Revised 3.26.20 - JR

App No: 2020031117

Application General Infomation

Applicant Name	Smartlink LLC	Updated	3/10/2020
Application Type	Minor Modification	Ann. Plan?	Yes
Carrier	AT&T Wireless	Will site be used to support government telecommunications facilities or other equipment for government use?	No
Solution Type	Macro		
Existing	Existing	Gvt. Use Desc.	

Application Description

AT&T proposes to remove (2) existing antennas, (15) existing RRHs (1) GSM cabinet and install (2) new antennas and (12) new RRHs.

Site Infomation

Site Id	53.01	Zoning	R-H
Structure Type	Building	Latitude	39.016778
Address	9727 Mt. Pisgah Rd, Silver Spring	Longitude	-76.974517
County Site Name	Chateau Apartments	Ground Elevation	326
Carrier Site Name	Gill	City	Silver Spring
Site Owner	Hillzo LP	Lease Status	Leased
Structure Owner	Hillzo LP	Does the structure require an antenna structure registration under FCC Title 47	No
Existing Structure Height	133'6"		
Provide the proposed height of the replacement structure without any antenna (New, Replacement Apps Only)		Distance to Residential Property (New, Replacement, Colocation Only)	
		Distance to Commercial Property (New, Replacement, Colocation Only)	

Justification of why this site was selected:

NearbySites (New, Replacement Apps Only):

Thursday, March 12, 2020

9:22:54 AM

App No: 2020031117

Screening considerations(New, Colocations, Replacement Apps Only):

Thursday, March 12, 2020

9:22:54 AM

App No: 2020031117

6409 Questions

Does this qualify as a 6409 application? (Minor Mod, Colocations Only): No

For towers outside the public ROW will the proposed installation increase the height of the structure by: (1) more than 10% or (2) more than 20 feet, whichever is greater?

Will the proposed installation increase the width by adding appurtenance to the body of the structure that would protrude from the edge of the structure by more than 6 feet?

For towers outside the public ROW will the proposed installation increase the width by adding appurtenance to the body of the structure that would protrude from the edge of the structure by more than 20 feet?

More than four Equipment Cabinets? YN

Will the proposed installation require excavation or expansion outside the current boundaries of the site?

Does the structure or current installation have concealment elements/measures? No

Will the proposed installation increase the height of the structure by: (1) more than 10% or (2) more than 10 feet, whichever is greater?

If yes, describe how the proposed installation does not defeat the existing concealment.

Small Wireless Facility Information

Small Wireless Facility Questions

Small Wireless Facility? No

Is the structure 10% taller than adjacent structures?

Cumulative volume of the proposed wireless equipment(s) exclusive of antennas in cubic feet: 240.69

Please list adjacent structure heights

Tribal Lands? No

Cumulative volume of the proposed antenna antenna(s) exclusive of equipment

ROW Information

PROW? No

Pole Number

ROW owner

ROW width

Thursday, March 12, 2020

9:22:54 AM

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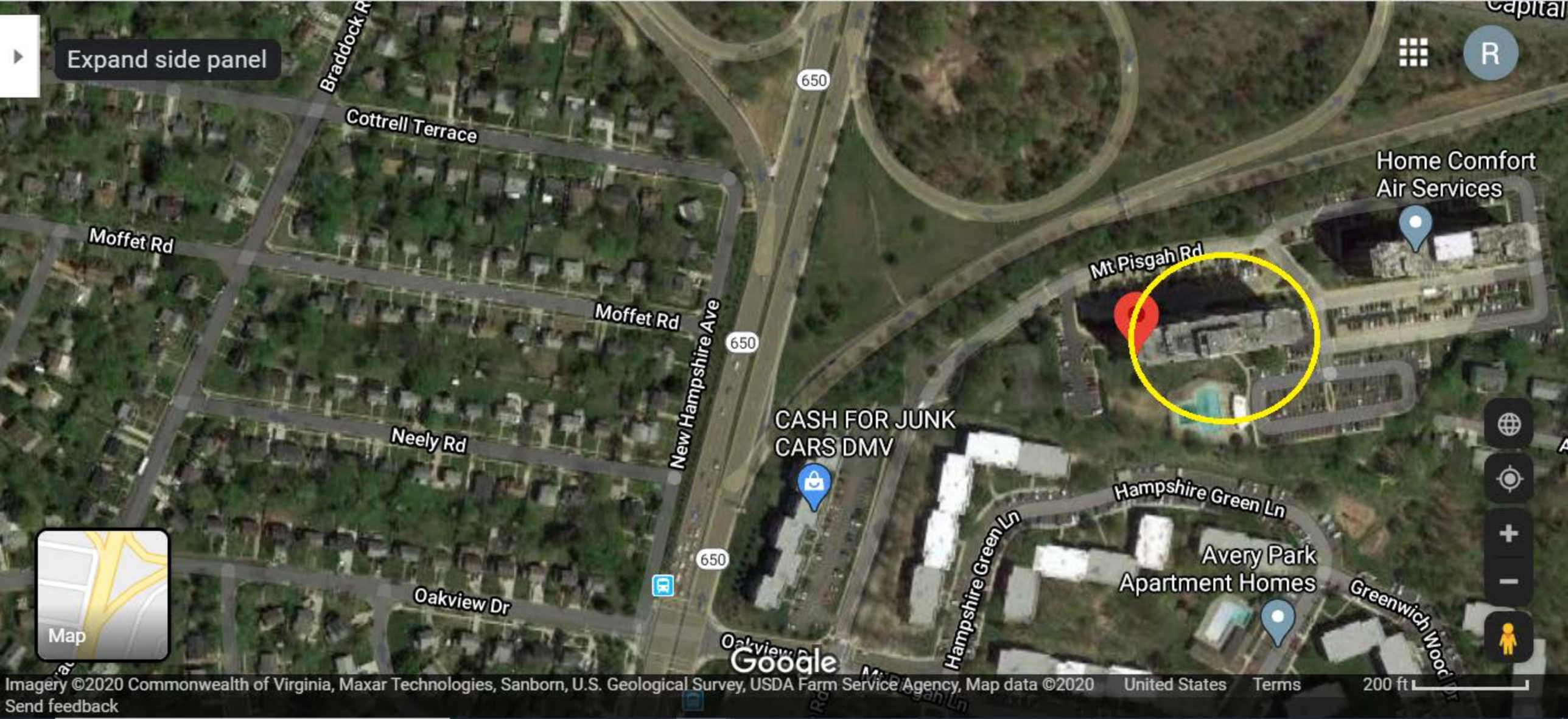
Antenna Infomation

Antenna Compliance	Yes
Compliance Desc	
Antenna Location	Yes
Antenna Loc. Desc.	
Env. Assessment	
Cat. Excluded?	
Routine Env. Evaluation	Checked

Antenna Model	CCL BSA-M65R-BUU-H6						
Frequency	704-710, 734-740, 710-716, 740-746, 716-722, 824-835, 869-880, 845-846.5, 890-891.5, 1870-1885, 1950-1965,						
RAD Center	140	Max ERP	1046	Antenna Dimensions	72(h)x28.5(w).9.7(d)	Quantity	2

Thursday, March 12, 2020

9:22:54 AM


Expand side panel
Braddock R
Cottrell Terrace
650
Moffet Rd
Moffet Rd
New Hampshire Ave
650
Neely Rd
650
Oakview Dr
Map
Home Comfort
Air Services
Mt Pisgah Rd
CASH FOR JUNK
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Antennas

DATASHEET

Multi-band Bi-Sector™ A

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FILTER BY SELECTION

PRODUCTS

- Amplifiers
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- PIM Analyzers

ANTENNAS

- Antenna Accessories
- Bi-Sector™
- iDAS
- Multi-Sector/Special Events
- Single Sector Multiport
- Small Cell/oDAS
- Specialty

Electrical

Ports	4 x Low Band Ports for 698-894 MHz		8 x High Band Ports for 1710-2360 MHz			
Frequency Range	698-806 MHz	824-894 MHz	1850-1990 MHz	1710-1755/2110-2155 MHz		2305-2360 MHz
Gain	16.4 dBi	17.3 dBi	18.0 dBi	17.2 dBi	18.4 dBi	18.1 dBi
Azimuth Beamwidth (-3dB)	34°	32°	31°	36°	28°	26°
Elevation Beamwidth (-3dB)	11.7°	10.3°	6.4°	7.2°	5.9°	5.6°
Electrical Downtilt	2° to 12°	2° to 12°	0° to 9°	0° to 9°	0° to 9°	0° to 9°

FREQUENCY BAND

- [ ] 604-806 MHz
- [ ] 698-798 MHz
- [ ] 698-896 MHz
- [ ] 698-960 MHz
- [ ] 790-960 MHz
- [ ] 824-896 MHz
- [ ] 1710-1880 MHz
- [ ] 1695-2180 MHz
- [ ] 1695-2360 MHz
- [ ] 1695-2690 MHz
- [ ] 1850-1995 MHz
- [ ] 2300-2400 MHz
- [ ] 2300-2690 MHz
- [ ] 2496-2690 MHz

HEIGHT

- [ ] 2 ft. (458 - 761 mm)
- [ ] 3 ft. (762 - 1066 mm)
- [ ] 4 ft. (1067 - 1371 mm)
- [ ] 5 ft. (1372 - 1676 mm)
- [ ] 6 ft. (1677 - 1981 mm)
- [ ] 7 ft. (1982 - 2286 mm)
- [ ] 8 ft. (2287 - 2590 mm)
- [ ] 9 ft. (2591 - 2896 mm)

HORIZONTAL BEAMWIDTH

- [ ] 20° to 30°
- [ ] 30° to 40°
- [ ] 50° to 70°
- [ ] TBD

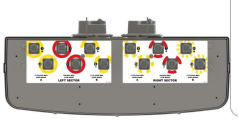
Elevation Sidelobes (1st Upper)	< -18 dB	< -18 dB	< -18 dB	< -18 dB	< -18 dB	< -18 dB
Front-to-Back Ratio @180°	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Front-to-Back Ratio over ± 20°	> 27 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 28 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Voltage Standing Wave Ratio(VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	300 watts	300 watts	300 watts	300 watts
Polarization	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

Mechanical

Dimensions (LxWxD)	72.0x28.5x9.7 in (1828x723x245 mm)
Survival Wind Speed	> 150 mph (> 240 kph)
Front Wind Load	438 lbs (1947 N) @ 100 mph (161 kph)
Side Wind Load	175 lbs (778 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	17.1 ft^2 (1.6 m^2)
Weight *	101.0 lbs (45.9 kg)
RET System Weight	6.6 lbs (3.0 kg)
Connector	12 x 7-16 DIN female long neck
Mounting Pole	2 to 5 in (5 to 12 cm)

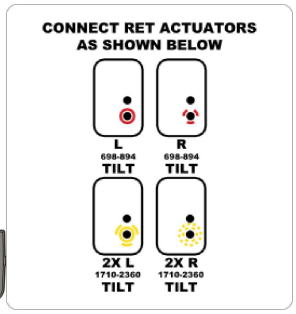
** Weight excludes mounting and RET*

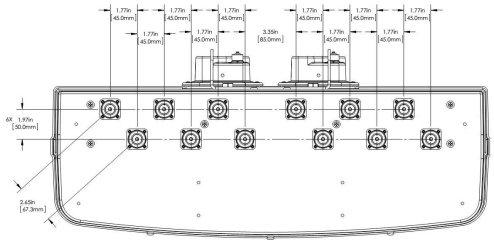
Bottom View



Connector Spacing

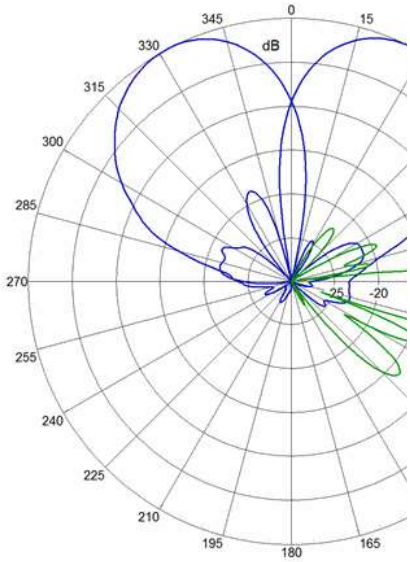
RET Connection Diagram



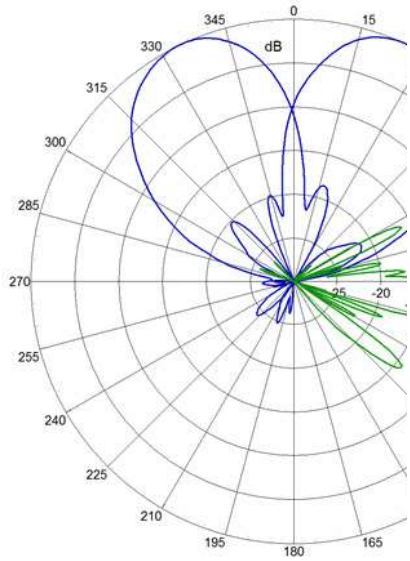


Typical Antenna Patterns

For detailed information on additional
support@cciproducts.com



761 MHz Azimuth Elevation 7



1910 MHz Azimuth Elevation

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+1 (201) 342-3339 fax
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RF COMPLIANCE EXPERTS

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703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com

Smartlink on behalf of AT&T Mobility, LLC
Site FA – 10128448
Site ID – MDL03821
USID – 100205
Site Name – GILL (MRWSH034472)

9727 Mount Pisgah Road
Silver Spring, MD 20903

Latitude: N39-01-00.00
Longitude: W76-58-30.00
Structure Type: Rooftop

Report generated date: January 24, 2020
Report by: Leo Romero
Customer Contact: Lauren Kersey

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

Table of Contents

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Max Cumulative Simulated RFE Level on the Ground	9,679.0% General Public Limit 1" in front of AT&T Mobility, LLC's Gamma Sector Antenna #8
Max Cumulative Simulated RFE Level on the Rooftop Walking Surface	9,679.0% General Public Limit 1" in front of AT&T Mobility, LLC's Gamma Sector Antenna #8
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
Compliant per FCC Rules and Regulations?	Will Be Compliant
Compliant per AT&T Mobility, LLC's Policy?	No

The following documents were provided by the client and were utilized to create this report:

RFDS: WASHINGTON-D.C.-MARYLAND_WASHINGTON-DC-BALTIMORE_GILL_2020-Cell-Site-RF-Modifications_Split-Sector_oo6650_2251A0S58F_10128448_100205_10-08-2019_Final-Approved_v1.00

CD's: 10128448.AE201.REV C.GILL.100205.01142020

RF Powers Used: MAX RRH Powers

1.2 Fall Arrest Anchor Point Summary

Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	0	N

1.3 Signage Summary

a. Pre-Site Visit AT&T Signage (Existing Signage)

AT&T Signage Locations	 Information 1	 Information 2	 Notice	 Notice 2	 Caution	 Caution 2	 Warning	 Warning 2	 Barriers
Access Point(s)	2								
Alpha									
Beta									
Gamma									

Note: All existing signage was documented during a previous site visit on 6/27/17.

b. Proposed AT&T Signage

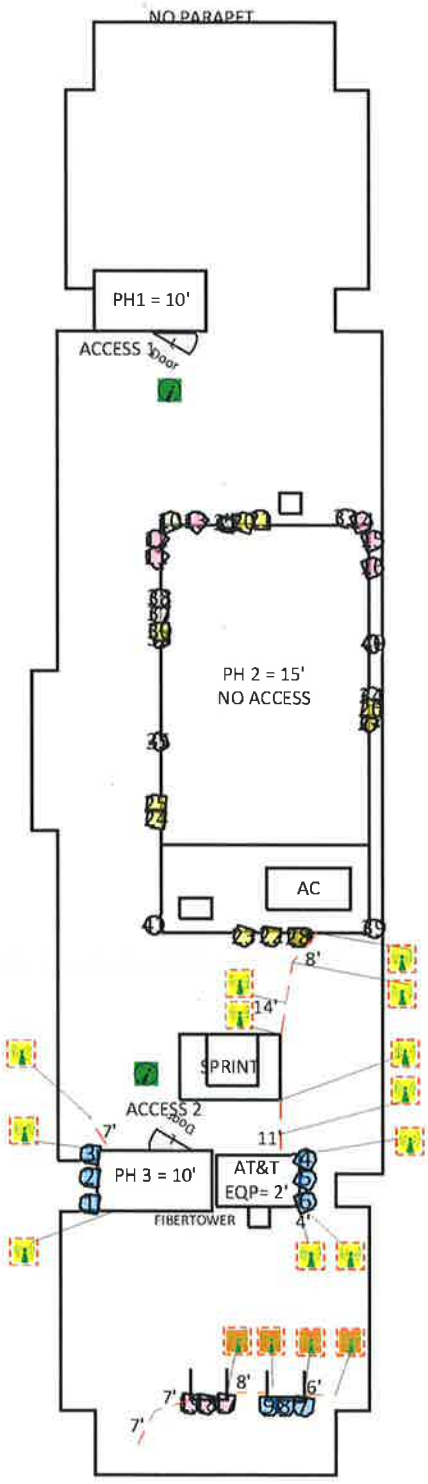
AT&T Signage Locations	 Information 1	 Information 2	 Notice	 Notice 2	 Caution	 Caution 2	 Warning	 Warning 2	 Barriers
Access Point(s)									
Alpha						3			X
Beta						9			X
Gamma								4	X

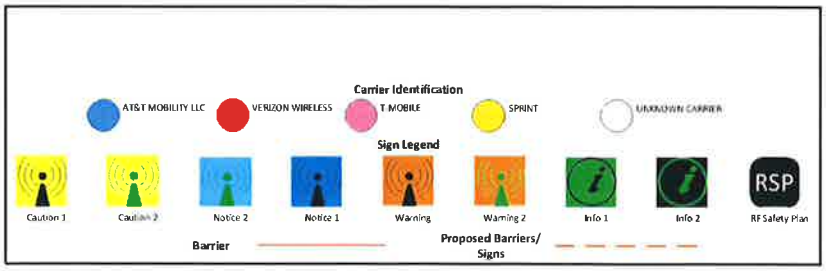
2 Scale Maps of Site

The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- RF Exposure Diagram – Detailed View West
- AT&T Mobility, LLC Contribution

Site Scale Map For: GILL





(Feet)

0 17.9 35.8

www.sitesafe.com
Site Name:GILL
1/24/2020 1:07:09 PM

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
1	AT&T MOBILITY LLC	Kathrein-Scala 742-264	Panel	850	UMTS	0	68.4	4.3	80	TPO	Watt	0	1	1267.9	12	4.8'	0°	2°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	737	LTE	0	75	8	160	TPO	Watt	0	1	3631.8	13.56	3'	0°	5°
2	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65C-R6	Panel	763	LTE	0	75	8	160	TPO	Watt	0	1	3631.8	13.56	3'	0°	5°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	1900	LTE	0	59	8	160	TPO	Watt	0	1	5496.9	15.36	3'	0°	2°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2110	LTE	0	61	8	80	TPO	Watt	0	1	2878	15.56	3'	0°	2°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2160	AWS3	0	61	8	80	TPO	Watt	0	1	2878	15.56	3'	0°	2°
3	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	LTE	0	61.1	4	100	TPO	Watt	0	1	2666.9	14.26	5'	0°	5°
4	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	737	LTE	110	75	8	160	TPO	Watt	0	1	3631.8	13.56	6'	0°	10°
4	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65C-R6	Panel	763	LTE	110	75	8	160	TPO	Watt	0	1	3631.8	13.56	6'	0°	12°
4	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	1900	LTE	110	59	8	160	TPO	Watt	0	1	5496.9	15.36	6'	0°	5°
4	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2110	LTE	110	61	8	80	TPO	Watt	0	1	2878	15.56	6'	0°	5°
4	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2160	AWS3	110	61	8	80	TPO	Watt	0	1	2878	15.56	6'	0°	5°
5	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	LTE	110	61.1	4	100	TPO	Watt	0	1	2666.9	14.26	8'	0°	6°
6	AT&T MOBILITY LLC	Kathrein-Scala 742-264	Panel	850	UMTS	150	68.4	4.3	80	TPO	Watt	0	1	1267.9	12	7.8'	0°	2°
7	AT&T MOBILITY LLC	Kathrein-Scala 742-264	Panel	850	UMTS	270	68.4	4.3	80	TPO	Watt	0	1	1267.9	12	4.8'	2°	2°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	737	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	763	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	1900	LTE	260	32.3	6	160	TPO	Watt	0	1	6139.3	15.84	4'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	2110	LTE	260	27.9	6	80	TPO	Watt	0	1	3373.6	16.25	4'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	2160	AWS3	260	27.9	6	80	TPO	Watt	0	1	3373.6	16.25	4'	0°	4°

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	737	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	763	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	1900	LTE	260	33.9	6	160	TPO	Watt	0	1	6153.5	15.85	4'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	2110	LTE	260	27.1	6	80	TPO	Watt	0	1	3373.6	16.25	4'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	2160	AWS3	260	27.1	6	80	TPO	Watt	0	1	3373.6	16.25	4'	0°	4°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	763	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	2300	LTE	260	23.6	6	100	TPO	Watt	0	1	3845.9	15.85	4'	0°	4°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	737	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	737	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	763	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	2300	AWS3	260	25.5	6	100	TPO	Watt	0	1	3845.9	15.85	4'	0°	4°
10	CRICKET COMMUNICATIONS (Decommissioned)	Generic Panel	Panel	2100		60	65	4.6	0	ERP	Watt	0	0	0	15.23	15.7'	0°	0°
11	T-MOBILE	Generic Panel	Panel	700		30	65	6.3	160	TPO	Watt	0	0	2884.8	12.56	13.9'	0°	0°
12	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	1900		30	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	14.5'	0°	0°
12	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	2100		30	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	14.5'	0°	0°
13	T-MOBILE	Ericsson AIR 21 B2A B4P	Panel	1900		30	65	4.7	120	TPO	Watt	0	0	4132.2	15.37	14.7'	0°	0°
14	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	1900		150	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	20.5'	0°	0°
14	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	2100		150	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	20.5'	0°	0°
15	T-MOBILE	Ericsson AIR 21 B2A B4P	Panel	1900		150	65	4.7	120	TPO	Watt	0	0	4132.2	15.37	20.7'	0°	0°
16	T-MOBILE	Generic Panel	Panel	700		150	65	4.6	160	TPO	Watt	0	0	2618.9	12.14	20.7'	0°	0°
17	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	1900		270	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	4.5'	0°	0°
17	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	2100		270	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	4.5'	0°	0°
18	T-MOBILE	Generic Panel	Panel	700		270	65	6.3	160	TPO	Watt	0	0	2884.8	12.56	3.9'	0°	0°
19	T-MOBILE	Ericsson AIR 21 B2A B4P	Panel	1900		270	65	4.7	120	TPO	Watt	0	0	4132.2	15.37	4.7'	0°	0°
20	SPRINT	Generic Panel	Panel	2500		100	65	4.1	160	TPO	Watt	0	0	5071.3	15.01	17'	0°	0°
21	SPRINT	Generic Panel	Panel	862		80	65	6.3	100	TPO	Watt	0	0	2202.9	13.43	15.9'	0°	0°

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
21	SPRINT	Generic Panel	Panel	1900		80	65	6.3	180	TPO	Watt	0	0	7608	16.26	15.9'	0°	0°
22	SPRINT	Generic Panel	Panel	862		270	65	6.3	100	TPO	Watt	0	0	2202.9	13.43	15.9'	0°	0°
22	SPRINT	Generic Panel	Panel	1900		270	65	6.3	180	TPO	Watt	0	0	7608	16.26	15.9'	0°	0°
23	SPRINT	Generic Panel	Panel	2500		280	65	4.1	160	TPO	Watt	0	0	5071.3	15.01	17'	0°	0°
24	SPRINT	Generic Panel	Panel	2500		0	65	4.1	160	TPO	Watt	0	0	5071.3	15.01	17'	0°	0°
25	SPRINT	Generic Panel	Panel	862		0	65	6.3	100	TPO	Watt	0	0	2202.9	13.43	16.9'	0°	0°
25	SPRINT	Generic Panel	Panel	1900		0	65	6.3	180	TPO	Watt	0	0	7608	16.26	16.9'	0°	0°
26	SPRINT	Generic Panel	Panel	2500		180	65	4.1	40	TPO	Watt	0	0	1267.8	15.01	13'	0°	0°
27	SPRINT	Generic Microwave	Aperture	80000		190	2	2	0.01	TPO	Watt	0	0	769.1	48.86	19'	0°	0°
28	SPRINT	Generic Panel	Panel	2500		260	65	4.1	40	TPO	Watt	0	0	1267.8	15.01	13'	0°	0°
29	SPRINT	Generic Microwave	Aperture	23000		280	2	0	0.02	TPO	Watt	0	0	36.9	32.66	15'	0°	0°
30	SPRINT	Generic Panel	Panel	2500		355	65	4.1	40	TPO	Watt	0	0	1267.8	15.01	13'	0°	0°
31	UNKNOWN CARRIER	Generic Microwave	Aperture	18000		90	2	2	0.01	TPO	Watt	0	0	58.3	37.66	19'	0°	0°
32	UNKNOWN CARRIER	Generic Microwave	Aperture	23000		90	2	1	0.01	TPO	Watt	0	0	18.5	32.66	16'	0°	0°
33	UNKNOWN CARRIER	Generic Omni	Omni	850		0	360	14	100	ERP	Watt	0	0	100	9.97	18'	0°	0°
34	UNKNOWN CARRIER	Generic Panel	Panel	5800		160	90	2.2	20	ERP	Watt	0	0	20	16.01	19.9'	0°	0°
35	UNKNOWN CARRIER	Generic Microwave	Aperture	80000		340	2	1	0.01	TPO	Watt	0	0	172.2	42.36	16'	0°	0°
36	UNKNOWN CARRIER	Generic Microwave	Aperture	18000		10	2	2	0.01	TPO	Watt	0	0	58.3	37.66	17'	0°	0°
37	UNKNOWN CARRIER	Generic Omni	Omni	450		0	360	4.7	100	ERP	Watt	0	0	100	2.97	17.6'	0°	0°
38	UNKNOWN CARRIER	Generic Omni	Omni	450		0	360	4.7	100	ERP	Watt	0	0	100	2.97	17.6'	0°	0°
39	UNKNOWN CARRIER	Generic Omni	Omni	850		0	360	14	100	ERP	Watt	0	0	100	9.97	18'	0°	0°
40	UNKNOWN CARRIER	Generic Microwave	Aperture	18000		170	0	0	0.01	TPO	Watt	0	0	58.3	37.66	17'	0°	0°
41	UNKNOWN CARRIER	Generic Omni	Omni	850		0	360	14	100	ERP	Watt	0	0	100	9.97	18'	0°	0°

Note: The Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience. Proposed equipment is tagged as (Proposed) under *Operator* or *Antenna Make & Model*.

Note: The 763MHz LTE technology is being added to existing antennas.

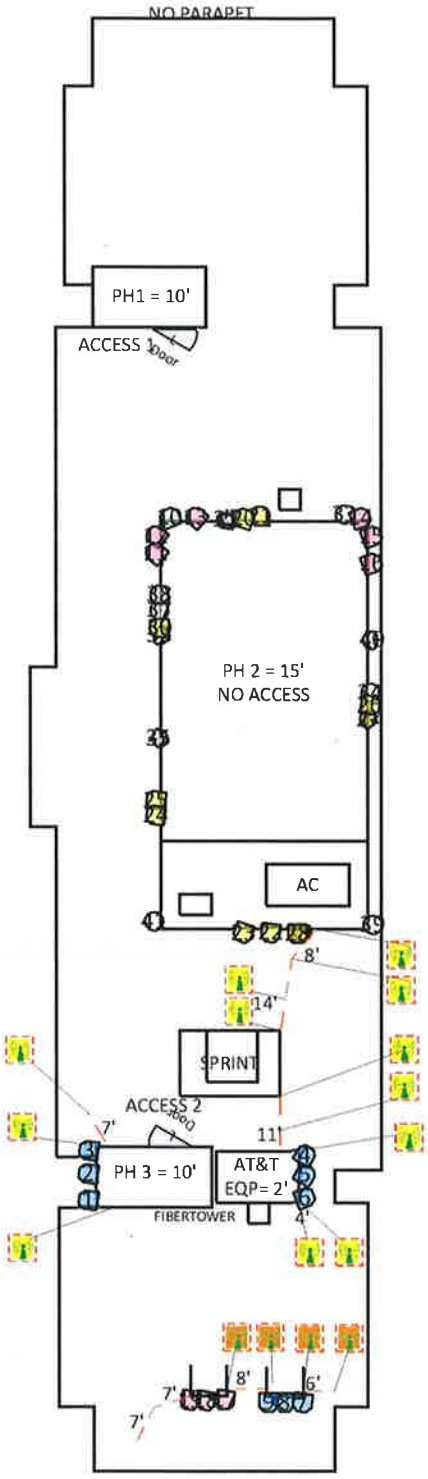
4 Emission Predictions

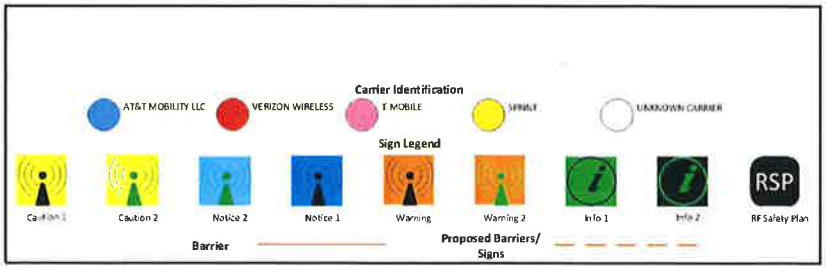
In the RF Exposure Simulations below, all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

- MAIN LEVEL = 0'
- PH1 and PH3 = 10'
- PH2 = 15'
- AT&T EQP = 2'

The Antenna Inventory heights are referenced to the same level.

Site Scale Map For: GILL



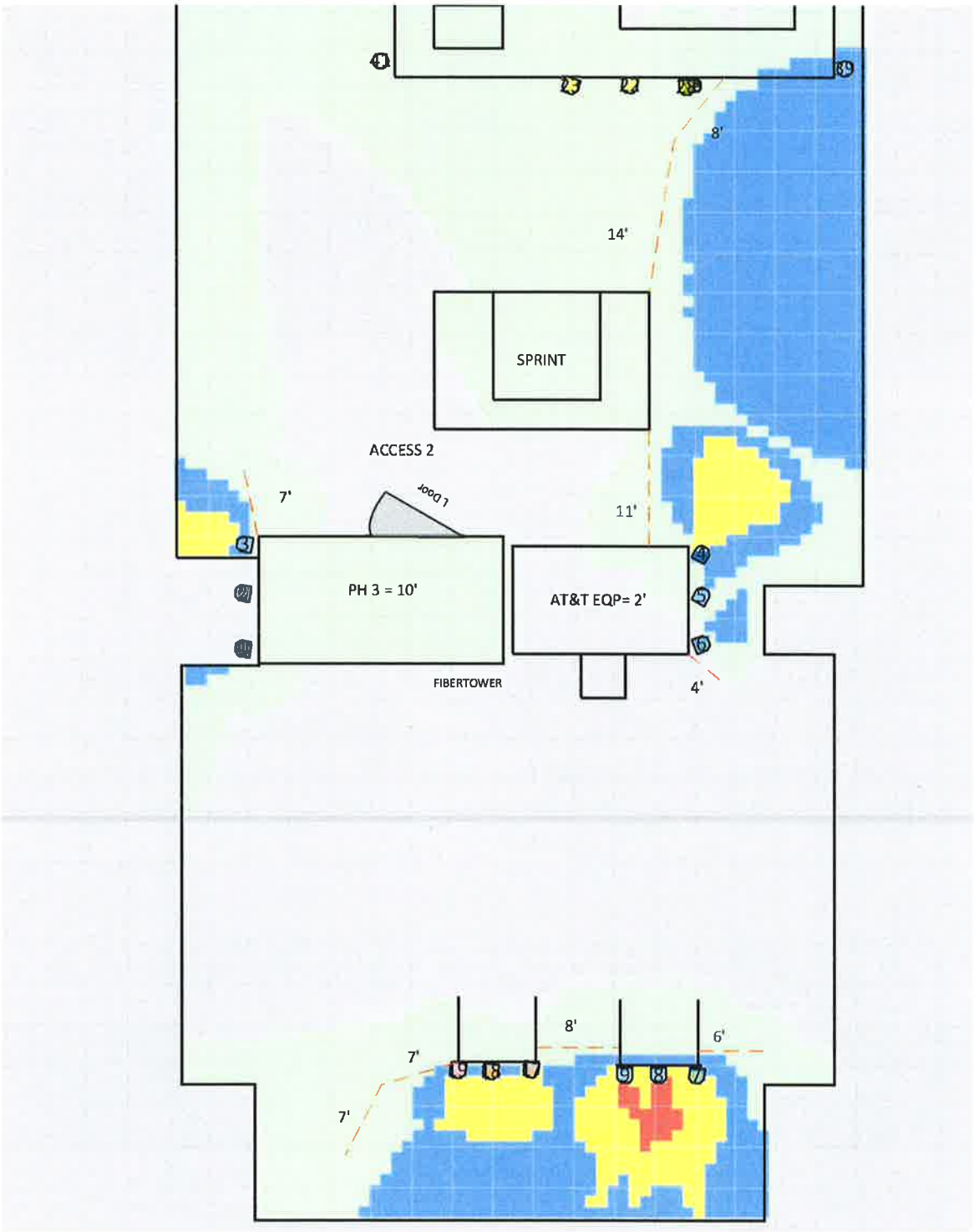


(Feet)

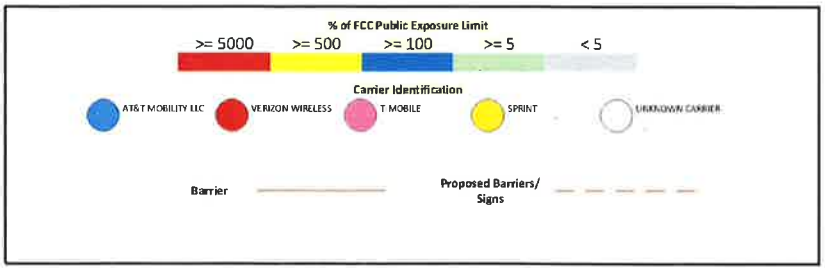
0 17.9 35.8

www.sitesafe.com
Site Name:GILL
1/24/2020 1:07:09 PM

RF Exposure Simulation For: GILL
Detail View West



% of FCC Public Exposure Limit
Spatial average 0' - 6'



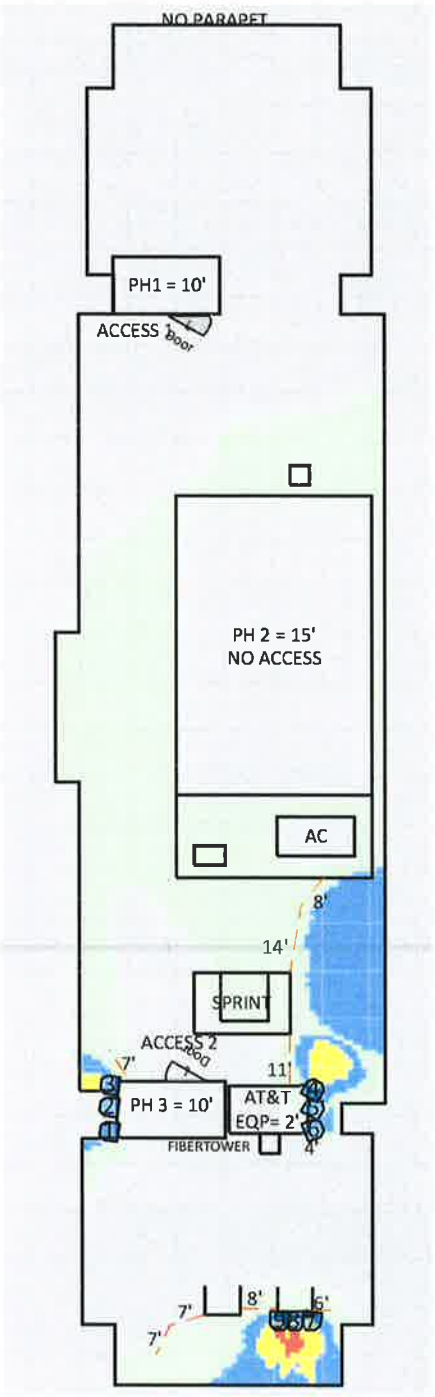
(Feet)

0 7.5 15

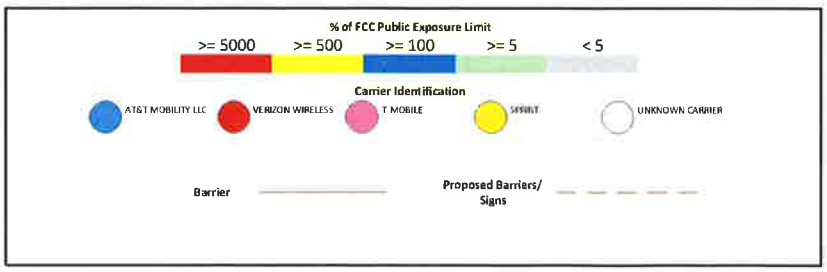
www.sitesafe.com
Site Name:GILL
1/24/2020 1:00:13 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: GILL
AT&T Mobility, LLC Contribution



% of FCC Public Exposure Limit
Spatial average 0' - 6'



(Feet)
0 20.3 40.6
www.sitesafe.com
Site Name:GILL
1/24/2020 1:03:52 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

Based on measurement or predictions, other wireless operators on this site may be out of RF exposure compliance with FCC regulations on this site. We recommend that those operators review this site with respect to RF exposure compliance.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC's RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

AT&T Mobility, LLC Proposed Alpha Sector Location

(2) Yellow Caution 2 sign(s) required one on each side of the sector.
Install a barrier that is 7' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.
Install (1) total Caution 2 sign(s) on the proposed barrier stanchions.

- 7' segment: (1) Caution 2 sign(s)

AT&T Mobility, LLC Proposed Beta Sector Location

(2) Yellow Caution 2 sign(s) required one on each side of the sector.
Install a barrier that is 33' long, comprised of (3) segment(s) and an estimated (7) stanchions, as depicted in the site scale map.
Install (6) total Caution 2 sign(s) on the proposed barrier stanchions.

- 11' segment: (2) Caution 2 sign(s)
- 14' segment: (3) Caution 2 sign(s)
- 8' segment: (1) Caution 2 sign(s)

Install a barrier that is 4' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.
Install (1) total Caution 2 sign(s) on the proposed barrier stanchions.

- 4' segment: (1) Caution 2 sign(s)

AT&T Mobility, LLC Proposed Gamma Sector Location

(2) Red Warning 2 sign(s) required one on each side of the sector.
Install a barrier that is 6' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.
Install (1) total Warning 2 sign(s) on the proposed barrier stanchions.

- 6' segment: (1) Warning 2 sign(s)

Install a barrier that is 8' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.

Install (1) total Warning 2 sign(s) on the proposed barrier stanchions.

- 8' segment: (1) Warning 2 sign(s)

AT&T Mobility, LLC is predicted to exceed 5% of the GP limit in an area near T-Mobile antennas #17, #18 and #19 that is predicted to exceed that limit and no signs or barriers are in place. AT&T Mobility, LLC should work with T-Mobile to ensure compliance at this location.
Install a barrier that is 14' long on the right side of T-Mobile's antennas #17, #18 and #19, comprised of (2) segment(s) and an estimated (3) stanchions, as depicted in the site scale map

Recommended per AT&T Mobility, LLC's Policy:

Site Access Location

Sitesafe recommends that all AT&T Mobility, LLC signage be removed from all access points, as they are not required by AT&T Mobility, LLC's signage policy.

Notes:

- Signage on the barriers should be placed on the stanchions no more than 8' apart from each other.
- Barriers were only recommended in areas predicted to exceed the General Public MPE limit greater than 6' from the unprotected roof edges. All other predicted to exceed areas are within 6' of the unprotected roof edges.
- Any existing signage that conflicts with the proposed signage in this report should be removed per AT&T Signage Posting Rules.
- Ensure all existing signage documented in this report still exist at the site, unless otherwise indicated.

Other Operator Antennas:

T-Mobile should review their Gamma sector.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Site Safe, LLC, in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Leo Romero.

January 24, 2020

Anthony Handley

Appendix A – Statement of Limiting Conditions

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data collected by Sitesafe provided by a second party and data collected by Sitesafe, the data will be used.

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for evaluating the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996, the FCC periodically reviews these rules and regulations as per their congressional mandate.

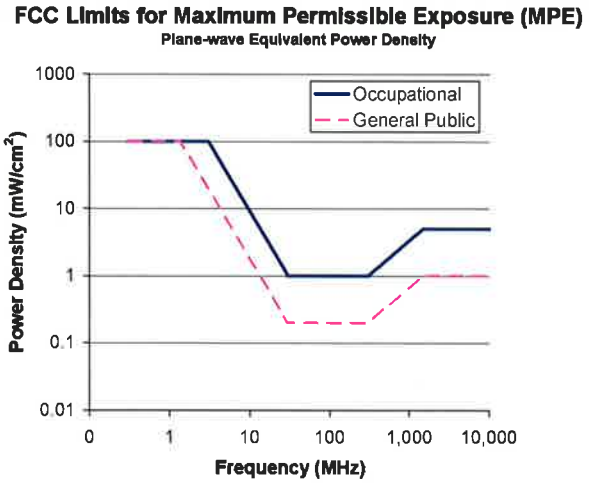
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lockout/Tagout procedure aimed to control the unexpected energization or startup of machines when maintenance or service is being performed.

Appendix C – Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a worker's understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet-based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Maintain a 3-foot clearance from all antennas: There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

Site RF Emissions Diagram(s): Section 4 of this report contains RF Diagram(s) that outline various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst-case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit. **Gray areas are accessible to anyone**.
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers**.
- Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.**
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

If trained occupational personnel require access to areas that are delineated as above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Appendix F – Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site complies with FCC standards with regards to Human Exposure to Radio Frequency Electromagnetic Fields from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to a half-wave dipole antenna.

Gain (of an antenna) – The ratio of the maximum power in a given direction to the maximum power in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antenna as compared to an omnidirectional antenna.

General Population/Uncontrolled Environment – Defined by the FCC as an area where RF exposure may occur to persons who are **unaware** of the potential for exposure and who have no control over their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use its industry specific knowledge of antenna models to select a worst-case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The rms and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC as an area where RF exposure may occur to persons who are **aware** of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – Electromagnetic waves that are propagated from antennas through space.

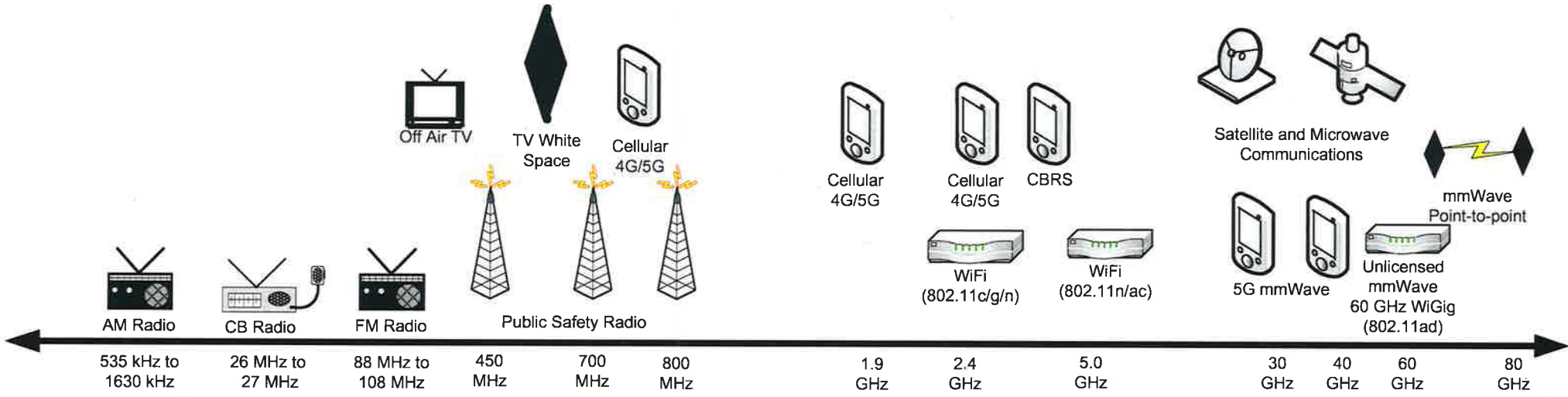
Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy a 6-foot tall human body will absorb while present in an electromagnetic field of energy.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix G – References

The following references can be followed for further information about RF Health and Safety.

Site Safe, LLC
http://www.sitesafe.com
FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety
National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org
Institute of Electrical and Electronics Engineers, Inc., (IEEE)
http://www.ieee.org
American National Standards Institute (ANSI)
http://www.ansi.org
Environmental Protection Agency (EPA)
http://www.epa.gov/radtown/wireless-tech.html
National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/
Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/
International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org
World Health Organization (WHO)
http://www.who.int/peh-emf/en/
National Cancer Institute
http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones
American Cancer Society (ACS)
http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?siteareа=PED
European Commission Scientific Committee on Emerging and Newly Identified Health Risks
http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf
Fairfax County, Virginia Public School Survey
http://www.fcps.edu/fts/safety-security/RFEESurvey/
UK Health Protection Agency Advisory Group on Non-Ionizing Radiation
http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368
Norwegian Institute of Public Health
http://www.fhi.no/dokumenter/545eea7147.pdf


Off Air TV
TV White Space
Cellular 4G/5G
Cellular 4G/5G
Cellular 4G/5G
CBRS
Satellite and Microwave Communications
mmWave Point-to-point
WiFi (802.11c/g/n)
WiFi (802.11n/ac)
5G mmWave
Unlicensed mmWave 60 GHz WiGig (802.11ad)
AM Radio
CB Radio
FM Radio
Public Safety Radio
535 kHz to 1630 kHz
26 MHz to 27 MHz
88 MHz to 108 MHz
450 MHz
700 MHz
800 MHz
1.9 GHz
2.4 GHz
5.0 GHz
30 GHz
40 GHz
60 GHz
80 GHz
Low Speeds
Favorable Propagation
High Speeds
Low Propagation

Trylon

Prepared For

smartlink

Structural Analysis

Steven Uecke, P.E.
MD P.E. License No. 42852
Date: 02-28-20 Expires: 11-28-20

GILL

02/28/20

PASS (44.6%)

TABLE OF CONTENT

STRUCTURAL ANALYSIS REPORT

SMARTLINK
1362 Mellon Road, Suite 140
Hanover, MD 21076

Attention: **Nathan Lenig**

Reference: Roof Frame Analysis – Engineering Assessment, located at 9727 Mount Pisgah Road, Silver Spring, MD 20903.

Trylon Job No.:	157156
AT&T Site Name:	GILL
AT&T Site FA#:	10128448
Site Address:	9727 Mount Pisgah Road, Silver Spring, MD 20903
Tower Profile:	Rooftop

Dear Nathan Lenig:

We have been provided with RF information for above-referenced site. AT&T is proposing to add new equipment to the existing equipment platform.

A revised equipment schematic has been provided to us. We have been asked to evaluate this information to determine whether or not the existing roof framing supporting the equipment platform is structurally adequate to safely support the proposed loading changes. The structural evaluation refers to the equipment cabinet installed at the existing rooftop equipment platform located at 9727 Mount Pisgah Road, Silver Spring, MD 20903.

The proposed changes were provided to us in scope of work Trylon drawing package dated 01/21/2020. The equipment platform is located at **133-ft 6-in** elevation. The existing equipment platform framing was verified for the loading from the proposed new and existing equipment cabinet.

The existing platform framing information that we considered in our evaluation is based on the previous construction drawings prepared by "BC Architects Engineers" dated 01/13/2011. The structural members that we considered in our analysis are presented in the attached sketches.

We consider that the existing equipment platform framing is in "like new" condition without cracks or deteriorated parts.

Proposed Equipment Cabinet:

Status	Equipment Cabinet	Qty.	Weight (lbs)
Proposed	**NETXTEND Battery Cabinet**	**1**	**2610.0**
	DC12	**3**	**56.3**
Existing	TE41 Cabinet	1	847.0
	9412 Cabinet	1	230.0
	UMTS Cabinet	1	1200.0
	FLEX Cabinet	1	600.0*

* Weight assumed

CONCLUSIONS AND RECOMMENDATIONS

Based on information provided, our calculations conclude that the existing equipment platform supporting the proposed new and existing equipment cabinet located at **133-ft 6-in** elevation of the Rooftop at the specified address, are **STRUCTURALLY ADEQUATE** to safely support the proposed equipment, subject to the attached Standard Conditions on page 4**.** The proposed new addition replaces the similar weight in the equipment and the existing roof frame supporting the equipment platform shall be structurally adequate.

Should you have any questions, comments or require additional information, please do not hesitate to call.

Sincerely,

Analysis performed by:

Ashraful Alam, PhD, PE

Standard Conditions for Providing Structural Consulting Services on Existing Structures

1. Roof structure is analyzed to the best of our ability using all information that is provided or can be obtained during fieldwork (if authorizes by client). If the existing conditions are not as we have represented in this analysis, we should be contacted to evaluate the significance of the deviation and revise the assessment accordingly.

2. The structural analysis has been performed assuming that existing roof slab is in "like new" condition. No allowance was made for excessive corrosion, damaged or missing structural members, loose bolts, misaligned parts, or any reduction in strength due to the age or fatigue of the product.

3. The structural analysis provided is an assessment of the primary load carrying capacity of the structure. We provide a limited scope of service. In some cases, we cannot verify the capacity of every structural parameter. In some cases, structural fabrication details are unknown at the time of our analysis, and the detailed field measurement of some of the required details may not be possible. In instances where we cannot perform connection capacity calculations, it is assumed that the existing manufactured connections develop the full capacity of the primary members being connected.

4. We cannot be held responsible for temporary and unbalanced loads on the roof structure. Our analysis is based on a particular loading arrangement or as-built field condition. We are not responsible for the methods and means of how the loading arrangement is accomplished by the contractor. These methods and means may include rigging of equipment or hardware to lift and locate, temporary hanging of equipment in locations other than the final arrangement, movement and tie off of tower riggers, personnel, and their equipment, etc.

Structural Calculations

Applicable Codes and References:

2015 International Building Code

ASCE 7-10 Minimum Design Loads for Buildings and Other Structures

AISC Steel Construction Manual Fourteenth Edition

Load Combinations (IBC 2015 LRFD):

- 1.4(D + F) (Eq. 16-1)
- 1.2(D + F) + 1.6(L + H) + 0.5(L_r or S or R) (Eq. 16-2)
- 1.2(D + F) + 1.6(L_r or S or R) + 1.6H + (f_1L or 0.5W) (Eq. 16-3)
- 1.2(D + F) + 1.0W + f_1L + 1.6H + 0.5(L_r or S or R) (Eq. 16-4)
- 1.2(D + F) + 1.0E + f_1L +1.6H + f_2S (Eq. 16-5)
- 0.9D + 1.0W + 1.6H (Eq. 16-6)
- 0.9(D + F) + 1.0E + 1.6H (Eq. 16-7)

Load Combinations (IBC 2015 ASD):

- D + F (Eq. 16-8)
- D + H + F + L (Eq. 16-9)
- D + H + F + (L_r or S or R) (Eq. 16-10)
- D + H + F + 0.75(L) + 0.75(L_r or S or R) (Eq. 16-11)
- D + H + F + (0.6W or 0.7E) (Eq. 16-12)
- D + H + F + 0.75(0.6W) + 0.75L + 0.75(L_r or S or R) (Eq. 16-13)
- D + H + F + 0.75(0.7E) + 0.75L + 0.75S (Eq. 16-14)
- 0.6D + 0.6W + H (Eq. 16-15)
- 0.6(D + F) + 0.7E + H (Eq. 16-16)

Notations:

- D = Dead load of structure and appurtenances, excluding guy assemblies
- F = Load due to fluids with well-defined pressures and maximum heights
- L = Floor live load
- H = Load due to lateral earth pressures, ground water pressure or pressure of bulk materials
- L_r = Roof live load
- R = Rain load
- S = Snow load
- W = Load due to wind pressure
- E = Combined effect of horizontal and vertical earthquake induced forces
- f_1 = 1 for floors in places of public assembly in excess of 100 pounds per square foot, and = 0.5 for other live loads
- f_2 = 0.7 for roof configurations that do not shed snow off the structure, and = 0.2 for other roof configurations

WIND LOAD ON EQUIPMENT

ASCE 7-10: Section 29.5.1

Basic wind speed	V = 115 mph
Risk category	II
Velocity pressure exponent coef (Table 26.6-1)	K_d = **0.85**
Exposure category (Sect. 2.6.5)	**C**
Height of building	h = **136.50** ft
Topography factor not signifcant (Sect. 2.6.6)	K_{zt} = 1.00
Nominal height of atmospheric boundary layer	z_g = **900** ft
3-second gust wind speed power law exponent	α = **9.5**
Terrain constant	K_e = **1.00**
Minimum value for K_z	$K_{zmin} = \max(2.01 \times (z/z_g)^{(2/\alpha)}, 0.85)$ = **1.351**
Velocity pressure coefficient (Sect. 2.6.5.2)	$K_z = \min(K_{zmin}, 2.01)$ = **1.351**
Velocity pressure	q_h **=** $0.00256 \times K_z \times K_{zt} \times K_d \times V^2 \times 1psf/mph^2$ = **38.887** psf

NETXTEND Cabinet

Length of equipment	L_1 = 3.1 ft
Width of equipment	W_1 =3.0 ft
Height of equipment	H_1 = 6.0 ft
Vertical projected area normal to wind	$A_{f1x} = L_1 \times H_1$ = **18.600** ft^2
Vertical projected area Transverse to wind	$A_{f1z} = W_1 \times H_1$ = **18.000** ft^2
Horizontal projected area normal to wind	$A_{r1} = L_1 \times W_1$ = **9.300** ft^2

TE41 Cabinet

Length of equipment	L_2 = 3.33 ft
Width of equipment	W_2 =3.0 ft
Height of equipment	H_2 = 6.17 ft
Vertical projected area normal to wind	$A_{f2x} = L_2 \times H_2$ = **20.546** ft^2
Vertical projected area Transverse to wind	$A_{f2z} = W_2 \times H_2$ = **18.510** ft^2
Horizontal projected area normal to wind	$A_{r2} = L_2 \times W_2$ = **9.990** ft^2

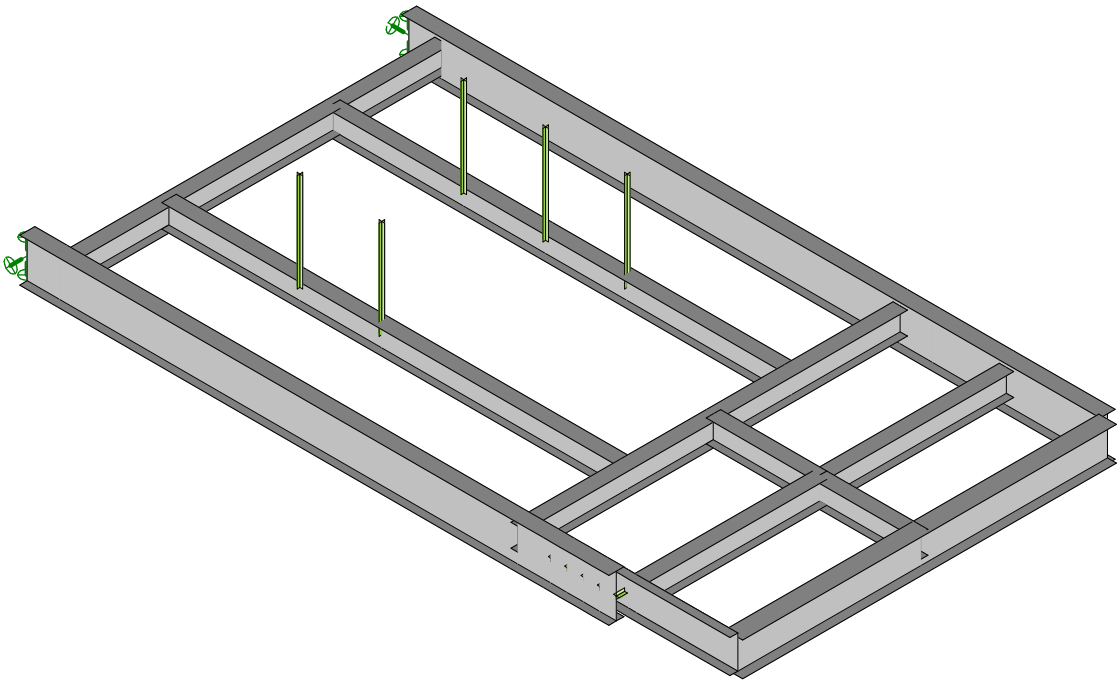
UMTS Cabinet

Length of equipment	L_3 = 2.6 ft
Width of equipment	W_3 =2.5 ft
Height of equipment	H_3 = 7.4 ft
Vertical projected area normal to wind	$A_{f3x} = L_3 \times H_3$ = **19.240** ft^2
Vertical projected area Transverse to wind	$A_{f3z} = W_3 \times H_3$ = **18.500** ft^2
Horizontal projected area normal to wind	$A_{r3} = L_3 \times W_3$ = **6.500** ft^2
Horizontal projected area normal to wind	$A_{r4} = L_4 \times W_4$ = **4.367** ft^2

Wind force (Normal and Transverse)

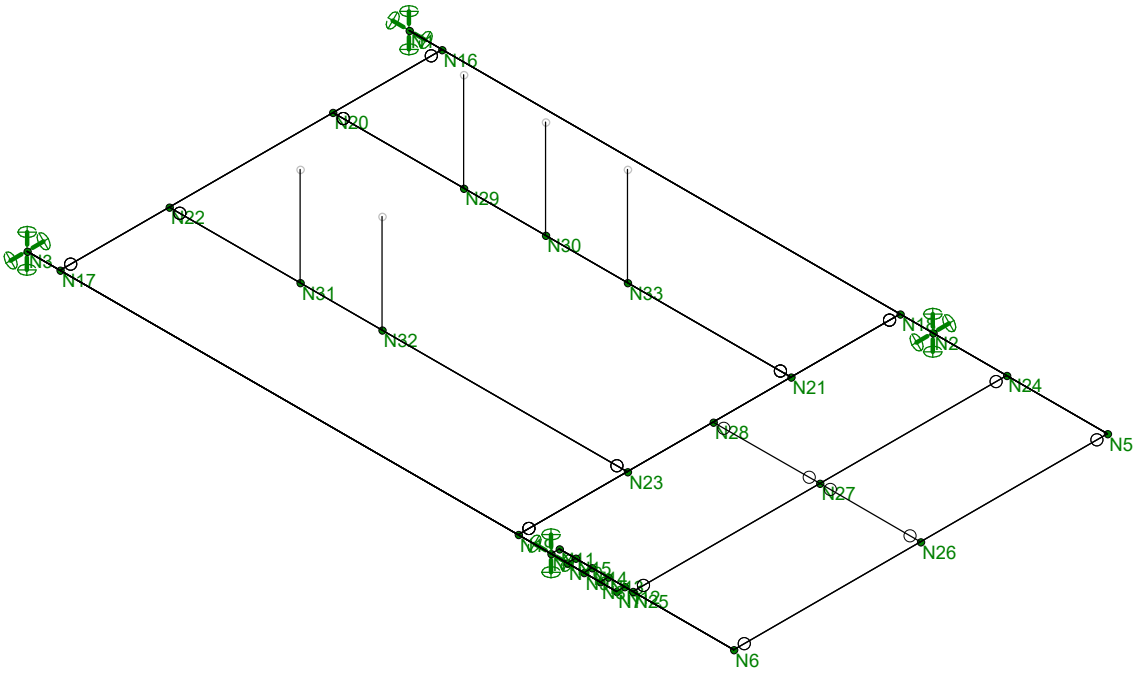
Pressure coefficient	GC_f = **1.9**
Lateral force due to wind (N-direction)	$F_{h1x} = \max(16\ psf, q_h \times GC_f) \times A_{f1x}$ = **1374.273** lb
Lateral force due to wind (T-direction)	$F_{h1z} = \max(16\ psf, q_h \times GC_f) \times A_{f1z}$ = **1329.942** lb

Lateral force due to wind (N-direction)	$F_{h2x} = \max(16\ psf, q_h \times GC_f) \times A_{f2x} =$ **1518.062** lb
Lateral force due to wind (T-direction)	$F_{h2z} = \max(16\ psf, q_h \times GC_f) \times A_{f2z} =$ **1367.623** lb
Lateral force due to wind (N-direction)	$F_{h3x} = \max(16\ psf, q_h \times GC_f) \times A_{f3x} =$ **1421.560** lb
Lateral force due to wind (T-direction)	$F_{h3z} = \max(16\ psf, q_h \times GC_f) \times A_{f3z} =$ **1366.884** lb



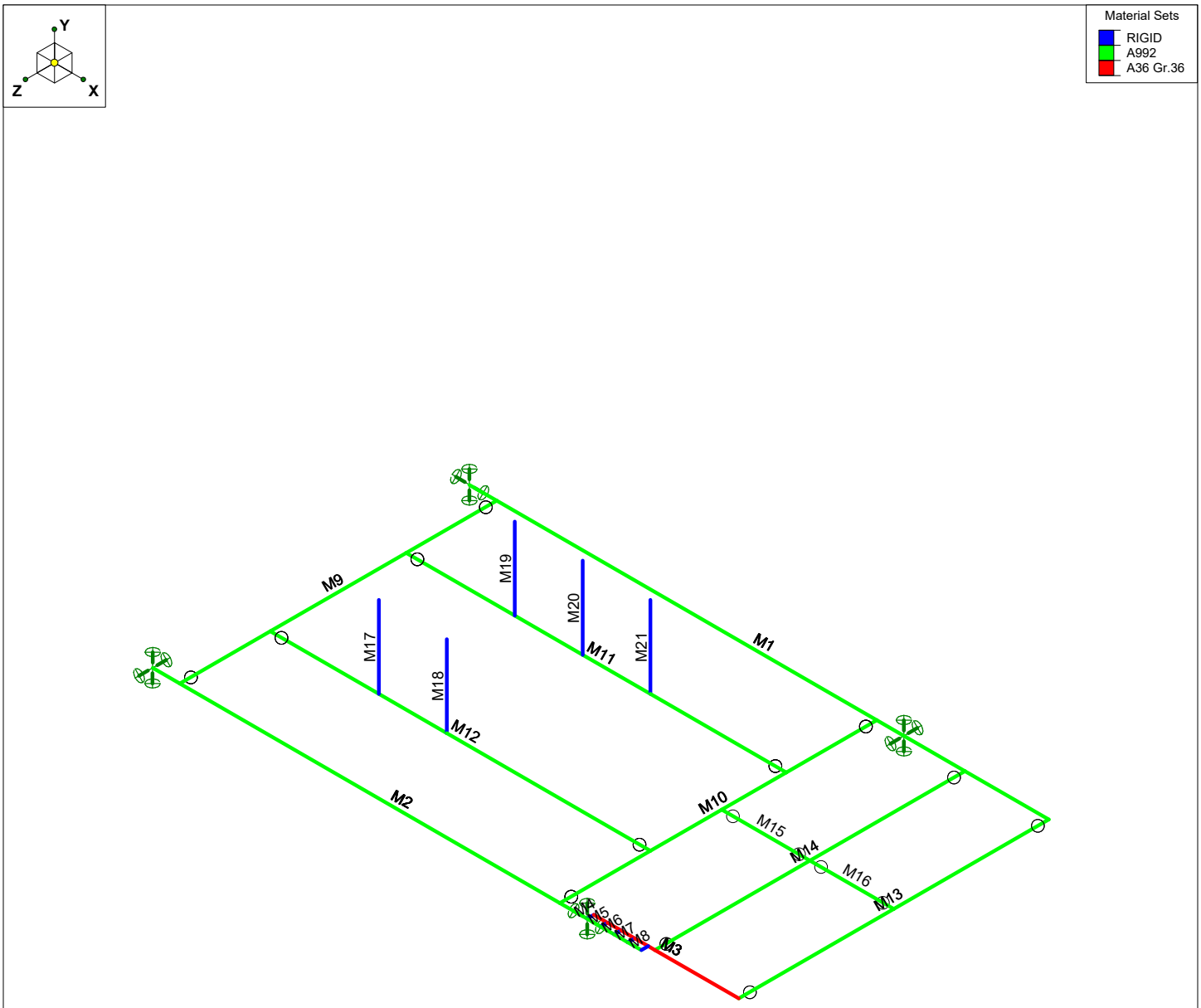
Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 9
AA	Gill	Feb 4, 2020 at 2:30 PM
157156	3-D View	AT&T_Gill_Equipment Platform.r3d



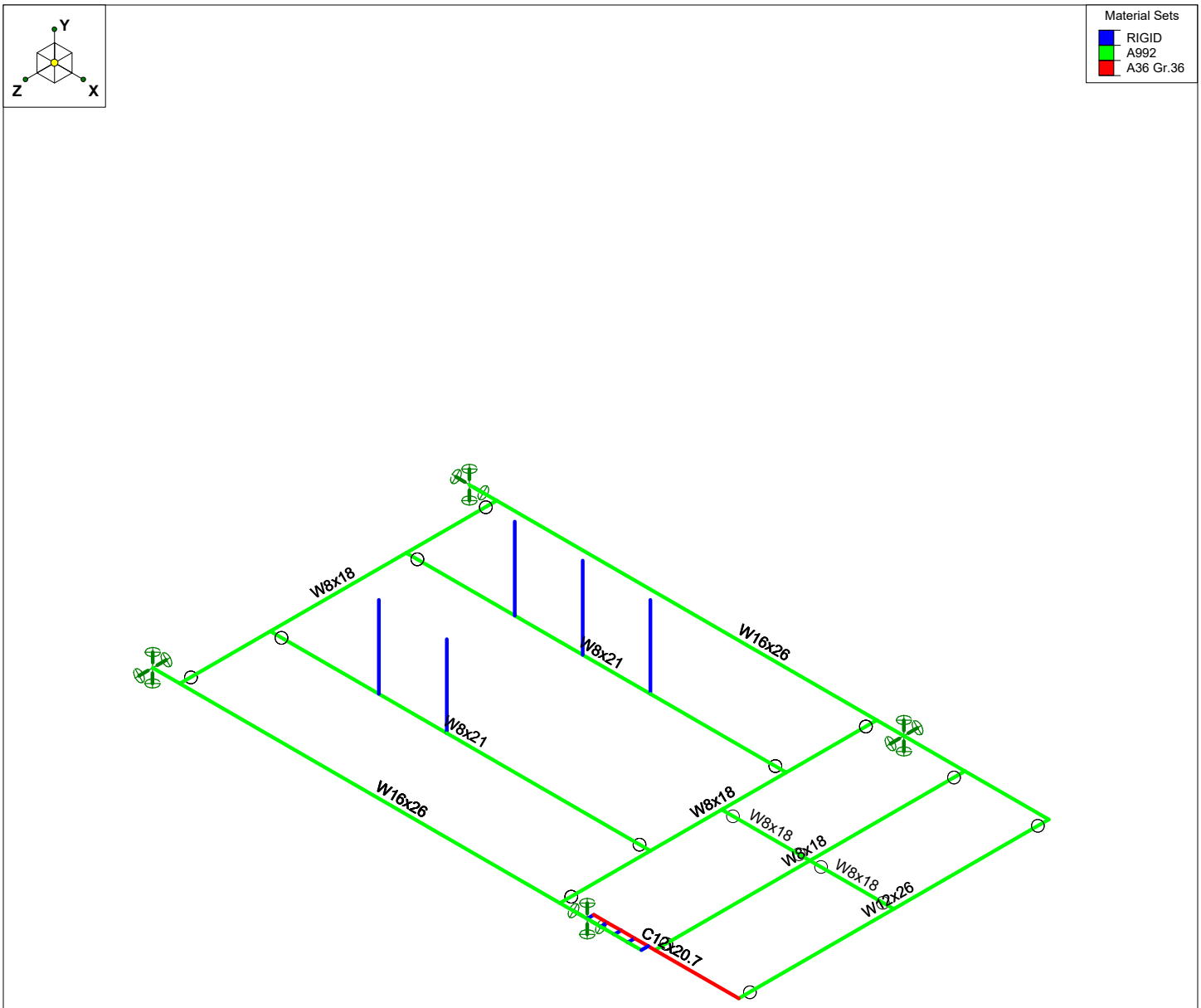
Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 10
AA	Gill	Feb 4, 2020 at 2:31 PM
157156	Node Numbers	AT&T_Gill_Equipment Platform.r3d



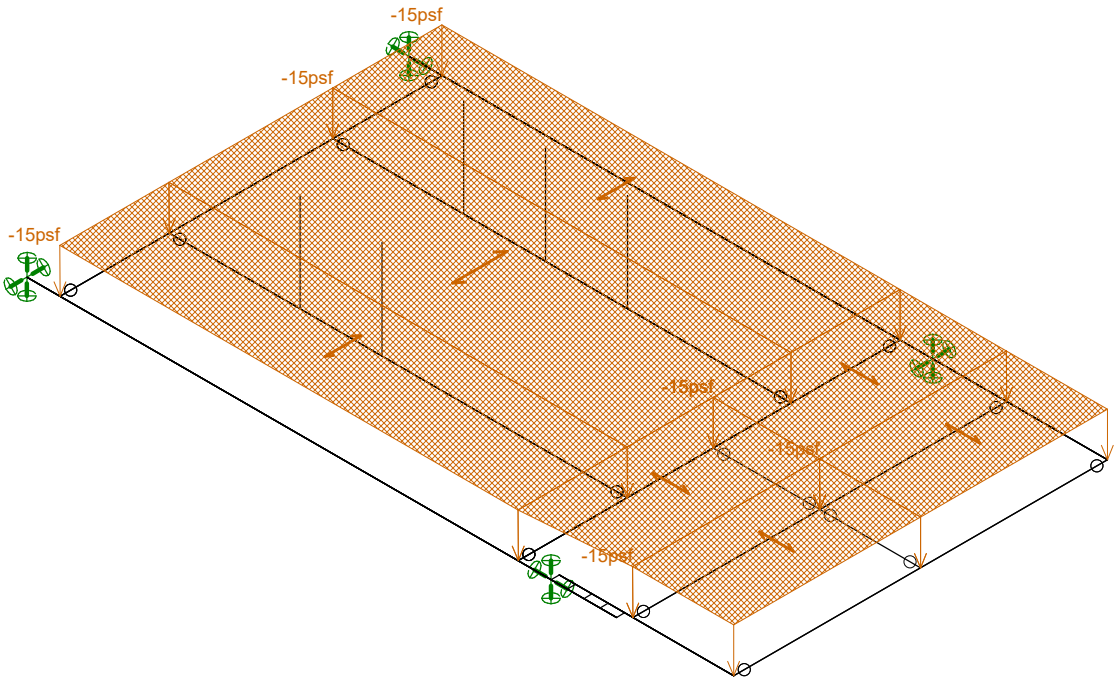
Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 11
AA	Gill	Feb 4, 2020 at 2:32 PM
157156	Member Labels	AT&T_Gill_Equipment Platform.r3d



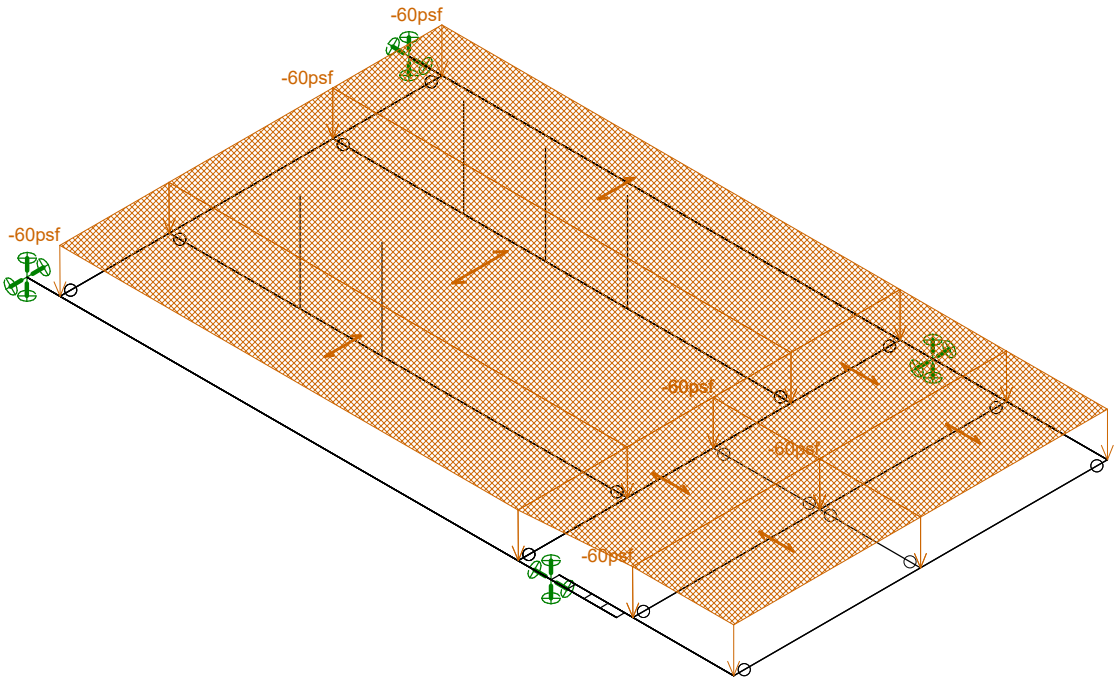
Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 12
AA	Gill	Feb 4, 2020 at 2:32 PM
157156	Member Shapes	AT&T_Gill_Equipment Platform.r3d



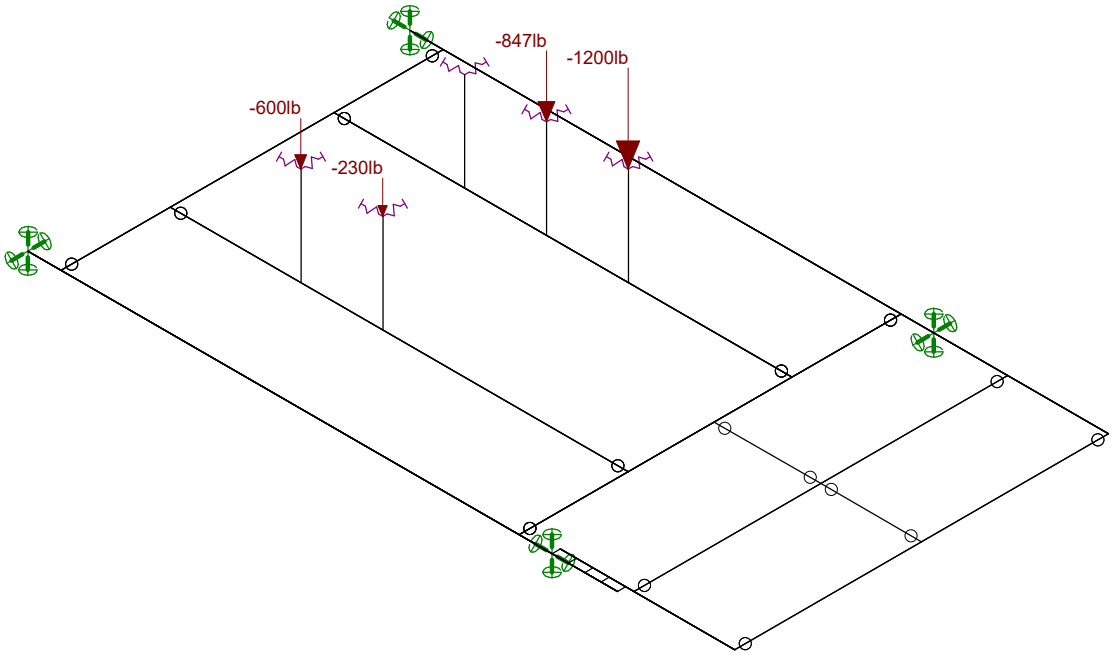
Loads: BLC 1, DL
Envelope Only Solution

Trylon		Page - 13
AA	Gill	Feb 4, 2020 at 2:32 PM
157156	Dead Load	AT&T_Gill_Equipment Platform.r3d



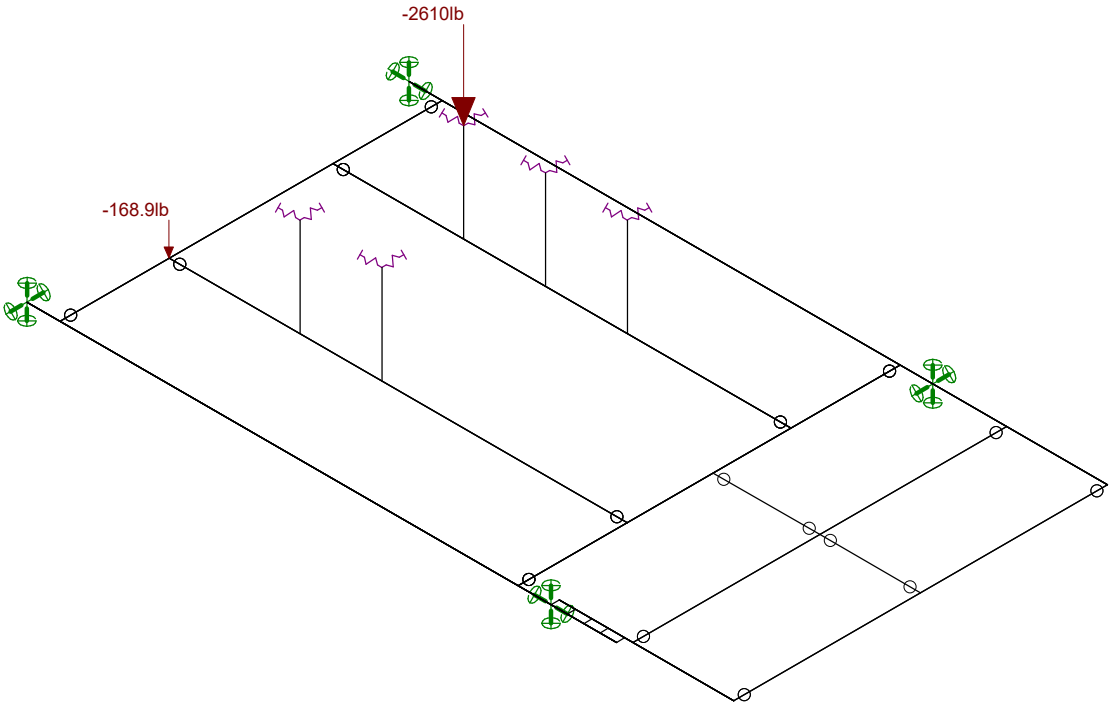
Loads: BLC 2, LL
Envelope Only Solution

Trylon		Page - 14
AA	Gill	Feb 4, 2020 at 2:33 PM
157156	Live Load	AT&T_Gill_Equipment Platform.r3d



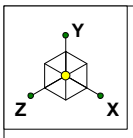
Loads: BLC 5, EX. EQ
Envelope Only Solution

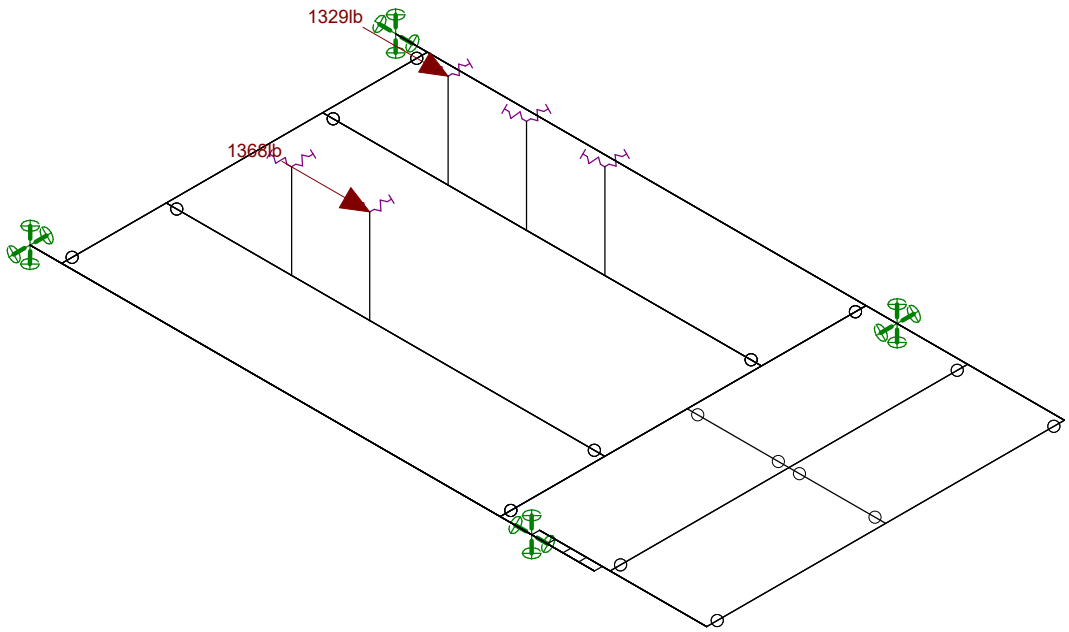
Trylon		Page - 15
AA	Gill	Feb 6, 2020 at 3:31 PM
157156	Ex. Equipment Load	AT&T_Gill_Equipment Platform.r3d



Loads: BLC 6, NEW EQ
Envelope Only Solution

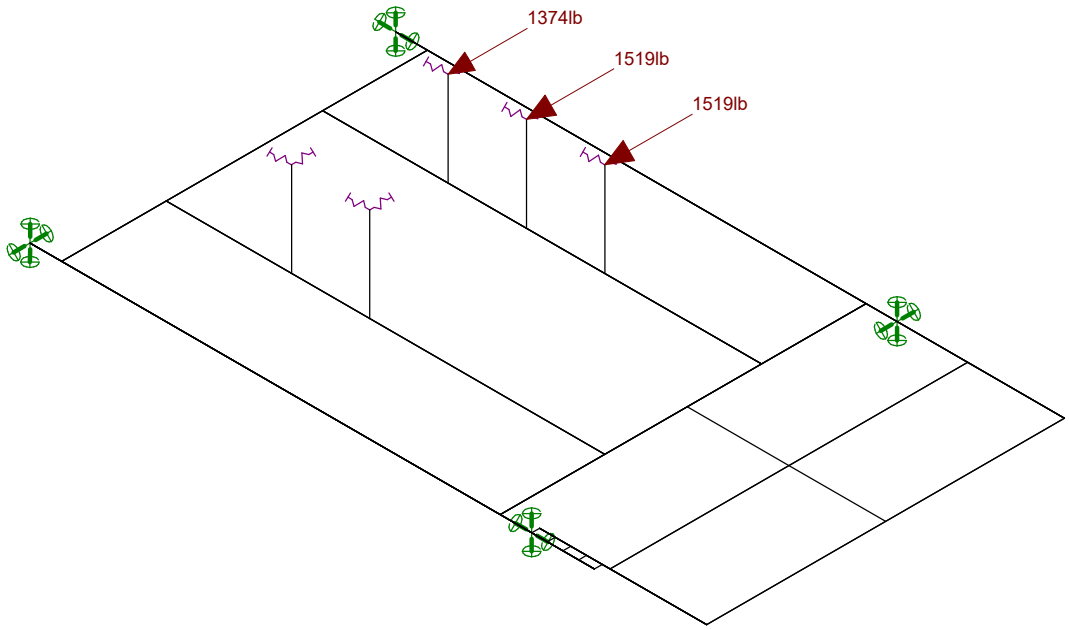
Trylon		Page - 16
AA	Gill	Feb 6, 2020 at 3:31 PM
157156	New Equipment Load	AT&T_Gill_Equipment Platform.r3d





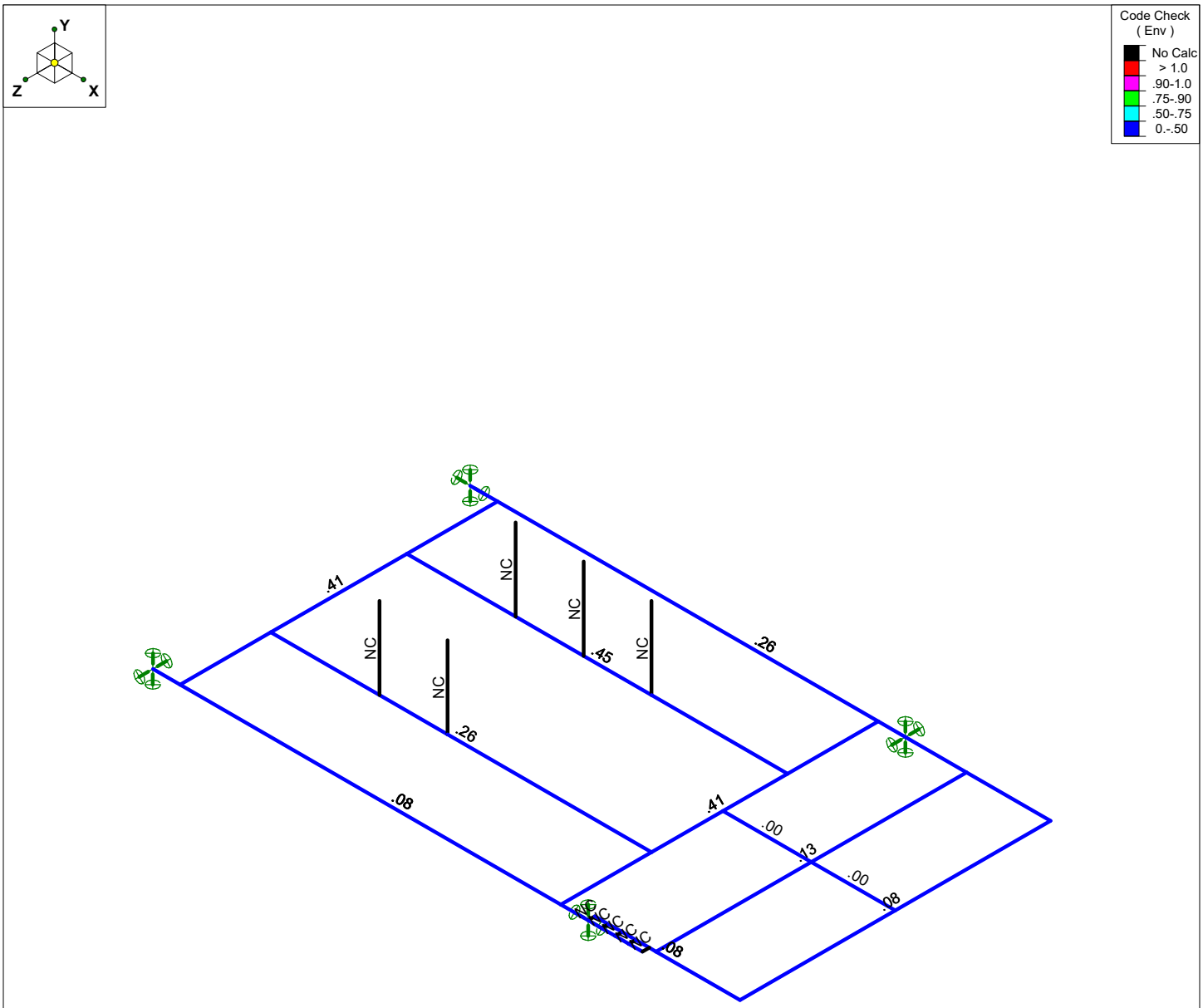
Loads: BLC 3, WLX
Envelope Only Solution

Trylon		Page - 17
AA	Gill	Feb 28, 2020 at 10:26 AM
157156	Wind Load x-direction	AT&T_Gill_Equipment Platform.r3d



Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 18
AA	Gill	Feb 28, 2020 at 10:27 AM
157156	Wind Load z-direction	AT&T_Gill_Equipment Platform.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Trylon		Page - 19
AA	Gill	Feb 28, 2020 at 10:27 AM
157156	Member Stress Ratio	AT&T_Gill_Equipment Platform.r3d

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N1	0	0	0	0	
2	N2	192	0	0	0	
3	N3	0	0	140	0	
4	N4	192	0	140	0	
5	N5	256	0	0	0	
6	N6	256	0	137	0	
7	N7	216	0	140	0	
8	N8	210	0	140	0	
9	N9	204	0	140	0	
10	N10	198	0	140	0	
11	N11	192	0	137	0	
12	N12	216	0	137	0	
13	N13	210	0	137	0	
14	N14	204	0	137	0	
15	N15	198	0	137	0	
16	N16	12	0	0	0	
17	N17	12	0	140	0	
18	N18	180	0	0	0	
19	N19	180	0	140	0	
20	N20	12	0	40	0	
21	N21	180	0	40	0	
22	N22	12	0	100	0	
23	N23	180	0	100	0	
24	N24	219	0	0	0	
25	N25	219	0	137	0	
26	N26	256	0	68.5	0	
27	N27	219	0	68.5	0	
28	N28	180	0	68.5	0	
29	N29	60	0	40	0	
30	N30	90	0	40	0	
31	N31	60	0	100	0	
32	N32	90	0	100	0	
33	N33	120	0	40	0	
34	N34	60	36	40	0	
35	N35	90	36	40	0	
36	N36	60	36	100	0	
37	N37	90	36	100	0	
38	N38	120	36	40	0	

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E..Density[k/ft...		Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N5			W16x26	Beam	Wide Flange	A992	Typical
2	M2	N3	N7			W16x26	Beam	Wide Flange	A992	Typical
3	M3	N11	N6			C12x20.7	Beam	Channel	A36 Gr.36	Typical
4	M4	N4	N11			RIGID	None	None	RIGID	Typical
5	M5	N10	N15			RIGID	None	None	RIGID	Typical
6	M6	N9	N14			RIGID	None	None	RIGID	Typical
7	M7	N8	N13			RIGID	None	None	RIGID	Typical
8	M8	N7	N12			RIGID	None	None	RIGID	Typical
9	M9	N17	N16			W8x18	Beam	Wide Flange	A992	Typical
10	M10	N19	N18			W8x18	Beam	Wide Flange	A992	Typical
11	M11	N20	N21			W8x21	Beam	Wide Flange	A992	Typical
12	M12	N22	N23			W8x21	Beam	Wide Flange	A992	Typical
13	M13	N6	N5			W12x26	Beam	Wide Flange	A992	Typical
14	M14	N25	N24			W8x18	Beam	Wide Flange	A992	Typical
15	M15	N28	N27			W8x18	Beam	Wide Flange	A992	Typical
16	M16	N27	N26			W8x18	Beam	Wide Flange	A992	Typical
17	M17	N31	N36			RIGID	None	None	RIGID	Typical
18	M18	N32	N37			RIGID	None	None	RIGID	Typical
19	M19	N29	N34			RIGID	None	None	RIGID	Typical
20	M20	N30	N35			RIGID	None	None	RIGID	Typical
21	M21	N33	N38			RIGID	None	None	RIGID	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	W16x26	256	6	6	Lbyy						Lateral
2	M2	W16x26	216			Lbyy						Lateral
3	M3	C12x20.7	64			Lbyy						Lateral
4	M9	W8x18	140			Lbyy						Lateral
5	M10	W8x18	140			Lbyy						Lateral
6	M11	W8x21	168			Lbyy						Lateral
7	M12	W8x21	168			Lbyy						Lateral
8	M13	W12x26	137			Lbyy						Lateral
9	M14	W8x18	137			Lbyy						Lateral
10	M15	W8x18	39			Lbyy						Lateral
11	M16	W8x18	37			Lbyy						Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	DL	DL		-1					7	
2	LL	LL							7	
3	WLX	WLX				2				
4	WLZ	WLZ				3				
5	EX. EQ	DL				4				
6	NEW EQ	DL				2				
7	BLC 1 Transient Area...	None						22		
8	BLC 2 Transient Area...	None						22		

Joint Loads and Enforced Displacements (BLC 3 : WLX)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/...
1	N34	L	X	1329
2	N37	L	X	1368

Joint Loads and Enforced Displacements (BLC 4 : WLZ)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/...
1	N34	L	Z	1374
2	N35	L	Z	1519
3	N38	L	Z	1519

Joint Loads and Enforced Displacements (BLC 5 : EX. EQ)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/...
1	N35	L	Y	-847
2	N38	L	Y	-1200
3	N36	L	Y	-600
4	N37	L	Y	-230

Joint Loads and Enforced Displacements (BLC 6 : NEW EQ)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/...
1	N34	L	Y	-2610
2	N22	L	Y	-168.9

Member Area Loads (BLC 1 : DL)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N17	N22	N23	N19	Y	A-B	-15
2	N20	N22	N23	N21	Y	A-B	-15
3	N16	N20	N21	N18	Y	A-B	-15
4	N28	N27	N25	N19	Y	A-B	-15
5	N28	N27	N24	N18	Y	A-B	-15
6	N25	N6	N26	N27	Y	A-B	-15
7	N27	N26	N5	N24	Y	A-B	-15

Member Area Loads (BLC 2 : LL)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N17	N22	N23	N19	Y	A-B	-60
2	N20	N22	N23	N21	Y	A-B	-60
3	N16	N20	N21	N18	Y	A-B	-60
4	N28	N27	N25	N19	Y	A-B	-60
5	N28	N27	N24	N18	Y	A-B	-60
6	N25	N6	N26	N27	Y	A-B	-60
7	N27	N26	N5	N24	Y	A-B	-60

Load Combinations

	Description	Sol...	PD...	SR...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	IBC 16-1	Yes	Y		DL	1.4																				
2	IBC 16-2 (a)	Yes	Y		DL	1.2	LL	1.6	LLS	1.6																
3	IBC 16-3 (...	Yes	Y		DL	1.2	W...	.5																		
4	IBC 16-3 (...	Yes	Y		DL	1.2	WLZ	.5																		
5	IBC 16-3 (...	Yes	Y		DL	1.2	W...	-.5																		
6	IBC 16-3 (...	Yes	Y		DL	1.2	WLZ	-.5																		
7	IBC 16-4 (...	Yes	Y		DL	1.2	W...	1	LL	.5	LLS	1														
8	IBC 16-4 (...	Yes	Y		DL	1.2	WLZ	1	LL	.5	LLS	1														
9	IBC 16-4 (...	Yes	Y		DL	1.2	W...	-1	LL	.5	LLS	1														
10	IBC 16-4 (...	Yes	Y		DL	1.2	WLZ	-1	LL	.5	LLS	1														
11	IBC 16-6 (a)	Yes	Y		DL	.9	W...	1																		
12	IBC 16-6 (b)	Yes	Y		DL	.9	WLZ	1																		
13	IBC 16-6 (c)	Yes	Y		DL	.9	W...	-1																		
14	IBC 16-6 (d)	Yes	Y		DL	.9	WLZ	-1																		

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N3	max	0	1	6608.953	2	63.057	8	0	1	.056	10	8.587	2
2		min	0	1	1897.057	11	-62.549	10	0	1	-.056	8	2.429	11
3	N2	max	0	1	12573.636	2	36.246	8	0	1	.025	8	-1.887	13
4		min	0	1	3264.065	13	-33.354	10	0	1	-.024	10	-3.865	2
5	N1	max	1108.183	9	6854.898	2	0	1	0	1	.001	10	0	1
6		min	-1055.206	11	2394.906	11	0	1	0	1	-.001	8	0	1
7	N4	max	1192.525	9	10967.955	2	0	1	.891	2	.11	11	0	1
8		min	-1125.377	11	2352.354	13	0	1	.182	11	-.115	9	0	1
9	N36	max	72.159	13	0	1	8.286	2	0	1	0	1	0	1
10		min	-151.227	7	0	1	2.816	11	0	1	0	1	0	1
11	N37	max	110.693	13	0	1	4.791	2	0	1	0	1	0	1
12		min	-106.848	7	0	1	1.31	13	0	1	0	1	0	1
13	N34	max	22.085	13	0	1	1431.701	10	0	1	0	1	0	1
14		min	-254.171	7	0	1	-1442.759	8	0	1	0	1	0	1
15	N35	max	88.845	13	0	1	1550.559	10	0	1	0	1	0	1
16		min	-101.013	7	0	1	-1551.917	8	0	1	0	1	0	1
17	N38	max	200.464	9	0	1	1517.385	10	0	1	0	1	0	1
18		min	-1.266	11	0	1	-1525.004	8	0	1	0	1	0	1
19	Totals:	max	2697	9	37005.443	2	4412	10						
20		min	-2697	11	10758.835	11	-4412	8						

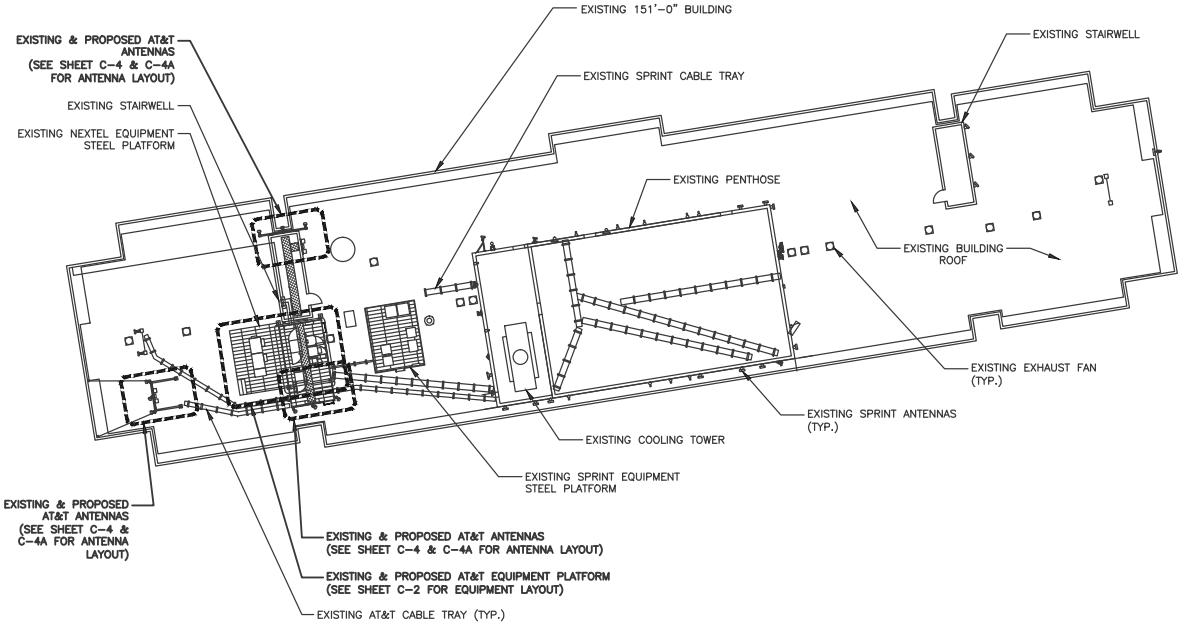
Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code C...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
1	M1	W16x26	.262	192	2	.085	192	y	2	105423.4...	345600	20.55	59.959	1....	H1-1b
2	M2	W16x26	.081	191.25	2	.069	191.25	y	2	46435.588	345600	20.55	139.651	3....	H1-1b
3	M3	C12x20.7	.079	0	2	.066	24	y	2	140262.4...	196992	7.438	69.12	1....	H1-1b
4	M9	W8x18	.409	99.167	2	.112	140	y	2	91863.311	236700	17.475	50.708	1....	H1-1b
5	M10	W8x18	.414	99.167	2	.115	140	y	2	91863.311	236700	17.475	49.534	1....	H1-1b
6	M11	W8x21	.446	77	2	.213	0	y	10	78201.637	277200	21.337	56.95	1....	H1-1b
7	M12	W8x21	.258	77	2	.082	0	y	2	78201.637	277200	21.337	56.703	1....	H1-1b
8	M13	W12x26	.083	68.5	9	.014	137	y	2	187087.8...	344250	30.637	121.924	1....	H1-1b
9	M14	W8x18	.128	68.5	2	.040	0	y	2	95687.229	236700	17.475	51.705	1....	H1-1b
10	M15	W8x18	.003	19.5	9	.001	39	y	1	219949.2...	236700	17.475	63.75	1....	H1-1b
11	M16	W8x18	.002	18.5	9	.001	0	y	2	221568.4...	236700	17.475	63.75	1....	H1-1b

References

GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL GIVE ALL NOTICES AND REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE SUBCONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID SUBCONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE SUBCONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE AT&T REPRESENTATIVE OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF SUBCONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE SUBCONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIAL AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE SUBCONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE THEMSELVES WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE SUBCONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS INFORMED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE SUBCONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE, UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS, AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEERING, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
11. THE SUBCONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVEMENTS, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE SUBCONTRACTOR SHALL REPAIR ANY DAMAGE THE MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. THE SUBCONTRACTOR SHALL MAINTAIN THE GENERAL WORK AREA AS CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST OR SMUDGES OF ANY NATURE.
13. THE SUBCONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
14. THE SUBCONTRACTOR SHALL NOTIFY THE AT&T REPRESENTATIVE (B&T ENGINEERING) WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE SUBCONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE AT&T REPRESENTATIVE (B&T ENGINEERING).
15. THE SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOBS.



TRUE NORTH

BUILDING PLAN

0 8' 16' 32'

SCALE: 1/32"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

1

AT&T

smartlink

Trylon

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

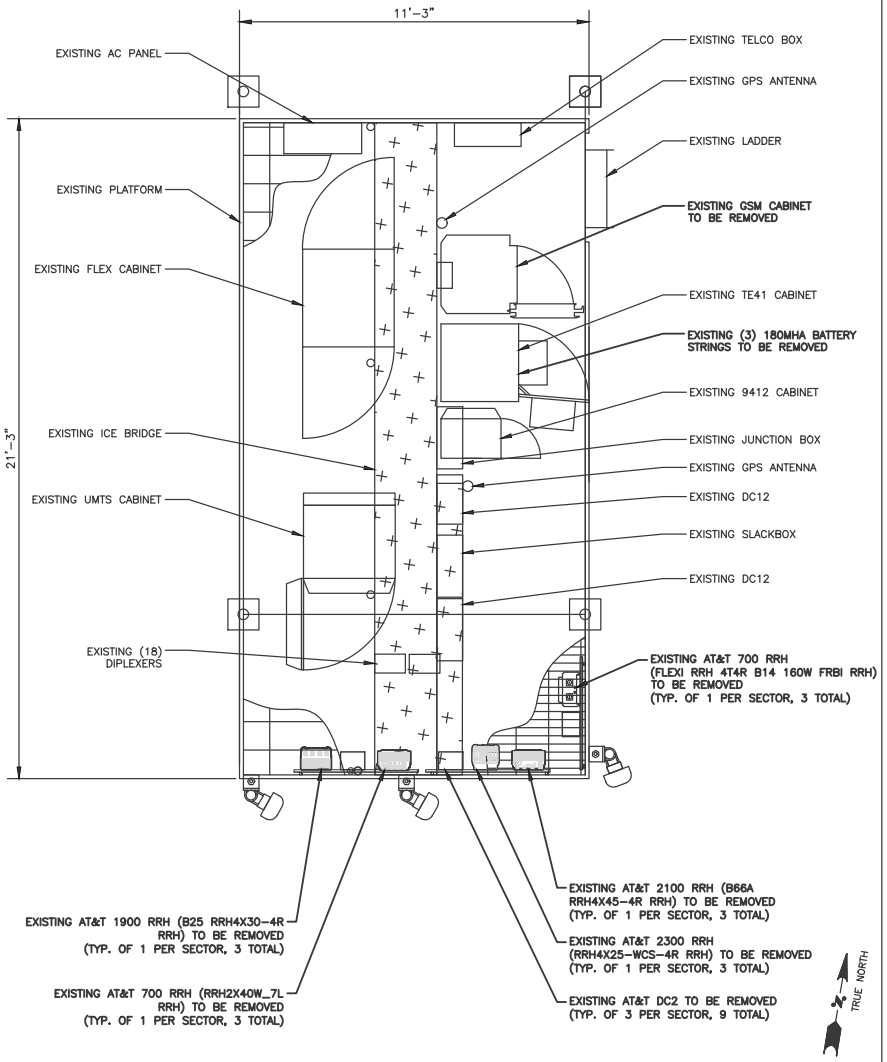
EXISTING BUILDING

SHEET DESCRIPTION

BUILDING PLAN

SHEET NO.

C-1

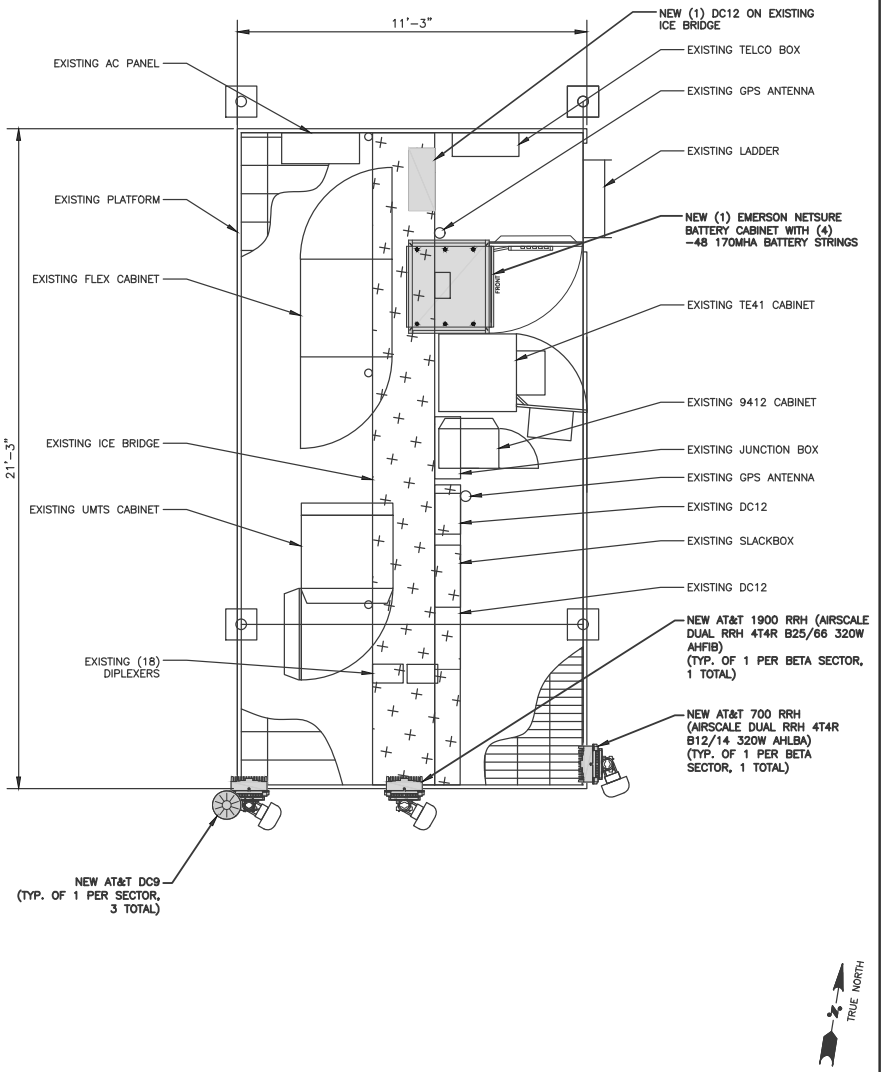


EXISTING EQUIPMENT LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

1



PROPOSED EQUIPMENT LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

2

AT&T

smartlink

Trylon

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

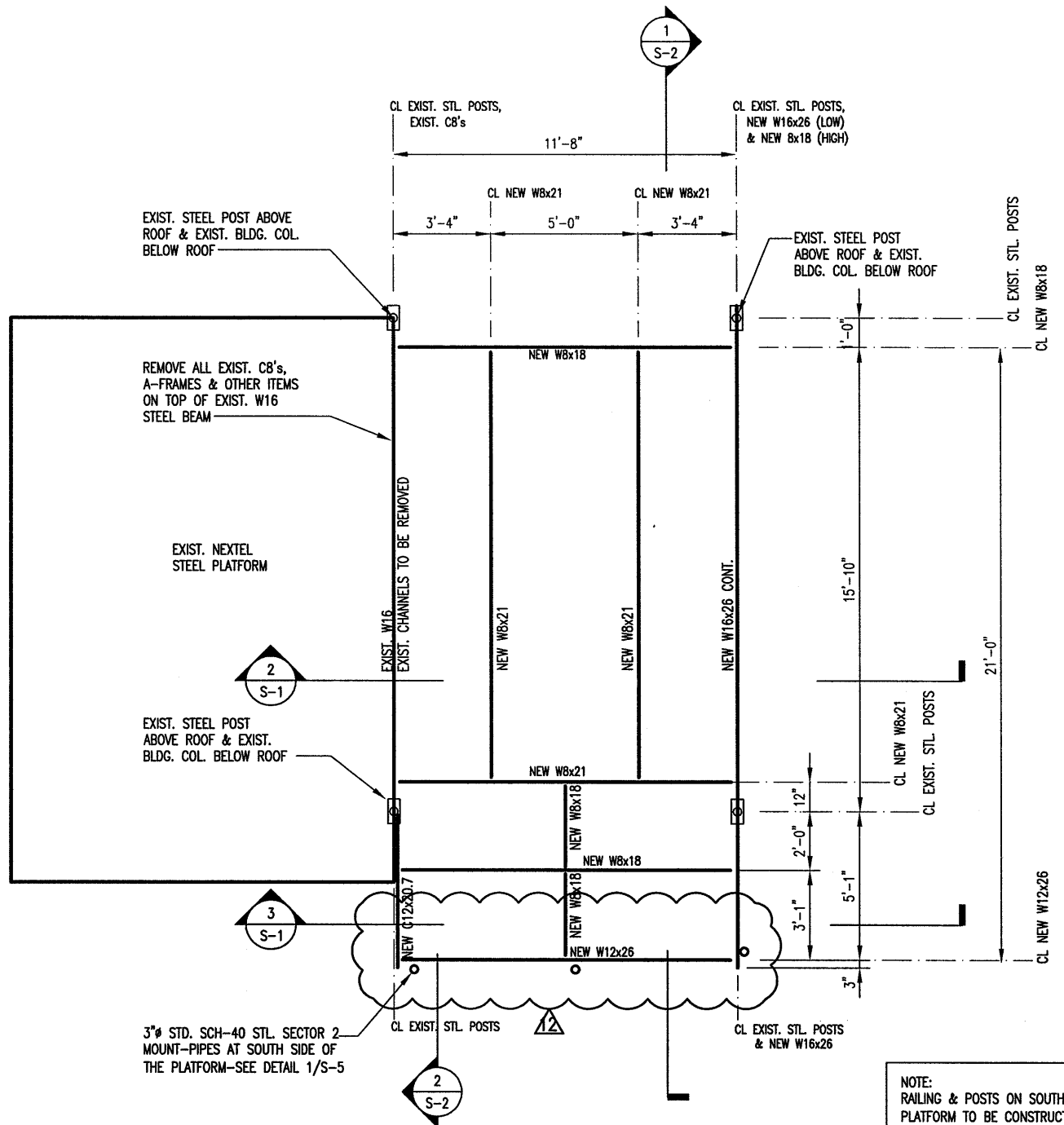
EXISTING BUILDING

SHEET DESCRIPTION

EQUIPMENT PLAN

SHEET NO.

C-2

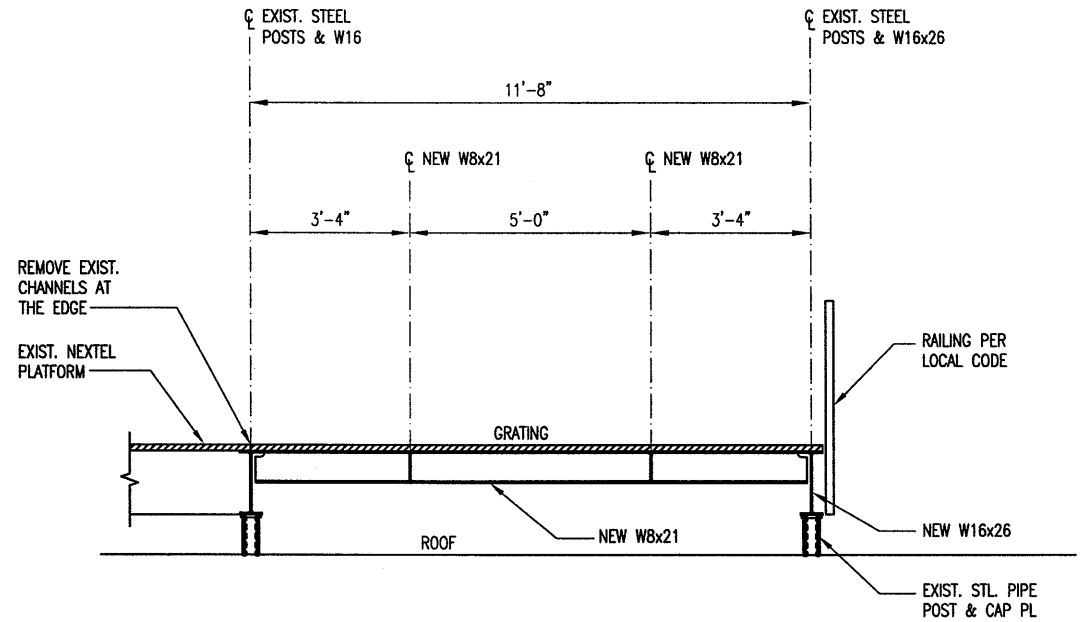


NOTE:
RAILING & POSTS ON SOUTH SIDE OF PLATFORM TO BE CONSTRUCTED OF 3"ø STD. PIPE, PER ATTACHED DETAIL. RAILING ON NORTH, EAST & WEST SIDES OF THE PLATFORM TO BE CONSTRUCTED PER TYPICAL HANDRAIL DETAIL AND IN CONFORMANCE WITH THE LOCAL CODE REQUIREMENTS.

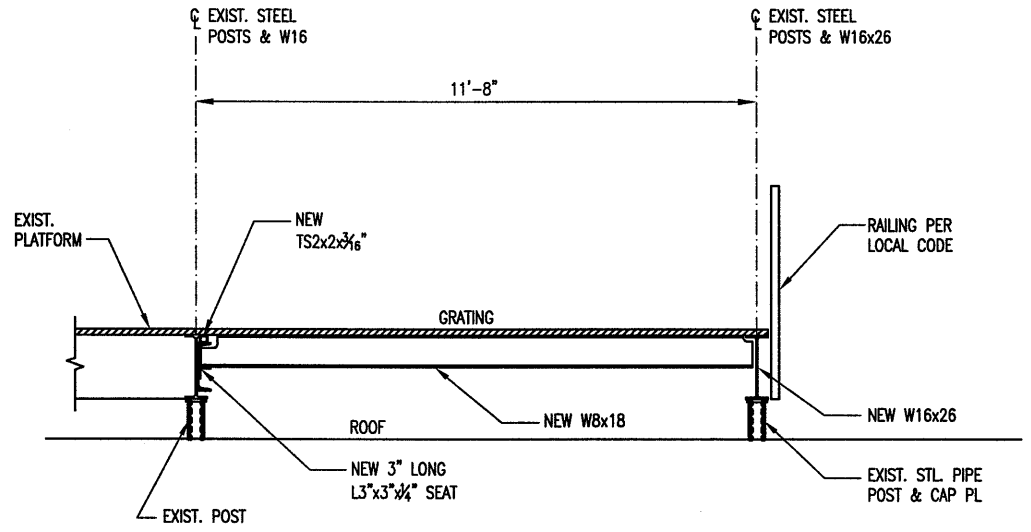
PROPOSED PLATFORM FRAMING PLAN
SCALE: 3/16"=1'-0" (1 / S-1)

SCALE IN FEET

0 5 10 20 30



SECTION DETAIL
SCALE: 1/4"=1'-0" (2 / S-1)



SECTION DETAIL
SCALE: 1/4"=1'-0" (3 / S-1)

BC architects engineers
5659 COLUMBIA PIKE, SUITE 101
FALLS CHURCH, VA 22041-2868
TEL: (703) 671-6000
FAX: (703) 671-6300

GILL_CHATEAU APARTMENT BUILDING
10128448_3821

9727 MT. PISGAH RD.
SILVER SPRING, MD 20903

at&t
7150 STANDARD DR
HANOVER, MD 21076

NO.	DATE	REVISIONS	BY	CHK	APP'D
14					
13	01-13-11	TMA & DIPLEXER MOUNTING DETAILS	AWS	CDM	BMQ
12	01-13-11	ADD (3) ANTENNAS AND RELOCATE SECTOR-3	AWS	CDM	BMQ
11	10-18-10	CLIENT COMMENTS	AWS	CDM	BMQ
10	08-16-10	CLIENT COMMENTS	AWS	CDM	BMQ
9	08-04-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
8	06-29-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
7	05-05-10	REVISED ELEC. DETAILS AND MOVE ANT. SECTOR 2	AWS	CDM	BMQ

SCALE: AS SHOWN | DESIGNED C. MORIN | DRAWN GMW

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 24552
EXPIRATION DATE: 11/17/11

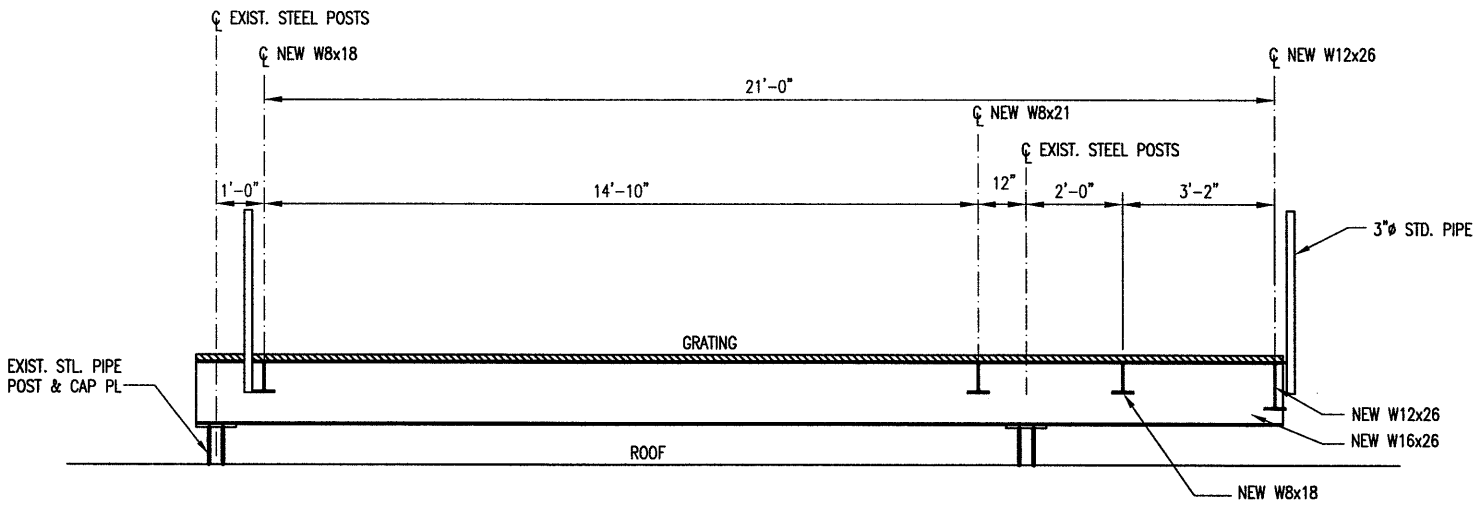
STATE OF MARYLAND · CHRISTOPHER G. MORIN · 2.23.11 · NO. 24552 · PROFESSIONAL ENGINEER

BC ARCHITECTS ENGINEERS
FALLS CHURCH, VA

PLATFORM FRAMING PLAN AND SECTIONS

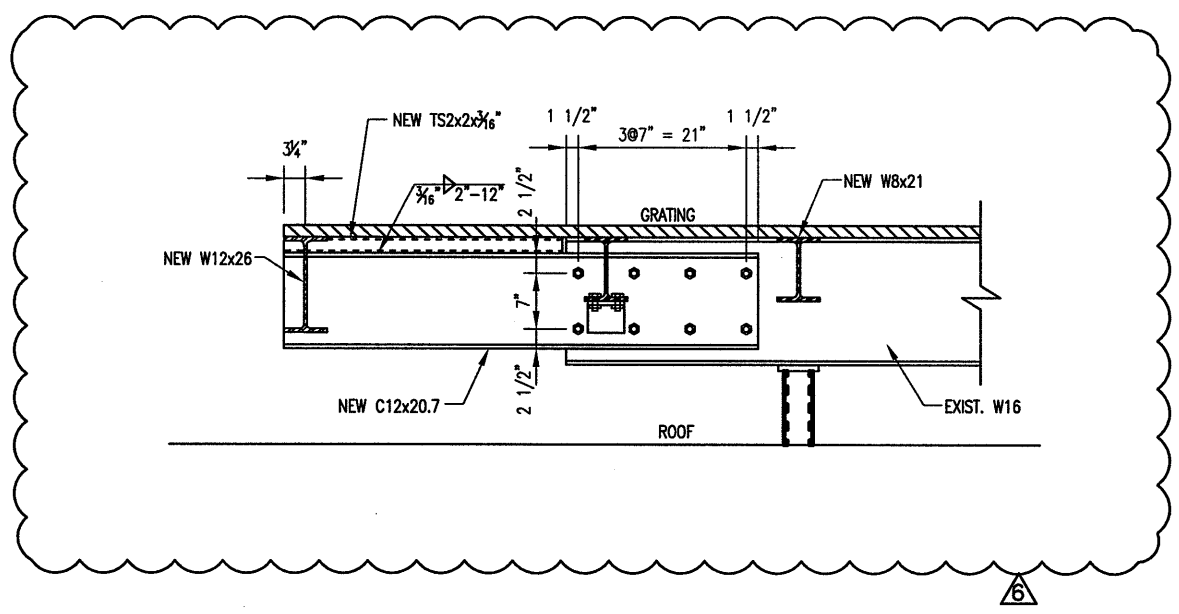
DRAWING NUMBER	REV
10128448-S-1	13

10-07-10 ARNOLD 09:36:51 Y:/Drawings - 2008/AT&T/Roof Top/GILL_Chateau Apartments - 10128448/CD's REVISED REV-10 08-16-10/S1.dwg

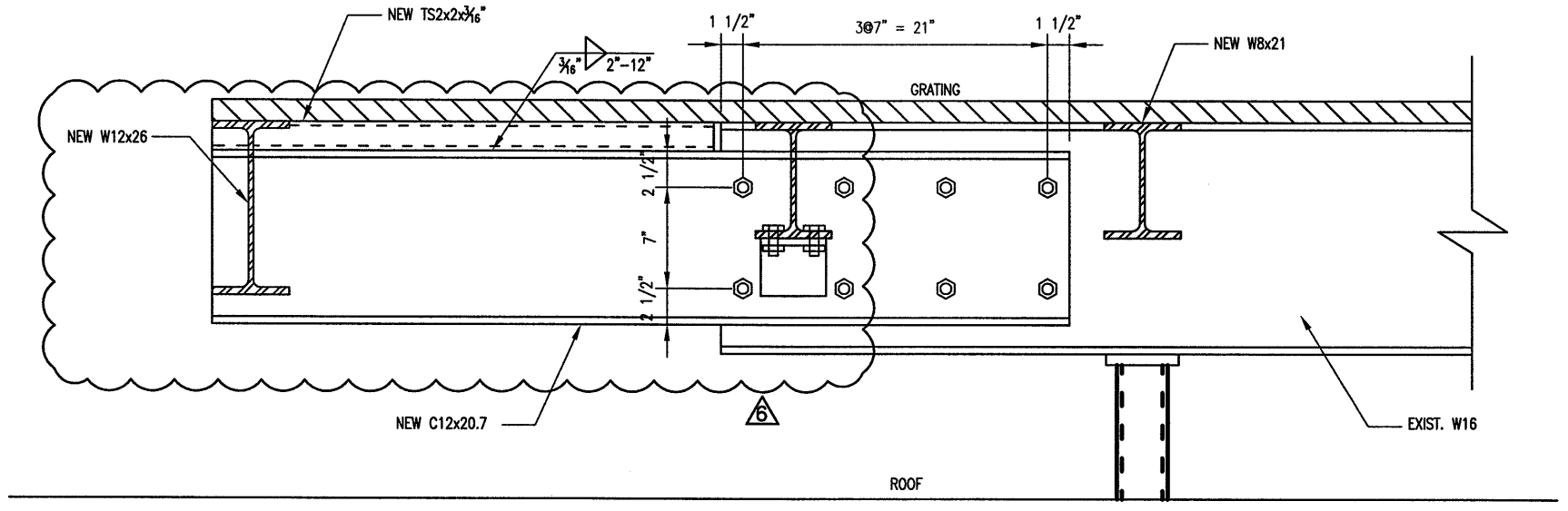


SECTION DETAIL (1 / S-2)
SCALE: 1/4"=1'-0"

NOT USED (3 / S-2)
SCALE: N/A



SECTION DETAIL (2 / S-2)
SCALE: 1/2"=1'-0"



DETAIL AT EXISTING CANTILEVERED W16 (3 / S-2)
SCALE: 1"=1'-0"

BC architects engineers
5659 COLUMBIA PIKE, SUITE 101
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FAX: (703) 671-6300

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10128448_3821

9727 MT. PISGAH RD.
SILVER SPRING, MD 20903

at&t
7150 STANDARD DR
HANOVER, MD 21076

NO.	DATE	REVISIONS	BY	CHK	APP'D
14					
13	01-13-11	TMA & DIPLEXER MOUNTING DETAILS	AWS	CDM	BMQ
12	01-13-11	ADD (3) ANTENNAS AND RELOCATE SECTOR-3	AWS	CDM	BMQ
11	10-18-10	CLIENT COMMENTS	AWS	CDM	BMQ
10	08-16-10	CLIENT COMMENTS	AWS	CDM	BMQ
9	08-04-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
8	06-29-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
7	05-05-10	REVISED ELEC. DETAILS AND MOVE ANT. SECTOR 2	AWS	CDM	BMQ

SCALE: AS SHOWN | DESIGNED C. MORIN | DRAWN GMW

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 24552
EXPIRATION DATE: 11/17/11

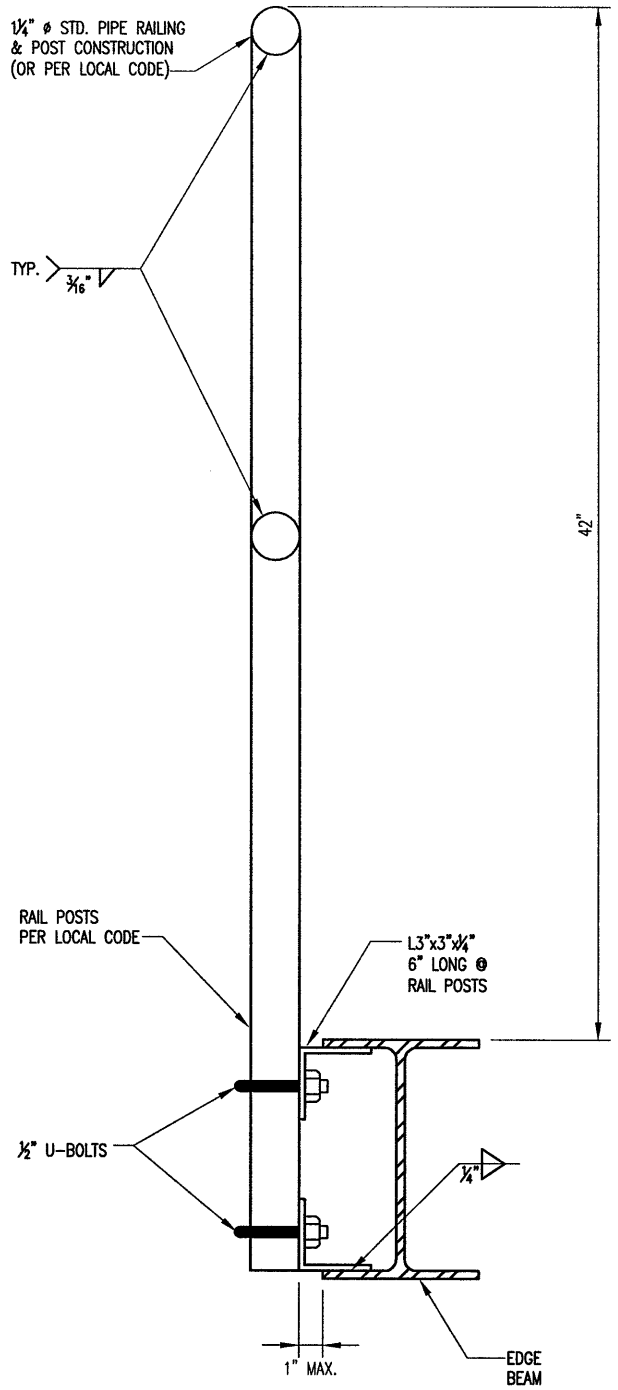
STATE OF MARYLAND · CHRISTOPHER B. MORIN · 2.23.11 · NO. 24552 · PROFESSIONAL ENGINEER

BC ARCHITECTS ENGINEERS
FALLS CHURCH, VA

PLATFORM SECTIONS AND DETAILS

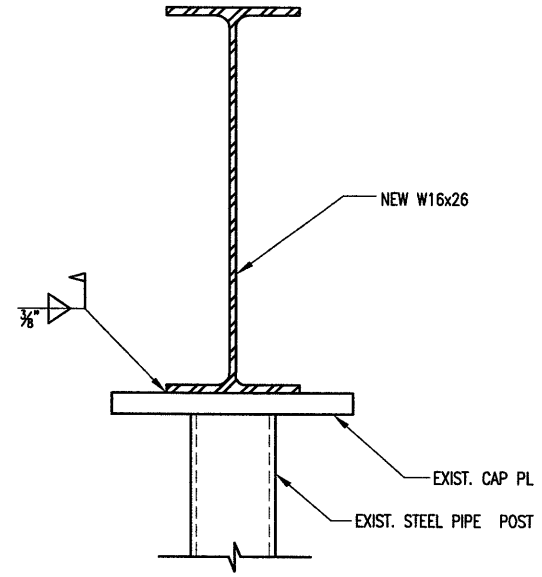
DRAWING NUMBER: 10128448-S-2
REV: 13

10-07-10 ARNOLD 09:25:31 Y:/Drawings - 2008/AT&T/Roof Top/Gill_Chateau Apartments - 10128448/CD's REVISED REV-10 08-16-10/S2.dwg



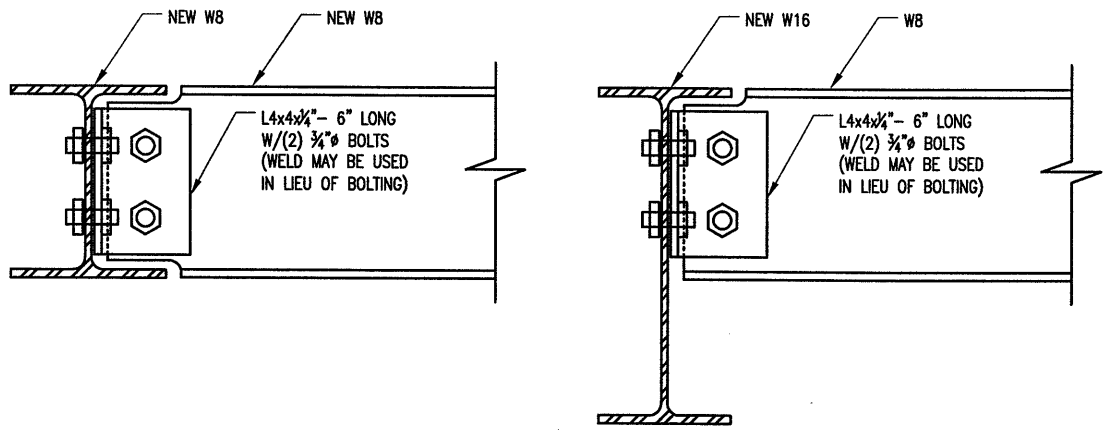
HANDRAIL DETAIL (1 / S-3)
SCALE: 1 1/2"=1'-0"

SCALE IN FEET
12" 9" 6" 0 1'-0"



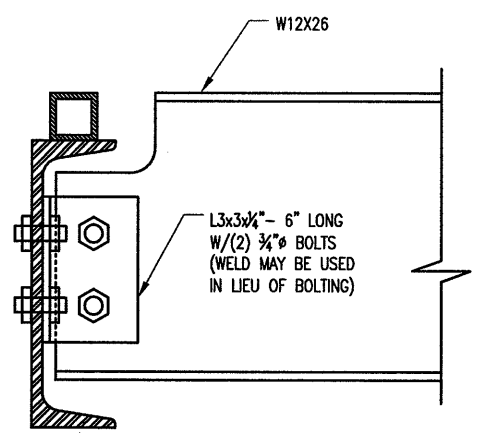
TYP. CAP PLATE DETAIL (2 / S-3)
SCALE: 1 1/2"=1'-0"

NOT USED (4 / S-3)
SCALE: N.T.S.



TYP. BEAM CONNECTION DETAIL (3 / S-3)
SCALE: 1 1/2"=1'-0"

SCALE IN FEET
12" 9" 6" 0 1'-0"



TYPICAL END-BEAM CONNECTION DETAIL (5 / S-3)
SCALE: 1 1/2"=1'-0"

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FALLS CHURCH, VA 22041-2868
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NO.	DATE	REVISIONS	BY	CHK	APP'D
14					
13	01-13-11	TMA & DIPLEXER MOUNTING DETAILS	AWS	CDM	BMQ
12	01-13-11	ADD (3) ANTENNAS AND RELOCATE SECTOR-3	AWS	CDM	BMQ
11	10-18-10	CLIENT COMMENTS	AWS	CDM	BMQ
10	08-16-10	CLIENT COMMENTS	AWS	CDM	BMQ
9	08-04-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
8	06-29-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
7	05-05-10	REVISED ELEC. DETAILS AND MOVE ANT. SECTOR 2	AWS	CDM	BMQ

SCALE: AS SHOWN | DESIGNED C. MORIN | DRAWN GMW

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 24552
EXPIRATION DATE: 11/17/11

STATE OF MARYLAND · CHRISTOPHER S. MORIN · 23.11 · NO. 24552 · PROFESSIONAL ENGINEER

BC ARCHITECTS ENGINEERS
FALLS CHURCH, VA

STRUCTURAL DETAILS

DRAWING NUMBER 10128448-S-3 | REV 13

10-08-10 ABI SOEMARKO 09:15:53 Y:/Drawings - 2008/AT&T/Roof Top/Gill_Chateau Apartments - 10128448/CD's REVISED REV-10 08-16-10/S3.dwg

SITESAFE
RF COMPLIANCE EXPERTS

8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 ● 703.276.1169 fax
info@sitesafe.com ● www.sitesafe.com

Smartlink on behalf of AT&T Mobility, LLC Site FA – 10128448 Site ID – MDL03821 USID – 100205 Site Name – GILL (MRWSH034472)

9727 Mount Pisgah Road
Silver Spring, MD 20903

Latitude: N39-01-00.00
Longitude: W76-58-30.00
Structure Type: Rooftop

Report generated date: March 24, 2020
Report by: Leo Romero
Customer Contact: Lauren Kersey

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

Table of Contents

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Max Cumulative Simulated RFE Level on the Rooftop	11,435.0% General Public Limit 1" in front of AT&T Mobility, LLC's Gamma Sector Antenna #8
Max Cumulative Simulated RFE Level on the Rooftop Walking Surface	11,435.0% General Public Limit 1" in front of AT&T Mobility, LLC's Gamma Sector Antenna #8
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
Compliant per FCC Rules and Regulations?	Will Be Compliant
Compliant per AT&T Mobility, LLC's Policy?	No

The following documents were provided by the client and were utilized to create this report:

RFDS: WASHINGTON-D.C.-MARYLAND_WASHINGTON-DC-BALTIMORE_GILL_2020-Cell-Site-RF-Modifications_Split-Sector_oo6650_2251A0S58F_10128448_100205_10-08-2019_Final-Approved_v1.00

CD's: 10128448.AE201.REV C.GILL.100205.01142020

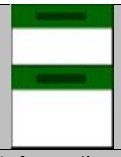
RF Powers Used: MAX RRH Powers

1.2 Fall Arrest Anchor Point Summary

Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	0	N

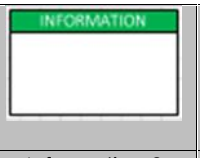
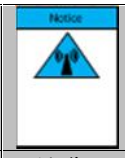
1.3 Signage Summary

a. Pre-Site Visit AT&T Signage (Existing Signage)

AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)	**2**								
Alpha									
Beta									
Gamma									

Note: All existing signage was documented during a previous site visit on 6/27/2017.

b. Proposed AT&T Signage

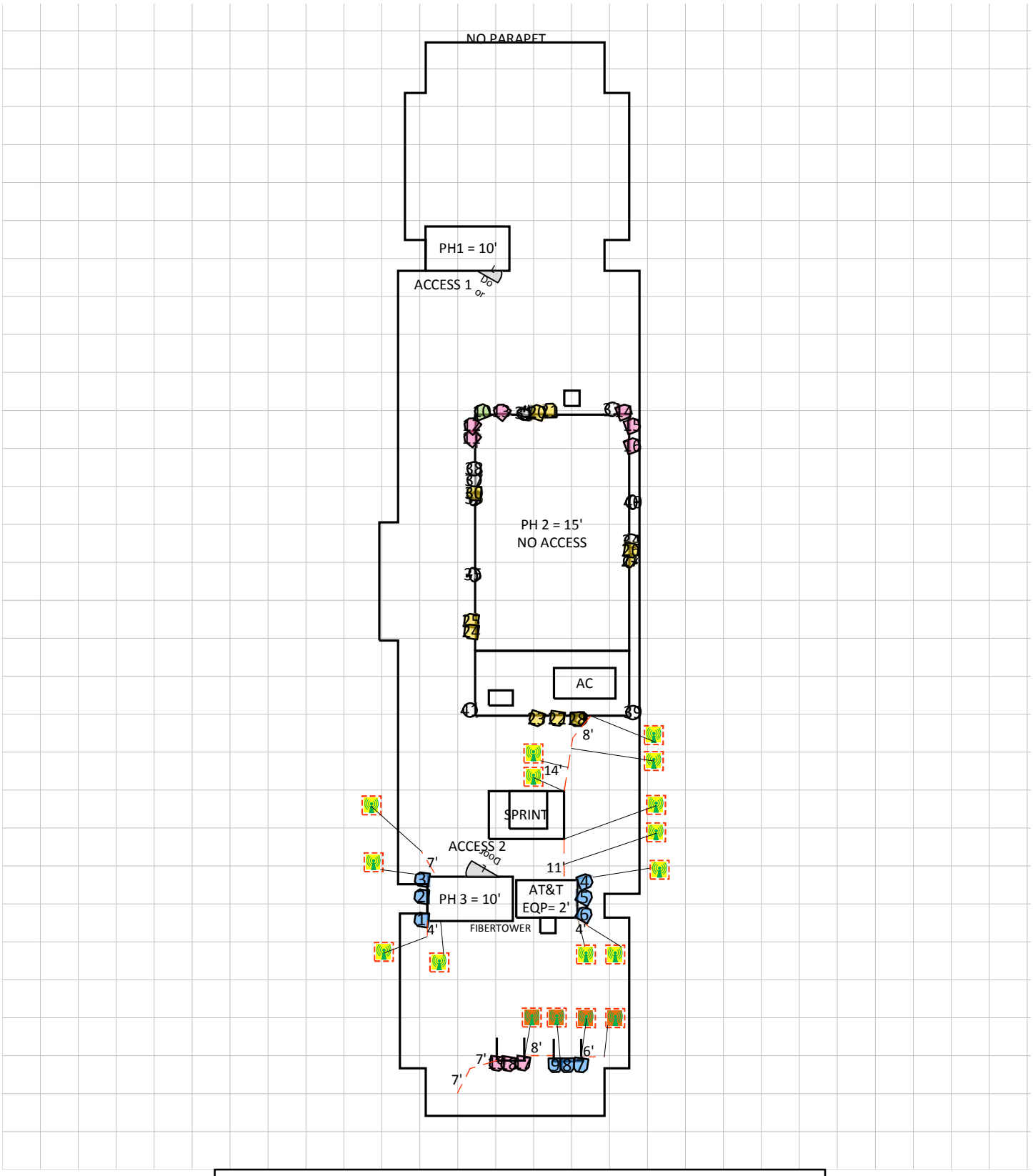
AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)									
Alpha						**4**			**X**
Beta						**9**			**X**
Gamma								**4**	**X**

2 Scale Maps of Site

The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- RF Exposure Diagram – Detailed View West
- AT&T Mobility, LLC Contribution

Site Scale Map For: GILL



Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Sign Legend

Caution 1 | Caution 2 | Notice 2 | Notice 1 | Warning | Warning 2 | Info 1 | Info 2 | RSP RF Safety Plan

Barrier

Proposed Barriers/ Signs

(Feet)

0 18.1 36.2

www.sitesafe.com
Site Name:GILL
3/17/2020 6:44:44 PM

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
1	AT&T MOBILITY LLC	Kathrein-Scala 742-264	Panel	850	UMTS	0	68.4	4.3	80	TPO	Watt	0	1	1267.9	12	6.3'	0°	2°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	737	LTE	0	75	8	160	TPO	Watt	0	1	3631.8	13.56	4.5'	0°	5°
2	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65C-R6	Panel	763	LTE	0	75	8	160	TPO	Watt	0	1	3631.8	13.56	4.5'	0°	5°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	1900	LTE	0	59	8	160	TPO	Watt	0	1	5496.9	15.36	4.5'	0°	2°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2110	LTE	0	61	8	80	TPO	Watt	0	1	2878	15.56	4.5'	0°	2°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2160	AWS3	0	61	8	80	TPO	Watt	0	1	2878	15.56	4.5'	0°	2°
3	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	LTE	0	61.1	4	100	TPO	Watt	0	1	2666.9	14.26	6.5'	0°	5°
4	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	LTE	150	61.1	4	100	TPO	Watt	0	1	2666.9	14.26	7.5'	0°	6°
4	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	737	LTE	110	75	8	160	TPO	Watt	0	1	3631.8	13.56	5.5'	0°	10°
4	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65C-R6	Panel	763	LTE	110	75	8	160	TPO	Watt	0	1	3631.8	13.56	5.5'	0°	12°
4	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	1900	LTE	110	59	8	160	TPO	Watt	0	1	5496.9	15.36	5.5'	0°	5°
4	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2110	LTE	110	61	8	80	TPO	Watt	0	1	2878	15.56	5.5'	0°	5°
5	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2160	AWS3	110	61	8	80	TPO	Watt	0	1	2878	15.56	5.5'	0°	5°
6	AT&T MOBILITY LLC	Kathrein-Scala 742-264	Panel	850	UMTS	110	68.4	4.3	80	TPO	Watt	0	1	1267.9	12	7.3'	0°	2°
7	AT&T MOBILITY LLC	Kathrein-Scala 742-264	Panel	850	UMTS	270	68.4	4.3	80	TPO	Watt	0	1	1267.9	12	4.3'	2°	2°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	737	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	763	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	1900	LTE	260	32.3	6	160	TPO	Watt	0	1	6139.3	15.84	3.5'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	2110	LTE	260	27.9	6	80	TPO	Watt	0	1	3373.6	16.25	3.5'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	2160	AWS3	260	27.9	6	80	TPO	Watt	0	1	3373.6	16.25	3.5'	0°	4°

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	737	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	763	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	1900	LTE	260	33.9	6	160	TPO	Watt	0	1	6153.5	15.85	3.5'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	2110	LTE	260	27.1	6	80	TPO	Watt	0	1	3373.6	16.25	3.5'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	2160	AWS3	260	27.1	6	80	TPO	Watt	0	1	3373.6	16.25	3.5'	0°	4°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	763	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	2300	LTE	260	23.6	6	100	TPO	Watt	0	1	3845.9	15.85	3.5'	0°	4°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	737	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	737	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	763	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	2300	AWS3	260	25.5	6	100	TPO	Watt	0	1	3845.9	15.85	3.5'	0°	4°
10	CRICKET COMMUNICATIONS (Decommissioned)	Generic Panel	Panel	2100		60	65	4.6	0	ERP	Watt	0	0	0	15.23	15.7'	0°	0°
11	T-MOBILE	Generic Panel	Panel	700		30	65	6.3	160	TPO	Watt	0	0	2884.8	12.56	13.9'	0°	0°
12	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	1900		30	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	14.5'	0°	0°
12	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	2100		30	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	14.5'	0°	0°
13	T-MOBILE	Ericsson AIR 21 B2A B4P	Panel	1900		30	65	4.7	120	TPO	Watt	0	0	4132.2	15.37	14.7'	0°	0°
14	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	1900		150	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	20.5'	0°	0°
14	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	2100		150	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	20.5'	0°	0°
15	T-MOBILE	Ericsson AIR 21 B2A B4P	Panel	1900		150	65	4.7	120	TPO	Watt	0	0	4132.2	15.37	20.7'	0°	0°
16	T-MOBILE	Generic Panel	Panel	700		150	65	4.6	160	TPO	Watt	0	0	2618.9	12.14	20.7'	0°	0°
17	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	1900		270	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	4.5'	0°	0°
17	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	2100		270	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	4.5'	0°	0°
18	T-MOBILE	Generic Panel	Panel	700		270	65	6.3	160	TPO	Watt	0	0	2884.8	12.56	3.9'	0°	0°
19	T-MOBILE	Ericsson AIR 21 B2A B4P	Panel	1900		270	65	4.7	120	TPO	Watt	0	0	4132.2	15.37	4.7'	0°	0°
20	SPRINT	Generic Panel	Panel	2500		100	65	4.1	160	TPO	Watt	0	0	5071.3	15.01	17'	0°	0°
21	SPRINT	Generic Panel	Panel	862		80	65	6.3	100	TPO	Watt	0	0	2202.9	13.43	15.9'	0°	0°

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
21	SPRINT	Generic Panel	Panel	1900		80	65	6.3	180	TPO	Watt	0	0	7608	16.26	15.9'	0°	0°
22	SPRINT	Generic Panel	Panel	862		270	65	6.3	100	TPO	Watt	0	0	2202.9	13.43	15.9'	0°	0°
22	SPRINT	Generic Panel	Panel	1900		270	65	6.3	180	TPO	Watt	0	0	7608	16.26	15.9'	0°	0°
23	SPRINT	Generic Panel	Panel	2500		280	65	4.1	160	TPO	Watt	0	0	5071.3	15.01	17'	0°	0°
24	SPRINT	Generic Panel	Panel	2500		0	65	4.1	160	TPO	Watt	0	0	5071.3	15.01	17'	0°	0°
25	SPRINT	Generic Panel	Panel	862		0	65	6.3	100	TPO	Watt	0	0	2202.9	13.43	16.9'	0°	0°
25	SPRINT	Generic Panel	Panel	1900		0	65	6.3	180	TPO	Watt	0	0	7608	16.26	16.9'	0°	0°
26	SPRINT	Generic Panel	Panel	2500		180	65	4.1	40	TPO	Watt	0	0	1267.8	15.01	13'	0°	0°
27	SPRINT	Generic Microwave	Aperture	80000		190	2	2	0.01	TPO	Watt	0	0	769.1	48.86	19'	0°	0°
28	SPRINT	Generic Panel	Panel	2500		260	65	4.1	40	TPO	Watt	0	0	1267.8	15.01	13'	0°	0°
29	SPRINT	Generic Microwave	Aperture	23000		280	2	0	0.02	TPO	Watt	0	0	36.9	32.66	15'	0°	0°
30	SPRINT	Generic Panel	Panel	2500		355	65	4.1	40	TPO	Watt	0	0	1267.8	15.01	13'	0°	0°
31	UNKNOWN CARRIER	Generic Microwave	Aperture	18000		90	2	2	0.01	TPO	Watt	0	0	58.3	37.66	19'	0°	0°
32	UNKNOWN CARRIER	Generic Microwave	Aperture	23000		90	2	1	0.01	TPO	Watt	0	0	18.5	32.66	16'	0°	0°
33	UNKNOWN CARRIER	Generic Omni	Omni	850		0	360	14	100	ERP	Watt	0	0	100	9.97	18'	0°	0°
34	UNKNOWN CARRIER	Generic Panel	Panel	5800		160	90	2.2	20	ERP	Watt	0	0	20	16.01	19.9'	0°	0°
35	UNKNOWN CARRIER	Generic Microwave	Aperture	80000		340	2	1	0.01	TPO	Watt	0	0	172.2	42.36	16'	0°	0°
36	UNKNOWN CARRIER	Generic Microwave	Aperture	18000		10	2	2	0.01	TPO	Watt	0	0	58.3	37.66	17'	0°	0°
37	UNKNOWN CARRIER	Generic Omni	Omni	450		0	360	4.7	100	ERP	Watt	0	0	100	2.97	17.6'	0°	0°
38	UNKNOWN CARRIER	Generic Omni	Omni	450		0	360	4.7	100	ERP	Watt	0	0	100	2.97	17.6'	0°	0°
39	UNKNOWN CARRIER	Generic Omni	Omni	850		0	360	14	100	ERP	Watt	0	0	100	9.97	18'	0°	0°
40	UNKNOWN CARRIER	Generic Microwave	Aperture	18000		170	0	0	0.01	TPO	Watt	0	0	58.3	37.66	17'	0°	0°
41	UNKNOWN CARRIER	Generic Omni	Omni	850		0	360	14	100	ERP	Watt	0	0	100	9.97	18'	0°	0°

Note: The Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience. Proposed equipment is tagged as *(Proposed)* under *Operator* or *Antenna Make & Model*.

Note: The 763 MHz LTE technology is being added to existing antennas.

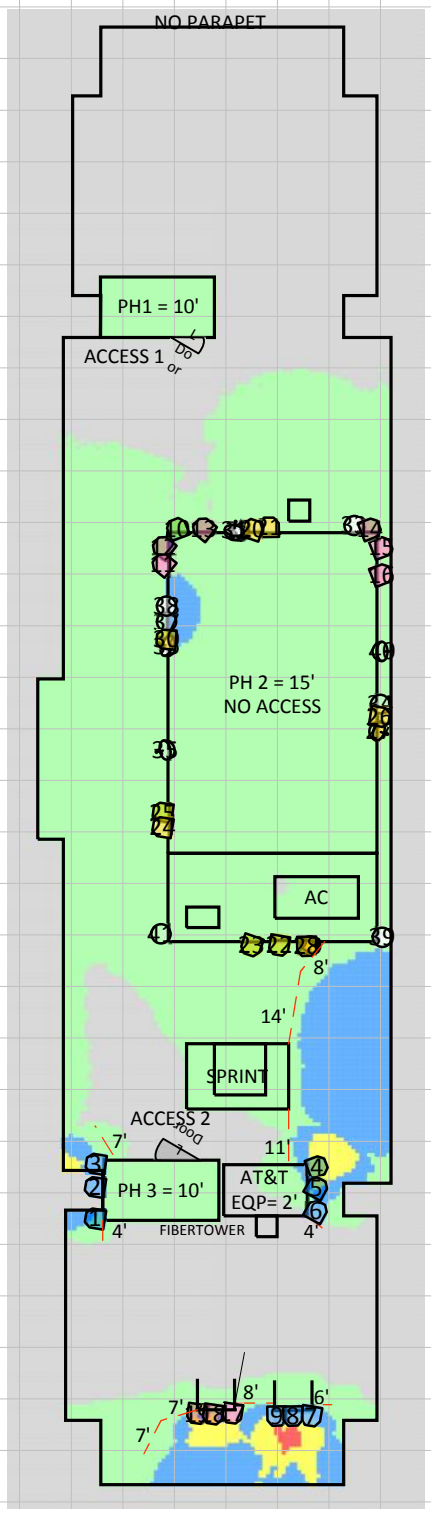
4 Emission Predictions

In the RF Exposure Simulations below, all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

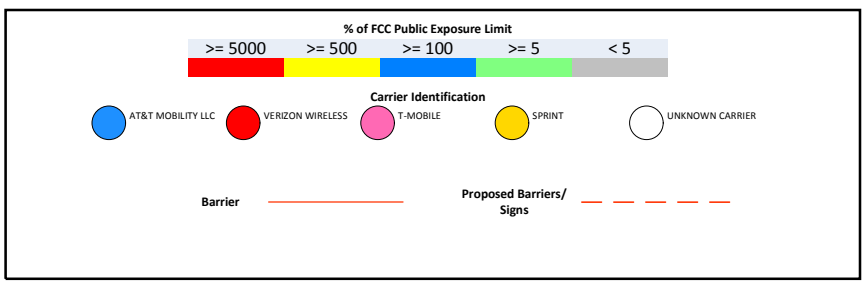
- MAIN LEVEL = 0'
- PH1 and PH3 = 10'
- PH2 = 15'
- AT&T EQP = 2'

The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: GILL
Composite Diagram



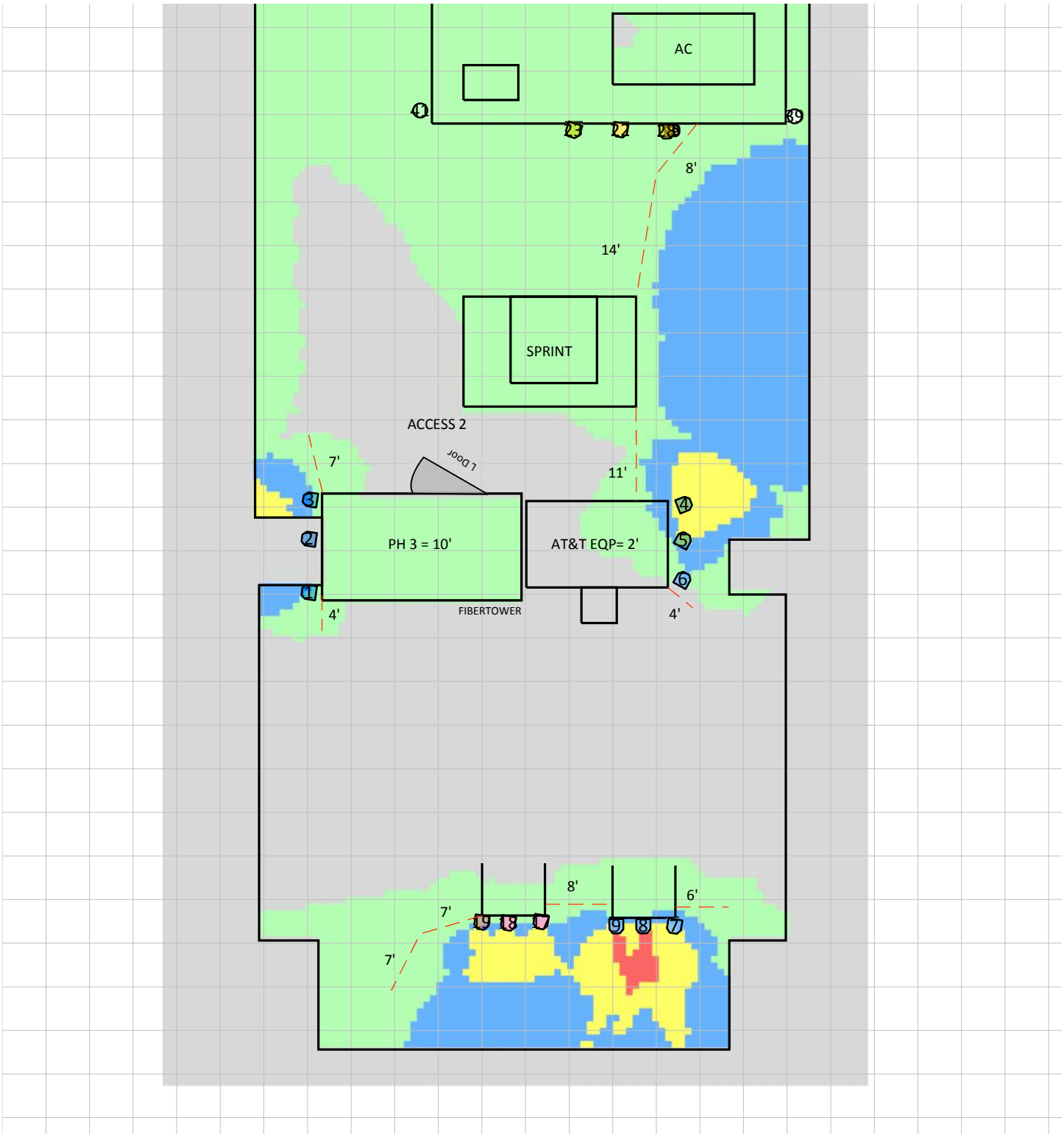
% of FCC Public Exposure Limit
Spatial Average 0' - 6'



(Feet)
0 19.8 39.6
www.sitesafe.com
Site Name:GILL
3/17/2020 6:34:39 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: GILL
Detail View West



% of FCC Public Exposure Limit
Spatial Average 0' - 6'

% of FCC Public Exposure Limit

>= 5000	>= 500	>= 100	>= 5	< 5

Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Barrier

Proposed Barriers/ Signs

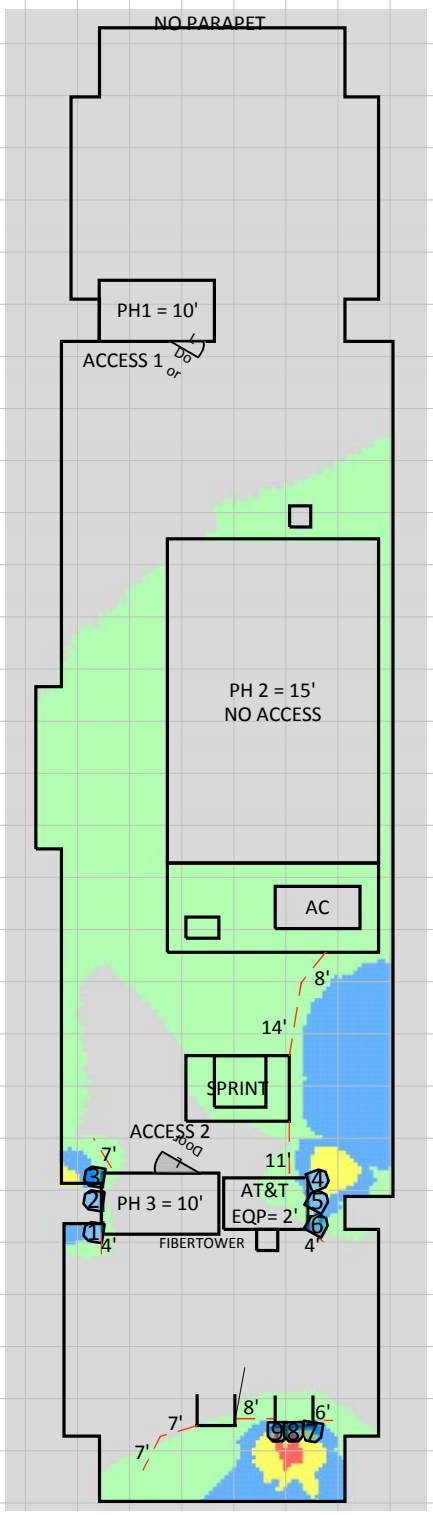
(Feet)

0 8.6 17.2

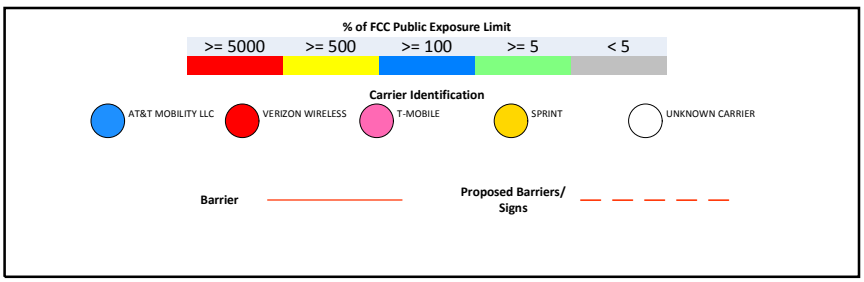
www.sitesafe.com
Site Name:GILL
3/17/2020 6:36:56 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: GILL
AT&T Mobility, LLC Contribution



% of FCC Public Exposure Limit
Spatial Average 0' - 6'



(Feet)
0 19.6 39.2

www.sitesafe.com
Site Name:GILL
3/17/2020 6:43:02 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

Based on measurement or predictions, other wireless operators on this site may be out of RF exposure compliance with FCC regulations on this site. We recommend that those operators review this site with respect to RF exposure compliance.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the proposed AT&T Mobility, LLC deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC's RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

AT&T Mobility, LLC Proposed Alpha Sector Location

(2) Yellow Caution 2 sign(s) required one on each side of the sector.
Install a barrier that is 4' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.
Install (1) total Caution 2 sign(s) on the proposed barrier stanchions.
- 4' segment: (1) Caution 2 sign(s)

Install a barrier that is 7' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.
Install (1) total Caution 2 sign(s) on the proposed barrier stanchions.
- 7' segment: (1) Caution 2 sign(s)

AT&T Mobility, LLC Proposed Beta Sector Location

(2) Yellow Caution 2 sign(s) required one on each side of the sector.
Install a barrier that is 33' long, comprised of (3) segment(s) and an estimated (7) stanchions, as depicted in the site scale map.
Install (6) total Caution 2 sign(s) on the proposed barrier stanchions.
- 11' segment: (2) Caution 2 sign(s)
- 14' segment: (3) Caution 2 sign(s)
- 8' segment: (1) Caution 2 sign(s)

Install a barrier that is 4' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.
Install (1) total Caution 2 sign(s) on the proposed barrier stanchions.
- 4' segment: (1) Caution 2 sign(s)

AT&T Mobility, LLC Proposed Gamma Sector Location

(2) Red Warning 2 sign(s) required one on each side of the sector.
Install a barrier that is 6' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.

Install (1) total Warning 2 sign(s) on the proposed barrier stanchions.

- 6' segment: (1) Warning 2 sign(s)

Install a barrier that is 8' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.

Install (1) total Warning 2 sign(s) on the proposed barrier stanchions.

- 8' segment: (1) Warning 2 sign(s)

AT&T Mobility, LLC is predicted to exceed 5% of the GP limit in an area near T-Mobile antennas #17, #18 and #19 that is predicted to exceed that limit and no signs or barriers are in place. AT&T Mobility, LLC should work with T-Mobile to ensure compliance at this location.

Install a barrier that is 14' long on the right side of T-Mobile's antennas #17, #18 and #19, comprised of (2) segment(s) and an estimated (3) stanchions, as depicted in the site scale map

Recommended per AT&T Mobility, LLC's Policy:

Site Access Location

Sitesafe recommends that all AT&T Mobility, LLC signage be removed from all access points, as they are not required by AT&T Mobility, LLC's signage policy.

Notes:

- Signage on the barriers should be placed on the stanchions no more than 8' apart from each other.
- Barriers were only recommended in areas predicted to exceed the General Public MPE limit greater than 6' from the unprotected roof edges. All other predicted to exceed areas are within 6' of the unprotected roof edges.
- Any existing signage that conflicts with the proposed signage in this report should be removed per AT&T's Signage Posting Rules.
- Ensure all existing signage documented in this report still exist at the site, unless otherwise indicated.

Other Operator Antennas:

T-Mobile should review their Gamma sector.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Site Safe, LLC, in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Leo Romero.

March 24, 2020

Appendix A – Statement of Limiting Conditions

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data collected by Sitesafe provided by a second party and data collected by Sitesafe, the data will be used.

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for evaluating the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996, the FCC periodically reviews these rules and regulations as per their congressional mandate.

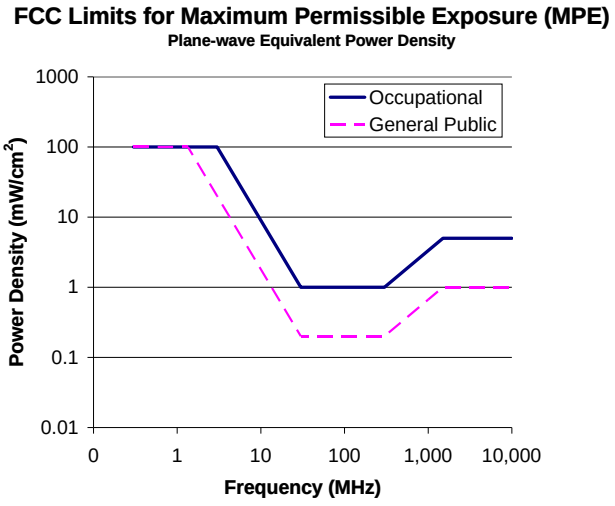
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lockout/Tagout procedure aimed to control the unexpected energization or startup of machines when maintenance or service is being performed.

Appendix C – Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a worker's understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet-based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Maintain a 3-foot clearance from all antennas: There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

Site RF Emissions Diagram(s): Section 4 of this report contains RF Diagram(s) that outline various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst-case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit. **Gray areas are accessible to anyone**.
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers**.
- Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.**
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

If trained occupational personnel require access to areas that are delineated as above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Appendix F – Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site complies with FCC standards with regards to Human Exposure to Radio Frequency Electromagnetic Fields from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to a half-wave dipole antenna.

Gain (of an antenna) – The ratio of the maximum power in a given direction to the maximum power in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antenna as compared to an omnidirectional antenna.

General Population/Uncontrolled Environment – Defined by the FCC as an area where RF exposure may occur to persons who are **unaware** of the potential for exposure and who have no control over their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use its industry specific knowledge of antenna models to select a worst-case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The rms and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC as an area where RF exposure may occur to persons who are **aware** of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy a 6-foot tall human body will absorb while present in an electromagnetic field of energy.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix G – References

The following references can be followed for further information about RF Health and Safety.

Site Safe, LLC
http://www.sitesafe.com
FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety
National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org
Institute of Electrical and Electronics Engineers, Inc., (IEEE)
http://www.ieee.org
American National Standards Institute (ANSI)
http://www.ansi.org
Environmental Protection Agency (EPA)
http://www.epa.gov/radtown/wireless-tech.html
National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/
Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/
International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org
World Health Organization (WHO)
http://www.who.int/peh-emf/en/
National Cancer Institute
http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones
American Cancer Society (ACS)
http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?siteareа=PED
European Commission Scientific Committee on Emerging and Newly Identified Health Risks
http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf
Fairfax County, Virginia Public School Survey
http://www.fcps.edu/fts/safety-security/RFEESurvey/
UK Health Protection Agency Advisory Group on Non-Ionizing Radiation
http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368
Norwegian Institute of Public Health
http://www.fhi.no/dokumenter/545eea7147.pdf

AT&T

SITE NAME: **GILL**

FA#: **10128448**

USID: **100205**

COUNTY: **MONTGOMERY**

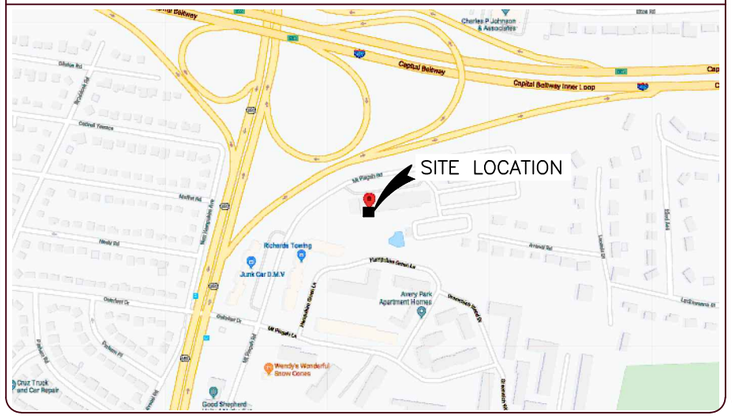
STRUCTURE TYPE: **EXISTING 151'-0" BUILDING**

PROJECT INFORMATION

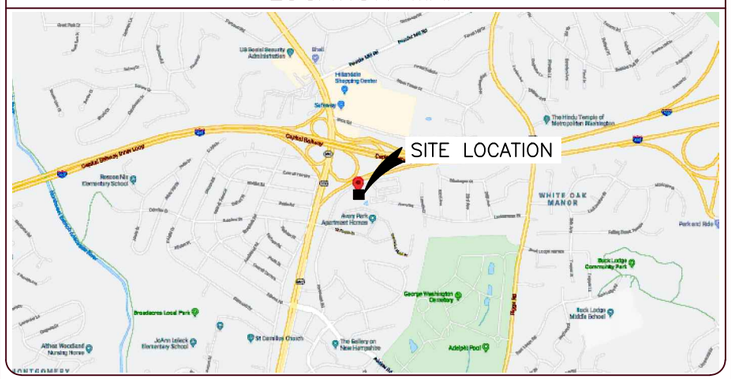
SITE ADDRESS:	9727 MOUNT PISGAH ROAD SILVER SPRING, MD 20903
LATITUDE (NAD83):	39.0166667° N
LONGITUDE (NAD83):	76.9750000° W
GROUND ELEVATION:	±326' (AMSL)
COUNTY:	MONTGOMERY
JURISDICTION:	MONTGOMERY COUNTY
ELECTRIC PROVIDER: PHONE:	PEPCO (202) 833-7500
TELCO PROVIDER: PHONE:	VERIZON (800 483-5000)
OCCUPANCY TYPE:	UNMANNED
ADA COMPLIANCE	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.

APPLICANT:	AT&T MOBILITY 7150 STANDARD DRIVE HANOVER, MD 21076
TOWER OWNER: ADDRESS:	HILLZO LIMITED PARTNERSHIP 1950 OLD GALLOWS RD, VIENNA, VA 22182 (602) 902-2000
A&E FIRM: ADDRESS:	TRYLON TSF 1825 W. WALNUT HILL LANE, STE#120 IRVING, TX 75038
CONTACT:	KATYA SERAVALLE
PHONE:	1-855-669-5421
EMAIL:	KATYA.SERAVALLE@TRYLON.COM

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

THE SCOPE OF WORK WILL BE COMPRISED OF:

- REMOVE (2) EXISTING ANTENNAS
- REMOVE (15) EXISTING RRH
- INSTALL (2) NEW ANTENNAS
- INSTALL (12) NEW RRHS
- REMOVE (9) EXISTING DC2
- REMOVE (12) EXISTING BATTERIES AS (3) STRINGS
- REMOVE GSM CABINET
- REMOVE ALL STAND ALONE DC/FIBER RUNS
- INSTALL (3) NEW DC9 RAYCAP
- INSTALL (9) NEW PWRT-606-S DC TRUNKS
- INSTALL (3) NEW RFFT-48SM-001 FIBER TRUNKS
- INSTALL (1) OUTDOOR DC12
- INSTALL EMERSON NETSURE BATTERY CABINET
- INSTALL (4) -48 170MHA BATTERY STRINGS

RFDS

RFDS ID: 3467371 ISSUE DATE: 10/10/2019 REVISION: V2020_0.1

UPDATED BY: oo6650 DATE/TIME UPDATED: 10/10/2019 @ 11:22:50 AM

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, PORTABLE WATER, OR TRASH DISPOSAL IS REQUIRED, NO COMMERCIAL SIGNAGE AND NO LANDSCAPING IS PROPOSED.

DO NOT SCALE DRAWINGS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR A 11"X17" SET. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CODE COMPLIANCE

ALL WORK & MATERIALS SHALL BE PERFORMED & INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

- 2015 BUILDING CODE
- 2014 NATIONAL ELECTRICAL CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- 2015 INTERNATIONAL FIRE PROTECTION ASSOCIATION
- LOCAL BUILDING CODES
- CITY/COUNTY ORDINANCES
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
- ANSI EIA/TIA-222-G
- TIA 607
- TELCORDIA GR-1275

DRIVING DIRECTIONS

FROM 7150 STANDARD DRIVE HANOVER, MD 21076:
GET ON MD-100 W FROM STANDARD DR, PARK CIR DR AND COCA COLA DR, TAKE I-95 S TO MD-650 S/NEW HAMPSHIRE AVE IN HILLANDALE. TAKE EXIT 28B FROM I-495 W, CONTINUE ON MD-650 S/NEW HAMPSHIRE AVE TO YOUR DESTINATION IN SILVER SPRING.

811 Know what's below. Call before you dig.

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN MARYLAND (EAST OF CHESAPEAKE BAY), CALL MISS UTILITY OF DELMARVA
TOLL FREE: 1-800-282-8555 OR www.missutilitydelmarva.net
MARYLAND STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

APPROVALS

AT&T (CM):	DATE:
SMARTLINK (PM):	DATE:
RF ENGINEER:	DATE:
SITE ACQUISITION:	DATE:
LANDLORD:	DATE:

SHEET INDEX

SHEET #	DESCRIPTION	REVISION #
T-1	TITLE SHEET	0
C-1	BUILDING PLAN	0
C-2	EQUIPMENT PLAN	0
C-3	TOWER ELEVATION	0
C-4	EXISTING ANTENNA LAYOUT	0
C-4A	PROPOSED ANTENNA LAYOUT	0
C-5	ANTENNA SCHEDULE	0
C-6	EQUIPMENT DETAILS	0
C-7	EQUIPMENT DETAILS	0
C-8	EQUIPMENT DETAILS	0
E-1	DC SURGE SUPPRESSION WIRING DIAGRAM	0
E-2	DC SURGE SUPPRESSION WIRING DIAGRAM	0
E-3	AC PANEL SCHEDULE	0
E-4	DC PANEL SCHEDULE	0
E-5	WIRING DIAGRAM	0
E-6	SYSTEM DIAGRAM	0
RF-1	RF PLUMBING DIAGRAM	0
RF-2	RF PLUMBING DIAGRAM	0
RF-3	RF PLUMBING DIAGRAM	0
RF-4	POWER LOAD CALCULATIONS	0
G-1	GROUNDING DETAILS	0
GN-1	GENERAL NOTES	0

AT&T

smartlink

Trylon

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

STATE OF MARYLAND · KIRK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

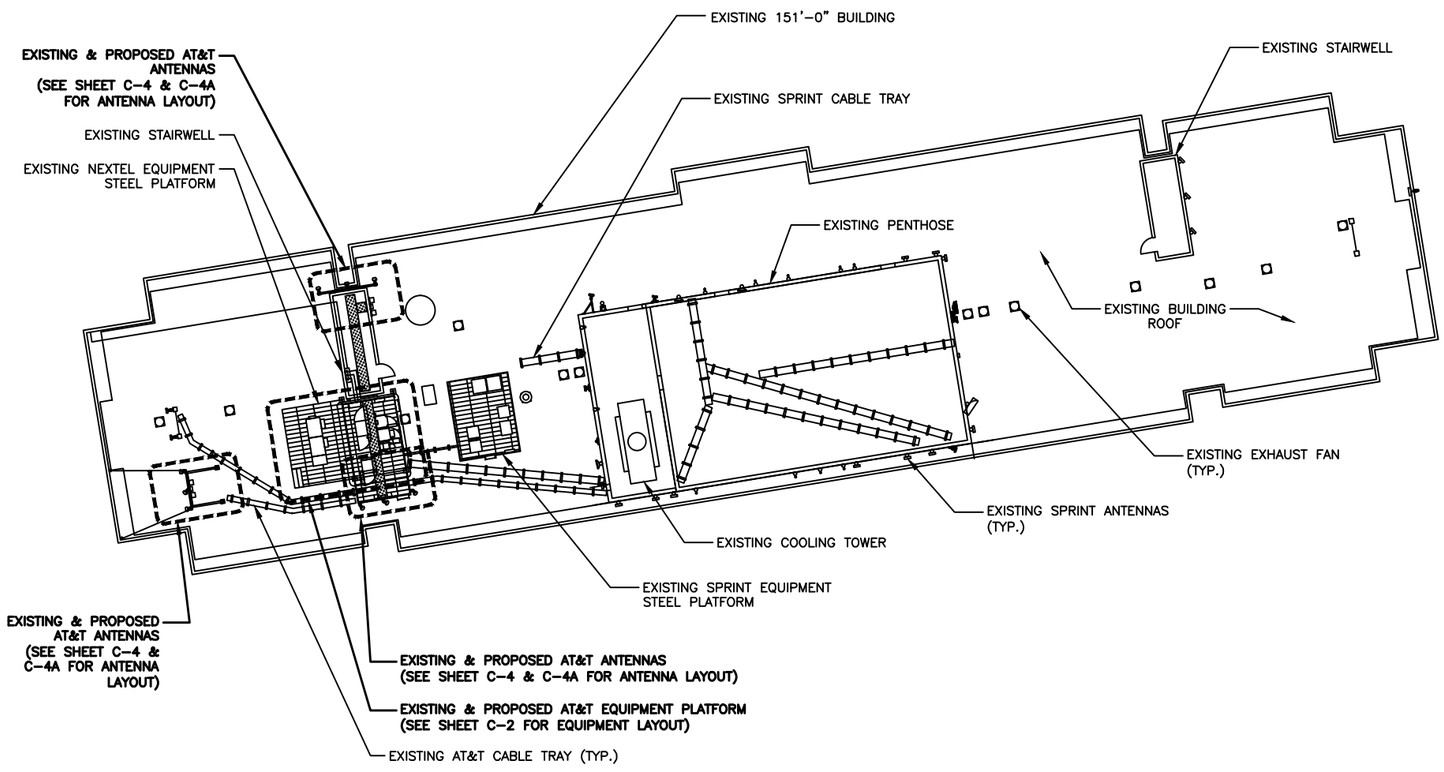
TITLE SHEET

SHEET NO.

T-1

GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL GIVE ALL NOTICES AND REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE SUBCONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID SUBCONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE SUBCONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE AT&T REPRESENTATIVE OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF SUBCONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE SUBCONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIAL AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE SUBCONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE THEMSELVES WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE SUBCONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS INFORMED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE SUBCONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE, UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS, AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEERING, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
11. THE SUBCONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVEMENTS, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE SUBCONTRACTOR SHALL REPAIR ANY DAMAGE THE MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. THE SUBCONTRACTOR SHALL MAINTAIN THE GENERAL WORK AREA AS CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST OR SMUDGES OF ANY NATURE.
13. THE SUBCONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
14. THE SUBCONTRACTOR SHALL NOTIFY THE AT&T REPRESENTATIVE (B&T ENGINEERING) WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE SUBCONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE AT&T REPRESENTATIVE (B&T ENGINEERING).
15. THE SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOBS.



TRUE NORTH

BUILDING PLAN

0 8' 16' 32'

SCALE: 1/32"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

1

AT&T

smartlink

Trylon

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

STATE OF MARYLAND
ERIK R. HALL
No. 27217
PROFESSIONAL ENGINEER

2-12-2020

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

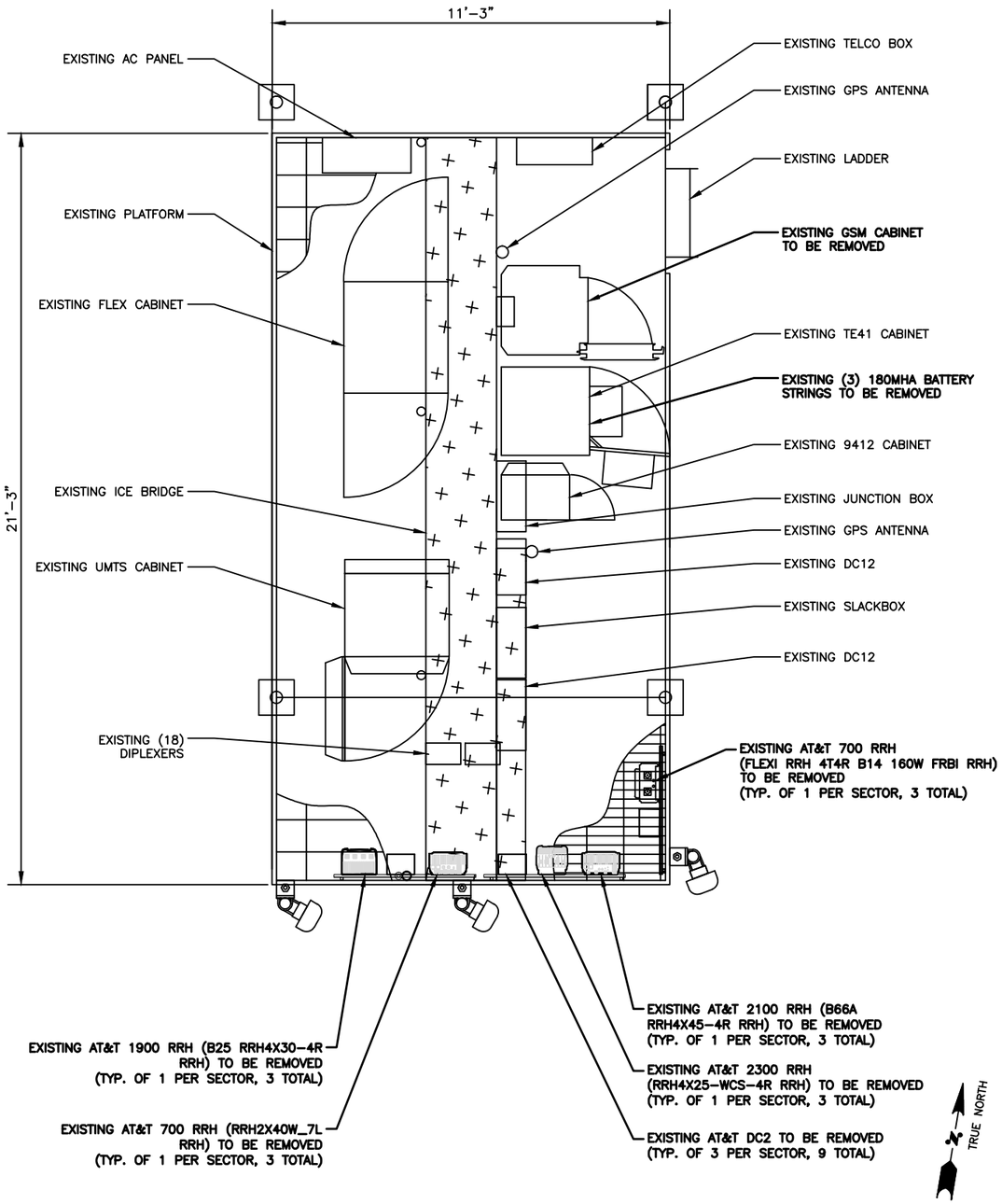
EXISTING BUILDING

SHEET DESCRIPTION

BUILDING PLAN

SHEET NO.

C-1

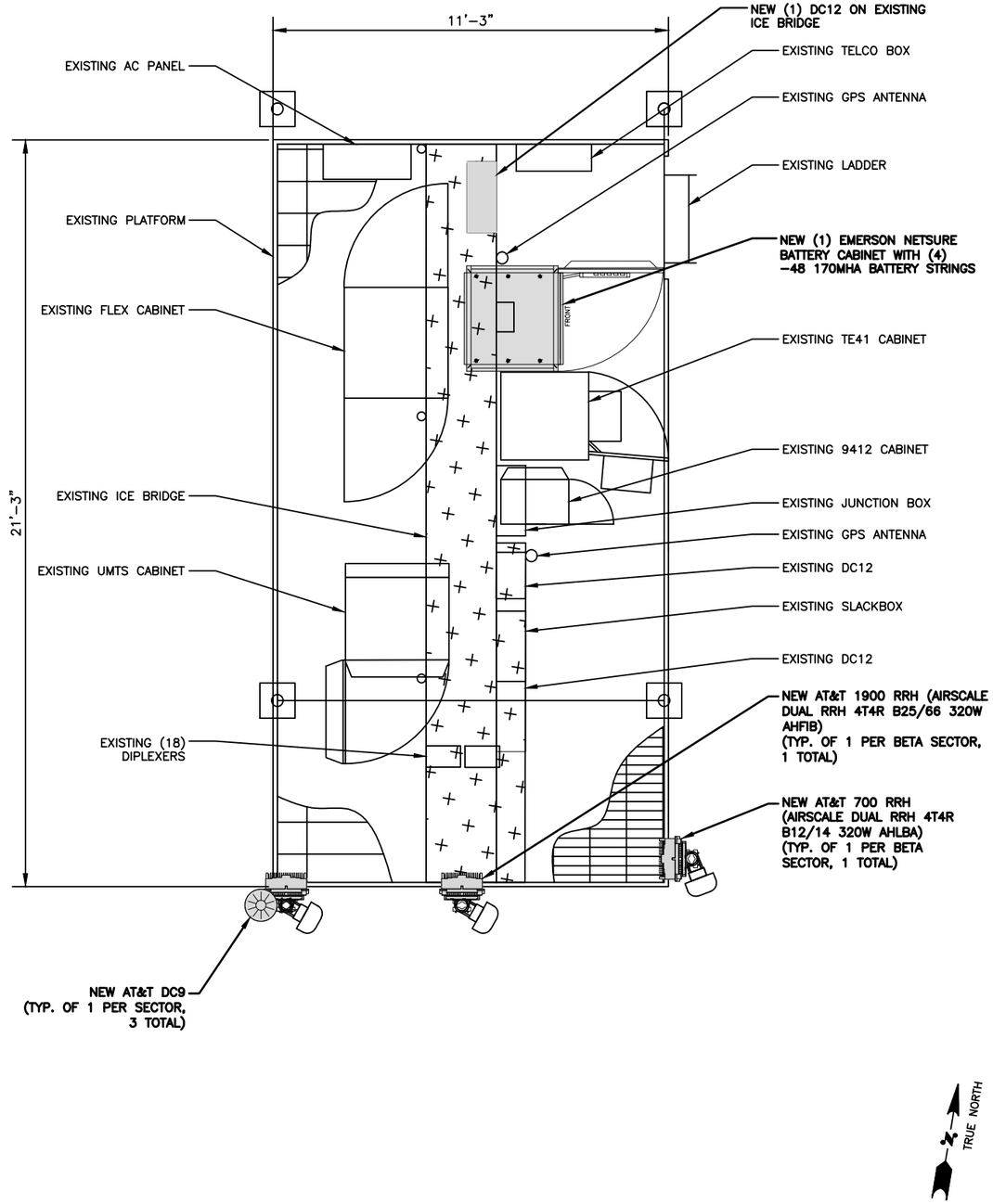


EXISTING EQUIPMENT LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

1



PROPOSED EQUIPMENT LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

2

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STATE OF MARYLAND · KIRE R. HALI · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

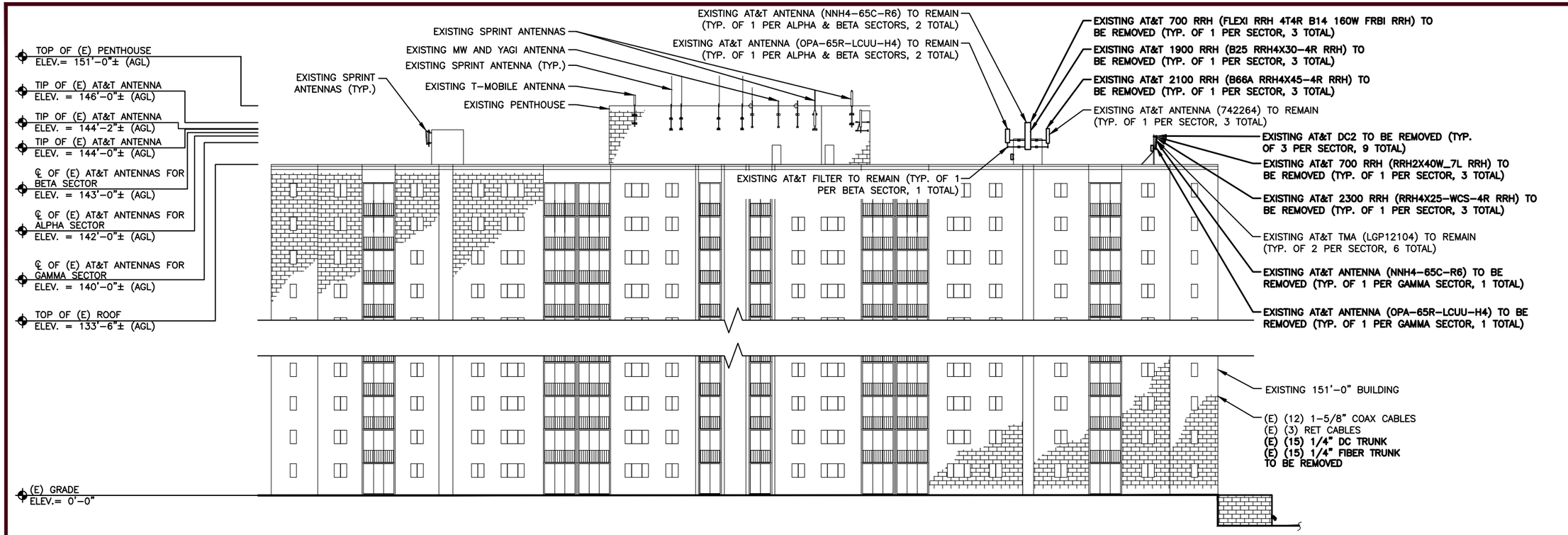
EXISTING BUILDING

SHEET DESCRIPTION

EQUIPMENT PLAN

SHEET NO.

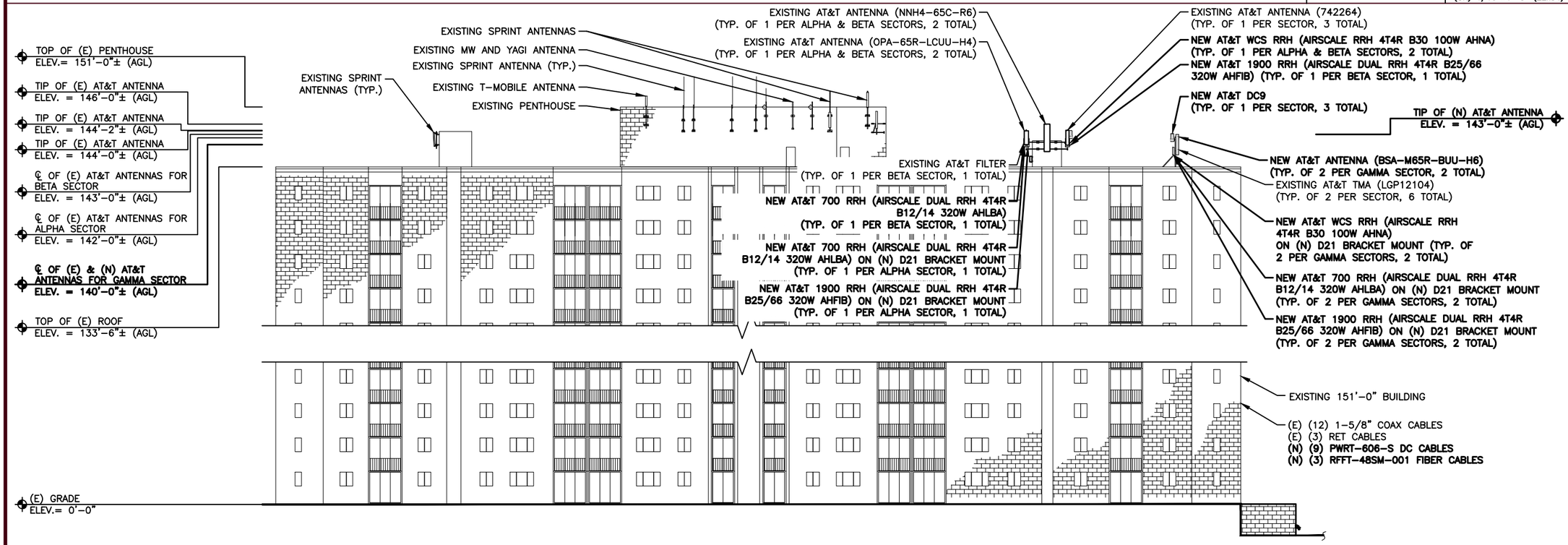
C-2



EXISTING TOWER ELEVATION-NORTH

SCALE: 1/32"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

1



PROPOSED TOWER ELEVATION-NORTH

SCALE: 1/32"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

2

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STATE OF MARYLAND
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9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

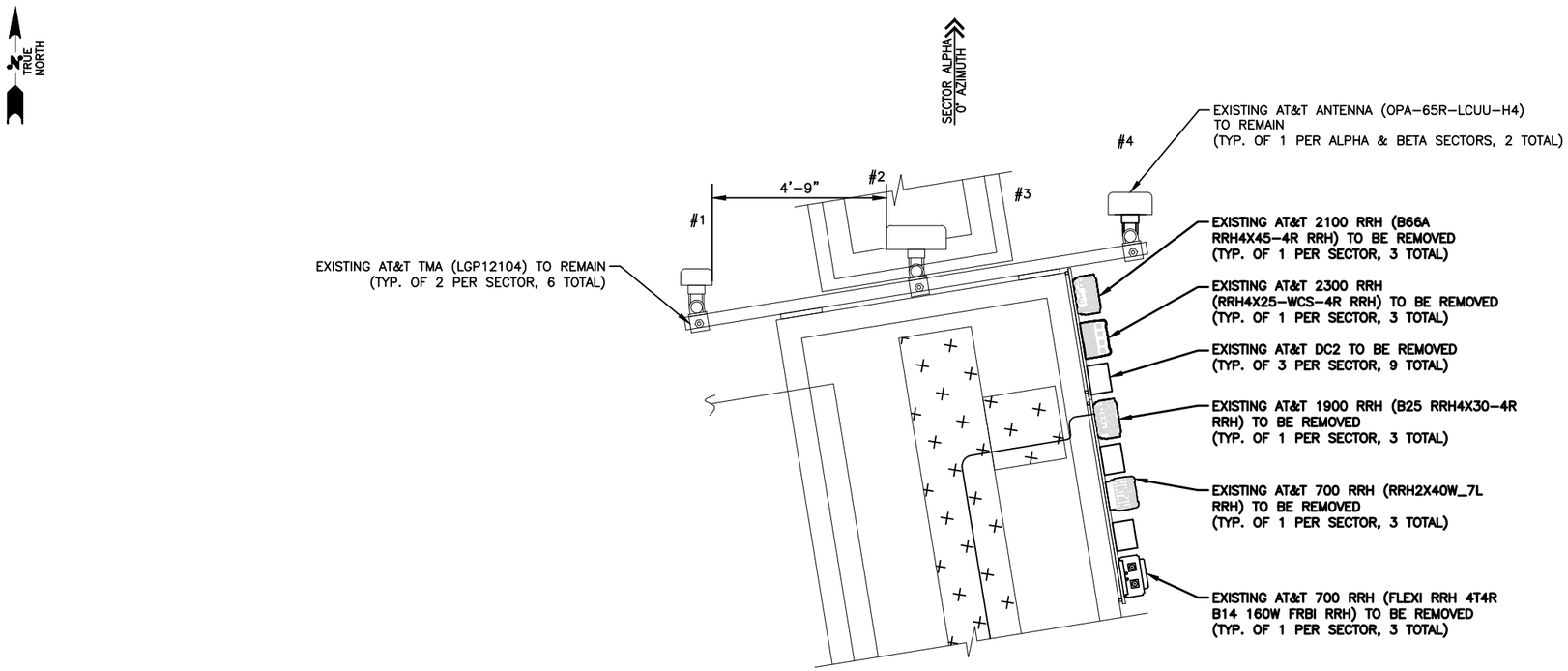
EXISTING BUILDING

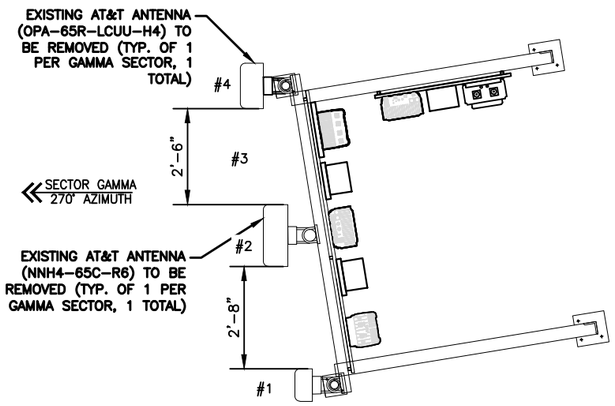
SHEET DESCRIPTION

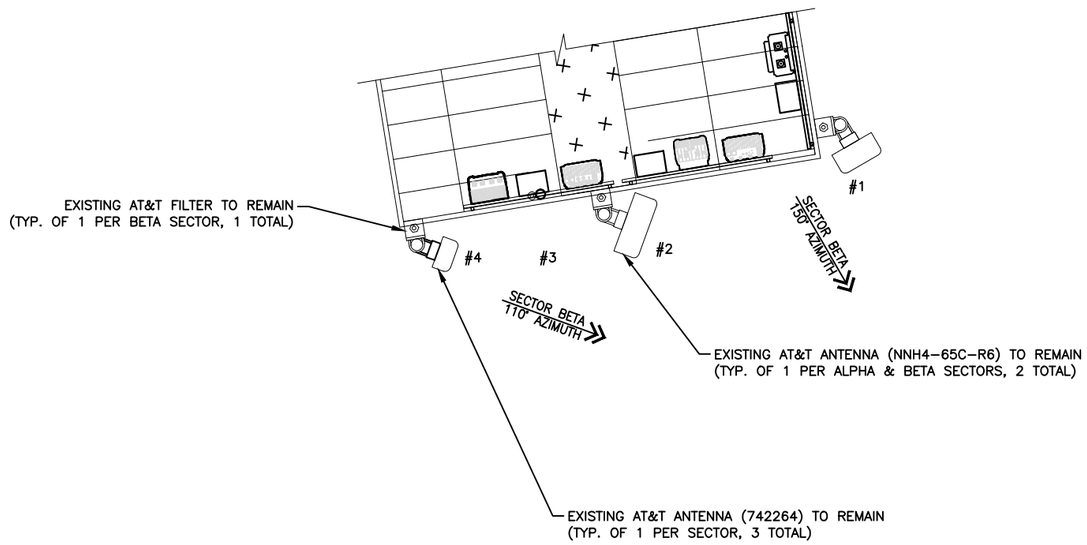
TOWER ELEVATION

SHEET NO.

C-3







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PROJECT TITLE

USID: 100205
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GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

EXISTING ANTENNA LAYOUT

SHEET NO.

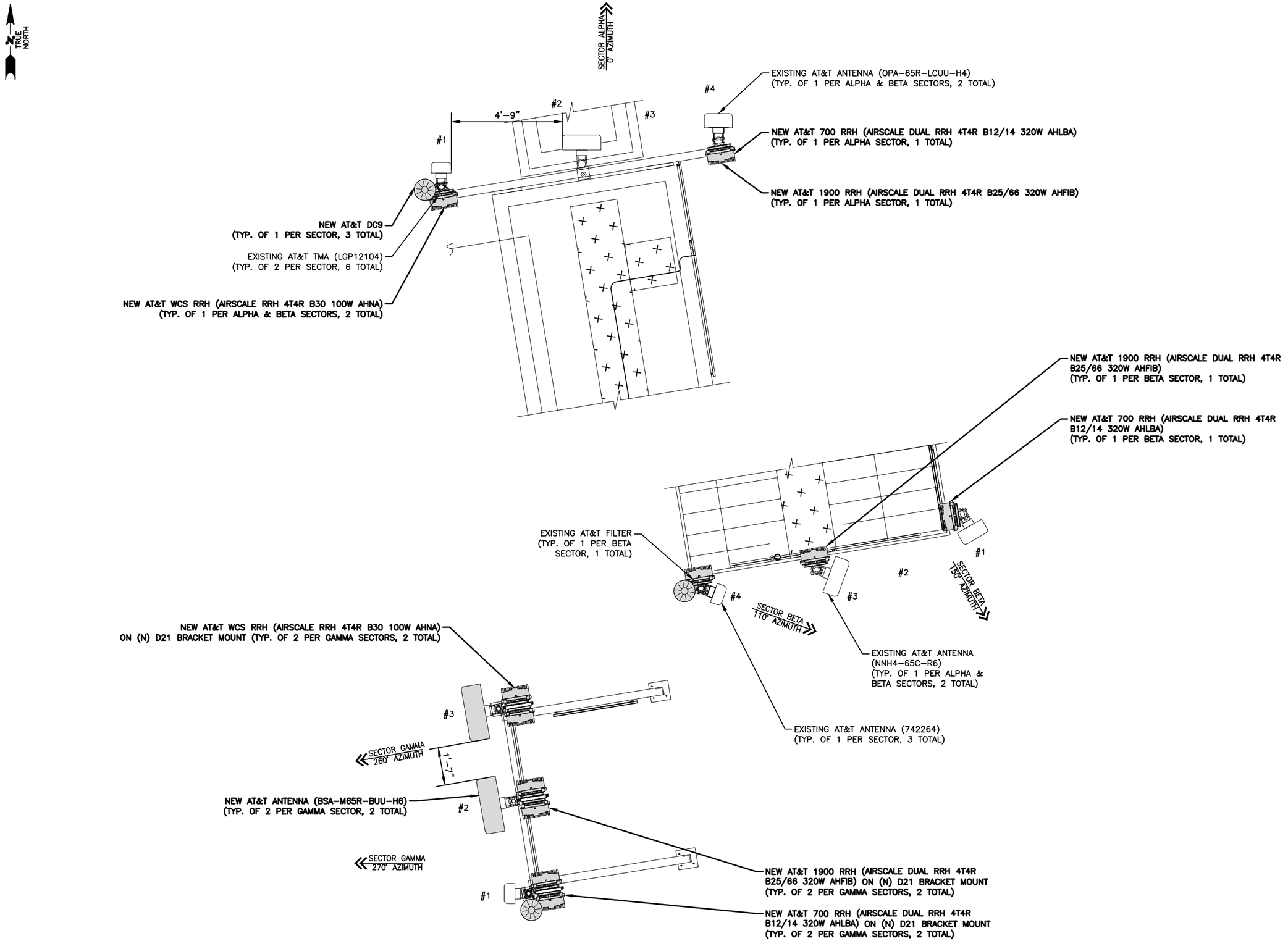
C-4

EXISTING ANTENNA LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

1



PROPOSED ANTENNA LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

1

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PROJECT TITLE

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9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

PROPOSED ANTENNA LAYOUT

SHEET NO.

C-4A

PROPOSED ANTENNA SCHEDULE

SECTOR	ANTENNA POSITION	ANTENNA MAKE/MODEL	RAD CENTER	AZIMUTH	M-TILT	E-TILT	RRH MAKE/MODEL	TMA/FILTER	FEEDLINE	FEEDLINE LENGTH
ALPHA	#1	(E) KATHREIN 742264	142'-0"	0°	0°	2°/2°	-	(E) (2) LGP12104	(E) (4) 1-5/8" COAX (E) (1) RET COAX	130'-0"
	#2	(E) COMMSCOPE NNH4-65C-R6	142'-0"	0°	**0°**	**5°/2°/2°/2°/5°**	**(N) (1) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA** **(N) (1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB**	-	**(N) (3) PWRT-606-S DC TRUNKS** **(N) (1) RFFT-48SM-001 FIBER TRUNK**	**130'-0"**
	#3	-	-	-	-	-	-	-	-	-
	#4	(E) CCL OPA-65R-LCUU-H4	142'-0"	0°	**0°**	**5°**	**(N) (1) AIRSCALE RRH 4T4R B30 100W AHNA**	-	**SHARED FIBER/DC**	**130'-0"**
BETA	#1	(E) CCL OPA-65R-LCUU-H4	143'-0"	150°	0°	6°	**(N) (1) AIRSCALE RRH 4T4R B30 100W AHNA**	(E) (1) KFTDR00110030	**SHARED FIBER/DC**	**130'-0"**
	#2	(E) COMMSCOPE NNH4-65C-R6	143'-0"	110°	**0°**	**12°/5°/5°/5°/10°**	**(N) (1) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA** **(N) (1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB**	-	**(N) (3) PWRT-606-S DC TRUNKS** **(N) (1) RFFT-48SM-001 FIBER TRUNK**	**130'-0"**
	#3	-	-	-	-	-	-	-	-	-
	#4	(E) KATHREIN 742264	143'-0"	110°	**0°**	**2°/2°**	-	(E) (2) LGP12104	(E) (4) 1-5/8" COAX (E) (1) RET COAX	130'-0"
GAMMA	#1	(E) KATHREIN 742264	140'-0"	270°	2°	2°/2°	-	(E) (2) LGP12104	(E) (4) 1-5/8" COAX (E) (1) RET COAX	130'-0"
	#2	**(N) CCL BSA-M65R-BUU-H6**	**140'-0"**	260°	**0°**	**6°/6°/6°/6°/4°/4°/4°/4°/4°/4°**	**(N) (2) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA** **(N) (2) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB**	-	**(N) (3) PWRT-606-S DC TRUNKS** **(N) (1) RFFT-48SM-001 FIBER TRUNK**	**130'-0"**
	#3	**(N) CCL BSA-M65R-BUU-H6**	**140'-0"**	260°	**0°**	**2°/2°**	**(N) (2) AIRSCALE RRH 4T4R B30 100W AHNA**	-	**SHARED FIBER/DC**	**130'-0"**

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STATE OF MARYLAND · KIRK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

ANTENNA SCHEDULE

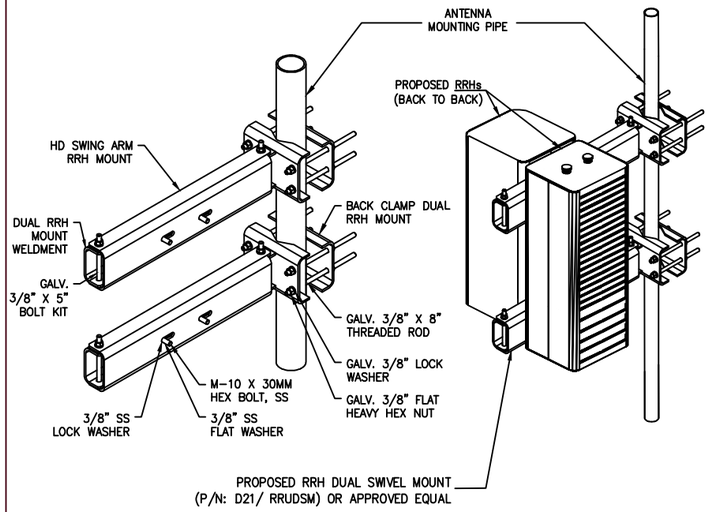
SHEET NO.

C-5

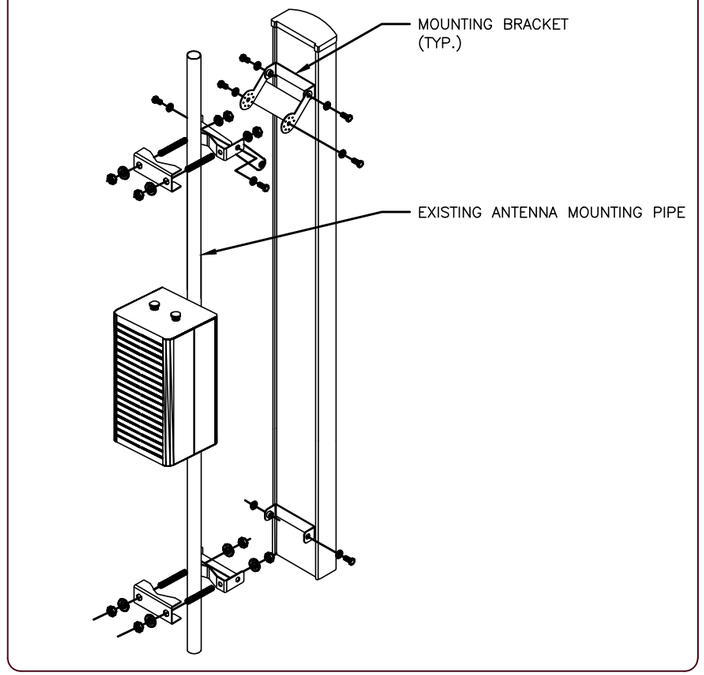
Dimensions (LxWxD)	72.0×26.5×9.7 in (1828×723×245 mm)
Survival Wind Speed	> 150 mph (> 240 kph)
Front Wind Load	438 lbs (1947 N) @ 100 mph (161 kph)
Side Wind Load	175 lbs (778 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	17.1 ft² (1.6 m²)
Weight *	101.0 lbs (45.9 kg)
RET System Weight	6.6 lbs (3.0 kg)
Connector	12 x 7-16 DIN female long neck
Mounting Pole	2 to 5 in (5 to 12 cm)

Ports	4 x Low Band Ports for 698-894 MHz		8 x High Band Ports for 1710-2360 MHz			
Frequency Range	690-806 MHz	824-894 MHz	1850-1990 MHz	1710-1755/2110-2155 MHz	1920-1980 MHz	2305-2360 MHz
Gain	16.4 dBi	17.3 dBi	18.0 dBi	17.2 dBi	18.4 dBi	18.1 dBi
Azimuth Beamwidth (-3dB)	34°	32°	31°	36°	29°	26°
Elevation Beamwidth (-3dB)	11.7°	10.3°	6.4°	7.2°	5.9°	5.6°
Electrical Downtilt	2° to 12°	2° to 12°	0° to 9°	0° to 9°	0° to 9°	0° to 9°
Elevation Sidelobes (1st Upper)	< -18 dB	< -18 dB	< -18 dB	< -18 dB	< -18 dB	< -18 dB
Front-to-Back Ratio @180°	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Front-to-Back Ratio over ± 20°	> 27 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 28 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Voltage Standing Wave Ratio(VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	300 watts	300 watts	300 watts	300 watts
Polarization	Dual Linear ±45°	Dual Linear ±45°	Dual Linear ±45°	Dual Linear ±45°	Dual Linear ±45°	Dual Linear ±45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

1 C-6 ANTENNA DETAIL
SCALE: NTS



2 C-6 RRH MOUNTING DETAIL
SCALE: NTS



3 C-6 ANTENNA MOUNTING DETAIL
SCALE: NTS

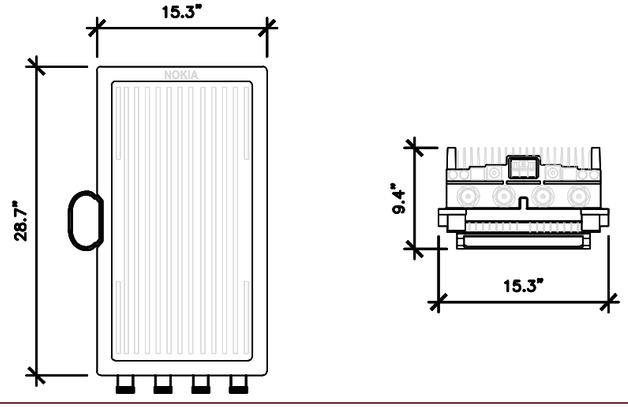
NOKIA AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA

DIMENSIONS, HXWXD: 560 X 308 X 149 (MM) (CORE)
28.7" X 15.3" X 9.4" (CORE)

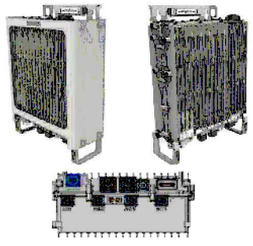
730 X 390 X 240 (MM)
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)

28.7" X 15.3" X 9.4"
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)

WEIGHT: < 46 (kg)
< 101.4 lbs
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)



4 C-6 NOKIA AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA DETAIL
SCALE: NTS



Ingress protection class	IP65
Installation options	Wall, Boot mount: Vertical wall/pole, Horizontal wall
Surge protection	Class II 5kA

Confidential

NOKIA

474861A AHNA AirScale RRH 4T4R B30 100W

Supported Frequency bands	3GPP band 30
Frequencies	DL 2350-2380 MHz, UL 2305-2315 MHz
Number of TX/RX paths	4/4
Instantaneous Bandwidth IBW	10 MHz
Occupied Bandwidth OBW	10 MHz
Output Power	4T4R 25W /TX
Dimensions (mm) Height x width x depth	336.5 x 306 x 140, Core only *(see more dimensions on next slide)*
Volume	14.4 Liters, Core only
Weight	Approx. 15.5 kg / 34.17 lbs, Core only Approx. 17.7Kg / 39.02 lbs including AirScale Mounting Bracket and Solar Cover
Supply Voltage / Voltage Range	DC-48V / -36V to -60V
Typical Power Consumption	Estimated 515 W @ 100% RF load
Antenna Ports	4TX/4RX, 4.3-10+
Optical Ports	2x CPRI 9.8 Gbps/ PR3_01 chaining
ALD Control Interfaces	AISG3.0 from ANT1,2, 3, 4 and RET (Power supply ANT1 and ANT3)
Other Interfaces	External Alarm Connector (up to 4 inputs)
Operational Temperature Range	-40°C to 55°C

5 C-6 NOKIA AIRSCALE RRH 4T4R B30 100W AHNA DETAIL
SCALE: NTS

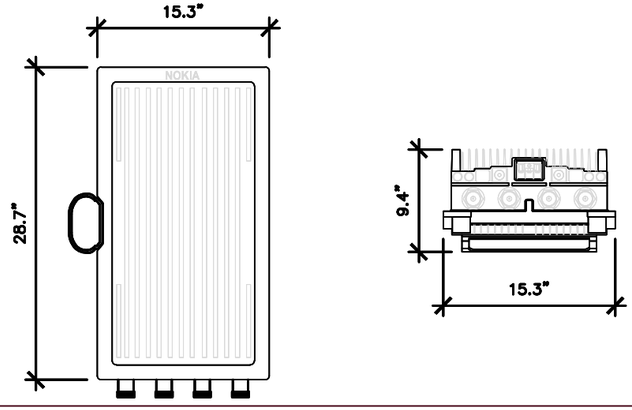
NOKIA AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB

DIMENSIONS, HxWxD: 560 X 308 X 149 (MM) (CORE)
28.7" X 15.3" X 9.4" (CORE)

730 X 390 X 240 (MM)
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)

28.7" X 15.3" X 9.4"
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)

WEIGHT: < 40 (kg)
< 88.2 lbs
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)



6 C-6 NOKIA AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB DETAIL
SCALE: NTS

AT&T

smartlink

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SUBMITTALS

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A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

STATE OF MARYLAND · KIRK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

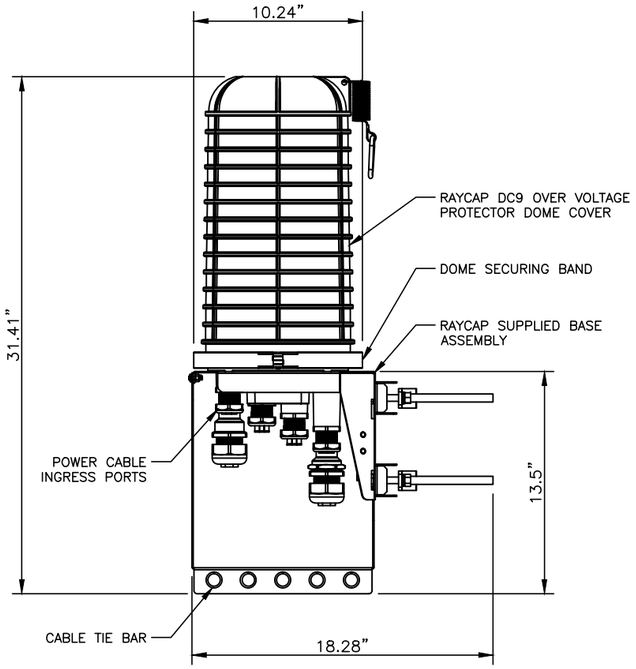
EXISTING BUILDING

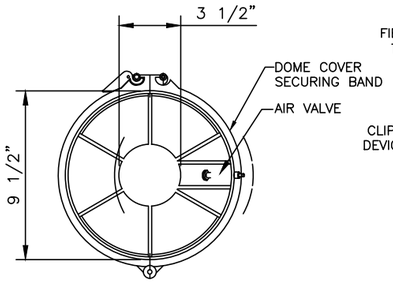
SHEET DESCRIPTION

EQUIPMENT DETAILS

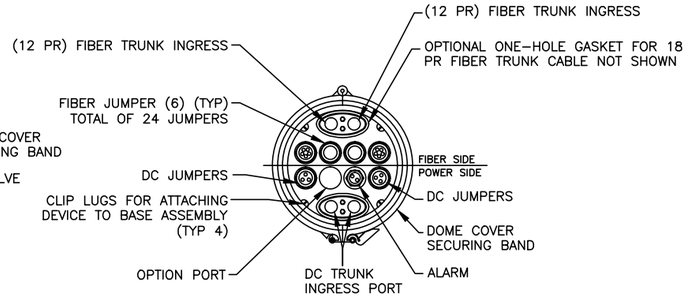
SHEET NO.

C-6





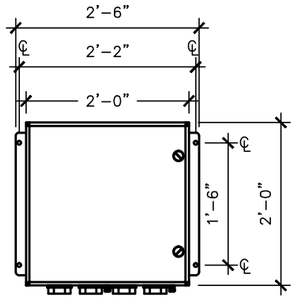
TOP VIEW



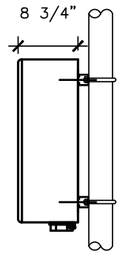
BOTTOM VIEW
DC9-48-60-24-8C-EV

RAYCAP DC9 (SQUID)	
LENGTH (H)	18.28"
WIDTH (W)	10.24"
HEIGHT (D)	31.4"
WEIGHT:	
SYSTEM	16.0 LBS
MOUNT	10.2 LBS
TOTAL:	26.2 LBS

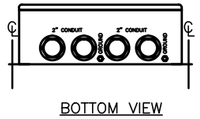
RAYCAP DC9 DETAILS — N.T.S. — 1



FRONT VIEW



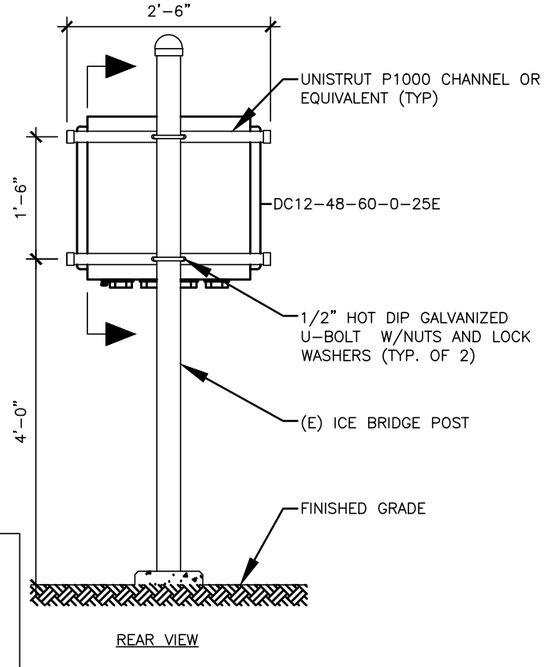
SIDE VIEW



BOTTOM VIEW

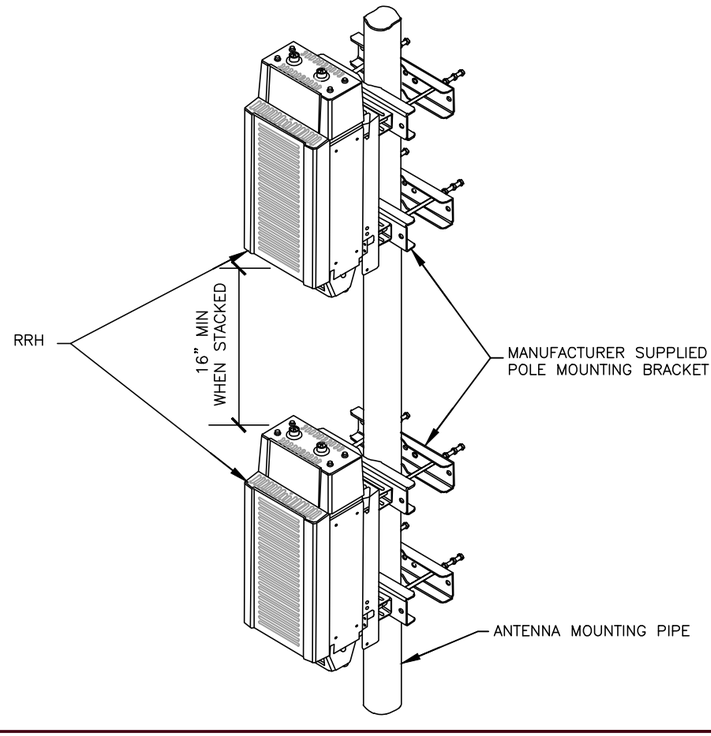
NOTES:

1. SUBCONTRACTOR SHALL SUPPLY AND INSTALL UNISTRUT (OR EQUIVALENT) MOUNTING CHANNELS.
2. SUBCONTRACTOR SHALL SUPPLY AND INSTALL ICE BRIDGE POSTS AS REQUIRED.
3. POSTS SHALL BE 3 1/2"O.D. SCHED. 40 PIPE (ASTM-A36, A53 OR EQUIVALENT).
4. SUBCONTRACTOR SHALL SUPPLY 3/8"ø UNISTRUT BOLTING HARDWARE AND SPRING NUTS. TYPICAL FOUR PER DC12. SUBCONTRACTOR SHALL BAG THE BOLTING HARDWARE AND HANG FROM INSTALLED UNISTRUT FRAME.
5. WEIGHT = 56.3lbs



REAR VIEW

DC12 DETAIL — N.T.S. — 2



RRH MOUNTING DETAIL — N.T.S. — 3

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SUBMITTALS

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D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

EQUIPMENT DETAILS

SHEET NO.

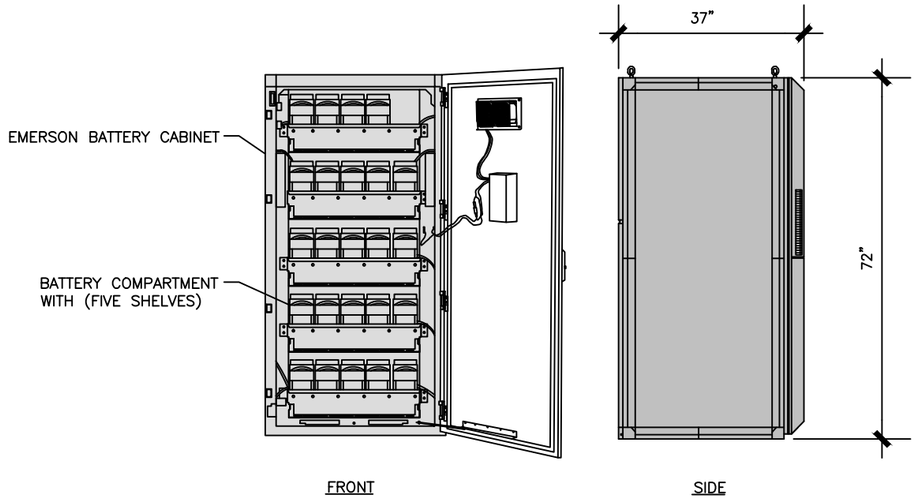
C-7

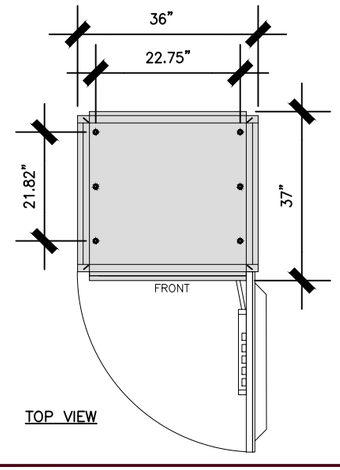
SIZE AND WEIGHT TABLE

BATTERY CABINET	WIDTH	DEPTH	HEIGHT	WEIGHT
NETXTEND OUTDOOR BATTERY CABINET	36"	37"	72"	980 LBS.

CLEARANCE

CLEARANCE	FRONT	REAR	SIDES
NETXTEND OUTDOOR BATTERY CABINET	36"	6"	2"





EMERSON BATTREY CABINET DETAIL | N.T.S. | 1

SBS-170F Battery Features and Benefits:

- Proven Long Service
- High energy density
- Up to two year shelf life
- Very low ventilation requirement
- Wide operating temperature range: -40°F (-40°C) to 122°F (50°C)

EnerSys PowerSafe SBS-170F Battery Specifications:

Chemistry:	Sealed Lead Acid
Voltage:	12 volts
Nominal Capacity:	170.0Ah
Terminals:	M6
Dimensions (L x W x H):	22.10 x 4.90 x 11.10
Weight (pounds):	115.7

170MHA BATTERY DETAIL | N.T.S. | 2

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STATE OF MARYLAND KIRK R. HALL No. 27217 PROFESSIONAL ENGINEER

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9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

EQUIPMENT DETAILS

SHEET NO.

C-8

DC9 FIBER CONNECTIONS

FIBER PORT	RRH CONNECTION
1	B12/700
2	B25/1900
3	B30/AWS
4	FUTURE
5	FUTURE
6	FUTURE
7	FUTURE
8	FUTURE
9	FUTURE
10	FUTURE
11	FUTURE
12	FUTURE
13	FUTURE
14	FUTURE
15	FUTURE
16	FUTURE
17	FUTURE
18	FUTURE
19	FUTURE
20	FUTURE
21	FUTURE
22	FUTURE
23	FUTURE
24	FUTURE

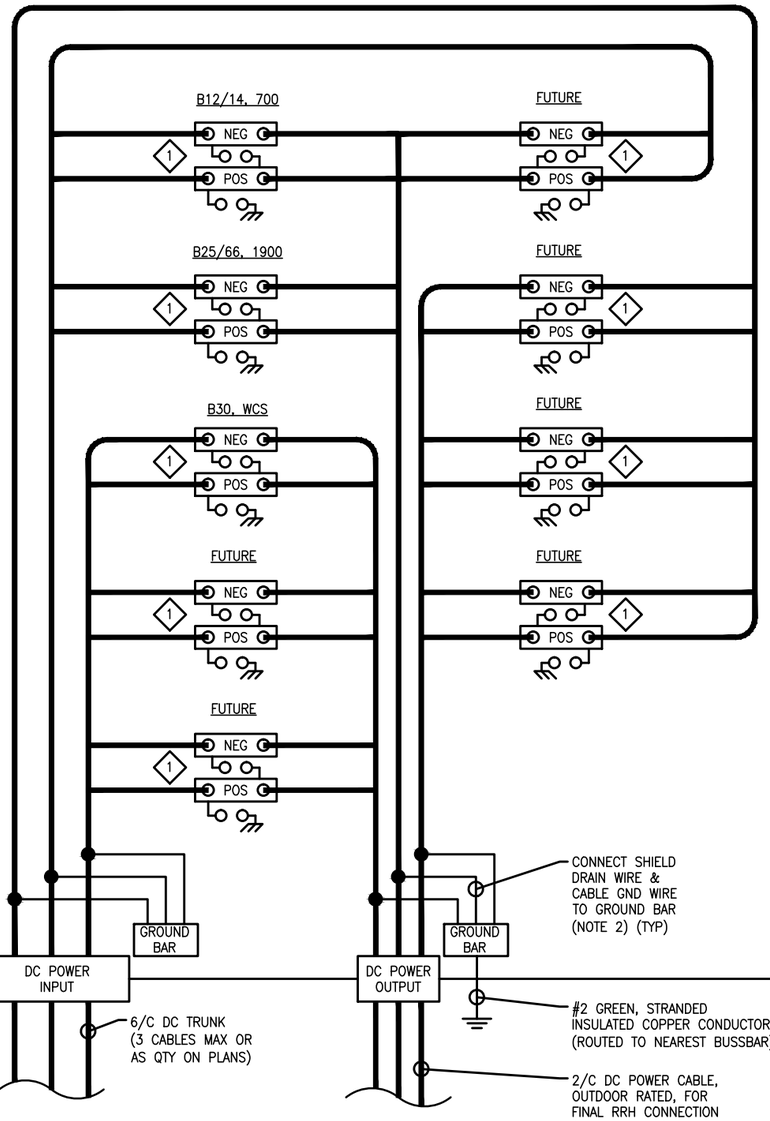
FIBER INPUT

24PR FIBER CABLE

FIBER OUTPUT

2PR SINGLE MODE FIBER, OUTDOOR RATED, FOR FINAL RRH CONNECTION (TYP PER RRH)

DC9 DC POWER CONNECTIONS



NOTES:

1. TRUNK GLAND KITS:
   - TRUNK GLAND KIT A: OVAL GASKET FOR #4 AND #6AWG TRUNK (CEQ. 21428)
   - TRUNK GLAND KIT B: OVAL GASKET FOR (2) #4 AWG TRUNKS (CEQ. 21429)
   - TRUNK GLAND KIT C: OVAL GASKET FOR (2) #8 AWG TRUNKS (CEQ. 21434)
2. WHEN SHIELDED CABLE IS USED CONNECT CABLE SHIELD DRAIN WIRE AND GROUND WIRE TO GROUND BAR.
3. FIRST SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED) RRH ON ALPHA SECTOR. IN THE EVENT THE ALARM CABLE CANNOT BE CONNECTED TO ALPHA IT WILL BE ACCEPTABLE TO ALARM TO THE CLOSEST PHYSICAL SECTOR ON AN EXCEPTION BASIS.
4. 2ND SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED) RRH ON BETA SECTOR.
4. 3RD SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED) RRH ON GAMMA SECTOR.
5. AN RRH WILL NEVER HAVE MORE THAN ONE SQUID ALARMED ON IT.
6. SQUID ALARMS ARE NOT TO BE DAISY CHAINED.

◇2 = LC CONNECTOR

◇1 = STRIKESORB PROTECTION MODULE BY RAYCAP

1/E-1 RAYCAP DC9-48-60-24-8C-EV
SCALE: N.T.S

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STATE OF MARYLAND · ERIK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

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USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

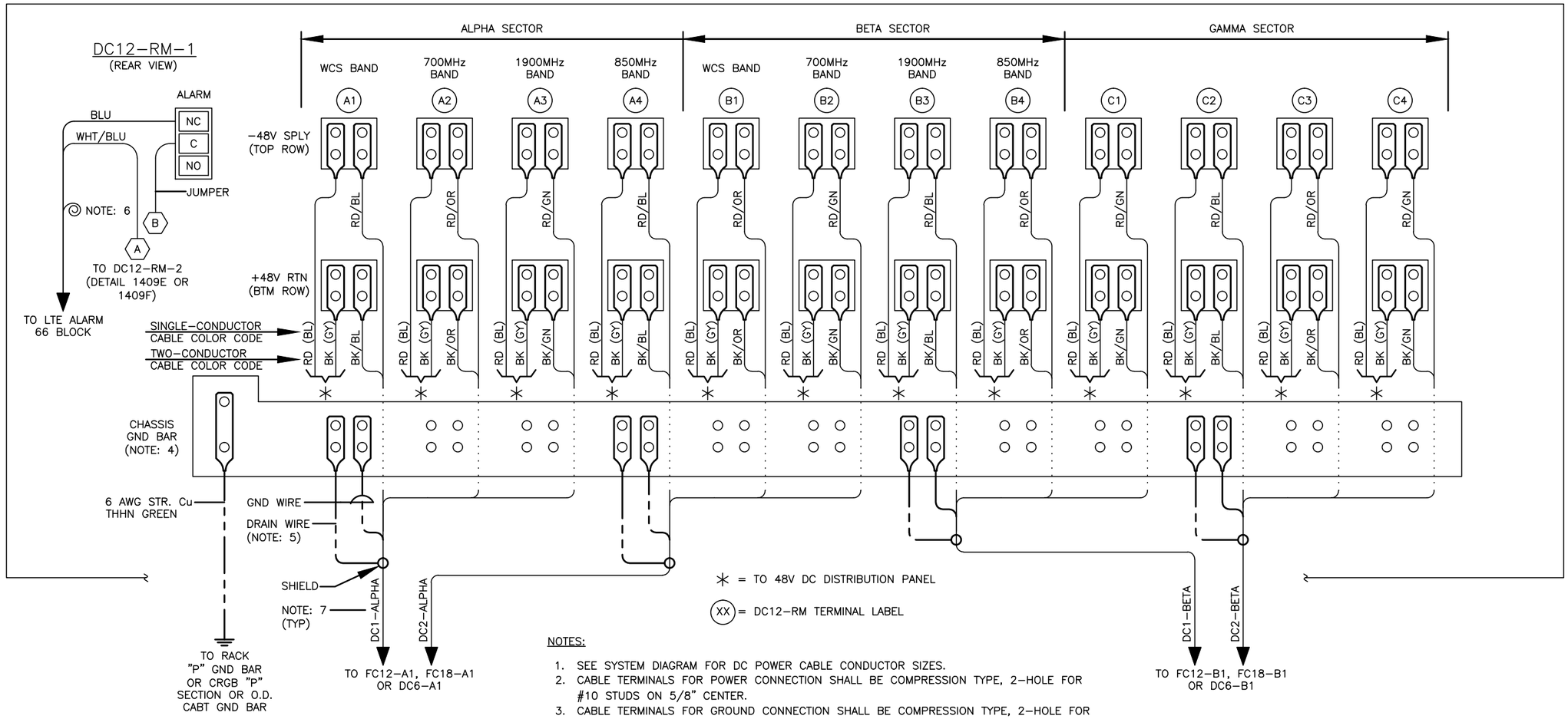
EXISTING BUILDING

SHEET DESCRIPTION

DC SURGE SUPPRESSION WIRING DIAGRAM

SHEET NO.

E-1



NOTES:

1. SEE SYSTEM DIAGRAM FOR DC POWER CABLE CONDUCTOR SIZES.
2. CABLE TERMINALS FOR POWER CONNECTION SHALL BE COMPRESSION TYPE, 2–HOLE FOR #10 STUDS ON 5/8" CENTER.
3. CABLE TERMINALS FOR GROUND CONNECTION SHALL BE COMPRESSION TYPE, 2–HOLE FOR 1/4" STUDS ON 5/8" CENTER.
4. CHASSIS GROUND BAR TERMINAL IS SUPPLIED WITH UNIT AND IS 2–HOLE, 1/4" ON 1" CENTER.
5. DRAIN WIRE CONNECTION APPLICABLE ONLY WHERE SHIELDED CABLE IS INSTALLED.
6. TURN BACK AND STORE UNUSED CONDUCTORS.
7. CABLES AND WIRES SHALL BE LABELED BY MARKET CONVENTION. LABELS SHOWN ARE REPRESENTATIVE.

CONNECTION DIAGRAM RACK–MOUNTED SURGE SUPPRESSION SYSTEM DC12–RM–1 FOR SECTORIZED SITE

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STATE OF MARYLAND
ERIK R. HALL
No. 27217
PROFESSIONAL ENGINEER

2-12-2020

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9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

DC SURGE SUPPRESSION WIRING DIAGRAM

SHEET NO.

E–2

PANEL 'DISTRIBUTION PANEL' SCHEDULE

120/240V, 1 PHASE, 3W — Square D #QO
200A BUS — 200A MAIN BKR

MAIN BREAKER RATING (A): 200 — SYSTEM VOLTAGE (V): 240

Type	DESCRIPTION	VA	c/nc	BKR	POSN	L1	L2	POSN	BKR	c/nc	VA	DESCRIPTION	Type
dual	UMTS CABINET	4875	nc	100	1	6892		2	30	c	2017	RECT 4	dual
		4875	nc		3		6892	4		c	2017		
dual	FLEX CABINET	1455	nc	100	5	3472		6	30	c	2017	RECT 5	dual
		1275	nc		7		3292	8		c	2017		
dual	UNLABELED	0	nc	20	9	0		10	30	c	0	RECT 6	dual
		0	nc		11		0	12		c	0		
dual	RECT 1	2017	c	30	13	2017		14	30	c	0	RECT 7	dual
		2017	c		15		2017	16		c	0		
dual	RECT 2	2017	c	30	17	2017		18	30	c	0	RECT 8	dual
		2017	c		19		2017	20		c	0		
dual	RECT 3	2017	c	30	21	2017		22	30	c	0	RECT 9	dual
		2017	c		23		2017	24		c	0		
	BLANK				25	1175		26	30	nc	1175	LUCENT AC	dual
	BLANK				27		0	28				BLANK	
	BLANK				29	0		30				BLANK	
	BLANK				31		0	32				BLANK	
	BLANK				33	0		34				BLANK	
	BLANK				35		0	36				BLANK	
	BLANK				37	0		38				BLANK	
	BLANK				39		0	40				BLANK	
	NOT PRESENT				41	0		42				NOT PRESENT	

PHASE TOTALS (VA):	17590	16235	
CURRENT PER PHASE (A):	168	156	Amperes/phase cannot exceed main breaker rating
PANEL TOTAL (VA):	33825		Legend: c = continuous, nc = non-continuous
PANEL CAPACITY (kVA):	48.0	CONNECTED LOAD (kVA):	33.8
PANEL LOADING (100% non-cont. load) (kVA):	13.7		
PANEL LOADING (125% continuous load) (kVA):	25.2		
PANEL LOADING (TOTAL) (kVA):	38.9		
SPARE CAPACITY (kVA):	9.1		

1 / E-3 EXISTING AC MAIN PANEL SCHEDULE
SCALE: NTS

PANEL 'DISTRIBUTION PANEL' SCHEDULE

120/240V, 1 PHASE, 3W — Square D #QO

MAIN BREAKER RATING (A): 100 — SYSTEM VOLTAGE (V): 240

Type	DESCRIPTION	VA	c/nc	BKR	POSN	L1	L2	POSN	BKR	c/nc	VA	DESCRIPTION	Type
single	LIGHTS	360	nc	10	1	360		2	20	nc	0	CONVERTER	single
single	GFCI	180	nc	20	3		180	4	20	nc	0	SPARE	dual
dual	AC 1	1095	nc	10	5	1095		6		nc	0		
		1095	nc		7		1095	8				BLANK	
	BLANK				9	0		10				BLANK	
	BLANK				11		0	12				BLANK	
	BLANK				13	0		14				BLANK	
	BLANK				15		0	16				BLANK	
	NOT PRESENT				17	0		18				NOT PRESENT	
	NOT PRESENT				19		0	20				NOT PRESENT	
	NOT PRESENT				21	0		22				NOT PRESENT	
	NOT PRESENT				23		0	24				NOT PRESENT	
	NOT PRESENT				25	0		26				NOT PRESENT	
	NOT PRESENT				27		0	28				NOT PRESENT	
	NOT PRESENT				29	0		30				NOT PRESENT	
	NOT PRESENT				31		0	32				NOT PRESENT	
	NOT PRESENT				33	0		34				NOT PRESENT	
	NOT PRESENT				35		0	36				NOT PRESENT	
	NOT PRESENT				37	0		38				NOT PRESENT	
	NOT PRESENT				39		0	40				NOT PRESENT	
	NOT PRESENT				41	0		42				NOT PRESENT	

PHASE TOTALS (VA):	1455	1275	
CURRENT PER PHASE (A):	12	11	Amperes/phase cannot exceed main breaker rating
PANEL TOTAL (VA):	2730		Legend: c = continuous, nc = non-continuous
PANEL CAPACITY (kVA):	24.0	CONNECTED LOAD (kVA):	2.7
PANEL LOADING (100% non-cont. load) (kVA):	2.7		
PANEL LOADING (125% continuous load) (kVA):	0.0		
PANEL LOADING (TOTAL) (kVA):	2.7		
SPARE CAPACITY (kVA):	21.3		

2 / E-3 EXISTING AC SUB PANEL SCHEDULE
SCALE: NTS

PANEL 'DISTRIBUTION PANEL' SCHEDULE

120/240V, 1 PHASE, 3W — Square D #QO
200A BUS — 200A MAIN BKR

MAIN BREAKER RATING (A): 200 — SYSTEM VOLTAGE (V): 240

Type	DESCRIPTION	VA	c/nc	BKR	POSN	L1	L2	POSN	BKR	c/nc	VA	DESCRIPTION	Type
dual	UMTS CABINET	4875	nc	100	1	6892		2	30	c	2017	RECT 4	dual
		4875	nc		3		6892	4		c	2017		
dual	FLEX CABINET	1275	nc	100	5	3292		6	30	c	2017	RECT 5	dual
		1455	nc		7		3472	8		c	2017		
dual	UNLABELED	0	nc	20	9	2017		10	30	c	2017	RECT 6	dual
		0	nc		11		2017	12		c	2017		
dual	RECT 1	2017	c	30	13	2017		14	30	c	0	RECT 7	dual
		2017	c		15		2017	16		c	0		
dual	RECT 2	2017	c	30	17	2017		18	30	c	0	RECT 8	dual
		2017	c		19		2017	20		c	0		
dual	RECT 3	2017	c	30	21	2017		22	30	c	0	RECT 9	dual
		2017	c		23		2017	24		c	0		
	BLANK				25	1175		26	30	nc	1175	LUCENT AC	dual
	BLANK				27		180	28	20	nc	180	BATT CAB GFCI	single
	BLANK				29	540		30	15	nc	540	BATT CAB HEAT	single
	BLANK				31		0	32				BLANK	
	BLANK				33	0		34				BLANK	
	BLANK				35		0	36				BLANK	
	BLANK				37	0		38				BLANK	
	BLANK				39		0	40				BLANK	
	NOT PRESENT				41	0		42				NOT PRESENT	

PHASE TOTALS (VA):	19967	18612	
CURRENT PER PHASE (A):	192	180	Amperes/phase cannot exceed main breaker rating
PANEL TOTAL (VA):	38579		Legend: c = continuous, nc = non-continuous
PANEL CAPACITY (kVA):	48.0	CONNECTED LOAD (kVA):	38.6
PANEL LOADING (100% non-cont. load) (kVA):	14.4		
PANEL LOADING (125% continuous load) (kVA):	30.3		
PANEL LOADING (TOTAL) (kVA):	44.6		
SPARE CAPACITY (kVA):	3.4		

3 / E-3 PROPOSED AC MAIN PANEL SCHEDULE
SCALE: NTS

PANEL 'DISTRIBUTION PANEL' SCHEDULE

120/240V, 1 PHASE, 3W — Square D #QO

MAIN BREAKER RATING (A): 100 — SYSTEM VOLTAGE (V): 240

Type	DESCRIPTION	VA	c/nc	BKR	POSN	L1	L2	POSN	BKR	c/nc	VA	DESCRIPTION	Type
single	LIGHTS	360	nc	10	1	360		2	20	nc	0	CONVERTER	single
single	GFCI	180	nc	20	3		180	4	20	nc	0	SPARE	dual
dual	AC 1	1095	nc	10	5	1095		6		nc	0		
		1095	nc		7		1095	8				BLANK	
	BLANK				9	0		10				BLANK	
	BLANK				11		0	12				BLANK	
	BLANK				13	0		14				BLANK	
	BLANK				15		0	16				BLANK	
	NOT PRESENT				17	0		18				NOT PRESENT	
	NOT PRESENT				19		0	20				NOT PRESENT	
	NOT PRESENT				21	0		22				NOT PRESENT	
	NOT PRESENT				23		0	24				NOT PRESENT	
	NOT PRESENT				25	0		26				NOT PRESENT	
	NOT PRESENT				27		0	28				NOT PRESENT	
	NOT PRESENT				29	0		30				NOT PRESENT	
	NOT PRESENT				31		0	32				NOT PRESENT	
	NOT PRESENT				33	0		34				NOT PRESENT	
	NOT PRESENT				35		0	36				NOT PRESENT	
	NOT PRESENT				37	0		38				NOT PRESENT	
	NOT PRESENT				39		0	40				NOT PRESENT	
	NOT PRESENT				41	0		42				NOT PRESENT	

PHASE TOTALS (VA):	1455	1275	
CURRENT PER PHASE (A):	12	11	Amperes/phase cannot exceed main breaker rating
PANEL TOTAL (VA):	2730		Legend: c = continuous, nc = non-continuous
PANEL CAPACITY (kVA):	24.0	CONNECTED LOAD (kVA):	2.7
PANEL LOADING (100% non-cont. load) (kVA):	2.7		
PANEL LOADING (125% continuous load) (kVA):	0.0		
PANEL LOADING (TOTAL) (kVA):	2.7		
SPARE CAPACITY (kVA):	21.3		

4 / E-3 PROPOSED AC SUB PANEL SCHEDULE
SCALE: NTS

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SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

STATE OF MARYLAND · ELKE R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

AC PANEL SCHEDULE

SHEET NO.

E-3

NOTES:

1. SWITCH OFF EXISTING DC BREAKERS AFTER RRHs HAVE BEEN DECOMMISSIONED, RELABEL AS "SPARE".

TIER 1 (LOWER) VOLTAGE: −48V
MAX. TIER BUS CURRENT: 600A

POSITION	DESCRIPTION	BRKR (A)
1	**(E) SPARE**	**15**
2	**(E) SPARE**	**15**
3	**(E) SPARE**	**15**
4	**(E) SPARE**	**15**
5	**(E) SPARE**	**15**
6	**(E) SPARE**	**15**
7	**(E) NOKIA FSM4 BBU**	**20**
8		
9	**(E) SPARE**	**25**
10	**(E) SPARE**	**25**
11	**(E) SPARE**	**25**
12		

NOTES:

1. REMOVE UNUSED BREAKERS, INSTALL NEW CIRCUIT BREAKERS FOR NEW RRHs AS SHOWN BELOW.

TIER 2 VOLTAGE: −48V
MAX. TIER BUS CURRENT: 600A

POSITION	DESCRIPTION	BRKR (A)
13	(N) B12/14 RRH, SECTOR A	50
14	(N) B12/14 RRH, SECTOR B	50
15	(N) B12/14 RRH, SECTOR C	50
16	(N) B25/66 RRH, SECTOR A	50
17	(N) B25/66 RRH, SECTOR B	50
18	(N) B25/66 RRH, SECTOR C	50
19	(N) B30 RRH, SECTOR A	25
20	(N) B30 RRH, SECTOR B	25
21	(N) B30 RRH, SECTOR C	25
22		
23		
24		

TIER 3 (OPTIONAL − NOTE: 4) VOLTAGE: −48V
MAX. TIER BUS CURRENT: 600A

POSITION	DESCRIPTION	BRKR (A)
25	(E) GSM	80A
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		

TIER 4 (UPPER) VOLTAGE: −48V
MAX. TIER BUS CURRENT: 600A

POSITION	DESCRIPTION	BRKR (A)
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		

DC BREAKER SIZE	ALPHA PART #	AT&T NEQ #
1A/1P	**Unavailable**	**Not Applicable**
3A/1P	470-301-10	NEQ 10356
5A/1P	470-302-10	NEQ 10357
10A/1P	470-303-10	NEQ 10358
15A/1P	470-304-10	NEQ 10359
16A/1P	**Unavailable**	**Not Applicable**
20A/1P	470-305-10	NEQ 10360
25A/1P	470-306-10	NEQ 10361
30A/1P	470-307-10	NEQ 10362
35A/1P	**Unavailable**	**Not Applicable**
40A/1P	470-309-10	NEQ 10364
45A/1P	**Unavailable**	**Not Applicable**
50A/1P	470-311-10	NEQ 10366
60A/1P	470-312-10	NEQ 10367
70A/1P	**Unavailable**	**Not Applicable**
75A/1P	**Unavailable**	**Not Applicable**
80A/1P	470-314-10	NEQ 10369
90A/1P	**Unavailable**	**Not Applicable**
100A/1P	470-316-10	NEQ 10371
100A/2P	**Unavailable**	**Not Applicable**
125A/2P	**Unavailable**	**Not Applicable**
150A/2P	747-148-20-000	NEQ 10373
200A/3P	**Unavailable**	**Not Applicable**
225A/3P	**Unavailable**	**Not Applicable**
250A/3P	747-221-20-000	NEQ 10377

ARGUS DC CIRCUIT BREAKER PART AND NEQ DATA

NOTES:

1. ALL BREAKERS 100A AND LARGER REQUIRE ONE (1) UNUSED POSITION ON EACH SIDE.
2. 2−POSITION AND 3−POSITION BREAKERS REQUIRE AN ADAPTOR PLATE ON LOAD TERMINALS.
3. INSTALL LARGER BREAKERS ON UPPER TIERS TO FACILITATE CABLE MANAGEMENT.
4. THIS DETAIL IS APPLICABLE FOR ALPHA 48/24V DUAL VOLTAGE POWER SYSTEMS 4−TIER MODEL (NEQ. 15239) AND 3−TIER MODEL (NEQ. 15240).
5. BREAKERS SHALL BE AM−TYPE, 80V 10kA SCCR, MAXIMUM RATING IS 250A. BREAKERS 1A TO 100A ARE 1−POSN, 110A TO 150A ARE 2−POSN AND 175A TO 250A ARE 3−POSN.
6. GMT FUSE RATINGS ARE 0.5A TO 15A.

1 / E−4 DC PANEL SCHEDULE
SCALE: N.T.S

AT&T

smartlink

Trylon

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STATE OF MARYLAND · ERIK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

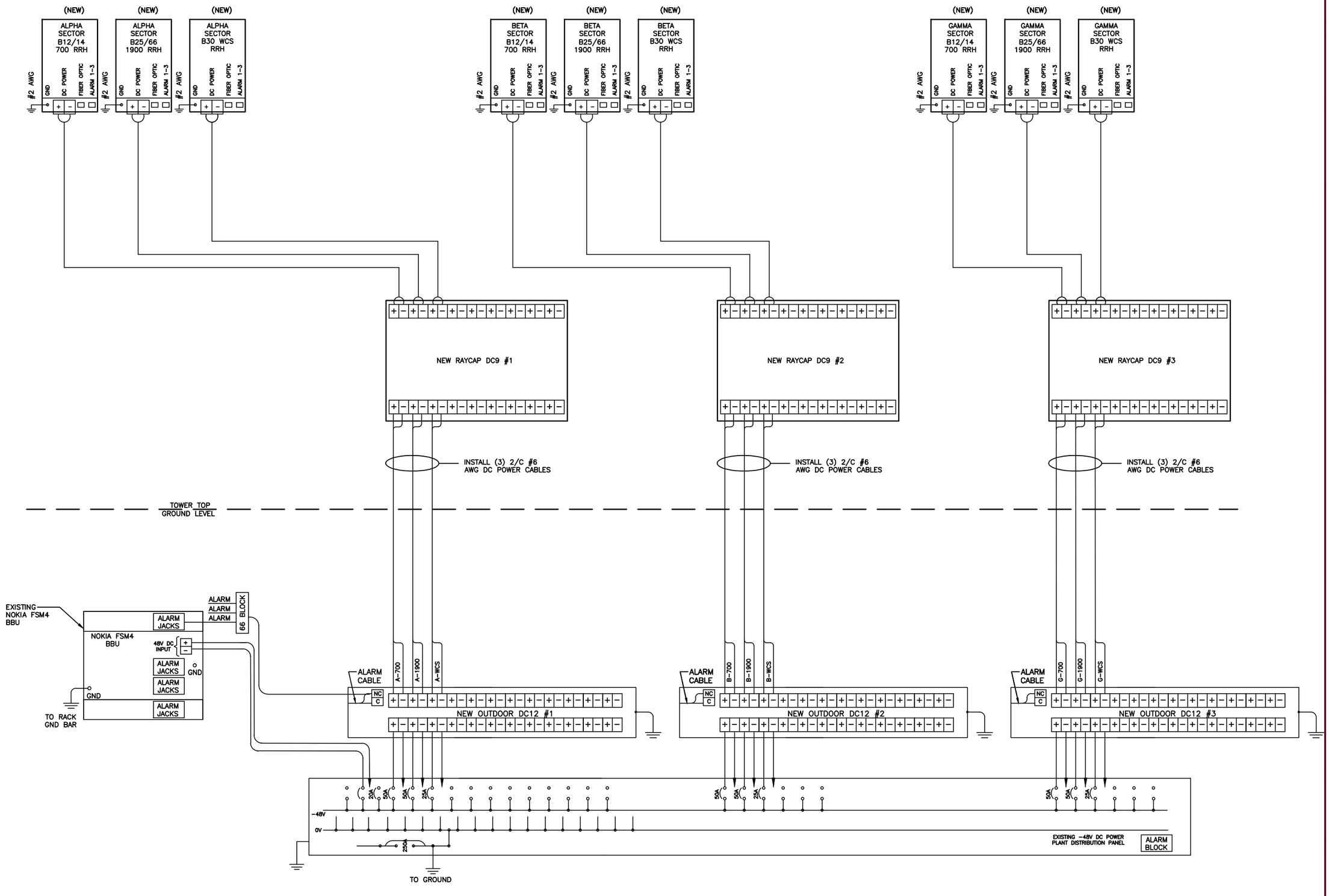
EXISTING BUILDING

SHEET DESCRIPTION

DC PANEL SCHEDULE

SHEET NO.

E−4



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9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

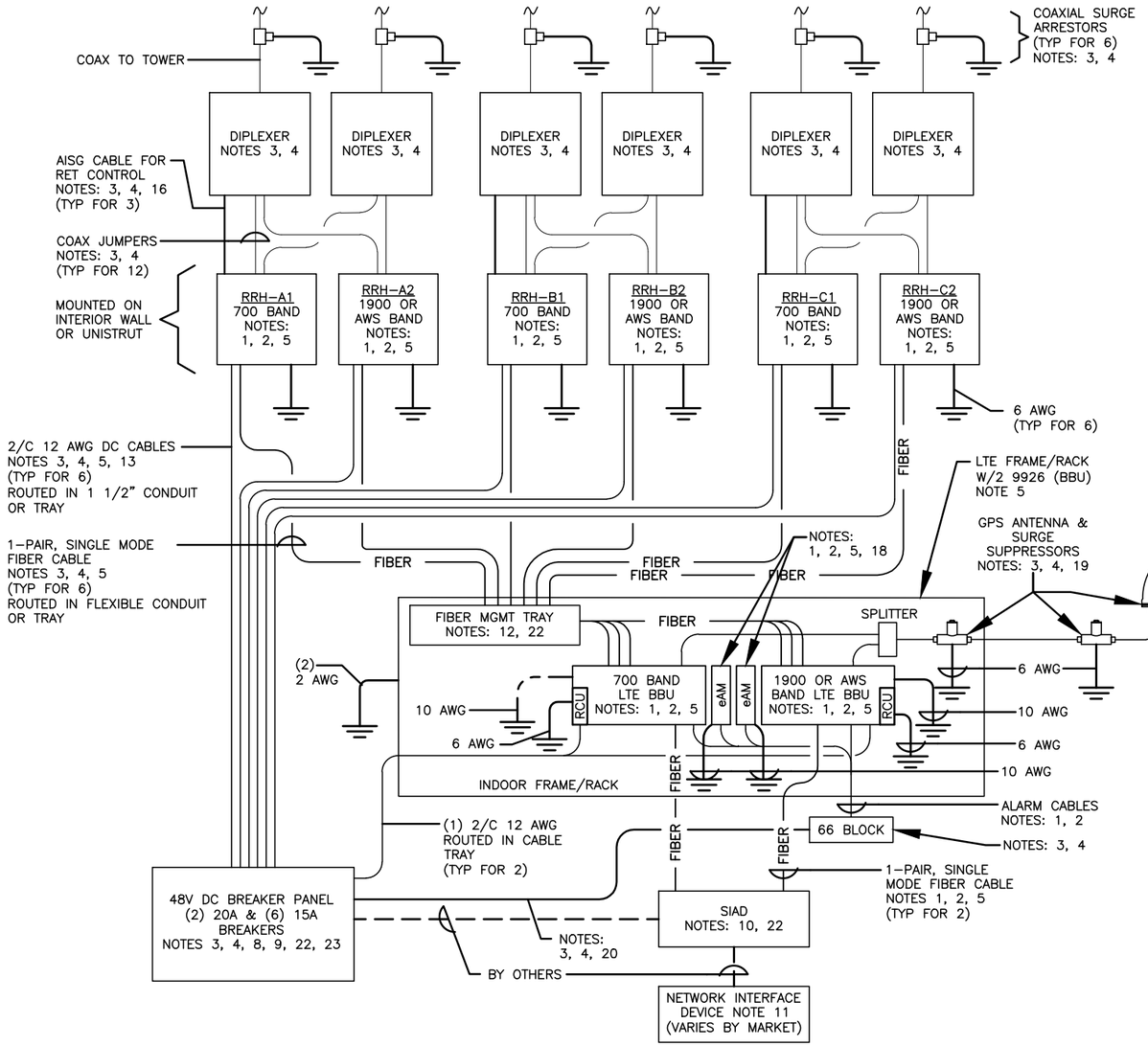
EXISTING BUILDING

SHEET DESCRIPTION

WIRING DIAGRAM

SHEET NO.

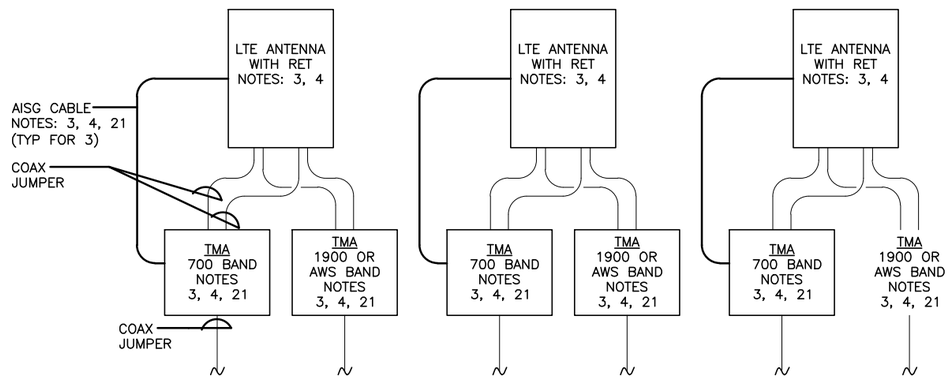
E-5



LTE SYSTEM DIAGRAM, TOWER SITE
WITH INDOOR ALU BASEBAND
AND RRHs @ GRADE LEVEL

NOTES:

1. FURNISHED BY OEM/AT&T.
2. INSTALLED BY OEM OR AS SCOPED BY MARKET.
3. FURNISHED BY GC.
4. INSTALLED BY GC.
5. FINAL CONNECTION BY OEM OR AS SCOPED BY MARKET.
6. DELETED.
7. DELETED.
8. PART OF CONVERTER WITH 18 BREAKER POSITIONS. BREAKERS SPECIFIED SEPARATELY.
9. BREAKERS TO BE TAGGED AND LOCKED OUT.
10. SIAD IS FURNISHED AND INSTALLED BY OTHERS AND INCLUDES POWER CONNECTIONS AND FIBER TO THE UNIT OR AS SCOPED BY MARKET. WHEN IN THE GENERAL CONTRACTOR'S SCOPE, INSTALL 10 AWG CHASSIS GROUND, PROVIDE (2) 10A BREAKERS FROM A 24V DC POWER SOURCE OR (2) 5A BREAKERS FROM A 48V DC POWER SOURCE AND CONNECT USING MFR POWER CABLE WITH SPECIAL CONNECTOR.
11. LEC TO FURNISH AND INSTALL NETWORK INTERFACE DEVICE.
12. COIL EXTRA LENGTH OF FIBER CABLE(S) WITHIN FIBER MANAGEMENT TRAY INSTALLED IN LTE FRAME.
13. MAXIMUM LENGTH OF SIZE 12 AWG DC POWER CABLE TO RRH SHALL NOT EXCEED 100 FEET.
14. SINGLE–CONDUCTOR DC POWER CABLES SHALL BE TELCOFLEX® OR KS24194™, COPPER, UL LISTED RHH NON–HALOGEN, LOW SMOKE WITH BRAIDED COVER, TYPE TC (1/0 AND LARGER). UNLESS OTHERWISE NOTED, STRANDING SHALL BE CLASS B (TYPE III) FOR CABLES SIZES 14, 12 & 10 AWG AND CLASS I (TYPE IV) FOR SIZES 8 AWG AND LARGER. CABLES SHALL BE COLOR CODED RED FOR +24V, BLUE FOR –48V AND GRAY FOR 24V AND 48V RETURN CONDUCTORS. MULTI–CONDUCTOR DC POWER CABLES SHALL BE COPPER, CLASS B STRANDING WITH FLAME RETARDANT PVC JACKET, TYPE TC, UL LISTED FOR 90°C DRY/ 75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
15. GROUNDING WIRES SHALL BE COPPER, GREEN THHN/THWN UL LISTED FOR 90°C DRY/75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
16. RET CONTROL FROM THE RRH IS AN OPTIONAL METHOD OF CONNECTION. REFER TO RF DATA SHEET FOR APPLICABILITY.
17. DELETED.
18. PROVIDE GROUND WIRES FOR ENHANCED ALARM MODULE (eAM) WHEN EMPLOYED BY MARKET.
19. DELETED.
20. DELETED.
21. TMAs MAY BE EITHER SINGLE UNITS (AS SHOWN) OR TWIN UNITS.
22. NOTED EQUIPMENT MAY BE COMMON TO LTE AND UMTS SYSTEMS. REFER TO UMTS SYSTEM DIAGRAM IF APPLICABLE.
23. EXISTING 700MHz BAND BBU IF MODEL 9926 (d2Uv3) MAY BE POWERED FROM A 10A BREAKER.



AT&T

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STATE OF MARYLAND · ERIK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

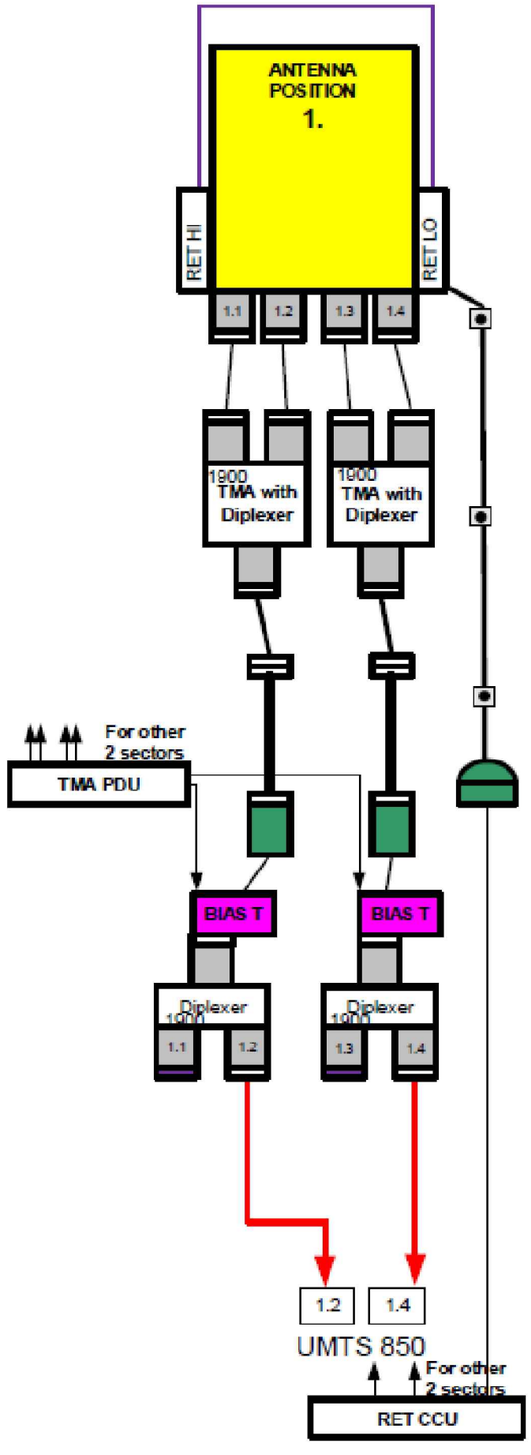
EXISTING BUILDING

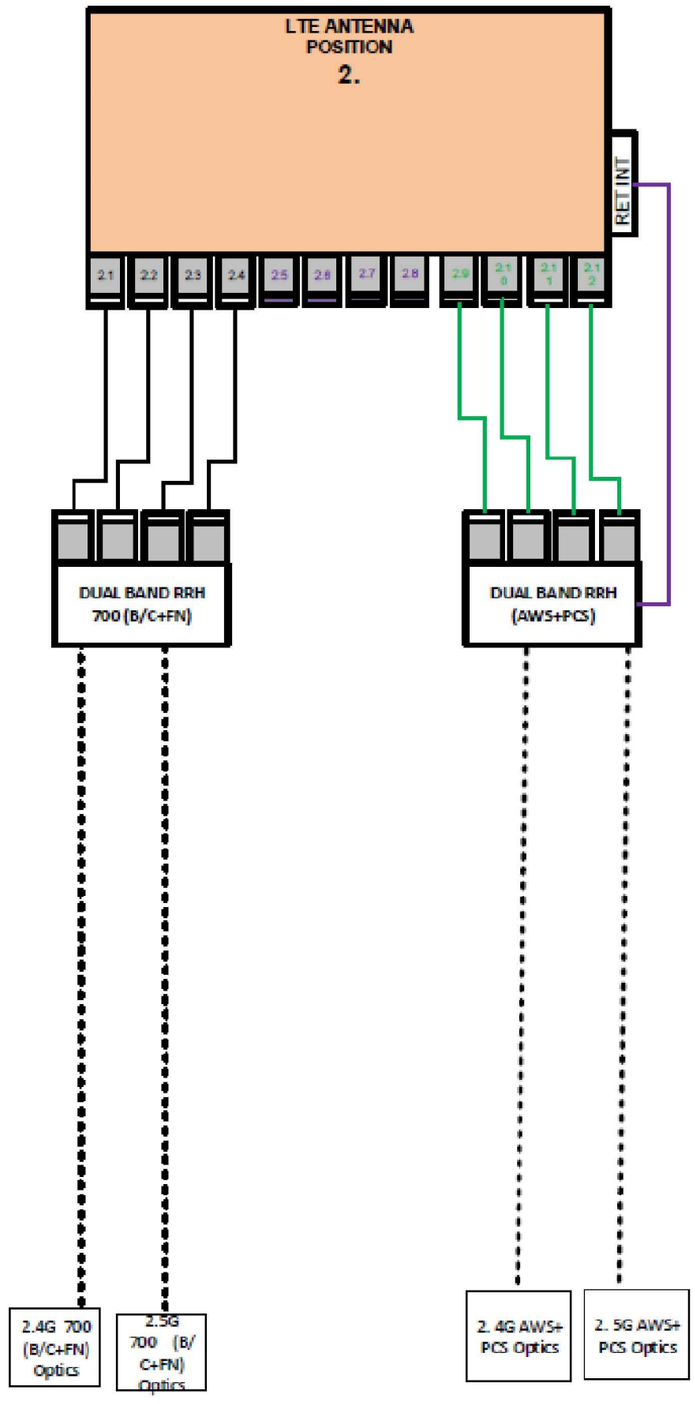
SHEET DESCRIPTION

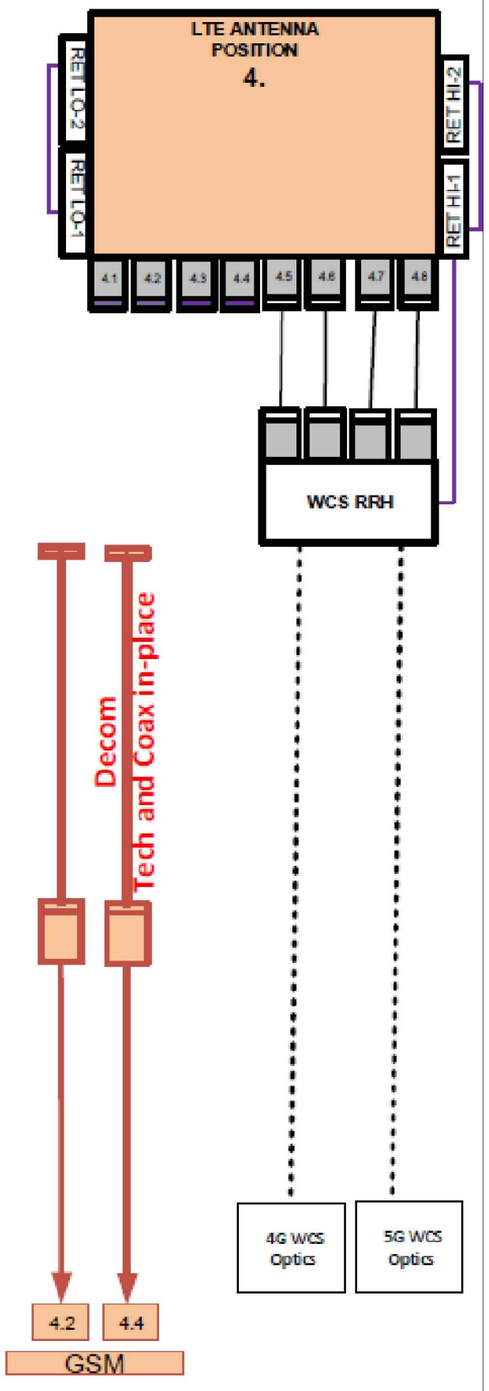
SYSTEM DIAGRAM

SHEET NO.

E–6







1 RF–1 PLUMBING DIAGRAM FOR ALPHA SECTOR
SCALE: NTS

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STATE OF MARYLAND
ERIK R. HALL
No. 27217
PROFESSIONAL ENGINEER

2-12-2020

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GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

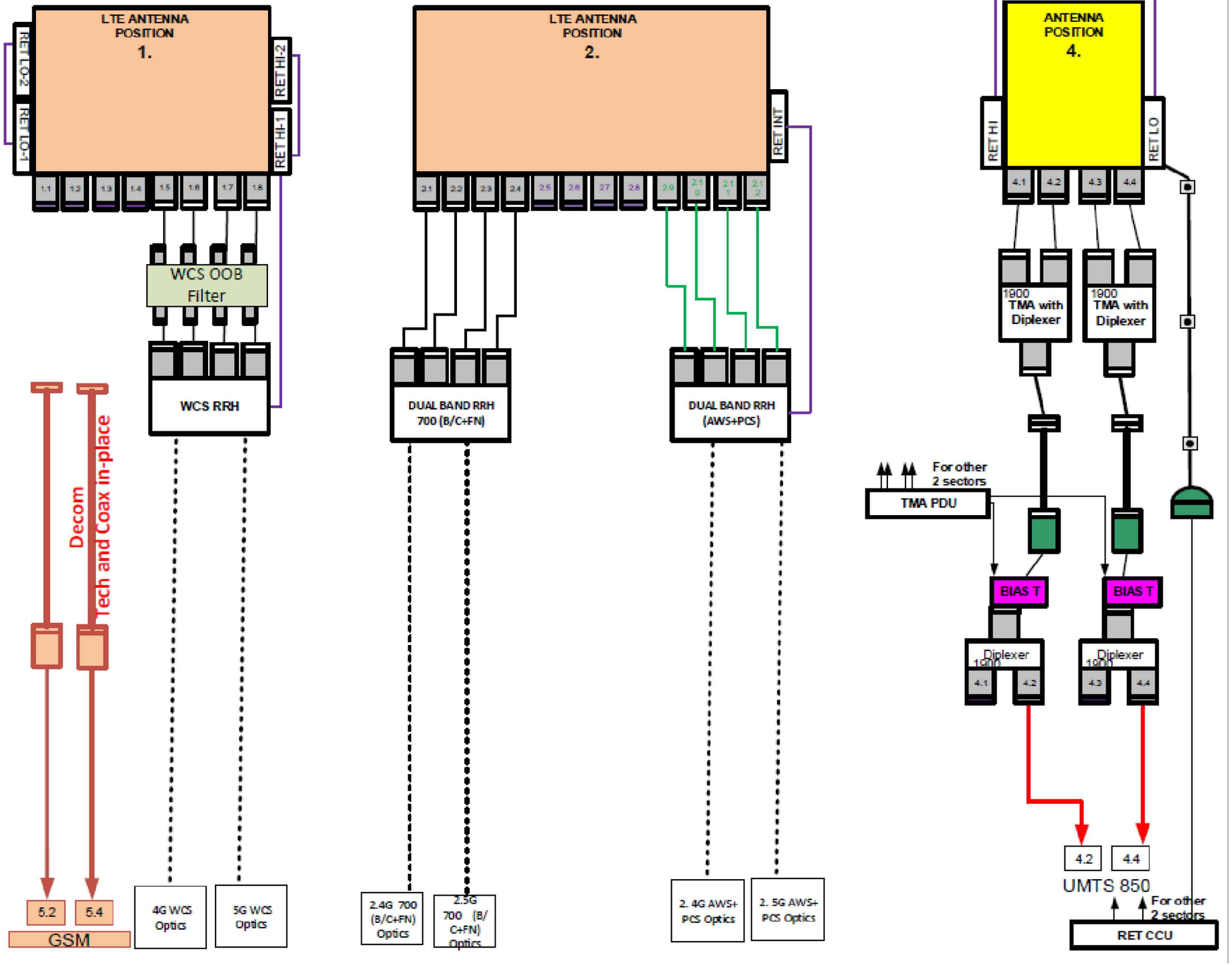
EXISTING BUILDING

SHEET DESCRIPTION

RF PLUMBING DIAGRAM

SHEET NO.

RF–1



1 RF–2 PLUMBING DIAGRAM FOR ALL SECTOR
SCALE: NTS

AT&T

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Trylon

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STATE OF MARYLAND · ERIK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

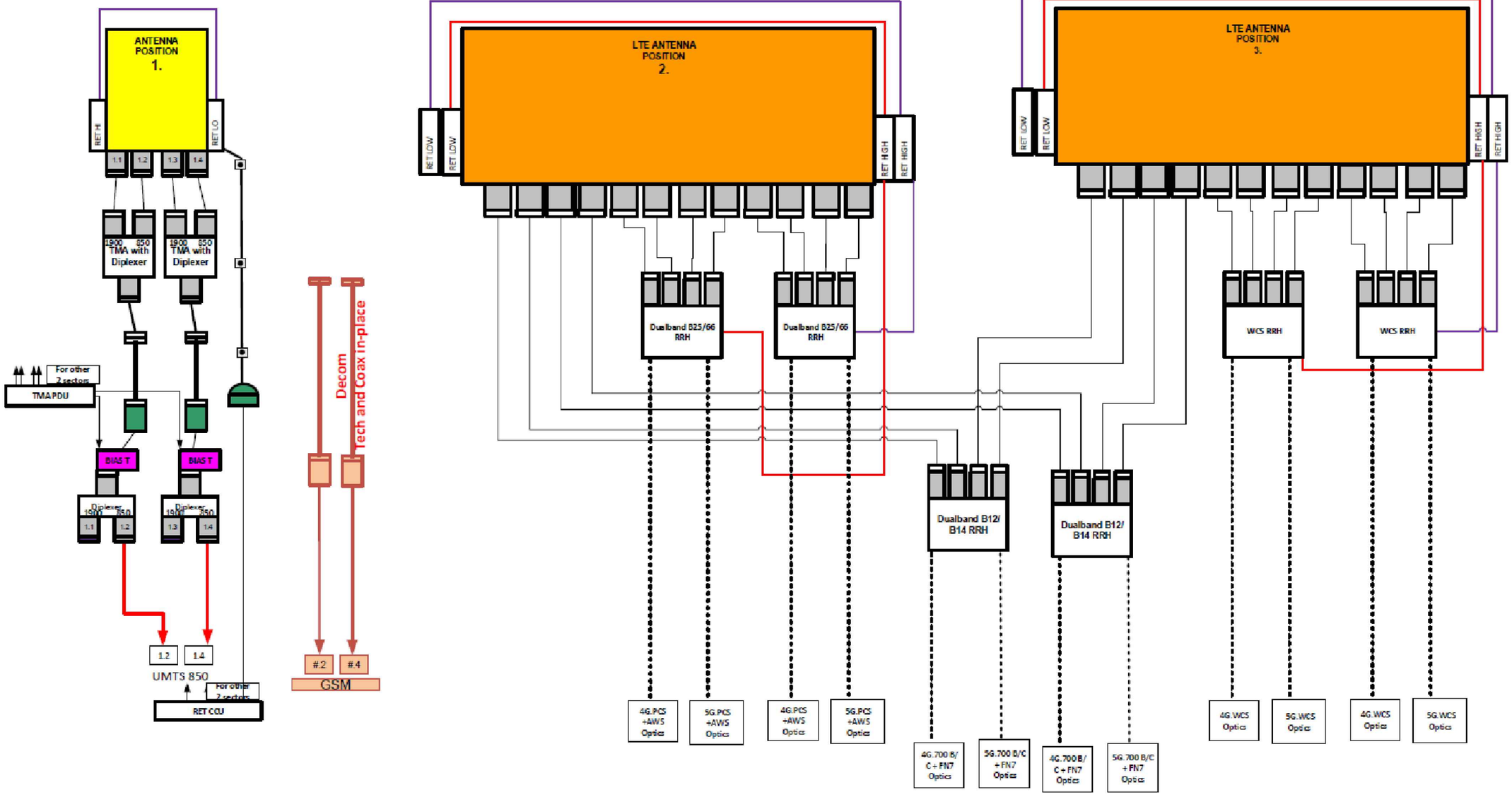
EXISTING BUILDING

SHEET DESCRIPTION

RF PLUMBING DIAGRAM

SHEET NO.

RF–2



1 RF–3 PLUMBING DIAGRAM FOR GAMMA SECTOR
SCALE: NTS

AT&T

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Trylon

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STATE OF MARYLAND KIRK A. HALL No. 27217 PROFESSIONAL ENGINEER

2-12-2020

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GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

RF PLUMBING DIAGRAM

SHEET NO.

RF–3

SITE DATA INPUT WORKSHEET - INDOOR SITE POWER ESTIMATE TOOL

STEP 1: ENTER QUANTITIES OF EQUIPMENT & DC OPERATING VOLTAGE:

NOTE: LOAD VALUES FOR ANY EQUIPMENT CAN BE USER SPECIFIED ON THE POWER CONSUMPTION WORKSHEET - USER CHANGES TO DEFAULT LOAD VALUES ARE HIGHLIGHTED IN BRIGHT YELLOW

STEP 2: ENTER DC PLANT TYPE FROM DROP-DOWN MENU:

("GENERIC" +24V or -48V DC PLANT CAN BE SELECTED FOR ANY MANUFACTURER'S DC PLANT)

GENERIC - ANY -48VDC PLANT

-48V PRIMARY DC PLANT SPECIFIED

(DC PLANT CONFIGURATION CAN BE REVIEWED ON DC PLANT WORKSHEET)

STEP 2A: THIS STEP ONLY SHOWN IF "GENERIC" DC PLANT PLANT TYPE HAS BEEN SELECTED:

-48V RECTIFIER CAPACITY (A): 50 *AVAILABLE SLOTS: 11

SELECT +24V CONVERTER CAPACITY (A): 5 *AVAILABLE SLOTS: 0

* ENTER 0 FOR SLOT VALUES TO BYPASS SLOT QUANTITY CHECK ON DC PLANT CONFIG. WORKSHEET

STEP 2B: THIS STEP ONLY SHOWN IF TYCO GP82424 DC PLANT PLANT TYPE HAS BEEN SELECTED:

STEP 3: DO YOU WANT TO CONFIGURE A STANDARD STAND-ALONE DC CONVERTER SYSTEM? N

NOTE: IF YOU SELECT "Y" ANY INTEGRATED DC PLANT CONVERTER OPTIONS WILL BE BYPASSED

STEP 4: ENTER INDOOR SITE BUILDING/SHELTER DATA:

(Square footage used for interior AC lighting LOAD calculation)

SELECT SITE BUILDING TYPE & SIZE: OTHER

SPECIFY TOTAL FLOOR SPACE (SQUARE FEET): 0

STEP 6: ENTER SITE HVAC SYSTEM DATA:

SPECIFY INDIVIDUAL HVAC UNIT SIZE (TONS): 0 SPECIFY QUANTITY: 0

DOES SITE HAVE ADDITIONAL HVAC (DIFFERENT SIZE)? N

ARE THERE SITE HVAC HEATING UNITS? N

TOTAL SPECIFIED SITE HVAC: 0-TONS ESTIMATED HVAC REQUIREMENT: TWO 4-TON UNITS

SPECIFIED HVAC NOT SUFFICIENT

THIS TOOL DOES NOT APPLY TO SITES THAT ARE EQUIPPED WITH FREE STANDING DIRECT AIR COOLING

STEP 8: ENTER SITE STATIONARY GENERATOR DATA:

DOES SITE HAVE A STATIONARY GENERATOR? N

ESTIMATED CAPACITY REQUIRED: 20 KW (NO SITE GENERATOR)

STEP 7: ENTER SITE BATTERY CONFIGURATION DATA:

SELECT SINGLE STRING BATTERY CAPACITY (AH): 165

SPECIFY TOTAL QUANTITY OF BATTERY STRINGS: 2

TOTAL SITE BATTERY CAPACITY (AH): 330

NOTE: STANDARD BATTERY CAPACITY HAS BEEN SPECIFIED

NOTE: 12 VOLT MONOBLOCK BATTERIES - 4 batteries per -48V String

ESTIMATED BATTERY RESERVE TIME: 2.44 HOURS (NO SITE GENSET)

SITES WITH STATIONARY GENSETS SHALL BE ENGINEERED WITH A MAX OF 3 SHELVES of 180 AH BATTERIES (3 strings at -48v or 6 strings at +24v) - ALL OTHER SITES A MINIMUM OF 4 HOURS

SITE POWER CALCULATION TOOL - VERSION 4.3 - October 17, 2017 R. BADGERO

ANY QUESTIONS PLEASE CONTACT RICK BADGERO (RB8620@ATT.COM)

QTY	RADIO HEADS - Outdoor	VOLTAGE	WATTS
	Ericsson		
0	RRUS 01 B2, B5 (80W)	48	0
0	RRUS 01 B12 (60W)	48	0
0	RRUS 11 B12 (2x30W)	48	0
0	RRUS 11 B2, B4, B5, B12 (2x40W)	48	0
0	RRUS 12 B2, B4, B5 (2x60W)	48	0
0	RRUS 32 B2 (4x40W)	48	0
0	RRUS 32 B30 (4x25W)	48	0
0	RRUS 32 B66A	48	0
0	RRUS A2 B2, B4, B12	48	0
0	RRUSE2 B29	48	0
0	RRUW B2, B5	48	0
0	AIR 21 (60W)	48	0
0	RRUS 4478 B14	48	0
	(FUTURE)		
	A-LU		
0	4x4S B66A	48	0
0	FDD RRH2x40-07L (UHLA) B17	48	0
0	RRH2x40-07L-AT (UHLB) B17	48	0
0	B25 RRH4x30 (UHFA) B25	48	0
0	B25 RRH2x60 (UHFA) B25	48	0
0	2X60W-850 B5	48	0
0	2X60W-1900 B2	48	0
0	2X60W-1900A B2	48	0
0	RRH2x40-07L-DE (UHLC) B29	48	0
0	RRH 4T4R (FRBI) B14	48	0
0	RRH4X25 B30	48	0
	(FUTURE)		
	(FUTURE)		

QTY	RADIO HEADS - Indoor	VOLTAGE	WATTS
	Ericsson		
0	RRUS 01 B2, B5 (80W)	48	0
0	RRUS 01 B12 (60W)	48	0
0	RRUS 11 B12 (2x30W)	48	0
0	RRUS 11 B2, B4, B5, B12 (2x40W)	48	0
0	RRUS 12 B2, B4, B5 (2x60W)	48	0
0	RRUS 32 B2 (4x40W)	48	0
0	RRUS 32 B30 (4x25W)	48	0
0	RRUS 32 B66A	48	0
0	RRUS A2 B2, B4, B12	48	0
0	RRUSE2 B29	48	0
0	RRUW B2, B5	48	0
0	AIR 21 (60W)	48	0
0	RRUS 4478 B14	48	0
	(FUTURE)		
	A-LU		
3	4x4S B66A	48	2112
3	FDD RRH2x40-07L (UHLA) B17	48	888
0	RRH2x40-07L-AT (UHLB) B17	48	0
3	B25 RRH4x30 (UHFA) B25	48	1692
0	B25 RRH2x60 (UHFA) B25	48	0
0	2X60W-850 B5	48	0
0	2X60W-1900 B2	48	0
0	2X60W-1900A B2	48	0
0	RRH2x40-07L-DE (UHLC) B29	48	0
0	RRH 4T4R (FRBI) B14	48	0
3	RRH4X25 B30	48	1248
	(FUTURE)		
	(FUTURE)		

QTY	LTE 4G & Multi-Std EQUIPMENT	VOLTAGE	WATTS
0	A-LU 9926 LTE BBU (w/max. 3 eCEM-u)	48	0
1	Nokia FSM-4	48	998
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
0	Ericsson LTE RBS6601 BBU - 1 DUL	48	0
0	Ericsson LTE RBS6601 BBU - 2 DUL	48	0
0	Ericsson WCDMA RBS6601 - 1 DUW	48	0
0	Ericsson LTE RBS6601 BBU - 1DUS	48	0
0	Ericsson LTE RBS6601 BBU - 2DUS	48	0
0	Ericsson XMU	48	0
0	Ericsson LTE RBS5216	48	0
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		

QTY	UMTS 3G EQUIPMENT	VOLTAGE	WATTS
0	A-LU MACRO NodeB (3S1C - 40W)	24	0
0	A-LU MACRO NodeB (3S2C - 40W)	24	0
0	A-LU MACRO NodeB (3S3C - 40W)	24	0
0	A-LU MACRO NodeB (3S4C - 40W)	24	0
0	A-LU MACRO NodeB (3S5C - 40W - 2 CAB)	24	0
0	A-LU MICRO NodeB	24	0
0	A-LU 9396 d2U Distributed NodeB MU	48	0
0	A-LU 9396 d4U Distributed NodeB MU	48	0
	(FUTURE)		
	(FUTURE)		
0	Ericsson RBS3206 NodeB 3S1C - 1 CAB	24	0
0	Ericsson RBS3206 NodeB 3S2C - 1 CAB	24	0
	NON-OBIF Ericsson 3rd, 4th & 5th Carrier		
0	Ericsson RBS3206 NodeB 3S3C - 2 CAB	24	0
0	Ericsson RBS3206 NodeB 3S4C - 2 CAB	24	0
0	Ericsson RBS3206 NodeB 3S5C - 3 CAB	24	0
	OBIF Ericsson 3rd, 4th & 5th Carrier		
0	Ericsson RBS3206 NodeB 3S3C - 1 CAB (Select RRUS from left section)	24	0
0	Ericsson RBS3206 NodeB 3S4C - 1 CAB (Select RRUS from left section)	24	0
0	Ericsson RBS3206 NodeB 3S4C - 1 CAB (Select RRUS from left section)	24	0
0	Ericsson RBS3206 NodeB 3S5C - 2 CAB (Select RRUS from left section)	24	0
0	Ericsson 3303 MICRO NodeB	24	0
0	Ericsson RBS3418 Distributed NodeB MU	48	0
	(FUTURE)		
	(FUTURE)		

(CUSTOM AC LOADS DEFINED ON POWER CONSUMPTION WORKSHEET)

QTY	USER SPECIFIED AC EQUIPMENT	VOLTAGE	KVA
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
	TOTAL USER SPECIFIED KVA:		0

TOTAL 120VAC AMPS: 0

TOTAL 240VAC AMPS: 4882

QTY	ANCILLARY CELL SITE EQUIPMENT	VOLTAGE	WATTS
0	A-LU 7705 SIAD	48	0
	(FUTURE)		
0	A-LU MPR-9500 MW Service Switch - MSS	48	0
0	A-Lu MPR-9500 MW Outdoor Unit - ODU	48	0
0	A-Lu MPR-9500 MW MPT-HL (Indoor)	48	0
	(FUTURE)		
0	Cisco MWR-2941 SIAD	48	0
0	Cisco SIAD ASR-901	48	0
0	Cisco 15310 EOS (SONET) MUX	48	0
0	Cisco 15454 MSP (MW Ring Config.)	48	0
	(FUTURE)		
0	Tru-Position LMU (E911)	48	0
0	DC Free Air (per HVAC unit)	48	0
0	GENERIC Ethernet NID	48	0
0	GENERIC Hydrogen Detector	48	0
0	GENERIC RET Controller	48	0
0	GENERIC RXAIT	48	0
0	GENERIC Smoke Detector	48	0
0	GENERIC TMA System	48	0
0	GENERIC Tower Lighting (DC)	48	0
0	NG480	48	0
0	Cisco 2911	48	0
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		

QTY	TX RF AMP (MCPA or SCPA) EQPT.	VOLTAGE	WATTS
0	Andrew (12 module mcpa FRAME)	24	0
0	Andrew 135 Watt Module	24	0
	(FUTURE)		
0	Powerwave 12 module mcpa FRAME)	24	0
0	Powerwave 90 Watt Module	24	0
0	Powerwave 120 Watt Module	24	0
0	Powerwave 180 Watt Module	24	0
	(FUTURE)		
0	CCI 125 Watt DAB SCPA Module	24	0
0	CCI 125 Watt DAC SCPA Module	24	0
	(FUTURE)		

(CUSTOM DC LOADS DEFINED ON POWER CONSUMPTION WORKSHEET)

QTY	USER SPECIFIED DC EQUIPMENT	VOLTAGE	WATTS
3	B14 Firstnet RRH	48	2208
1	9412 Heaters	48	800
0	B25/66 Dual Band RRH	48	0
0	B12/14 Dual Band RRH	48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
	TOTAL USER SPECIFIED WATTS:		3008
	TOTAL +24V (27V) AMPS:	0	
	TOTAL -48V (54V) AMPS:	55.7	

-48V PRIMARY VOLTAGE DC PLANT SPECIFIED				
+24VDC EQUIPMENT LOAD:	0 WATTS	=	0 AMPS	at +24V
-48VDC EQUIPMENT LOAD:	9888 WATTS	=	184 AMPS	at -48V
NO SECONDARY 24V LOADS - DC CONVERTER SYSTEM NOT REQUIRED				
TOTAL PRIMARY 48V LOAD:	9888 WATTS	=	184 AMPS	at -48V

(DC PLANT CONFIGURATION CAN BE REVIEWED ON DC PLANT WORKSHEET)		
DC PLANT: GENERIC - ANY -48VDC PLANT		
-48V RECTIFIERS REQUIRED (N+1):	6	
-48V RECTIFIER SLOTS:	11	
CONV. TYPE: GENERIC - CONV. SIZE & SLOT QTY MANUALLY SPECIFIED		
+24V CONVERTERS REQUIRED:	0	(NO DC CONVERTERS REQUIRED)
+24V CONVERTER SLOTS:	0	(NO DC CONVERTERS REQUIRED)
ESTIMATED BATTERY RESERVE TIME		
2 165 AH 48V STRINGS =	2.44 HOURS	(4 HOUR MINIMUM BATTERY RESERVE)

ESTIMATED SITE MAX. AC LOAD (AMPS):	97.60 AMPS
ESTIMATE 200A SERVICE SUFFICIENT	

SITE GENERATOR CAPACITY REQUIRED:	20 KW
ON SITE GENERATOR CAPACITY:	0 KW
(NO ON-SITE GENERATOR)	

RECOMMENDED HVAC SYSTEM:	TWO 4-TON
SPECIFIED SITE TOTAL HVAC CAPACITY:	0-TONS
ESTIMATE EXISTING HVAC NOT SUFFICIENT	

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DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

STATE OF MARYLAND · KIRK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

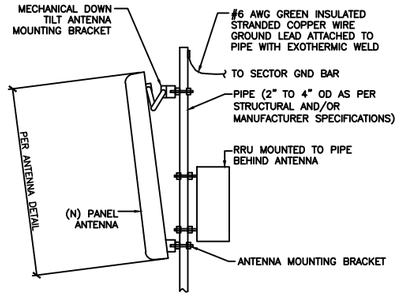
EXISTING BUILDING

SHEET DESCRIPTION

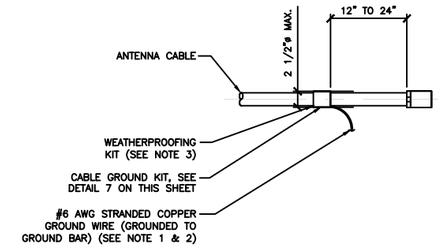
POWER LOAD CALCULATIONS

SHEET NO.

RF-4



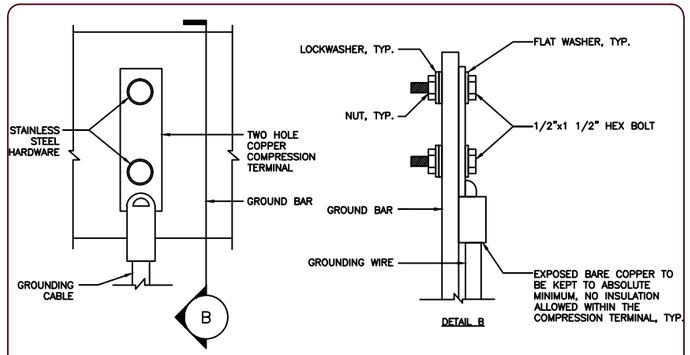
1 G-1 ANTENNA PIPE MOUNT GROUNDING DETAIL



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR
2. GROUNDING KIT SHALL BE ANDREW SUREGROUND TYPE KIT WITH TWO-HOLE LUG
3. WEATHER PROOFING SHALL BE ANDREW TWO-PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED

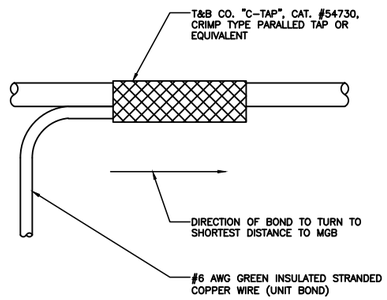
2 G-1 CABLE GROUND KIT DETAIL



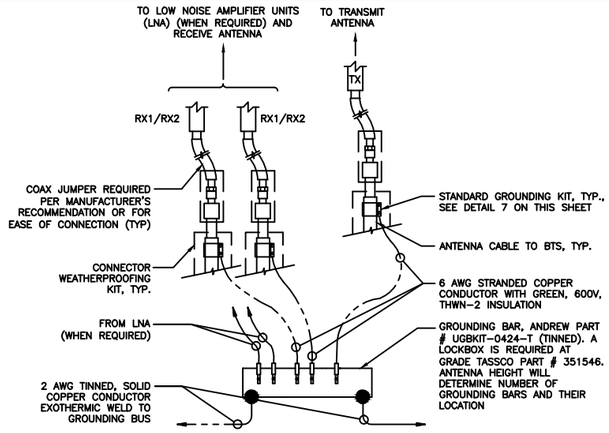
NOTES:

1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS AND TO BE APPLIED PRIOR TO ADDING HARDWARE.

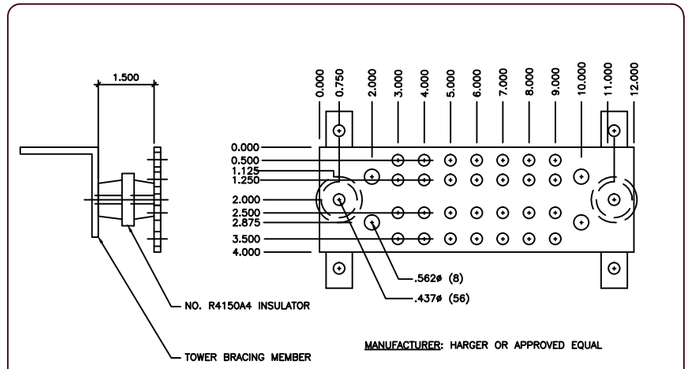
3 G-1 TYPICAL GROUND LUG CONNECTION DETAIL



4 G-1 GROUNDING WIRE CONNECTION

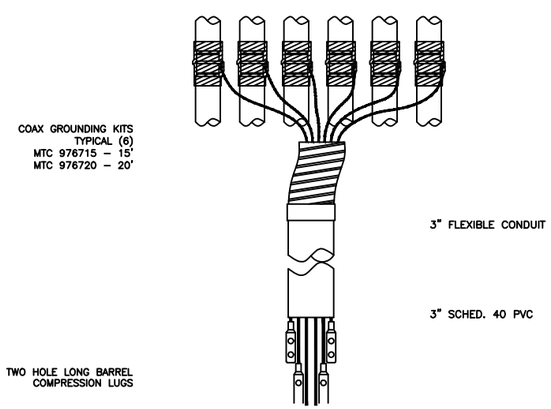


5 G-1 ANTENNA GROUNDING BAR CONNECTION DETAIL

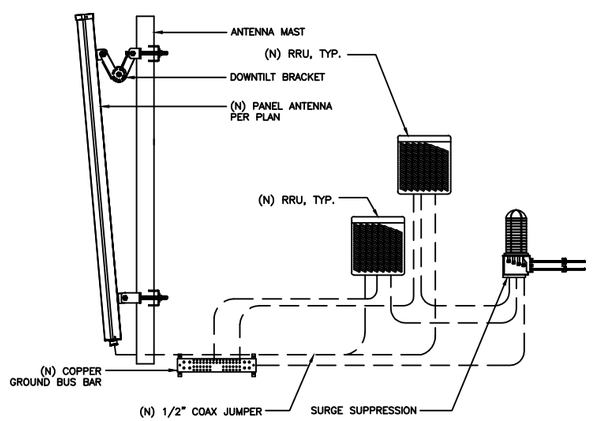


MANUFACTURER: HARGER OR APPROVED EQUAL

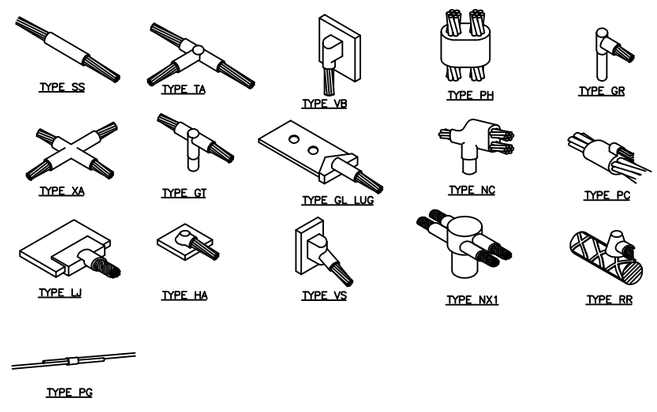
6 G-1 ANTENNA (12") GROUND BAR DETAIL



7 G-1 COAX GROUND KIT



8 G-1 RRU GROUNDING DETAIL



9 G-1 TYPICAL CADWELD TYPES

AT&T

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

GROUNDING DETAILS

SHEET NO.

G-1

GENERAL NOTES

1. GENERAL REQUIREMENTS

A. PURPOSE AND INTENT
1.THE DRAWING AND SPECIFICATION ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY, HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED, OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF DISCREPANCIES BETWEEN REQUIREMENTS SHOWN IN BOTH, THE MORE STRINGENT REQUIREMENTS SHALL APPLY.
2. THE INTENTION OF THE DOCUMENT IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.

A. CONFLICTS
1. VERIFY ALL MEASUREMENTS AT THE SITE BEFORE ORDERING MATERIAL OR DOING ANY WORK, NO EXTRA CHARGE OR COMPENSATION WILL BE ALLOWED DUE TO DIFFERENCES BETWEEN ACTUAL DIMENSIONS OR DIMENSIONS SHOWN ON PLANS SUBMIT NOTICE OF ANY DISCREPANCY IN DIMENSIONS OR OTHERWISE TO AT&T FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
2. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS GOVERNING THE WORK.

A. CLEANING
1. KEEP THE SITE FREE FROM ACCUMULATION OF WASTE AND RUBBISH CAUSED BY EMPLOYEES AT THE COMPLETION OF THE WORK, REMOVE ALL WASTE AND NON-CONSTRUCTION MATERIAL INCLUDING ALL CONTRACT TOOLS, SCAFFOLDING, AND SURPLUS MATERIAL AND LEAVE SITE CLEAN AND READY FOR USE.

A. CODES
1.CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING ALL LAWS, REGULATIONS, AND RULES PROMULGATED BY FEDERAL STATE AND LOCAL AUTHORITIES WITH JURISDICTION OVER THE SALTIER. THIS RESPONSIBILITY IS IN EFFECT REGARDLESS OF WEATHER THE LAW, ORDINANCE, REGULATION OR RULE IS MENTIONED IN THESE SPECIFICATIONS.

A. LICENSING
1. CONTRACTOR SHALL HAVE AND MAINTAIN A VALID CONTRACTOR'S LICENSE FOR THE LOCATION IN WHICH THE WORK IS TO BE PERFORMED. FOR JURISDICTIONS THAT LICENSE INDIVIDUAL TRADES, THE TRADESMAN OR SUBCONTRACTOR PERFORMING THOSE SHALL BE LICENSED, RESEARCHED AND COMPLY WITH THE LICENSING LAWS, PAY LICENSE FEES, AND SELECT AND INFORM SUBCONTRACTORS REGARDING THESE LAWS.

A. OSHA
1. FOLLOW ALL APPLICABLE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS AND STATE LAWS BASED IN THE FEDERAL OCCUPATION SAFETY AND HEALTH ACT. THESE REGULATIONS INCLUDE, BUT ARE NOT LIMITED TO, REGULATIONS DEALING WITH TOWER CONSTRUCTION AND SAFETY, EXCAVATION AND TRENCHING, AND WORK IN CONFINED SPACES. ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES DURING CONSTRUCTION.

A. PHOTOS
1. PROVIDE PHOTOGRAPHIC EVIDENCE OF ALL FOUNDATION INSTALLATIONS, GROUNDING, AND TRENCHING AFTER PLACEMENT OF UTILITIES PRIOR TO BACKFILL.

A. BUILDING PERMITS
1. CONTRACTOR WILL SUBMIT CONSTRUCTION DOCUMENTS TO THE JURISDICTIONAL AUTHORITY FOR PLAN CHECK AND REVIEW. CONTRACTOR WILL SUBMIT LICENSING AND WORKMAN'S COMPENSATION INFORMATION TO THE JURISDICTION AS REQUIRED TO OBTAIN THE BUILDING PERMIT, CONTRACTOR SHALL COORDINATE AND SCHEDULE REQUIRED INSPECTIONS AND POST REQUIRED PERMITS AT THE JOB SITE COMPLY WITH SPECIFIC PROJECT RELATED REQUESTS AND SUGGESTIONS MADE BY BUILDING INSPECTOR, AND INFORM CONSTRUCTION MANAGER OF ANY SUCH WORK THAT MAY BE BEYOND THE SCOPE OF THE CONTRACT OR DEVIATE FROM THE CONSTRUCTION DOCUMENT. AT&T WILL REIMBURSE THE CONTRACTOR FEES FOR PLAN REVIEW, BUILDING PERMIT, CONNECTIONS, AND INSPECTIONS. (INCLUDED IN THE BASE PROPOSAL).

A. ZONING REGULATIONS AND CONDITIONAL USE PERMITS
1. CONTRACTOR WILL SUBMIT ALL ZONING AND CONDITIONAL USE PERMITS. SOME USE PERMITS MAY HAVE SPECIFIC REQUIREMENTS FOR THE SITE RELATED TO CONSTRUCTION, SUCH AS NOISE REGULATIONS, HOURS OF WORK, ACCESS LIMITATIONS, ETC. THE CONSTRUCTION MANAGER WILL INFORM THE CONTRACTOR OF THESE REQUIREMENTS AT THE PRE-BID MEETING OR AS SHOWN IN THE CONSTRUCTION DOCUMENTS.

A. FAA PERMIT AND TOWER LIGHTING
1. REFER TO CONSTRUCTION DOCUMENTS AND CONSTRUCTION MANAGER FOR FAA AND STATE LIGHTING REQUIREMENTS. CONTRACTOR SHALL PROVIDE TEMPORARY FM APPROVED LIGHTING UNTIL PERMANENT LIGHTING IS OPERATIONAL.

A. TOWER SECURITY
1. IF REQUIRED, TOWER MUST BE FENCED, TEMPORARILY OR PERMANENTLY WITHIN 24 HOURS OF ERECTION. DO NOT ALLOW THE GATE ACCESSING THE TOWER AREA TO REMAIN OPEN OR UNATTENDED ANY TIME FOR ANY REASON. KEEP THE GATE CLOSED AND LOCKED WHEN NOT IN USE.

L. SITE CONTROL
1. THE CONTRACTOR IS COMPLETELY RESPONSIBLE FOR CONTAINMENT OF SEDIMENT AND CONTROL OF EROSION AT THE SITE. ANY DAMAGE TO ADJACENT OR DOWNSTREAM PROPERTIES WILL BE CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO AT&T.
2. THE CONTRACTOR IS TO MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES. DO NOT ALLOW WATER TO STAND OR POND. ANY DAMAGE TO STRUCTURES OR WORK ON THE SITE CAUSED BY INADEQUATE MAINTENANCE OF DRAINAGE PROVISIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND ANY COST ASSOCIATED WITH REPAIRS FOR SUCH DAMAGE WILL BE AT THE CONTRACTOR'S EXPENSE.
3. ALL WASTE MATERIAL SHALL BE PROPERLY DISPOSED OF OFF-SITE OR AS DIRECTED BY CONSTRUCTION MANAGER AND IN ACCORDANCE WITH JURISDICTIONAL AUTHORITIES.

M. LIVESTOCK PROTECTION
1. PROTECT AND SECURE LIVESTOCK. MAINTAIN AND SECURE EXISTING PERIMETER FENCE AND/OR GATE ENCLOSURES.

2. SITE PREPARATION

A. SCOPE OF WORK INCLUDES
1. PROTECTION OF EXISTING TREES, VEGETATION AND LANDSCAPING MATERIALS WHICH MIGHT BE DAMAGED BY CONSTRUCTION ACTIVITIES.
2. TRIMMING OF EXISTING TREES AND VEGETATION AS REQUIRED FOR PROTECTION DURING CONSTRUCTION ACTIVITIES.
3. CLEANING AND GRUBBING OF STUMPS, VEGETATION, DEBRIS, RUBBISH, DESIGNATED TREES AND SITE IMPROVEMENTS.
4. TOPSOIL STRIPPING AND STOCKPILING.
5. TEMPORARY EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL CONFORMING TO LOCAL REQUIREMENTS AS APPLICABLE.
6. TEMPORARY PROTECTION OF ADJACENT PROPERTY, STRUCTURES, BENCHMARKS, AND MONUMENTS.
7. PROTECTION AND TEMPORARY RELOCATION, STORAGE AND RE-INSTALLATION OF EXISTING FENCE AND OTHER SITE IMPROVEMENTS SCHEDULED FOR RE-USE.
8. REMOVAL AND LEGDK DISPOSAL OF CLEARED MATERIALS.

B. PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS NOTED IN CONSTRUCTION DOCUMENTS)
1. MATERIALS USED FOR TREE PROTECTION, EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL.

3. EARTHWORK

A. SCOPE OF WORK INCLUDES
1. EXCAVATION, TRENCHING, FILLING, COMPACTION, AND GRADING FOR STRUCTURES, SITE IMPROVEMENTS AND UTILITIES.
2. MATERIALS FOR SUB-BASE, DRAINAGE, BACKFILL AND GRAVEL FOR SLABS, PAVEMENT AND IMPROVEMENTS.
3. ROCK EXCAVATION WITHOUT BLASTING.
4. SUPPLY OF ADDITIONAL MATERIALS FOR OFFSITE AS REQUIRED.
5. REMOVAL AND LEGDK DISPOSAL OF EXCAVATED MATERIAL AS REQUIRED.

B. QUALITY ASSURANCE
1. COMPACTION
A. UNDER STRUCTURES, BUILDING SLABS, PAVEMENTS AND WALKWAYS WILL OBTAIN A 95% COMPACTION AT A MINIMUM DRY DENSITY AS DETERMINED BY ASTM 0-1557 OR WITH PLUS OR MINUS 3% OF THE MOISTURE CONTENT.
2. GRADING TOLERANCES OUTSIDE BUILDING LINES
A. LAWNS, UNPAVED AREAS AND WALKS PLUS OR MINUS 1 INCH.
B. UNDER PAVEMENTS PLUS OR MINUS ½ INCH.
3. GRADING TOLERANCES FOR FILL UNDER CONCRETE APPLICATIONS
A. PLUS OR MINUS ½ INCH MEASURED WITH 10 FOOT STRAIGHT EDGE.

C. PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS NOTED IN CONSTRUCTION DOCUMENTS)
1. SUB-BASE MATERIAL: GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE OR SLAG, AND NATURAL SAND.
2. WASHED MATERIAL, EVENLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL WITH 95% PASSING A 1-1/2 INCH SIEVE.
3. GRADING MATERIAL WILL CONSIST OF SATISFACTORY NATIVE OR IMPORTED SOIL MATERIALS FREE OF CLAY, ROCK OR GRAVEL NOT LARGER THAN 2 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS AND OTHER UNSUITABLE MATERIALS WILL NOT BE ALLOWED FOR USE. IMPORTED MATERIALS SHALL HAVE A CLAY CONTENT OF NO MORE THAN 5%.
4. GRAVEL MATERIAL: EVENLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL WITH 95% PASSING A 1-1/2 INCH SIEVE.
5. GEOTEXTILE FABRIC: AS PER CONSTRUCTION DOCUMENTS.

D. CLEARING AND GRUBBING
1. REMOVE ALL VEGETATION AND MATERIALS AS REQUIRED. REMOVE STUMPS COMPLETELY UNDER FOUNDATIONS AND ROADWAYS. DISPOSE OF CLEARING AND GRUBBING OFF-SITE OR IN AN ON-SITE LOCATION APPROVED BY CONSTRUCTION MANAGER.

E. STRIPPING
1. STRIP NOT LESS 3 INCHES OF SOD AND TOPSOIL FROM AREAS THAT WILL UNDERLAY GRAVEL, PAVEMENT, NEW STRUCTURES OR EMBANKMENTS. STOCKPILE STRIPPING ON-SITE FOR RE-USE AND FINAL LANDSCAPING.

G. EMBANKMENT
1. CONSTRUCT EMBANKMENT TO THE LINES AND GRADES SHOWN ON THE DRAWING.
2. CONSTRUCT EMBANKMENT FROM ON-SITE EXCAVATION MATERIAL WHEN SUITABLE. USE IMPORTED BACKFILL ONLY AFTER AVAILABLE ON-SITE EXCAVATION MATERIAL HAS BEEN USED.
3. CONSTRUCT IN LIFTS OF NOT MORE THAN 12 INCHES IN LOOSE DEPTH. THE FULL WIDTH OF THE CROSS SECTION SHALL BE BROUGHT UP UNIFORMLY.
4. MATERIAL SHALL BE PLACED IN LAYERS AND SHALL BE NEAR OPTIMUM MOISTURE CONTENT BEFORE ROLLING TO OBTAIN THE PRESCRIBED COMPACTION. WETTING OR DRYING OF THE MATERIAL AND MANIPULATION TO SECURE A UNIFORM MOISTURE CONTENT THROUGHOUT THE LAYERS MAY BE REQUIRED. SUCH OPERATIONS SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM. SHOULD THE MATERIAL BE TOO WET TO PERMIT PROPER COMPACTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE MATERIAL WITH AN ACCEPTABLE MOISTURE CONTENT.
5. DO NOT PLACE FROZEN MATERIAL IN THE EMBANKMENT AND DO NOT PLACE EMBANKMENT MATERIAL UPON FROZEN MATERIAL.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF EMBANKMENTS AND THE REPLACEMENT OF ANY PORTION WHICH HAS BECOME DISPLACED DUE TO CONTRACTOR'S OPERATIONS.
7. START LAYERS IN THE DEEPEST PORTION OF THE FILL AND AS PLACEMENT PROGRESSES, CONSTRUCT LAYERS APPROXIMATELY PARALLEL TO THE FINISH GRADE LINE.
8. ROUTE EQUIPMENT BOTH LOADED AND EMPTY, OVER THE FULL WIDTH OF THE EMBANKMENT TO ENSURE UNIFORMITY OF MATERIAL PLACEMENT.
9. COMPACT EMBANKMENT UNDERLYING NEW GRAVEL PAVING, FLOOR SLABS AND STRUCTURES TO BE 95% COMPACTION AT A MINIMUM DRY DENSITY AS DETERMINED BY ASTM 0-1557 OR WITHIN PLUS OR MINUS 3% OF OPTIMUM MOISTURE CONTENT. COMPACT NON-STRUCTURAL AREA EMBANKMENTS TO A MINIMUM OF 90% OF ASTM 0-1557.

H. SITE GRADING
1. USING ON-SITE EXCAVATION MATERIAL, SHAPE, TRIM, FINISH AND COMPACT SURFACE AREAS TO CONFORM TO THE LINES. GRADES AND CROSS SECTIONS SHOWN ON THE DRAWING OR AS DESIGNATED BY THE CONSTRUCTION MANAGER.
2. GRADE SURFACES TO DRAIN AND ELIMINATE ANY PONDING OR EROSION.
3. ELIMINATE WHEEL RUTS BY REGRADING.
4. COMPACT AREAS OF UNDERLYING NEW GRAVEL, PAVING, FLOOR SLABS AND STRUCTURES TO BE AT 95% COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY THE ASTM 0-1557 OR WITHIN PLUS OR MINUS 3% OF OPTIMUM MOISTURE CONTENT.
5. CONSTRUCT FINISH SURFACE OF SITE GRADING AREAS WITHIN 1 INCH FROM SPECIFIED GRADE.

I. SUBGRADE PREPARATION
1. SHAPE TOP OF SUBGRADE TO THE LINES AND GRADES SHOWN ON THE DRAWINGS.
2. MAINTAIN TOP OF SUBGRADE IN A FREE-DRAINING CONDITION.
3. DO NOT STOCK PILE MATERIAL ON TOP OF SUBGRADE UNLESS AUTHORIZED BY CONSTRUCTION MANAGER.
4. COMPACT THE TOP 12 INCHES OF SUBGRADE TO A 95% COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY ASTM 0-1557 OR WITHIN PLUS OR MINUS 3% OF THE OPTIMUM MOISTURE CONTENT.
5. CONSTRUCT TOP OF SUBGRADE WITHIN 1 INCH OF ESTABLISHED GRADE AND CROSS SECTION.

J. GEOTEXTILE FABRIC
1. LAY GEOTEXTILE FABRIC OVER COMPACTED SUBGRADE IN THE COMPOUND AREA AND UNDER LENGTH OF ROAD (WHEN REQUIRED). LAP ALL JOINTS TO A MINIMUM OF 36 INCHES.

K. GRAVEL SURFACING
1. CONSTRUCT GRAVEL SURFACING AREAS USING CRUSHED AGGREGATE BASE AND FINISH COURSES AS SPECIFIED BY CONSTRUCTION MANAGER. SPREAD GRAVEL AND RAKE TO OBTAIN A UNIFORM SURFACE AREA.

L. LANDSCAPING
1. FURNISH, INSTALL AND MAINTAIN LANDSCAPE WORK AS SHOWN AND/OR REQUIRED WITHIN THE CONSTRUCTION DOCUMENTS OR AS SPECIFIED IN THE CONSTRUCTION SPECIFICATIONS.

M. CONCRETE FORM WORK
1. FORMS: SMOOTH AND FREE OF SURFACE IRREGULARITIES. UTILIZE FORM RELEASE AGENTS.
2. CHAMFER EXPOSED EDGES OF ALL TOWER FOUNDATION SHALL RECEIVE A ¾ INCH BY ¾ INCH 45 DEGREE CHAMFER. OTHER EXPOSED EDGES SHALL RECEIVE A TOOLED RADIUS FINISH.
3. UPON COMPLETION, REMOVE ALL FORMS INCLUDING THOSE CONCEALED OR BURIED.
4. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.

4. GENERAL NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS AND COORDINATE HIS WORK WITH THE WORK OF ALL OTHER CONTRACTORS TO ENSURE THAT WORK PROGRESSION IS NOT INTERRUPTED.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A NEAT AND ORDERLY SITE, YARD AND GROUNDS. CONTRACTOR SHALL REMOVE AND DISPOSE OFF SITE ALL RUBBISH, WASTE MATERIAL, LITTER AND ALL FOREIGN SUBSTANCES. REMOVE PETROCHEMICAL SPILLS, STAINS AND OTHER FOREIGN DEPOSITS. RAKE GROUND TO A SMOOTH EVEN-TEXTURED SURFACE.
3. THE PLANS SHOW SOME KNOWN SUBSURFACE STRUCTURE ABOVE GROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA, EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATION INDICATED. IN PARTICULAR THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPELINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE AREA MAY BE SHOWN OR MAY NOT BE SHOWN AND IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN 48 HOURS BEFORE YOU DIG, DRILL OR BLAST CALL LOCAL UTILITIES LOCATOR COMPANY.
4. THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE OWNER OR THE OWNER'S REPRESENTATIVE.
5. THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THE SITE DURING THE PERFORMANCE OF THIS CONTRACT.
6. THE CONTRACTOR SHALL RESTORE ALL DAMAGED, PUBLIC OR PRIVATE PROPERTY TO AT LEAST AS GOOD OF CONDITION AS BEFORE DISTURBED AS DETERMINED BY THE OWNER OR OWNER'S REPRESENTATIVE.
7. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.
8. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE OWNER OR OWNER'S REPRESENTATIVE, SHALL BE REPLACED.
9 ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH OSHA REGULATIONS FOR CONSTRUCTION.
10.CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK.
11ALL UTILITY WORK INVOLVING CONNECTIONS TO EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER OR OWNER'S REPRESENTATIVE BEFORE EACH AND EVERY CONNECTION TO EXISTING SYSTEMS IS MADE.
12MAINTAIN FLOW FOR ALL EXISTING UTILITIES
13ALL SITE FILL SHALL MEET SELECTED FILL STANDARDS AS DEFINED BY THE OWNER OF OWNER'S REPRESENTATIVE ON THE DRAWINGS OR GEOTECHNICAL REPORT RECOMMENDATIONS.
14CONTRACTOR TO GRADE ALL AREAS OF THE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE BUILDING OR EQUIPMENT PAD AND THE TOWER.
15IF NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING AND REGRADING ROADWAY AND ANY DISTURBED AREAS FOLLOWING INSTALLATION OF UTILITIES.
16NO COMMERCIAL MESSAGES TO BE DISPLAYED ON TOWER
17WATER AND SEWER SERVICES ARE NOT REQUIRED FOR THE DEVELOPMENT
18THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL UNLESS OTHERWISE NOTED.
19ELECTRICAL DRAWINGS HAVE BEEN REVIEWED AND SEALED FOR STRUCTURAL PURPOSES ONLY.

AT&T

smartlink

Trylon

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

STATE OF MARYLAND
KIRK R. HALL
No. 27217
PROFESSIONAL ENGINEER

2-12-2020

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

GENERAL NOTES

SHEET NO.

GN-1

App No: 2020031117

Revised 3.20.20 - JR

Application General Infomation

Applicant Name	Smartlink LLC
Application Type	Minor Modification
Carrier	AT&T Wireless
Solution Type	Macro
Existing	Existing

Updated	3/10/2020
Ann. Plan?	Yes
Will site be used to support government telecommunications facilities or other equipment for government use?	No
Gvt. Use Desc.	

Application Description

AT&T proposes to remove (2) existing antennas, (15) existing RRHs (1) GSM cabinet and install (2) new antennas and (12) new RRHs.

Site Infomation

Site Id	53.01
Structure Type	Building
Address	9727 Mt. Pisgah Rd, Silver Spring
County Site Name	Chateau Apartments
Carrier Site Name	Gill
Site Owner	Hillzo LP
Structure Owner	Hillzo LP
Existing Structure Height	133'6"
Provide the proposed height of the replacement structure without any antenna (New, Replacement Apps Only)	

Zoning	R-H
Latitude	39.016778
Longitude	-76.974517
Ground Elevation	326
City	Silver Spring
Lease Status	Leased
Does the structure require an antenna structure registration under FCC Title 47	No
Distance to Residential Property (New, Replacement, Colocation Only)	
Distance to Commercial Property (New, Replacement, Colocation Only)	

Justification of why this site was selected:

NearbySites (New, Replacement Apps Only):

Thursday, March 12, 2020

9:22:54 AM

App No: 2020031117

Screening considerations(New, Colocations, Replacement Apps Only):

Thursday, March 12, 2020

9:22:54 AM

App No: 2020031117

6409 Questions

Does this qualify as a 6409 application? (Minor Mod, Colocations Only): No

For towers outside the public ROW will the proposed installation increase the height of the structure by: (1) more than 10% or (2) more than 20 feet, whichever is greater?

Will the proposed installation increase the width by adding appurtenance to the body of the structure that would protrude from the edge of the structure by more than 6 feet?

For towers outside the public ROW will the proposed installation increase the width by adding appurtenance to the body of the structure that would protrude from the edge of the structure by more than 20 feet?

More than four Equipment Cabinets? YN

Will the proposed installation require excavation or expansion outside the current boundaries of the site?

Does the structure or current installation have concealment elements/measures? No

Will the proposed installation increase the height of the structure by: (1) more than 10% or (2) more than 10 feet, whichever is greater?

If yes, describe how the proposed installation does not defeat the existing concealment.

Small Wireless Facility Information

Small Wireless Facility Questions

Small Wireless Facility? No

Is the structure 10% taller than adjacent structures?

Cumulative volume of the proposed wireless equipment(s) exclusive of antennas in cubic feet: 240.69

Please list adjacent structure heights

Tribal Lands? No

Cumulative volume of the proposed antenna antenna(s) exclusive of equipment

ROW Information

PROW? No

Pole Number

ROW owner

ROW width

Thursday, March 12, 2020

9:22:54 AM

App No: 2020031117

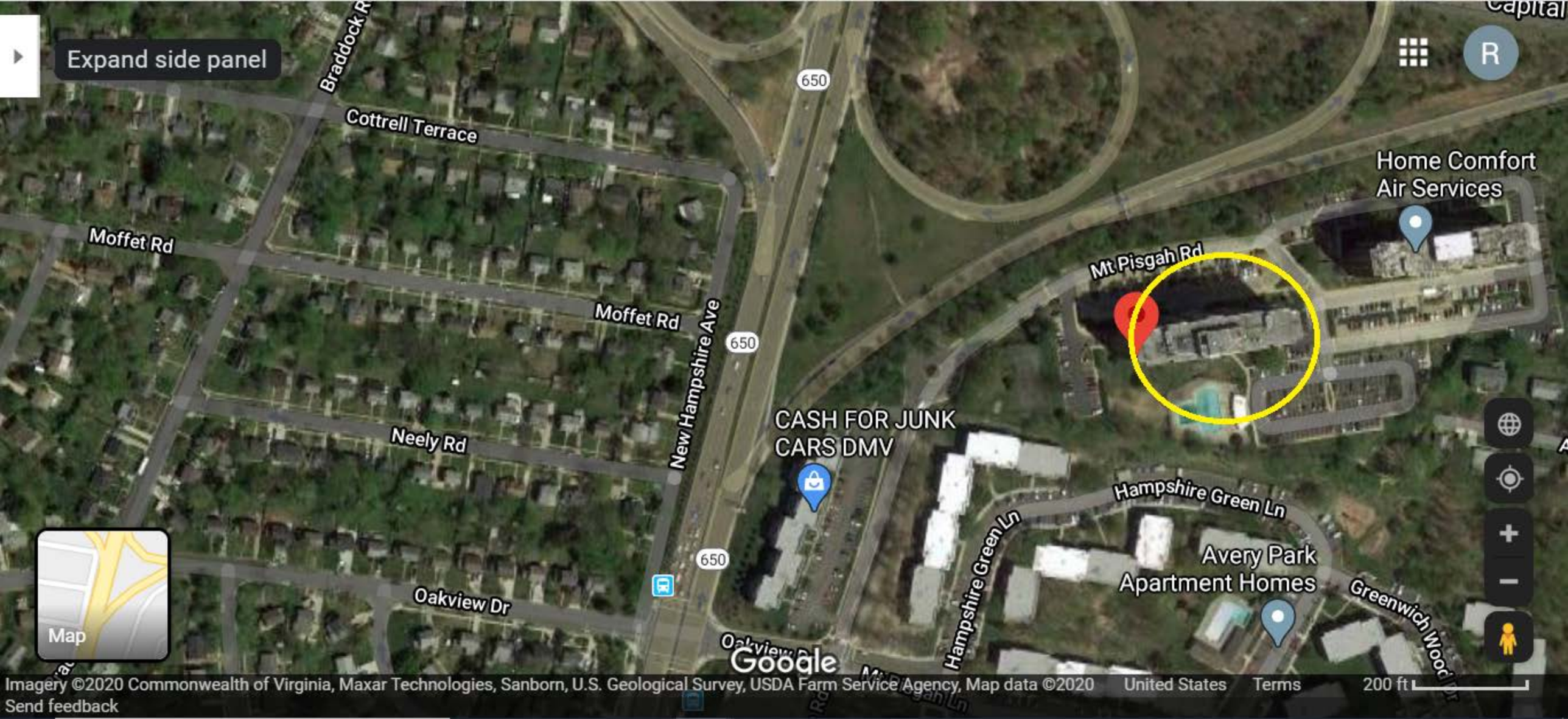
Antenna Infomation

Antenna Compliance	Yes
Compliance Desc	
Antenna Location	Yes
Antenna Loc. Desc.	
Env. Assessment	
Cat. Excluded?	
Routine Env. Evaluation	yes

Antenna Model	CCL BSA-M65R-BUU-H6						
Frequency	704-710, 734-740, 710-716, 740-746, 716-722, 824-835, 869-880, 845-846.5, 890-891.5, 1870-1885, 1950-1965,						
RAD Center	140	Max ERP	1046	Antenna Dimensions	72(h)x28.5(w).9.7(d)	Quantity	2

Thursday, March 12, 2020

9:22:54 AM


Expand side panel
Braddock R
Cottrell Terrace
650
Moffet Rd
Moffet Rd
New Hampshire Ave
650
Neely Rd
650
Oakview Dr
Map
Home Comfort
Air Services
Mt Pisgah Rd
CASH FOR JUNK
CARS DMV
Hampshire Green Ln
Hampshire Green Ln
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200 ft
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Antennas

DATASHEET

Multi-band Bi-Sector™ A

OVERVIEW SPECIFICATIONS ACCESSORIES

RESOURCES ORDERING STANDARDS & CERTIFICATIONS

FILTER BY SELECTION

PRODUCTS

- Amplifiers
- Antennas
- Co-Siting & Antenna Sharing
- DAS & Small Cell Products
- Filters & Combiners
- PIM Analyzers

ANTENNAS

- Antenna Accessories
- Bi-Sector™
- iDAS
- Multi-Sector/Special Events
- Single Sector Multiport
- Small Cell/oDAS
- Specialty

Electrical

Ports	4 x Low Band Ports for 698-894 MHz		8 x High Band Ports for 1710-2360 MHz			
Frequency Range	698-806 MHz	824-894 MHz	1850-1990 MHz	1710-1755/2110-2155 MHz		2305-2360 MHz
Gain	16.4 dBi	17.3 dBi	18.0 dBi	17.2 dBi	18.4 dBi	18.1 dBi
Azimuth Beamwidth (-3dB)	34°	32°	31°	36°	28°	26°
Elevation Beamwidth (-3dB)	11.7°	10.3°	6.4°	7.2°	5.9°	5.6°
Electrical Downtilt	2° to 12°	2° to 12°	0° to 9°	0° to 9°	0° to 9°	0° to 9°

FREQUENCY BAND

- [ ] 604-806 MHz
- [ ] 698-798 MHz
- [ ] 698-896 MHz
- [ ] 698-960 MHz
- [ ] 790-960 MHz
- [ ] 824-896 MHz
- [ ] 1710-1880 MHz
- [ ] 1695-2180 MHz
- [ ] 1695-2360 MHz
- [ ] 1695-2690 MHz
- [ ] 1850-1995 MHz
- [ ] 2300-2400 MHz
- [ ] 2300-2690 MHz
- [ ] 2496-2690 MHz

HEIGHT

- [ ] 2 ft. (458 - 761 mm)
- [ ] 3 ft. (762 - 1066 mm)
- [ ] 4 ft. (1067 - 1371 mm)
- [ ] 5 ft. (1372 - 1676 mm)
- [ ] 6 ft. (1677 - 1981 mm)
- [ ] 7 ft. (1982 - 2286 mm)
- [ ] 8 ft. (2287 - 2590 mm)
- [ ] 9 ft. (2591 - 2896 mm)

HORIZONTAL BEAMWIDTH

- [ ] 20° to 30°
- [ ] 30° to 40°
- [ ] 50° to 70°
- [ ] TBD

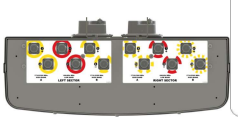
Elevation Sidelobes (1st Upper)	< -18 dB	< -18 dB	< -18 dB	< -18 dB	< -18 dB	< -18 dB
Front-to-Back Ratio @180°	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Front-to-Back Ratio over ± 20°	> 27 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 28 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Voltage Standing Wave Ratio(VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	300 watts	300 watts	300 watts	300 watts
Polarization	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

Mechanical

Dimensions (LxWxD)	72.0x28.5x9.7 in (1828x723x245 mm)
Survival Wind Speed	> 150 mph (> 240 kph)
Front Wind Load	438 lbs (1947 N) @ 100 mph (161 kph)
Side Wind Load	175 lbs (778 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	17.1 ft^2 (1.6 m^2)
Weight *	101.0 lbs (45.9 kg)
RET System Weight	6.6 lbs (3.0 kg)
Connector	12 x 7-16 DIN female long neck
Mounting Pole	2 to 5 in (5 to 12 cm)

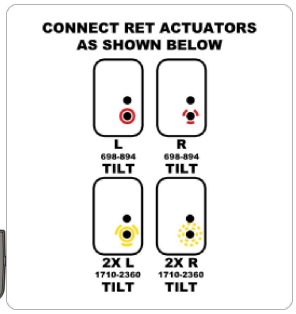
** Weight excludes mounting and RET*

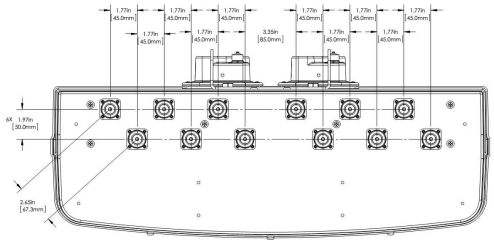
Bottom View



Connector Spacing

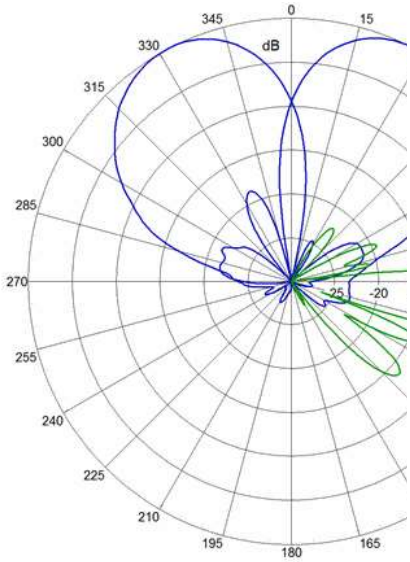
RET Connection Diagram



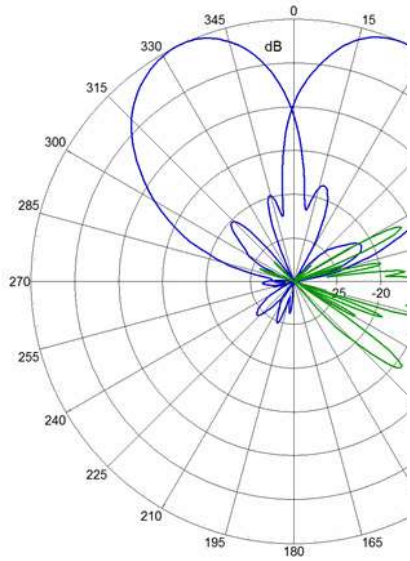


Typical Antenna Patterns

For detailed information on additional
support@cciproducts.com



761 MHz Azimuth Elevation 7



1910 MHz Azimuth Elevation

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sales@cciproducts.com

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RF COMPLIANCE EXPERTS

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703.276.1100 ● 703.276.1169 fax
info@sitesafe.com ● www.sitesafe.com

Smartlink on behalf of AT&T Mobility, LLC Site FA – 10128448 Site ID – MDL03821 USID – 100205 Site Name – GILL (MRWSH034472)

9727 Mount Pisgah Road
Silver Spring, MD 20903

Latitude: N39-01-00.00
Longitude: W76-58-30.00
Structure Type: Rooftop

Report generated date: March 17, 2020
Report by: Leo Romero
Customer Contact: Lauren Kersey

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

Table of Contents

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Max Cumulative Simulated RFE Level on the Ground	11,435.0% General Public Limit 1" in front of AT&T Mobility, LLC's Gamma Sector Antenna #8
Max Cumulative Simulated RFE Level on the Rooftop Walking Surface	11,435.0% General Public Limit 1" in front of AT&T Mobility, LLC's Gamma Sector Antenna #8
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
Compliant per FCC Rules and Regulations?	Will Be Compliant
Compliant per AT&T Mobility, LLC's Policy?	No

The following documents were provided by the client and were utilized to create this report:

RFDS: WASHINGTON-D.C.-MARYLAND_WASHINGTON-DC-BALTIMORE_GILL_2020-Cell-Site-RF-Modifications_Split-Sector_oo6650_2251A0S58F_10128448_100205_10-08-2019_Final-Approved_v1.00

CD's: 10128448.AE201.REV C.GILL.100205.01142020

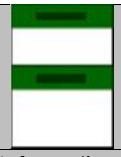
RF Powers Used: MAX RRH Powers

1.2 Fall Arrest Anchor Point Summary

Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	0	N

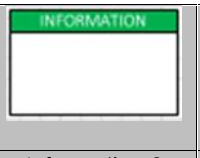
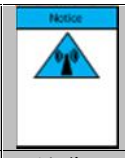
1.3 Signage Summary

a. Pre-Site Visit AT&T Signage (Existing Signage)

AT&T Signage Locations	 Information 1	 Information 2	 Notice	 Notice 2	 Caution	 Caution 2	 Warning	 Warning 2	 Barriers
Access Point(s)	**2**								
Alpha									
Beta									
Gamma									

Note: All existing signage was documented during a previous site visit on 6/27/2017.

b. Proposed AT&T Signage

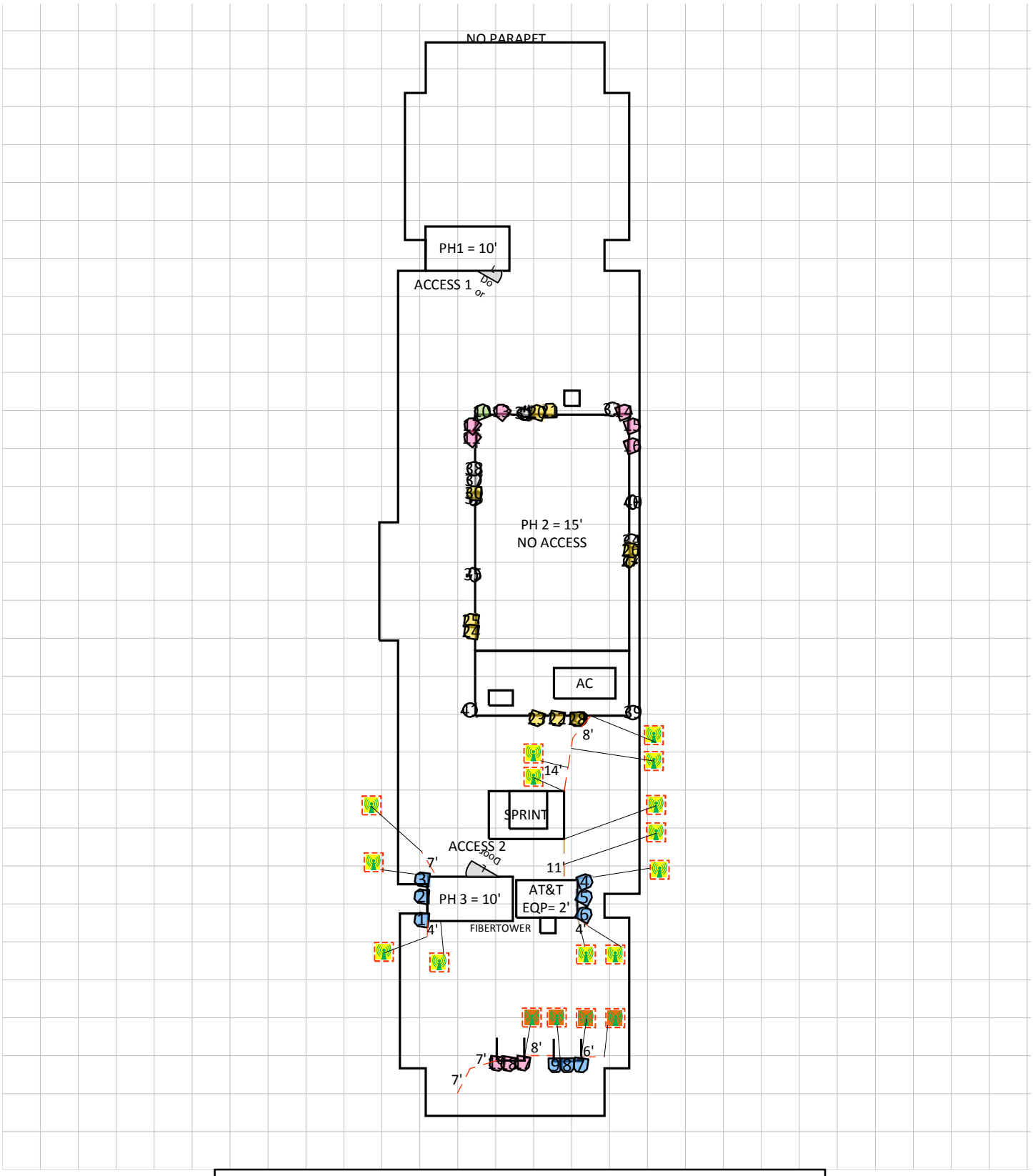
AT&T Signage Locations	 Information 1	 Information 2	 Notice	 Notice 2	 Caution	 Caution 2	 Warning	 Warning 2	 Barriers
Access Point(s)									
Alpha						**4**			**X**
Beta						**9**			**X**
Gamma								**4**	**X**

2 Scale Maps of Site

The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- RF Exposure Diagram – Detailed View West
- AT&T Mobility, LLC Contribution

Site Scale Map For: GILL



Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Sign Legend

Caution 1 | Caution 2 | Notice 2 | Notice 1 | Warning | Warning 2 | Info 1 | Info 2 | RSP RF Safety Plan

Barrier

Proposed Barriers/ Signs

(Feet)

0 18.1 36.2

www.sitesafe.com
Site Name:GILL
3/17/2020 6:44:44 PM

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
1	AT&T MOBILITY LLC	Kathrein-Scala 742-264	Panel	850	UMTS	0	68.4	4.3	80	TPO	Watt	0	1	1267.9	12	6.3'	0°	2°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	737	LTE	0	75	8	160	TPO	Watt	0	1	3631.8	13.56	4.5'	0°	5°
2	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65C-R6	Panel	763	LTE	0	75	8	160	TPO	Watt	0	1	3631.8	13.56	4.5'	0°	5°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	1900	LTE	0	59	8	160	TPO	Watt	0	1	5496.9	15.36	4.5'	0°	2°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2110	LTE	0	61	8	80	TPO	Watt	0	1	2878	15.56	4.5'	0°	2°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2160	AWS3	0	61	8	80	TPO	Watt	0	1	2878	15.56	4.5'	0°	2°
3	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	LTE	0	61.1	4	100	TPO	Watt	0	1	2666.9	14.26	6.5'	0°	5°
4	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	LTE	150	61.1	4	100	TPO	Watt	0	1	2666.9	14.26	7.5'	0°	6°
5	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	737	LTE	110	75	8	160	TPO	Watt	0	1	3631.8	13.56	5.5'	0°	10°
5	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65C-R6	Panel	763	LTE	110	75	8	160	TPO	Watt	0	1	3631.8	13.56	5.5'	0°	12°
5	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	1900	LTE	110	59	8	160	TPO	Watt	0	1	5496.9	15.36	5.5'	0°	5°
5	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2110	LTE	110	61	8	80	TPO	Watt	0	1	2878	15.56	5.5'	0°	5°
5	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2160	AWS3	110	61	8	80	TPO	Watt	0	1	2878	15.56	5.5'	0°	5°
6	AT&T MOBILITY LLC	Kathrein-Scala 742-264	Panel	850	UMTS	110	68.4	4.3	80	TPO	Watt	0	1	1267.9	12	7.3'	0°	2°
7	AT&T MOBILITY LLC	Kathrein-Scala 742-264	Panel	850	UMTS	270	68.4	4.3	80	TPO	Watt	0	1	1267.9	12	4.3'	2°	2°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	737	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	763	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	1900	LTE	260	32.3	6	160	TPO	Watt	0	1	6139.3	15.84	3.5'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	2110	LTE	260	27.9	6	80	TPO	Watt	0	1	3373.6	16.25	3.5'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	2160	AWS3	260	27.9	6	80	TPO	Watt	0	1	3373.6	16.25	3.5'	0°	4°

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	737	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	763	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	1900	LTE	260	33.9	6	160	TPO	Watt	0	1	6153.5	15.85	3.5'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	2110	LTE	260	27.1	6	80	TPO	Watt	0	1	3373.6	16.25	3.5'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	2160	AWS3	260	27.1	6	80	TPO	Watt	0	1	3373.6	16.25	3.5'	0°	4°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	763	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	2300	LTE	260	23.6	6	100	TPO	Watt	0	1	3845.9	15.85	3.5'	0°	4°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	737	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	737	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	763	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	3.5'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	2300	AWS3	260	25.5	6	100	TPO	Watt	0	1	3845.9	15.85	3.5'	0°	4°
10	CRICKET COMMUNICATIONS (Decommissioned)	Generic Panel	Panel	2100		60	65	4.6	0	ERP	Watt	0	0	0	15.23	15.7'	0°	0°
11	T-MOBILE	Generic Panel	Panel	700		30	65	6.3	160	TPO	Watt	0	0	2884.8	12.56	13.9'	0°	0°
12	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	1900		30	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	14.5'	0°	0°
12	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	2100		30	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	14.5'	0°	0°
13	T-MOBILE	Ericsson AIR 21 B2A B4P	Panel	1900		30	65	4.7	120	TPO	Watt	0	0	4132.2	15.37	14.7'	0°	0°
14	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	1900		150	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	20.5'	0°	0°
14	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	2100		150	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	20.5'	0°	0°
15	T-MOBILE	Ericsson AIR 21 B2A B4P	Panel	1900		150	65	4.7	120	TPO	Watt	0	0	4132.2	15.37	20.7'	0°	0°
16	T-MOBILE	Generic Panel	Panel	700		150	65	4.6	160	TPO	Watt	0	0	2618.9	12.14	20.7'	0°	0°
17	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	1900		270	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	4.5'	0°	0°
17	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	2100		270	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	4.5'	0°	0°
18	T-MOBILE	Generic Panel	Panel	700		270	65	6.3	160	TPO	Watt	0	0	2884.8	12.56	3.9'	0°	0°
19	T-MOBILE	Ericsson AIR 21 B2A B4P	Panel	1900		270	65	4.7	120	TPO	Watt	0	0	4132.2	15.37	4.7'	0°	0°
20	SPRINT	Generic Panel	Panel	2500		100	65	4.1	160	TPO	Watt	0	0	5071.3	15.01	17'	0°	0°
21	SPRINT	Generic Panel	Panel	862		80	65	6.3	100	TPO	Watt	0	0	2202.9	13.43	15.9'	0°	0°

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
21	SPRINT	Generic Panel	Panel	1900		80	65	6.3	180	TPO	Watt	0	0	7608	16.26	15.9'	0°	0°
22	SPRINT	Generic Panel	Panel	862		270	65	6.3	100	TPO	Watt	0	0	2202.9	13.43	15.9'	0°	0°
22	SPRINT	Generic Panel	Panel	1900		270	65	6.3	180	TPO	Watt	0	0	7608	16.26	15.9'	0°	0°
23	SPRINT	Generic Panel	Panel	2500		280	65	4.1	160	TPO	Watt	0	0	5071.3	15.01	17'	0°	0°
24	SPRINT	Generic Panel	Panel	2500		0	65	4.1	160	TPO	Watt	0	0	5071.3	15.01	17'	0°	0°
25	SPRINT	Generic Panel	Panel	862		0	65	6.3	100	TPO	Watt	0	0	2202.9	13.43	16.9'	0°	0°
25	SPRINT	Generic Panel	Panel	1900		0	65	6.3	180	TPO	Watt	0	0	7608	16.26	16.9'	0°	0°
26	SPRINT	Generic Panel	Panel	2500		180	65	4.1	40	TPO	Watt	0	0	1267.8	15.01	13'	0°	0°
27	SPRINT	Generic Microwave	Aperture	80000		190	2	2	0.01	TPO	Watt	0	0	769.1	48.86	19'	0°	0°
28	SPRINT	Generic Panel	Panel	2500		260	65	4.1	40	TPO	Watt	0	0	1267.8	15.01	13'	0°	0°
29	SPRINT	Generic Microwave	Aperture	23000		280	2	0	0.02	TPO	Watt	0	0	36.9	32.66	15'	0°	0°
30	SPRINT	Generic Panel	Panel	2500		355	65	4.1	40	TPO	Watt	0	0	1267.8	15.01	13'	0°	0°
31	UNKNOWN CARRIER	Generic Microwave	Aperture	18000		90	2	2	0.01	TPO	Watt	0	0	58.3	37.66	19'	0°	0°
32	UNKNOWN CARRIER	Generic Microwave	Aperture	23000		90	2	1	0.01	TPO	Watt	0	0	18.5	32.66	16'	0°	0°
33	UNKNOWN CARRIER	Generic Omni	Omni	850		0	360	14	100	ERP	Watt	0	0	100	9.97	18'	0°	0°
34	UNKNOWN CARRIER	Generic Panel	Panel	5800		160	90	2.2	20	ERP	Watt	0	0	20	16.01	19.9'	0°	0°
35	UNKNOWN CARRIER	Generic Microwave	Aperture	80000		340	2	1	0.01	TPO	Watt	0	0	172.2	42.36	16'	0°	0°
36	UNKNOWN CARRIER	Generic Microwave	Aperture	18000		10	2	2	0.01	TPO	Watt	0	0	58.3	37.66	17'	0°	0°
37	UNKNOWN CARRIER	Generic Omni	Omni	450		0	360	4.7	100	ERP	Watt	0	0	100	2.97	17.6'	0°	0°
38	UNKNOWN CARRIER	Generic Omni	Omni	450		0	360	4.7	100	ERP	Watt	0	0	100	2.97	17.6'	0°	0°
39	UNKNOWN CARRIER	Generic Omni	Omni	850		0	360	14	100	ERP	Watt	0	0	100	9.97	18'	0°	0°
40	UNKNOWN CARRIER	Generic Microwave	Aperture	18000		170	0	0	0.01	TPO	Watt	0	0	58.3	37.66	17'	0°	0°
41	UNKNOWN CARRIER	Generic Omni	Omni	850		0	360	14	100	ERP	Watt	0	0	100	9.97	18'	0°	0°

Note: The Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. Effective Radiated Power (ERP is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience. Proposed equipment is tagged as *(Proposed)* under *Operator* or *Antenna Make & Model*.

Note: The 763 MHz LTE technology is being added to existing antennas.

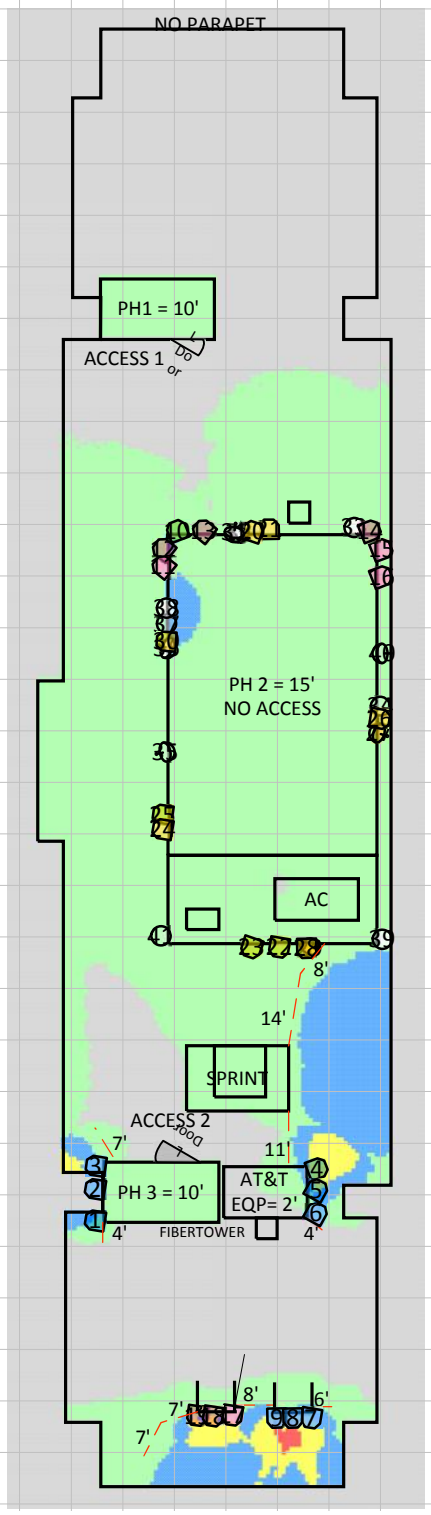
4 Emission Predictions

In the RF Exposure Simulations below, all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

- MAIN LEVEL = 0'
- PH1 and PH3 = 10'
- PH2 = 15'
- AT&T EQP = 2'

The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: GILL
Composite Diagram



% of FCC Public Exposure Limit
Spatial Average 0' - 6'

% of FCC Public Exposure Limit

>= 5000	>= 500	>= 100	>= 5	< 5

Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Barrier

Proposed Barriers/ Signs

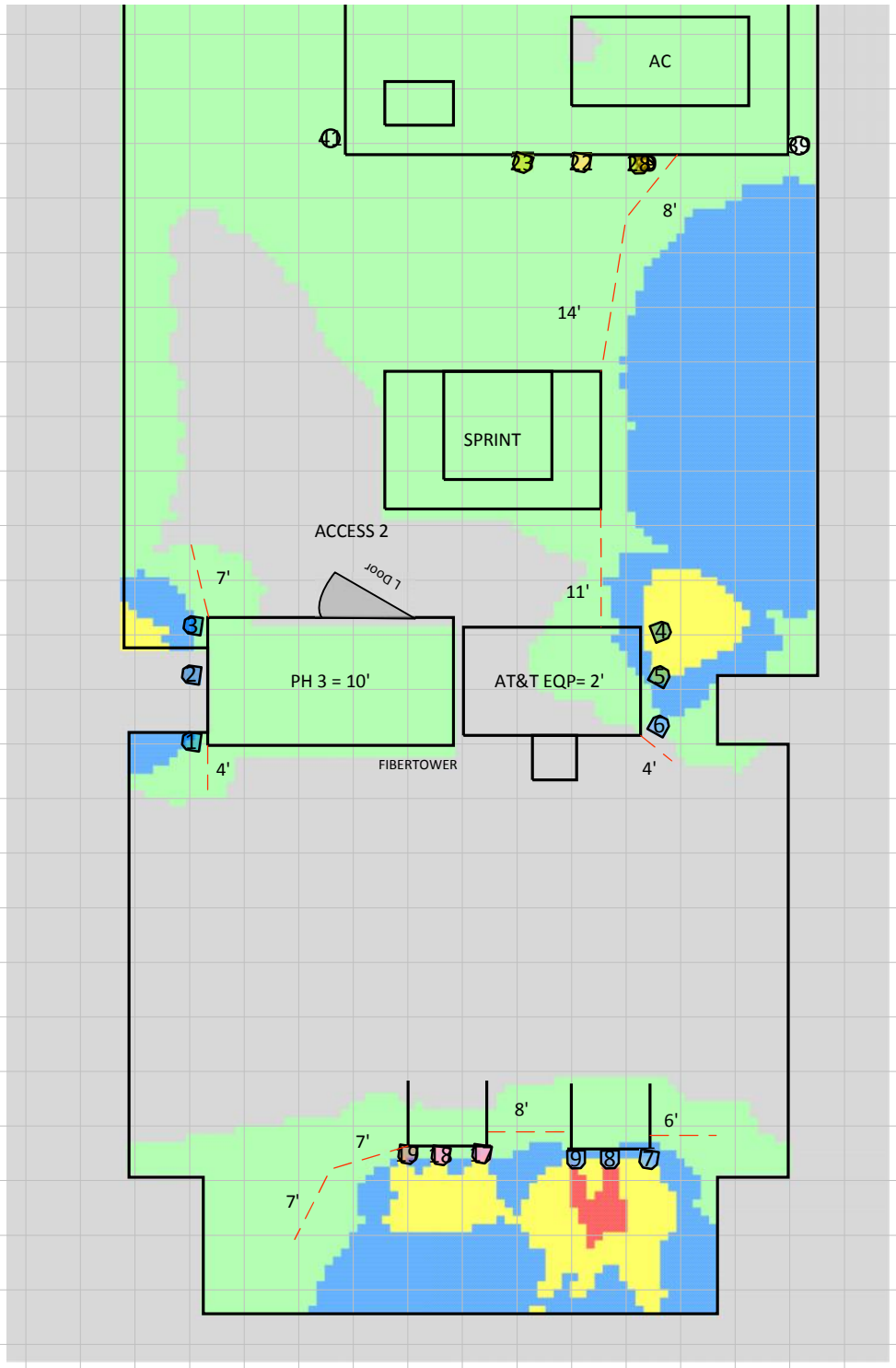
(Feet)

0 19.8 39.6

www.sitesafe.com
Site Name:GILL
3/17/2020 6:34:39 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: GILL
Detail View West



% of FCC Public Exposure Limit
Spatial Average 0' - 6'

% of FCC Public Exposure Limit

>= 5000	>= 500	>= 100	>= 5	< 5

Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Barrier

Proposed Barriers/ Signs

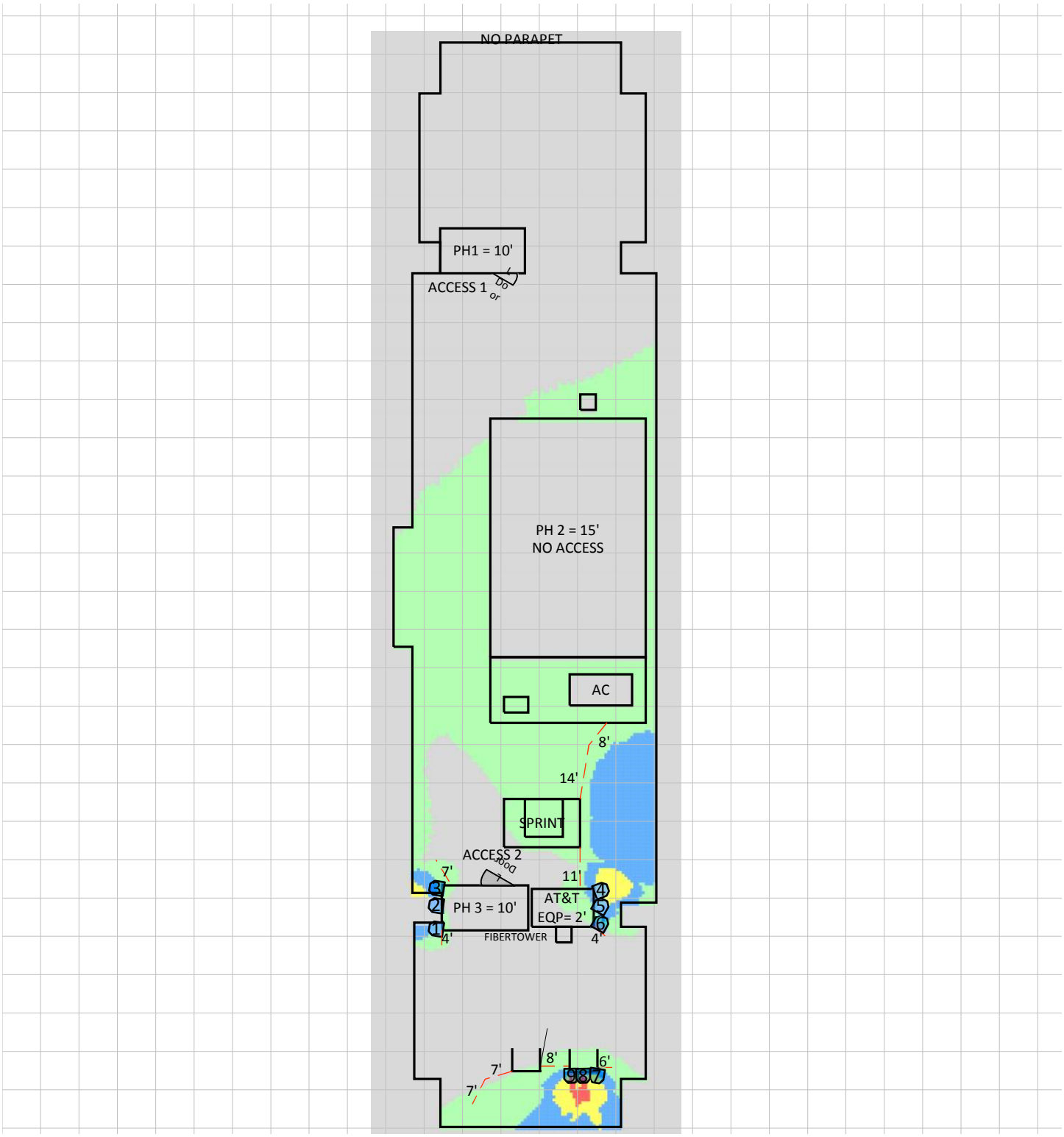
(Feet)

0 8.6 17.2

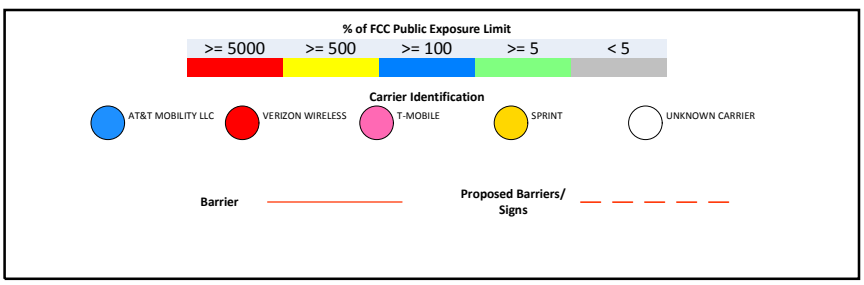
www.sitesafe.com
Site Name:GILL
3/17/2020 6:36:56 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: GILL
AT&T Mobility, LLC Contribution



% of FCC Public Exposure Limit
Spatial Average 0' - 6'



(Feet)
0 19.6 39.2
www.sitesafe.com
Site Name:GILL
3/17/2020 6:43:02 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

Based on measurement or predictions, other wireless operators on this site may be out of RF exposure compliance with FCC regulations on this site. We recommend that those operators review this site with respect to RF exposure compliance.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the proposed AT&T Mobility, LLC deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC's RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

AT&T Mobility, LLC Proposed Alpha Sector Location

(2) Yellow Caution 2 sign(s) required one on each side of the sector.
Install a barrier that is 4' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.
Install (1) total Caution 2 sign(s) on the proposed barrier stanchions.
- 4' segment: (1) Caution 2 sign(s)

Install a barrier that is 7' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.
Install (1) total Caution 2 sign(s) on the proposed barrier stanchions.
- 7' segment: (1) Caution 2 sign(s)

AT&T Mobility, LLC Proposed Beta Sector Location

(2) Yellow Caution 2 sign(s) required one on each side of the sector.
Install a barrier that is 33' long, comprised of (3) segment(s) and an estimated (7) stanchions, as depicted in the site scale map.
Install (6) total Caution 2 sign(s) on the proposed barrier stanchions.
- 11' segment: (2) Caution 2 sign(s)
- 14' segment: (3) Caution 2 sign(s)
- 8' segment: (1) Caution 2 sign(s)

Install a barrier that is 4' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.
Install (1) total Caution 2 sign(s) on the proposed barrier stanchions.
- 4' segment: (1) Caution 2 sign(s)

AT&T Mobility, LLC Proposed Gamma Sector Location

(2) Red Warning 2 sign(s) required one on each side of the sector.
Install a barrier that is 6' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.

Install (1) total Warning 2 sign(s) on the proposed barrier stanchions.

- 6' segment: (1) Warning 2 sign(s)

Install a barrier that is 8' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.

Install (1) total Warning 2 sign(s) on the proposed barrier stanchions.

- 8' segment: (1) Warning 2 sign(s)

AT&T Mobility, LLC is predicted to exceed 5% of the GP limit in an area near T-Mobile antennas #17, #18 and #19 that is predicted to exceed that limit and no signs or barriers are in place. AT&T Mobility, LLC should work with T-Mobile to ensure compliance at this location.

Install a barrier that is 14' long on the right side of T-Mobile's antennas #17, #18 and #19, comprised of (2) segment(s) and an estimated (3) stanchions, as depicted in the site scale map

Recommended per AT&T Mobility, LLC's Policy:

Site Access Location

Sitesafe recommends that all AT&T Mobility, LLC signage be removed from all access points, as they are not required by AT&T Mobility, LLC's signage policy.

Notes:

- Signage on the barriers should be placed on the stanchions no more than 8' apart from each other.
- Barriers were only recommended in areas predicted to exceed the General Public MPE limit greater than 6' from the unprotected roof edge. All other predicted to exceed areas are within 6' of the unprotected roof edge.
- Any existing signage that conflicts with the proposed signage in this report should be removed per AT&T Signage Posting Rules.
- Ensure all existing signage documented in this report still exist at the site, unless otherwise indicated.

Other Operator Antennas:

T-Mobile should review their Gamma sector.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Site Safe, LLC, in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Leo Romero.

March 18, 2020

Appendix A – Statement of Limiting Conditions

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data collected by Sitesafe provided by a second party and data collected by Sitesafe, the data will be used.

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for evaluating the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996, the FCC periodically reviews these rules and regulations as per their congressional mandate.

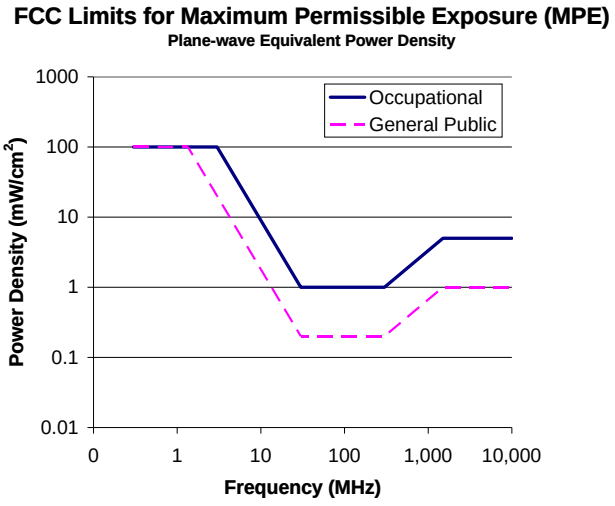
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lockout/Tagout procedure aimed to control the unexpected energization or startup of machines when maintenance or service is being performed.

Appendix C – Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a worker's understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet-based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Maintain a 3-foot clearance from all antennas: There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

Site RF Emissions Diagram(s): Section 4 of this report contains RF Diagram(s) that outline various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst-case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit. **Gray areas are accessible to anyone**.
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers**.
- Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.**
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

If trained occupational personnel require access to areas that are delineated as above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Appendix F – Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site complies with FCC standards with regards to Human Exposure to Radio Frequency Electromagnetic Fields from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to a half-wave dipole antenna.

Gain (of an antenna) – The ratio of the maximum power in a given direction to the maximum power in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antenna as compared to an omnidirectional antenna.

General Population/Uncontrolled Environment – Defined by the FCC as an area where RF exposure may occur to persons who are **unaware** of the potential for exposure and who have no control over their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use its industry specific knowledge of antenna models to select a worst-case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The rms and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC as an area where RF exposure may occur to persons who are **aware** of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10 measurements taken in a ten (10 second interval from zero (0 to six (6 feet. This measurement is intended to model the average energy a 6-foot tall human body will absorb while present in an electromagnetic field of energy.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix G – References

The following references can be followed for further information about RF Health and Safety.

Site Safe, LLC
http://www.sitesafe.com
FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety
National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org
Institute of Electrical and Electronics Engineers, Inc., (IEEE)
http://www.ieee.org
American National Standards Institute (ANSI)
http://www.ansi.org
Environmental Protection Agency (EPA)
http://www.epa.gov/radtown/wireless-tech.html
National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/
Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/
International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org
World Health Organization (WHO)
http://www.who.int/peh-emf/en/
National Cancer Institute
http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones
American Cancer Society (ACS)
http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?siteareа=PED
European Commission Scientific Committee on Emerging and Newly Identified Health Risks
http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf
Fairfax County, Virginia Public School Survey
http://www.fcps.edu/fts/safety-security/RFEESurvey/
UK Health Protection Agency Advisory Group on Non-Ionizing Radiation
http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368
Norwegian Institute of Public Health
http://www.fhi.no/dokumenter/545eea7147.pdf

Trylon

Prepared For

smartlink

Structural Analysis

Steven Uecke, P.E.
MD P.E. License No. 42852
Date: 02-28-20 Expires: 11-28-20

GILL

02/28/20

PASS (44.6%)

TABLE OF CONTENT

STRUCTURAL ANALYSIS REPORT

SMARTLINK
1362 Mellon Road, Suite 140
Hanover, MD 21076

Attention: **Nathan Lenig**

Reference: Roof Frame Analysis – Engineering Assessment, located at 9727 Mount Pisgah Road, Silver Spring, MD 20903.

Trylon Job No.:	157156
AT&T Site Name:	GILL
AT&T Site FA#:	10128448
Site Address:	9727 Mount Pisgah Road, Silver Spring, MD 20903
Tower Profile:	Rooftop

Dear Nathan Lenig:

We have been provided with RF information for above-referenced site. AT&T is proposing to add new equipment to the existing equipment platform.

A revised equipment schematic has been provided to us. We have been asked to evaluate this information to determine whether or not the existing roof framing supporting the equipment platform is structurally adequate to safely support the proposed loading changes. The structural evaluation refers to the equipment cabinet installed at the existing rooftop equipment platform located at 9727 Mount Pisgah Road, Silver Spring, MD 20903.

The proposed changes were provided to us in scope of work Trylon drawing package dated 01/21/2020. The equipment platform is located at **133-ft 6-in** elevation. The existing equipment platform framing was verified for the loading from the proposed new and existing equipment cabinet.

The existing platform framing information that we considered in our evaluation is based on the previous construction drawings prepared by "BC Architects Engineers" dated 01/13/2011. The structural members that we considered in our analysis are presented in the attached sketches.

We consider that the existing equipment platform framing is in "like new" condition without cracks or deteriorated parts.

Proposed Equipment Cabinet:

Status	Equipment Cabinet	Qty.	Weight (lbs)
Proposed	**NETXTEND Battery Cabinet**	**1**	**2610.0**
	DC12	**3**	**56.3**
Existing	TE41 Cabinet	1	847.0
	9412 Cabinet	1	230.0
	UMTS Cabinet	1	1200.0
	FLEX Cabinet	1	600.0*

* Weight assumed

CONCLUSIONS AND RECOMMENDATIONS

Based on information provided, our calculations conclude that the existing equipment platform supporting the proposed new and existing equipment cabinet located at **133-ft 6-in** elevation of the Rooftop at the specified address, are **STRUCTURALLY ADEQUATE** to safely support the proposed equipment, subject to the attached Standard Conditions on page 4**.** The proposed new addition replaces the similar weight in the equipment and the existing roof frame supporting the equipment platform shall be structurally adequate.

Should you have any questions, comments or require additional information, please do not hesitate to call.

Sincerely,

Analysis performed by:

Ashraful Alam, PhD, PE

Standard Conditions for Providing Structural Consulting Services on Existing Structures

1. Roof structure is analyzed to the best of our ability using all information that is provided or can be obtained during fieldwork (if authorizes by client). If the existing conditions are not as we have represented in this analysis, we should be contacted to evaluate the significance of the deviation and revise the assessment accordingly.

2. The structural analysis has been performed assuming that existing roof slab is in "like new" condition. No allowance was made for excessive corrosion, damaged or missing structural members, loose bolts, misaligned parts, or any reduction in strength due to the age or fatigue of the product.

3. The structural analysis provided is an assessment of the primary load carrying capacity of the structure. We provide a limited scope of service. In some cases, we cannot verify the capacity of every structural parameter. In some cases, structural fabrication details are unknown at the time of our analysis, and the detailed field measurement of some of the required details may not be possible. In instances where we cannot perform connection capacity calculations, it is assumed that the existing manufactured connections develop the full capacity of the primary members being connected.

4. We cannot be held responsible for temporary and unbalanced loads on the roof structure. Our analysis is based on a particular loading arrangement or as-built field condition. We are not responsible for the methods and means of how the loading arrangement is accomplished by the contractor. These methods and means may include rigging of equipment or hardware to lift and locate, temporary hanging of equipment in locations other than the final arrangement, movement and tie off of tower riggers, personnel, and their equipment, etc.

Structural Calculations

Applicable Codes and References:

2015 International Building Code

ASCE 7-10 Minimum Design Loads for Buildings and Other Structures

AISC Steel Construction Manual Fourteenth Edition

Load Combinations (IBC 2015 LRFD):

- 1.4(D + F) (Eq. 16-1)
- 1.2(D + F) + 1.6(L + H) + 0.5(L_r or S or R) (Eq. 16-2)
- 1.2(D + F) + 1.6(L_r or S or R) + 1.6H + (f_1L or 0.5W) (Eq. 16-3)
- 1.2(D + F) + 1.0W + f_1L + 1.6H + 0.5(L_r or S or R) (Eq. 16-4)
- 1.2(D + F) + 1.0E + f_1L +1.6H + f_2S (Eq. 16-5)
- 0.9D + 1.0W + 1.6H (Eq. 16-6)
- 0.9(D + F) + 1.0E + 1.6H (Eq. 16-7)

Load Combinations (IBC 2015 ASD):

- D + F (Eq. 16-8)
- D + H + F + L (Eq. 16-9)
- D + H + F + (L_r or S or R) (Eq. 16-10)
- D + H + F + 0.75(L) + 0.75(L_r or S or R) (Eq. 16-11)
- D + H + F + (0.6W or 0.7E) (Eq. 16-12)
- D + H + F + 0.75(0.6W) + 0.75L + 0.75(L_r or S or R) (Eq. 16-13)
- D + H + F + 0.75(0.7E) + 0.75L + 0.75S (Eq. 16-14)
- 0.6D + 0.6W + H (Eq. 16-15)
- 0.6(D + F) + 0.7E + H (Eq. 16-16)

Notations:

- D = Dead load of structure and appurtenances, excluding guy assemblies
- F = Load due to fluids with well-defined pressures and maximum heights
- L = Floor live load
- H = Load due to lateral earth pressures, ground water pressure or pressure of bulk materials
- L_r = Roof live load
- R = Rain load
- S = Snow load
- W = Load due to wind pressure
- E = Combined effect of horizontal and vertical earthquake induced forces
- f_1 = 1 for floors in places of public assembly in excess of 100 pounds per square foot, and = 0.5 for other live loads
- f_2 = 0.7 for roof configurations that do not shed snow off the structure, and = 0.2 for other roof configurations

WIND LOAD ON EQUIPMENT

ASCE 7-10: Section 29.5.1

Basic wind speed	V = 115 mph
Risk category	II
Velocity pressure exponent coef (Table 26.6-1)	K_d = **0.85**
Exposure category (Sect. 2.6.5)	**C**
Height of building	h = **136.50** ft
Topography factor not signifcant (Sect. 2.6.6)	K_{zt} = 1.00
Nominal height of atmospheric boundary layer	z_g = **900** ft
3-second gust wind speed power law exponent	α = **9.5**
Terrain constant	K_e = **1.00**
Minimum value for K_z	$K_{zmin} = \max(2.01 \times (z/z_g)^{(2/\alpha)}, 0.85)$ = **1.351**
Velocity pressure coefficient (Sect. 2.6.5.2)	$K_z = \min(K_{zmin}, 2.01)$ = **1.351**
Velocity pressure	q_h **=** $0.00256 \times K_z \times K_{zt} \times K_d \times V^2 \times 1psf/mph^2$ = **38.887** psf

NETXTEND Cabinet

Length of equipment	L_1 = 3.1 ft
Width of equipment	W_1 =3.0 ft
Height of equipment	H_1 = 6.0 ft
Vertical projected area normal to wind	$A_{f1x} = L_1 \times H_1$ = **18.600** ft^2
Vertical projected area Transverse to wind	$A_{f1z} = W_1 \times H_1$ = **18.000** ft^2
Horizontal projected area normal to wind	$A_{r1} = L_1 \times W_1$ = **9.300** ft^2

TE41 Cabinet

Length of equipment	L_2 = 3.33 ft
Width of equipment	W_2 =3.0 ft
Height of equipment	H_2 = 6.17 ft
Vertical projected area normal to wind	$A_{f2x} = L_2 \times H_2$ = **20.546** ft^2
Vertical projected area Transverse to wind	$A_{f2z} = W_2 \times H_2$ = **18.510** ft^2
Horizontal projected area normal to wind	$A_{r2} = L_2 \times W_2$ = **9.990** ft^2

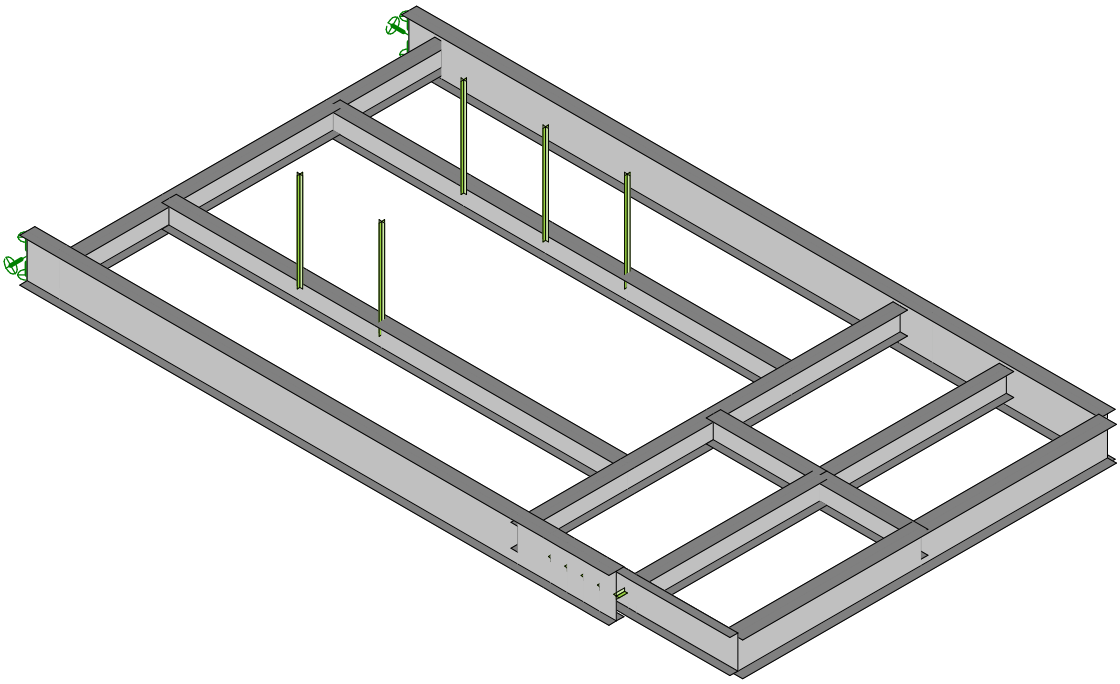
UMTS Cabinet

Length of equipment	L_3 = 2.6 ft
Width of equipment	W_3 =2.5 ft
Height of equipment	H_3 = 7.4 ft
Vertical projected area normal to wind	$A_{f3x} = L_3 \times H_3$ = **19.240** ft^2
Vertical projected area Transverse to wind	$A_{f3z} = W_3 \times H_3$ = **18.500** ft^2
Horizontal projected area normal to wind	$A_{r3} = L_3 \times W_3$ = **6.500** ft^2
Horizontal projected area normal to wind	$A_{r4} = L_4 \times W_4$ = **4.367** ft^2

Wind force (Normal and Transverse)

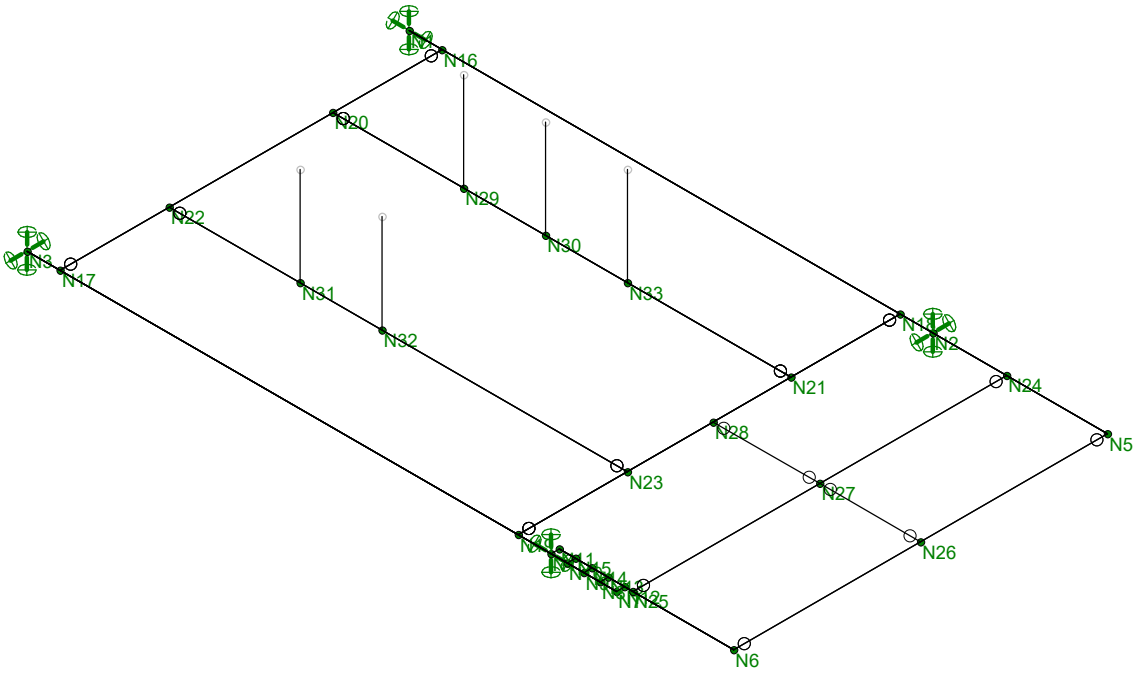
Pressure coefficient	GC_f = **1.9**
Lateral force due to wind (N-direction)	$F_{h1x} = \max(16\ psf, q_h \times GC_f) \times A_{f1x}$ = **1374.273** lb
Lateral force due to wind (T-direction)	$F_{h1z} = \max(16\ psf, q_h \times GC_f) \times A_{f1z}$ = **1329.942** lb

Lateral force due to wind (N-direction)	$F_{h2x} = \max(16\ psf, q_h \times GC_f) \times A_{f2x} =$ **1518.062** lb
Lateral force due to wind (T-direction)	$F_{h2z} = \max(16\ psf, q_h \times GC_f) \times A_{f2z} =$ **1367.623** lb
Lateral force due to wind (N-direction)	$F_{h3x} = \max(16\ psf, q_h \times GC_f) \times A_{f3x} =$ **1421.560** lb
Lateral force due to wind (T-direction)	$F_{h3z} = \max(16\ psf, q_h \times GC_f) \times A_{f3z} =$ **1366.884** lb



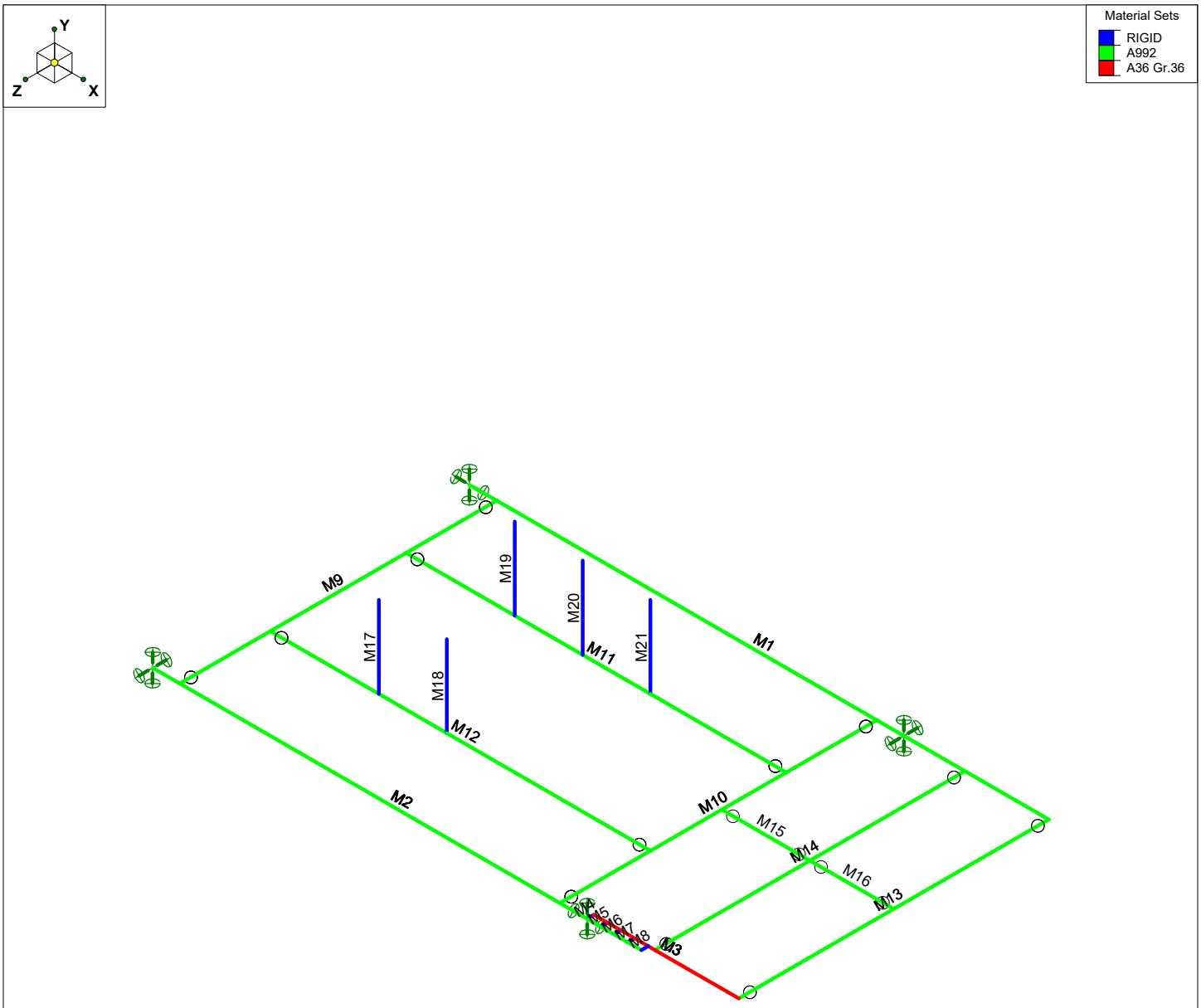
Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 9
AA	Gill	Feb 4, 2020 at 2:30 PM
157156	3-D View	AT&T_Gill_Equipment Platform.r3d



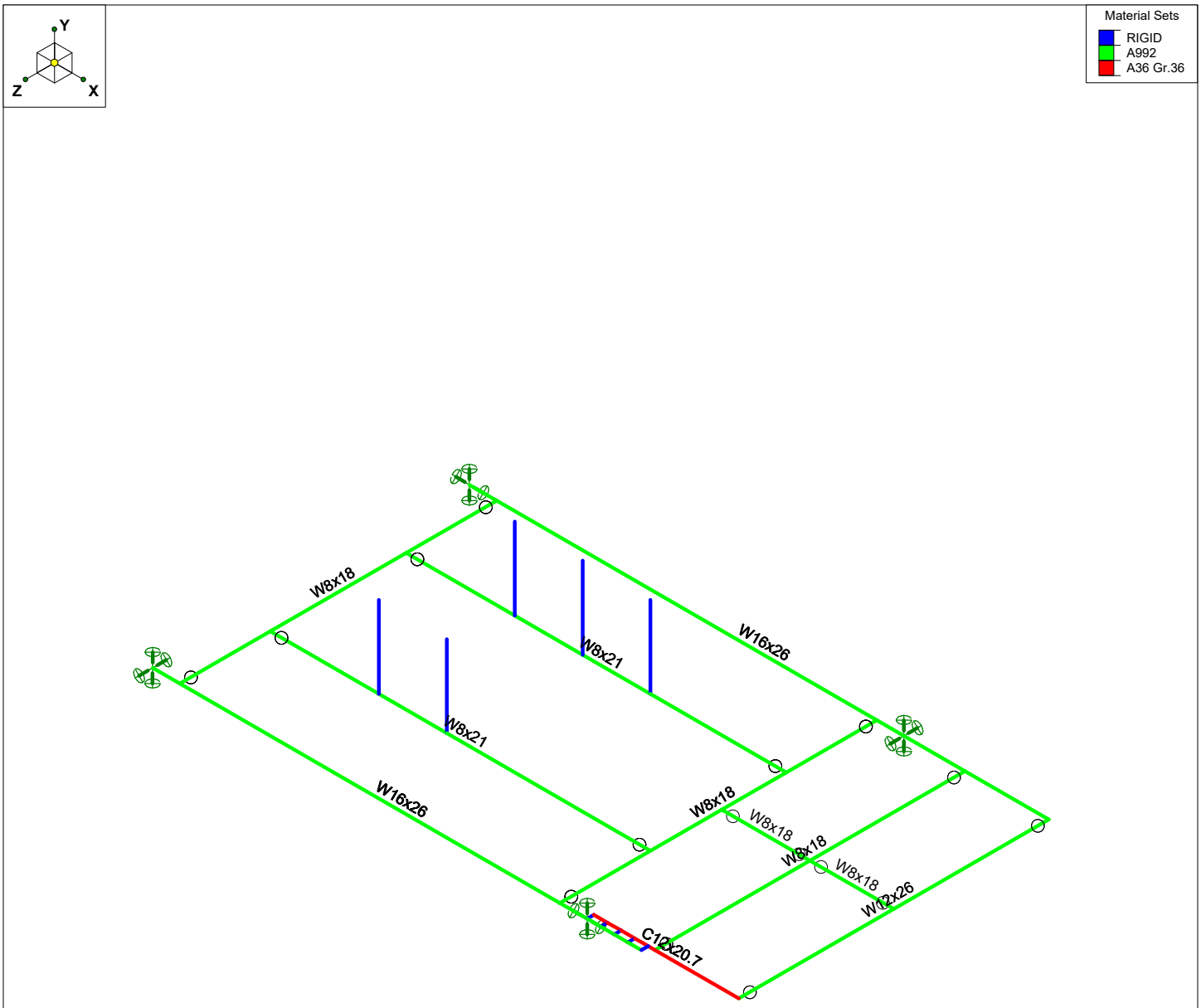
Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 10
AA	Gill	Feb 4, 2020 at 2:31 PM
157156	Node Numbers	AT&T_Gill_Equipment Platform.r3d



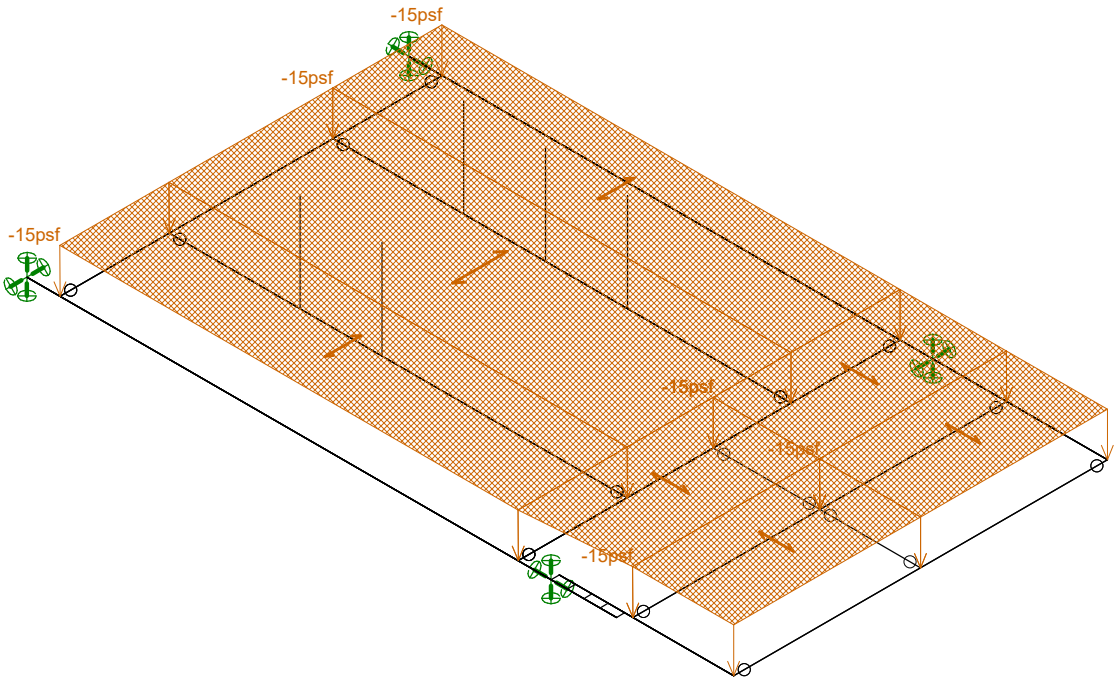
Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 11
AA	Gill	Feb 4, 2020 at 2:32 PM
157156	Member Labels	AT&T_Gill_Equipment Platform.r3d



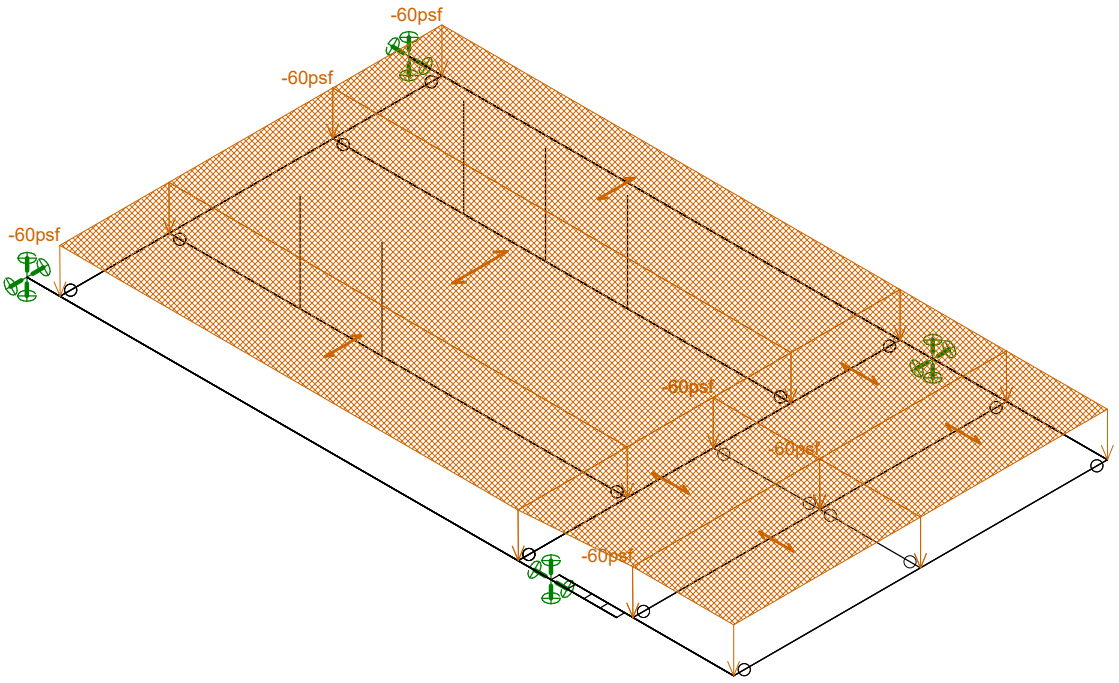
Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 12
AA	Gill	Feb 4, 2020 at 2:32 PM
157156	Member Shapes	AT&T_Gill_Equipment Platform.r3d



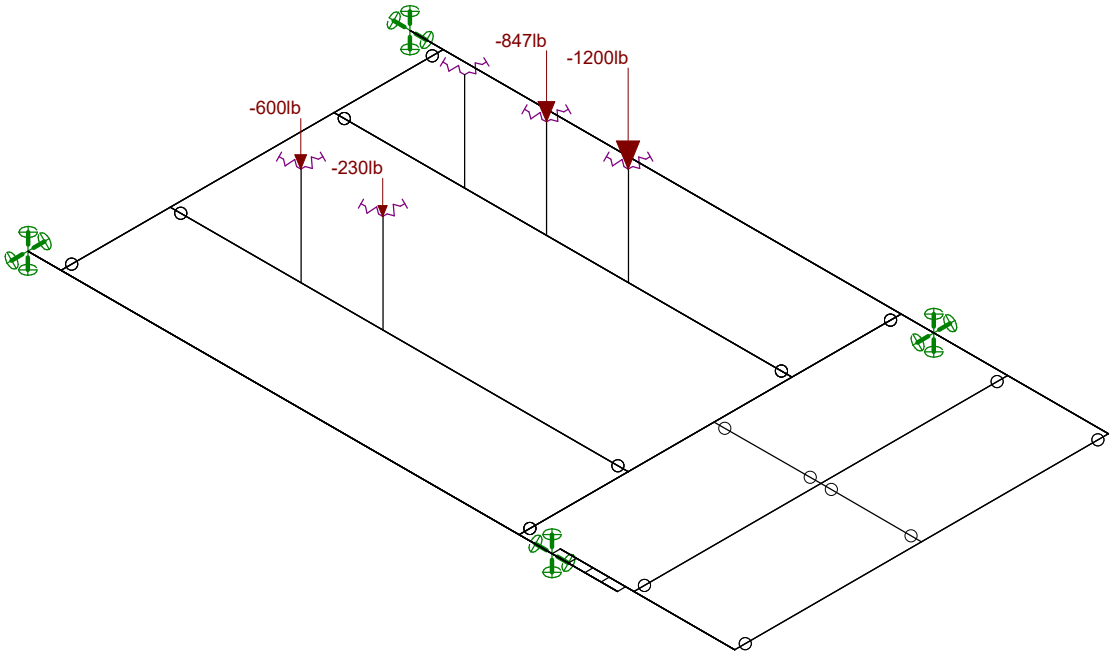
Loads: BLC 1, DL
Envelope Only Solution

Trylon		Page - 13
AA	Gill	Feb 4, 2020 at 2:32 PM
157156	Dead Load	AT&T_Gill_Equipment Platform.r3d



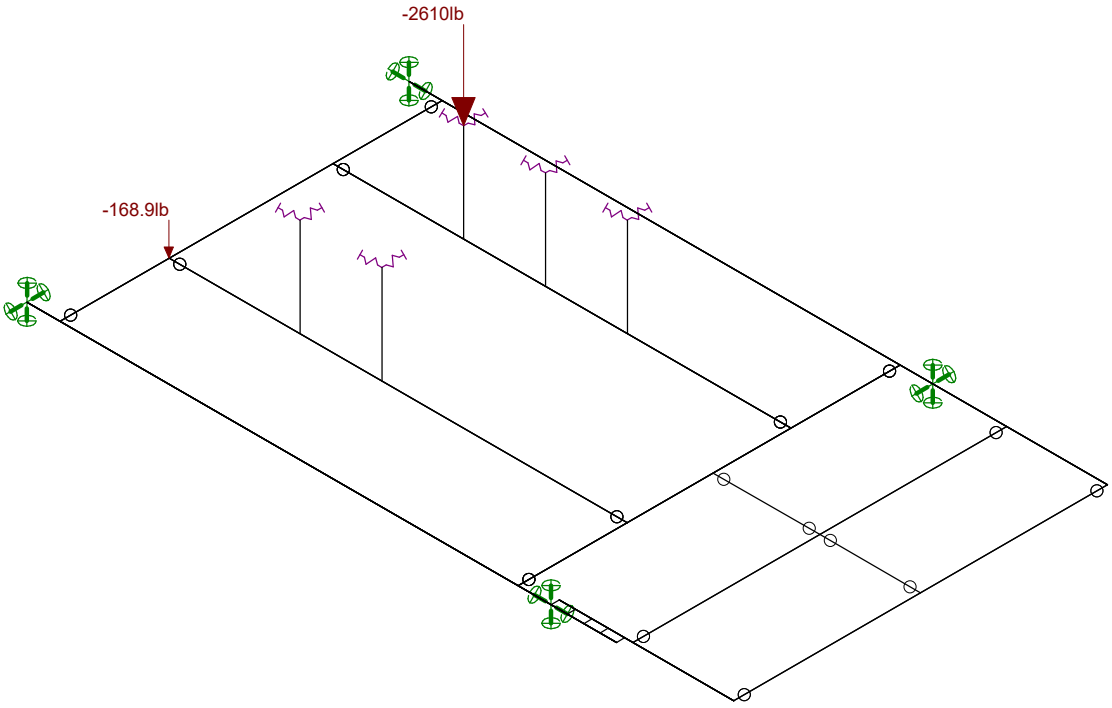
Loads: BLC 2, LL
Envelope Only Solution

Trylon		Page - 14
AA	Gill	Feb 4, 2020 at 2:33 PM
157156	Live Load	AT&T_Gill_Equipment Platform.r3d



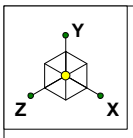
Loads: BLC 5, EX. EQ
Envelope Only Solution

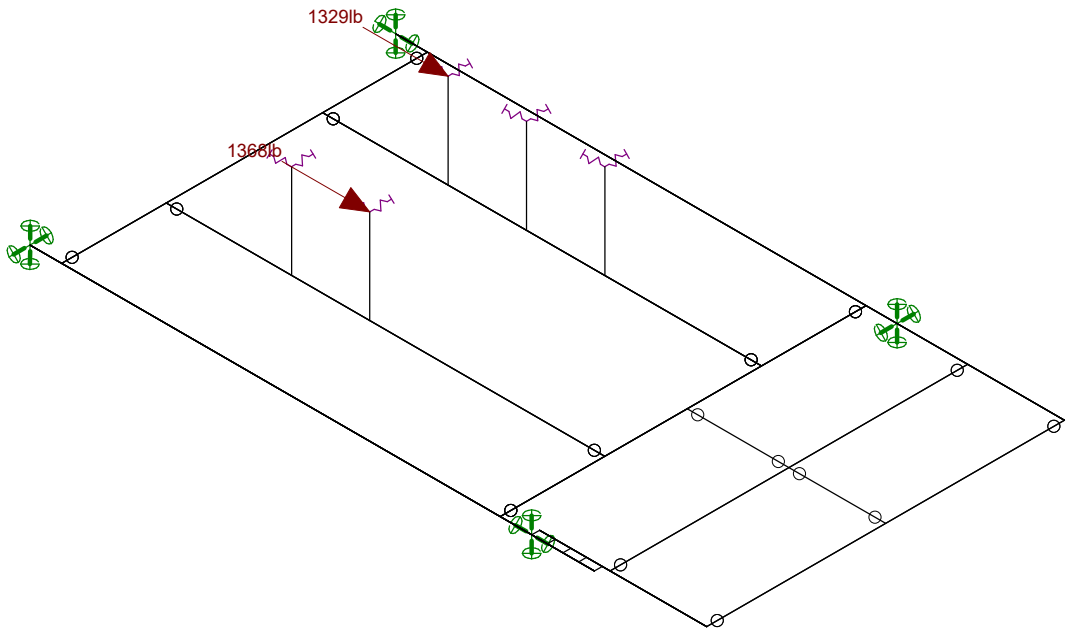
Trylon		Page - 15
AA	Gill	Feb 6, 2020 at 3:31 PM
157156	Ex. Equipment Load	AT&T_Gill_Equipment Platform.r3d



Loads: BLC 6, NEW EQ
Envelope Only Solution

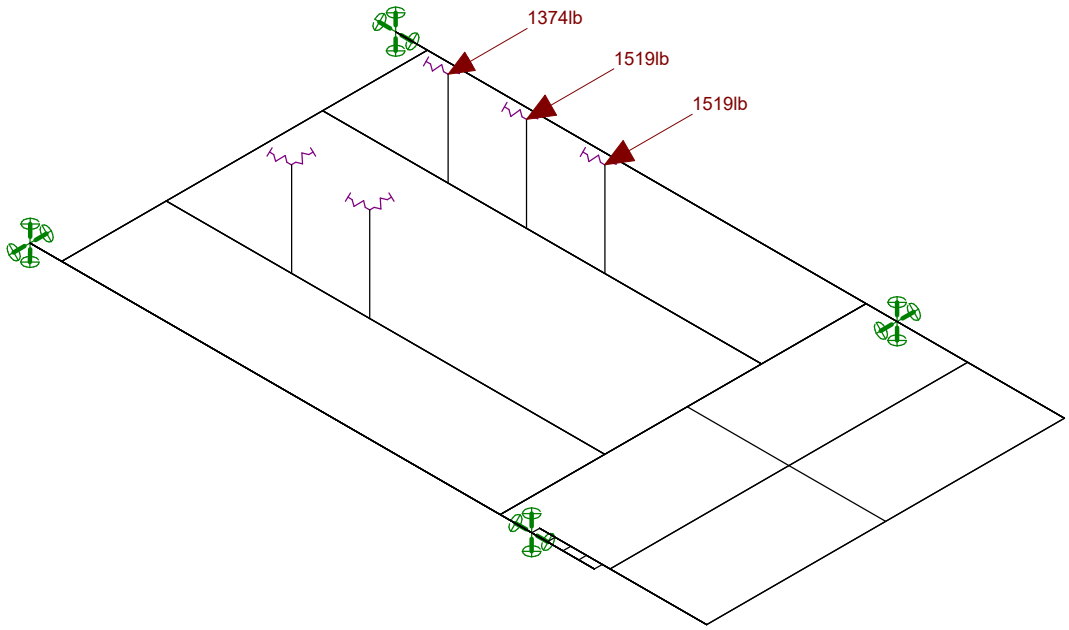
Trylon		Page - 16
AA	Gill	Feb 6, 2020 at 3:31 PM
157156	New Equipment Load	AT&T_Gill_Equipment Platform.r3d





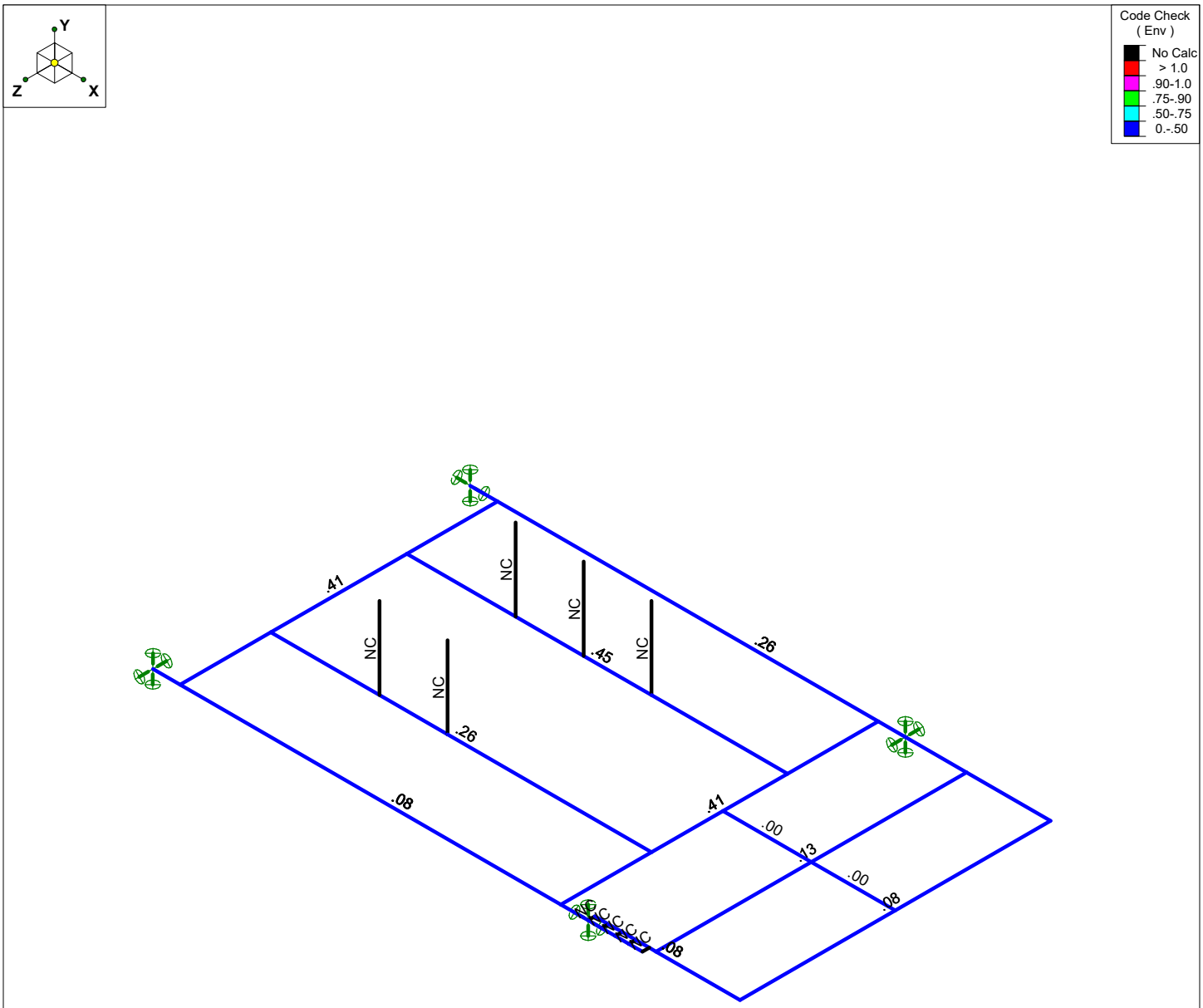
Loads: BLC 3, WLX
Envelope Only Solution

Trylon		Page - 17
AA	Gill	Feb 28, 2020 at 10:26 AM
157156	Wind Load x-direction	AT&T_Gill_Equipment Platform.r3d



Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 18
AA	Gill	Feb 28, 2020 at 10:27 AM
157156	Wind Load z-direction	AT&T_Gill_Equipment Platform.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Trylon		Page - 19
AA	Gill	Feb 28, 2020 at 10:27 AM
157156	Member Stress Ratio	AT&T_Gill_Equipment Platform.r3d

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N1	0	0	0	0	
2	N2	192	0	0	0	
3	N3	0	0	140	0	
4	N4	192	0	140	0	
5	N5	256	0	0	0	
6	N6	256	0	137	0	
7	N7	216	0	140	0	
8	N8	210	0	140	0	
9	N9	204	0	140	0	
10	N10	198	0	140	0	
11	N11	192	0	137	0	
12	N12	216	0	137	0	
13	N13	210	0	137	0	
14	N14	204	0	137	0	
15	N15	198	0	137	0	
16	N16	12	0	0	0	
17	N17	12	0	140	0	
18	N18	180	0	0	0	
19	N19	180	0	140	0	
20	N20	12	0	40	0	
21	N21	180	0	40	0	
22	N22	12	0	100	0	
23	N23	180	0	100	0	
24	N24	219	0	0	0	
25	N25	219	0	137	0	
26	N26	256	0	68.5	0	
27	N27	219	0	68.5	0	
28	N28	180	0	68.5	0	
29	N29	60	0	40	0	
30	N30	90	0	40	0	
31	N31	60	0	100	0	
32	N32	90	0	100	0	
33	N33	120	0	40	0	
34	N34	60	36	40	0	
35	N35	90	36	40	0	
36	N36	60	36	100	0	
37	N37	90	36	100	0	
38	N38	120	36	40	0	

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E..Density[k/ft...		Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N5			W16x26	Beam	Wide Flange	A992	Typical
2	M2	N3	N7			W16x26	Beam	Wide Flange	A992	Typical
3	M3	N11	N6			C12x20.7	Beam	Channel	A36 Gr.36	Typical
4	M4	N4	N11			RIGID	None	None	RIGID	Typical
5	M5	N10	N15			RIGID	None	None	RIGID	Typical
6	M6	N9	N14			RIGID	None	None	RIGID	Typical
7	M7	N8	N13			RIGID	None	None	RIGID	Typical
8	M8	N7	N12			RIGID	None	None	RIGID	Typical
9	M9	N17	N16			W8x18	Beam	Wide Flange	A992	Typical
10	M10	N19	N18			W8x18	Beam	Wide Flange	A992	Typical
11	M11	N20	N21			W8x21	Beam	Wide Flange	A992	Typical
12	M12	N22	N23			W8x21	Beam	Wide Flange	A992	Typical
13	M13	N6	N5			W12x26	Beam	Wide Flange	A992	Typical
14	M14	N25	N24			W8x18	Beam	Wide Flange	A992	Typical
15	M15	N28	N27			W8x18	Beam	Wide Flange	A992	Typical
16	M16	N27	N26			W8x18	Beam	Wide Flange	A992	Typical
17	M17	N31	N36			RIGID	None	None	RIGID	Typical
18	M18	N32	N37			RIGID	None	None	RIGID	Typical
19	M19	N29	N34			RIGID	None	None	RIGID	Typical
20	M20	N30	N35			RIGID	None	None	RIGID	Typical
21	M21	N33	N38			RIGID	None	None	RIGID	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	W16x26	256	6	6	Lbyy						Lateral
2	M2	W16x26	216			Lbyy						Lateral
3	M3	C12x20.7	64			Lbyy						Lateral
4	M9	W8x18	140			Lbyy						Lateral
5	M10	W8x18	140			Lbyy						Lateral
6	M11	W8x21	168			Lbyy						Lateral
7	M12	W8x21	168			Lbyy						Lateral
8	M13	W12x26	137			Lbyy						Lateral
9	M14	W8x18	137			Lbyy						Lateral
10	M15	W8x18	39			Lbyy						Lateral
11	M16	W8x18	37			Lbyy						Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	DL	DL		-1					7	
2	LL	LL							7	
3	WLX	WLX				2				
4	WLZ	WLZ				3				
5	EX. EQ	DL				4				
6	NEW EQ	DL				2				
7	BLC 1 Transient Area...	None						22		
8	BLC 2 Transient Area...	None						22		

Joint Loads and Enforced Displacements (BLC 3 : WLX)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/...
1	N34	L	X	1329
2	N37	L	X	1368

Joint Loads and Enforced Displacements (BLC 4 : WLZ)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/...
1	N34	L	Z	1374
2	N35	L	Z	1519
3	N38	L	Z	1519

Joint Loads and Enforced Displacements (BLC 5 : EX. EQ)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/...
1	N35	L	Y	-847
2	N38	L	Y	-1200
3	N36	L	Y	-600
4	N37	L	Y	-230

Joint Loads and Enforced Displacements (BLC 6 : NEW EQ)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/...
1	N34	L	Y	-2610
2	N22	L	Y	-168.9

Member Area Loads (BLC 1 : DL)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N17	N22	N23	N19	Y	A-B	-15
2	N20	N22	N23	N21	Y	A-B	-15
3	N16	N20	N21	N18	Y	A-B	-15
4	N28	N27	N25	N19	Y	A-B	-15
5	N28	N27	N24	N18	Y	A-B	-15
6	N25	N6	N26	N27	Y	A-B	-15
7	N27	N26	N5	N24	Y	A-B	-15

Member Area Loads (BLC 2 : LL)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N17	N22	N23	N19	Y	A-B	-60
2	N20	N22	N23	N21	Y	A-B	-60
3	N16	N20	N21	N18	Y	A-B	-60
4	N28	N27	N25	N19	Y	A-B	-60
5	N28	N27	N24	N18	Y	A-B	-60
6	N25	N6	N26	N27	Y	A-B	-60
7	N27	N26	N5	N24	Y	A-B	-60

Load Combinations

	Description	Sol...	PD...	SR...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	IBC 16-1	Yes	Y		DL	1.4																				
2	IBC 16-2 (a)	Yes	Y		DL	1.2	LL	1.6	LLS	1.6																
3	IBC 16-3 (...	Yes	Y		DL	1.2	W...	.5																		
4	IBC 16-3 (...	Yes	Y		DL	1.2	WLZ	.5																		
5	IBC 16-3 (...	Yes	Y		DL	1.2	W...	-.5																		
6	IBC 16-3 (...	Yes	Y		DL	1.2	WLZ	-.5																		
7	IBC 16-4 (...	Yes	Y		DL	1.2	W...	1	LL	.5	LLS	1														
8	IBC 16-4 (...	Yes	Y		DL	1.2	WLZ	1	LL	.5	LLS	1														
9	IBC 16-4 (...	Yes	Y		DL	1.2	W...	-1	LL	.5	LLS	1														
10	IBC 16-4 (...	Yes	Y		DL	1.2	WLZ	-1	LL	.5	LLS	1														
11	IBC 16-6 (a)	Yes	Y		DL	.9	W...	1																		
12	IBC 16-6 (b)	Yes	Y		DL	.9	WLZ	1																		
13	IBC 16-6 (c)	Yes	Y		DL	.9	W...	-1																		
14	IBC 16-6 (d)	Yes	Y		DL	.9	WLZ	-1																		

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N3	max	0	1	6608.953	2	63.057	8	0	1	.056	10	8.587	2
2		min	0	1	1897.057	11	-62.549	10	0	1	-.056	8	2.429	11
3	N2	max	0	1	12573.636	2	36.246	8	0	1	.025	8	-1.887	13
4		min	0	1	3264.065	13	-33.354	10	0	1	-.024	10	-3.865	2
5	N1	max	1108.183	9	6854.898	2	0	1	0	1	.001	10	0	1
6		min	-1055.206	11	2394.906	11	0	1	0	1	-.001	8	0	1
7	N4	max	1192.525	9	10967.955	2	0	1	.891	2	.11	11	0	1
8		min	-1125.377	11	2352.354	13	0	1	.182	11	-.115	9	0	1
9	N36	max	72.159	13	0	1	8.286	2	0	1	0	1	0	1
10		min	-151.227	7	0	1	2.816	11	0	1	0	1	0	1
11	N37	max	110.693	13	0	1	4.791	2	0	1	0	1	0	1
12		min	-106.848	7	0	1	1.31	13	0	1	0	1	0	1
13	N34	max	22.085	13	0	1	1431.701	10	0	1	0	1	0	1
14		min	-254.171	7	0	1	-1442.759	8	0	1	0	1	0	1
15	N35	max	88.845	13	0	1	1550.559	10	0	1	0	1	0	1
16		min	-101.013	7	0	1	-1551.917	8	0	1	0	1	0	1
17	N38	max	200.464	9	0	1	1517.385	10	0	1	0	1	0	1
18		min	-1.266	11	0	1	-1525.004	8	0	1	0	1	0	1
19	Totals:	max	2697	9	37005.443	2	4412	10						
20		min	-2697	11	10758.835	11	-4412	8						

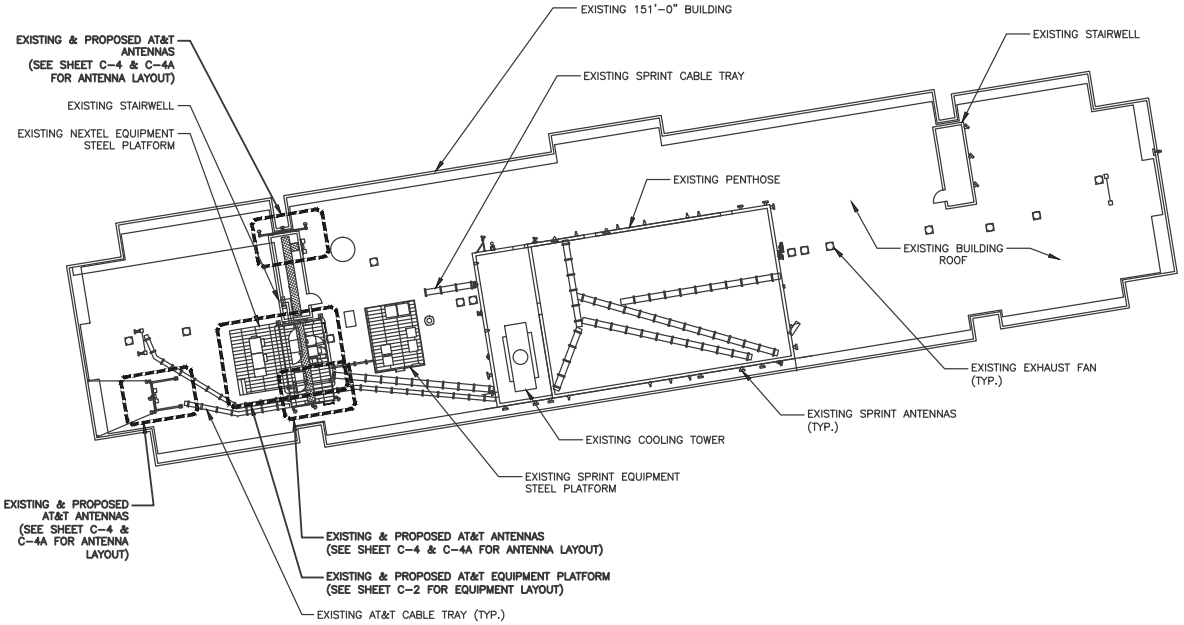
Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code C...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
1	M1	W16x26	.262	192	2	.085	192	y	2	105423.4...	345600	20.55	59.959	1....	H1-1b
2	M2	W16x26	.081	191.25	2	.069	191.25	y	2	46435.588	345600	20.55	139.651	3....	H1-1b
3	M3	C12x20.7	.079	0	2	.066	24	y	2	140262.4...	196992	7.438	69.12	1....	H1-1b
4	M9	W8x18	.409	99.167	2	.112	140	y	2	91863.311	236700	17.475	50.708	1....	H1-1b
5	M10	W8x18	.414	99.167	2	.115	140	y	2	91863.311	236700	17.475	49.534	1....	H1-1b
6	M11	W8x21	.446	77	2	.213	0	y	10	78201.637	277200	21.337	56.95	1....	H1-1b
7	M12	W8x21	.258	77	2	.082	0	y	2	78201.637	277200	21.337	56.703	1....	H1-1b
8	M13	W12x26	.083	68.5	9	.014	137	y	2	187087.8...	344250	30.637	121.924	1....	H1-1b
9	M14	W8x18	.128	68.5	2	.040	0	y	2	95687.229	236700	17.475	51.705	1....	H1-1b
10	M15	W8x18	.003	19.5	9	.001	39	y	1	219949.2...	236700	17.475	63.75	1....	H1-1b
11	M16	W8x18	.002	18.5	9	.001	0	y	2	221568.4...	236700	17.475	63.75	1....	H1-1b

References

GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL GIVE ALL NOTICES AND REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE SUBCONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID SUBCONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE SUBCONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE AT&T REPRESENTATIVE OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF SUBCONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE SUBCONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIAL AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE SUBCONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE THEMSELVES WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE SUBCONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS INFORMED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE SUBCONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE, UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS, AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEERING, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
11. THE SUBCONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVEMENTS, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE SUBCONTRACTOR SHALL REPAIR ANY DAMAGE THE MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. THE SUBCONTRACTOR SHALL MAINTAIN THE GENERAL WORK AREA AS CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST OR SMUDGES OF ANY NATURE.
13. THE SUBCONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
14. THE SUBCONTRACTOR SHALL NOTIFY THE AT&T REPRESENTATIVE (B&T ENGINEERING) WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE SUBCONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE AT&T REPRESENTATIVE (B&T ENGINEERING).
15. THE SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOBS.



TRUE NORTH

BUILDING PLAN

0 8' 16' 32'

SCALE: 1/32"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

1

AT&T

smartlink

Trylon

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

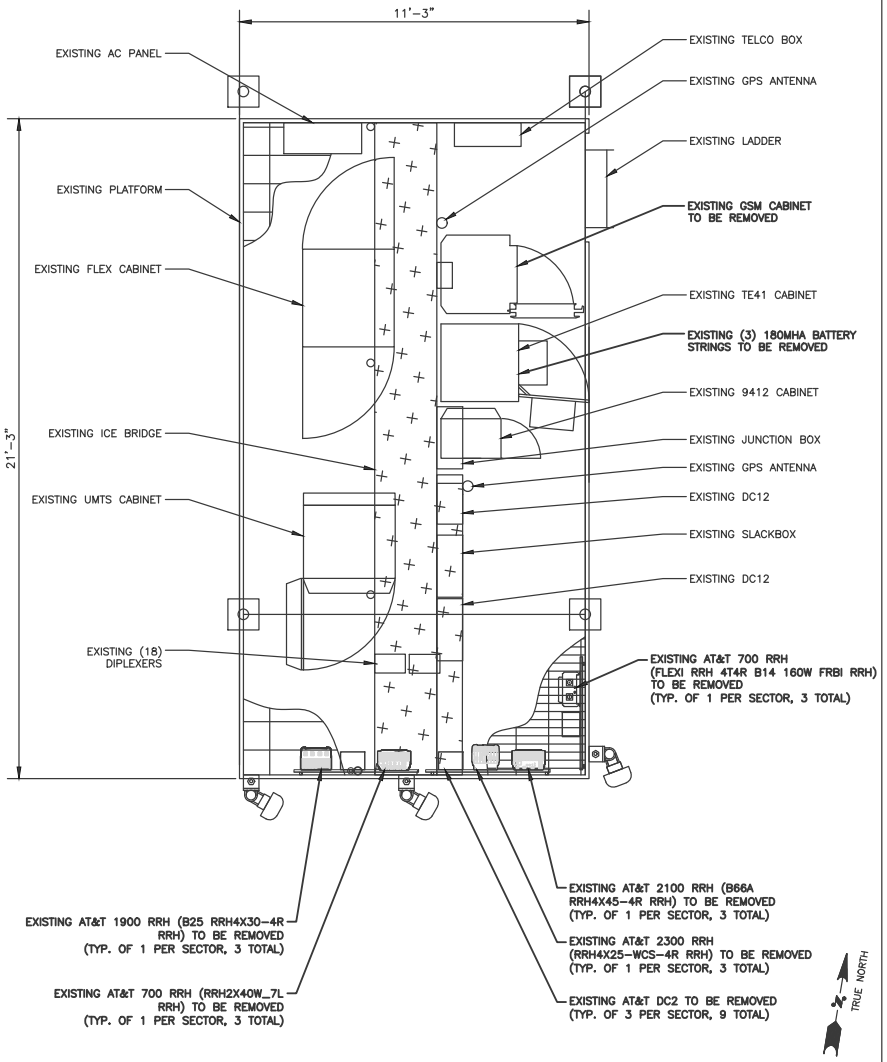
EXISTING BUILDING

SHEET DESCRIPTION

BUILDING PLAN

SHEET NO.

C-1

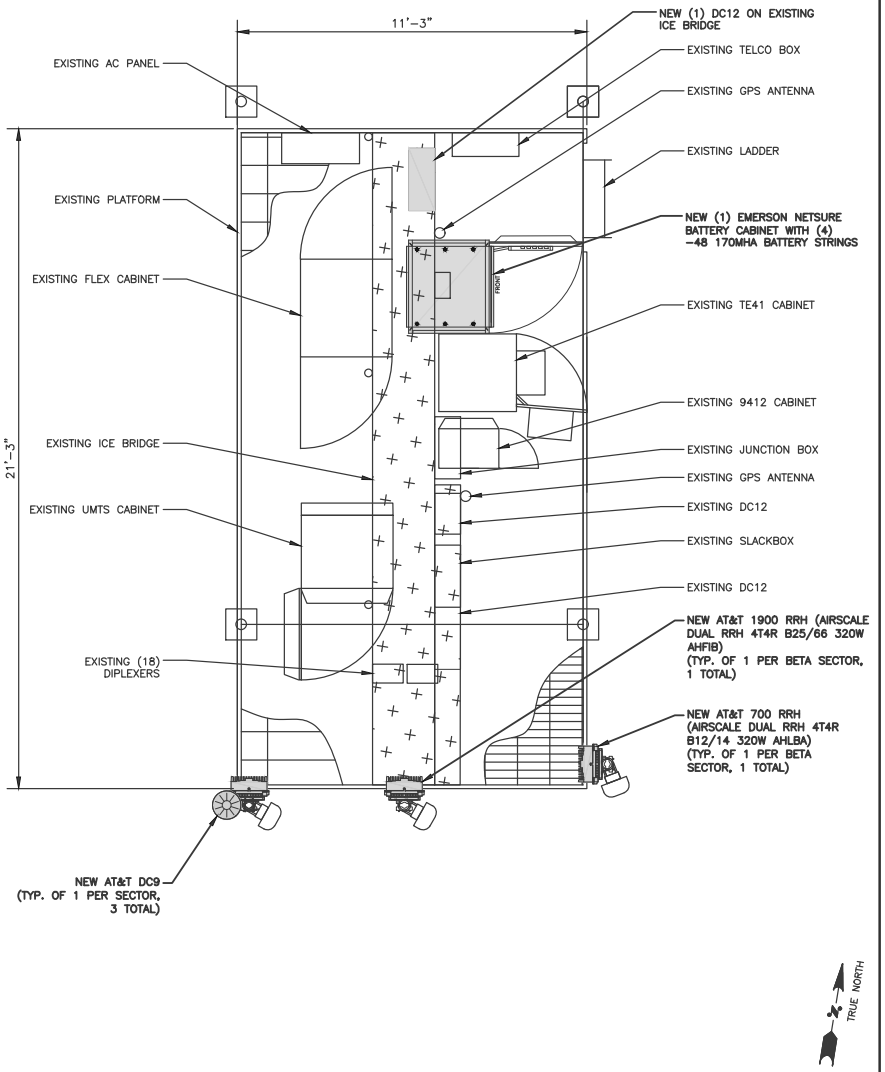


EXISTING EQUIPMENT LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

1



PROPOSED EQUIPMENT LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

2

AT&T

smartlink

Trylon

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

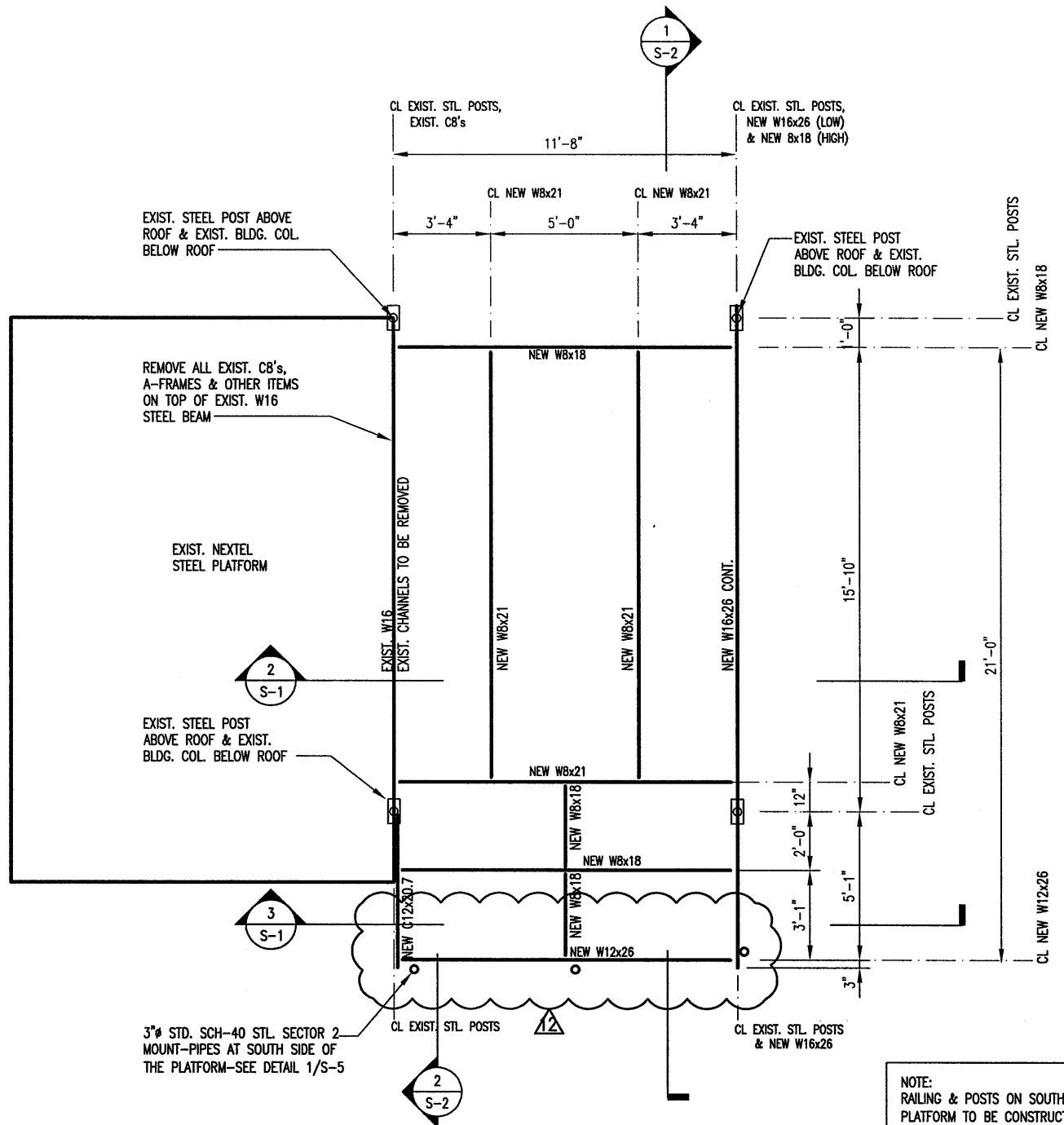
EXISTING BUILDING

SHEET DESCRIPTION

EQUIPMENT PLAN

SHEET NO.

C-2

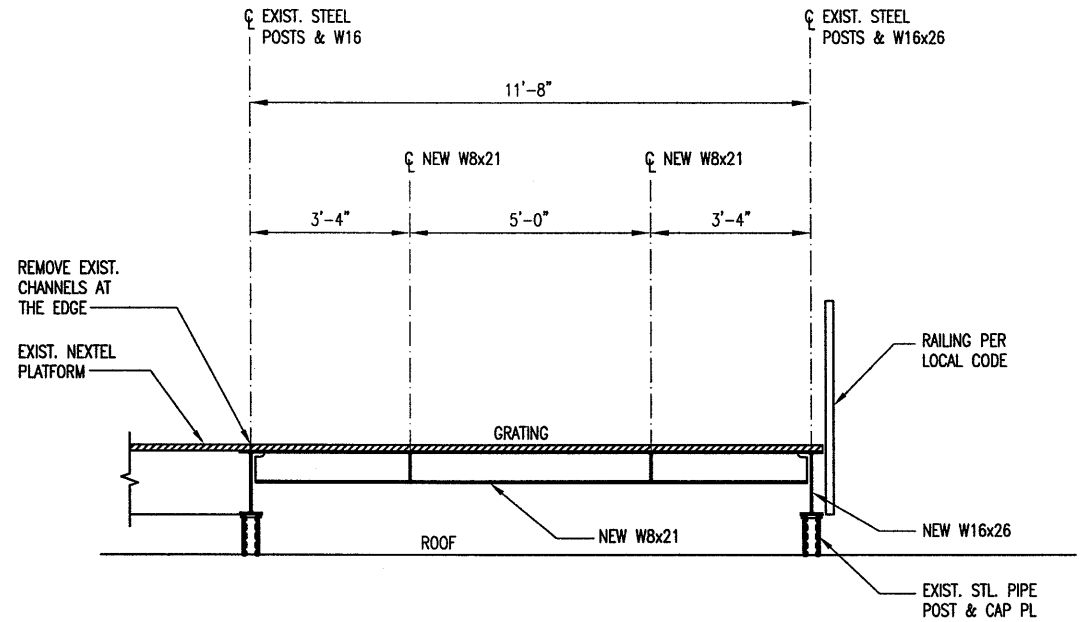


NOTE:
RAILING & POSTS ON SOUTH SIDE OF PLATFORM TO BE CONSTRUCTED OF 3"ø STD. PIPE, PER ATTACHED DETAIL. RAILING ON NORTH, EAST & WEST SIDES OF THE PLATFORM TO BE CONSTRUCTED PER TYPICAL HANDRAIL DETAIL AND IN CONFORMANCE WITH THE LOCAL CODE REQUIREMENTS.

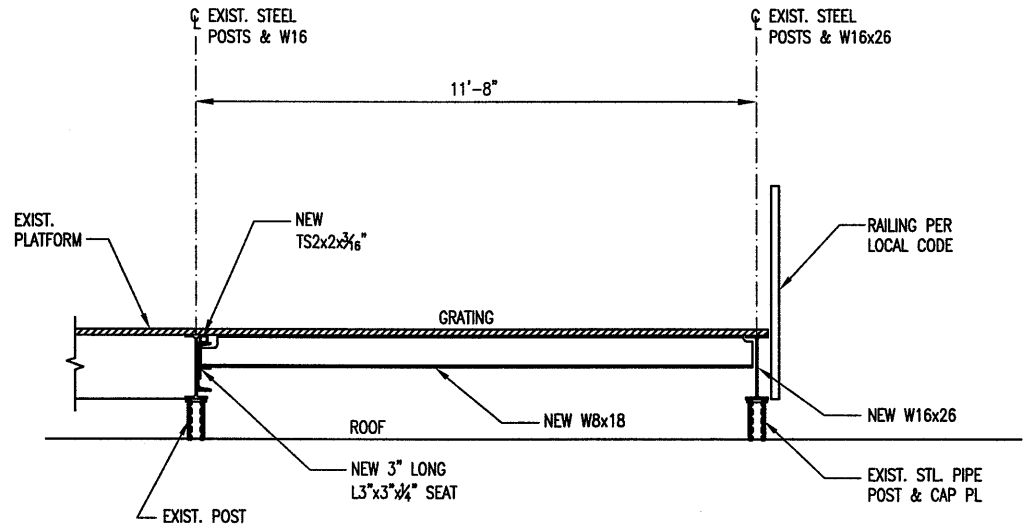
PROPOSED PLATFORM FRAMING PLAN
SCALE: 3/16"=1'-0" (1 / S-1)

SCALE IN FEET

0 5 10 20 30



SECTION DETAIL
SCALE: 1/4"=1'-0" (2 / S-1)



SECTION DETAIL
SCALE: 1/4"=1'-0" (3 / S-1)

BC architects engineers
5659 COLUMBIA PIKE, SUITE 101
FALLS CHURCH, VA 22041-2868
TEL: (703) 671-6000
FAX: (703) 671-6300

GILL_CHATEAU APARTMENT BUILDING
10128448_3821

9727 MT. PISGAH RD.
SILVER SPRING, MD 20903

at&t
7150 STANDARD DR
HANOVER, MD 21076

NO.	DATE	REVISIONS	BY	CHK	APP'D
14					
13	01-13-11	TMA & DIPLEXER MOUNTING DETAILS	AWS	CDM	BMQ
12	01-13-11	ADD (3) ANTENNAS AND RELOCATE SECTOR-3	AWS	CDM	BMQ
11	10-18-10	CLIENT COMMENTS	AWS	CDM	BMQ
10	08-16-10	CLIENT COMMENTS	AWS	CDM	BMQ
9	08-04-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
8	06-29-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
7	05-05-10	REVISED ELEC. DETAILS AND MOVE ANT. SECTOR 2	AWS	CDM	BMQ

SCALE: AS SHOWN | DESIGNED C. MORIN | DRAWN GMW

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 24552
EXPIRATION DATE: 11/17/11

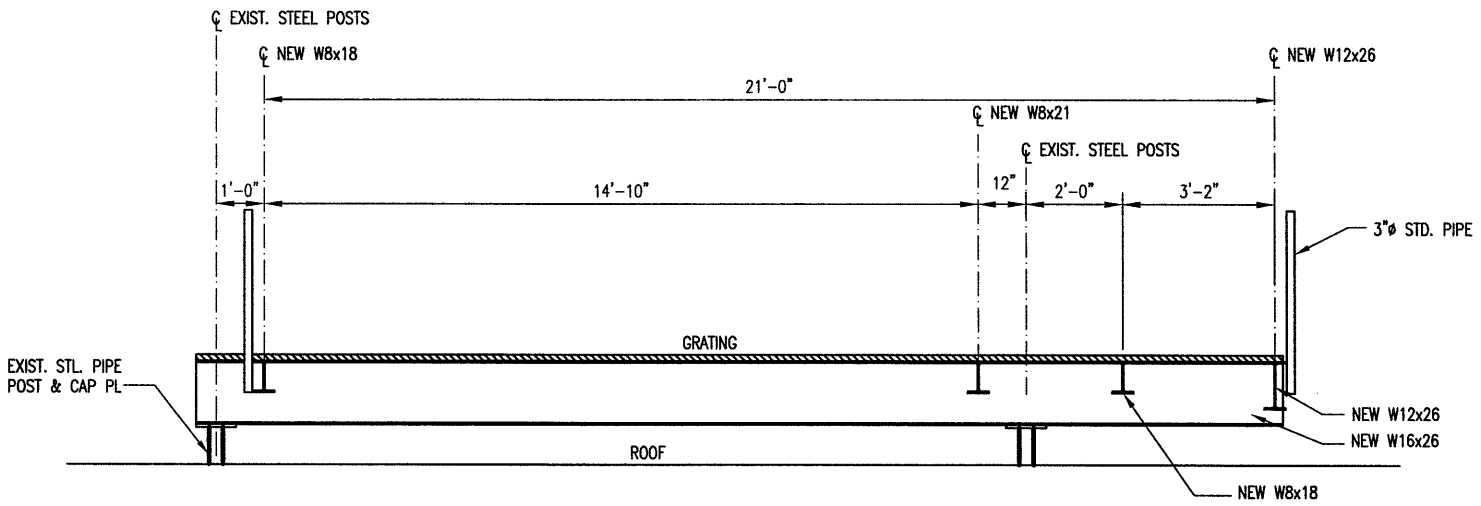
STATE OF MARYLAND · CHRISTOPHER G. MORIN · 2.23.11 · NO. 24552 · PROFESSIONAL ENGINEER

BC ARCHITECTS ENGINEERS
FALLS CHURCH, VA

PLATFORM FRAMING PLAN AND SECTIONS

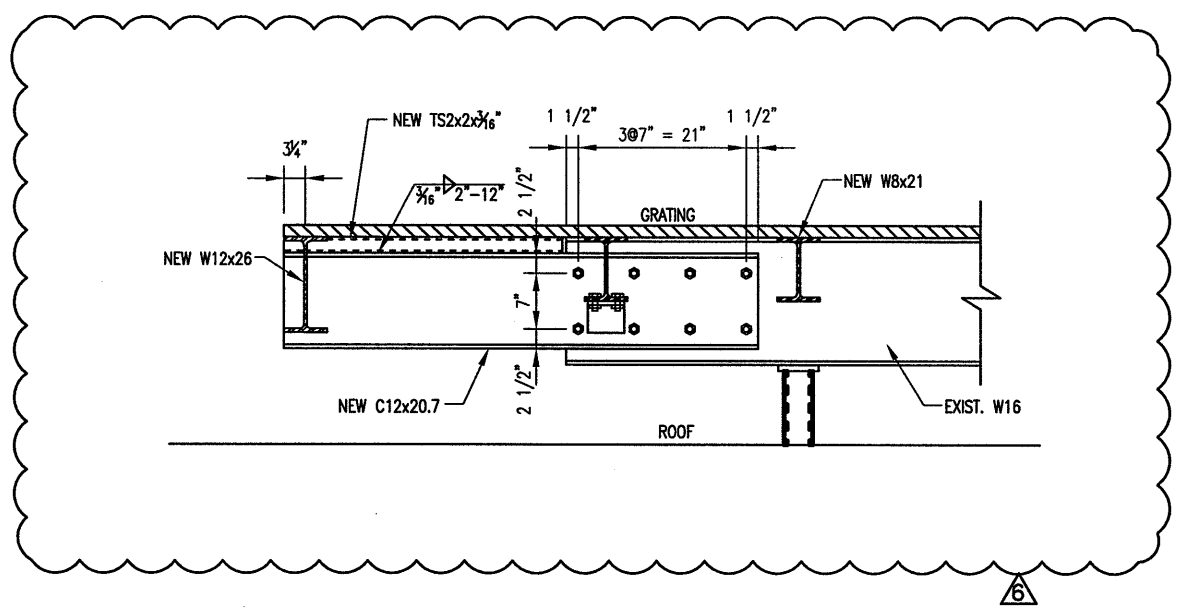
DRAWING NUMBER	REV
10128448-S-1	13

10-07-10 ARNOLD 09:36:51 Y:/Drawings - 2008/AT&T/Roof Top/GILL_Chateau Apartments - 10128448/CD's REVISED REV-10 08-16-10/S1.dwg

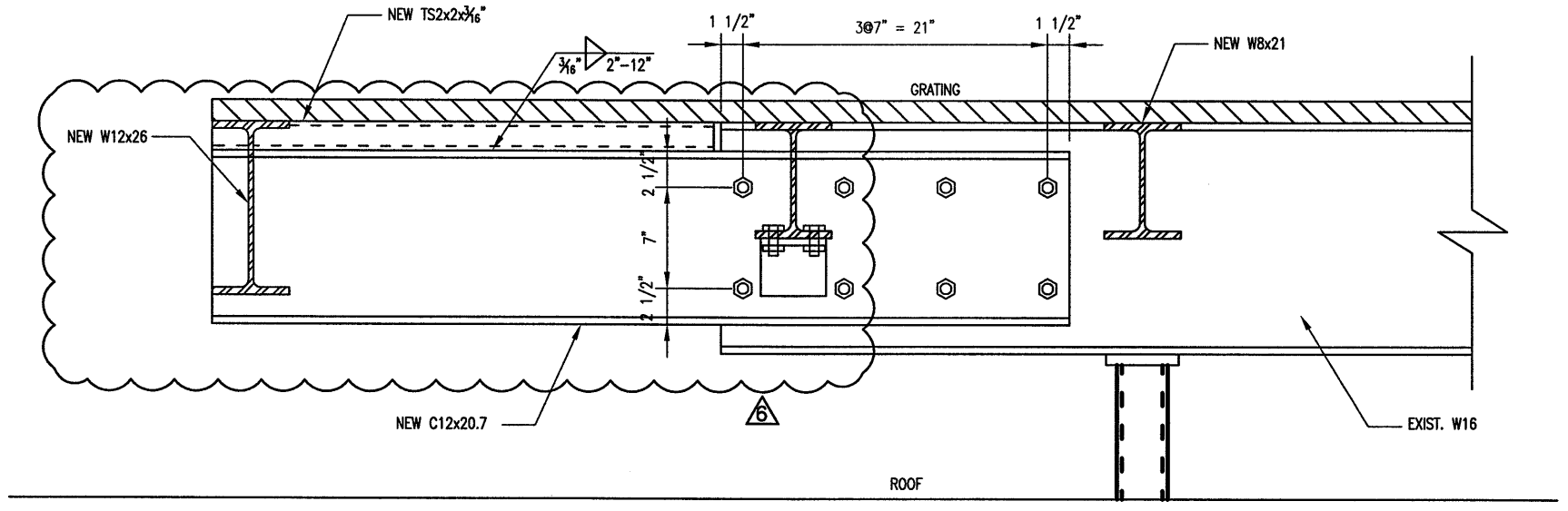


SECTION DETAIL (1 / S-2)
SCALE: 1/4"=1'-0"

NOT USED (3 / S-2)
SCALE: N/A



SECTION DETAIL (2 / S-2)
SCALE: 1/2"=1'-0"



DETAIL AT EXISTING CANTILEVERED W16 (3 / S-2)
SCALE: 1"=1'-0"

BC architects engineers
5659 COLUMBIA PIKE, SUITE 101
FALLS CHURCH, VA 22041-2868
TEL: (703) 671-6000
FAX: (703) 671-6300

GILL_CHATEAU APARTMENT BUILDING
10128448_3821

9727 MT. PISGAH RD.
SILVER SPRING, MD 20903

at&t
7150 STANDARD DR
HANOVER, MD 21076

NO.	DATE	REVISIONS	BY	CHK	APP'D
14					
13	01-13-11	TMA & DIPLEXER MOUNTING DETAILS	AWS	CDM	BMQ
12	01-13-11	ADD (3) ANTENNAS AND RELOCATE SECTOR-3	AWS	CDM	BMQ
11	10-18-10	CLIENT COMMENTS	AWS	CDM	BMQ
10	08-16-10	CLIENT COMMENTS	AWS	CDM	BMQ
9	08-04-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
8	06-29-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
7	05-05-10	REVISED ELEC. DETAILS AND MOVE ANT. SECTOR 2	AWS	CDM	BMQ

SCALE: AS SHOWN | DESIGNED C. MORIN | DRAWN GMW

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 24552
EXPIRATION DATE: 11/17/11

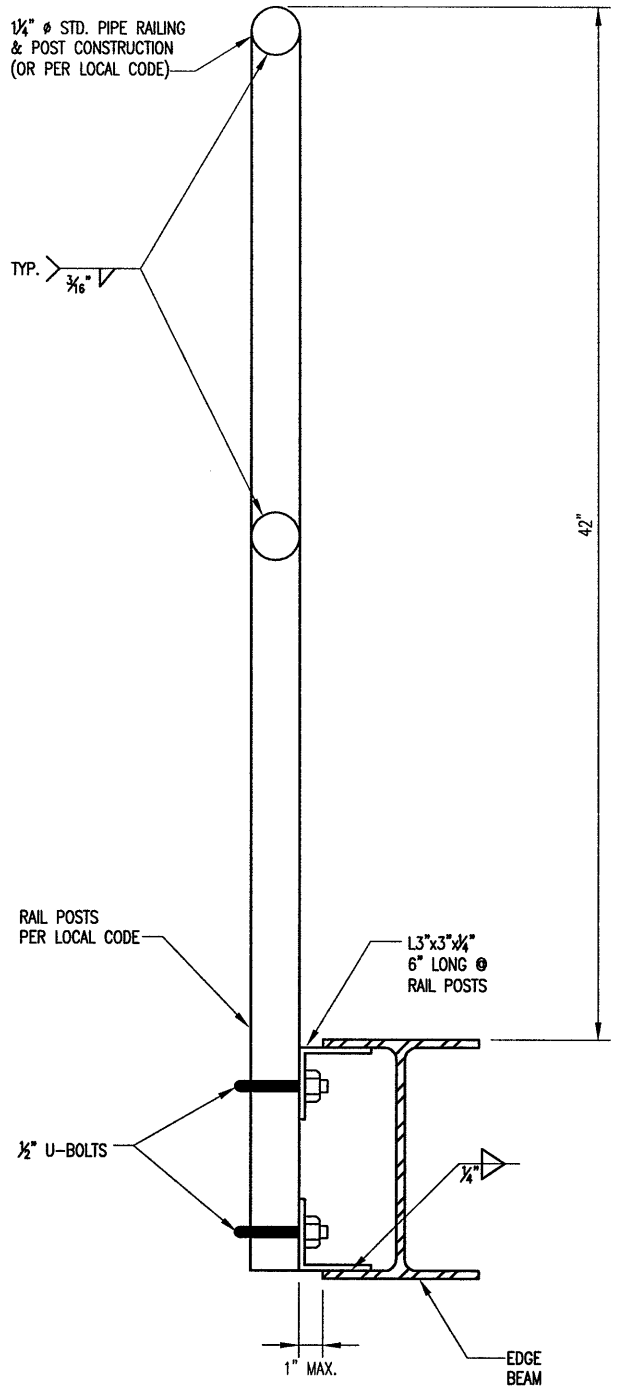
STATE OF MARYLAND · CHRISTOPHER B. MORIN · 2.23.11 · NO. 24552 · PROFESSIONAL ENGINEER

BC ARCHITECTS ENGINEERS
FALLS CHURCH, VA

PLATFORM SECTIONS AND DETAILS

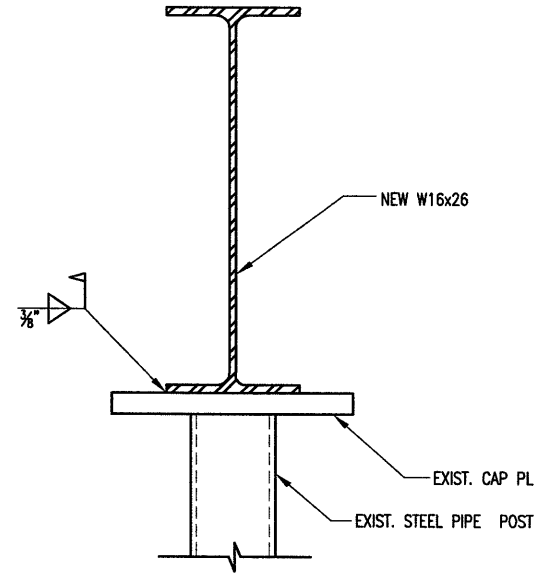
DRAWING NUMBER: 10128448-S-2
REV: 13

10-07-10 ARNOLD 09:25:31 Y:/Drawings - 2008/AT&T/Roof Top/Gill_Chateau Apartments - 10128448/CD's REVISED REV-10 08-16-10/S2.dwg



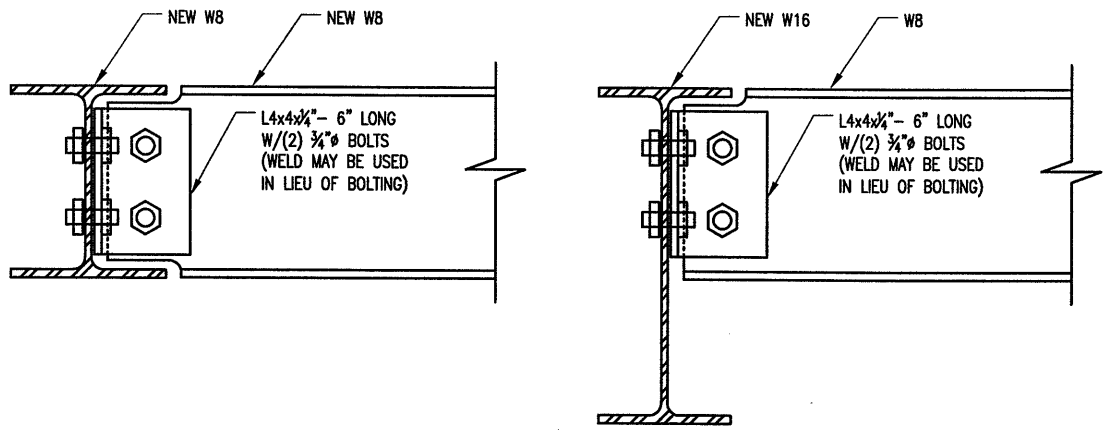
HANDRAIL DETAIL (1 / S-3)
SCALE: 1 1/2"=1'-0"

SCALE IN FEET
12" 9" 6" 0 1'-0"



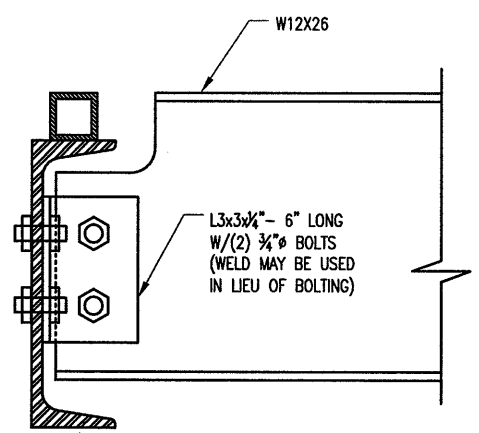
TYP. CAP PLATE DETAIL (2 / S-3)
SCALE: 1 1/2"=1'-0"

NOT USED (4 / S-3)
SCALE: N.T.S.



TYP. BEAM CONNECTION DETAIL (3 / S-3)
SCALE: 1 1/2"=1'-0"

SCALE IN FEET
12" 9" 6" 0 1'-0"



TYPICAL END-BEAM CONNECTION DETAIL (5 / S-3)
SCALE: 1 1/2"=1'-0"

BC architects engineers
5659 COLUMBIA PIKE, SUITE 101
FALLS CHURCH, VA 22041-2868
TEL: (703) 671-6000
FAX: (703) 671-6300

GILL_CHATEAU APARTMENT BUILDING
10128448_3821

9727 MT. PISGAH RD.
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at&t
7150 STANDARD DR
HANOVER, MD 21076

NO.	DATE	REVISIONS	BY	CHK	APP'D
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7	05-05-10	REVISED ELEC. DETAILS AND MOVE ANT. SECTOR 2	AWS	CDM	BMQ

SCALE: AS SHOWN | DESIGNED C. MORIN | DRAWN GMW

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LICENSE NO. 24552
EXPIRATION DATE: 11/17/11

STATE OF MARYLAND · CHRISTOPHER S. MORIN · 23.11 · NO. 24552 · PROFESSIONAL ENGINEER

BC ARCHITECTS ENGINEERS
FALLS CHURCH, VA

STRUCTURAL DETAILS

DRAWING NUMBER 10128448-S-3 | REV 13

10-08-10 ABI SOEMARKO 09:15:53 Y:/Drawings - 2008/AT&T/Roof Top/Gill_Chateau Apartments - 10128448/CD's REVISED REV-10 08-16-10/S3.dwg

AT&T

SITE NAME: **GILL**

FA#: **10128448**

USID: **100205**

COUNTY: **MONTGOMERY**

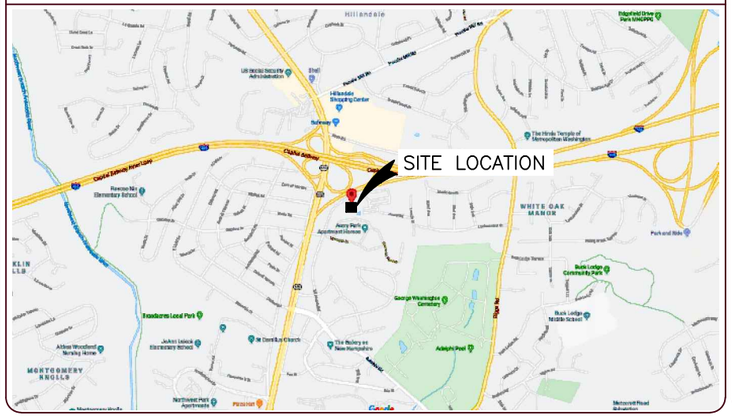
STRUCTURE TYPE: **EXISTING 133'-6" BUILDING**

PROJECT INFORMATION

SITE ADDRESS:	9727 MOUNT PISGAH ROAD SILVER SPRING, MD 20903
LATITUDE (NAD83):	39.0166667° N
LONGITUDE (NAD83):	76.9750000° W
GROUND ELEVATION:	±326' (AMSL)
COUNTY:	MONTGOMERY
JURISDICTION:	MONTGOMERY COUNTY
ELECTRIC PROVIDER: PHONE:	PEPCO (202) 833-7500
TELCO PROVIDER: PHONE:	VERIZON (800 483-5000)
OCCUPANCY TYPE:	UNMANNED
ADA COMPLIANCE	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.

APPLICANT:	AT&T MOBILITY 7150 STANDARD DRIVE HANOVER, MD 21076
TOWER OWNER: ADDRESS:	HILLZO LIMITED PARTNERSHIP 1950 OLD GALLOWS RD, VIENNA, VA 22182 (602) 902-2000
A&E FIRM: ADDRESS: CONTACT: PHONE: EMAIL:	TRYLON TSF 1825 W. WALNUT HILL LANE, STE#120 IRVING, TX 75038 KATYA SERAVALLE 1-855-669-5421 KATYA.SERAVALLE@TRYLON.COM

AREA MAP



PROJECT DESCRIPTION

THE SCOPE OF WORK WILL BE COMPRISED OF:

- REMOVE (2) EXISTING ANTENNAS
- REMOVE (15) EXISTING RRH
- INSTALL (2) NEW ANTENNAS
- INSTALL (12) NEW RRHS
- REMOVE (9) EXISTING DC2
- REMOVE (12) EXISTING BATTERIES AS (3) STRINGS
- REMOVE GSM CABINET
- REMOVE ALL STAND ALONE DC/FIBER RUNS
- INSTALL (3) NEW DC9-48-60-24-8C-EV RAYCAP
- INSTALL (9) NEW PWRT-606-S DC TRUNKS
- INSTALL (3) NEW RFFT-48SM-001 FIBER TRUNKS
- INSTALL (1) OUTDOOR DC12-48-60-0-25E
- INSTALL EMERSON NETSURE BATTERY CABINET
- INSTALL (4) -48 170MHA BATTERY STRINGS

RFDS

RFDS ID: 3467371 ISSUE DATE: 10/10/2019 REVISION: V2020_0.1

UPDATED BY: oo6650 DATE/TIME UPDATED: 10/10/2019 @ 11:22:50 AM

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, PORTABLE WATER, OR TRASH DISPOSAL IS REQUIRED, NO COMMERCIAL SIGNAGE AND NO LANDSCAPING IS PROPOSED.

DO NOT SCALE DRAWINGS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR A 11"X17" SET. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CODE COMPLIANCE

ALL WORK & MATERIALS SHALL BE PERFORMED & INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

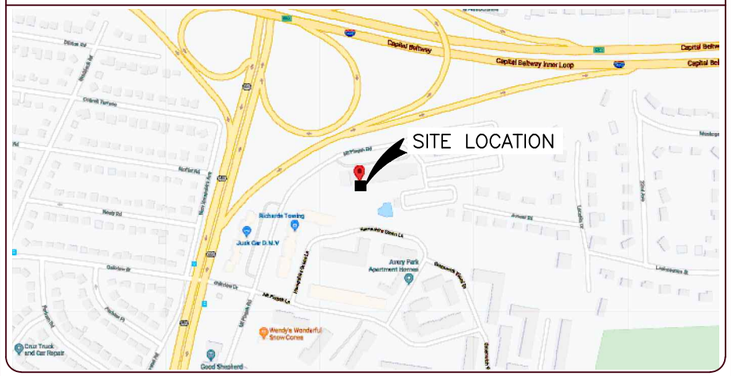
- 2015 BUILDING CODE
- 2014 NATIONAL ELECTRICAL CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- 2015 NATIONAL FIRE PROTECTION ASSOCIATION
- LOCAL BUILDING CODES
- CITY/COUNTY ORDINANCES
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
- ANSI EIA/TIA-222-G
- TIA 607
- TELCORDIA GR-1275

811 Know what's below. Call before you dig.

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN MARYLAND (EAST OF CHESAPEAKE BAY), CALL MISS UTILITY OF DELMARVA TOLL FREE: 1-800-282-8555 OR www.missutilitydelmarva.net

MARYLAND STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

LOCATION MAP



DRIVING DIRECTIONS

FROM 7150 STANDARD DRIVE HANOVER, MD 21076:
GET ON MD-100 W FROM STANDARD DR, PARK CIR DR AND COCA COLA DR, TAKE I-95 S TO MD-650 S/NEW HAMPSHIRE AVE IN HILLANDALE. TAKE EXIT 28B FROM I-495 W, CONTINUE ON MD-650 S/NEW HAMPSHIRE AVE TO YOUR DESTINATION IN SILVER SPRING.

APPROVALS

AT&T (CM):		DATE:
SMARTLINK (PM):		DATE:
RF ENGINEER:		DATE:
SITE ACQUISITION:		DATE:
LANDLORD:		DATE:

SHEET INDEX

SHEET #	DESCRIPTION	REVISION #
T-1	TITLE SHEET	1
C-1	BUILDING PLAN	1
C-2	EQUIPMENT PLAN	1
C-3	TOWER ELEVATION	1
C-4	EXISTING ANTENNA LAYOUT	1
C-4A	PROPOSED ANTENNA LAYOUT	1
C-5	ANTENNA SCHEDULE	1
C-6	EQUIPMENT DETAILS	1
C-7	EQUIPMENT DETAILS	1
C-8	EQUIPMENT DETAILS	1
E-1	DC SURGE SUPPRESSION WIRING DIAGRAM	1
E-2	DC SURGE SUPPRESSION WIRING DIAGRAM	1
E-3	AC PANEL SCHEDULE	1
E-4	DC PANEL SCHEDULE	1
E-5	WIRING DIAGRAM	1
E-6	SYSTEM DIAGRAM	1
RF-1	RF PLUMBING DIAGRAM	1
RF-2	RF PLUMBING DIAGRAM	1
RF-3	RF PLUMBING DIAGRAM	1
RF-4	POWER LOAD CALCULATIONS	1
G-1	GROUNDING DETAILS	1
GN-1	GENERAL NOTES	1

AT&T

smartlink

Trylon

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	100% CD	SAR
1	03/19/20	100% CD	SAR

STATE OF MARYLAND · LEE R. HALL · No. 27217 · PROFESSIONAL ENGINEER

3-19-2020

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

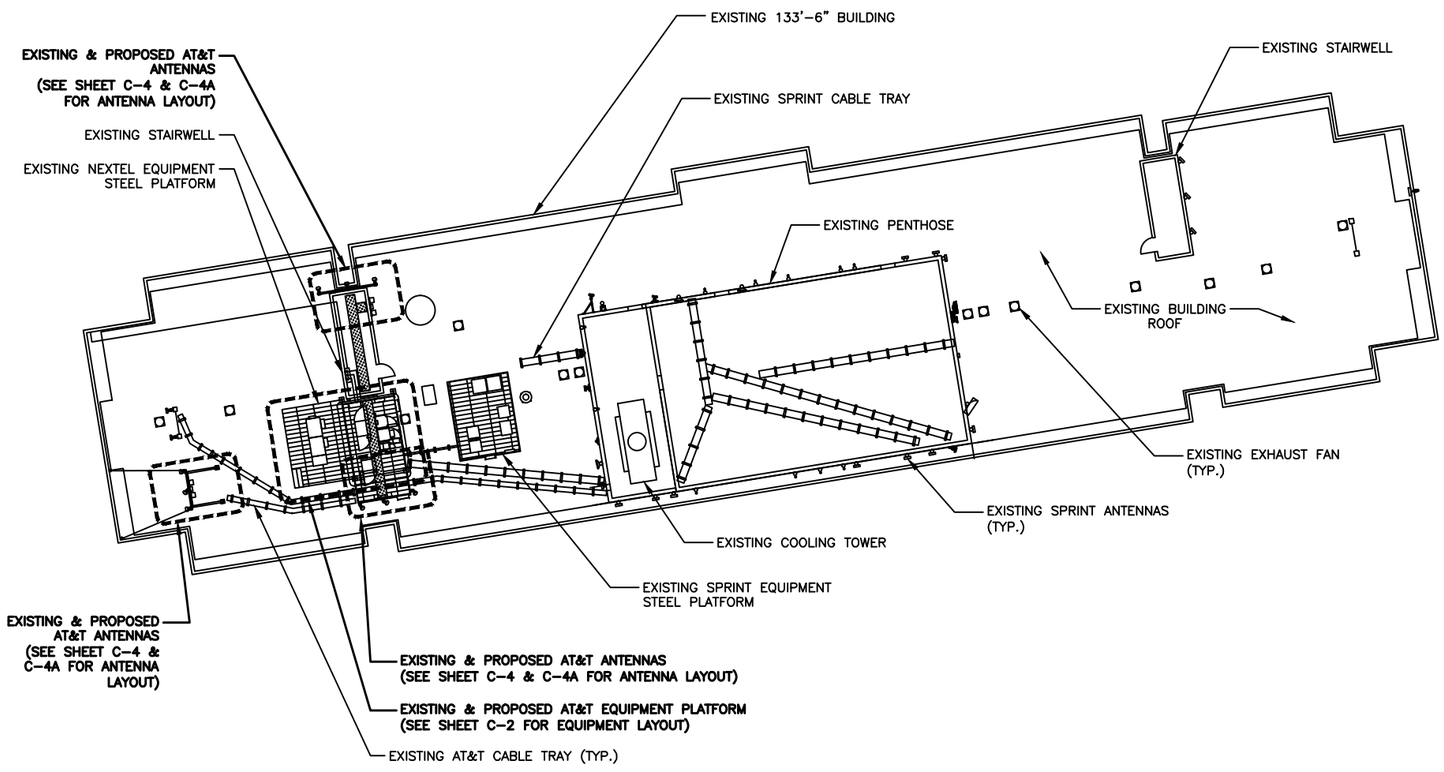
TITLE SHEET

SHEET NO.

T-1

GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL GIVE ALL NOTICES AND REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE SUBCONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID SUBCONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE SUBCONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE AT&T REPRESENTATIVE OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF SUBCONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE SUBCONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIAL AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE SUBCONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE THEMSELVES WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE SUBCONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS INFORMED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE SUBCONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE, UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS, AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEERING, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
11. THE SUBCONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVEMENTS, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE SUBCONTRACTOR SHALL REPAIR ANY DAMAGE THE MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. THE SUBCONTRACTOR SHALL MAINTAIN THE GENERAL WORK AREA AS CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST OR SMUDGES OF ANY NATURE.
13. THE SUBCONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
14. THE SUBCONTRACTOR SHALL NOTIFY THE AT&T REPRESENTATIVE (B&T ENGINEERING) WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE SUBCONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE AT&T REPRESENTATIVE (B&T ENGINEERING).
15. THE SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOBS.



TRUE NORTH

AT&T

smartlink

Trylon

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SUBMITTALS

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STATE OF MARYLAND · LEE R. HALL · No. 27217 · PROFESSIONAL ENGINEER

3-19-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

BUILDING PLAN

SHEET NO.

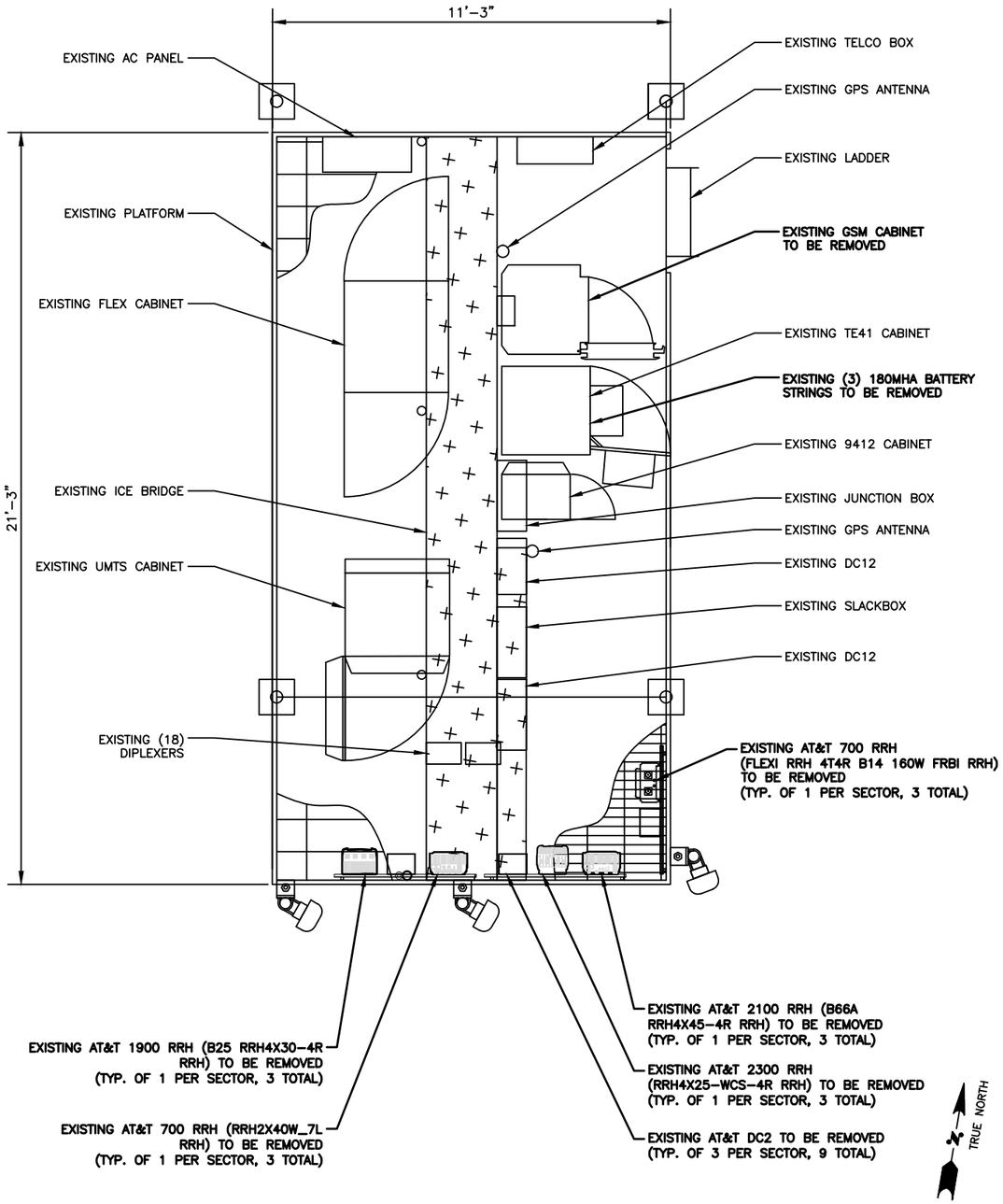
C-1

BUILDING PLAN

0 8' 16' 32'

SCALE: 1/32"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

1

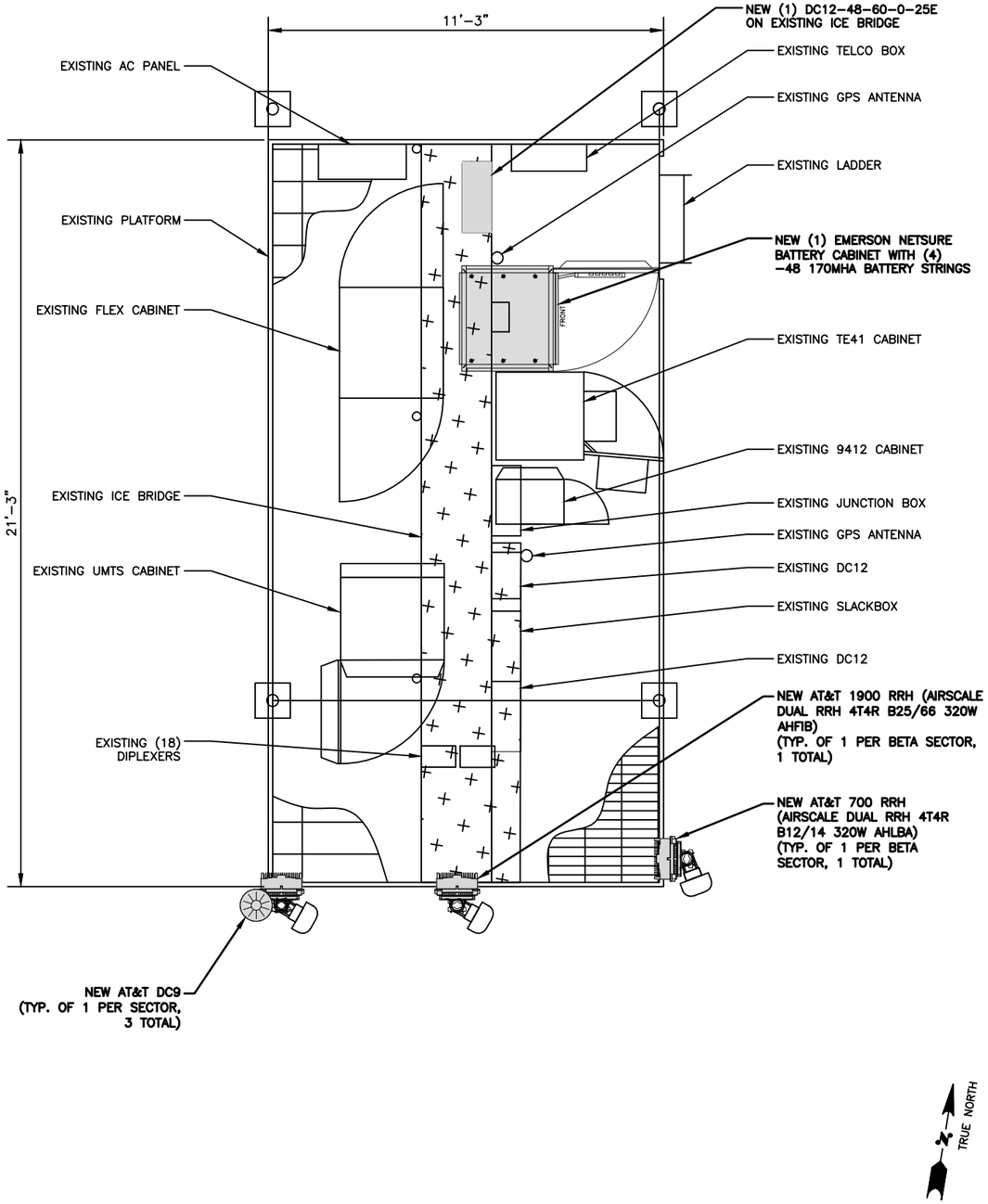


EXISTING EQUIPMENT LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

1



PROPOSED EQUIPMENT LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

2

AT&T

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Trylon

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STATE OF MARYLAND
ERIK R. HALL
No. 27217
PROFESSIONAL ENGINEER

3-19-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

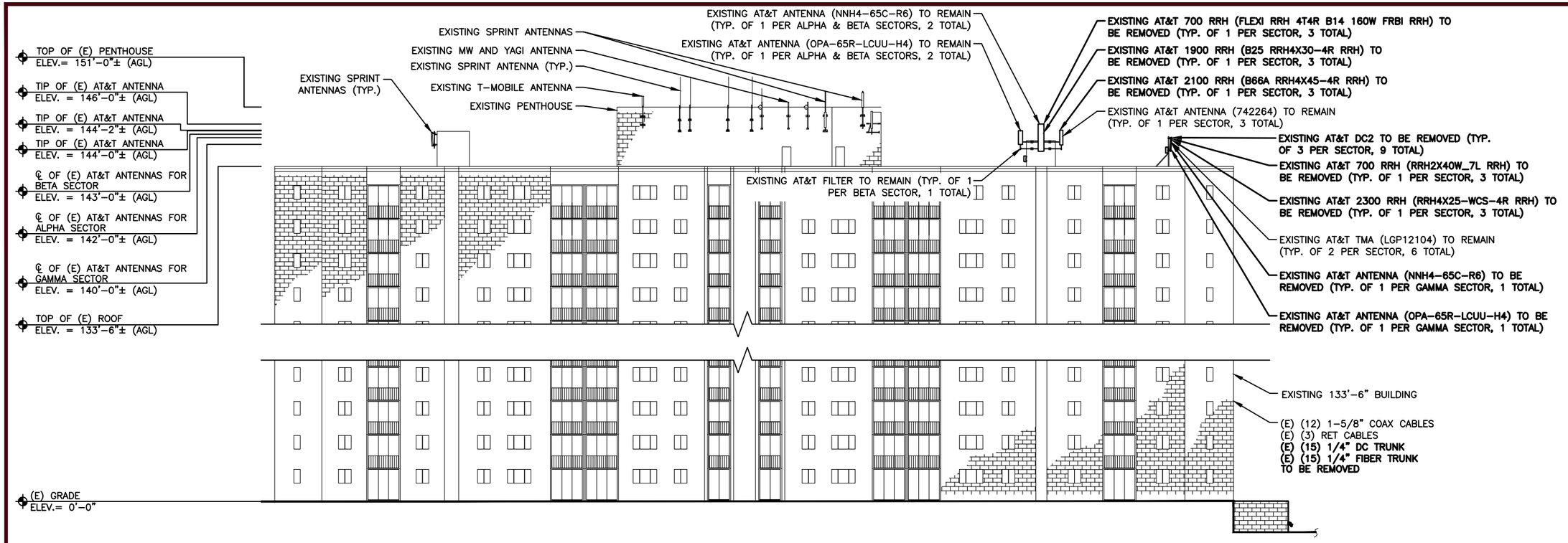
EXISTING BUILDING

SHEET DESCRIPTION

EQUIPMENT PLAN

SHEET NO.

C-2

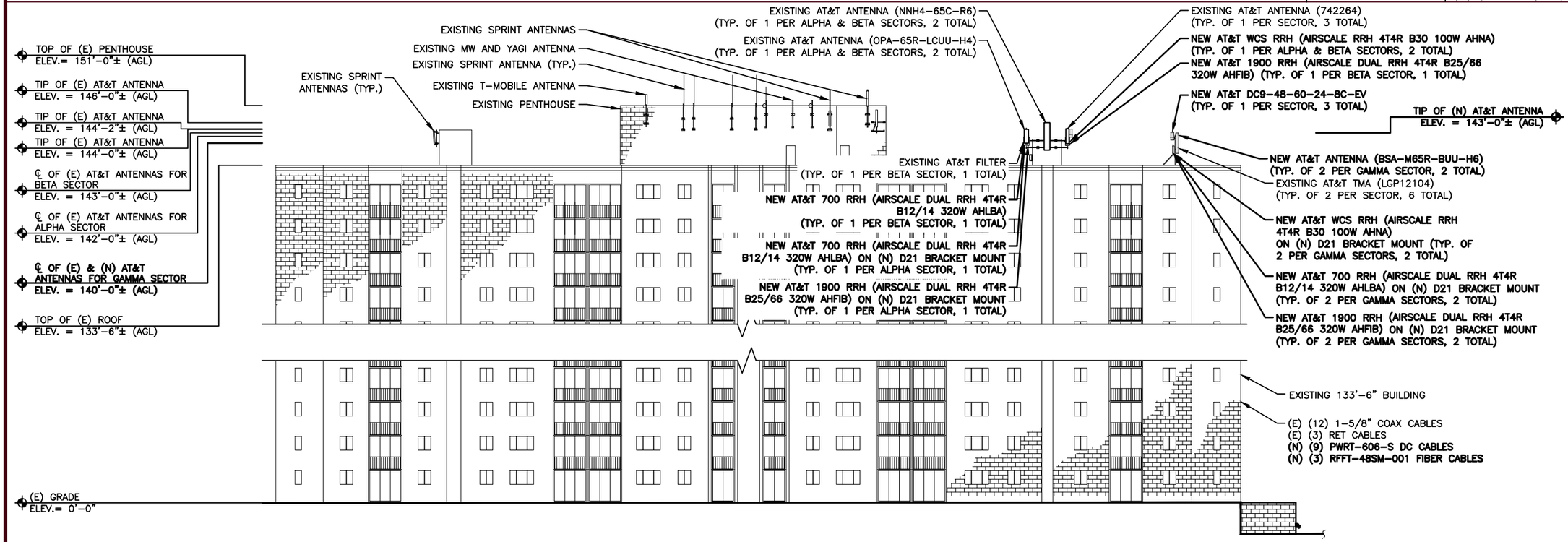


EXISTING TOWER ELEVATION-NORTH

0 8' 16' 32'

SCALE: 1/32"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

1



PROPOSED TOWER ELEVATION-NORTH

0 8' 16' 32'

SCALE: 1/32"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

2

AT&T

smartlink

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D	01/21/20	90% CD	PTN
0	02/11/20	100% CD	SAR
1	03/19/20	100% CD	SAR

STATE OF MARYLAND
ERIK R. HALL
No. 27217
PROFESSIONAL ENGINEER

3-19-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

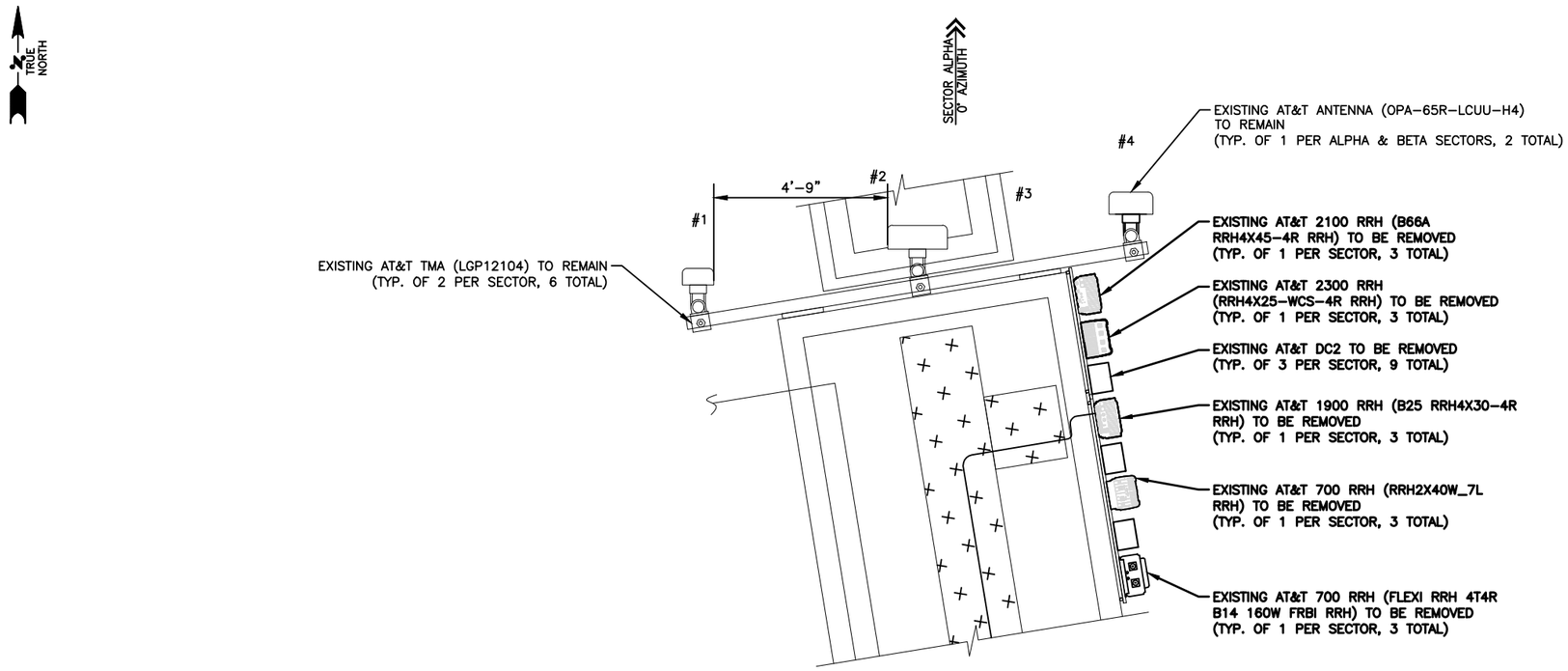
EXISTING BUILDING

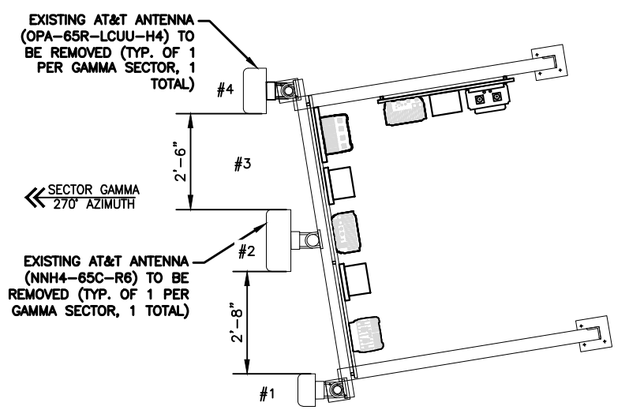
SHEET DESCRIPTION

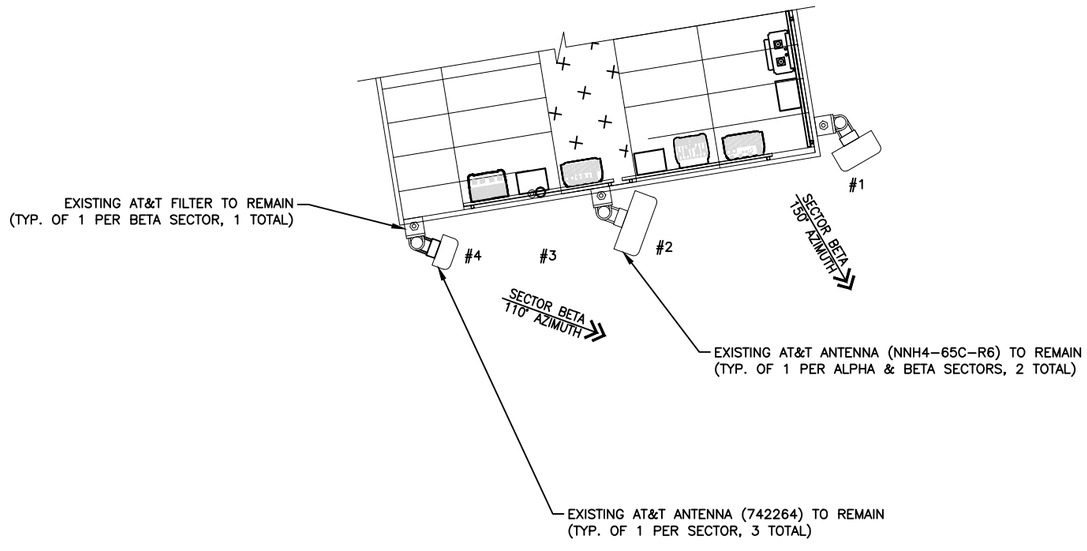
TOWER ELEVATION

SHEET NO.

C-3







EXISTING ANTENNA LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

1

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DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
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C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	100% CD	SAR
1	03/19/20	100% CD	SAR

STATE OF MARYLAND
ERIK R. HALL
No. 27217
PROFESSIONAL ENGINEER

3-19-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

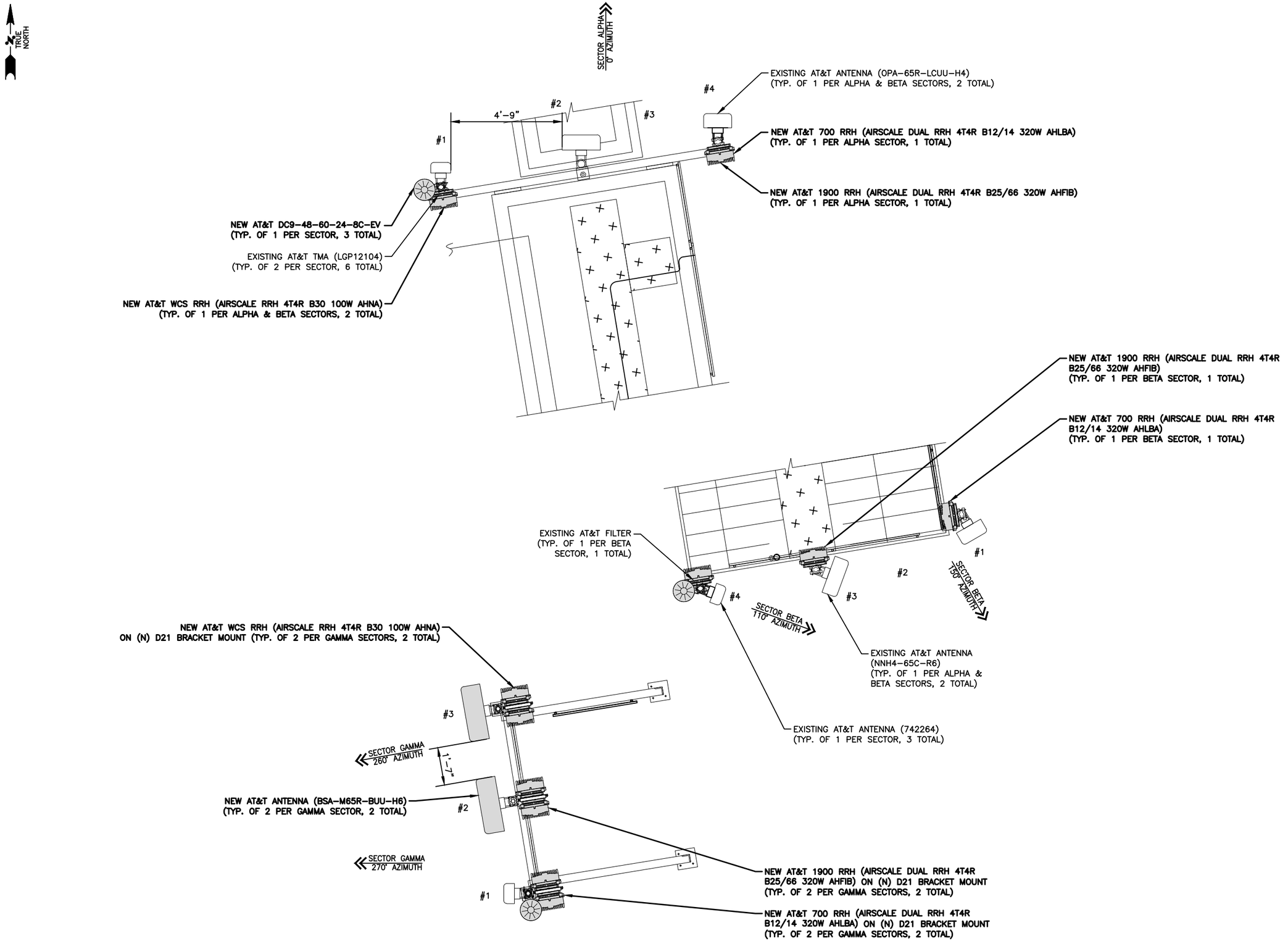
EXISTING BUILDING

SHEET DESCRIPTION

EXISTING ANTENNA LAYOUT

SHEET NO.

C-4



PROPOSED ANTENNA LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

1

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9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

PROPOSED ANTENNA LAYOUT

SHEET NO.

C-4A

PROPOSED ANTENNA SCHEDULE

SECTOR	ANTENNA POSITION	ANTENNA MAKE/MODEL	RAD CENTER	AZIMUTH	M-TILT	E-TILT	RRH MAKE/MODEL	TMA/FILTER	FEEDLINE	FEEDLINE LENGTH
ALPHA	#1	(E) KATHREIN 742264	142'-0"	0°	0°	2°/2°	-	(E) (2) LGP12104	(E) (4) 1-5/8" COAX (E) (1) RET COAX	130'-0"
	#2	(E) COMMSCOPE NNH4-65C-R6	142'-0"	0°	**0°**	**5°/2°/2°/2°/5°**	**(N) (1) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA** **(N) (1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB**	-	**(N) (3) PWRT-606-S DC TRUNKS** **(N) (1) RFFT-48SM-001 FIBER TRUNK**	**130'-0"**
	#3	-	-	-	-	-	-	-	-	-
	#4	(E) CCL OPA-65R-LCUU-H4	142'-0"	0°	**0°**	**5°**	**(N) (1) AIRSCALE RRH 4T4R B30 100W AHNA**	-	**SHARED FIBER/DC**	**130'-0"**
BETA	#1	(E) CCL OPA-65R-LCUU-H4	143'-0"	150°	0°	6°	**(N) (1) AIRSCALE RRH 4T4R B30 100W AHNA**	(E) (1) KFTDR00110030	**SHARED FIBER/DC**	**130'-0"**
	#2	(E) COMMSCOPE NNH4-65C-R6	143'-0"	110°	**0°**	**12°/5°/5°/5°/10°**	**(N) (1) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA** **(N) (1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB**	-	**(N) (3) PWRT-606-S DC TRUNKS** **(N) (1) RFFT-48SM-001 FIBER TRUNK**	**130'-0"**
	#3	-	-	-	-	-	-	-	-	-
	#4	(E) KATHREIN 742264	143'-0"	110°	**0°**	**2°/2°**	-	(E) (2) LGP12104	(E) (4) 1-5/8" COAX (E) (1) RET COAX	130'-0"
GAMMA	#1	(E) KATHREIN 742264	140'-0"	270°	2°	2°/2°	-	(E) (2) LGP12104	(E) (4) 1-5/8" COAX (E) (1) RET COAX	130'-0"
	#2	**(N) CCL BSA-M65R-BUU-H6**	**140'-0"**	260°	**0°**	**6°/6°/6°/6°/4°/4°/4°/4°/4°/4°**	**(N) (2) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA** **(N) (2) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB**	-	**(N) (3) PWRT-606-S DC TRUNKS** **(N) (1) RFFT-48SM-001 FIBER TRUNK**	**130'-0"**
	#3	**(N) CCL BSA-M65R-BUU-H6**	**140'-0"**	260°	**0°**	**2°/2°**	**(N) (2) AIRSCALE RRH 4T4R B30 100W AHNA**	-	**SHARED FIBER/DC**	**130'-0"**

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0	02/11/20	100% CD	SAR
1	03/19/20	100% CD	SAR

STATE OF MARYLAND · KIRK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

ANTENNA SCHEDULE

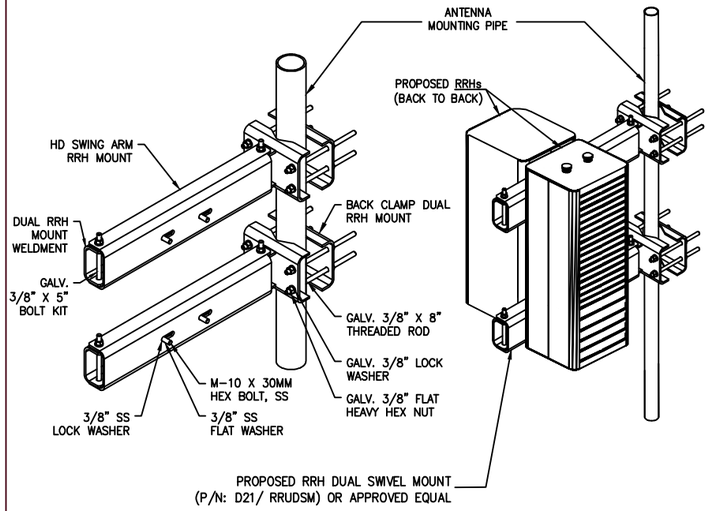
SHEET NO.

C-5

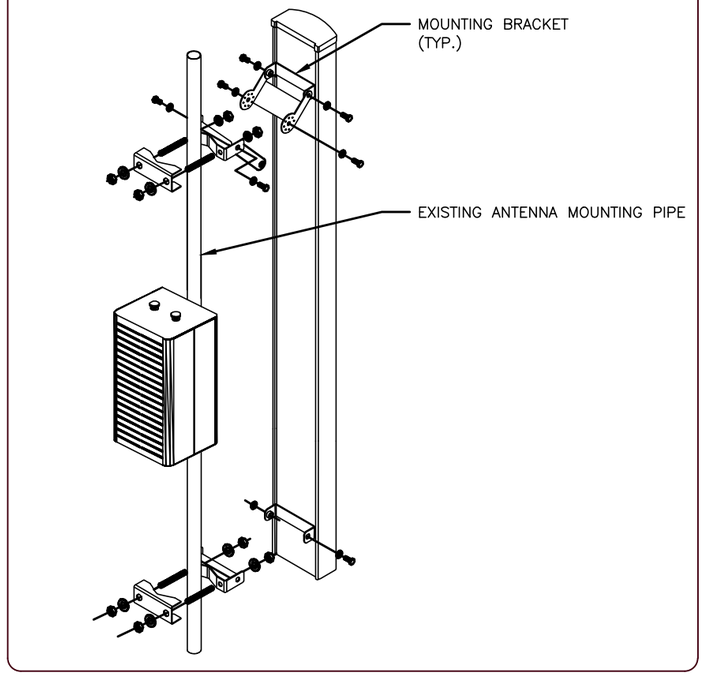
Dimensions (LxWxD)	72.0x26.5x9.7 in (1828x723x245 mm)
Survival Wind Speed	> 150 mph (> 240 kph)
Front Wind Load	438 lbs (1947 N) @ 100 mph (161 kph)
Side Wind Load	175 lbs (778 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	17.1 ft² (1.6 m²)
Weight *	101.0 lbs (45.9 kg)
RET System Weight	6.6 lbs (3.0 kg)
Connector	12 x 7-16 DIN female long neck
Mounting Pole	2 to 5 in (5 to 12 cm)

Ports	4 x Low Band Ports for 698-894 MHz		8 x High Band Ports for 1710-2360 MHz			
Frequency Range	690-806 MHz	824-894 MHz	1850-1990 MHz	1710-1755/2110-2155 MHz	2305-2360 MHz	
Gain	16.4 dBi	17.3 dBi	18.0 dBi	17.2 dBi	18.4 dBi	18.1 dBi
Azimuth Beamwidth (-3dB)	34°	32°	31°	36°	29°	26°
Elevation Beamwidth (-3dB)	11.7°	10.3°	6.4°	7.2°	5.9°	5.6°
Electrical Downtilt	2° to 12°	2° to 12°	0° to 9°	0° to 9°	0° to 9°	0° to 9°
Elevation Sidelobes (1st Upper)	< -18 dB	< -18 dB	< -18 dB	< -18 dB	< -18 dB	< -18 dB
Front-to-Back Ratio @180°	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Front-to-Back Ratio over ± 20°	> 27 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 28 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Voltage Standing Wave Ratio(VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	300 watts	300 watts	300 watts	300 watts
Polarization	Dual Linear ±45°	Dual Linear ±45°	Dual Linear ±45°	Dual Linear ±45°	Dual Linear ±45°	Dual Linear ±45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

1 / C-6 ANTENNA DETAIL
SCALE: NTS



2 / C-6 RRH MOUNTING DETAIL
SCALE: NTS



3 / C-6 ANTENNA MOUNTING DETAIL
SCALE: NTS

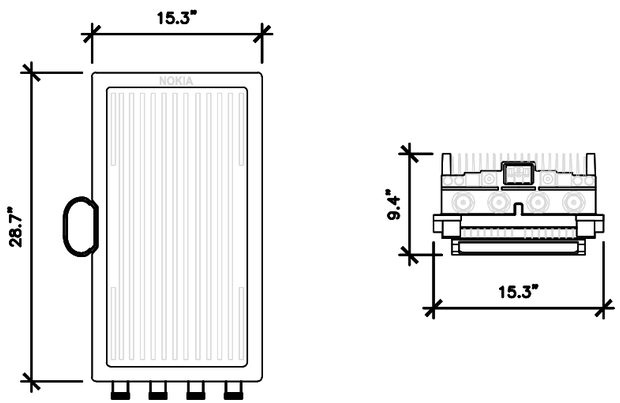
NOKIA AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA

DIMENSIONS, HXWXD: 560 X 308 X 149 (MM) (CORE)
28.7" X 15.3" X 9.4" (CORE)

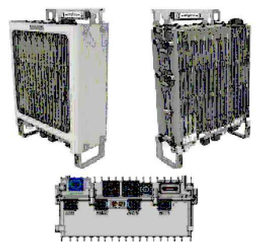
730 X 390 X 240 (MM)
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)

28.7" X 15.3" X 9.4"
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)

WEIGHT: < 46 (kg)
< 101.4 lbs
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)



4 / C-6 NOKIA AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA DETAIL
SCALE: NTS



Ingress protection class	IP65
Installation options	Wall, Boot mount: Vertical wall/pole, Horizontal wall
Surge protection	Class II 5kA

Confidential

NOKIA

474861A AHNA AirScale RRH 4T4R B30 100W

Supported Frequency bands	3GPP band 30
Frequencies	DL 2350-2360 MHz, UL 2305-2315 MHz
Number of TX/RX paths	4/4
Instantaneous Bandwidth IBW	10 MHz
Occupied Bandwidth OBW	10 MHz
Output Power	4T4R 25W/TX
Dimensions (mm) Height x width x depth	336.5 x 306 x 140, Core only *(see more dimensions on next slide)*
Volume	14.4 Liters, Core only
Weight	Approx. 15.5 kg / 34.17 lbs, Core only Approx. 17.7Kg / 39.02 lbs including AirScale Mounting Bracket and Solar Cover
Supply Voltage / Voltage Range	DC-48V / -36V to -60V
Typical Power Consumption	Estimated 515 W @ 100% RF load
Antenna Ports	4TX/4RX, 4.3-10+
Optical Ports	2x CPRI 9.8 Gbps/ PR3_01 chaining
ALD Control Interfaces	AISG3.0 from ANT1,2, 3, 4 and RET (Power supply ANT1 and ANT3)
Other Interfaces	External Alarm Connector (up to 4 inputs)
Operational Temperature Range	-40°C to 55°C

5 / C-6 NOKIA AIRSCALE RRH 4T4R B30 100W AHNA DETAIL
SCALE: NTS

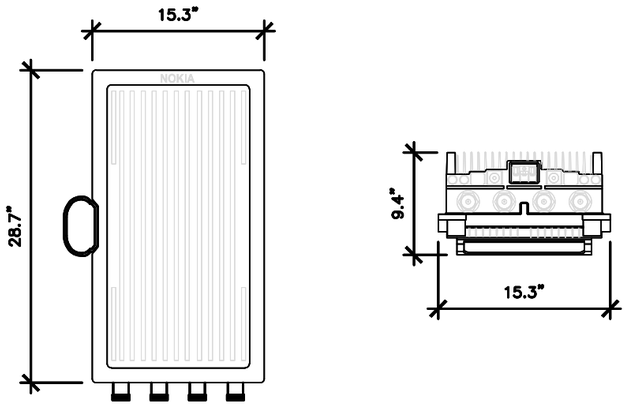
NOKIA AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB

DIMENSIONS, HxWxD: 560 X 308 X 149 (MM) (CORE)
28.7" X 15.3" X 9.4" (CORE)

730 X 390 X 240 (MM)
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)

28.7" X 15.3" X 9.4"
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)

WEIGHT: < 40 (kg)
< 88.2 lbs
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)



6 / C-6 NOKIA AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB DETAIL
SCALE: NTS

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1	03/19/20	100% CD	SAR

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GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

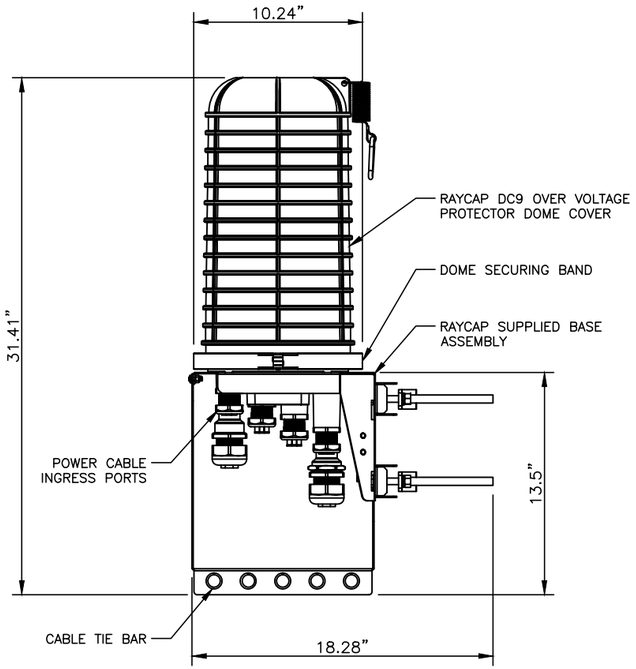
EXISTING BUILDING

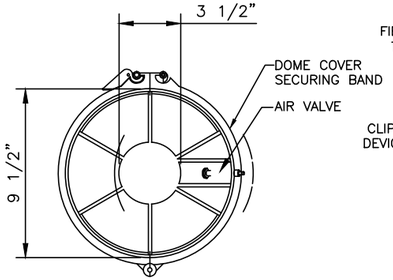
SHEET DESCRIPTION

EQUIPMENT DETAILS

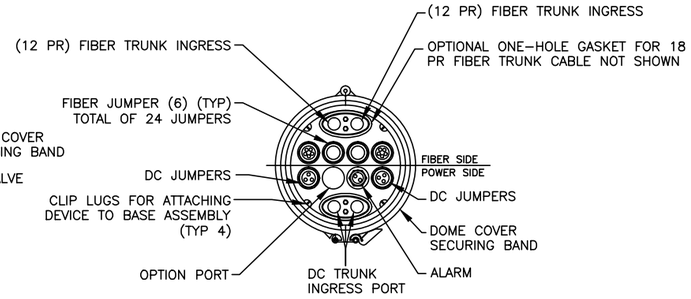
SHEET NO.

C-6





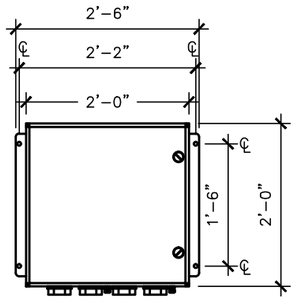
TOP VIEW



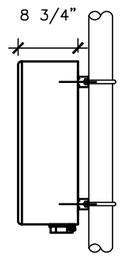
BOTTOM VIEW
DC9-48-60-24-8C-EV

RAYCAP DC9 (SQUID)	
LENGTH (H)	18.28"
WIDTH (W)	10.24"
HEIGHT (D)	31.4"
WEIGHT:	
SYSTEM	16.0 LBS
MOUNT	10.2 LBS
TOTAL:	26.2 LBS

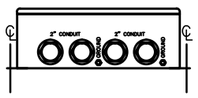
RAYCAP DC9 DETAILS — N.T.S. — 1



FRONT VIEW



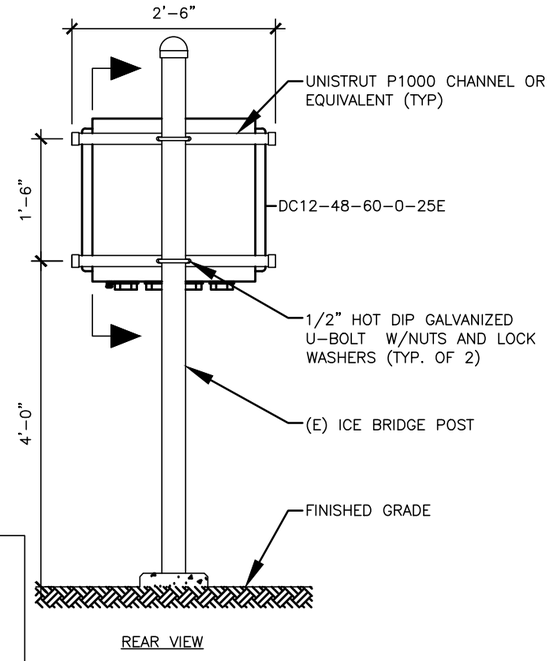
SIDE VIEW



BOTTOM VIEW

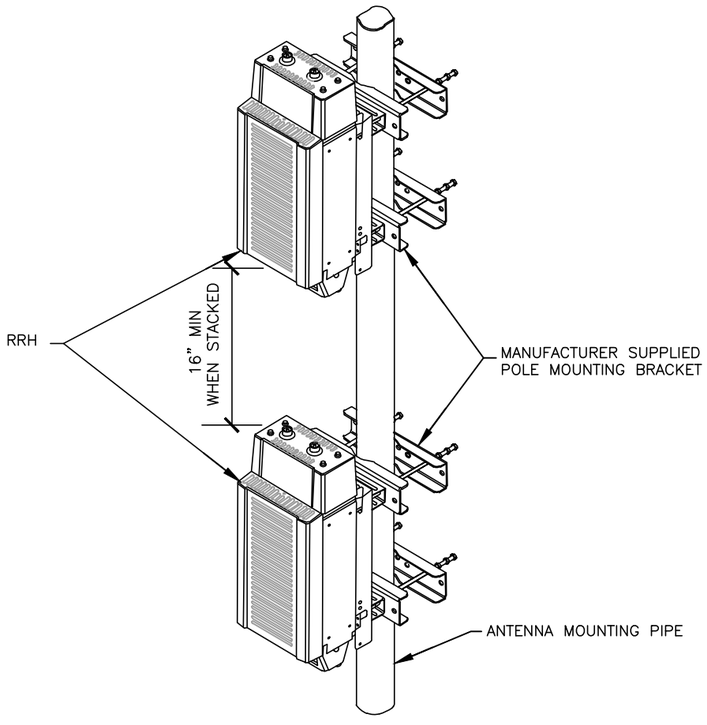
NOTES:

1. SUBCONTRACTOR SHALL SUPPLY AND INSTALL UNISTRUT (OR EQUIVALENT) MOUNTING CHANNELS.
2. SUBCONTRACTOR SHALL SUPPLY AND INSTALL ICE BRIDGE POSTS AS REQUIRED.
3. POSTS SHALL BE 3 1/2"O.D. SCHED. 40 PIPE (ASTM-A36, A53 OR EQUIVALENT).
4. SUBCONTRACTOR SHALL SUPPLY 3/8"ø UNISTRUT BOLTING HARDWARE AND SPRING NUTS. TYPICAL FOUR PER DC12. SUBCONTRACTOR SHALL BAG THE BOLTING HARDWARE AND HANG FROM INSTALLED UNISTRUT FRAME.
5. WEIGHT = 56.3lbs



REAR VIEW

DC12 DETAIL — N.T.S. — 2



RRH MOUNTING DETAIL — N.T.S. — 3

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GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

EQUIPMENT DETAILS

SHEET NO.

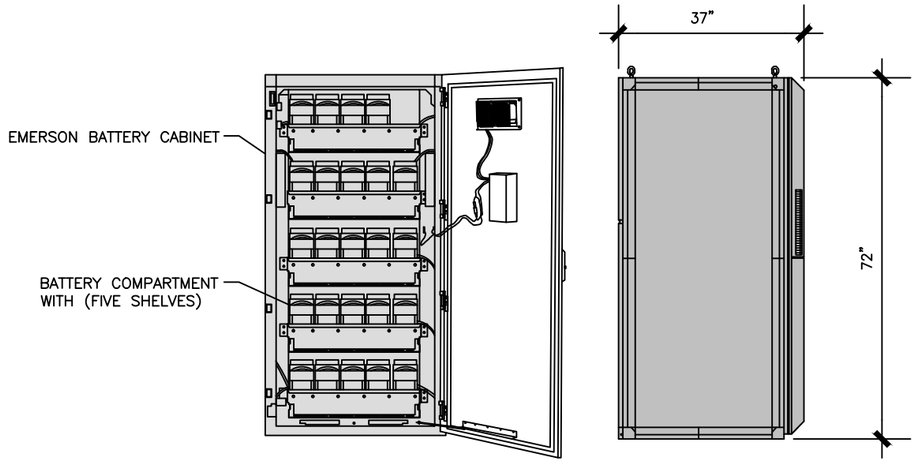
C-7

SIZE AND WEIGHT TABLE

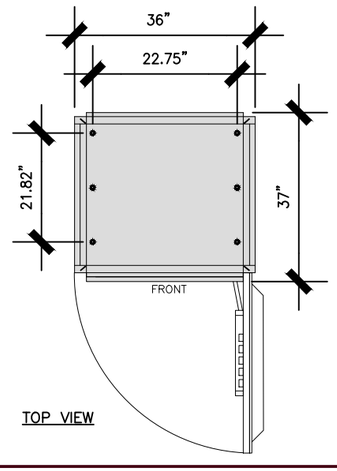
BATTERY CABINET	WIDTH	DEPTH	HEIGHT	WEIGHT
NETXTEND OUTDOOR BATTERY CABINET	36"	37"	72"	980 LBS.

CLEARANCE

CLEARANCE	FRONT	REAR	SIDES
NETXTEND OUTDOOR BATTERY CABINET	36"	6"	2"



FRONT SIDE



TOP VIEW

EMERSON BATTREY CABINET DETAIL | N.T.S. | 1

SBS-170F Battery Features and Benefits:

- Proven Long Service
- High energy density
- Up to two year shelf life
- Very low ventilation requirement
- Wide operating temperature range: -40°F (-40°C) to 122°F (50°C)

EnerSys PowerSafe SBS-170F Battery Specifications:

Chemistry:	Sealed Lead Acid
Voltage:	12 volts
Nominal Capacity:	170.0Ah
Terminals:	M6
Dimensions (L x W x H):	22.10 x 4.90 x 11.10
Weight (pounds):	115.7

170MHA BATTERY DETAIL | N.T.S. | 2

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SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

EQUIPMENT DETAILS

SHEET NO.

C-8

DC9 FIBER CONNECTIONS

FIBER PORT	RRH CONNECTION
1	B12/700
2	B25/1900
3	B30/AWS
4	FUTURE
5	FUTURE
6	FUTURE
7	FUTURE
8	FUTURE
9	FUTURE
10	FUTURE
11	FUTURE
12	FUTURE
13	FUTURE
14	FUTURE
15	FUTURE
16	FUTURE
17	FUTURE
18	FUTURE
19	FUTURE
20	FUTURE
21	FUTURE
22	FUTURE
23	FUTURE
24	FUTURE

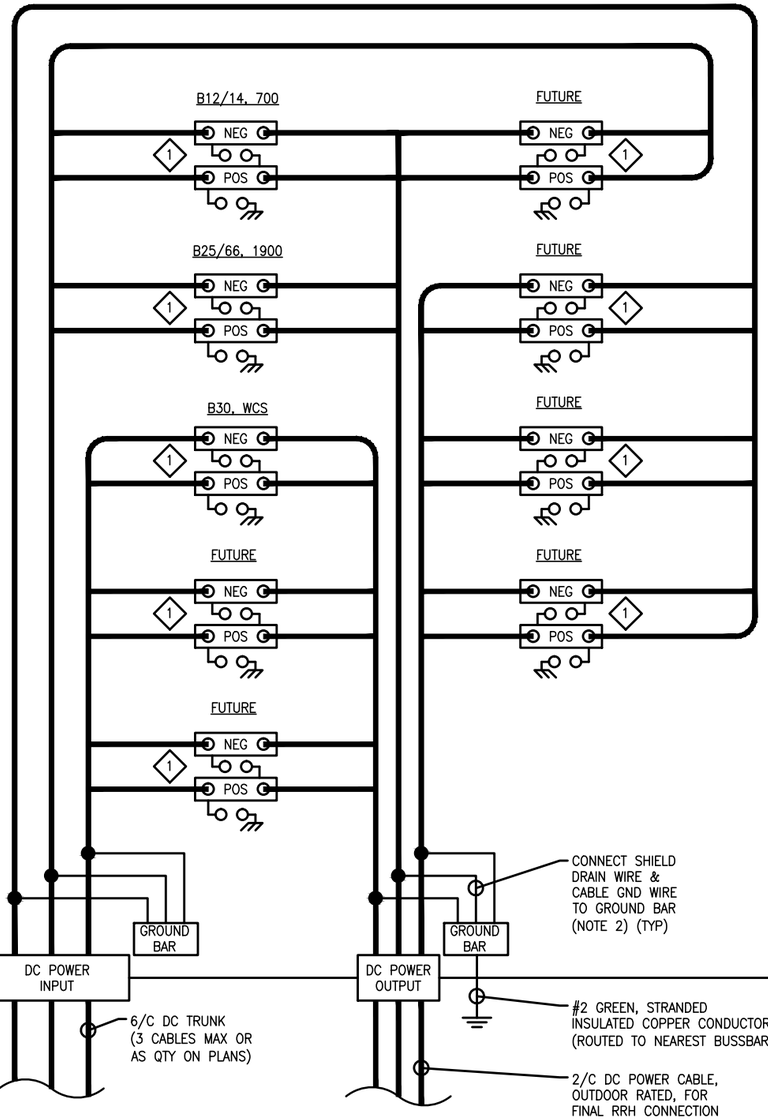
FIBER INPUT

24PR FIBER CABLE

FIBER OUTPUT

2PR SINGLE MODE FIBER, OUTDOOR RATED, FOR FINAL RRH CONNECTION (TYP PER RRH)

DC9 DC POWER CONNECTIONS



NOTES:

1. TRUNK GLAND KITS:
   - TRUNK GLAND KIT A: OVAL GASKET FOR #4 AND #6AWG TRUNK (CEQ. 21428)
   - TRUNK GLAND KIT B: OVAL GASKET FOR (2) #4 AWG TRUNKS (CEQ. 21429)
   - TRUNK GLAND KIT C: OVAL GASKET FOR (2) #8 AWG TRUNKS (CEQ. 21434)
2. WHEN SHIELDED CABLE IS USED CONNECT CABLE SHIELD DRAIN WIRE AND GROUND WIRE TO GROUND BAR.
3. FIRST SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED) RRH ON ALPHA SECTOR. IN THE EVENT THE ALARM CABLE CANNOT BE CONNECTED TO ALPHA IT WILL BE ACCEPTABLE TO ALARM TO THE CLOSEST PHYSICAL SECTOR ON AN EXCEPTION BASIS.
4. 2ND SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED) RRH ON BETA SECTOR.
4. 3RD SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED) RRH ON GAMMA SECTOR.
5. AN RRH WILL NEVER HAVE MORE THAN ONE SQUID ALARMED ON IT.
6. SQUID ALARMS ARE NOT TO BE DAISY CHAINED.

2 = LC CONNECTOR

1 = STRIKESORB PROTECTION MODULE BY RAYCAP

1/E-1 RAYCAP DC9-48-60-24-8C-EV
SCALE: N.T.S

AT&T

smartlink

Trylon

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
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C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	100% CD	SAR
1	03/19/20	100% CD	SAR

STATE OF MARYLAND · ERIK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

3-19-2020

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

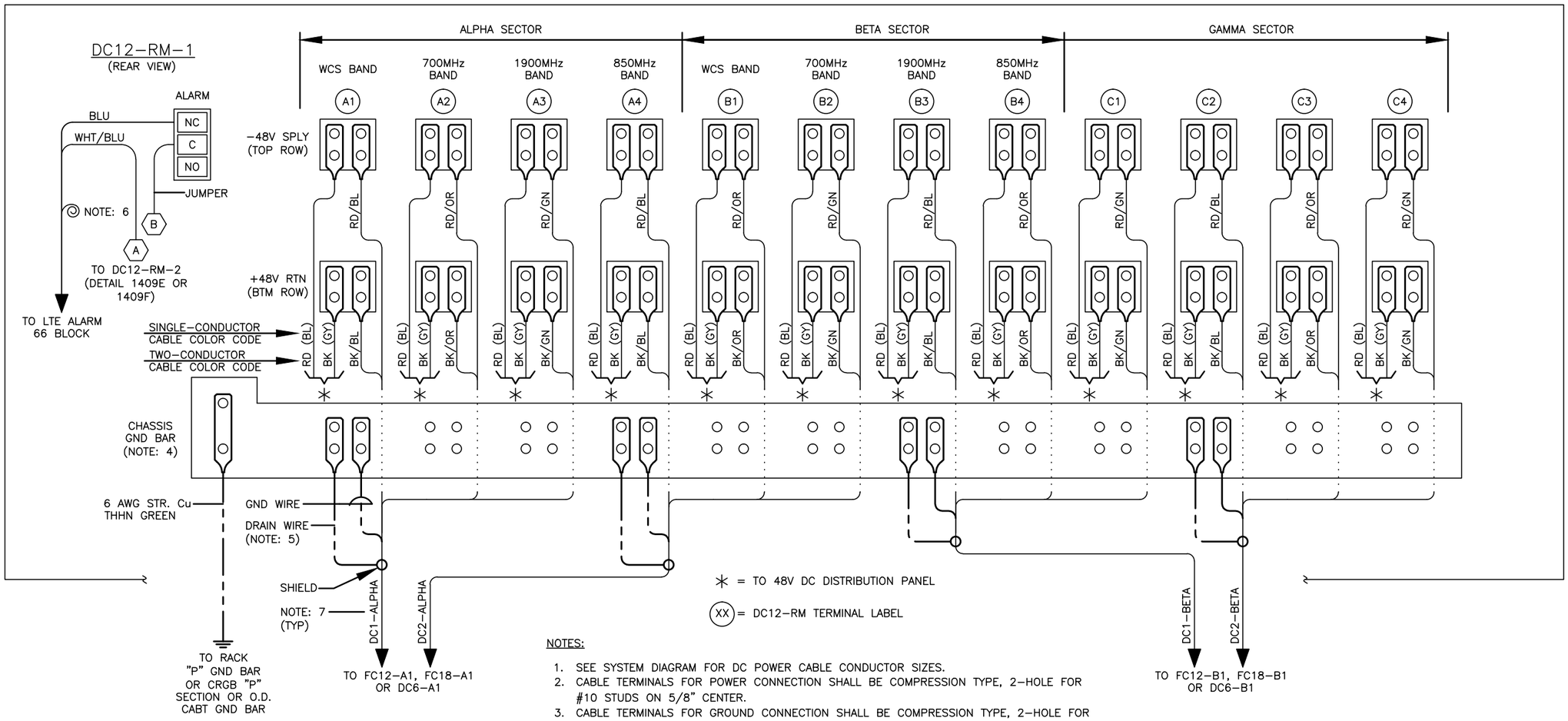
EXISTING BUILDING

SHEET DESCRIPTION

DC SURGE SUPPRESSION WIRING DIAGRAM

SHEET NO.

E-1



NOTES:

1. SEE SYSTEM DIAGRAM FOR DC POWER CABLE CONDUCTOR SIZES.
2. CABLE TERMINALS FOR POWER CONNECTION SHALL BE COMPRESSION TYPE, 2–HOLE FOR #10 STUDS ON 5/8" CENTER.
3. CABLE TERMINALS FOR GROUND CONNECTION SHALL BE COMPRESSION TYPE, 2–HOLE FOR 1/4" STUDS ON 5/8" CENTER.
4. CHASSIS GROUND BAR TERMINAL IS SUPPLIED WITH UNIT AND IS 2–HOLE, 1/4" ON 1" CENTER.
5. DRAIN WIRE CONNECTION APPLICABLE ONLY WHERE SHIELDED CABLE IS INSTALLED.
6. TURN BACK AND STORE UNUSED CONDUCTORS.
7. CABLES AND WIRES SHALL BE LABELED BY MARKET CONVENTION. LABELS SHOWN ARE REPRESENTATIVE.

CONNECTION DIAGRAM RACK–MOUNTED SURGE SUPPRESSION SYSTEM DC12–RM–1 FOR SECTORIZED SITE

AT&T

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Trylon

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

DC SURGE SUPPRESSION WIRING DIAGRAM

SHEET NO.

E–2

PANEL 'DISTRIBUTION PANEL' SCHEDULE

120/240V, 1 PHASE, 3W — Square D #QO
200A BUS — 200A MAIN BKR

MAIN BREAKER RATING (A): 200 — SYSTEM VOLTAGE (V): 240

Type	DESCRIPTION	VA	c/nc	BKR	POSN	L1	L2	POSN	BKR	c/nc	VA	DESCRIPTION	Type
dual	UMTS CABINET	4875	nc	100	1	6892		2	30	c	2017	RECT 4	dual
		4875	nc		3		6892	4		c	2017		
dual	FLEX CABINET	1455	nc	100	5	3472		6	30	c	2017	RECT 5	dual
		1275	nc		7		3292	8		c	2017		
dual	UNLABELED	0	nc	20	9	0		10	30	c	0	RECT 6	dual
		0	nc		11		0	12		c	0		
dual	RECT 1	2017	c	30	13	2017		14	30	c	0	RECT 7	dual
		2017	c		15		2017	16		c	0		
dual	RECT 2	2017	c	30	17	2017		18	30	c	0	RECT 8	dual
		2017	c		19		2017	20		c	0		
dual	RECT 3	2017	c	30	21	2017		22	30	c	0	RECT 9	dual
		2017	c		23		2017	24		c	0		
	BLANK				25	1175		26	30	nc	1175	LUCENT AC	dual
	BLANK				27		0	28				BLANK	
	BLANK				29	0		30				BLANK	
	BLANK				31		0	32				BLANK	
	BLANK				33	0		34				BLANK	
	BLANK				35		0	36				BLANK	
	BLANK				37	0		38				BLANK	
	BLANK				39		0	40				BLANK	
	NOT PRESENT				41	0		42				NOT PRESENT	

PHASE TOTALS (VA):	17590	16235	
CURRENT PER PHASE (A):	168	156	Amperes/phase cannot exceed main breaker rating
PANEL TOTAL (VA):	33825		Legend: c = continuous, nc = non-continuous
PANEL CAPACITY (kVA):	48.0	CONNECTED LOAD (kVA):	33.8
PANEL LOADING (100% non-cont. load) (kVA):	13.7		
PANEL LOADING (125% continuous load) (kVA):	25.2		
PANEL LOADING (TOTAL) (kVA):	38.9		
SPARE CAPACITY (kVA):	9.1		

1 / E-3 EXISTING AC MAIN PANEL SCHEDULE
SCALE: NTS

PANEL 'DISTRIBUTION PANEL' SCHEDULE

120/240V, 1 PHASE, 3W — Square D #QO

MAIN BREAKER RATING (A): 100 — SYSTEM VOLTAGE (V): 240

Type	DESCRIPTION	VA	c/nc	BKR	POSN	L1	L2	POSN	BKR	c/nc	VA	DESCRIPTION	Type
single	LIGHTS	360	nc	10	1	360		2	20	nc	0	CONVERTER	single
single	GFCI	180	nc	20	3		180	4	20	nc	0	SPARE	dual
dual	AC 1	1095	nc	10	5	1095		6		nc	0		
		1095	nc		7		1095	8				BLANK	
	BLANK				9	0		10				BLANK	
	BLANK				11		0	12				BLANK	
	BLANK				13	0		14				BLANK	
	BLANK				15		0	16				BLANK	
	NOT PRESENT				17	0		18				NOT PRESENT	
	NOT PRESENT				19		0	20				NOT PRESENT	
	NOT PRESENT				21	0		22				NOT PRESENT	
	NOT PRESENT				23		0	24				NOT PRESENT	
	NOT PRESENT				25	0		26				NOT PRESENT	
	NOT PRESENT				27		0	28				NOT PRESENT	
	NOT PRESENT				29	0		30				NOT PRESENT	
	NOT PRESENT				31		0	32				NOT PRESENT	
	NOT PRESENT				33	0		34				NOT PRESENT	
	NOT PRESENT				35		0	36				NOT PRESENT	
	NOT PRESENT				37	0		38				NOT PRESENT	
	NOT PRESENT				39		0	40				NOT PRESENT	
	NOT PRESENT				41	0		42				NOT PRESENT	

PHASE TOTALS (VA):	1455	1275	
CURRENT PER PHASE (A):	12	11	Amperes/phase cannot exceed main breaker rating
PANEL TOTAL (VA):	2730		Legend: c = continuous, nc = non-continuous
PANEL CAPACITY (kVA):	24.0	CONNECTED LOAD (kVA):	2.7
PANEL LOADING (100% non-cont. load) (kVA):	2.7		
PANEL LOADING (125% continuous load) (kVA):	0.0		
PANEL LOADING (TOTAL) (kVA):	2.7		
SPARE CAPACITY (kVA):	21.3		

2 / E-3 EXISTING AC SUB PANEL SCHEDULE
SCALE: NTS

PANEL 'DISTRIBUTION PANEL' SCHEDULE

120/240V, 1 PHASE, 3W — Square D #QO
200A BUS — 200A MAIN BKR

MAIN BREAKER RATING (A): 200 — SYSTEM VOLTAGE (V): 240

Type	DESCRIPTION	VA	c/nc	BKR	POSN	L1	L2	POSN	BKR	c/nc	VA	DESCRIPTION	Type
dual	UMTS CABINET	4875	nc	100	1	6892		2	30	c	2017	RECT 4	dual
		4875	nc		3		6892	4		c	2017		
dual	FLEX CABINET	1275	nc	100	5	3292		6	30	c	2017	RECT 5	dual
		1455	nc		7		3472	8		c	2017		
dual	UNLABELED	0	nc	20	9	2017		10	30	c	2017	RECT 6	dual
		0	nc		11		2017	12		c	2017		
dual	RECT 1	2017	c	30	13	2017		14	30	c	0	RECT 7	dual
		2017	c		15		2017	16		c	0		
dual	RECT 2	2017	c	30	17	2017		18	30	c	0	RECT 8	dual
		2017	c		19		2017	20		c	0		
dual	RECT 3	2017	c	30	21	2017		22	30	c	0	RECT 9	dual
		2017	c		23		2017	24		c	0		
	BLANK				25	1175		26	30	nc	1175	LUCENT AC	dual
	BLANK				27		180	28	20	nc	180	BATT CAB GFCI	single
	BLANK				29	540		30	15	nc	540	BATT CAB HEAT	single
	BLANK				31		0	32				BLANK	
	BLANK				33	0		34				BLANK	
	BLANK				35		0	36				BLANK	
	BLANK				37	0		38				BLANK	
	BLANK				39		0	40				BLANK	
	NOT PRESENT				41	0		42				NOT PRESENT	

PHASE TOTALS (VA):	19967	18612	
CURRENT PER PHASE (A):	192	180	Amperes/phase cannot exceed main breaker rating
PANEL TOTAL (VA):	38579		Legend: c = continuous, nc = non-continuous
PANEL CAPACITY (kVA):	48.0	CONNECTED LOAD (kVA):	38.6
PANEL LOADING (100% non-cont. load) (kVA):	14.4		
PANEL LOADING (125% continuous load) (kVA):	30.3		
PANEL LOADING (TOTAL) (kVA):	44.6		
SPARE CAPACITY (kVA):	3.4		

3 / E-3 PROPOSED AC MAIN PANEL SCHEDULE
SCALE: NTS

PANEL 'DISTRIBUTION PANEL' SCHEDULE

120/240V, 1 PHASE, 3W — Square D #QO

MAIN BREAKER RATING (A): 100 — SYSTEM VOLTAGE (V): 240

Type	DESCRIPTION	VA	c/nc	BKR	POSN	L1	L2	POSN	BKR	c/nc	VA	DESCRIPTION	Type
single	LIGHTS	360	nc	10	1	360		2	20	nc	0	CONVERTER	single
single	GFCI	180	nc	20	3		180	4	20	nc	0	SPARE	dual
dual	AC 1	1095	nc	10	5	1095		6		nc	0		
		1095	nc		7		1095	8				BLANK	
	BLANK				9	0		10				BLANK	
	BLANK				11		0	12				BLANK	
	BLANK				13	0		14				BLANK	
	BLANK				15		0	16				BLANK	
	NOT PRESENT				17	0		18				NOT PRESENT	
	NOT PRESENT				19		0	20				NOT PRESENT	
	NOT PRESENT				21	0		22				NOT PRESENT	
	NOT PRESENT				23		0	24				NOT PRESENT	
	NOT PRESENT				25	0		26				NOT PRESENT	
	NOT PRESENT				27		0	28				NOT PRESENT	
	NOT PRESENT				29	0		30				NOT PRESENT	
	NOT PRESENT				31		0	32				NOT PRESENT	
	NOT PRESENT				33	0		34				NOT PRESENT	
	NOT PRESENT				35		0	36				NOT PRESENT	
	NOT PRESENT				37	0		38				NOT PRESENT	
	NOT PRESENT				39		0	40				NOT PRESENT	
	NOT PRESENT				41	0		42				NOT PRESENT	

PHASE TOTALS (VA):	1455	1275	
CURRENT PER PHASE (A):	12	11	Amperes/phase cannot exceed main breaker rating
PANEL TOTAL (VA):	2730		Legend: c = continuous, nc = non-continuous
PANEL CAPACITY (kVA):	24.0	CONNECTED LOAD (kVA):	2.7
PANEL LOADING (100% non-cont. load) (kVA):	2.7		
PANEL LOADING (125% continuous load) (kVA):	0.0		
PANEL LOADING (TOTAL) (kVA):	2.7		
SPARE CAPACITY (kVA):	21.3		

4 / E-3 PROPOSED AC SUB PANEL SCHEDULE
SCALE: NTS

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Trylon

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SUBMITTALS

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0	02/11/20	100% CD	SAR
1	03/19/20	100% CD	SAR

STATE OF MARYLAND — KIRK R. HALL — No. 27217 — PROFESSIONAL ENGINEER

3-19-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

AC PANEL SCHEDULE

SHEET NO.

E-3

NOTES:

1. SWITCH OFF EXISTING DC BREAKERS AFTER RRHs HAVE BEEN DECOMMISSIONED, RELABEL AS "SPARE".

TIER 1 (LOWER) VOLTAGE: −48V
MAX. TIER BUS CURRENT: 600A

POSITION	DESCRIPTION	BRKR (A)
1	**(E) SPARE**	**15**
2	**(E) SPARE**	**15**
3	**(E) SPARE**	**15**
4	**(E) SPARE**	**15**
5	**(E) SPARE**	**15**
6	**(E) SPARE**	**15**
7	**(E) NOKIA FSM4 BBU**	**20**
8		
9	**(E) SPARE**	**25**
10	**(E) SPARE**	**25**
11	**(E) SPARE**	**25**
12		

NOTES:

1. REMOVE UNUSED BREAKERS, INSTALL NEW CIRCUIT BREAKERS FOR NEW RRHs AS SHOWN BELOW.

TIER 2 VOLTAGE: −48V
MAX. TIER BUS CURRENT: 600A

POSITION	DESCRIPTION	BRKR (A)
13	(N) B12/14 RRH, SECTOR A	50
14	(N) B12/14 RRH, SECTOR B	50
15	(N) B12/14 RRH, SECTOR C	50
16	(N) B25/66 RRH, SECTOR A	50
17	(N) B25/66 RRH, SECTOR B	50
18	(N) B25/66 RRH, SECTOR C	50
19	(N) B30 RRH, SECTOR A	25
20	(N) B30 RRH, SECTOR B	25
21	(N) B30 RRH, SECTOR C	25
22		
23		
24		

TIER 3 (OPTIONAL − NOTE: 4) VOLTAGE: −48V
MAX. TIER BUS CURRENT: 600A

POSITION	DESCRIPTION	BRKR (A)
25	(E) GSM	80A
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		

TIER 4 (UPPER) VOLTAGE: −48V
MAX. TIER BUS CURRENT: 600A

POSITION	DESCRIPTION	BRKR (A)
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		

DC BREAKER SIZE	ALPHA PART #	AT&T NEQ #
1A/1P	**Unavailable**	**Not Applicable**
3A/1P	470-301-10	NEQ 10356
5A/1P	470-302-10	NEQ 10357
10A/1P	470-303-10	NEQ 10358
15A/1P	470-304-10	NEQ 10359
16A/1P	**Unavailable**	**Not Applicable**
20A/1P	470-305-10	NEQ 10360
25A/1P	470-306-10	NEQ 10361
30A/1P	470-307-10	NEQ 10362
35A/1P	**Unavailable**	**Not Applicable**
40A/1P	470-309-10	NEQ 10364
45A/1P	**Unavailable**	**Not Applicable**
50A/1P	470-311-10	NEQ 10366
60A/1P	470-312-10	NEQ 10367
70A/1P	**Unavailable**	**Not Applicable**
75A/1P	**Unavailable**	**Not Applicable**
80A/1P	470-314-10	NEQ 10369
90A/1P	**Unavailable**	**Not Applicable**
100A/1P	470-316-10	NEQ 10371
100A/2P	**Unavailable**	**Not Applicable**
125A/2P	**Unavailable**	**Not Applicable**
150A/2P	747-148-20-000	NEQ 10373
200A/3P	**Unavailable**	**Not Applicable**
225A/3P	**Unavailable**	**Not Applicable**
250A/3P	747-221-20-000	NEQ 10377

ARGUS DC CIRCUIT BREAKER PART AND NEQ DATA

NOTES:

1. ALL BREAKERS 100A AND LARGER REQUIRE ONE (1) UNUSED POSITION ON EACH SIDE.
2. 2−POSITION AND 3−POSITION BREAKERS REQUIRE AN ADAPTOR PLATE ON LOAD TERMINALS.
3. INSTALL LARGER BREAKERS ON UPPER TIERS TO FACILITATE CABLE MANAGEMENT.
4. THIS DETAIL IS APPLICABLE FOR ALPHA 48/24V DUAL VOLTAGE POWER SYSTEMS 4−TIER MODEL (NEQ. 15239) AND 3−TIER MODEL (NEQ. 15240).
5. BREAKERS SHALL BE AM−TYPE, 80V 10kA SCCR, MAXIMUM RATING IS 250A. BREAKERS 1A TO 100A ARE 1−POSN, 110A TO 150A ARE 2−POSN AND 175A TO 250A ARE 3−POSN.
6. GMT FUSE RATINGS ARE 0.5A TO 15A.

1 / E−4 DC PANEL SCHEDULE
SCALE: N.T.S

AT&T

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Trylon

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USID: 100205
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GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

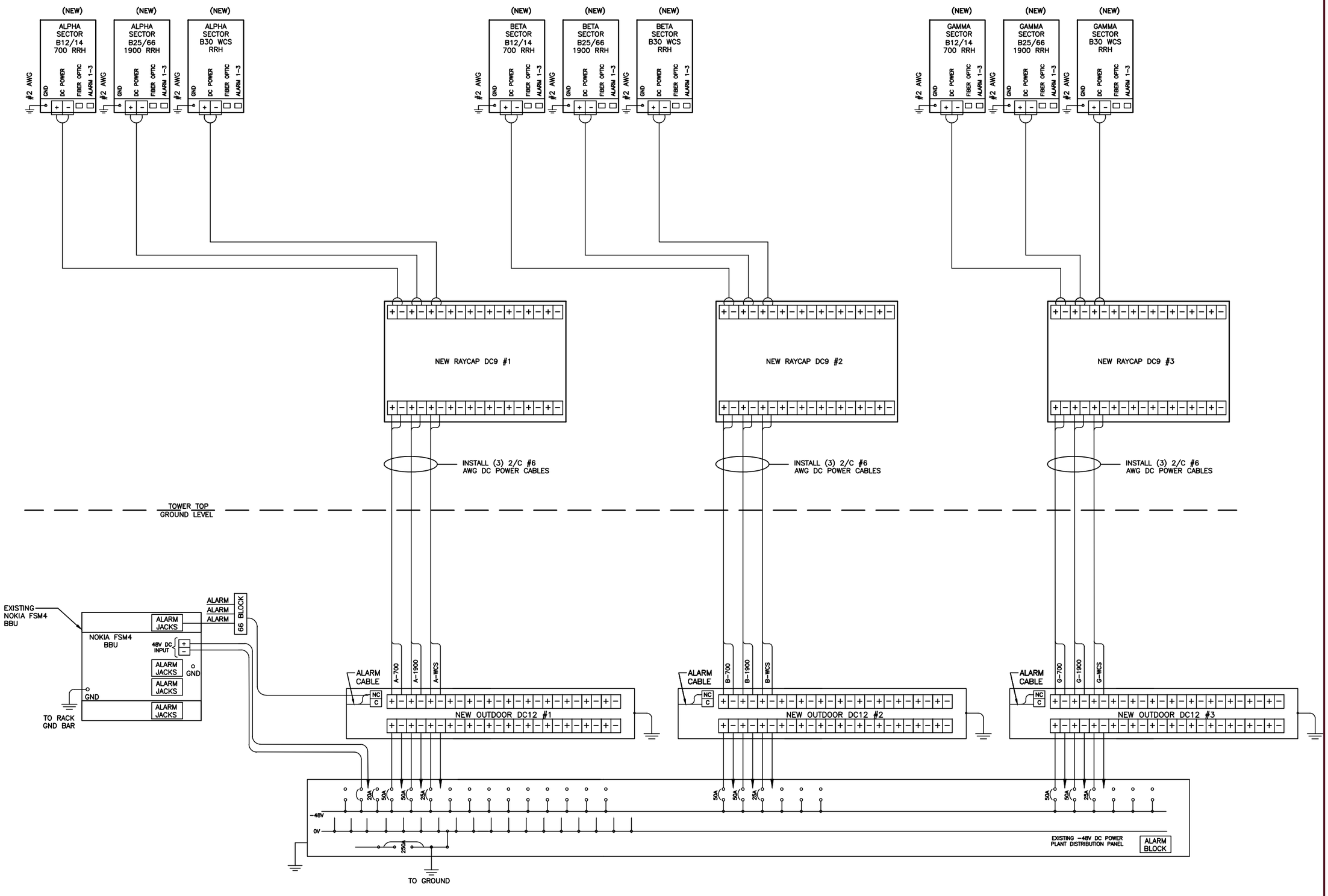
EXISTING BUILDING

SHEET DESCRIPTION

DC PANEL SCHEDULE

SHEET NO.

E−4



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STATE OF MARYLAND
KIRK R. HALL
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GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

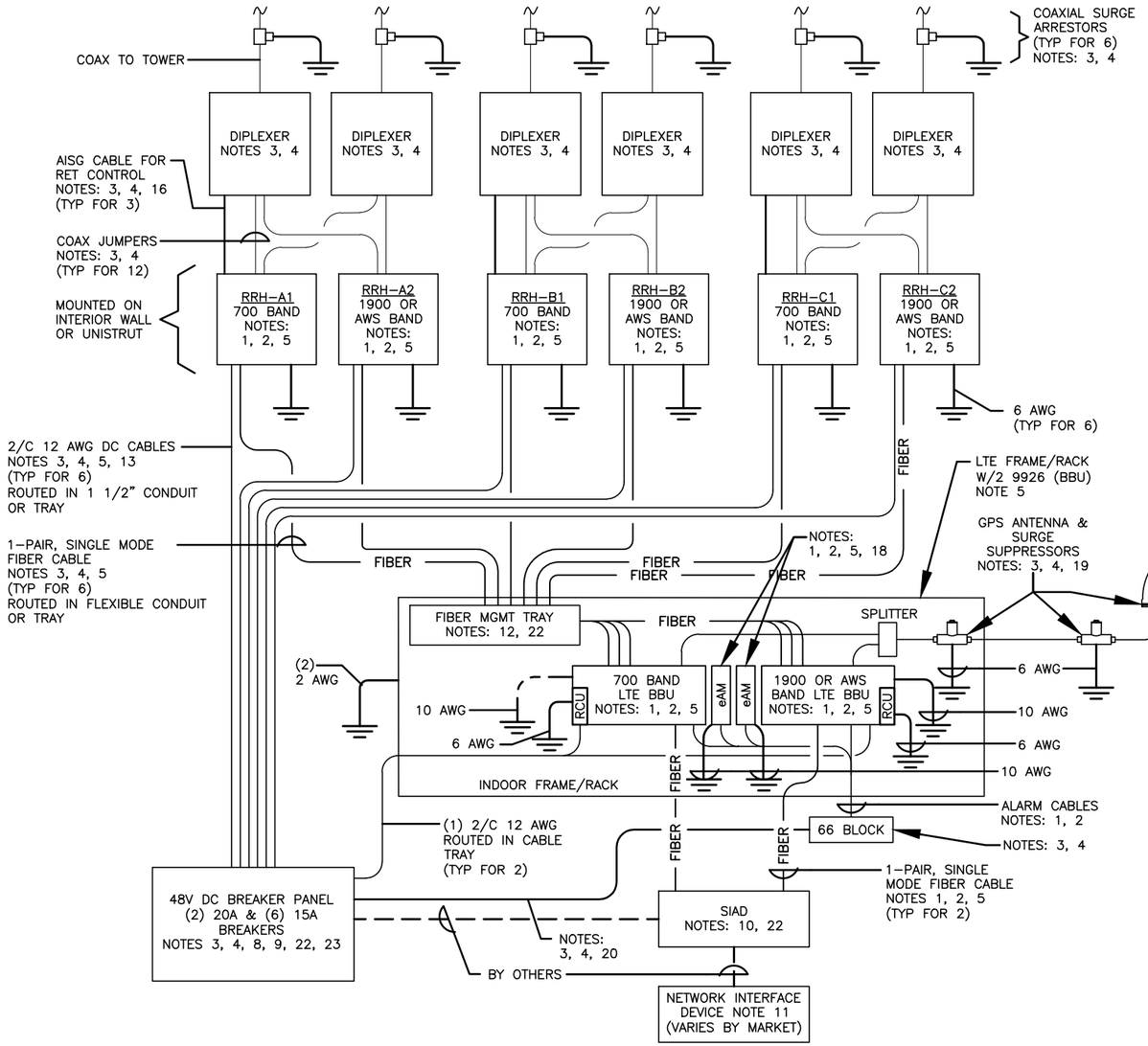
EXISTING BUILDING

SHEET DESCRIPTION

WIRING DIAGRAM

SHEET NO.

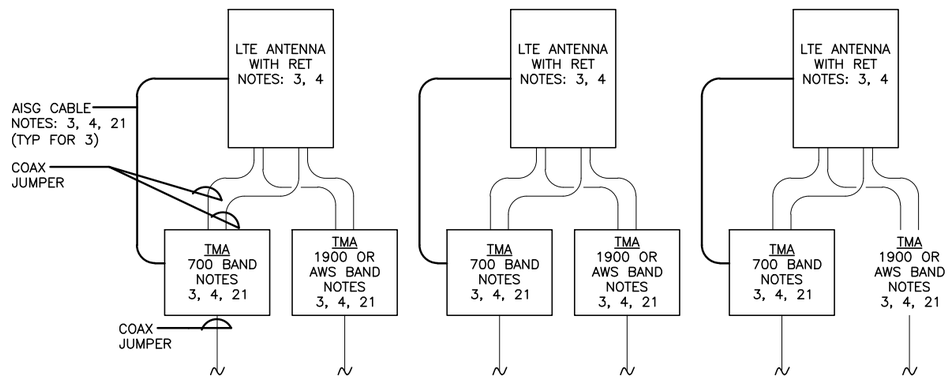
E-5



LTE SYSTEM DIAGRAM, TOWER SITE
WITH INDOOR ALU BASEBAND
AND RRHs @ GRADE LEVEL

NOTES:

1. FURNISHED BY OEM/AT&T.
2. INSTALLED BY OEM OR AS SCOPED BY MARKET.
3. FURNISHED BY GC.
4. INSTALLED BY GC.
5. FINAL CONNECTION BY OEM OR AS SCOPED BY MARKET.
6. DELETED.
7. DELETED.
8. PART OF CONVERTER WITH 18 BREAKER POSITIONS. BREAKERS SPECIFIED SEPARATELY.
9. BREAKERS TO BE TAGGED AND LOCKED OUT.
10. SIAD IS FURNISHED AND INSTALLED BY OTHERS AND INCLUDES POWER CONNECTIONS AND FIBER TO THE UNIT OR AS SCOPED BY MARKET. WHEN IN THE GENERAL CONTRACTOR'S SCOPE, INSTALL 10 AWG CHASSIS GROUND, PROVIDE (2) 10A BREAKERS FROM A 24V DC POWER SOURCE OR (2) 5A BREAKERS FROM A 48V DC POWER SOURCE AND CONNECT USING MFR POWER CABLE WITH SPECIAL CONNECTOR.
11. LEC TO FURNISH AND INSTALL NETWORK INTERFACE DEVICE.
12. COIL EXTRA LENGTH OF FIBER CABLE(S) WITHIN FIBER MANAGEMENT TRAY INSTALLED IN LTE FRAME.
13. MAXIMUM LENGTH OF SIZE 12 AWG DC POWER CABLE TO RRH SHALL NOT EXCEED 100 FEET.
14. SINGLE–CONDUCTOR DC POWER CABLES SHALL BE TELCOFLEX® OR KS24194™, COPPER, UL LISTED RHH NON–HALOGEN, LOW SMOKE WITH BRAIDED COVER, TYPE TC (1/0 AND LARGER). UNLESS OTHERWISE NOTED, STRANDING SHALL BE CLASS B (TYPE III) FOR CABLES SIZES 14, 12 & 10 AWG AND CLASS I (TYPE IV) FOR SIZES 8 AWG AND LARGER. CABLES SHALL BE COLOR CODED RED FOR +24V, BLUE FOR –48V AND GRAY FOR 24V AND 48V RETURN CONDUCTORS. MULTI–CONDUCTOR DC POWER CABLES SHALL BE COPPER, CLASS B STRANDING WITH FLAME RETARDANT PVC JACKET, TYPE TC, UL LISTED FOR 90°C DRY/ 75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
15. GROUNDING WIRES SHALL BE COPPER, GREEN THHN/THWN UL LISTED FOR 90°C DRY/75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
16. RET CONTROL FROM THE RRH IS AN OPTIONAL METHOD OF CONNECTION. REFER TO RF DATA SHEET FOR APPLICABILITY.
17. DELETED.
18. PROVIDE GROUND WIRES FOR ENHANCED ALARM MODULE (eAM) WHEN EMPLOYED BY MARKET.
19. DELETED.
20. DELETED.
21. TMAs MAY BE EITHER SINGLE UNITS (AS SHOWN) OR TWIN UNITS.
22. NOTED EQUIPMENT MAY BE COMMON TO LTE AND UMTS SYSTEMS. REFER TO UMTS SYSTEM DIAGRAM IF APPLICABLE.
23. EXISTING 700MHz BAND BBU IF MODEL 9926 (d2Uv3) MAY BE POWERED FROM A 10A BREAKER.



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DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	100% CD	SAR
1	03/19/20	100% CD	SAR

STATE OF MARYLAND · MIKE R. HALL · No. 27217 · PROFESSIONAL ENGINEER

3-19-2020

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

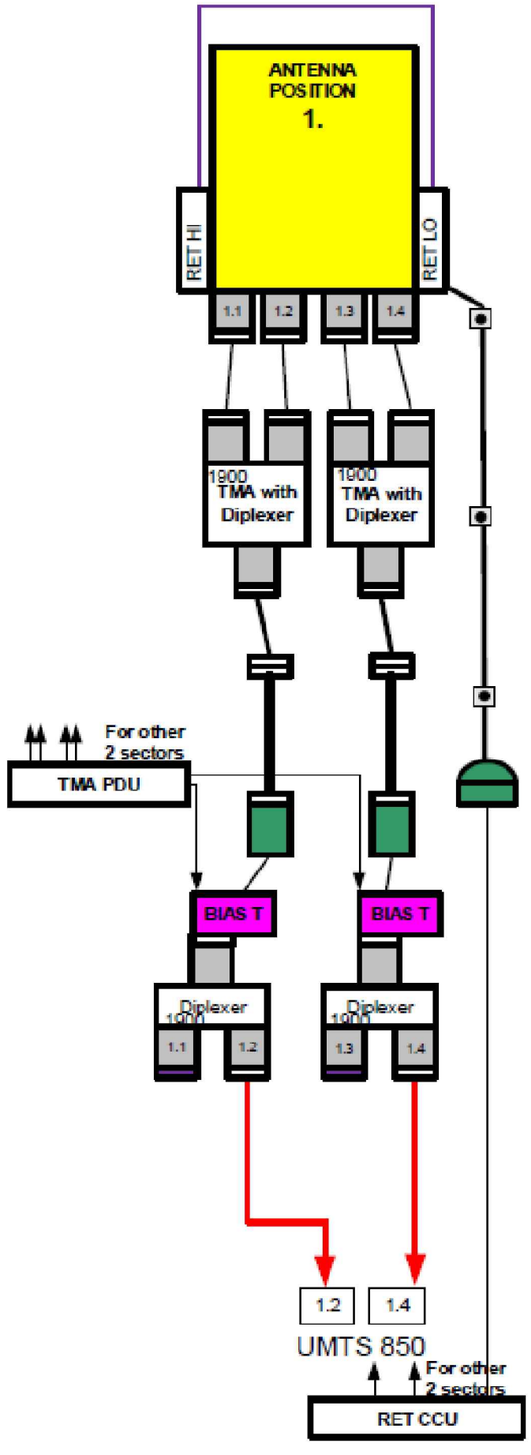
EXISTING BUILDING

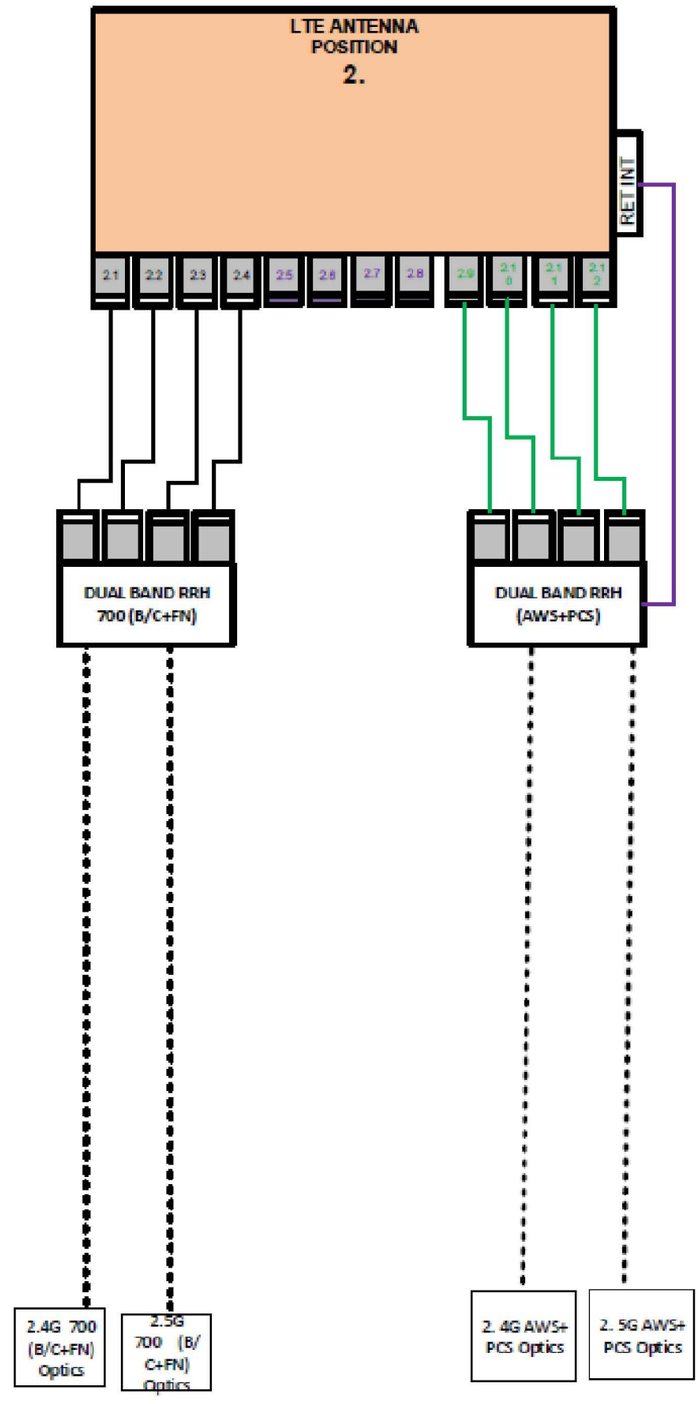
SHEET DESCRIPTION

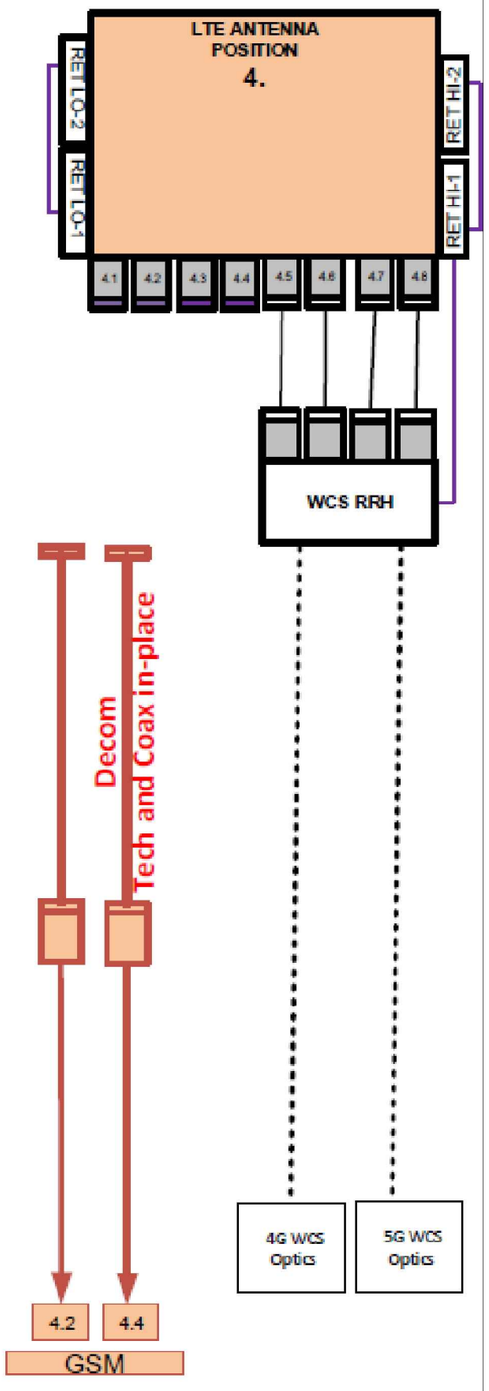
SYSTEM DIAGRAM

SHEET NO.

E–6







1 / RF-1 PLUMBING DIAGRAM FOR ALPHA SECTOR
SCALE: NTS

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C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	100% CD	SAR
1	03/19/20	100% CD	SAR

STATE OF MARYLAND · ERIC R. HALL · No. 27217 · PROFESSIONAL ENGINEER

3-19-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

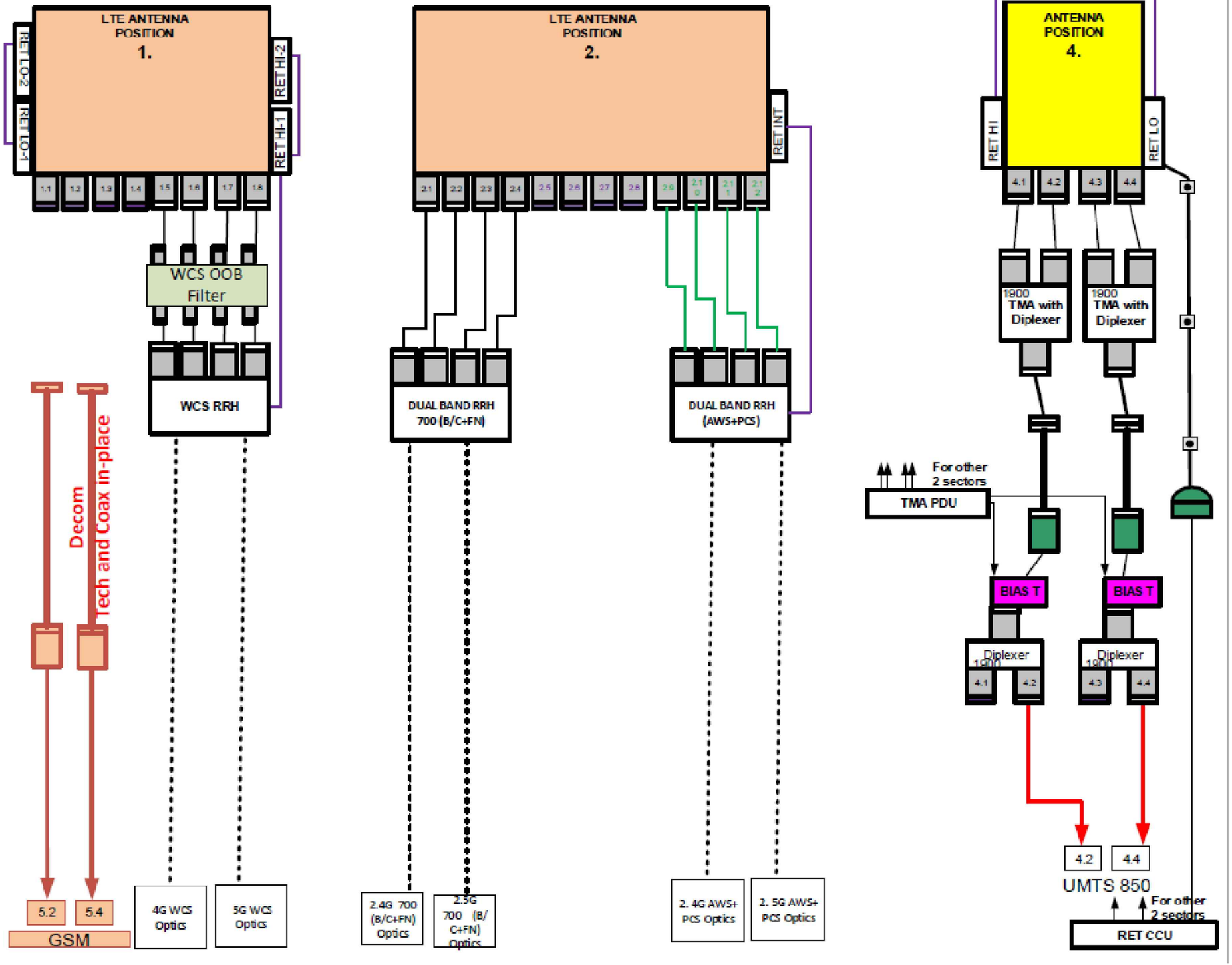
EXISTING BUILDING

SHEET DESCRIPTION

RF PLUMBING DIAGRAM

SHEET NO.

RF-1



1 RF-2 PLUMBING DIAGRAM FOR ALL SECTOR
SCALE: NTS

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SUBMITTALS

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C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	100% CD	SAR
1	03/19/20	100% CD	SAR

STATE OF MARYLAND KIRK R. HALL No. 27217 PROFESSIONAL ENGINEER

3-19-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

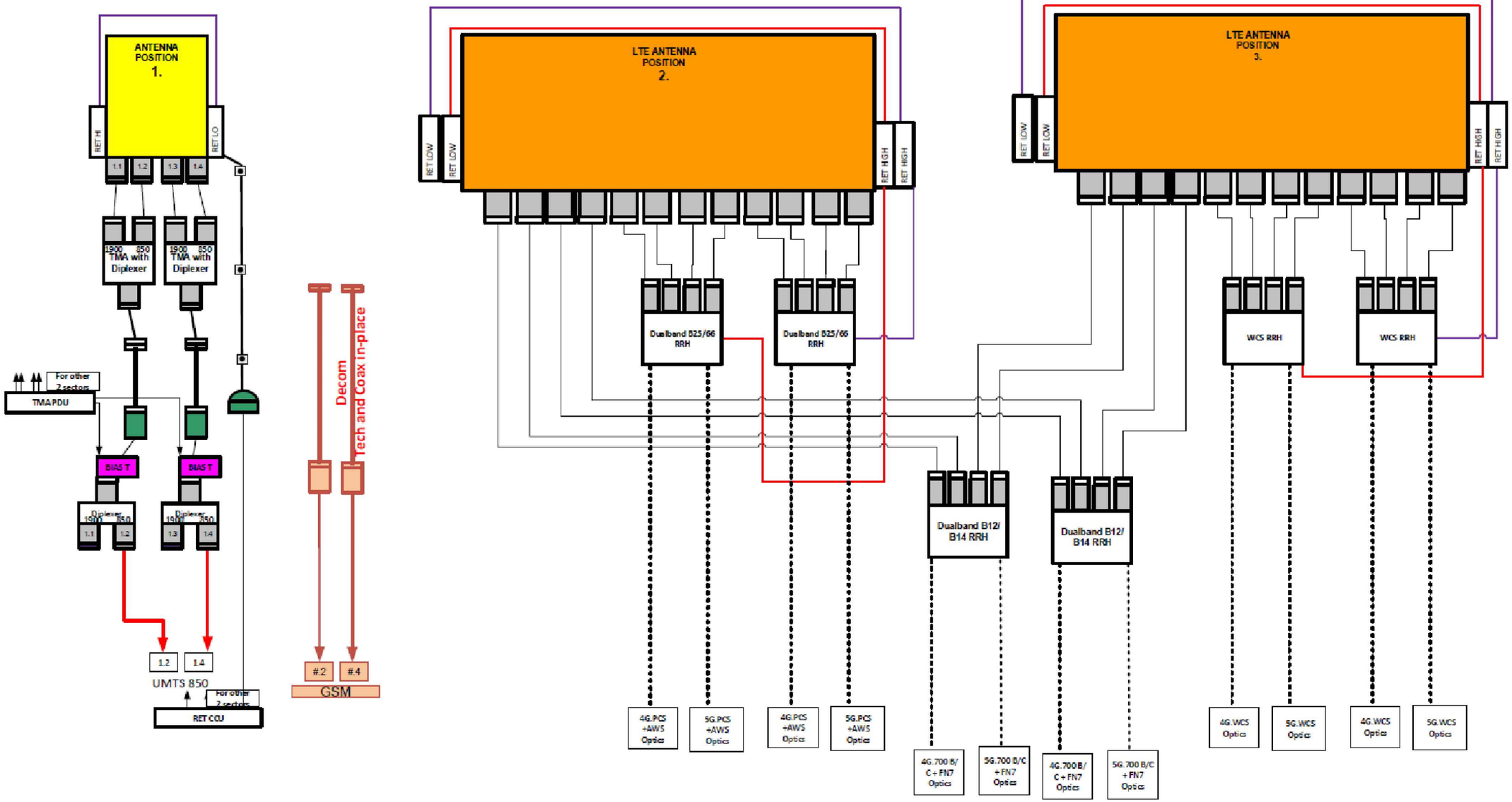
EXISTING BUILDING

SHEET DESCRIPTION

RF PLUMBING DIAGRAM

SHEET NO.

RF-2



1 RF-3 PLUMBING DIAGRAM FOR GAMMA SECTOR
SCALE: NTS

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SUBMITTALS

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C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	100% CD	SAR
1	03/19/20	100% CD	SAR

STATE OF MARYLAND MIKE R. HALL No. 27217 PROFESSIONAL ENGINEER

3-19-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

RF PLUMBING DIAGRAM

SHEET NO.

RF-3

SITE DATA INPUT WORKSHEET - INDOOR SITE POWER ESTIMATE TOOL

STEP 1: ENTER QUANTITIES OF EQUIPMENT & DC OPERATING VOLTAGE:

NOTE: LOAD VALUES FOR ANY EQUIPMENT CAN BE USER SPECIFIED ON THE POWER CONSUMPTION WORKSHEET - USER CHANGES TO DEFAULT LOAD VALUES ARE HIGHLIGHTED IN BRIGHT YELLOW

STEP 2: ENTER DC PLANT TYPE FROM DROP-DOWN MENU:

("GENERIC" +24V or -48V DC PLANT CAN BE SELECTED FOR ANY MANUFACTURER'S DC PLANT)

GENERIC - ANY -48VDC PLANT

-48V PRIMARY DC PLANT SPECIFIED

(DC PLANT CONFIGURATION CAN BE REVIEWED ON DC PLANT WORKSHEET)

STEP 2A: THIS STEP ONLY SHOWN IF "GENERIC" DC PLANT PLANT TYPE HAS BEEN SELECTED:

-48V RECTIFIER CAPACITY (A): 50 *AVAILABLE SLOTS: 11

SELECT +24V CONVERTER CAPACITY (A): 5 *AVAILABLE SLOTS: 0

* ENTER 0 FOR SLOT VALUES TO BYPASS SLOT QUANTITY CHECK ON DC PLANT CONFIG. WORKSHEET

STEP 2B: THIS STEP ONLY SHOWN IF TYCO GP82424 DC PLANT PLANT TYPE HAS BEEN SELECTED:

STEP 3: DO YOU WANT TO CONFIGURE A STANDARD STAND-ALONE DC CONVERTER SYSTEM? N

NOTE: IF YOU SELECT "Y" ANY INTEGRATED DC PLANT CONVERTER OPTIONS WILL BE BYPASSED

STEP 4: ENTER INDOOR SITE BUILDING/SHELTER DATA:

(Square footage used for interior AC lighting LOAD calculation)

SELECT SITE BUILDING TYPE & SIZE: OTHER

SPECIFY TOTAL FLOOR SPACE (SQUARE FEET): 0

STEP 6: ENTER SITE HVAC SYSTEM DATA:

SPECIFY INDIVIDUAL HVAC UNIT SIZE (TONS): 0 SPECIFY QUANTITY: 0

DOES SITE HAVE ADDITIONAL HVAC (DIFFERENT SIZE)? N

ARE THERE SITE HVAC HEATING UNITS? N

TOTAL SPECIFIED SITE HVAC: 0-TONS ESTIMATED HVAC REQUIREMENT: TWO 4-TON UNITS

SPECIFIED HVAC NOT SUFFICIENT

THIS TOOL DOES NOT APPLY TO SITES THAT ARE EQUIPPED WITH FREE STANDING DIRECT AIR COOLING

STEP 6: ENTER SITE STATIONARY GENERATOR DATA:

DOES SITE HAVE A STATIONARY GENERATOR? N

ESTIMATED CAPACITY REQUIRED: 20 KW (NO SITE GENERATOR)

STEP 7: ENTER SITE BATTERY CONFIGURATION DATA:

SELECT SINGLE STRING BATTERY CAPACITY (AH): 165

SPECIFY TOTAL QUANTITY OF BATTERY STRINGS: 2

TOTAL SITE BATTERY CAPACITY (AH): 330

NOTE: STANDARD BATTERY CAPACITY HAS BEEN SPECIFIED

NOTE: 12 VOLT MONOBLOCK BATTERIES - 4 batteries per -48V String

ESTIMATED BATTERY RESERVE TIME: 2.44 HOURS (NO SITE GENSET)

SITES WITH STATIONARY GENSETS SHALL BE ENGINEERED WITH A MAX OF 3 SHELVES of 180 AH BATTERIES (3 strings at -48v or 6 strings at +24v) - ALL OTHER SITES A MINIMUM OF 4 HOURS

SITE POWER CALCULATION TOOL - VERSION 4.3 - October 17, 2017 R. BADGERO

ANY QUESTIONS PLEASE CONTACT RICK BADGERO (RB8620@ATT.COM)

QTY	RADIO HEADS - Outdoor	VOLTAGE	WATTS
	Ericsson		
0	RRUS 01 B2, B5 (80W)	48	0
0	RRUS 01 B12 (60W)	48	0
0	RRUS 11 B12 (2x30W)	48	0
0	RRUS 11 B2, B4, B5, B12 (2x40W)	48	0
0	RRUS 12 B2, B4, B5 (2x60W)	48	0
0	RRUS 32 B2 (4x40W)	48	0
0	RRUS 32 B30 (4x25W)	48	0
0	RRUS 32 B66A	48	0
0	RRUS A2 B2, B4, B12	48	0
0	RRUSE2 B29	48	0
0	RRUW B2, B5	48	0
0	AIR 21 (60W)	48	0
0	RRUS 4478 B14	48	0
	(FUTURE)		
	A-LU		
0	4x4S B66A	48	0
0	FDD RRH2x40-07L (UHLA) B17	48	0
0	RRH2x40-07L-AT (UHLB) B17	48	0
0	B25 RRH4x30 (UHFA) B25	48	0
0	B25 RRH2x60 (UHFA) B25	48	0
0	2X60W-850 B5	48	0
0	2X60W-1900 B2	48	0
0	2X60W-1900A B2	48	0
0	RRH2x40-07L-DE (UHLC) B29	48	0
0	RRH 4T4R (FRBI) B14	48	0
0	RRH4X25 B30	48	0
	(FUTURE)		
	(FUTURE)		

QTY	RADIO HEADS - Indoor	VOLTAGE	WATTS
	Ericsson		
0	RRUS 01 B2, B5 (80W)	48	0
0	RRUS 01 B12 (60W)	48	0
0	RRUS 11 B12 (2x30W)	48	0
0	RRUS 11 B2, B4, B5, B12 (2x40W)	48	0
0	RRUS 12 B2, B4, B5 (2x60W)	48	0
0	RRUS 32 B2 (4x40W)	48	0
0	RRUS 32 B30 (4x25W)	48	0
0	RRUS 32 B66A	48	0
0	RRUS A2 B2, B4, B12	48	0
0	RRUSE2 B29	48	0
0	RRUW B2, B5	48	0
0	AIR 21 (60W)	48	0
0	RRUS 4478 B14	48	0
	(FUTURE)		
	A-LU		
3	4x4S B66A	48	2112
3	FDD RRH2x40-07L (UHLA) B17	48	888
0	RRH2x40-07L-AT (UHLB) B17	48	0
3	B25 RRH4x30 (UHFA) B25	48	1692
0	B25 RRH2x60 (UHFA) B25	48	0
0	2X60W-850 B5	48	0
0	2X60W-1900 B2	48	0
0	2X60W-1900A B2	48	0
0	RRH2x40-07L-DE (UHLC) B29	48	0
0	RRH 4T4R (FRBI) B14	48	0
3	RRH4X25 B30	48	1248
	(FUTURE)		
	(FUTURE)		

QTY	LTE 4G & Multi-Std EQUIPMENT	VOLTAGE	WATTS
0	A-LU 9926 LTE BBU (w/max. 3 eCEM-u)	48	0
1	Nokia FSM-4	48	998
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
0	Ericsson LTE RBS6601 BBU - 1 DUL	48	0
0	Ericsson LTE RBS6601 BBU - 2 DUL	48	0
0	Ericsson WCDMA RBS6601 - 1 DUW	48	0
0	Ericsson LTE RBS6601 BBU - 1DUS	48	0
0	Ericsson LTE RBS6601 BBU - 2DUS	48	0
0	Ericsson XMU	48	0
0	Ericsson LTE RBS5216	48	0
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		

QTY	UMTS 3G EQUIPMENT	VOLTAGE	WATTS
0	A-LU MACRO NodeB (3S1C - 40W)	24	0
0	A-LU MACRO NodeB (3S2C - 40W)	24	0
0	A-LU MACRO NodeB (3S3C - 40W)	24	0
0	A-LU MACRO NodeB (3S4C - 40W)	24	0
0	A-LU MACRO NodeB (3S5C - 40W - 2 CAB)	24	0
0	A-LU MICRO NodeB	24	0
0	A-LU 9396 d2U Distributed NodeB MU	48	0
0	A-LU 9396 d4U Distributed NodeB MU	48	0
	(FUTURE)		
	(FUTURE)		
0	Ericsson RBS3206 NodeB 3S1C - 1 CAB	24	0
0	Ericsson RBS3206 NodeB 3S2C - 1 CAB	24	0
	NON-OBIF Ericsson 3rd, 4th & 5th Carrier		
0	Ericsson RBS3206 NodeB 3S3C - 2 CAB	24	0
0	Ericsson RBS3206 NodeB 3S4C - 2 CAB	24	0
0	Ericsson RBS3206 NodeB 3S5C - 3 CAB	24	0
	OBIF Ericsson 3rd, 4th & 5th Carrier		
0	Ericsson RBS3206 NodeB 3S3C - 1 CAB (Select RRUS from left section)	24	0
0	Ericsson RBS3206 NodeB 3S4C - 1 CAB (Select RRUS from left section)	24	0
0	Ericsson RBS3206 NodeB 3S4C - 1 CAB (Select RRUS from left section)	24	0
0	Ericsson RBS3206 NodeB 3S5C - 2 CAB (Select RRUS from left section)	24	0
0	Ericsson 3303 MICRO NodeB	24	0
0	Ericsson RBS3418 Distributed NodeB MU	48	0
	(FUTURE)		
	(FUTURE)		

(CUSTOM AC LOADS DEFINED ON POWER CONSUMPTION WORKSHEET)

QTY	USER SPECIFIED AC EQUIPMENT	VOLTAGE	KVA
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
	TOTAL USER SPECIFIED KVA:		0
	TOTAL 120VAC AMPS:		0
	TOTAL 240VAC AMPS:		4800

QTY	ANCILLARY CELL SITE EQUIPMENT	VOLTAGE	WATTS
0	A-LU 7705 SIAD	48	0
	(FUTURE)		
0	A-LU MPR-9500 MW Service Switch - MSS	48	0
0	A-Lu MPR-9500 MW Outdoor Unit - ODU	48	0
0	A-Lu MPR-9500 MW MPT-HL (Indoor)	48	0
	(FUTURE)		
0	Cisco MWR-2941 SIAD	48	0
0	Cisco SIAD ASR-901	48	0
0	Cisco 15310 EOS (SONET) MUX	48	0
0	Cisco 15454 MSP (MW Ring Config.)	48	0
	(FUTURE)		
0	Tru-Position LMU (E911)	48	0
0	DC Free Air (per HVAC unit)	48	0
0	GENERIC Ethernet NID	48	0
0	GENERIC Hydrogen Detector	48	0
0	GENERIC RET Controller	48	0
0	GENERIC RXAIT	48	0
0	GENERIC Smoke Detector	48	0
0	GENERIC TMA System	48	0
0	GENERIC Tower Lighting (DC)	48	0
0	NG480	48	0
0	Cisco 2911	48	0
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		

QTY	TX RF AMP (MCPA or SCPA) EQPT.	VOLTAGE	WATTS
0	Andrew (12 module mcpa FRAME)	24	0
0	Andrew 135 Watt Module	24	0
	(FUTURE)		
0	Powerwave 12 module mcpa FRAME)	24	0
0	Powerwave 90 Watt Module	24	0
0	Powerwave 120 Watt Module	24	0
0	Powerwave 180 Watt Module	24	0
	(FUTURE)		
0	CCI 125 Watt DAB SCPA Module	24	0
0	CCI 125 Watt DAC SCPA Module	24	0
	(FUTURE)		

(CUSTOM DC LOADS DEFINED ON POWER CONSUMPTION WORKSHEET)

QTY	USER SPECIFIED DC EQUIPMENT	VOLTAGE	WATTS
3	B14 Firstnet RRH	48	2208
1	9412 Heaters	48	800
0	B25/66 Dual Band RRH	48	0
0	B12/14 Dual Band RRH	48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
	TOTAL USER SPECIFIED WATTS:		3008
	TOTAL +24V (27V) AMPS:		0
	TOTAL -48V (54V) AMPS:		55.7

-48V PRIMARY VOLTAGE DC PLANT SPECIFIED				
+24VDC EQUIPMENT LOAD:	0 WATTS	=	0 AMPS	at +24V
-48VDC EQUIPMENT LOAD:	9888 WATTS	=	184 AMPS	at -48V
NO SECONDARY 24V LOADS - DC CONVERTER SYSTEM NOT REQUIRED				
TOTAL PRIMARY 48V LOAD:	9888 WATTS	=	184 AMPS	at -48V

(DC PLANT CONFIGURATION CAN BE REVIEWED ON DC PLANT WORKSHEET)		
DC PLANT: GENERIC - ANY -48VDC PLANT		
-48V RECTIFIERS REQUIRED (N+1):	6	
-48V RECTIFIER SLOTS:	11	
CONV. TYPE: GENERIC - CONV. SIZE & SLOT QTY MANUALLY SPECIFIED		
+24V CONVERTERS REQUIRED:	0	(NO DC CONVERTERS REQUIRED)
+24V CONVERTER SLOTS:	0	(NO DC CONVERTERS REQUIRED)
ESTIMATED BATTERY RESERVE TIME		
2 165 AH 48V STRINGS =	2.44 HOURS	(4 HOUR MINIMUM BATTERY RESERVE)

ESTIMATED SITE MAX. AC LOAD (AMPS):	97.60 AMPS
ESTIMATE 200A SERVICE SUFFICIENT	

SITE GENERATOR CAPACITY REQUIRED:	20 KW
ON SITE GENERATOR CAPACITY:	0 KW
(NO ON-SITE GENERATOR)	

RECOMMENDED HVAC SYSTEM:	TWO 4-TON
SPECIFIED SITE TOTAL HVAC CAPACITY:	0-TONS
ESTIMATE EXISTING HVAC NOT SUFFICIENT	

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1	03/19/20	100% CD	SAR

STATE OF MARYLAND ERIK R. HALL No. 27217 PROFESSIONAL ENGINEER

3-19-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

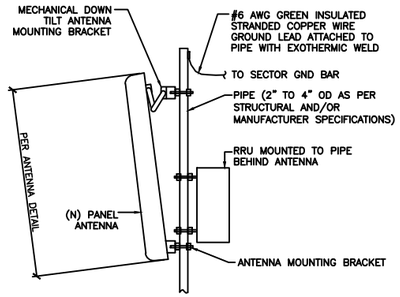
EXISTING BUILDING

SHEET DESCRIPTION

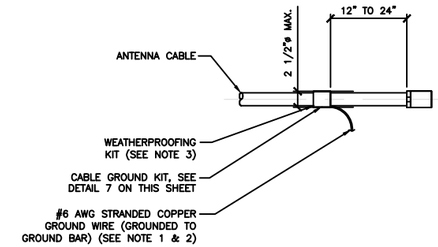
POWER LOAD CALCULATIONS

SHEET NO.

RF-4



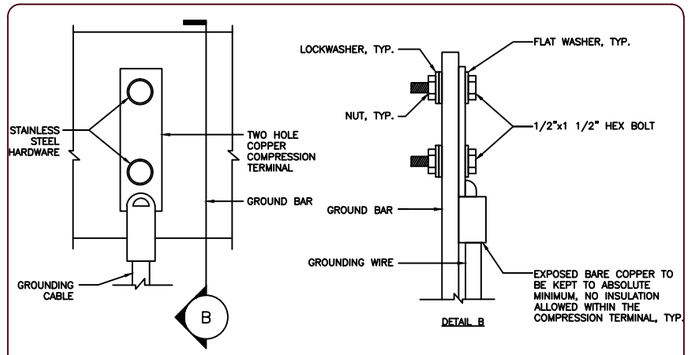
1 G-1 ANTENNA PIPE MOUNT GROUNDING DETAIL



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR
2. GROUNDING KIT SHALL BE ANDREW SUREGROUND TYPE KIT WITH TWO-HOLE LUG
3. WEATHER PROOFING SHALL BE ANDREW TWO-PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED

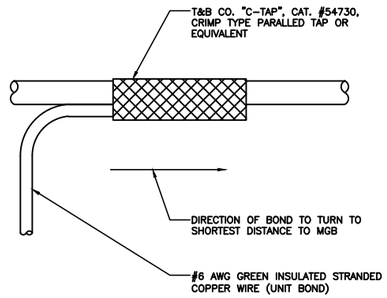
2 G-1 CABLE GROUND KIT DETAIL



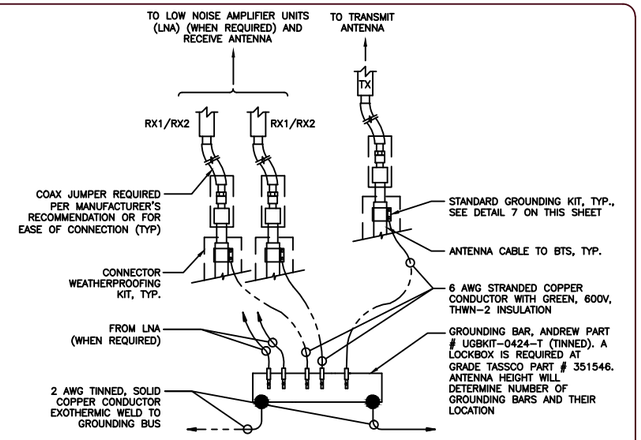
NOTES:

1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS AND TO BE APPLIED PRIOR TO ADDING HARDWARE.

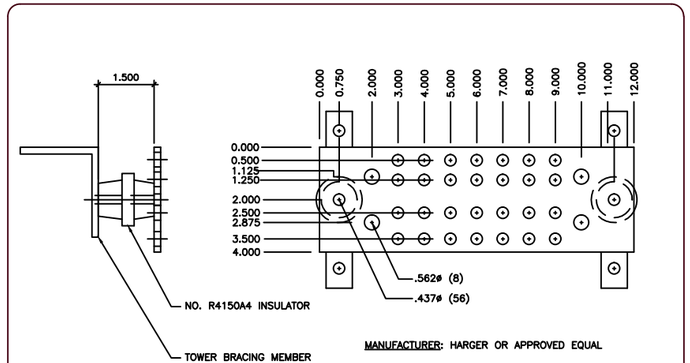
3 G-1 TYPICAL GROUND LUG CONNECTION DETAIL



4 G-1 GROUNDING WIRE CONNECTION

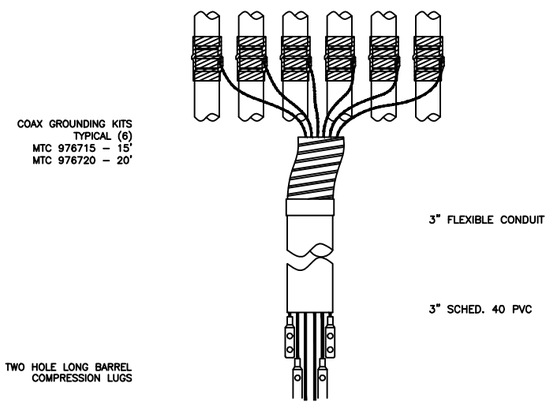


5 G-1 ANTENNA GROUNDING BAR CONNECTION DETAIL

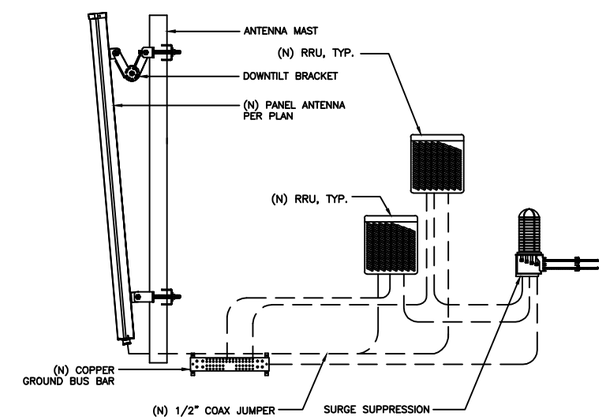


MANUFACTURER: HARGER OR APPROVED EQUAL

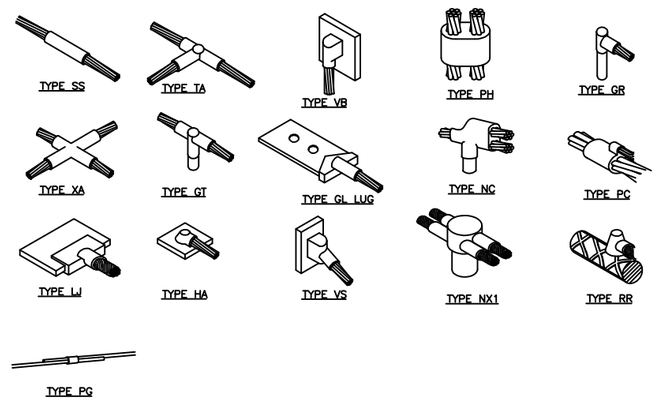
6 G-1 ANTENNA (12") GROUND BAR DETAIL



7 G-1 COAX GROUND KIT



8 G-1 RRU GROUNDING DETAIL



9 G-1 TYPICAL CADWELD TYPES

AT&T

smartlink

Trylon

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	100% CD	SAR
1	03/19/20	100% CD	SAR

STATE OF MARYLAND · KIRK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

3-19-2020

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

GROUNDING DETAILS

SHEET NO.

G-1

GENERAL NOTES

1. GENERAL REQUIREMENTS

A. PURPOSE AND INTENT
1.THE DRAWING AND SPECIFICATION ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY, HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED, OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF DISCREPANCIES BETWEEN REQUIREMENTS SHOWN IN BOTH, THE MORE STRINGENT REQUIREMENTS SHALL APPLY.
2. THE INTENTION OF THE DOCUMENT IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.

A. CONFLICTS
1. VERIFY ALL MEASUREMENTS AT THE SITE BEFORE ORDERING MATERIAL OR DOING ANY WORK, NO EXTRA CHARGE OR COMPENSATION WILL BE ALLOWED DUE TO DIFFERENCES BETWEEN ACTUAL DIMENSIONS OR DIMENSIONS SHOWN ON PLANS SUBMIT NOTICE OF ANY DISCREPANCY IN DIMENSIONS OR OTHERWISE TO AT&T FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
2. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS GOVERNING THE WORK.

A. CLEANING
1. KEEP THE SITE FREE FROM ACCUMULATION OF WASTE AND RUBBISH CAUSED BY EMPLOYEES AT THE COMPLETION OF THE WORK, REMOVE ALL WASTE AND NON-CONSTRUCTION MATERIAL INCLUDING ALL CONTRACT TOOLS, SCAFFOLDING, AND SURPLUS MATERIAL AND LEAVE SITE CLEAN AND READY FOR USE.

A. CODES
1.CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING ALL LAWS, REGULATIONS, AND RULES PROMULGATED BY FEDERAL STATE AND LOCAL AUTHORITIES WITH JURISDICTION OVER THE SALTIER. THIS RESPONSIBILITY IS IN EFFECT REGARDLESS OF WEATHER THE LAW, ORDINANCE, REGULATION OR RULE IS MENTIONED IN THESE SPECIFICATIONS.

A. LICENSING
1. CONTRACTOR SHALL HAVE AND MAINTAIN A VALID CONTRACTOR'S LICENSE FOR THE LOCATION IN WHICH THE WORK IS TO BE PERFORMED. FOR JURISDICTIONS THAT LICENSE INDIVIDUAL TRADES, THE TRADESMAN OR SUBCONTRACTOR PERFORMING THOSE SHALL BE LICENSED, RESEARCHED AND COMPLY WITH THE LICENSING LAWS, PAY LICENSE FEES, AND SELECT AND INFORM SUBCONTRACTORS REGARDING THESE LAWS.

A. OSHA
1. FOLLOW ALL APPLICABLE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS AND STATE LAWS BASED IN THE FEDERAL OCCUPATION SAFETY AND HEALTH ACT. THESE REGULATIONS INCLUDE, BUT ARE NOT LIMITED TO, REGULATIONS DEALING WITH TOWER CONSTRUCTION AND SAFETY, EXCAVATION AND TRENCHING, AND WORK IN CONFINED SPACES. ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES DURING CONSTRUCTION.

A. PHOTOS
1. PROVIDE PHOTOGRAPHIC EVIDENCE OF ALL FOUNDATION INSTALLATIONS, GROUNDING, AND TRENCHING AFTER PLACEMENT OF UTILITIES PRIOR TO BACKFILL.

A. BUILDING PERMITS
1. CONTRACTOR WILL SUBMIT CONSTRUCTION DOCUMENTS TO THE JURISDICTIONAL AUTHORITY FOR PLAN CHECK AND REVIEW. CONTRACTOR WILL SUBMIT LICENSING AND WORKMAN'S COMPENSATION INFORMATION TO THE JURISDICTION AS REQUIRED TO OBTAIN THE BUILDING PERMIT, CONTRACTOR SHALL COORDINATE AND SCHEDULE REQUIRED INSPECTIONS AND POST REQUIRED PERMITS AT THE JOB SITE COMPLY WITH SPECIFIC PROJECT RELATED REQUESTS AND SUGGESTIONS MADE BY BUILDING INSPECTOR, AND INFORM CONSTRUCTION MANAGER OF ANY SUCH WORK THAT MAY BE BEYOND THE SCOPE OF THE CONTRACT OR DEVIATE FROM THE CONSTRUCTION DOCUMENT. AT&T WILL REIMBURSE THE CONTRACTOR FEES FOR PLAN REVIEW, BUILDING PERMIT, CONNECTIONS, AND INSPECTIONS. (INCLUDED IN THE BASE PROPOSAL).

A. ZONING REGULATIONS AND CONDITIONAL USE PERMITS
1. CONTRACTOR WILL SUBMIT ALL ZONING AND CONDITIONAL USE PERMITS. SOME USE PERMITS MAY HAVE SPECIFIC REQUIREMENTS FOR THE SITE RELATED TO CONSTRUCTION, SUCH AS NOISE REGULATIONS, HOURS OF WORK, ACCESS LIMITATIONS, ETC. THE CONSTRUCTION MANAGER WILL INFORM THE CONTRACTOR OF THESE REQUIREMENTS AT THE PRE-BID MEETING OR AS SHOWN IN THE CONSTRUCTION DOCUMENTS.

A. FAA PERMIT AND TOWER LIGHTING
1. REFER TO CONSTRUCTION DOCUMENTS AND CONSTRUCTION MANAGER FOR FAA AND STATE LIGHTING REQUIREMENTS. CONTRACTOR SHALL PROVIDE TEMPORARY FM APPROVED LIGHTING UNTIL PERMANENT LIGHTING IS OPERATIONAL.

A. TOWER SECURITY
1. IF REQUIRED, TOWER MUST BE FENCED, TEMPORARILY OR PERMANENTLY WITHIN 24 HOURS OF ERECTION. DO NOT ALLOW THE GATE ACCESSING THE TOWER AREA TO REMAIN OPEN OR UNATTENDED ANY TIME FOR ANY REASON. KEEP THE GATE CLOSED AND LOCKED WHEN NOT IN USE.

L. SITE CONTROL
1. THE CONTRACTOR IS COMPLETELY RESPONSIBLE FOR CONTAINMENT OF SEDIMENT AND CONTROL OF EROSION AT THE SITE. ANY DAMAGE TO ADJACENT OR DOWNSTREAM PROPERTIES WILL BE CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO AT&T.
2. THE CONTRACTOR IS TO MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES. DO NOT ALLOW WATER TO STAND OR POND. ANY DAMAGE TO STRUCTURES OR WORK ON THE SITE CAUSED BY INADEQUATE MAINTENANCE OF DRAINAGE PROVISIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND ANY COST ASSOCIATED WITH REPAIRS FOR SUCH DAMAGE WILL BE AT THE CONTRACTOR'S EXPENSE.
3. ALL WASTE MATERIAL SHALL BE PROPERLY DISPOSED OF OFF-SITE OR AS DIRECTED BY CONSTRUCTION MANAGER AND IN ACCORDANCE WITH JURISDICTIONAL AUTHORITIES.

M. LIVESTOCK PROTECTION
1. PROTECT AND SECURE LIVESTOCK. MAINTAIN AND SECURE EXISTING PERIMETER FENCE AND/OR GATE ENCLOSURES.

2. SITE PREPARATION

A. SCOPE OF WORK INCLUDES
1. PROTECTION OF EXISTING TREES, VEGETATION AND LANDSCAPING MATERIALS WHICH MIGHT BE DAMAGED BY CONSTRUCTION ACTIVITIES.
2. TRIMMING OF EXISTING TREES AND VEGETATION AS REQUIRED FOR PROTECTION DURING CONSTRUCTION ACTIVITIES.
3. CLEANING AND GRUBBING OF STUMPS, VEGETATION, DEBRIS, RUBBISH, DESIGNATED TREES AND SITE IMPROVEMENTS.
4. TOPSOIL STRIPPING AND STOCKPILING.
5. TEMPORARY EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL CONFORMING TO LOCAL REQUIREMENTS AS APPLICABLE.
6. TEMPORARY PROTECTION OF ADJACENT PROPERTY, STRUCTURES, BENCHMARKS, AND MONUMENTS.
7. PROTECTION AND TEMPORARY RELOCATION, STORAGE AND RE-INSTALLATION OF EXISTING FENCE AND OTHER SITE IMPROVEMENTS SCHEDULED FOR RE-USE.
8. REMOVAL AND LEGDK DISPOSAL OF CLEARED MATERIALS.

B. PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS NOTED IN CONSTRUCTION DOCUMENTS)
1. MATERIALS USED FOR TREE PROTECTION, EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL.

3. EARTHWORK

A. SCOPE OF WORK INCLUDES
1. EXCAVATION, TRENCHING, FILLING, COMPACTION, AND GRADING FOR STRUCTURES, SITE IMPROVEMENTS AND UTILITIES.
2. MATERIALS FOR SUB-BASE, DRAINAGE, BACKFILL AND GRAVEL FOR SLABS, PAVEMENT AND IMPROVEMENTS.
3. ROCK EXCAVATION WITHOUT BLASTING.
4. SUPPLY OF ADDITIONAL MATERIALS FOR OFFSITE AS REQUIRED.
5. REMOVAL AND LEGDK DISPOSAL OF EXCAVATED MATERIAL AS REQUIRED.

B. QUALITY ASSURANCE
1. COMPACTION
A. UNDER STRUCTURES, BUILDING SLABS, PAVEMENTS AND WALKWAYS WILL OBTAIN A 95% COMPACTION AT A MINIMUM DRY DENSITY AS DETERMINED BY ASTM 0-1557 OR WITH PLUS OR MINUS 3% OF THE MOISTURE CONTENT.
2. GRADING TOLERANCES OUTSIDE BUILDING LINES
A. LAWNS, UNPAVED AREAS AND WALKS PLUS OR MINUS 1 INCH.
B. UNDER PAVEMENTS PLUS OR MINUS $\frac{1}{2}$ INCH.
3. GRADING TOLERANCES FOR FILL UNDER CONCRETE APPLICATIONS
A. PLUS OR MINUS $\frac{1}{2}$ INCH MEASURED WITH 10 FOOT STRAIGHT EDGE.

C. PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS NOTED IN CONSTRUCTION DOCUMENTS)
1. SUB-BASE MATERIAL: GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE OR SLAG, AND NATURAL SAND.
2. WASHED MATERIAL, EVENLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL WITH 95% PASSING A 1-1/2 INCH SIEVE.
3. GRADING MATERIAL WILL CONSIST OF SATISFACTORY NATIVE OR IMPORTED SOIL MATERIALS FREE OF CLAY, ROCK OR GRAVEL NOT LARGER THAN 2 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS AND OTHER UNSUITABLE MATERIALS WILL NOT BE ALLOWED FOR USE. IMPORTED MATERIALS SHALL HAVE A CLAY CONTENT OF NO MORE THAN 5%.
4. GRAVEL MATERIAL: EVENLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL WITH 95% PASSING A 1-1/2 INCH SIEVE.
5. GEOTEXTILE FABRIC: AS PER CONSTRUCTION DOCUMENTS.

D. CLEARING AND GRUBBING
1. REMOVE ALL VEGETATION AND MATERIALS AS REQUIRED. REMOVE STUMPS COMPLETELY UNDER FOUNDATIONS AND ROADWAYS. DISPOSE OF CLEARING AND GRUBBING OFF-SITE OR IN AN ON-SITE LOCATION APPROVED BY CONSTRUCTION MANAGER.

E. STRIPPING
1. STRIP NOT LESS 3 INCHES OF SOD AND TOPSOIL FROM AREAS THAT WILL UNDERLAY GRAVEL, PAVEMENT, NEW STRUCTURES OR EMBANKMENTS. STOCKPILE STRIPPING ON-SITE FOR RE-USE AND FINAL LANDSCAPING.

G. EMBANKMENT
1. CONSTRUCT EMBANKMENT TO THE LINES AND GRADES SHOWN ON THE DRAWING.
2. CONSTRUCT EMBANKMENT FROM ON-SITE EXCAVATION MATERIAL WHEN SUITABLE. USE IMPORTED BACKFILL ONLY AFTER AVAILABLE ON-SITE EXCAVATION MATERIAL HAS BEEN USED.
3. CONSTRUCT IN LIFTS OF NOT MORE THAN 12 INCHES IN LOOSE DEPTH. THE FULL WIDTH OF THE CROSS SECTION SHALL BE BROUGHT UP UNIFORMLY.
4. MATERIAL SHALL BE PLACED IN LAYERS AND SHALL BE NEAR OPTIMUM MOISTURE CONTENT BEFORE ROLLING TO OBTAIN THE PRESCRIBED COMPACTION. WETTING OR DRYING OF THE MATERIAL AND MANIPULATION TO SECURE A UNIFORM MOISTURE CONTENT THROUGHOUT THE LAYERS MAY BE REQUIRED. SUCH OPERATIONS SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM. SHOULD THE MATERIAL BE TOO WET TO PERMIT PROPER COMPACTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE MATERIAL WITH AN ACCEPTABLE MOISTURE CONTENT.
5. DO NOT PLACE FROZEN MATERIAL IN THE EMBANKMENT AND DO NOT PLACE EMBANKMENT MATERIAL UPON FROZEN MATERIAL.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF EMBANKMENTS AND THE REPLACEMENT OF ANY PORTION WHICH HAS BECOME DISPLACED DUE TO CONTRACTOR'S OPERATIONS.
7. START LAYERS IN THE DEEPEST PORTION OF THE FILL AND AS PLACEMENT PROGRESSES, CONSTRUCT LAYERS APPROXIMATELY PARALLEL TO THE FINISH GRADE LINE.
8. ROUTE EQUIPMENT BOTH LOADED AND EMPTY, OVER THE FULL WIDTH OF THE EMBANKMENT TO ENSURE UNIFORMITY OF MATERIAL PLACEMENT.
9. COMPACT EMBANKMENT UNDERLYING NEW GRAVEL PAVING, FLOOR SLABS AND STRUCTURES TO BE 95% COMPACTION AT A MINIMUM DRY DENSITY AS DETERMINED BY ASTM 0-1557 OR WITHIN PLUS OR MINUS 3% OF OPTIMUM MOISTURE CONTENT. COMPACT NON-STRUCTURAL AREA EMBANKMENTS TO A MINIMUM OF 90% OF ASTM 0-1557.

H. SITE GRADING
1. USING ON-SITE EXCAVATION MATERIAL, SHAPE, TRIM, FINISH AND COMPACT SURFACE AREAS TO CONFORM TO THE LINES. GRADES AND CROSS SECTIONS SHOWN ON THE DRAWING OR AS DESIGNATED BY THE CONSTRUCTION MANAGER.
2. GRADE SURFACES TO DRAIN AND ELIMINATE ANY PONDING OR EROSION.
3. ELIMINATE WHEEL RUTS BY REGRADING.
4. COMPACT AREAS OF UNDERLYING NEW GRAVEL, PAVING, FLOOR SLABS AND STRUCTURES TO BE AT 95% COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY THE ASTM 0-1557 OR WITHIN PLUS OR MINUS 3% OF OPTIMUM MOISTURE CONTENT.
5. CONSTRUCT FINISH SURFACE OF SITE GRADING AREAS WITHIN 1 INCH FROM SPECIFIED GRADE.

I. SUBGRADE PREPARATION
1. SHAPE TOP OF SUBGRADE TO THE LINES AND GRADES SHOWN ON THE DRAWINGS.
2. MAINTAIN TOP OF SUBGRADE IN A FREE-DRAINING CONDITION.
3. DO NOT STOCK PILE MATERIAL ON TOP OF SUBGRADE UNLESS AUTHORIZED BY CONSTRUCTION MANAGER.
4. COMPACT THE TOP 12 INCHES OF SUBGRADE TO A 95% COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY ASTM 0-1557 OR WITHIN PLUS OR MINUS 3% OF THE OPTIMUM MOISTURE CONTENT.
5. CONSTRUCT TOP OF SUBGRADE WITHIN 1 INCH OF ESTABLISHED GRADE AND CROSS SECTION.

J. GEOTEXTILE FABRIC
1. LAY GEOTEXTILE FABRIC OVER COMPACTED SUBGRADE IN THE COMPOUND AREA AND UNDER LENGTH OF ROAD (WHEN REQUIRED). LAP ALL JOINTS TO A MINIMUM OF 36 INCHES.

K. GRAVEL SURFACING
1. CONSTRUCT GRAVEL SURFACING AREAS USING CRUSHED AGGREGATE BASE AND FINISH COURSES AS SPECIFIED BY CONSTRUCTION MANAGER. SPREAD GRAVEL AND RAKE TO OBTAIN A UNIFORM SURFACE AREA.

L. LANDSCAPING
1. FURNISH, INSTALL AND MAINTAIN LANDSCAPE WORK AS SHOWN AND/OR REQUIRED WITHIN THE CONSTRUCTION DOCUMENTS OR AS SPECIFIED IN THE CONSTRUCTION SPECIFICATIONS.

M. CONCRETE FORM WORK
1. FORMS: SMOOTH AND FREE OF SURFACE IRREGULARITIES. UTILIZE FORM RELEASE AGENTS.
2. CHAMFER EXPOSED EDGES OF ALL TOWER FOUNDATION SHALL RECEIVE A $\frac{3}{4}$ INCH BY $\frac{3}{4}$ INCH 45 DEGREE CHAMFER. OTHER EXPOSED EDGES SHALL RECEIVE A TOOLED RADIUS FINISH.
3. UPON COMPLETION, REMOVE ALL FORMS INCLUDING THOSE CONCEALED OR BURIED.
4. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.

4. GENERAL NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS AND COORDINATE HIS WORK WITH THE WORK OF ALL OTHER CONTRACTORS TO ENSURE THAT WORK PROGRESSION IS NOT INTERRUPTED.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A NEAT AND ORDERLY SITE, YARD AND GROUNDS. CONTRACTOR SHALL REMOVE AND DISPOSE OFF SITE ALL RUBBISH, WASTE MATERIAL, LITTER AND ALL FOREIGN SUBSTANCES. REMOVE PETROCHEMICAL SPILLS, STAINS AND OTHER FOREIGN DEPOSITS. RAKE GROUND TO A SMOOTH EVEN-TEXTURED SURFACE.
3. THE PLANS SHOW SOME KNOWN SUBSURFACE STRUCTURE ABOVE GROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA, EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATION INDICATED. IN PARTICULAR THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPELINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE AREA MAY BE SHOWN OR MAY NOT BE SHOWN AND IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN 48 HOURS BEFORE YOU DIG, DRILL OR BLAST CALL LOCAL UTILITIES LOCATOR COMPANY.
4. THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE OWNER OR THE OWNER'S REPRESENTATIVE.
5. THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THE SITE DURING THE PERFORMANCE OF THIS CONTRACT.
6. THE CONTRACTOR SHALL RESTORE ALL DAMAGED, PUBLIC OR PRIVATE PROPERTY TO AT LEAST AS GOOD OF CONDITION AS BEFORE DISTURBED AS DETERMINED BY THE OWNER OR OWNER'S REPRESENTATIVE.
7. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.
8. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE OWNER OR OWNER'S REPRESENTATIVE, SHALL BE REPLACED.
9 ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH OSHA REGULATIONS FOR CONSTRUCTION.
10.CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK.
11ALL UTILITY WORK INVOLVING CONNECTIONS TO EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER OR OWNER'S REPRESENTATIVE BEFORE EACH AND EVERY CONNECTION TO EXISTING SYSTEMS IS MADE.
12MAINTAIN FLOW FOR ALL EXISTING UTILITIES
13ALL SITE FILL SHALL MEET SELECTED FILL STANDARDS AS DEFINED BY THE OWNER OF OWNER'S REPRESENTATIVE ON THE DRAWINGS OR GEOTECHNICAL REPORT RECOMMENDATIONS.
14CONTRACTOR TO GRADE ALL AREAS OF THE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE BUILDING OR EQUIPMENT PAD AND THE TOWER.
15IF NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING AND REGRADING ROADWAY AND ANY DISTURBED AREAS FOLLOWING INSTALLATION OF UTILITIES.
16NO COMMERCIAL MESSAGES TO BE DISPLAYED ON TOWER
17WATER AND SEWER SERVICES ARE NOT REQUIRED FOR THE DEVELOPMENT
18THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL UNLESS OTHERWISE NOTED.
19ELECTRICAL DRAWINGS HAVE BEEN REVIEWED AND SEALED FOR STRUCTURAL PURPOSES ONLY.

AT&T

smartlink

Trylon

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
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STATE OF MARYLAND
MARK R. HALL
No. 27217
PROFESSIONAL ENGINEER

3-19-2020

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

GENERAL NOTES

SHEET NO.

GN-1

App No: 2020031117

Application General Infomation

Applicant Name	Smartlink LLC	Updated	3/10/2020
Application Type	Minor Modification	Ann. Plan?	Yes
Carrier	AT&T Wireless	Will site be used to support government telecommunications facilities or other equipment for government use?	No
Solution Type	Macro		
Existing	Existing	Gvt. Use Desc.	

Application Description

AT&T proposes to remove (2) existing antennas, (15) existing RRHs (1) GSM cabinet and install (2) new antennas and (12) new RRHs.

Site Infomation

Site Id	53.01	Zoning	R-H
Structure Type	Building	Latitude	39.016778
Address	9727 Mt. Pisgah Rd, Silver Spring	Longitude	-76.974517
County Site Name	Chateau Apartments	Ground Elevation	326
Carrier Site Name	Gill	City	Silver Spring
Site Owner	Hillzo LP	Lease Status	Leased
Structure Owner	Hillzo LP	Does the structure require an antenna structure registration under FCC Title 47	No
Existing Structure Height	151		
Provide the proposed height of the replacement structure without any antenna (New, Replacement Apps Only)		Distance to Residential Property (New, Replacement, Colocation Only)	
		Distance to Commercial Property (New, Replacement, Colocation Only)	

Justification of why this site was selected:

NearbySites (New, Replacement Apps Only):

App No: 2020031117

Screening considerations(New, Colocations, Replacement Apps Only):

Thursday, March 12, 2020

9:22:54 AM

App No: 2020031117

6409 Questions

Does this qualify as a 6409 application? (Minor Mod, Colocations Only): No

For towers outside the public ROW will the proposed installation increase the height of the structure by: (1) more than 10% or (2) more than 20 feet, whichever is greater?

Will the proposed installation increase the width by adding appurtenance to the body of the structure that would protrude from the edge of the structure by more than 6 feet?

For towers outside the public ROW will the proposed installation increase the width by adding appurtenance to the body of the structure that would protrude from the edge of the structure by more than 20 feet?

More than four Equipment Cabinets? YN

Will the proposed installation require excavation or expansion outside the current boundaries of the site?

Does the structure or current installation have concealment elements/measures? No

Will the proposed installation increase the height of the structure by: (1) more than 10% or (2) more than 10 feet, whichever is greater?

If yes, describe how the proposed installation does not defeat the existing concealment.

Small Wireless Facility Information

Small Wireless Facility Questions

Small Wireless Facility? No

Is the structure 10% taller than adjacent structures?

Cumulative volume of the proposed wireless equipment(s) exclusive of antennas in cubic feet: 240.69

Please list adjacent structure heights

Tribal Lands? No

Cumulative volume of the proposed antenna antenna(s) exclusive of equipment

ROW Information

PROW? No

Pole Number

ROW owner

ROW width

Thursday, March 12, 2020

9:22:54 AM

App No: 2020031117

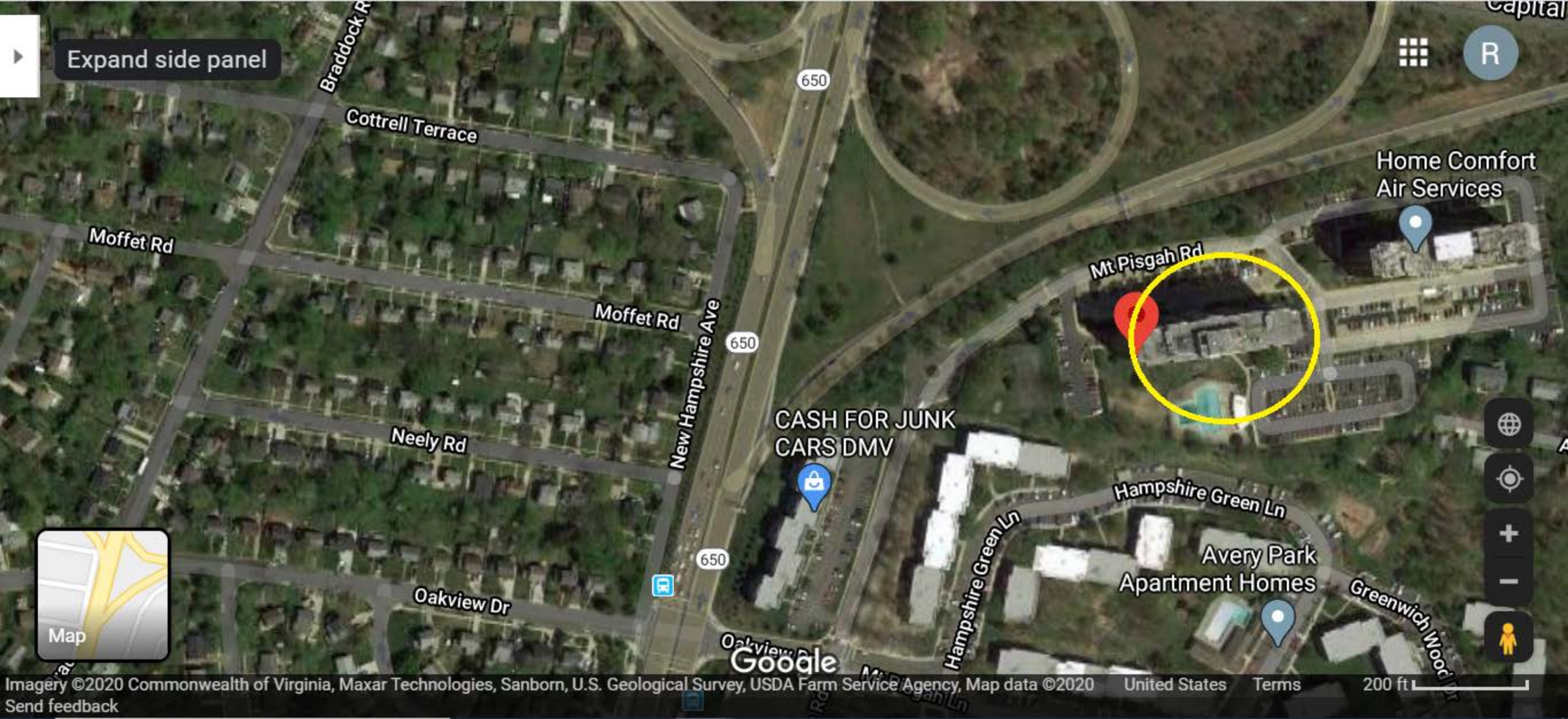
Antenna Infomation

Antenna Compliance	Yes
Compliance Desc	
Antenna Location	Yes
Antenna Loc. Desc.	
Env. Assessment	
Cat. Excluded?	checked
Routine Env. Evaluation	

Antenna Model	CCL BSA-M65R-BUU-H6						
Frequency	704-710, 734-740, 710-716, 740-746, 716-722, 824-835, 869-880, 845-846.5, 890-891.5, 1870-1885, 1950-1965,						
RAD Center	142	Max ERP	1046	Antenna Dimensions	72(h)x28.5(w).9.7(d)	Quantity	2

Thursday, March 12, 2020

9:22:54 AM


Expand side panel
Braddock R
Cottrell Terrace
650
Moffet Rd
Moffet Rd
New Hampshire Ave
650
Neely Rd
650
Oakview Dr
Map
Home Comfort
Air Services
Mt Pisgah Rd
CASH FOR JUNK
CARS DMV
Hampshire Green Ln
Hampshire Green Ln
Avery Park
Apartment Homes
Greenwich Wood
Google
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Antennas

DATASHEET

Multi-band Bi-Sector™ A

OVERVIEW SPECIFICATIONS ACCESSORIES

RESOURCES ORDERING STANDARDS & CERTIFICATIONS

FILTER BY SELECTION

PRODUCTS

- Amplifiers
- Antennas
- Co-Siting & Antenna Sharing
- DAS & Small Cell Products
- Filters & Combiners
- PIM Analyzers

ANTENNAS

- Antenna Accessories
- Bi-Sector™
- iDAS
- Multi-Sector/Special Events
- Single Sector Multiport
- Small Cell/oDAS
- Specialty

Electrical

Ports	4 x Low Band Ports for 698-894 MHz		8 x High Band Ports for 1710-2360 MHz			
Frequency Range	698-806 MHz	824-894 MHz	1850-1990 MHz	1710-1755/2110-2155 MHz		2305-2360 MHz
Gain	16.4 dBi	17.3 dBi	18.0 dBi	17.2 dBi	18.4 dBi	18.1 dBi
Azimuth Beamwidth (-3dB)	34°	32°	31°	36°	28°	26°
Elevation Beamwidth (-3dB)	11.7°	10.3°	6.4°	7.2°	5.9°	5.6°
Electrical Downtilt	2° to 12°	2° to 12°	0° to 9°	0° to 9°	0° to 9°	0° to 9°

FREQUENCY BAND

- [ ] 604-806 MHz
- [ ] 698-798 MHz
- [ ] 698-896 MHz
- [ ] 698-960 MHz
- [ ] 790-960 MHz
- [ ] 824-896 MHz
- [ ] 1710-1880 MHz
- [ ] 1695-2180 MHz
- [ ] 1695-2360 MHz
- [ ] 1695-2690 MHz
- [ ] 1850-1995 MHz
- [ ] 2300-2400 MHz
- [ ] 2300-2690 MHz
- [ ] 2496-2690 MHz

HEIGHT

- [ ] 2 ft. (458 - 761 mm)
- [ ] 3 ft. (762 - 1066 mm)
- [ ] 4 ft. (1067 - 1371 mm)
- [ ] 5 ft. (1372 - 1676 mm)
- [ ] 6 ft. (1677 - 1981 mm)
- [ ] 7 ft. (1982 - 2286 mm)
- [ ] 8 ft. (2287 - 2590 mm)
- [ ] 9 ft. (2591 - 2896 mm)

HORIZONTAL BEAMWIDTH

- [ ] 20° to 30°
- [ ] 30° to 40°
- [ ] 50° to 70°
- [ ] TBD

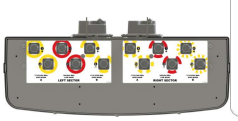
Elevation Sidelobes (1st Upper)	< -18 dB	< -18 dB	< -18 dB	< -18 dB	< -18 dB	< -18 dB
Front-to-Back Ratio @180°	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Front-to-Back Ratio over ± 20°	> 27 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 28 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Voltage Standing Wave Ratio(VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	300 watts	300 watts	300 watts	300 watts
Polarization	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

Mechanical

Dimensions (LxWxD)	72.0x28.5x9.7 in (1828x723x245 mm)
Survival Wind Speed	> 150 mph (> 240 kph)
Front Wind Load	438 lbs (1947 N) @ 100 mph (161 kph)
Side Wind Load	175 lbs (778 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	17.1 ft^2 (1.6 m^2)
Weight *	101.0 lbs (45.9 kg)
RET System Weight	6.6 lbs (3.0 kg)
Connector	12 x 7-16 DIN female long neck
Mounting Pole	2 to 5 in (5 to 12 cm)

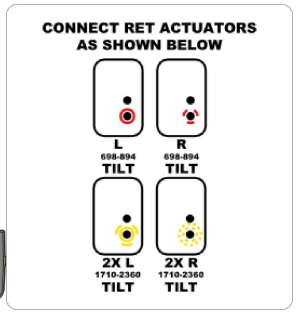
** Weight excludes mounting and RET*

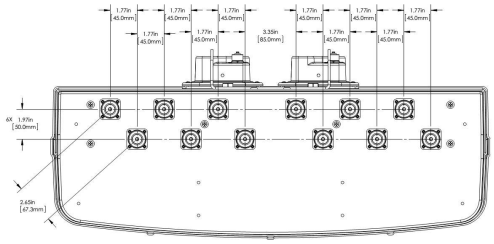
Bottom View



Connector Spacing

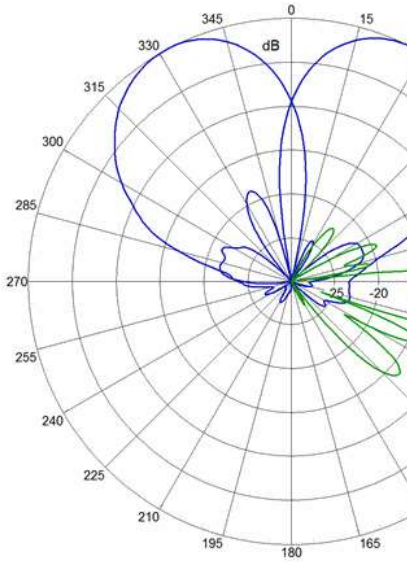
RET Connection Diagram



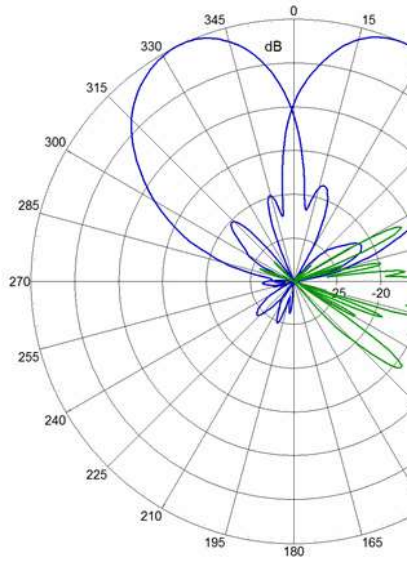


Typical Antenna Patterns

For detailed information on additional
support@cciproducts.com



761 MHz Azimuth Elevation 7



1910 MHz Azimuth Elevation

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Smartlink on behalf of AT&T Mobility, LLC
Site FA – 10128448
Site ID – MDL03821
USID – 100205
Site Name – GILL (MRWSH034472)

9727 Mount Pisgah Road
Silver Spring, MD 20903

Latitude: N39-01-00.00
Longitude: W76-58-30.00
Structure Type: Rooftop

Report generated date: January 24, 2020
Report by: Leo Romero
Customer Contact: Lauren Kersey

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

Table of Contents

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Max Cumulative Simulated RFE Level on the Ground	9,679.0% General Public Limit 1" in front of AT&T Mobility, LLC's Gamma Sector Antenna #8
Max Cumulative Simulated RFE Level on the Rooftop Walking Surface	9,679.0% General Public Limit 1" in front of AT&T Mobility, LLC's Gamma Sector Antenna #8
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
Compliant per FCC Rules and Regulations?	Will Be Compliant
Compliant per AT&T Mobility, LLC's Policy?	No

The following documents were provided by the client and were utilized to create this report:

RFDS: WASHINGTON-D.C.-MARYLAND_WASHINGTON-DC-BALTIMORE_GILL_2020-Cell-Site-RF-Modifications_Split-Sector_oo6650_2251A0S58F_10128448_100205_10-08-2019_Final-Approved_v1.00

CD's: 10128448.AE201.REV C.GILL.100205.01142020

RF Powers Used: MAX RRH Powers

1.2 Fall Arrest Anchor Point Summary

Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	0	N

1.3 Signage Summary

a. Pre-Site Visit AT&T Signage (Existing Signage)

AT&T Signage Locations	 Information 1	 Information 2	 Notice	 Notice 2	 Caution	 Caution 2	 Warning	 Warning 2	 Barriers
Access Point(s)	2								
Alpha									
Beta									
Gamma									

Note: All existing signage was documented during a previous site visit on 6/27/17.

b. Proposed AT&T Signage

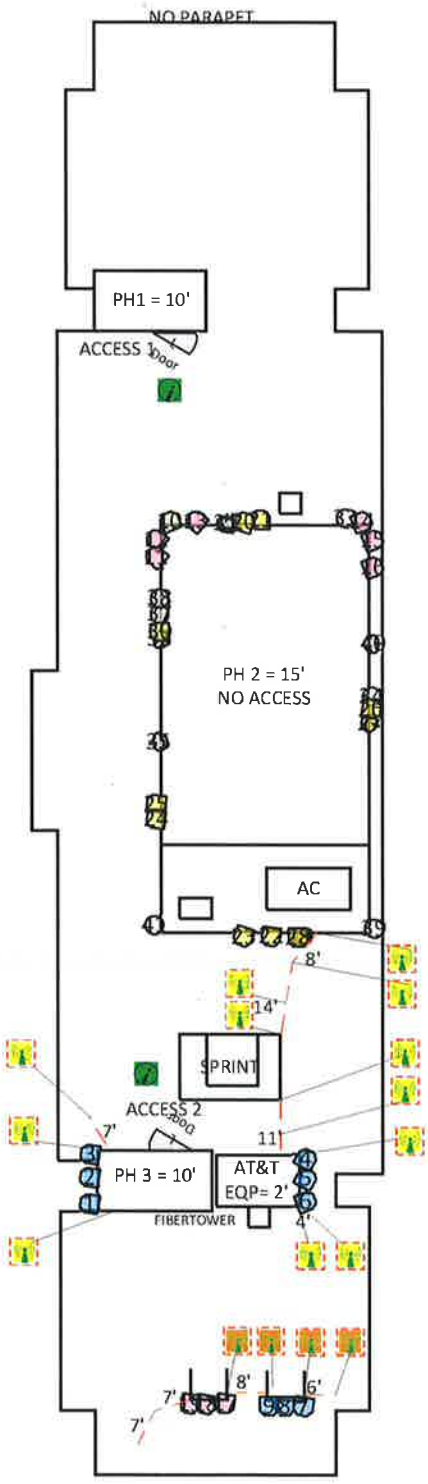
AT&T Signage Locations	 Information 1	 Information 2	 Notice	 Notice 2	 Caution	 Caution 2	 Warning	 Warning 2	 Barriers
Access Point(s)									
Alpha						3			X
Beta						9			X
Gamma								4	X

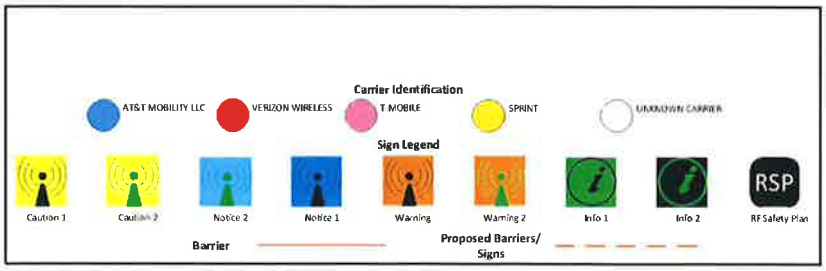
2 Scale Maps of Site

The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- RF Exposure Diagram – Detailed View West
- AT&T Mobility, LLC Contribution

Site Scale Map For: GILL





(Feet)

0 17.9 35.8

www.sitesafe.com
Site Name:GILL
1/24/2020 1:07:09 PM

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
1	AT&T MOBILITY LLC	Kathrein-Scala 742-264	Panel	850	UMTS	0	68.4	4.3	80	TPO	Watt	0	1	1267.9	12	4.8'	0°	2°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	737	LTE	0	75	8	160	TPO	Watt	0	1	3631.8	13.56	3'	0°	5°
2	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65C-R6	Panel	763	LTE	0	75	8	160	TPO	Watt	0	1	3631.8	13.56	3'	0°	5°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	1900	LTE	0	59	8	160	TPO	Watt	0	1	5496.9	15.36	3'	0°	2°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2110	LTE	0	61	8	80	TPO	Watt	0	1	2878	15.56	3'	0°	2°
2	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2160	AWS3	0	61	8	80	TPO	Watt	0	1	2878	15.56	3'	0°	2°
3	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	LTE	0	61.1	4	100	TPO	Watt	0	1	2666.9	14.26	5'	0°	5°
4	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	737	LTE	110	75	8	160	TPO	Watt	0	1	3631.8	13.56	6'	0°	10°
4	AT&T MOBILITY LLC (Proposed)	Commscope NNH4-65C-R6	Panel	763	LTE	110	75	8	160	TPO	Watt	0	1	3631.8	13.56	6'	0°	12°
4	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	1900	LTE	110	59	8	160	TPO	Watt	0	1	5496.9	15.36	6'	0°	5°
4	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2110	LTE	110	61	8	80	TPO	Watt	0	1	2878	15.56	6'	0°	5°
4	AT&T MOBILITY LLC	Commscope NNH4-65C-R6	Panel	2160	AWS3	110	61	8	80	TPO	Watt	0	1	2878	15.56	6'	0°	5°
5	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	LTE	110	61.1	4	100	TPO	Watt	0	1	2666.9	14.26	8'	0°	6°
6	AT&T MOBILITY LLC	Kathrein-Scala 742-264	Panel	850	UMTS	150	68.4	4.3	80	TPO	Watt	0	1	1267.9	12	7.8'	0°	2°
7	AT&T MOBILITY LLC	Kathrein-Scala 742-264	Panel	850	UMTS	270	68.4	4.3	80	TPO	Watt	0	1	1267.9	12	4.8'	2°	2°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	737	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	763	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	1900	LTE	260	32.3	6	160	TPO	Watt	0	1	6139.3	15.84	4'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	2110	LTE	260	27.9	6	80	TPO	Watt	0	1	3373.6	16.25	4'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	2160	AWS3	260	27.9	6	80	TPO	Watt	0	1	3373.6	16.25	4'	0°	4°

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	737	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	763	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	1900	LTE	260	33.9	6	160	TPO	Watt	0	1	6153.5	15.85	4'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	2110	LTE	260	27.1	6	80	TPO	Watt	0	1	3373.6	16.25	4'	0°	4°
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	2160	AWS3	260	27.1	6	80	TPO	Watt	0	1	3373.6	16.25	4'	0°	4°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	763	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	2300	LTE	260	23.6	6	100	TPO	Watt	0	1	3845.9	15.85	4'	0°	4°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (L-Beam)	Panel	737	LTE	260	36.3	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	737	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	763	LTE	260	33.8	6	80	TPO	Watt	0	1	2128.6	14.25	4'	0°	6°
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas BSA-M65R-BUU-H6 (R-Beam)	Panel	2300	AWS3	260	25.5	6	100	TPO	Watt	0	1	3845.9	15.85	4'	0°	4°
10	CRICKET COMMUNICATIONS (Decommissioned)	Generic Panel	Panel	2100		60	65	4.6	0	ERP	Watt	0	0	0	15.23	15.7'	0°	0°
11	T-MOBILE	Generic Panel	Panel	700		30	65	6.3	160	TPO	Watt	0	0	2884.8	12.56	13.9'	0°	0°
12	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	1900		30	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	14.5'	0°	0°
12	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	2100		30	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	14.5'	0°	0°
13	T-MOBILE	Ericsson AIR 21 B2A B4P	Panel	1900		30	65	4.7	120	TPO	Watt	0	0	4132.2	15.37	14.7'	0°	0°
14	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	1900		150	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	20.5'	0°	0°
14	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	2100		150	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	20.5'	0°	0°
15	T-MOBILE	Ericsson AIR 21 B2A B4P	Panel	1900		150	65	4.7	120	TPO	Watt	0	0	4132.2	15.37	20.7'	0°	0°
16	T-MOBILE	Generic Panel	Panel	700		150	65	4.6	160	TPO	Watt	0	0	2618.9	12.14	20.7'	0°	0°
17	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	1900		270	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	4.5'	0°	0°
17	T-MOBILE	Ericsson AIR 32 B4A B2P	Panel	2100		270	65	4.9	120	TPO	Watt	0	0	4625.7	15.86	4.5'	0°	0°
18	T-MOBILE	Generic Panel	Panel	700		270	65	6.3	160	TPO	Watt	0	0	2884.8	12.56	3.9'	0°	0°
19	T-MOBILE	Ericsson AIR 21 B2A B4P	Panel	1900		270	65	4.7	120	TPO	Watt	0	0	4132.2	15.37	4.7'	0°	0°
20	SPRINT	Generic Panel	Panel	2500		100	65	4.1	160	TPO	Watt	0	0	5071.3	15.01	17'	0°	0°
21	SPRINT	Generic Panel	Panel	862		80	65	6.3	100	TPO	Watt	0	0	2202.9	13.43	15.9'	0°	0°

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
21	SPRINT	Generic Panel	Panel	1900		80	65	6.3	180	TPO	Watt	0	0	7608	16.26	15.9'	0°	0°
22	SPRINT	Generic Panel	Panel	862		270	65	6.3	100	TPO	Watt	0	0	2202.9	13.43	15.9'	0°	0°
22	SPRINT	Generic Panel	Panel	1900		270	65	6.3	180	TPO	Watt	0	0	7608	16.26	15.9'	0°	0°
23	SPRINT	Generic Panel	Panel	2500		280	65	4.1	160	TPO	Watt	0	0	5071.3	15.01	17'	0°	0°
24	SPRINT	Generic Panel	Panel	2500		0	65	4.1	160	TPO	Watt	0	0	5071.3	15.01	17'	0°	0°
25	SPRINT	Generic Panel	Panel	862		0	65	6.3	100	TPO	Watt	0	0	2202.9	13.43	16.9'	0°	0°
25	SPRINT	Generic Panel	Panel	1900		0	65	6.3	180	TPO	Watt	0	0	7608	16.26	16.9'	0°	0°
26	SPRINT	Generic Panel	Panel	2500		180	65	4.1	40	TPO	Watt	0	0	1267.8	15.01	13'	0°	0°
27	SPRINT	Generic Microwave	Aperture	80000		190	2	2	0.01	TPO	Watt	0	0	769.1	48.86	19'	0°	0°
28	SPRINT	Generic Panel	Panel	2500		260	65	4.1	40	TPO	Watt	0	0	1267.8	15.01	13'	0°	0°
29	SPRINT	Generic Microwave	Aperture	23000		280	2	0	0.02	TPO	Watt	0	0	36.9	32.66	15'	0°	0°
30	SPRINT	Generic Panel	Panel	2500		355	65	4.1	40	TPO	Watt	0	0	1267.8	15.01	13'	0°	0°
31	UNKNOWN CARRIER	Generic Microwave	Aperture	18000		90	2	2	0.01	TPO	Watt	0	0	58.3	37.66	19'	0°	0°
32	UNKNOWN CARRIER	Generic Microwave	Aperture	23000		90	2	1	0.01	TPO	Watt	0	0	18.5	32.66	16'	0°	0°
33	UNKNOWN CARRIER	Generic Omni	Omni	850		0	360	14	100	ERP	Watt	0	0	100	9.97	18'	0°	0°
34	UNKNOWN CARRIER	Generic Panel	Panel	5800		160	90	2.2	20	ERP	Watt	0	0	20	16.01	19.9'	0°	0°
35	UNKNOWN CARRIER	Generic Microwave	Aperture	80000		340	2	1	0.01	TPO	Watt	0	0	172.2	42.36	16'	0°	0°
36	UNKNOWN CARRIER	Generic Microwave	Aperture	18000		10	2	2	0.01	TPO	Watt	0	0	58.3	37.66	17'	0°	0°
37	UNKNOWN CARRIER	Generic Omni	Omni	450		0	360	4.7	100	ERP	Watt	0	0	100	2.97	17.6'	0°	0°
38	UNKNOWN CARRIER	Generic Omni	Omni	450		0	360	4.7	100	ERP	Watt	0	0	100	2.97	17.6'	0°	0°
39	UNKNOWN CARRIER	Generic Omni	Omni	850		0	360	14	100	ERP	Watt	0	0	100	9.97	18'	0°	0°
40	UNKNOWN CARRIER	Generic Microwave	Aperture	18000		170	0	0	0.01	TPO	Watt	0	0	58.3	37.66	17'	0°	0°
41	UNKNOWN CARRIER	Generic Omni	Omni	850		0	360	14	100	ERP	Watt	0	0	100	9.97	18'	0°	0°

Note: The Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience. Proposed equipment is tagged as (Proposed) under *Operator* or *Antenna Make & Model*.

Note: The 763MHz LTE technology is being added to existing antennas.

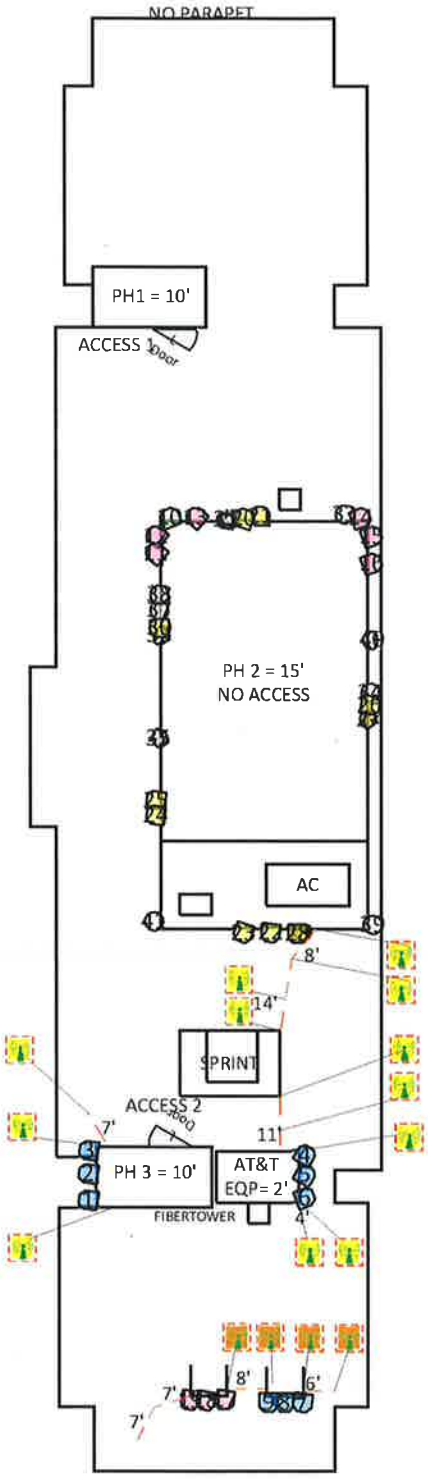
4 Emission Predictions

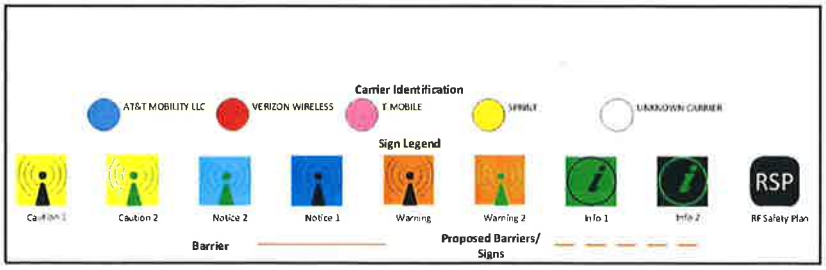
In the RF Exposure Simulations below, all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

- MAIN LEVEL = 0'
- PH1 and PH3 = 10'
- PH2 = 15'
- AT&T EQP = 2'

The Antenna Inventory heights are referenced to the same level.

Site Scale Map For: GILL



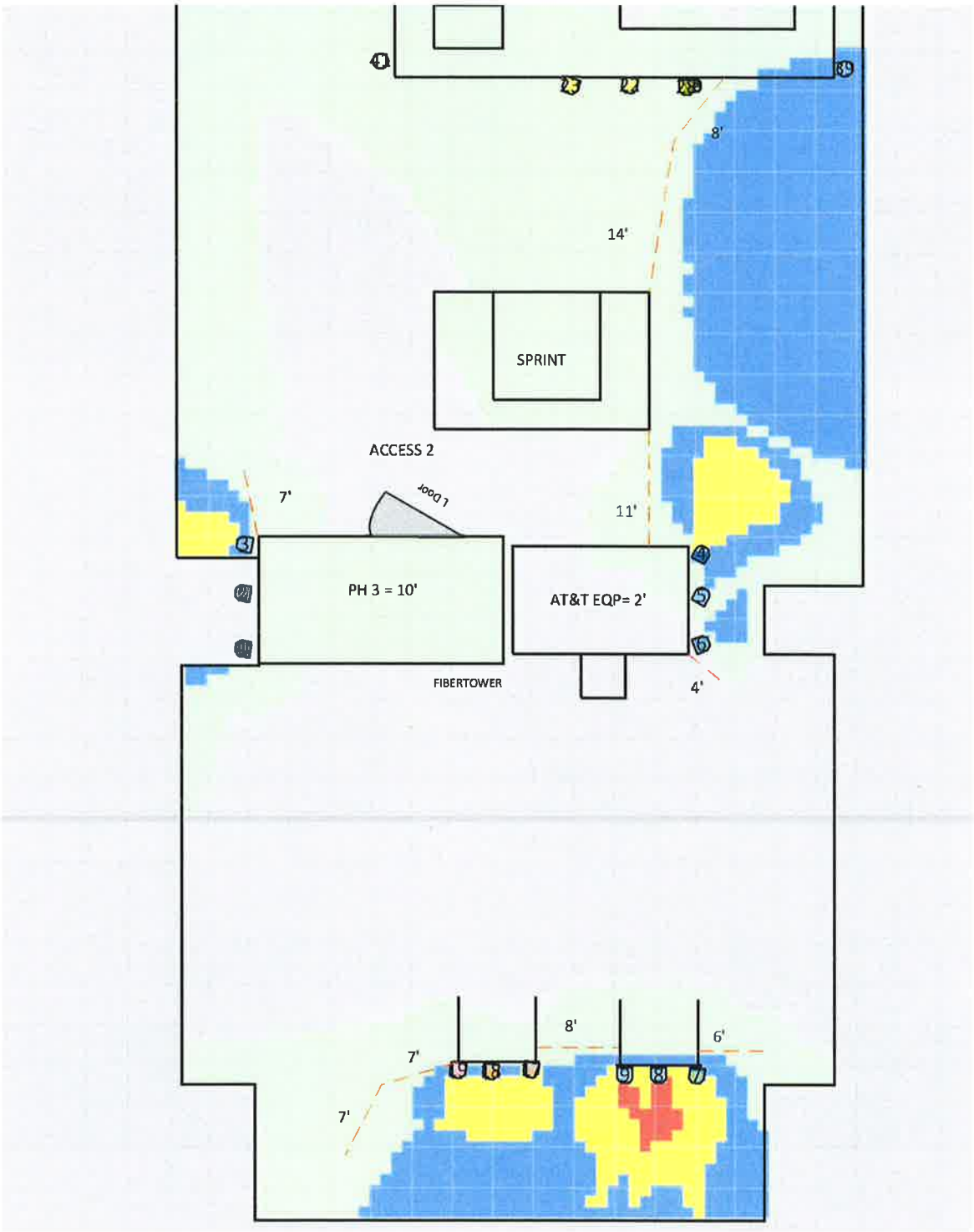


(Feet)

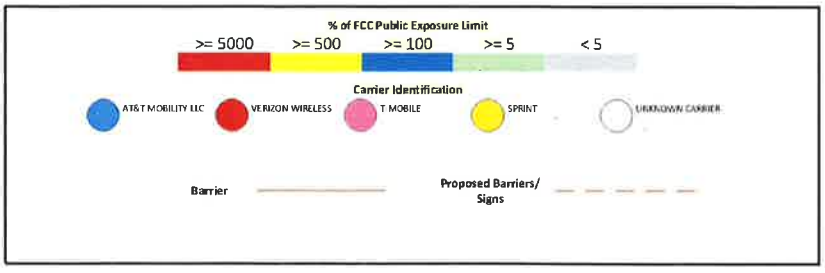
0 17.9 35.8

www.sitesafe.com
Site Name:GILL
1/24/2020 1:07:09 PM

RF Exposure Simulation For: GILL
Detail View West



% of FCC Public Exposure Limit
Spatial average 0' - 6'



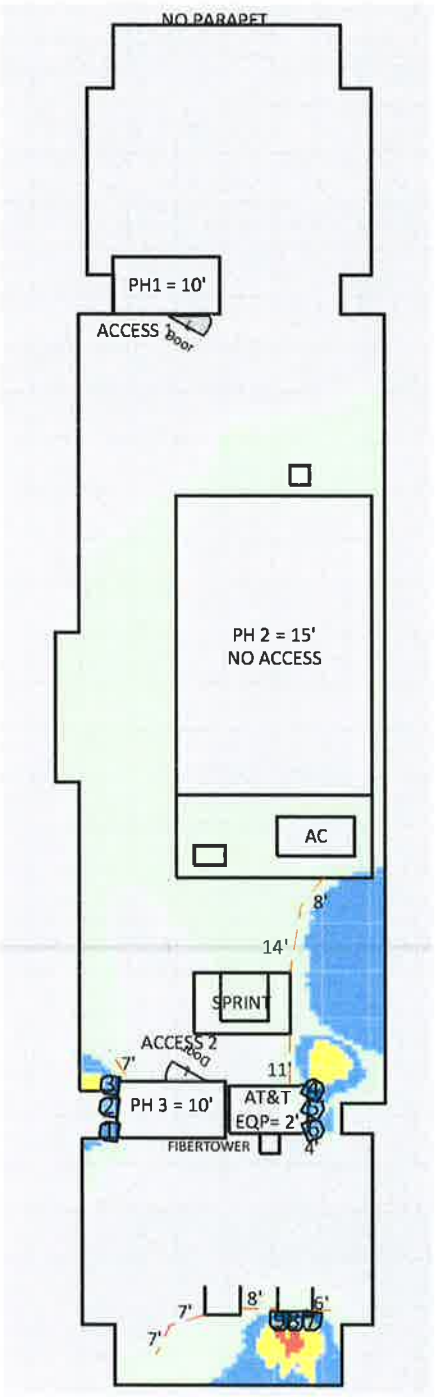
(Feet)

0 7.5 15

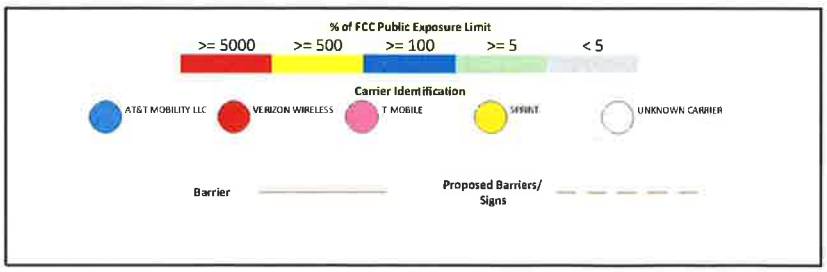
www.sitesafe.com
Site Name:GILL
1/24/2020 1:00:13 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: GILL
AT&T Mobility, LLC Contribution



% of FCC Public Exposure Limit
Spatial average 0' - 6'



(Feet)
0 20.3 40.6
www.sitesafe.com
Site Name:GILL
1/24/2020 1:03:52 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

Based on measurement or predictions, other wireless operators on this site may be out of RF exposure compliance with FCC regulations on this site. We recommend that those operators review this site with respect to RF exposure compliance.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC's RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

AT&T Mobility, LLC Proposed Alpha Sector Location

(2) Yellow Caution 2 sign(s) required one on each side of the sector.
Install a barrier that is 7' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.
Install (1) total Caution 2 sign(s) on the proposed barrier stanchions.

- 7' segment: (1) Caution 2 sign(s)

AT&T Mobility, LLC Proposed Beta Sector Location

(2) Yellow Caution 2 sign(s) required one on each side of the sector.
Install a barrier that is 33' long, comprised of (3) segment(s) and an estimated (7) stanchions, as depicted in the site scale map.
Install (6) total Caution 2 sign(s) on the proposed barrier stanchions.

- 11' segment: (2) Caution 2 sign(s)
- 14' segment: (3) Caution 2 sign(s)
- 8' segment: (1) Caution 2 sign(s)

Install a barrier that is 4' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.
Install (1) total Caution 2 sign(s) on the proposed barrier stanchions.

- 4' segment: (1) Caution 2 sign(s)

AT&T Mobility, LLC Proposed Gamma Sector Location

(2) Red Warning 2 sign(s) required one on each side of the sector.
Install a barrier that is 6' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.
Install (1) total Warning 2 sign(s) on the proposed barrier stanchions.

- 6' segment: (1) Warning 2 sign(s)

Install a barrier that is 8' long, comprised of (1) segment(s) and an estimated (2) stanchions, as depicted in the site scale map.

Install (1) total Warning 2 sign(s) on the proposed barrier stanchions.

- 8' segment: (1) Warning 2 sign(s)

AT&T Mobility, LLC is predicted to exceed 5% of the GP limit in an area near T-Mobile antennas #17, #18 and #19 that is predicted to exceed that limit and no signs or barriers are in place. AT&T Mobility, LLC should work with T-Mobile to ensure compliance at this location.
Install a barrier that is 14' long on the right side of T-Mobile's antennas #17, #18 and #19, comprised of (2) segment(s) and an estimated (3) stanchions, as depicted in the site scale map

Recommended per AT&T Mobility, LLC's Policy:

Site Access Location

Sitesafe recommends that all AT&T Mobility, LLC signage be removed from all access points, as they are not required by AT&T Mobility, LLC's signage policy.

Notes:

- Signage on the barriers should be placed on the stanchions no more than 8' apart from each other.
- Barriers were only recommended in areas predicted to exceed the General Public MPE limit greater than 6' from the unprotected roof edges. All other predicted to exceed areas are within 6' of the unprotected roof edges.
- Any existing signage that conflicts with the proposed signage in this report should be removed per AT&T Signage Posting Rules.
- Ensure all existing signage documented in this report still exist at the site, unless otherwise indicated.

Other Operator Antennas:

T-Mobile should review their Gamma sector.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Site Safe, LLC, in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Leo Romero.

January 24, 2020

Anthony Handley

Appendix A – Statement of Limiting Conditions

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data collected by Sitesafe provided by a second party and data collected by Sitesafe, the data will be used.

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for evaluating the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996, the FCC periodically reviews these rules and regulations as per their congressional mandate.

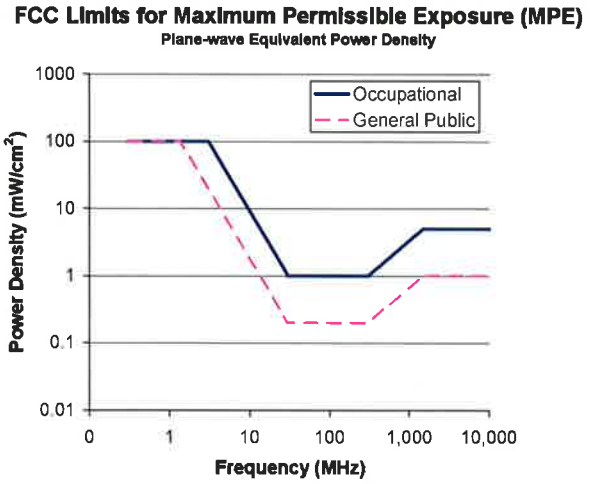
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lockout/Tagout procedure aimed to control the unexpected energization or startup of machines when maintenance or service is being performed.

Appendix C – Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a worker's understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet-based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Maintain a 3-foot clearance from all antennas: There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

Site RF Emissions Diagram(s): Section 4 of this report contains RF Diagram(s) that outline various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst-case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit. **Gray areas are accessible to anyone**.
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers**.
- Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.**
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

If trained occupational personnel require access to areas that are delineated as above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Appendix F – Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site complies with FCC standards with regards to Human Exposure to Radio Frequency Electromagnetic Fields from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to a half-wave dipole antenna.

Gain (of an antenna) – The ratio of the maximum power in a given direction to the maximum power in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antenna as compared to an omnidirectional antenna.

General Population/Uncontrolled Environment – Defined by the FCC as an area where RF exposure may occur to persons who are **unaware** of the potential for exposure and who have no control over their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use its industry specific knowledge of antenna models to select a worst-case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The rms and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC as an area where RF exposure may occur to persons who are **aware** of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – Electromagnetic waves that are propagated from antennas through space.

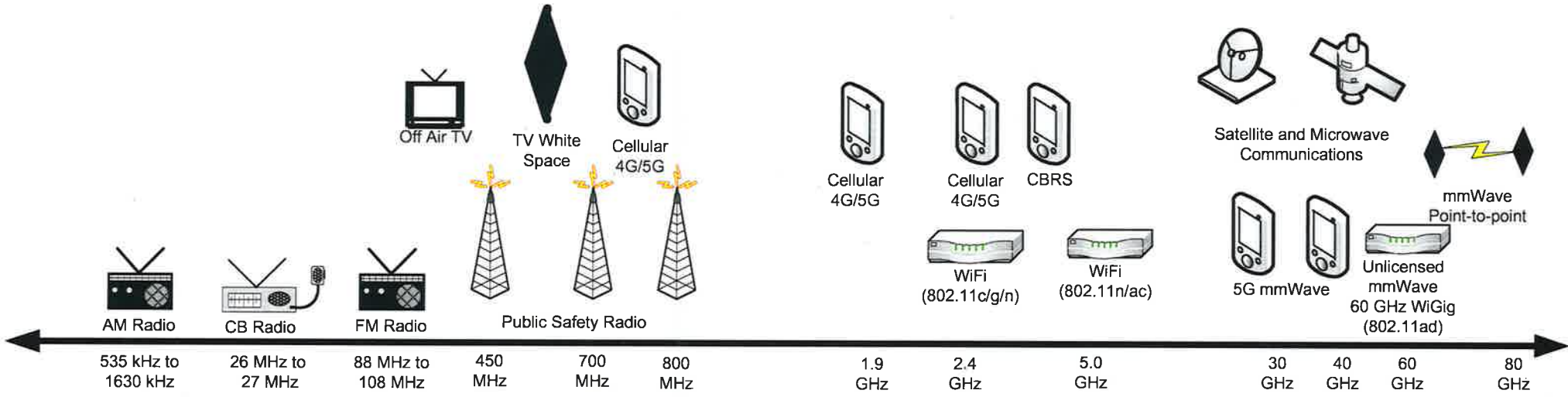
Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy a 6-foot tall human body will absorb while present in an electromagnetic field of energy.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix G – References

The following references can be followed for further information about RF Health and Safety.

Site Safe, LLC
http://www.sitesafe.com
FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety
National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org
Institute of Electrical and Electronics Engineers, Inc., (IEEE)
http://www.ieee.org
American National Standards Institute (ANSI)
http://www.ansi.org
Environmental Protection Agency (EPA)
http://www.epa.gov/radtown/wireless-tech.html
National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/
Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/
International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org
World Health Organization (WHO)
http://www.who.int/peh-emf/en/
National Cancer Institute
http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones
American Cancer Society (ACS)
http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?siteareа=PED
European Commission Scientific Committee on Emerging and Newly Identified Health Risks
http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf
Fairfax County, Virginia Public School Survey
http://www.fcps.edu/fts/safety-security/RFEESurvey/
UK Health Protection Agency Advisory Group on Non-Ionizing Radiation
http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368
Norwegian Institute of Public Health
http://www.fhi.no/dokumenter/545eea7147.pdf


Off Air TV
TV White Space
Cellular 4G/5G
Cellular 4G/5G
Cellular 4G/5G
CBRS
Satellite and Microwave Communications
mmWave Point-to-point
WiFi (802.11c/g/n)
WiFi (802.11n/ac)
5G mmWave
Unlicensed mmWave 60 GHz WiGig (802.11ad)
AM Radio
CB Radio
FM Radio
Public Safety Radio
535 kHz to 1630 kHz
26 MHz to 27 MHz
88 MHz to 108 MHz
450 MHz
700 MHz
800 MHz
1.9 GHz
2.4 GHz
5.0 GHz
30 GHz
40 GHz
60 GHz
80 GHz
Low Speeds
Favorable Propagation
High Speeds
Low Propagation

Trylon

Prepared For

smartlink

Structural Analysis

Steven Uecke, P.E.
MD P.E. License No. 42852
Date: 02-28-20 Expires: 11-28-20

GILL

02/28/20

PASS (44.6%)

TABLE OF CONTENT

STRUCTURAL ANALYSIS REPORT

SMARTLINK
1362 Mellon Road, Suite 140
Hanover, MD 21076

Attention: **Nathan Lenig**

Reference: Roof Frame Analysis – Engineering Assessment, located at 9727 Mount Pisgah Road, Silver Spring, MD 20903.

Trylon Job No.:	157156
AT&T Site Name:	GILL
AT&T Site FA#:	10128448
Site Address:	9727 Mount Pisgah Road, Silver Spring, MD 20903
Tower Profile:	Rooftop

Dear Nathan Lenig:

We have been provided with RF information for above-referenced site. AT&T is proposing to add new equipment to the existing equipment platform.

A revised equipment schematic has been provided to us. We have been asked to evaluate this information to determine whether or not the existing roof framing supporting the equipment platform is structurally adequate to safely support the proposed loading changes. The structural evaluation refers to the equipment cabinet installed at the existing rooftop equipment platform located at 9727 Mount Pisgah Road, Silver Spring, MD 20903.

The proposed changes were provided to us in scope of work Trylon drawing package dated 01/21/2020. The equipment platform is located at **133-ft 6-in** elevation. The existing equipment platform framing was verified for the loading from the proposed new and existing equipment cabinet.

The existing platform framing information that we considered in our evaluation is based on the previous construction drawings prepared by "BC Architects Engineers" dated 01/13/2011. The structural members that we considered in our analysis are presented in the attached sketches.

We consider that the existing equipment platform framing is in "like new" condition without cracks or deteriorated parts.

Proposed Equipment Cabinet:

Status	Equipment Cabinet	Qty.	Weight (lbs)
Proposed	**NETXTEND Battery Cabinet**	**1**	**2610.0**
	DC12	**3**	**56.3**
Existing	TE41 Cabinet	1	847.0
	9412 Cabinet	1	230.0
	UMTS Cabinet	1	1200.0
	FLEX Cabinet	1	600.0*

* Weight assumed

CONCLUSIONS AND RECOMMENDATIONS

Based on information provided, our calculations conclude that the existing equipment platform supporting the proposed new and existing equipment cabinet located at **133-ft 6-in** elevation of the Rooftop at the specified address, are **STRUCTURALLY ADEQUATE** to safely support the proposed equipment, subject to the attached Standard Conditions on page 4**.** The proposed new addition replaces the similar weight in the equipment and the existing roof frame supporting the equipment platform shall be structurally adequate.

Should you have any questions, comments or require additional information, please do not hesitate to call.

Sincerely,

Analysis performed by:

Ashraful Alam, PhD, PE

Standard Conditions for Providing Structural Consulting Services on Existing Structures

1. Roof structure is analyzed to the best of our ability using all information that is provided or can be obtained during fieldwork (if authorizes by client). If the existing conditions are not as we have represented in this analysis, we should be contacted to evaluate the significance of the deviation and revise the assessment accordingly.

2. The structural analysis has been performed assuming that existing roof slab is in "like new" condition. No allowance was made for excessive corrosion, damaged or missing structural members, loose bolts, misaligned parts, or any reduction in strength due to the age or fatigue of the product.

3. The structural analysis provided is an assessment of the primary load carrying capacity of the structure. We provide a limited scope of service. In some cases, we cannot verify the capacity of every structural parameter. In some cases, structural fabrication details are unknown at the time of our analysis, and the detailed field measurement of some of the required details may not be possible. In instances where we cannot perform connection capacity calculations, it is assumed that the existing manufactured connections develop the full capacity of the primary members being connected.

4. We cannot be held responsible for temporary and unbalanced loads on the roof structure. Our analysis is based on a particular loading arrangement or as-built field condition. We are not responsible for the methods and means of how the loading arrangement is accomplished by the contractor. These methods and means may include rigging of equipment or hardware to lift and locate, temporary hanging of equipment in locations other than the final arrangement, movement and tie off of tower riggers, personnel, and their equipment, etc.

Structural Calculations

Applicable Codes and References:

2015 International Building Code

ASCE 7-10 Minimum Design Loads for Buildings and Other Structures

AISC Steel Construction Manual Fourteenth Edition

Load Combinations (IBC 2015 LRFD):

- 1.4(D + F) (Eq. 16-1)
- 1.2(D + F) + 1.6(L + H) + 0.5(L_r or S or R) (Eq. 16-2)
- 1.2(D + F) + 1.6(L_r or S or R) + 1.6H + (f_1L or 0.5W) (Eq. 16-3)
- 1.2(D + F) + 1.0W + f_1L + 1.6H + 0.5(L_r or S or R) (Eq. 16-4)
- 1.2(D + F) + 1.0E + f_1L +1.6H + f_2S (Eq. 16-5)
- 0.9D + 1.0W + 1.6H (Eq. 16-6)
- 0.9(D + F) + 1.0E + 1.6H (Eq. 16-7)

Load Combinations (IBC 2015 ASD):

- D + F (Eq. 16-8)
- D + H + F + L (Eq. 16-9)
- D + H + F + (L_r or S or R) (Eq. 16-10)
- D + H + F + 0.75(L) + 0.75(L_r or S or R) (Eq. 16-11)
- D + H + F + (0.6W or 0.7E) (Eq. 16-12)
- D + H + F + 0.75(0.6W) + 0.75L + 0.75(L_r or S or R) (Eq. 16-13)
- D + H + F + 0.75(0.7E) + 0.75L + 0.75S (Eq. 16-14)
- 0.6D + 0.6W + H (Eq. 16-15)
- 0.6(D + F) + 0.7E + H (Eq. 16-16)

Notations:

- D = Dead load of structure and appurtenances, excluding guy assemblies
- F = Load due to fluids with well-defined pressures and maximum heights
- L = Floor live load
- H = Load due to lateral earth pressures, ground water pressure or pressure of bulk materials
- L_r = Roof live load
- R = Rain load
- S = Snow load
- W = Load due to wind pressure
- E = Combined effect of horizontal and vertical earthquake induced forces
- f_1 = 1 for floors in places of public assembly in excess of 100 pounds per square foot, and = 0.5 for other live loads
- f_2 = 0.7 for roof configurations that do not shed snow off the structure, and = 0.2 for other roof configurations

WIND LOAD ON EQUIPMENT

ASCE 7-10: Section 29.5.1

Basic wind speed	V = 115 mph
Risk category	II
Velocity pressure exponent coef (Table 26.6-1)	K_d = **0.85**
Exposure category (Sect. 2.6.5)	**C**
Height of building	h = **136.50** ft
Topography factor not signifcant (Sect. 2.6.6)	K_{zt} = 1.00
Nominal height of atmospheric boundary layer	z_g = **900** ft
3-second gust wind speed power law exponent	α = **9.5**
Terrain constant	K_e = **1.00**
Minimum value for K_z	$K_{zmin} = \max(2.01 \times (z/z_g)^{(2/\alpha)}, 0.85)$ = **1.351**
Velocity pressure coefficient (Sect. 2.6.5.2)	$K_z = \min(K_{zmin}, 2.01)$ = **1.351**
Velocity pressure	q_h **=** $0.00256 \times K_z \times K_{zt} \times K_d \times V^2 \times 1psf/mph^2$ = **38.887** psf

NETXTEND Cabinet

Length of equipment	L_1 = 3.1 ft
Width of equipment	W_1 =3.0 ft
Height of equipment	H_1 = 6.0 ft
Vertical projected area normal to wind	$A_{f1x} = L_1 \times H_1$ = **18.600** ft^2
Vertical projected area Transverse to wind	$A_{f1z} = W_1 \times H_1$ = **18.000** ft^2
Horizontal projected area normal to wind	$A_{r1} = L_1 \times W_1$ = **9.300** ft^2

TE41 Cabinet

Length of equipment	L_2 = 3.33 ft
Width of equipment	W_2 =3.0 ft
Height of equipment	H_2 = 6.17 ft
Vertical projected area normal to wind	$A_{f2x} = L_2 \times H_2$ = **20.546** ft^2
Vertical projected area Transverse to wind	$A_{f2z} = W_2 \times H_2$ = **18.510** ft^2
Horizontal projected area normal to wind	$A_{r2} = L_2 \times W_2$ = **9.990** ft^2

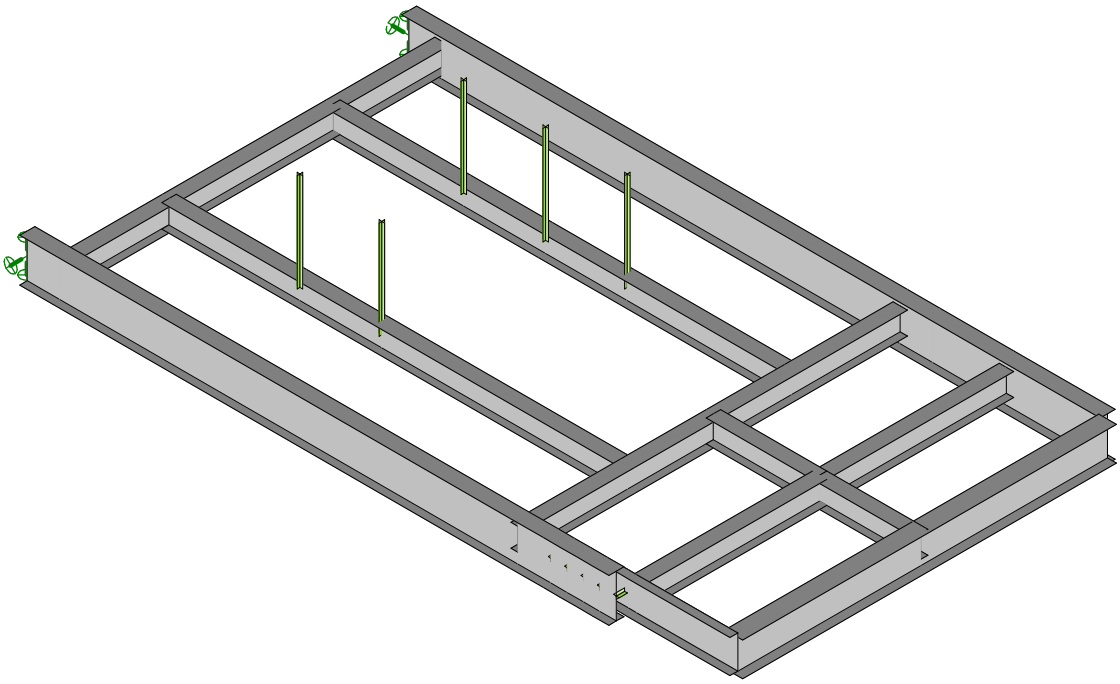
UMTS Cabinet

Length of equipment	L_3 = 2.6 ft
Width of equipment	W_3 =2.5 ft
Height of equipment	H_3 = 7.4 ft
Vertical projected area normal to wind	$A_{f3x} = L_3 \times H_3$ = **19.240** ft^2
Vertical projected area Transverse to wind	$A_{f3z} = W_3 \times H_3$ = **18.500** ft^2
Horizontal projected area normal to wind	$A_{r3} = L_3 \times W_3$ = **6.500** ft^2
Horizontal projected area normal to wind	$A_{r4} = L_4 \times W_4$ = **4.367** ft^2

Wind force (Normal and Transverse)

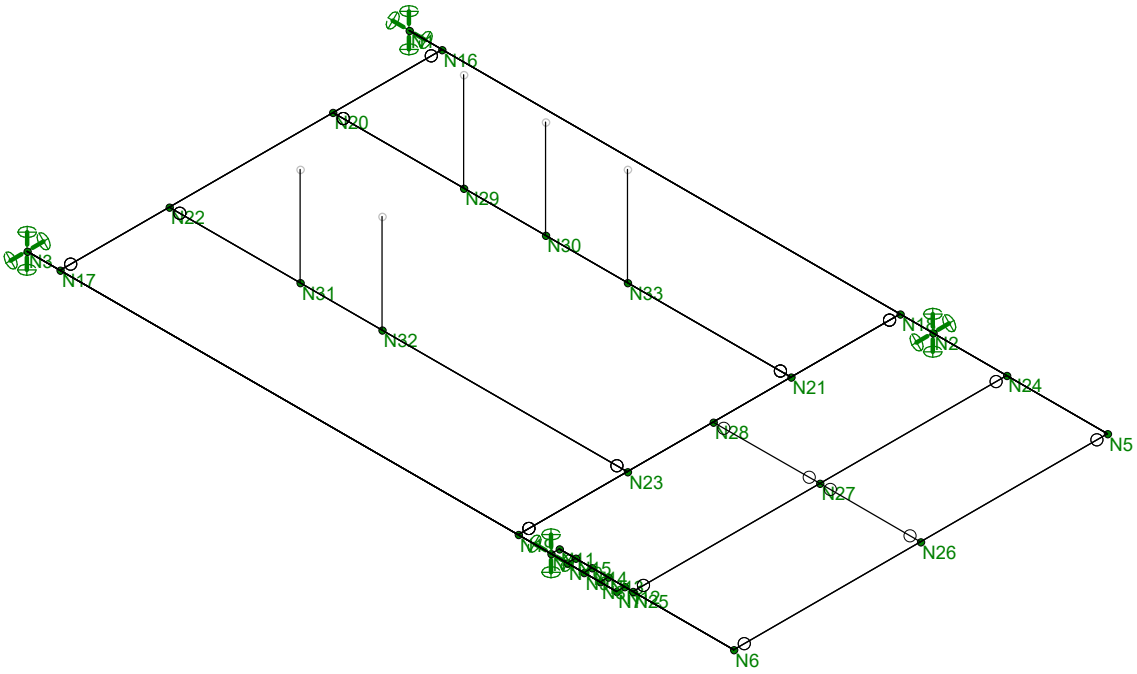
Pressure coefficient	GC_f = **1.9**
Lateral force due to wind (N-direction)	$F_{h1x} = \max(16\ psf, q_h \times GC_f) \times A_{f1x}$ = **1374.273** lb
Lateral force due to wind (T-direction)	$F_{h1z} = \max(16\ psf, q_h \times GC_f) \times A_{f1z}$ = **1329.942** lb

Lateral force due to wind (N-direction)	$F_{h2x} = \max(16\ psf, q_h \times GC_f) \times A_{f2x} =$ **1518.062** lb
Lateral force due to wind (T-direction)	$F_{h2z} = \max(16\ psf, q_h \times GC_f) \times A_{f2z} =$ **1367.623** lb
Lateral force due to wind (N-direction)	$F_{h3x} = \max(16\ psf, q_h \times GC_f) \times A_{f3x} =$ **1421.560** lb
Lateral force due to wind (T-direction)	$F_{h3z} = \max(16\ psf, q_h \times GC_f) \times A_{f3z} =$ **1366.884** lb



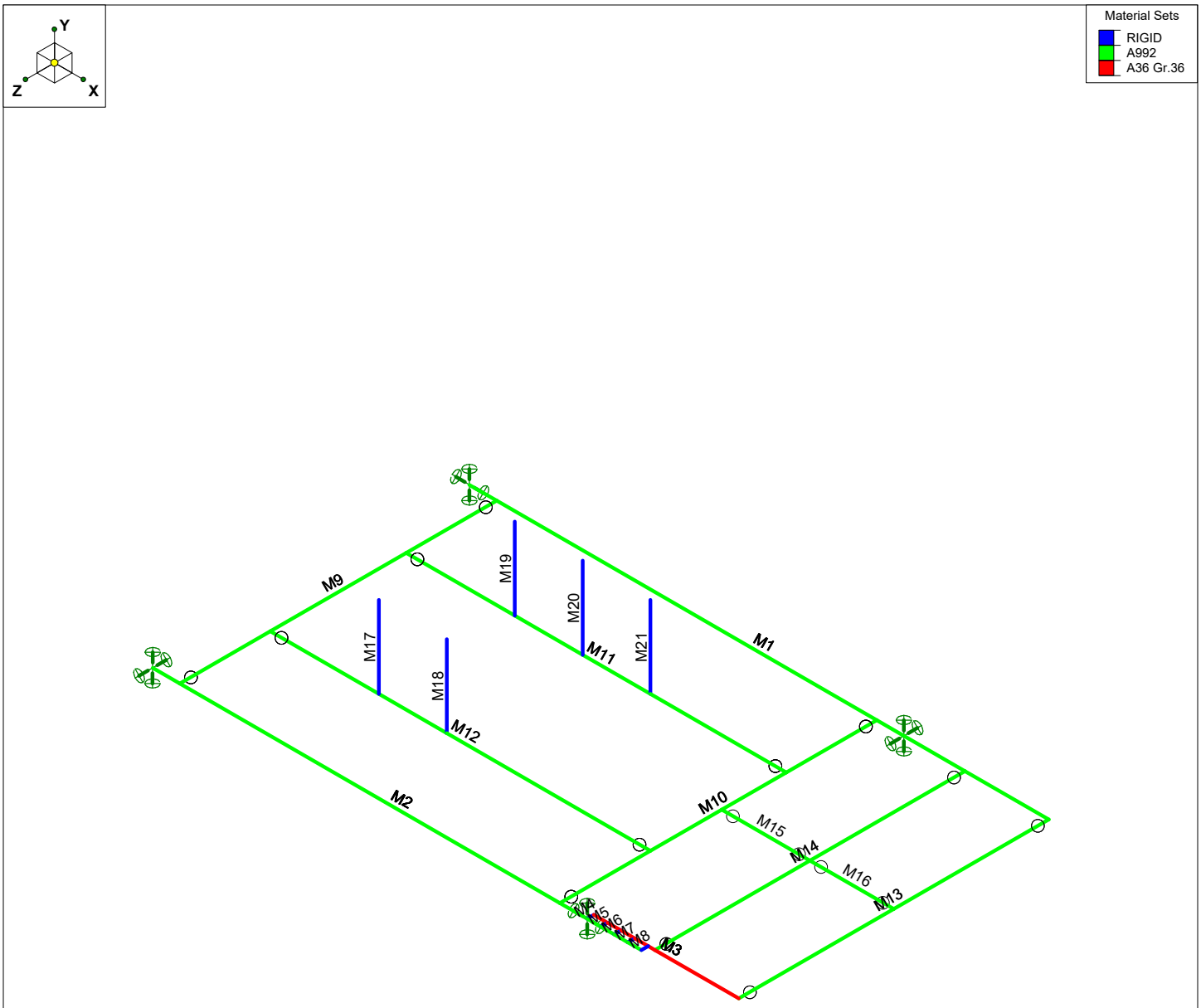
Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 9
AA	Gill	Feb 4, 2020 at 2:30 PM
157156	3-D View	AT&T_Gill_Equipment Platform.r3d



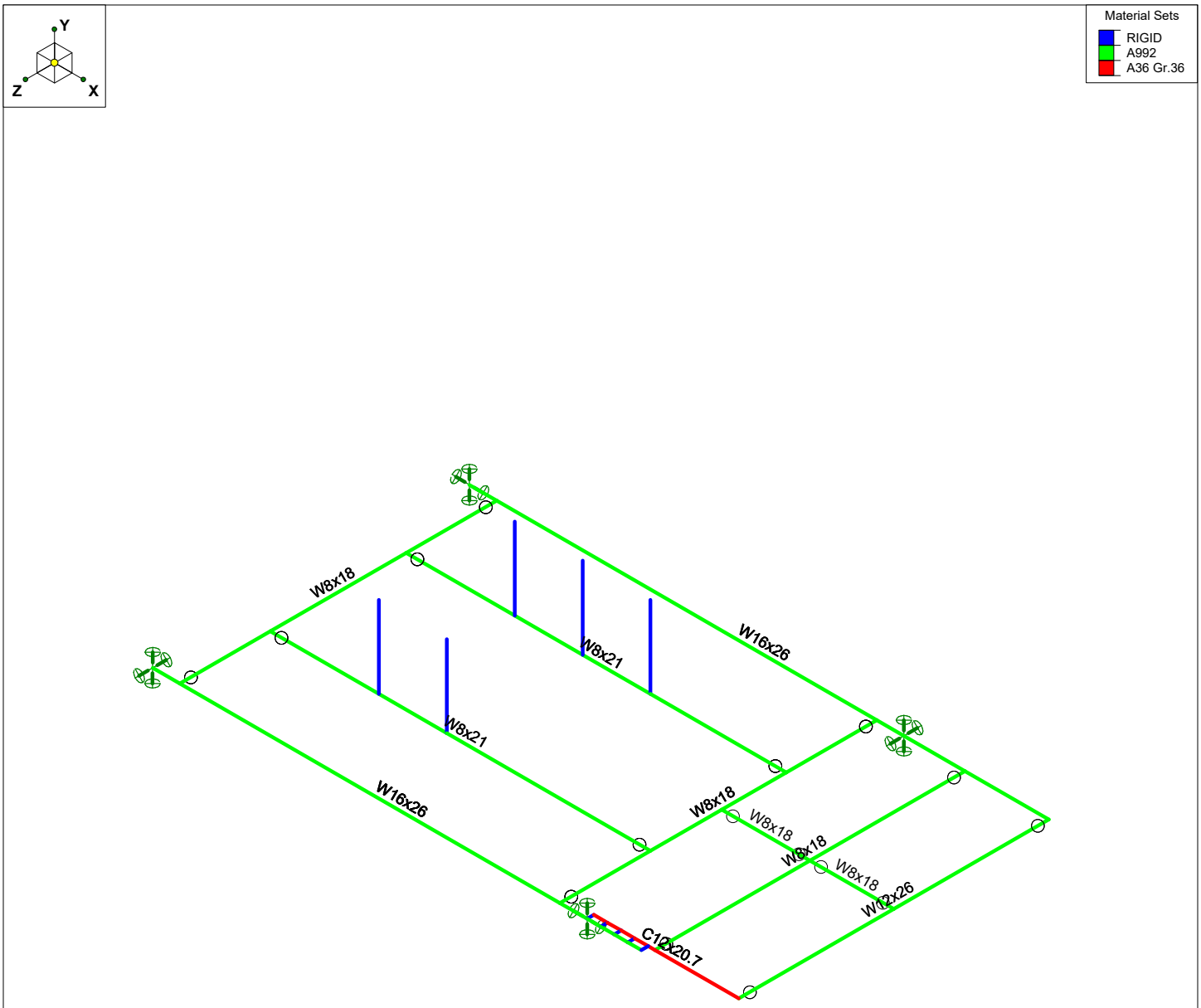
Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 10
AA	Gill	Feb 4, 2020 at 2:31 PM
157156	Node Numbers	AT&T_Gill_Equipment Platform.r3d



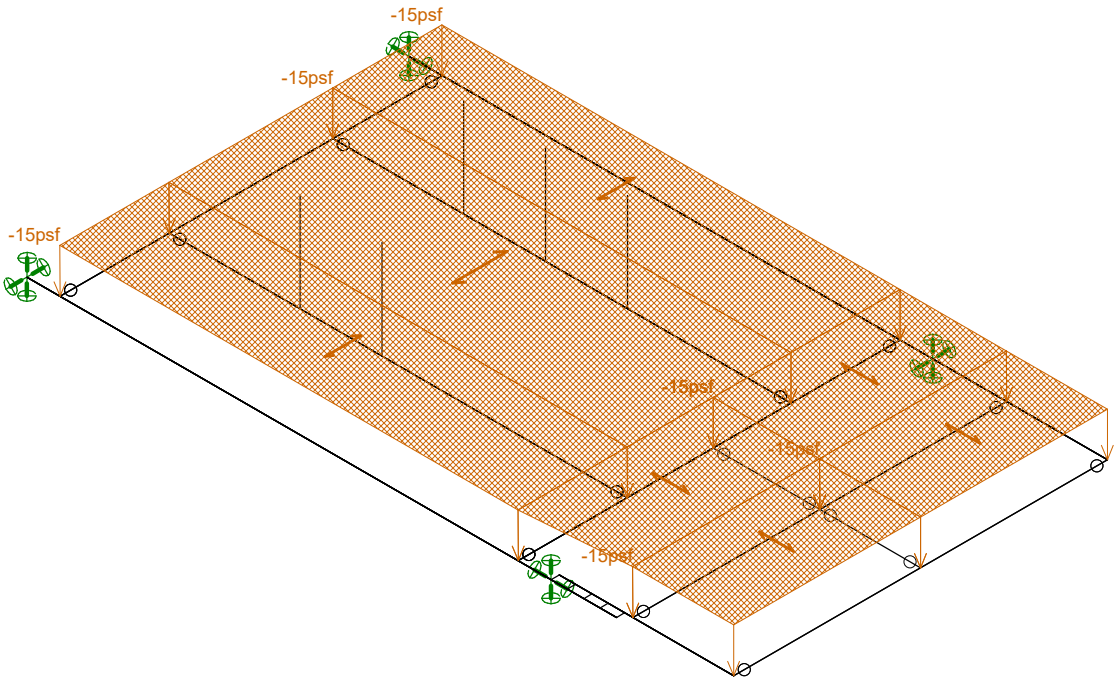
Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 11
AA	Gill	Feb 4, 2020 at 2:32 PM
157156	Member Labels	AT&T_Gill_Equipment Platform.r3d



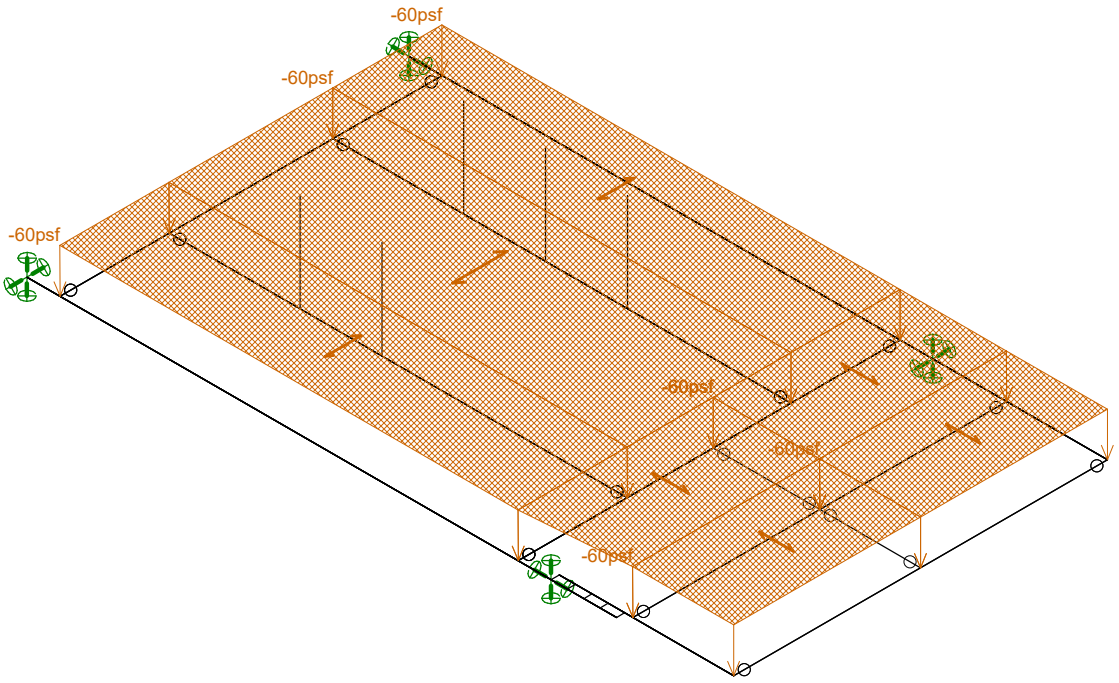
Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 12
AA	Gill	Feb 4, 2020 at 2:32 PM
157156	Member Shapes	AT&T_Gill_Equipment Platform.r3d



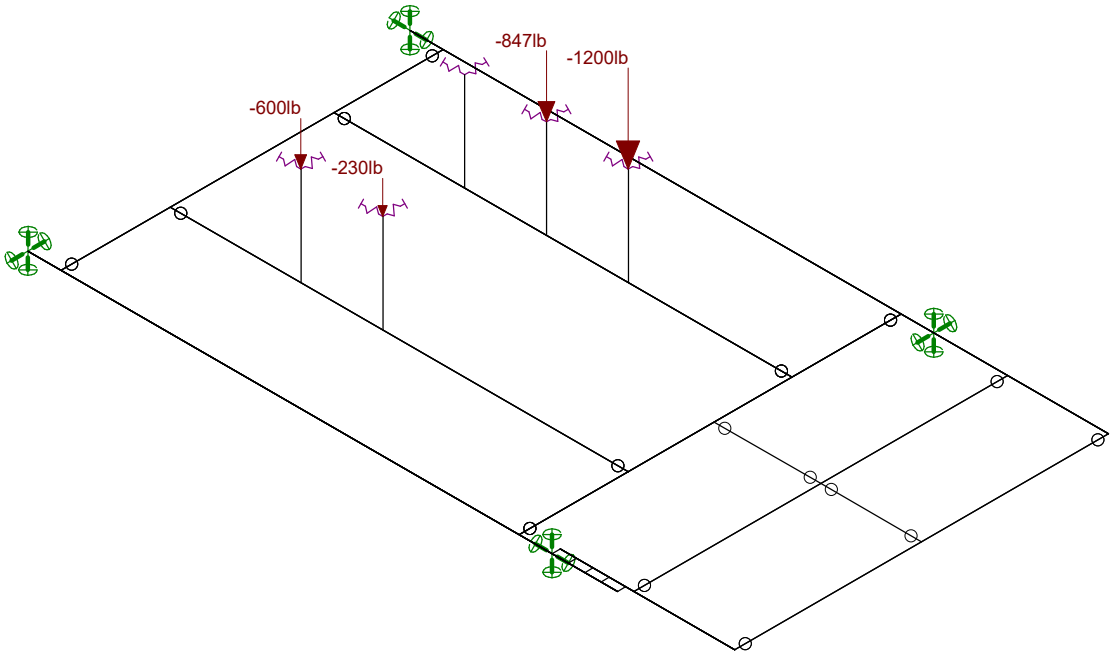
Loads: BLC 1, DL
Envelope Only Solution

Trylon		Page - 13
AA	Gill	Feb 4, 2020 at 2:32 PM
157156	Dead Load	AT&T_Gill_Equipment Platform.r3d



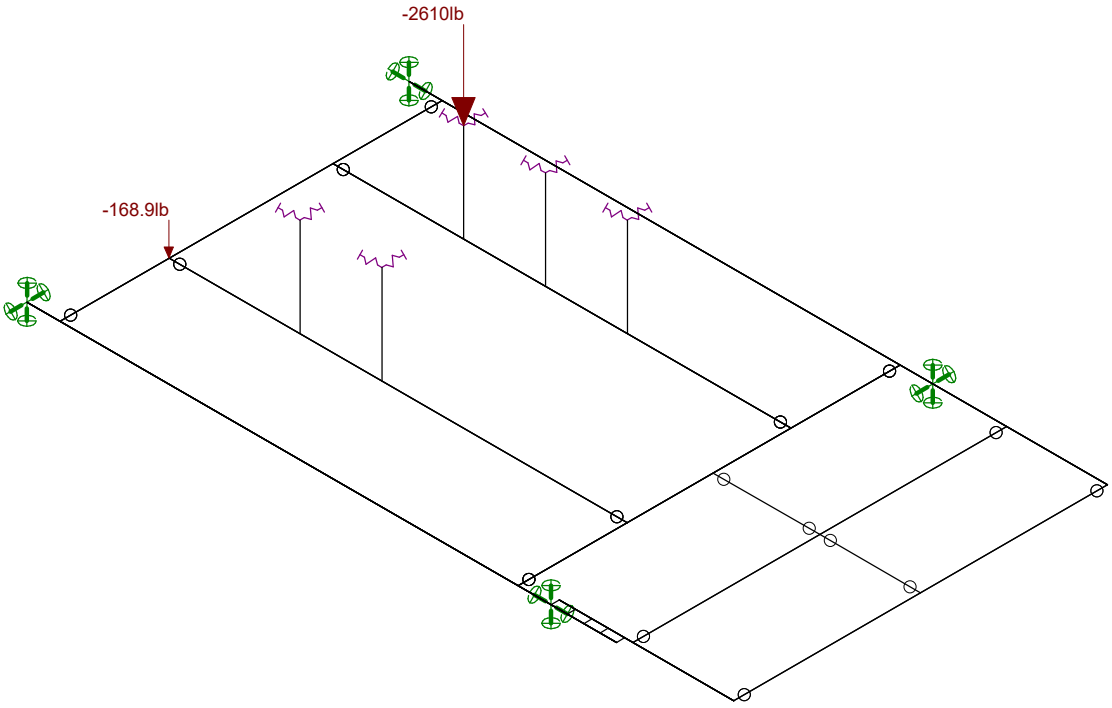
Loads: BLC 2, LL
Envelope Only Solution

Trylon		Page - 14
AA	Gill	Feb 4, 2020 at 2:33 PM
157156	Live Load	AT&T_Gill_Equipment Platform.r3d



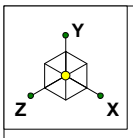
Loads: BLC 5, EX. EQ
Envelope Only Solution

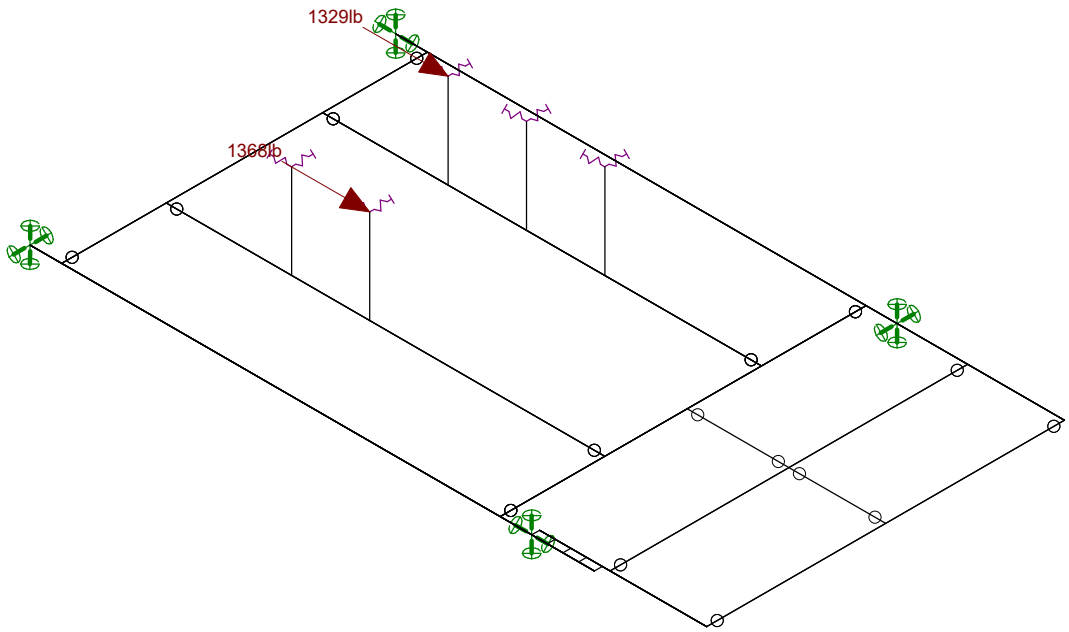
Trylon		Page - 15
AA	Gill	Feb 6, 2020 at 3:31 PM
157156	Ex. Equipment Load	AT&T_Gill_Equipment Platform.r3d



Loads: BLC 6, NEW EQ
Envelope Only Solution

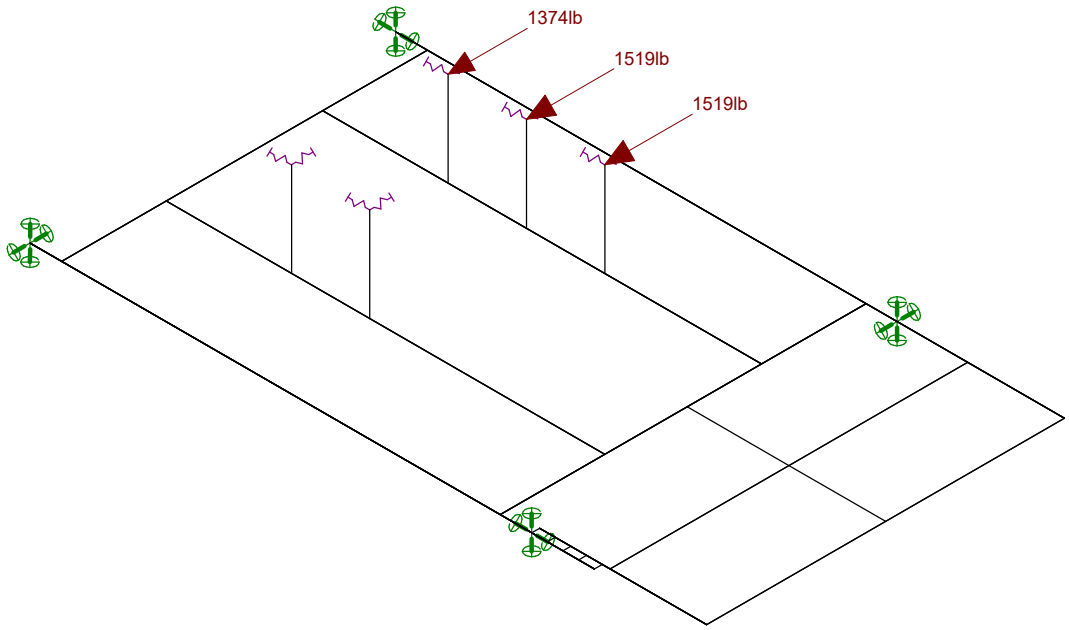
Trylon		Page - 16
AA	Gill	Feb 6, 2020 at 3:31 PM
157156	New Equipment Load	AT&T_Gill_Equipment Platform.r3d





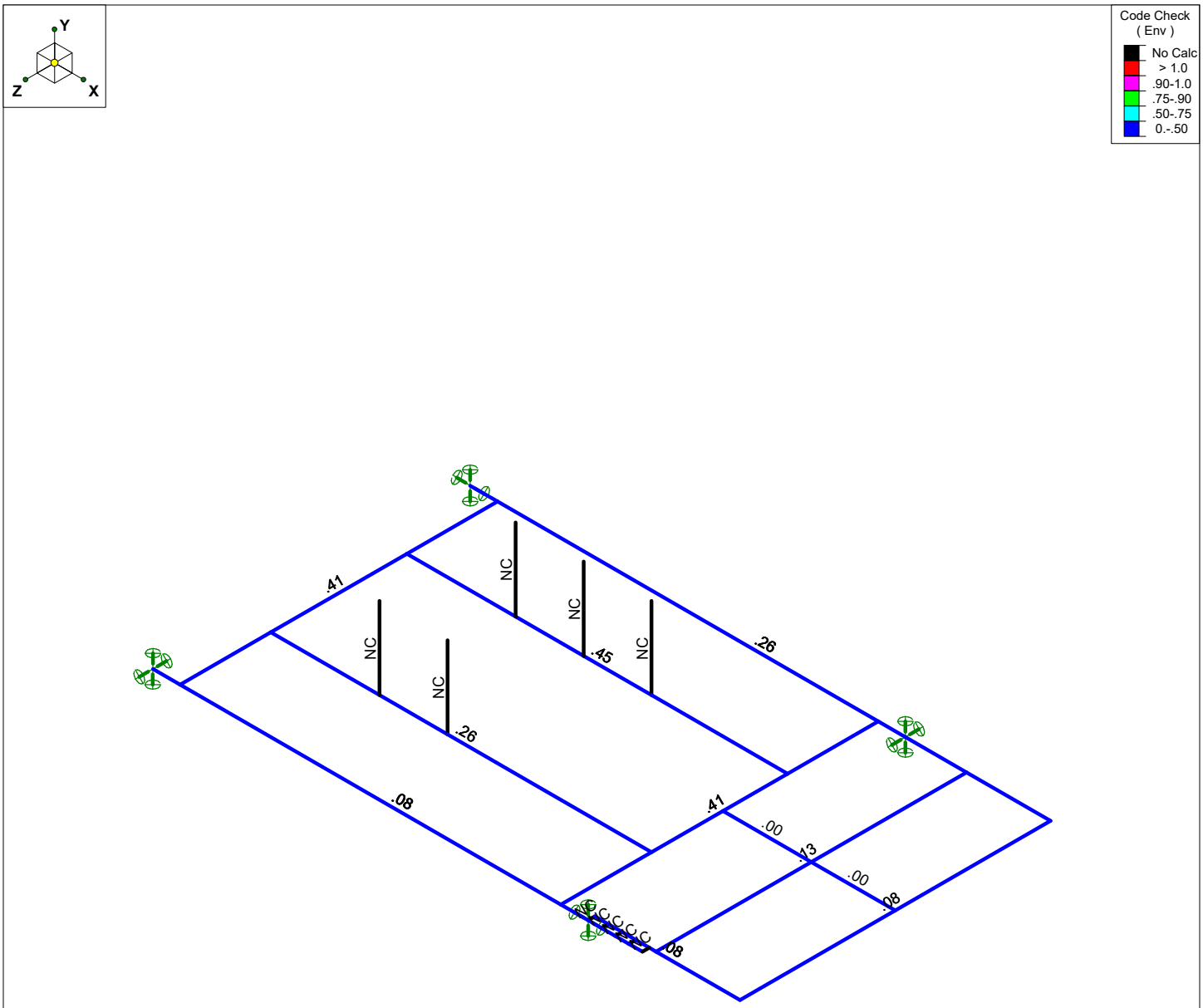
Loads: BLC 3, WLX
Envelope Only Solution

Trylon		Page - 17
AA	Gill	Feb 28, 2020 at 10:26 AM
157156	Wind Load x-direction	AT&T_Gill_Equipment Platform.r3d



Loads: BLC 4, WLZ
Envelope Only Solution

Trylon		Page - 18
AA	Gill	Feb 28, 2020 at 10:27 AM
157156	Wind Load z-direction	AT&T_Gill_Equipment Platform.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Trylon		Page - 19
AA	Gill	Feb 28, 2020 at 10:27 AM
157156	Member Stress Ratio	AT&T_Gill_Equipment Platform.r3d

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N1	0	0	0	0	
2	N2	192	0	0	0	
3	N3	0	0	140	0	
4	N4	192	0	140	0	
5	N5	256	0	0	0	
6	N6	256	0	137	0	
7	N7	216	0	140	0	
8	N8	210	0	140	0	
9	N9	204	0	140	0	
10	N10	198	0	140	0	
11	N11	192	0	137	0	
12	N12	216	0	137	0	
13	N13	210	0	137	0	
14	N14	204	0	137	0	
15	N15	198	0	137	0	
16	N16	12	0	0	0	
17	N17	12	0	140	0	
18	N18	180	0	0	0	
19	N19	180	0	140	0	
20	N20	12	0	40	0	
21	N21	180	0	40	0	
22	N22	12	0	100	0	
23	N23	180	0	100	0	
24	N24	219	0	0	0	
25	N25	219	0	137	0	
26	N26	256	0	68.5	0	
27	N27	219	0	68.5	0	
28	N28	180	0	68.5	0	
29	N29	60	0	40	0	
30	N30	90	0	40	0	
31	N31	60	0	100	0	
32	N32	90	0	100	0	
33	N33	120	0	40	0	
34	N34	60	36	40	0	
35	N35	90	36	40	0	
36	N36	60	36	100	0	
37	N37	90	36	100	0	
38	N38	120	36	40	0	

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E..Density[k/ft...		Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N5			W16x26	Beam	Wide Flange	A992	Typical
2	M2	N3	N7			W16x26	Beam	Wide Flange	A992	Typical
3	M3	N11	N6			C12x20.7	Beam	Channel	A36 Gr.36	Typical
4	M4	N4	N11			RIGID	None	None	RIGID	Typical
5	M5	N10	N15			RIGID	None	None	RIGID	Typical
6	M6	N9	N14			RIGID	None	None	RIGID	Typical
7	M7	N8	N13			RIGID	None	None	RIGID	Typical
8	M8	N7	N12			RIGID	None	None	RIGID	Typical
9	M9	N17	N16			W8x18	Beam	Wide Flange	A992	Typical
10	M10	N19	N18			W8x18	Beam	Wide Flange	A992	Typical
11	M11	N20	N21			W8x21	Beam	Wide Flange	A992	Typical
12	M12	N22	N23			W8x21	Beam	Wide Flange	A992	Typical
13	M13	N6	N5			W12x26	Beam	Wide Flange	A992	Typical
14	M14	N25	N24			W8x18	Beam	Wide Flange	A992	Typical
15	M15	N28	N27			W8x18	Beam	Wide Flange	A992	Typical
16	M16	N27	N26			W8x18	Beam	Wide Flange	A992	Typical
17	M17	N31	N36			RIGID	None	None	RIGID	Typical
18	M18	N32	N37			RIGID	None	None	RIGID	Typical
19	M19	N29	N34			RIGID	None	None	RIGID	Typical
20	M20	N30	N35			RIGID	None	None	RIGID	Typical
21	M21	N33	N38			RIGID	None	None	RIGID	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	W16x26	256	6	6	Lbyy						Lateral
2	M2	W16x26	216			Lbyy						Lateral
3	M3	C12x20.7	64			Lbyy						Lateral
4	M9	W8x18	140			Lbyy						Lateral
5	M10	W8x18	140			Lbyy						Lateral
6	M11	W8x21	168			Lbyy						Lateral
7	M12	W8x21	168			Lbyy						Lateral
8	M13	W12x26	137			Lbyy						Lateral
9	M14	W8x18	137			Lbyy						Lateral
10	M15	W8x18	39			Lbyy						Lateral
11	M16	W8x18	37			Lbyy						Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	DL	DL		-1					7	
2	LL	LL							7	
3	WLX	WLX				2				
4	WLZ	WLZ				3				
5	EX. EQ	DL				4				
6	NEW EQ	DL				2				
7	BLC 1 Transient Area...	None						22		
8	BLC 2 Transient Area...	None						22		

Joint Loads and Enforced Displacements (BLC 3 : WLX)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/...
1	N34	L	X	1329
2	N37	L	X	1368

Joint Loads and Enforced Displacements (BLC 4 : WLZ)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/...
1	N34	L	Z	1374
2	N35	L	Z	1519
3	N38	L	Z	1519

Joint Loads and Enforced Displacements (BLC 5 : EX. EQ)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/...
1	N35	L	Y	-847
2	N38	L	Y	-1200
3	N36	L	Y	-600
4	N37	L	Y	-230

Joint Loads and Enforced Displacements (BLC 6 : NEW EQ)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/...
1	N34	L	Y	-2610
2	N22	L	Y	-168.9

Member Area Loads (BLC 1 : DL)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N17	N22	N23	N19	Y	A-B	-15
2	N20	N22	N23	N21	Y	A-B	-15
3	N16	N20	N21	N18	Y	A-B	-15
4	N28	N27	N25	N19	Y	A-B	-15
5	N28	N27	N24	N18	Y	A-B	-15
6	N25	N6	N26	N27	Y	A-B	-15
7	N27	N26	N5	N24	Y	A-B	-15

Member Area Loads (BLC 2 : LL)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N17	N22	N23	N19	Y	A-B	-60
2	N20	N22	N23	N21	Y	A-B	-60
3	N16	N20	N21	N18	Y	A-B	-60
4	N28	N27	N25	N19	Y	A-B	-60
5	N28	N27	N24	N18	Y	A-B	-60
6	N25	N6	N26	N27	Y	A-B	-60
7	N27	N26	N5	N24	Y	A-B	-60

Load Combinations

	Description	Sol...	PD...	SR...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	IBC 16-1	Yes	Y		DL	1.4																				
2	IBC 16-2 (a)	Yes	Y		DL	1.2	LL	1.6	LLS	1.6																
3	IBC 16-3 (...	Yes	Y		DL	1.2	W...	.5																		
4	IBC 16-3 (...	Yes	Y		DL	1.2	WLZ	.5																		
5	IBC 16-3 (...	Yes	Y		DL	1.2	W...	-.5																		
6	IBC 16-3 (...	Yes	Y		DL	1.2	WLZ	-.5																		
7	IBC 16-4 (...	Yes	Y		DL	1.2	W...	1	LL	.5	LLS	1														
8	IBC 16-4 (...	Yes	Y		DL	1.2	WLZ	1	LL	.5	LLS	1														
9	IBC 16-4 (...	Yes	Y		DL	1.2	W...	-1	LL	.5	LLS	1														
10	IBC 16-4 (...	Yes	Y		DL	1.2	WLZ	-1	LL	.5	LLS	1														
11	IBC 16-6 (a)	Yes	Y		DL	.9	W...	1																		
12	IBC 16-6 (b)	Yes	Y		DL	.9	WLZ	1																		
13	IBC 16-6 (c)	Yes	Y		DL	.9	W...	-1																		
14	IBC 16-6 (d)	Yes	Y		DL	.9	WLZ	-1																		

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N3	max	0	1	6608.953	2	63.057	8	0	1	.056	10	8.587	2
2		min	0	1	1897.057	11	-62.549	10	0	1	-.056	8	2.429	11
3	N2	max	0	1	12573.636	2	36.246	8	0	1	.025	8	-1.887	13
4		min	0	1	3264.065	13	-33.354	10	0	1	-.024	10	-3.865	2
5	N1	max	1108.183	9	6854.898	2	0	1	0	1	.001	10	0	1
6		min	-1055.206	11	2394.906	11	0	1	0	1	-.001	8	0	1
7	N4	max	1192.525	9	10967.955	2	0	1	.891	2	.11	11	0	1
8		min	-1125.377	11	2352.354	13	0	1	.182	11	-.115	9	0	1
9	N36	max	72.159	13	0	1	8.286	2	0	1	0	1	0	1
10		min	-151.227	7	0	1	2.816	11	0	1	0	1	0	1
11	N37	max	110.693	13	0	1	4.791	2	0	1	0	1	0	1
12		min	-106.848	7	0	1	1.31	13	0	1	0	1	0	1
13	N34	max	22.085	13	0	1	1431.701	10	0	1	0	1	0	1
14		min	-254.171	7	0	1	-1442.759	8	0	1	0	1	0	1
15	N35	max	88.845	13	0	1	1550.559	10	0	1	0	1	0	1
16		min	-101.013	7	0	1	-1551.917	8	0	1	0	1	0	1
17	N38	max	200.464	9	0	1	1517.385	10	0	1	0	1	0	1
18		min	-1.266	11	0	1	-1525.004	8	0	1	0	1	0	1
19	Totals:	max	2697	9	37005.443	2	4412	10						
20		min	-2697	11	10758.835	11	-4412	8						

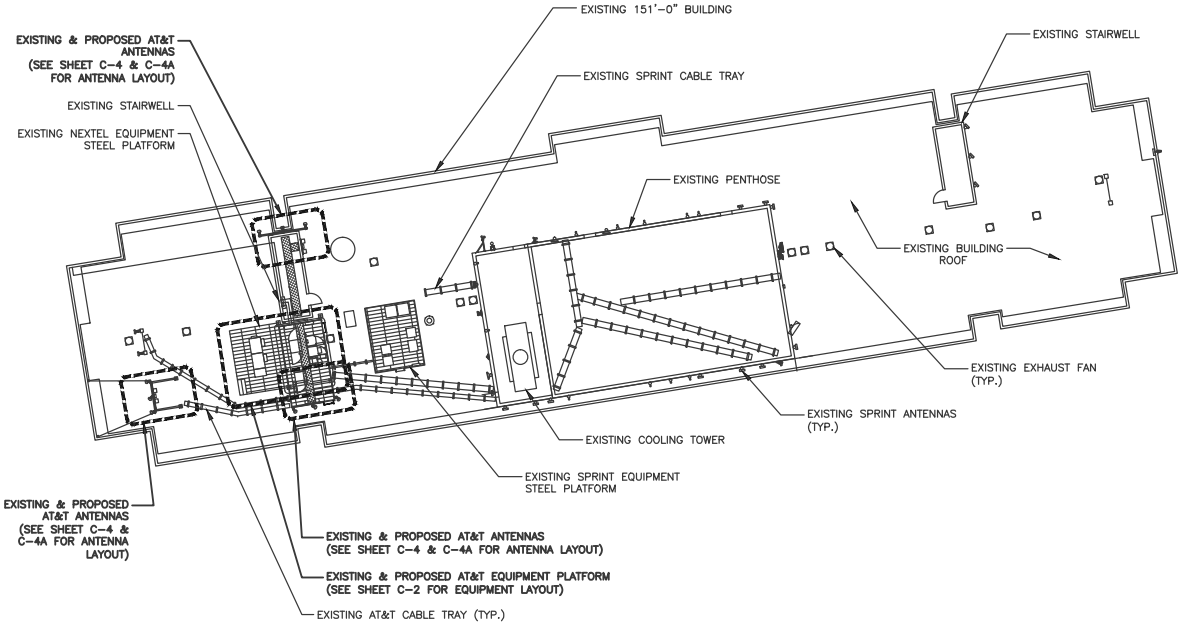
Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code C...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
1	M1	W16x26	.262	192	2	.085	192	y	2	105423.4...	345600	20.55	59.959	1....	H1-1b
2	M2	W16x26	.081	191.25	2	.069	191.25	y	2	46435.588	345600	20.55	139.651	3....	H1-1b
3	M3	C12x20.7	.079	0	2	.066	24	y	2	140262.4...	196992	7.438	69.12	1....	H1-1b
4	M9	W8x18	.409	99.167	2	.112	140	y	2	91863.311	236700	17.475	50.708	1....	H1-1b
5	M10	W8x18	.414	99.167	2	.115	140	y	2	91863.311	236700	17.475	49.534	1....	H1-1b
6	M11	W8x21	.446	77	2	.213	0	y	10	78201.637	277200	21.337	56.95	1....	H1-1b
7	M12	W8x21	.258	77	2	.082	0	y	2	78201.637	277200	21.337	56.703	1....	H1-1b
8	M13	W12x26	.083	68.5	9	.014	137	y	2	187087.8...	344250	30.637	121.924	1....	H1-1b
9	M14	W8x18	.128	68.5	2	.040	0	y	2	95687.229	236700	17.475	51.705	1....	H1-1b
10	M15	W8x18	.003	19.5	9	.001	39	y	1	219949.2...	236700	17.475	63.75	1....	H1-1b
11	M16	W8x18	.002	18.5	9	.001	0	y	2	221568.4...	236700	17.475	63.75	1....	H1-1b

References

GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL GIVE ALL NOTICES AND REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE SUBCONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID SUBCONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE SUBCONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE AT&T REPRESENTATIVE OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF SUBCONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE SUBCONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIAL AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE SUBCONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE THEMSELVES WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE SUBCONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS INFORMED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE SUBCONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE, UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS, AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEERING, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
11. THE SUBCONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVEMENTS, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE SUBCONTRACTOR SHALL REPAIR ANY DAMAGE THE MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. THE SUBCONTRACTOR SHALL MAINTAIN THE GENERAL WORK AREA AS CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST OR SMUDGES OF ANY NATURE.
13. THE SUBCONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
14. THE SUBCONTRACTOR SHALL NOTIFY THE AT&T REPRESENTATIVE (B&T ENGINEERING) WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE SUBCONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE AT&T REPRESENTATIVE (B&T ENGINEERING).
15. THE SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOBS.



TRUE NORTH

BUILDING PLAN

0 8' 16' 32'

SCALE: 1/32"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

1

AT&T

smartlink

Trylon

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

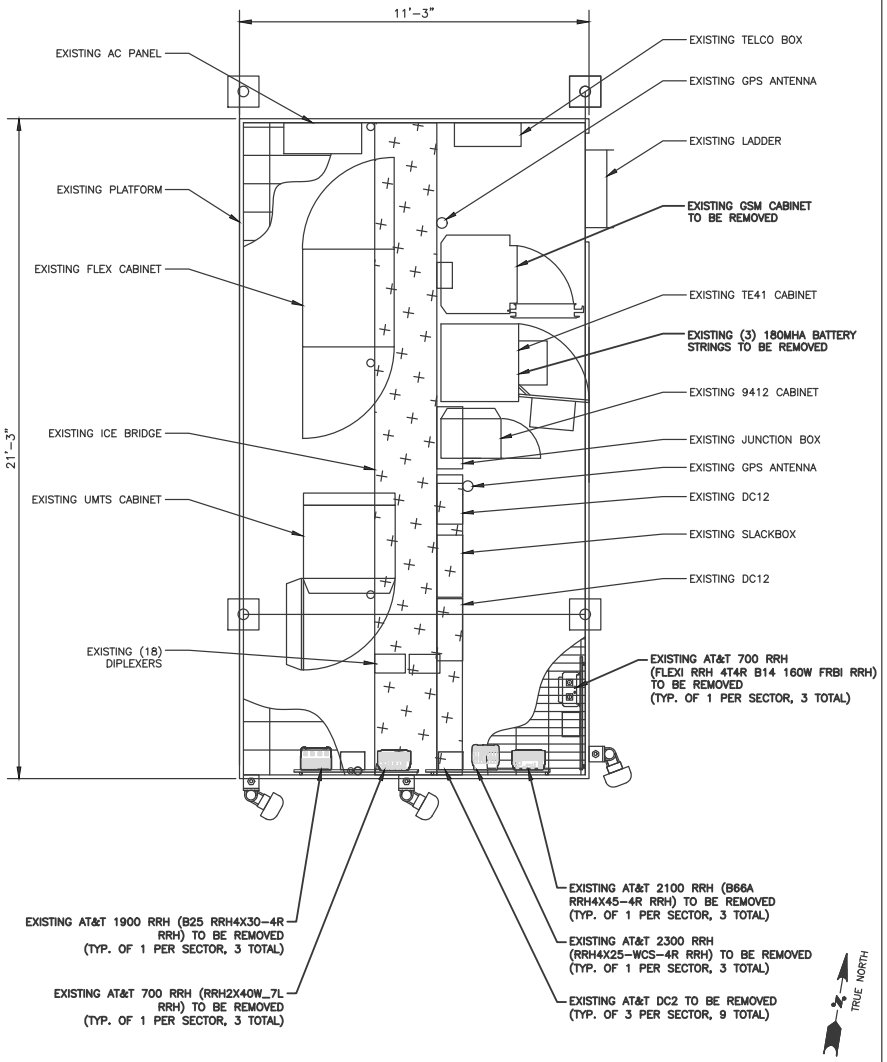
EXISTING BUILDING

SHEET DESCRIPTION

BUILDING PLAN

SHEET NO.

C-1

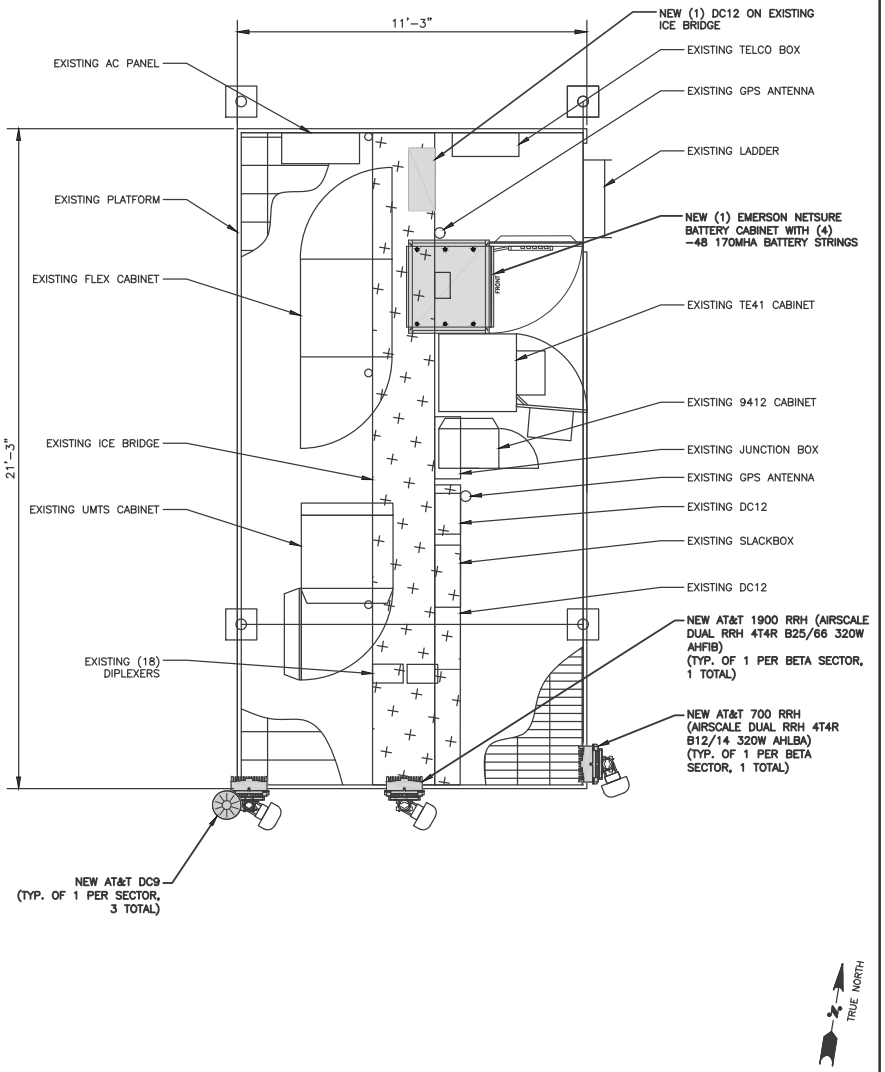


EXISTING EQUIPMENT LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

1



PROPOSED EQUIPMENT LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

2

AT&T

smartlink

Trylon

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

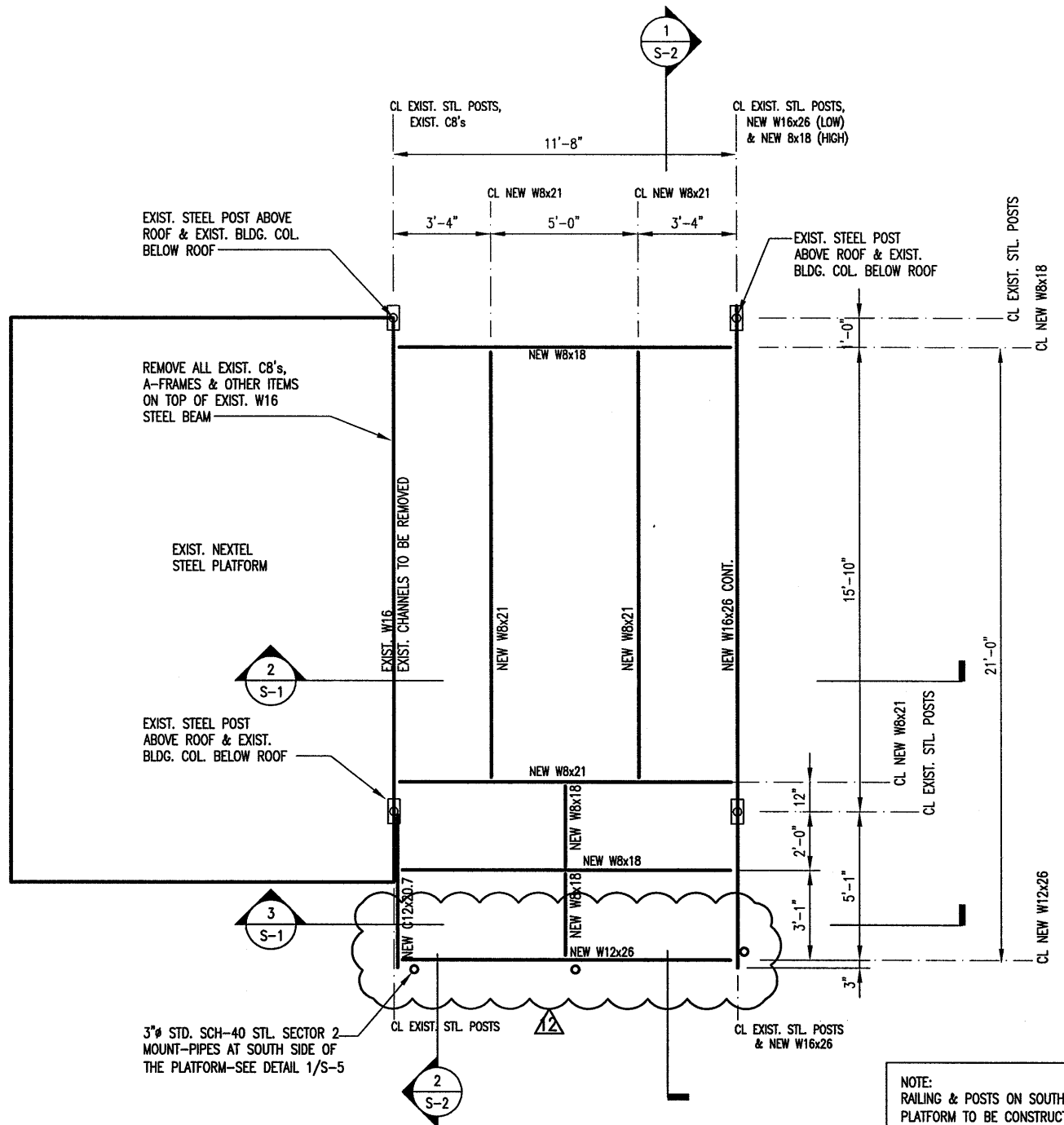
EXISTING BUILDING

SHEET DESCRIPTION

EQUIPMENT PLAN

SHEET NO.

C-2

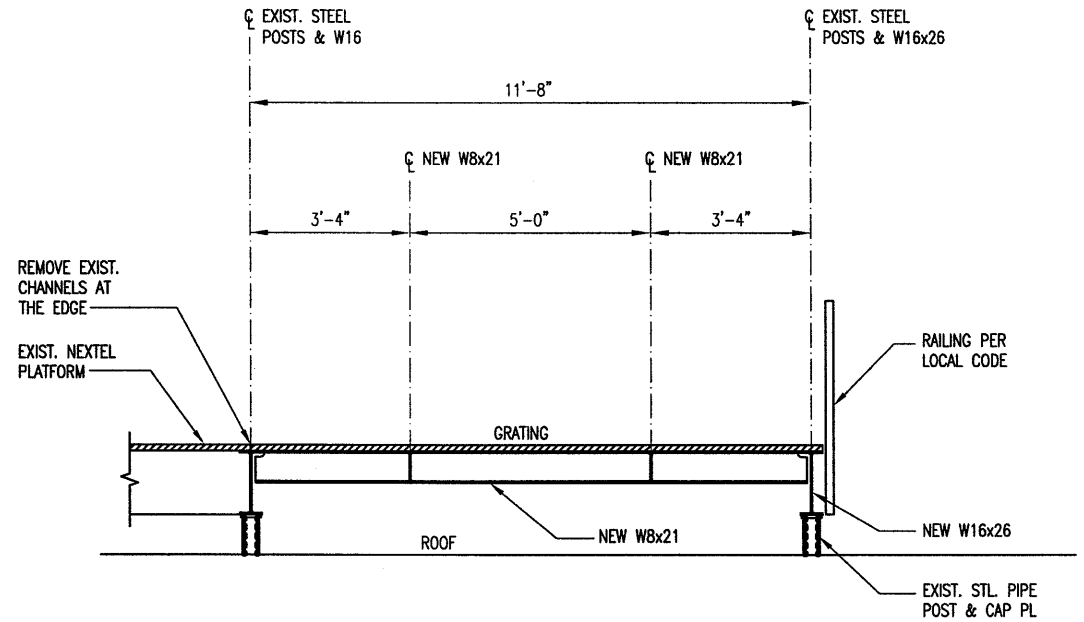


NOTE:
RAILING & POSTS ON SOUTH SIDE OF PLATFORM TO BE CONSTRUCTED OF 3"ø STD. PIPE, PER ATTACHED DETAIL. RAILING ON NORTH, EAST & WEST SIDES OF THE PLATFORM TO BE CONSTRUCTED PER TYPICAL HANDRAIL DETAIL AND IN CONFORMANCE WITH THE LOCAL CODE REQUIREMENTS.

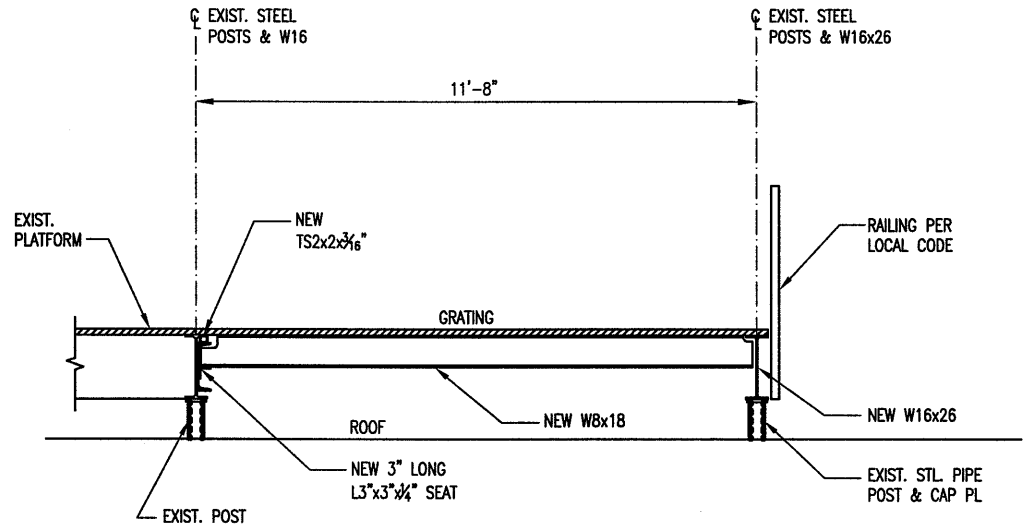
PROPOSED PLATFORM FRAMING PLAN
SCALE: 3/16"=1'-0" (1 / S-1)

SCALE IN FEET

0 5 10 20 30



SECTION DETAIL
SCALE: 1/4"=1'-0" (2 / S-1)



SECTION DETAIL
SCALE: 1/4"=1'-0" (3 / S-1)

BC architects engineers
5659 COLUMBIA PIKE, SUITE 101
FALLS CHURCH, VA 22041-2868
TEL: (703) 671-6000
FAX: (703) 671-6300

GILL_CHATEAU APARTMENT BUILDING
10128448_3821

9727 MT. PISGAH RD.
SILVER SPRING, MD 20903

at&t
7150 STANDARD DR
HANOVER, MD 21076

NO.	DATE	REVISIONS	BY	CHK	APP'D
14					
13	01-13-11	TMA & DIPLEXER MOUNTING DETAILS	AWS	CDM	BMQ
12	01-13-11	ADD (3) ANTENNAS AND RELOCATE SECTOR-3	AWS	CDM	BMQ
11	10-18-10	CLIENT COMMENTS	AWS	CDM	BMQ
10	08-16-10	CLIENT COMMENTS	AWS	CDM	BMQ
9	08-04-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
8	06-29-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
7	05-05-10	REVISED ELEC. DETAILS AND MOVE ANT. SECTOR 2	AWS	CDM	BMQ

SCALE: AS SHOWN | DESIGNED C. MORIN | DRAWN GMW

PROFESSIONAL CERTIFICATION.
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 24552
EXPIRATION DATE: 11/17/11

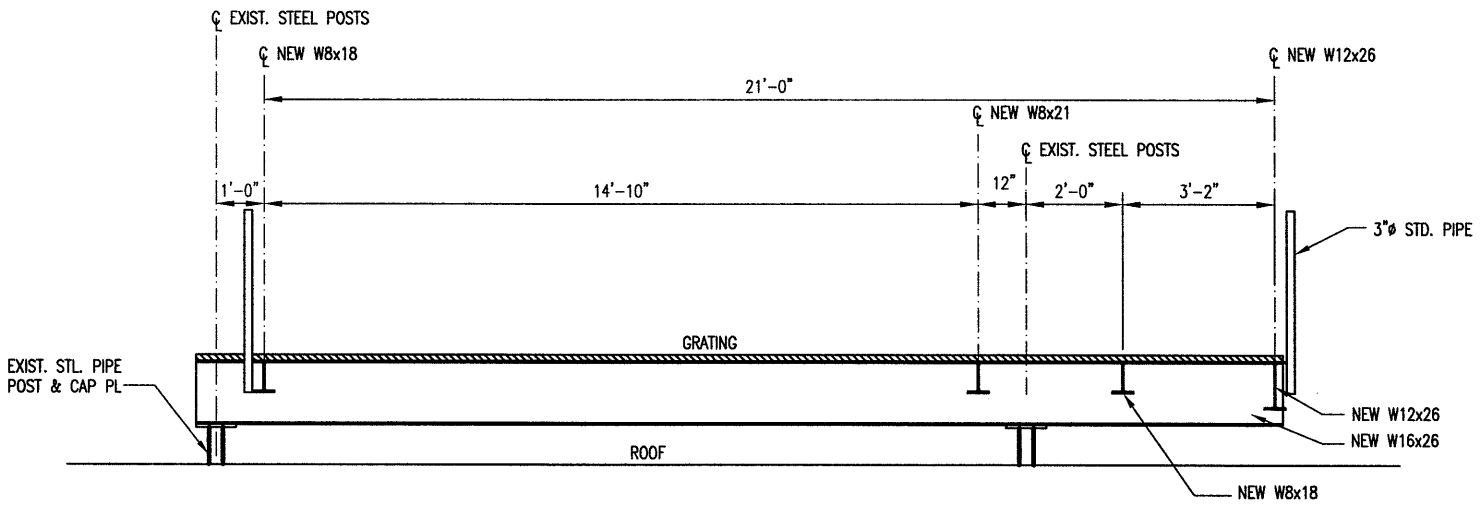
STATE OF MARYLAND · CHRISTOPHER G. MORIN · 2.23.11 · NO. 24552 · PROFESSIONAL ENGINEER

BC ARCHITECTS ENGINEERS
FALLS CHURCH, VA

PLATFORM FRAMING PLAN AND SECTIONS

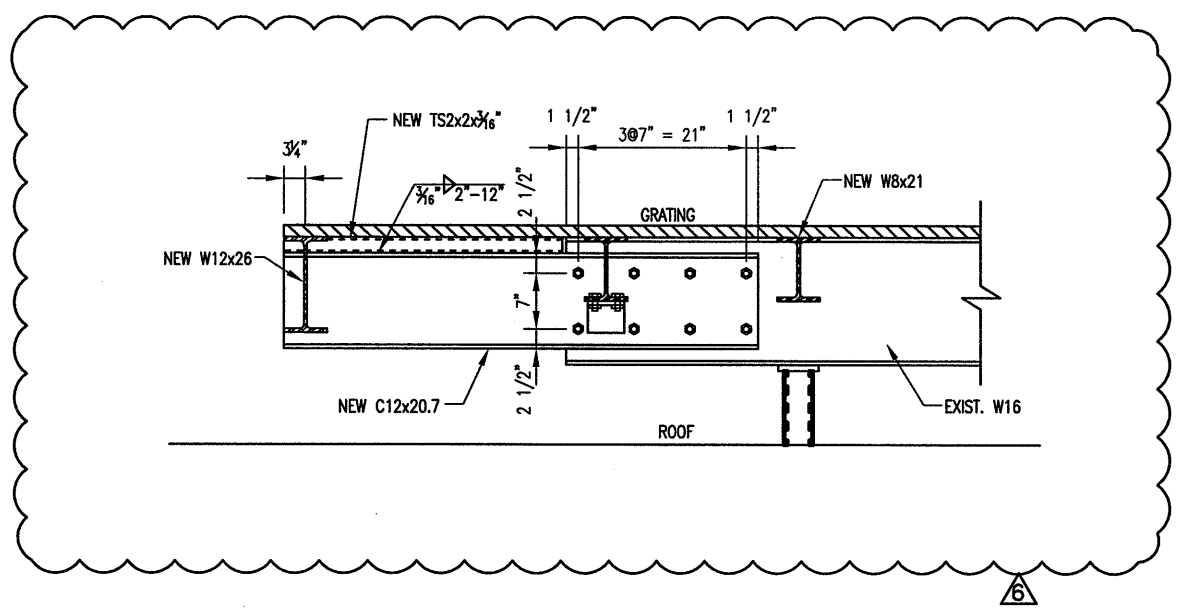
DRAWING NUMBER	REV
10128448-S-1	13

10-07-10 ARNOLD 09:36:51 Y:/Drawings - 2008/AT&T/Roof Top/GILL_Chateau Apartments - 10128448/CD's REVISED REV-10 08-16-10/S1.dwg

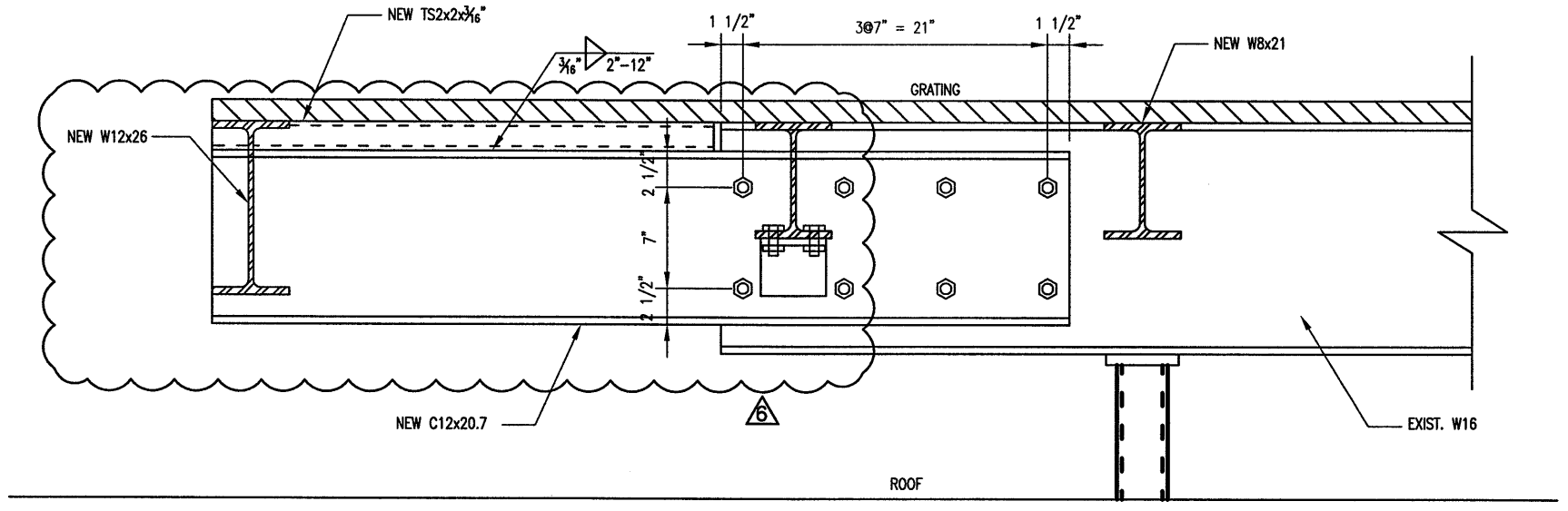


SECTION DETAIL (1 / S-2)
SCALE: 1/4"=1'-0"

NOT USED (3 / S-2)
SCALE: N/A



SECTION DETAIL (2 / S-2)
SCALE: 1/2"=1'-0"



DETAIL AT EXISTING CANTILEVERED W16 (3 / S-2)
SCALE: 1"=1'-0"

BC architects engineers
5659 COLUMBIA PIKE, SUITE 101
FALLS CHURCH, VA 22041-2868
TEL: (703) 671-6000
FAX: (703) 671-6300

GILL_CHATEAU APARTMENT BUILDING
10128448_3821

9727 MT. PISGAH RD.
SILVER SPRING, MD 20903

at&t
7150 STANDARD DR
HANOVER, MD 21076

NO.	DATE	REVISIONS	BY	CHK	APP'D
14					
13	01-13-11	TMA & DIPLEXER MOUNTING DETAILS	AWS	CDM	BMQ
12	01-13-11	ADD (3) ANTENNAS AND RELOCATE SECTOR-3	AWS	CDM	BMQ
11	10-18-10	CLIENT COMMENTS	AWS	CDM	BMQ
10	08-16-10	CLIENT COMMENTS	AWS	CDM	BMQ
9	08-04-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
8	06-29-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
7	05-05-10	REVISED ELEC. DETAILS AND MOVE ANT. SECTOR 2	AWS	CDM	BMQ

SCALE: AS SHOWN | DESIGNED C. MORIN | DRAWN GMW

PROFESSIONAL CERTIFICATION.
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LICENSE NO. 24552
EXPIRATION DATE: 11/17/11

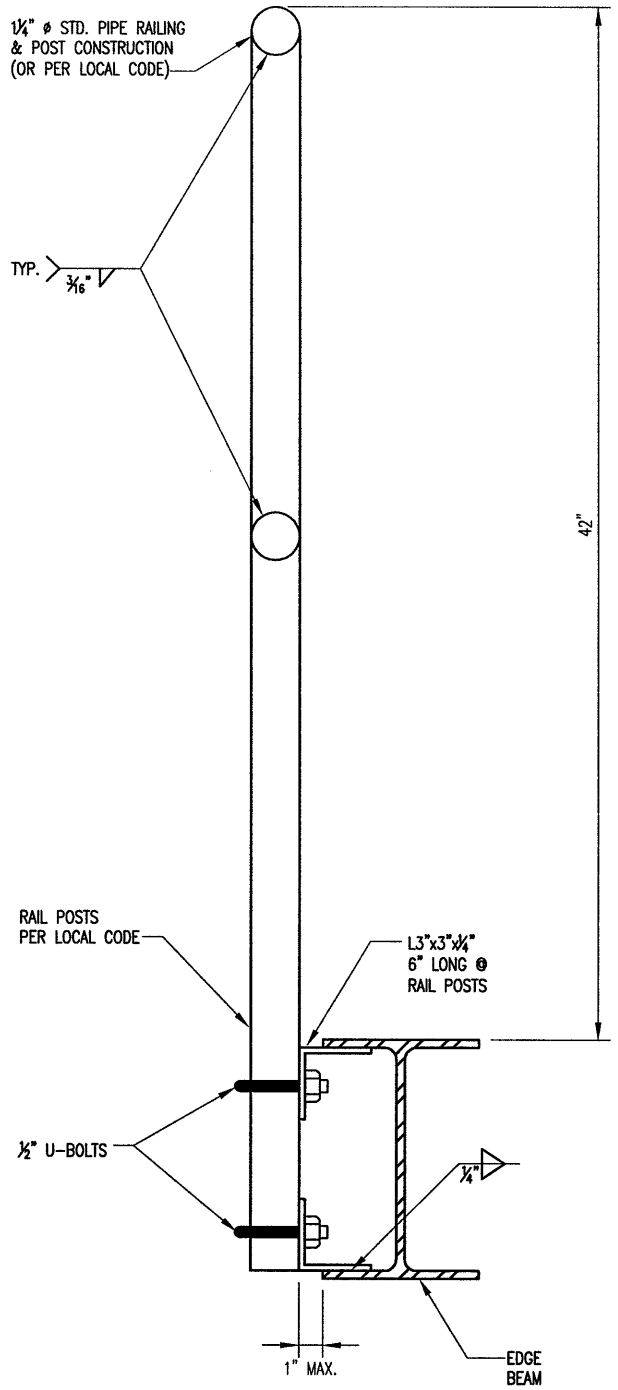
STATE OF MARYLAND · CHRISTOPHER B. MORIN · 2.23.11 · NO. 24552 · PROFESSIONAL ENGINEER

BC ARCHITECTS ENGINEERS
FALLS CHURCH, VA

PLATFORM SECTIONS AND DETAILS

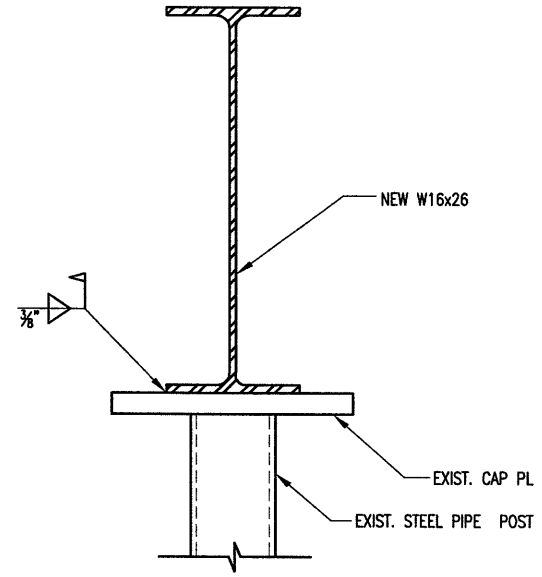
DRAWING NUMBER: 10128448-S-2
REV: 13

10-07-10 ARNOLD 09:25:31 Y:/Drawings - 2008/AT&T/Roof Top/Gill_Chateau Apartments - 10128448/CD's REVISED REV-10 08-16-10/S2.dwg



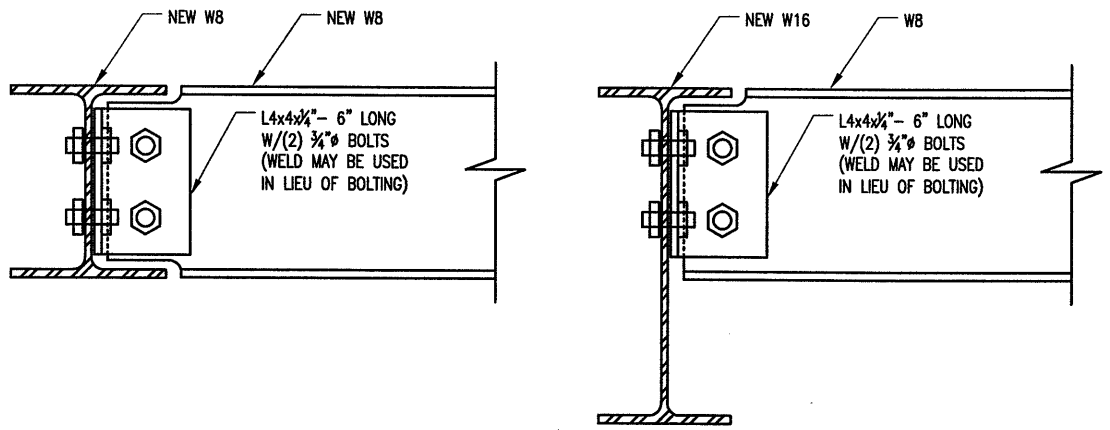
HANDRAIL DETAIL (1 / S-3)
SCALE: 1 1/2"=1'-0"

SCALE IN FEET
12" 9" 6" 0 1'-0"



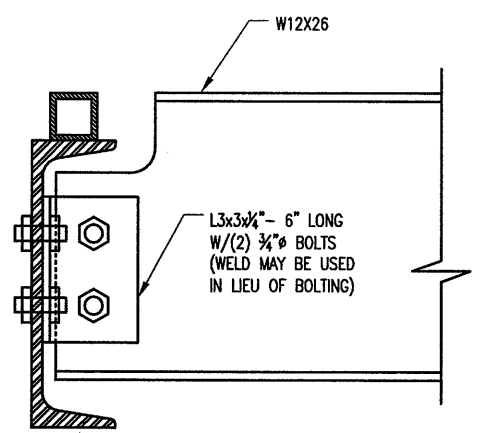
TYP. CAP PLATE DETAIL (2 / S-3)
SCALE: 1 1/2"=1'-0"

NOT USED (4 / S-3)
SCALE: N.T.S.



TYP. BEAM CONNECTION DETAIL (3 / S-3)
SCALE: 1 1/2"=1'-0"

SCALE IN FEET
12" 9" 6" 0 1'-0"



TYPICAL END-BEAM CONNECTION DETAIL (5 / S-3)
SCALE: 1 1/2"=1'-0"

BC architects engineers
5659 COLUMBIA PIKE, SUITE 101
FALLS CHURCH, VA 22041-2868
TEL: (703) 671-6000
FAX: (703) 671-6300

GILL_CHATEAU APARTMENT BUILDING
10128448_3821

9727 MT. PISGAH RD.
SILVER SPRING, MD 20903

at&t
7150 STANDARD DR
HANOVER, MD 21076

NO.	DATE	REVISIONS	BY	CHK	APP'D
14					
13	01-13-11	TMA & DIPLEXER MOUNTING DETAILS	AWS	CDM	BMQ
12	01-13-11	ADD (3) ANTENNAS AND RELOCATE SECTOR-3	AWS	CDM	BMQ
11	10-18-10	CLIENT COMMENTS	AWS	CDM	BMQ
10	08-16-10	CLIENT COMMENTS	AWS	CDM	BMQ
9	08-04-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
8	06-29-10	TELCO DEMARC AT GROUND FLOOR	AWS	CDM	BMQ
7	05-05-10	REVISED ELEC. DETAILS AND MOVE ANT. SECTOR 2	AWS	CDM	BMQ

SCALE: AS SHOWN | DESIGNED C. MORIN | DRAWN GMW

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LICENSE NO. 24552
EXPIRATION DATE: 11/17/11

STATE OF MARYLAND · CHRISTOPHER S. MORIN · 23.11 · NO. 24552 · PROFESSIONAL ENGINEER

BC ARCHITECTS ENGINEERS
FALLS CHURCH, VA

STRUCTURAL DETAILS

DRAWING NUMBER 10128448-S-3 | REV 13

10-08-10 ABI SOEMARKO 09:15:53 Y:/Drawings - 2008/AT&T/Roof Top/Gill_Chateau Apartments - 10128448/CD's REVISED REV-10 08-16-10/S3.dwg

AT&T

SITE NAME: **GILL**

FA#: **10128448**

USID: **100205**

COUNTY: **MONTGOMERY**

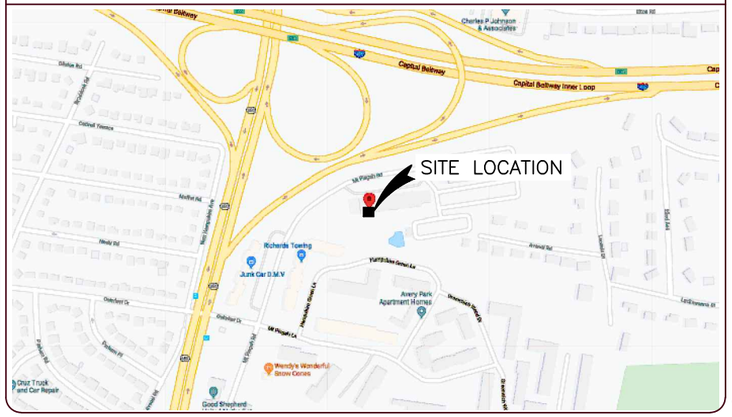
STRUCTURE TYPE: **EXISTING 151'-0" BUILDING**

PROJECT INFORMATION

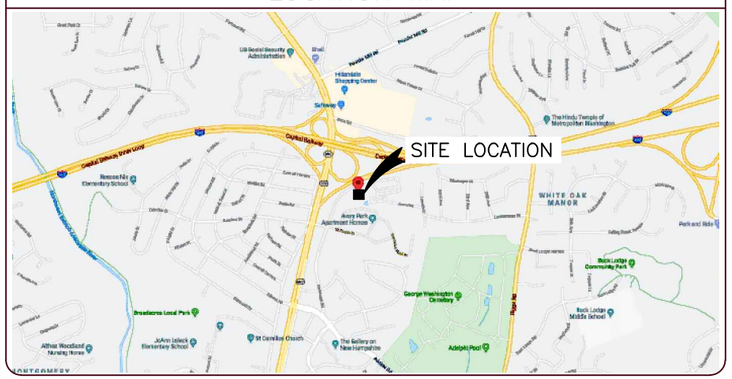
SITE ADDRESS:	9727 MOUNT PISGAH ROAD SILVER SPRING, MD 20903
LATITUDE (NAD83):	39.0166667° N
LONGITUDE (NAD83):	76.9750000° W
GROUND ELEVATION:	±326' (AMSL)
COUNTY:	MONTGOMERY
JURISDICTION:	MONTGOMERY COUNTY
ELECTRIC PROVIDER: PHONE:	PEPCO (202) 833-7500
TELCO PROVIDER: PHONE:	VERIZON (800 483-5000)
OCCUPANCY TYPE:	UNMANNED
ADA COMPLIANCE	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.

APPLICANT:	AT&T MOBILITY 7150 STANDARD DRIVE HANOVER, MD 21076
TOWER OWNER: ADDRESS:	HILLZO LIMITED PARTNERSHIP 1950 OLD GALLOWS RD, VIENNA, VA 22182 (602) 902-2000
A&E FIRM: ADDRESS:	TRYLON TSF 1825 W. WALNUT HILL LANE, STE#120 IRVING, TX 75038
CONTACT:	KATYA SERAVALLE
PHONE:	1-855-669-5421
EMAIL:	KATYA.SERAVALLE@TRYLON.COM

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

THE SCOPE OF WORK WILL BE COMPRISED OF:

- REMOVE (2) EXISTING ANTENNAS
- REMOVE (15) EXISTING RRH
- INSTALL (2) NEW ANTENNAS
- INSTALL (12) NEW RRHS
- REMOVE (9) EXISTING DC2
- REMOVE (12) EXISTING BATTERIES AS (3) STRINGS
- REMOVE GSM CABINET
- REMOVE ALL STAND ALONE DC/FIBER RUNS
- INSTALL (3) NEW DC9 RAYCAP
- INSTALL (9) NEW PWRT-606-S DC TRUNKS
- INSTALL (3) NEW RFFT-48SM-001 FIBER TRUNKS
- INSTALL (1) OUTDOOR DC12
- INSTALL EMERSON NETSURE BATTERY CABINET
- INSTALL (4) -48 170MHA BATTERY STRINGS

RFDS

RFDS ID: 3467371 ISSUE DATE: 10/10/2019 REVISION: V2020_0.1

UPDATED BY: oo6650 DATE/TIME UPDATED: 10/10/2019 @ 11:22:50 AM

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, PORTABLE WATER, OR TRASH DISPOSAL IS REQUIRED, NO COMMERCIAL SIGNAGE AND NO LANDSCAPING IS PROPOSED.

DO NOT SCALE DRAWINGS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR A 11"X17" SET. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CODE COMPLIANCE

ALL WORK & MATERIALS SHALL BE PERFORMED & INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

- 2015 BUILDING CODE
- 2014 NATIONAL ELECTRICAL CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- 2015 INTERNATIONAL FIRE PROTECTION ASSOCIATION
- LOCAL BUILDING CODES
- CITY/COUNTY ORDINANCES
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
- ANSI EIA/TIA-222-G
- TIA 607
- TELCORDIA GR-1275

DRIVING DIRECTIONS

FROM 7150 STANDARD DRIVE HANOVER, MD 21076:
GET ON MD-100 W FROM STANDARD DR, PARK CIR DR AND COCA COLA DR, TAKE I-95 S TO MD-650 S/NEW HAMPSHIRE AVE IN HILLANDALE. TAKE EXIT 28B FROM I-495 W, CONTINUE ON MD-650 S/NEW HAMPSHIRE AVE TO YOUR DESTINATION IN SILVER SPRING.

811 Know what's below. Call before you dig.

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN MARYLAND (EAST OF CHESAPEAKE BAY), CALL MISS UTILITY OF DELMARVA
TOLL FREE: 1-800-282-8555 OR www.missutilitydelmarva.net
MARYLAND STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

APPROVALS

AT&T (CM):	DATE:
SMARTLINK (PM):	DATE:
RF ENGINEER:	DATE:
SITE ACQUISITION:	DATE:
LANDLORD:	DATE:

SHEET INDEX

SHEET #	DESCRIPTION	REVISION #
T-1	TITLE SHEET	0
C-1	BUILDING PLAN	0
C-2	EQUIPMENT PLAN	0
C-3	TOWER ELEVATION	0
C-4	EXISTING ANTENNA LAYOUT	0
C-4A	PROPOSED ANTENNA LAYOUT	0
C-5	ANTENNA SCHEDULE	0
C-6	EQUIPMENT DETAILS	0
C-7	EQUIPMENT DETAILS	0
C-8	EQUIPMENT DETAILS	0
E-1	DC SURGE SUPPRESSION WIRING DIAGRAM	0
E-2	DC SURGE SUPPRESSION WIRING DIAGRAM	0
E-3	AC PANEL SCHEDULE	0
E-4	DC PANEL SCHEDULE	0
E-5	WIRING DIAGRAM	0
E-6	SYSTEM DIAGRAM	0
RF-1	RF PLUMBING DIAGRAM	0
RF-2	RF PLUMBING DIAGRAM	0
RF-3	RF PLUMBING DIAGRAM	0
RF-4	POWER LOAD CALCULATIONS	0
G-1	GROUNDING DETAILS	0
GN-1	GENERAL NOTES	0

AT&T

smartlink

Trylon

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

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D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

STATE OF MARYLAND · KIRK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

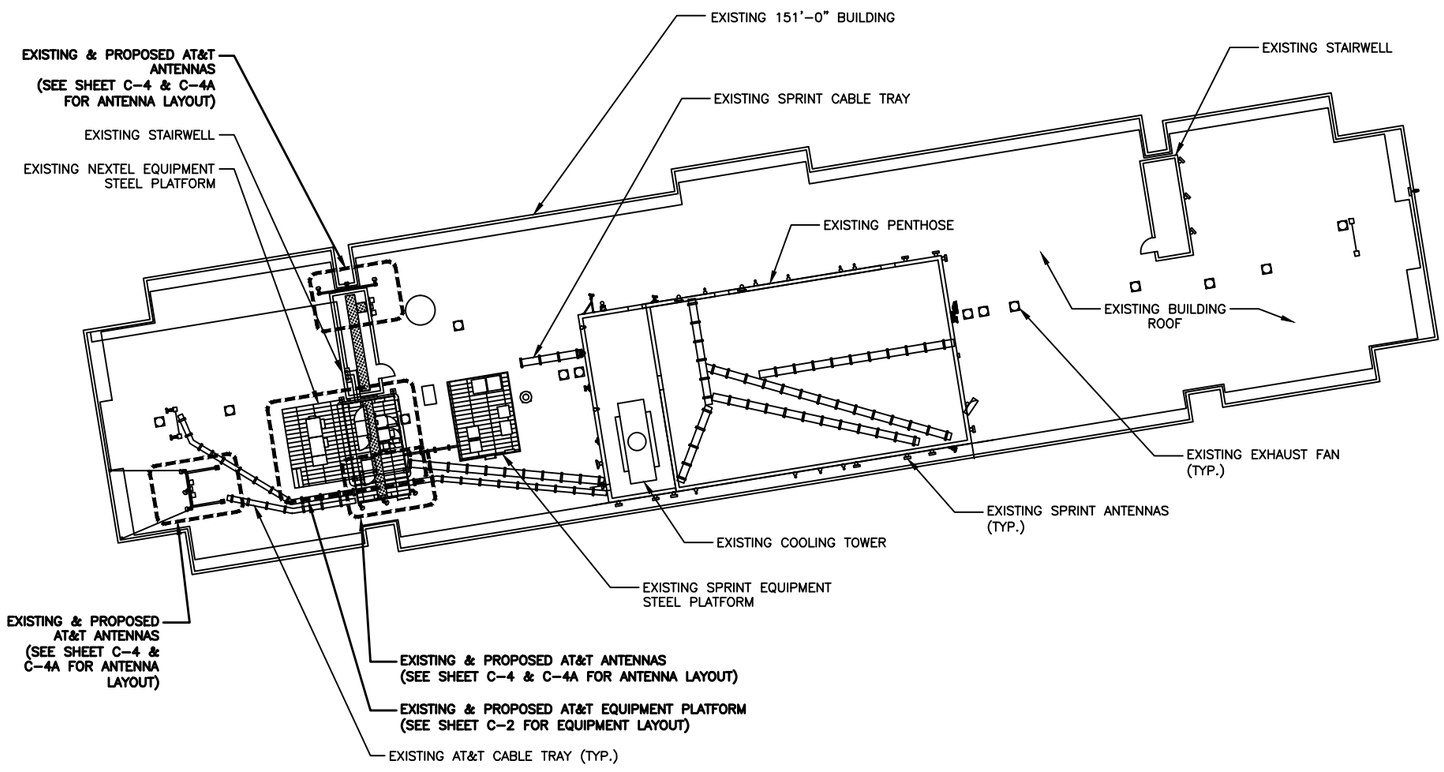
TITLE SHEET

SHEET NO.

T-1

GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL GIVE ALL NOTICES AND REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE SUBCONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID SUBCONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE SUBCONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE AT&T REPRESENTATIVE OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF SUBCONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE SUBCONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIAL AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE SUBCONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE THEMSELVES WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE SUBCONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS INFORMED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE SUBCONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE, UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS, AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEERING, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
11. THE SUBCONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVEMENTS, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE SUBCONTRACTOR SHALL REPAIR ANY DAMAGE THE MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. THE SUBCONTRACTOR SHALL MAINTAIN THE GENERAL WORK AREA AS CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST OR SMUDGES OF ANY NATURE.
13. THE SUBCONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
14. THE SUBCONTRACTOR SHALL NOTIFY THE AT&T REPRESENTATIVE (B&T ENGINEERING) WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE SUBCONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE AT&T REPRESENTATIVE (B&T ENGINEERING).
15. THE SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOBS.



TRUE NORTH

BUILDING PLAN

0 8' 16' 32'

SCALE: 1/32"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

1

AT&T

smartlink

Trylon

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SUBMITTALS

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STATE OF MARYLAND
ERIK R. HALL
No. 27217
PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

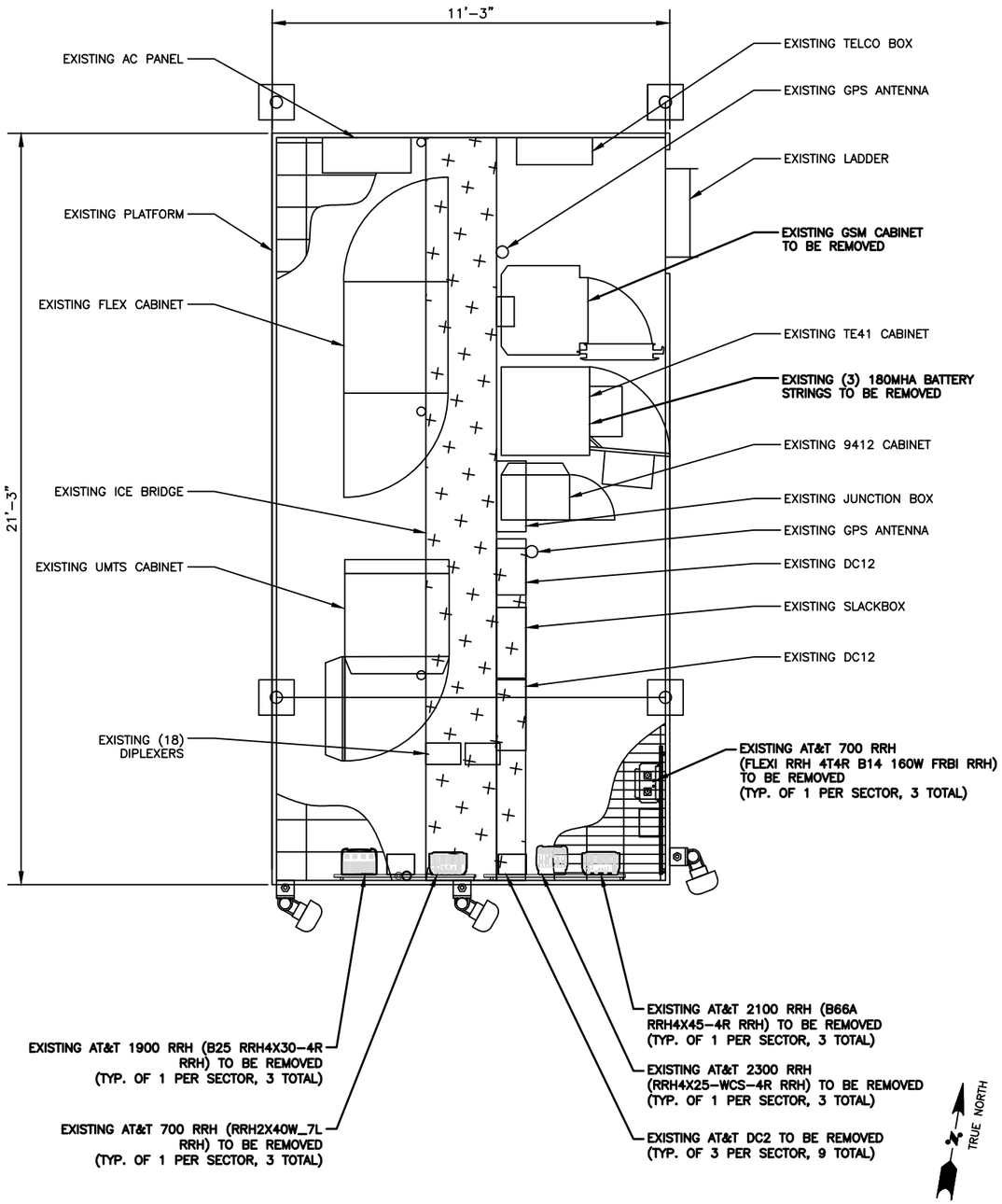
EXISTING BUILDING

SHEET DESCRIPTION

BUILDING PLAN

SHEET NO.

C-1

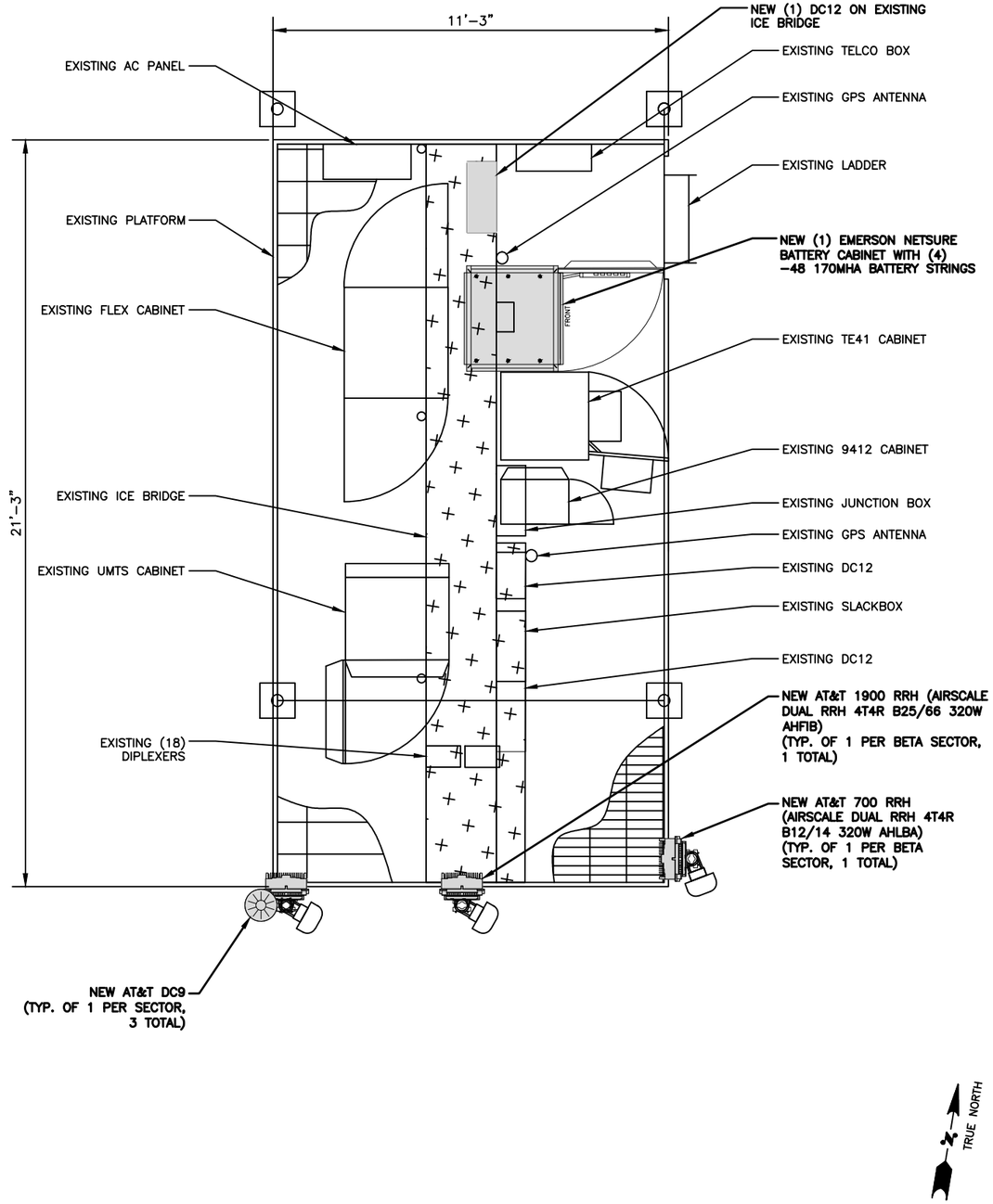


EXISTING EQUIPMENT LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

1



PROPOSED EQUIPMENT LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

2

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STATE OF MARYLAND · KIRE R. HALI · No. 27217 · PROFESSIONAL ENGINEER

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9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

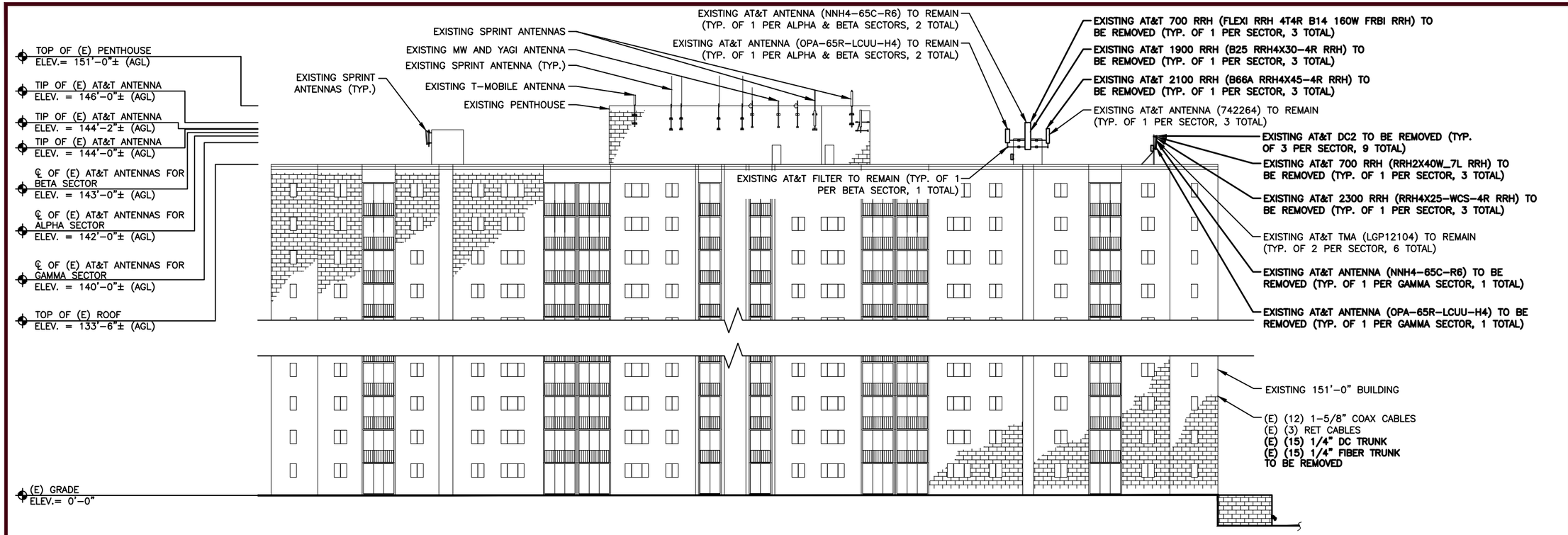
EXISTING BUILDING

SHEET DESCRIPTION

EQUIPMENT PLAN

SHEET NO.

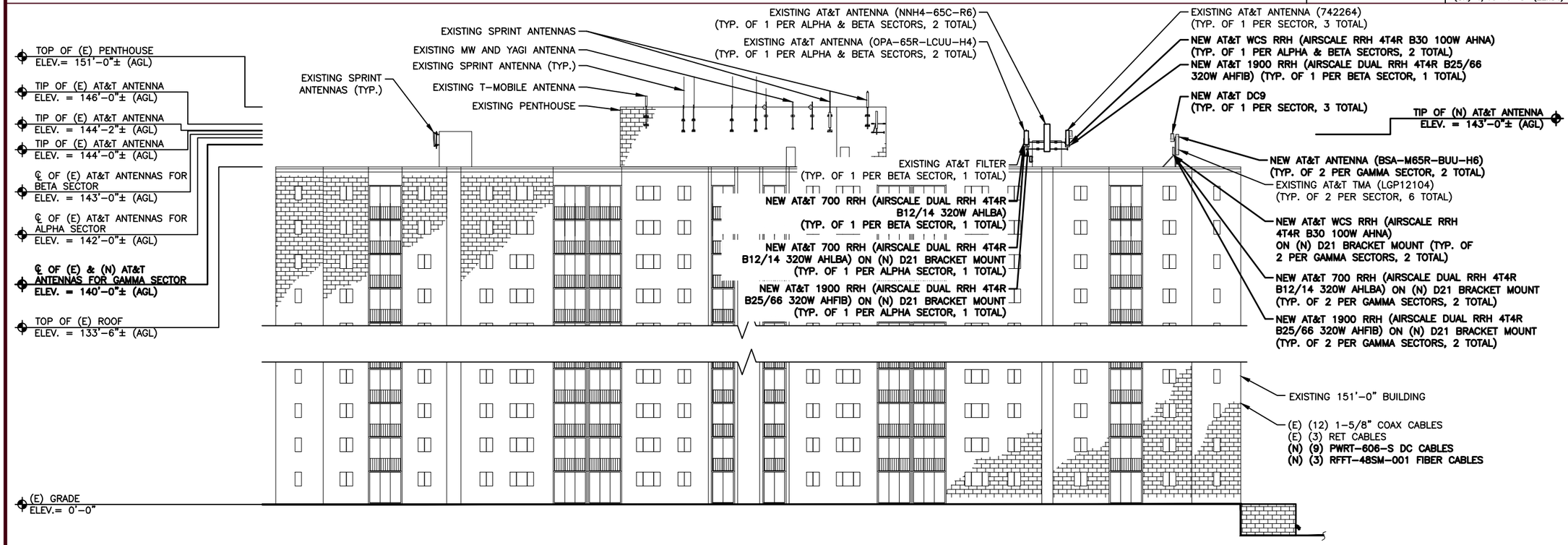
C-2



EXISTING TOWER ELEVATION-NORTH

SCALE: 1/32"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

1



PROPOSED TOWER ELEVATION-NORTH

SCALE: 1/32"=1'-0" (11x17)
(OR) 1/16"=1'-0" (22x34)

2

AT&T

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STATE OF MARYLAND
ERIK R. HALL
No. 27217
PROFESSIONAL ENGINEER

2-12-2020

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9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

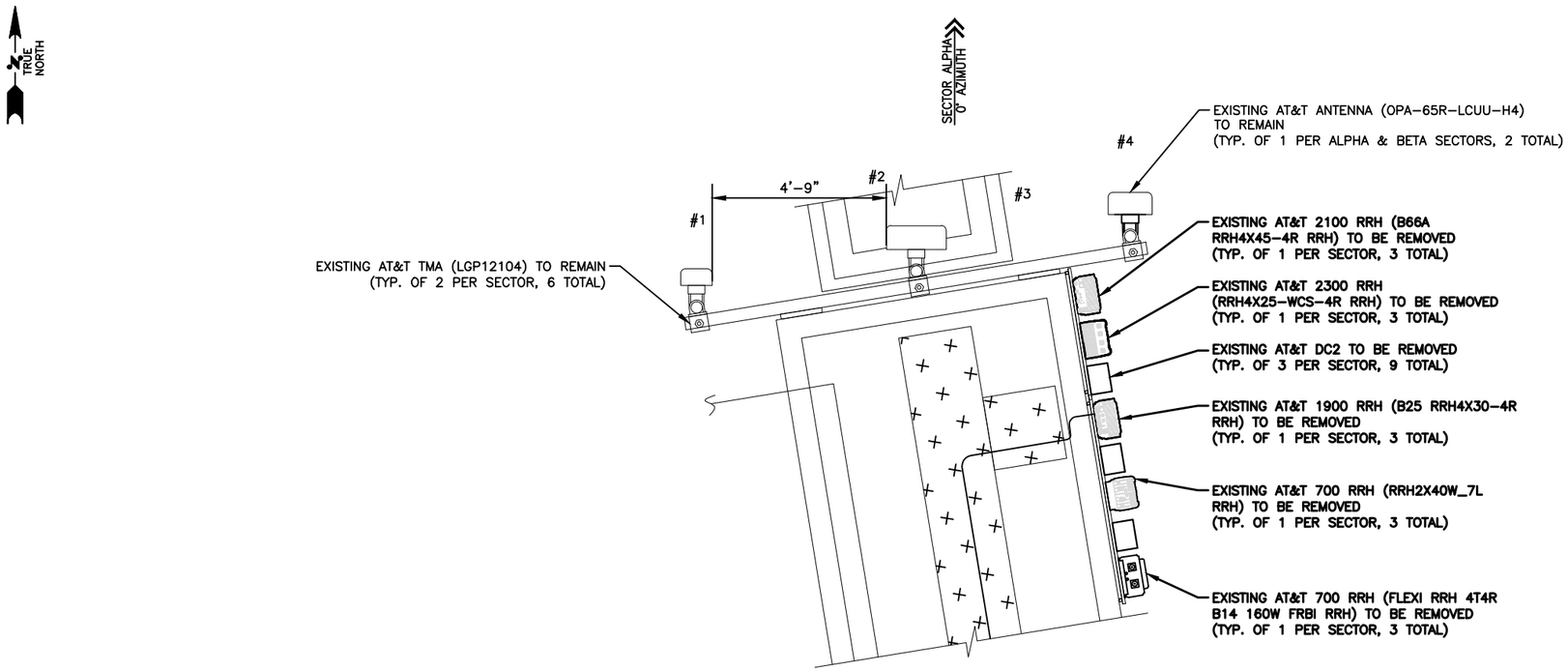
EXISTING BUILDING

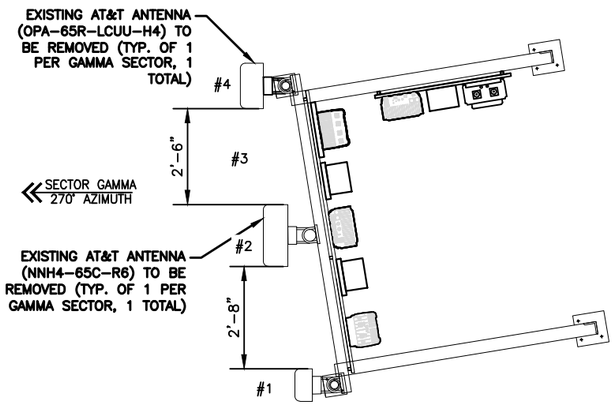
SHEET DESCRIPTION

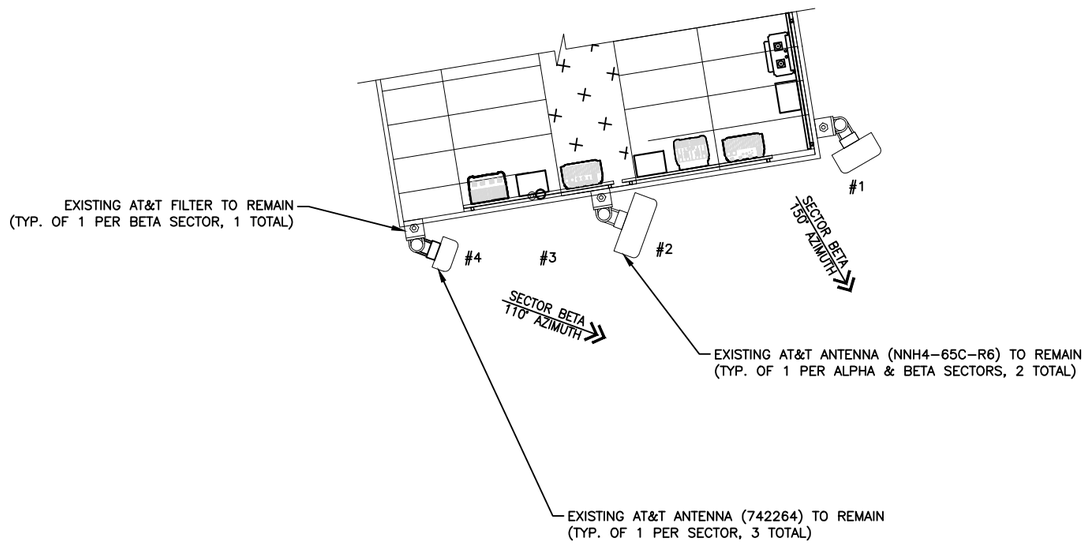
TOWER ELEVATION

SHEET NO.

C-3







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9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

EXISTING ANTENNA LAYOUT

SHEET NO.

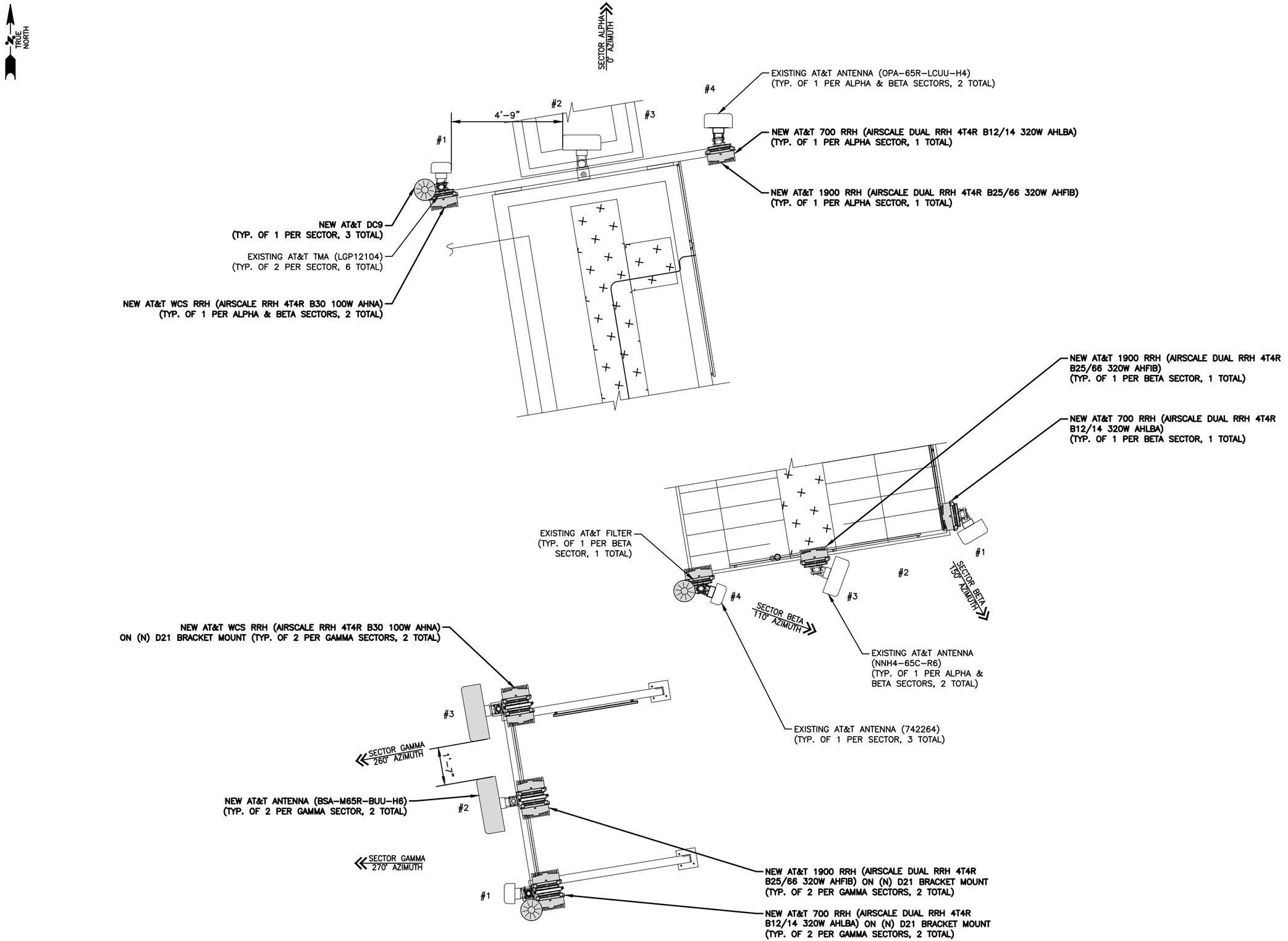
C-4

EXISTING ANTENNA LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

1



PROPOSED ANTENNA LAYOUT

0 2' 4'

SCALE: 1/4"=1'-0" (11x17)
(OR) 1/2"=1'-0" (22x34)

1

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STATE OF MARYLAND
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PROJECT TITLE

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9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

PROPOSED ANTENNA LAYOUT

SHEET NO.

C-4A

PROPOSED ANTENNA SCHEDULE

SECTOR	ANTENNA POSITION	ANTENNA MAKE/MODEL	RAD CENTER	AZIMUTH	M-TILT	E-TILT	RRH MAKE/MODEL	TMA/FILTER	FEEDLINE	FEEDLINE LENGTH
ALPHA	#1	(E) KATHREIN 742264	142'-0"	0°	0°	2°/2°	-	(E) (2) LGP12104	(E) (4) 1-5/8" COAX (E) (1) RET COAX	130'-0"
	#2	(E) COMMSCOPE NNH4-65C-R6	142'-0"	0°	**0°**	**5°/2°/2°/2°/5°**	**(N) (1) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA** **(N) (1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB**	-	**(N) (3) PWRT-606-S DC TRUNKS** **(N) (1) RFFT-48SM-001 FIBER TRUNK**	**130'-0"**
	#3	-	-	-	-	-	-	-	-	-
	#4	(E) CCL OPA-65R-LCUU-H4	142'-0"	0°	**0°**	**5°**	**(N) (1) AIRSCALE RRH 4T4R B30 100W AHNA**	-	**SHARED FIBER/DC**	**130'-0"**
BETA	#1	(E) CCL OPA-65R-LCUU-H4	143'-0"	150°	0°	6°	**(N) (1) AIRSCALE RRH 4T4R B30 100W AHNA**	(E) (1) KFTDR00110030	**SHARED FIBER/DC**	**130'-0"**
	#2	(E) COMMSCOPE NNH4-65C-R6	143'-0"	110°	**0°**	**12°/5°/5°/5°/10°**	**(N) (1) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA** **(N) (1) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB**	-	**(N) (3) PWRT-606-S DC TRUNKS** **(N) (1) RFFT-48SM-001 FIBER TRUNK**	**130'-0"**
	#3	-	-	-	-	-	-	-	-	-
	#4	(E) KATHREIN 742264	143'-0"	110°	**0°**	**2°/2°**	-	(E) (2) LGP12104	(E) (4) 1-5/8" COAX (E) (1) RET COAX	130'-0"
GAMMA	#1	(E) KATHREIN 742264	140'-0"	270°	2°	2°/2°	-	(E) (2) LGP12104	(E) (4) 1-5/8" COAX (E) (1) RET COAX	130'-0"
	#2	**(N) CCL BSA-M65R-BUU-H6**	**140'-0"**	260°	**0°**	**6°/6°/6°/6°/4°/4°/4°/4°/4°/4°**	**(N) (2) AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA** **(N) (2) AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB**	-	**(N) (3) PWRT-606-S DC TRUNKS** **(N) (1) RFFT-48SM-001 FIBER TRUNK**	**130'-0"**
	#3	**(N) CCL BSA-M65R-BUU-H6**	**140'-0"**	260°	**0°**	**2°/2°**	**(N) (2) AIRSCALE RRH 4T4R B30 100W AHNA**	-	**SHARED FIBER/DC**	**130'-0"**

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

ANTENNA SCHEDULE

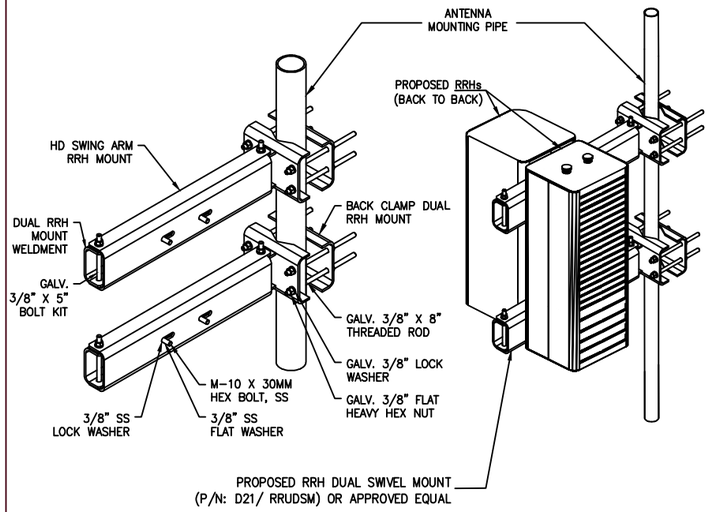
SHEET NO.

C-5

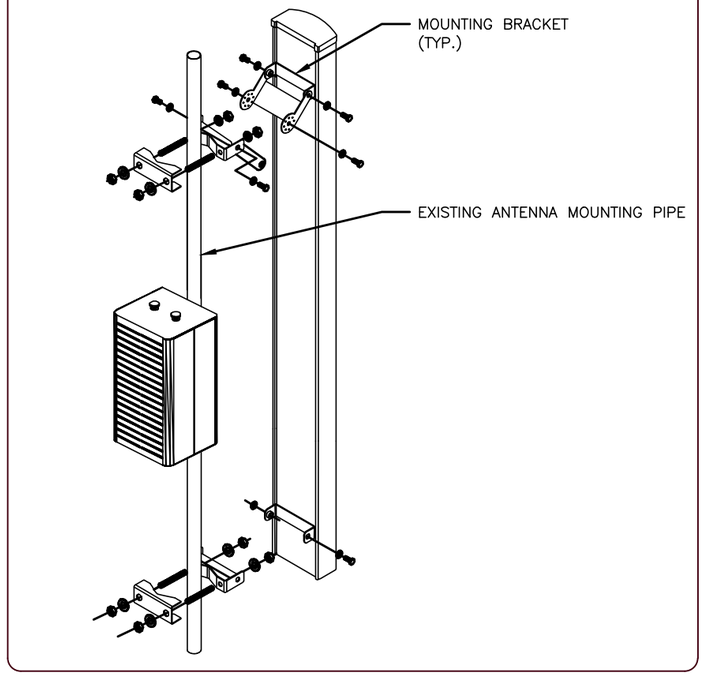
Dimensions (LxWxD)	72.0×26.5×9.7 in (1828×723×245 mm)
Survival Wind Speed	> 150 mph (> 240 kph)
Front Wind Load	438 lbs (1947 N) @ 100 mph (161 kph)
Side Wind Load	175 lbs (778 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	17.1 ft² (1.6 m²)
Weight *	101.0 lbs (45.9 kg)
RET System Weight	6.6 lbs (3.0 kg)
Connector	12 x 7-16 DIN female long neck
Mounting Pole	2 to 5 in (5 to 12 cm)

Ports	4 x Low Band Ports for 698-894 MHz		8 x High Band Ports for 1710-2360 MHz			
Frequency Range	690-806 MHz	824-894 MHz	1850-1990 MHz	1710-1755/2110-2155 MHz	1920-1980 MHz	2305-2360 MHz
Gain	16.4 dBi	17.3 dBi	18.0 dBi	17.2 dBi	18.4 dBi	18.1 dBi
Azimuth Beamwidth (-3dB)	34°	32°	31°	36°	29°	26°
Elevation Beamwidth (-3dB)	11.7°	10.3°	6.4°	7.2°	5.9°	5.6°
Electrical Downtilt	2° to 12°	2° to 12°	0° to 9°	0° to 9°	0° to 9°	0° to 9°
Elevation Sidelobes (1st Upper)	< -18 dB	< -18 dB	< -18 dB	< -18 dB	< -18 dB	< -18 dB
Front-to-Back Ratio @180°	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Front-to-Back Ratio over ± 20°	> 27 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 28 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Voltage Standing Wave Ratio(VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	300 watts	300 watts	300 watts	300 watts
Polarization	Dual Linear ±45°	Dual Linear ±45°	Dual Linear ±45°	Dual Linear ±45°	Dual Linear ±45°	Dual Linear ±45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

1 C-6 ANTENNA DETAIL
SCALE: NTS



2 C-6 RRH MOUNTING DETAIL
SCALE: NTS



3 C-6 ANTENNA MOUNTING DETAIL
SCALE: NTS

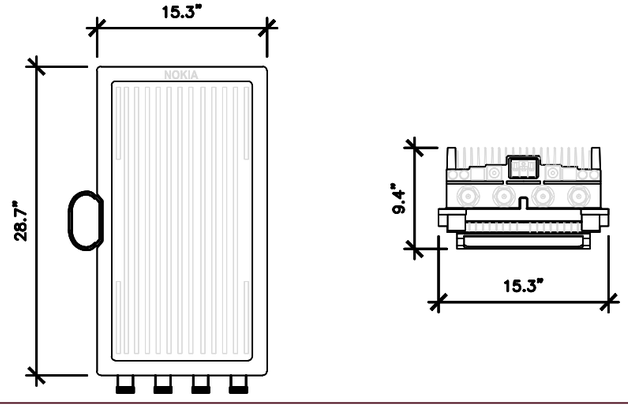
NOKIA AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA

DIMENSIONS, HXWXD: 560 X 308 X 149 (MM) (CORE)
28.7" X 15.3" X 9.4" (CORE)

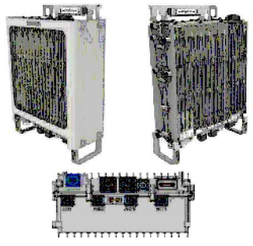
730 X 390 X 240 (MM)
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)

28.7" X 15.3" X 9.4"
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)

WEIGHT: < 46 (kg)
< 101.4 lbs
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)



4 C-6 NOKIA AIRSCALE DUAL RRH 4T4R B12/14 320W AHLBA DETAIL
SCALE: NTS



Ingress protection class	IP65
Installation options	Wall, Boot mount: Vertical wall/pole, Horizontal wall
Surge protection	Class II 5kA

Confidential

NOKIA

474861A AHNA AirScale RRH 4T4R B30 100W

Supported Frequency bands	3GPP band 30
Frequencies	DL 2350-2380 MHz, UL 2305-2315 MHz
Number of TX/RX paths	4/4
Instantaneous Bandwidth IBW	10 MHz
Occupied Bandwidth OBW	10 MHz
Output Power	4T4R 25W /TX
Dimensions (mm) Height x width x depth	336.5 x 306 x 140, Core only *(see more dimensions on next slide)*
Volume	14.4 Liters, Core only
Weight	Approx. 15.5 kg / 34.17 lbs, Core only Approx. 17.7Kg / 39.02 lbs including AirScale Mounting Bracket and Solar Cover
Supply Voltage / Voltage Range	DC-48V / -36V to -60V
Typical Power Consumption	Estimated 515 W @ 100% RF load
Antenna Ports	4TX/4RX, 4.3-10+
Optical Ports	2x CPRI 9.8 Gbps/ PR3_01 chaining
ALD Control Interfaces	AISG3.0 from ANT1,2, 3, 4 and RET (Power supply ANT1 and ANT3)
Other Interfaces	External Alarm Connector (up to 4 inputs)
Operational Temperature Range	-40°C to 55°C

5 C-6 NOKIA AIRSCALE RRH 4T4R B30 100W AHNA DETAIL
SCALE: NTS

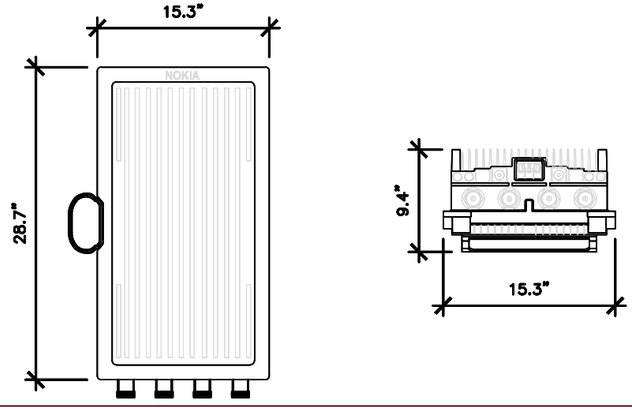
NOKIA AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB

DIMENSIONS, HxWxD: 560 X 308 X 149 (MM) (CORE)
28.7" X 15.3" X 9.4" (CORE)

730 X 390 X 240 (MM)
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)

28.7" X 15.3" X 9.4"
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)

WEIGHT: < 40 (kg)
< 88.2 lbs
(OVERALL NOT-TO-EXCEED WITH COVER AND BRACKET)



6 C-6 NOKIA AIRSCALE DUAL RRH 4T4R B25/66 320W AHFIB DETAIL
SCALE: NTS

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SUBMITTALS

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C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

STATE OF MARYLAND · KIRK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

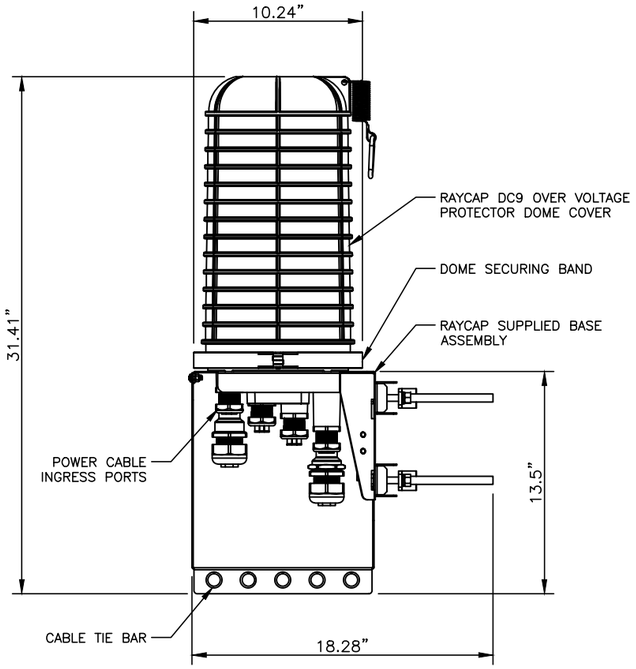
EXISTING BUILDING

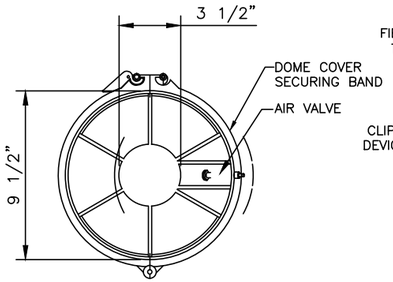
SHEET DESCRIPTION

EQUIPMENT DETAILS

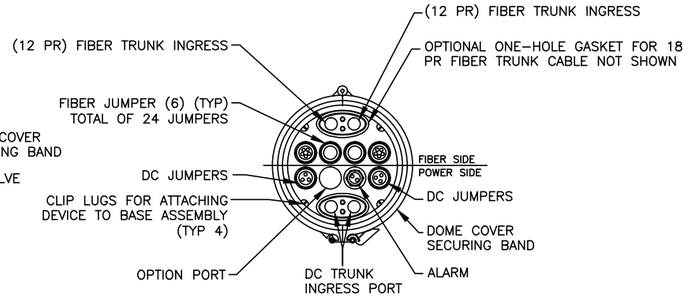
SHEET NO.

C-6





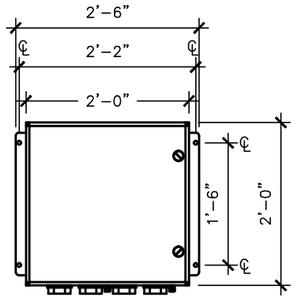
TOP VIEW



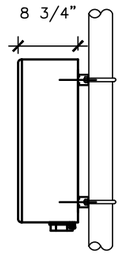
BOTTOM VIEW
DC9-48-60-24-8C-EV

RAYCAP DC9 (SQUID)	
LENGTH (H)	18.28"
WIDTH (W)	10.24"
HEIGHT (D)	31.4"
WEIGHT:	
SYSTEM	16.0 LBS
MOUNT	10.2 LBS
TOTAL:	26.2 LBS

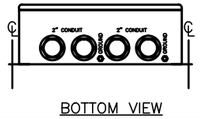
RAYCAP DC9 DETAILS — N.T.S. — 1



FRONT VIEW



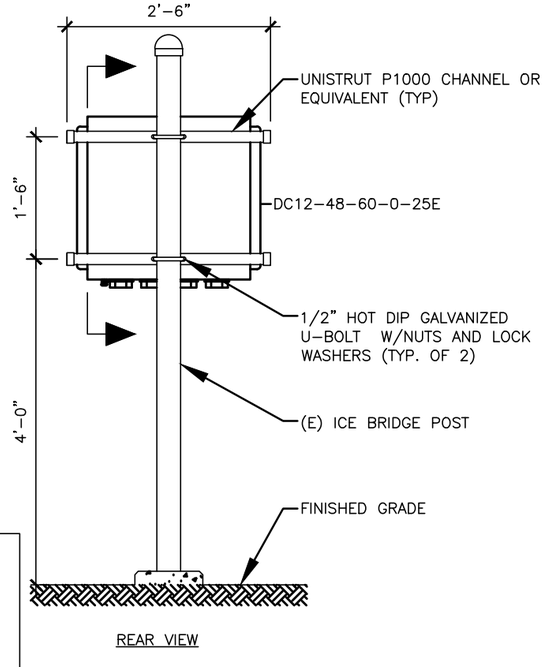
SIDE VIEW



BOTTOM VIEW

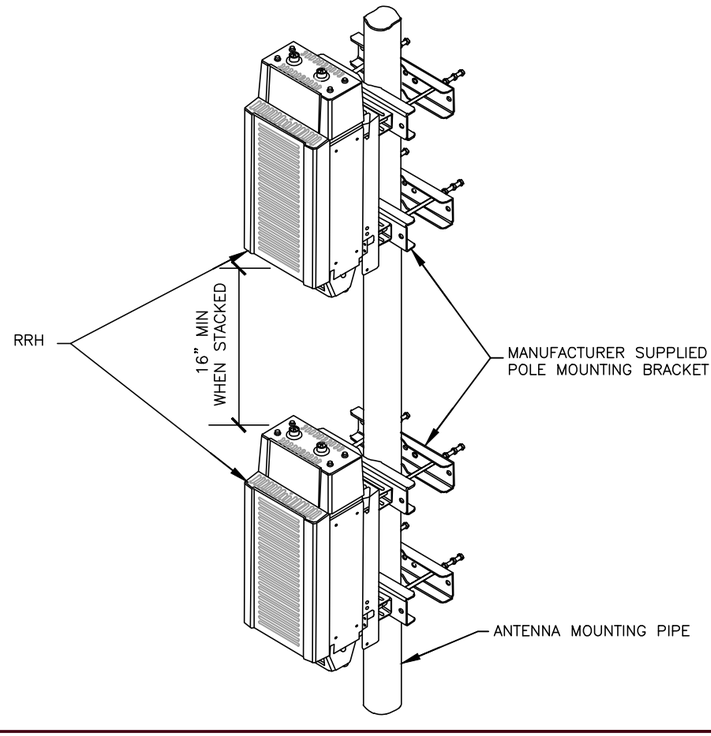
NOTES:

1. SUBCONTRACTOR SHALL SUPPLY AND INSTALL UNISTRUT (OR EQUIVALENT) MOUNTING CHANNELS.
2. SUBCONTRACTOR SHALL SUPPLY AND INSTALL ICE BRIDGE POSTS AS REQUIRED.
3. POSTS SHALL BE 3 1/2"O.D. SCHED. 40 PIPE (ASTM-A36, A53 OR EQUIVALENT).
4. SUBCONTRACTOR SHALL SUPPLY 3/8"ø UNISTRUT BOLTING HARDWARE AND SPRING NUTS. TYPICAL FOUR PER DC12. SUBCONTRACTOR SHALL BAG THE BOLTING HARDWARE AND HANG FROM INSTALLED UNISTRUT FRAME.
5. WEIGHT = 56.3lbs



REAR VIEW

DC12 DETAIL — N.T.S. — 2



RRH MOUNTING DETAIL — N.T.S. — 3

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

EQUIPMENT DETAILS

SHEET NO.

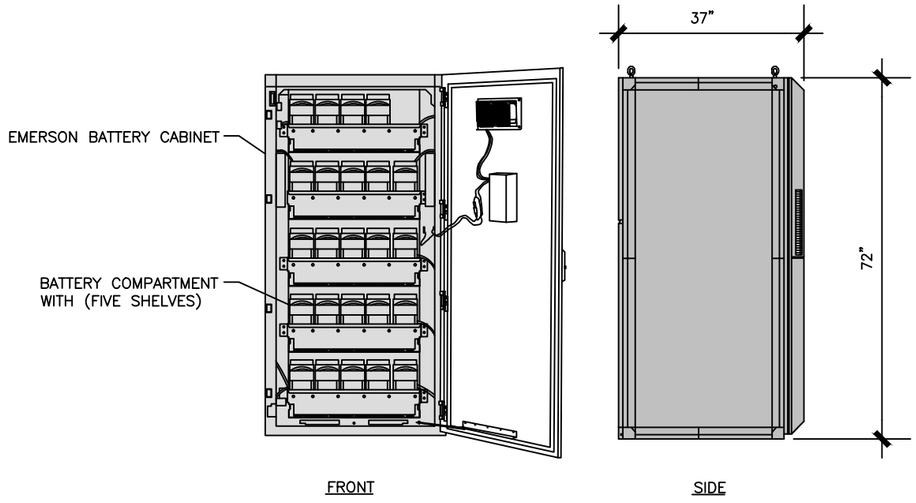
C-7

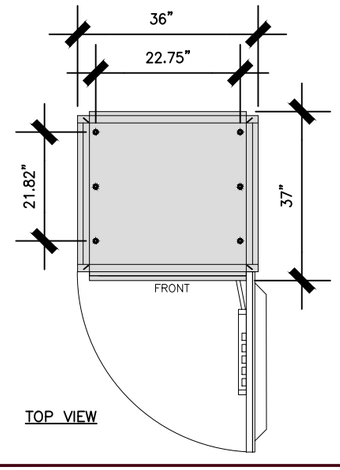
SIZE AND WEIGHT TABLE

BATTERY CABINET	WIDTH	DEPTH	HEIGHT	WEIGHT
NETXTEND OUTDOOR BATTERY CABINET	36"	37"	72"	980 LBS.

CLEARANCE

CLEARANCE	FRONT	REAR	SIDES
NETXTEND OUTDOOR BATTERY CABINET	36"	6"	2"





EMERSON BATTREY CABINET DETAIL | N.T.S. | 1

SBS-170F Battery Features and Benefits:

- Proven Long Service
- High energy density
- Up to two year shelf life
- Very low ventilation requirement
- Wide operating temperature range: -40°F (-40°C) to 122°F (50°C)

EnerSys PowerSafe SBS-170F Battery Specifications:

Chemistry:	Sealed Lead Acid
Voltage:	12 volts
Nominal Capacity:	170.0Ah
Terminals:	M6
Dimensions (L x W x H):	22.10 x 4.90 x 11.10
Weight (pounds):	115.7

170MHA BATTERY DETAIL | N.T.S. | 2

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9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

EQUIPMENT DETAILS

SHEET NO.

C-8

DC9 FIBER CONNECTIONS

FIBER PORT	RRH CONNECTION
1	B12/700
2	B25/1900
3	B30/AWS
4	FUTURE
5	FUTURE
6	FUTURE
7	FUTURE
8	FUTURE
9	FUTURE
10	FUTURE
11	FUTURE
12	FUTURE
13	FUTURE
14	FUTURE
15	FUTURE
16	FUTURE
17	FUTURE
18	FUTURE
19	FUTURE
20	FUTURE
21	FUTURE
22	FUTURE
23	FUTURE
24	FUTURE

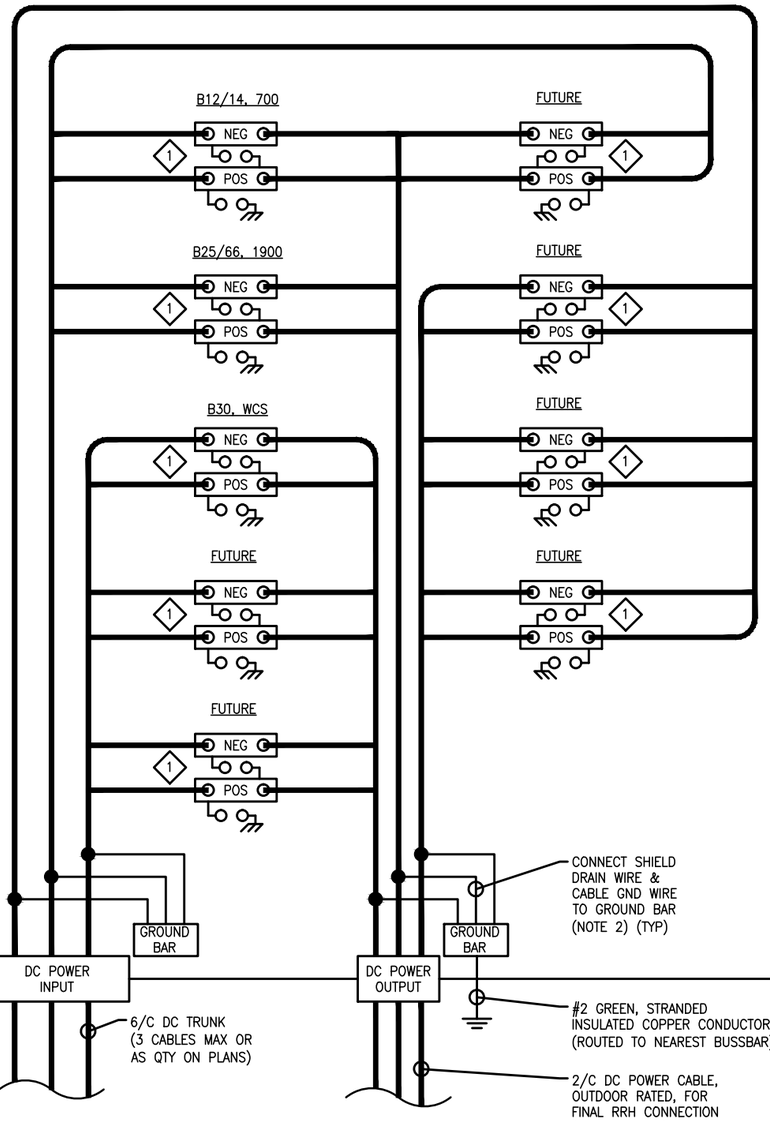
FIBER INPUT

24PR FIBER CABLE

FIBER OUTPUT

2PR SINGLE MODE FIBER, OUTDOOR RATED, FOR FINAL RRH CONNECTION (TYP PER RRH)

DC9 DC POWER CONNECTIONS



NOTES:

1. TRUNK GLAND KITS:
   - TRUNK GLAND KIT A: OVAL GASKET FOR #4 AND #6AWG TRUNK (CEQ. 21428)
   - TRUNK GLAND KIT B: OVAL GASKET FOR (2) #4 AWG TRUNKS (CEQ. 21429)
   - TRUNK GLAND KIT C: OVAL GASKET FOR (2) #8 AWG TRUNKS (CEQ. 21434)
2. WHEN SHIELDED CABLE IS USED CONNECT CABLE SHIELD DRAIN WIRE AND GROUND WIRE TO GROUND BAR.
3. FIRST SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED) RRH ON ALPHA SECTOR. IN THE EVENT THE ALARM CABLE CANNOT BE CONNECTED TO ALPHA IT WILL BE ACCEPTABLE TO ALARM TO THE CLOSEST PHYSICAL SECTOR ON AN EXCEPTION BASIS.
4. 2ND SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED) RRH ON BETA SECTOR.
4. 3RD SQUID INSTALLED WILL BE ALARMED TO THE LOWEST BAND (OR FIRST INSTALLED) RRH ON GAMMA SECTOR.
5. AN RRH WILL NEVER HAVE MORE THAN ONE SQUID ALARMED ON IT.
6. SQUID ALARMS ARE NOT TO BE DAISY CHAINED.

◇2 = LC CONNECTOR

◇1 = STRIKESORB PROTECTION MODULE BY RAYCAP

1/E-1 RAYCAP DC9-48-60-24-8C-EV
SCALE: N.T.S

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0	02/11/20	90% CD	SAR

STATE OF MARYLAND · ERIK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

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GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

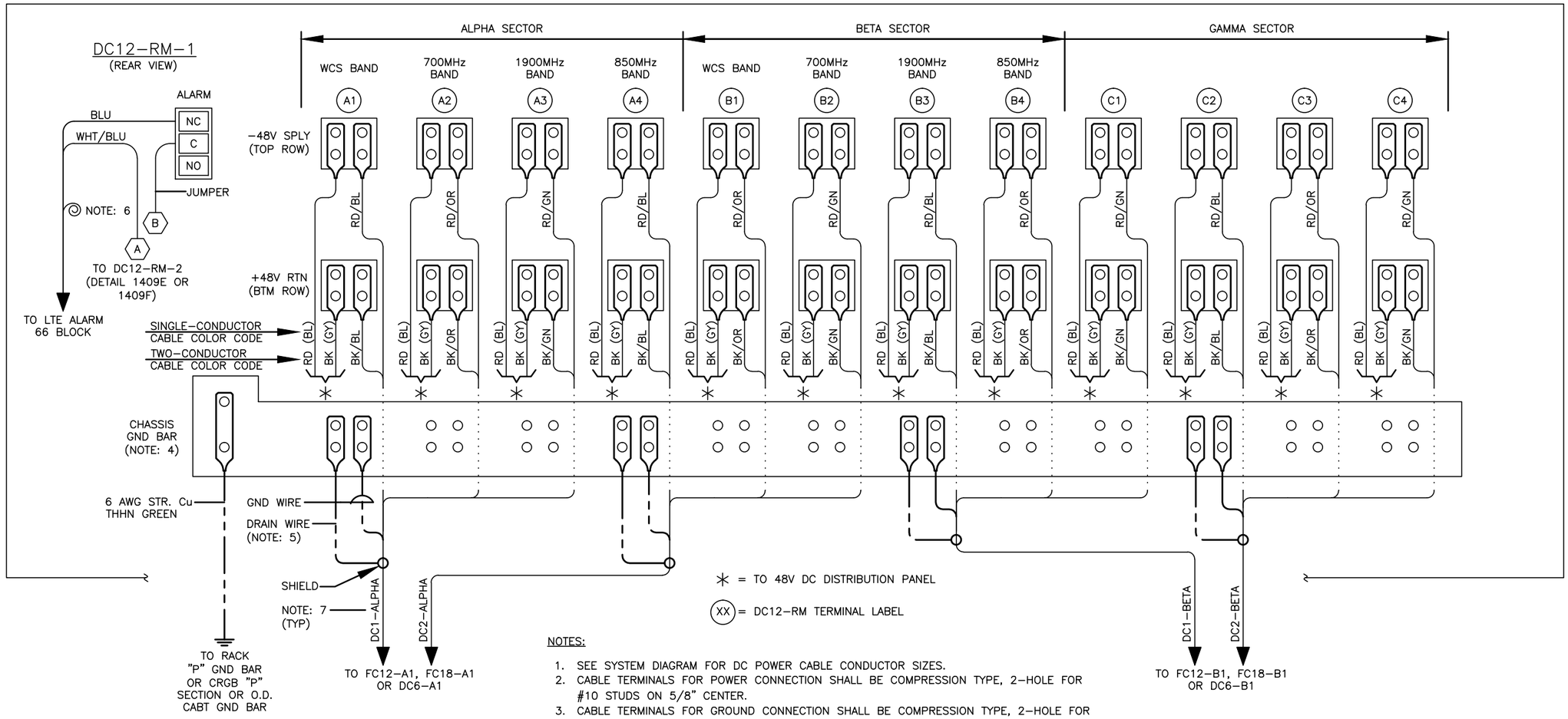
EXISTING BUILDING

SHEET DESCRIPTION

DC SURGE SUPPRESSION WIRING DIAGRAM

SHEET NO.

E-1



NOTES:

1. SEE SYSTEM DIAGRAM FOR DC POWER CABLE CONDUCTOR SIZES.
2. CABLE TERMINALS FOR POWER CONNECTION SHALL BE COMPRESSION TYPE, 2–HOLE FOR #10 STUDS ON 5/8" CENTER.
3. CABLE TERMINALS FOR GROUND CONNECTION SHALL BE COMPRESSION TYPE, 2–HOLE FOR 1/4" STUDS ON 5/8" CENTER.
4. CHASSIS GROUND BAR TERMINAL IS SUPPLIED WITH UNIT AND IS 2–HOLE, 1/4" ON 1" CENTER.
5. DRAIN WIRE CONNECTION APPLICABLE ONLY WHERE SHIELDED CABLE IS INSTALLED.
6. TURN BACK AND STORE UNUSED CONDUCTORS.
7. CABLES AND WIRES SHALL BE LABELED BY MARKET CONVENTION. LABELS SHOWN ARE REPRESENTATIVE.

CONNECTION DIAGRAM RACK–MOUNTED SURGE SUPPRESSION SYSTEM DC12–RM–1 FOR SECTORIZED SITE

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D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

STATE OF MARYLAND
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No. 27217
PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

DC SURGE SUPPRESSION WIRING DIAGRAM

SHEET NO.

E–2

PANEL 'DISTRIBUTION PANEL' SCHEDULE

120/240V, 1 PHASE, 3W — Square D #QO
200A BUS — 200A MAIN BKR

MAIN BREAKER RATING (A): 200 — SYSTEM VOLTAGE (V): 240

Type	DESCRIPTION	VA	c/nc	BKR	POSN	L1	L2	POSN	BKR	c/nc	VA	DESCRIPTION	Type
dual	UMTS CABINET	4875	nc	100	1	6892		2	30	c	2017	RECT 4	dual
		4875	nc		3		6892	4		c	2017		
dual	FLEX CABINET	1455	nc	100	5	3472		6	30	c	2017	RECT 5	dual
		1275	nc		7		3292	8		c	2017		
dual	UNLABELED	0	nc	20	9	0		10	30	c	0	RECT 6	dual
		0	nc		11		0	12		c	0		
dual	RECT 1	2017	c	30	13	2017		14	30	c	0	RECT 7	dual
		2017	c		15		2017	16		c	0		
dual	RECT 2	2017	c	30	17	2017		18	30	c	0	RECT 8	dual
		2017	c		19		2017	20		c	0		
dual	RECT 3	2017	c	30	21	2017		22	30	c	0	RECT 9	dual
		2017	c		23		2017	24		c	0		
	BLANK				25	1175		26	30	nc	1175	LUCENT AC	dual
	BLANK				27		0	28				BLANK	
	BLANK				29	0		30				BLANK	
	BLANK				31		0	32				BLANK	
	BLANK				33	0		34				BLANK	
	BLANK				35		0	36				BLANK	
	BLANK				37	0		38				BLANK	
	BLANK				39		0	40				BLANK	
	NOT PRESENT				41	0		42				NOT PRESENT	

PHASE TOTALS (VA):	17590	16235	
CURRENT PER PHASE (A):	168	156	Amperes/phase cannot exceed main breaker rating
PANEL TOTAL (VA):	33825		Legend: c = continuous, nc = non-continuous
PANEL CAPACITY (kVA):	48.0	CONNECTED LOAD (kVA):	33.8
PANEL LOADING (100% non-cont. load) (kVA):	13.7		
PANEL LOADING (125% continuous load) (kVA):	25.2		
PANEL LOADING (TOTAL) (kVA):	38.9		
SPARE CAPACITY (kVA):	9.1		

1 / E-3 EXISTING AC MAIN PANEL SCHEDULE
SCALE: NTS

PANEL 'DISTRIBUTION PANEL' SCHEDULE

120/240V, 1 PHASE, 3W — Square D #QO

MAIN BREAKER RATING (A): 100 — SYSTEM VOLTAGE (V): 240

Type	DESCRIPTION	VA	c/nc	BKR	POSN	L1	L2	POSN	BKR	c/nc	VA	DESCRIPTION	Type
single	LIGHTS	360	nc	10	1	360		2	20	nc	0	CONVERTER	single
single	GFCI	180	nc	20	3		180	4	20	nc	0	SPARE	dual
dual	AC 1	1095	nc	10	5	1095		6		nc	0		
		1095	nc		7		1095	8				BLANK	
	BLANK				9	0		10				BLANK	
	BLANK				11		0	12				BLANK	
	BLANK				13	0		14				BLANK	
	BLANK				15		0	16				BLANK	
	NOT PRESENT				17	0		18				NOT PRESENT	
	NOT PRESENT				19		0	20				NOT PRESENT	
	NOT PRESENT				21	0		22				NOT PRESENT	
	NOT PRESENT				23		0	24				NOT PRESENT	
	NOT PRESENT				25	0		26				NOT PRESENT	
	NOT PRESENT				27		0	28				NOT PRESENT	
	NOT PRESENT				29	0		30				NOT PRESENT	
	NOT PRESENT				31		0	32				NOT PRESENT	
	NOT PRESENT				33	0		34				NOT PRESENT	
	NOT PRESENT				35		0	36				NOT PRESENT	
	NOT PRESENT				37	0		38				NOT PRESENT	
	NOT PRESENT				39		0	40				NOT PRESENT	
	NOT PRESENT				41	0		42				NOT PRESENT	

PHASE TOTALS (VA):	1455	1275	
CURRENT PER PHASE (A):	12	11	Amperes/phase cannot exceed main breaker rating
PANEL TOTAL (VA):	2730		Legend: c = continuous, nc = non-continuous
PANEL CAPACITY (kVA):	24.0	CONNECTED LOAD (kVA):	2.7
PANEL LOADING (100% non-cont. load) (kVA):	2.7		
PANEL LOADING (125% continuous load) (kVA):	0.0		
PANEL LOADING (TOTAL) (kVA):	2.7		
SPARE CAPACITY (kVA):	21.3		

2 / E-3 EXISTING AC SUB PANEL SCHEDULE
SCALE: NTS

PANEL 'DISTRIBUTION PANEL' SCHEDULE

120/240V, 1 PHASE, 3W — Square D #QO
200A BUS — 200A MAIN BKR

MAIN BREAKER RATING (A): 200 — SYSTEM VOLTAGE (V): 240

Type	DESCRIPTION	VA	c/nc	BKR	POSN	L1	L2	POSN	BKR	c/nc	VA	DESCRIPTION	Type
dual	UMTS CABINET	4875	nc	100	1	6892		2	30	c	2017	RECT 4	dual
		4875	nc		3		6892	4		c	2017		
dual	FLEX CABINET	1275	nc	100	5	3292		6	30	c	2017	RECT 5	dual
		1455	nc		7		3472	8		c	2017		
dual	UNLABELED	0	nc	20	9	2017		10	30	c	2017	RECT 6	dual
		0	nc		11		2017	12		c	2017		
dual	RECT 1	2017	c	30	13	2017		14	30	c	0	RECT 7	dual
		2017	c		15		2017	16		c	0		
dual	RECT 2	2017	c	30	17	2017		18	30	c	0	RECT 8	dual
		2017	c		19		2017	20		c	0		
dual	RECT 3	2017	c	30	21	2017		22	30	c	0	RECT 9	dual
		2017	c		23		2017	24		c	0		
	BLANK				25	1175		26	30	nc	1175	LUCENT AC	dual
	BLANK				27		180	28	20	nc	180	BATT CAB GFCI	single
	BLANK				29	540		30	15	nc	540	BATT CAB HEAT	single
	BLANK				31		0	32				BLANK	
	BLANK				33	0		34				BLANK	
	BLANK				35		0	36				BLANK	
	BLANK				37	0		38				BLANK	
	BLANK				39		0	40				BLANK	
	NOT PRESENT				41	0		42				NOT PRESENT	

PHASE TOTALS (VA):	19967	18612	
CURRENT PER PHASE (A):	192	180	Amperes/phase cannot exceed main breaker rating
PANEL TOTAL (VA):	38579		Legend: c = continuous, nc = non-continuous
PANEL CAPACITY (kVA):	48.0	CONNECTED LOAD (kVA):	38.6
PANEL LOADING (100% non-cont. load) (kVA):	14.4		
PANEL LOADING (125% continuous load) (kVA):	30.3		
PANEL LOADING (TOTAL) (kVA):	44.6		
SPARE CAPACITY (kVA):	3.4		

3 / E-3 PROPOSED AC MAIN PANEL SCHEDULE
SCALE: NTS

PANEL 'DISTRIBUTION PANEL' SCHEDULE

120/240V, 1 PHASE, 3W — Square D #QO

MAIN BREAKER RATING (A): 100 — SYSTEM VOLTAGE (V): 240

Type	DESCRIPTION	VA	c/nc	BKR	POSN	L1	L2	POSN	BKR	c/nc	VA	DESCRIPTION	Type
single	LIGHTS	360	nc	10	1	360		2	20	nc	0	CONVERTER	single
single	GFCI	180	nc	20	3		180	4	20	nc	0	SPARE	dual
dual	AC 1	1095	nc	10	5	1095		6		nc	0		
		1095	nc		7		1095	8				BLANK	
	BLANK				9	0		10				BLANK	
	BLANK				11		0	12				BLANK	
	BLANK				13	0		14				BLANK	
	BLANK				15		0	16				BLANK	
	NOT PRESENT				17	0		18				NOT PRESENT	
	NOT PRESENT				19		0	20				NOT PRESENT	
	NOT PRESENT				21	0		22				NOT PRESENT	
	NOT PRESENT				23		0	24				NOT PRESENT	
	NOT PRESENT				25	0		26				NOT PRESENT	
	NOT PRESENT				27		0	28				NOT PRESENT	
	NOT PRESENT				29	0		30				NOT PRESENT	
	NOT PRESENT				31		0	32				NOT PRESENT	
	NOT PRESENT				33	0		34				NOT PRESENT	
	NOT PRESENT				35		0	36				NOT PRESENT	
	NOT PRESENT				37	0		38				NOT PRESENT	
	NOT PRESENT				39		0	40				NOT PRESENT	
	NOT PRESENT				41	0		42				NOT PRESENT	

PHASE TOTALS (VA):	1455	1275	
CURRENT PER PHASE (A):	12	11	Amperes/phase cannot exceed main breaker rating
PANEL TOTAL (VA):	2730		Legend: c = continuous, nc = non-continuous
PANEL CAPACITY (kVA):	24.0	CONNECTED LOAD (kVA):	2.7
PANEL LOADING (100% non-cont. load) (kVA):	2.7		
PANEL LOADING (125% continuous load) (kVA):	0.0		
PANEL LOADING (TOTAL) (kVA):	2.7		
SPARE CAPACITY (kVA):	21.3		

4 / E-3 PROPOSED AC SUB PANEL SCHEDULE
SCALE: NTS

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Trylon

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SUBMITTALS

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A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

STATE OF MARYLAND · ELKE R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

AC PANEL SCHEDULE

SHEET NO.

E-3

NOTES:

1. SWITCH OFF EXISTING DC BREAKERS AFTER RRHs HAVE BEEN DECOMMISSIONED, RELABEL AS "SPARE".

TIER 1 (LOWER) VOLTAGE: −48V
MAX. TIER BUS CURRENT: 600A

POSITION	DESCRIPTION	BRKR (A)
1	**(E) SPARE**	**15**
2	**(E) SPARE**	**15**
3	**(E) SPARE**	**15**
4	**(E) SPARE**	**15**
5	**(E) SPARE**	**15**
6	**(E) SPARE**	**15**
7	**(E) NOKIA FSM4 BBU**	**20**
8		
9	**(E) SPARE**	**25**
10	**(E) SPARE**	**25**
11	**(E) SPARE**	**25**
12		

NOTES:

1. REMOVE UNUSED BREAKERS, INSTALL NEW CIRCUIT BREAKERS FOR NEW RRHs AS SHOWN BELOW.

TIER 2 VOLTAGE: −48V
MAX. TIER BUS CURRENT: 600A

POSITION	DESCRIPTION	BRKR (A)
13	(N) B12/14 RRH, SECTOR A	50
14	(N) B12/14 RRH, SECTOR B	50
15	(N) B12/14 RRH, SECTOR C	50
16	(N) B25/66 RRH, SECTOR A	50
17	(N) B25/66 RRH, SECTOR B	50
18	(N) B25/66 RRH, SECTOR C	50
19	(N) B30 RRH, SECTOR A	25
20	(N) B30 RRH, SECTOR B	25
21	(N) B30 RRH, SECTOR C	25
22		
23		
24		

TIER 3 (OPTIONAL − NOTE: 4) VOLTAGE: −48V
MAX. TIER BUS CURRENT: 600A

POSITION	DESCRIPTION	BRKR (A)
25	(E) GSM	80A
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		

TIER 4 (UPPER) VOLTAGE: −48V
MAX. TIER BUS CURRENT: 600A

POSITION	DESCRIPTION	BRKR (A)
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		

DC BREAKER SIZE	ALPHA PART #	AT&T NEQ #
1A/1P	**Unavailable**	**Not Applicable**
3A/1P	470-301-10	NEQ 10356
5A/1P	470-302-10	NEQ 10357
10A/1P	470-303-10	NEQ 10358
15A/1P	470-304-10	NEQ 10359
16A/1P	**Unavailable**	**Not Applicable**
20A/1P	470-305-10	NEQ 10360
25A/1P	470-306-10	NEQ 10361
30A/1P	470-307-10	NEQ 10362
35A/1P	**Unavailable**	**Not Applicable**
40A/1P	470-309-10	NEQ 10364
45A/1P	**Unavailable**	**Not Applicable**
50A/1P	470-311-10	NEQ 10366
60A/1P	470-312-10	NEQ 10367
70A/1P	**Unavailable**	**Not Applicable**
75A/1P	**Unavailable**	**Not Applicable**
80A/1P	470-314-10	NEQ 10369
90A/1P	**Unavailable**	**Not Applicable**
100A/1P	470-316-10	NEQ 10371
100A/2P	**Unavailable**	**Not Applicable**
125A/2P	**Unavailable**	**Not Applicable**
150A/2P	747-148-20-000	NEQ 10373
200A/3P	**Unavailable**	**Not Applicable**
225A/3P	**Unavailable**	**Not Applicable**
250A/3P	747-221-20-000	NEQ 10377

ARGUS DC CIRCUIT BREAKER PART AND NEQ DATA

NOTES:

1. ALL BREAKERS 100A AND LARGER REQUIRE ONE (1) UNUSED POSITION ON EACH SIDE.
2. 2−POSITION AND 3−POSITION BREAKERS REQUIRE AN ADAPTOR PLATE ON LOAD TERMINALS.
3. INSTALL LARGER BREAKERS ON UPPER TIERS TO FACILITATE CABLE MANAGEMENT.
4. THIS DETAIL IS APPLICABLE FOR ALPHA 48/24V DUAL VOLTAGE POWER SYSTEMS 4−TIER MODEL (NEQ. 15239) AND 3−TIER MODEL (NEQ. 15240).
5. BREAKERS SHALL BE AM−TYPE, 80V 10kA SCCR, MAXIMUM RATING IS 250A. BREAKERS 1A TO 100A ARE 1−POSN, 110A TO 150A ARE 2−POSN AND 175A TO 250A ARE 3−POSN.
6. GMT FUSE RATINGS ARE 0.5A TO 15A.

1 / E−4 DC PANEL SCHEDULE
SCALE: N.T.S

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STATE OF MARYLAND · ERIK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

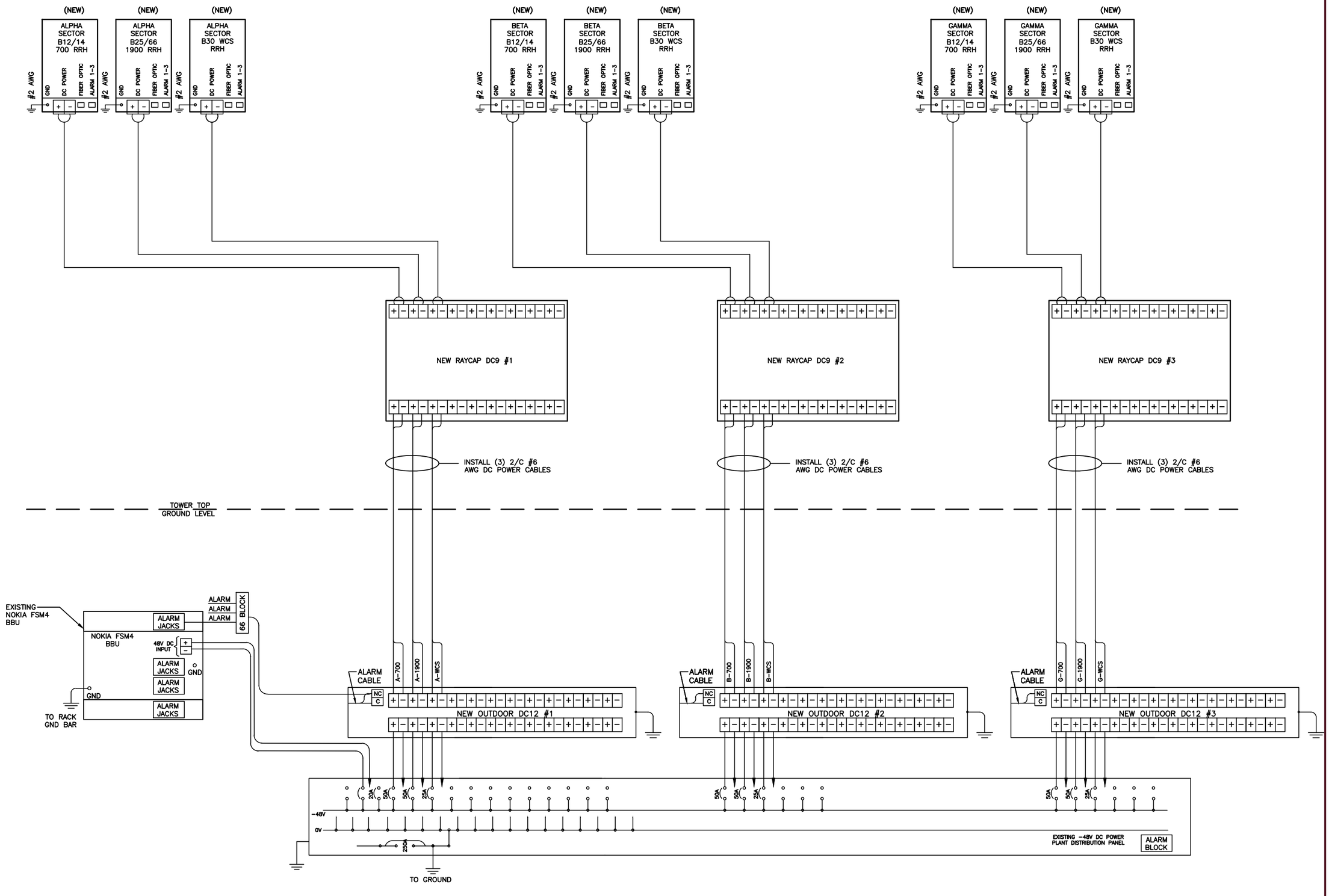
EXISTING BUILDING

SHEET DESCRIPTION

DC PANEL SCHEDULE

SHEET NO.

E−4



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USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

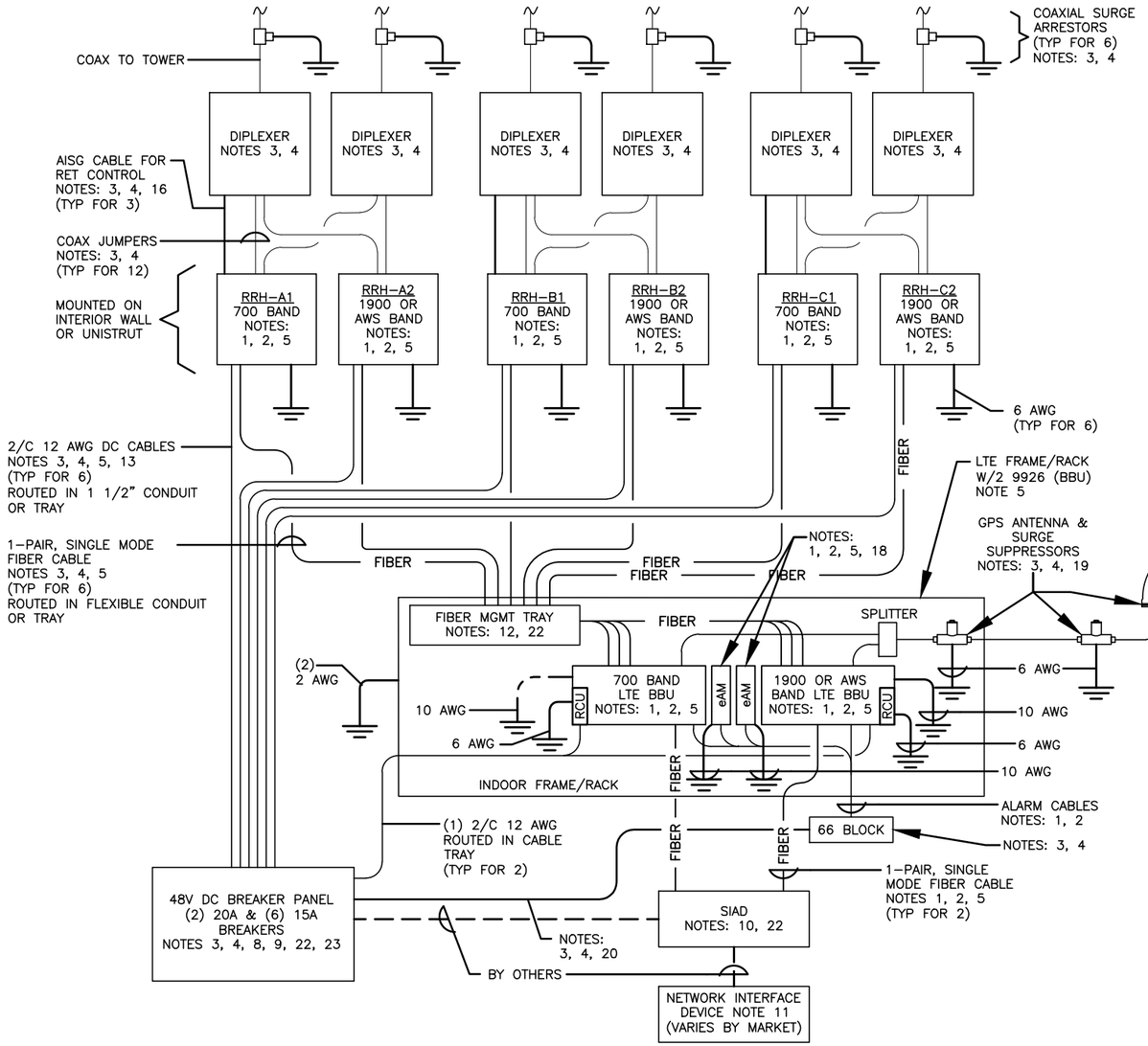
EXISTING BUILDING

SHEET DESCRIPTION

WIRING DIAGRAM

SHEET NO.

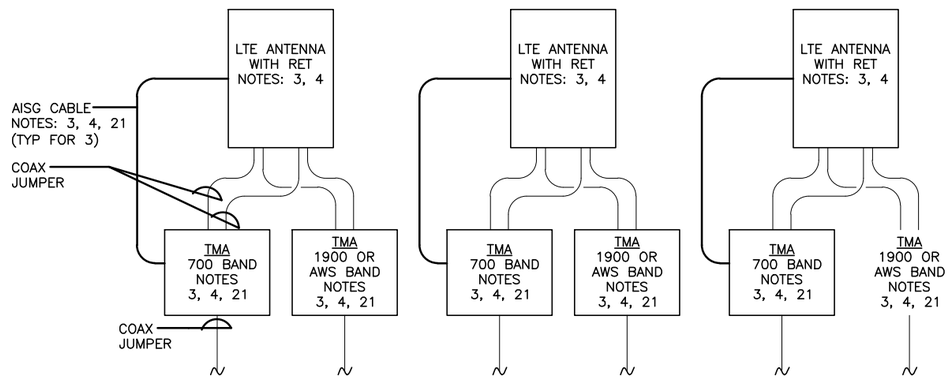
E-5



LTE SYSTEM DIAGRAM, TOWER SITE
WITH INDOOR ALU BASEBAND
AND RRHs @ GRADE LEVEL

NOTES:

1. FURNISHED BY OEM/AT&T.
2. INSTALLED BY OEM OR AS SCOPED BY MARKET.
3. FURNISHED BY GC.
4. INSTALLED BY GC.
5. FINAL CONNECTION BY OEM OR AS SCOPED BY MARKET.
6. DELETED.
7. DELETED.
8. PART OF CONVERTER WITH 18 BREAKER POSITIONS. BREAKERS SPECIFIED SEPARATELY.
9. BREAKERS TO BE TAGGED AND LOCKED OUT.
10. SIAD IS FURNISHED AND INSTALLED BY OTHERS AND INCLUDES POWER CONNECTIONS AND FIBER TO THE UNIT OR AS SCOPED BY MARKET. WHEN IN THE GENERAL CONTRACTOR'S SCOPE, INSTALL 10 AWG CHASSIS GROUND, PROVIDE (2) 10A BREAKERS FROM A 24V DC POWER SOURCE OR (2) 5A BREAKERS FROM A 48V DC POWER SOURCE AND CONNECT USING MFR POWER CABLE WITH SPECIAL CONNECTOR.
11. LEC TO FURNISH AND INSTALL NETWORK INTERFACE DEVICE.
12. COIL EXTRA LENGTH OF FIBER CABLE(S) WITHIN FIBER MANAGEMENT TRAY INSTALLED IN LTE FRAME.
13. MAXIMUM LENGTH OF SIZE 12 AWG DC POWER CABLE TO RRH SHALL NOT EXCEED 100 FEET.
14. SINGLE–CONDUCTOR DC POWER CABLES SHALL BE TELCOFLEX® OR KS24194™, COPPER, UL LISTED RHH NON–HALOGEN, LOW SMOKE WITH BRAIDED COVER, TYPE TC (1/0 AND LARGER). UNLESS OTHERWISE NOTED, STRANDING SHALL BE CLASS B (TYPE III) FOR CABLES SIZES 14, 12 & 10 AWG AND CLASS I (TYPE IV) FOR SIZES 8 AWG AND LARGER. CABLES SHALL BE COLOR CODED RED FOR +24V, BLUE FOR –48V AND GRAY FOR 24V AND 48V RETURN CONDUCTORS. MULTI–CONDUCTOR DC POWER CABLES SHALL BE COPPER, CLASS B STRANDING WITH FLAME RETARDANT PVC JACKET, TYPE TC, UL LISTED FOR 90°C DRY/ 75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
15. GROUNDING WIRES SHALL BE COPPER, GREEN THHN/THWN UL LISTED FOR 90°C DRY/75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
16. RET CONTROL FROM THE RRH IS AN OPTIONAL METHOD OF CONNECTION. REFER TO RF DATA SHEET FOR APPLICABILITY.
17. DELETED.
18. PROVIDE GROUND WIRES FOR ENHANCED ALARM MODULE (eAM) WHEN EMPLOYED BY MARKET.
19. DELETED.
20. DELETED.
21. TMAs MAY BE EITHER SINGLE UNITS (AS SHOWN) OR TWIN UNITS.
22. NOTED EQUIPMENT MAY BE COMMON TO LTE AND UMTS SYSTEMS. REFER TO UMTS SYSTEM DIAGRAM IF APPLICABLE.
23. EXISTING 700MHz BAND BBU IF MODEL 9926 (d2Uv3) MAY BE POWERED FROM A 10A BREAKER.



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SUBMITTALS

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D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

STATE OF MARYLAND · ERIK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

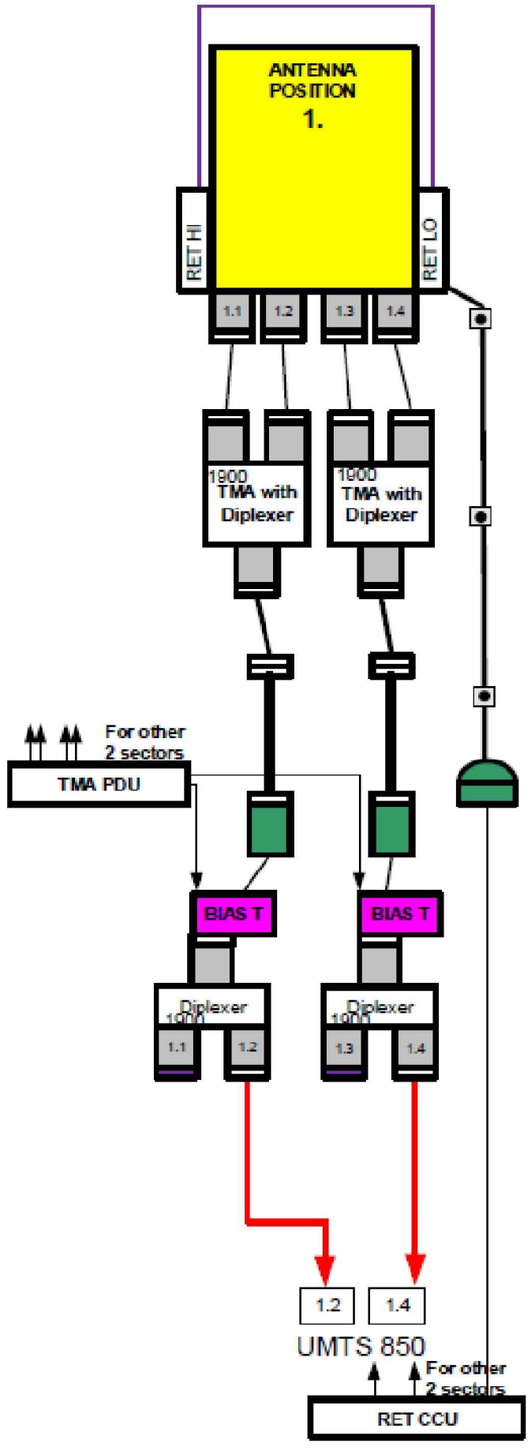
EXISTING BUILDING

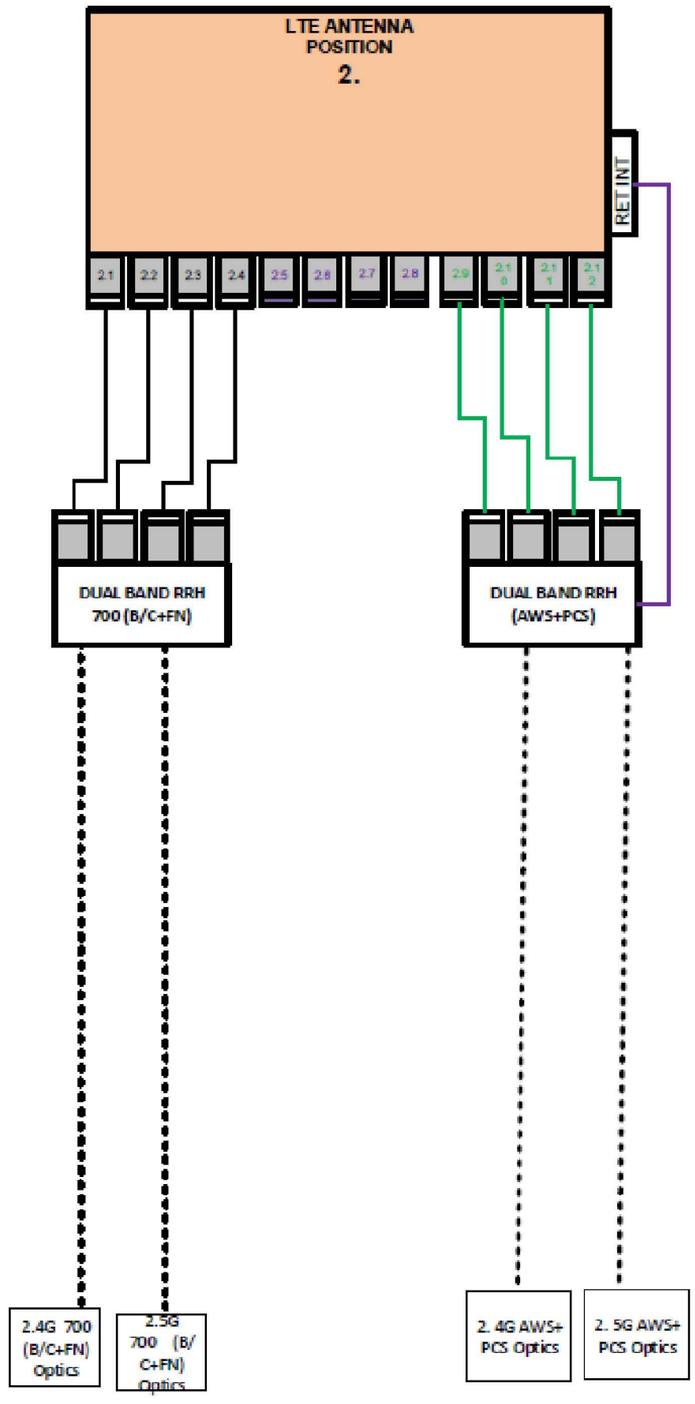
SHEET DESCRIPTION

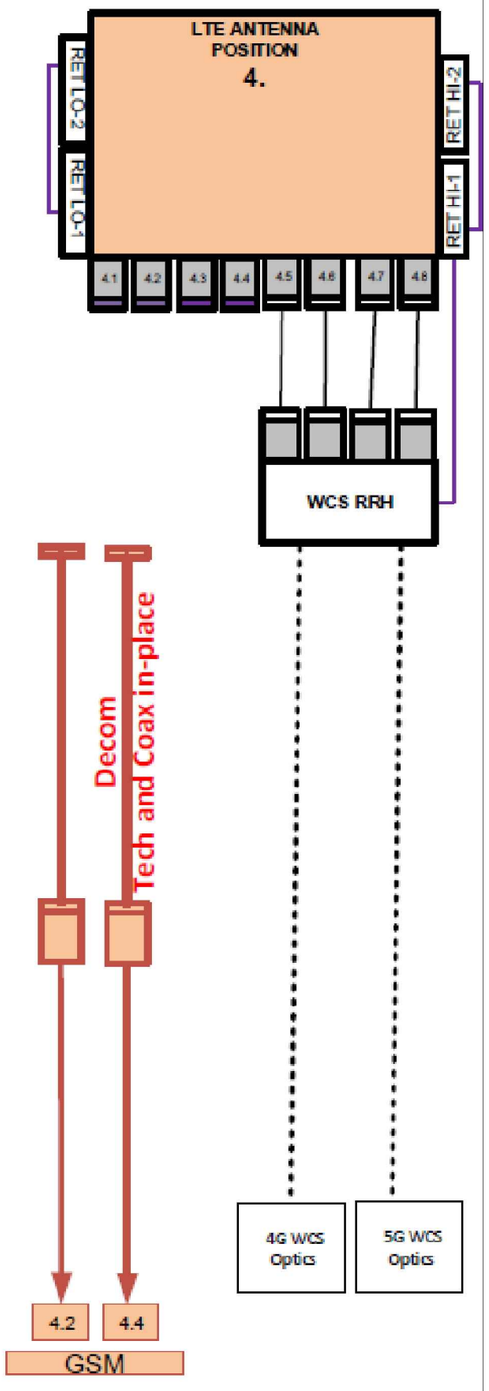
SYSTEM DIAGRAM

SHEET NO.

E–6







1 RF–1 PLUMBING DIAGRAM FOR ALPHA SECTOR
SCALE: NTS

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0	02/11/20	90% CD	SAR

STATE OF MARYLAND
ERIK R. HALL
No. 27217
PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

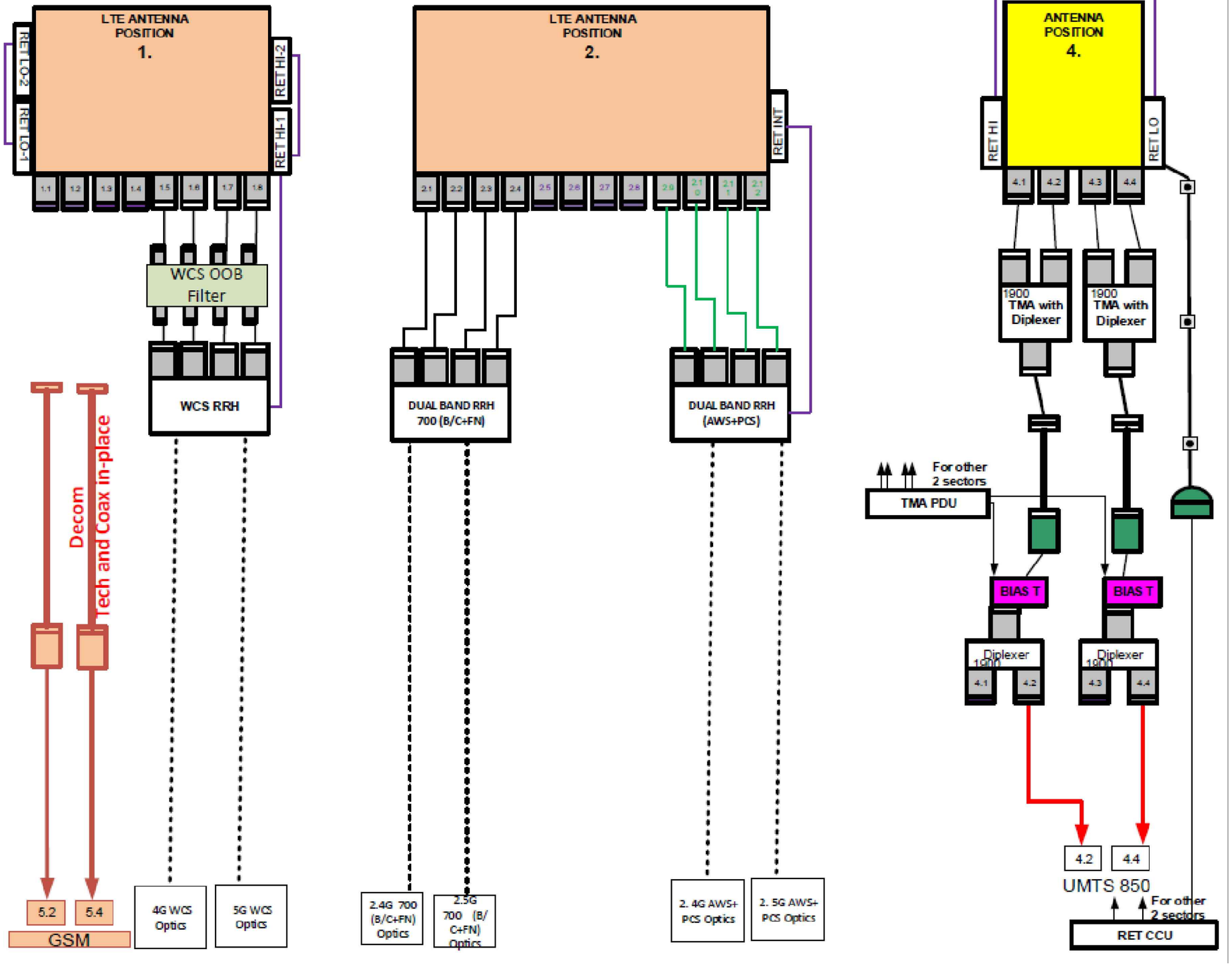
EXISTING BUILDING

SHEET DESCRIPTION

RF PLUMBING DIAGRAM

SHEET NO.

RF–1



1 RF–2 PLUMBING DIAGRAM FOR ALL SECTOR
SCALE: NTS

AT&T

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Trylon

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C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

STATE OF MARYLAND · ERIK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

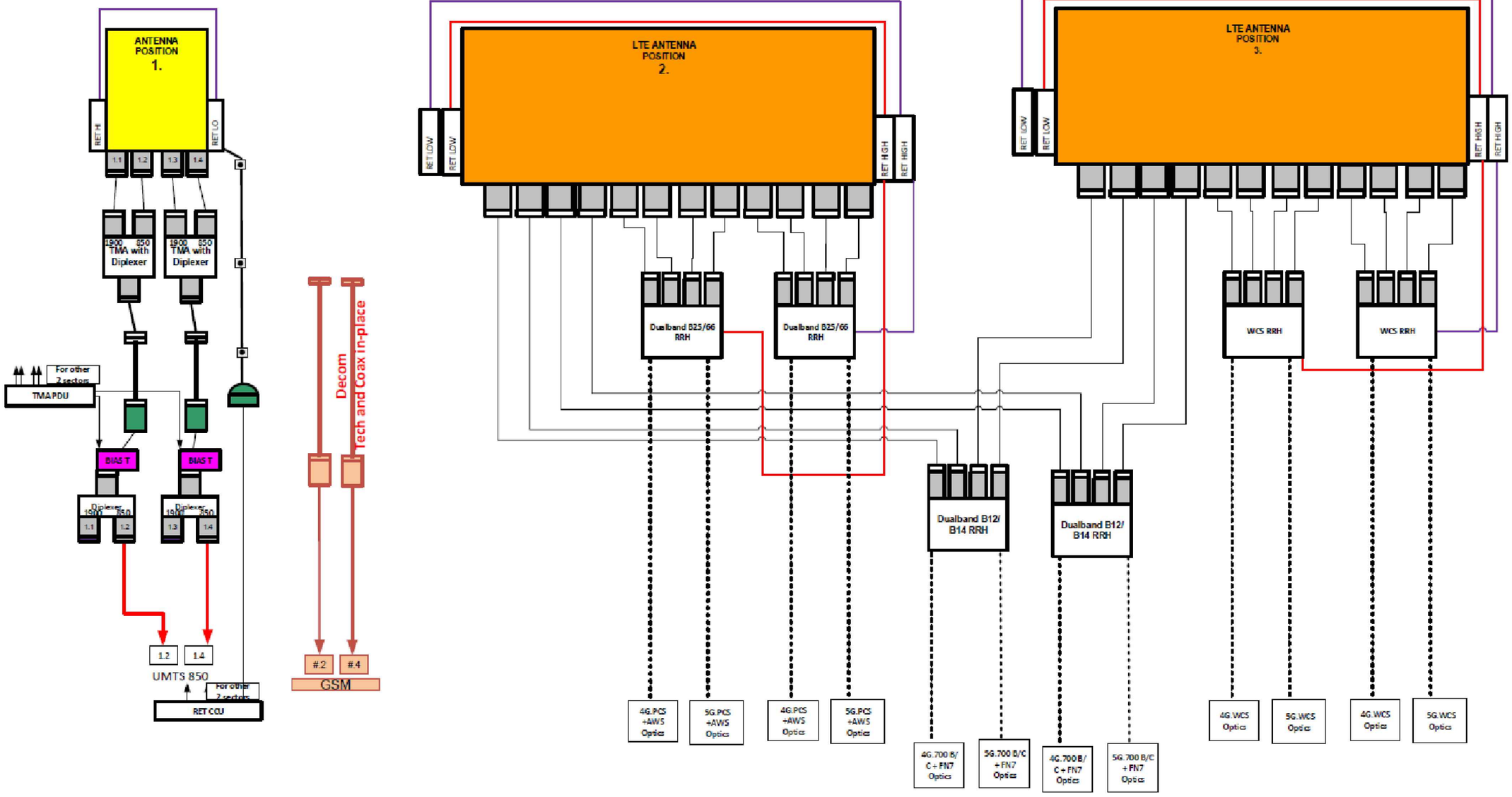
EXISTING BUILDING

SHEET DESCRIPTION

RF PLUMBING DIAGRAM

SHEET NO.

RF–2



1 RF–3 PLUMBING DIAGRAM FOR GAMMA SECTOR
SCALE: NTS

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SUBMITTALS

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STATE OF MARYLAND KIRK A. HALL No. 27217 PROFESSIONAL ENGINEER

2-12-2020

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

RF PLUMBING DIAGRAM

SHEET NO.

RF–3

SITE DATA INPUT WORKSHEET - INDOOR SITE POWER ESTIMATE TOOL

STEP 1: ENTER QUANTITIES OF EQUIPMENT & DC OPERATING VOLTAGE:

NOTE: LOAD VALUES FOR ANY EQUIPMENT CAN BE USER SPECIFIED ON THE POWER CONSUMPTION WORKSHEET - USER CHANGES TO DEFAULT LOAD VALUES ARE HIGHLIGHTED IN BRIGHT YELLOW

STEP 2: ENTER DC PLANT TYPE FROM DROP-DOWN MENU:

("GENERIC" +24V or -48V DC PLANT CAN BE SELECTED FOR ANY MANUFACTURER'S DC PLANT)

GENERIC - ANY -48VDC PLANT

-48V PRIMARY DC PLANT SPECIFIED

(DC PLANT CONFIGURATION CAN BE REVIEWED ON DC PLANT WORKSHEET)

STEP 2A: THIS STEP ONLY SHOWN IF "GENERIC" DC PLANT PLANT TYPE HAS BEEN SELECTED:

-48V RECTIFIER CAPACITY (A): 50 *AVAILABLE SLOTS: 11

SELECT +24V CONVERTER CAPACITY (A): 5 *AVAILABLE SLOTS: 0

* ENTER 0 FOR SLOT VALUES TO BYPASS SLOT QUANTITY CHECK ON DC PLANT CONFIG. WORKSHEET

STEP 2B: THIS STEP ONLY SHOWN IF TYCO GP82424 DC PLANT PLANT TYPE HAS BEEN SELECTED:

STEP 3: DO YOU WANT TO CONFIGURE A STANDARD STAND-ALONE DC CONVERTER SYSTEM? N

NOTE: IF YOU SELECT "Y" ANY INTEGRATED DC PLANT CONVERTER OPTIONS WILL BE BYPASSED

STEP 4: ENTER INDOOR SITE BUILDING/SHELTER DATA:

(Square footage used for interior AC lighting LOAD calculation)

SELECT SITE BUILDING TYPE & SIZE: OTHER

SPECIFY TOTAL FLOOR SPACE (SQUARE FEET): 0

STEP 6: ENTER SITE HVAC SYSTEM DATA:

SPECIFY INDIVIDUAL HVAC UNIT SIZE (TONS): 0 SPECIFY QUANTITY: 0

DOES SITE HAVE ADDITIONAL HVAC (DIFFERENT SIZE)? N

ARE THERE SITE HVAC HEATING UNITS? N

TOTAL SPECIFIED SITE HVAC: 0-TONS ESTIMATED HVAC REQUIREMENT: TWO 4-TON UNITS

SPECIFIED HVAC NOT SUFFICIENT

THIS TOOL DOES NOT APPLY TO SITES THAT ARE EQUIPPED WITH FREE STANDING DIRECT AIR COOLING

STEP 8: ENTER SITE STATIONARY GENERATOR DATA:

DOES SITE HAVE A STATIONARY GENERATOR? N

ESTIMATED CAPACITY REQUIRED: 20 KW (NO SITE GENERATOR)

STEP 7: ENTER SITE BATTERY CONFIGURATION DATA:

SELECT SINGLE STRING BATTERY CAPACITY (AH): 165

SPECIFY TOTAL QUANTITY OF BATTERY STRINGS: 2

TOTAL SITE BATTERY CAPACITY (AH): 330

NOTE: STANDARD BATTERY CAPACITY HAS BEEN SPECIFIED

NOTE: 12 VOLT MONOBLOCK BATTERIES - 4 batteries per -48V String

ESTIMATED BATTERY RESERVE TIME: 2.44 HOURS (NO SITE GENSET)

SITES WITH STATIONARY GENSETS SHALL BE ENGINEERED WITH A MAX OF 3 SHELVES of 180 AH BATTERIES (3 strings at -48v or 6 strings at +24v) - ALL OTHER SITES A MINIMUM OF 4 HOURS

SITE POWER CALCULATION TOOL - VERSION 4.3 - October 17, 2017 R. BADGERO

ANY QUESTIONS PLEASE CONTACT RICK BADGERO (RB8620@ATT.COM)

QTY	RADIO HEADS - Outdoor	VOLTAGE	WATTS
	Ericsson		
0	RRUS 01 B2, B5 (80W)	48	0
0	RRUS 01 B12 (60W)	48	0
0	RRUS 11 B12 (2x30W)	48	0
0	RRUS 11 B2, B4, B5, B12 (2x40W)	48	0
0	RRUS 12 B2, B4, B5 (2x60W)	48	0
0	RRUS 32 B2 (4x40W)	48	0
0	RRUS 32 B30 (4x25W)	48	0
0	RRUS 32 B66A	48	0
0	RRUS A2 B2, B4, B12	48	0
0	RRUSE2 B29	48	0
0	RRUW B2, B5	48	0
0	AIR 21 (60W)	48	0
0	RRUS 4478 B14	48	0
	(FUTURE)		
	A-LU		
0	4x4S B66A	48	0
0	FDD RRH2x40-07L (UHLA) B17	48	0
0	RRH2x40-07L-AT (UHLB) B17	48	0
0	B25 RRH4x30 (UHFA) B25	48	0
0	B25 RRH2x60 (UHFA) B25	48	0
0	2X60W-850 B5	48	0
0	2X60W-1900 B2	48	0
0	2X60W-1900A B2	48	0
0	RRH2x40-07L-DE (UHLC) B29	48	0
0	RRH 4T4R (FRBI) B14	48	0
0	RRH4X25 B30	48	0
	(FUTURE)		
	(FUTURE)		

QTY	RADIO HEADS - Indoor	VOLTAGE	WATTS
	Ericsson		
0	RRUS 01 B2, B5 (80W)	48	0
0	RRUS 01 B12 (60W)	48	0
0	RRUS 11 B12 (2x30W)	48	0
0	RRUS 11 B2, B4, B5, B12 (2x40W)	48	0
0	RRUS 12 B2, B4, B5 (2x60W)	48	0
0	RRUS 32 B2 (4x40W)	48	0
0	RRUS 32 B30 (4x25W)	48	0
0	RRUS 32 B66A	48	0
0	RRUS A2 B2, B4, B12	48	0
0	RRUSE2 B29	48	0
0	RRUW B2, B5	48	0
0	AIR 21 (60W)	48	0
0	RRUS 4478 B14	48	0
	(FUTURE)		
	A-LU		
3	4x4S B66A	48	2112
3	FDD RRH2x40-07L (UHLA) B17	48	888
0	RRH2x40-07L-AT (UHLB) B17	48	0
3	B25 RRH4x30 (UHFA) B25	48	1692
0	B25 RRH2x60 (UHFA) B25	48	0
0	2X60W-850 B5	48	0
0	2X60W-1900 B2	48	0
0	2X60W-1900A B2	48	0
0	RRH2x40-07L-DE (UHLC) B29	48	0
0	RRH 4T4R (FRBI) B14	48	0
3	RRH4X25 B30	48	1248
	(FUTURE)		
	(FUTURE)		

QTY	LTE 4G & Multi-Std EQUIPMENT	VOLTAGE	WATTS
0	A-LU 9926 LTE BBU (w/max. 3 eCEM-u)	48	0
1	Nokia FSM-4	48	998
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
0	Ericsson LTE RBS6601 BBU - 1 DUL	48	0
0	Ericsson LTE RBS6601 BBU - 2 DUL	48	0
0	Ericsson WCDMA RBS6601 - 1 DUW	48	0
0	Ericsson LTE RBS6601 BBU - 1DUS	48	0
0	Ericsson LTE RBS6601 BBU - 2DUS	48	0
0	Ericsson XMU	48	0
0	Ericsson LTE RBS5216	48	0
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		

QTY	UMTS 3G EQUIPMENT	VOLTAGE	WATTS
0	A-LU MACRO NodeB (3S1C - 40W)	24	0
0	A-LU MACRO NodeB (3S2C - 40W)	24	0
0	A-LU MACRO NodeB (3S3C - 40W)	24	0
0	A-LU MACRO NodeB (3S4C - 40W)	24	0
0	A-LU MACRO NodeB (3S5C - 40W - 2 CAB)	24	0
0	A-LU MICRO NodeB	24	0
0	A-LU 9396 d2U Distributed NodeB MU	48	0
0	A-LU 9396 d4U Distributed NodeB MU	48	0
	(FUTURE)		
	(FUTURE)		
0	Ericsson RBS3206 NodeB 3S1C - 1 CAB	24	0
0	Ericsson RBS3206 NodeB 3S2C - 1 CAB	24	0
	NON-OBIF Ericsson 3rd, 4th & 5th Carrier		
0	Ericsson RBS3206 NodeB 3S3C - 2 CAB	24	0
0	Ericsson RBS3206 NodeB 3S4C - 2 CAB	24	0
0	Ericsson RBS3206 NodeB 3S5C - 3 CAB	24	0
	OBIF Ericsson 3rd, 4th & 5th Carrier		
0	Ericsson RBS3206 NodeB 3S3C - 1 CAB (Select RRUS from left section)	24	0
0	Ericsson RBS3206 NodeB 3S4C - 1 CAB (Select RRUS from left section)	24	0
0	Ericsson RBS3206 NodeB 3S4C - 1 CAB (Select RRUS from left section)	24	0
0	Ericsson RBS3206 NodeB 3S5C - 2 CAB (Select RRUS from left section)	24	0
0	Ericsson 3303 MICRO NodeB	24	0
0	Ericsson RBS3418 Distributed NodeB MU	48	0
	(FUTURE)		
	(FUTURE)		

(CUSTOM AC LOADS DEFINED ON POWER CONSUMPTION WORKSHEET)

QTY	USER SPECIFIED AC EQUIPMENT	VOLTAGE	KVA
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
0			0
	TOTAL USER SPECIFIED KVA:		0

TOTAL 120VAC AMPS: 0

TOTAL 240VAC AMPS: 4882

QTY	ANCILLARY CELL SITE EQUIPMENT	VOLTAGE	WATTS
0	A-LU 7705 SIAD	48	0
	(FUTURE)		
0	A-LU MPR-9500 MW Service Switch - MSS	48	0
0	A-Lu MPR-9500 MW Outdoor Unit - ODU	48	0
0	A-Lu MPR-9500 MW MPT-HL (Indoor)	48	0
	(FUTURE)		
0	Cisco MWR-2941 SIAD	48	0
0	Cisco SIAD ASR-901	48	0
0	Cisco 15310 EOS (SONET) MUX	48	0
0	Cisco 15454 MSP (MW Ring Config.)	48	0
	(FUTURE)		
0	Tru-Position LMU (E911)	48	0
0	DC Free Air (per HVAC unit)	48	0
0	GENERIC Ethernet NID	48	0
0	GENERIC Hydrogen Detector	48	0
0	GENERIC RET Controller	48	0
0	GENERIC RXAIT	48	0
0	GENERIC Smoke Detector	48	0
0	GENERIC TMA System	48	0
0	GENERIC Tower Lighting (DC)	48	0
0	NG480	48	0
0	Cisco 2911	48	0
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		
	(FUTURE)		

QTY	TX RF AMP (MCPA or SCPA) EQPT.	VOLTAGE	WATTS
0	Andrew (12 module mcpa FRAME)	24	0
0	Andrew 135 Watt Module	24	0
	(FUTURE)		
0	Powerwave 12 module mcpa FRAME)	24	0
0	Powerwave 90 Watt Module	24	0
0	Powerwave 120 Watt Module	24	0
0	Powerwave 180 Watt Module	24	0
	(FUTURE)		
0	CCI 125 Watt DAB SCPA Module	24	0
0	CCI 125 Watt DAC SCPA Module	24	0
	(FUTURE)		

(CUSTOM DC LOADS DEFINED ON POWER CONSUMPTION WORKSHEET)

QTY	USER SPECIFIED DC EQUIPMENT	VOLTAGE	WATTS
3	B14 Firstnet RRH	48	2208
1	9412 Heaters	48	800
0	B25/66 Dual Band RRH	48	0
0	B12/14 Dual Band RRH	48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
0		48	0
	TOTAL USER SPECIFIED WATTS:		3008
	TOTAL +24V (27V) AMPS:	0	
	TOTAL -48V (54V) AMPS:	55.7	

-48V PRIMARY VOLTAGE DC PLANT SPECIFIED				
+24VDC EQUIPMENT LOAD:	0 WATTS	=	0 AMPS	at +24V
-48VDC EQUIPMENT LOAD:	9888 WATTS	=	184 AMPS	at -48V
NO SECONDARY 24V LOADS - DC CONVERTER SYSTEM NOT REQUIRED				
TOTAL PRIMARY 48V LOAD:	9888 WATTS	=	184 AMPS	at -48V

(DC PLANT CONFIGURATION CAN BE REVIEWED ON DC PLANT WORKSHEET)		
DC PLANT: GENERIC - ANY -48VDC PLANT		
-48V RECTIFIERS REQUIRED (N+1):	6	
-48V RECTIFIER SLOTS:	11	
CONV. TYPE: GENERIC - CONV. SIZE & SLOT QTY MANUALLY SPECIFIED		
+24V CONVERTERS REQUIRED:	0	(NO DC CONVERTERS REQUIRED)
+24V CONVERTER SLOTS:	0	(NO DC CONVERTERS REQUIRED)
ESTIMATED BATTERY RESERVE TIME		
2 165 AH 48V STRINGS =	2.44 HOURS	(4 HOUR MINIMUM BATTERY RESERVE)

ESTIMATED SITE MAX. AC LOAD (AMPS):	97.60 AMPS
ESTIMATE 200A SERVICE SUFFICIENT	

SITE GENERATOR CAPACITY REQUIRED:	20 KW
ON SITE GENERATOR CAPACITY:	0 KW
(NO ON-SITE GENERATOR)	

RECOMMENDED HVAC SYSTEM:	TWO 4-TON
SPECIFIED SITE TOTAL HVAC CAPACITY:	0-TONS
ESTIMATE EXISTING HVAC NOT SUFFICIENT	

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SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

STATE OF MARYLAND · KIRK R. HALL · No. 27217 · PROFESSIONAL ENGINEER

2-12-2020

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

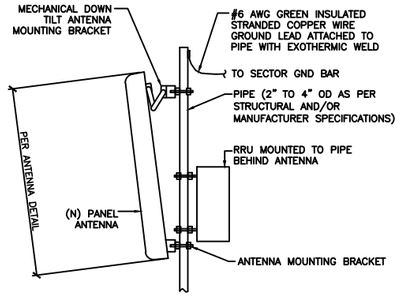
EXISTING BUILDING

SHEET DESCRIPTION

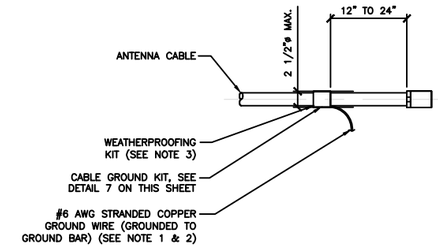
POWER LOAD CALCULATIONS

SHEET NO.

RF-4



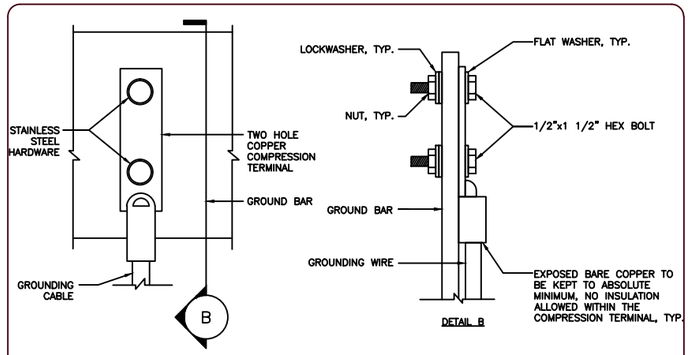
1 G-1 ANTENNA PIPE MOUNT GROUNDING DETAIL



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR
2. GROUNDING KIT SHALL BE ANDREW SUREGROUND TYPE KIT WITH TWO-HOLE LUG
3. WEATHER PROOFING SHALL BE ANDREW TWO-PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED

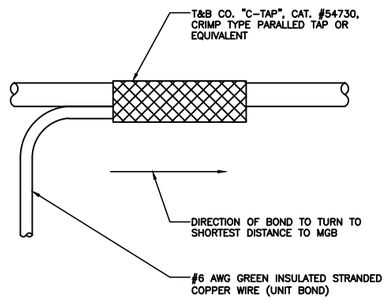
2 G-1 CABLE GROUND KIT DETAIL



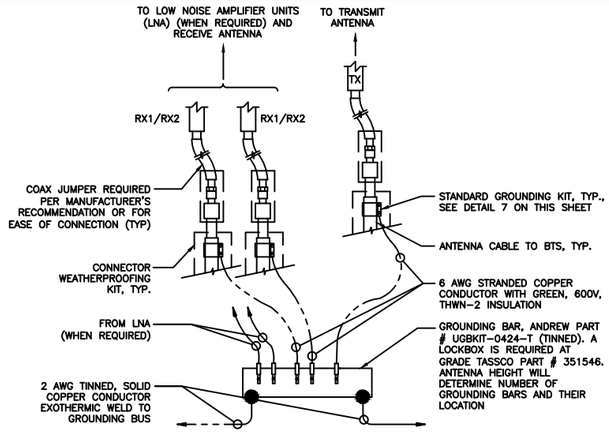
NOTES:

1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS AND TO BE APPLIED PRIOR TO ADDING HARDWARE.

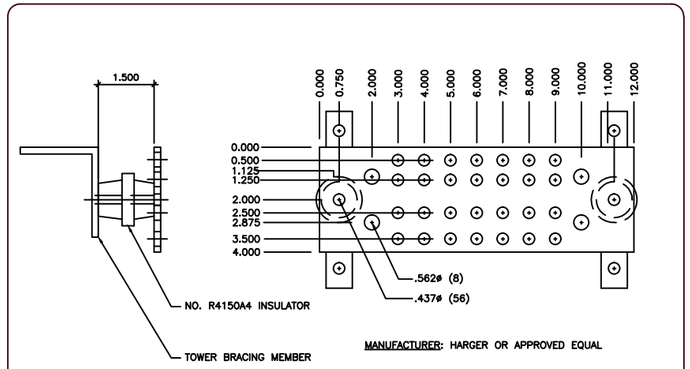
3 G-1 TYPICAL GROUND LUG CONNECTION DETAIL



4 G-1 GROUNDING WIRE CONNECTION

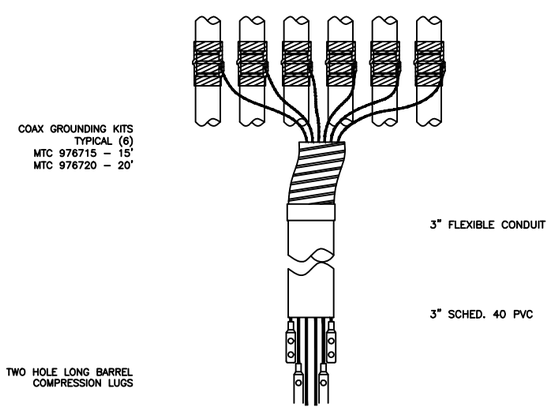


5 G-1 ANTENNA GROUNDING BAR CONNECTION DETAIL

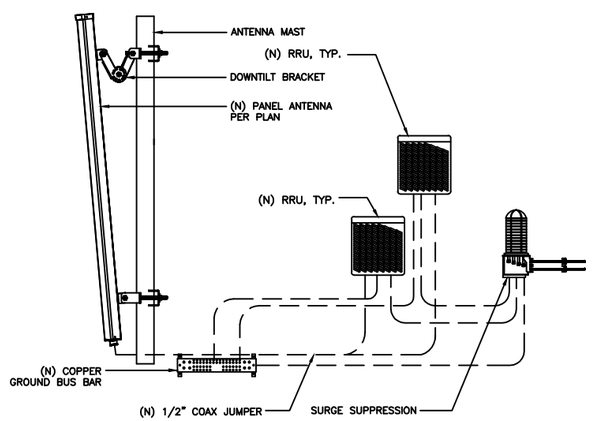


MANUFACTURER: HARGER OR APPROVED EQUAL

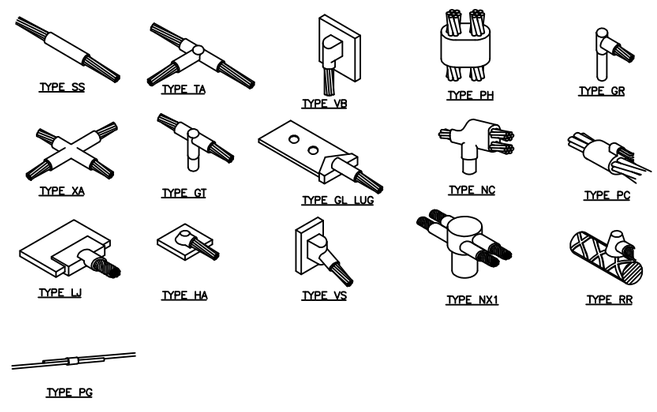
6 G-1 ANTENNA (12") GROUND BAR DETAIL



7 G-1 COAX GROUND KIT



8 G-1 RRU GROUNDING DETAIL



9 G-1 TYPICAL CADWELD TYPES

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SUBMITTALS

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PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

GROUNDING DETAILS

SHEET NO.

G-1

GENERAL NOTES

1. GENERAL REQUIREMENTS

A. PURPOSE AND INTENT
1.THE DRAWING AND SPECIFICATION ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY, HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED, OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF DISCREPANCIES BETWEEN REQUIREMENTS SHOWN IN BOTH, THE MORE STRINGENT REQUIREMENTS SHALL APPLY.
2. THE INTENTION OF THE DOCUMENT IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.

A. CONFLICTS
1. VERIFY ALL MEASUREMENTS AT THE SITE BEFORE ORDERING MATERIAL OR DOING ANY WORK, NO EXTRA CHARGE OR COMPENSATION WILL BE ALLOWED DUE TO DIFFERENCES BETWEEN ACTUAL DIMENSIONS OR DIMENSIONS SHOWN ON PLANS SUBMIT NOTICE OF ANY DISCREPANCY IN DIMENSIONS OR OTHERWISE TO AT&T FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
2. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS GOVERNING THE WORK.

A. CLEANING
1. KEEP THE SITE FREE FROM ACCUMULATION OF WASTE AND RUBBISH CAUSED BY EMPLOYEES AT THE COMPLETION OF THE WORK, REMOVE ALL WASTE AND NON-CONSTRUCTION MATERIAL INCLUDING ALL CONTRACT TOOLS, SCAFFOLDING, AND SURPLUS MATERIAL AND LEAVE SITE CLEAN AND READY FOR USE.

A. CODES
1.CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING ALL LAWS, REGULATIONS, AND RULES PROMULGATED BY FEDERAL STATE AND LOCAL AUTHORITIES WITH JURISDICTION OVER THE SALTIER. THIS RESPONSIBILITY IS IN EFFECT REGARDLESS OF WEATHER THE LAW, ORDINANCE, REGULATION OR RULE IS MENTIONED IN THESE SPECIFICATIONS.

A. LICENSING
1. CONTRACTOR SHALL HAVE AND MAINTAIN A VALID CONTRACTOR'S LICENSE FOR THE LOCATION IN WHICH THE WORK IS TO BE PERFORMED. FOR JURISDICTIONS THAT LICENSE INDIVIDUAL TRADES, THE TRADESMAN OR SUBCONTRACTOR PERFORMING THOSE SHALL BE LICENSED, RESEARCHED AND COMPLY WITH THE LICENSING LAWS, PAY LICENSE FEES, AND SELECT AND INFORM SUBCONTRACTORS REGARDING THESE LAWS.

A. OSHA
1. FOLLOW ALL APPLICABLE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS AND STATE LAWS BASED IN THE FEDERAL OCCUPATION SAFETY AND HEALTH ACT. THESE REGULATIONS INCLUDE, BUT ARE NOT LIMITED TO, REGULATIONS DEALING WITH TOWER CONSTRUCTION AND SAFETY, EXCAVATION AND TRENCHING, AND WORK IN CONFINED SPACES. ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES DURING CONSTRUCTION.

A. PHOTOS
1. PROVIDE PHOTOGRAPHIC EVIDENCE OF ALL FOUNDATION INSTALLATIONS, GROUNDING, AND TRENCHING AFTER PLACEMENT OF UTILITIES PRIOR TO BACKFILL.

A. BUILDING PERMITS
1. CONTRACTOR WILL SUBMIT CONSTRUCTION DOCUMENTS TO THE JURISDICTIONAL AUTHORITY FOR PLAN CHECK AND REVIEW. CONTRACTOR WILL SUBMIT LICENSING AND WORKMAN'S COMPENSATION INFORMATION TO THE JURISDICTION AS REQUIRED TO OBTAIN THE BUILDING PERMIT, CONTRACTOR SHALL COORDINATE AND SCHEDULE REQUIRED INSPECTIONS AND POST REQUIRED PERMITS AT THE JOB SITE COMPLY WITH SPECIFIC PROJECT RELATED REQUESTS AND SUGGESTIONS MADE BY BUILDING INSPECTOR, AND INFORM CONSTRUCTION MANAGER OF ANY SUCH WORK THAT MAY BE BEYOND THE SCOPE OF THE CONTRACT OR DEVIATE FROM THE CONSTRUCTION DOCUMENT. AT&T WILL REIMBURSE THE CONTRACTOR FEES FOR PLAN REVIEW, BUILDING PERMIT, CONNECTIONS, AND INSPECTIONS. (INCLUDED IN THE BASE PROPOSAL).

A. ZONING REGULATIONS AND CONDITIONAL USE PERMITS
1. CONTRACTOR WILL SUBMIT ALL ZONING AND CONDITIONAL USE PERMITS. SOME USE PERMITS MAY HAVE SPECIFIC REQUIREMENTS FOR THE SITE RELATED TO CONSTRUCTION, SUCH AS NOISE REGULATIONS, HOURS OF WORK, ACCESS LIMITATIONS, ETC. THE CONSTRUCTION MANAGER WILL INFORM THE CONTRACTOR OF THESE REQUIREMENTS AT THE PRE-BID MEETING OR AS SHOWN IN THE CONSTRUCTION DOCUMENTS.

A. FAA PERMIT AND TOWER LIGHTING
1. REFER TO CONSTRUCTION DOCUMENTS AND CONSTRUCTION MANAGER FOR FAA AND STATE LIGHTING REQUIREMENTS. CONTRACTOR SHALL PROVIDE TEMPORARY FM APPROVED LIGHTING UNTIL PERMANENT LIGHTING IS OPERATIONAL.

A. TOWER SECURITY
1. IF REQUIRED, TOWER MUST BE FENCED, TEMPORARILY OR PERMANENTLY WITHIN 24 HOURS OF ERECTION. DO NOT ALLOW THE GATE ACCESSING THE TOWER AREA TO REMAIN OPEN OR UNATTENDED ANY TIME FOR ANY REASON. KEEP THE GATE CLOSED AND LOCKED WHEN NOT IN USE.

L. SITE CONTROL
1. THE CONTRACTOR IS COMPLETELY RESPONSIBLE FOR CONTAINMENT OF SEDIMENT AND CONTROL OF EROSION AT THE SITE. ANY DAMAGE TO ADJACENT OR DOWNSTREAM PROPERTIES WILL BE CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO AT&T.
2. THE CONTRACTOR IS TO MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES. DO NOT ALLOW WATER TO STAND OR POND. ANY DAMAGE TO STRUCTURES OR WORK ON THE SITE CAUSED BY INADEQUATE MAINTENANCE OF DRAINAGE PROVISIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND ANY COST ASSOCIATED WITH REPAIRS FOR SUCH DAMAGE WILL BE AT THE CONTRACTOR'S EXPENSE.
3. ALL WASTE MATERIAL SHALL BE PROPERLY DISPOSED OF OFF-SITE OR AS DIRECTED BY CONSTRUCTION MANAGER AND IN ACCORDANCE WITH JURISDICTIONAL AUTHORITIES.

M. LIVESTOCK PROTECTION
1. PROTECT AND SECURE LIVESTOCK. MAINTAIN AND SECURE EXISTING PERIMETER FENCE AND/OR GATE ENCLOSURES.

2. SITE PREPARATION

A. SCOPE OF WORK INCLUDES
1. PROTECTION OF EXISTING TREES, VEGETATION AND LANDSCAPING MATERIALS WHICH MIGHT BE DAMAGED BY CONSTRUCTION ACTIVITIES.
2. TRIMMING OF EXISTING TREES AND VEGETATION AS REQUIRED FOR PROTECTION DURING CONSTRUCTION ACTIVITIES.
3. CLEANING AND GRUBBING OF STUMPS, VEGETATION, DEBRIS, RUBBISH, DESIGNATED TREES AND SITE IMPROVEMENTS.
4. TOPSOIL STRIPPING AND STOCKPILING.
5. TEMPORARY EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL CONFORMING TO LOCAL REQUIREMENTS AS APPLICABLE.
6. TEMPORARY PROTECTION OF ADJACENT PROPERTY, STRUCTURES, BENCHMARKS, AND MONUMENTS.
7. PROTECTION AND TEMPORARY RELOCATION, STORAGE AND RE-INSTALLATION OF EXISTING FENCE AND OTHER SITE IMPROVEMENTS SCHEDULED FOR RE-USE.
8. REMOVAL AND LEGDK DISPOSAL OF CLEARED MATERIALS.

B. PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS NOTED IN CONSTRUCTION DOCUMENTS)
1. MATERIALS USED FOR TREE PROTECTION, EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL.

3. EARTHWORK

A. SCOPE OF WORK INCLUDES
1. EXCAVATION, TRENCHING, FILLING, COMPACTION, AND GRADING FOR STRUCTURES, SITE IMPROVEMENTS AND UTILITIES.
2. MATERIALS FOR SUB-BASE, DRAINAGE, BACKFILL AND GRAVEL FOR SLABS, PAVEMENT AND IMPROVEMENTS.
3. ROCK EXCAVATION WITHOUT BLASTING.
4. SUPPLY OF ADDITIONAL MATERIALS FOR OFFSITE AS REQUIRED.
5. REMOVAL AND LEGDK DISPOSAL OF EXCAVATED MATERIAL AS REQUIRED.

B. QUALITY ASSURANCE
1. COMPACTION
A. UNDER STRUCTURES, BUILDING SLABS, PAVEMENTS AND WALKWAYS WILL OBTAIN A 95% COMPACTION AT A MINIMUM DRY DENSITY AS DETERMINED BY ASTM 0-1557 OR WITH PLUS OR MINUS 3% OF THE MOISTURE CONTENT.
2. GRADING TOLERANCES OUTSIDE BUILDING LINES
A. LAWNS, UNPAVED AREAS AND WALKS PLUS OR MINUS 1 INCH.
B. UNDER PAVEMENTS PLUS OR MINUS ½ INCH.
3. GRADING TOLERANCES FOR FILL UNDER CONCRETE APPLICATIONS
A. PLUS OR MINUS ½ INCH MEASURED WITH 10 FOOT STRAIGHT EDGE.

C. PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS NOTED IN CONSTRUCTION DOCUMENTS)
1. SUB-BASE MATERIAL: GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE OR SLAG, AND NATURAL SAND.
2. WASHED MATERIAL, EVENLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL WITH 95% PASSING A 1-1/2 INCH SIEVE.
3. GRADING MATERIAL WILL CONSIST OF SATISFACTORY NATIVE OR IMPORTED SOIL MATERIALS FREE OF CLAY, ROCK OR GRAVEL NOT LARGER THAN 2 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS AND OTHER UNSUITABLE MATERIALS WILL NOT BE ALLOWED FOR USE. IMPORTED MATERIALS SHALL HAVE A CLAY CONTENT OF NO MORE THAN 5%.
4. GRAVEL MATERIAL: EVENLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL WITH 95% PASSING A 1-1/2 INCH SIEVE.
5. GEOTEXTILE FABRIC: AS PER CONSTRUCTION DOCUMENTS.

D. CLEARING AND GRUBBING
1. REMOVE ALL VEGETATION AND MATERIALS AS REQUIRED. REMOVE STUMPS COMPLETELY UNDER FOUNDATIONS AND ROADWAYS. DISPOSE OF CLEARING AND GRUBBING OFF-SITE OR IN AN ON-SITE LOCATION APPROVED BY CONSTRUCTION MANAGER.

E. STRIPPING
1. STRIP NOT LESS 3 INCHES OF SOD AND TOPSOIL FROM AREAS THAT WILL UNDERLAY GRAVEL, PAVEMENT, NEW STRUCTURES OR EMBANKMENTS. STOCKPILE STRIPPING ON-SITE FOR RE-USE AND FINAL LANDSCAPING.

G. EMBANKMENT
1. CONSTRUCT EMBANKMENT TO THE LINES AND GRADES SHOWN ON THE DRAWING.
2. CONSTRUCT EMBANKMENT FROM ON-SITE EXCAVATION MATERIAL WHEN SUITABLE. USE IMPORTED BACKFILL ONLY AFTER AVAILABLE ON-SITE EXCAVATION MATERIAL HAS BEEN USED.
3. CONSTRUCT IN LIFTS OF NOT MORE THAN 12 INCHES IN LOOSE DEPTH. THE FULL WIDTH OF THE CROSS SECTION SHALL BE BROUGHT UP UNIFORMLY.
4. MATERIAL SHALL BE PLACED IN LAYERS AND SHALL BE NEAR OPTIMUM MOISTURE CONTENT BEFORE ROLLING TO OBTAIN THE PRESCRIBED COMPACTION. WETTING OR DRYING OF THE MATERIAL AND MANIPULATION TO SECURE A UNIFORM MOISTURE CONTENT THROUGHOUT THE LAYERS MAY BE REQUIRED. SUCH OPERATIONS SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM. SHOULD THE MATERIAL BE TOO WET TO PERMIT PROPER COMPACTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE MATERIAL WITH AN ACCEPTABLE MOISTURE CONTENT.
5. DO NOT PLACE FROZEN MATERIAL IN THE EMBANKMENT AND DO NOT PLACE EMBANKMENT MATERIAL UPON FROZEN MATERIAL.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF EMBANKMENTS AND THE REPLACEMENT OF ANY PORTION WHICH HAS BECOME DISPLACED DUE TO CONTRACTOR'S OPERATIONS.
7. START LAYERS IN THE DEEPEST PORTION OF THE FILL AND AS PLACEMENT PROGRESSES, CONSTRUCT LAYERS APPROXIMATELY PARALLEL TO THE FINISH GRADE LINE.
8. ROUTE EQUIPMENT BOTH LOADED AND EMPTY, OVER THE FULL WIDTH OF THE EMBANKMENT TO ENSURE UNIFORMITY OF MATERIAL PLACEMENT.
9. COMPACT EMBANKMENT UNDERLYING NEW GRAVEL PAVING, FLOOR SLABS AND STRUCTURES TO BE 95% COMPACTION AT A MINIMUM DRY DENSITY AS DETERMINED BY ASTM 0-1557 OR WITHIN PLUS OR MINUS 3% OF OPTIMUM MOISTURE CONTENT. COMPACT NON-STRUCTURAL AREA EMBANKMENTS TO A MINIMUM OF 90% OF ASTM 0-1557.

H. SITE GRADING
1. USING ON-SITE EXCAVATION MATERIAL, SHAPE, TRIM, FINISH AND COMPACT SURFACE AREAS TO CONFORM TO THE LINES. GRADES AND CROSS SECTIONS SHOWN ON THE DRAWING OR AS DESIGNATED BY THE CONSTRUCTION MANAGER.
2. GRADE SURFACES TO DRAIN AND ELIMINATE ANY PONDING OR EROSION.
3. ELIMINATE WHEEL RUTS BY REGRADING.
4. COMPACT AREAS OF UNDERLYING NEW GRAVEL, PAVING, FLOOR SLABS AND STRUCTURES TO BE AT 95% COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY THE ASTM 0-1557 OR WITHIN PLUS OR MINUS 3% OF OPTIMUM MOISTURE CONTENT.
5. CONSTRUCT FINISH SURFACE OF SITE GRADING AREAS WITHIN 1 INCH FROM SPECIFIED GRADE.

I. SUBGRADE PREPARATION
1. SHAPE TOP OF SUBGRADE TO THE LINES AND GRADES SHOWN ON THE DRAWINGS.
2. MAINTAIN TOP OF SUBGRADE IN A FREE-DRAINING CONDITION.
3. DO NOT STOCK PILE MATERIAL ON TOP OF SUBGRADE UNLESS AUTHORIZED BY CONSTRUCTION MANAGER.
4. COMPACT THE TOP 12 INCHES OF SUBGRADE TO A 95% COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY ASTM 0-1557 OR WITHIN PLUS OR MINUS 3% OF THE OPTIMUM MOISTURE CONTENT.
5. CONSTRUCT TOP OF SUBGRADE WITHIN 1 INCH OF ESTABLISHED GRADE AND CROSS SECTION.

J. GEOTEXTILE FABRIC
1. LAY GEOTEXTILE FABRIC OVER COMPACTED SUBGRADE IN THE COMPOUND AREA AND UNDER LENGTH OF ROAD (WHEN REQUIRED). LAP ALL JOINTS TO A MINIMUM OF 36 INCHES.

K. GRAVEL SURFACING
1. CONSTRUCT GRAVEL SURFACING AREAS USING CRUSHED AGGREGATE BASE AND FINISH COURSES AS SPECIFIED BY CONSTRUCTION MANAGER. SPREAD GRAVEL AND RAKE TO OBTAIN A UNIFORM SURFACE AREA.

L. LANDSCAPING
1. FURNISH, INSTALL AND MAINTAIN LANDSCAPE WORK AS SHOWN AND/OR REQUIRED WITHIN THE CONSTRUCTION DOCUMENTS OR AS SPECIFIED IN THE CONSTRUCTION SPECIFICATIONS.

M. CONCRETE FORM WORK
1. FORMS: SMOOTH AND FREE OF SURFACE IRREGULARITIES. UTILIZE FORM RELEASE AGENTS.
2. CHAMFER EXPOSED EDGES OF ALL TOWER FOUNDATION SHALL RECEIVE A ¾ INCH BY ¾ INCH 45 DEGREE CHAMFER. OTHER EXPOSED EDGES SHALL RECEIVE A TOOLED RADIUS FINISH.
3. UPON COMPLETION, REMOVE ALL FORMS INCLUDING THOSE CONCEALED OR BURIED.
4. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.

4. GENERAL NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS AND COORDINATE HIS WORK WITH THE WORK OF ALL OTHER CONTRACTORS TO ENSURE THAT WORK PROGRESSION IS NOT INTERRUPTED.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A NEAT AND ORDERLY SITE, YARD AND GROUNDS. CONTRACTOR SHALL REMOVE AND DISPOSE OFF SITE ALL RUBBISH, WASTE MATERIAL, LITTER AND ALL FOREIGN SUBSTANCES. REMOVE PETROCHEMICAL SPILLS, STAINS AND OTHER FOREIGN DEPOSITS. RAKE GROUND TO A SMOOTH EVEN-TEXTURED SURFACE.
3. THE PLANS SHOW SOME KNOWN SUBSURFACE STRUCTURE ABOVE GROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA, EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATION INDICATED. IN PARTICULAR THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPELINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE AREA MAY BE SHOWN OR MAY NOT BE SHOWN AND IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN 48 HOURS BEFORE YOU DIG, DRILL OR BLAST CALL LOCAL UTILITIES LOCATOR COMPANY.
4. THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE OWNER OR THE OWNER'S REPRESENTATIVE.
5. THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THE SITE DURING THE PERFORMANCE OF THIS CONTRACT.
6. THE CONTRACTOR SHALL RESTORE ALL DAMAGED, PUBLIC OR PRIVATE PROPERTY TO AT LEAST AS GOOD OF CONDITION AS BEFORE DISTURBED AS DETERMINED BY THE OWNER OR OWNER'S REPRESENTATIVE.
7. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.
8. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE OWNER OR OWNER'S REPRESENTATIVE, SHALL BE REPLACED.
9 ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH OSHA REGULATIONS FOR CONSTRUCTION.
10.CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK.
11ALL UTILITY WORK INVOLVING CONNECTIONS TO EXISTING SYSTEMS SHALL BE COORDINATED WITH THE OWNER OR OWNER'S REPRESENTATIVE BEFORE EACH AND EVERY CONNECTION TO EXISTING SYSTEMS IS MADE.
12MAINTAIN FLOW FOR ALL EXISTING UTILITIES
13ALL SITE FILL SHALL MEET SELECTED FILL STANDARDS AS DEFINED BY THE OWNER OF OWNER'S REPRESENTATIVE ON THE DRAWINGS OR GEOTECHNICAL REPORT RECOMMENDATIONS.
14CONTRACTOR TO GRADE ALL AREAS OF THE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE BUILDING OR EQUIPMENT PAD AND THE TOWER.
15IF NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING AND REGRADING ROADWAY AND ANY DISTURBED AREAS FOLLOWING INSTALLATION OF UTILITIES.
16NO COMMERCIAL MESSAGES TO BE DISPLAYED ON TOWER
17WATER AND SEWER SERVICES ARE NOT REQUIRED FOR THE DEVELOPMENT
18THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL UNLESS OTHERWISE NOTED.
19ELECTRICAL DRAWINGS HAVE BEEN REVIEWED AND SEALED FOR STRUCTURAL PURPOSES ONLY.

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DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY.

SUBMITTALS

REV	DATE	DESCRIPTION	BY
A	12/11/19	90% CD	SAR
B	12/26/19	90% CD	KSN
C	01/14/20	90% CD	GOP
D	01/21/20	90% CD	PTN
0	02/11/20	90% CD	SAR

STATE OF MARYLAND
KIRK R. HALL
No. 27217
PROFESSIONAL ENGINEER

2-12-2020

"I CERTIFY THAT THESE DOCUMENTS WERE PREPARED BY OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NUMBER 27217, EXPIRATION DATE 3/26/2020."

PROJECT TITLE

USID: 100205
FA#: 10128448

GILL

9727 MOUNT PISGAH ROAD
SILVER SPRING, MD 20903

EXISTING BUILDING

SHEET DESCRIPTION

GENERAL NOTES

SHEET NO.

GN-1