SECTORSITE
Communications Site Development

PO Box 118, Convent Station, NJ 07961
Office (973) 543-0611 • Fax (973) 543-7232
www.SectorSiteLLC.com

September 24, 2018

Connecticut Siting Counsel
10 Franklin Square
New Britain, CT 06051

Re: Docket 480 Development and Management Plan submission in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies

To Whom It May Concern:

Please find enclosed the following documents prepared for the Development and Management Plan (D & M Plan). The D & M Plan shall be served on the Town of Farmington. The Plan includes the following:

1. An original and 15 sets of 11" x17" sized drawings and 2 full sized sets of drawings.
2. Geotechnical Report
3. Tower and foundation design

The site work shall start after SectorSite receives Siting Council approval of the D&M Plan. The work shall be performed during the hours of 8 am to 5 pm, Monday through Saturday.

The supervisor of the site work will be:

Scott Murdoch
Director of Construction
SectorSite, LLC
(732) 232-4083
Smurdoch@sectorsite.com

Please contact me should you have any questions or comments.

Very truly yours,

Lynn Toomey

Lynn Toomey
Dir. Real Estate
908-4560-485

Cc: Town of Farmington

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Communications Site Development

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September 24, 2018

Town of Farmington
Town Clerk
One Monteith Drive
Farmington, CT 06032

Re: Docket 480 Development and Management Plan submission in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies

To Whom It May Concern:

For your review, enclosed are the following documents submitted to Connecticut Siting Counsel prepared for the Development and Management Plan (D & M Plan):

1. One full sized sets of drawings.
2. Geotechnical Report
3. Tower and foundation design

The site work shall start after SectorSite receives Siting Council approval of the D&M Plan. The work shall be performed during the hours of 8 am to 5 pm, Monday through Saturday.

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Please contact me should you have any questions or comments.

Very truly yours,

Lynn Toomey

Lynn Toomey
Dir. Real Estate
908-456-0485

Cc: Town of Farmington

GEOTECHNICAL EVALUATION of SUBSURFACE CONDITIONS

for

CT-119

Farmington Southwest Fire Department
2 Westwoods Drive
Farmington, CT 06032

Prepared for:

SECTORSITE
Communications Site Development

May 24, 2018

Prepared by:

HUDSON Design Group LLC

45 Beachwood Drive
North Andover, MA 01845
Phone: (978) 557-5553
www.hudsondesigngroupllc.com

STATE OF CONNECTICUT
MARK A. McELUSKY
PEN.0028625
LICENSED PROFESSIONAL ENGINEER

5/24/18

PROJECT LOCATION & DESCRIPTION

The proposed antenna tower project is located at 2 Westwoods Drive in Farmington, CT 06032, to the rear of the existing Farmington Southwest Fire Station. The proposed communication compound will be located within a currently undeveloped farm field at coordinates 41° 42' 37.4" N and 72° 52' 54.9" W, as can be seen in a Google Earth view or on the Bristol CT USGS topographic quadrangle (1984).

The proposed communications compound will consist of a 50'x50' lease area, 48'x48'chain-link perimeter security fence or compound. The first tenant will have two 5'x10' cement concrete pads with exterior communications cabinets, and a 4'x4' cement concrete pad with exterior mounted emergency electrical generator. The proposed antenna tower will consist of a 130' flagpole tower. The flagpole antenna tower and compound can accommodate up to four commercial carriers.

The property is owned by the Town of Farmington and Sector Site will be the tower owner and manager.

PROJECT PURPOSE

The purpose of this Geotechnical Evaluation of Subsurface Conditions is to determine the subsurface soil conditions and properties to be used in the structural design of the proposed antenna tower foundation. The soil investigation and report were completed for Sector Site.

The Geotechnical Evaluation was completed in accordance with standard practice, ANSI /TIA-222-G Structural Standards for Steel Antennas Towers and Supporting Structures (2009), International Building Code (IBC) 2009, and CT State Building Code (2016), as applicable.

METHODS OF INVESTIGATION

Hudson Design Group (HDG) completed a limited document review consisting of USDA-NRCS Soil Survey data, USGS Bristol, CT topographic map or quadrangle, and USGS Bedrock Geological Map of Connecticut (1985) for the area of interest. The field or on-site investigation consisted of two soil borings to bedrock, and two auger probes to 15 feet.

The soil boring and rock coring were performed in general accordance with ASTM D 1586 and D 2113-08, respectively. The soil boring was reported as completed with a Diedrich D-50 ATV vehicle with safety hammer. The boring included Standard Penetration Testing (SPT) with continuous split spoon sampling to 15 feet.

Those present during the 5/15/18 geotechnical field or on site investigation include Orrin Cone and Vic Smith of New England Boring Contractors (NEBC). No laboratory tests were completed on the recovered soil samples for this investigation.

RESULTS

USDA SOIL DATA

Based on review of the USDA, Natural Resource Conservation Service (NRCS) Soil Survey for State of Connecticut (CT600), Hartford County, HDG determined that the reported soil at the project area consists of Raypol Silt Loam, map unit 12.

The hydrologic soil group (HSG) rating of the Raypol Silt Loam soil is reported as "C/D". Hydrologic Group C soils have a slow infiltration rate when thoroughly wet, and HSG D soils are essentially impermeable when wet. The C soils consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. The dual rating applies to areas that are either drained (C) or undrained (D) by terrain or topography. The reported depth to water table and any restrictive layer are 6 inches and greater than 78 inches below the ground surface, respectively.

Based on further on-line or internet based review of the USDA-NRCS soil survey data, the Raypol Silt Loam soil has a reported sand, silt, and clay content of 64.8%, 31.3%, and 3.9%, respectively. The Raypol Silt Loam soil was classified as ML according to the Unified Soil Classification (USC) system.

USGS BEDROCK DATA

Based on review of the USGS Bedrock Geological Map of Connecticut (1985) for the area of interest, the mapped bedrock is labeled as TRnh. TRnh is reported as New Haven Arkose and is from the upper Triassic Geologic Period. New Haven Arkose bedrock is generally coarse grained sedimentary sandstone that may be interbedded with brick-red shaley siltstone. The depth to bedrock is not listed on the USGS bedrock map.

SOIL BORING

Based on soil boring B-1, the soil encountered was classified by the driller primarily red-brown fine to medium grained sand, little fine to coarse gravel, with a trace of silt. Although not listed on the boring log, NEBC reported that groundwater or wet soil was encountered at 12 feet below the surface for the date and location of boring.

As previously described, Standard Penetration Testing (SPT) with soil sampling were completed from the surface to bottom of soil boring. Based on the field boring blowcounts and corresponding standard penetration number, N, correction for system energy or efficiency and overburden, N_{corr}, the following empirical soil properties and shallow bearing capacity are estimated for the granular soil.

Table 1. Empirically estimated soil properties and mat foundation bearing capacity.

Depth (ft)	**Ncorr**	**Soil Description**	**Density** (pcf) **(moist)**	**Ø** (deg)	**Tanδ**	**Pp** (psf/ ft)	**qa net** (tsf)
6	132	Fine & Med grain sand	130	35	0.4	150	5

Ncorr = Blowcount corrected for overburden and hammer energy efficiency
Density = Moist or Buoyant soil density per on-site conditions (lbs/ft^3 = pcf)
Ø = soil internal friction angle.
Tanδ = Coefficient of lateral sliding for cement concrete on specific soil.
Pp = Allowable lateral passive pressure per foot of depth.
qa net = empirically estimated net allowable soil bearing capacity (tons/ft^2 = tsf).

It shall be understood that the bearing capacity of a shallow foundation on granular soil is dependent on depth of embedment, foundation dimensions, soil density, and moist or saturated soil conditions. As such, a 30'x30' shallow foundation at the depth of embedment listed above with moist soil conditions were used in Meyerhof's shallow bearing capacity equation.

ROCK CORING

Upon reaching refusal due to the presence of bedrock, one (1), 5-foot NQ rock core was completed within the bedrock at B-1. The rock bit was advanced to 15 feet and the coring was completed from 15 feet to 20 feet below ground, with a full 60 inch core recovery.

From HDGs review of the rock core photographs and drillers log, the bedrock appears to be reddish brown sandstone. The rock core demonstrates little decomposition, minimal weathering, and little fracturing for the upper 47 inches of core.

Based on the quantity and summing of rock sections 4-inches in length or greater, the core has a Rock Quality Designation (RQD) of 57% with rock quality classification of FAIR. HDG's estimation of RQD was performed in accordance with ASTM D 6032-08 and based on review of the drillers rock core photographs.

From review of the USGS Bedrock map and data, reported bedrock core descriptions and review of digital rock core photographs from the driller, HDG estimates the bedrock as listed below and correlated to presumptive values.

Table 2. Maximum presumptive properties and strengths for cored bedrock.

Estimated Rock Type	**RQD**	**Vertical Compressive Strength (psf)**	**Lateral Bearing Pressure (psf/ft)**	**Lateral Sliding Coefficient**
Sedimentary Rock (1)	57	4,000	400	0.35

1 Based on International Building Code, Chapter 18, Soils and Foundations (2009).

CONCLUSIONS & RECOMMENDATIONS

Based on the USDA-NRCS Soil Survey data, USGS Geologic Bedrock map and descriptions, on-site investigations and empirical relations, the estimated soil properties and bearing capacity are listed in the table above. In the event an empirical relation

could not be established or determined, a presumptive value will be listed and stated as such and be according to the International Building Code (2009), and applicable amendments to the IBC through the CT State Building Code (2016).

SOIL

Although soil bearing capacity generally increases with increasing depth of embedment and increasing foundation dimensions for a mat or shallow foundation on granular or cohesionless soil, HDG recommends using a **maximum net allowable soil bearing capacity of 5 TSF**, or 10,000 lbs per square foot for foundation design. This value of bearing capacity is based on the condition or case of moist soil conditions and the water table being well below the bottom of foundation.

However, if the potential for the groundwater table being at or above the foundation bottom exists, then a **maximum net allowable soil bearing capacity of 2.5 TSF**, or 5,000 lbs per square foot should be used instead for design of the foundation This value of bearing capacity is based on the condition or case of saturated granular soil or buoyant soil conditions, which may occur with a seasonally fluctuating water table.

BEDROCK

Based on boring B-1 and rock core results from 15 feet to 20 feet below grade, HDG has provided the presumed rock compressive strength from the International Building Code (IBC) in Table 2. However, the soil conditions appear quite favorable to a shallow mat foundation supported by the in situ soil.

Alternatives to use of the presumptive values for the bedrock for foundation design are to complete laboratory tests on core specimens such as ASTM D 7012-13, Standard Test Method for Compressive Strength and Elastic Moduli of Intact Rock Core Specimens under Varying States of Stress and Temperatures and ASTM D3967-08, Standard Test Method for Splitting Tensile Strength of Intact Rock Core Specimens.

FOUNDATION DESIGN & ALTERNATIVES

Based on the results of the soil boring investigation, HDG recommends the use of a shallow mat foundation with the dimensions and depth below ground surface as listed in Table 1. The antenna tower foundation should be of sufficient mass or cement concrete weight to resist the maximum design loads. Alternative antenna tower foundation designs include a drilled shaft or caisson (deep) foundation socketed into bedrock. Regardless of foundation type, the tower foundation design should ensure foundation settlement does not exceed 1-inch.

The proposed cement concrete foundation should be designed in accordance with ANSI /TIA-222-G Structural Standards for Steel Antennas Towers and Supporting Structures (2009), International Building Code (IBC) 2009, and CT State Building Code (2016), as applicable.

ADDITIONAL CRITERIA

Based on review of the UBC United States Seismic Zones Map, the project location is within the Zone 2A (0.15g) Seismic Zone (ground acceleration). Average frost depth at this location is 30-inches.

All foundation construction backfill should be placed in layers not exceeding 12-inches in thickness and vibro-compacted in place to 95% of the maximum dry density and optimum moisture content of the soil previously established by Modified Proctor Test, ASTM D 1557-12. The backfilling and compaction or densification of granular soil should be verified on-site during construction per Standard Test Methods for In-Place Density and Water Content of Soil & Soil Aggregate by Nuclear Methods, ASTM D 6938-15. Soil used in backfilling shall be well graded, moist (not saturated) granular soil, and free of organics, cobbles, rocks, slag, and refuse or trash.

Permanent and temporary measures to facilitate groundwater drainage below the antenna tower foundation bottom or base should be implemented to the greatest extent practicable. Temporary measures for adequate de-watering and maintaining the groundwater table well below the foundation subgrade or base elevation must be completed prior to foundation excavation and maintained throughout foundation construction and backfilling operations.

In addition, the overall project general contractor and subcontractor (as applicable) selected for antenna tower foundation construction should contact the Sector Site project manager, Hudson Design Group project manager, and foundation designer in writing regarding any requested foundation design changes prior to completing any foundation fabrication or foundation construction modifications on their own. Construction modifications include the location of antenna tower foundation bottom elevation (depth below grade), any dimensional changes, and any deviation or change from the tower manufacturer's or foundation designer's sealed and final design and construction plans.

LIMITATIONS

As applicable, our recommendations are based on field observations, investigations, analysis, empirical relationships, and field or laboratory testing completed to date and limited to contractual arrangements for authorized tasks. It is important to understand that the soil investigation completed is very limited in scope and breadth and that subsurface soil conditions can vary greatly, or remain consistent with the soils identified in the soil log during the investigation and incorporated into the calculations or estimates and report.

If soil conditions are found to be greatly different from those identified in the soil log during the construction of the antenna tower foundation, HDG shall not be held liable or responsible in any way for foundation or tower design modifications or limitations that may be imposed or required as a result of differing or unforeseen conditions. Furthermore, the opinions and estimated values are based on professional experience, formal education, and a standard level of care and due-diligence practiced within the profession. No guarantee or warranty of work is explicitly or implicitly implied. This report is solely for the use of our client.

Figure 1. View of rock core extracted from 15’ to 20’ below grade (photographs altered to fit page).

p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 413.588.8139 f: 413.517.0590 a: 116 Pleasant Street, Suite 302A, Easthampton, MA 01027

(603) 437-1610 **New England Boring Contractors** **Fax: (603) 437-0034**
P.O. Box 165
Derry, NH 03038

Boring # B-2 **Project**: Hudson Design Group Tower Site **Project #** C08631

Project Address: Tower Site **City:** Farmington **State:** **CT**MA **Zip:**

Date Start: 05/15/18 **Date End:** 05/15/18 **Location:** See Plan

Casing: HW
Size: 4”
Hammer: 300lbs NX
Core Barrell – NX 2.15”

Sampler:
S/S

140lbs
Fall:30”

Sampler:
1-3/8 in. I.D.
30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date: 05/15/18	**Depth:** ~11’	**Casing:**	**Stabilization Period**

DP	S./#	DEPTH	PEN	REC	BLOWS/6”	S/C	SAMPLE DESCRIPTION
-	S-1	0’ – 2’	24”	14”	6-7-10-15		Dry, medium dense, red brown FINE TO MEDIUM SAND, little fine to coarse gravel, trace silt.
-	S-2	2’ – 4’	24”	16”	10-15-22-26		Dry, dense, red brown FINE TO MEDIUM SAND, little fine to coarse gravel, trace silt.
2’6”							
-	S-3	4’ – 6’	24”	18”	25-38-44-50		Dry, very dense, red brown FINE TO MEDIUM SAND, little fine to coarse gravel, trace silt.
5’0”							
-	S-4	6’ – 6’5”	5”	3”	100/5”		Dry, very dense, red brown FINE TO MEDIUM SAND, little fine to coarse gravel, trace silt.
-	S-5	8’ – 10’	24”	10”	28-36-48-66		Dry, very dense, red brown FINE TO MEDIUM SAND, little fine to coarse gravel, trace silt.
10’0”	S-6	10’ – 12’	24”	5”	33-38-42-48		Wet, very dense, red brown FINE TO MEDIUM SAND, little fine to coarse gravel, trace silt.
-	S-7	12’ – 13’	12”	6	50/100		Wet, very dense, red brown FINE TO MEDIUM SAND, little fine to coarse gravel, trace silt.
-					Coring Times		
-					Min/Ft.	15’	Top of BEDROCK at 15’, began coring.
15’0”	C-1	15’ – 20’	60”	30”	3		Red SANDSTONE
-					3		
-					3		
-					3		
-					4	25’	
25’0”							Bottom of Exploration – 25’
30’0”							

Drillers. Orrin Cone **Helper:** Mike Gionfrido **Inspector:** None

Remarks: Drill Rig: CME-75 Also conducted 2 15’ probes.

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

(603) 437-1610 **New England Boring Contractors** **Fax: (603) 437-0034**
P.O. Box 165
Derry, NH 03038

Boring # B-1 **Project**: Hudson Design Group Tower Site **Project #** C08631

Project Address: Tower Site **City:** Farmington **State:** **CT**MA **Zip:**

Date Start: 05/15/18 **Date End:** 05/15/18 **Location:** See Plan

Casing: HW
Size: 4”
Hammer: 300lbs NX
Core Barrell – NX 2.15”

Sampler:
S/S
140lbs
Fall:30”

Sampler:
1-3/8 in. I.D.
30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date:	**Depth:**	**Casing:**	**Stabilization Period**
05/15/18	None Noted		

DP	S./#	DEPTH	PEN	REC	BLOWS/6”	S/C	SAMPLE DESCRIPTION
-	S-1	0’ – 2’	24”	12”	6-16-16-20		Dry, medium dense, red--brown FINE TO MEDIUM SAND, little fine to coarse gravel, trace silt.
-							
-							
-							
5’0”	S-1	5’ – 5’8”	8”	6”	60-100/2		Dry, very dense, red-brown FINE TO MEDIUM SAND, little fine to coarse gravel, trace inorganic silt.
-							
-							
-							
-							
10’0”	S-3	10’ – 12’	24”	14”	25-38-50-61		Dry, very dense, red-brown FINE TO MEDIUM SAND, little fine to coarse gravel, trace inorganic silt.
-							
-							
-							
-						15’0”	Casing Refusal at 15’
15’0”							Bottom of Exploration = 15’
-							
-							
-							
-							
15’0”							
-							
-							
-							
-							
25’0”							
-							
-							
-							
-							
30’0”							
-							

Drillers. Orrin Cone **Helper:** Mike Gionfrido **Inspector:** None

Remarks: Drill Rig: CME-75

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

GENERAL NOTES:

1. ALL STEEL SHALL MEET THE REQUIREMENTS OF THE "STANDARD SPECIFICATIONS FOR STRUCTURAL STEEL" ASTM A36, UNLESS OTHERWISE NOTED ON THE STRUCTURAL PLANS OR BELOW.

2. ALL ROUND STEEL PIPE SHALL MEET THE REQUIREMENTS OF ASTM A53 TYPE E OR S GRADE B (35 KSI YIELD POINT MATERIAL) OR ASTM A501 (36 KSI YIELD POINT MATERIAL) OR ASTM A500 (54 KSI YIELD POINT MATERIAL).

3. ALL POLYGON FORMED STEEL SHAFTS SHALL MEET THE REQUIREMENTS OF ASTM A572 GRADE 65 (65 KSI YIELD POINT MATERIAL).

4. ALL WELDED CONNECTIONS SHALL CONFORM TO THE LATEST VERSION OF THE AMERICAN WELDING SOCIETY AWS D1.1 CODE. ALL WELD ELECTRODES OR WIRE SHALL AT A MINIMUM CONFORM TO E70 ELECTRODES (70 KSI YIELD).

5. ALL STEEL SHAPES AND PLATES SHALL BE HOT-DIPPED GALVANIZED ACCORDING TO ASTM A123. ALL STEEL NUTS AND BOLTS AND ASSOCIATED HARDWARE SHALL BE HOT-DIPPED ACCORDING TO ASTM A153.

6. THE MONOPOLE STRUCTURE SHALL BE FABRICATED BY TRANSAMERICAN POWER PRODUCTS.

7. SPECIAL INSPECTION SHALL BE PERFORMED ACCORDING THE IBC.

ERECTION NOTES:

1. ALL ANTENNA COAXIAL CABLES SHALL BE RUN INSIDE THE MONOPOLE SHAFT. COAX TO THE CONCEALMENT CYLINDERS SHALL BE STRAPPED FLUSH TO THE OUTSIDE OF THE CYLINDER SPINE AND THEN ROUTED THROUGH THE COAX HOLES PROVIDED INTO THE INSIDE OF THE MONOPOLE SHAFT OR INSIDE THE CYLINDER SPINE FOR THE UPPER CYLINDER SECTIONS.

2. THE CONTRACTOR SHALL INSTALL THE ANTENNA AND MOUNT AS REQUIRED BY THE OWNER.

3. ALL FLANGE BOLT NUTS SHALL BE TIGHTENED ACCORDING TO THE TURN OF THE NUT METHOD AS DEFINED IN AISC MANUAL OF STEEL CONSTRUCTION, AND SHALL RECEIVE SPECIAL INSPECTION.

4. ALL GALVANIZED SURFACES THAT ARE DAMAGED BY ABRASIONS, CUTS, DRILLING OR FIELD WELDING DURING SHIPPING OR ERECTION SHALL BE TOUCHED UP WITH TWO COATS OF A COLD GALVANIZING COMPOUND MEETING THE REQUIREMENTS OF ASTM A780.

RADOME MOUNTING:

1. RADOME MOUNTING BOLTS SHALL BE 3/8"ø GRADE 316 STAINLESS BOLTS W/ OVERSIZED WASHERS. BOLTS SHALL BE INSTALLED INTO AVK INDUSTRIAL PRODUCTS ALS4-616-312 THREADED INSERTS TO SECURE THE BOLTS.

2. HOLES IN RADOME FOR MOUNTING SHALL BE OVERSIZED TO 1/2"ø HOLES.

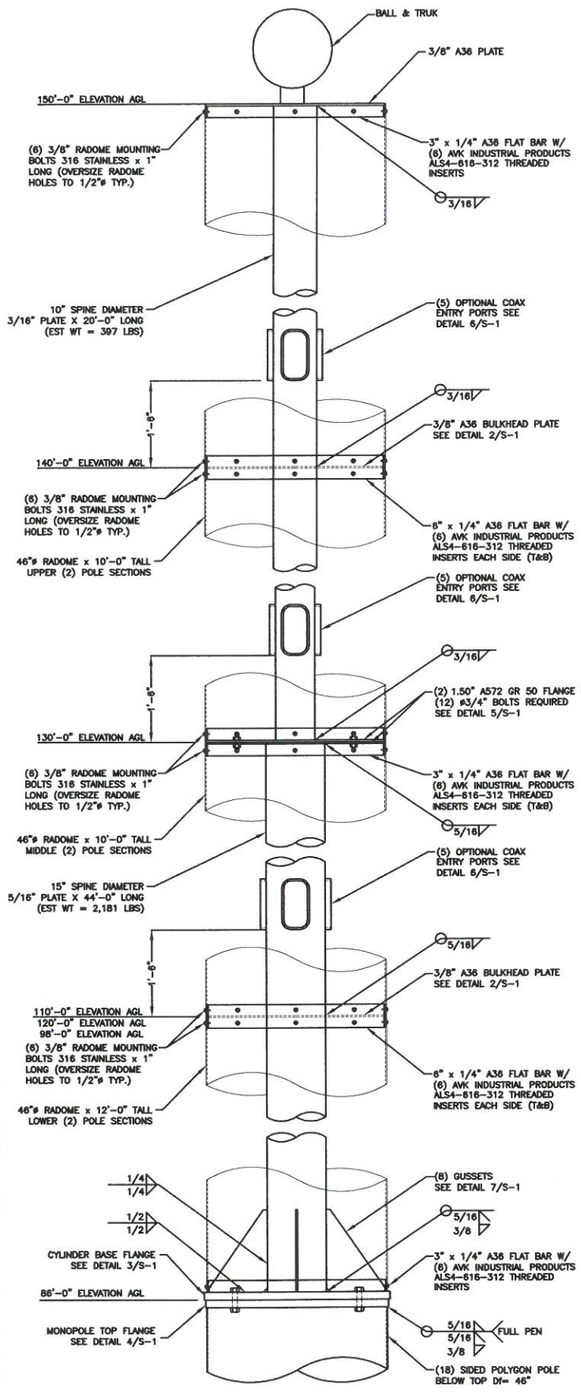
4. VERTICAL SEAM OF RADOME SHALL BE BOLTED AND INSTALLED ACCORDING TO THE RADOME MANUFACTURER.

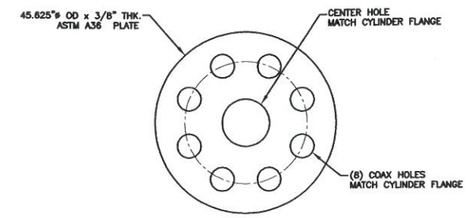
VORTEX SHEDDING:

THIS STRUCTURE HAS BEEN DESIGNED WITH ALL OF THE APPLICABLE FACTORS AS REQUIRED BY CODE. THIS STRUCTURE HAS NOT BEEN DESIGNED TO MITIGATE THE EFFECTS OF VORTEX SHEDDING, OR EXCESSIVE DISPLACEMENT OR VIBRATION AS A RESULT OF HARMONIC OSCILLATIONS AT RELATIVELY LOW WIND SPEED.

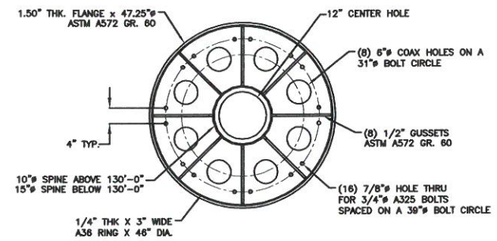
IN THE UNLIKELY EVENT THIS STRUCTURE SHOWS SYMPTOMS OF VORTEX SHEDDING, WE RECOMMEND THE INSTALLATION OF ADDITIONAL CABLE FEEDLINES, OR CHAIN TO THE INTERIOR OF THE THE POLE (SPINE). THE EXTENT OF THE VORTEX SHEDDING IS TYPICALLY DAMPENED BY ADDING OR REMOVING ADDITIONAL WEIGHT AT THE EQUIPMENT LEVELS THE FULL HEIGHT OF THE POLE.

Additional Notes:

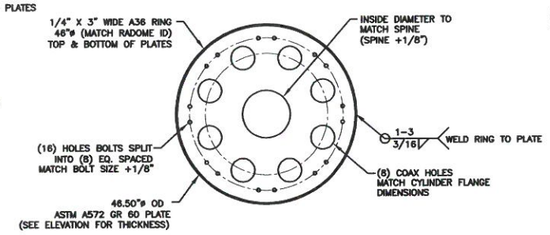




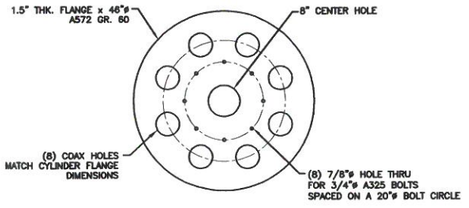
BULKHEAD PLATE 2 S-1



CYLINDER BASE FLANGE 3 S-1



86' FLANGE PLATE 4 S-1



120' FLANGE PLATE 5 S-1

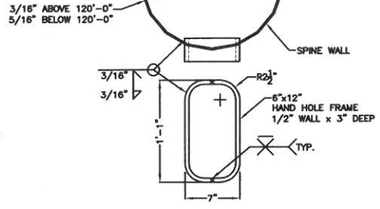
DESIGN
Building Code: 2016 CONNECTICUT BUILDING CODE
Design Standard: ANSI/TIA-222-G-2
Wind Speed Load Cases: 3-SEC. GUSTED WIND SPEED
Load Case #1: 94 MPH Design Wind Speed - V_{ASD} (V_{ULT} = 121 MPH)
Load Case #2: 50 MPH Wind with 1.00" Ice Accumulation
Load Case #3: 60 MPH Service Wind Speed

Structure Class	Exposure Cat.	Topography Cat.	Crest Height
II	C	1	

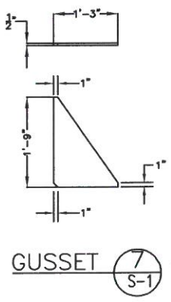
STRUCTURE PROPERTIES					
Cross-Section: 18-SIDED			Taper: 0.00000 in/ft		
Shaft Steel: ASTM A572 GR 65			Flange Steel: ASTM A572 GR 60		
Bolts: 3/4" Ø ASTM A325 (Section 1)					
3/4" Ø ASTM A325 (Section 2)					
Sect.	Length (ft)	Thickness (in)	Splice (ft)	Top Dia. (in)	Bot Dia. (in)
1	20.00	0.1875	0.00	10.00	10.00
2	44.00	0.3125	0.00	15.00	15.00

EQUIPMENT LIST	
Elev.	Description
TOP	12' X 18' FLAG
145'-0"	46"Ø X 10'-0" RADOME W/ INTERNAL ANTENNAS
135'-0"	46"Ø X 10'-0" RADOME W/ INTERNAL ANTENNAS
125'-0"	46"Ø X 10'-0" RADOME W/ INTERNAL ANTENNAS
115'-0"	46"Ø X 10'-0" RADOME W/ INTERNAL ANTENNAS
104'-0"	46"Ø X 12'-0" RADOME W/ INTERNAL ANTENNAS
92'-0"	46"Ø X 12'-0" RADOME W/ INTERNAL ANTENNAS

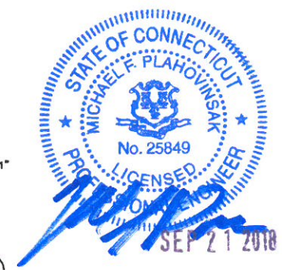
ANTENNA FEED LINES ROUTED ON THE INSIDE OF THE POLE



HAND HOLE DETAIL 6 S-1
SCALE: 1/8"=1"
ASTM A572 GR. 65 (65 KSI)



GUSSET 7 S-1



MICHAEL F. PLAHOVINSAK, P.E. #25849
Sole Proprietor - Independent Engineer
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614-398-6250 / mike@mfpeng.com

TransAmerican Power Products, Inc.
2427 Kelly Lane
Houston, Texas 77066
PH: 281-444-8277 / FX: 281-444-7270

Site Name: CT119 FARMINGTON
Site Location: HARTFORD CO., CT / 41°42'37.4", -72°52'54.9"
Designed By: MFP
Drawn By: MFP
Date: 9/20/2018
Scale: NTS / AS NOTED
Structure: 130-FT FLAG POLE (FUT 150-FT)
Project Number: 23518-364
TAPP #TP-16890
Owner: SECTOR SITE
Sheet No. S-1

TAPP
2427 Kelly Lane
Houston, Texas 77066
281-444-8277
QUALITY STEEL POLES. DELIVERED.

Page 1 of 2		Job Number:	23518-364
Eng: MFP		Customer Ref:	TP-16890
		Date:	9/20/2018
Structure:	130-FT FLAG POLE (FUT 150-FT)		
Site:	CT119 FARMINGTON		
Location:	HARTFORD CO., CT / 41°42'37.4", -72°52'54.9"		
Owner:	SECTOR SITE		
Revision No.:	Revision Date:		

DESIGN

Building Code:	2016 CONNECTICUT BUILDING CODE		
Design Standard:	ANSI/TIA-222-G-2		
Wind Speed Load Cases:	3-SEC. GUSTED WIND SPEED		
Load Case #1:	94 MPH Design Wind Speed - V_{ASD} (V_{ULT} = 121 MPH)		
Load Case #2:	50 MPH Wind with 1" Ice Accumulation		
Load Case #3	60 MPH Service Wind Speed		
Structure Class	Exposure Cat.	Topography Cat.	Crest Height
II	C	1	

EQUIPMENT LIST

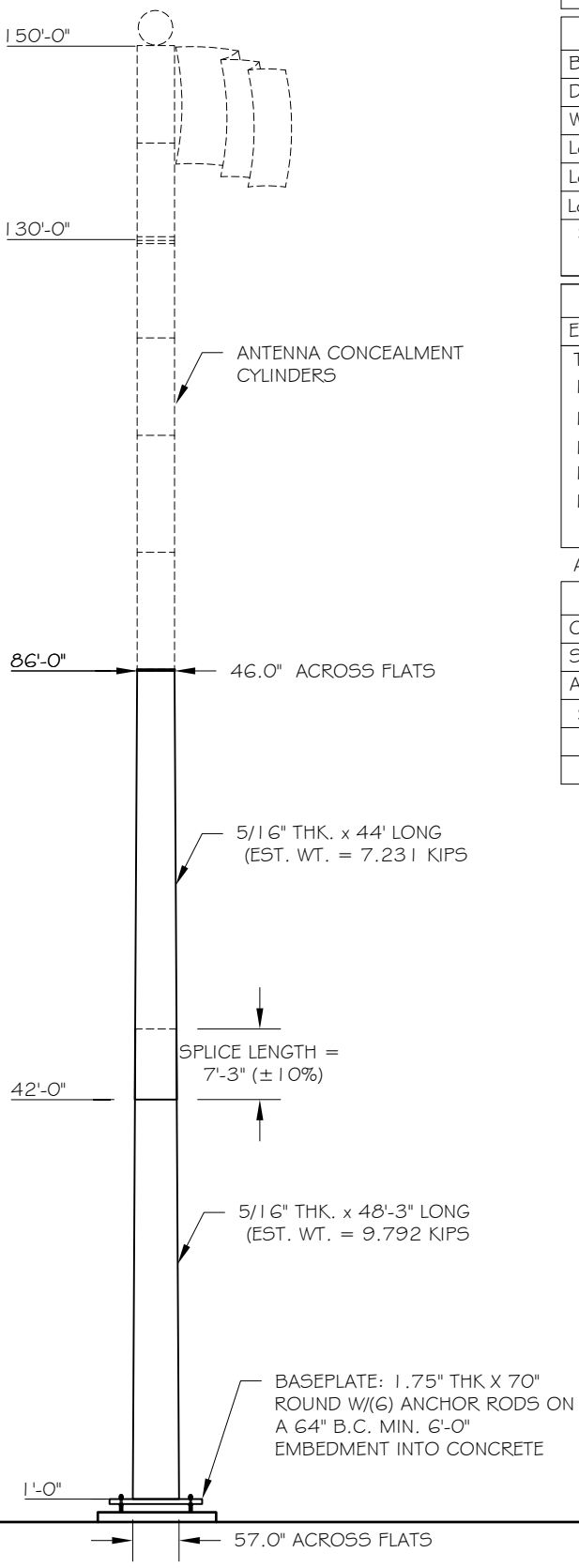
Elev.	Description
TOP	12' X 18' FLAG
145	46"Ø X 10' RADOME W/ INTERNAL ANTENNAS
135	46"Ø X 10' RADOME W/ INTERNAL ANTENNAS
125	46"Ø X 10' RADOME W/ INTERNAL ANTENNAS
115	46"Ø X 10' RADOME W/ INTERNAL ANTENNAS
104	46"Ø X 12' RADOME W/ INTERNAL ANTENNAS
92	46"Ø X 12' RADOME W/ INTERNAL ANTENNAS

ANTENNA FEED LINES ROUTED ON THE INSIDE OF THE POLE

STRUCTURE PROPERTIES

Cross-Section: 18-Sided	Taper: 0.13676 in/ft
Shaft Steel: ASTM A572 GR 65	Baseplate Steel: ASTM A572 GR 60
Anchor Rods: 2.25 in. A615 GR. 75 X 7'-0" LONG	

Sect.	Length (ft)	Thickness (in)	Splice (ft)	Top Dia. (in)	Bot Dia. (in)
1	44.00	0.3125	7.25	46.00	52.02
2	48.25	0.3125	0.00	50.40	57.00



STATE OF CONNECTICUT
MICHAEL F. PLAHOVINSAK
No. 25849
LICENSED PROFESSIONAL ENGINEER
9.20.2018

MICHAEL F. PLAHOVINSAK, P.E. #25849
Sole Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
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BASE REACTIONS FOR FOUNDATION DESIGN

Moment:	1330 ft-kip
Shear:	17 kip
Axial:	36 kip

TAPP
2427 Kelly Lane
Houston, Texas 77066
281-444-8277
QUALITY STEEL POLES. DELIVERED.

Page 2 of 2		Job Number:	23518-364
Eng: MFP		Customer Ref:	TP-16890
		Date:	9/20/2018
Structure:	130-FT FLAG POLE (FUT 150-FT)		
Site:	CT119 FARMINGTON		
Location:	HARTFORD CO., CT / 41°42'37.4", -72°52'54.9"		
Owner:	SECTOR SITE		
Revision No.:	Revision Date:		

FOUNDATION NOTES:

1. ALL FOUNDATION CONCRETE SHALL USE TYPE II CEMENT AND ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS. CONCRETE SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.46 AND SHALL BE AIR ENTRAINED 6% (±1.5%). ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318, "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", LATEST EDITION.

2. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 VERTICAL BARS SHALL BE GRADE 60, AND TIES OR STIRRUPS SHALL BE A MINIMUM OF GRADE 40. THE PLACEMENT OF ALL REINFORCEMENT SHALL CONFORM TO ACI 315, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION.

3. THE CONTRACTOR SHALL DETERMINE THE MEANS AND METHODS TO SUPPORT THE EXCAVATION DURING CONSTRUCTION. THE CONTRACTOR SHALL READ THE GEOTECHNICAL REPORT AND SHALL CONSULT THE GEOTECHNICAL ENGINEER AS NECESSARY PRIOR TO CONSTRUCTION.

4. FOUNDATION DESIGN IS BASED ON GEOTECHNICAL REPORT BY:
ENGINEER: HUDSON DESIGN GROUP
REPORT NO.: N/A (DATED 5/24/18)

5. ESTIMATED CONCRETE VOLUME = 30 CUBIC YARDS.

6. THE FOUNDATION HAS BEEN DESIGNED TO RESIST THE FOLLOWING FACTORED LOADS:
MOMENT: 1330 FT*KIPS
SHEAR: 17 KIPS
AXIAL: 36 KIPS

STATE OF CONNECTICUT
MICHAEL F. PLAHOVINSAK
No. 25849
PROFESSIONAL ENGINEER
9.20.2018

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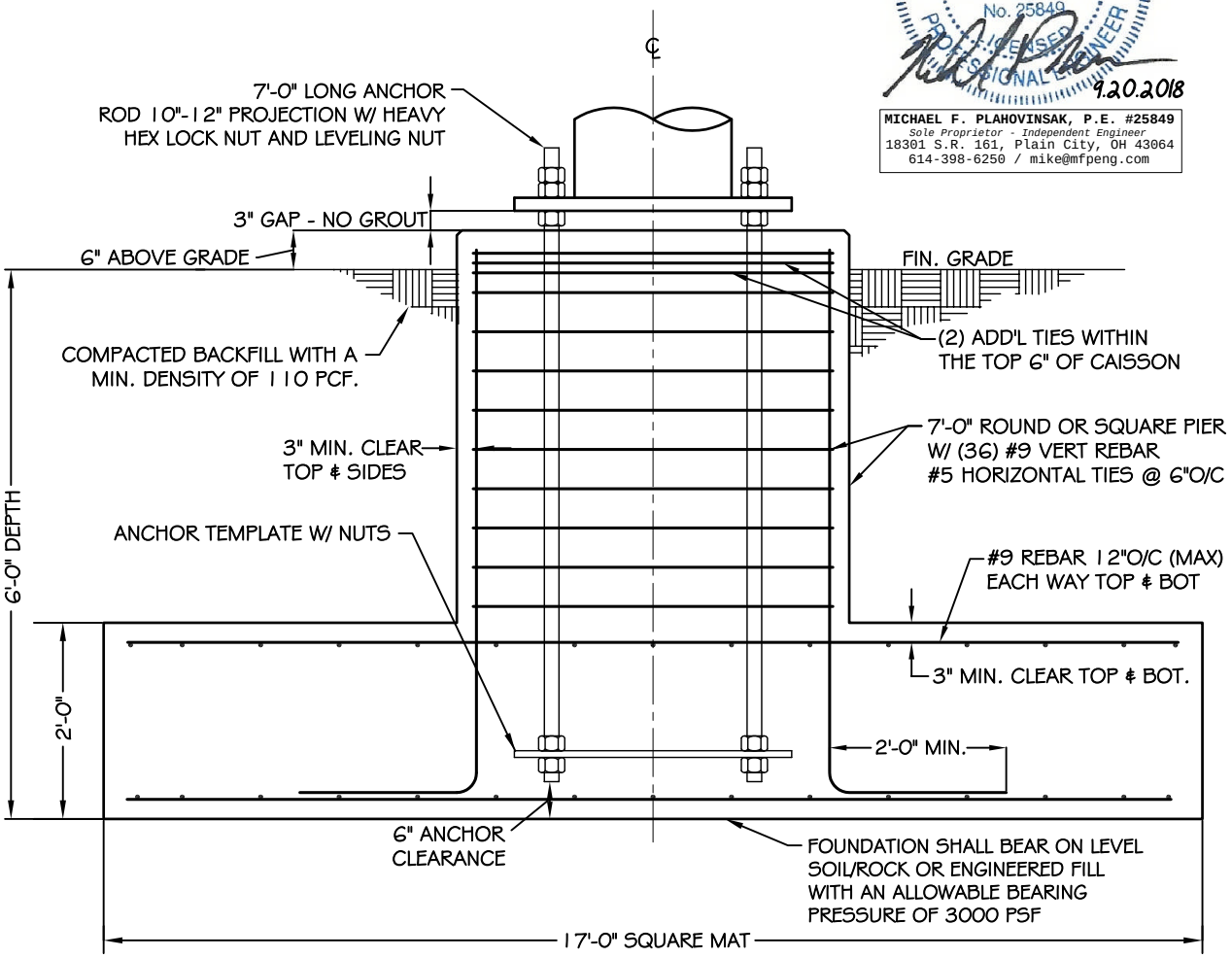

SPREAD FOOTING

NOT TO SCALE

tnxTower

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Job	Page
130-ft Flag Pole (Fut. 150-ft) - MFP #23518-364 r2	1 of 8
Project CT119 Farmington	**Date** 05:17:21 09/20/18
Client TP-16890	**Designed by** Mike

Tower Input Data

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 94 mph.
Structure Class II.
Exposure Category C.
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 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
ANSI/TIA-222-G wind speeds are Vasd winds. Refer to IBC Table 1609.3.1 for Vult wind speed conversions..
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.

Tapered Pole Section Geometry

Section	*Elevation* *ft*	*Section Length* *ft*	*Splice Length* *ft*	*Number of Sides*	*Top Diameter* *in*	*Bottom Diameter* *in*	*Wall Thickness* *in*	*Bend Radius* *in*	*Pole Grade*
L1	150.00-140.00	10.00	0.00	18	10.0000	10.0000	0.1875	0.7500	A572-65 (65 ksi)
L2	140.00-130.50	9.50	0.00	18	10.0000	10.0000	0.1875	0.7500	A572-65 (65 ksi)
L3	130.50-130.00	0.50	0.00	18	10.0000	15.0000	0.1875	0.7500	A572-65 (65 ksi)
L4	130.00-120.00	10.00	0.00	18	15.0000	15.0000	0.3125	1.2500	A572-65 (65 ksi)
L5	120.00-110.00	10.00	0.00	18	15.0000	15.0000	0.3125	1.2500	A572-65 (65 ksi)
L6	110.00-98.00	12.00	0.00	18	15.0000	15.0000	0.3125	1.2500	A572-65 (65 ksi)
L7	98.00-86.50	11.50	0.00	18	15.0000	15.0000	0.3125	1.2500	A572-65 (65 ksi)
L8	86.50-86.00	0.50	0.00	18	15.0000	46.0000	0.3125	1.2500	A572-65 (65 ksi)
L9	86.00-42.00	44.00	7.25	18	46.0000	52.0200	0.3125	1.2500	A572-65 (65 ksi)
L10	42.00-1.00	48.25		18	50.4031	57.0000	0.3125	1.2500	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	10.1253	5.8397	71.0370	3.4834	5.0800	13.9837	142.1675	2.9204	1.4300	7.627
	10.1253	5.8397	71.0370	3.4834	5.0800	13.9837	142.1675	2.9204	1.4300	7.627
L2	10.1253	5.8397	71.0370	3.4834	5.0800	13.9837	142.1675	2.9204	1.4300	7.627
	10.1253	5.8397	71.0370	3.4834	5.0800	13.9837	142.1675	2.9204	1.4300	7.627

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
L3	10.1253	5.8397	71.0370	3.4834	5.0800	13.9837	142.1675	2.9204	1.4300	7.627
	15.2025	8.8153	244.3603	5.2584	7.6200	32.0683	489.0422	4.4085	2.3100	12.32
L4	15.1832	14.5682	397.0434	5.2141	7.6200	52.1054	794.6093	7.2855	2.0900	6.688
	15.1832	14.5682	397.0434	5.2141	7.6200	52.1054	794.6093	7.2855	2.0900	6.688
L5	15.1832	14.5682	397.0434	5.2141	7.6200	52.1054	794.6093	7.2855	2.0900	6.688
	15.1832	14.5682	397.0434	5.2141	7.6200	52.1054	794.6093	7.2855	2.0900	6.688
L6	15.1832	14.5682	397.0434	5.2141	7.6200	52.1054	794.6093	7.2855	2.0900	6.688
	15.1832	14.5682	397.0434	5.2141	7.6200	52.1054	794.6093	7.2855	2.0900	6.688
L7	15.1832	14.5682	397.0434	5.2141	7.6200	52.1054	794.6093	7.2855	2.0900	6.688
	15.1832	14.5682	397.0434	5.2141	7.6200	52.1054	794.6093	7.2855	2.0900	6.688
L8	15.1832	14.5682	397.0434	5.2141	7.6200	52.1054	794.6093	7.2855	2.0900	6.688
	46.6614	45.3163	11950.5138	16.2191	23.3680	511.4051	23916.7524	22.6625	7.5460	24.147
L9	46.6614	45.3163	11950.5138	16.2191	23.3680	511.4051	23916.7524	22.6625	7.5460	24.147
	52.7743	51.2874	17324.2729	18.3562	26.4262	655.5728	34671.3415	25.6486	8.6055	27.538
L10	52.1389	49.6836	15749.3367	17.7822	25.6048	615.0941	31519.3968	24.8465	8.3209	26.627
	57.8311	56.2269	22827.3926	20.1241	28.9560	788.3476	45684.8220	28.1188	9.4820	30.342

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
1 5/8"	C	No	Inside Pole	145.00 - 1.00	12	No Ice	0.00	0.92
						1/2" Ice	0.00	0.92
						1" Ice	0.00	0.92
1 5/8"	C	No	Inside Pole	135.00 - 1.00	12	No Ice	0.00	0.92
						1/2" Ice	0.00	0.92
						1" Ice	0.00	0.92
1 5/8"	C	No	Inside Pole	125.00 - 1.00	12	No Ice	0.00	0.92
						1/2" Ice	0.00	0.92
						1" Ice	0.00	0.92
1 5/8"	C	No	Inside Pole	115.00 - 1.00	12	No Ice	0.00	0.92
						1/2" Ice	0.00	0.92
						1" Ice	0.00	0.92
1 5/8"	C	No	Inside Pole	105.00 - 1.00	12	No Ice	0.00	0.92
						1/2" Ice	0.00	0.92
						1" Ice	0.00	0.92
1 5/8"	C	No	Inside Pole	95.00 - 1.00	12	No Ice	0.00	0.92
						1/2" Ice	0.00	0.92
						1" Ice	0.00	0.92

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
12' x 18' Flag	C	None		0.0000	150.00	No Ice	12.02	12.02	0.10
						1/2" Ice	12.02	12.02	0.20
						1" Ice	12.02	12.02	0.30
Radome Cylinder (46"Ø x 10')	C	None		0.0000	145.00	No Ice	19.26	19.26	0.55
						1/2" Ice	27.71	27.71	0.89
						1" Ice	28.50	28.50	1.24
Radome Cylinder (46"Ø x 10')	C	None		0.0000	135.00	No Ice	19.26	19.26	0.55
						1/2" Ice	27.71	27.71	0.89
						1" Ice	28.50	28.50	1.24
Radome Cylinder (46"Ø x 10')	C	None		0.0000	125.00	No Ice	19.26	19.26	0.55
						1/2" Ice	27.71	27.71	0.89
						1" Ice	28.50	28.50	1.24
Radome Cylinder (46"Ø x 10')	C	None		0.0000	115.00	No Ice	19.26	19.26	0.55
						1/2" Ice	27.71	27.71	0.89
						1" Ice	28.50	28.50	1.24
Radome Cylinder (46"Ø x 12')	C	None		0.0000	104.00	No Ice	23.64	23.64	0.45
						1/2" Ice	33.74	33.74	0.85
						1" Ice	34.65	34.65	1.26
Radome Cylinder (46"Ø x 12')	C	None		0.0000	92.00	No Ice	23.64	23.64	0.45
						1/2" Ice	33.74	33.74	0.85
						1" Ice	34.65	34.65	1.26

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 90 deg - No Ice
5	0.9 Dead+1.6 Wind 90 deg - No Ice
6	1.2 Dead+1.6 Wind 180 deg - No Ice
7	0.9 Dead+1.6 Wind 180 deg - No Ice
8	1.2 Dead+1.0 Ice+1.0 Temp
9	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
10	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
11	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
12	Dead+Wind 0 deg - Service
13	Dead+Wind 90 deg - Service
14	Dead+Wind 180 deg - Service

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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	150 - 140	Pole	Max Tension	5	0.00	0.00	0.00
			Max. Compression	8	-3.59	0.00	0.00
			Max. Mx	4	-0.90	-12.25	0.00
			Max. My	2	-0.90	0.00	12.25
			Max. Vy	4	1.81	-12.25	0.00
			Max. Vx	2	-1.81	0.00	12.25
L2	140 - 130.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-6.66	0.00	0.00
			Max. Mx	4	-1.89	-34.67	0.00
			Max. My	2	-1.89	0.00	34.67
			Max. Vy	4	2.95	-34.67	0.00
			Max. Vx	2	-2.95	0.00	34.67
L3	130.5 - 130	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-6.71	0.00	0.00
			Max. Mx	4	-1.92	-36.14	0.00
			Max. My	2	-1.92	0.00	36.14
			Max. Vy	4	2.96	-36.14	0.00
			Max. Vx	2	-2.96	0.00	36.14
L4	130 - 120	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-10.44	0.00	0.00
			Max. Mx	4	-3.43	-71.72	0.00
			Max. My	2	-3.43	0.00	71.72
			Max. Vy	4	4.15	-71.72	0.00
			Max. Vx	2	-4.15	0.00	71.72
L5	120 - 110	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-14.28	0.00	0.00
			Max. Mx	4	-5.11	-118.92	0.00
			Max. My	2	-5.11	0.00	118.92
			Max. Vy	4	5.28	-118.92	0.00
			Max. Vx	2	-5.28	0.00	118.92
L6	110 - 98	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-18.72	0.00	0.00
			Max. Mx	4	-7.14	-189.83	0.00
			Max. My	2	-7.14	0.00	189.83
			Max. Vy	4	6.52	-189.83	0.00
			Max. Vx	2	-6.52	0.00	189.83
L7	98 - 86.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-23.22	0.00	0.00
			Max. Mx	4	-9.42	-270.47	0.00
			Max. My	2	-9.42	0.00	270.47
			Max. Vy	4	7.53	-270.47	0.00
			Max. Vx	2	-7.53	0.00	270.47
L8	86.5 - 86	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-23.37	0.00	0.00
			Max. Mx	4	-9.54	-274.23	0.00
			Max. My	2	-9.54	0.00	274.23
			Max. Vy	4	7.55	-274.23	0.00
			Max. Vx	2	-7.55	0.00	274.23
L9	86 - 42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-38.41	0.00	0.00
			Max. Mx	4	-19.61	-631.85	0.00
			Max. My	2	-19.61	0.00	631.85
			Max. Vy	4	11.90	-631.85	0.00
			Max. Vx	2	-11.90	0.00	631.85
L10	42 - 1	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-61.57	0.00	0.00
			Max. Mx	4	-35.50	-1330.13	0.00
			Max. My	2	-35.50	0.00	1330.13

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	4	16.79	-1330.13	0.00
			Max. Vx	2	-16.79	0.00	1330.13

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 140	15.663	13	1.4321	0.0000
L2	140 - 130.5	12.690	13	1.3882	0.0000
L3	130.5 - 130	10.089	13	1.1944	0.0000
L4	130 - 120	9.964	13	1.1897	0.0000
L5	120 - 110	7.553	13	1.1032	0.0000
L6	110 - 98	5.391	13	0.9491	0.0000
L7	98 - 86.5	3.353	13	0.6495	0.0000
L8	86.5 - 86	2.276	12	0.2197	0.0000
L9	86 - 42	2.253	12	0.2190	0.0000
L10	49.25 - 1	0.826	12	0.1455	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	12' x 18' Flag	13	15.663	1.4321	0.0000	11497
145.00	Radome Cylinder (46"Ø x 10')	13	14.164	1.4332	0.0000	11497
135.00	Radome Cylinder (46"Ø x 10')	13	11.274	1.2778	0.0000	2818
125.00	Radome Cylinder (46"Ø x 10')	13	8.736	1.1498	0.0000	6721
115.00	Radome Cylinder (46"Ø x 10')	13	6.432	1.0329	0.0000	3729
104.00	Radome Cylinder (46"Ø x 12')	13	4.277	0.8368	0.0000	2277
92.00	Radome Cylinder (46"Ø x 12')	12	2.664	0.3680	0.0000	1555

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 140	68.596	2	6.2729	0.0000
L2	140 - 130.5	55.599	2	6.0813	0.0000
L3	130.5 - 130	44.219	2	5.2354	0.0000
L4	130 - 120	43.673	2	5.2148	0.0000
L5	120 - 110	33.115	2	4.8375	0.0000
L6	110 - 98	23.641	2	4.1632	0.0000
L7	98 - 86.5	14.706	2	2.8497	0.0000
L8	86.5 - 86	9.982	2	0.9638	0.0000
L9	86 - 42	9.881	2	0.9606	0.0000
L10	49.25 - 1	3.623	2	0.6381	0.0000

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Plain City, OH 43064
Phone: 614-398-6250
FAX: mike@mfpeng.com

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	12' x 18' Flag	2	68.596	6.2729	0.0000	2692
145.00	Radome Cylinder (46"Ø x 10')	2	62.041	6.2777	0.0000	2692
135.00	Radome Cylinder (46"Ø x 10')	2	49.404	5.5996	0.0000	658
125.00	Radome Cylinder (46"Ø x 10')	2	38.297	5.0408	0.0000	1562
115.00	Radome Cylinder (46"Ø x 10')	2	28.202	4.5298	0.0000	862
104.00	Radome Cylinder (46"Ø x 12')	2	18.758	3.6713	0.0000	523
92.00	Radome Cylinder (46"Ø x 12')	2	11.685	1.6144	0.0000	355

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	150 - 140 (1)	TP10x10x0.1875	10.00	0.00	0.0	5.8397	-0.90	433.86	0.002
L2	140 - 130.5 (2)	TP10x10x0.1875	9.50	0.00	0.0	5.8397	-1.89	433.86	0.004
L3	130.5 - 130 (3)	TP15x10x0.1875	0.50	0.00	0.0	5.8397	-1.91	433.86	0.004
L4	130 - 120 (4)	TP15x15x0.3125	10.00	0.00	0.0	14.5682	-3.43	1082.34	0.003
L5	120 - 110 (5)	TP15x15x0.3125	10.00	0.00	0.0	14.5682	-5.11	1082.34	0.005
L6	110 - 98 (6)	TP15x15x0.3125	12.00	0.00	0.0	14.5682	-7.14	1082.34	0.007
L7	98 - 86.5 (7)	TP15x15x0.3125	11.50	0.00	0.0	14.5682	-9.42	1082.34	0.009
L8	86.5 - 86 (8)	TP46x15x0.3125	0.50	0.00	0.0	14.5682	-9.49	1082.34	0.009
L9	86 - 42 (9)	TP52.02x46x0.3125	44.00	0.00	0.0	50.3035	-19.61	3154.12	0.006
L10	42 - 1 (10)	TP57x50.4031x0.3125	48.25	0.00	0.0	56.2269	-35.50	3325.35	0.011

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	150 - 140 (1)	TP10x10x0.1875	12.25	86.58	0.141	0.00	86.58	0.000
L2	140 - 130.5 (2)	TP10x10x0.1875	34.67	86.58	0.400	0.00	86.58	0.000
L3	130.5 - 130 (3)	TP15x10x0.1875	34.67	86.58	0.400	0.00	86.58	0.000
L4	130 - 120 (4)	TP15x15x0.3125	71.72	322.60	0.222	0.00	322.60	0.000
L5	120 - 110 (5)	TP15x15x0.3125	118.92	322.60	0.369	0.00	322.60	0.000
L6	110 - 98 (6)	TP15x15x0.3125	189.82	322.60	0.588	0.00	322.60	0.000
L7	98 - 86.5 (7)	TP15x15x0.3125	270.47	322.60	0.838	0.00	322.60	0.000
L8	86.5 - 86 (8)	TP46x15x0.3125	270.47	322.60	0.838	0.00	322.60	0.000
L9	86 - 42 (9)	TP52.02x46x0.3125	631.85	3294.92	0.192	0.00	3294.92	0.000
L10	42 - 1 (10)	TP57x50.4031x0.3125	1330.13	3885.34	0.342	0.00	3885.34	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	150 - 140 (1)	TP10x10x0.1875	1.81	216.93	0.008	0.00	173.86	0.000
L2	140 - 130.5 (2)	TP10x10x0.1875	2.95	216.93	0.014	0.00	173.86	0.000
L3	130.5 - 130 (3)	TP15x10x0.1875	2.96	327.47	0.009	0.00	173.86	0.000
L4	130 - 120 (4)	TP15x15x0.3125	4.15	541.17	0.008	0.00	648.04	0.000
L5	120 - 110 (5)	TP15x15x0.3125	5.28	541.17	0.010	0.00	648.04	0.000

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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 $\frac{T_u}{\phi T_n}$
L6	110 - 98 (6)	TP15x15x0.3125	6.52	541.17	0.012	0.00	648.04	0.000
L7	98 - 86.5 (7)	TP15x15x0.3125	7.53	541.17	0.014	0.00	648.04	0.000
L8	86.5 - 86 (8)	TP46x15x0.3125	7.55	1488.63	0.005	0.00	648.04	0.000
L9	86 - 42 (9)	TP52.02x46x0.3125	11.90	1577.06	0.008	0.00	6604.03	0.000
L10	42 - 1 (10)	TP57x50.4031x0.3125	16.79	1662.67	0.010	0.00	7786.67	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	150 - 140 (1)	0.002	0.141	0.000	0.008	0.000	0.144 ✔	1.000	4.8.2 ✔
L2	140 - 130.5 (2)	0.004	0.400	0.000	0.014	0.000	0.405 ✔	1.000	4.8.2 ✔
L3	130.5 - 130 (3)	0.004	0.400	0.000	0.009	0.000	0.405 ✔	1.000	4.8.2 ✔
L4	130 - 120 (4)	0.003	0.222	0.000	0.008	0.000	0.226 ✔	1.000	4.8.2 ✔
L5	120 - 110 (5)	0.005	0.369	0.000	0.010	0.000	0.373 ✔	1.000	4.8.2 ✔
L6	110 - 98 (6)	0.007	0.588	0.000	0.012	0.000	0.595 ✔	1.000	4.8.2 ✔
L7	98 - 86.5 (7)	0.009	0.838	0.000	0.014	0.000	0.847 ✔	1.000	4.8.2 ✔
L8	86.5 - 86 (8)	0.009	0.838	0.000	0.005	0.000	0.847 ✔	1.000	4.8.2 ✔
L9	86 - 42 (9)	0.006	0.192	0.000	0.008	0.000	0.198 ✔	1.000	4.8.2 ✔
L10	42 - 1 (10)	0.011	0.342	0.000	0.010	0.000	0.353 ✔	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	150 - 140	Pole	TP10x10x0.1875	1	-0.90	433.86	14.4	Pass
L2	140 - 130.5	Pole	TP10x10x0.1875	2	-1.89	433.86	40.5	Pass
L3	130.5 - 130	Pole	TP15x10x0.1875	3	-1.91	433.86	40.5	Pass
L4	130 - 120	Pole	TP15x15x0.3125	4	-3.43	1082.34	22.6	Pass
L5	120 - 110	Pole	TP15x15x0.3125	5	-5.11	1082.34	37.3	Pass
L6	110 - 98	Pole	TP15x15x0.3125	6	-7.14	1082.34	59.5	Pass
L7	98 - 86.5	Pole	TP15x15x0.3125	7	-9.42	1082.34	84.7	Pass
L8	86.5 - 86	Pole	TP46x15x0.3125	8	-9.49	1082.34	84.7	Pass
L9	86 - 42	Pole	TP52.02x46x0.3125	9	-19.61	3154.12	19.8	Pass
L10	42 - 1	Pole	TP57x50.4031x0.3125	10	-35.50	3325.35	35.3	Pass
							Summary	
						Pole (L7)	84.7	Pass
						RATING =	**84.7**	**Pass**

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email: mike@mfpeng.com

Job 150-ft flag pole - MFP #23518-364	**Page** BP-G
Project CT119 Farmington	**Date** 9/10/2018
Client TAPP TP-16890	**Designed by** Mike

Anchor Rod and Base Plate Calculation

ANSI/TIA-222-G-2

Factored Base Reactions:		***Pole Shape:***	***Anchor Rods:***	***Base Plate:***
Moment:	1330 ft-kips	18-Sided	(6) 2.25 in. A615 GR. 75	1.75 in. x 70 in. Round
Shear:	17 kips	***Pole Dia. (D_f):***	Anchor Rods Evenly Spaced	fy = 60 ksi
Axial:	36 kips	57.00 in	On a 64 in Bolt Circle	

Anchor Rod Calculation According to TIA-222-G section 4.9.9

ϕ = 0.80 TIA 4.9.9
I_{bolts} = 3072.00 in^2 Momet of Inertia
P_u = 166 kips Tension Force
V_u = 3 kips Shear Force
R_{nt} = 325.00 kips Nominal Tensile Strength
η = 0.50 for detail type (d)

The following Interation Equation Shall Be Satisfied:

$$\left(\frac{P_u + \frac{V_u}{\eta}}{\phi R_{nt}} \right) \leq 1.0$$

$$0.661 \leq 1$$

Base Plate Calculation According to TIA-222-G

ϕ = 0.90 TIA 4.7
M_{PL} = 602.9 in-kip Plate Moment
L = 29.8 in Section Length
Z = 22.9 Plastic Section Modulus
M_P = 1371.0 in-kip Plastic Moment
ϕM_n = 1233.9 in-kip Factored Resistance

Calculated Moment vs Factored Resistance

602.88 in-kip $\leq$ 1234 in-kip

Anchor Rods Are Adequate	**66.1%** ☑
Base Plate is Adequate	**48.9%** ☑

Monopole Spread Footing Calculation

ANSI/TIA-222-G-2

Factored Base Reactions:		**Footing Dimensions:**		**Concrete:**
Moment:	1330 ft-kips	17 ft x 17 ft	7 ft Square Pier	f'c = 4000 psi
Shear:	17 kips	x 2 ft thick	w/6 in Reveal	Steel fy = 60 ksi
Axial:	36 kips	Bearing 6 ft B.G.	29.6 Yd3 Concrete	f = 0.75
Soil Backfill	100 pcf	Ultimate Bearing:	6000 psf	Water Table n/a

Foundation Weight

Weight of Pole	36.0	kips
Weight of Concrete	119.775	kips
Weight of Soil	96	kips
Bouyancy of Water	0.0	kips
Total	251.8	kips

Overturning Resistance:

Overturning Moment (M_u)	1440.5	ft-kips	1330 ft-kips + (17 kips x 6.5 ft)
Resisting Moment (R_s)	2140.0875	ft-kips	251.775 kips x 17 ft / 2
ϕ x R_s > M_u	$M_{overturning}$ / f M_{resist}		**89.7%** **OK**

Soil Bearing Pressure:

Eccentricity (e)	5.72	ft	1440.5 ft-kips / 251.775 kips
6(e)	34.3 ft	>	17.0 ft 6e > 17
Maximum Soil Bearing	3561.985	psf	Calculated across corners
Soil Overburden	-600	psf	
Net Soil Bearing	2961.985	psf	
Resisting Soil Bearing (R_s)	6000	psf	
Net Soil Bearing < ϕ x R_s	Net Bearing / f R_s		**65.8%** **OK**

Bending Moment in Pier:

Bending Moment	1406.5	ft-kips	1330 ft-kips + (17 kips x 4.5 ft)
Pier Steel Req'd (Loads)	16.09	in^2	
Min. Pier Steel	35.28	in^2	1/2% (Based on Square Pier)

Bending Moment in Footing:

Max Bending Moment	604.12233	ft-kips	Σ Moments about pier face
Footing Steel Req'd (Loads)	0.86	in^2/ft	
Min. Footing Steel	0.52	in^2/ft	0.18%

PROJECT SUMMARY

SCOPE OF WORK:	SectorSite, LLC. IS PROPOSING TO INSTALL THE FOLLOWING IMPROVEMENTS: 130' FLAGPOLE 48'x48' FENCED COMPOUND POWER. AND TELCO UTILITIES T-MOBILE EQUIPMENT CABINET & COMMUNITY GENERATOR ON (2) CONCRETE PADS (6) T-MOBILE ANTENNAS, WITH ASSOCIATED CABLING AND APPURTENANCES INSIDE THE FLAGPOLE.
SITE ADDRESS:	2 WESTWOODS DRIVE FARMINGTON, CT 06032
LATITUDE: LONGITUDE:	41° 42' 37.40" N 41.710389 N 72° 52' 54.90" W 72.881917 W
PROPERTY OWNER:	TOWN OF FARMINGTON 1 MONTEITH DRIVE FARMINGTON, CT 06032
TAX MAP#:	125-5
POWER COMPANY: TELEPHONE COMPANY:	EVERSOURCE FRONTIER COMMUNICATIONS
TOWER OWNER/APPLICANT:	SectorSite, LLC P.O. BOX 118 CONVENT STATION, NJ 07961
CO APPLICANT:	T-MOBILE 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002
PROJECT ENGINEERING:	DOUG ROBERTS, AIA. HUDSON DESIGN GROUP, LLC. 45 BEECHWOOD DRIVE NORTH ANDOVER, CT 01845

GENERAL NOTES:

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF SectorSite, LLC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

DRAWING INDEX

SECTOR SITE SITE AQUISITION

SECTOR SITE SITE AQUISITION

ATTORNEY

OTHER

SECTORSITE Communications Site Development

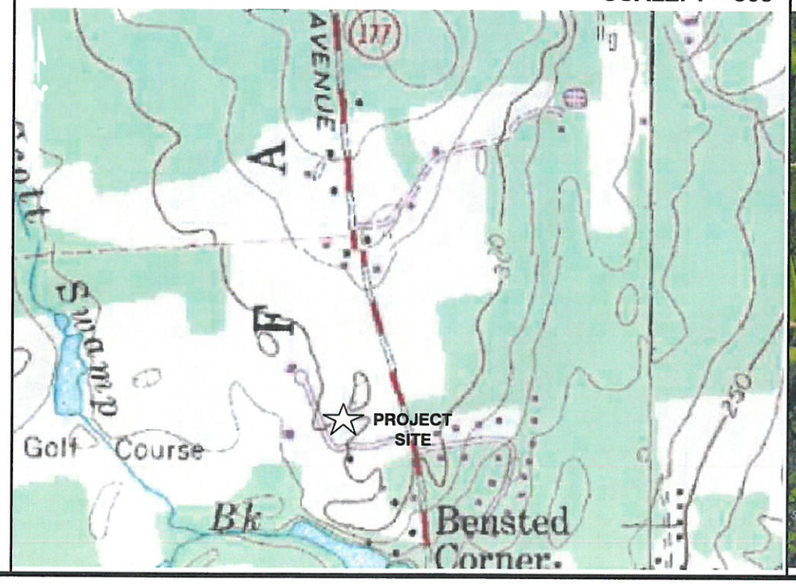
T-Mobile

SITE NUMBER: CT-119
SITE NAME: FARMINGTON SOUTHWEST FIRE DEPT.
DEVELOPMENT & MANAGEMENT PLAN - DOCKET NO.480

WORK WILL BE PERFORMED MONDAY THRU SATURDAY, FROM 8AM TO 5PM

T-MOBILE SITE ID: CTHA112A

VICINITY MAP SCALE: 1"=500'



AERIAL MAP SCALE: 1"=200'

SectorSite, LLC.
53 SOUTH JEFFERSON ROAD, SUITE M.
WHIPPANY, NJ 07981

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

STATE OF CONNECTICUT
DOUGLAS J. ROBERTS
NO. 4310
LICENSED ARCHITECT

CHECKED BY: DJR

APPROVED BY: DPH

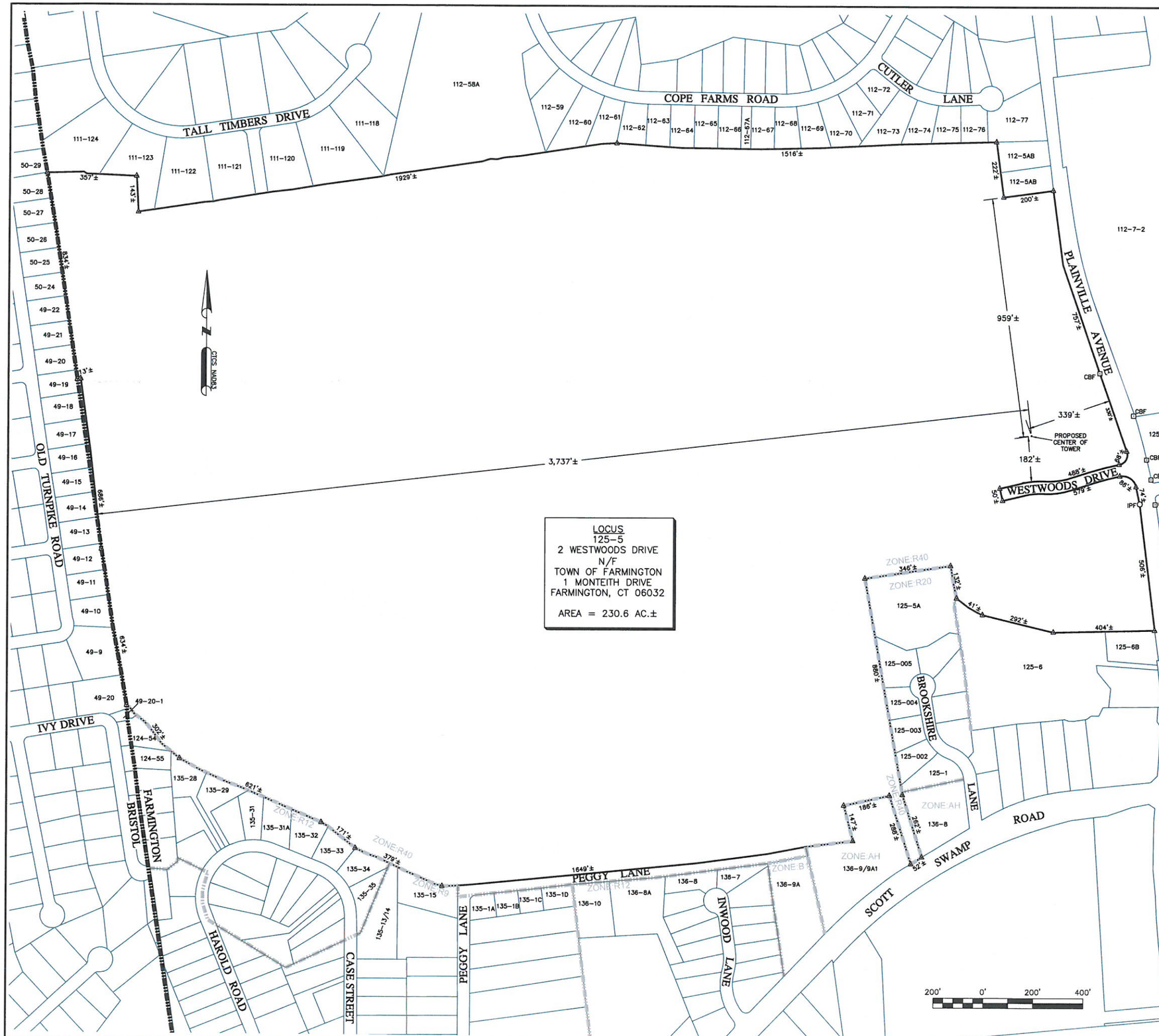
SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	09/21/18	REVISED PER COMMENTS	KAM
1	07/31/18	ADDED COMMON GENERATOR	SLY
0	06/08/18	ISSUED FOR REVIEW	KB/KAM

SITE NAME:
FARMINGTON
SOUTHWEST FIRE DEPT.
SITE NUMBER:
CT-119
T-MOBILE SITE ID: CTHA112A
SITE ADDRESS:
2 WESTWOODS DRIVE
FARMINGTON, CT 06032

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



LOCUS
125-5
2 WESTWOODS DRIVE
N/F
TOWN OF FARMINGTON
1 MONTEITH DRIVE
FARMINGTON, CT 06032

AREA = 230.6 AC.±

LEGEND

- PROPERTY LINE – SUBJECT PARCEL
- ABUTTERS PROPERTY LINE
- CONTOUR MINOR
- CONTOUR MAJOR

SITE SPECIFIC NOTES:

1. FIELD SURVEY DATE:	9/14/2017
2. HORIZONTAL DATUM:	NORTH AMERICAN DATUM OF 1983 (NAD83)
3. VERTICAL DATUM:	NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
4. OWNER:	TOWN OF FARMINGTON 1 MONTEITH DRIVE FARMINGTON, CT 06032
5. SITE NAME:	CT-119
6. SITE ADDRESS	2 WESTWOODS DRIVE FARMINGTON, CT 06032
7. APPLICANT:	SECTORSITE, LLC
8. JURISDICTION:	TOWN OF FARMINGTON
9. TAX ID:	125-5
10. DEED REFERENCE:	BOOK 274 PAGE 1075
11. PLAN REFERENCE:	PLAN 3098-C-50
12. ZONING DISTRICT:	R40

13. THE HORIZONTAL DATUM AND VERTICAL DATUM WERE DERIVED FROM AN RTK GPS SURVEY.

14. ALL UNDERGROUND UTILITY INFORMATION PRESENTED HEREON WAS DETERMINED FROM SURFACE EVIDENCE AND PLANS OF RECORD. ALL UNDERGROUND UTILITIES SHOULD BE LOCATED IN THE FIELD PRIOR TO COMMENCEMENT OF ALL SITE WORK. CALL DIGSAFE 1-800-322-4844 A MINIMUM OF 72 HOURS PRIOR TO PLANNED ACTIVITY.

15. ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS, THE PROPOSED IMPROVEMENTS ON THIS PROPERTY ARE LOCATED IN AN AREA DESIGNATED AS ZONE X (UNSHADED), AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. COMMUNITY PANEL NO. 09003C 0459 F EFFECTIVE DATE: 9/26/2008

16. FIELD SURVEY BY EDM TOTAL STATION.

17. THIS IS NOT A BOUNDARY SURVEY.

18. ALL PROPERTY LINES SHOWN ARE FROM DEEDS, PLANS OF RECORD, AND CONNECTICUT PARCEL GIS AND ARE APPROXIMATE ONLY.

19. ABUTTING PROPERTY LINES, ABUTTING STREET LINES AND ABUTTING BUILDING LOCATIONS ARE AS TAKEN FROM DEEDS, REFERENCE PLANS, THE TOWN OF FARMINGTON ASSESSORS' MAPS & GIS AND ARE APPROXIMATE ONLY.

20. NO WETLAND DELINEATION WAS FOUND DURING THE SURVEY.

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

TYPE OF SURVEY: IMPROVEMENT LOCATION SURVEY

BOUNDARY SURVEY CATEGORY: DEPENDENT RESURVEY

CLASS OF ACCURACY: HORIZONTAL CLASS D
TOPOGRAPGIC CLASS T-2

PURPOSE OF SURVEY: PROPOSED CELLULAR ANTENNA

PROPERTY LINES SHOWN HERON ARE FROM RECORD DEEDS, PLANS, AND GIS AS OVERLAID ON ANY MONUMENTATION OR OTHER EVIDENCE THAT MAY HAVE BEEN LOCATED DURING THE TOPOGRAPHIC SURVEY. A PROPERTY LINE SURVEY WAS NOT PERFORMED BY NORTHEAST SURVEY CONSULTANTS, PC, OR ITS AFFILIATES, AND AS A RESULT THE PROPERTY LINES SHOWN ARE APPROXIMATE AND DO NOT PRESENT A PROPERTY/ BOUNDARY OPINION.

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

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

CHARLES G. GIDMAN, P.L.S. #70103

SECTORSITE Communications Site Development

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WHIPPANY, NJ 07981

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

NORTHEAST SURVEY CONSULTANTS
116 Pleasant St. Ste. 302
P.O. Box 109
Easthampton, MA 01027
(413) 203-5144
northeastsurvey.com

STATE OF CONNECTICUT CHARLES G. GIDMAN 70103 REGISTERED LAND SURVEYOR

CHECKED BY: BCF

APPROVED BY: CGG

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	10/04/17	ISSUED FOR REVIEW	BCF

SITE NAME:
FARMINGTON SOUTHWEST FIRE DEPT.

SITE NUMBER:
CT-119

T-MOBILE SITE ID: CTHA112A

SITE ADDRESS:
2 WESTWOODS DRIVE
FARMINGTON, CT 06032

SHEET TITLE
ABUTTERS PLAN

SHEET NUMBER
C-1

BRISTOL ABUTTER PARCELS

49-9
2 OLD TURNPIKE RD
PAWELCZYK, GEORGE T & JUDITH L
2 OLD TURNPIKE RD
BRISTOL, CT 06010

49-10
6 OLD TURNPIKE RD
CARLSON, GARY R & MARIANNE E
6 OLD TURNPIKE RD
BRISTOL, CT 06010

49-11
16 OLD TURNPIKE RD
KANDYBOWICZ, KRYSTYNA & TADEUSZ
16 OLD TURNPIKE RD
BRISTOL, CT 06010

49-12
26 OLD TURNPIKE RD
FOX, LAURENCE J & JANICE M
26 OLD TURNPIKE RD
BRISTOL, CT 06010

49-13
36 OLD TURNPIKE RD
RONDEAU, KENNTH A II & CAROL E
36 OLD TURNPIKE RD
BRISTOL, CT 06010

49-14
46 OLD TURNPIKE RD
DIMATTIA, ULDERICO & ROSINA I
46 OLD TURNPIKE RD
BRISTOL, CT 06010

49-15
58 OLD TURNPIKE RD
DOBRYNSKI, JOAN L ESTATE OF
174 RED OAK HILL RD
FARMINGTON, CT 06032

49-16
68 OLD TURNPIKE RD
ADORNO, SEBASTIAN & JENNIFER A
68 OLD TURNPIKE RD
BRISTOL, CT 06010

49-17
78 OLD TURNPIKE RD
BURKE, SEAN & JESSICA V
78 OLD TURNPIKE RD
BRISTOL, CT 06010

49-18
88 OLD TURNPIKE RD
LEVINS, JAMES R & ROCHELLE O
88 OLD TURNPIKE RD
BRISTOL, CT 06010

49-19
98 OLD TURNPIKE RD
DEMAREST, JEFFREY S & JESSICA M
98 OLD TURNPIKE RD
BRISTOL, CT 06010

49-20
108 OLD TURNPIKE RD
BRUNI, THOMAS J
108 OLD TURNPIKE RD
BRISTOL, CT 06010

49-20
327 IVY DR
LOWREY, JAMES J & LESLIE R
327 IVY DR
BRISTOL, CT 06010

49-20-1
IVY DR
BRISTOL, CITY OF
111 NORTH MAIN ST
BRISTOL, CT 0601

49-21
118 OLD TURNPIKE RD
WASHBURN, GORDON W & TEXIE, ANN L U
118 OLD TURNPIKE RD
BRISTOL, CT 06010

49-22
128 OLD TURNPIKE RD
GENEST, MARC
128 OLD TURNPIKE RD
BRISTOL, CT 06010

50-24
138 OLD TURNPIKE RD
GRADY, LAURIE H & PETER M
138 OLD TURNPIKE RD
BRISTOL, CT 06010

50-25
148 OLD TURNPIKE RD
GRASSO, GERARD F & JAYNE
148 OLD TURNPIKE RD
BRISTOL, CT 06010

50-26
158 OLD TURNPIKE RD
COTE, PAUL F & SANDRA J
158 OLD TURNPIKE RD
BRISTOL, CT 06010

50-27
168 OLD TURNPIKE RD
CLEMENT, JOYCE
168 OLD TURNPIKE RD
BRISTOL, CT 06010

50-28
178 OLD TURNPIKE RD
GOULET, ALLAN & AMY
178 OLD TURNPIKE RD
BRISTOL, CT 06010

50-29
188 OLD TURNPIKE RD
LLOYD, ROYCE W & CLAUDETTE A
188 OLD TURNPIKE RD
BRISTOL, CT 06010

FARMINGTON ABUTTER PARCELS

111-58A
8138 COPE FARMS RD
FARMINGTON TOWN OF
1 MONTEITH DR
FARMINGTON, CT 06032

111-59
49 COPE FARMS RD
WALLACE, JUDY R.
49 COPE FARMS RD
FARMINGTON, CT 06032

111-118
56 TALL TIMBERS DR
DOYON FAMILY LIVING TRUST
56 TALL TIMBERS DR
FARMINGTON, CT 06032

111-119
52 TALL TIMBERS DR
HAYHURST, WILLIAREM
52 TALL TIMBERS DR
FARMINGTON, CT 06032

111-120
48 TALL TIMBERS DR
TOMLINSON, DOUGLAS W & PATRICIA A
48 TALL TIMBERS DR
FARMINGTON, CT 06032

111-121
44 TALL TIMBERS DR
DADDARIO, SUSAN T
44 TALL TIMBERS DR
FARMINGTON, CT 06032

111-122
40 TALL TIMBERS DR
GILL, CAROL A
40 TALL TIMBERS DR
FARMINGTON, CT 06032

111-123
36-TALL TIMBERS DR
BLUM, MICHAEL C
36-TALL TIMBERS DR
FARMINGTON, CT 06032

111-124
32 TALL TIMBERS DR
ARLAUSKAS, JOHN A &
694 LNKE SCENE DR
VENICE, FL 34293

112-5AB
740 PLAINVILLE AVE
SCB HOLDINGS LLC
70 SANFORD AVE
UNIONVILLE, CT 06085

112-7-2
9364 PLAINVILLE AVE
FARMINGTON TOWN OF
1 MONTEITH DR
FARMINGTON, CT 06032

112-7/8A
741 PLAINVILLE AVE
KRELL, PATRICIA A
397 MEADOW RD
FARMINGTON, CT 06032

112-60
47 COPE FARMS RD
PRICE, DAVID K
47 COPE FARMS RD
FARMINGTON, CT 06032

112-61
45 COPE FARMS RD
SILVA, ARMENIO & JOAQUINA
45 COPE FARMS RD
FARMINGTON, CT 06032

112-62
43 COPE FARMS RD
STIERER, JACK G &
43 COPE FARMS RD
FARMINGTON, CT 06032

112-63
41 COPE FARMS RD
KU, WENDY
41 COPE FARMS RD
FARMINGTON, CT 06032

112-64
39 COPE FARMS RD
SIMONEAU, PAUL J & JOANNE M
1250 MORSE BLVD
SINGER ISLNND FL 33404

112-65
37 COPE FARMS RD
BYER, JANET I
37 COPE FARMS DR
FARMINGTON, CT 06032

112-66
35 COPE FARMS RD
FEEHAN, KEVIN T
35 COPE FARMS RD
FARMINGTON, CT 06032

112-67
33 COPE FARMS RD
DALY, GERALD E &
33 COPE FARMS RD
FARMINGTON, CT 06032

112-67A
8139 COPE FARMS RD
FARMINGTON, TOWN OF
1 MONTEITH DR
FARMINGTON, CT 06032

112-68
31 COPE FARMS RD
TIWARI DHIRENDRA, KUMAR & ANUJA
31 COPE FARMS RD
FARMINGTON, CT 06032

112-69
29 COPE FARMS RD
BERLINSKI, EDWARD J
29 COPE FARMS RD
FARMINGTON, CT 06032

112-70
27 COPE FARMS RD
KIEVIT, WILLIAM F & KRISTEN P
27 COPE FARMS RD
FARMINGTON, CT 06032

112-73
4 CUTLER LN
GRAVES, LARRY R
4 CUTLER LN
FARMINGTON, CT 06032

112-74
6 CUTLER LN
FERN, BRIAN K & AUDREY M
6 CUTLER LN
FARMINGTON, CT 06032

112-75
8 CUTLER LN
KOZAK, TODD A &
8 CUTLER LN
FARMINGTON, CT 06032

112-76
10 CUTLER LN
CRUZ, ANGEL N & HELEN L
10 CUTLER LN
FARMINGTON, CT 06032

112-77
12 CUTLER LN
GALVIN, JOHN J JR & DONNA M
12 CUTLER LN
FARMINGTON, CT 06032

124-54
339 IVY DR
SUTTER, WILLIAM F III & ROSMARIE
339 IVY DR
BRISTOL, CT 06010

124-55
349 IVY DR
MCCABE, KELLY W & LEA L
349 IVY DR
BRISTOL, CT 06010

125-1
2 PINE HOLLOW RD
JOHNSON, KENNETH E & KIMBERLY A
2 PINE HOLLOW RD
FARMINGTON, CT 06032

125-1
7 BROOKSHIRE LN
FLANDERS, JESSICA M
7 BROOKSHIRE LN
FARMINGTON, CT 06032

125-002
15 BROOKSHIRE LN
LUTKOWSKI, ANDRZEJ M & BARBARA
15 BROOKSHIRE LN
FARMINGTON, CT 06032

125-003
17 BROOKSHIRE LN
PENNITO, JAMES W & LORI A
17 BROOKSHIRE LN
FARMINGTON, CT 06032

125-004
23 BROOKSHIRE LN
MOLONY, RANDALL C & SHEILA L
23 BROOKSHIRE LN
FARMINGTON, CT 06032

125-005
25 BROOKSHIRE LN
HOPKINSON, DAVID A
25 BROOKSHIRE LN
FARMINGTON, CT 06032

125-5A
8072 BROOKSHIRE LN
FARMINGTON, TOWN OF
1 MONTEITH DR
FARMINGTON, CT 06032

125-6
798 PLAINVILLE AVE
WETSTONE, SCOTT L & SHUSDOCK, GLORIA A
798 PLAINVILLE AVE
FARMINGTON, CT 06032

125-6B
796 PLAINVILLE AVE
BERRY, JOAN R & JOHN
796 PLAINVILLE AVE
FARMINGTON, CT 06032

125-12
1 GREENCREST DR
ORMSBY, DIANE M
1 GREENCREST DR
FARMINGTON, CT 06032

125-13
3 GREENCREST DR
HELM, WALTER
3 GREENCREST DR
FARMINGTON, CT 06032

125-14
5 GREENCREST DR
ZIEBKA, MICHAEL A & CHERYL H
5 GREENCREST DR
FARMINGTON, CT 06032

125-18
1 PINE HOLLOW RD
CHEN, FEI & LI HUI, LNU
1 PINE HOLLOW RD
FARMINGTON, CT 06032

135-1A
66 PEGGY LN
SLNTER, WILLIAM T
66 PEGGY LN
FARMINGTON, CT 06032

135-1B
70 PEGGY LN
SILVER, JOHN F & SHANNON L
70 PEGGY LN
FARMINGTON, CT 06032

135-1C
74 PEGGY LN
PELTIER, MICHAEL A & KELLY
74 PEGGY LN
FARMINGTON, CT 06032

135-1D
76 PEGGY LN
MNYUKH, YURI
76 PEGGY LN
FARMINGTON, CT 06032

135-13/14
46 CASE ST
FETERA, THOMAS & KRISTIN
46 CASE ST
FARMINGTON, CT 06032

135-15
61 PEGGY LN
KOLODZIEJ, HIRONIM
61 PEGGY LN
FARMINGTON, CT 06032

135-28
81 HAROLD RD
RICHARD, ROBIN M
81 HAROLD RD
FARMINGTON, CT 06032

135-29
83 HAROLD RD
HOGERTY, JACQUELINE
83 HAROLD RD
FARMINGTON, CT 06032

135-30
85 HAROLD RD
MILLER, COLLEEN A & JAMES E
85 HAROLD RD
FARMINGTON, CT 06032

135-31
87 HAROLD RD
DREZEK, TADEUSZ & TERESE
87 HAROLD RD
FARMINGTON, CT 06032

135-31A
8329 HAROLD RD
FARMINGTON, TOWN OF
1 MONTEITH DR
FARMINGTON, CT 06032

135-32
93 HAROLD RD
WILCZAK, RAFAL S & JUSTYNA
93 HAROLD RD
FARMINGTON, CT 06032

135-33
99 HAROLD RD
MULNWKA, JERZY J & ELZBIETA T
99 HAROLD RD
FARMINGTON, CT 06032

135-34
103 HAROLD RD
NGUYEN, DAVID T & DIANE H LE
103 HAROLD RD
FARMINGTON, CT 06032

135-35
105 HAROLD RD
CERASOLI, GENNARO
105 HAROLD RD
FARMINGTON, CT 06032

136-7
20 INWOOD LN
MACHADO, JORGE A & TATIANA
20 INWOOD LN
FARMINGTON, CT 06032

136-8
8770 SCOTT SWAMP RD
ROUTE 6 WESTWOODS ASSOCIATES
6 EXECUTIVE DR
FARMINGTON, CT 06032

136-8
22 INWOOD LN
WANG, TAO & YAN QIAOMEI
22 INWOOD LN
FARMINGTON, CT 06032

136-8A
8391 INWOOD LN
FARMINGTON, TOWN OF
1 MONTEITH DR
FARMINGTON, CT 06032

136-9/9A1
312 SCOTT SWAMP RD
ROUTE 6 WESTWOODS ASSOC LTD
6 EXECUTIVE DR
FARMINGTON, CT 06032

136-9A
326 SCOTT SWAMP RD
KOAPA LLC
326 SCOTT SWAMP RD
FARMINGTON, CT 06032

136-10
8612 PEGGY LN
NIMAN, JEFFERY
21 COBBS RD
WEST HARTFORD, CT 06107

136-47A
8772 SCOTT SWAMP RD
STAFFORDSHIRE ASSOCIATES
365 BREWSTER R
BRISTOL, CT 06010

SectorSite, LLC.
53 SOUTH JEFFERSON ROAD, SUITE M.
WHIPPANY, NJ 07981

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
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NORTHEAST SURVEY CONSULTANTS
116 Pleasant St. Ste. 302
P.O. Box 109
Easthampton, MA 01027
(413) 203-5144
northeastsurvey.com

STATE OF CONNECTICUT
CHAD E. S. HUDAK
970
LICENSED
LAND SURVEYOR

CHECKED BY: BCF

APPROVED BY: CGG

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	10/04/17	ISSUED FOR REVIEW	BCF

SITE NAME:
FARMINGTON SOUTHWEST FIRE DEPT.

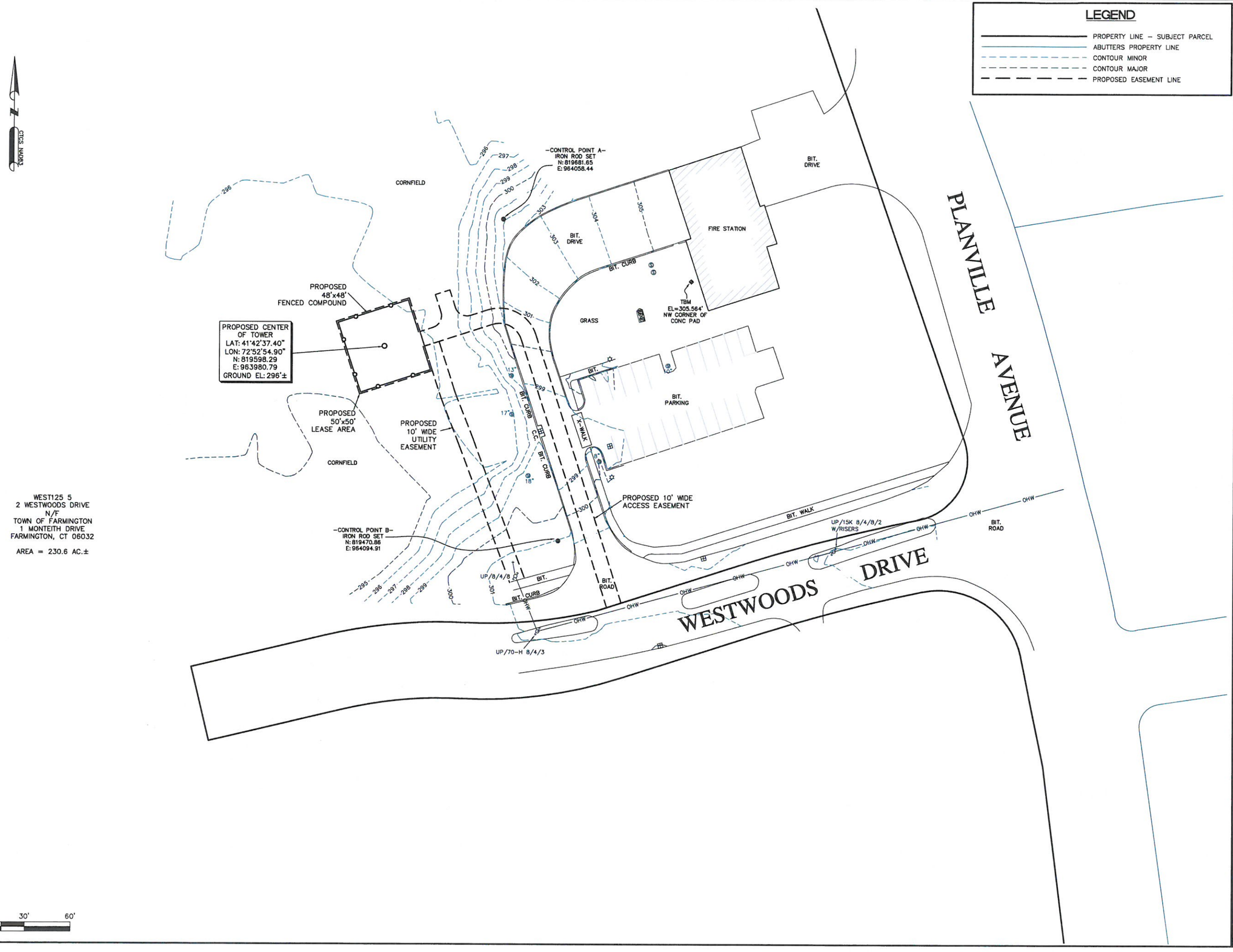
SITE NUMBER:
CT-119

T-MOBILE SITE ID: CTHA112A

SITE ADDRESS:
2 WESTWOODS DRIVE
FARMINGTON, CT 06032

SHEET TITLE
ABUTTERS LIST

SHEET NUMBER
C-2



SECTORSITE
Communications Site Development
SectorSite, LLC.
53 SOUTH JEFFERSON ROAD, SUITE M.
WHIPPANY, NJ 07981

HDG
HUDSON
Design Group LLC
45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
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Easthampton, MA 01027
(413) 203-5144
northeastsurvey.com

STATE OF CONNECTICUT
CHARLES G. GORMAN
LICENSED
LAND SURVEYOR

CHECKED BY: BCF

APPROVED BY: CGG

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	10/04/17	ISSUED FOR REVIEW	BCF

SITE NAME:
FARMINGTON
SOUTHWEST FIRE DEPT.

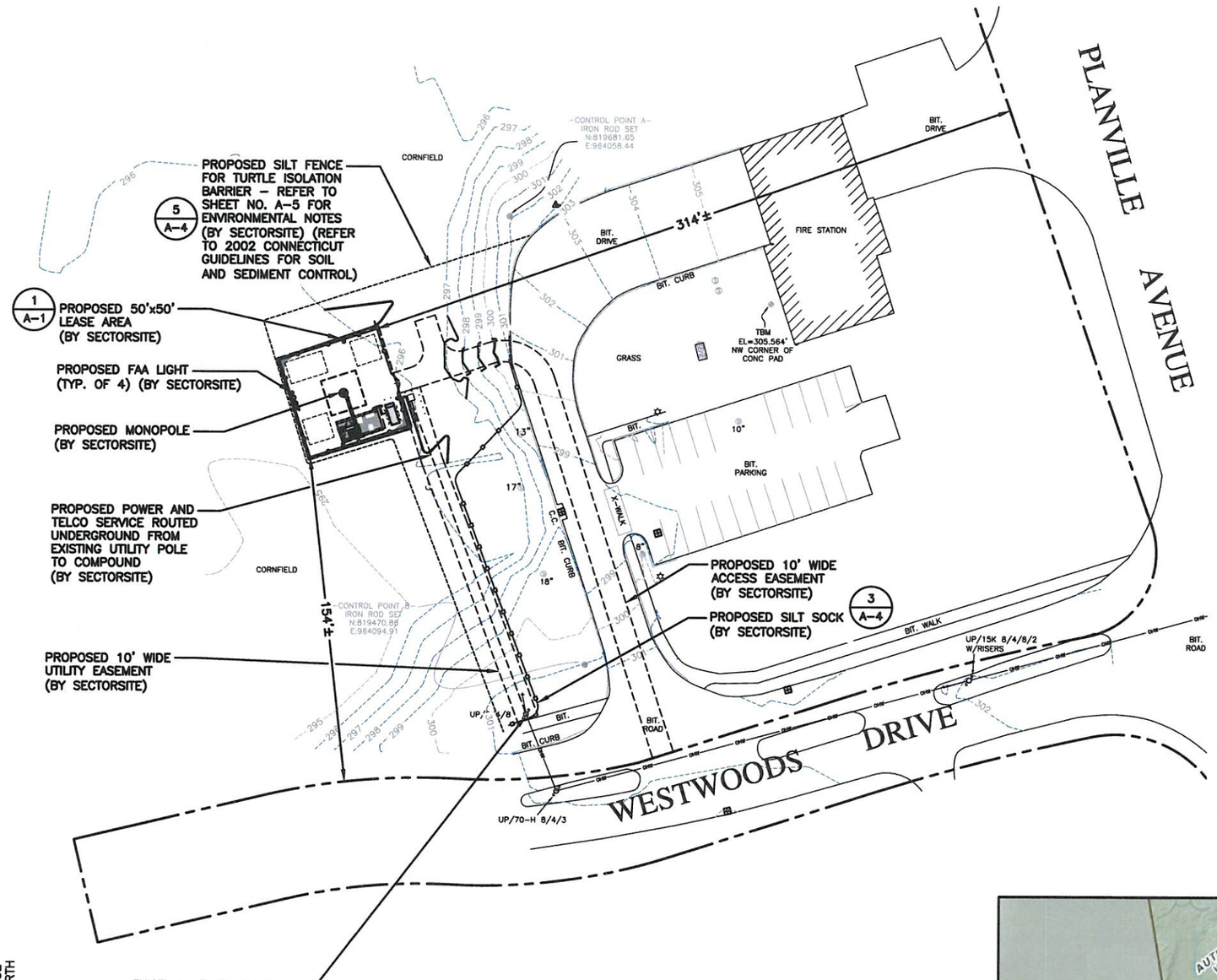
SITE NUMBER:
CT-119

T-MOBILE SITE ID: CTHA112A

SITE ADDRESS:
2 WESTWOODS DRIVE
FARMINGTON, CT 06032

SHEET TITLE
EXISTING CONDITIONS PLAN

SHEET NUMBER
C-3



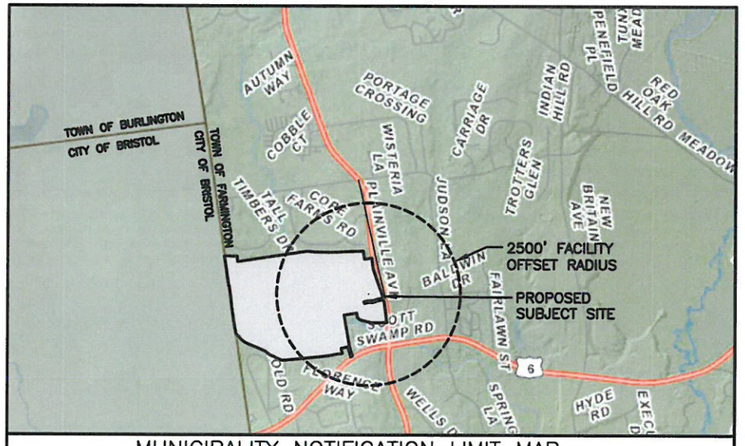
13°40'
MAGNETIC NORTH
TRUE NORTH

GRAPHIC SCALE
0 15 30 60 90 FEET

SITE PLAN (1 / C-4)
22x34 SCALE: 1"=30'-0"
11x17 SCALE: 1"=60'-0"

LEGEND

- PROPERTY LINE – SUBJECT PARCEL
- ABUTTERS PROPERTY LINE
- EXISTING CONTOUR LINE
- TREE LINE
- BARBED WIRE FENCE REMAINS
- OVERHEAD WIRE
- EXISTING CHAIN LINK FENCE
- EXISTING BUILDING
- CB CATCH BASIN
- CONIFEROUS TREE
- DECIDUOUS TREE
- STONEWALL
- WELL
- UTILITY POLE
- 1086 PROPOSED CONTOUR LINE
- FAA LIGHT



MUNICIPALITY NOTIFICATION LIMIT MAP

SECTORSITE Communications Site Development
SectorSite, LLC.
53 SOUTH JEFFERSON ROAD, SUITE M.
WHIPPANY, NJ 07981

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

STATE OF CONNECTICUT
DOUGLAS J. ROBERTS
NO. 4910
LICENSED ARCHITECT

CHECKED BY: DJR

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	09/21/18	REVISED PER COMMENTS	KAM
1	07/31/18	ADDED COMMON GENERATOR	SLY
0	06/08/18	ISSUED FOR REVIEW	KB/KAM

SITE NAME:
FARMINGTON SOUTHWEST FIRE DEPT.
SITE NUMBER:
CT-119
T-MOBILE SITE ID: CTHA112A
SITE ADDRESS:
2 WESTWOODS DRIVE
FARMINGTON, CT 06032

SHEET TITLE
PARTIAL SITE PLAN

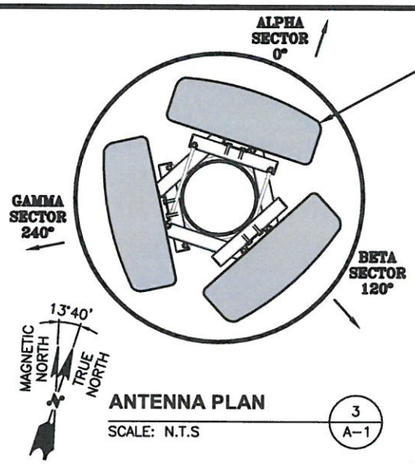
SHEET NUMBER
C-4

NOTE:

1. PROPOSED NEW TOWER AND FOUNDATION DESIGN BY OTHERS
2. VERIFY AZIMUTHS W/ RF ENGINEER.

LEGEND:

- PROPERTY LINE–SUBJECT PARCEL
- PROPERTY LINE–ABUTTERS
- STATE LINE
- CONTOUR LINE
- DELINEATED WETLAND LINE
- (E) BUILDING
- XXX–XX ASSESSORS MAP–BLOCK–LOT NO.
- (E) TREE LINE
- FAA LIGHT



PROPOSED ANTENNAS (2 PER SECTOR, TOTAL OF 6) (BY T–MOBILE) 5&6/A–8

ANTENNA PLAN 3/A–1
SCALE: N.T.S

PROPOSED SILT FENCE FOR TURTLE ISOLATION BARRIER – REFER TO SHEET NO. A–5 FOR ENVIRONMENTAL NOTES (BY SECTORSITE) 5/A–4

PROPOSED SWALE (TYP.) (BY SECTORSITE) 4/A–4

PROPOSED 10'x20' TURN AROUND/ PARKING AREA (BY SECTORSITE)

PROPOSED 10' GRAVEL DRIVEWAY (BY SECTORSITE) 3/A–4

PROPOSED RECESSED BITUMINOUS CURB TO REPLACE EXISTING CURB (BY SECTORSITE)

PROPOSED 50'x50' LEASE AREA (BY SECTORSITE) 1/A–3

PROPOSED 48'x48' FENCED COMPOUND (BY SECTORSITE)

PROPOSED FLAGPOLE (BY SECTORSITE)

PROPOSED ICE BRIDGE (BY T–MOBILE) 1/A–6

PROPOSED COMMUNITY GENERATOR AND H–FRAME FOR CARRIER AUTOMATIC TRANSFER SWITCHES AND FAA LIGHT CONTROLLER PANEL (BY SECTORSITE) 3/A–2

PROPOSED EQUIPMENT CABINET ON CONCRETE PADS (BY T–MOBILE) 1/A–2

PROPOSED FAA LIGHT (TYP. OF 4) (BY SECTORSITE)

PROPOSED BOLLARD (BY SECTORSITE) 2/A–3

PROPOSED POWER AND TELCO SERVICE ROUTED UNDERGROUND (BY SECTORSITE) 5/A–6

PROPOSED 10' WIDE UTILITY EASEMENT (BY SECTORSITE)

PROPOSED SILT SOCK (BY SECTORSITE) 3/A–4

PROPOSED POWER & TELCO SERVICE ROUTED UNDERGROUND FROM COMMUNITY H–FRAME TO PPC AND EMERSON CABINET

PROPOSED TRANSFORMER (BY SECTORSITE)

PROPOSED METER CENTER (BY SECTORSITE)

PROPOSED 10' WIDE ACCESS EASEMENT (BY SECTORSITE)

AVAILABLE CARRIER SPACE

AVAILABLE CARRIER SPACE

AVAILABLE CARRIER SPACE

50'±
48'±
24'±
10' GATE
BIT. CURB
13°40'
MAGNETIC NORTH
TRUE NORTH

COMPOUND PLAN 1/A–1
22x34 SCALE: 1"=10'–0"
11x17 SCALE: 1"=20'–0"

GRAPHIC SCALE 0 5 10 20 30 FEET

TOP OF PROPOSED TOWER
ELEV. = 130'± (AGL)
ELEV. = 427.0'± (AMSL)

℄ OF PROPOSED T–MOBILE ANTENNAS
ELEV. = 127'± (AGL)
ELEV. = 424.0'± (AMSL)

℄ OF PROPOSED T–MOBILE ANTENNAS
ELEV. = 117'± (AGL)
ELEV. = 414.0'± (AMSL)

℄ OF FUTURE CARRIER ANTENNAS
ELEV. = 107'± (AGL)
ELEV. = 404.0'± (AMSL)

℄ OF FUTURE CARRIER ANTENNAS
ELEV. = 97'± (AGL)
ELEV. = 394.0'± (AMSL)

PROPOSED ANTENNAS (1 PER SECTOR, TOTAL OF 3) (BY T–MOBILE)

PROPOSED ANTENNAS (1 PER SECTOR, TOTAL OF 3) (BY T–MOBILE)

FUTURE CARRIER ANTENNAS (TYP.)

PROPOSED FLAGPOLE (BY SECTORSITE)

TOWER NOTES:

1.) TOWER ELEVATION IS SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL REFER TO TOWER MANUFACTURER DRAWINGS FOR COMPLETE INSTALLATION AND BILL OF MATERIAL INFORMATION.
2.) TOWER MINIMUM DESIGN SPECIFICATIONS SHALL BE IN ACCORDANCE WITH ANSI/TIA/EIA 222–G "STRUCTURAL STANDARDS FOR SUPPORTING STRUCTURES AND ANTENNAS, REVISION G" AND GOVERNING FEDERAL, STATE, AND LOCAL CODE REQUIREMENTS
3.) TOWER MANUFACTURER SHALL BE RESPONSIBLE FOR DESIGN AND STRUCTURAL COMPONENTS OF THE TOWER.
4.) FINAL UTILITY CONNECTIONS SHALL BE COORDINATED WITH THE LOCAL UTILITIES.

PROPOSED FAA LIGHT (TYP.) (BY SECTORSITE)

PROPOSED EQUIPMENT CABINET ON CONCRETE PAD (BY T–MOBILE)

PROPOSED FINISHED GRADE
ELEV. = 1'± (AGL)/0.0' AGL
ELEV. = 297'± (AMSL)

EXISTING GRADE
ELEV. = 0.0'± (AGL)
ELEV. = 296.0'± (AMSL)

8'–0"±

SOUTH ELEVATION 2/A–1
22x34 SCALE: 1/8"=1'–0"
11x17 SCALE: 1/16"=1'–0"

GRAPHIC SCALE 0 4 8 16 24 FEET

SectorSite, LLC.
53 SOUTH JEFFERSON ROAD, SUITE M.
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HUDSON Design Group LLC
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FAX: (978) 336-5586

STATE OF CONNECTICUT
DOUGLAS J. ROBERTS
LICENSED ARCHITECT
NO. 4910

CHECKED BY: DJR

APPROVED BY: DPH

SUBMITTALS

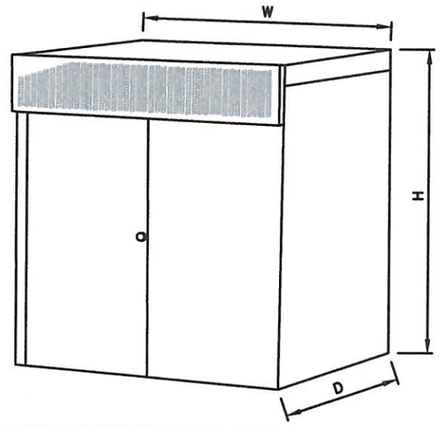
REV.	DATE	DESCRIPTION	BY
2	09/21/18	REVISED PER COMMENTS	KAM
1	07/31/18	ADDED COMMON GENERATOR	SLY
0	06/08/18	ISSUED FOR REVIEW	KB/KAM

SITE NAME:
FARMINGTON SOUTHWEST FIRE DEPT.
SITE NUMBER:
CT-119
T-MOBILE SITE ID: CTHA112A
SITE ADDRESS:
2 WESTWOODS DRIVE
FARMINGTON, CT 06032

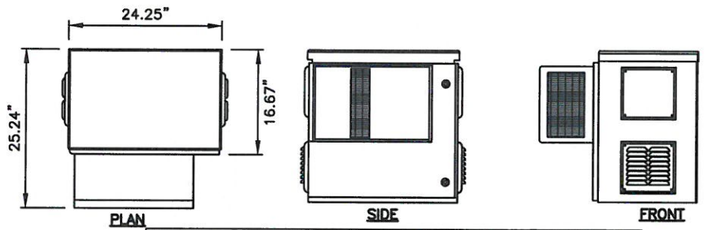
SHEET TITLE
COMPOUND PLAN AND ELEVATION

SHEET NUMBER
A-1

CABINET DIMENSIONS	
MODEL #	RBS 6102
MANUF.	ERICSSON
WIDTH	51.2"
DEPTH	27.6"
HEIGHT	57.1"
WEIGHT (W/O BACKUP BATTERIES)	728 LBS
CABINET CAN BE MOUNTED DIRECTLY TO SITE GROUND (INSTALL PER MANUFACTURER'S INSTALLATION GUIDELINES)	



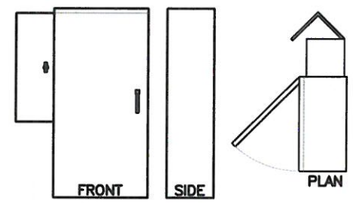
T-MOBILE
PROPOSED 6102 EQUIPMENT CABINET 6/A-2
SCALE: N.T.S



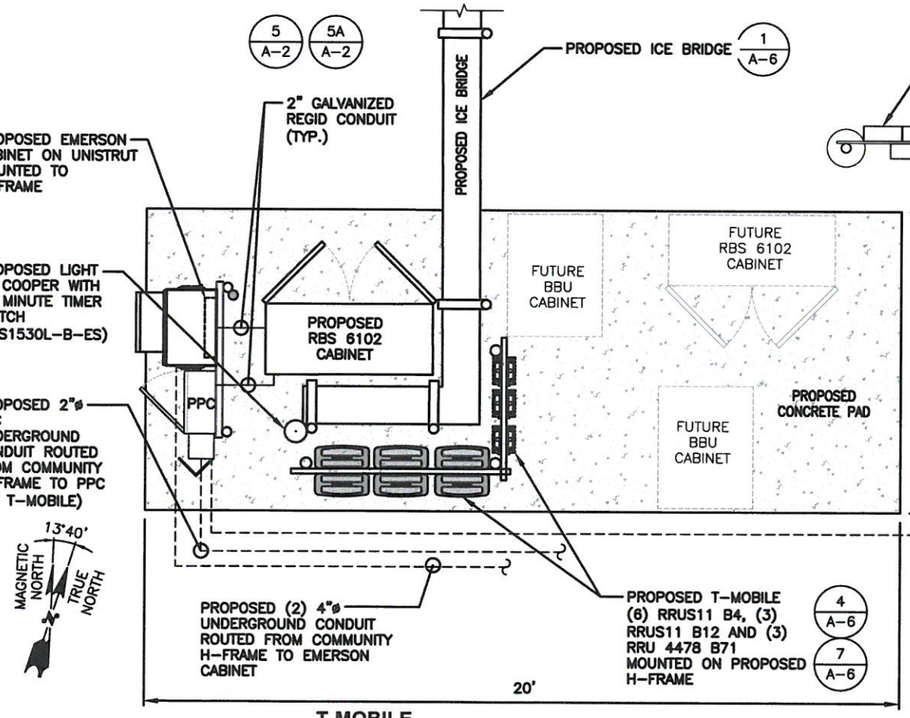
NETXTEND COMPACT 2416 CABINET – EMERSON NETWORK POWER

EMERSON CABINET 5/A-2
SCALE: N.T.S

PPC DIMENSIONS	
MODEL #	CS2S2-W736
MANUF.	EMERSON
WIDTH	30"
DEPTH	10"
HEIGHT	66"
WEIGHT	150 LBS
NOTE: INSTALL CABINET ANCHORS PER MANUFACTURER'S INSTALLATION GUIDELINES	

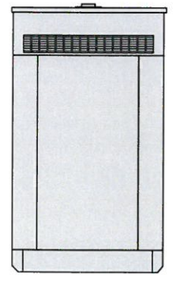


T-MOBILE
POWER PROTECTION CABINET (PPC) 4/A-2
SCALE: N.T.S



T-MOBILE
EQUIPMENT PLAN 1/A-2
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

GRAPHIC SCALE
0 1 2 4 6 FEET



GAS GENERATOR MODEL NO: SG100	
MANUF.	GENERAC
HEIGHT	68.6"
WIDTH	40.5"
LENGTH	111.8"
WEIGHT	3,022 LBS

ANCHOR GENERATOR TO CONCRETE PAD PER MANUFACTURER'S RECOMMENDATIONS

SECTORSITE
GENERATOR DETAIL 3/A-2
SCALE: N.T.S

SectorSite, LLC.
53 SOUTH JEFFERSON ROAD, SUITE M.
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45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

STATE OF CONNECTICUT
DOUGLAS J. ROBERTS
NO. 4910
LICENSED ARCHITECT

CHECKED BY: DJR

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	09/21/18	REVISED PER COMMENTS	KAM
1	07/31/18	ADDED COMMON GENERATOR	SLY
0	06/08/18	ISSUED FOR REVIEW	KB/KAM

SITE NAME:
FARMINGTON SOUTHWEST FIRE DEPT.
SITE NUMBER:
CT-119
T-MOBILE SITE ID: CTHA112A
SITE ADDRESS:
2 WESTWOODS DRIVE
FARMINGTON, CT 06032

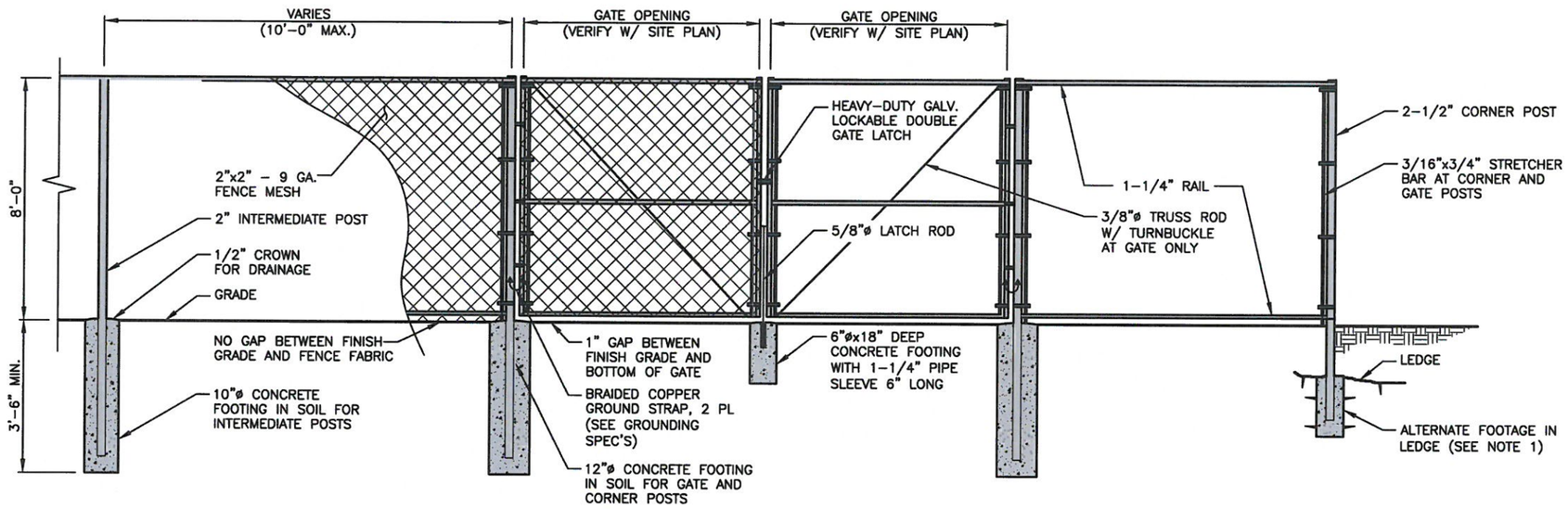
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-2

FENCE NOTES

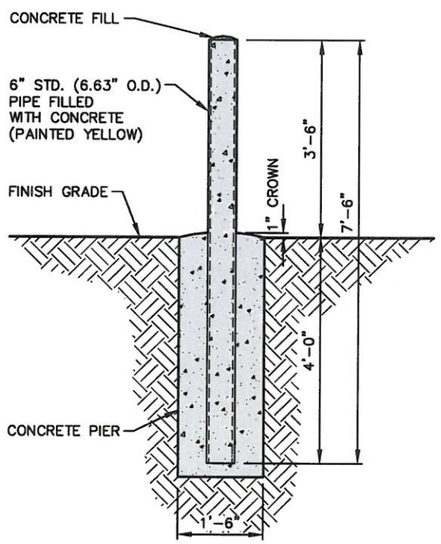
1. ALTERNATE FOOTINGS FOR ALL FENCE POSTS IN LEDGE: IF LEDGE IS ENCOUNTERED AT GRADE, OR AT A DEPTH SHALLOWER THAN 3'–6", CORE DRILL AN 8" DIA HOLE 18" INTO THE LEDGE. CENTER POST IN THE HOLE AND FILL WITH CONCRETE OR GROUT. IF LEDGE IS BELOW FINISH GRADE, COAT BACKFILLED SECTION OF POST WITH COAL TAR, AND BACKFILL WITH WELL–DRAINING GRAVEL.

2. ATTACH EACH GATE WITH 1–1/2 PAIR OF NON–LIFT–OFF TYPE, MALLEABLE IRON OR FORGING, PIN–TYPE HINGES. ASSEMBLIES SHALL ALLOW FOR 180° OF GATE TRAVEL.



CHAINLINK FENCE DETAIL (1 / A–3)

SCALE: N.T.S



BOLLARD DETAILS (2 / A–3)

22x34 SCALE: 1/2"=1'–0"
11x17 SCALE: 1/4"=1'–0"

SectorSite, LLC.
53 SOUTH JEFFERSON ROAD, SUITE M.
WHIPPANY, NJ 07981

HUDSON Design Group LLC
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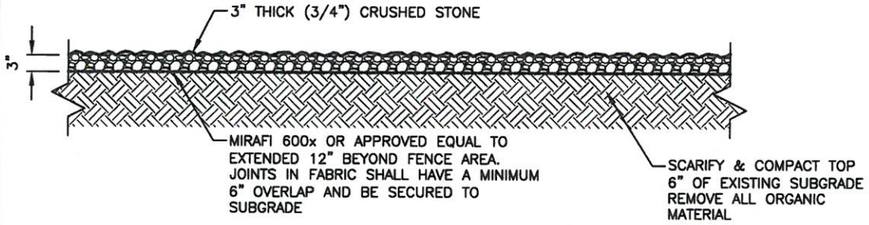
SHEET TITLE
FENCE DETAILS

SHEET NUMBER
A-3



COMPOUND COVERING DETAIL (1 / A-4)

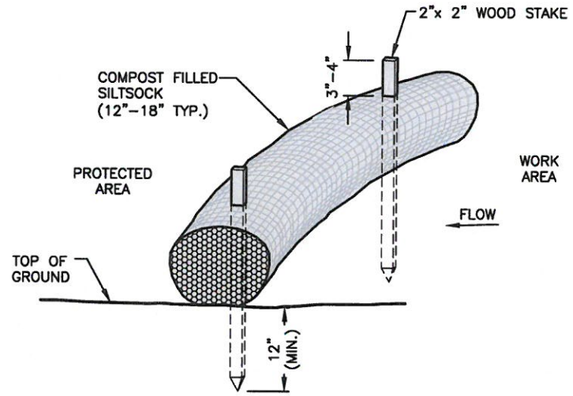
SCALE: N.T.S

CRUSHED GRAVEL	
SIEVE	% PASSING BY WEIGHT
5"	100
3 1/2"	90–100
1 1/2"	55–95
1/4"	25–60
#10	15–45
#40	5–25
#100	0–10
#200	0–5

PROCESSED AGGREGATE	
SIEVE	% PASSING BY WEIGHT
2 1/4"	100
2"	95–100
3/4"	50–75
1/4"	25–45
#40	5–20
#100	2–12

NOTES:

1. COMPOST ROLLS MUST BE PLACED ALONG SLOPE CONTOURS.
2. STAKES SHOULD BE DRIVEN IN THE MIDDLE OF THE COMPOST LEAVING 2–3 INCHES OF THE STAKE PROTRUDING ABOVE THE COMPOST.
3. STAKES SHOULD BE SPACED AT 3'–4' ℄ INTERVALS.
4. FIT COMPOST AROUND STORM DRAINS OR INLETS, THE COMPOST SHOULD BE BACK 1–1 1/12 FEET AND SHOULD DIRECT WATER FLOW TOWARD THE ANGLE OF DRAINAGE. IF ALL DRAINAGE ANGLES INTO THE INLET, SNAKE THE COMPOST ALL THE WAY AROUND THE INLET.
5. WHEN COMPOST ARE USED FOR FLAT GROUND APPLICATIONS, DRIVE THE STAKES STRAIGHT DOWN; WHEN INSTALLING COMPOST ON SLOPES, DRIVE THE STAKES PERPENDICULAR TO THE SLOPE.
6. USE 18" LONG STAKES FOR HARD, ROCKY SOIL. FOR SOFT, LOAMY SOIL, USE 24" STAKE FOR GREATER SECURITY.

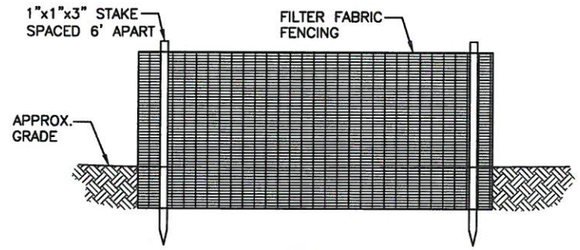


NOTES:
1. SILTSOCK SHALL BE FILTREXX SILTSOXX, OR APPROVED EQUAL.
2. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.
3. SILTSOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
4. SEE SPECIFICATIONS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

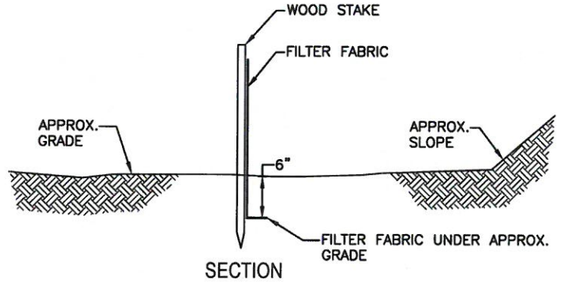
SILT SOCK DETAIL (3 / A-4)

SCALE: N.T.S

MIRAFI 600x OR APPROVED EQUAL TO EXTENDED 12" BEYOND FENCE AREA. JOINTS IN FABRIC SHALL HAVE A MINIMUM 6" OVERLAP AND BE SECURED TO SUBGRADE



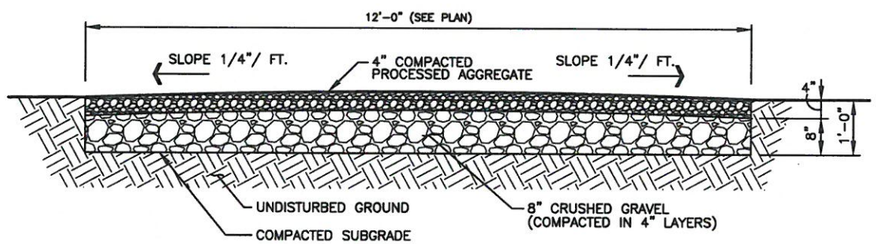
ELEVATION



SECTION

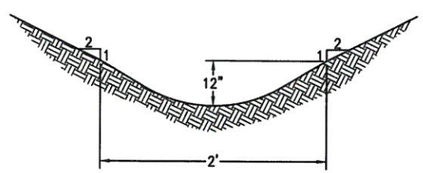
SILT FENCE DETAIL (5 / A-4)

SCALE: N.T.S



GRAVEL ACCESS DRIVE (2 / A-4)

SCALE: N.T.S



SWALE DETAIL (4 / A-4)

SCALE: N.T.S

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SHEET TITLE
EROSION CONTROL AND DETAILS

SHEET NUMBER
A-4

ENVIRONMENTAL NOTES

Eastern Box Turtle Protection Program

Eastern Box Turtle (Terrapenne carolina carolina) and Spotted Turtle (Clemmys guttata), State Special Concern species afforded protection under the Connecticut Endangered Species Act, are known to occur within the vicinity of the proposed communications tower facility at 2 Westwoods Drive in Farmington, Connecticut. The following turtle protection measures satisfy requirements from the Connecticut Department of Energy & Environmental Protection ("DEEP") Wildlife Division in accordance with their Natural Diversity Data Base ("NDDB") determination letter (No. 201708898) dated November 8, 2017; this determination is valid until November 8, 2019 provided the scope of the project has not changed and work has begun on the project prior to the expiration date.

It is of the utmost importance that the Contractor complies with the requirement for implementation of these protective measures and the education of its employees and subcontractors performing work on the project site. This protection plan shall be implemented if work will occur during the turtle's active period (April 1st to October 30th). The proposed communications tower facility would be sited in a cultivated agricultural field which does not provide suitable hibernating habitat for either the Eastern Box Turtle or Spotted Turtle; hibernation habitat typically includes woodlands, woodland edges and forested wetlands. Therefore, protection measures during the turtle's inactive period (October 1st through March 30th) are not required for this project.

All-Points Technology Corporation, P.C. ("APT") will serve as the Environmental Monitor for this project to ensure that these protection measures are implemented properly and will provide an education session on rare species that may be encountered and the project's proximity to sensitive habitat prior to the start of construction activities. The Contractor shall contact Dean Gustafson, Senior Environmental Scientist at APT, at least 5 business days prior to the start of any construction activities. Mr. Gustafson can be reached by phone at (860) 663-1697 ext. 201 or via email at dgustafson@allpointstech.com.

The proposed protection program consists of several components: education of all contractors and sub-contractors prior to initiation of work on the site; protective measures; periodic inspection of the construction project; and, reporting.

1. Isolation Measures & Sedimentation and Erosion Controls

a. Plastic netting used in a variety of erosion control products (i.e., erosion control blankets, fiber rolls [wattles], reinforced silt fence) has been found to entangle wildlife, including reptiles, amphibians, birds and small mammals, but particularly snakes. No permanent erosion control products or reinforced silt fence will be used on the project. Temporary erosion control products will use either erosion control blankets and fiber rolls composed of processed fibers mechanically bound together to form a continuous matrix (netless) or netting composed of planar woven natural biodegradable fiber to avoid/minimize wildlife entanglement.

b. Installation of sedimentation and erosion controls, required for erosion control compliance and creation of a barrier to possible migrating/dispersing turtles, shall be performed by the Contractor following clearing activities and prior to any earthwork. The Environmental Monitor will inspect the work zone area prior to and following erosion control barrier installation to ensure the area is free of Eastern Box Turtle and Spotted Turtle and document barriers have been satisfactorily installed. The intent of the barrier is to segregate the majority of the work zone and isolate it from foraging/migrating/dispersing turtles, snakes and other herpetofauna. Oftentimes complete isolation of a work zone is not feasible due to accessibility needs and locations of staging/material storage areas, etc. Although the barriers may not completely isolate the work zone, they will be positioned to deflect migrating/dispersal routes away from the work zone to minimize potential encounters with turtles, snakes and other herpetofauna.

c. The Contractor is responsible for daily inspections of the sedimentation and erosion controls for tears or breeches and accumulation levels of sediment, particularly following storm events that generate a discharge. APT will provide periodic inspections of the sedimentation and erosion controls throughout the duration of construction activities only as it pertains to protection of rare species. Third party monitoring of sedimentation and erosion controls will be performed by other parties, as necessary, under applicable local, state and/or federal regulations.

d. The extent of the sedimentation and erosion controls will be as shown on the site plans. The Contractor shall have additional sedimentation and erosion controls stockpiled on site should field or construction conditions warrant extending the controls as directed by APT.

e. No equipment, vehicles or construction materials shall be stored outside of the sedimentation and erosion controls within 100 feet of wetlands or watercourses.

f. All sedimentation and erosion controls shall be removed within 30 days of completion of work and permanent stabilization of site soils so that reptile and amphibian movement between uplands and wetlands is not restricted.

2.Contractor Education

a. Prior to work on site, the Contractor shall attend an educational session at the pre-construction meeting with APT. This orientation and educational session will consist of an introductory meeting with APT providing photos of Eastern Box Turtle and Spotted Turtle emphasizing the non-aggressive nature of these species, the absence of need to destroy animals that might be encountered and the need to follow Protective Measures as described in Section 4 below. Workers will also be provided information regarding the identification of other turtles, snakes and common herpetofauna species that could be encountered.

b. The education session will also focus on means to discriminate between the species of concern and other native species to avoid unnecessary "false alarms? Encounters with any species of turtles or snakes will be documented.

c. The Contractor will be provided with cell phone and email contacts for APT personnel to immediately report any encounters with eastern box turtle, spotted turtle or other species. Educational poster materials will be provided by APT and displayed on the job site to maintain worker awareness as the project progresses.

3.Petroleum Materials Storage and Spill Prevention

a. Certain precautions are necessary to store petroleum materials, refuel and contain and properly clean up any inadvertent fuel or petroleum (i.e., oil, hydraulic fluid, etc.) spill to avoid possible impact to nearby habitats.

b. A spill containment kit consisting of a sufficient supply of absorbent pads and absorbent material will be maintained by the Contractor at the construction site throughout the duration of the project. In addition, a waste drum will be kept on site to contain any used absorbent pads/material for proper and timely disposal off site in accordance with applicable local, state and federal laws.

c. The following petroleum and hazardous materials storage and refueling restrictions and spill response procedures will be adhered to by the Contractor.

i. Petroleum and Hazardous Materials Storage and Refueling

1. Refueling of vehicles or machinery shall occur a minimum of 100 feet from wetlands or watercourses and shall take place on an impervious pad with secondary containment designed to contain fuels.

2.Any fuel or hazardous materials that must be kept on site shall be stored on an impervious surface utilizing secondary containment a minimum of 100 feet from wetlands or watercourses.

ii. Initial Spill Response Procedures

1. Stop operations and shut off equipment.

2.Remove any sources of spark or flame.

3.Contain the source of the spill.

4.Determine the approximate volume of the spill.

5.Identify the location of natural flow paths to prevent the release of the spill to sensitive nearby waterways or wetlands.

6. Ensure that fellow workers are notified of the spill.

iii.Spill Clean Up & Containment

1. Obtain spill response materials from the on-site spill response kit. Place absorbent materials directly on the release area.

2.Limit the spread of the spill by placing absorbent materials around the perimeter of the spill.

3.Isolate and eliminate the spill source.

4.Contact the appropriate local, state and/or federal agencies, as necessary.

5.Contact a disposal company to properly dispose of contaminated materials in accordance with all local, state and federal regulations.

iv.Reporting

1. Complete an incident report.

2.Submit a completed incident report to the appropriate Town of Farmington, Connecticut Siting Council and other applicable local, state and federal officials.

4.Turtle Protective Measures

a. Prior to the start of construction each day, the Contractor shall search the entire work area for turtles.

b. If a turtle is found, it shall be immediately moved, unharmed, by carefully grasped in both hands, one on each side of the shell, between the turtle's forelimbs and the hind limbs, and placed just outside of the isolation barrier in the same approximate direction it was walking.

c. Special care shall be taken by the Contractor during early morning and evening hours so that possible basking or foraging turtles are not harmed by construction activities.

5.Herbicide and Pesticide Restrictions

a. The use of herbicides and pesticides at the proposed communications tower facility shall be avoided when possible. In the event herbicides and/or pesticides are required at the proposed facility, their use will be used in accordance with Integrated Pest Management ("IPM") principles with particular attention to minimize applications within 100 feet of wetland or watercourse resources. No applications of herbicides or pesticides are allowed within actual wetland or watercourse resources.

6. Reporting

a. Daily Compliance Monitoring Reports (brief narrative and applicable photos) documenting each APT inspection will be submitted by APT to SectorSite for compliance verification. Any observations of turtles will be included in the reports.

b. Following completion of the construction project, APT will provide a Compliance Monitoring Summary Report to SectorSite documenting implementation of the rare species and wetland protection program, monitoring and any species observations. SectorSite will provide a copy of the Compliance Monitoring Summary Report to the Connecticut Siting Council for compliance verification.

Any observations of Eastern Box Turtle will be reported to CTDEEP by APT, with photo-documentation (if possible

SECTORSITE
Communications Site Development

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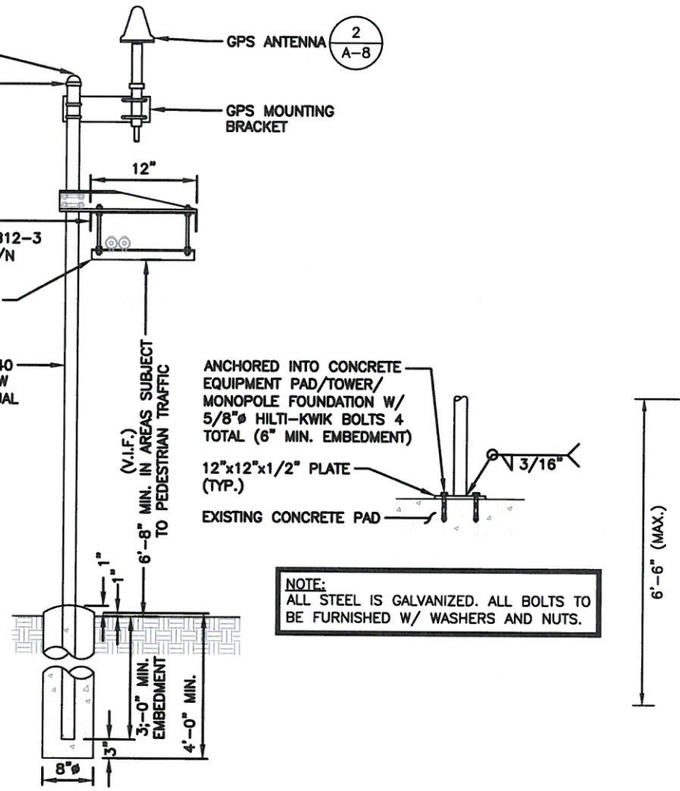
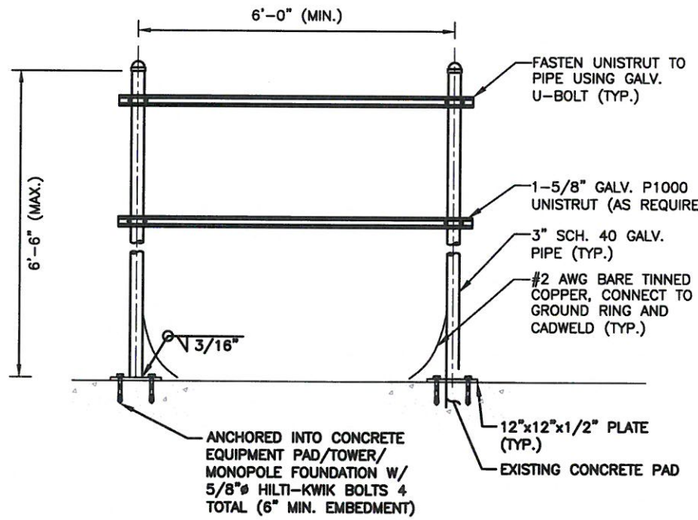
SHEET TITLE
ENVIRONMENTAL NOTES

SHEET NUMBER
A-5

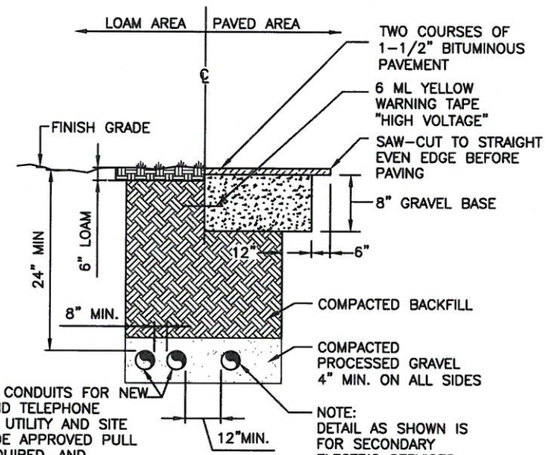


NOTE:
ALL STEEL IS GALVANIZED. ALL BOLTS TO BE FURNISHED W/ WASHERS AND NUTS.

T-MOBILE
COAX ICE BRIDGE DETAIL 1 / A-6
SCALE: N.T.S



TYPICAL H-FRAME DETAIL 2 / A-6
SCALE: N.T.S



SCHEDULE 40 CONDUITS FOR NEW ELECTRICAL AND TELEPHONE SERVICES SEE UTILITY AND SITE PLANS. PROVIDE APPROVED PULL BOXES AS REQUIRED, AND COORDINATE INSTALLATION W/ ALL UTILITY COMPANIES FOR INTERFACING AT TERMINATION POINTS. PROVIDE FULL LENGTH PULL ROPES (TYP.).

BURIED CONDUIT DETAIL 3 / A-6
SCALE: N.T.S

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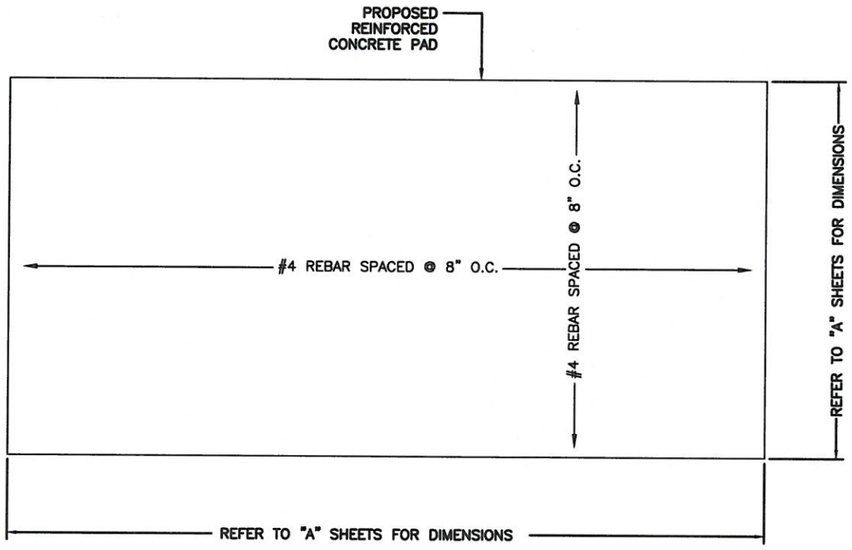
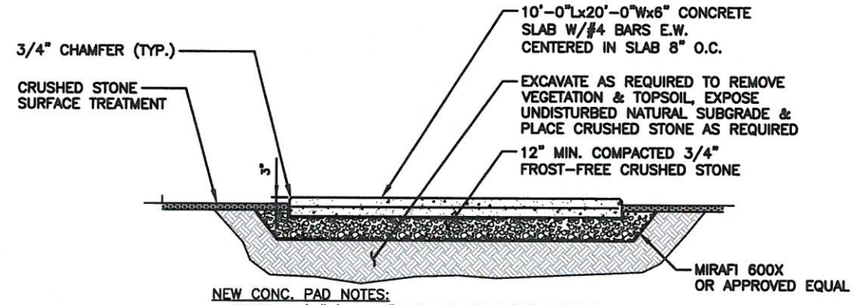
SHEET TITLE
DETAILS

SHEET NUMBER
A-6



EQUIPMENT CONCRETE PAD PLAN (1 / A-7)

SCALE: N.T.S



NEW CONC. PAD NOTES:
- REINF. W/ #4's @ 8" O.C. EA. WAY (MID-DEPTH).
- REINF. SHALL BE ASTM A615-GRADE 60. SECURE IN PLACE.
- REINFORCEMENT IN EQUIPMENT SLAB TO BE WELDED AND BONDED TO GROUND RING

T-MOBILE
CONCRETE PAD DETAIL (2 / A-7)

SCALE: N.T.S

FOUNDATION NOTES & CONCRETE SPECIFICATIONS

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

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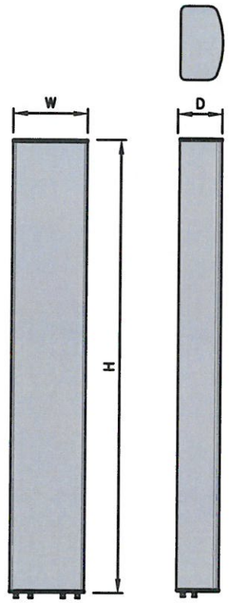
SHEET TITLE
CONCRETE PAD
DETAILS

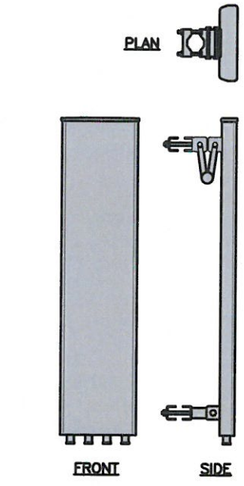
SHEET NUMBER
A-7

L600 ANTENNA DIMENSIONS	
MODEL #	FHH-65C-R3
MANUF.	COMMSCOPE
HEIGHT	96"
WIDTH	15.6"
DEPTH	9"
WEIGHT	69.4 LBS



ANTENNA DETAIL 1 A-8
SCALE: N.T.S

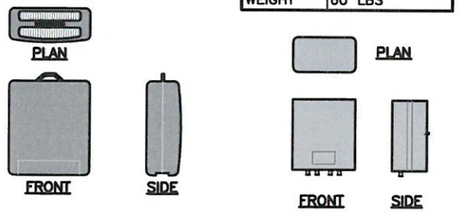
L19 ANTENNA DIMENSIONS	
MODEL #	APX16DWV-16DWV-S-E-A20
MANUF.	RFS
WIDTH	13"
DEPTH	3.15"
HEIGHT	55.9"
WEIGHT	40.7 LBS



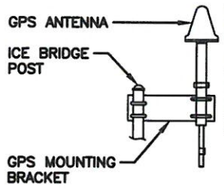
ANTENNA DETAIL 2 A-8
SCALE: N.T.S

RRUS11 DIMENSIONS	
MODEL #	RRUS11 B12
MODEL #	RRUS11 B4
MANUF.	ERICSSON
WIDTH	17"
DEPTH	7"
HEIGHT	20"
WEIGHT	50.6 LBS

RRUS 4478 B71 DIMENSIONS	
MODEL #	RRUS 4478 B71
MANUF.	ERICSSON
HEIGHT	15"
WIDTH	13.2"
DEPTH	7.4"
WEIGHT	60 LBS

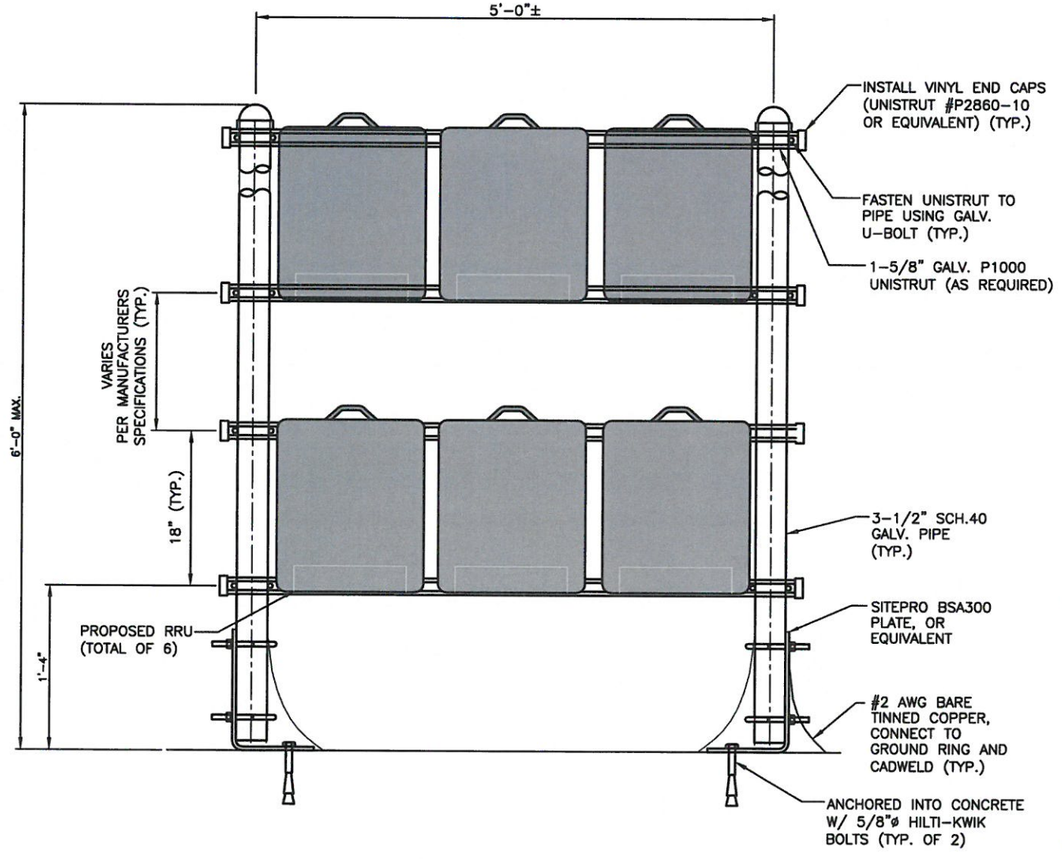


PROPOSED RADIOS DETAIL 3 A-8
SCALE: N.T.S



GPS DIMENSIONS	
MODEL #	CCAH32ST03
MANUF.	NAIS
HEIGHT	3.9"
WIDTH	3.5"

T-MOBILE
GPS ANTENNA MOUNTING DETAIL 4 A-8
SCALE: N.T.S



PROPOSED RRU MOUNTING DETAIL ON H-FRAME 5 A-8
SCALE: N.T.S

SECTORSITE
Communications Site Development
SectorSite, LLC.
53 SOUTH JEFFERSON ROAD, SUITE M.
WHIPPANY, NJ 07981

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

STATE OF CONNECTICUT
DOUGLAS P. ROBERTS
NO. 4310
LICENSED ARCHITECT

CHECKED BY: DJR

APPROVED BY: DPH

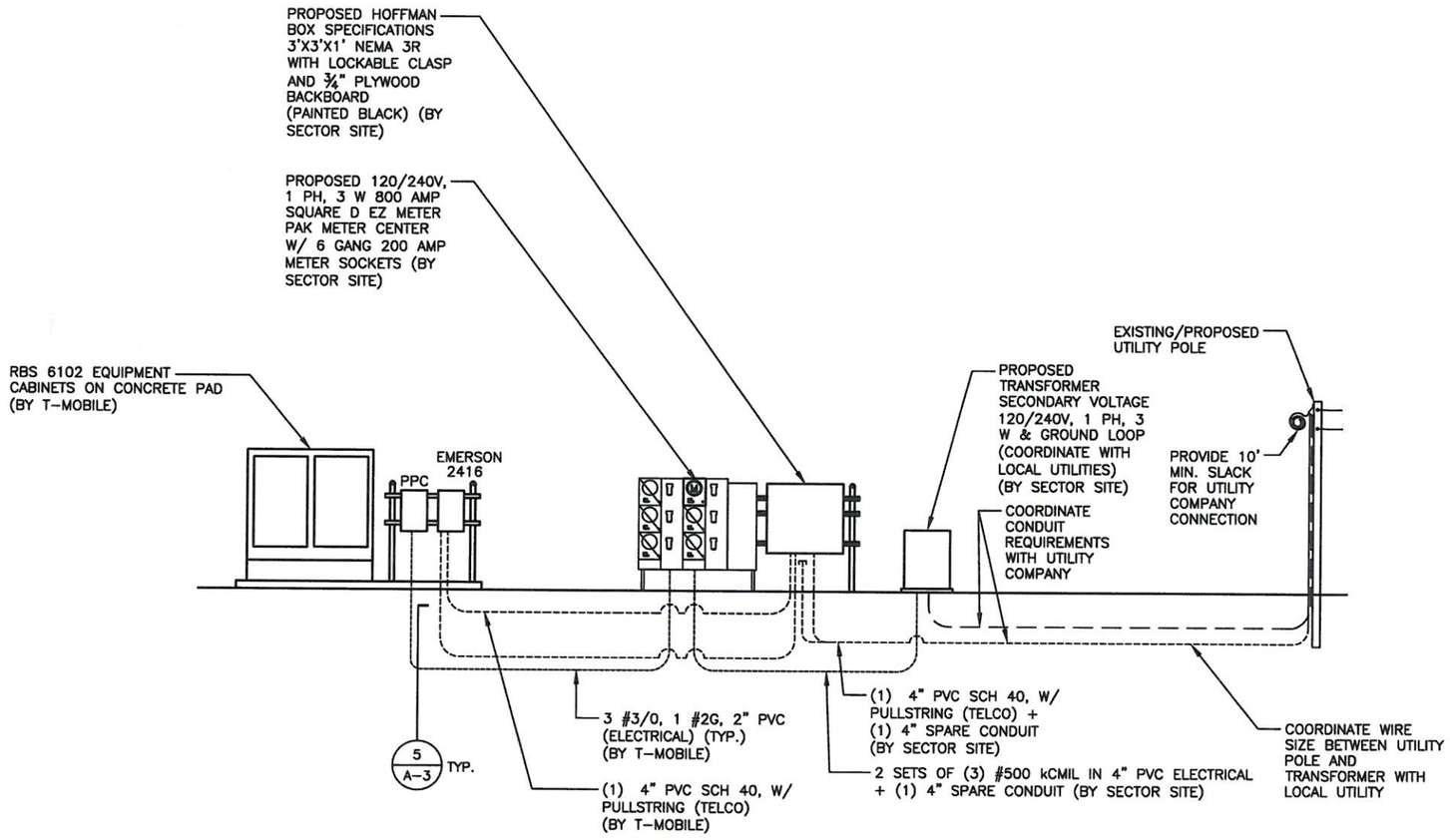
SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	09/21/18	REVISED PER COMMENTS	KAM
1	07/31/18	ADDED COMMON GENERATOR	SLY
0	06/08/18	ISSUED FOR REVIEW	KB/KAM

SITE NAME:
FARMINGTON
SOUTHWEST FIRE DEPT.
SITE NUMBER:
CT-119
T-MOBILE SITE ID: CTHA112A
SITE ADDRESS:
2 WESTWOODS DRIVE
FARMINGTON, CT 06032

SHEET TITLE
ANTENNA DETAILS

SHEET NUMBER
A-8



POWER & TELEPHONE RISER DIAGRAM (1 / E–1)

SCALE: N.T.S

ELECTRICAL NOTES

1. UTILITY SERVICES SHOWN ARE PROPOSED, THE ELECTRIC CONTRACTOR SHALL COORDINATE EXACT TELEPHONE AND ELECTRIC SERVICE CONNECTION POINTS, PULL BOXES, ROUTING AND ASSOCIATED REQUIREMENTS WITH LOCAL UTILITY COMPANIES.
2. VISIT SITE AND EXAMINE CONDITIONS UNDER WHICH WORK MUST BE PERFORMED. REPORT ADVERSE CONDITIONS IN WRITING TO LICENSEE. COMMENCEMENT OF WORK SHALL BE CONSTRUED AS COMPLETE ACCEPTANCE OF EXISTING CONDITIONS INCLUDING PREPARATORY WORK DONE BY OTHERS.
3. ALL EXISTING UNDERGROUND LINES ON SITE SHALL BE LOCATED PRIOR TO CONSTRUCTION.
4. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION.
5. PERFORM WORK AS REQUIRED BY BOCA AND PER LOCAL LAWS.
6. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONDUIT ROUTING WITH LOCAL UTILITY COMPANIES AND FIELD CONSTRUCTION MANAGER.
7. ALL EXTERIOR WALL PENETRATIONS SHALL BE SILICONE SEALED.
8. MATERIAL AND EQUIPMENT SHALL BE UL, NEMA, ANSI, IEEE, ADA & CBM APPROVED FOR INTENDED SERVICE. INSTALLATION SHALL MEET REQUIREMENTS OF NATIONAL AND STATE ELECTRICAL CODE.
9. ALL ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THEN THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AND A MINIMUM OF 10,000 A.I.C..
10. ALL NEW WIRING SHALL BE TYPE THWN RATED 75'C., 600 VOLT. WET OR DRY LOCATIONS. MINIMUM BRANCH CIRCUIT WIRING SHALL BE #12 AWG SOLID COPPER.
11. ALL METALLIC CONDUITS SHALL BE PROVIDED WITH BONDING BUSHINGS.
12. ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO THE LICENSEE PROJECT MANAGER AT JOB COMPLETION.
13. PROVIDE THE OWNER WITH ONE SET OF COMPLETE ELECTRICAL "AS BUILT" DRAWINGS AT THE COMPLETION OF THE JOB.
14. GUARANTEE WORK IN WRITING FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE. REPAIR OR REPLACE DEFECTIVE MATERIALS OR INSTALLATION AT NO COST TO OWNER. CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE AT NO COST TO OWNER.
15. CONTRACTOR SHALL CONTACT "DIG SAFE" (1–888–DIG–SAFE) PRIOR TO COMMENCEMENT OF WORK.

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STATE OF CONNECTICUT · DOUGLAS J. ROBERTS · NO. 4316 · LICENSED ARCHITECT

CHECKED BY: DJR

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	09/21/18	REVISED PER COMMENTS	KAM
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SITE NUMBER:
CT-119
T-MOBILE SITE ID: CTHA112A
SITE ADDRESS:
2 WESTWOODS DRIVE
FARMINGTON, CT 06032

SHEET TITLE
RISER DIAGRAM

SHEET NUMBER
E-1