



**Board of Architectural Review (BAR)
Certificate of Appropriateness**

RECEIVED

JAN 11 2013

NEIGHBORHOOD DEVELOPMENT SERVICES

Please Return To: City of Charlottesville
Department of Neighborhood Development Services
P.O. Box 911, City Hall
Charlottesville, Virginia 22902
Telephone (434) 970-3130 Fax (434) 970-3359

Please submit ten (10) copies of application form and all attachments.

For a new construction project, please include \$375 application fee. For all other projects requiring BAR approval, please include \$125 application fee. For projects that require only administrative approval, please include \$100 administrative fee. Make checks payable to the City of Charlottesville.

The BAR meets the third Tuesday of the month.

Deadline for submittals is Tuesday 3 weeks prior to next BAR meeting by 4 p.m.

Owner Name	500 Court Square Association	Applicant Name	STEVEN MUSCARELLA DYNIS FOR AT&T
Project Name/Description	AT&T LTE CV305	Parcel Number	530096000
Property Address	500 Court Square		

Applicant Information

Address: 1632 E. PARHAM RD.
RICHMOND VA 23228
Email: SMUSCARELLA@DYNIS.COM
Phone: (W) 410-227-8733 (H) 804-615-2737
FAX:

Property Owner Information (if not applicant)

Address: 500 Court Square, Charlottesville, VA 22902
Email:
Phone: (W) (H)
FAX:

Do you intend to apply for Federal or State Tax Credits for this project? No

Signature of Applicant

I hereby attest that the information I have provided is, to the best of my knowledge, correct. (Signature also denotes commitment to pay invoice for required mail notices.)

Signature: STEVEN MUSCARELLA Date: 1/2/13

Print Name: STEVEN MUSCARELLA Date: 1/2/13

Property Owner Permission (if not applicant)

I have read this application and hereby give my consent to its submission.

Signature: SEE ATTACHED EMAIL APPROVED Date:

Print Name Date

Description of Proposed Work (attach separate narrative if necessary): REPLACEMENT OF EXISTING ANTENNA FOR AT&T WITH A LIKE KIND ANTENNA FOR LTE 4G UPGRADE.

List All Attachments (see reverse side for submittal requirements):

Cut sheets for Antenna, STATE OF WORK Constructive Drawings: photos

For Office Use Only	Approved/Disapproved by: M.J. Scales
Received by: J. Barnow	Date: Jan. 30, 2013
Fee paid: \$125.00 Cash (Ck. # 1045)	Conditions of approval:
Date Received: J. Barnow	
P13-0004	

HISTORIC DISTRICT ORDINANCE: For more information, please refer to *Section 34- 271 Historical Preservation and Architectural Design Control Overlay Districts* in the City of Charlottesville Zoning Ordinance online at www.charlottesville.org

DESIGN REVIEW GUIDELINES: You may obtain a copy of the current *Design Review Guidelines* at the Department of Neighborhood Development Services in City Hall or online.

SUBMITTAL REQUIREMENTS: The following information and exhibits shall be submitted along with each application for Certificate of Appropriateness, per *Sec. 34-282 (d)* in the City of Charlottesville Zoning Ordinance:

(1) Detailed and clear depictions of any proposed changes in the exterior features of the subject property;

SEE ATTACHED LETTER

(2) Photographs of the subject property and photographs of the buildings on contiguous properties;

(3) Samples to show the nature, texture and color of materials proposed;

NO CHANGES TO BUILDING STRUCTURE ARE PROPOSED

(4) The history of an existing building or structure, if requested;

(5) For new construction and projects proposing expansion of the footprint of an existing building: a three-dimensional model (in physical or digital form);

(6) In the case of a demolition request where structural integrity is at issue, the applicant shall provide a structural evaluation and cost estimates for rehabilitation, prepared by a professional engineer, unless waived by the BAR.

N/A

N/A

N/A

Board of Architectural Review
City of Charlottesville
Department of Neighborhood Development Services
P.O. Box 911, City Hall
Charlottesville, VA 22902

Date: January 7, 2013 **RECEIVED**
JAN 11 2013
NEIGHBORHOOD DEVELOPMENT SERVICES

AT&T Request to Replace Existing Antenna at 500 Court Square, Charlottesville, VA 22902

This is a request by AT&T Mobility to perform maintenance at the AT&T Cellular Communications facility located at the 500 Court Square, Charlottesville, VA 22902. This location is a building structure that provides space for several wireless companies to locate their antenna and related equipment to provide wireless services to the Court House area of Charlottesville.

The building ownership is currently performing repairs and improvements to the building and the roof as part of a re-roofing project. This request is not related to the current work being performed by the building ownership. This request is limited to the replacement of the existing antenna and upgrading the wireless facility operated by AT&T. This application is simply a request to replace the existing panel type antenna on the roof of the building with a like kind panel antenna to upgrade and improve the AT&T wireless services at this site.

The proposed "maintenance work" consists of replacing the all of the existing antennas with similar ones that allow for 4G technology call processing. The number of the antenna authorized for use at the site will not change nor will the overall layout of the site. There will not be any change to any other exterior elements of the building or the mounting platforms that are currently provided by the building ownership.

Currently there are nine (9) panel type AT&T antenna that are pipe mounted on three (3) platforms (sectors) that are directly part of the roof. There are three (3) panel antenna on each of the three (3) platforms. The platforms are directly mounted to the main column support structures of the building and are part of the building. They are provided to AT&T under a lease agreement with the building ownership.

The current antenna locations and heights will not be changed as part of this application. The existing nine (9) panel type antenna are EMS Wireless model RV90-17-04dp are 56"x8"x2.75" in size and they will be replaced with nine (9) Andrews panel type antenna that are 72.7"x11.9"x7.1" in size. The existing mounting system will be reused for each antenna.

The existing equipment platform is also located on the roof and will not be increased in size or changed as part of this application. Some additional radio equipment will be place on the equipment platform to support the operation of the new antenna. Low voltage junction boxes will be mounted to the platforms to allow for 3/4 inch fiber lines to connect between the radio

cabinets on the platform and the antenna. These fiber lines will be run along AT&T's existing cable trays on the roof.

A revised set of Constructions Drawings giving the more specific details along with pictures of the existing antenna mounting platforms are being submitted with this application. Please review this request and approve the replacement of the existing antenna.

Respectfully

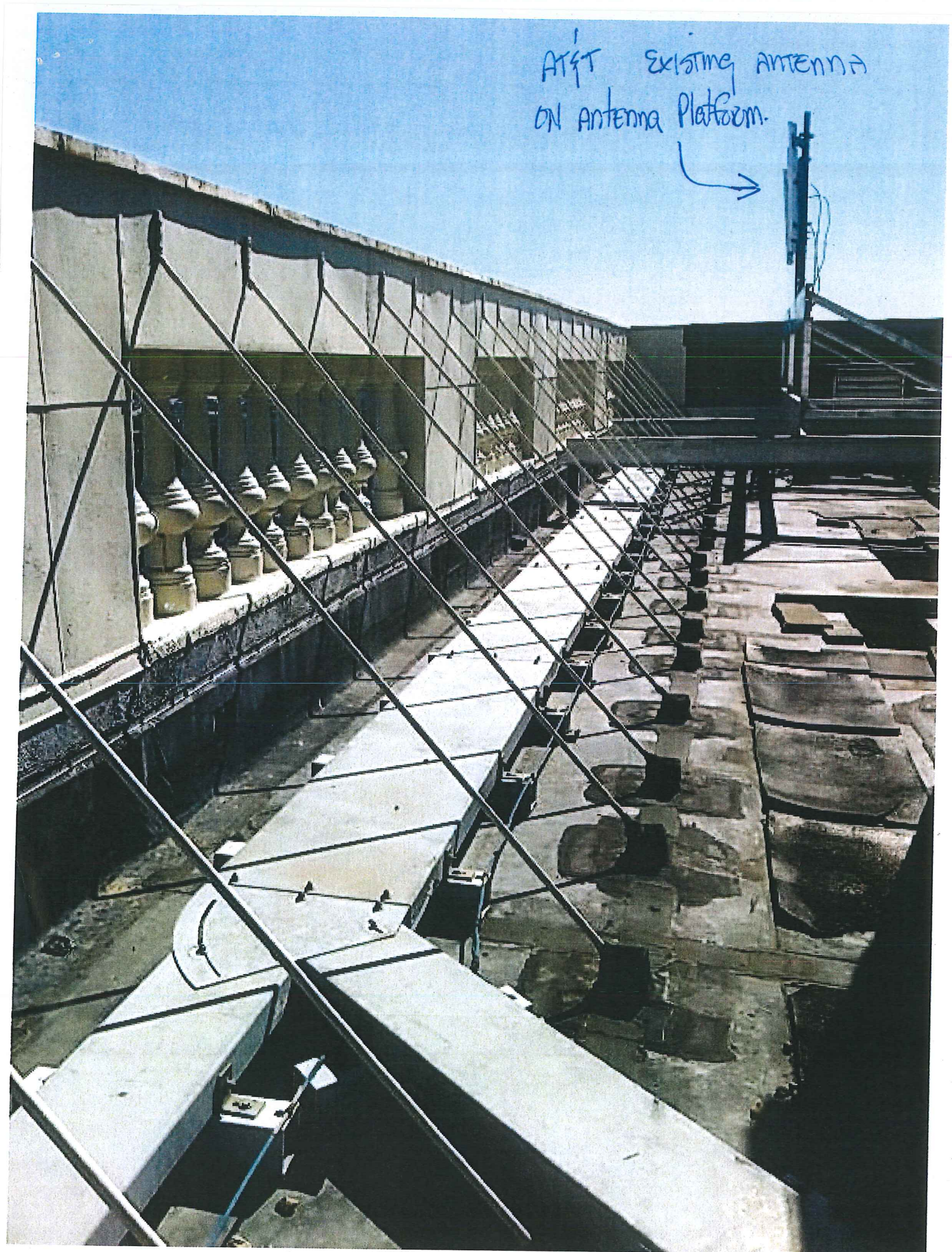
Steve Muscarella
Agent for AT&T Mobility

Sign Here: STEVEN MUSCARELLA

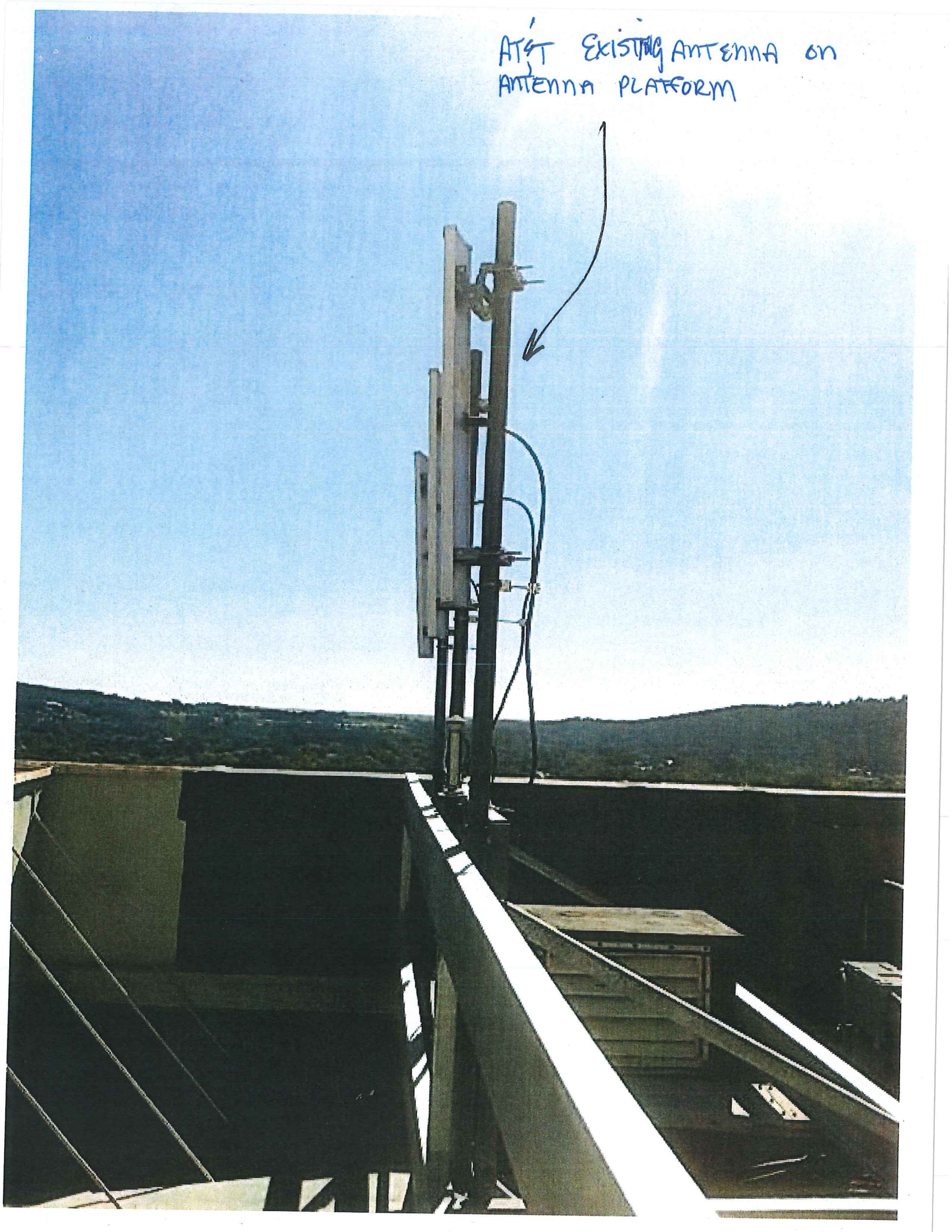
Print Name: STEVEN MUSCARELLA

Date: 1/8/13

AT&T Existing ANTENNA
ON ANTENNA PLATFORM.



AT&T EXISTING ANTENNA ON
ANTENNA PLATFORM



EXISTING
ATT ANTENNA ON
ANTENNA PLATFORM





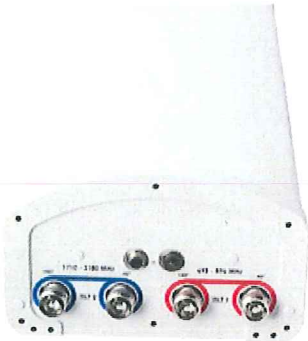
OTHER ~~CARRIER~~ EXISTING ANTENNA MOUNTED
NEAR AT&T EQUIPMENT CABINET

Product Specifications



SBNH-1D6565B

DualPol® Dual Band Antenna, 698–896 MHz and 1710–2180 MHz, 65° horizontal beamwidth, RET compatible variable electrical tilt



- Two DualPol® antennas under one radome
- Interleaved dipole technology providing for attractive, low wind load mechanical package
- Each antenna is independently capable of field adjustable electrical tilt
- Internal next generation actuator eliminates field installation and defines new standards for reliability
- Fully compatible with Andrew Teletilt® remote control system

CHARACTERISTICS

General Specifications

Antenna Type SmartBeam®
 Brand DualPol® | SmartBeam® | Teletilt®
 Operating Frequency Band 1710 – 2180 MHz | 698 – 896 MHz

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1710–1880	1850–1990	1920–2180
Beamwidth, Horizontal, degrees	70	67	59	57	65
Beamwidth, Horizontal Tolerance, degrees	±3	±8	±2	±4	±6
Gain, dBd	12.9	13.1	16.3	16.1	15.7
Gain, dBi	15.0	15.2	18.4	18.2	17.8
Beamwidth, Vertical, degrees	12.3	10.8	5.5	5.1	4.8
Beam Tilt, degrees	0–10	0–10	0–6	0–6	0–6
Upper Sidelobe Suppression (USLS), typical, dB	15	15	15	15	15
Front-to-Back Ratio at 180°, dB	25	27	34	35	32
Front-to-Back Total Power at 180° ± 20°, dB	20	20	28	28	25
Cross Polarization Ratio (CPR) at Boresight, dB	24	18	25	25	22
Cross Polarization Ratio (CPR) at Sector, dB	10	8	10	10	8
Isolation, dB	30	30	30	30	30
Isolation, Intersystem, dB	30	30	30	30	30
VSWR Return Loss, db	1.5:1 14.0	1.5:1 14.0	1.5:1 14.0	1.5:1 14.0	1.5:1 14.0
Intermodulation Products, 3rd Order, 2 x 20 W, dBc	-150	-150	-150	-150	-150
Input Power, maximum, watts	400	400	300	300	300
Polarization	±45°	±45°	±45°	±45°	±45°
Impedance, ohms	50	50	50	50	50
Lightning Protection	dc Ground	dc Ground	dc Ground	dc Ground	dc Ground

www.commscope.com/andrew

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Product Specifications

SBNH-1D6565B



Mechanical Specifications

Color	Light gray
Connector Interface	7-16 DIN Female
Connector Location	Bottom
Connector Quantity	4
Radome Material	Fiberglass, UV resistant
Wind Loading, maximum	617.7 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Speed, maximum	241.0 km/h 149.8 mph

Dimensions

Depth	181.0 mm 7.1 in
Length	1847.0 mm 72.7 in
Width	301.0 mm 11.9 in
Net Weight	21.5 kg 47.4 lb

Remote Electrical Tilt (RET) Information

Adjustment Time, full range, maximum	30 s
Annual Failure Rate, maximum	0.01%
Power Consumption, during motor movements, maximum	11.0 W
Power Consumption, idle state, maximum	2.0 W
Power Input	10-30 V
Protocol	3GPP/AISG 2.0 Multi-RET
RET Interface	RS-485 Male (input port, 1) RS-485 Female (daisy chain port ,1)
RET System	Teletilt®

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2002/95/EC	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system



INCLUDED PRODUCTS

www.commscope.com/andrew

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ENGINEERING
 2006 INTERNATIONAL BUILDING CODE
 2008 NATIONAL ELECTRIC CODE
 TIA/EIA-222-G OR LATEST EDITION

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, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

PROJECT DESCRIPTION
 PROPOSED UPGRADE OF EXISTING TELECOMMUNICATIONS FACILITY INCLUDING THE REMOVAL OF (9) EXISTING ANTENNAS AND INSTALLATION OF (9) NEW ANTENNAS ON EXISTING ANTENNA MOUNTS; (3) RADIO HEAD UNITS, ASSOCIATED SURGE SUPPRESSION AND APPURTENANCES ON AN EXISTING ROOFTOP EQUIPMENT PLATFORM AND UPGRADE SUPPORTING EQUIPMENT ON EXISTING PLATFORM.

SITE INFORMATION
 SITE ADDRESS: 500 COURT SQUARE
 CHARLOTTESVILLE, VA 22902
 COUNTY: CHARLOTTESVILLE CITY
 LATITUDE (NAD 83): 38° 01' 54.98" N (38.03194)
 LONGITUDE (NAD 83): 78° 28' 41.02" W (-78.47806)
 REGION: NORTHEAST
 US ID: 49360
 FA LOCATION: 10068631

PROJECT CONTACTS
 A/E: COM-EX CONSULTANTS, LLC
 862-209-4300
 RF: RAJ MAGUNTA - AT&T
 408-505-5127
 CONSTRUCTION: TBD

RF DATA NOTE
 CONTRACTOR SHALL OBTAIN LATEST RF DATA SHEET AND CONFIRM SAME WITH DYNIS CONSTRUCTION MANAGER PRIOR TO START OF CONSTRUCTION.
 IF USING 11"x17" PLOT, DRAWINGS WILL BE HALF SCALE

CONTACT INFORMATION
 ENGINEER: COM-EX CONSULTANTS, LLC
 4 SECOND AVENUE, SUITE 204
 DENVER, NJ 07834
 CONTACT: NICHOLAS D. BARILE
 PHONE: 862-209-4300

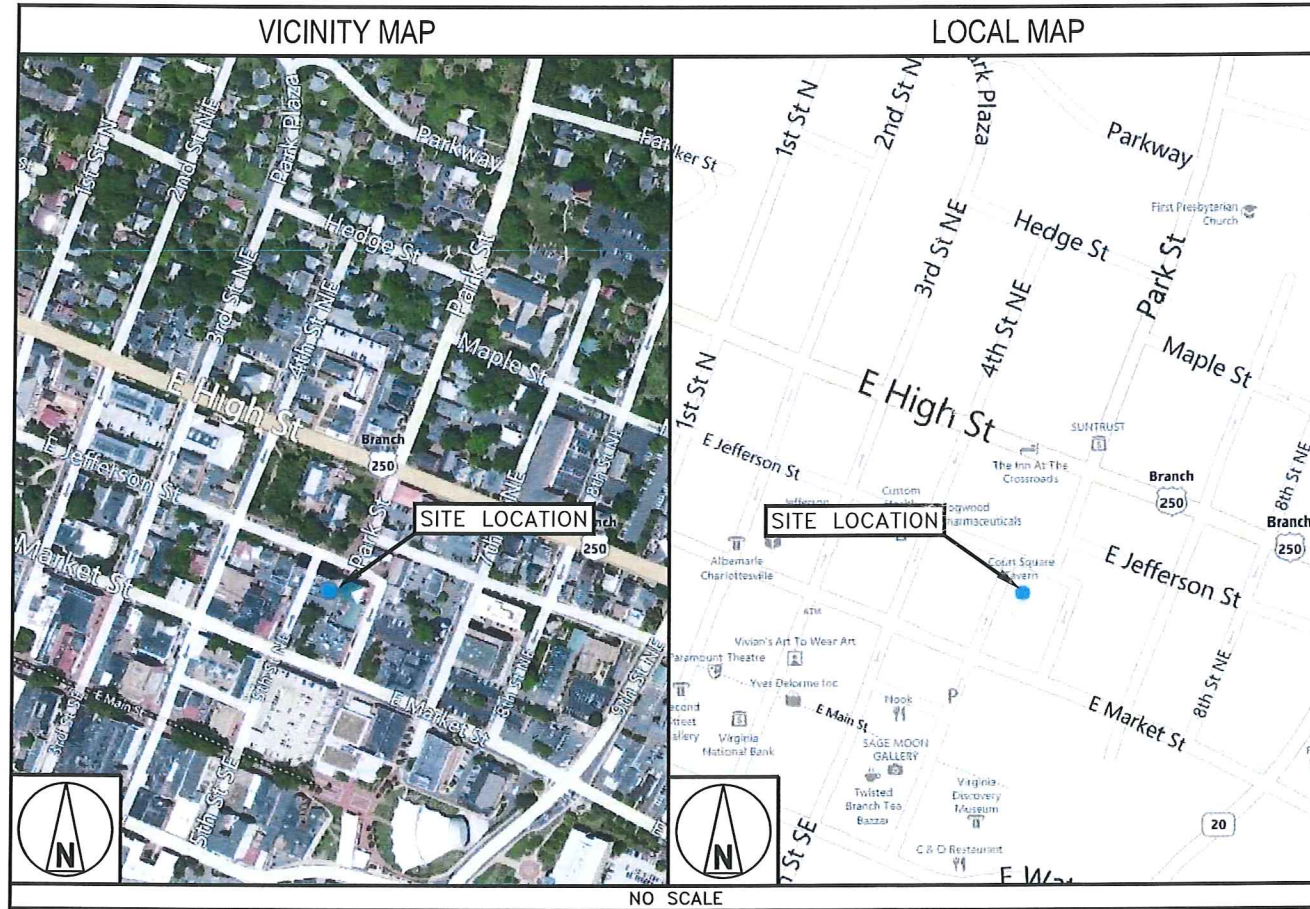
SITE NAME: COURT SQUARE

SITE # CV305



LTE ROOFTOP

RECEIVED
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 JAN 11 2013
 NEIGHBORHOOD DEVELOPMENT SERVICES



DRIVING DIRECTIONS
 DIRECTIONS FROM NEAREST AT&T OFFICE:
 1: START OUT GOING SOUTHWEST ON COX RD. 2: TURN SLIGHT RIGHT ONTO NUCKOLS RD. 3: MERGE ONTO I-295 N TOWARD I-64 W / CHARLOTTESVILLE. 4: MERGE ONTO I-64 W VIA EXIT 53A TOWARD CHARLOTTESVILLE. 5: TAKE THE US-250 EXIT-EXIT 124- TOWARD CHARLOTTESVILLE / SHADWELL. 6: TURN RIGHT ONTO RICHMOND RD / US-250 W. CONTINUE TO FOLLOW US-250 W. 7: TURN LEFT ONTO E HIGH ST / US-250 BR / VA-20. 8: KEEP RIGHT AT THE FORK TO GO ON E HIGH ST / US-250 BR. 9: TURN LEFT ONTO PARK ST. 10: TURN LEFT ONTO COURT SQ. 11: END AT [1-399] COURT SQ

APPROVALS

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

AT&T COMPLIANCE: _____ DATE: _____
 AT&T RF ENGINEER: _____ DATE: _____
 AT&T OPERATIONS: _____ DATE: _____
 AT&T PM: _____ DATE: _____
 DYNIS CONSTRUCTION: _____ DATE: _____
 DYNIS SITE ACQ: _____ DATE: _____
 SITE OWNER: _____ DATE: _____

DRAWING INDEX

SHEET NO:	SHEET TITLE
T-1	TITLE SHEET
C-1	ROOF PLAN AND EQUIPMENT LAYOUT
C-2	EAST ELEVATION
C-3	ANTENNA LAYOUTS
C-4	EQUIPMENT DETAILS
RF-1	RF DATA
G-1	GROUNDING DETAILS
G-1.1	EQUIPMENT GROUNDING PLAN
GN-1	GENERAL CONSTRUCTION NOTES

DO NOT SCALE DRAWINGS
 CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

UNDERGROUND SERVICE ALERT
 MISS UTILITY
 811
 WWW.VA811.COM
 3 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

at&t
 LIBERTY PLAZA 1
 4801 COX ROAD, SUITE 300
 GLEN ALLEN, VA 23060

DYNIS
 Consider It Connected.
 9020 MENDENHALL COURT, SUITE H
 COLUMBIA, MARYLAND 21045

COM-EX Consultants
 4 SECOND AVENUE
 SUITE 204
 DENVER, NJ 07834
 PHONE: 862.209.4301
 FAX: 862.209.4301
 NEW JERSEY STATE BOARD OF PROFESSIONAL ENGINEERS
 CERTIFICATE OF AUTHORIZATION # 240A28172100

PROJECT NO: 12024-DYN
 DRAWN BY: SDF
 CHECKED BY: NDB

REV	DATE	DESCRIPTION
0	07/26/12	ISSUED FOR CONSTRUCTION
A	05/09/12	INITIAL SUBMISSION

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INFORMATION ON THIS SET OF DRAWINGS IS NOT FOR LEGAL USE UNLESS ACCOMPANIED BY THE STAMP AND SEAL & SIGNATURE OF A PROFESSIONAL ENGINEER

Nicholas D. Barile
 NICHOLAS D. BARILE
 Lic No. 010435
 NICHOLAS D. BARILE
 PROFESSIONAL ENGINEER
 PROFESSIONAL ENGINEER, No. 0402050435

COURT SQUARE
 SITE # CV305
 SITE ADDRESS:
 500 COURT SQUARE
 CHARLOTTESVILLE, VA 22902
 LTE

SHEET TITLE
 TITLE SHEET

SHEET NUMBER
 T-1



LIBERTY PLAZA 1
4801 COX ROAD, SUITE 300
GLEN ALLEN, VA 23060



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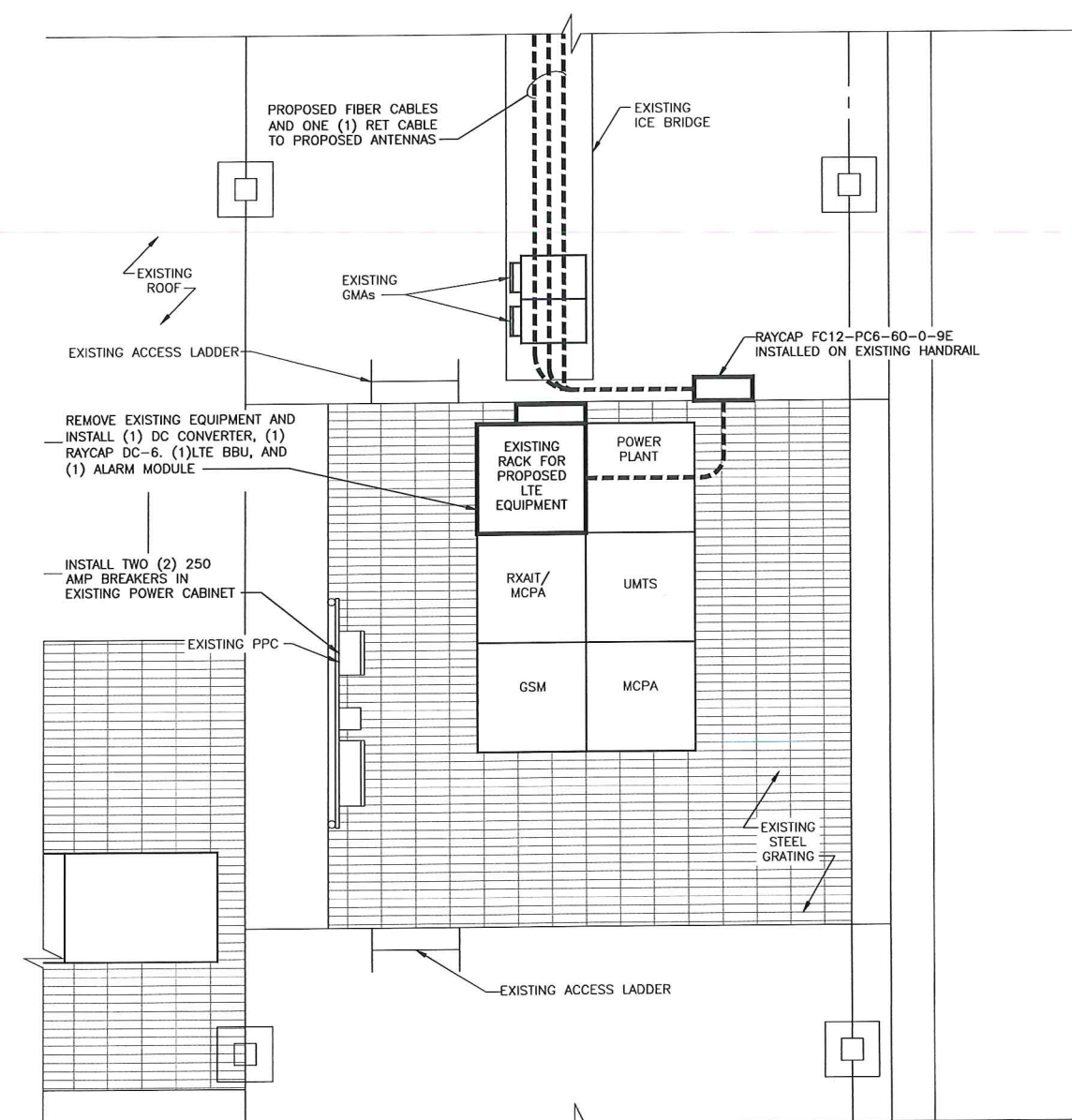
NICHOLAS D. BARILE
PROFESSIONAL ENGINEER
No. 0402050435

COURT SQUARE
SITE # CV305
SITE ADDRESS:
500 COURT SQUARE
CHARLOTTESVILLE, VA 22902
LTE

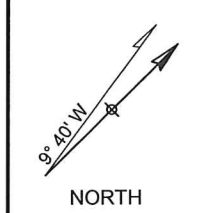
SHEET TITLE
ROOF PLAN AND
EQUIPMENT LAYOUT

SHEET NUMBER

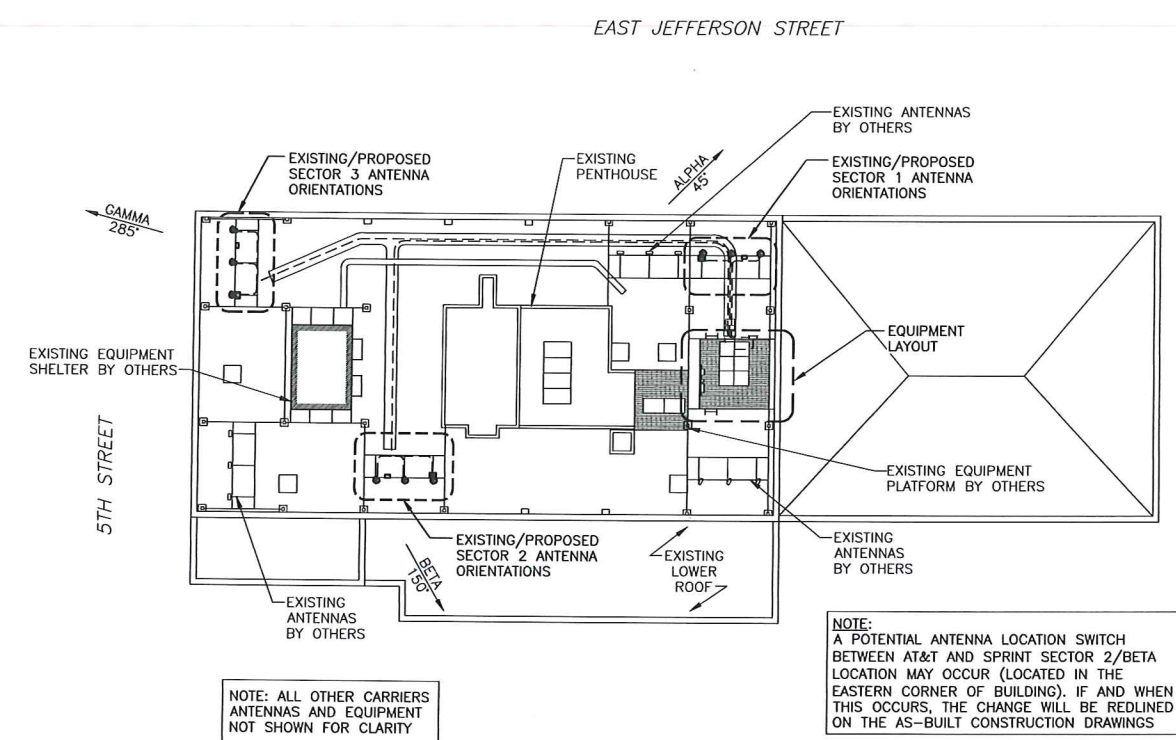
C-1



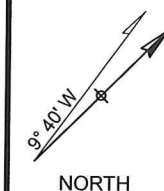
EQUIPMENT LAYOUT
4' 2' 0 4' 8'
1/2"=1'-0"



NOTES:
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.



ROOF PLAN
16' 8' 0 16' 32'
1/16"=1'-0"



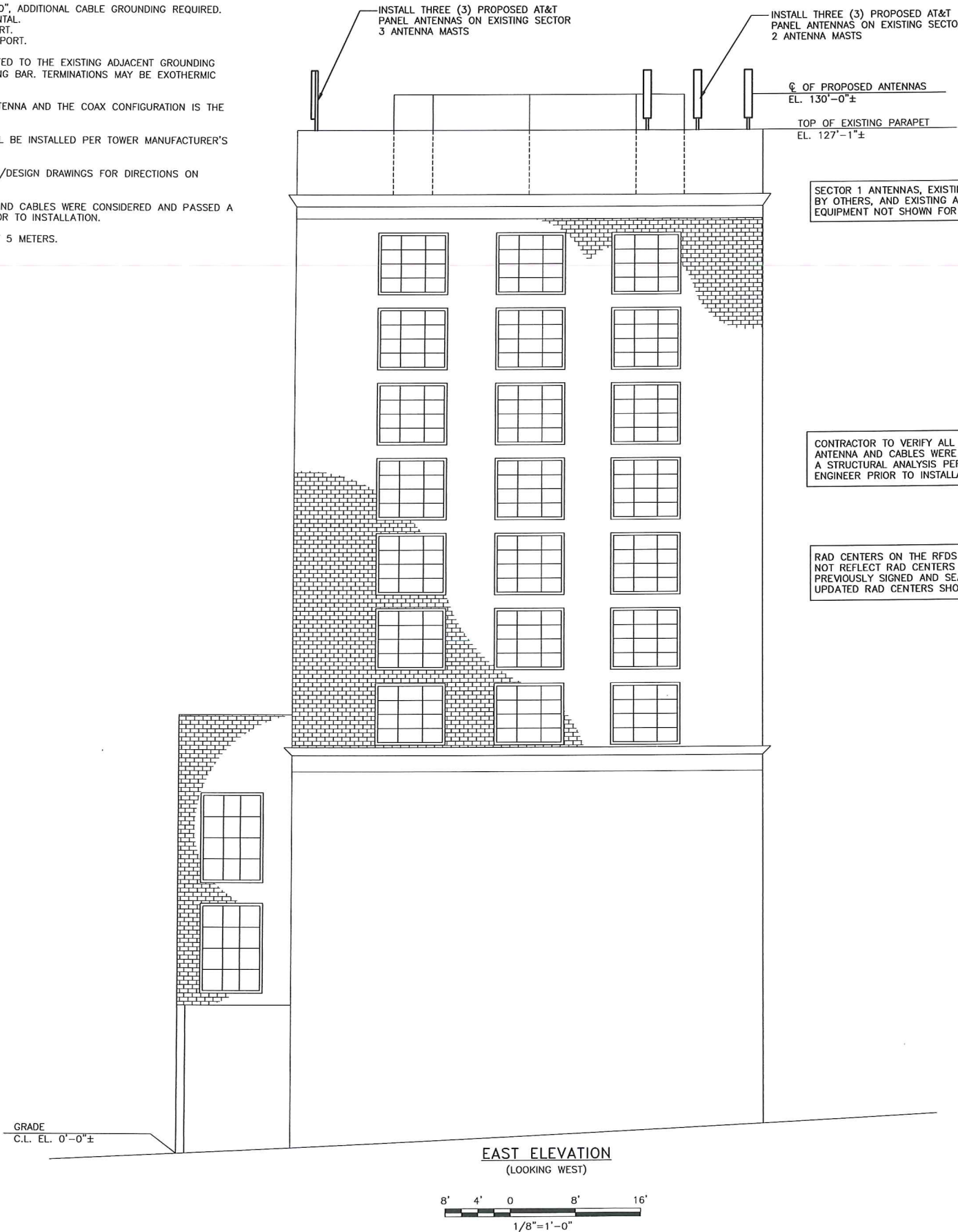
NOTES:
1. MAGNETIC DECLINATION SHOWN FOR JULY 24, 2012, AS PER NOAA-NATIONAL GEOPHYSICAL DATA CENTER
2. ANGLE OF MAGNETIC DECLINATION CHANGES BY 0' 1" W PER YEAR

LEGEND

CHAINLINK FENCE	— x — x — x —	WOOD/WROUGHT IRON FENCE	— □ — □ —
LEASE AREA	— — — — —	WALL STRUCTURE	▨ ▨ ▨ ▨ ▨
ICE BRIDGE	▨ ▨ ▨ ▨ ▨		

GENERAL NOTES

1. ALL CABLES SHALL BE GROUNDED WITH COAXIAL CABLE GROUNDING KITS. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS.
 - A. GROUNDING AT THE ANTENNA LEVEL.
 - B. GROUNDING AT MID LEVEL, TOWERS WHICH ARE OVER 200'-0", ADDITIONAL CABLE GROUNDING REQUIRED.
 - C. GROUNDING AT BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
 - D. GROUNDING OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
 - E. GROUNDING INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.
2. ALL PROPOSED GROUNDING BAR DOWNLOADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUNDING BAR DOWNLEADS A MINIMUM DISTANCE OF 4'-0" BELOW GROUNDING BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANTENNA AND THE COAX CONFIGURATION IS THE CORRECT MAKE AND MODELS, PRIOR TO INSTALLATION.
4. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S SPECIFICATION & RECOMMENDATIONS.
5. CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.
6. CONTRACTOR TO VERIFY ALL PROPOSED AND EXISTING ANTENNA AND CABLES WERE CONSIDERED AND PASSED A STRUCTURAL ANALYSIS PERFORMED BY A LICENSED ENGINEER PRIOR TO INSTALLATION.
7. DISTANCE FROM RRHS TO SURGE ARRESTOR TO BE A MAXIMUM OF 5 METERS.



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4801 COX ROAD, SUITE 300
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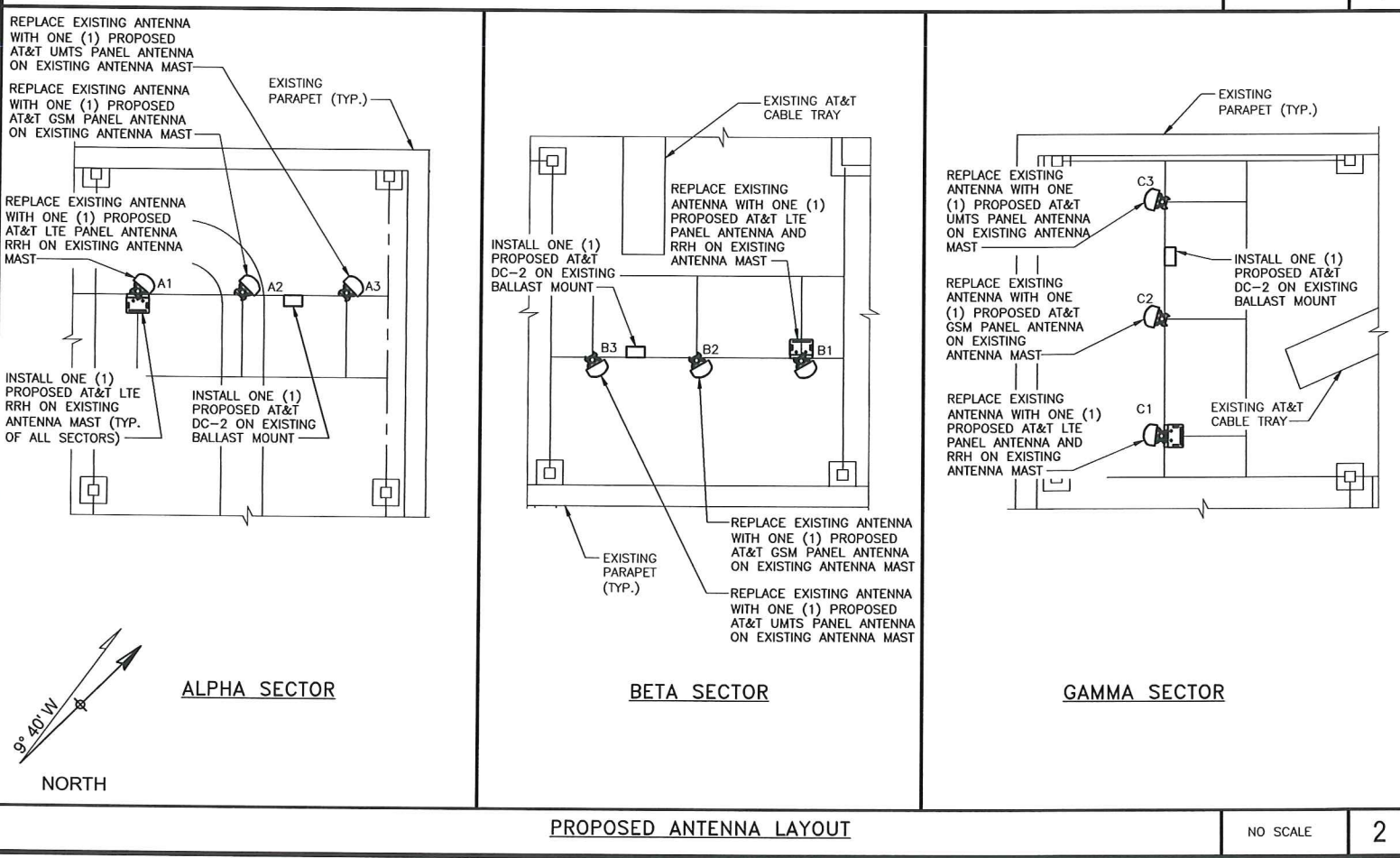
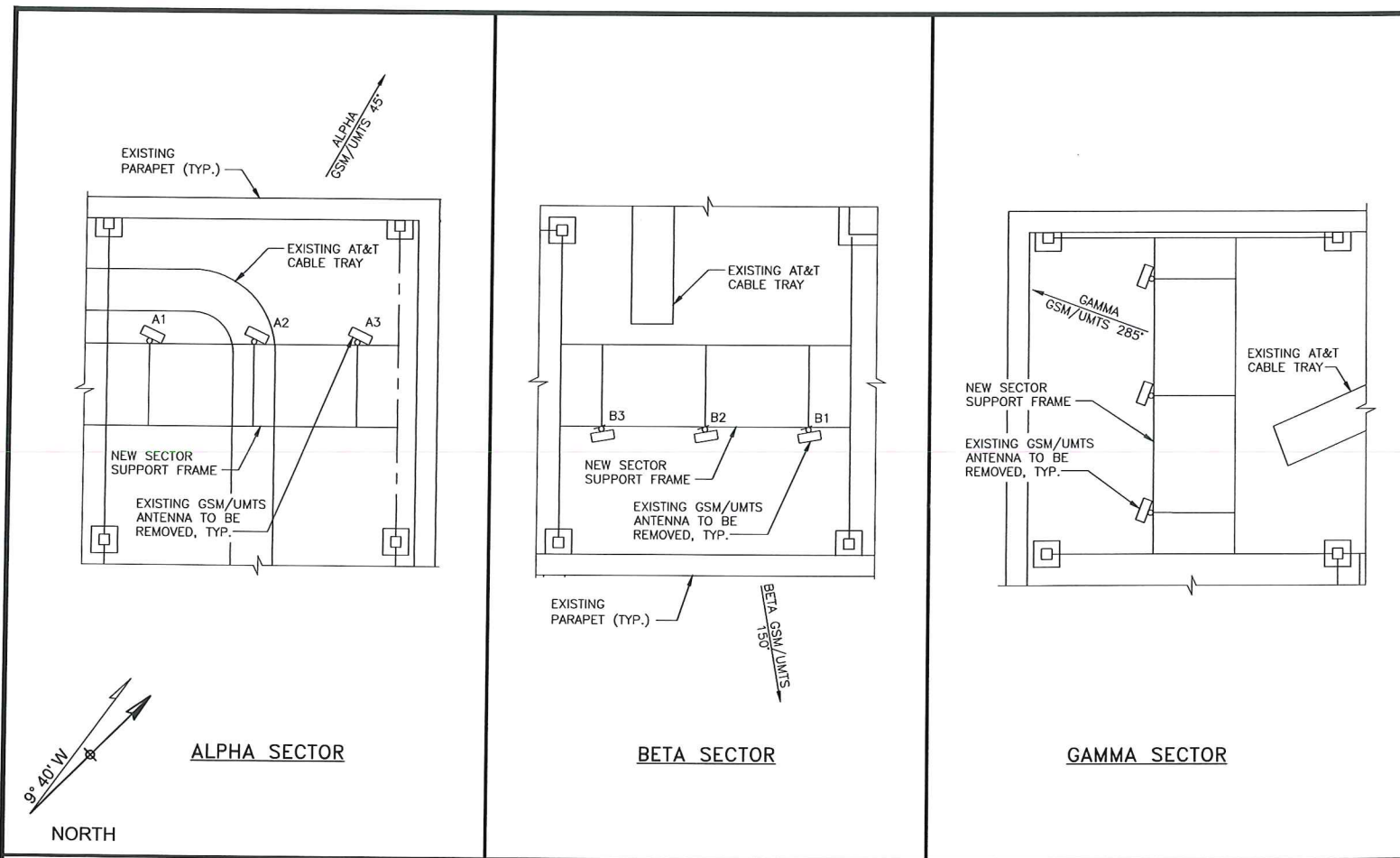
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NICHOLAS D. BARILE
PROFESSIONAL ENGINEER No. 040250435

COURT SQUARE
SITE # CV305
SITE ADDRESS:
500 COURT SQUARE
CHARLOTTESVILLE, VA 22902
LTE

SHEET TITLE
EAST ELEVATION

SHEET NUMBER
C-2



ANTENNA MOUNTING NOTES:

- DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO CURRENT ANSI/TIA-222 OR APPLICABLE LOCAL CODES.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS NOTED OTHERWISE.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS NOTED OTHERWISE.
- DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
- ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.
- ALL UNUSED PORTS ON ANY ANTENNAS SHALL BE TERMINATED WITH A 50-OHM LOAD TO ENSURE ANTENNAS PERFORM AS DESIGNED.
- PRIOR TO SETTING ANTENNA AZIMUTHS AND DOWNTILTS, ANTENNA CONTRACTOR SHALL CHECK THE ANTENNA MOUNT FOR TIGHTNESS AND ENSURE THAT THEY ARE PLUMB. ANTENNA AZIMUTHS SHALL BE SET FROM TRUE NORTH AND BE ORIENTED WITHIN +/- 5% AS DEFINED BY THE RFDS. ANTENNA DOWNTILTS SHALL BE WITHIN +/- 0.5% AS DEFINED BY THE RFDS. REFER TO ND-00246.
- JUMPERS FROM THE TMA'S MUST TERMINATE TO OPPOSITE POLARIZATION'S IN EACH SECTOR.
- CONTRACTOR SHALL RECORD THE SERIAL #, SECTOR, AND POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND PROVIDE THE INFORMATION TO AT&T.
- TMA'S SHALL BE MOUNTED ON PIPE DIRECTLY BEHIND ANTENNAS AS CLOSE TO ANTENNA AS FEASIBLE IN A VERTICAL POSITION.
- ANTENNAS SHALL HAVE A 4'-0" MIN CENTER TO CENTER HORIZONTAL SEPARATION.

TORQUE REQUIREMENTS:

- ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
- ALL RF CONNECTIONS, GROUNDING HARDWARE AND ANTENNA HARDWARE SHALL HAVE A TORQUE MARK INSTALLED IN A CONTINUOUS STRAIGHT LINE FROM BOTH SIDES OF THE CONNECTION.
 - RF CONNECTION BOTH SIDES OF THE CONNECTOR.
 - GROUNDING AND ANTENNA HARDWARE ON THE NUT SIDE STARTING FROM THE THREADS TO THE SOLID SURFACE. EXAMPLE OF SOLID SURFACE: GROUND BAR, ANTENNA BRACKET METAL.
- ALL 8M ANTENNA HARDWARE SHALL BE TIGHTENED TO 9 LB-FT (12 NM).
- ALL 12M ANTENNA HARDWARE SHALL BE TIGHTENED TO 43 LB-FT (58 NM).
- ALL GROUNDING HARDWARE SHALL BE TIGHTENED UNTIL THE LOCK WASHER COLLAPSES AND THE GROUNDING HARDWARE IS NO LONGER LOOSE.
- ALL DIN TYPE CONNECTIONS SHALL BE TIGHTENED TO 18-22 LB-FT (24.4 - 29.8 NM).
- ALL N TYPE CONNECTIONS SHALL BE TIGHTENED TO 15-20 LB-IN (1.7 - 2.3 NM).

FIBER & POWER CABLE MOUNTING NOTES:

- THE FIBER OPTIC TRUNK CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY. WHEN INSTALLING FIBER OPTIC TRUNK CABLES INTO A CABLE TRAY SYSTEM, THEY SHALL BE INSTALLED INTO AN INTER DUCT AND A PARTITION BARRIER SHALL BE INSTALLED BETWEEN THE 600 VOLT CABLES AND THE INTER DUCT IN ORDER TO SEGREGATE CABLE TYPES. OPTIC FIBER TRUNK CABLES SHALL HAVE APPROVED CABLE RESTRAINTS EVERY (60) SIXTY FEET AND SECURELY FASTENED TO THE CABLE TRAY SYSTEM. NFPA 70 (NEC) ARTICLE 770 RULES SHALL APPLY.
- THE TYPE TC-ER CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY AND SHALL BE SECURED AT INTERVALS NOT EXCEEDING (6) SIX FEET. AN EXCEPTION; WHERE TYPE TC-ER CABLES ARE NOT SUBJECT TO PHYSICAL DAMAGE, CABLES SHALL BE PERMITTED TO MAKE A TRANSITION BETWEEN CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY WHICH ARE SERVING UTILIZATION EQUIPMENT OR DEVICES, A DISTANCE (6) SIX FEET SHALL NOT BE EXCEEDED WITHOUT CONTINUOUS SUPPORTING. NFPA 70 (NEC) ARTICLES 336 AND 392 RULES SHALL APPLY.
- WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC-ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.

GENERAL NOTES:

- IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ANTENNA, TMA'S, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.
- ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.
- ALL OUTDOOR RF CONNECTORS/CONNECTIONS SHALL BE WEATHERPROOFED, EXCEPT THE RET CONNECTORS, USING BUTYL TAPE AFTER INSTALLATION AND FINAL CONNECTIONS ARE MADE. BUTYL TAPE SHALL HAVE A MINIMUM OF ONE-HALF TAPE WIDTH OVERLAP ON EACH TURN AND EACH LAYER SHALL BE WRAPPED THREE TIMES. WEATHERPROOFING SHALL BE SMOOTH WITHOUT BUCKLING. BUTYL BLEEDING IS NOT ALLOWED.
- IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:
 - TEMPERATURE SHALL BE ABOVE 50° F.
 - PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.
 - FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.
 - DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS.

PROPOSED ANTENNA AND TRANSMISSION CABLES REQUIREMENT

SECTOR	ANTENNA TYPE	TECHNOLOGY	ANTENNA AZIMUTH (TRUE NORTH)	ELECTRICAL DOWNTILT	MECHANICAL DOWNTILT	TRANSMISSION CABLE		
						QTY.	LENGTH	TYPE
A1	ANDREW SBNH-1D6565B	LTE	40°	8'	1'	1	15'	NEW FIBER
A2	ANDREW SBNH-1D8585B	GSM	45°	2'	0'	2	15'	EXISTING 1-5/8" COAX
A3	ANDREW SBNH-1D8585B	UMTS	45°	2'	0'	2	15'	EXISTING 1-5/8" COAX
B1	ANDREW SBNH-1D6565B	LTE	150°	8'	0'	1	106'	NEW FIBER
B2	ANDREW SBNH-1D8585B	GSM	150°	2'	0'	2	106'	EXISTING 1-5/8" COAX
B3	ANDREW SBNH-1D8585B	UMTS	150°	2'	0'	2	106'	EXISTING 1-5/8" COAX
C1	ANDREW SBNH-1D6565B	LTE	280°	8'	2'	1	112'	NEW FIBER
C2	ANDREW SBNH-1D8585B	GSM	285°	2'	0'	2	112'	EXISTING 1-5/8" COAX
C3	ANDREW SBNH-1D8585B	UMTS	285°	2'	0'	2	112'	EXISTING 1-5/8" COAX

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4801 COX ROAD, SUITE 300
GLEN ALLEN, VA 23060

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9020 MENDENHALL COURT, SUITE H
COLUMBIA, MARYLAND 21045

4 SECOND AVENUE
SUITE 204
DENVER, NJ 07834
PHONE: 862.209.4300
FAX: 862.209.4301
NEW JERSEY STATE BOARD OF PROFESSIONAL ENGINEERS
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PROJECT NO:	12024-DYN
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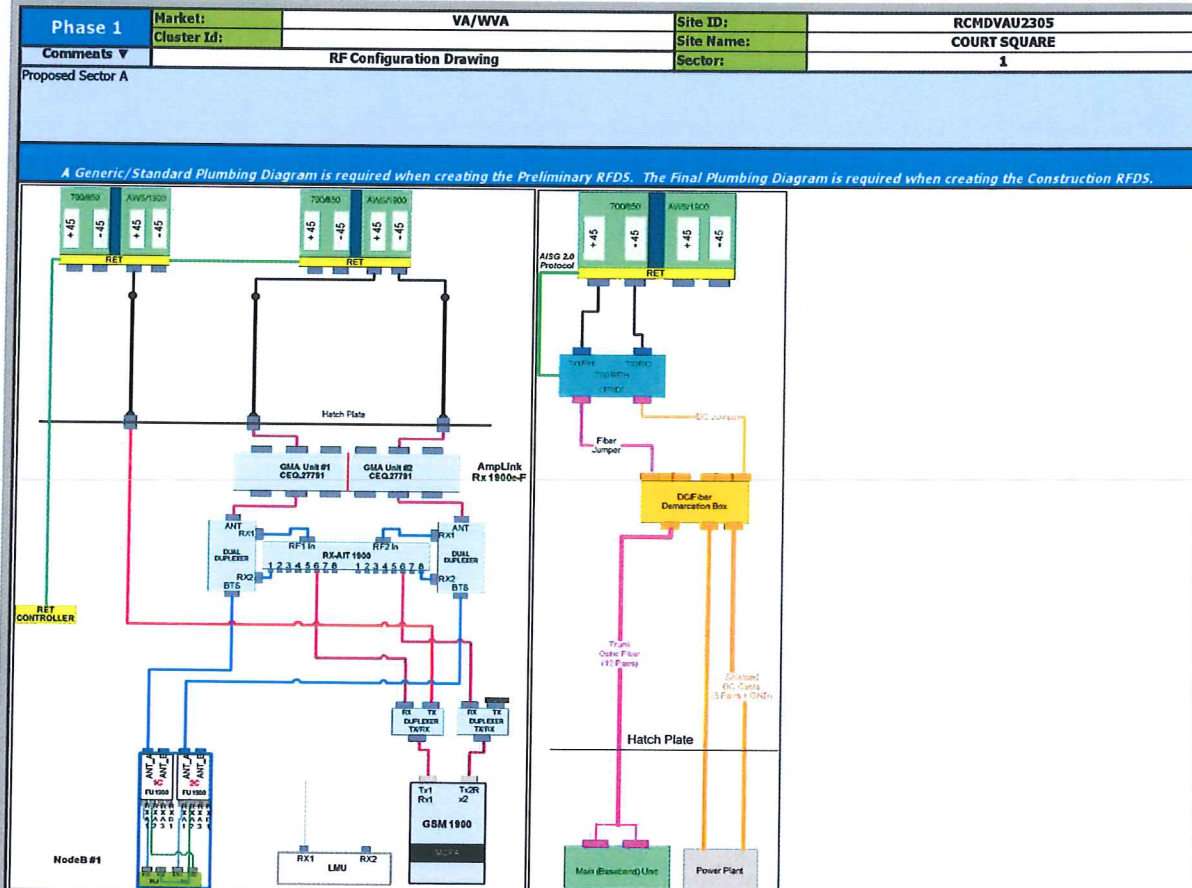
NICHOLAS D. BARILE
Lic. No. 000435

NICHOLAS D. BARILE
PROFESSIONAL ENGINEER Lic. No. 040205435

COURT SQUARE
SITE # CV305
SITE ADDRESS:
500 COURT SQUARE
CHARLOTTESVILLE, VA 22902
LTE

SHEET TITLE
ANTENNA LAYOUTS

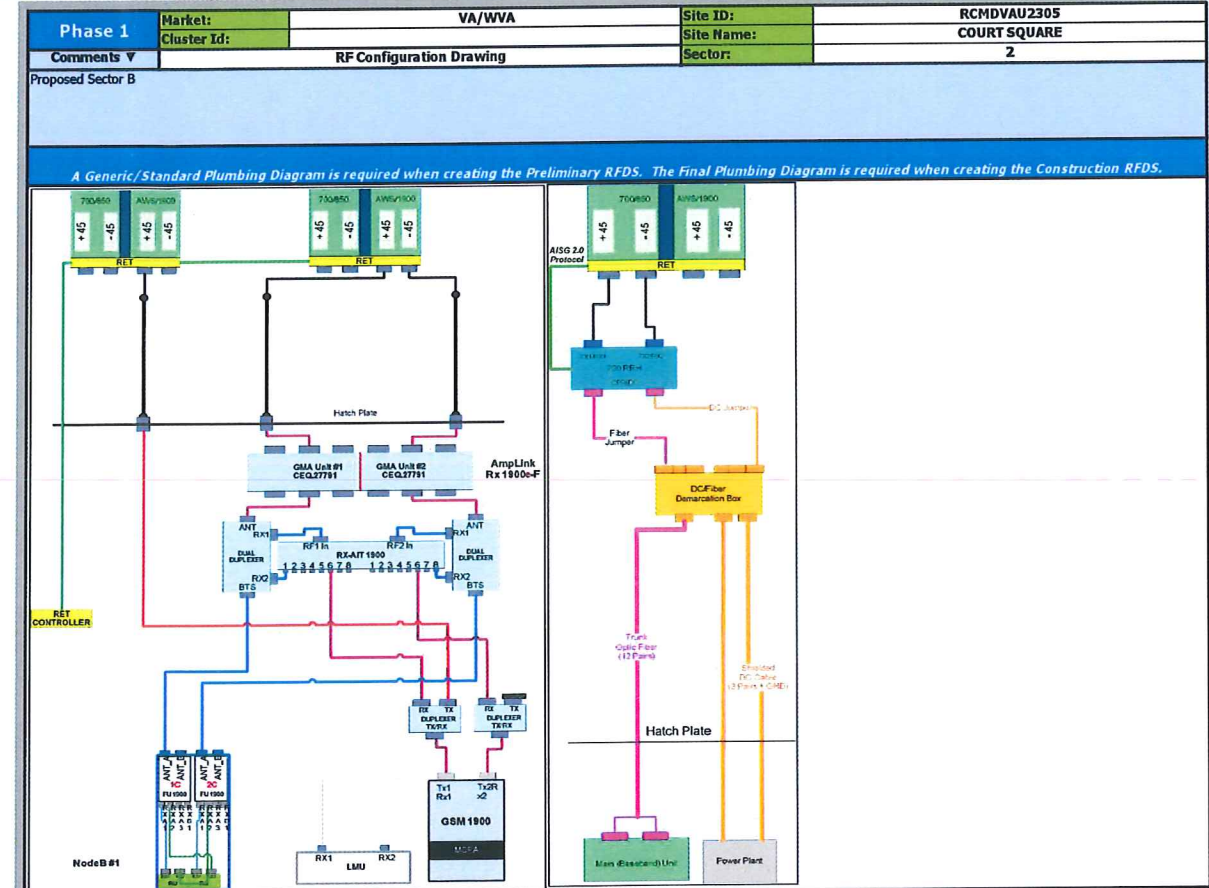
SHEET NUMBER
C-3



SECTOR 1 ANTENNA SCHEMATIC

NO SCALE

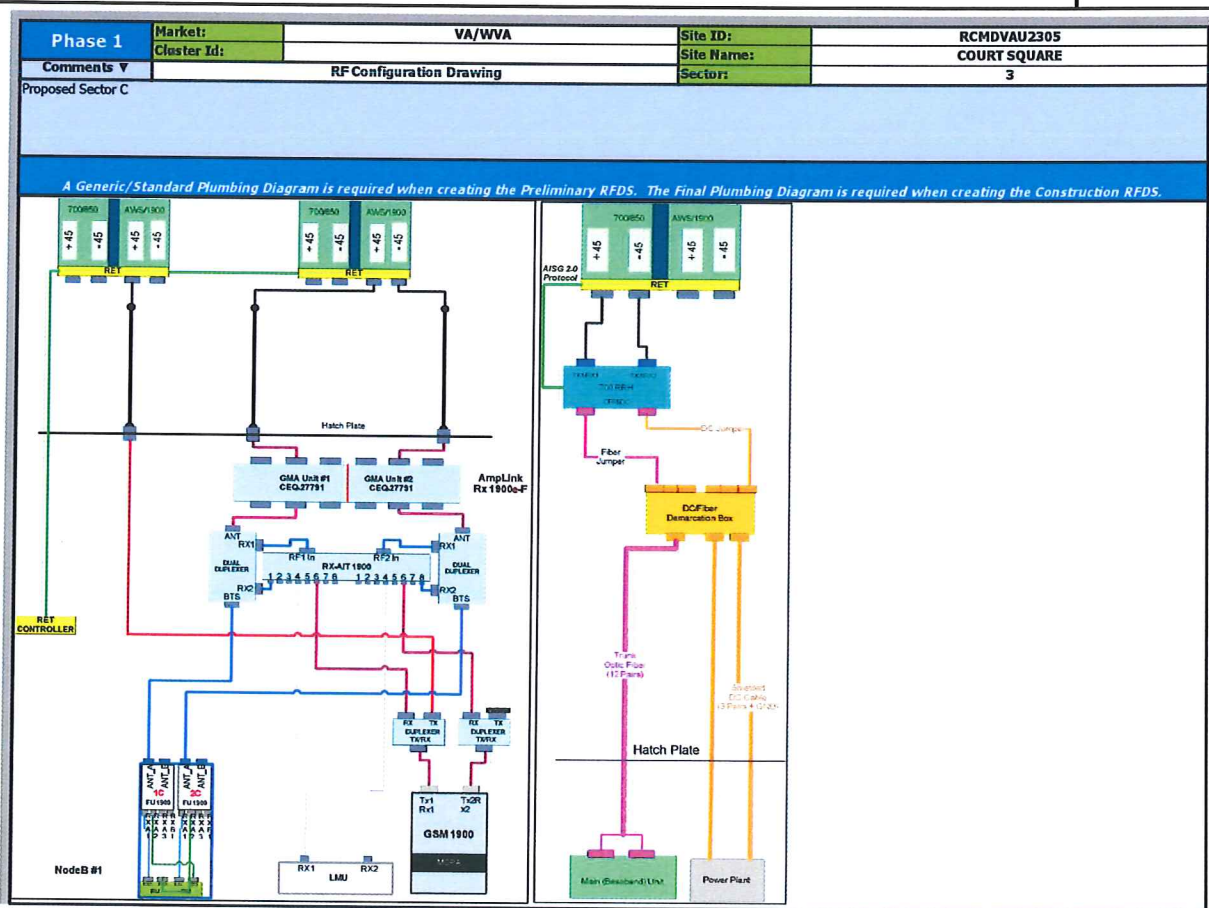
1



SECTOR 2 ANTENNA SCHEMATIC

NO SCALE

2



SECTOR 3 ANTENNA SCHEMATIC

NO SCALE

3

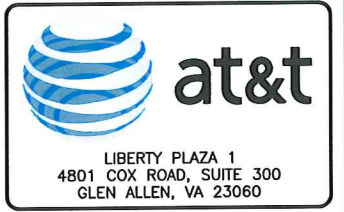
NOTES:

1. ANTENNA SCHEMATICS TAKEN FROM RF DESIGN SHEET DATE STAMPED (02/29/2012, VERSION 1)
2. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING & VERIFYING ACCURACY OF ALL RFDS SHEET INFORMATION WITH THE RF ENGINEER AND CLIENT PRIOR TO ORDERING & INSTALLATION OF MATERIALS.
3. SHOULD ANY DISCREPANCIES EXIST BETWEEN THE EXISTING SITE CONDITIONS, THE PROPOSED DESIGN AND THE RF DATA SHEET, THE CONTRACTOR WILL NOTIFY THE CLIENT AND RF ENGINEER AND A REVISED RF DATA SHEET WILL BE PROVIDED.

RF DATA SHEET NOTES

NO SCALE

4



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COURT SQUARE
SITE # CV305
SITE ADDRESS:
500 COURT SQUARE
CHARLOTTEVILLE, VA 22902
LTE

SHEET TITLE
RF DATA

SHEET NUMBER
RF-1

NEWTON INSTRUMENT COMPANY, INC.
BUTNER, N.C.

NO	REQUIRED	PART NUMBER	DESCRIPTION
①	1	1/4"x4"x48"	SOLID GROUNDING BAR
②	2	A-6056	WALL MOUNTING BRACKET
③	2	3061-4	INSULATORS
④	4	3012-1	5/8"-11x1" H.H.C.S.
⑤	4	3015-8	5/8" LOCKWASHER

EACH GROUNDING CONDUCTOR TERMINATING ON ANY GROUNDING BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION

SECTION "P" - SURGE PROTECTORS

- (EC) CELL REFERENCE GROUNDING BAR (IF COLLOCATED)
- (EC) GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)
- (EC) TELCO GROUNDING BAR (#2 AWG)
- (EC) COMMERCIAL POWER COMMON NEUTRAL/GROUNDING BOND (3/0)
- (EC) FIBER GROUNDING BAR (#2 AWG)
- (EC) POWER ROOM REFERENCE GROUNDING BAR (#2 AWG)
- (AT&T) RECTIFIER FRAMES

SECTION "A" - SURGE ABSORBERS

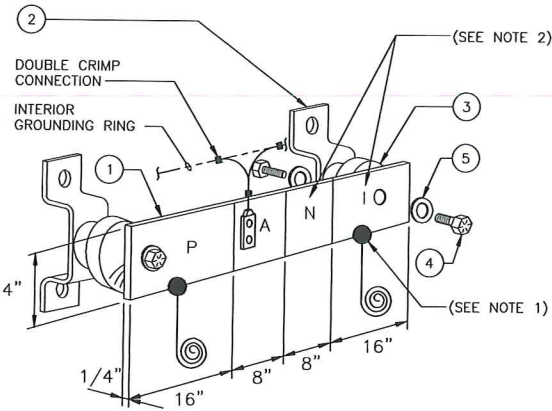
- (EC) INTERIOR GROUNDING RING (#2 AWG)
- (EC) EXTERNAL EARTH GROUNDING FIELD (BURIED GROUNDING RING) (#2 AWG)
- (EC) METALLIC COLD WATER PIPE (IF AVAILABLE) (1/0 AWG)
- (EC) BUILDING STEEL (IF AVAILABLE) (1/0 AWG)

SECTION "N" - NON-ISOLATED GROUNDING ZONE EQUIPMENT

- (EC) MISC. NON-ISOLATED GROUNDING ZONE EQUIPMENT (AT&T)-48V POWER SUPPLY RETURN BARE

SECTION "I" - ISOLATED GROUNDING ZONE

- (AT&T) ALL ISOLATED GROUNDING REFERENCE
- (AT&T) GROUNDING WINDOW BAR



NOTES:

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUNDING BAR. ROUTE CONDUCTORS TO BURIED GROUNDING RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL GROUNDING BARS SHALL BE STAMPED IN TO THE METAL "IF STOLEN DO NOT RECYCLE." THE CONTRACTOR SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "N", "I") WITH 1" HIGH LETTERS.
3. ALL HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
5. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUNDING CONDUCTOR DOWN TO GROUNDING BUS.
6. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUNDING BAR AND BOLTED ON THE BACK SIDE. INSTALL BLACK HEAT-SHRINKING TUBE, 600 VOLT INSULATION, ON ALL GROUNDING TERMINATIONS. THE INTENT IS TO WEATHERPROOF THE COMPRESSION CONNECTION.
7. SUPPLIED AND INSTALLED BY CONTRACTOR.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUNDING BAR AS REQUIRED, PROVIDING 50% SPARE CONNECTION POINTS.
9. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).

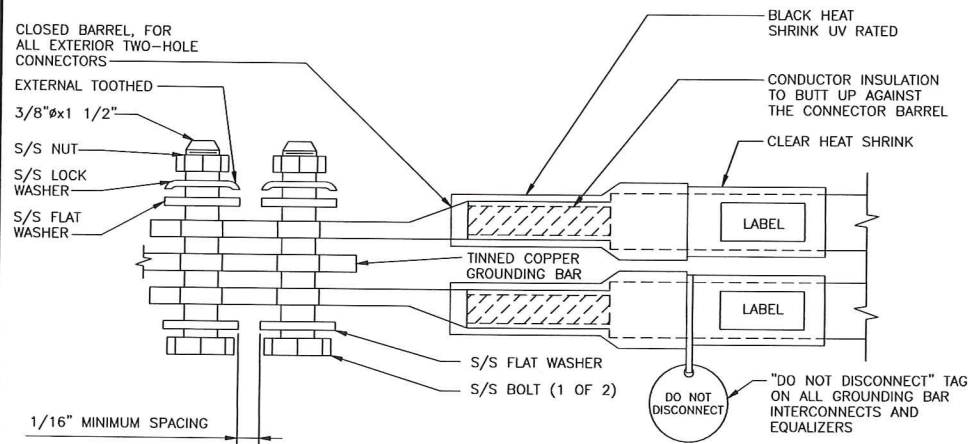
(MGB) REFERENCE GROUNDING BAR

NO SCALE

1

NOT USED

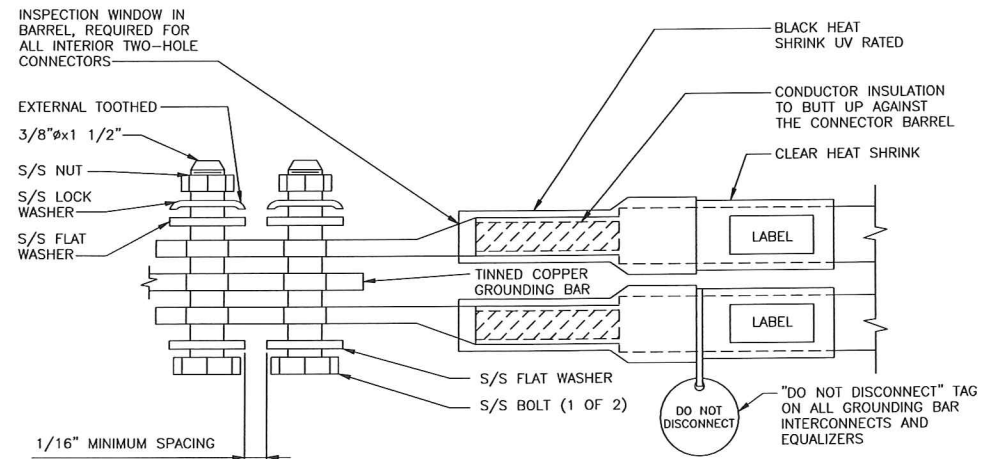
2



EXTERIOR TWO HOLE LUG DETAIL

NO SCALE

3



INTERIOR TWO HOLE LUG DETAIL

NO SCALE

4

NOT USED

5



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SUITE 204
DENVER, NJ 07834
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FAX: 862.209.4301
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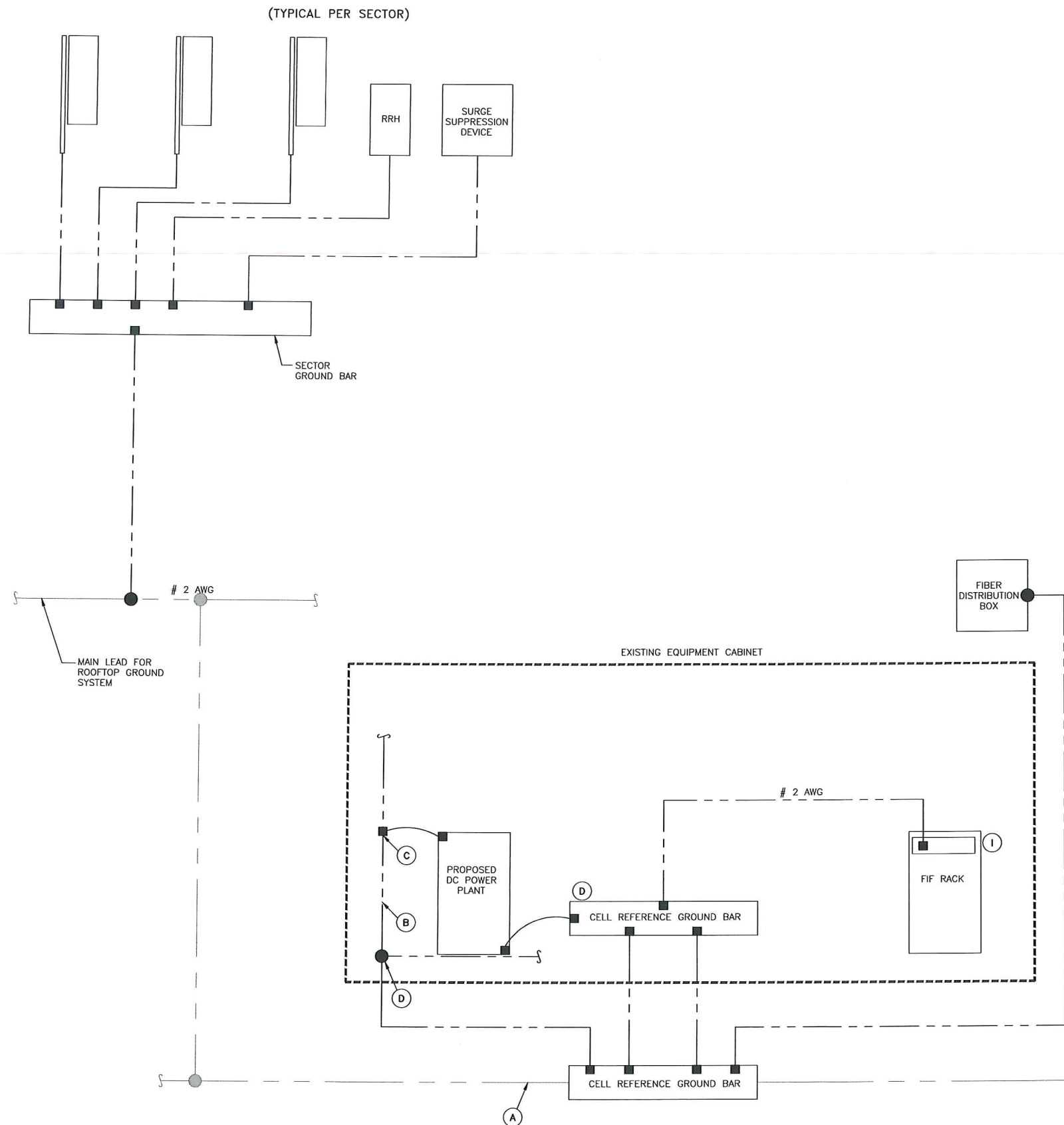
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Nicholas D. Barile
NICHOLAS D. BARILE
PROFESSIONAL ENGINEER
No. 0402050435

COURT SQUARE
SITE # CV305
SITE ADDRESS:
500 COURT SQUARE
CHARLOTTESVILLE, VA 22902
LTE

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-1



SHELTER/ANTENNA SITE:

NOTES:

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND AT&T GROUNDING AND BONDING REQUIREMENTS (ATT-TP-76416) AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUNDING CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES:

- A** BUILDING GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA BUILDING'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE BUILDING AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE BUILDING RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS. (ATT-TP-76416 7.5.1)
- B** INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR. (ATT-TP-76416 7.6.4)
- C** BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING. (ATT-TP-76416 7.5.2.2)
- D** CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS. (ATT-76416 7.6.5)
- E** HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS.
- F** EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE. (ATT-TP-76416 7.6.7.2)
- G** BUILDING EXIT GROUND BAR: #2 AWG SOLID TINNED COPPER BOND TO THE BUILDING GROUND RING. (ATT-TP-76416 7.55)
- H** TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR AND EXTERIOR GROUND RING. (ATT-TP-76416 7.6.8)
- I** FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENT'S METAL FRAMEWORK. BOND THE FRAME GROUND BUS TO THE "1" SECTION OF THE CELL REFERENCE GROUND BAR. (ATT-TP-76416 7.8)

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COLUMBIA, MARYLAND 21045

4 SECOND AVENUE
SUITE 204
DENVER, NJ 07834
PHONE: 862.209.4300
FAX: 862.209.4301
NEW JERSEY STATE BOARD OF PROFESSIONAL ENGINEERS
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NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, No. 0402050435

COURT SQUARE
SITE # CV305
SITE ADDRESS:
500 COURT SQUARE
CHARLOTTESVILLE, VA 22902
LTE

SHEET TITLE
EQUIPMENT
GROUNDING PLAN

SHEET NUMBER
G-1.1

GENERAL CONSTRUCTION NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
GENERAL CONTRACTOR – OVERLAND CONTRACTING INC. (DYNIS)
CONTRACTOR: (CONSTRUCTION)
OWNER – AT&T
2. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND AT&T PROJECT SPECIFICATIONS.
3. GENERAL CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
4. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.
5. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE ENGINEER PRIOR TO PROCEEDING.
10. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFIRM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.
11. GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.
12. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMAN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
13. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED MATERIALS APPROVED BY LOCAL JURISDICTION. CONTRACTOR SHALL KEEP AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS.
14. WORK PREVIOUSLY COMPLETED IS REPRESENTED BY LIGHT SHADED LINES AND NOTES. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
15. CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
16. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
17. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
18. GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.
19. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.
20. THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.
21. THE GENERAL CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2-A OR 2-A:10-B-C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.
22. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.
23. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
24. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
25. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.
26. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUNDING. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
27. THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR DENSITY IN OPEN SPACE. ALL TRENCHES IN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE-APPROVED BY THE LOCAL JURISDICTION.
28. ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.
29. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.
30. CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS-BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.
31. CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.
32. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).
33. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY AT&T TECHNICIANS.
34. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.
35. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST REVISION AT&T MOBILITY GROUNDING STANDARD "TECHNICAL SPECIFICATION FOR CONSTRUCTION OF GSM/GPRS WIRELESS SITES" AND "TECHNICAL SPECIFICATION FOR FACILITY GROUNDING". IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATION AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.
36. CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE GENERAL CONTRACTOR IMMEDIATELY.
37. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
38. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
39. NO WHITE STROBE LIGHTS ARE PERMITTED. LIGHTING IF REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS.
40. ALL COAXIAL CABLE INSTALLATIONS TO FOLLOW MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.



LIBERTY PLAZA 1
4801 COX ROAD, SUITE 300
GLEN ALLEN, VA 23060



Consider It Connected.
9020 MENDENHALL COURT, SUITE H
COLUMBIA, MARYLAND 21045



4 SECOND AVENUE
SUITE 204
DENVER, NJ 07834
PHONE: 662.209.4300
FAX: 662.209.4301
NEW JERSEY STATE BOARD OF PROFESSIONAL ENGINEERS
CERTIFICATE OF AUTHORIZATION # 240428172100

PROJECT NO: 12024-DYN

DRAWN BY: SDF

CHECKED BY: NDB

REV	DATE	DESCRIPTION
0	07/26/12	ISSUED FOR CONSTRUCTION
A	05/09/12	INITIAL SUBMISSION

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NICHOLAS D. BARILE
Lic No. 0402050435
PROFESSIONAL ENGINEER, STATE OF NEW JERSEY

COURT SQUARE
SITE # CV305
SITE ADDRESS:
500 COURT SQUARE
CHARLOTTESVILLE, VA 22902
LTE

SHEET TITLE
GENERAL
CONSTRUCTION NOTES

SHEET NUMBER
GN-1

Scala, Mary Joy

From: Steve Muscarella <smuscarella@dynis.com>
Sent: Wednesday, January 30, 2013 10:51 AM
To: Scala, Mary Joy
Cc: 'Douglas G. Brooks'
Subject: FW: AT&T LTE Approval and Memo 500 Court Square

Mary Joy

Please see the email from Mr. Brooks indicating the approval of the Association. Will you need something else? Will this application have to go to a hearing or will you be able to approve it administratively?

Thank you Mr. Brooks

If Mary Joy needs something signed will you be able to sign the application and scan it back to her?

Steven Muscarella
Site Acquisition
DYNIS
1632 E. Parham Rd
Richmond, VA 23228
P: 804-261-5711
F: 804-261-7231
C 804-615-2737
www.dynis.com

From: Doug Brooks [mailto:doug@realpropertyinc.com]
Sent: Wednesday, January 30, 2013 10:06 AM
To: Steve Muscarella; Scala, Mary Joy
Cc: bevhomerepair@aol.com
Subject: RE: AT&T LTE Approval and Memo 500 Court Square

Yes. As agent for the Association, I affirm that BSI is our agent for these matters, and we do not object to the recommended/approved installations.

Please let me know if any further is required.

Douglas G. Brooks, Sr.
Principal, CEO CMCA®, AMS®
Licensed VA Real Estate Broker

Real Property Inc.
1500 Amherst Street Ste. #3
Charlottesville, VA 22903-5158

(434) 202-1850 desk phone
(866) 679-8972 fax



From: Steve Muscarella [<mailto:smuscarella@dynis.com>]
Sent: Wednesday, January 30, 2013 10:03 AM
To: Scala, Mary Joy
Cc: Doug Brooks; bevhomerepair@aol.com
Subject: FW: AT&T LTE Approval and Memo 500 Court Square

Mary Joy

Attached are the approvals for the work that the Building Representative that manages the roof top (has a contractual relationship with the building ownership) for the project and to get approval as needed.

If you need me to have something signed by the building I will make arrangement for what you may need. I have been working with Sam Beverly and Douglas Brooks on this project as well.

Steven Muscarella
Site Acquisition
DYNIS
1632 E. Parham Rd
Richmond, VA 23228
P: 804-261-5711
F: 804-261-7231
C 804-615-2737
www.dynis.com

From: Dennis Warner [<mailto:dwarner@broadcastservicesinc.com>]
Sent: Thursday, October 18, 2012 10:23 AM
To: Steve Muscarella
Subject: AT&T LTE Approval and Memo

Dear Steven Muscarella

The LTE upgrade has been approved please have AT&T attached the schedule A and B to their agreement for future reference. These upgrade doses not initiate, a price increase. Please contact Sidney Sutton for site access and insurance. Attached is BSI contact information and approved Schedule A and B. If you have any question please contact me.

Sincerely

Dennis L Warner
Communication Engineering
Broadcast Services, Inc.
Office: 317.895.9050 Ext: 204
Mobile: 317.640.6146

Engineering Approval / Memo 10/18/12
BROADCAST SERVICES, INC. 4801 Industrial Parkway Indianapolis, IN 46226

Dear Steven Muscarella

Date: October 18, 2012

The LTE upgrade has been approved please have AT&T attach the schedule A and B to their agreement for future reference. These upgrade does not initiate, a price increase. Please contact Sidney Sutton for site access and insurance. Attached is BSI contact information and approved Schedule A and B. If you have any question please contact me.

Sincerely
Dennis L Warner
Communication Engineering
Broadcast Services, Inc.
Office: 317.895.9050 Ext: 204
Mobile: 317.640.6146
Email: dwarner@broadcastservicesinc.com

RECEIVED

JAN 11 2013

NEIGHBORHOOD DEVELOPMENT SERVICES

Broadcast Services, Inc.

Phone (317) 895-9050 Fax (317) 895-2900

SCHEDULE A FOR THE TELECOMMUNICATIONS TERMINAL SITE ACCESS AGREEMENT

Site: CV305 - 500 COURT SQUARE	City: CHARLOTTESVILLE, VA
User: AT&T - New Cingular Wireless PCS LLC	Tel: (804) 615 2737

PLEASE FILL IN ALL LINES FOR IMMEDIATE REVIEW.

SYSTEM USE (example: two-way mobile radio for trucking business, etc.)

PCS CELL SITE

STATION

Manufacturer ERICSSON	Model 2206/3206/3206	Dimensions 12'x12' PLATFORM	Quantity UNLIMITED
UPS or other battery configuration (please explain): EXISTING POWER PLANT WILL REMAIN - SEE DRAWINGS			
Power Output: 58.57 (mW/W/dbm)	Power Input to Antenna: 60 WATTS PER SECTOR (mW/W/dbm)		
Location of equipment: outdoor Equipment racks 12'x12' Interior equipment:			

ANTENNAS

Manufacturer ANDREWS	Model SBNH-1D6565 B	Dimensions 72.7x 11.9 x 7.1	Gain 18.5 (db)
(If there are multiple types of antennas for the system, please attach a configuration drawing)			
Azimuths for each antenna 40/150/280		Downtilt elec/mech ELECTRICAL 4°	
Other coverage requirements or remarks: ADDING LTE EQUIPMENT TO EXISTING CABINET + REPLACING ALL EXISTING ANTENNA			

TRANSMISSION LINE

Type: LDF7 - 50 A	Size: 1/8	No. of lines per antenna: 1 PER ANTENNA
--------------------------	------------------	--

PROTECTIVE DEVICES (List make and model)

Duplexer: 12 Duplexer / 6 GMAS	Isolator: Isolation: ___ db	Low Pass Filter:
---------------------------------------	------------------------------------	------------------

FREQUENCY (DBS)

Tx LTE 704 - 716 (MHz)	Rx LTE 734 - 746 (MHz)
Tx UMTS/GSM 1850-1910/824-849 (MHz)	Rx 1930-1990/869-894 (MHz)
Number of Channels Possible: 24 TOTAL	Number of Channels in Use: 24 TOTAL
Attach FCC license, CP, or other description of authority	

PLEASE ATTACH ANY CONFIGURATION DRAWINGS RELEVANT TO THE SYSTEM PROPOSED ABOVE. **SEE ATTACHED**

Submitted by (print or type): STEVEN MUSCARELLA	Date: 10/16/2012
Title: Site Acq MANAGER - DYNIS	Tel: (804) 615 2737

Initial _____

Initial _____

Approved: **Jennifer Wynn**
BSI 10/18/12
 Communicator Engineer ✓

SCHEDULE B TO THE TELECOMMUNICATIONS TERMINAL SITE ACCESS AGREEMENT

Site: 500 Court Square. City: Charlottesville.

User: AT&T

Frequencies

Transmit	Receive	Band Type	
1850 MHz	1930 MHz	UMTS	Current Frequency
1910 MHz	1990 MHz	UMTS	Current Frequency
824 MHz	869 MHz	GSM	Current Frequency
849 MHz	894 MHz	GSM	Current Frequency
704 MHz	734 MHz	LTE	New Frequency
716 MHz	746 MHz	LTE	New Frequency

User Information

Broadcast Service Inc. Site Number: CHA02
User Classification: GMS, UMTS, LTE
AT&T Site Number: CV305
Site Address: 500 Court Square Charlottesville, VA 22902
Site Location: Latitude: 38° 01' 54.98"N, Longitude: 78° 28' 41.02"W
Building HT: 127'-1" AGL
Antenna CL: 133'-0" AGL

SCHEDULE A TO THE TELECOMMUNICATIONS TERMINAL SITE ACCESS AGREEMENT

Dated October 16, 2012 has been reviewed and found to be:

XX Acceptable with the following qualifications:

System Description See Equipment List

This system consists of equipment to provide GMS/UMTS/LTE service. The station will be connected to 9 antennas in 3 sectors. The sectors are generally North, West-Southwest and East-Southeast.

Antenna Mounts and Location

The Andrew antenna, Model Number: SBNH-1D6565B, SBNH-1D8585B antennas will be mounted in three sectors. The antennas and mount structure will be painted to match the building. The antenna roof frame will be mounted according to construction drawings, which are sealed by a professional engineer registered in the State of Virginia. All steel and hardware shall be hot dip galvanized or stainless steel. The antennas and mount structure will be painted to match the penthouse wall.

Coax Type and Routing

It will be routed along the surface of the roof in cable trays supported on sleepers.

Initials _____
Initials _____

Equipment Configuration Schedule A 10/16/12

1. Six Cabinets: Power Plant, RXAIT/MCPA, GSM, MCPA , UMTS and LTE
2. Three Antennas Model Andrew SBNH-1D6565B Antenna LTE
3. Six Antennas Model Andrew SBNH-1D8585B Antenna GSM/UMTS

Power Service

BSI normally provides power to the user based on a negotiated fee. It is understood that the user intends to use separate metered electrical service.

Interference Protection

The performance of the User's systems is not guaranteed by this Agreement. Should the User's transmissions cause interference to other systems at the site, it will be the User's responsibility to correct any such interference should it arise.

System Installation

BSI requires that installation be performed by approved contractors. Upon completion of the installation phases, addition or removal of any equipment or antennas will not be authorized without prior written approval from BSI, and execution of an addendum to this agreement. All construction must match drawings that have been approved by Broadcast Services. Any change in construction/Installation must be approved by Broadcast Services.

Drawing Approved Date of Issue 07/26/12
Drawing Submitted by AT&T and ComEx Consultants

**Schedule B is valid for only sixty (60) days without a signed Agreement.

Date: 10/18/12 Reviewed by: *Dennis Warner*

BROADCAST SERVICES, INC.
Dennis Warner
Communications Engineer

Initials _____
Initials _____