS FOR ATTACHMENTS TO CONCRETE SLABS.

ELECTRICAL IDENTIFICATION:

A. UPDATE AND PROVIDE TYPED CIRCUIT BREAKER SCHEDULES IN THE MOUNTING BRACKET, INSIDE DOORS OF AC PANEL BOARDS WITH ANY CHANGES MADE TO THE AC SYSTEM.

B. BRANCH CIRCUITS FEEDING AVIATION OBSTRUCTION LIGHTING EQUIPMENT SHALL BE CLEARLY IDENTIFIED AS SUCH AT THE BRANCH CIRCUIT PANELBOARD.

SECTION 26 200 – ELECTRICAL MATERIALS AND EQUIPMENT

CONDUIT:

A. RIGID GALVANIZED STEEL (RGS) CONDUIT SHALL BE USED FOR EXTERIOR LOCATIONS ABOVE GROUND AND IN UNFINISHED INTERIOR LOCATIONS AND FOR ENCASED RUNS IN CONCRETE. RIGID CONDUIT AND FITTINGS SHALL BE STEEL, COATED WITH ZINC EXTERIOR AND INTERIOR BY THE HOT DIP GALVANIZING PROCESS. CONDUIT SHALL BE PRODUCED TO ANSI SPECIFICATIONS C80.1, FEDERAL SPECIFICATION WW-C-581 AND SHALL BE LISTED WITH THE UNDERWRITERS' LABORATORIES. FITTINGS SHALL BE THREADED – SET SCREW OR COMPRESSION FITTINGS WILL NOT BE ACCEPTABLE. RGS CONDUITS SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND.

B. UNDERGROUND CONDUIT IN CONCRETE SHALL BE POLYVINYLCHLORIDE (PVC) SUITABLE FOR DIRECT BURIAL AS APPLICABLE. JOINTS SHALL BE BELLED, AND FLUSH SOLVENT WELDED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL BE CARLON ELECTRICAL PRODUCTS OR APPROVED EQUAL.

C. TRANSITIONS BETWEEN PVC AND RIGID (RGS) SHALL BE MADE WITH PVC COATED METALLIC LONG SWEEP RADIUS ELBOWS.

D. EMT OR RIGID GALVANIZED STEEL CONDUIT MAY BE USED IN FINISHED SPACES CONCEALED IN WALLS AND CEILINGS. EMT SHALL BE MILD STEEL, ELECTRICALLY WELDED, ELECTRO-GALVANIZED OR HOT-DIPPED GALVANIZED AND PRODUCED TO ANSI SPECIFICATION C80.3, FEDERAL SPECIFICATION WW-C-563, AND SHALL BE UL LISTED. EMT SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND, OR APPROVED EQUAL. FITTINGS SHALL BE METALLIC COMPRESSION. SET SCREW CONNECTIONS SHALL NOT BE ACCEPTABLE.

E. LIQUID TIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR FINAL CONNECTION TO EQUIPMENT. FITTINGS SHALL BE METALLIC GLAND TYPE COMPRESSION FITTINGS, MAINTAINING THE INTEGRITY OF CONDUIT SYSTEM. SET SCREW CONNECTIONS SHALL NOT BE ACCEPTABLE. MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL NOT EXCEED 6-FEET. LFMC SHALL BE PROTECTED AND SUPPORTED AS REQUIRE BY NEC. MANUFACTURERS OF FLEXIBLE CONDUITS SHALL BE CAROL, ANACONDA METAL HOSE OR UNIVERSAL METAL HOSE, OR APPROVED EQUAL.

F. MINIMUM SIZE CONDUIT SHALL BE 3/4 INCH (21MM).

HUBS AND BOXES:

A. AT ENTRANCES TO CABINETS OR OTHER EQUIPMENT NOT HAVING INTEGRAL THREADED HUBS PROVIDE METALLIC THREADED HUBS OF THE SIZE AND CONFIGURATION REQUIRED. HUB SHALL INCLUDE LOCKNUT AND NEOPRENE O-RING SEAL. PROVIDE IMPACT RESISTANT 105 DEGREE C PLASTIC BUSHINGS TO PROTECT CABLE INSULATION.

B. CABLE TERMINATION FITTINGS FOR CONDUIT
1. CABLE TERMINATORS FOR RGS CONDUITS SHALL BE TYPE CRC BY O-Z/GEDNEY OR EQUAL.
2. CABLE TERMINATORS FOR LFMC SHALL BE ETCO – CL2075; OR MADE FOR THE PURPOSE PRODUCTS BY ROXTEC.

C. EXTERIOR PULL BOXES AND PULL BOXES IN INTERIOR INDUSTRIAL AREAS SHALL BE PLATED CAST ALLOY, HEAVY DUTY, WEATHERPROOF, DUST PROOF, WITH GASKET, PLATED IRON ALLOY COVER AND STAINLESS STEEL COVER SCREWS, CROUSE-HINDS WAB SERIES OR EQUAL.

D. CONDUIT OUTLET BODIES SHALL BE PLATED CAST ALLOY WITH SIMILAR GASKETED COVERS. OUTLET BODIES SHALL BE OF THE CONFIGURATION AND SIZE SUITABLE FOR THE APPLICATION. PROVIDE CROUSE-HINDS FORM 8 OR EQUAL.

E. MANUFACTURER FOR BOXES AND COVERS SHALL BE HOFFMAN, SQUARE "D", CROUSE-HINDS, COOPER, ADALET, APPLETON, O-Z GEDNEY, RACO, OR APPROVED EQUAL.

SUPPLEMENTAL GROUNDING SYSTEM

A. FURNISH AND INSTALL A SUPPLEMENTAL GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS. SUPPORT SYSTEM WITH NON-MAGNETIC STAINLESS STEEL CLIPS WITH RUBBER GROMMETS. GROUNDING CONNECTORS SHALL BE TINNED COPPER WIRE, SIZES AS INDICATED ON THE DRAWINGS. PROVIDE STRANDED OR SOLID BARE OR INSULATED CONDUCTORS AS INDICATED.

B. SUPPLEMENTAL GROUNDING SYSTEM: ALL CONNECTIONS TO BE MADE WITH CAD WELDS, EXCEPT AT EQUIPMENT USE LUGS OR OTHER AVAILABLE GROUNDING MEANS AS REQUIRED BY MANUFACTURER; AT GROUND BARS USE TWO HOLE SPADES WITH NO OX.

C. STOLEN GROUND-BARS: IN THE EVENT OF STOLEN GROUND BARS, CONTACT SPRINT CM FOR REPLACEMENT INSTRUCTION USING THREADED ROD KITS.

EXISTING STRUCTURE:

A. EXISTING EXPOSED WIRING AND ALL EXPOSED OUTLETS, RECEPTACLES, SWITCHES, DEVICES, BOXES, AND OTHER EQUIPMENT THAT ARE NOT TO BE UTILIZED IN THE COMPLETED PROJECT SHALL BE REMOVED OR DE-ENERGIZED AND CAPPED IN THE WALL, CEILING, OR FLOOR SO THAT THEY ARE CONCEALED AND SAFE. WALL, CEILING, OR FLOOR SHALL BE PATCHED TO MATCH THE ADJACENT CONSTRUCTION.

CONDUIT AND CONDUCTOR INSTALLATION:

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

B. CONDUCTORS SHALL BE PULLED IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE.

Sprint
3 ENTERPRISE DRIVE
ALBANY, NY 12204

Transcend Wireless
TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH, NJ 07430
TEL: (201) 684-0055
FAX: (201) 684-0066

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

STATE OF CONNECTICUT
DEREK J. CREASER
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: RP

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	12/04/17	ISSUED FOR PERMITTING	VP
1	11/06/17	ISSUED FOR PERMITTING	VP
0	10/04/17	ISSUED FOR REVIEW	VP

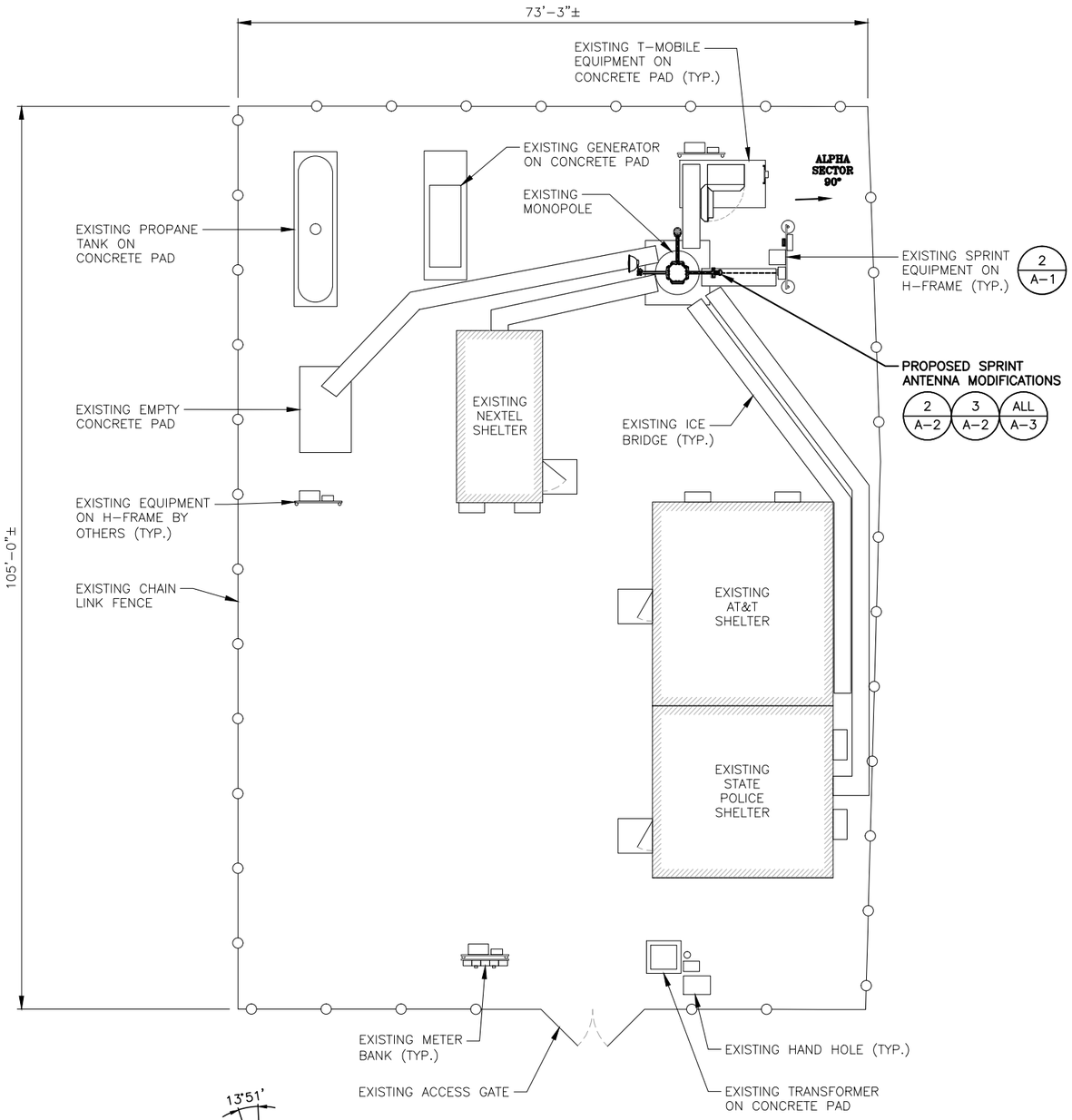
SITE NUMBER:
CT33XR081
SITE NAME:
GLASTONBURY
CROWN ID:
806368
SITE ADDRESS:
374 THREE MILES ROAD
GLASTONBURY, CT 06033
HARTFORD COUNTY COUNTY

SHEET TITLE
OUTLINE SPECIFICATIONS

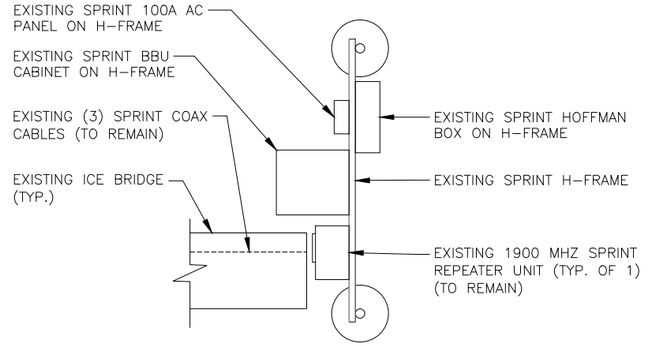
SHEET NUMBER
SP-3

STRUCTURAL NOTES:
PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO STRUCTURAL ANALYSIS PROVIDED BY TOWER OWNER DETERMINE IF THERE ANY SUPPLEMENTAL OR SPECIAL INSTALLATION REQUIREMENTS, OR RELOCATION ARRANGEMENTS.

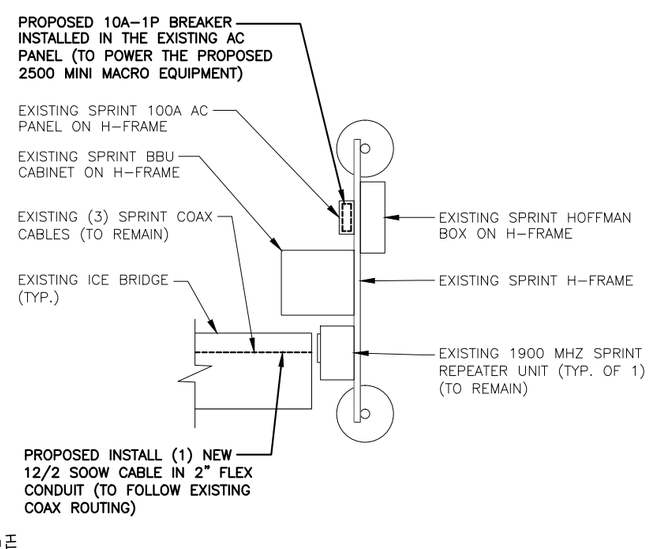
NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.



COMPOUND PLAN 1 A-1
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"
0 4'-0" 8'-0" 16'-0" 24'-0"



EXISTING EQUIPMENT PLAN 2 A-1
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"
0 1'-0" 2'-0" 4'-0" 6'-0"



PROPOSED EQUIPMENT PLAN 3 A-1
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"
0 1'-0" 2'-0" 4'-0" 6'-0"

Sprint
3 ENTERPRISE DRIVE
ALBANY, NY 12204

Transcend Wireless
TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH, NJ 07430
TEL: (201) 684-0055
FAX:(201) 684-0066

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 23551
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: RP

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	12/04/17	ISSUED FOR PERMITTING	VP
1	11/06/17	ISSUED FOR PERMITTING	VP
0	10/04/17	ISSUED FOR REVIEW	VP

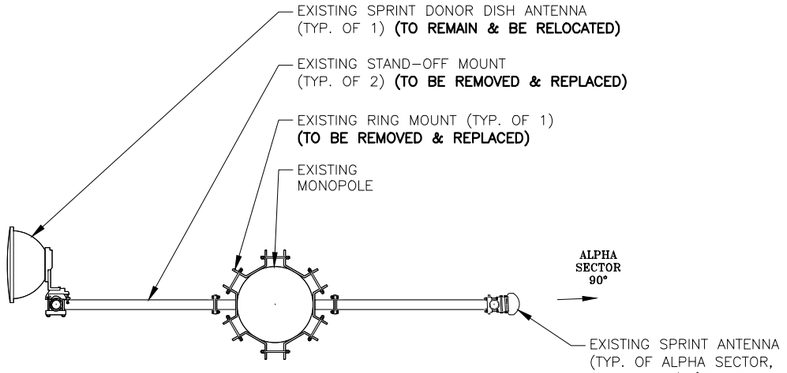
SITE NUMBER:
CT33XR081
SITE NAME:
GLASTONBURY
CROWN ID:
806368
SITE ADDRESS:
374 THREE MILES ROAD
GLASTONBURY, CT 06033
HARTFORD COUNTY COUNTY

SHEET TITLE
COMPOUND AND EQUIPMENT PLANS

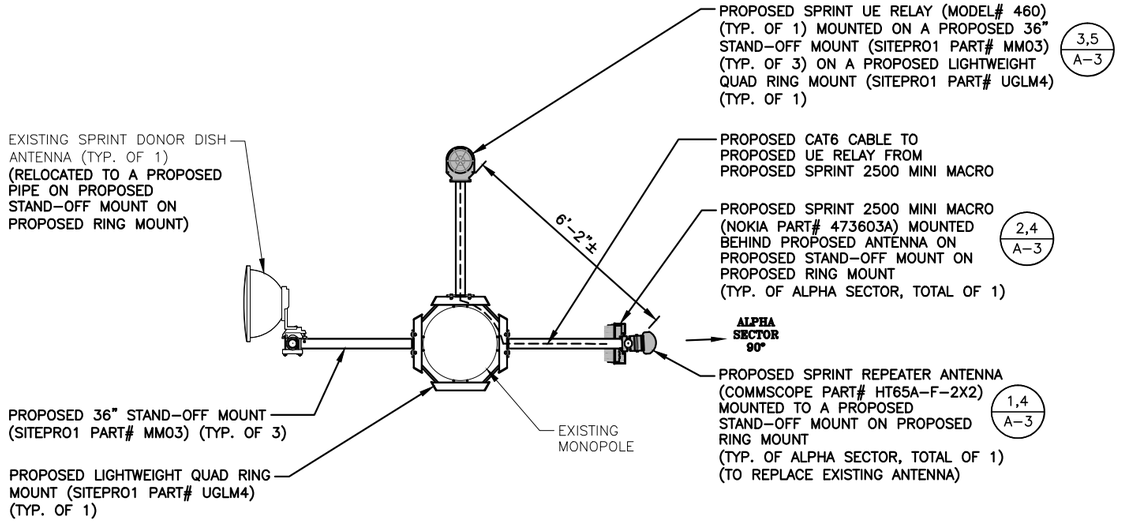
SHEET NUMBER
A-1

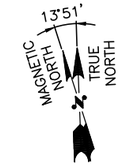
STRUCTURAL NOTES:
PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO STRUCTURAL ANALYSIS PROVIDED BY TOWER OWNER DETERMINE IF THERE ANY SUPPLEMENTAL OR SPECIAL INSTALLATION REQUIREMENTS, OR RELOCATION ARRANGEMENTS.

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

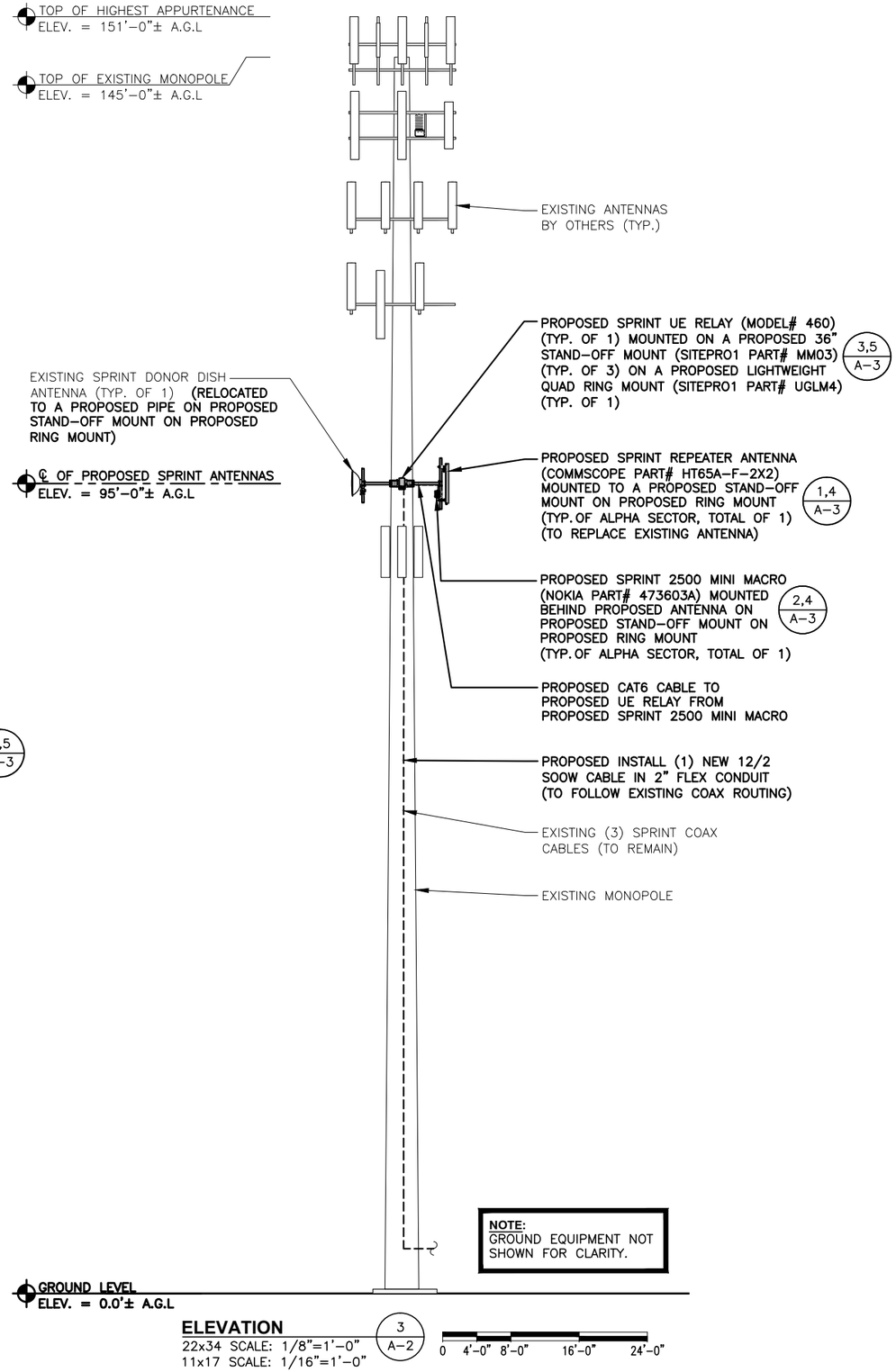


EXISTING ANTENNA PLAN (1 / A-2)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"
0 1'-0" 2'-0" 4'-0" 6'-0"





PROPOSED ANTENNA PLAN (2 / A-2)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"
0 1'-0" 2'-0" 4'-0" 6'-0"



ELEVATION (3 / A-2)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"
0 4'-0" 8'-0" 16'-0" 24'-0"

Sprint
3 ENTERPRISE DRIVE
ALBANY, NY 12204

Transcend Wireless
TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH, NJ 07430
TEL: (201) 684-0055
FAX:(201) 684-0066

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 23551
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: RP

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	12/04/17	ISSUED FOR PERMITTING	VP
1	11/06/17	ISSUED FOR PERMITTING	VP
0	10/04/17	ISSUED FOR REVIEW	VP

SITE NUMBER:
CT33XR081

SITE NAME:
GLASTONBURY

CROWN ID:
806368

SITE ADDRESS:
374 THREE MILES ROAD
GLASTONBURY, CT 06033
HARTFORD COUNTY COUNTY

SHEET TITLE
ANTENNA LAYOUTS AND ELEVATION

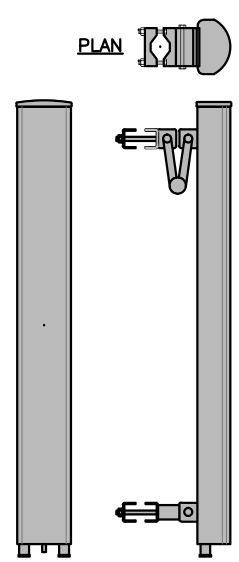
SHEET NUMBER
A-2

STRUCTURAL NOTES:
PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO STRUCTURAL ANALYSIS PROVIDED BY TOWER OWNER DETERMINE IF THERE ANY SUPPLEMENTAL OR SPECIAL INSTALLATION REQUIREMENTS, OR RELOCATION ARRANGEMENTS.

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

ANTENNA DIMENSIONS

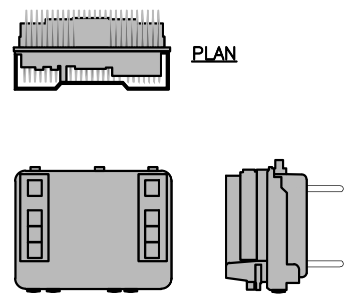
MODEL #	HT65A-F-2X2
MANUF.	COMMSCOPE
HEIGHT	54.7"
WIDTH	6.7"
DEPTH	4.1"
WEIGHT	17.2 LBS



PROPOSED REPEATER ANTENNA DETAIL (1 / A-3)
SCALE: N.T.S

2500 MINI MACRO DIMENSIONS

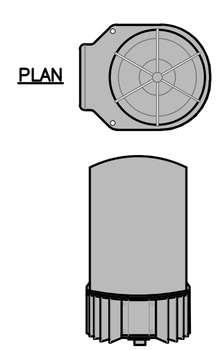
MODEL #	473603A
MANUF.	NOKIA
HEIGHT	9.7"
WIDTH	12.9"
DEPTH	6.3"
WEIGHT	27.3 LBS



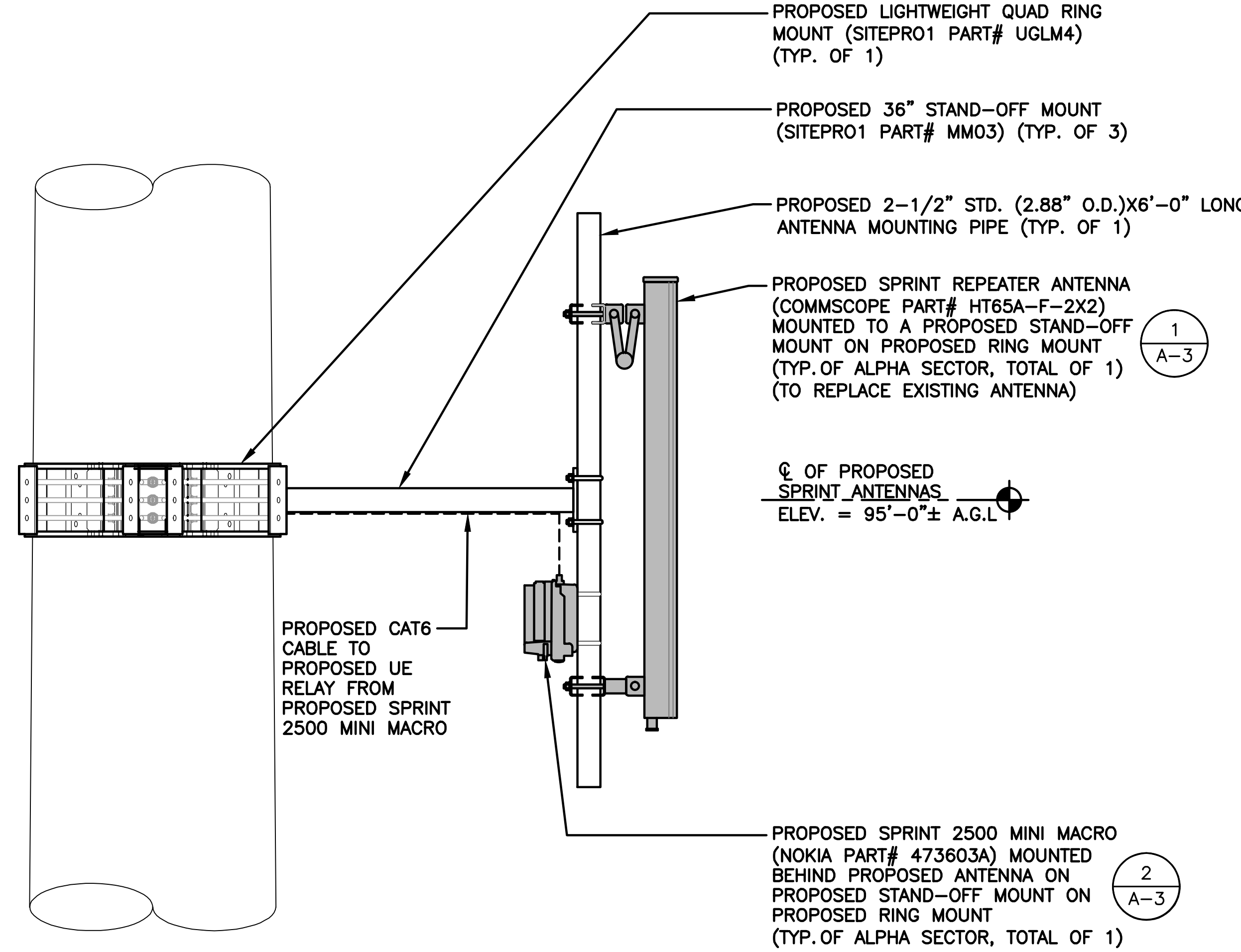
PROPOSED 2500 MINI MACRO DETAIL (2 / A-3)
SCALE: N.T.S

UE RELAY 460 DIMENSIONS

MODEL #	IRELAY 460
MANUF.	AIRSPAN
HEIGHT	15.7"
WIDTH	7.8"ø
WEIGHT	8.8 LBS

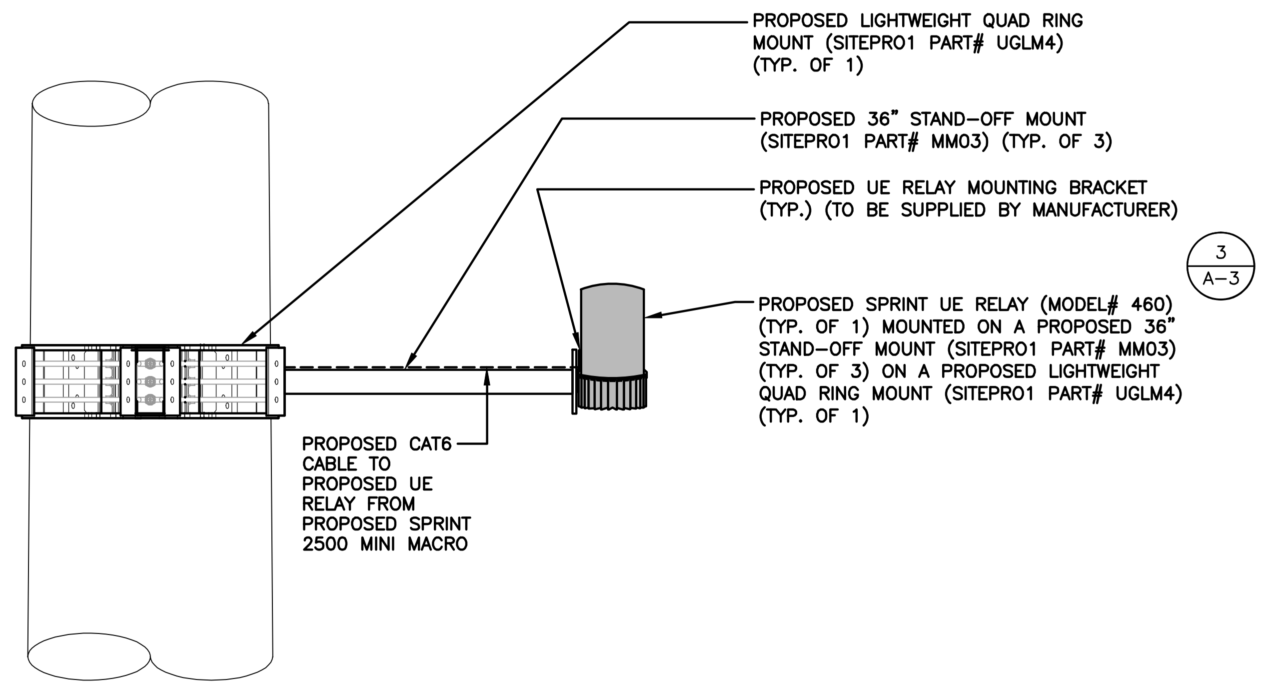


PROPOSED UE RELAY DETAIL (3 / A-3)
SCALE: N.T.S



PROPOSED ANTENNA MOUNTING DETAIL (4 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"



PROPOSED UE RELAY MOUNTING DETAIL (5 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"

Sprint
3 ENTERPRISE DRIVE
ALBANY, NY 12204

Transcend Wireless
TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH, NJ 07430
TEL: (201) 684-0055
FAX:(201) 684-0066

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

STATE OF CONNECTICUT
DEREK J. CREASER
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: RP

APPROVED BY: DJC

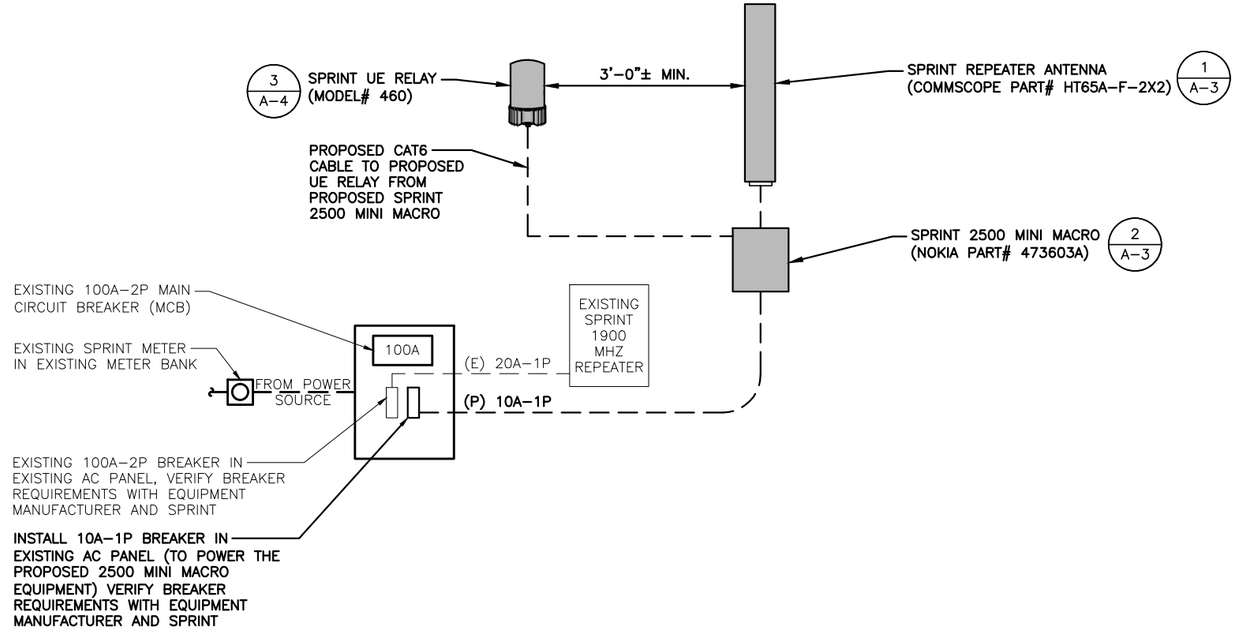
SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	12/04/17	ISSUED FOR PERMITTING	VP
1	11/06/17	ISSUED FOR PERMITTING	VP
0	10/04/17	ISSUED FOR REVIEW	VP

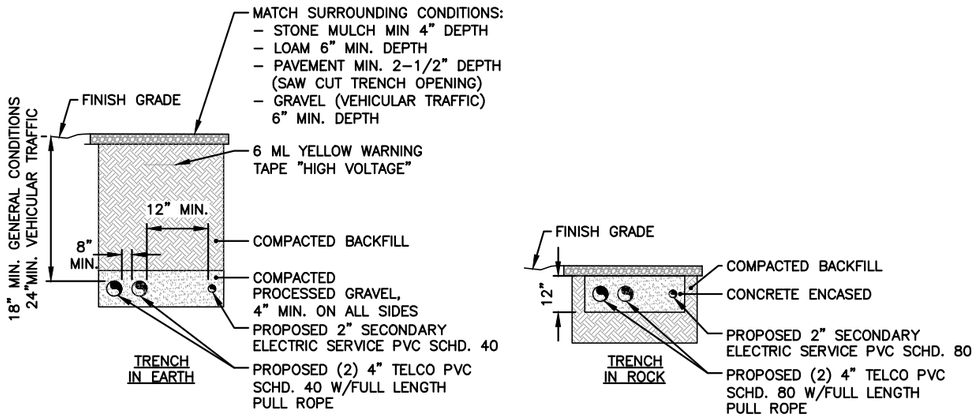
SITE NUMBER:
CT33XR081
SITE NAME:
GLASTONBURY
CROWN ID:
806368
SITE ADDRESS:
374 THREE MILES ROAD
GLASTONBURY, CT 06033
HARTFORD COUNTY COUNTY

SHEET TITLE
DETAILS

SHEET NUMBER
A-3



TYPICAL POWER AND GROUNDING ONE LINE DIAGRAM (1 / E-1)
SCALE: N.T.S



SPECIAL WORK NOTE:
EXISTING UNDERGROUND UTILITY LOCATIONS ARE UNKNOWN. WHERE DIRECTED OR REQUIRED, HAND-EXCAVATE PROPOSED UTILITY TRENCHING

BURIED CONDUIT DETAIL (2 / E-1)
SCALE: N.T.S

ELECTRICAL 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) THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONDUIT ROUTING WITH LOCAL UTILITY COMPANIES AND SPRINT CONSTRUCTION MANAGER.

3) ALL CONDUITS ROUTED BELOW GRADE SHALL TRANSITION TO RIGID GALVANIZED ELBOWS WITH RIGID GALVANIZED STEEL CONDUIT ABOVE GRADE.

4) ALL METAL CONDUITS SHALL BE PROVIDED WITH GROUNDING BUSHINGS.

5) GENERAL CONTRACTOR SHALL PROVIDE ALL DIRECT BURIED CONDUITS WITH PLASTIC WARNING TAPE IDENTIFYING CONTENTS. TAPE COLORS SHALL BE ORANGE FOR TELEPHONE AND RED FOR ELECTRIC.

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

7) THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIALS DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.

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

9) 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.

10) BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.

11) ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.

12) 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.

13) RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.

14) FIBER OPTIC CIRCUITS SHALL BE IN ACCORDANCE WITH NEC ARTICLE 770-OPTICAL FIBER CABLES AND RACEWAYS.

15) COMMUNICATIONS CIRCUITS SHALL BE IN ACCORDANCE WITH NEC ARTICLE 800-COMMUNICATIONS SYSTEMS.

SPECIAL WORK NOTE:

1. G.C. TO FURNISH AND INSTALL ALL COMPONENTS TO UPGRADE EXISTING ELECTRICAL SERVICE, CONDUIT, CONDUCTOR, PPC AND MCB IN ACCORDANCE WITH SPRINT CONSTRUCTION STANDARDS NV 2.5 ADDENDUM "ENGINEERING NOTICE 2013-002 (POWER UPGRADES) REV.0"
2. G.C. TO FURNISH AND INSTALL UPGRADE THE EXISTING MMBTS BREAKER, CONDUCTOR, AND CONDUIT TO A MINIMUM NEC RATING FOR A 100-AMP, 240V CIRCUIT.
3. FOR NEW OR REPAIRED GROUNDING EQUIPMENT, REFER TO SPRINT GROUNDING STANDARDS AND FOLLOWING (SUPPLEMENTS):
-ANTI-THEFT UPDATE TO SPRINT GROUNDING DATED 08-24-12
-SPRINT ENGINEERING LETTER EL-0504 DATED 04-20-12

Sprint
3 ENTERPRISE DRIVE
ALBANY, NY 12204

Transcend Wireless
TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH, NJ 07430
TEL: (201) 684-0055
FAX:(201) 684-0066

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 23551
LICENSED
PROFESSIONAL ENGINEER

CHECKED BY: RP

APPROVED BY: DJC

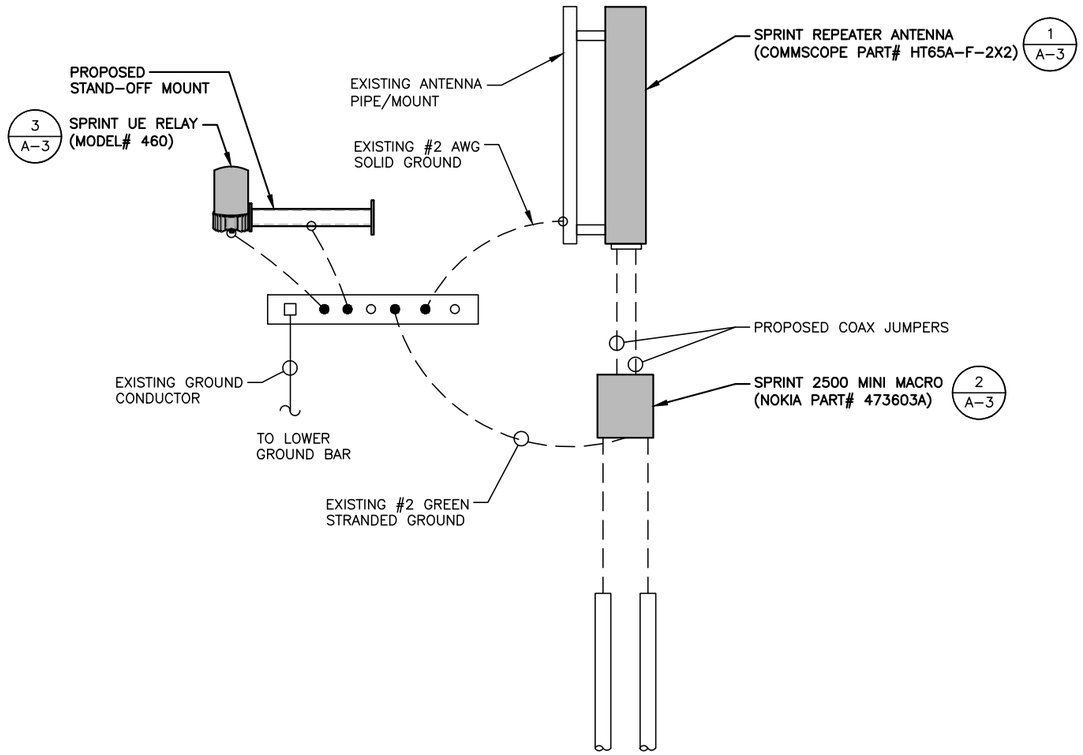
SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	12/04/17	ISSUED FOR PERMITTING	VP
1	11/06/17	ISSUED FOR PERMITTING	VP
0	10/04/17	ISSUED FOR REVIEW	VP

SITE NUMBER:
CT33XR081
SITE NAME:
GLASTONBURY
CROWN ID:
806368
SITE ADDRESS:
374 THREE MILES ROAD
GLASTONBURY, CT 06033
HARTFORD COUNTY COUNTY

SHEET TITLE
ELECTRICAL DETAILS AND NOTES

SHEET NUMBER
E-1



EQUIPMENT GROUNDING SCHEMATIC 1/G-1
SCALE: N.T.S

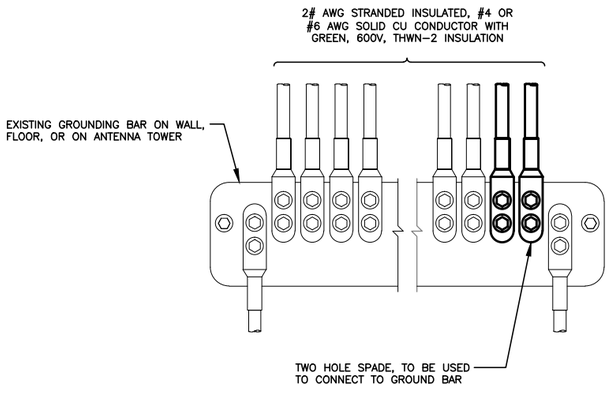
SYMBOL LEGEND

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- CABLE GROUNDING KIT
- GROUNDING/BONDING
- CONDUIT

UNLESS NOTED OTHERWISE, ALL BONDING CONDUCTORS ARE 2# SOLID TINNED BCW.

PROTECTIVE GROUNDING SYSTEMS GENERAL NOTES:

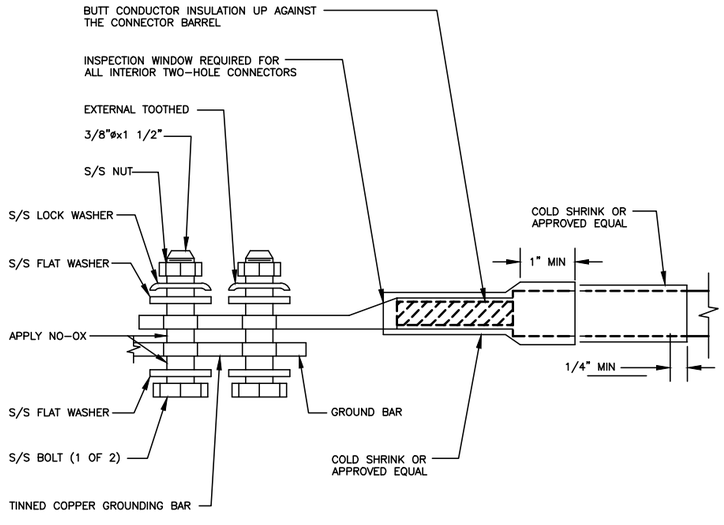
1. GROUNDING SHALL BE IN ACCORDANCE WITH NEC ARTICLE 250-GROUNDING AND BONDING.
2. GROUNDING SHALL BE IN ACCORDANCE WITH SPRINT SSEO DOCUMENTS 3.018.02.004 "BONDING, GROUNDING AND TRANSIENT PROTECTION FOR CELL SITES" AND 3.018.10.002 "SITE RESISTANCE TO EARTH TESTING".
3. PROVIDE GROUND CONNECTIONS FOR ALL METALLIC STRUCTURES, ENCLOSURES, RACEWAYS AND OTHER CONDUCTIVE ITEMS ASSOCIATED WITH THE INSTALLATION OF CARRIER'S EQUIPMENT.
4. GROUND CONNECTIONS: CLEAN SURFACES THOROUGHLY BEFORE APPLYING GROUND LUGS OR CLAMPS. IF SURFACE IS COATED, REMOVE THE COATING, APPLY A NON-CORROSIVE APPROVED COMPOUND TO CLEAN SURFACE AND INSTALL LUGS OR CLAMPS. WHERE GALVANIZING IS REMOVED FROM METAL, IT SHALL BE PAINTED OR TOUCHED UP WITH "GALVAMOX" OR EQUAL.
5. ALL GROUNDING WIRES SHALL PROVIDE A STRAIGHT, DOWNWARD PATH TO GROUND WITH GRADUAL BENDS AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
6. ALL CLAMPS AND SUPPORTS USED TO SUPPORT THE GROUNDING SYSTEM CONDUCTORS AND PVC CONDUITS SHALL BE PVC TYPE (NON CONDUCTIVE). DO NOT USE METAL BRACKETS OR SUPPORTS WHICH WOULD FORM A COMPLETE RING AROUND ANY GROUNDING CONDUCTOR.
7. ALL GROUND WIRES SHALL BE #2 SOLID TINNED BCW UNLESS NOTED OTHERWISE.
8. PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE.
9. GROUND ANTENNA BASES, FRAMES, CABLE RACKS, AND OTHER METALLIC COMPONENTS WITH #2 INSULATED TINNED STRANDED COPPER GROUNDING CONDUCTORS AND CONNECT TO INSULATED SURFACE MOUNTED GROUND BARS. CONNECTION DETAILS SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS FOR GROUNDING.
10. EACH EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MGB) WITH #2 SOLID TINNED BCW EQUIPMENT CABINETS WALL HAVE (2) CONNECTIONS.
11. GROUND HYBRIFLEX SHIELD AT TOP, BOTTOM AND AT TRANSITION TO HYBRIFLEX JUMPER CABLES AT EQUIPMENT CABINET ENTRANCE USING MANUFACTURER'S GUIDELINES. WHEN HYBRIFLEX CABLE EXCEEDS 200', GROUND AT INTERVALS NOT EXCEEDING 100'.
12. THE CONTRACTOR SHALL VERIFY THAT THE EXISTING GROUND BARS HAVE ENOUGH SPACE/HOLES FOR ADDITIONAL TWO HOLE LUGS.
13. EXOTHERMIC WELDING IS RECOMMENDED FOR GROUNDING CONNECTION WHERE PRACTICAL OTHERWISE. THE CONNECTION SHALL BE MADE USING COMPRESSION TYPE-2 HOLES, LONG BARREL LUGS OR DOUBLE CRIMP "C" CLAMP. THE COPPER CABLES SHALL BE COATED WITH AN ANTI-OXIDANT (THOMAS BETTS KOPR-SHILD) BEFORE MAKING THE CRIMP CONNECTIONS THE CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDED TORQUES ON THE BOLT ASSEMBLY TO SECURE CONNECTIONS.
14. AT ALL TERMINATIONS AT EQUIPMENT ENCLOSURES, PANEL, AND FRAMES OF EQUIPMENT AND WHERE EXPOSED FOR GROUNDING. CONDUCTOR TERMINATION SHALL BE PERFORMED UTILIZING TWO HOLE BOLTED TONGUE COMPRESSION TYPE LUGS WITH STAINLESS STEEL SELF-TAPPING SCREWS.
15. THE MASTER GROUND BAR (MGB) SHALL BE MADE OF BARE 1/4"x2" COPPER (FOR OUTDOOR APPLICATIONS IT SHALL BE TINNED COPPER) AND LARGE ENOUGH TO ACCOMMODATE THE REQUIRED NUMBER OF GROUND CONNECTIONS. THE HARDWARE SECURING THE MGB SHALL ELECTRICAL INSULATE THE MGB FROM ANY STRUCTURE TO WHICH IT IS FASTENED.
16. ALL BOLTS, WASHERS, AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
17. ALL GROUNDING CONNECTIONS SHALL BE COATED WITH A COPPER SHIELD ANTI-CORROSIVE AGENT SUCH AS T&B KOPR SHIELD. VERIFY PRODUCT WITH SPRINT CONSTRUCTION MANAGER.
18. FOR NEW OR REPAIRED GROUNDING EQUIPMENT. REFER TO SPRINT GROUNDING STANDARDS AND FOLLOWING (SUPPLEMENTS):
    -ANTI-THEFT UPDATE TO SPRINT GROUNDING DATED: 08-24-12 (OR CURRENT VERSION)
    -SPRINT ENGINEERING LETTER EL-0504 DATED: 04-20-12 (OR CURRENT VERSION)



NOTES

1. APPLY NO-OX TO LUG AND BAR CONTACT SURFACE. DO NOT COAT INLINE LUG.
2. IF STOLEN GROUND BARS ARE ENCOUNTERED, CONTACT SPRINT CM FOR REPLACEMENT THREADED ROD KIT.

INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR 3/G-1
SCALE: N.T.S



TWO HOLE LUG 4/G-1
SCALE: N.T.S

Sprint
3 ENTERPRISE DRIVE
ALBANY, NY 12204

Transcend Wireless
TRANSCEND WIRELESS
10 INDUSTRIAL AVE
MAHWAH, NJ 07430
TEL: (201) 684-0055
FAX:(201) 684-0066

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 23955
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: RP

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	12/04/17	ISSUED FOR PERMITTING	VP
1	11/06/17	ISSUED FOR PERMITTING	VP
0	10/04/17	ISSUED FOR REVIEW	VP

SITE NUMBER:
CT33XR081
SITE NAME:
GLASTONBURY
CROWN ID:
806368
SITE ADDRESS:
374 THREE MILES ROAD
GLASTONBURY, CT 06033
HARTFORD COUNTY COUNTY

SHEET TITLE
GROUNDING DETAILS AND NOTES

SHEET NUMBER
G-1

Date: **February 14, 2018**

Chanhdara Ratsavong
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277

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

Subject: **Structural Analysis Report**

Carrier Designation:	***Sprint PCS* Co-Locate** **Carrier Site Number:**	 CT33XR081
Crown Castle Designation:	**Crown Castle BU Number:** **Crown Castle Site Name:** **Crown Castle JDE Job Number:** **Crown Castle Work Order Number:** **Crown Castle Application Number:**	806368 HRT 049B 943215 478779 1524389 419276 Rev. 2
Engineering Firm Designation:	**Crown Castle Project Number:**	1524389
Site Data:	**374 Three Mile Rd., GLASTONBURY, Hartford County, CT** **Latitude *41° 41' 36.93"*, Longitude *-72° 32' 50.11"*** **144.813 Foot - Monopole Tower**	

Dear Chanhdara Ratsavong,

Crown Castle is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 1524389, in accordance with application 419276, revision 2.

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

LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

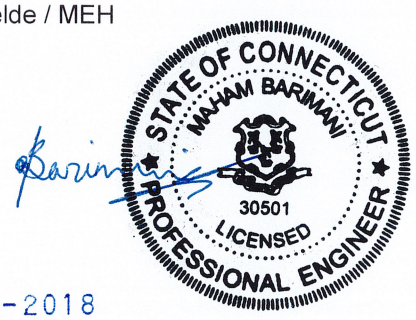
This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B and Risk Category II were used in this analysis.

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

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

Structural analysis prepared by: Dejen Tewelde / MEH

Respectfully submitted by:



Maham Barimani, P.E.
Senior Project Engineer

tnxTower Report - version 7.0.5.1

02-15-2018

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 144.81ft Monopole tower designed by ENGINEERED ENDEAVORS, INC. in January of 1997. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-F.

The tower has been modified as per reinforcement drawings prepared by GPD Associates in March of 2005. Reinforcement consists of addition of base plate stiffeners to base plate.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a 3-second gust wind speed of 97 mph with no ice, 50 mph with 1 inch ice thickness and 60 mph under service loads, exposure category B.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
95.0	97.0	1	commscope	HT65A-F-2X2 w/ Mount Pipe	1	1-1/8	-
		1	nokia	FWHR			
	95.0	1	valmont	MM03			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
147.0	148.0	9	andrew	SBNHH-1D65B w/ Mount Pipe	2	1-5/8	2
		3	alcatel lucent	B66A RRH4X45			
		3	alcatel lucent	RRH2X60-700			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		2	swedcom	SC-E 6014 REV2 w/ Mount Pipe			
		3	alcatel lucent	RRH2X60-PCS			
	148.0	2	antel	LPA-80063/6CF w/ Mount Pipe	12 1	1-5/8 1-1/4	1
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		2	swedcom	SC-E 6014 REV2 w/ Mount Pipe			
	147.0	1	tower mounts	Platform Mount [LP 1001-1]			
	145.0	6	rfs celwave	FD9R6004/2C-3L			
137.0	138.0	3	ericsson	RRUS 32 B2	-	-	2
		6	powerwave technologies	7020.00			
		1	cci antennas	HPA-65R-BUU-H6 w/ Mount Pipe	12 1	1 1/4 1/2	1
		2	cci antennas	HPA-65R-BUU-H8 w/ Mount Pipe	2 1	3/4 3/8	

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
		3	communication components inc.	DTMABP7819VG12A	1	conduit	
		3	ericsson	RRUS-11			
		6	powerwave technologies	7020.00			
		4	powerwave technologies	7770.00 w/ Mount Pipe			
		2	powerwave technologies	P65-17-XLH-RR w/ Mount Pipe			
		3	powerwave technologies	TT19-08BP111-001			
		1	raycap	DC6-48-60-18-8F			
	137.0	1	tower mounts	Platform Mount [LP 1001-1]			
126.0	130.0	2	gps	GPS_A	12 2	1 1/4 1/2	4
	128.0	12	decibel	DB844G65ZAXY w/ Mount Pipe			
	126.0	1	tower mounts	Platform Mount [LP 601-1]			
		1	tower mounts	Side Arm Mount [SO 701-3]			
116.0	117.0	3	ericsson	KRY 112 144/1	12 1	1-5/8 1 1/4	1
		3	ericsson	RRUS 11 B12			
	116.0	3	commscope	LNX-6515DS-VTM w/ Mount Pipe			
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe			
		3	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe			
		1	tower mounts	Platform Mount [LP 601-1]			
95.0	97.0	1	ems wireless	RR65-18-02DP w/ Mount Pipe	1	1-1/4	3
	95.0	1	tower mounts	Side Arm Mount [SO 701-1]			
	96.0	1	repeater technologies	DA1900-39	2	1 1/4	1
	95.0		tower mounts	Side Arm Mount [SO 701-1]			
87.0	87.0	3	allgon	7250.02 w/ Mount Pipe	6	1-1/4	4

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Equipment to be Removed; Not Considered in Analysis
4) Abandoned Equipment; Considered in Analysis

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
145	145	15	Swedcom	ALP 9212	-	-
140	140	15	Swedcom	ALP 11011	-	-

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
130	130	15	Swedcom	ALP 9212	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr. Clarence Welti, P.C.	262197	CCISITES
4-POST-MODIFICATION INSPECTION	GPD Associates	1090825	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Engineered Endeavors Inc.	974245	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Engineered Endeavors Inc.	262188	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD Associates	1037241	CCISITES

3.1) Analysis Method

tnxTower (version 7.0.5.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	144.813 - 92.3125	Pole	TP35.64x20.5x0.3438	1	-21.83	2649.41	53.2	Pass
L2	92.3125 - 44.5225	Pole	TP48.61x33.5106x0.4375	2	-37.18	4485.00	56.9	Pass
L3	44.5225 - 0	Pole	TP60.5x45.8521x0.4688	3	-59.27	5701.25	61.8	Pass
							Summary	
						Pole (L3)	61.8	Pass
						RATING =	**61.8**	**Pass**

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	58.5	Pass
1	Base Plate	0	64.8	Pass
1	Base Foundation (Compared w/ Design Loads)	0	62.7	Pass

Structure Rating (max from all components) =	64.8%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
2) Foundation capacity determined by comparing analysis reactions to original design reactions.

4.1) Recommendations

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

The results of the tilt and twist values for a 60 mph 3-second gust service wind speed per the TIA-222-G Standard are given below:

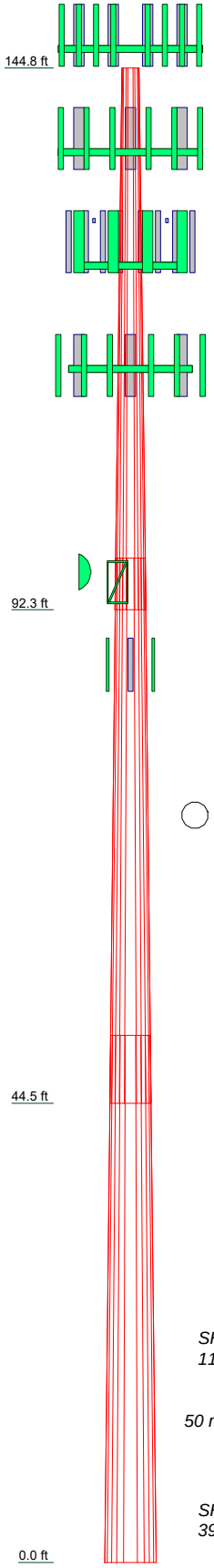
Critical Deflections and Radius of Curvature - Service Wind

Elevation *ft*	*Appurtenance*	*Gov. Load Comb.*	*Deflection* *in*	*Tilt* °	*Twist* °	*Radius of Curvature* *ft*
96.00	DA1900-39	46	6.739	0.7039	0.0022	5498

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	52.50	12	0.3438	5.00	20.5000	35.6400		5.5
2	52.79	12	0.4375	6.58	33.5106	48.6100	A572-65	10.3
3	51.11	12	0.4688		45.8521	60.5000		13.8
								29.6



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Platform Mount [LP 1001-1]	147	DTMABP7819VG12A	137
SC-E 6014 REV2 w/ Mount Pipe	147	DTMABP7819VG12A	137
SC-E 6014 REV2 w/ Mount Pipe	147	RRUS 32 B2	137
(3) SBNHH-1D65B w/ Mount Pipe	147	RRUS 32 B2	137
(3) SBNHH-1D65B w/ Mount Pipe	147	RRUS 32 B2	137
(3) SBNHH-1D65B w/ Mount Pipe	147	Platform Mount [LP 601-1]	126
SC-E 6014 REV2 w/ Mount Pipe	147	Side Arm Mount [SO 701-3]	126
SC-E 6014 REV2 w/ Mount Pipe	147	(4) DB844G65ZAXY w/ Mount Pipe	126
(2) LPA-80063/6CF w/ Mount Pipe	147	(4) DB844G65ZAXY w/ Mount Pipe	126
(2) FD9R6004/2C-3L	147	(4) DB844G65ZAXY w/ Mount Pipe	126
(2) FD9R6004/2C-3L	147	GPS_A	126
(2) FD9R6004/2C-3L	147	GPS_A	126
RRH2X60-700	147	Transition Ladder	126
RRH2X60-700	147	Platform Mount [LP 601-1]	116
RRH2X60-700	147	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	116
RRH2X60-PCS	147		
RRH2X60-PCS	147	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	116
RRH2X60-PCS	147		
DB-T1-6Z-8AB-0Z	147	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	116
DB-T1-6Z-8AB-0Z	147		
B66A RRH4X45	147	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	116
B66A RRH4X45	147		
B66A RRH4X45	147	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	116
Platform Mount [LP 1001-1]	137		
(2) 7770.00 w/ Mount Pipe	137	LNX-6515DS-VTM w/ Mount Pipe	116
7770.00 w/ Mount Pipe	137	LNX-6515DS-VTM w/ Mount Pipe	116
7770.00 w/ Mount Pipe	137	LNX-6515DS-VTM w/ Mount Pipe	116
HPA-65R-BUU-H6 w/ Mount Pipe	137	KRY 112 144/1	116
HPA-65R-BUU-H8 w/ Mount Pipe	137	KRY 112 144/1	116
HPA-65R-BUU-H8 w/ Mount Pipe	137	KRY 112 144/1	116
P65-17-XLH-RR w/ Mount Pipe	137	RRUS 11 B12	116
P65-17-XLH-RR w/ Mount Pipe	137	RRUS 11 B12	116
(2) 7020.00	137	RRUS 11 B12	116
(2) 7020.00	137	Transition Ladder	116
(2) 7020.00	137	Side Arm Mount [SO 701-1]	95
(2) 7020.00	137	Side Arm Mount [SO 701-1]	95
(2) 7020.00	137	HT65A-F-2X2 w/ Mount Pipe	95
(2) 7020.00	137	FWHR	95
TT19-08BP111-001	137	Ice Shield 1.5' x 2.0'	95
TT19-08BP111-001	137	DA1900-39	95
TT19-08BP111-001	137	7250.02 w/ Mount Pipe	87
RRUS-11	137	7250.02 w/ Mount Pipe	87
RRUS-11	137	7250.02 w/ Mount Pipe	87
RRUS-11	137	Pipe Mount [PM 601-3]	87
DC6-48-60-18-8F	137		
DTMABP7819VG12A	137		

MATERIAL STRENGTH

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

ALL REACTIONS ARE FACTORED

AXIAL 116 K

SHEAR 11 K

MOMENT 1253

TORQUE 2 kip-ft

50 mph WIND - 1.0000 in ICE

AXIAL 59 K

SHEAR 39 K

MOMENT 4235 kip-ft

TORQUE 5 kip-ft

REACTIONS - 97 mph WIND

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 97 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. TOWER RATING: 61.8%

CROWN CASTLE
The Pathway to Possible

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

Job: ***BU# 806368***			
Project:			
Client: Crown Castle	Drawn by: DTewelde		App'd:
Code: TIA-222-G	Date: 02/14/18		Scale: NTS
Path: R:\SA Models - Letters\Work Area\Dtewelde\WIP\806368 WO 1524389\806368.eri			Dwg No. E-1

Tower Input Data

There is a pole section.
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 97 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56.00 pcf.
A wind speed of 50 mph is used in combination with ice.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric				

Tapered Pole Section Geometry

Section	*Elevation*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	
L1	144.81-92.31	52.50	5.00	12	20.5000	35.6400	0.3438	1.3750	A572-65 (65 ksi)
L2	92.31-44.52	52.79	6.58	12	33.5106	48.6100	0.4375	1.7500	A572-65 (65 ksi)
L3	44.52-0.00	51.11		12	45.8521	60.5000	0.4688	1.8750	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	21.2232	22.3104	1156.9477	7.2159	10.6190	108.9507	2344.2898	10.9805	4.5728	13.303
	36.8972	39.0685	6212.5548	12.6361	18.4615	336.5137	12588.3202	19.2283	8.6303	25.106
L2	36.1733	46.5917	6504.9566	11.8402	17.3585	374.7421	13180.8057	22.9310	7.8083	17.848
	50.3248	67.8630	20100.9894	17.2458	25.1800	798.2925	40730.0543	33.4001	11.8550	27.097
L3	49.4230	68.5005	18008.2769	16.2472	23.7514	758.1993	36489.6514	33.7138	11.0321	23.535
	62.6342	90.6097	41678.8054	21.4912	31.3390	1329.9341	84452.5593	44.5953	14.9578	31.91

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 144.81-92.31				1	1	1			
L2 92.31-44.52				1	1	1			
L3 44.52-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
HB114-21U3M12-XXXF(1-1/4)	C	Surface Ar (CaAa)	144.81 - 8.00	1	1	0.160 0.165	1.5400		1.22
HB158-1-08U8-S8J18(1-5/8)	C	Surface Ar (CaAa)	144.81 - 8.00	2	2	0.050 0.150	1.9800		1.30
95									
LDF6-50A(1-1/4)	B	Surface Ar (CaAa)	95.00 - 4.00	2	2	0.130 0.250	1.5500		0.60
TYPE SOOW(1-1/8)	C	Surface Ar (CaAa)	95.00 - 0.00	1	1	0.130 0.250	1.1600		0.96
**********									
LDF6-50A(1-1/4)	C	Surface Ar (CaAa)	87.00 - 0.00	6	6	-0.300 0.000	1.5500		0.60

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
HJ7-50A(1-5/8)	C	No	Inside Pole	144.81 - 2.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
137								
LCF114-50J(1-1/4)	C	No	Inside Pole	137.00 - 8.00	12	No Ice	0.00	0.70
						1/2" Ice	0.00	0.70
						1" Ice	0.00	0.70
LCF12-50J(1/2)	C	No	Inside Pole	137.00 - 8.00	1	No Ice	0.00	0.15

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
WR-VG86ST-BRD(3/4)	C	No	Inside Pole	137.00 - 8.00	2	No Ice	0.00	0.58
						1/2" Ice	0.00	0.58
						1" Ice	0.00	0.58
FB-L98B-002-75000(3/8)	C	No	Inside Pole	137.00 - 8.00	1	No Ice	0.00	0.06
						1/2" Ice	0.00	0.06
						1" Ice	0.00	0.06
2" innerduct conduit	C	No	Inside Pole	137.00 - 8.00	1	No Ice	0.00	0.20
						1/2" Ice	0.00	0.20
						1" Ice	0.00	0.20
126								
LDF4-50A(1/2)	A	No	Inside Pole	126.00 - 2.00	2	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
LDF6-50A(1-1/4)	A	No	Inside Pole	126.00 - 2.00	12	No Ice	0.00	0.60
						1/2" Ice	0.00	0.60
						1" Ice	0.00	0.60
116								
LDF7-50A(1-5/8)	A	No	Inside Pole	116.00 - 8.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
MLE Hybrid 9Power/18Fiber RL 2(1-5/8)	A	No	Inside Pole	116.00 - 8.00	1	No Ice	0.00	1.07
						1/2" Ice	0.00	1.07
						1" Ice	0.00	1.07

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	144.81-92.31	A	0.000	0.000	0.000	0.000	0.51
		B	0.000	0.000	0.833	0.000	0.00
		C	0.000	0.000	29.187	0.000	1.30
L2	92.31-44.52	A	0.000	0.000	0.000	0.000	0.88
		B	0.000	0.000	14.815	0.000	0.06
		C	0.000	0.000	71.332	0.000	1.45
L3	44.52-0.00	A	0.000	0.000	0.000	0.000	0.72
		B	0.000	0.000	12.562	0.000	0.05
		C	0.000	0.000	66.658	0.000	1.24

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	144.81-92.31	A	2.269	0.000	0.000	0.000	0.000	0.51
		B		0.000	0.000	2.566	0.000	0.04
		C		0.000	0.000	89.211	0.000	2.70
L2	92.31-44.52	A	2.149	0.000	0.000	0.000	0.000	0.88
		B		0.000	0.000	45.629	0.000	0.70
		C		0.000	0.000	180.522	0.000	4.23
L3	44.52-0.00	A	1.917	0.000	0.000	0.000	0.000	0.72
		B		0.000	0.000	37.474	0.000	0.56
		C		0.000	0.000	159.002	0.000	3.56

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	144.81-92.31	-0.1462	0.6708	-0.2608	1.1326
L2	92.31-44.52	0.3890	1.4057	0.3881	1.7338
L3	44.52-0.00	0.4444	1.4956	0.4918	1.9830

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	2	HB114-21U3M12-XXXF(1-1/4)	92.31 - 144.81	1.0000	1.0000
L1	3	HB158-1-08U8-S8J18(1-5/8)	92.31 - 144.81	1.0000	1.0000
L1	17	LDF6-50A(1-1/4)	92.31 - 95.00	1.0000	1.0000
L1	19	TYPE SOOW(1-1/8)	92.31 - 95.00	1.0000	1.0000
L1	21	LDF6-50A(1-1/4)	92.31 - 87.00	1.0000	1.0000
L2	2	HB114-21U3M12-XXXF(1-1/4)	44.52 - 92.31	1.0000	1.0000
L2	3	HB158-1-08U8-S8J18(1-5/8)	44.52 - 92.31	1.0000	1.0000
L2	17	LDF6-50A(1-1/4)	44.52 - 92.31	1.0000	1.0000
L2	19	TYPE SOOW(1-1/8)	44.52 - 92.31	1.0000	1.0000
L2	21	LDF6-50A(1-1/4)	44.52 - 87.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Platform Mount [LP 1001-1]	C	None		0.0000	147.00	No Ice 1/2" Ice 1" Ice	47.70 59.50 71.30	47.70 59.50 71.30	3.02 3.62 4.22
SC-E 6014 REV2 w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	3.56 3.91 4.26	4.22 4.78 5.35	0.03 0.07 0.12
SC-E 6014 REV2 w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	3.56 3.91 4.26	4.22 4.78 5.35	0.03 0.07 0.12

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(3) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	8.39 8.95 9.48	7.08 8.28 9.19	0.08 0.15 0.22
(3) SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	8.39 8.95 9.48	7.08 8.28 9.19	0.08 0.15 0.22
(3) SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	8.39 8.95 9.48	7.08 8.28 9.19	0.08 0.15 0.22
SC-E 6014 REV2 w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	3.56 3.91 4.26	4.22 4.78 5.35	0.03 0.07 0.12
SC-E 6014 REV2 w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	3.56 3.91 4.26	4.22 4.78 5.35	0.03 0.07 0.12
(2) LPA-80063/6CF w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	9.83 10.40 10.93	10.22 11.38 12.27	0.05 0.14 0.25
(2) FD9R6004/2C-3L	A	From Leg	4.00 0.00 -2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	0.31 0.39 0.47	0.08 0.12 0.17	0.00 0.01 0.01
(2) FD9R6004/2C-3L	B	From Leg	4.00 0.00 -2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	0.31 0.39 0.47	0.08 0.12 0.17	0.00 0.01 0.01
(2) FD9R6004/2C-3L	C	From Leg	4.00 0.00 -2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	0.31 0.39 0.47	0.08 0.12 0.17	0.00 0.01 0.01
RRH2X60-700	A	From Leg	4.00 0.00 1.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	1.82 2.05 2.29	0.06 0.08 0.11
RRH2X60-700	B	From Leg	4.00 0.00 1.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	1.82 2.05 2.29	0.06 0.08 0.11
RRH2X60-700	C	From Leg	4.00 0.00 1.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	3.50 3.76 4.03	1.82 2.05 2.29	0.06 0.08 0.11
RRH2X60-PCS	A	From Leg	4.00 0.00 1.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.72 1.90 2.09	0.06 0.08 0.10
RRH2X60-PCS	B	From Leg	4.00 0.00 1.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.72 1.90 2.09	0.06 0.08 0.10
RRH2X60-PCS	C	From Leg	4.00 0.00 1.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.72 1.90 2.09	0.06 0.08 0.10
DB-T1-6Z-8AB-0Z	A	From Leg	4.00	0.0000	147.00	No Ice	4.80	2.00	0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	5.07	2.19	0.08
			1.00			1" Ice	5.35	2.39	0.12
DB-T1-6Z-8AB-0Z	A	From Leg	4.00	0.0000	147.00	No Ice	4.80	2.00	0.04
			0.00			1/2" Ice	5.07	2.19	0.08
			1.00			1" Ice	5.35	2.39	0.12
B66A RRH4X45	A	From Leg	4.00	0.0000	147.00	No Ice	2.58	1.63	0.07
			0.00			1/2" Ice	2.79	1.81	0.09
			1.00			1" Ice	3.01	2.00	0.11
B66A RRH4X45	B	From Leg	4.00	0.0000	147.00	No Ice	2.58	1.63	0.07
			0.00			1/2" Ice	2.79	1.81	0.09
			1.00			1" Ice	3.01	2.00	0.11
B66A RRH4X45	C	From Leg	4.00	0.0000	147.00	No Ice	2.58	1.63	0.07
			0.00			1/2" Ice	2.79	1.81	0.09
			1.00			1" Ice	3.01	2.00	0.11
137* Platform Mount [LP 1001-1]	C	None		0.0000	137.00	No Ice	47.70	47.70	3.02
						1/2" Ice	59.50	59.50	3.62
						1" Ice	71.30	71.30	4.22
(2) 7770.00 w/ Mount Pipe	A	From Leg	4.00	0.0000	137.00	No Ice	5.75	4.25	0.06
			0.00			1/2" Ice	6.18	5.01	0.10
			1.00			1" Ice	6.61	5.71	0.16
7770.00 w/ Mount Pipe	B	From Leg	4.00	0.0000	137.00	No Ice	5.75	4.25	0.06
			0.00			1/2" Ice	6.18	5.01	0.10
			1.00			1" Ice	6.61	5.71	0.16
7770.00 w/ Mount Pipe	C	From Leg	4.00	0.0000	137.00	No Ice	5.75	4.25	0.06
			0.00			1/2" Ice	6.18	5.01	0.10
			1.00			1" Ice	6.61	5.71	0.16
HPA-65R-BUU-H6 w/ Mount Pipe	A	From Leg	4.00	0.0000	137.00	No Ice	9.90	8.11	0.08
			0.00			1/2" Ice	10.47	9.30	0.16
			1.00			1" Ice	11.01	10.21	0.25
HPA-65R-BUU-H8 w/ Mount Pipe	B	From Leg	4.00	0.0000	137.00	No Ice	13.21	9.58	0.10
			0.00			1/2" Ice	13.90	11.05	0.20
			1.00			1" Ice	14.59	12.50	0.30
HPA-65R-BUU-H8 w/ Mount Pipe	C	From Leg	4.00	0.0000	137.00	No Ice	13.21	9.58	0.10
			0.00			1/2" Ice	13.90	11.05	0.20
			1.00			1" Ice	14.59	12.50	0.30
P65-17-XLH-RR w/ Mount Pipe	B	From Leg	4.00	0.0000	137.00	No Ice	11.70	8.94	0.09
			0.00			1/2" Ice	12.42	10.45	0.18
			1.00			1" Ice	13.15	11.99	0.27
P65-17-XLH-RR w/ Mount Pipe	C	From Leg	4.00	0.0000	137.00	No Ice	11.70	8.94	0.09
			0.00			1/2" Ice	12.42	10.45	0.18
			1.00			1" Ice	13.15	11.99	0.27
(2) 7020.00	A	From Leg	4.00	0.0000	137.00	No Ice	0.10	0.17	0.00
			0.00			1/2" Ice	0.15	0.24	0.01
			1.00			1" Ice	0.20	0.31	0.01
(2) 7020.00	B	From Leg	4.00	0.0000	137.00	No Ice	0.10	0.17	0.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2"	0.15	0.24	0.01
			1.00			Ice	0.20	0.31	0.01
						1" Ice			
(2) 7020.00	C	From Leg	4.00	0.0000	137.00	No Ice	0.10	0.17	0.00
			0.00			1/2"	0.15	0.24	0.01
			1.00			Ice	0.20	0.31	0.01
						1" Ice			
(2) 7020.00	A	From Leg	4.00	0.0000	137.00	No Ice	0.10	0.17	0.00
			0.00			1/2"	0.15	0.24	0.01
			1.00			Ice	0.20	0.31	0.01
						1" Ice			
(2) 7020.00	B	From Leg	4.00	0.0000	137.00	No Ice	0.10	0.17	0.00
			0.00			1/2"	0.15	0.24	0.01
			1.00			Ice	0.20	0.31	0.01
						1" Ice			
(2) 7020.00	C	From Leg	4.00	0.0000	137.00	No Ice	0.10	0.17	0.00
			0.00			1/2"	0.15	0.24	0.01
			1.00			Ice	0.20	0.31	0.01
						1" Ice			
TT19-08BP111-001	A	From Leg	4.00	0.0000	137.00	No Ice	0.55	0.44	0.02
			0.00			1/2"	0.64	0.53	0.02
			1.00			Ice	0.74	0.63	0.03
						1" Ice			
TT19-08BP111-001	B	From Leg	4.00	0.0000	137.00	No Ice	0.55	0.44	0.02
			0.00			1/2"	0.64	0.53	0.02
			1.00			Ice	0.74	0.63	0.03
						1" Ice			
TT19-08BP111-001	C	From Leg	4.00	0.0000	137.00	No Ice	0.55	0.44	0.02
			0.00			1/2"	0.64	0.53	0.02
			1.00			Ice	0.74	0.63	0.03
						1" Ice			
RRUS-11	A	From Leg	4.00	0.0000	137.00	No Ice	2.78	1.19	0.05
			0.00			1/2"	2.99	1.33	0.07
			1.00			Ice	3.21	1.49	0.09
						1" Ice			
RRUS-11	B	From Leg	4.00	0.0000	137.00	No Ice	2.78	1.19	0.05
			0.00			1/2"	2.99	1.33	0.07
			1.00			Ice	3.21	1.49	0.09
						1" Ice			
RRUS-11	C	From Leg	4.00	0.0000	137.00	No Ice	2.78	1.19	0.05
			0.00			1/2"	2.99	1.33	0.07
			1.00			Ice	3.21	1.49	0.09
						1" Ice			
DC6-48-60-18-8F	A	From Leg	4.00	0.0000	137.00	No Ice	0.79	0.79	0.02
			0.00			1/2"	1.27	1.27	0.04
			1.00			Ice	1.45	1.45	0.05
						1" Ice			
DTMABP7819VG12A	A	From Leg	4.00	0.0000	137.00	No Ice	0.98	0.34	0.02
			0.00			1/2"	1.10	0.42	0.03
			1.00			Ice	1.23	0.51	0.04
						1" Ice			
DTMABP7819VG12A	B	From Leg	4.00	0.0000	137.00	No Ice	0.98	0.34	0.02
			0.00			1/2"	1.10	0.42	0.03
			1.00			Ice	1.23	0.51	0.04
						1" Ice			
DTMABP7819VG12A	C	From Leg	4.00	0.0000	137.00	No Ice	0.98	0.34	0.02
			0.00			1/2"	1.10	0.42	0.03
			1.00			Ice	1.23	0.51	0.04
						1" Ice			
RRUS 32 B2	A	From Leg	4.00	0.0000	137.00	No Ice	2.73	1.67	0.05
			0.00			1/2"	2.95	1.86	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			1.00			Ice	3.18	2.05	0.10
						1" Ice			
RRUS 32 B2	B	From Leg	4.00	0.0000	137.00	No Ice	2.73	1.67	0.05
			0.00			1/2"	2.95	1.86	0.07
			1.00			Ice	3.18	2.05	0.10
						1" Ice			
RRUS 32 B2	C	From Leg	4.00	0.0000	137.00	No Ice	2.73	1.67	0.05
			0.00			1/2"	2.95	1.86	0.07
			1.00			Ice	3.18	2.05	0.10
						1" Ice			
126									
Platform Mount [LP 601-1]	C	None		0.0000	126.00	No Ice	28.47	28.47	1.12
						1/2"	33.59	33.59	1.51
						Ice	38.71	38.71	1.91
						1" Ice			
Side Arm Mount [SO 701-3]	C	From Leg	4.00	0.0000	126.00	No Ice	2.83	2.83	0.20
			0.00			1/2"	3.92	3.92	0.24
			0.00			Ice	5.01	5.01	0.28
						1" Ice			
(4) DB844G65ZAXY w/ Mount Pipe	A	From Face	3.00	0.0000	126.00	No Ice	4.58	4.80	0.03
			0.00			1/2"	4.96	5.42	0.08
			2.00			Ice	5.34	6.04	0.13
						1" Ice			
(4) DB844G65ZAXY w/ Mount Pipe	B	From Face	3.00	0.0000	126.00	No Ice	4.58	4.80	0.03
			0.00			1/2"	4.96	5.42	0.08
			2.00			Ice	5.34	6.04	0.13
						1" Ice			
(4) DB844G65ZAXY w/ Mount Pipe	C	From Face	3.00	0.0000	126.00	No Ice	4.58	4.80	0.03
			0.00			1/2"	4.96	5.42	0.08
			2.00			Ice	5.34	6.04	0.13
						1" Ice			
GPS_A	A	From Face	3.00	0.0000	126.00	No Ice	0.26	0.26	0.00
			0.00			1/2"	0.32	0.32	0.00
			4.00			Ice	0.39	0.39	0.01
						1" Ice			
GPS_A	B	From Face	3.00	0.0000	126.00	No Ice	0.26	0.26	0.00
			0.00			1/2"	0.32	0.32	0.00
			4.00			Ice	0.39	0.39	0.01
						1" Ice			
Transition Ladder	C	From Leg	2.00	0.0000	126.00	No Ice	6.00	6.00	0.16
			0.00			1/2"	8.00	8.00	0.24
			-4.00			Ice	10.00	10.00	0.32
						1" Ice			
116									
Platform Mount [LP 601-1]	C	None		0.0000	116.00	No Ice	28.47	28.47	1.12
						1/2"	33.59	33.59	1.51
						Ice	38.71	38.71	1.91
						1" Ice			
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00	0.0000	116.00	No Ice	6.33	5.64	0.11
			0.00			1/2"	6.78	6.43	0.17
			0.00			Ice	7.21	7.13	0.23
						1" Ice			
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00	0.0000	116.00	No Ice	6.33	5.64	0.11
			0.00			1/2"	6.78	6.43	0.17
			0.00			Ice	7.21	7.13	0.23
						1" Ice			
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00	0.0000	116.00	No Ice	6.33	5.64	0.11
			0.00			1/2"	6.78	6.43	0.17
			0.00			Ice	7.21	7.13	0.23
						1" Ice			
ERICSSON AIR 21 B4A	A	From Leg	4.00	0.0000	116.00	No Ice	6.33	5.64	0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
B2P w/ Mount Pipe			0.00			1/2"	6.78	6.43	0.17
			0.00			Ice	7.21	7.13	0.23
						1" Ice			
ERICSSON AIR 21 B4A	B	From Leg	4.00	0.0000	116.00	No Ice	6.33	5.64	0.11
B2P w/ Mount Pipe			0.00			1/2"	6.78	6.43	0.17
			0.00			Ice	7.21	7.13	0.23
						1" Ice			
ERICSSON AIR 21 B4A	C	From Leg	4.00	0.0000	116.00	No Ice	6.33	5.64	0.11
B2P w/ Mount Pipe			0.00			1/2"	6.78	6.43	0.17
			0.00			Ice	7.21	7.13	0.23
						1" Ice			
LNX-6515DS-VTM w/ Mount Pipe	A	From Leg	4.00	0.0000	116.00	No Ice	11.68	9.84	0.08
			0.00			1/2"	12.40	11.37	0.17
			0.00			Ice	13.14	12.91	0.27
						1" Ice			
LNX-6515DS-VTM w/ Mount Pipe	B	From Leg	4.00	0.0000	116.00	No Ice	11.68	9.84	0.08
			0.00			1/2"	12.40	11.37	0.17
			0.00			Ice	13.14	12.91	0.27
						1" Ice			
LNX-6515DS-VTM w/ Mount Pipe	C	From Leg	4.00	0.0000	116.00	No Ice	11.68	9.84	0.08
			0.00			1/2"	12.40	11.37	0.17
			0.00			Ice	13.14	12.91	0.27
						1" Ice			
KRY 112 144/1	A	From Leg	4.00	0.0000	116.00	No Ice	0.35	0.17	0.01
			0.00			1/2"	0.43	0.23	0.01
			1.00			Ice	0.51	0.30	0.02
						1" Ice			
KRY 112 144/1	B	From Leg	4.00	0.0000	116.00	No Ice	0.35	0.17	0.01
			0.00			1/2"	0.43	0.23	0.01
			1.00			Ice	0.51	0.30	0.02
						1" Ice			
KRY 112 144/1	C	From Leg	4.00	0.0000	116.00	No Ice	0.35	0.17	0.01
			0.00			1/2"	0.43	0.23	0.01
			1.00			Ice	0.51	0.30	0.02
						1" Ice			
RRUS 11 B12	A	From Leg	4.00	0.0000	116.00	No Ice	2.83	1.18	0.05
			0.00			1/2"	3.04	1.33	0.07
			1.00			Ice	3.26	1.48	0.10
						1" Ice			
RRUS 11 B12	B	From Leg	4.00	0.0000	116.00	No Ice	2.83	1.18	0.05
			0.00			1/2"	3.04	1.33	0.07
			1.00			Ice	3.26	1.48	0.10
						1" Ice			
RRUS 11 B12	C	From Leg	4.00	0.0000	116.00	No Ice	2.83	1.18	0.05
			0.00			1/2"	3.04	1.33	0.07
			1.00			Ice	3.26	1.48	0.10
						1" Ice			
Transition Ladder	C	From Leg	2.00	0.0000	116.00	No Ice	6.00	6.00	0.16
			0.00			1/2"	8.00	8.00	0.24
			-4.00			Ice	10.00	10.00	0.32
						1" Ice			
****95***									
Side Arm Mount [SO 701-1]	A	From Leg	0.00	0.0000	95.00	No Ice	0.85	1.67	0.07
			0.00			1/2"	1.14	2.34	0.08
			0.00			Ice	1.43	3.01	0.09
						1" Ice			
Side Arm Mount [SO 701-1]	C	From Leg	0.00	0.0000	95.00	No Ice	0.85	1.67	0.07
			0.00			1/2"	1.14	2.34	0.08
			0.00			Ice	1.43	3.01	0.09
						1" Ice			
HT65A-F-2X2 w/ Mount	A	From Leg	3.00	0.0000	95.00	No Ice	3.90	3.83	0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Pipe			0.00			1/2" Ice	4.33	4.58	0.07
			2.00			1" Ice	4.75	5.27	0.12
FWHR	A	From Leg	3.00	0.0000	95.00	No Ice	1.03	0.51	0.03
			0.00			1/2" Ice	1.16	0.60	0.04
			2.00			1" Ice	1.30	0.70	0.05
Ice Shield 1.5' x 2.0'	C	From Leg	3.00	0.0000	95.00	No Ice	0.30	0.40	0.03
			0.00			1/2" Ice	0.41	0.55	0.04
			4.00			1" Ice	0.54	0.70	0.06
87									
Pipe Mount [PM 601-3]	C	None		0.0000	87.00	No Ice	4.39	4.39	0.20
						1/2" Ice	5.48	5.48	0.24
						1" Ice	6.57	6.57	0.28
7250.02 w/ Mount Pipe	A	From Leg	1.00	0.0000	87.00	No Ice	4.24	3.32	0.04
			0.00			1/2" Ice	4.71	4.30	0.07
			0.00			1" Ice	5.17	5.05	0.12
7250.02 w/ Mount Pipe	B	From Leg	1.00	0.0000	87.00	No Ice	4.24	3.32	0.04
			0.00			1/2" Ice	4.71	4.30	0.07
			0.00			1" Ice	5.17	5.05	0.12
7250.02 w/ Mount Pipe	C	From Leg	1.00	0.0000	87.00	No Ice	4.24	3.32	0.04
			0.00			1/2" Ice	4.71	4.30	0.07
			0.00			1" Ice	5.17	5.05	0.12
**********									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
DA1900-39	C	Paraboloid w/o Radome	From Leg	3.00	0.0000		95.00	3.54	No Ice	9.86	0.05
				0.00					1/2" Ice	10.32	0.10
				1.00					1" Ice	10.77	0.15
**********											

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice

Comb. No.	Description
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	144.813 - 92.3125	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.84	8.83	-5.36
			Max. Mx	20	-21.84	947.36	-1.84
			Max. My	14	-21.83	2.95	-954.12
			Max. Vy	8	26.68	-942.65	-0.46
			Max. Vx	2	-26.81	1.40	951.57
			Max. Torque	13			-4.59
L2	92.3125 - 44.5225	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.13	10.47	-10.08
			Max. Mx	8	-37.19	-2357.22	13.11
			Max. My	2	-37.18	-21.23	2367.50

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	8	33.51	-2357.22	13.11
			Max. Vx	2	-33.53	-21.23	2367.50
			Max. Torque	13			-5.09
L3	44.5225 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-116.27	9.25	-16.78
			Max. Mx	8	-59.28	-4219.51	28.01
			Max. My	2	-59.28	-47.36	4229.89
			Max. Vy	8	39.34	-4219.51	28.01
			Max. Vx	2	-39.36	-47.36	4229.89
			Max. Torque	13			-5.08

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	36	116.27	10.68	0.01
	Max. H_x	20	59.30	39.12	-0.01
	Max. H_z	2	59.30	-0.50	39.32
	Max. M_x	2	4229.89	-0.50	39.32
	Max. M_z	8	4219.51	-39.30	0.31
	Max. Torsion	25	5.04	19.47	33.82
	Min. Vert	25	44.47	19.47	33.82
	Min. H_x	8	59.30	-39.30	0.31
	Min. H_z	14	59.30	0.06	-39.17
	Min. M_x	14	-4219.99	0.06	-39.17
	Min. M_z	20	-4207.24	39.12	-0.01
	Min. Torsion	13	-5.08	-19.46	-33.83

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	49.42	0.00	0.00	2.33	2.21	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	59.30	0.50	-39.32	-4229.89	-47.36	-4.38
0.9 Dead+1.6 Wind 0 deg - No Ice	44.47	0.50	-39.32	-4192.51	-47.72	-4.40
1.2 Dead+1.6 Wind 30 deg - No Ice	59.30	19.92	-34.00	-3657.31	-2135.12	-2.69
0.9 Dead+1.6 Wind 30 deg - No Ice	44.47	19.92	-34.00	-3625.06	-2116.66	-2.70
1.2 Dead+1.6 Wind 60 deg - No Ice	59.30	34.11	-19.76	-2123.50	-3661.16	-0.75
0.9 Dead+1.6 Wind 60 deg - No Ice	44.47	34.11	-19.76	-2105.09	-3628.95	-0.75
1.2 Dead+1.6 Wind 90 deg - No Ice	59.30	39.30	-0.31	-28.02	-4219.51	1.40
0.9 Dead+1.6 Wind 90 deg - No Ice	44.47	39.30	-0.31	-28.53	-4182.27	1.42
1.2 Dead+1.6 Wind 120 deg - No Ice	59.30	34.19	19.23	2075.89	-3668.97	3.67
0.9 Dead+1.6 Wind 120 deg - No Ice	44.47	34.19	19.23	2056.39	-3636.70	3.69
1.2 Dead+1.6 Wind 150 deg - No Ice	59.30	19.46	33.83	3645.90	-2089.04	5.05

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
0.9 Dead+1.6 Wind 150 deg - No Ice	44.47	19.46	33.83	3612.30	-2070.92	5.08
1.2 Dead+1.6 Wind 180 deg - No Ice	59.30	-0.06	39.17	4219.99	9.24	5.03
0.9 Dead+1.6 Wind 180 deg - No Ice	44.47	-0.06	39.17	4181.23	8.47	5.06
1.2 Dead+1.6 Wind 210 deg - No Ice	59.30	-19.57	33.99	3662.12	2106.66	3.56
0.9 Dead+1.6 Wind 210 deg - No Ice	44.47	-19.57	33.99	3628.39	2086.99	3.57
1.2 Dead+1.6 Wind 240 deg - No Ice	59.30	-33.94	19.66	2119.77	3650.27	0.71
0.9 Dead+1.6 Wind 240 deg - No Ice	44.47	-33.94	19.66	2099.95	3616.71	0.71
1.2 Dead+1.6 Wind 270 deg - No Ice	59.30	-39.12	0.01	4.82	4207.24	-2.31
0.9 Dead+1.6 Wind 270 deg - No Ice	44.47	-39.12	0.01	4.06	4168.67	-2.33
1.2 Dead+1.6 Wind 300 deg - No Ice	59.30	-33.83	-19.53	-2100.10	3639.12	-4.28
0.9 Dead+1.6 Wind 300 deg - No Ice	44.47	-33.83	-19.53	-2081.86	3605.65	-4.31
1.2 Dead+1.6 Wind 330 deg - No Ice	59.30	-19.47	-33.82	-3639.73	2095.31	-5.01
0.9 Dead+1.6 Wind 330 deg - No Ice	44.47	-19.47	-33.82	-3607.60	2075.73	-5.04
1.2 Dead+1.0 Ice	116.27	-0.00	0.00	16.78	9.25	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice	116.27	0.09	-9.99	-1164.78	0.32	-1.36
1.2 Dead+1.0 Wind 30 deg+1.0 Ice	116.27	5.03	-8.63	-1004.60	-583.72	-0.88
1.2 Dead+1.0 Wind 60 deg+1.0 Ice	116.27	8.65	-5.00	-574.77	-1011.17	-0.26
1.2 Dead+1.0 Wind 90 deg+1.0 Ice	116.27	10.72	-0.05	11.92	-1237.91	0.43
1.2 Dead+1.0 Wind 120 deg+1.0 Ice	116.27	9.29	5.27	634.39	-1073.83	1.10
1.2 Dead+1.0 Wind 150 deg+1.0 Ice	116.27	4.96	8.61	1036.31	-576.58	1.51
1.2 Dead+1.0 Wind 180 deg+1.0 Ice	116.27	-0.00	9.96	1195.38	9.27	1.50
1.2 Dead+1.0 Wind 210 deg+1.0 Ice	116.27	-4.96	8.63	1038.27	595.33	1.07
1.2 Dead+1.0 Wind 240 deg+1.0 Ice	116.27	-8.62	4.99	606.66	1026.44	0.26
1.2 Dead+1.0 Wind 270 deg+1.0 Ice	116.27	-10.68	-0.01	15.91	1252.89	-0.61
1.2 Dead+1.0 Wind 300 deg+1.0 Ice	116.27	-9.22	-5.33	-606.77	1085.14	-1.24
1.2 Dead+1.0 Wind 330 deg+1.0 Ice	116.27	-4.96	-8.61	-1002.35	595.43	-1.51
Dead+Wind 0 deg - Service	49.42	0.11	-8.41	-898.63	-8.38	-0.94
Dead+Wind 30 deg - Service	49.42	4.26	-7.27	-776.75	-452.80	-0.58
Dead+Wind 60 deg - Service	49.42	7.30	-4.23	-450.25	-777.64	-0.16
Dead+Wind 90 deg - Service	49.42	8.41	-0.07	-4.19	-896.49	0.30
Dead+Wind 120 deg - Service	49.42	7.32	4.11	443.66	-779.30	0.79
Dead+Wind 150 deg - Service	49.42	4.16	7.24	777.86	-442.98	1.09
Dead+Wind 180 deg - Service	49.42	-0.01	8.38	900.07	3.68	1.09
Dead+Wind 210 deg - Service	49.42	-4.19	7.27	781.32	450.15	0.77
Dead+Wind 240 deg - Service	49.42	-7.26	4.21	453.00	778.73	0.16

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 270 deg - Service	49.42	-8.37	0.00	2.80	897.28	-0.50
Dead+Wind 300 deg - Service	49.42	-7.24	-4.18	-445.25	776.35	-0.93
Dead+Wind 330 deg - Service	49.42	-4.17	-7.24	-772.99	447.73	-1.09

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-49.42	0.00	0.00	49.42	0.00	0.000%
2	0.50	-59.30	-39.32	-0.50	59.30	39.32	0.000%
3	0.50	-44.47	-39.32	-0.50	44.47	39.32	0.000%
4	19.92	-59.30	-34.00	-19.92	59.30	34.00	0.000%
5	19.92	-44.47	-34.00	-19.92	44.47	34.00	0.000%
6	34.11	-59.30	-19.76	-34.11	59.30	19.76	0.000%
7	34.11	-44.47	-19.76	-34.11	44.47	19.76	0.000%
8	39.30	-59.30	-0.31	-39.30	59.30	0.31	0.000%
9	39.30	-44.47	-0.31	-39.30	44.47	0.31	0.000%
10	34.19	-59.30	19.23	-34.19	59.30	-19.23	0.000%
11	34.19	-44.47	19.23	-34.19	44.47	-19.23	0.000%
12	19.46	-59.30	33.83	-19.46	59.30	-33.83	0.000%
13	19.46	-44.47	33.83	-19.46	44.47	-33.83	0.000%
14	-0.06	-59.30	39.17	0.06	59.30	-39.17	0.000%
15	-0.06	-44.47	39.17	0.06	44.47	-39.17	0.000%
16	-19.57	-59.30	33.99	19.57	59.30	-33.99	0.000%
17	-19.57	-44.47	33.99	19.57	44.47	-33.99	0.000%
18	-33.94	-59.30	19.66	33.94	59.30	-19.66	0.000%
19	-33.94	-44.47	19.66	33.94	44.47	-19.66	0.000%
20	-39.12	-59.30	0.01	39.12	59.30	-0.01	0.000%
21	-39.12	-44.47	0.01	39.12	44.47	-0.01	0.000%
22	-33.83	-59.30	-19.53	33.83	59.30	19.53	0.000%
23	-33.83	-44.47	-19.53	33.83	44.47	19.53	0.000%
24	-19.47	-59.30	-33.82	19.47	59.30	33.82	0.000%
25	-19.47	-44.47	-33.82	19.47	44.47	33.82	0.000%
26	0.00	-116.27	0.00	0.00	116.27	-0.00	0.000%
27	0.09	-116.27	-9.99	-0.09	116.27	9.99	0.000%
28	5.03	-116.27	-8.63	-5.03	116.27	8.63	0.000%
29	8.65	-116.27	-5.00	-8.65	116.27	5.00	0.000%
30	10.72	-116.27	-0.05	-10.72	116.27	0.05	0.000%
31	9.29	-116.27	5.27	-9.29	116.27	-5.27	0.000%
32	4.96	-116.27	8.61	-4.96	116.27	-8.61	0.000%
33	-0.00	-116.27	9.96	0.00	116.27	-9.96	0.000%
34	-4.96	-116.27	8.63	4.96	116.27	-8.63	0.000%
35	-8.62	-116.27	4.99	8.62	116.27	-4.99	0.000%
36	-10.68	-116.27	-0.01	10.68	116.27	0.01	0.000%
37	-9.22	-116.27	-5.33	9.22	116.27	5.33	0.000%
38	-4.96	-116.27	-8.61	4.96	116.27	8.61	0.000%
39	0.11	-49.42	-8.41	-0.11	49.42	8.41	0.000%
40	4.26	-49.42	-7.27	-4.26	49.42	7.27	0.000%
41	7.30	-49.42	-4.23	-7.30	49.42	4.23	0.000%
42	8.41	-49.42	-0.07	-8.41	49.42	0.07	0.000%
43	7.32	-49.42	4.11	-7.32	49.42	-4.11	0.000%
44	4.16	-49.42	7.24	-4.16	49.42	-7.24	0.000%
45	-0.01	-49.42	8.38	0.01	49.42	-8.38	0.000%
46	-4.19	-49.42	7.27	4.19	49.42	-7.27	0.000%
47	-7.26	-49.42	4.21	7.26	49.42	-4.21	0.000%
48	-8.37	-49.42	0.00	8.37	49.42	-0.00	0.000%
49	-7.24	-49.42	-4.18	7.24	49.42	4.18	0.000%
50	-4.17	-49.42	-7.24	4.17	49.42	7.24	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00063824
3	Yes	4	0.00000001	0.00040629
4	Yes	5	0.00000001	0.00025671
5	Yes	5	0.00000001	0.00011494
6	Yes	5	0.00000001	0.00026749
7	Yes	5	0.00000001	0.00012027
8	Yes	4	0.00000001	0.00026145
9	Yes	4	0.00000001	0.00015220
10	Yes	5	0.00000001	0.00027849
11	Yes	5	0.00000001	0.00012595
12	Yes	5	0.00000001	0.00024397
13	Yes	5	0.00000001	0.00010912
14	Yes	4	0.00000001	0.00088316
15	Yes	4	0.00000001	0.00056432
16	Yes	5	0.00000001	0.00028033
17	Yes	5	0.00000001	0.00012636
18	Yes	5	0.00000001	0.00026363
19	Yes	5	0.00000001	0.00011818
20	Yes	4	0.00000001	0.00044678
21	Yes	4	0.00000001	0.00027855
22	Yes	5	0.00000001	0.00024723
23	Yes	5	0.00000001	0.00011057
24	Yes	5	0.00000001	0.00028584
25	Yes	5	0.00000001	0.00012951
26	Yes	4	0.00000001	0.00000465
27	Yes	4	0.00017631	0.00041711
28	Yes	4	0.00017554	0.00061599
29	Yes	4	0.00017530	0.00066577
30	Yes	4	0.00017503	0.00037587
31	Yes	4	0.00017468	0.00086291
32	Yes	4	0.00017574	0.00062629
33	Yes	4	0.00017644	0.00045087
34	Yes	4	0.00017611	0.00082177
35	Yes	4	0.00017623	0.00072891
36	Yes	4	0.00017607	0.00040784
37	Yes	4	0.00017555	0.00071299
38	Yes	4	0.00017611	0.00082631
39	Yes	4	0.00000001	0.00004224
40	Yes	4	0.00000001	0.00007144
41	Yes	4	0.00000001	0.00008046
42	Yes	4	0.00000001	0.00002267
43	Yes	4	0.00000001	0.00009793
44	Yes	4	0.00000001	0.00007003
45	Yes	4	0.00000001	0.00004825
46	Yes	4	0.00000001	0.00009762
47	Yes	4	0.00000001	0.00007865
48	Yes	4	0.00000001	0.00002792
49	Yes	4	0.00000001	0.00007050
50	Yes	4	0.00000001	0.00010664

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	144.813 - 92.3125	16.153	46	1.0614	0.0070
L2	97.3125 - 44.5225	6.946	46	0.7144	0.0023
L3	51.1055 - 0	1.822	46	0.3335	0.0007

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
147.00	Platform Mount [LP 1001-1]	46	16.153	1.0614	0.0070	51524
137.00	Platform Mount [LP 1001-1]	46	14.506	1.0071	0.0061	32975
126.00	Platform Mount [LP 601-1]	46	12.229	0.9297	0.0049	13694
116.00	Platform Mount [LP 601-1]	46	10.249	0.8575	0.0038	8941
96.00	DA1900-39	46	6.739	0.7039	0.0022	5498
95.00	Side Arm Mount [SO 701-1]	46	6.585	0.6957	0.0021	5492
87.00	Pipe Mount [PM 601-3]	46	5.424	0.6296	0.0017	5662

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	144.813 - 92.3125	75.622	2	4.9683	0.0324
L2	97.3125 - 44.5225	32.585	4	3.3490	0.0105
L3	51.1055 - 0	8.558	4	1.5663	0.0032

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
147.00	Platform Mount [LP 1001-1]	2	75.622	4.9683	0.0328	11159
137.00	Platform Mount [LP 1001-1]	2	67.923	4.7149	0.0285	7141
126.00	Platform Mount [LP 601-1]	2	57.281	4.3539	0.0227	2964
116.00	Platform Mount [LP 601-1]	2	48.027	4.0172	0.0179	1933
96.00	DA1900-39	4	31.619	3.2995	0.0101	1186
95.00	Side Arm Mount [SO 701-1]	4	30.895	3.2617	0.0098	1184
87.00	Pipe Mount [PM 601-3]	4	25.464	2.9529	0.0079	1218

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	144.813 - 92.3125 (1)	TP35.64x20.5x0.3438	52.50	0.00	0.0	37.4725	-21.83	2649.41	0.008
L2	92.3125 - 44.5225 (2)	TP48.61x33.5106x0.4375	52.79	0.00	0.0	65.2104	-37.18	4485.00	0.008
L3	44.5225 - 0 (3)	TP60.5x45.8521x0.4688	51.11	0.00	0.0	90.6097	-59.27	5701.25	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	144.813 - 92.3125 (1)	TP35.64x20.5x0.3438	954.13	1823.28	0.523	0.00	1823.28	0.000
L2	92.3125 - 44.5225 (2)	TP48.61x33.5106x0.4375	2368.36	4223.14	0.561	0.00	4223.14	0.000
L3	44.5225 - 0 (3)	TP60.5x45.8521x0.4688	4234.93	6973.40	0.607	0.00	6973.40	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	144.813 - 92.3125 (1)	TP35.64x20.5x0.3438	26.81	1324.71	0.020	3.94	3697.03	0.001
L2	92.3125 - 44.5225 (2)	TP48.61x33.5106x0.4375	33.61	2242.50	0.015	2.69	8563.17	0.000
L3	44.5225 - 0 (3)	TP60.5x45.8521x0.4688	39.44	2850.62	0.014	2.69	14139.83	0.000

Pole Interaction Design Data

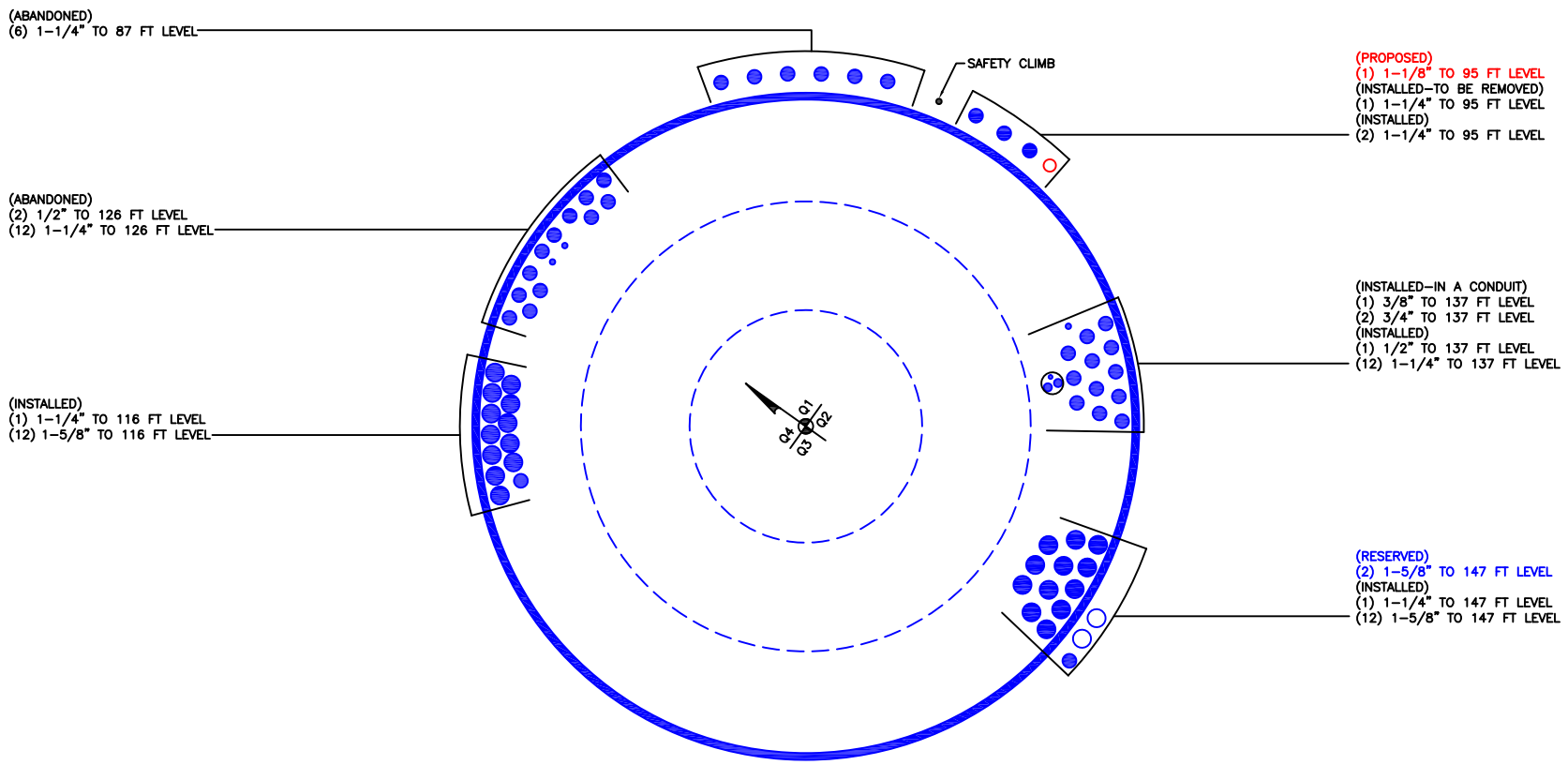
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	144.813 - 92.3125 (1)	0.008	0.523	0.000	0.020	0.001	0.532	1.000	4.8.2
L2	92.3125 - 44.5225 (2)	0.008	0.561	0.000	0.015	0.000	0.569	1.000	4.8.2
L3	44.5225 - 0 (3)	0.010	0.607	0.000	0.014	0.000	0.618	1.000	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	144.813 - 92.3125	Pole	TP35.64x20.5x0.3438	1	-21.83	2649.41	53.2	Pass
L2	92.3125 - 44.5225	Pole	TP48.61x33.5106x0.4375	2	-37.18	4485.00	56.9	Pass
L3	44.5225 - 0	Pole	TP60.5x45.8521x0.4688	3	-59.27	5701.25	61.8	Pass
							Summary	
						Pole (L3)	61.8	Pass
						RATING =	**61.8**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 806368 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

TIA Rev G Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#: *806368*
Site Name: *HRT 049B 943215*
App #: *419276 Rev. 2*

Pole Manufacturer:	*Other*

Reactions		
Mu:	4235	ft-kips
Axial, Pu:	59	kips
Shear, Vu:	39	kips
Eta Factor, ŋ	0.5	TIA G (Fig. 4-4)

If No stiffeners, Criteria:	AISC LRFD	<-Only Applcable to Unstiffened Cases

Anchor Rod Data		
Qty:	20	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	70	in

Plate Data		
Diam:	76.5	in
Thick:	2.25	in
Grade:	60	ksi
Single-Rod B-eff:	9.73	in

Stiffener Data (Welding at both sides)		
Config:	0	*
Weld Type:		
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:		in
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Diam:	60.5	in
Thick:	0.46875	in
Grade:	65	ksi
# of Sides:	12	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Anchor Rod Results

		Rigid
Max Rod (Cu+ Vu/ŋ):	152.1 Kips	AISC LRFD
Allowable Axial, Φ*Fu*Anet:	260.0 Kips	φ*Tn
Anchor Rod Stress Ratio:	58.5% **Pass**	

Base Plate Results

	Flexural Check	Rigid
Base Plate Stress:	35.0 ksi	AISC LRFD
Allowable Plate Stress:	54.0 ksi	φ*Fy
Base Plate Stress Ratio:	64.8% **Pass**	Y.L. Length: 35.21

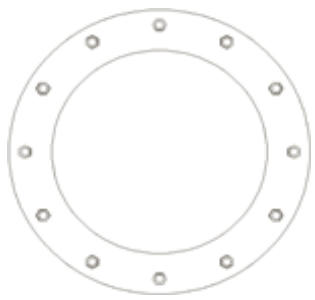
n/a

Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check:	n/a



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt
** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

FOUNDATION REACTION COMPARISON

BU# 806368
WO# 1524389

REACTIONS	DESIGN REACTIONS	*MODIFIED DESIGN REACTIONS	CURRENT REACTIONS	% CAPACITY
MOMENT (kip-ft)	5001.4	6751.9	4235.0	62.7%
SHEAR (kips)	44.6	60.1	39.0	64.8%

Design loads from: CCIsites Doc #262188

* Design loads were multiplied by 1.35 for comparison as allowed by TIA-222-G, Section 15.5.

Although the shear capacity is at 64.8%, the moment reaction is the governing criteria for a monopole pier and pad foundation. Therefore, the overall capacity for this foundation is 62.7%.

CCISeismic - Design Category

Per *2012/2015 IBC*

Site BU:	806368
Work Order:	1524389
Application:	419276 Rev. 2

	Degrees	Minutes	Seconds		
Site Latitude =	41	41	36.93	41.6936	degrees
Site Longitude =	-72	32	50.11	-72.5473	degrees
Ground Supported Structure =	Yes				
Structure Class =	II			*(Table 2-1)*	
Site Class =	D - Stiff Soil			*(Table 2-11)*	

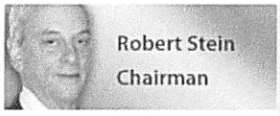
Spectral response acceleration short periods, S_S =	0.180	USGS Seismic Tool
Spectral response acceleration 1 s period, S_1 =	0.063	

Importance Factor, I =	1.0	*(Table 2-3)*
Acceleration-based site coefficient, F_a =	1.6	*(Table 2-12)*
Velocity-based site coefficient, F_v =	2.4	*(Table 2-13)*

Design spectral response acceleration short period, S_{DS} =	0.193	*(2.7.6)*
Design spectral response acceleration 1 s period, S_{D1} =	0.102	*(2.7.6)*

Seismic Design Category - Short Period Response =	B	*ASCE 7-05 Table 11.6-1*
Seismic Design Category - 1s Period Response =	B	*ASCE 7-05 Table 11.6-2*

Worst Case Seismic Design Category =	B	*ASCE 7-05 Tables 11.6-1 and 6-2*



Filing Guides
Meetings & Minutes
Public Participation
Audio Link to New Britain Hearing Rooms
Programs & Services
Telecommunications Database
Publications
Other Resources
Statutes & Regulations
Electric Transmission Upgrade Projects
Frequently Asked Questions

Printable Version

GLASTONBURY

DOCKET NO. 12 - CL&P application for a Certificate of Environmental Compatibility and Public Need with respect to the construction of an overhead 345 kV electric transmission line between the Millstone Point generating station, in Waterford, and the Manchester substation, in Manchester. (Findings of Fact), (Opinion), (Dissenting Opinion), and (Decision and Order).

DOCKET NO. 16 - ~~Greater Hartford CATV, Inc.,~~ InSite Towers, LLC Certificate for the construction of a receive site on Bell Street in **Glastonbury**. (Findings of Fact), (Opinion), and (Decision and Order).

DOCKET NO. 21 - Capitol Region Council of Governments application for a Certificate of Environmental Compatibility and Public Need for the construction of a 60 foot microwave tower on Talcott Ridge in Avon, Connecticut. **Returned without prejudice.**

DOCKET NO. 22 – Connecticut Department of Environmental Protection for a Certificate of Environmental Compatibility and Public Need for a microwave telecommunication facility in the Town of Glastonbury, Connecticut. (Findings of Fact) (Opinion), and (Decision and Order).

DOCKET NO. 22A – Connecticut Department of Environmental Protection for an amendment to a Certificate of Environmental Compatibility and Public Need for a microwave telecommunication facility in the Town of Glastonbury, Connecticut. (Opinion) and (Decision and Order).

DOCKET NO. 25 - Connecticut Light and Power Company and Hartford Electric Light Company Certificate with respect to the construction of an overhead 345-kV electric transmission line between the Millstone Point generating station in Waterford, and the Manchester Substation in Manchester. (**Glastonbury**) (Findings of Fact), (Opinion), and (Decision and Order).

DOCKET NO. 58 - Metro Mobile CTS of Hartford, Inc. Certificate for the construction, maintenance, and operation of facilities to provide cellular telephone service on Birch Mountain Road in **Glastonbury**, Bloomfield, Haddam, Middlefield, Portland, Rocky Hill, Somers, Willington, Vernon, Windsor, and Hartford. (Findings of Fact), (Opinion), and (Decision and Order).

DOCKET NO. 63 - Department of Environmental Protection Certificate for the construction of microwave telecommunication towers on Birch Mountain Road in **Glastonbury** and Montville. (Findings of Fact), (Opinion), and (Decision and Order).

DOCKET NO. 174 - An application of Cellco Partnership d/b/a Bell Atlantic NYNEX Mobile for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications facility and associated equipment located within an approximately 30 acre parcel at 366 Three Mile Road, in the East Glastonbury section of the Town of **Glastonbury**, Connecticut. The proposed alternate one site Is located within the same approximately 30 acre parcel at 366 Three Mile road. The proposed alternate two site is located within an approximately 50 acre parcel at 1952 New London Tpke, in the East Glastonbury section of the Town of **Glastonbury**. (Findings of Fact), (Opinion), and (Decision and Order).

DOCKET NO. 280 – Message Center Management, Inc. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at the Casella Property, east of Main Street (Route 17), **Glastonbury**, Connecticut. (Decision and Order)

DOCKET NO. 359 - Optasite Towers LLC and Omnipoint Communications, Inc. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 58 Montano Road or 618 Neipsic Road, **Glastonbury**, Connecticut. (Record), (Findings of Fact), (Opinion), (Decision and Order).

DOCKET NO. 459 - Message Center Management, Inc. and New Cingular Wireless PCS, LLC (AT&T) application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications facility located at Glastonbury Tax Assessor Map E3, Block 0820, Lot E0002, Seven J's Farm, Candlewood Road, Glastonbury, Connecticut. **WITHDRAWN.**

PETITION NO. 49 - Southern New England Telephone Company petition for construction of a replacement microwave tower on Birch Mountain Road in **Glastonbury**. Staff Report. **Approved 1/11/80**

PETITION NO. 172 - Connecticut Natural Gas Corporation petition for the construction and operation of temporary towers and associated equipment in New Britain, Bloomfield, **Glastonbury**, and Rocky Hill. Staff

Report. **Denied 1/28/87**

PETITION NO. 249 - The Connecticut Light and Power Company petition for the proposed addition of a second 115-kV to 23-kV, 47 MVA transformer, and associated equipment within Hopewell 22R Substation in **Glastonbury**. Staff Report. **Approved 3/26/90**

PETITION NO. 618T - Cellco Partnership d/b/a Verizon Wireless petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed modification to an existing Connecticut Light and Power Company transmission structure located at 67 Hawthorne Mead Drive, **Glastonbury**, Connecticut. Staff Report. **Approved 08/26/03.**

PETITION NO. 737 - The Connecticut Light and Power Company petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed Manchester to Hopewell 115-kV Transmission Line Reconductor Project in the Towns of Manchester and **Glastonbury**. Findings of Fact. Opinion. Decison and Order. **Approved 09/14/06.** D&M Change Approval.

PETITION NO. 922 - UIL Distributed Resources, LLC declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the installation of a Fuel Cell generating facility located at 1835 Hebron Avenue, **Glastonbury**, Connecticut. Record, Staff Report and Decision. **Approved 12/03/09.**

PETITION NO. 990 - Cellco Partnership d/b/a Verizon Wireless petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the extension of an existing telecommunications facility located at 577 Bell Street, **Glastonbury**, Connecticut. Staff Report. **Approved 06/23/11.**

PETITION NO. 1072 – Algonquin Gas Transmission, LLC Petition for a Declaratory Ruling Regarding the Jurisdiction of the Connecticut Siting Council over the construction or replacement of natural gas pipeline facilities in the towns of Danbury, Cromwell/Rocky Hill, Lebanon/Franklin/Norwich and Montville, Connecticut; modifications to compressor stations in the towns of Oxford, Cromwell and Chaplin Connecticut; modifications to metering stations in the towns of Berlin, Danbury, Farmington, **Glastonbury**, Guilford, Middletown, Montville, North Haven, Norwich, Plainville, Pomfret, Putnam, Southbury, Vernon and Windham, Connecticut; and for recommendations regarding siting, environmental mitigation measures, and construction procedures to the Federal Energy Regulatory Commission. Decision Letter and Staff Report **Decision: 10/31/13.**

PE1133-VER-20150706 - Cellco Partnership d/b/a Verizon Wireless sub-petition for a declaratory ruling for approval of an eligible facility request for modifications to an existing telecommunications facility located at 58 Montano Road, **Glastonbury**, Connecticut. Decision Letter.

PETITION NO. 1160 - Cellco Partnership d/b/a Verizon Wireless petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed installation of a small cell telecommunications facility on the roof of an existing industrial building located at 278 Oakwood Drive, Glastonbury, Connecticut. Decision Letter and Staff Report. Completion Letter. **Approved 06/25/15**.

PETITION NO. 1162 – Eversource Energy petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed modifications to its existing Hopewell Substation located at 1007 Chestnut Hill Road, Glastonbury, Connecticut. Decision Letter and Staff Report. **Approved 07/23/15.**

PETITION NO. 1267 - Doosan Fuel Cell America Inc. petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the construction, operation and maintenance of a customer-side 460-kilowatt combined heat and power fuel cell facility to be located at the Glastonbury High School, 330 Hubbard Street, Glastonbury, Connecticut. **Withdrawn.**

PETITION NO. 1297 - Bloom Energy Corporation, as an agent for Home Depot, petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the construction, operation and maintenance of a Customer-Side 200 Kilowatt Fuel Cell Facility and a 100 Kilowatt Auxiliary Battery Storage Facility to be located at the Home Depot building, 115 Putnam Boulevard, Glastonbury, Connecticut. **Approved 05/11/17.**

PETITION NO. 1318 - Cellco Partnership d/b/a Verizon Wireless petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed installation of a small cell telecommunications facility on the roof of an existing commercial building located at 3039 Main Street, **Glastonbury**, Connecticut. **Approved 09/14/2017**

SNET Cellular, Inc. - Notice Pursuant to Regulations of State Agencies 16-50j-73 of Intent to Modify Exempt Towers and Associated Equipment operated by SNET Cellular, Inc., located in Hartford, South Windsor, Waterbury, Westport, Milford, Branford, Middlefield, Guilford, Stamford, Old Saybrook, Canton, Enfield, Waterford, Newtown, Haddam, and **Glastonbury**, Connecticut.

BANM notice of intent to modify existing telecommunications facilities located off of South St., Vernon; off Birch Mountain Rd., **Glastonbury**; and off of Turkey Hill Rd. and Plains Rd., Haddam.

Dept. of Public Safety, Div. of State Police notice of intent to modify an existing telecommunications facility located on John Tom Hill, **Glastonbury**.

Springwich Cellular Ltd. Partnership notice of intent to modify existing telecommunications facilities located on Birch Mountain Rd., **Glastonbury**; Shuttle Meadow Rd., Southington; Town Farm Rd., Enfield; Prestige Park Rd., East Hartford; 55 Trumbull St., Hartford; Mountain Rd., Hartford; Beckley Rd., Berlin; Kikapoo Rd., Middlefield; and 391 Niederwerfer Rd., South Windsor. Complete File

Springwich Cellular Ltd. Partnership notice of intent to modify an existing telecommunications facility located at 2108 Main Street in **Glastonbury**. (acknowledged 8/20/97)

Springwich Cellular Ltd. Partnership notice of intent to modify an existing telecommunications facility located off of Birch Mountain Road in **Glastonbury**.

EM-CROWN-054-990609 - Crown Atlantic Company LLC notice of intent to modify an existing telecommunications facility located off Three Mile Road in **Glastonbury**.

TS-NEXTEL-054-990805 - Nextel Communications request for an order to approve tower sharing at a telecommunications tower to be replaced at the St. Paul's Roman Catholic Church on 2577 Main Street in **Glastonbury**.

EM-CROWN-054-990810 - Crown Atlantic Company LLC notice of intent to modify an existing telecommunications facility located at 366 Three Mile Road in **Glastonbury**.

TS-VOICESTREAM-054-000908 – VoiceStream Wireless, Inc. request for an order to approve tower sharing at an existing telecommunications facility located at 115 Birch Mountain Road, **Glastonbury**, Connecticut.

EM-VER-054-000914 - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located off Birch Mountain Road, **Glastonbury**, Connecticut.

TS-VER-054-001214 - Cellco Partnership d/b/a Verizon Wireless request for an order to approve tower sharing at an existing telecommunications facility located at 175 Dickinson Road, **Glastonbury**, Connecticut.

EM-XM-054-010110 - XM Satellite Radio notice of intent to modify an existing telecommunications facility located at Three Mile Road, **Glastonbury**, Connecticut.

TS-VOICESTREAM-054-010130 - VoiceStream Wireless Corporation request for an order to approve tower sharing at an existing telecommunications facility located 175 Dickinson Road, **Glastonbury**, Connecticut.

EM-CROWN-054-010430 - Crown Atlantic Company LLC on behalf of Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at Three Mile Road, **Glastonbury**, Connecticut.

TS-SPRINT-054-010820 - Sprint Spectrum, L.P. request for an order to approve tower sharing at an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut.

TS-AT&T-054-010906 - AT&T Wireless PCS, LLC d/b/a AT&T Wireless request for an order to approve tower sharing at an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut.

EM-AT&T-054-020228 - AT&T Wireless notice of intent to modify an existing telecommunications facility located at 175 Dickinson Road, **Glastonbury**, Connecticut.

EM-AT&T-054-020703 - AT&T Wireless PCS, LLC d/b/a AT&T Wireless notice of intent to modify an existing telecommunications facility located at 366 Three Mile Road, **Glastonbury**, Connecticut.

EM-CING-054-079-028-121-104-073-109-058-020702 - SNET Mobility, LLC notice of intent to modify existing telecommunications facilities located in Colchester, **Glastonbury**, Griswold, Lisbon, Marlborough, Norwich, Plainfield, and Salem, Connecticut.

EM-CING-013-041-054-060-076-093-108-020913 - Southwestern Bell Mobile Systems, LLC notice of intent to modify existing telecommunications facilities located in Bozrah, East Haddam, **Glastonbury**, Guilford, Madison, New Haven, and Oxford, Connecticut.

TS-T-MOBILE-054-020916 - Omnipoint Communications, Inc., a subsidiary of T-Mobile USA, Inc. request for an order to approve tower sharing at an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut.

EM-T-MOBILE-"UNIVERSAL"-020830 - Omnipoint Facilities Network 2., L.L.C. and Omnipoint Communications, Inc., subsidiaries of T-Mobile USA, Inc. notice of intent to modify existing telecommunications facilities throughout Connecticut.

EM-AT&T-054-021004 - AT&T Wireless PCS, LLC d/b/a AT&T Wireless notice of intent to modify an existing telecommunications facility located at 115 Birch Mountain Road, **Glastonbury**, Connecticut.

EM-VER-054-030417 - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at Birch Mountain Road, **Glastonbury**, Connecticut.

EM-CING-054-040210 - Southwestern Bell Mobile Systems, LLC notice of intent to modify an existing telecommunications facility located at 175 Dickinson Road, **Glastonbury**, Connecticut.

EM-CING-054-040527 - Southwestern Bell Mobile Systems, LLC notice of intent to modify an existing telecommunications facility located at 577 Bell Street, **Glastonbury**, Connecticut.

EM-VER-054-050224 - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 175 Dickinson Road, **Glastonbury**, Connecticut.

EM-VER-054-054A-079-113-060-050329 -Cellco Partnership d/b/a Verizon Wireless notice of intent to modify existing telecommunications facilities located at Birch Mountain Road, **Glastonbury**; Three Mile Road, **Glastonbury**; North Main Street, Marlborough; Cosgrove Road, Willington; and 74 Goodrich Lane, Portland, Connecticut.

EM-VER-054-028-061115 - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify existing telecommunications facilities located at 48 Birch Mountain Road, **Glastonbury**; and 112 Munn Road, Colchester, Connecticut.

EM-CING-137-028-013-054-061122- New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at Taugwonk Spur No. 2, Stonington; 31 Chestnut Hill Road, Colchester;

29 Mahoney Road, Colchester; 131 Gifford Lane, Bozrah; and 115 Birch Mountain Road, **Glastonbury**, Connecticut. Complete File

EM-CING-011-054-105-130-157-070220 - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 1021 Blue Hills Avenue, Bloomfield; Dickinson Road, **Glastonbury**; 38 Hatchetts Hill Road, Old Lyme; 231 Kettletown Road, Southbury; and 56 Norfield Road, Weston, Connecticut. Decision Letter.

EM-CING-008-014-054-085-110-137-070622 - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 93 Old Amity Road, Bethany; 405 Brushy Plain Road, Branford; Three Mile Road, **Glastonbury**; 88 Main Street, Monroe; 10 Sparks Street, Plainville; and 82 Mechanic Street, Stonington, Connecticut. Decision Letter.

EM-CING-054-057-061-160-161-070815 - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 366 Three Mile Road, **Glastonbury**; Butternut Hollow Road, Greenwich; 599 Plains Road, Haddam; 111 Trask Road/426 River Road, Willington; and 128 Mather Street, Wilton, Connecticut.

EM-CING-054-054-077-134-164-070911 – New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 2108 Main Street, **Glastonbury**; 577 Bell Street, **Glastonbury**; 60 Adams Street, Manchester; 46 Brendon Street, Stafford; and 419 Broad Street, Windsor, Connecticut.

EM-CING-054-080201 – New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut.

EM-VER-054-080214 – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunication facility located at 175 Dickinson Road, **Glastonbury**, Connecticut.

EM-VER-054-080422 – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunication facility located at 374 Three Mile Road, **Glastonbury**, Connecticut.

EM-POCKET-054-080917 – Youghiogheny Communications-Northeast, LLC d/b/a Pocket Communications notice of intent to modify an existing telecommunications facility located at 175 Dickinson Road, **Glastonbury**, Connecticut.

EM-POCKET-054-080930 – Youghiogheny Communications-Northeast, LLC d/b/a Pocket Communications notice of intent to modify an existing telecommunications facility located at 577 Bell Street, **Glastonbury**, Connecticut.

EM-POCKET-054-081110 – Youghiogheny Communications-Northeast, LLC d/b/a Pocket Communications notice of intent to modify an existing telecommunications facility located at 1679 New London Turnpike, **Glastonbury**, Connecticut.

EM-CING-054-081117- New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 175 Dickinson Road, **Glastonbury**, Connecticut.

EM-CING-054-090311 - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at Birch Mountain Road, **Glastonbury**, Connecticut.

EM-POCKET-054-090710 – Youghiogheny Communications-Northeast, LLC d/b/a Pocket Communications notice of intent to modify an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut.

EM-T-MOBILE-054-090930 – Omnipoint Communications, as subsidiary of T-Mobile USA, Inc. notice of intent to modify an existing telecommunications facility located 2577 Main Street, **Glastonbury**, Connecticut.

EM-CLEARWIRE-054-090930 - Clearwire Corporation notice of intent to modify an existing telecommunications facility located at 577 Bell Street, **Glastonbury**, Connecticut.

EM-CLEARWIRE-054-091028 – Clearwire Corporation notice of intent to modify an existing telecommunications facility located at 58 Montano Road, **Glastonbury**, Connecticut.

EM-VER-054-100324- Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at Three Mile Road, **Glastonbury**, Connecticut.

EM-CLEARWIRE-054-100507 – Clearwire Corporation notice of intent to modify an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut.

TS-CLEARWIRE-054-100916 – Clear Wireless LLC request for an order to approve tower sharing at an existing telecommunications facility located at 1679 New London Turnpike, **Glastonbury**, Connecticut.

EM-T-MOBILE-054-110630 - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 366 South Three Mile Road, **Glastonbury**, Connecticut.

EM-VER-054-111108 - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 347 Three Mile Road, **Glastonbury**, Connecticut.

EM-SPRINT-054-111205 – Sprint Spectrum LP notice of intent to modify an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut.

EM-VER-054-120106 - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 175 Dickinson Road, **Glastonbury**, Connecticut.

EM-CING-054-120501 – New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 366 Three Mile Road, **Glastonbury**, Connecticut.

EM-CING-054-120515 – New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 175 Dickinson Road, **Glastonbury**, Connecticut.

EM-AT&T-054-120518A – AT&T Mobility notice of intent to modify an existing telecommunications facility located at 2108 Main Street, **Glastonbury**, Connecticut.

EM-AT&T-054-120518B – AT&T Mobility notice of intent to modify an existing telecommunications facility located at 577 Bell Street, **Glastonbury**, Connecticut.

EM-VER-054-120614- Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 484 Birch Mountain Road, **Glastonbury**, Connecticut.

EM-SPRINT-054-120608 – Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 1679 New London Turnpike, **Glastonbury**, Connecticut.

EM-VER-054-120806- Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at Hebron Avenue, **Glastonbury**, Connecticut.

EM-SPRINT-054-120924 – Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 333 Birch Mountain Road, **Glastonbury**, Connecticut.

EM-AT&T-054-121016 - AT&T Mobility notice of intent to modify an existing telecommunications facility located at 50 Birch Mountain Road, **Glastonbury**, Connecticut.

EM-SPRINT-054-121126 –Sprint Spectrum notice of intent to modify an existing telecommunications facility located at 77 Redwood Lane (175 Dickinson Road), **Glastonbury**, Connecticut.

EM-METROPCS-054-121224-MA – MetroPCS Massachusetts, LLC notice of intent to modify an existing telecommunications facility located at 1679 New London Turnpike, **Glastonbury**, Connecticut.

EM-METROPCS-054-121228-MA - MetroPCS Massachusetts, LLC notice of intent to modify an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut.

EM-AT&T-054-130107 – AT&T Mobility notice of intent to modify an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut.

EM-SPRINT-NEXTEL-054-130201 - Sprint Nextel Corporation notice of intent to modify an existing telecommunications facility located at 1679 New London Turnpike, **Glastonbury**, Connecticut.

EM-T-MOBILE-054-130528 – T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 58A Montano Road, **Glastonbury**, Connecticut.

EM-SPRINT-054-130717 – Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut.

EM-VER-054-130805 – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 175 Dickinson Road, **Glastonbury**, Connecticut.

EM-VER-054-130823 – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at Three Mile Road, **Glastonbury**, Connecticut.

TS-CING-054-131008 – New Cingular Wireless PCS, LLC request for an order to approve tower sharing at an existing telecommunications facility located at 58A Montano Road, **Glastonbury**, Connecticut.

EM-VER-054-131126 – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 374 Three Mile Road, **Glastonbury**, Connecticut.

EM-AT&T-054-131230 - American Telephone and Telegraph Company notice of intent to modify an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut.

TS-VER-054-140117 - Cellco Partnership d/b/a Verizon Wireless request for an order to approve tower sharing at an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut. Decision. Completion Letter.

EM-AT&T-054-140127 - American Telephone & Telegraph (AT&T) notice of intent to modify an existing telecommunications facility located at 577 Bell Street, **Glastonbury**, Connecticut. Decision. Extension Request and CSC Decision. Extension Request and CSC Decision. Extension Request and CSC Decision.

EM-T-MOBILE-054-140303 – T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut. Decision. Completion Letter.

EM-T-MOBILE-054-140414 – T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 366 South Three Mile Road, **Glastonbury**, Connecticut. Decision. Completion Letter.

EM-SPRINT-054-140530 – Sprint Spectrum notice of intent to modify an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut. Decision. Completion Letter.

EM-CING-054-140512 – New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 175 Dickinson Road, South **Glastonbury**, Connecticut. Decision. Completion Letter.

EM-T-MOBILE-054-140616 - T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 577 Bell Street, **Glastonbury**, Connecticut. Decision. Completion Letter.

EM-AT&T-054-140625 – AT&T notice of intent to modify an existing telecommunications facility located at Birch Mountain Road, **Glastonbury**, Connecticut. Decision. Request for Extension and CSC Decision.

EM-SPRINT-054-140626 - Sprint PCS notice of intent to modify an existing telecommunications facility located at 299 Paxton Way, **Glastonbury**, Connecticut. Decision. Completion Letter.

EM-AT&T-054-141224 - AT&T notice of intent to modify an existing telecommunications facility located at 2108 Main Street, **Glastonbury**, Connecticut. Decision. Completion Letter.

EM-VER-054-150305 - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 577 Bell Street, **Glastonbury**, Connecticut. Decision. Completion Letter.

EM-T-MOBILE-054-150310 - T-Mobile notice of intent to modify an existing telecommunications facility located at 115 Birch Mountain Road, **Glastonbury**, Connecticut. Decision. Completion Letter.

EM-VER-054-150612 - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at Hebron Avenue, **Glastonbury**, Connecticut. Decision. Extension Request and Approval. Completion Letter.

EM-VER-054-150717 - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut. Decision. Completion Letter.

EM-T-MOBILE-054-150812 - T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 115 Birch Mountain Road, Glastonbury, Connecticut. Denied.

EM-VER-054-150828 – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 374 Three Mile Road, **Glastonbury**, Connecticut. Decision. Not Constructed.

EM-T-MOBILE-054-150831 – T-Mobile notice of intent to modify an existing telecommunications facility located at 374 Three Mile Road, **Glastonbury**, Connecticut. Decision. Completion Letter.

EM-T-MOBILE-054-151008 – T-Mobile notice of intent to modify an existing telecommunications facility located at 58A Montano Road, **Glastonbury**, Connecticut. Decision.

EM-T-MOBILE-054-151020 - T-Mobile notice of intent to modify an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut. Decision. Completion Letter.

EM-VER-054-151214 - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at Birch Mountain Road, **Glastonbury**, Connecticut. Decision. Extension Request with CSC Decision. Compliance/Completion Letter

EM-AT&T-054-160202 - AT&T notice of intent to modify an existing telecommunications facility located at 374 Three Mile Road, **Glastonbury**, Connecticut. Decision. Extension Request and CSC Decision 2nd Extension Request and CSC Decision

EM-T-MOBILE-054-160202 - T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 115 Birch Mountain Road, **Glastonbury**, Connecticut. Decision Extension Request and CSC Decision 2nd Extension Request and CSC Decision Completion Letter

EM-AT&T-054-160311 - AT&T Mobility, LLC notice of intent to modify an existing telecommunications facility located at 58 Montano Road, **Glastonbury**, Connecticut. Incomplete Letter. Corrected Cover Letter. Decision.

EM-T-MOBILE-054-160713 - T-Mobile notice of intent to modify an existing telecommunications facility located at 577 Bell Street, **Glastonbury**, Connecticut. Decision. Completion Letter.

EM-VER-054-160825 - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 175 Dickinson Road, **Glastonbury**, Connecticut. Decision. Extension Request and CSC Decision

EM-AT&T-054-160916 - AT&T notice of intent to modify an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut. Decision. Compliance with Condition #1.

EM-AT&T-054-170123 - AT&T notice of intent to modify an existing telecommunications facility located at 374 Three Mile Road, **Glastonbury**, Connecticut. Decision

EM-AT&T-054-170123b - AT&T notice of intent to modify an existing telecommunications facility located at 2108 Main Street, **Glastonbury**, Connecticut. Decision Completion Letter

EM-AT&T-054-170306 - AT&T Wireless notice of intent to modify an existing telecommunications facility located at 577 Bell Street, **Glastonbury**, Connecticut. Incomplete Response to Incomplete Decision Completion Letter

EM-AT&T-054-170308 - AT&T Wireless notice of intent to modify an existing telecommunications facility located at 175 Dickinson Road, **Glastonbury**, Connecticut. Decision Completion Letter

EM-SPRINT-054-170511 - Sprint Spectrum, LP notice of intent to modify an existing telecommunications facility located at 115 Birch Mountain Road, **Glastonbury**, Connecticut. Decision

EM-SPRINT-054-170713 – Sprint Spectrum, LP notice of intent to modify an existing telecommunications facility located at 2577 Main Street, **Glastonbury**, Connecticut. Decision

EM-VER-054-170727 – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 577 Bell Street, **Glastonbury**, Connecticut. Decision

EM-VER-054-170828 - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 374 Three Mile Road, **Glastonbury**, Connecticut. Decision

Content Last Modified on 2/8/2018 2:00:24 PM

Ten Franklin Square New Britain, CT 06051 / 860- 827-2935