



May 10, 2016

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

Regarding: Notice of Exempt Modification – Antenna Swap, Swap of
Diplexers for Triplexers, and Addition of Three Radio
Heads and a DC/Fiber Squid
Property Address: 23 Kelleher Court Wethersfield, CT 06109

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 180-foot monopole at the above-referenced address, latitude 41.71541666666667 longitude 72.69059444444444. Said monopole is owned by the Town of Wethersfield. The existing equipment shelter measures approximately 10' x 20', totaling 200 square feet.

AT&T desires to modify its existing telecommunications facility by swapping three (3) antennas, swapping (6) diplexers for triplexers, adding three (3) remote-radio heads (“RRHs”) and a DC/Fiber Squid. The centerline height of said antennas is and will remain at 140 feet. Antennas are mounted utilizing a T-Arm.

Please accept this application as notification pursuant to R.C.S.A. §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16-50j-72 (b)(2). In accordance with R.C.S.A. §16-50j-73, a copy of this letter is being sent to the Town Manager of the Town of Wethersfield, Jeff Bridges, to the Communications Consultant for the Town, John C. Eichner, and also to the Town Engineer, Michael Turner. Please be advised that the Town of Wethersfield owns both the tower and the ground.

The planned modifications to AT&T’s facility fall squarely within those activities explicitly provided for in R.C.S.A. §16-50j-72 (b)(2). Specifically:

1. The planned modification will not result in an increase in the height of the existing structure. The antennas to be swapped will be installed at the existing height of 140 feet on the 180-foot monopole.
2. The proposed modifications will not involve any changes to ground-mounted equipment, and therefore will not require an extension of the site boundary.
3. The proposed modification will not increase the noise level at the facility by six decibel or more, or to levels that exceed state and local criteria.

4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above Federal Communications Commission (FCC) safety standard. An RF emissions calculation (attached) for AT&T's modified facility is herein provided.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The monopole and its foundation can support AT&T's proposed modifications (please see attached structural analysis completed by American Tower dated April 28, 2016).

For the foregoing reasons, AT&T respectfully requests that the proposed antenna swap and remote radio head and DC/fiber squid installation be allowed within the exempt modifications under R.C.S.A. §16-50j-72 (b)(2).

Sincerely,

Sarah Snell

Sarah Snell
Site Acquisition Specialist

cc: Jeff Bridges, Town Manager Town of Wethersfield (Landowner & Tower Owner)
John C. Eichner, Communications Consultant, Town of Wethersfield
Michael Turner, Town Engineer Town of Wethersfield

STRUCTURAL ANALYSIS REPORT

For

CT5122

WETHERSFIELD NORTH

23 Kelleher Court
Wethersfield, CT 06109

Antennas Mounted to the Monopole



Prepared for:

EMPIRE telecom



at&t

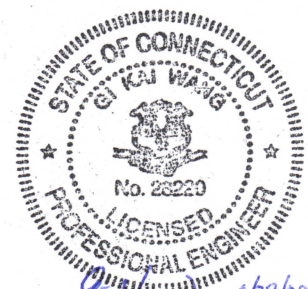
Dated: April 28, 2016

Prepared by:

Hudson
Design Group LLC



1600 Osgood Street Bldg. 20N Suite 3090
North Andover, MA 01845
(P) 978.557.5553 (F) 978.336.5586
www.hudsondesigngroupllc.com





SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the 179' monopole supporting the existing and proposed AT&T's antennas located at elevation 140' above the ground level.

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

Record drawings of the existing monopole prepared by FWT, dated July 18, 2006, were available and obtained for our use. The previous structural analysis report prepared by RAMAKER & Associates, Inc., dated August 5, 2014, was also available and obtained for our use.

Tower mapping report prepared by ProVertic LLC, dated April 21, 2016, was provided to this office.

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing monopole and foundation are in conformance with the ANSI/TIA-222-F Standard for the loading considered under the criteria listed in this report. The monopole structure is rated at 97.9% - (Pole section L4 from EL.0' to EL.45.5' Controlling).



APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
	10' Omni	188'	T-Arm
	(2) 6' Omni	186'	T-Arm
	(2) 4' Omni	185'	T-Arm
	4' Dipole	185'	T-Arm
	(2) Distribution Box	181'	T-Arm
	(2) APXVSP18-C Antennas	174'	T-Arm
	ET-X-TU-42-15 Antenna	174'	T-Arm
	(3) APXV9TM14 Antennas	174'	T-Arm
	(3) RRH 8X20-25	174'	Ring Mount
	(3) RRH 800	170'	Ring Mount
	(3) RRH 1900	170'	Ring Mount
	2' Dish	159'	Chain Mount
	(6) AIR21 B4A/B2P Antennas	152'	T-Arm
	(3) LNX-6515DS Antennas	152'	T-Arm
	(3) RRUS-11	151'	T-Arm
	(3) TMA	151'	T-Arm
AT&T	(3) 7770 Antennas	140'	T-Arm
AT&T	(6) LGP 21401 TMA	140'	T-Arm
AT&T	(6) RRUS-11	142'	Ring Mount
AT&T	(3) RRUS-A2	142'	Ring Mount
AT&T	Surge Arrestor DC6-48-60-18-8F	140'	T-Arm
AT&T	(2) TPA-65R-LCUUUU-H8 Antennas	140'	T-Arm
AT&T	(2) HPA-65R-BUU-H8 Antennas	140'	T-Arm
AT&T	(2) SBNHH-1D65A Antennas	140'	T-Arm
AT&T	(6) TPX-070821	140'	T-Arm
AT&T	(3) RRUS-32	140'	Ring Mount
AT&T	Surge Arrestor DC6-48-60-18-8F	140'	T-Arm
	(3) BXA-171063-12CF Antennas	130'	Low Profile Platform
	(3) BXA-70063-4CF Antennas	130'	Low Profile Platform
	(3) BXA-70063-6CF Antennas	130'	Low Profile Platform
	(3) MGD3-900 Antennas	130'	Low Profile Platform
	(3) RRH2X40 AWS	130'	Low Profile Platform
	RXXDC-3315-PF-48	130'	Low Profile Platform
	2' Dish	126'	Chain Mount

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



AT&T EXISTING/PROPOSED COAX CABLES:

Tenant	Coax Cables	Elev.	Mount
AT&T	(12) 1 5/8" Cables	140'	Inside Monopole
AT&T	Fiber Cable	140'	Inside Monopole
AT&T	(2) DC Power Cables	140'	Inside Monopole
AT&T	Fiber Cable	140'	Inside Monopole
AT&T	(2) DC Power Cables	140'	Inside Monopole

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

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
Pole Section-L1	32.4 %	141.25 – 179	PASS	
Pole Section-L2	59.6 %	92.58 – 141.25	PASS	
Pole Section-L3	78.5 %	45.5 – 92.58	PASS	
Pole Section-L4	97.9 %	0 – 45.5	PASS	Controlling
Base Plate	88.1 %	0	PASS	



DESIGN CRITERIA:

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

County: Hartford
Wind Load: 80 mph (fastest mile)
 100 mph (3 second gust)
Ice Thickness: 1/2 inch

2. Approximate height above grade to proposed antennas: 140'

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

ASSUMPTIONS:

1. The monopole dimensions, member sizes, material strength and foundation are as indicated in the record drawings of the existing monopole prepared by FWT, dated July 18, 2006.
2. The appurtenances configuration is as stated in this report. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
3. The monopole and foundation are properly constructed and maintained. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
4. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.
5. All prior structural modification, if any, are assumed to be as per the data supplied (if available), and installed properly.

SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed antennas, triplexers and surge arrestor be mounted on the existing T-frame supported by the monopole; the proposed RRHs be mounted on the existing mount pipes.

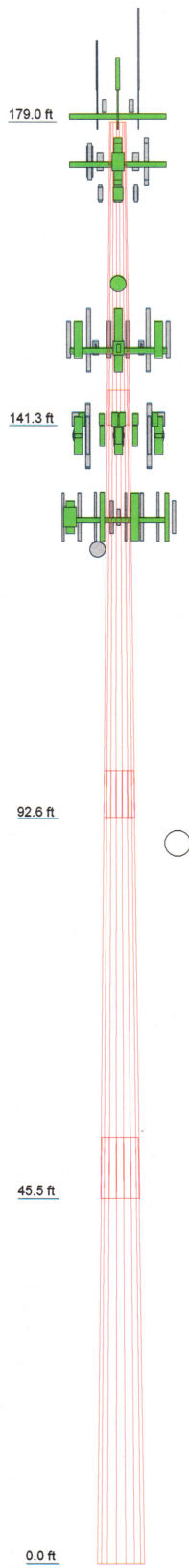


Photo 1: Photo illustrating the Monopole with Appurtenances shown.



CALCULATIONS

Section	1	2	3	4
Length (ft)	37.75	53.00	53.00	53.00
Number of Sides	18	18	18	18
Thickness (in)	0.250	0.375	0.375	0.375
Socket Length (ft)	4.33	5.92	7.50	54.976
Top Dia (in)	23.100	31.585	43.492	66.225
Bot Dia (in)	33.249	45.834	57.742	132.49.9
Grade		A572-65	10784.9	
Weight (lb)	2846.3	8228.8	10784.9	13249.9



DESIGNED APPURTENANCE LOADING


TYPE	ELEVATION	TYPE	ELEVATION
(3) 2"x6' pipe	181	(2) Ericsson RRUS-11	142
(3) 2"x6' pipe	181	(2) Ericsson RRUS-11	142
(3) 2"x6' pipe	181	(2) Ericsson RRUS-11	142
Omni 4"x6'	181	Ericsson A2 Module	142
Omni 2"x6'	181	Ericsson A2 Module	142
Distribution Box	181	Ericsson A2 Module	142
Omni 3"x4'	181	Powerwave 7770	140
Omni 3"x10'	181	(2) Powerwave TMA LGP21401	140
Distribution Box	181	(2) Powerwave TMA LGP21401	140
Omni 3"x4'	181	(2) Powerwave TMA LGP21401	140
4' Dipole	181	Powerwave 7770	140
TA 702-3	180	Surge Arrestor (DC6-48-60-18-8F)	140
ET-X-TU-42-15-37-18-IR-ST w/mount pipe (SPRINT)	174	TA 602-3	140
APXVSP18-C w/mount pipe	174	TPA-65R-LCUUUU-H8 w/mount pipe (ATI - Proposed)	140
APXVSP18-C w/mount pipe	174	HPA-65R-BUU-H8 w/mount pipe	140
APXV9TM14 w/mount pipe	174	TPA-65R-LCUUUU-H8 w/mount pipe	140
APXV9TM14 w/mount pipe	174	HPA-65R-BUU-H8 w/mount pipe	140
APXV9TM14 w/mount pipe	174	(2) SBNHH-1D65A w/ Mount Pipe	140
TA 602-3	174	Ericsson RRUS-32	140
RRH 8x20-25	174	Ericsson RRUS-32	140
RRH 8x20-25	174	Ericsson RRUS-32	140
RRH 8x20-25	174	(2) TPX-070821 Triplexer	140
RRH-800	170	(2) TPX-070821 Triplexer	140
RRH-800	170	(2) TPX-070821 Triplexer	140
RRH-800	170	Surge Arrestor (DC6-48-60-18-8F)	140
RRH-1900 (SPRINT)	170	Powerwave 7770 (ATI - Existing)	140
RRH-1900	170	BXA-70063-4CF-EDIN w/mount pipe	130
RRH-1900	170	BXA-70063-6CF-EDIN w/mount pipe	130
Ring Mount	170	Rymsa MGD3-900	130
HP2-102	159	RRH2X40 AWS	130
(2) ERICSSON AIR 21 B4A B2P w/ Mount Pipe	151	BXA-171063-12CF-EDIN w/mount pipe	130
(2) ERICSSON AIR 21 B4A B2P w/ Mount Pipe	151	BXA-70063-4CF-EDIN w/mount pipe	130
Andrew LNX-6515DS-VTM w/mount pipe	151	BXA-70063-6CF-EDIN w/mount pipe	130
Andrew LNX-6515DS-VTM w/mount pipe	151	Rymsa MGD3-900	130
Andrew LNX-6515DS-VTM w/mount pipe	151	RRH2X40 AWS	130
Andrew LNX-6515DS-VTM w/mount pipe	151	BXA-171063-12CF-EDIN w/mount pipe	130
RRUS 11	151	BXA-70063-4CF-EDIN w/mount pipe	130
RRUS 11	151	BXA-70063-6CF-EDIN w/mount pipe	130
RRUS 11	151	Rymsa MGD3-900	130
Gen. TMA	151	RRH2X40 AWS	130
Gen. TMA	151	RxxDC-3315-PF-48	130
Gen. TMA	151	PIROD 13' Low Profile Platform	130
TA 602-3	151	BXA-171063-12CF-EDIN w/mount pipe (VERIZON)	130
(2) ERICSSON AIR 21 B4A B2P w/ Mount Pipe	151	HP2-102	126


MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80.0 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69.3 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50.0 mph wind.

 Hudson Design Group LLC 1600 Osgood Street Bldg. 20N Suite 3090 North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	Job: CT 5122
	Project: 179 ft monopole
	Client: AT&T
	Code: TIA/EIA-222-F
Path:	Drawn by: kw
Date: 04/28/16	App'd:
Scale: NTS	Dwg No. E-1

 Hudson Design Group LLC 1600 Osgood Street Bldg. 20N Suite 3090 North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586	Job	CT 5122	Page	1 of 12
	Project	179 ft monopole	Date	13:44:20 04/28/16
	Client	AT&T	Designed by	kw

Tower Input Data

There is a pole section.

This tower is designed using the TIA/EIA-222-F standard.

The following design criteria apply:

Tower is located in Hartford County, Connecticut.

Basic wind speed of 80.0 mph.

Nominal ice thickness of 0.500 in.

Ice density of 56.0 pcf.

A wind speed of 69.3 mph is used in combination with ice.

Temperature drop of 50.0 °F.

Deflections calculated using a wind speed of 50.0 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.333.

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	179.00-141.25	37.75	4.33	18	23.100	33.249	0.250	1.000	A572-65 (65 ksi)
L2	141.25-92.58	53.00	5.92	18	31.585	45.834	0.375	1.500	A572-65 (65 ksi)
L3	92.58-45.50	53.00	7.50	18	43.492	57.742	0.375	1.500	A572-65 (65 ksi)
L4	45.50-0.00	53.00		18	54.976	69.225	0.375	1.500	A572-65 (65 ksi)

Monopole Base Plate Data

Base Plate Data

Base plate is square	√
Base plate is grouted	
Anchor bolt grade	A615-75
Anchor bolt size	2.250 in
Number of bolts	16
Embedment length	72.000 in
f_c	3.0 ksi
Grout space	3.000 in
Base plate grade	A572-60
Base plate thickness	2.250 in
Bolt circle diameter	76.000 in
Outer diameter	82.000 in
Inner diameter	48.000 in
Base plate type	Stiffened Plate
Bolts per stiffener	1
Stiffener thickness	0.500 in



Hudson Design Group LLC
 1600 Osgood Street Bldg. 20N Suite 3090
 North Andover, MA 01845
 Phone: (978) 557-5553
 FAX: (978) 336-5586

Job	CT 5122	Page	2 of 12
Project	179 ft monopole	Date	13:44:20 04/28/16
Client	AT&T	Designed by	kw

Base Plate Data	
Stiffener height	12.000 in

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	CAAA		Weight plf
						ft ² /ft	plf	
1 5/8	B	No	Inside Pole	179.00 - 6.00	4	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
1 1/4	B	No	Inside Pole	179.00 - 6.00	1	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
7/8	B	No	Inside Pole	179.00 - 6.00	2	No Ice	0.00	0.54
						1/2" Ice	0.00	0.54
1/2	B	No	Inside Pole	179.00 - 6.00	2	No Ice	0.00	0.25
						1/2" Ice	0.00	0.25

1 1/4 (SPRINT)	B	No	Inside Pole	174.00 - 6.00	3	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
1 1/4	B	No	CaAa (Out Of Face)	174.00 - 6.00	1	No Ice	0.16	0.66
						1/2" Ice	0.25	1.91

1/4	B	No	Inside Pole	159.00 - 6.00	1	No Ice	0.00	0.25
						1/2" Ice	0.00	0.25

1 5/8 (T-Mobile)	C	No	Inside Pole	151.00 - 6.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
1 5/8	C	No	CaAa (Out Of Face)	151.00 - 6.00	6	No Ice	0.20	1.04
						1/2" Ice	0.30	2.55
1/4	C	No	CaAa (Out Of Face)	151.00 - 6.00	1	No Ice	0.06	0.25
						1/2" Ice	0.16	0.91

1 5/8 (AT&T - Existing)	A	No	Inside Pole	140.00 - 6.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
FB-L98B-002	A	No	Inside Pole	140.00 - 6.00	1	No Ice	0.00	0.25
						1/2" Ice	0.00	0.25
WR-VG122ST-BRDA	A	No	Inside Pole	140.00 - 6.00	2	No Ice	0.00	0.25
						1/2" Ice	0.00	0.25

FB-L98B-002 (AT&T - Proposed)	A	No	Inside Pole	140.00 - 6.00	1	No Ice	0.00	0.25
						1/2" Ice	0.00	0.25
WR-VG122ST-BRDA	A	No	Inside Pole	140.00 - 6.00	2	No Ice	0.00	0.25
						1/2" Ice	0.00	0.25

1 5/8 (Verizon)	C	No	Inside Pole	130.00 - 6.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
1 5/8	C	No	CaAa (Out Of Face)	130.00 - 6.00	6	No Ice	0.20	1.04
						1/2" Ice	0.30	2.55
1/4	C	No	CaAa (Out Of Face)	130.00 - 6.00	1	No Ice	0.06	0.25
						1/2" Ice	0.16	0.91

1/4	B	No	Inside Pole	126.00 - 6.00	1	No Ice	0.00	0.25
						1/2" Ice	0.00	0.25

step rungs	C	No	CaAa (Out Of Face)	179.00 - 6.00	1	No Ice	0.10	1.00
						1/2" Ice	0.15	1.50



Hudson Design Group LLC
 1600 Osgood Street Bldg. 20N Suite 3090
 North Andover, MA 01845
 Phone: (978) 557-5553
 FAX: (978) 336-5586

Job	CT 5122	Page	3 of 12
Project	179 ft monopole	Date	13:44:20 04/28/16
Client	AT&T	Designed by	kw

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						
			ft	ft	°	ft	ft ²	ft ²	lb	
(3) 2"x6' pipe	A	From Face	2.00	0.00	0.0000	181.00	No Ice	1.43	1.43	22.00
			0.00	0.00			1/2" Ice	1.93	1.93	32.85
			0.00	0.00						
(3) 2"x6' pipe	B	From Face	2.00	0.00	0.0000	181.00	No Ice	1.43	1.43	22.00
			0.00	0.00			1/2" Ice	1.93	1.93	32.85
			0.00	0.00						
(3) 2"x6' pipe	C	From Face	2.00	0.00	0.0000	181.00	No Ice	1.43	1.43	22.00
			0.00	0.00			1/2" Ice	1.93	1.93	32.85
			0.00	0.00						
Omni 4"x6'	A	From Face	2.00	0.00	0.0000	181.00	No Ice	2.09	2.09	20.00
			0.00	5.00			1/2" Ice	2.46	2.46	37.13
			5.00	0.00						
Omni 2"x6'	A	From Face	2.00	0.00	0.0000	181.00	No Ice	1.20	1.20	25.00
			0.00	5.00			1/2" Ice	1.80	1.80	34.39
			5.00	0.00						
Distribution Box	A	From Face	1.00	0.00	0.0000	181.00	No Ice	2.33	1.36	10.00
			0.00	0.00			1/2" Ice	2.55	1.54	26.33
			0.00	0.00						
Omni 3"x4'	B	From Face	2.00	0.00	0.0000	181.00	No Ice	1.00	1.00	15.00
			0.00	4.00			1/2" Ice	1.25	1.25	23.96
			4.00	0.00						
Omni 3"x10'	B	From Face	2.00	0.00	0.0000	181.00	No Ice	3.00	3.00	20.00
			0.00	7.00			1/2" Ice	4.03	4.03	41.79
			7.00	0.00						
Distribution Box	B	From Face	1.00	0.00	0.0000	181.00	No Ice	2.33	1.36	10.00
			0.00	0.00			1/2" Ice	2.55	1.54	26.33
			0.00	0.00						
Omni 3"x4'	C	From Face	2.00	0.00	0.0000	181.00	No Ice	1.00	1.00	15.00
			0.00	4.00			1/2" Ice	1.25	1.25	23.96
			4.00	0.00						
4' Dipole	C	From Face	2.00	0.00	0.0000	181.00	No Ice	1.64	1.64	15.00
			0.00	4.00			1/2" Ice	1.91	1.91	32.13
			4.00	0.00						
TA 702-3	A	None			0.0000	180.00	No Ice	5.64	5.64	339.00
							1/2" Ice	6.55	6.55	429.00

ET-X-TU-42-15-37-18-IR-ST w/mount pipe (SPRINT)	A	From Face	3.00	0.00	0.0000	174.00	No Ice	8.68	4.50	68.25
			0.00	0.00			1/2" Ice	9.18	5.17	127.30
			0.00	0.00						
APXVSPP18-C w/mount pipe	B	From Face	3.00	0.00	0.0000	174.00	No Ice	8.50	6.95	82.55
			0.00	0.00			1/2" Ice	9.15	8.13	150.56
			0.00	0.00						
APXVSPP18-C w/mount pipe	C	From Face	3.00	0.00	0.0000	174.00	No Ice	8.50	6.95	82.55
			0.00	0.00			1/2" Ice	9.15	8.13	150.56
			0.00	0.00						
APXV9TM14 w/mount pipe	A	From Face	3.00	0.00	0.0000	174.00	No Ice	7.21	5.03	91.90
			0.00	0.00			1/2" Ice	7.77	5.89	147.31
			0.00	0.00						
APXV9TM14 w/mount pipe	B	From Face	3.00	0.00	0.0000	174.00	No Ice	7.21	5.03	91.90
			0.00	0.00			1/2" Ice	7.77	5.89	147.31
			0.00	0.00						
APXV9TM14 w/mount pipe	C	From Face	3.00	0.00	0.0000	174.00	No Ice	7.21	5.03	91.90
			0.00	0.00			1/2" Ice	7.77	5.89	147.31
			0.00	0.00						



Hudson Design Group LLC
 1600 Osgood Street Bldg. 20N Suite 3090
 North Andover, MA 01845
 Phone: (978) 557-5553
 FAX: (978) 336-5586

Job	CT 5122	Page	4 of 12
Project	179 ft monopole	Date	13:44:20 04/28/16
Client	AT&T	Designed by	kw

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb	
TA 602-3	A	None		0.0000	174.00	No Ice 1/2" Ice	11.59 15.44	11.59 15.44	774.00 990.00

RRH-1900 (SPRINT)	A	From Face	1.50 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice	2.71 2.95	3.66 3.92	60.00 88.32
RRH-1900	B	From Face	1.50 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice	2.71 2.95	3.66 3.92	60.00 88.32
RRH-1900	C	From Face	1.50 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice	2.71 2.95	3.66 3.92	60.00 88.32
RRH-800	A	From Face	1.50 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice	2.49 2.71	3.22 3.46	64.00 91.74
RRH-800	B	From Face	1.50 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice	2.49 2.71	3.22 3.46	64.00 91.74
RRH-800	C	From Face	1.50 0.00 0.00	0.0000	170.00	No Ice 1/2" Ice	2.49 2.71	3.22 3.46	64.00 91.74
RRH 8x20-25	A	From Face	1.50 0.00 0.00	0.0000	174.00	No Ice 1/2" Ice	4.72 5.01	1.70 1.92	70.00 97.14
RRH 8x20-25	B	From Face	1.50 0.00 0.00	0.0000	174.00	No Ice 1/2" Ice	4.72 5.01	1.70 1.92	70.00 97.14
RRH 8x20-25	C	From Face	1.50 0.00 0.00	0.0000	174.00	No Ice 1/2" Ice	4.72 5.01	1.70 1.92	70.00 97.14
Ring Mount	A	None		0.0000	170.00	No Ice 1/2" Ice	1.40 2.40	1.40 2.40	90.00 130.00

(2) ERICSSON AIR 21 B4A B2P w/ Mount Pipe	A	From Face	3.00 0.00 1.00	0.0000	151.00	No Ice 1/2" Ice	6.85 7.41	5.78 6.70	104.90 162.69
(2) ERICSSON AIR 21 B4A B2P w/ Mount Pipe	B	From Face	3.00 0.00 1.00	0.0000	151.00	No Ice 1/2" Ice	6.85 7.41	5.78 6.70	104.90 162.69
(2) ERICSSON AIR 21 B4A B2P w/ Mount Pipe	C	From Face	3.00 0.00 1.00	0.0000	151.00	No Ice 1/2" Ice	6.85 7.41	5.78 6.70	104.90 162.69
Andrew LNX-6515DS-VTM w/mount pipe	A	From Face	3.00 0.00 1.00	0.0000	151.00	No Ice 1/2" Ice	11.72 12.44	10.28 11.81	102.41 196.22
Andrew LNX-6515DS-VTM w/mount pipe	B	From Face	3.00 0.00 1.00	0.0000	151.00	No Ice 1/2" Ice	11.72 12.44	10.28 11.81	102.41 196.22
Andrew LNX-6515DS-VTM w/mount pipe	C	From Face	3.00 0.00 1.00	0.0000	151.00	No Ice 1/2" Ice	11.72 12.44	10.28 11.81	102.41 196.22
RRUS 11	A	From Face	2.00 0.00 0.00	0.0000	151.00	No Ice 1/2" Ice	3.25 3.49	1.37 1.55	50.70 71.50
RRUS 11	B	From Face	2.00 0.00 0.00	0.0000	151.00	No Ice 1/2" Ice	3.25 3.49	1.37 1.55	50.70 71.50



Hudson Design Group LLC
 1600 Osgood Street Bldg. 20N Suite 3090
 North Andover, MA 01845
 Phone: (978) 557-5553
 FAX: (978) 336-5586

Job	CT 5122	Page	5 of 12
Project	179 ft monopole	Date	13:44:20 04/28/16
Client	AT&T	Designed by	kw

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb	
RRUS 11	C	From Face	2.00 0.00 0.00	0.0000	151.00	No Ice 1/2" Ice 3.25 3.49	1.37 1.55	50.70 71.50	
Gen. TMA	A	From Face	2.00 0.00 0.00	0.0000	151.00	No Ice 1/2" Ice 0.68 0.80	0.45 0.56	13.20 18.38	
Gen. TMA	B	From Face	2.00 0.00 0.00	0.0000	151.00	No Ice 1/2" Ice 0.68 0.80	0.45 0.56	13.20 18.38	
Gen. TMA	C	From Face	2.00 0.00 0.00	0.0000	151.00	No Ice 1/2" Ice 0.68 0.80	0.45 0.56	13.20 18.38	
TA 602-3	A	None		0.0000	151.00	No Ice 1/2" Ice 11.59 15.44	11.59 15.44	774.00 990.00	

Powerwave 7770 (AT&T - Existing)	A	From Face	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 5.92 6.36	2.91 3.26	39.00 71.64	
Powerwave 7770	B	From Face	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 5.92 6.36	2.91 3.26	39.00 71.64	
Powerwave 7770	C	From Face	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 5.92 6.36	2.91 3.26	39.00 71.64	
(2) Powerwave TMA LGP21401	A	From Face	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1.23 1.38	0.41 0.52	14.10 21.29	
(2) Powerwave TMA LGP21401	B	From Face	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1.23 1.38	0.41 0.52	14.10 21.29	
(2) Powerwave TMA LGP21401	C	From Face	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1.23 1.38	0.41 0.52	14.10 21.29	
(2) Ericsson RRUS-11	A	From Leg	1.00 0.00 0.00	0.0000	142.00	No Ice 1/2" Ice 3.26 3.50	1.38 1.56	50.70 71.57	
(2) Ericsson RRUS-11	B	From Leg	1.00 0.00 0.00	0.0000	142.00	No Ice 1/2" Ice 3.26 3.50	1.38 1.56	50.70 71.57	
(2) Ericsson RRUS-11	C	From Leg	1.00 0.00 0.00	0.0000	142.00	No Ice 1/2" Ice 3.26 3.50	1.38 1.56	50.70 71.57	
Ericsson A2 Module	A	From Leg	1.00 0.00 0.00	0.0000	142.00	No Ice 1/2" Ice 2.42 2.63	0.54 0.67	22.00 34.73	
Ericsson A2 Module	B	From Leg	1.00 0.00 0.00	0.0000	142.00	No Ice 1/2" Ice 2.42 2.63	0.54 0.67	22.00 34.73	
Ericsson A2 Module	C	From Leg	1.00 0.00 0.00	0.0000	142.00	No Ice 1/2" Ice 2.42 2.63	0.54 0.67	22.00 34.73	
Surge Arrestor (DC6-48-60-18-8F)	A	From Face	1.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1.27 1.46	1.27 1.46	20.00 35.12	
TA 602-3	A	None		0.0000	140.00	No Ice 1/2" Ice 11.59 15.44	11.59 15.44	774.00 990.00	



Hudson Design Group LLC
 1600 Osgood Street Bldg. 20N Suite 3090
 North Andover, MA 01845
 Phone: (978) 557-5553
 FAX: (978) 336-5586

Job	CT 5122	Page	6 of 12
Project	179 ft monopole	Date	13:44:20 04/28/16
Client	AT&T	Designed by	kw

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	lb
TPA-65R-LCUUUU-H8 w/mount pipe (AT&T - Proposed)	A	From Face	3.00	0.0000	140.00	No Ice	13.91	11.20	118.50
			0.00			1/2" Ice	14.84	12.82	224.27
			0.00						
HPA-65R-BUU-H8 w/mount pipe	A	From Face	3.00	0.0000	140.00	No Ice	13.37	9.42	97.20
			0.00			1/2" Ice	14.10	10.82	192.07
			0.00						
TPA-65R-LCUUUU-H8 w/mount pipe	B	From Face	3.00	0.0000	140.00	No Ice	13.91	11.20	118.50
			0.00			1/2" Ice	14.84	12.82	224.27
			0.00						
HPA-65R-BUU-H8 w/mount pipe	B	From Face	3.00	0.0000	140.00	No Ice	13.37	9.42	97.20
			0.00			1/2" Ice	14.10	10.82	192.07
			0.00						
(2) SBNHH-1D65A w/ Mount Pipe	C	From Face	3.00	0.0000	140.00	No Ice	6.76	5.34	55.90
			0.00			1/2" Ice	7.31	6.20	111.21
			0.00						
Ericsson RRUS-32	A	From Leg	1.00	0.0000	140.00	No Ice	3.87	2.76	77.00
			0.00			1/2" Ice	4.15	3.02	104.93
			0.00						
Ericsson RRUS-32	B	From Leg	1.00	0.0000	140.00	No Ice	3.87	2.76	77.00
			0.00			1/2" Ice	4.15	3.02	104.93
			0.00						
Ericsson RRUS-32	C	From Leg	1.00	0.0000	140.00	No Ice	3.87	2.76	77.00
			0.00			1/2" Ice	4.15	3.02	104.93
			0.00						
(2) TPX-070821 Triplexer	A	From Face	2.00	0.0000	140.00	No Ice	0.55	0.12	7.50
			0.00			1/2" Ice	0.65	0.17	10.96
			0.00						
(2) TPX-070821 Triplexer	B	From Face	2.00	0.0000	140.00	No Ice	0.55	0.12	7.50
			0.00			1/2" Ice	0.65	0.17	10.96
			0.00						
(2) TPX-070821 Triplexer	C	From Face	2.00	0.0000	140.00	No Ice	0.55	0.12	7.50
			0.00			1/2" Ice	0.65	0.17	10.96
			0.00						
Surge Arrestor (DC6-48-60-18-8F)	C	From Face	1.00	0.0000	140.00	No Ice	1.27	1.27	20.00
			0.00			1/2" Ice	1.46	1.46	35.12
			0.00						

BXA-171063-12CF-EDIN w/mount pipe (VERIZON)	A	From Face	3.00	0.0000	130.00	No Ice	5.02	5.28	40.55
			-6.00			1/2" Ice	5.57	6.45	86.49
			0.00						
BXA-70063-4CF-EDIN w/mount pipe	A	From Face	3.00	0.0000	130.00	No Ice	5.41	3.70	28.25
			6.00			1/2" Ice	5.86	4.32	70.71
			0.00						
BXA-70063-6CF-EDIN w/mount pipe	A	From Face	3.00	0.0000	130.00	No Ice	7.99	5.82	42.55
			-2.00			1/2" Ice	8.64	6.99	103.53
			0.00						
Ryma MGD3-900	A	From Face	3.00	0.0000	130.00	No Ice	5.37	3.60	22.00
			2.00			1/2" Ice	5.83	4.04	51.69
			0.00						
RRH2X40 AWS	A	From Face	2.00	0.0000	130.00	No Ice	2.52	1.59	44.00
			6.00			1/2" Ice	2.75	1.80	61.40
			0.00						
BXA-171063-12CF-EDIN w/mount pipe	B	From Face	3.00	0.0000	130.00	No Ice	5.02	5.28	40.55
			-6.00			1/2" Ice	5.57	6.45	86.49
			0.00						
BXA-70063-4CF-EDIN w/mount pipe	B	From Face	3.00	0.0000	130.00	No Ice	5.41	3.70	28.25
			6.00			1/2" Ice	5.86	4.32	70.71
			0.00						



Hudson Design Group LLC
 1600 Osgood Street Bldg. 20N Suite 3090
 North Andover, MA 01845
 Phone: (978) 557-5553
 FAX: (978) 336-5586

Job	CT 5122	Page	7 of 12
Project	179 ft monopole	Date	13:44:20 04/28/16
Client	AT&T	Designed by	kw

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						
			ft	ft	°	ft	ft ²	ft ²	lb	
BXA-70063-6CF-EDIN w/mount pipe	B	From Face		0.00	0.0000	130.00	No Ice	7.99	5.82	42.55
				3.00			1/2" Ice	8.64	6.99	103.53
				-2.00						
Ryma MGD3-900	B	From Face		0.00	0.0000	130.00	No Ice	5.37	3.60	22.00
				3.00			1/2" Ice	5.83	4.04	51.69
				2.00						
RRH2X40 AWS	B	From Face		0.00	0.0000	130.00	No Ice	2.52	1.59	44.00
				2.00			1/2" Ice	2.75	1.80	61.40
				6.00						
BXA-171063-12CF-EDIN w/mount pipe	C	From Face		0.00	0.0000	130.00	No Ice	5.02	5.28	40.55
				3.00			1/2" Ice	5.57	6.45	86.49
				-6.00						
BXA-70063-4CF-EDIN w/mount pipe	C	From Face		0.00	0.0000	130.00	No Ice	5.41	3.70	28.25
				3.00			1/2" Ice	5.86	4.32	70.71
				6.00						
BXA-70063-6CF-EDIN w/mount pipe	C	From Face		0.00	0.0000	130.00	No Ice	7.99	5.82	42.55
				3.00			1/2" Ice	8.64	6.99	103.53
				-2.00						
Ryma MGD3-900	C	From Face		0.00	0.0000	130.00	No Ice	5.37	3.60	22.00
				3.00			1/2" Ice	5.83	4.04	51.69
				2.00						
RRH2X40 AWS	C	From Face		0.00	0.0000	130.00	No Ice	2.52	1.59	44.00
				2.00			1/2" Ice	2.75	1.80	61.40
				6.00						
RxxDC-3315-PF-48	C	From Face		0.00	0.0000	130.00	No Ice	5.36	2.91	32.00
				2.00			1/2" Ice	5.67	3.17	67.82
				6.00						
PiROD 13' Low Profile Platform *****	A	None		0.00	0.0000	130.00	No Ice	15.70	15.70	1300.00
				0.00			1/2" Ice	20.10	20.10	1765.00

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz	Lateral							
				ft	ft	°	°	ft	ft	ft ²	lb	
HP2-102	C	Paraboloid w/Shroud (HP)	From Face		1.50	Worst		159.00	2.00	No Ice	3.14	25.00
					0.00					1/2" Ice	3.41	42.49
					0.00							
HP2-102	A	Paraboloid w/Shroud (HP)	From Face		1.50	Worst		126.00	2.00	No Ice	3.14	25.00
					0.00					1/2" Ice	3.41	42.49
					0.00							

Load Combinations

Comb. No.	Description
-----------	-------------



Hudson Design Group LLC
 1600 Osgood Street Bldg. 20N Suite 3090
 North Andover, MA 01845
 Phone: (978) 557-5553
 FAX: (978) 336-5586

Job	CT 5122	Page	8 of 12
Project	179 ft monopole	Date	13:44:20 04/28/16
Client	AT&T	Designed by	kw

<i>Comb. No.</i>	<i>Description</i>
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Force lb</i>	<i>Major Axis Moment lb-ft</i>	<i>Minor Axis Moment lb-ft</i>
L1	179 - 141.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-10334.62	111.95	-237.04
			Max. Mx	11	-6615.70	237294.25	1390.63
			Max. My	8	-6630.61	-1350.28	-234071.75
			Max. Vy	11	-12654.40	237294.25	1390.63
			Max. Vx	8	12548.33	-1350.28	-234071.75
			Max. Torque	4			-628.49
L2	141.25 - 92.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-28713.20	2574.63	-807.86
			Max. Mx	11	-20093.31	1366923.79	3679.53
			Max. My	8	-20113.26	-2844.54	-1354173.3
			Max. Vy	11	-30319.20	1366923.79	3679.53
			Max. Vx	8	30149.53	-2844.54	-1354173.3



Hudson Design Group LLC
 1600 Osgood Street Bldg. 20N Suite 3090
 North Andover, MA 01845
 Phone: (978) 557-5553
 FAX: (978) 336-5586

Job	CT 5122	Page	9 of 12
Project	179 ft monopole	Date	13:44:20 04/28/16
Client	AT&T	Designed by	kw

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L3	92.58 - 45.5	Pole	Max. Torque	8			1 -2504.83
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-44031.15	5166.34	-2484.65
			Max. Mx	11	-33542.48	2941942.13	5410.77
			Max. My	8	-33554.00	-4122.18	-2921089.8
			Max. Vy	11	-38743.65	2941942.13	5410.77
			Max. Vx	8	38575.37	-4122.18	-2921089.8
L4	45.5 - 0	Pole	Max. Torque	21			5 -4042.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-64975.69	8454.24	-4609.45
			Max. Mx	11	-52492.04	5211171.10	7290.37
			Max. My	8	-52492.32	-5492.85	-5181025.8
			Max. Vy	11	-46619.12	5211171.10	7290.37
			Max. Vx	8	46456.61	-5492.85	-5181025.8
		Max. Torque	26			7 6006.52	

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	24	64975.69	42723.06	43.17
	Max. H _x	11	52521.66	46585.75	50.74
	Max. H _z	2	52521.66	50.74	46423.43
	Max. M _x	2	5177374.32	50.74	46423.43
	Max. M _z	5	5203906.37	-46585.75	-50.74
	Max. Torsion	26	6006.54	21398.92	36931.56
	Min. Vert	1	52521.66	0.00	0.00
	Min. H _x	5	52521.66	-46585.75	-50.74
	Min. H _z	8	52521.66	-50.74	-46423.43
	Min. M _x	8	-5181025.87	-50.74	-46423.43
	Min. M _z	11	-5211171.10	46585.75	50.74
	Min. Torsion	20	-6006.28	-21398.92	-36931.56

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
Dead Only	52521.66	0.00	0.00	1786.49	3538.73	0.00
Dead+Wind 0 deg - No Ice	52521.66	-50.74	-46423.43	-5177374.32	12742.39	-5214.26
Dead+Wind 30 deg - No Ice	52521.66	23248.93	-40178.49	-4478935.77	-2592282.43	-3812.38
Dead+Wind 60 deg - No Ice	52521.66	40319.07	-23167.77	-2579860.57	-4501705.50	-1389.79
Dead+Wind 90 deg - No Ice	52521.66	46585.75	50.74	10945.23	-5203906.37	1405.02
Dead+Wind 120 deg - No Ice	52521.66	40369.81	23255.65	2599289.11	-4510790.63	3824.01
Dead+Wind 150 deg - No Ice	52521.66	23336.81	40229.23	4491674.79	-2608055.90	5219.30
Dead+Wind 180 deg - No Ice	52521.66	50.74	46423.43	5181025.87	-5493.82	5216.30



Hudson Design Group LLC
 1600 Osgood Street Bldg. 20N Suite 3090
 North Andover, MA 01845
 Phone: (978) 557-5553
 FAX: (978) 336-5586

Job	CT 5122	Page	10 of 12
Project	179 ft monopole	Date	13:44:20 04/28/16
Client	AT&T	Designed by	kw

Load Combination	Vertical	Shear _x	Shear _z	Overturning Moment, M _x	Overturning Moment, M _z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead+Wind 210 deg - No Ice	52521.66	-23248.93	40178.49	4482595.31	2599533.76	3814.61
Dead+Wind 240 deg - No Ice	52521.66	-40319.07	23167.77	2583521.64	4508964.95	1389.90
Dead+Wind 270 deg - No Ice	52521.66	-46585.75	-50.74	-7290.62	5211171.10	-1407.13
Dead+Wind 300 deg - No Ice	52521.66	-40369.81	-23255.65	-2595642.49	4518052.54	-3826.28
Dead+Wind 330 deg - No Ice	52521.66	-23336.81	-40229.23	-4488029.70	2615309.70	-5219.54
Dead+Ice+Temp	64975.69	-0.00	0.00	4609.45	8454.24	-0.08
Dead+Wind 0 deg+Ice+Temp	64975.69	-43.17	-42619.97	-4723048.01	16459.70	-5716.02
Dead+Wind 30 deg+Ice+Temp	64975.69	21324.14	-36888.39	-4085727.93	-2358017.49	-3894.44
Dead+Wind 60 deg+Ice+Temp	64975.69	36977.66	-21272.60	-2352370.48	-4098339.15	-1030.01
Dead+Wind 90 deg+Ice+Temp	64975.69	42723.07	43.17	12543.23	-4738192.53	2110.31
Dead+Wind 120 deg+Ice+Temp	64975.69	37020.84	21347.37	2375340.98	-4106160.03	4685.72
Dead+Wind 150 deg+Ice+Temp	64975.69	21398.92	36931.56	4102943.97	-2371590.91	6006.28
Dead+Wind 180 deg+Ice+Temp	64975.69	43.17	42619.97	4732440.18	769.46	5717.60
Dead+Wind 210 deg+Ice+Temp	64975.69	-21324.14	36888.39	4095126.46	2375247.81	3896.17
Dead+Wind 240 deg+Ice+Temp	64975.69	-36977.67	21272.60	2361771.14	4115575.25	1029.98
Dead+Wind 270 deg+Ice+Temp	64975.69	-42723.06	-43.17	-3146.79	4755433.26	-2112.10
Dead+Wind 300 deg+Ice+Temp	64975.69	-37020.84	-21347.37	-2365950.90	4123399.61	-4687.58
Dead+Wind 330 deg+Ice+Temp	64975.69	-21398.92	-36931.56	-4093556.02	2388824.70	-6006.54
Dead+Wind 0 deg - Service	52521.66	-19.82	-18134.15	-2022763.24	7205.68	-2043.82
Dead+Wind 30 deg - Service	52521.66	9081.61	-15694.73	-1749736.10	-1011120.86	-1495.17
Dead+Wind 60 deg - Service	52521.66	15749.64	-9049.91	-1007377.86	-1757540.88	-546.03
Dead+Wind 90 deg - Service	52521.66	18197.56	19.82	5394.40	-2032052.77	549.44
Dead+Wind 120 deg - Service	52521.66	15769.46	9084.24	1017210.07	-1761104.37	1497.81
Dead+Wind 150 deg - Service	52521.66	9115.94	15714.55	1756957.10	-1017295.35	2044.95
Dead+Wind 180 deg - Service	52521.66	19.82	18134.15	2026420.42	74.51	2044.16
Dead+Wind 210 deg - Service	52521.66	-9081.62	15694.73	1753394.50	1018401.48	1495.49
Dead+Wind 240 deg - Service	52521.66	-15749.64	9049.91	1011036.49	1764822.74	545.96
Dead+Wind 270 deg - Service	52521.66	-18197.56	-19.82	-1736.75	2039335.44	-549.82
Dead+Wind 300 deg - Service	52521.66	-15769.46	-9084.24	-1013553.64	1768386.61	-1498.14
Dead+Wind 330 deg - Service	52521.66	-9115.94	-15714.55	-1753300.90	1024576.35	-2044.95

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-52521.66	0.00	0.00	52521.66	0.00	0.000%
2	-50.74	-52521.66	-46423.42	50.74	52521.66	46423.43	0.000%
3	23248.93	-52521.66	-40178.49	-23248.93	52521.66	40178.49	0.000%
4	40319.07	-52521.66	-23167.77	-40319.07	52521.66	23167.77	0.000%
5	46585.74	-52521.66	50.74	-46585.75	52521.66	-50.74	0.000%
6	40369.81	-52521.66	23255.65	-40369.81	52521.66	-23255.65	0.000%
7	23336.81	-52521.66	40229.23	-23336.81	52521.66	-40229.23	0.000%
8	50.74	-52521.66	46423.42	-50.74	52521.66	-46423.43	0.000%
9	-23248.93	-52521.66	40178.49	23248.93	52521.66	-40178.49	0.000%
10	-40319.07	-52521.66	23167.77	40319.07	52521.66	-23167.77	0.000%
11	-46585.74	-52521.66	-50.74	46585.75	52521.66	50.74	0.000%
12	-40369.81	-52521.66	-23255.65	40369.81	52521.66	23255.65	0.000%
13	-23336.81	-52521.66	-40229.23	23336.81	52521.66	40229.23	0.000%
14	0.00	-64975.69	0.00	0.00	64975.69	-0.00	0.000%
15	-43.17	-64975.69	-42619.96	43.17	64975.69	42619.97	0.000%
16	21324.13	-64975.69	-36888.38	-21324.14	64975.69	36888.39	0.000%
17	36977.66	-64975.69	-21272.59	-36977.67	64975.69	21272.60	0.000%
18	42723.05	-64975.69	43.17	-42723.06	64975.69	-43.17	0.000%
19	37020.83	-64975.69	21347.37	-37020.84	64975.69	-21347.37	0.000%
20	21398.91	-64975.69	36931.56	-21398.92	64975.69	-36931.56	0.000%
21	43.17	-64975.69	42619.96	-43.17	64975.69	-42619.97	0.000%



Hudson Design Group LLC
 1600 Osgood Street Bldg. 20N Suite 3090
 North Andover, MA 01845
 Phone: (978) 557-5553
 FAX: (978) 336-5586

Job	CT 5122	Page	11 of 12
Project	179 ft monopole	Date	13:44:20 04/28/16
Client	AT&T	Designed by	kw

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
22	-21324.13	-64975.69	36888.38	21324.14	64975.69	-36888.39	0.000%
23	-36977.66	-64975.69	21272.59	36977.67	64975.69	-21272.60	0.000%
24	-42723.05	-64975.69	-43.17	42723.06	64975.69	43.17	0.000%
25	-37020.83	-64975.69	-21347.37	37020.84	64975.69	21347.37	0.000%
26	-21398.91	-64975.69	-36931.56	21398.92	64975.69	36931.56	0.000%
27	-19.82	-52521.66	-18134.15	19.82	52521.66	18134.15	0.000%
28	9081.61	-52521.66	-15694.72	-9081.61	52521.66	15694.73	0.000%
29	15749.64	-52521.66	-9049.91	-15749.64	52521.66	9049.91	0.000%
30	18197.56	-52521.66	19.82	-18197.56	52521.66	-19.82	0.000%
31	15769.46	-52521.66	9084.24	-15769.46	52521.66	-9084.24	0.000%
32	9115.94	-52521.66	15714.54	-9115.94	52521.66	-15714.55	0.000%
33	19.82	-52521.66	18134.15	-19.82	52521.66	-18134.15	0.000%
34	-9081.61	-52521.66	15694.72	9081.62	52521.66	-15694.73	0.000%
35	-15749.64	-52521.66	9049.91	15749.64	52521.66	-9049.91	0.000%
36	-18197.56	-52521.66	-19.82	18197.56	52521.66	19.82	0.000%
37	-15769.46	-52521.66	-9084.24	15769.46	52521.66	9084.24	0.000%
38	-9115.94	-52521.66	-15714.54	9115.94	52521.66	15714.55	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	179 - 141.25	38.2120	36	1.7496	0.0021
L2	145.58 - 92.58	26.3093	36	1.6074	0.0029
L3	98.5 - 45.5	12.3066	36	1.1714	0.0020
L4	53 - 0	3.6059	36	0.6198	0.0009

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
181.00	(3) 2"x6' pipe	36	38.2120	1.7496	0.0021	52508
180.00	TA 702-3	36	38.2120	1.7496	0.0021	52508
174.00	ET-X-TU-42-15-37-18-IR-ST w/mount pipe	36	36.3896	1.7330	0.0023	52508
170.00	RRH-1900	36	34.9356	1.7192	0.0024	29171
159.00	HP2-102	36	30.9797	1.6767	0.0027	13126
151.00	(2) ERICSSON AIR 21 B4A B2P w/ Mount Pipe	36	28.1687	1.6384	0.0029	9375
142.00	(2) Ericsson RRUS-11	36	25.1052	1.5843	0.0029	7582
140.00	Powerwave 7770	36	24.4412	1.5705	0.0029	7434
130.00	BXA-171063-12CF-EDIN w/mount pipe	36	21.2209	1.4924	0.0028	6784
126.00	HP2-102	36	19.9815	1.4574	0.0027	6554



Hudson Design Group LLC
 1600 Osgood Street Bldg. 20N Suite 3090
 North Andover, MA 01845
 Phone: (978) 557-5553
 FAX: (978) 336-5586

Job	CT 5122	Page	12 of 12
Project	179 ft monopole	Date	13:44:20 04/28/16
Client	AT&T	Designed by	kw

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P _{allow} lb	% Capacity	Pass Fail
L1	179 - 141.25	Pole	TP33.249x23.1x0.25	1	-6615.27	139195.85	32.4	Pass
L2	141.25 - 92.58	Pole	TP45.834x31.585x0.375	2	-20093.20	546303.37	59.6	Pass
L3	92.58 - 45.5	Pole	TP57.742x43.492x0.375	3	-33542.50	1097421.53	78.5	Pass
L4	45.5 - 0	Pole	TP69.225x54.976x0.375	4	-52492.00	2081772.67	97.9	Pass
Summary								
Pole (L4)							97.9	Pass
Base Plate							88.1	Pass
RATING =							97.9	Pass

Monopole Pier and Pad Foundation

BU # : CT 5122

Site Name:

App. Number:

TIA-222 Revision: F

Design Reactions		
Shear, S:	46.6	kips
Moment, M:	5211	ft-kips
Tower Height, H:	179	ft
Tower Weight, Wt:	52.5	kips
Base Diameter, BD:	5.77	ft

Foundation Dimensions		
Depth, D:	6.5	ft
Pad Width, W:	30	ft
Neglected Depth, N:	0	ft
Thickness, T:	2.50	ft
Pier Diameter, Pd:	8.50	ft
Ext. Above Grade, E:	0.50	ft
BP Dist. Above Pier:	3	in.
Clear Cover, Cc:	3.0	in

Soil Properties		
Soil Unit Weight, γ :	0.100	kcf
Ult. Bearing Capacity, Bc:	6.0	ksf
Angle of Friction, Φ :	30	deg
Cohesion, Co:	0.000	ksf
Passive Pressure, Pp:	0.000	ksf
Base Friction, μ :	0.40	

Material Properties		
Rebar Yield Strength, Fy:	60000	psi
Concrete Strength, F'c:	3000	psi
Concrete Unit Weight, δ_c :	0.150	kcf
Seismic Zone, z:	1	

Rebar Properties		
Pier Rebar Size, Sp:	9	
Pier Rebar Quantity, mp:	41	41
Pad Rebar Size, Spad:	9	
Pad Rebar Quantity, mpad:	33	19
Pier Tie Size, St:	4	3
Tie Quantity, mt:	14	5

Design Checks			
	Capacity/ Availability	Demand/ Limits	Check
<i>Req'd Pier Diam.(ft)</i>	8.5	7.77	OK
<i>Overturing (ft-kips)</i>	6478.65	5211.00	80.4%
<i>Shear Capacity (kips)</i>	164.77	46.60	28.3%
<i>Bearing (ksf)</i>	4.50	2.66	59.1%
<i>Pad Shear - 1-way (kips)</i>	781.90	610.30	78.1%
<i>Pad Shear - 2-way (kips)</i>	1752.73	145.71	8.3%
<i>Pad Moment Capacity (k-ft)</i>	3765.60	2332.95	62.0%
<i>Pier Moment Capacity (k-ft)</i>	9815.92	5420.70	55.2%

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

AT&T Existing Facility

Site ID: CT5122

Wethersfield North
23 Kelleher Ct
Wethersfield, CT 06109

March 11, 2016

EBI Project Number: 6216001533

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	10.94 %

March 11, 2016

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

Emissions Analysis for Site: **CT5122 – Wethersfield North**

EBI Consulting was directed to analyze the proposed AT&T facility located at **23 Kelleher Ct, Wethersfield, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at **23 Kelleher Ct, Wethersfield, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

- 1) 2 GSM channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 2 LTE channels (WCS Band – 2300 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 3) 2 GSM channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 2 UMTS channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 6) 2 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

- 7) 2 LTE channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 8) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 9) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 10) The antennas used in this modeling are the **CCI HPA-65R-BUU-H8, CCI TPA-65R-LCUUUU-H8, Andrew SBNHH-1D65A and the Powerwave 7770.00** for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 11) The antenna mounting height centerline of the proposed antennas is **130 feet** above ground level (AGL).
- 12) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	CCI TPA-65R- LCUUUU-H8	Make / Model:	CCI TPA-65R- LCUUUU-H8	Make / Model:	Andrew SBNHH-1D65A
Gain:	13.45 / 14.45 / 13.75 dBd	Gain:	13.45 / 14.45 / 13.75 dBd	Gain:	10.95 / 15.05 / 14.35 dBd
Height (AGL):	130 feet	Height (AGL):	130 feet	Height (AGL):	130 feet
Frequency Bands	850 MHz / 2300 MHz (WCS) / 1900 MHz (PCS)	Frequency Bands	850 MHz / 2300 MHz (WCS) / 1900 MHz (PCS)	Frequency Bands	850 MHz / 2300 MHz (WCS) / 1900 MHz (PCS)
Channel Count	6	Channel Count	6	Channel Count	6
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	6,094.03	ERP (W):	6,094.03	ERP (W):	6,219.00
Antenna A1 MPE%	1.66	Antenna B1 MPE%	1.66	Antenna C1 MPE%	1.66
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Powerwave 7770	Make / Model:	7770	Make / Model:	Powerwave 7770
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	130 feet	Height (AGL):	130 feet	Height (AGL):	130 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A2 MPE%	0.65	Antenna B2 MPE%	0.65	Antenna C2 MPE%	0.65
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	CCI HPA-65R-BUU-H8	Make / Model:	CCI HPA-65R-BUU-H8	Make / Model:	Andrew SBNHH-1D65A
Gain:	13.15 / 14.95 dBd	Gain:	13.15 / 14.95 dBd	Gain:	10.95 / 10.95 dBd
Height (AGL):	130 feet	Height (AGL):	130 feet	Height (AGL):	130 feet
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	6,229.75	ERP (W):	6,229.75	ERP (W):	4,760.66
Antenna A3 MPE%	2.12	Antenna B3 MPE%	2.12	Antenna C3 MPE%	1.51

Site Composite MPE%	
Carrier	MPE%
AT&T – Max per sector	4.43 %
Town of Wethersfield	0.24 %
Clearwire	0.07 %
Verizon Wireless	2.89 %
Sprint	1.27 %
Nextel	1.65 %
T-Mobile	0.39 %
Site Total MPE %:	10.94 %

AT&T Sector 1 Total:	4.43 %
AT&T Sector 2 Total:	4.43 %
AT&T Sector 3 Total:	3.75 %
Site Total:	10.94 %

Highest Calculated Emissions Values per Sector:

AT&T _ Per Sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
AT&T 850 MHz GSM	2	663.93	130	3.10	850	567	0.55 %
AT&T 2300 MHz (WCS) LTE	2	1671.67	130	7.82	2300	1000	0.78 %
AT&T 1900 MHz (PCS) GSM	2	711.41	130	3.33	1900	1000	0.33 %
AT&T 850 MHz UMTS	2	414.12	130	1.94	850	567	0.34 %
AT&T 1900 MHz (PCS) UMTS	2	656.33	130	3.07	1900	1000	0.31 %
AT&T 700 MHz LTE	2	1239.23	130	5.79	700	467	1.24 %
AT&T 1900 MHz (PCS) LTE	2	1875.65	130	8.77	1900	1000	0.86 %
						Total:	4.43 %

Summary

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

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

AT&T Sector	Power Density Value (%)
Sector 1:	4.43 %
Sector 2:	4.43 %
Sector 3 :	3.75 %
AT&T Maximum Total (per sector):	4.43 %
Site Total:	10.94 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **10.94%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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



Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

PROJECT INFORMATION

SCOPE OF WORK:

- REPLACE 2 ANTENNA PER SECTOR (TOTAL OF 6 NEW ANTENNAS)
- ADD 1 RRH PER SECTOR (TOTAL OF 3 NEW RRHS)
- ADD 2 TRIPLEXERS PER SECTOR (TOTAL OF 6 NEW TRIPLEXERS)
- ADD 1 FIBER/DC SQUID
- ADD 1 FIBER TRUNK AND 2 DC TRUNKS

SITE ADDRESS: 23 KELLEHER CT
WETHERSFIELD, CT 06109

LATITUDE: 41.7153919 41°-42'-55.41084"N
LONGITUDE: -72.6905989 72°-41'-26.15604"W

USID: 25877

TOWER OWNER: TBD

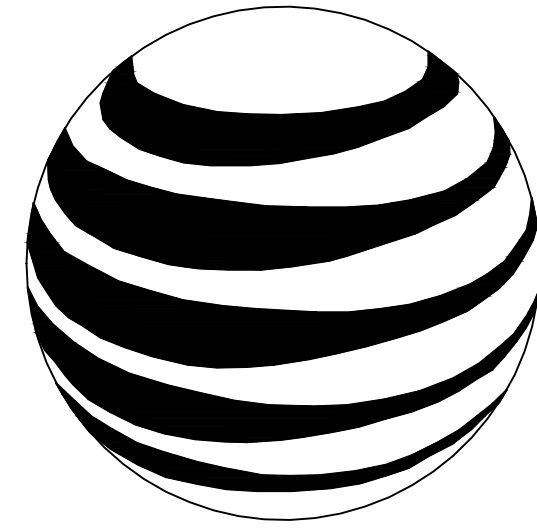
TYPE OF SITE: MONOPOLE/OUTDOOR EQUIPMENT

STRUCTURE HEIGHT: 179'-0"± (TOP OF MONOPOLE)

RAD CENTER: 140'-0"±

CURRENT USE: UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY

PROPOSED USE: UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY



at&t
MOBILITY

FA CODE: 10092829
SITE NUMBER: CT5122
SITE NAME: WETHERSFIELD NORTH

PROJECT TEAM

CLIENT REPRESENTATIVE

COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD
BILLERICA, MA 01821
CONTACT: DAVID COOPER
PHONE: 617-639-4908
EMAIL: dcooper@empiretelecomm.com

SITE ACQUISITION:

COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD
BILLERICA, MA 01821
CONTACT: DAVID COOPER
PHONE: 617-639-4908
EMAIL: dcooper@empiretelecomm.com

ZONING:

COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD
BILLERICA, MA 01821
CONTACT: DAVID COOPER
PHONE: 617-639-4908
EMAIL: dcooper@empiretelecomm.com

ENGINEERING:

COMPANY: COM-EX CONSULTANTS, LLC
ADDRESS: 115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
CONTACT: NICHOLAS D. BARILE, P.E.
PHONE: 862-209-4300
EMAIL: nbarile@comexconsultants.com

RF ENGINEER:

COMPANY: AT&T MOBILITY – NEW ENGLAND
ADDRESS: 550 COCHITUATE ROAD
SUITE 550 13 & 14
FRAMINGHAM, MA 01701
CONTACT: CAMERON SYME
PHONE: 508-596-7146
EMAIL: cs6970@att.com

CONSTRUCTION MANAGEMENT:

COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD
BILLERICA, MA 01821
CONTACT: GRZEGORZ "GREG" DORMAN
PHONE: 484-683-1750
EMAIL: gdorman@empiretelecomm.com

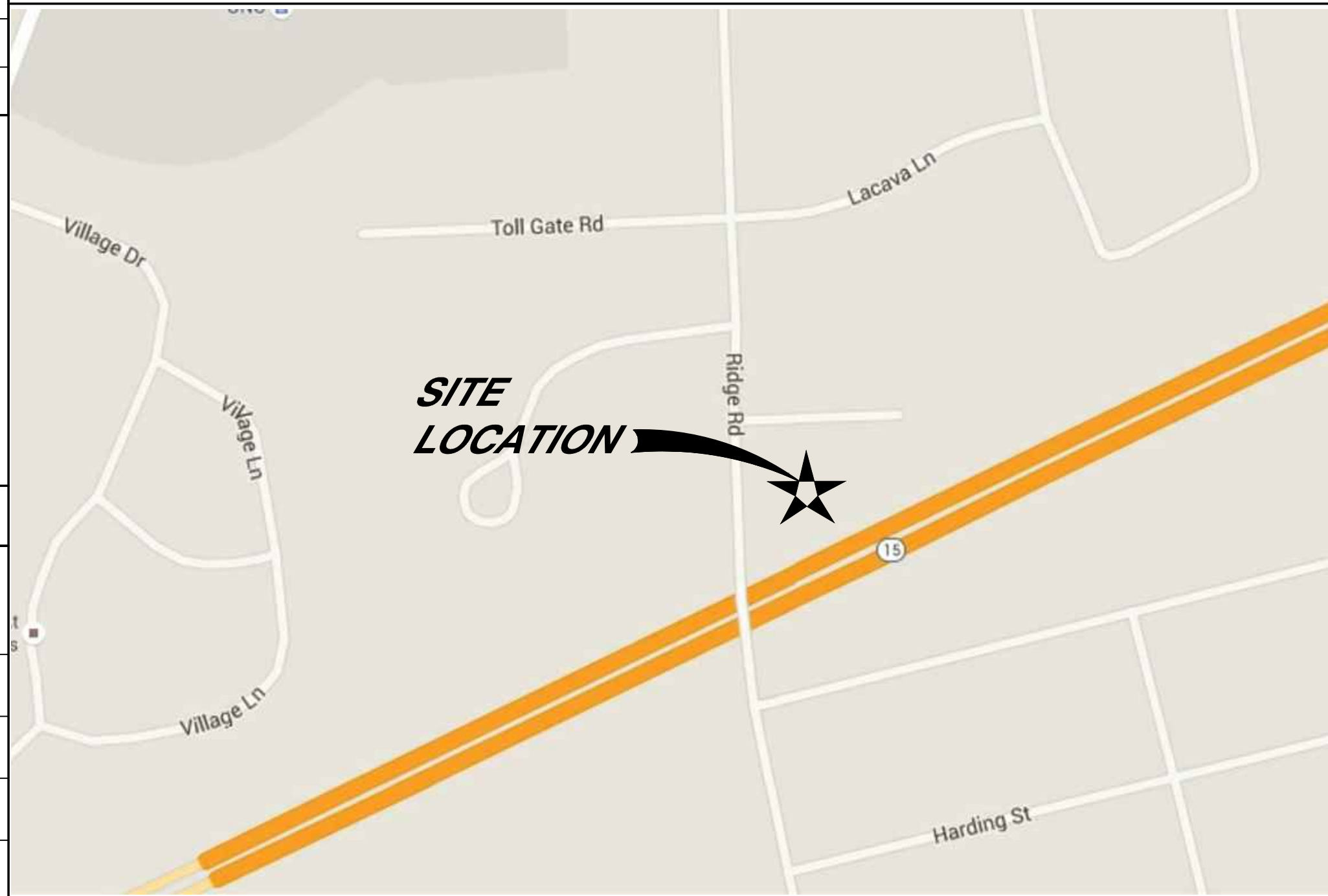
DRAWING INDEX

REV.

T-1	TITLE SHEET	A
GN-1	GROUNDING & GENERAL NOTES	A
A-1	SITE PLAN	A
A-2	EQUIPMENT LAYOUTS	A
A-3	ANTENNA LAYOUTS & ELEVATIONS	A
A-4	DETAILS	A
A-5	ANTENNA MOUNTING DETAILS	A
G-1	GROUNDING, ONE-LINE DIAGRAM & DETAILS	A

VICINITY MAP

FROM ROCKY HILL, HEAD SOUTHWEST ON CONCRIB LN. TURN RIGHT ONTO SOLO DR. TURN RIGHT ONTO CT 160 E. TURN LEFT ONTO GILBERT AVE. SLIGHT RIGHT ONTO MAPLE ST. TURN LEFT ONTO GRISWOLD RD. TURN LEFT ONTO PROSPECT ST. FOLLOW RIDGE RD TO KELLEHER CT. SITE WILL BE ON RIGHT.



GENERAL NOTES

- THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY, AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
- 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.
- CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE SUBCONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN, ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR SITE MODIFICATIONS.

DISCIPLINE:	NAME:	DATE:
SITE ACQUISITION:		
CONSTRUCTION MANAGER:		
AT&T PROJECT MANAGER:		



CONNECTICUT LAW REQUIRES TWO WORKING DAYS NOTICE PRIOR TO ANY EARTH MOVING ACTIVITIES BY CALLING 800-922-4455 OR DIAL 811



SITE NUMBER: CT5122
SITE NAME: WETHERSFIELD NORTH
23 KELLEHER CT.
WETHERSFIELD, CT 06109
HARTFORD COUNTY



NO.	DATE	REVISIONS	BY	CHK	APP'D
A	01/12/16	ISSUED FOR REVIEW	NJM	NDB	NDB
SCALE: AS SHOWN		DESIGNED BY: NJM	DRAWN BY: NJM		

SEAL:		
AT&T		
DRAWING TITLE: TITLE SHEET		
JOB NUMBER 15208-EMP	DRAWING NUMBER T-1	REV A

GROUNDING NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG00-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
13. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV-G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM EIGHT FEET (8') TO TEN FEET (10').
14. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE 1/2" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID TINNED COPPER GROUND WIRE, PER NEC 250.50.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR – EMPIRE TELECOM
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER – AT&T MOBILITY
 OEM – ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR (EMPIRE TELECOM).
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR
9. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OFF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
12. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
13. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS UNLESS OTHERWISE SPECIFIED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
14. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy=36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
15. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
17. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
18. SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

19. SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
 - INTERNATIONAL BUILDING CODE: IBC 2009 WITH LOCAL & COUNTY AMENDMENTS
 - NATIONAL ELECTRICAL CODE: NEC 2011 WITH LOCAL & COUNTY AMENDMENTS
 - FIRE/LIFE SAFETY CODE: NFPA-101 2009 WITH LOCAL & COUNTY AMENDMENTS
20. SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
 - AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
 - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, THIRTEENTH EDITION
 - AMERICAN SOCIETY OF TESTING OF MATERIALS, ASTM
 - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA-222-G-1), STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
 - TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
 - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA
 - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
 - TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS
21. FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.
22. 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 AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.

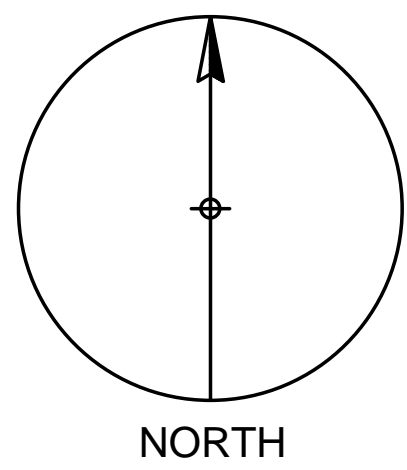
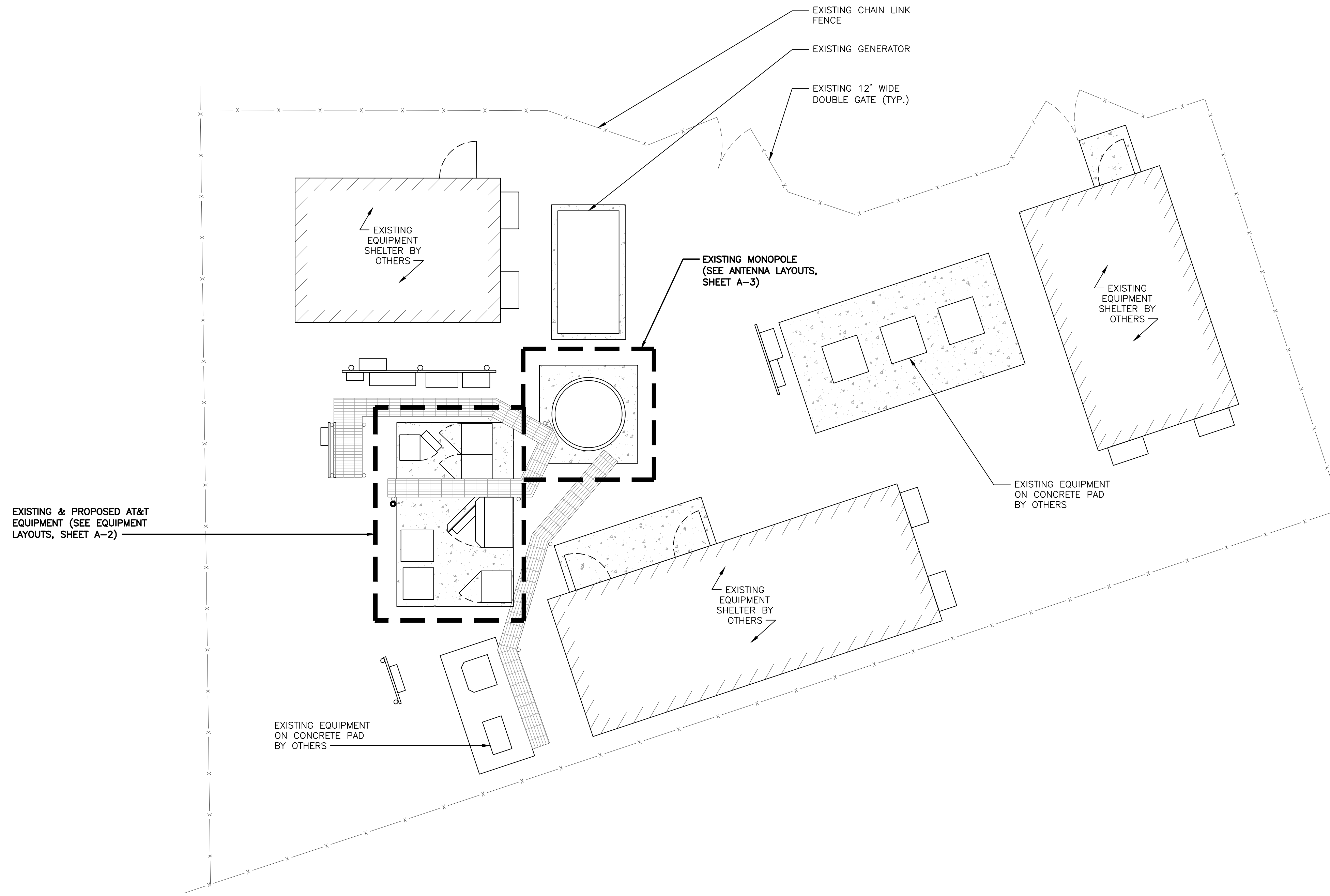


SITE NUMBER: CT5122
SITE NAME: WETHERSFIELD NORTH
 23 KELLEHER CT.
 WETHERSFIELD, CT 06109
 HARTFORD COUNTY



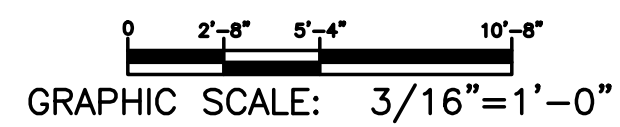
A	01/12/16	ISSUED FOR REVIEW	NJM	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: NJM	DRAWN BY: NJM		

SEAL:		
AT&T		
DRAWING TITLE: GROUNDING & GENERAL NOTES		
JOB NUMBER	DRAWING NUMBER	REV
15208-EMP	GN-1	A



NORTH

SITE PLAN
SCALE: 3/16" = 1'-0"



NOTE:
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 AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.

COM-EX
Consultants
115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE
telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

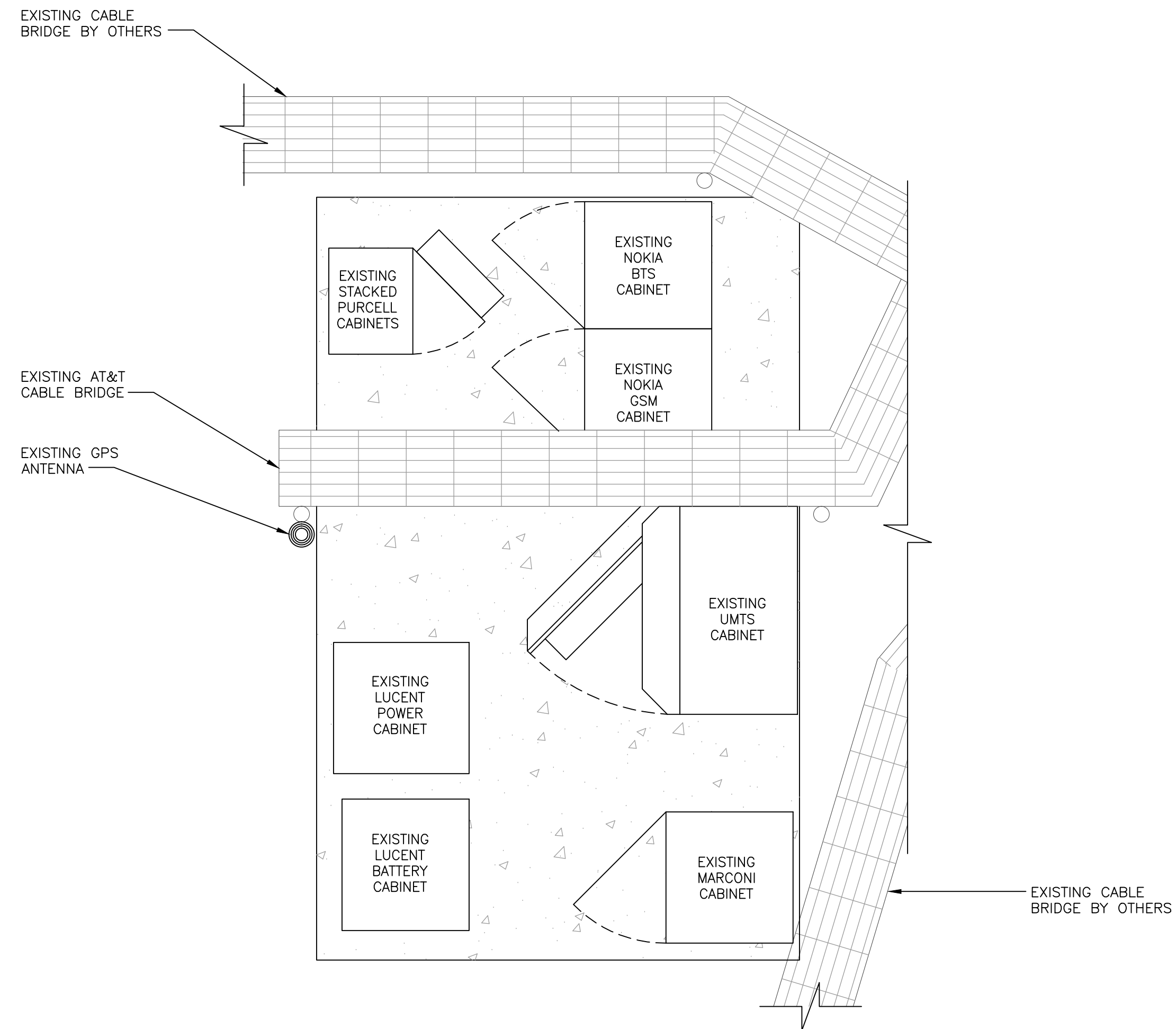
SITE NUMBER: CT5122
SITE NAME: WETHERSFIELD NORTH
23 KELLEHER CT.
WETHERSFIELD, CT 06109
HARTFORD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
A	01/12/16	ISSUED FOR REVIEW	NJM	NDB	NDB
SCALE: AS SHOWN		DESIGNED BY: NJM	DRAWN BY: NJM		

SEAL:

AT&T		
DRAWING TITLE: ROOFTOP LAYOUT		
JOB NUMBER 15208-EMP	DRAWING NUMBER A-1	REV A

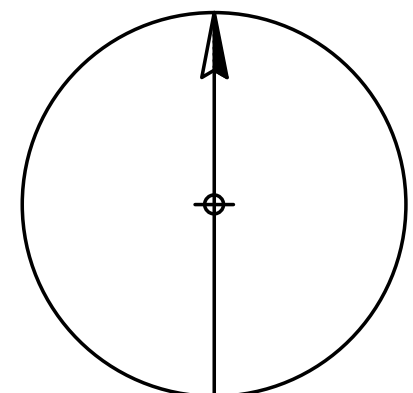


EXISTING EQUIPMENT LAYOUT

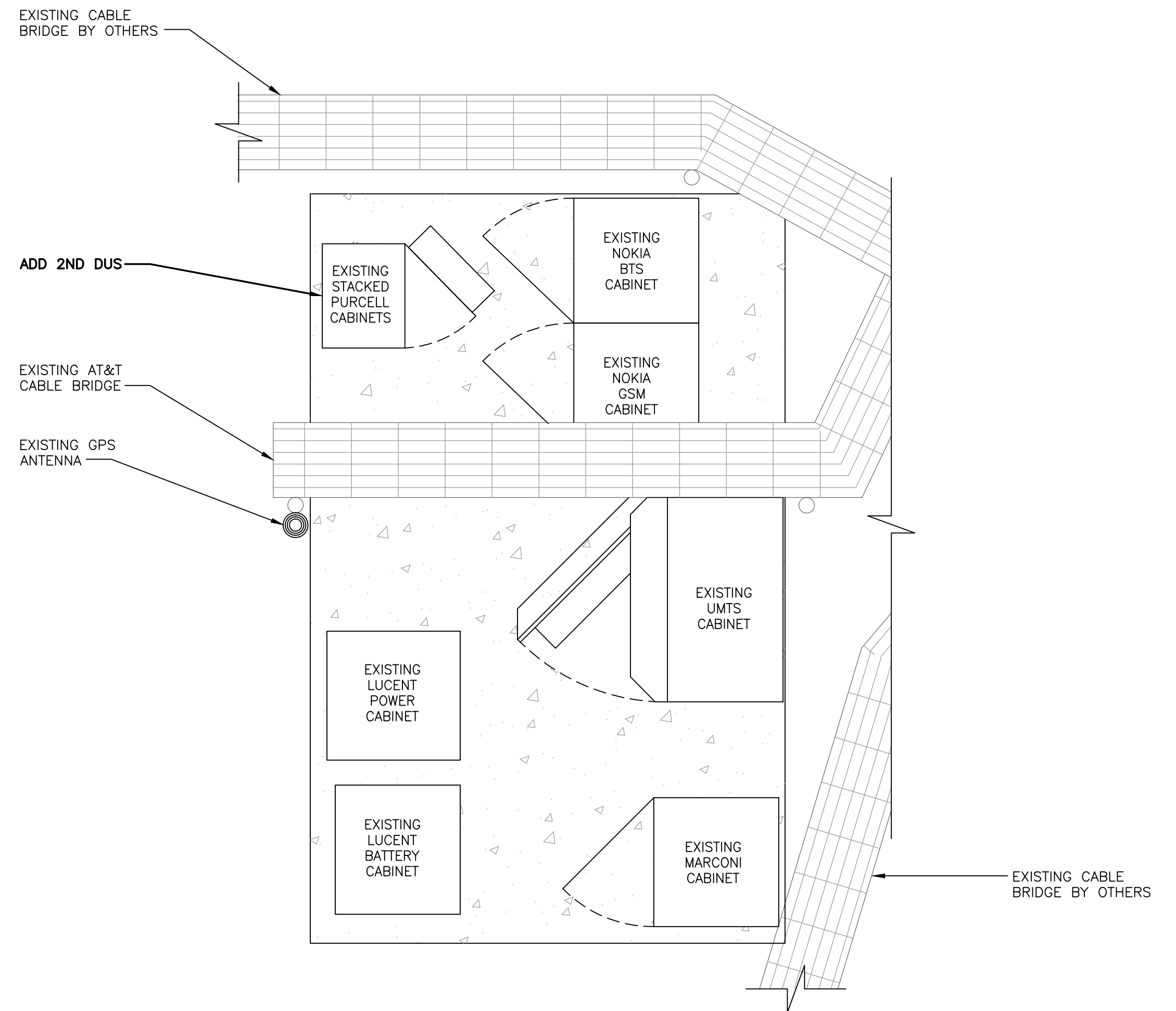
SCALE: 1" = 2'-0"



(IN FEET)
1/2 Inch = 1 Foot



NORTH

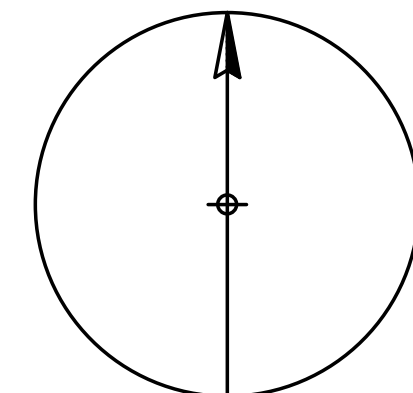


PROPOSED EQUIPMENT LAYOUT

SCALE: 1" = 2'-0"



(IN FEET)
1/2 Inch = 1 Foot



NORTH

COM-EX
Consultants
115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE
telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

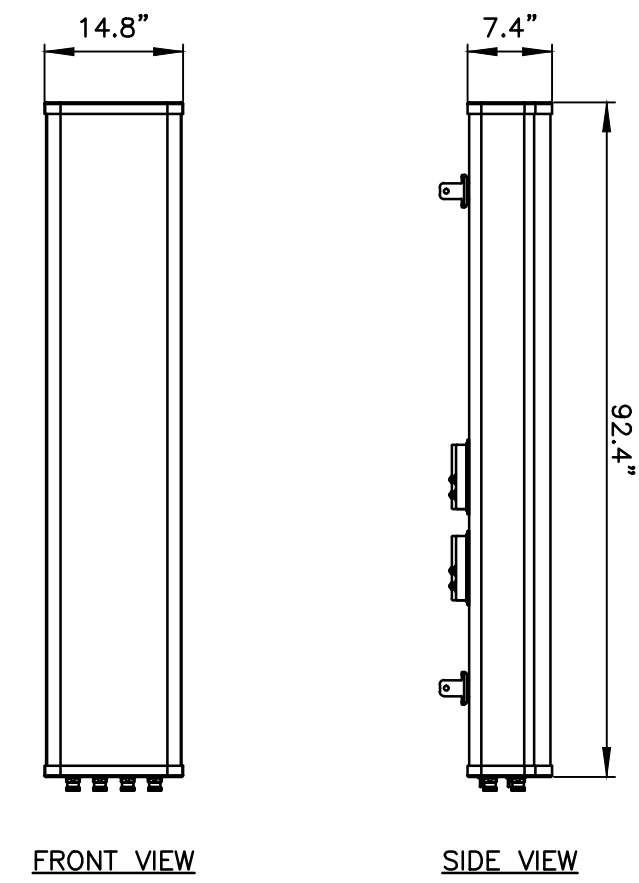
SITE NUMBER: CT5122
SITE NAME: WETHERSFIELD NORTH
23 KELLEHER CT.
WETHERSFIELD, CT 06109
HARTFORD COUNTY

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

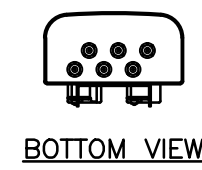
NO.	DATE	REVISIONS	BY	CHK	APP'D
A	01/12/16	ISSUED FOR REVIEW	NJM	NDB	NDB
SCALE: AS SHOWN		DESIGNED BY: NJM	DRAWN BY: NJM		

SEAL:

AT&T		
DRAWING TITLE: EQUIPMENT LAYOUTS		
JOB NUMBER 15208-EMP	DRAWING NUMBER A-2	REV A



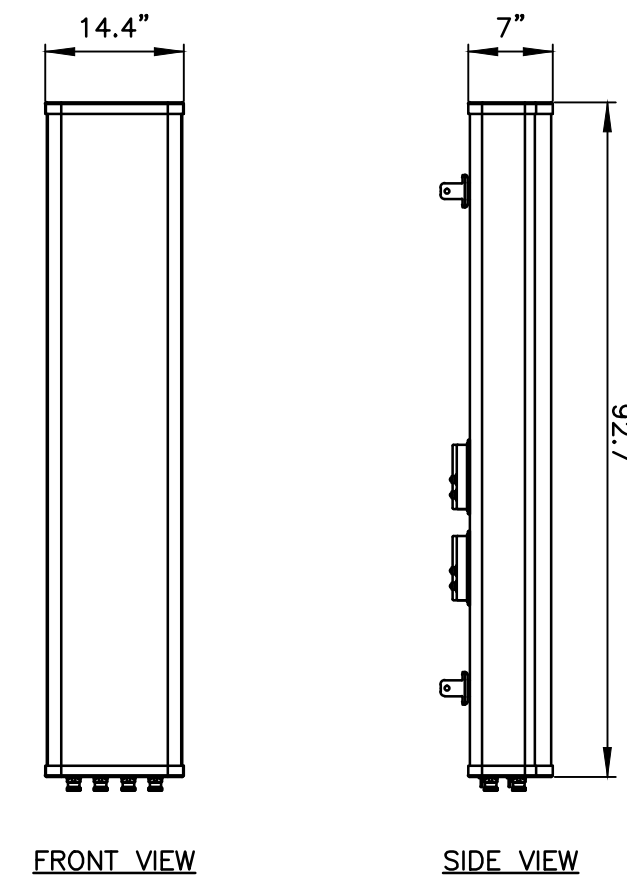
FRONT VIEW SIDE VIEW



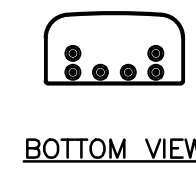
BOTTOM VIEW

MANUFACTURER	CCI
MODEL	HPA-65R-BUU-H8
WEIGHT	68 LBS

LTE ANTENNA DETAIL
SCALE: N.T.S.



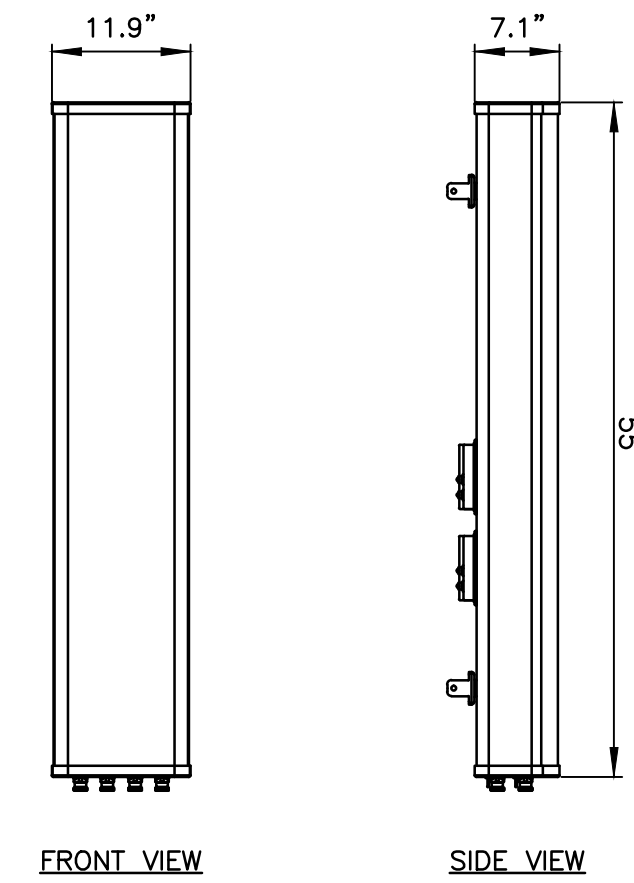
FRONT VIEW SIDE VIEW



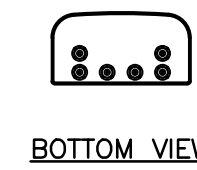
BOTTOM VIEW

MANUFACTURER	CCI
MODEL	TPA-65R-LCUIIU-H8
WEIGHT	105 LBS

LTE ANTENNA DETAIL
SCALE: N.T.S.



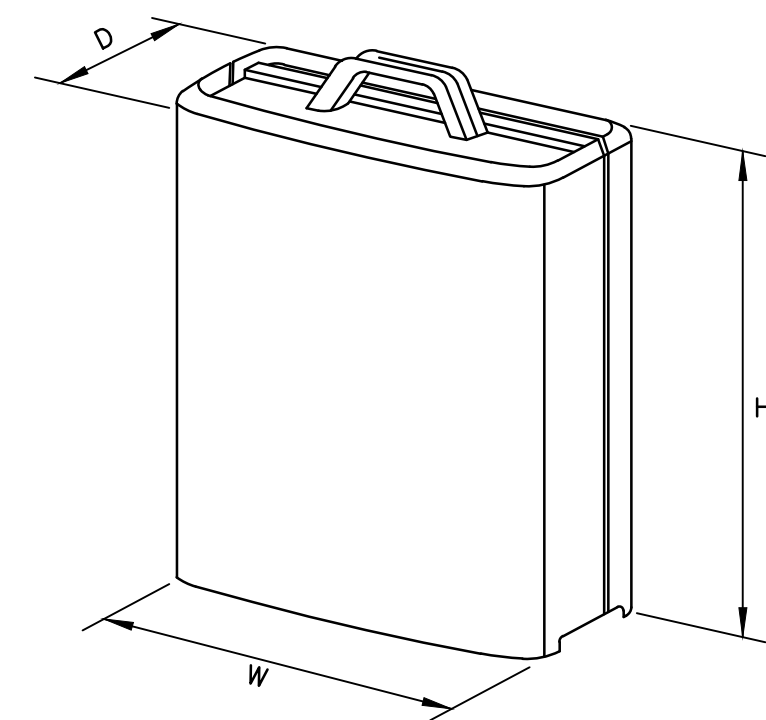
FRONT VIEW SIDE VIEW



BOTTOM VIEW

MANUFACTURER	COMMSCOPE
MODEL	SBNHH-1D65A
WEIGHT	33.5 LBS

LTE ANTENNA DETAIL
SCALE: N.T.S.



MODEL	L x W x H	WEIGHT
*RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
*A2 MODULE	16.4" x 15.2" x 3.4"	22 LBS
RRUS-32	29.9"x13.3"x9.5"	77 LBS

*DENOTES EXISTING.

RRUS DETAIL
SCALE: N.T.S.

NO.	DATE	REVISIONS	BY	CHK	APP'D
A	01/12/16	ISSUED FOR REVIEW	NJM	NDB	NDB
SCALE: AS SHOWN		DESIGNED BY: NJM	DRAWN BY: NJM		

SEAL:

AT&T		
DRAWING TITLE:		
DETAILS		
JOB NUMBER	DRAWING NUMBER	REV
15208-EMP	A-4	A

PROPOSED AT&T RRUS-32 MOUNTED ON EXISTING PIPE MOUNT (BELOW) (TYP. OF 1 PER SECTOR, 3 TOTAL)

PROPOSED LTE ANTENNA ON EXISTING SECTOR FRAME (TYP. OF 1 PER SECTOR, 3 TOTAL)

PROPOSED LTE/GSM ANTENNA ON EXISTING SECTOR FRAME (TYP. OF 1 PER SECTOR, 3 TOTAL)

- (2) TRIPLEXERS

ADJUST ANTENNA MOUNTS AS NEEDED TO MAINTAIN 6' SEPARATION BETWEEN LTE ANTENNAS

PROPOSED ANTENNA MOUNTING DETAIL (FRONT VIEW)

SCALE: N.T.S.

EXISTING AT&T RRHS MOUNTED TO EXISTING CHAIN MOUNT:

- (2) RRUS-11 PER SECTOR, (6) TOTAL TO REMAIN
- (1) A2 MODULE PER SECTOR, (3) TOTAL TO REMAIN

EXISTING UMS ANTENNA TO REMAIN (TYP. OF 1 PER SECTOR, 3 TOTAL)

- (2) TMAs

EXISTING MONOPOLE

PROPOSED LTE ANTENNAS ON EXISTING SECTOR FRAME (TYP. OF 2 PER SECTOR, 6 TOTAL)

EXISTING AT&T RRHS MOUNTED TO EXISTING CHAIN MOUNT:

- (2) RRUS-11 PER SECTOR, (6) TOTAL TO REMAIN
- (1) A2 MODULE PER SECTOR, (3) TOTAL TO REMAIN

PROPOSED AT&T RRUS-32 MOUNTED ON EXISTING PIPE MOUNT (BELOW) (TYP. OF 1 PER SECTOR, 3 TOTAL)

PROPOSED ANTENNA MOUNTING DETAIL (SIDE VIEW)

SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770	55"x11"x5"
	A2	ANDREW	SBNH-1D6565C	96.4"x11.9"x7.1"
	A3	POWERWAVE	7770	55"x11"x5"
	-	-	-	-
BETA	B1	POWERWAVE	7770	55"x11"x5"
	B2	POWERWAVE	P65-17-XLH-RR	96"x12"x6"
	B3	POWERWAVE	7770	55"x11"x5"
	-	-	-	-
GAMMA	G1	POWERWAVE	7770	55"x11"x5"
	G2	KMW	AM-X-CD-14-65-00T-RET	48"x11.8"x5.9"
	G3	POWERWAVE	7770	55"x11"x5"
	-	-	-	-

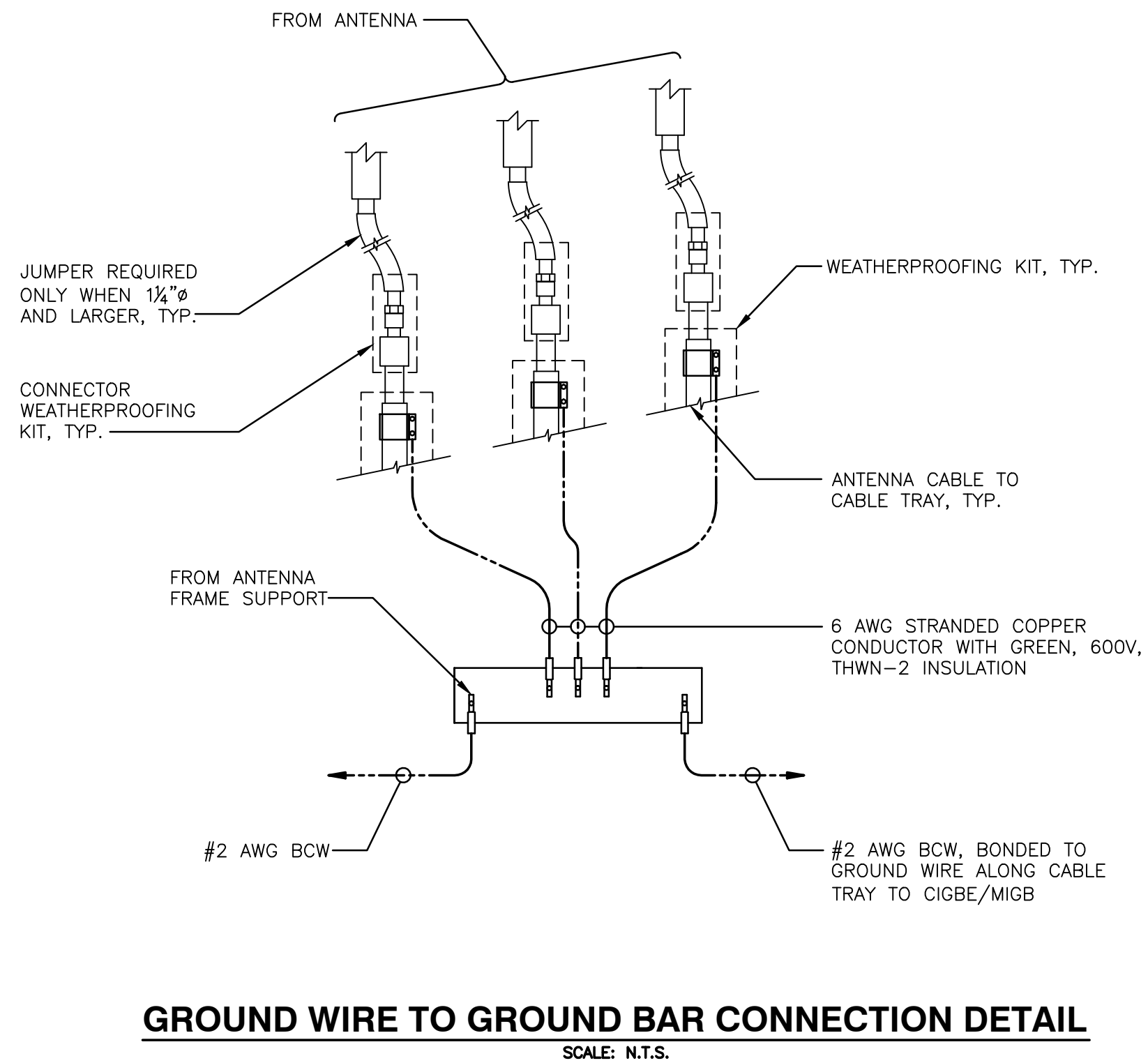
FINAL ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770	55"x11"x5"
	A2	CCI	TPA-65R-LCUUUU-H8	92.7"x14.4"x7"
	A3	CCI	HPA-65R-BUU-H8	92.4"x14.8"x7.4"
	-	-	-	-
BETA	B1	POWERWAVE	7770	55"x11"x5"
	B2	CCI	TPA-65R-LCUUUU-H8	92.7"x14.4"x7"
	B3	CCI	HPA-65R-BUU-H8	92.4"x14.8"x7.4"
	-	-	-	-
GAMMA	G1	POWERWAVE	7770	55"x11"x5"
	G2	ANDREW	SBNHH-1D65A	55"x11.9"x7.1"
	G3	ANDREW	SBNHH-1D65A	55"x11.9"x7.1"
	-	-	-	-

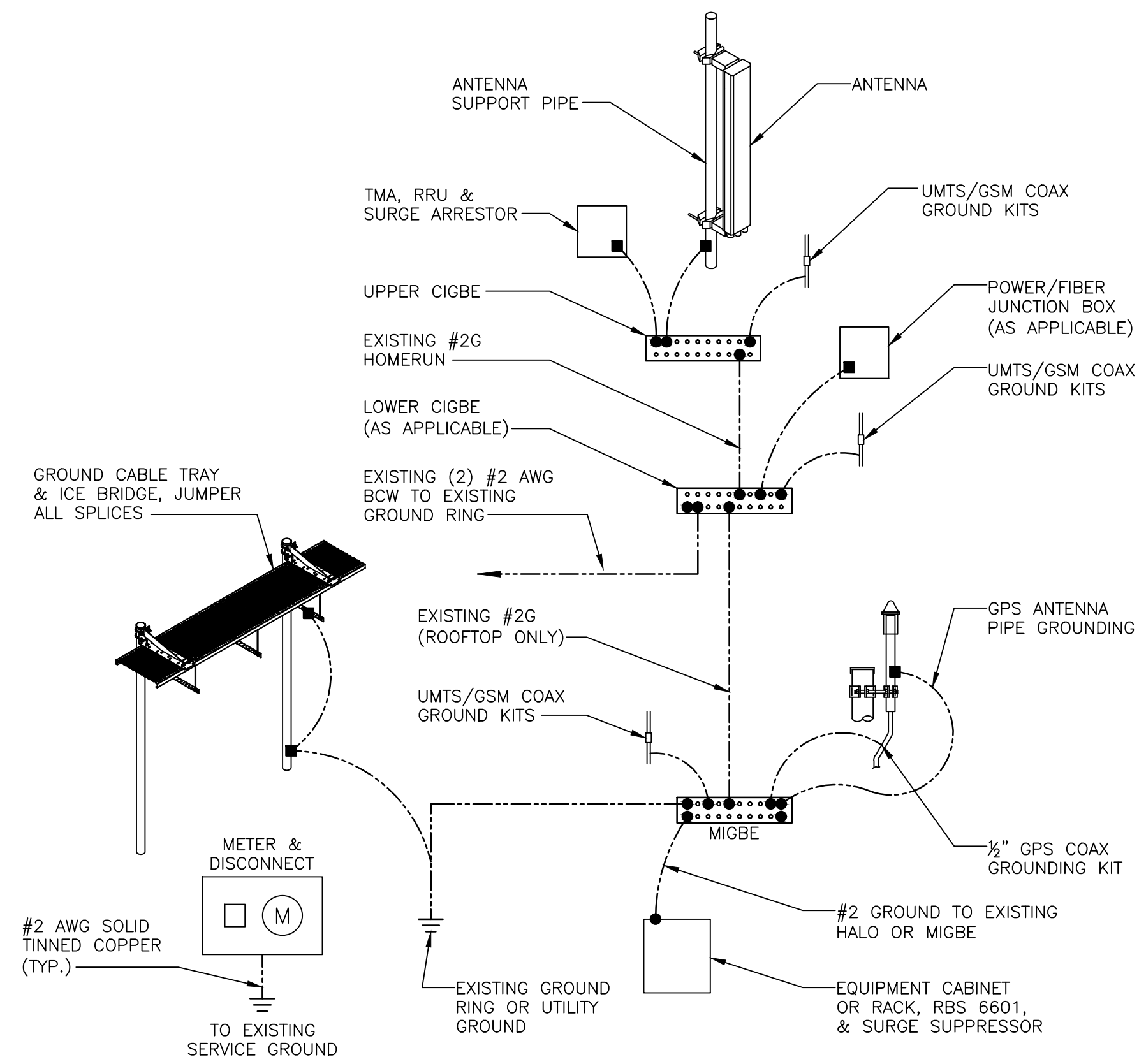
PROPOSED RRU SCHEDULE

SECTOR	MAKE	MODEL	SIZE (INCHES)	ADDITIONAL COMPONENT	SIZE (INCHES)
ALPHA	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"	ERICSSON A2 MODULE	16.4"x15.2"x3.4"
	ERICSSON	RRUS-32	29.9"x13.3"x9.5"		
BETA	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"	ERICSSON A2 MODULE	16.4"x15.2"x3.4"
	ERICSSON	RRUS-32	29.9"x13.3"x9.5"		
GAMMA	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"	ERICSSON A2 MODULE	16.4"x15.2"x3.4"
	ERICSSON	RRUS-32	29.9"x13.3"x9.5"		

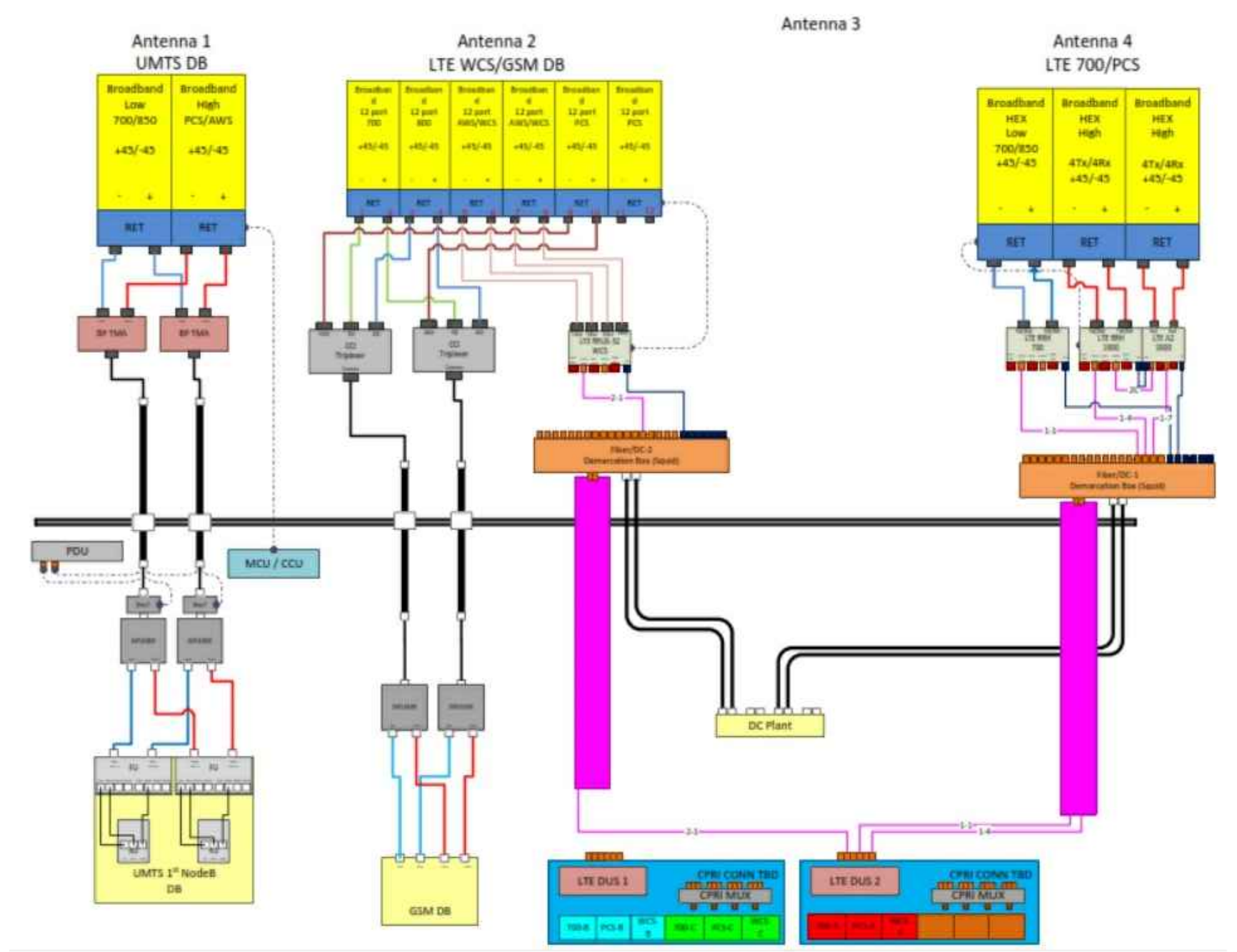
PROJECT OWNER IS RESPONSIBLE FOR PROVIDING A STRUCTURAL STABILITY ANALYSIS TO DETERMINE THE CAPACITY AND SUITABILITY OF THE EXISTING ANTENNA SUPPORT STRUCTURE TO SAFELY CARRY ALL ADDITIONAL LOADS IMPOSED BY THE PROPOSED EQUIPMENT AS SHOWN HEREIN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING ANY REQUIRED STRUCTURAL MODIFICATIONS INTO THEIR SCOPE OF WORK.



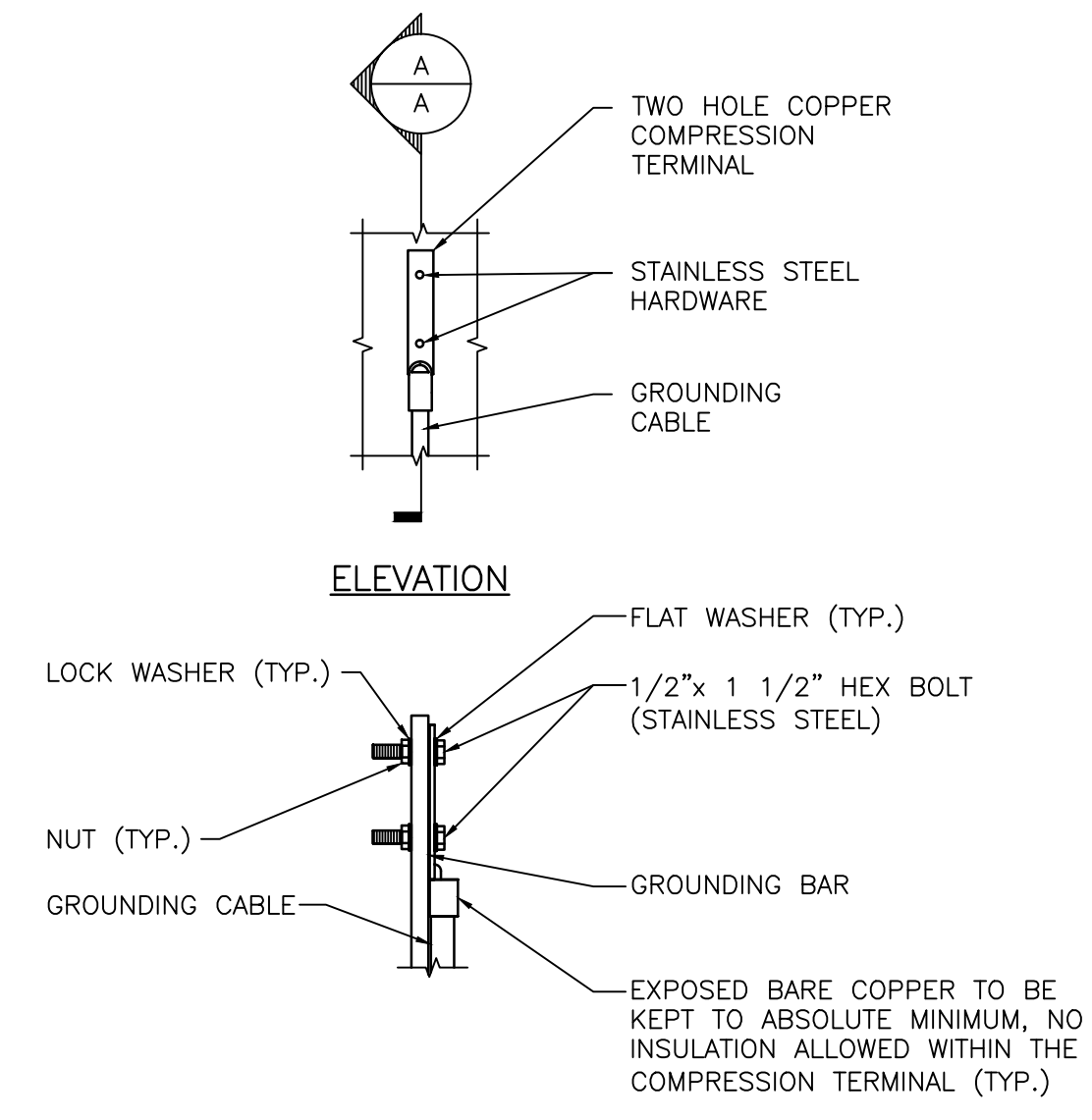
GROUND WIRE TO GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.



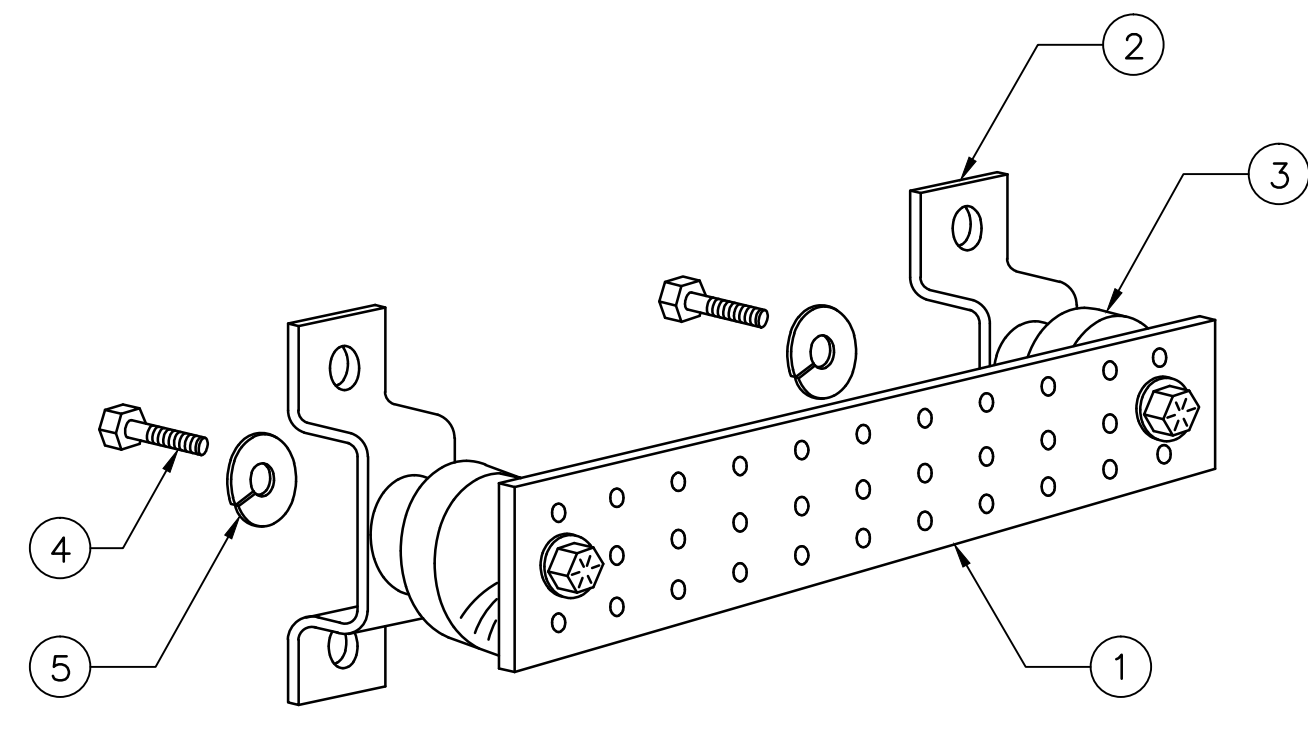
GROUNDING RISER DIAGRAM
SCALE: N.T.S.



TYPICAL PLUMBING DIAGRAM (PER SECTOR)
SCALE: N.T.S.



TYPICAL GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.

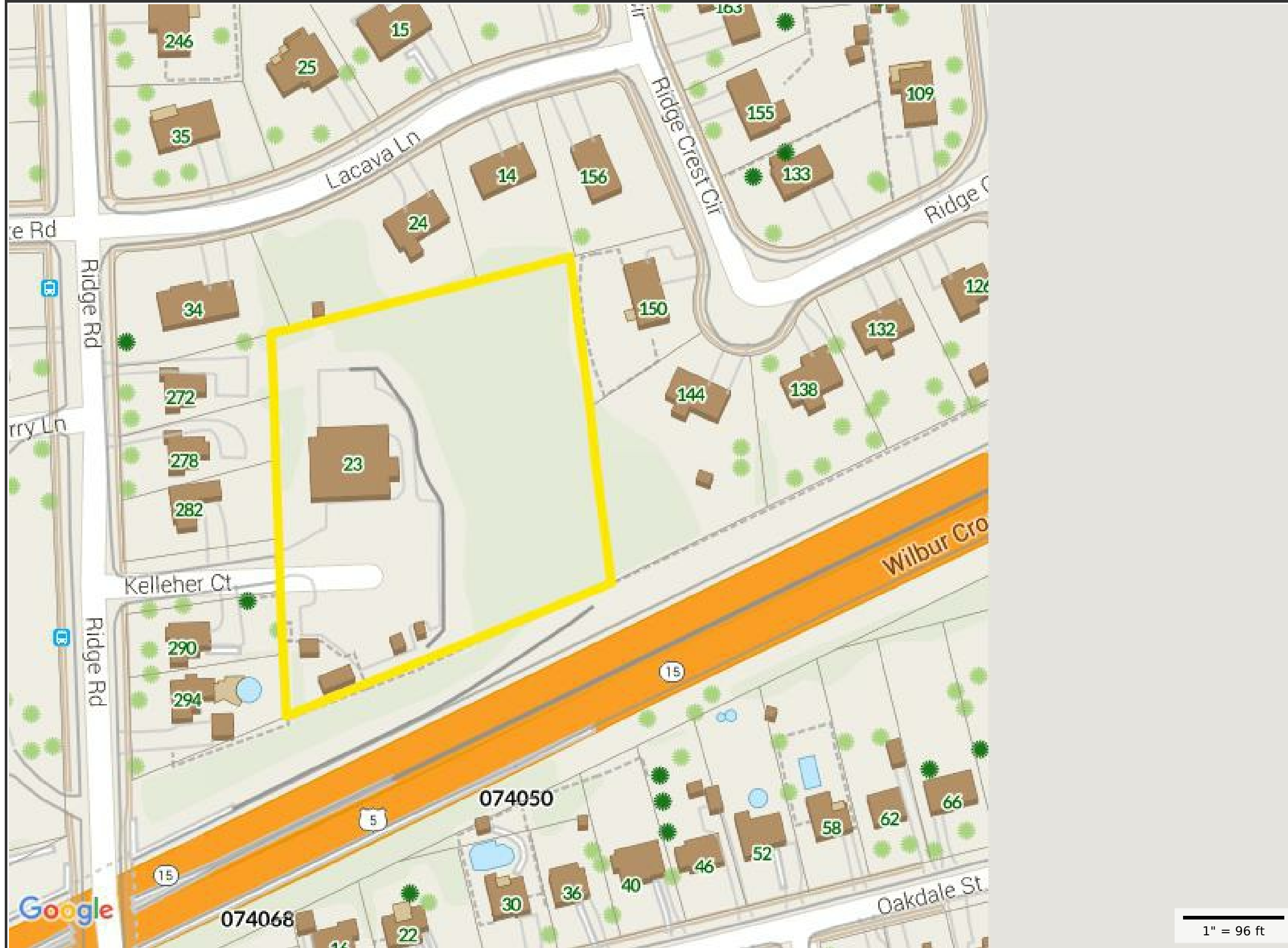


ITEM NO.	QTY.	DESCRIPTION
1	1	SOLID GROUND BAR (20"x 4"x 1/4")
2	1	WALL MOUNTING BRACKET
3	2	INSULATORS
4	4	5/8"-11x1" H.H.C.S.
5	4	5/8" LOCK WASHER

- NOTES:
- EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION
- SECTION "P" - SURGE PRODUCERS**
- CABLE ENTRY PORTS (HATCH PLATES) (#2)
 - GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
 - TELCO GROUND BAR
 - COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
 - +24V POWER SUPPLY RETURN BAR (#2)
 - -48V POWER SUPPLY RETURN BAR (#2)
 - RECTIFIER FRAMES
- SECTION "A" - SURGE ABSORBERS**
- INTERIOR GROUND RING (#2)
 - EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
 - METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
 - BUILDING STEEL (IF AVAILABLE) (#2)

GROUND BAR DETAIL
SCALE: N.T.S.

23 Kelleher Ct. Assessor's Map



Property Information
Property ID 073060
Location 23 KELLEHER CT
Owner WETHERSFIELD TOWN OF



**MAP FOR REFERENCE ONLY
 NOT A LEGAL DOCUMENT**

Town of Wethersfield, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

1" = 96 ft