MERITAS LAW FIRMS WORLDWIDE

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April 12, 2019

VIA FEDERAL EXPRESS AND
ELECTRONIC MAIL

Melanie.bachman@ct.gov
Siting.council@ct.gov

Ms. Melanie A. Bachman, Esq., Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06501

Re: Petition of T-Mobile Northeast, LLC for a Declaratory Ruling that a Certificate of Environmental Compatibility and Public Need is not Required for the Modification of an Existing Rooftop Telecommunications Facility.

Dear Attorney Bachman:

This office represents T-Mobile Northeast, LLC ("T-Mobile") in connection with the above-mentioned Petition. On behalf of T-Mobile, I have enclosed an original and fifteen (15) copies of T-Mobile's responses to the Connecticut Siting Council's ("Council") First Set of Interrogatories. Per the Council's instructions, I have bulk filed two copies of the requested items.

Please do not hesitate to contact me with any questions.

Very truly yours,

Jesse A. Langer

Enclosures

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

PETITION OF T-MOBILE NORTHEAST, LLC FOR A DECLARATORY RULING THAT A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED IS NOT REQUIRED FOR THE MODIFICATION OF AN EXISTING ROOFTOP TELECOMMUNICATIONS FACILITY	:	PETITION NO. 1363
	:	April 12, 2019

PETITIONER' RESPONSES TO THE FIRST SET OF INTERROGATORIES BY THE CONNECTICUT SITING COUNCIL

T-Mobile Northeast, LLC ("T-Mobile") respectfully submits the following responses and non-privileged documentation to the First Set of Interrogatories issued by the Connecticut Siting Council ("Council") in connection with the above-captioned matter.

Q1 **The Petition Structural Analysis was conducted in accordance with the 2016 CT State Building Code. Please revise the Structural Analysis to include the 2018 CT State Building Code which became effective on October 1, 2018 (Two bulk copies may be filed).**

RESPONSE: T-Mobile has attached two bulk copies, which are in accordance with the 2018 Connecticut State Building Code.

Q2 **Please revise the Petition Site Plans to include a certification stamp by a Professional Engineer duly licensed in the State of Connecticut, and reference notes that include the 2018 CT State Building Code and 2018 CT Fire Safety Code. (Two bulk copies may be filed).**

RESPONSE: T-Mobile has attached two bulk copies, which are in accordance with the 2018 Connecticut State Building Code and the 2018 Connecticut Fire Safety Code.

Q3 **Provide a construction schedule including days of the week and hours per day.**

RESPONSE: T-Mobile anticipates construction in the summer of 2019. T-Mobile will coordinate with the property owner, who operates a large commercial mall, to ensure that construction does not disrupt normal business operations. Accordingly, all crane work will occur either overnight or in the early morning. T-Mobile does not anticipate any disturbance to the surrounding area during this temporary time period in light of the size of the host property and the extensive commercial uses proximate to the host property.

Respectfully submitted by,

T-MOBILE NORTHEAST LLC

By: _____

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CENTEK engineering

Centered on Solutions℠

Structural Analysis Report

Antenna Pipe Mast

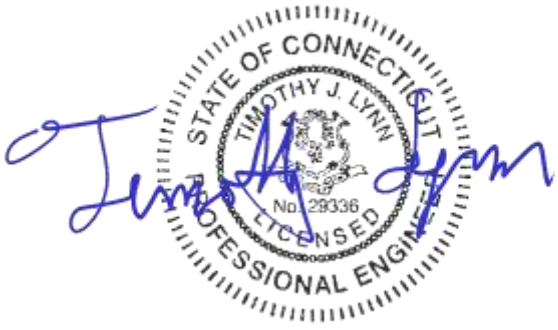
Proposed T-Mobile
Antenna Upgrade

T-Mobile Site Ref: CT11002A

1201 Boston Post Road
Milford, CT

CENTEK Project No. 18127.08

Date: ~~August 9, 2018~~
~~REV 1: March 1, 2019~~
REV 2: April 5, 2019



Prepared for:

T-Mobile USA
35 Griffin Road
Bloomfield, CT 06002

Table of Contents

Introduction

The purpose of this report is to summarize the results of the non-linear, P-Δ structural analysis of the antenna upgrade proposed by T-Mobile on the existing roof mounted antenna masts located in Milford, Connecticut.

The host structure is a roof mounted steel equipment platform with two (2) existing antenna pipe masts along with façade mounted pipe masts at the Delta sector.

At the time of this analysis information on the existing roof framing was limited; therefore a comparative analysis was performed to determine the adequacy of the existing host structure to support the existing/proposed equipment upgrade. The proposed antenna mast is supported on an existing dunnage frame located directly over existing host structure columns. The proposed equipment upgrade resulted in a minor increase in weight to the subject columns from the existing superimposed loads and therefore it was determined as adequate.

Antenna and Appurtenance Summary

The existing, proposed and future loads considered in this analysis consist of the following:

- T-Mobile (Existing to Remain – Alpha, Beta & Gamma Sectors):
  Antennas: Three (3) AIR21 B4A/B12P (8-ft) panel antennas and three (3) Ericsson RRUS-11 B12 remote radio units mounted on one (1) existing pipe mast attached to the equipment platform steel dunnage frame with a RAD center elevation of +/- 41-ft AGL.
- **T-Mobile (Existing to Relocate – Alpha, Beta & Gamma Sectors):**
  Antennas: Three (3) Ericsson KRD901146 (AIR32) panel antennas to be relocated to the proposed pipe mast attached to the equipment platform steel dunnage frame with a RAD center elevation of +/- 50-ft AGL.
- **T-Mobile (Proposed – Alpha, Beta & Gamma Sectors):**
  Antennas: Three (3) Ericsson AIR3246 B66 panel antennas mounted on the proposed pipe mast attached to the equipment platform steel dunnage frame with a RAD center elevation of +/- 43-ft AGL.
- T-Mobile (Existing to Remain – Delta Sector):
  Antennas: One (1) Ericsson KRD901146 (AIR32) panel antenna and one (1) Ericsson RRUS-11 B12 remote radio mounted on an existing pipe mast attached to the building façade with a RAD center elevation of +/- 41-ft AGL.
- T-Mobile (Existing to Remove – Delta Sector):
  Antennas: One (1) Andrew LNX-6515DS panel antenna mounted on an existing pipe mast attached to the building façade with a RAD center elevation of +/- 41-ft AGL
- **T-Mobile (Proposed – Delta Sector):**
  Antennas: One (1) AIR21 B4A/B12P (8-ft) panel antenna and one (1) Ericsson AIR3246 B66 mounted on one (1) existing and one (1) proposed pipe masts attached to the building façade with a RAD center elevation of +/- 41-ft AGL.

Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents or reinforcement drawings.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.
- All coax cables to be installed as indicated in this report.

Analysis

The existing antenna support mounts were analyzed using a comprehensive computer program titled Risa3D. The program analyzes the antenna mounts, considering the worst case loading condition. The antenna support mounts were considered to be loaded by concentric forces along the pipe masts, and the model assumes that the members are subjected to bending, axial, and shear forces.

Structure Loading

Loading was determined per the requirements of the 2015 International Building Code as modified by the 2018 CT State Building Code and ASCE 7-10 “Minimum Design Loads for Buildings and Other Structures”.

Wind Speed: Milford; v = 125 mph (Risk Cat 2) *[Appendix N of the 2018 CSBC]*

Results

Antenna mast stresses were calculated utilizing the structural analysis software Risa-3D.

- Calculated stresses were found to be within allowable limits.

Component	Stress Ratio (percentage of capacity)	Result
Proposed	39.7%	**PASS**

Conclusion

This analysis shows that the subject antenna mast and host structure **is adequate** to support the proposed modified antenna configuration.

The analysis is based, in part, on the information provided to this office by T-Mobile. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:

Timothy J. Lynn, PE
Structural Engineer

Standard Conditions for Furnishing of Professional Engineering Services on Existing Structures

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the "as new" condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

CENTEK engineering
Centered on Solutions℠ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Subject: Wind Load on Equipment per ASCE 7-10

Location: Milford, CT

Rev. 0: 8/9/18

Prepared by: T.J.L; Checked by: C.F.C.
Job No. 18127.08

Design Wind Load on Other Structures: (Based on IBC 2015, CSBC 2018 and ASCE 7-10)

Wind Speed =	$V := 125$	mph	(User Input)	(CSBC Appendix-N)
Risk Category =	$BC := II$		(User Input)	(IBC Table 1604.5)
Exposure Category =	$Exp := C$		(User Input)	
Height Above Grade =	$Z := 50$	ft	(User Input)	
Structure Height =	$Height := 6$	ft	(User Input)	
Horizontal Dimension of Structure =	$Width := 1$	ft	(User Input)	

Terrain Exposure Constants:

Nominal Height of the Atmospheric Boundary Layer = (Table 26.9-1)

$$zg := \begin{cases} 1200 & \text{if } Exp = B = 900 \\ 900 & \text{if } Exp = C \\ 700 & \text{if } Exp = D \end{cases}$$

3-Sec Gust Speed Power Law Exponent = (Table 26.9-1)

$$\alpha := \begin{cases} 7 & \text{if } Exp = B = 9.5 \\ 9.5 & \text{if } Exp = C \\ 11.5 & \text{if } Exp = D \end{cases}$$

Integral Length Scale Factor = (Table 26.9-1)

$$l := \begin{cases} 320 & \text{if } Exp = B = 500 \\ 500 & \text{if } Exp = C \\ 650 & \text{if } Exp = D \end{cases}$$

Integral Length Scale Power Law Exponent = (Table 26.9-1)

$$E := \begin{cases} \frac{1}{3} & \text{if } Exp = B = 0.2 \\ \frac{1}{5} & \text{if } Exp = C \\ \frac{1}{8} & \text{if } Exp = D \end{cases}$$

Turbulence Intensity Factor = (Table 26.9-1)

$$c := \begin{cases} 0.3 & \text{if } Exp = B = 0.2 \\ 0.2 & \text{if } Exp = C \\ 0.15 & \text{if } Exp = D \end{cases}$$

Exposure Constant = (Table 26.9-1)

$$Z_{min} := \begin{cases} 30 & \text{if } Exp = B = 15 \\ 15 & \text{if } Exp = C \\ 7 & \text{if } Exp = D \end{cases}$$

Exposure Coefficient = (Table 29.3-1)

$$K_z := \begin{cases} 2.01\left(\frac{Z}{zg}\right)^{\left(\frac{2}{\alpha}\right)} & \text{if } 15 \le Z \le zg = 1.09 \\ 2.01\left(\frac{15}{zg}\right)^{\left(\frac{2}{\alpha}\right)} & \text{if } Z < 15 \end{cases}$$

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Location: Milford, CT

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Topographic Factor =	$K_{zt} := 1$	(Eq. 26.8-2)
Wind Directionality Factor =	$K_d := 0.85$	(Table 26.6-1)
Velocity Pressure =	$q_z := 0.00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot V^2 = 37.19$	(Eq. 29.3-1)
Force Coefficient =	$(GC_r) := 1.9$	(Sec 29.5-1)
Wind Force =	$F := q_z \cdot (GC_r) = 71$	psf

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Subject: Wind Load on Equipment per ASCE 7-10

Location: Milford, CT

Rev. 0: 8/9/18

Prepared by: T.J.L; Checked by: C.F.C.
Job No. 18127.08

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Ericsson AIR21 B4A/B12P 8F		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 96$	in	(User Input)
Antenna Width =	$W_{ant} := 12.1$	in	(User Input)
Antenna Thickness =	$T_{ant} := 8.7$	in	(User Input)
Antenna Weight =	$WT_{ant} := 148$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)

Wind Load (Front)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 8.1$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 8.1$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 570$	lbs

Wind Load (Side)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot T_{ant}}{144} = 5.8$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 5.8$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 410$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 148$	lbs

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Ericssson AIR32		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 56.6$	in	(User Input)
Antenna Width =	$W_{ant} := 12.9$	in	(User Input)
Antenna Thickness =	$T_{ant} := 8.7$	in	(User Input)
Antenna Weight =	$WT_{ant} := 132$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)

Wind Load (Front)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 5.1$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 5.1$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 358$	lbs

Wind Load (Side)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot T_{ant}}{144} = 3.4$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 3.4$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 242$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 132$	lbs

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Ericssson AIR3246 B66		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 58.1$	in	(User Input)
Antenna Width =	$W_{ant} := 15.7$	in	(User Input)
Antenna Thickness =	$T_{ant} := 9.4$	in	(User Input)
Antenna Weight =	$WT_{ant} := 180$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)

Wind Load (Front)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 6.3$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 6.3$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 448$	lbs

Wind Load (Side)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot T_{ant}}{144} = 3.8$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 3.8$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 268$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 180$	lbs

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Andrew LNX6515DS		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 96.4$	in	(User Input)
Antenna Width =	$W_{ant} := 11.9$	in	(User Input)
Antenna Thickness =	$T_{ant} := 7.1$	in	(User Input)
Antenna Weight =	$WT_{ant} := 50$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)

Wind Load (Front)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 8$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 8$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 563$	lbs

Wind Load (Side)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot T_{ant}}{144} = 4.8$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 4.8$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 336$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 50$	lbs

Development of Wind & Ice Load on RRHs

RRH Data:

RRH Model =	Ericsson RRUS-11		
RRH Shape =	Flat		(User Input)
RRH Height =	$L_{RRH} := 17.8$	in	(User Input)
RRH Width =	$W_{RRH} := 17.3$	in	(User Input)
RRH Thickness =	$T_{RRH} := 7.2$	in	(User Input)
RRH Weight =	$WT_{RRH} := 50$	lbs	(User Input)
Number of RRHs =	$N_{RRH} := 1$		(User Input)

Wind Load (Front)

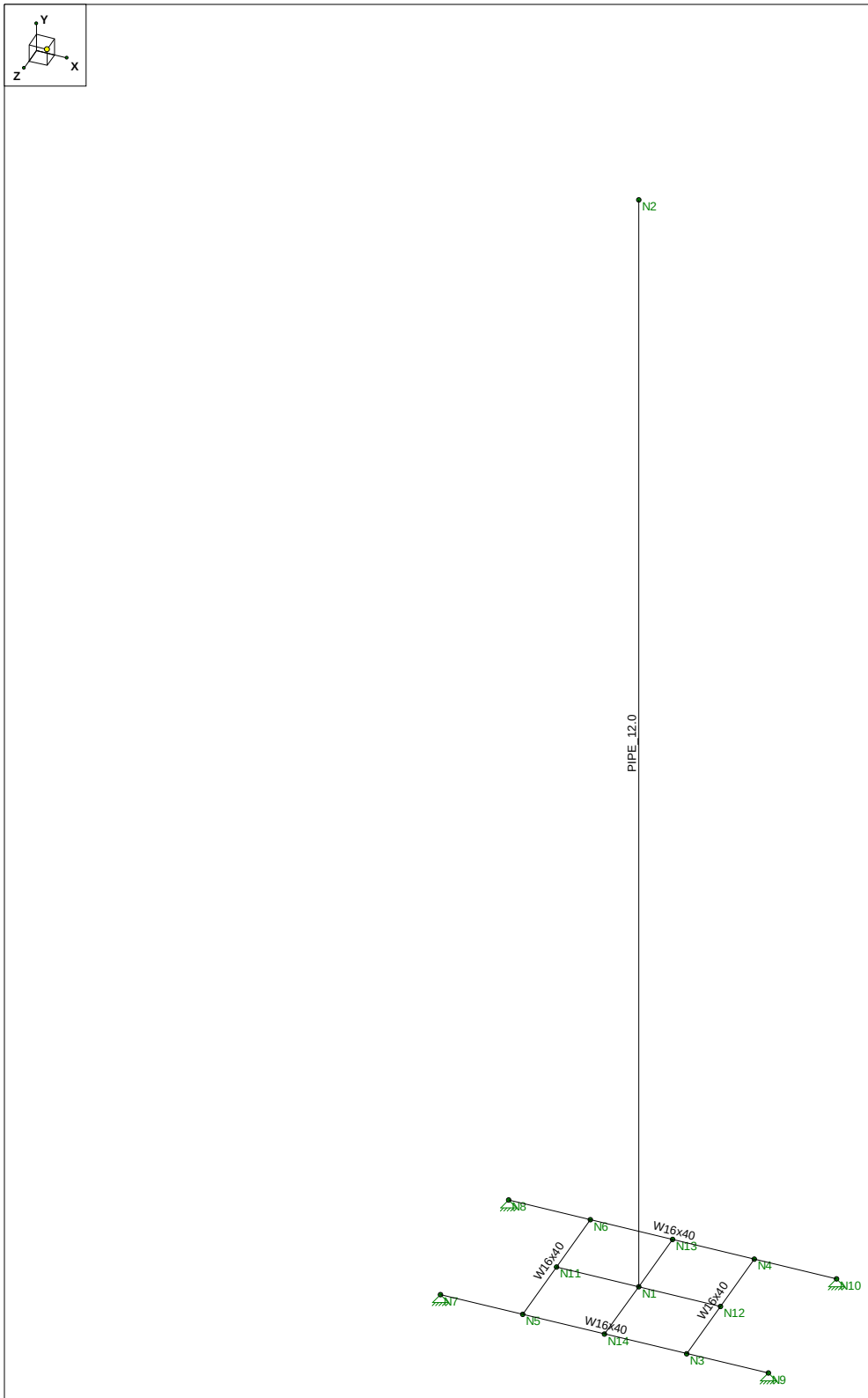
Surface Area for One RRH =	$SA_{RRH} := \frac{L_{RRH} \cdot W_{RRH}}{144} = 2.1$	sf
RRH Projected Surface Area =	$A_{RRH} := SA_{RRH} \cdot N_{RRH} = 2.1$	sf
Total RRH Wind Force =	$F_{RRH} := F \cdot A_{RRH} = 151$	lbs

Wind Load (Side)

Surface Area for One RRH =	$SA_{RRH} := \frac{L_{RRH} \cdot T_{RRH}}{144} = 0.9$	sf
RRH Projected Surface Area =	$A_{RRH} := SA_{RRH} \cdot N_{RRH} = 0.9$	sf
Total RRH Wind Force =	$F_{RRH} := F \cdot A_{RRH} = 63$	lbs

Gravity Load (without ice)

Weight of All RRHs =	$WT_{RRH} \cdot N_{RRH} = 50$	lbs



Envelope Only Solution

Centek Engineering		
TJL	CT11002A - Antenna Mount (East)	Aug 9, 2018 at 5:03 PM
18127.08	Member Framing	Antenna Mount.r3d

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI S100-10: ASD
Wood Code	AWC NDS-12: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	ACI 530-11: ASD
Aluminum Code	AA ADM1-10: ASD - Building
	AISC 14th(360-10): ASD

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1
Footing Overturning Safety Factor	1
Optimize for OTM/Sliding	No
Check Concrete Bearing	No
Footing Concrete Weight (k/ft^3)	150.001
Footing Concrete f'c (ksi)	4
Footing Concrete Ec (ksi)	3644
Lambda	1
Footing Steel fy (ksi)	60
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#3
Footing Top Bar Cover (in)	2
Footing Bottom Bar	#3
Footing Bottom Bar Cover (in)	3.5
Pedestal Bar	#3
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#3

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	58	1.2
3	A992	29000	11154	.3	.65	.49	50	1.1	58	1.2
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
6	A53 Grade B	29000	11154	.3	.65	.49	35	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Pipe Mast	PIPE_12.0	Beam	Pipe	A53 Grade B	Typical	13.7	262	262	523
2	bEAM	W16x40	Beam	Pipe	A992	Typical	11.8	28.9	518	.794

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Pipe Mast	30			Lbyy						Lateral
2	M2	bEAM	8			Lbyy						Lateral
3	M3	bEAM	8			Lbyy						Lateral
4	M4	bEAM	4			Lbyy						Lateral
5	M5	bEAM	4			Lbyy						Lateral

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
1	M1	N1	N2			Pipe Mast	Beam	Pipe	A53 Gra...	Typical
2	M2	N7	N9			bEAM	Beam	Pipe	A992	Typical
3	M3	N8	N10			bEAM	Beam	Pipe	A992	Typical
4	M4	N5	N6			bEAM	Beam	Pipe	A992	Typical
5	M5	N3	N4			bEAM	Beam	Pipe	A992	Typical
6	M10	N13	N1			RIGID	None	None	RIGID	Typical
7	M11	N1	N14			RIGID	None	None	RIGID	Typical
8	M8	N11	N12			RIGID	None	None	RIGID	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
1	N1	0	0	0	0	
2	N2	0	30	0	0	
3	N3	2	0	2	0	
4	N4	2	0	-2	0	
5	N5	-2	0	2	0	
6	N6	-2	0	-2	0	
7	N7	-4	0	2	0	
8	N8	-4	0	-2	0	
9	N9	4	0	2	0	
10	N10	4	0	-2	0	
11	N11	-2	0	0	0	
12	N12	2	0	0	0	
13	N13	0	0	-2	0	
14	N14	0	0	2	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N1						
2	N7	Reaction	Reaction	Reaction			
3	N8	Reaction	Reaction	Reaction			
4	N9	Reaction	Reaction	Reaction			

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
5	N10	Reaction	Reaction	Reaction			
6	N3						
7	N6						

Member Point Loads (BLC 2 : Weight of Equipment)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Y	-.396	28
2	M1	Y	-.54	21
3	M1	Y	-.4	21
4	M1	Y	-.4	28

Member Point Loads (BLC 3 : Wind X-Direction)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	X	.842	28
2	M1	X	.984	21
3	M1	X	.15	21
4	M1	X	.15	28

Member Point Loads (BLC 4 : Wind Z-Direction)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Z	.842	28
2	M1	Z	.984	21
3	M1	Z	.15	21
4	M1	Z	.15	28

Member Distributed Loads (BLC 3 : Wind X-Direction)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	.051	.051	0	18

Member Distributed Loads (BLC 4 : Wind Z-Direction)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/...	Start Location[ft,%]	End Location[ft,%]
1	M1	Z	.051	.051	0	18

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Self Weight	DL		-1						
2	Weight of Equipment	DL					4			
3	Wind X-Direction	WLX					4	1		
4	Wind Z-Direction	WLZ					4	1		

Load Combinations

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	IBC 16-8	Yes	Y		DL	1																		
2	IBC 16-9	Yes	Y		DL	1	LL	1	LLS	1														

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
3	IBC 16-10 (a)	Yes	Y		DL	1	RLL	1																
4	IBC 16-10 (b)	Yes	Y		DL	1	SL	1	SLN	1														
5	IBC 16-10 (c)	Yes	Y		DL	1	RL	1																
6	IBC 16-11 (a)	Yes	Y		DL	1	LL	.75	LLS	.75	RLL	.75												
7	IBC 16-11 (b)	Yes	Y		DL	1	LL	.75	LLS	.75	SL	.75	SLN	.75										
8	IBC 16-11 (c)	Yes	Y		DL	1	LL	.75	LLS	.75	RL	.75												
9	IBC 16-12 (a) (a)	Yes	Y		DL	1	W...	.6																
10	IBC 16-12 (a) (b)	Yes	Y		DL	1	W...	.6																
11	IBC 16-12 (a) (c)	Yes	Y		DL	1	W...	-.6																
12	IBC 16-12 (a) (d)	Yes	Y		DL	1	W...	-.6																
13	IBC 16-13 (a) (a)	Yes	Y		DL	1	W...	.45	LL	.75	LLS	.75	RLL	.75										
14	IBC 16-13 (a) (b)	Yes	Y		DL	1	W...	.45	LL	.75	LLS	.75	RLL	.75										
15	IBC 16-13 (a) (c)	Yes	Y		DL	1	W...	-.45	LL	.75	LLS	.75	RLL	.75										
16	IBC 16-13 (a) (d)	Yes	Y		DL	1	W...	-.45	LL	.75	LLS	.75	RLL	.75										
17	IBC 16-13 (b) (a)	Yes	Y		DL	1	W...	.45	LL	.75	LLS	.75	SL	.75	SLN	.75								
18	IBC 16-13 (b) (b)	Yes	Y		DL	1	W...	.45	LL	.75	LLS	.75	SL	.75	SLN	.75								
19	IBC 16-13 (b) (c)	Yes	Y		DL	1	W...	-.45	LL	.75	LLS	.75	SL	.75	SLN	.75								
20	IBC 16-13 (b) (d)	Yes	Y		DL	1	W...	-.45	LL	.75	LLS	.75	SL	.75	SLN	.75								
21	IBC 16-13 (c) (a)	Yes	Y		DL	1	W...	.45	LL	.75	LLS	.75	RL	.75										
22	IBC 16-13 (c) (b)	Yes	Y		DL	1	W...	.45	LL	.75	LLS	.75	RL	.75										
23	IBC 16-13 (c) (c)	Yes	Y		DL	1	W...	-.45	LL	.75	LLS	.75	RL	.75										
24	IBC 16-13 (c) (d)	Yes	Y		DL	1	W...	-.45	LL	.75	LLS	.75	RL	.75										
25	IBC 16-15 (a)	Yes	Y		DL	.6	W...	.6																
26	IBC 16-15 (b)	Yes	Y		DL	.6	W...	.6																
27	IBC 16-15 (c)	Yes	Y		DL	.6	W...	-.6																
28	IBC 16-15 (d)	Yes	Y		DL	.6	W...	-.6																

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N7	max	.457	11	5.587	10	.457	12	0	1	0	1	0	1
2		min	-.457	9	-3.918	28	-.457	10	0	1	0	1	0	1
3	N8	max	.457	11	5.587	12	.457	12	0	1	0	1	0	1
4		min	-.457	9	-3.918	26	-.457	10	0	1	0	1	0	1
5	N9	max	.457	11	5.587	10	.457	12	0	1	0	1	0	1
6		min	-.457	9	-3.918	28	-.457	10	0	1	0	1	0	1
7	N10	max	.457	11	5.587	12	.457	12	0	1	0	1	0	1
8		min	-.457	9	-3.918	26	-.457	10	0	1	0	1	0	1
9	Totals:	max	1.826	11	4.098	11	1.826	12						
10		min	-1.826	9	2.459	25	-1.826	10						

Envelope Joint Displacements

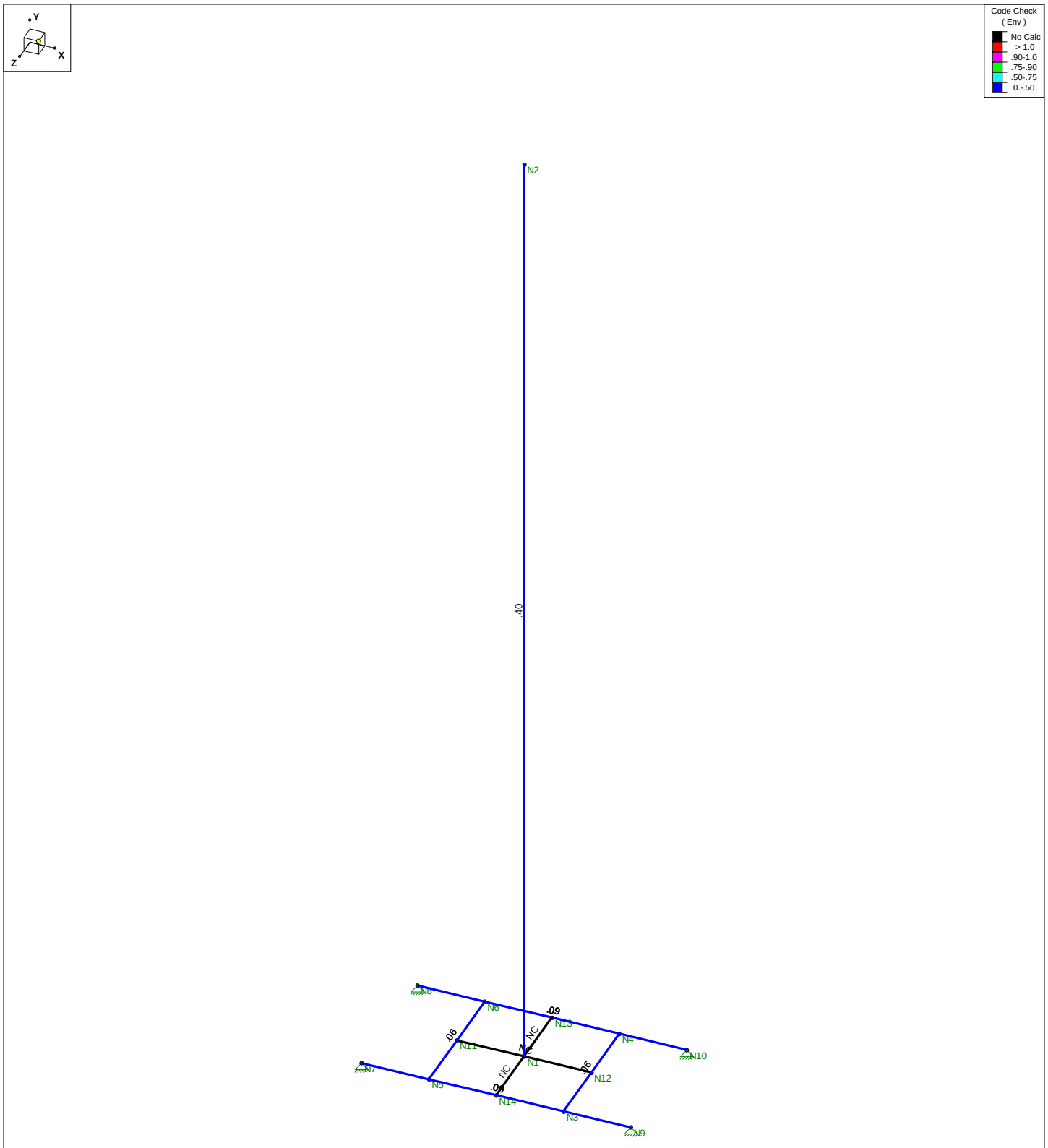
	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...	LC	Y Rotation [...	LC	Z Rotation [...	LC
1	N1	max	0	9	-.002	26	.005	10	5.277e-04	10	0	12	1.318e-04	11
2		min	0	11	-.003	11	-.005	12	-5.277e-04	12	0	26	-1.318e-04	9
3	N2	max	2.668	9	-.003	26	2.818	10	1.052e-02	10	0	12	1.012e-02	11
4		min	-2.668	11	-.005	11	-2.818	12	-1.052e-02	12	0	26	-1.012e-02	9
5	N3	max	0	9	.008	28	.005	10	4.236e-04	26	5.772e-05	26	2.809e-04	10
6		min	0	11	-.011	10	-.005	12	-4.558e-04	12	-5.772e-05	12	-2.011e-04	28
7	N4	max	0	9	.008	26	.005	10	4.558e-04	10	5.772e-05	10	2.809e-04	12

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...	LC	Y Rotation [...	LC	Z Rotation [...	LC
8		min	0	11	-.011	12	-.005	12	-4.236e-04	28	-5.772e-05	28	-2.011e-04	26
9	N5	max	0	9	.008	28	.005	10	4.236e-04	26	5.772e-05	12	2.011e-04	28
10		min	0	11	-.011	10	-.005	12	-4.558e-04	12	-5.772e-05	10	-2.809e-04	10
11	N6	max	0	9	.008	26	.005	10	4.558e-04	10	5.772e-05	12	2.011e-04	26
12		min	0	11	-.011	12	-.005	12	-4.236e-04	28	-5.772e-05	10	-2.809e-04	12
13	N7	max	0	9	0	28	0	10	4.236e-04	26	2.538e-04	12	2.953e-04	28
14		min	0	11	0	10	0	12	-4.558e-04	12	-2.538e-04	10	-4.141e-04	10
15	N8	max	0	9	0	26	0	10	4.558e-04	10	2.538e-04	12	2.953e-04	26
16		min	0	11	0	12	0	12	-4.236e-04	28	-2.538e-04	10	-4.141e-04	12
17	N9	max	0	9	0	28	0	10	4.236e-04	26	2.538e-04	10	4.141e-04	10
18		min	0	11	0	10	0	12	-4.558e-04	12	-2.538e-04	12	-2.953e-04	28
19	N10	max	0	9	0	26	0	10	4.558e-04	10	2.538e-04	10	4.141e-04	12
20		min	0	11	0	12	0	12	-4.236e-04	28	-2.538e-04	12	-2.953e-04	26
21	N11	max	0	9	.002	25	.005	10	5.277e-04	10	0	28	1.318e-04	11
22		min	0	11	-.006	11	-.005	12	-5.277e-04	12	0	26	-1.318e-04	9
23	N12	max	0	9	.002	27	.005	10	5.277e-04	10	0	10	1.318e-04	11
24		min	0	11	-.006	9	-.005	12	-5.277e-04	12	0	12	-1.318e-04	9
25	N13	max	0	9	.011	26	.005	10	5.277e-04	10	0	9	1.318e-04	11
26		min	0	11	-.015	12	-.005	12	-5.277e-04	12	0	11	-1.318e-04	9
27	N14	max	0	9	.011	28	.005	10	5.277e-04	10	0	11	1.318e-04	11
28		min	0	11	-.015	10	-.005	12	-5.277e-04	12	0	9	-1.318e-04	9

Envelope AISC 14th(360-10): ASD Steel Code Checks

	Member	Shape	Code Check	Loc...	LC	Shea...	Loc.....	L...	Pnc/o...	Pnt/o...	Mnyy/...	Mnzz/.....		Eqn
1	M1	PIPE 12.0	.397	0	10	.021	0		10	202.972	287.126	93.787	93.787	1	H1-1b
2	M2	W16x40	.095	2	10	.058	2	y	10	258.605	353.293	31.687	175.631	1..	H1-1b
3	M3	W16x40	.095	2	12	.058	2	y	12	258.605	353.293	31.687	175.631	1..	H1-1b
4	M4	W16x40	.057	2	10	.051	1.8...	y	10	306.581	353.293	31.687	182.136	1..	H1-1b
5	M5	W16x40	.057	2	10	.051	1.8...	y	10	306.581	353.293	31.687	182.136	1..	H1-1b



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Centek Engineering		
TJL	CT11002A - Antenna Mount (East)	Aug 9, 2018 at 5:03 PM
18127.08	Unity Check	Antenna Mount.r3d

T-Mobile

WIRELESS COMMUNICATIONS FACILITY

MILFORD / I-95 /1

SITE ID: CT11002A

1201 BOSTON POST ROAD

MILFORD, CT 06460

T-MOBILE RF CONFIGURATION

4Sec-792MEE_3xAIR

PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:

   A. RELOCATE (3) EXISTING PANEL ANTENNAS TO THE PROPOSED PIPE MAST ATTACHED TO THE EQUIPMENT STEEL DUNNAGE FRAME.
   B. INSTALL (3) PROPOSED PANEL ANTENNAS ON THE PROPOSED PIPE MAST ATTACHED TO THE EQUIPMENT STEEL DUNNAGE FRAME.
   C. REPLACE (1) PANEL ANTENNA (DELTA SECTOR)
   D. INSTALL (1) PANEL ANTENNA ON A PROPOSED PIPE MAST ATTACHED TO THE BUILDING FACADE (DELTA SECTOR).
   E. INSTALL (2) 6X12 HYBRID CABLES/ (1) TO PROPOSED PIPE MAST FOR (ALPHA/BETA/GAMMA) AND ONE (1) TO DELTA.

PROJECT INFORMATION

SITE NAME:	MILFORD / I-95 /1
SITE ID:	CT11002A
SITE ADDRESS:	1201 BOSTON POST ROAD MILFORD, CT 06460
APPLICANT:	T-MOBILE NORTHEAST, LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002
CONTACT PERSON:	DAN REID (PROJECT MANAGER) TRANSCEND WIRELESS, LLC (203) 592-8291
ENGINEER:	CENTEK ENGINEERING, INC. 63-2 NORTH BRANFORD RD. BRANFORD, CT 06405
PROJECT COORDINATES:	LATITUDE: 41°-14'-11.60" N LONGITUDE: 73°-02'-02.59" W GROUND ELEVATION: 22'± AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	3
N-1	DESIGN BASIS AND SITE NOTES	3
C-1	SITE LOCATION PLAN	3
C-2	ROOF PLAN, ELEVATION AND ANTENNA MOUNTING CONF.	3
C-3	ANTENNA MOUNTING CONFIGURATION	3
S-1	ANTENNA MAST DETAILS	3
E-1	TYPICAL ELECTRICAL DETAILS	3

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2018 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA-222 REVISION "G" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2018 CONNECTICUT FIRE SAFETY CODE, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
3. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
4. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
5. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
6. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN "AS-BUILT" SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
7. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
8. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY.
9. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
10. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
11. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
12. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE T-MOBILE CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
14. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
15. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
16. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
17. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
18. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
19. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.

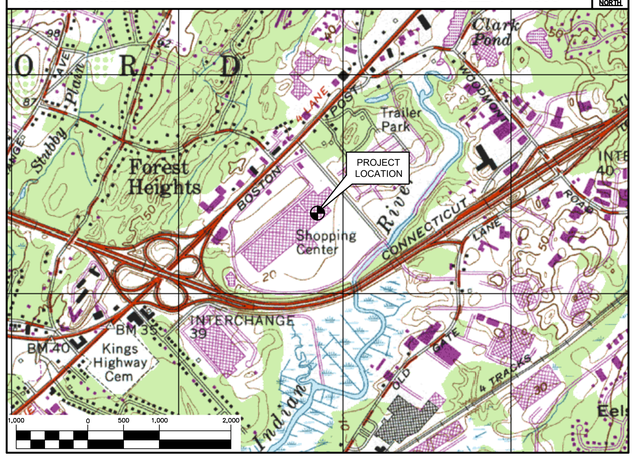
SITE DIRECTIONS

FROM: 35 GRIFFIN ROAD SOUTH, BLOOMFIELD, CT 06002

TO: 1201 BOSTON POST ROAD, MILFORD, CT 06460

1.	HEAD NORTH ON GRIFFIN ROAD S. TOWARD HARTMAN RD.	0.21 MI.
2.	TAKE THE 2ND RIGHT ONTO DAY HILL RD.	3.64 MI.
3.	MERGE ONTO I-91 S TOWARD HARTFORD	45.80 MI.
4.	KEEP RIGHT TOWARD NY CITY	0.08 MI.
5.	MERGE ONTO I-95 S TOWARD NY CITY/NY CITY	8.50 MI.
6.	MERGE ONTO BOSTON POST RD/US-1 N via EXIT 39B	0.29 MI.
7.	1201 BOSTON POST ROAD IS ON THE RIGHT	0.00 MI.

VICINITY MAP SCALE: 1" = 1000'



REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
4	04/05/19	FJP	CAG	CONSTRUCTION DRAWINGS - REVISED PER CLIENT COMMENTS
3	02/22/19	TJL	CAG	CONSTRUCTION DRAWINGS - REVISED PER CLIENT COMMENTS
2	02/19/19	LGL	CAG	CONSTRUCTION DRAWINGS - REVISED PER CLIENT COMMENTS
1	12/11/18	KAWJR	CAG	CONSTRUCTION DRAWINGS - REVISED PER CLIENT COMMENTS
0	08/17/18	ASC	TJL	ISSUED FOR CONSTRUCTION
A	08/10/18	ASC	TJL	PRELIMINARY CDs - ISSUED FOR CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

STATE OF CONNECTICUT — TIMOTHY J. LUSSIER — LICENSED PROFESSIONAL ENGINEER

T-Mobile

Transcend Wireless

CENTEK engineering
Centered on Solutions℠
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

T-MOBILE NORTHEAST LLC

WIRELESS COMMUNICATIONS FACILITY

MILFORD / I-95 / 1

SITE ID: CT11002A

1201 BOSTON POST ROAD (CT POST MALL)

MILFORD, CT 06460

DATE: 08/01/18

SCALE: AS NOTED

JOB NO. 18127.08

TITLE SHEET

T-1

Sheet No. 1 of 7

DESIGN BASIS:

GOVERNING CODE: 2015 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2018 CT STATE BUILDING CODE AND AMENDMENTS.

1. DESIGN CRITERIA:

- RISK CATEGORY: II (BASED ON IBC TABLE 1604.5)
- ULTIMATE DESIGN SPEED (OTHER STRUCTURE): 125 MPH (Vult) (EXPOSURE C/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-10) PER 2015 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2018 CONNECTICUT STATE BUILDING CODE.
- SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE GOVERNING BUILDING CODE.
2. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
3. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
4. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST EXISTING FIELD CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.
6. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS, ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
7. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
8. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE SHORING, BRACING, AND BARRICADES AS MAY BE REQUIRED FOR THE PROTECTION OF EXISTING PROPERTY, CONSTRUCTION WORKERS, AND FOR PUBLIC SAFETY.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING SITE OPERATIONS, COORDINATE WORK WITH NORTHEAST UTILITIES
10. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER FOUNDATION REMEDIATION WORK IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, TEMPORARY BRACING, GUYS OR TIEDOWNS, WHICH MIGHT BE NECESSARY.
11. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
12. SHOP DRAWINGS, CONCRETE MIX DESIGNS, TEST REPORTS, AND OTHER SUBMITTALS PERTAINING TO STRUCTURAL WORK SHALL BE FORWARDED TO THE OWNER FOR REVIEW BEFORE FABRICATION AND/OR INSTALLATION IS MADE. SHOP DRAWINGS SHALL INCLUDE ERECTION DRAWINGS AND COMPLETE DETAILS OF CONNECTIONS AS WELL AS MANUFACTURER'S SPECIFICATION DATA WHERE APPROPRIATE. SHOP DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR AND BEAR THE CHECKER'S INITIALS BEFORE BEING SUBMITTED FOR REVIEW.
13. NO DRILLING WELDING OR TAPING ON EVERSOURCE OWNED EQUIPMENT.
14. REFER TO DRAWING T1 FOR ADDITIONAL NOTES AND REQUIREMENTS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)

   A. STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)
   B. STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI)
   C. STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)
   D. STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)
   E. PIPE---ASTM A53 (FY = 35 KSI)
   F. CONNECTION BOLTS---ASTM A325-N
   G. U-BOLTS---ASTM A36
   H. ANCHOR RODS---ASTM F 1554
   I. WELDING ELECTRODE---ASTM E 70XX

2. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.
3. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
4. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
5. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
6. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
7. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON-GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
8. ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.
9. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE".
10. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
11. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
12. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.
13. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
14. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
15. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
16. FABRICATE BEAMS WITH MILL CAMBER UP.
17. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.
18. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
19. INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
20. FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
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1	12/11/18	KAWJR	CAG	CONSTRUCTION DRAWINGS - REVISED PER CLIENT COMMENTS
0	08/17/18	ASC	TJL	ISSUED FOR CONSTRUCTION
A	08/10/18	ASC	TJL	PRELIMINARY CDs - ISSUED FOR CLIENT REVIEW

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MILFORD / I-95 / 1
SITE ID: CT11002A
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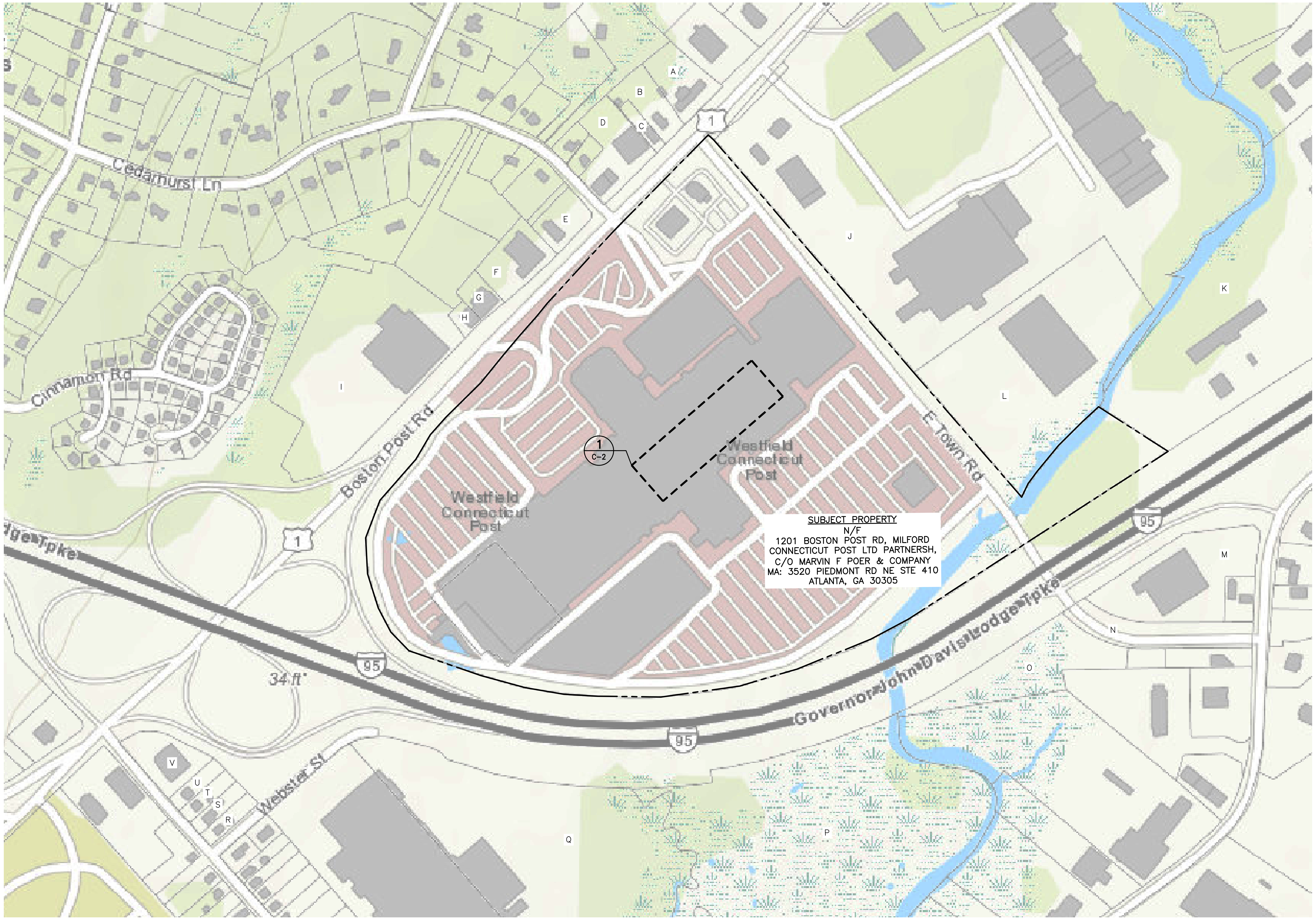
MILFORD, CT 06460

DATE: 08/01/18
SCALE: AS NOTED
JOB NO. 18127.08

DESIGN BASIS AND SITE NOTES

N-1

Sheet No. 2 of 7



1 SITE LOCATION PLAN (C-1)

SCALE: 1" = 200'

APPROX. NORTH

GRAPHIC SCALE: 200 0 100 200 400 800 (IN FEET) 1 inch = 200 ft.

ABUTTERS INFO:

BOSTON POST STREET:

A	1354 BOSTON POST RD, MILFORD ALLIANCE ENERGY LLC MA: 15 NORTHEAST INDUSTRIAL BRANFORD, CT 06405
B	1338 BOSTON POST RD HUNTER ROBERT JOHN MA: 225 WOODRUFF RD MILFORD, CT 06460
C	1330 BOSTON POST RD MILFORD FOUR LLC MA: 460 COE AV EAST HAVEN, CT 06512
D	1306 BOSTON POST RD MILFORD FOUR LLC MA: 460 COE AV EAST HAVEN, CT 06512
E	1292 BOSTON POST RD BURGER KING CORPORATION MA: P O BOX 020783 MIAMI, FL 33102-0783
F	1270 BOSTON POST RD CAPLOWE IRIS TRUSTEE OF THE* C/O HILLEL J AUERBACH P C MA: P O BOX 4014 NEW HAVEN, CT 06525
G	1260 BOSTON POST RD CAPLOWE IRIS TRUSTEE OF THE* C/O HILLEL J AUERBACH P C MA: P O BOX 4014 NEW HAVEN, CT 06525
H	1250 BOSTON POST RD 1250 POST ROAD MILFORD LLC C/O PHYLLIS ELLENBOGEN MA: 411 WISHART CT HENRICO, VA 23229
I	1212 BOSTON POST RD 217 STATE MILFORD LLC C/O MATTONE ET AL MA: 134-01 20TH AV COLLEGE POINT, NY 11356

WILBAR AVE:

J	60 WILBAR AVE WILLIAMS HENRY S & JULIE & SURV MA: 60 WILBAR AVE MILFORD, CT 06460

BANNER DR:

K	0 BANNER DR STATE OF CONNECTICUT ACCOUNTS PAYABLE MA: PO BOX 317546 NEWINGTON, CT 06131

EAST TOWN RD:

L	1360 EAST TOWN RD REHOLD MILFORD LLC C/O AFS LEASE ACCOUNTING MA: P O BOX 6500 CARLISLE, PA 17013-6500

OLD GATE LN:

M	330 OLD GATE LN TOYS R US PROPERTY COMPANY II LLC ATT TAX DEPT MA: 1 GEOFFREY WAY WAYNE, NJ 06470
N	0 OLD GATE LN CONNECTICUT POST LIMITED PARTN C/O MARVIN F POER & COMPANY MA: 3520 PIEDMONT RD NE STE 410 ATLANTA, GA 30305
O	0 OLD GATE LN CONNECTICUT POST LTD PARTERNSH C/O MARVIN F POER & COMPANY MA: 3520 PIEDMONT RD NE STE 410 ATLANTA, GA 30305
P	0 OLD GATE LN CITY OF MILFORD MA: 70 WEST RIVER ST MILFORD, CT 06460

O LEIGHTON RD:

Q	0 LEIGHTON RD SCHICK MANUFACTURING INC MA: 1350 TIMBERLAKE MNR PKY (SUITE 300) CHESTERFIELD, MO 63017

HOME ACRES AVE:

R	42 HOME ACRES AVE GARY P & LYNN J & SURV. MA: 42 HOME ACRES AVE MILFORD , CT 06460
S	38 HOME ACRES AVE DANIEL BRASSELL & SURV. MA: 38 HOME ACRES AVE MILFORD, CT 06460
T	32 HOME ACRES AVE ATSALINE L SUNTHORN & SONNY T MA: 32 HOME ACRES AVE MILFORD, CT 06460
U	28 HOME ACRES AVE JOHN K RICHARDS & VINCENZA S MA: 28 HOME ACRES AVE MILFORD, CT 06460

BOSTON POST RD

V	1083 BOSTON POST RD. MIL LLC MA: 124-19 METROPOLITAN AVE KEW GARDENS, NY 11416

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
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0	08/17/18	ASC	TJL	ISSUED FOR CONSTRUCTION
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MILFORD / I-95 / 1
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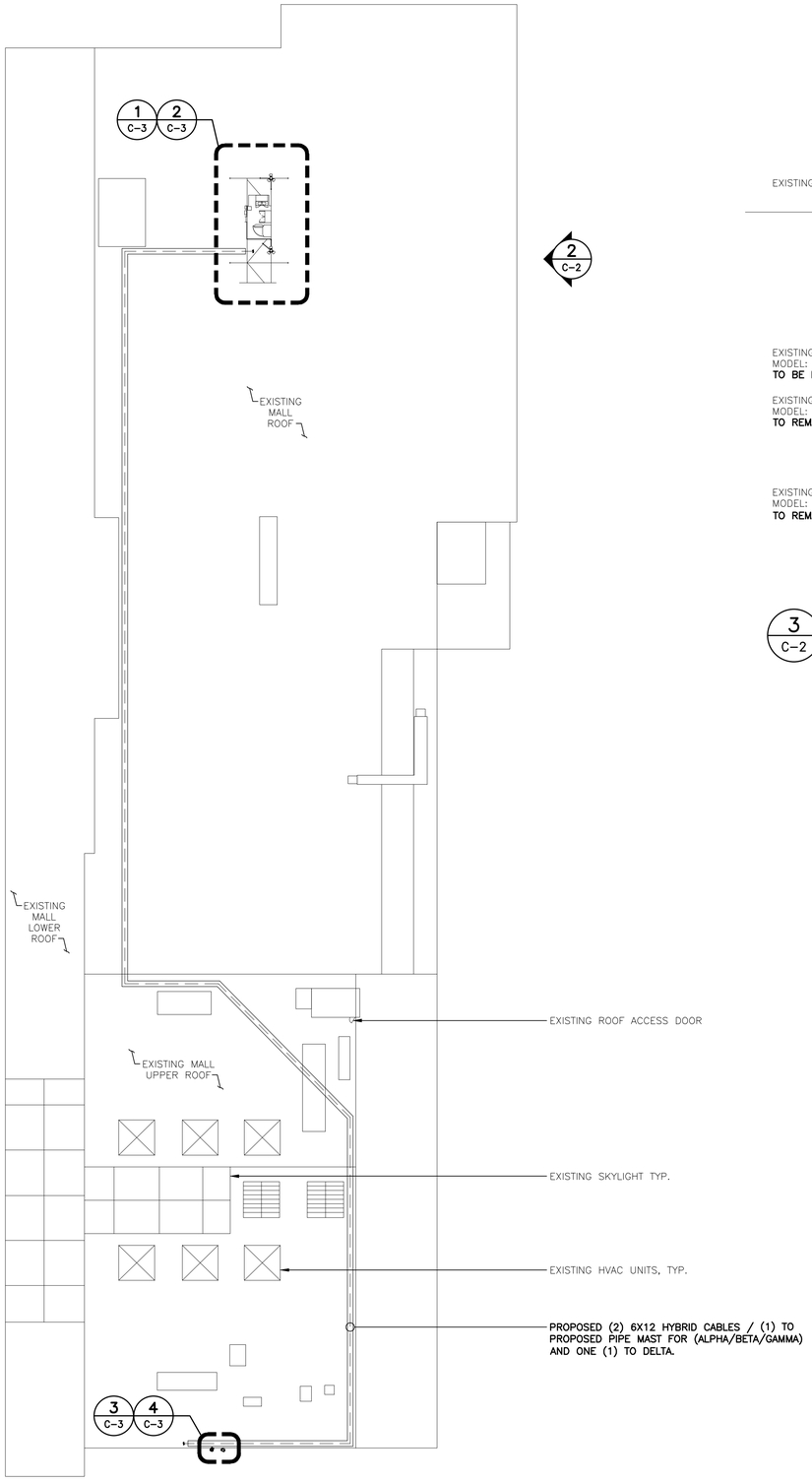
MILFORD, CT 06460

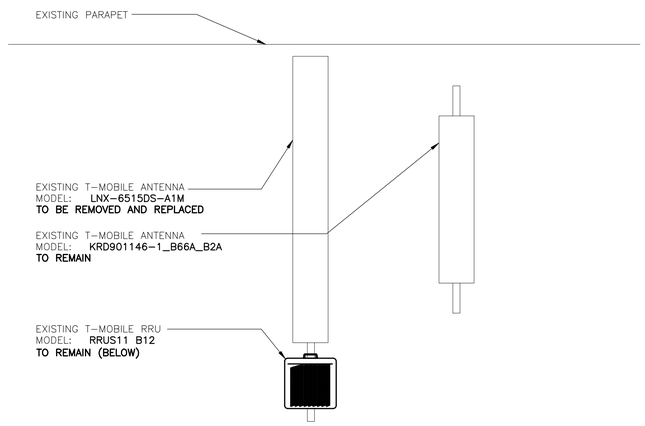
DATE:	08/01/18
SCALE:	AS NOTED
JOB NO.	18127.08

SITE LOCATION PLAN

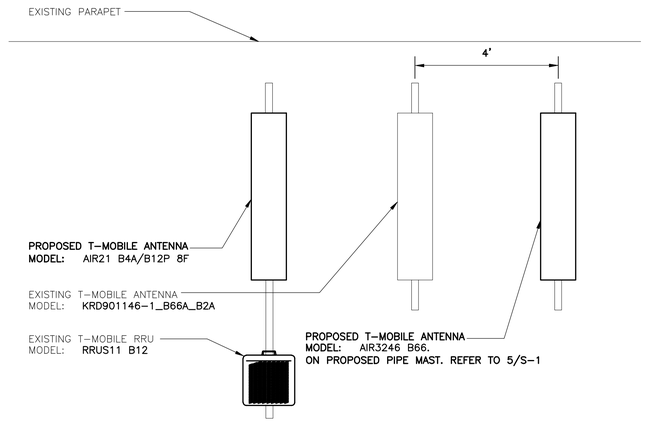
C-1

Sheet No. 3 of 7





3 C-2 **EXISTING ANTENNA MOUNTING ELEVATION**
SCALE: 1/2" = 1' **(DELTA SECTOR) 41' ELEVATION**



4 C-2 **PROPOSED ANTENNA MOUNTING ELEVATION**
SCALE: 1/2" = 1' **(DELTA SECTOR) 41' ELEVATION**

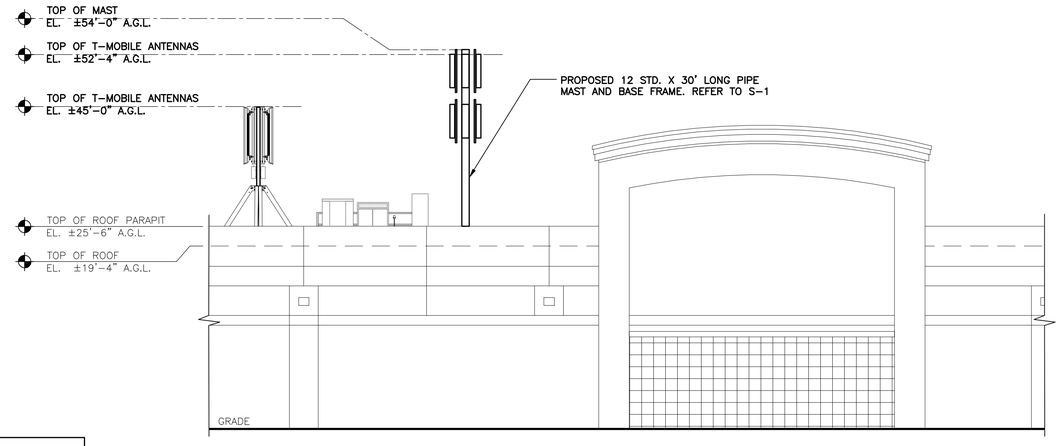
1 C-2 **ROOF PLAN**
SCALE: 1" = 25'

TRUE NORTH

GRAPHIC SCALE
25 0 12.5 25 50 100
(IN FEET)
1 inch = 25 ft.

STRUCTURAL NOTE:

REFER TO STRUCTURAL ANALYSIS REPORT AS PREPARED BY CENTEK ENGINEERING INC.,
DATED: 08/10/18
PROJECT NUMBER: 18127.08



2 C-2 **NORTHEAST ELEVATION**
SCALE: 1" = 10'

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

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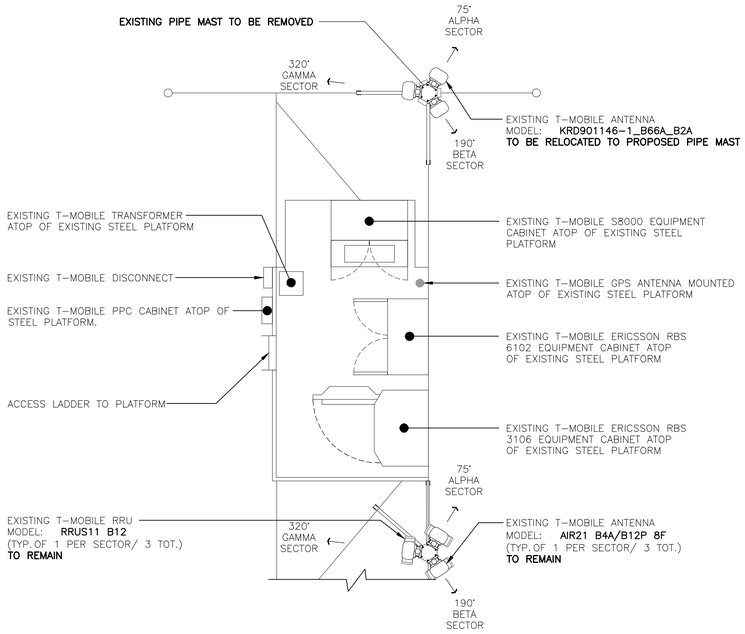
MILFORD, CT 06460

DATE: 08/01/18
SCALE: AS NOTED
JOB NO. 18127.08

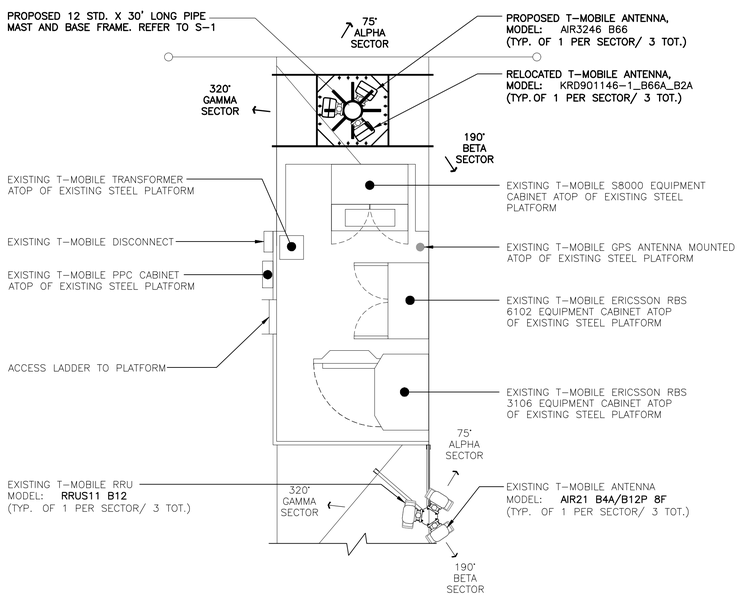
ROOF PLAN
ELEVATION AND
ANTENNA
MOUNTING CONFIG

C-2

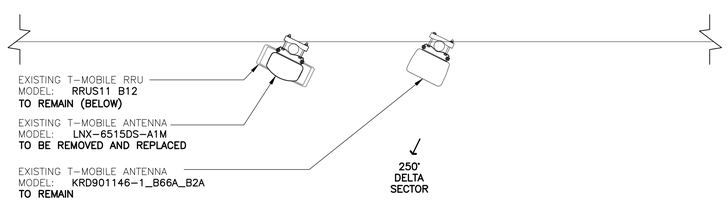
Sheet No. 4 of 7



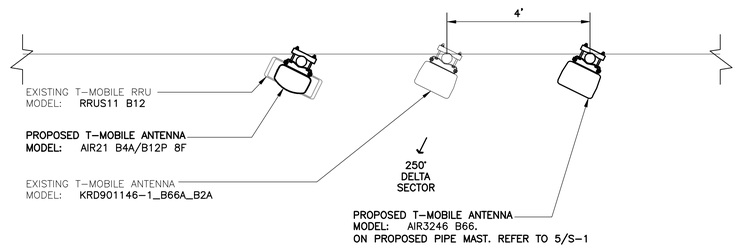
1 C-3 **EXISTING ANTENNA MOUNTING CONFIGURATION**
SCALE: 1/4" = 1'



2 C-3 **PROPOSED ANTENNA MOUNTING CONFIGURATION**
SCALE: 1/2" = 1'



3 C-3 **EXISTING ANTENNA MOUNTING CONFIGURATION (DELTA SECTOR) 41' ELEVATION**
SCALE: 1/2" = 1'



4 C-3 **PROPOSED ANTENNA MOUNTING CONFIGURATION (DELTA SECTOR) 41' ELEVATION**
SCALE: 1/2" = 1'

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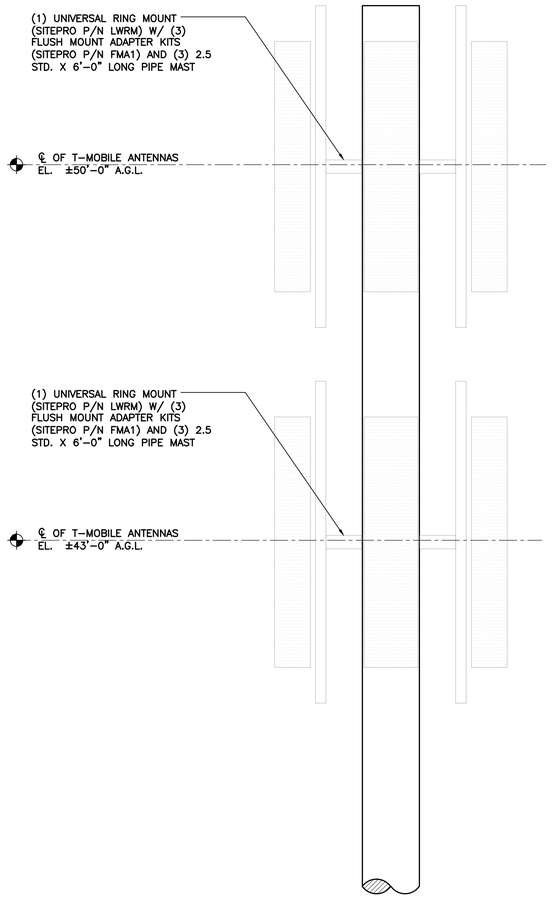
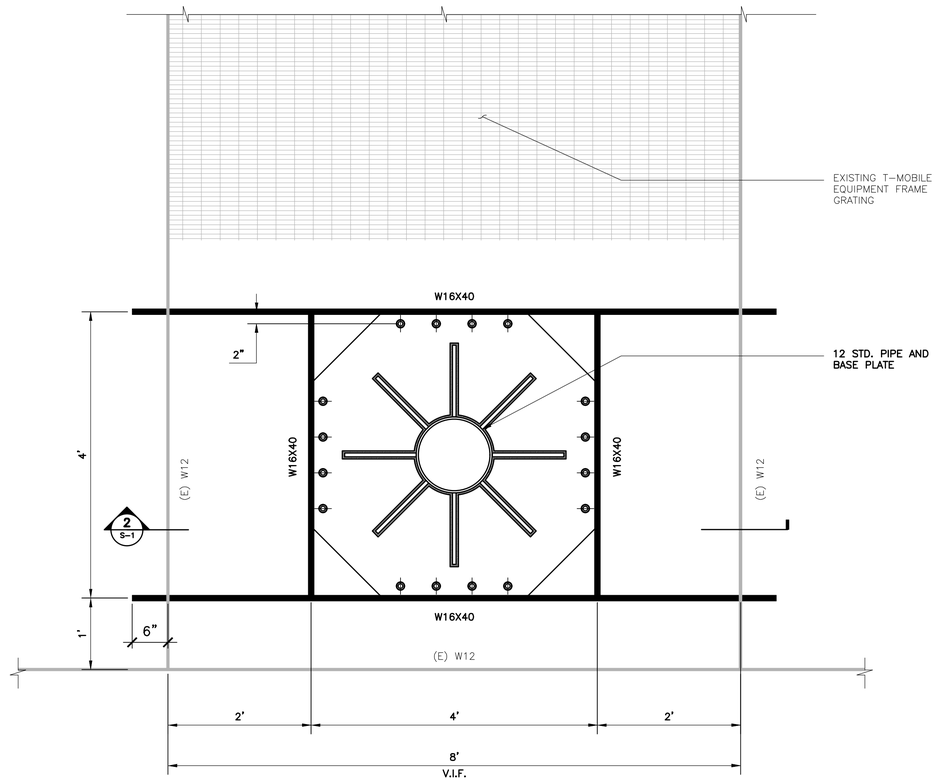
ANTENNA MOUNTING CONFIG

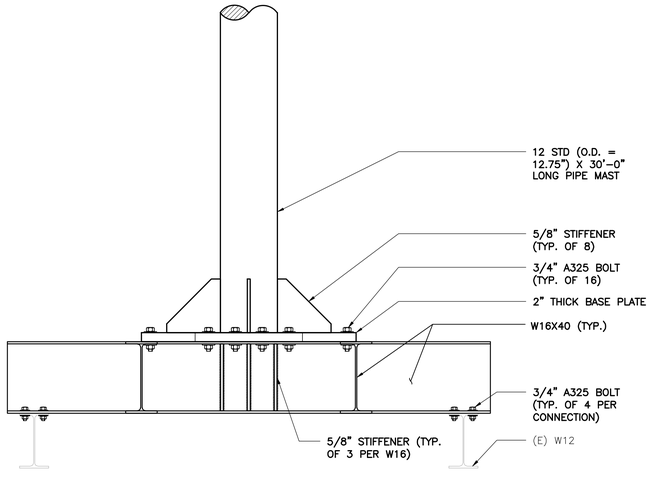
C-3

Sheet No. 5 of 7

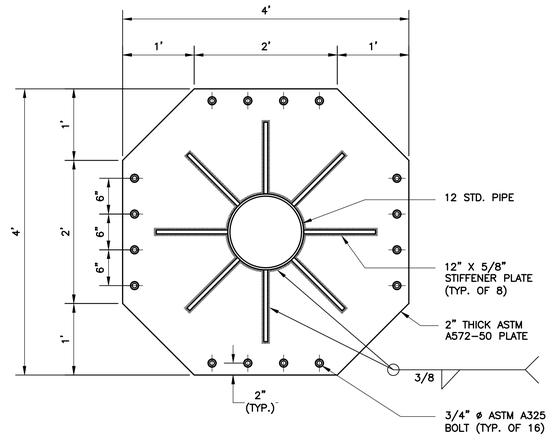




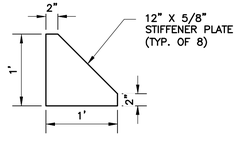
1 / S-1 **ANTENNA MAST FRAMING PLAN**
SCALE: 1" = 1'



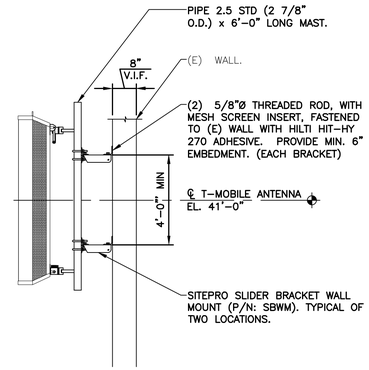
2 / S-1 **ANTENNA MAST ELEVATION**
SCALE: 3/4" = 1'



3 / S-1 **BASE PLATE DETAIL**
SCALE: 1" = 1'



4 / S-1 **STIFFENER PLATE DETAIL**
SCALE: 1" = 1'



5 / S-1 **PROPOSED DELTA MAST DETAIL**
SCALE: 1/2" = 1'

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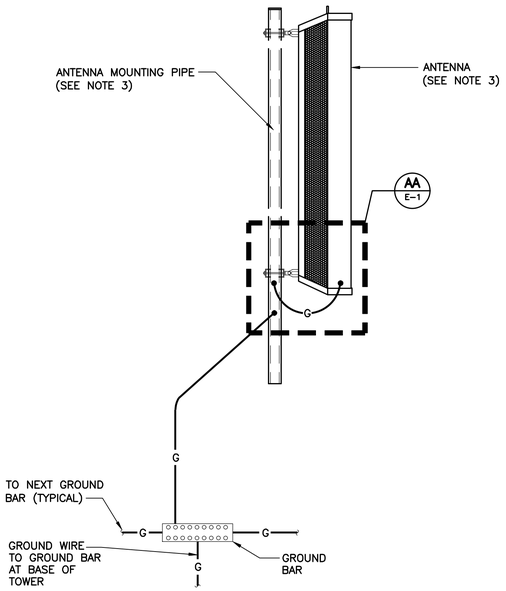
ANTENNA MAST DETAILS

S-1

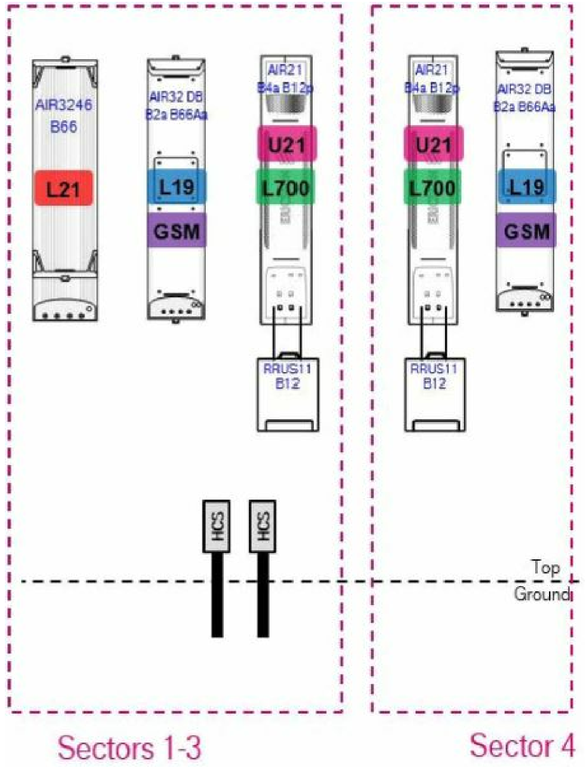
Sheet No. 5 of 7



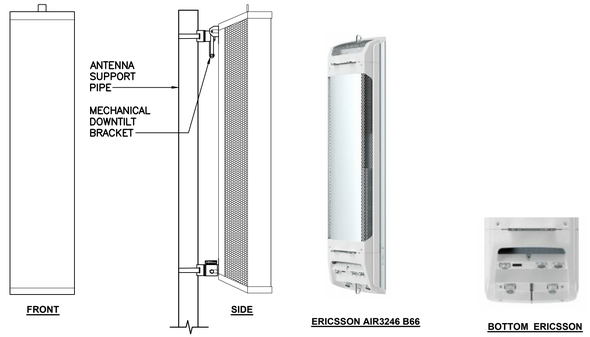
NOTES:

1. BOND COAXIAL CABLE GROUND KITS TO EACH OWNER'S GROUND BAR ALONG ENTIRE COAX RUN FROM ANTENNA TO SHELTER.
2. BOND ALL EQUIPMENT TO GROUND PER NEC AND MANUFACTURERS SPECIFICATIONS.
3. DETAIL IS TYPICAL FOR ALL ANTENNA SECTORS, INCLUDING GPS ANTENNA.

1 / E-1 **TYPICAL ANTENNA GROUNDING DETAIL**
SCALE: NONE

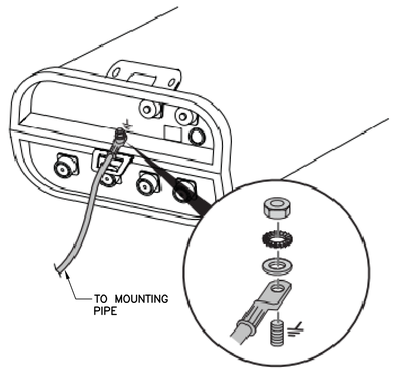


2 / E-1 **PROPOSED PLUMBING DIAGRAM**
SCALE: NONE



ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: ERICSSON MODEL: AIR3246 B66	58.1"L x 15.75"W x 9.4"D	180 LBS.
MAKE: ERICSSON MODEL: KRC118 048/1	96.0"L x 12.1"W x 8.7"D	126 LBS.

3 / E-1 **PROPOSED ANTENNA DETAIL**
SCALE: NONE



AA / E-1 **TYPICAL ANTENNA GROUNDING DETAIL**
SCALE: NONE

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
A	08/10/18	ASC	TJL	PRELIMINARY CDs – ISSUED FOR CLIENT REVIEW
0	08/17/18	ASC	TJL	ISSUED FOR CONSTRUCTION
1	12/11/18	KAWJR	CAG	CONSTRUCTION DRAWINGS – REVISED PER CLIENT COMMENTS
2	02/19/19	LGL	CAG	CONSTRUCTION DRAWINGS – REVISED PER CLIENT COMMENTS
3	02/22/19	TJL	CAG	CONSTRUCTION DRAWINGS – REVISED PER CLIENT COMMENTS
4	04/05/19	FJP	CAG	CONSTRUCTION DRAWINGS – REVISED PER CLIENT COMMENTS

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DATE: 08/01/18
SCALE: AS NOTED
JOB NO. 18127.08

TYPICAL ELECTRICAL DETAILS

E-1

Sheet No. 6 of 7