

From: Scala, Mary Joy
Sent: Thursday, October 31, 2013 3:10 PM
To: 'stuart.squier@gdnsites.com'
Subject: BAR Action October 15 2013

October 31, 2013

Verizon Wireless
c/o Stuart Squier
3126 W Cary Street – PMB#604
Richmond, VA 23221

Certificate of Appropriateness Application

BAR 13-10-02
819 W Main Street
Tax Map 32 Parcel 144.2
Norfolk Southern Railway company, Owner/
Verizon Wireless c/o Stuart Squier, Applicant
Replace nine existing antennas with fourth sector mount and 16 new antennas

Dear Applicant,

The above referenced project was discussed before a meeting of the City of Charlottesville Board of Architectural Review (BAR) on October 15, 2013. The following action was taken:

Approved (5-0) on consent agenda as submitted.

In accordance with Charlottesville City Code 34-285(b), this decision may be appealed to the City Council in writing within ten working days of the date of the decision. Written appeals, including the grounds for an appeal, the procedure(s) or standard(s) alleged to have been violated or misapplied by the BAR, and/or any additional information, factors or opinions the applicant deems relevant to the application, should be directed to Paige Barfield, Clerk of the City Council, PO Box 911, Charlottesville, VA 22902.

This certificate of appropriateness shall expire in 18 months (April 15, 2015), unless within that time period you have either: been issued a building permit for construction of the improvements if one is required, or if no building permit is required, commenced construction. The expiration date may differ if the COA is associated with a valid site plan. You may request an extension of the certificate of appropriateness *before this approval expires* for one additional year for reasonable cause.

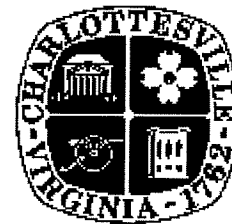
Upon completion of construction, please contact me for an inspection of the improvements included in this application. If you have any questions, please contact me at 434-970-3130 or scala@charlottesville.org.

Sincerely yours,

Mary Joy Scala, AICP
Preservation and Design Planner

Mary Joy Scala, AICP
Preservation and Design Planner
City of Charlottesville
Department of Neighborhood Development Services
City Hall - 610 East Market Street
P.O. Box 911
Charlottesville, VA 22902
Ph 434.970.3130 FAX 434.970.3359
scala@charlottesville.org

**CITY OF CHARLOTTESVILLE
BOARD OF ARCHITECTURAL REVIEW
STAFF REPORT
October 15, 2013**



Certificate of Appropriateness Application

BAR 13-10-02

819 W Main Street

Tax Map 32 Parcel 144.2

Norfolk Southern Railway Company, Owner/ Verizon Wireless c/o Stuart Squier, Applicant

Replace nine existing antennas with fourth sector mount and 16 new antennas

Background

This property is located in the West Main Street ADC District. The radio tower is a non-conforming use. The zoning is Mixed Use – West Main North Corridor.

April 18, 2006 - The BAR approved (7-0) an Alltel emergency generator with diesel fuel tank next to the radio tower and within an existing chain link fence that marks the leased area. The application included approximately 55 feet of brown slat screening on a portion of the existing chain link fence.

November 28, 2006 - The BAR voted (9-0) to approve the request to install an 80" x 17" x 16" antenna on an existing Norfolk Southern tower and a 25 sq. ft. concrete pad to house a 31" x 30" x 84" cabinet with ice bridge above.

November 16, 2010 - The BAR voted (8-0) to add four new antennas at 185 feet, and adding cross bracing between 125-131 feet levels as submitted.

September 20, 2011 - The BAR approved (5-0) an application to install nine antennas and to expand the compound as submitted on the consent agenda.

June 19, 2012 - The BAR approved (7-0) the application (for 3 additional antennas) as submitted, finding that the new antennas satisfy the BAR's criteria and are compatible with other properties in the district, and finding that they would not result in a substantial change in physical dimensions.

Application

Verizon Wireless is seeking approval to remove all nine existing antennas and replace them with sixteen new antennas at the 185 foot level of the existing 225 foot tower. A new mounting pipe will be added to create a new, fourth sector. No new ground equipment is proposed. The antennas range in size from 48.8" x 11.8" to 94.7" x 23.6".

Criteria, Standards, and Guidelines

Review Criteria Generally

Sec. 34-284(b) of the City Code states that,

In considering a particular application the BAR shall approve the application unless it finds:

- (1) That the proposal does not meet specific standards set forth within this division or applicable provisions of the Design Guidelines established by the board pursuant to Sec.34-288(6); and*
- (2) The proposal is incompatible with the historic, cultural or architectural character of the district in which the property is located or the protected property that is the subject of the application.*

Pertinent Standards for Review of Construction and Alterations include:

- (1) Whether the material, texture, color, height, scale, mass and placement of the proposed addition, modification or construction are visually and architecturally compatible with the site and the applicable design control district;*
- (2) The harmony of the proposed change in terms of overall proportion and the size and placement of entrances, windows, awnings, exterior stairs and signs;*
- (3) The Secretary of the Interior Standards for Rehabilitation set forth within the Code of Federal Regulations (36 C.F.R. §67.7(b)), as may be relevant;*
- (4) The effect of the proposed change on the historic district neighborhood;*
- (5) The impact of the proposed change on other protected features on the property, such as gardens, landscaping, fences, walls and walks;*
- (6) Whether the proposed method of construction, renovation or restoration could have an adverse impact on the structure or site, or adjacent buildings or structures;*
- (8) Any applicable provisions of the City's Design Guidelines.*

Pertinent Design Review Guidelines

Site Design and Elements

P. 2.7 Utilities and other Site Appurtenances

- 1. Place overhead wires, utility poles and meters, antennae, trash containers, and exterior heat exchangers in locations where they are least likely to detract from the character of the site.*
- 2. Encourage the installation of utility services underground.*
- 3. Screen utilities and other site elements with fences, walls or plantings.*
- 4. Antennae and communication dishes should be placed in inconspicuous rooftop locations.*
- 5. Screen all rooftop mechanical equipment with a wall of a material harmonious with the building or structure.*

Discussion and Recommendations

The pertinent zoning section on Telecommunication Facilities states:

Sec. 34-1073. Facilities by district.

(a) Within the city's historic and entrance corridor overlay districts:

- (1) The following shall be permitted uses: antennae or microcells mounted on existing communications towers established prior to February 20, 2001; attached communications facilities utilizing utility poles or other electric transmission facilities as the attachment structure; and other attached communications facilities if such other attached communications facilities are not visible from any adjacent street or property.*
- (2) The following shall be prohibited uses: attached communications facilities where such facilities are visible from any adjacent street or property, and communications facilities utilizing alternative tower, monopole tower, guyed tower, lattice tower and self-supporting tower support structures.*

This is a permitted use; there are existing antennas in this location; and there is no way to screen the tower. Existing vegetation currently screens the fenced equipment area. Staff recommends approval.

Suggested Motion

Having considered the standards set forth within the City Code, including City Design Guidelines for Site Design and Elements, I move to find that the proposal to add new antennas satisfies the BAR's criteria and is compatible with other properties in the West Main Street ADC District, and that the BAR approves the application as submitted.



Board of Architectural Review (BAR)
Certificate of Appropriateness

RECEIVED

SEP 24 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 Norfolk Southern Railway Company Applicant Name Verizon Wireless - C/O Stuart Squier
Project Name/Description Collocation and replacement of antennas on tower Parcel Number Tax Map 32 / Parcel 144.2
Property Address 819 W Main St.

Applicant Information

Address: 3126 West Cary Street - PMB# 604
Richmond, VA 23221
Email: stuart.squier@gdnsites.com
Phone: (W) (804)901-7433 (H)
FAX: (888) 844-1702

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.)

Stuart Squier 8/28/13
Signature Date

Stuart Squier 8/28/13
Print Name Date

Property Owner Information (if not applicant)

Address: 1200 Peachtree Street NE
Atlanta, GA 30309
Email:
Phone: (W) (404) 529-1216 (H)
FAX:

Property Owner Permission (if not applicant)

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

R.J. Rumsey 8/30/13
Signature Date

R.J. Rumsey 8/28/13
Print Name Date

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

Description of Proposed Work (attach separate narrative if necessary): Verizon Wireless is proposing to replace all twelve (12) existing antennas using the existing sector mounts at the 185' level of this existing tower. In order to expand coverage and service needs throughout central Charlottesville, Verizon Wireless will also be installing a fourth sector mount with four (4) new antennas at the same 185' level.

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

Project description narrative, Tower site plan with elevation view drawing

For Office Use Only
Received by: D. Eubank
Fee paid: 12500 Cash/Ck. #
Date Received: 9/24/13
Approved/Disapproved by:
Date:
Conditions of approval:



Implementation/Construction – Virginia
1831 Rady Ct., Richmond, VA 23222

September 18, 2013

Mary Joy Scala
Preservation and Design Planner
City of Charlottesville
610 East Market Street
Charlottesville, VA 22902

RE: Board of Architectural Review Application – Verizon Wireless Proposal –
Downtown Charlottesville Antenna Modifications

Dear Ms. Scala,

Verizon Wireless (VZW) is proposing the reconfiguration of antenna arrays on the existing lattice tower located at 811 West Main Street, located within the Norfolk Southern Railroad right-of-way. The property is identified by Tax Map #31 Parcel 184.13. VZW has entered into an agreement with the Norfolk Southern Railroad regarding the proposed new facilities to support integration of Verizon Wireless 4G Advanced Wireless Services (AWS) network. The proposed changes will provide upgraded service within the downtown area in the City of Charlottesville.

The reconfiguration involves removing all nine (9) existing antennas, and replacing them with sixteen (16) new antennas located on the existing 225' self support tower at the 185' level. Because there is inadequate space on the mounting pipes to hold the proposed antennas, Verizon Wireless will add a new mounting pipe to create a new, fourth sector. No new ground equipment will be required to accommodate this modification.

Please refer to the attached spec sheets for detailed information about each antenna model being proposed for this installation. The following table details the dimensions of all proposed antennas:

<i>Antenna Model (Qty)</i>	<i>Height</i>	<i>Width</i>
Antel BXA 80040 (2)	94.7"	23.6"
Antel BXA 80063 (2)	94.7"	11.2"
Antel BXA 185040 (2)	48.8"	11.8"
Antel BXA 185063 (2)	72.4"	6.1"
Antel BXA 70040 (2)	94.6"	23.9"
Antel BXA 70063 (2)	94.7"	11.2"
Antel BXA 171063 (4)	72.4"	6.1"



Implementation/Construction – Virginia
1831 Rady Ct., Richmond, VA 23222

Please refer to the attached construction drawings for elevation view of the tower and cross section of the mounting pipes and proposed antenna locations.

Compliance with City Ordinance

Per Section 34-282 of the City of Charlottesville Zoning Ordinance the following information and exhibits are to be submitted along with each application to the Board of Architectural Review (BAR):

- (1) Detailed and clear descriptions of any proposed changes in the exterior features of the subject property, including but not limited to the following: the general design, arrangement, texture, materials, plantings and colors to be used, the type of windows, exterior doors, lights, landscaping, parking, signs, and other exterior fixtures and appurtenances. The relationship of the proposed change to surrounding properties will also be shown.

All work is to be performed on the tower and will consist of attaching the proposed antennas on existing mounting pipes. There will be no additional ground facilities, clearing or grading. Please see the attached elevation sketch identifying the proposed additions to Verizon Wireless' antennas on the tower.

- (2) Photographs of the subject property and photographs of the buildings on contiguous properties.
Please see attached photographs showing the existing tower and a simulation of proposed modifications.
- (3) Samples to show the nature, texture and color of materials proposed.
Please see attached antenna spec sheets, the color of the proposed antennas will be gray, similar to the existing ones
- (4) The history of an existing building or structure, if requested by the BAR or Staff.
The existing tower was built in the late 1960's for railroad communications. Since the mid-1990's the tower has also been used by wireless communications carriers including Verizon and nTelos to support their wireless telephone networks.
- (5) For new construction and projects proposing expansion of the footprint of an existing building: a three-dimensional model (in physical or digital form) depicting the site, and all buildings and structures to be located thereon, as it will appear upon completion of the work that is the subject of the application.



Implementation/Construction – Virginia
1831 Rady Ct., Richmond, VA 23222

This project does not necessitate any expansion of the footprint of the existing tower compound or building square footage.

- (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. The BAR may waive the requirement for a structural evaluation and cost estimates in the case of emergency, or if it determines that the building or structure proposed for demolition is not historically, architecturally or culturally significant under the criteria set forth in Section 34-274.

This proposal does not require the demolition of any existing structures.

Chapter three (3), Section O (New Construction and Additions) of the Charlottesville Architectural Design Control Districts Design Guidelines suggests the following careful consideration be taken when additions are made in historic Districts:

1. Function and Size
2. Location
3. Design
4. Replication of Style
5. Materials and Features
6. Attachment to Existing Building

Section 34-1073(a) (Facilities by District) of the City of Charlottesville Zoning Ordinance permits antenna or microcells attached to existing structures within the city's historic and entrance corridor overlay districts. Section 34-1080(a) (Visibility and Placement) states that where such facilities are visible from adjacent properties or public rights of way, the communication facilities shall be located as to blend in with the existing structure to the maximum extent feasible, through measures such as screening or the use of neutral colors. Additionally, Section 34-1074(a) (Height) restricts the total height that a communication facility can extend above the original height of the existing attachment structure to twenty (20) feet. The design of the proposed communications facility complies with each of the above-mentioned requirements.



Implementation/Construction – Virginia
1831 Rady Ct., Richmond, VA 23222

Conclusion

Verizon Wireless is confident that the proposed antenna upgrades are in compliance with the City of Charlottesville's Zoning Ordinance and Architectural Design Control Districts Design Guidelines to design a facility that is in accordance with the West Main Street District's guidelines for scale, size, design, screening, and color. The proposed antenna facility meets all of the requirements for the district and will not create a detrimental impact upon the district. This is because there will be no additional ground disturbance or construction and all work will be done on the existing tower without increasing its height.

Verizon Wireless respectfully requests the approval of the proposed Board of Architectural Review Application. If further information is required for the review of the application, please contact me at (804) 901-7433 or by e-mail at stuart.squier@gdnsites.com

Sincerely,

A handwritten signature in black ink, appearing to read "Stuart Squier".

Stuart Squier
GDNSites
Consultants to Verizon Wireless

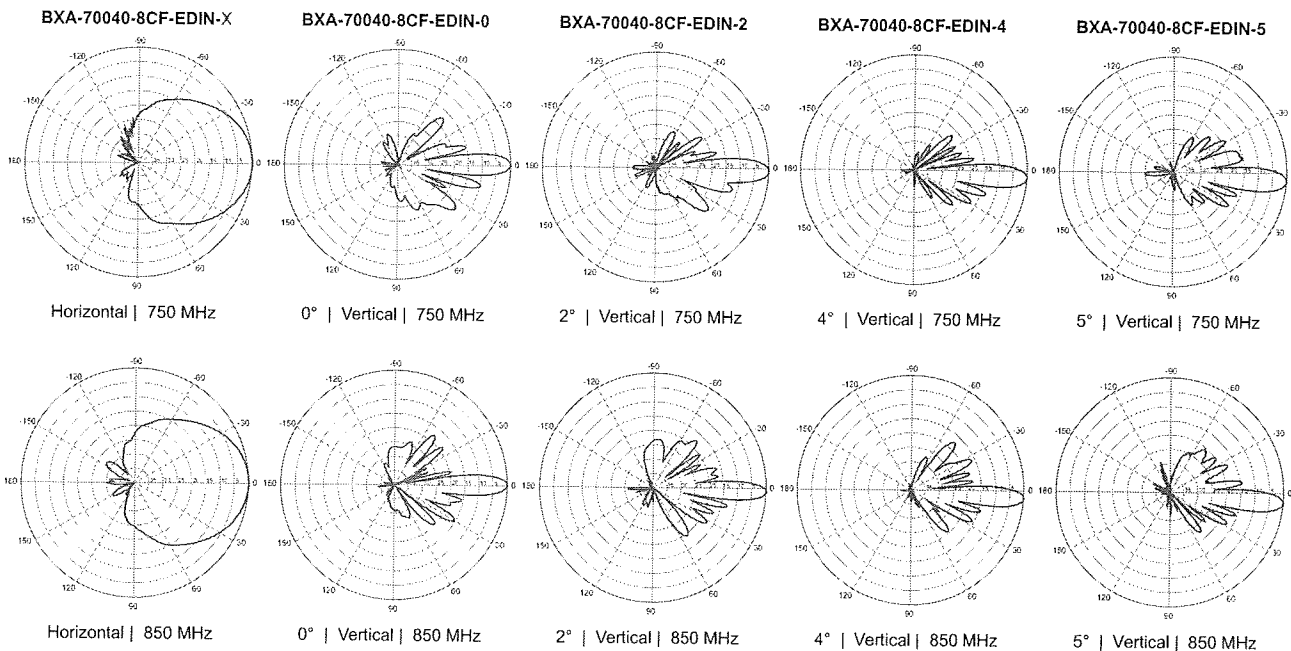
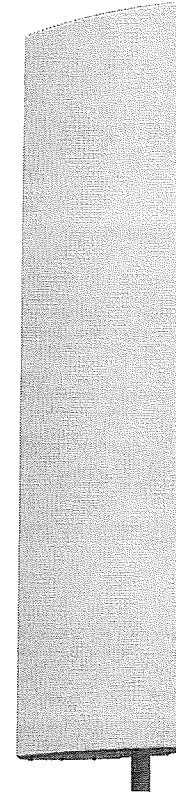
BXA-70040-8CF-EDIN-X

X-Pol | FET Panel | 40° | 18.0 dBd

Replace "X" with desired electrical downtilt.

Antenna is also available with NE connector(s).
Replace "EDIN" with "NE" in the model number
when ordering.

Electrical Characteristics		696-900 MHz		
Frequency bands	696-806 MHz	806-900 MHz		
Polarization	±45°			
Horizontal beamwidth	42°	40°		
Vertical beamwidth	9°	7°		
Gain	17.5 dBd (19.6 dBi)	18.0 dBd (20.1 dBi)		
Electrical downtilt (X)	0, 2, 4, 5, 6, 7, 10			
Impedance	50Ω			
VSWR	≤1.35:1			
Upper sidelobe suppression (0°)	-15.4 dB	-19.5 dB		
Front-to-back ratio (+/-30°)	-37.7 dB	-34.0 dB		
Null fill	5% (-26.02 dB)			
Isolation between ports	< -27 dB			
Input power with EDIN connectors	500 W			
Input power with NE connectors	300 W			
Lightning protection	Direct Ground			
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)			
Mechanical Characteristics				
Dimensions Length x Width x Depth	2404 x 606 x 200 mm		94.6 x 23.9 x 7.9 in	
Depth with z-brackets	240 mm		9.4 in	
Weight without mounting brackets	23 kg		50 lbs	
Survival wind speed	> 201 km/hr		> 125 mph	
Wind area	Front: 1.46 m ² Side: 0.48 m ²	Front: 15.7 ft ² Side: 5.2 ft ²		
Wind load @ 161 km/hr (100 mph)	Front: 2083 N Side: 783 N	Front: 469 lbf Side: 175 lbf		
Mounting Options		Part Number	Fits Pipe Diameter	Weight
3-Point Mounting & Downtilt Bracket Kit		36210008	40-115 mm 1.57-4.5 in	6.9 kg 15.2 lbs
Concealment Configurations		This model cannot be used in a standard FP concealment configuration		



Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

Slant +/- 45° Dual Polarized, Panel 40° / 18 dBd

BXA-80040/8CF

When ordering replace " " with connector type.

Mechanical specifications

Length	2405 mm	94.7 in
Width	600 mm	23.6 in
Depth	200 mm	7.9 in
Depth with z-bracket	240 mm	9.4 in
4) Weight	22.7 kg	50.0 lbs
Wind Area		
Fore/Aft	1.44 m ²	15.5 ft ²
Side	0.48 m ²	5.2 ft ²
Rated Wind Velocity (Safety factor 2.0)		
	>206 km/hr	>128 mph
Wind Load @ 100 mph (161 km/hr)		
Fore/Aft	2059 N	463.0 lbs
Side	782 N	175.7 lbs

Antenna consisting of aluminum alloy with brass feedlines covered by a UV safe fiberglass radome.

Mounting and Downtilting

Mounting brackets attach to a pipe diameter of Ø50-160 mm (2.0-6.3 in).

Mounting bracket kit #36210002

Downtilt bracket kit #36114003

Electrical specifications

Frequency Range	806-900 MHz*
Impedance	50Ω
3) Connector(s)	NE or E-DIN 2 ports / center or bottom
1) VSWR	≤ 1.4:1
Polarization	Slant ± 45°
1) Isolation Between Ports	≤ -27 dB
1) Gain	18 dBd
2) Power Rating	500 W
1) Half Power Angle	
H-Plane	40°
E-Plane	7°
1) Electrical Downtilt	0°
1) Null Fill	5%

Lightning Protection Direct Ground

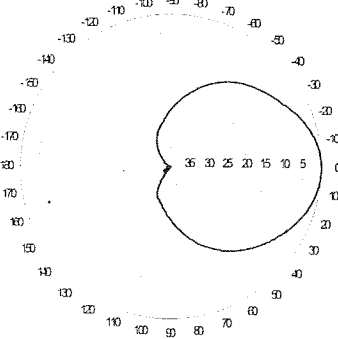
*Also available for 870-960 MHz. Consult your sales director for more information.

Patented Dipole Design: U.S. Patent No. 6,608,600 B2

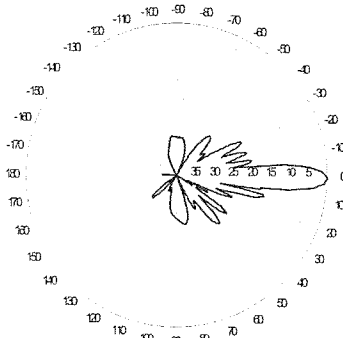
- 1) Typical values.
- 2) Power rating limited by connector only.
- 3) NE indicates an elongated N connector.
E-DIN indicates an elongated DIN connector.
- 4) The antenna weight listed above does not include the bracket weight.

Improvements to mechanical and/or electrical performance of the antenna may be made without notice.

Radiation pattern¹⁾



Horizontal

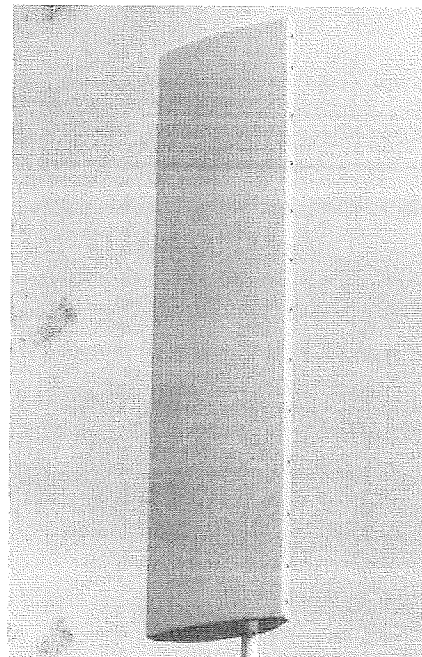


Vertical

Featuring upper side lobe suppression.

Radiation patterns for all antennas are measured with the antenna mounted on a fiberglass pole.

Mounting on a metal pole will typically improve the Front-to-Back ratio.



Amphenol Antel's
Exclusive 3T (True
Transmission Line
Technology)
Antenna Design:

- Watercut brass feedline assembly for consistent performance.
- Unique feedline design eliminates the need for conventional solder joints in the signal path.
- A non-collinear system with access to every radiating element for broad bandwidth and superior performance.
- Air as insulation for virtually no internal signal loss.

This Amphenol Antel antenna is under a five-year limited warranty for repair or replacement.

Antenna can be ordered with center-fed or bottom-fed connectors.

Center-fed: BXA-80040/8CF + (NE or E-DIN)
Bottom-fed: BXA-80040/8BF + (NE or E-DIN)

CF Denotes a Center-Fed Connector.

806-900 MHz

A Amphenol
Antel, Inc.
The Antenna Technology Company

Revision Date: 7/3/07

Amphenol Antel, Inc. 1300 Capital Drive Rockford, Illinois 61109 USA Tel. (815) 399-0001
Toll-Free (888) 417-9562 Fax. (815) 399-0156 antel@antelinc.com www.antelinc.com

BXA-70063-8CF-EDIN-X

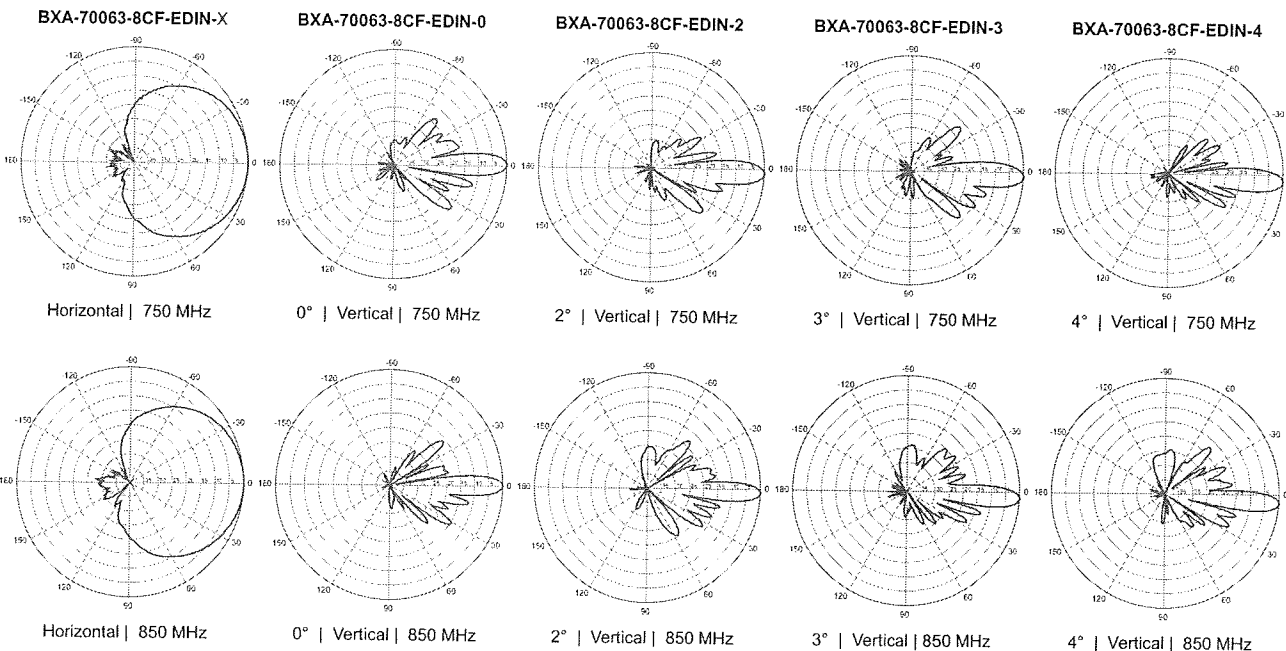
X-Pol | FET Panel | 63° | 16.0 dBd

Replace "X" with desired electrical downtilt.

Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.



Electrical Characteristics		696-900 MHz		
Frequency bands	696-806 MHz	806-900 MHz		
Polarization	±45°			
Horizontal beamwidth	65°	63°		
Vertical beamwidth	9°	7°		
Gain	15.5 dBd (17.6 dBi)	16.0 dBd (18.1 dBi)		
Electrical downtilt (X)	0, 2, 3, 4, 5, 6, 7, 8, 10			
Impedance	50Ω			
VSWR	≤1.35:1			
Upper sidelobe suppression (0°)	-16.2 dB	-19.0 dB		
Front-to-back ratio (+/-30°)	-32.9 dB	-31.3 dB		
Null fill	5% (-26.02 dB)			
Isolation between ports	< -30 dB			
Input power with EDIN connectors	500 W			
Input power with NE connectors	300 W			
Lightning protection	Direct Ground			
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)			
Mechanical Characteristics				
Dimensions Length x Width x Depth	2405 x 285 x 132 mm	94.7 x 11.2 x 5.2 in		
Depth with z-brackets	170 mm	6.7 in		
Weight without mounting brackets	10.9 kg	24 lbs		
Survival wind speed	> 201 km/hr	> 125 mph		
Wind area	Front: 0.69 m ² Side: 0.31 m ²	Front: 7.4 ft ² Side: 3.4 ft ²		
Wind load @ 161 km/hr (100 mph)	Front: 1031 N Side: 581 N	Front: 232 lbf Side: 129 lbf		
Mounting Options		Part Number	Fits Pipe Diameter	Weight
3-Point Mounting & Downtilt Bracket Kit		36210008	40-115 mm 1.57-4.5 in	6.9 kg 15.2 lbs
Concealment Configurations		For concealment configurations, order BXA-70063-8CF-EDIN-X-FP		



Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

Slant +/- 45° Dual Polarized, Panel 63° / 20.5 dBi

BXA-185063/12CF

When ordering replace " " with connector type.

Mechanical specifications

Length	1840 mm	72.4 in
Width	154 mm	6.1 in
Depth	105 mm	4.1 in
Depth with t-bracket	133 mm	5.2 in
4) Weight	6.8 kg	15.0 lbs
Wind Area		
Fore/Aft	0.28 m ²	3.1 ft ²
Side	0.19 m ²	2.1 ft ²
Rated Wind Velocity (Safety factor 2.0)		
	>201 km/hr	>125 mph
Wind Load @ 100 mph (161 km/hr)		
Fore/Aft	460 N	103.4 lbs
Side	304 N	68.3 lbs

Antenna consisting of aluminum alloy with brass feedlines covered by a UV safe fiberglass radome.

Mounting and Downtilting

Mounting brackets attach to a pipe diameter of Ø50-102 mm (2.0-4.0 in).

Mounting bracket kit #26799997

Downtilt bracket kit #26799999

The downtilt bracket kit includes the mounting bracket kit.

Electrical specifications

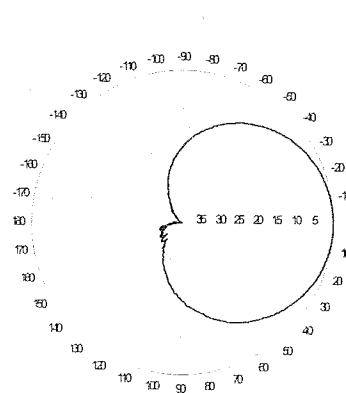
Frequency Range	1850-1990 MHz
Impedance	50Ω
3) Connector(s)	NE or E-DIN 2 ports / center
1) VSWR	≤ 1.4:1
Polarization	Slant ± 45°
1) Isolation Between Ports	< -30 dB
1) Gain	20.5 dBi
2) Power Rating	250 W
1) Half Power Angle	
H-Plane	63°
E-Plane	5°
1) Electrical Downtilt	0°
1) Null Fill	5%
Lightning Protection	Direct Ground

Patented Dipole Design: U.S. Patent No. 6,597,324 B2

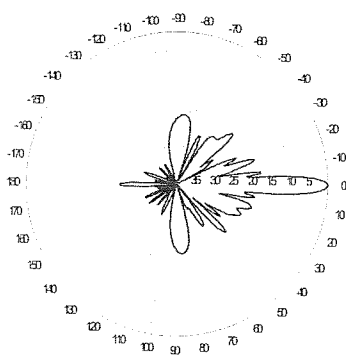
- 1) Typical values.
- 2) Power rating limited by connector only.
- 3) NE indicates an elongated N connector.
E-DIN indicates an elongated DIN connector.
- 4) The antenna weight listed above does not include the bracket weight.

Improvements to mechanical and/or electrical performance of the antenna may be made without notice.

Radiation pattern¹⁾



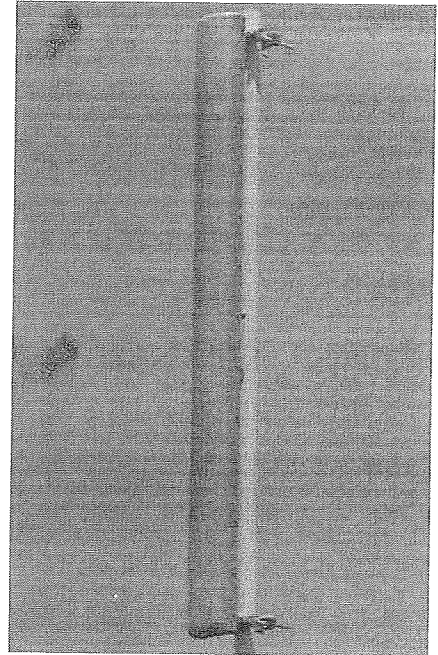
Horizontal



Vertical

Radiation patterns for all antennas are measured with the antenna mounted on a fiberglass pole.

Mounting on a metal pole will typically improve the Front-to-Back ratio.



**Amphenol Antel's
Exclusive 3T (True
Transmission Line
Technology)
Antenna Design:**

- Watercut brass feedline assembly for consistent performance.
- Unique feedline design eliminates the need for conventional solder joints in the signal path.
- A non-collinear system with access to every radiating element for broad bandwidth and superior performance.
- Air as insulation for virtually no internal signal loss.

This Amphenol Antel antenna is under a five-year limited warranty for repair or replacement.

Antenna available with center-fed connectors only.

CF Denotes a Center-Fed Connector.

1850-1990 MHz

**Amphenol
Antel, Inc.**
The Antenna Technology Company

Revision Date: 7/11/07

Amphenol Antel, Inc. 1300 Capital Drive Rockford, Illinois 61109 USA Tel. (815) 399-0001
Toll-Free (888) 417-9562 Fax. (815) 399-0156 antel@antelinc.com www.antelinc.com

Slant +/- 45° Dual Polarized, Panel 63° / 19-19.5 dBi

BXA-171063/12CF

When ordering replace "___" with connector type.

Mechanical specifications

Length	1840 mm	72.4 in
Width	154 mm	6.1 in
Depth	105 mm	4.1 in
Depth with t-bracket	133 mm	5.2 in
4) Weight	6.8 kg	15.0 lbs
Wind Area		
Fore/Aft	0.28 m ²	3.1 ft ²
Side	0.19 m ²	2.1 ft ²
Rated Wind Velocity (Safety factor 2.0)		
	>201 km/hr	>125 mph
Wind Load @ 100 mph (161 km/hr)		
Fore/Aft	460 N	103.4 lbs
Side	304 N	68.3 lbs

Antenna consisting of aluminum alloy with brass feedlines covered by a UV safe fiberglass radome.

Mounting and Downtilting

Mounting brackets attach to a pipe diameter of Ø50-102 mm (2.0-4.0 in).

Mounting bracket kit #26799997

Downtilt bracket kit #26799999

The downtilt bracket kit includes the mounting bracket kit.

Electrical specifications

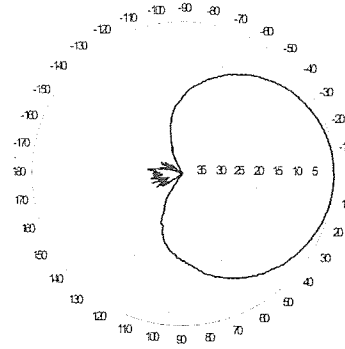
Frequency Range	1710-2170 MHz
Impedance	50Ω
3) Connector(s)	NE or E-DIN 2 ports / center
1) VSWR	≤ 1.5:1
Polarization	Slant ± 45°
1) Isolation Between Ports	< -25 dB
1) Gain:	1710-1880 MHz 19.5dBi 1850-1990 MHz 19.5 dBi 2110-2155 MHz 19.0 dBi
2) Power Rating	250 W
1) Half Power Angle	
H-Plane	63°
E-Plane	5°
1) Electrical Downtilt	0°
1) Null Fill	5%
Lightning Protection	Direct Ground

Patented Dipole Design: U.S. Patent No. 6,597,324 B2

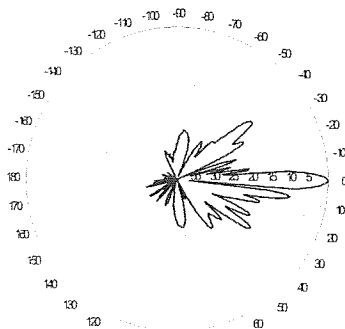
- 1) Typical values.
- 2) Power rating limited by connector only.
- 3) NE indicates an elongated N connector.
E-DIN indicates an elongated DIN connector.
- 4) The antenna weight listed above does not include the bracket weight.

Improvements to mechanical and/or electrical performance of the antenna may be made without notice.

Radiation pattern¹⁾



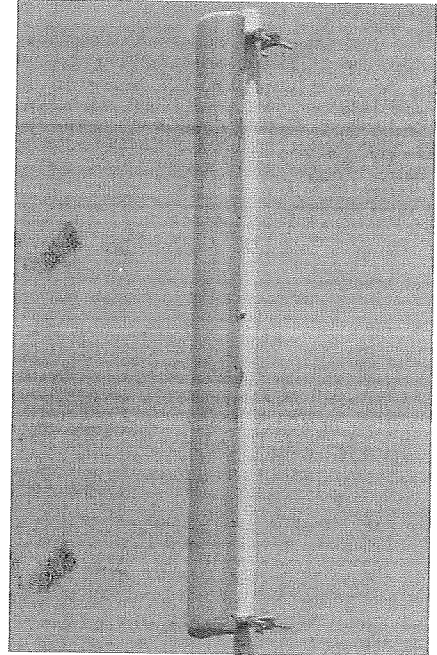
Horizontal



Vertical

Radiation patterns for all antennas are measured with the antenna mounted on a fiberglass pole.

Mounting on a metal pole will typically improve the Front-to-Back ratio.



Amphenol Antel's
Exclusive 3T (True
Transmission Line
Technology)
Antenna Design:

- Watercut brass feedline assembly for consistent performance.
- Unique feedline design eliminates the need for conventional solder joints in the signal path.
- A non-collinear system with access to every radiating element for broad bandwidth and superior performance.
- Air as insulation for virtually no internal signal loss.

This Amphenol Antel antenna is under a five-year limited warranty for repair or replacement.

Antenna available with center-fed connectors only.

CF Denotes a Center-Fed Connector.

1710-2170 MHz

**Amphenol
Antel, Inc.**
The Antenna Technology Company

Revision Date: 10/4/07

Amphenol Antel, Inc. 1300 Capital Drive Rockford, Illinois 61109 USA Tel. (815) 399-0001
Toll-Free (888) 417-9562 Fax. (815) 399-0156 antel@antelinc.com www.antelinc.com

Slant +/- 45° Dual Polarized, Panel 40° / 19.5 dBi

BXA-185040/8CF

When ordering replace "___" with connector type.

Mechanical specifications

Length	1240 mm	48.8 in
Width	300 mm	11.8 in
Depth	120 mm	4.7 in
Depth with z-bracket	160 mm	6.3 in
4) Weight	5.9 kg	13.0 lbs
Wind Area		
Fore/Aft	0.37 m ²	4.0 ft ²
Side	0.15 m ²	1.6 ft ²
Rated Wind Velocity (Safety factor 2.0)		
	>233 km/hr	>145 mph
Wind Load @ 100 mph (161 km/hr)		
Fore/Aft	531 N	119 lbs
Side	234 N	53 lbs

Antenna consisting of aluminum alloy with brass feedlines covered by a UV safe fiberglass radome.

Mounting and Downtilting

Mounting brackets attach to a pipe diameter of Ø50-102 mm (2.0-4.0 in). If the lock-down brace is used, the maximum diameter is Ø88.9 mm (3.5 in).

Mounting Bracket & Downtilt Bracket Kit
#21699999

Electrical specifications

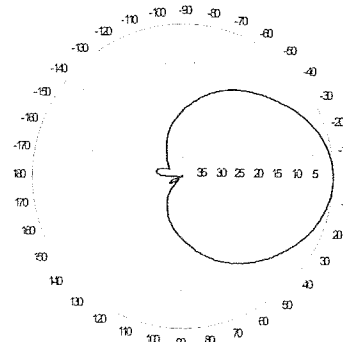
Frequency Range	1850-1990 MHz
Impedance	50Ω
3) Connector(s)	NE or E-DIN 2 ports / center
1) VSWR	≤ 1.4:1
Polarization	Slant ± 45°
1) Isolation Between Ports	< -30 dB
1) Gain	19.5 dBi
2) Power Rating	250 W
1) Half Power Angle	
H-Plane	40°
E-Plane	7°
1) Electrical Downtilt	0°
1) Null Fill	5%
Lightning Protection	Direct Ground

Patented Dipole Design: U.S. Patent No. 6,597,324 B2

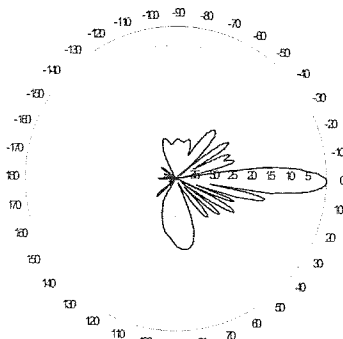
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Improvements to mechanical and/or electrical performance of the antenna may be made without notice.

Radiation pattern¹⁾



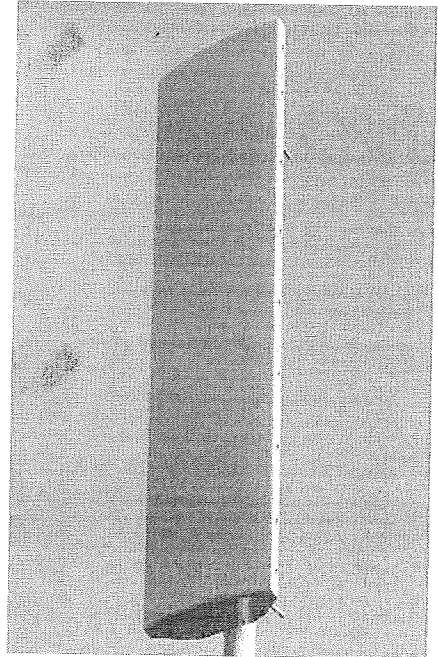
Horizontal



Vertical

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1850-1990 MHz

**Amphenol
Antel, Inc.**
The Antenna Technology Company

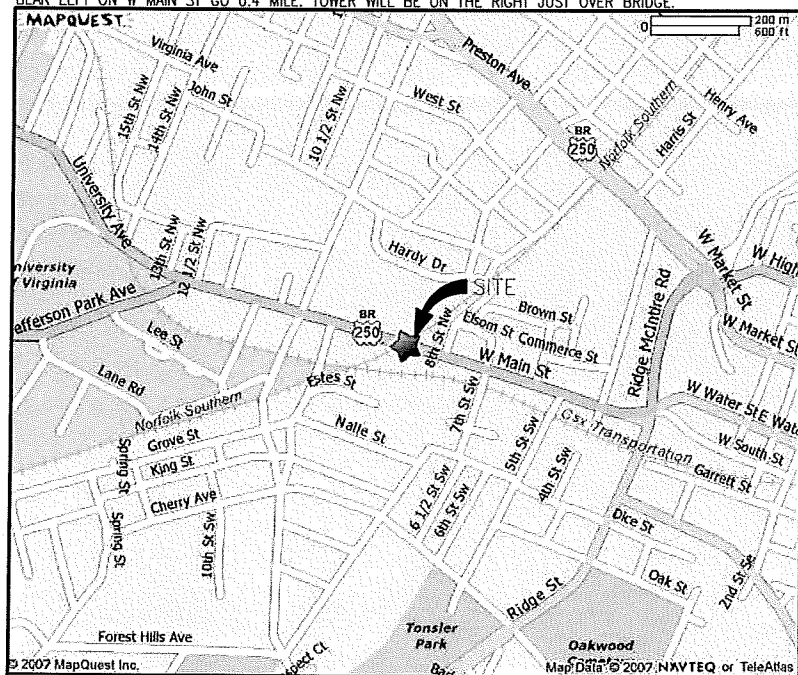
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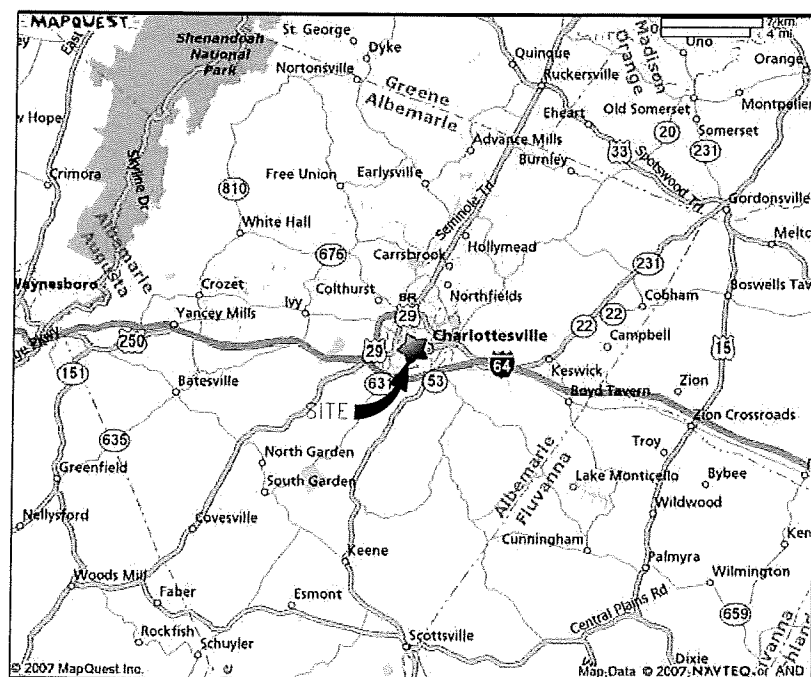
DIRECTIONS TO SITE:

FROM RICHMOND:
 TAKE I-95 N TO I-64W MERGE ONTO I-64 W TOWARDS CHARLOTTESVILLE TAKE EXIT 121 TOWARDS CHARLOTTESVILLE/SCOTTSVILLE. TURN RIGHT ON VA-20 N. GO ±1 MILE CONTINUE ON MONTICELLO AVE. GO 0.3 MILE, TURN RIGHT ON 2ND ST. SE GO 0.2 MILES AND TURN LEFT ON WATER ST. GO 0.2 MILES AND BEAR LEFT ON W MAIN ST GO 0.4 MILE. TOWER WILL BE ON THE RIGHT JUST OVER BRIDGE.



LOCAL MAP

SCALE: 1" = 2,000'



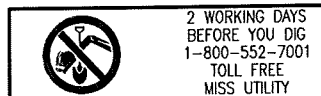
VICINITY MAP

NOT TO SCALE

DOWNTOWN CHARLOTTESVILLE

WEST MAIN STREET
 CHARLOTTESVILLE, VA 22911

PROJECT DESCRIPTION:
COLLOCATION OF ANTENNAS AND ASSOCIATED EQUIPMENT ON AN EXISTING SELF SUPPORT TOWER



APPROVAL			
ACQUISITION MANAGER:	SIGNATURE	PHONE NUMBER	DATE
CONSTRUCTION MANAGER:	SIGNATURE	PHONE NUMBER	DATE
RF ENGINEERING:	SIGNATURE	PHONE NUMBER	DATE
NETWORK OPS. MANAGER:	SIGNATURE	PHONE NUMBER	DATE

REV. NO.	DESCRIPTION	BY	DATE	REV. NO.	DESCRIPTION	BY	DATE
1	REVIEW SET	SPP	5/14/12				
2	APPLICATION DRAWINGS	SPP	9/18/13				

CONSULTING TEAM	
ARCHITECTURE AND ENGINEERING: CLARK NEXSEN 5510 CHEROKEE AVE, SUITE 110 ALEXANDRIA, VA 22312 PROJECT MANAGER: JUSTIN Y. YOON, PE TELEPHONE: (703) 256-3344 FAX NUMBER: (703) 256-6622	
SURVEY: CAUSEWAY CONSULTANTS, P.C. 1005 S. BATTLEFIELD BLVD. CHESAPEAKE, VA 23322 CONTACT: EDDIE R. WHITE TELEPHONE: (757) 482-0474 FAX NUMBER: (757) 482-9870	
SOIL ENGINEER: NONE	
STRUCTURAL ENGINEERING: CLARK NEXSEN 6160 KEMPSVILLE CIR, SUITE-200A NORFOLK, VA 23502 CONTACT: WILLIAM R MELGAARD, PE TELEPHONE: (757) 455-5800 FAX NUMBER: (757) 455-5638	
UTILITIES: POWER COMPANY: DOMINION VIRGINIA POWER CONTACT: CUSTOMER SERVICE TELEPHONE: 1-888-667-3000	
TELEPHONE COMPANY: VERIZON CONTACT: CUSTOMER SERVICE TELEPHONE: 1-800-826-2355	

PROJECT SUMMARY	
SITE INFORMATION: DOWNTOWN CHARLOTTESVILLE WEST MAIN STREET CHARLOTTESVILLE, VA 22911	PROPERTY OWNER: NORFOLK SOUTHERN RAILWAY COMPANY
TOWER INFORMATION: NORFOLK SOUTHERN RAILROAD COMPANY CONTACT: JIM LOVE TELEPHONE: 1-434-531-8282	
APPLICANT INFORMATION: VERIZON WIRELESS 1831 RADY COURT RICHMOND, VA 23222 CONTACT: VINCENT CRUTE TELEPHONE: (804) 543-7580 FAX NUMBER: (804) 321-0398	
PROJECT DATA: ZONING: WEST MAIN NORTH CORRIDOR JURISDICTION: CITY OF CHARLOTTESVILLE TAX MAP/PARCEL: TAX MAP 32, PARCEL 144.2 PARCEL ID #: 320144200 SITE TYPE: COLLOCATION TOWER TYPE: SELF SUPPORT TOWER TOWER HEIGHT: 225' ACREAGE: N/A LEASE AREA: 707 SF	
GEOGRAPHIC COORDINATES: LATITUDE: 38° 01' 56.54" N LONGITUDE: 78° 29' 30.29" W GROUND ELEV (AMSL): 496.50'	
ADA COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. SITE WILL NOT BE SERVED BY CITY SEWER OR WATER.	

SHEET INDEX	
SHEET:	DESCRIPTION:
G-1	COVER SHEET
C-1	ELEVATION VIEW

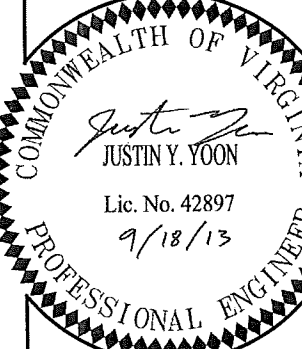
SUBMITTALS		
SYM.	DESCRIPTION	DATE
△	REVIEW SET	05/14/12
△	APPLICATION DWGS	9/18/13
△		
△		
△		
△		
△		
△		

SHEET NAME:
COVER SHEET

SHEET NO.:
G-1

SHEET TOTAL:
2

CLARK NEXSEN
 Architecture & Engineering
 5510 CHEROKEE AVENUE SUITE 110
 ALEXANDRIA, VIRGINIA 22312
 703-256-3344 FAX 703-256-6622
 WWW.CLARKNEXSEN.COM



SITE INFO:
DOWNTOWN CHARLOTTESVILLE
COLLOCATE SELF SUPPORT TOWER
 WEST MAIN STREET
 CHARLOTTESVILLE, VA 22911
 ALBEMARLE COUNTY

DESIGN:	SPP
DRAWN:	MSA
REVIEW:	SPP
TV DATE:	07/19/07
COMM. NO.:	3036.070

SYM.	DESCRIPTION	DATE
△	REVIEW SET	05/14/12
△	APPLICATION DWGS	9/18/13
△		
△		
△		
△		
△		

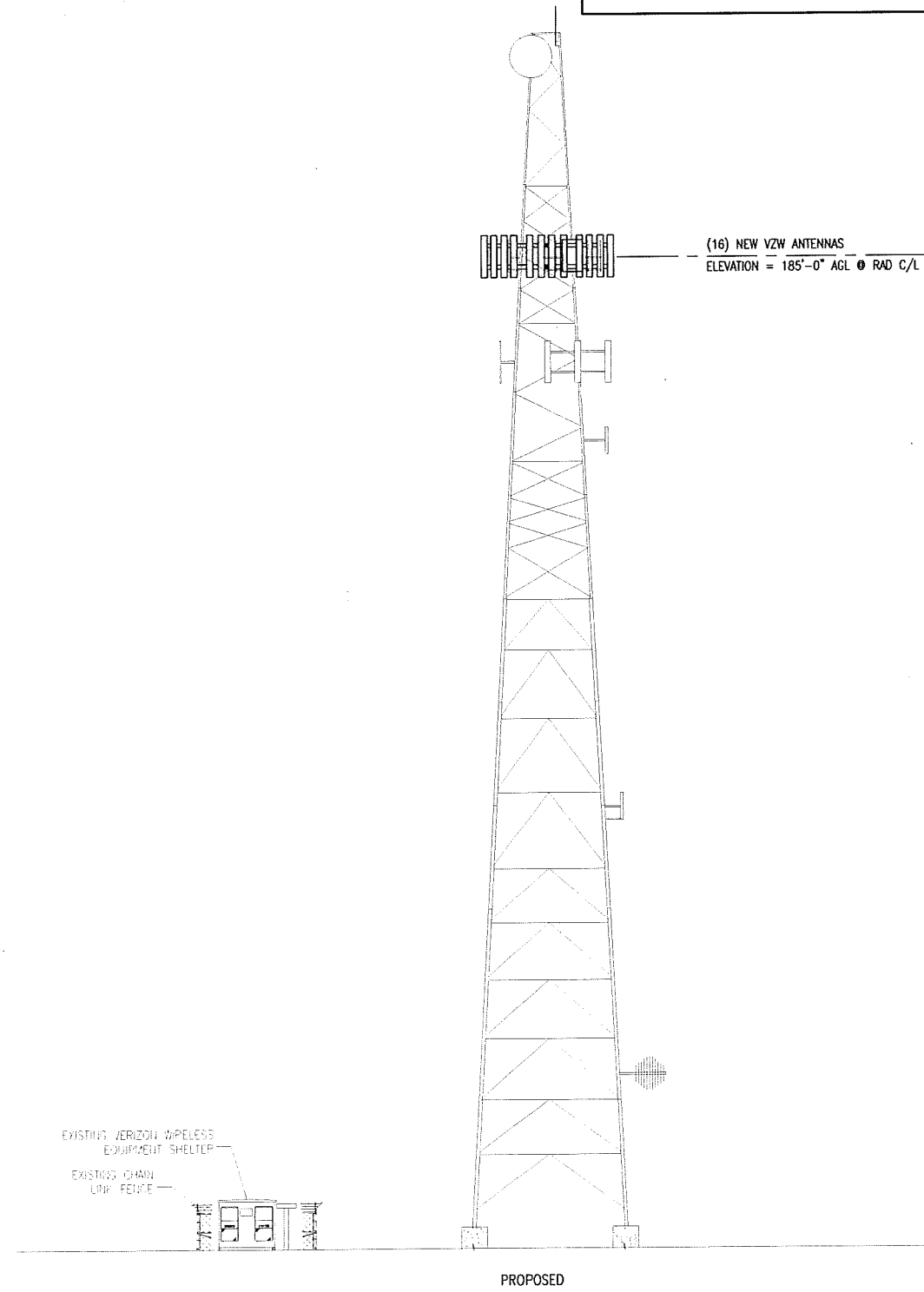
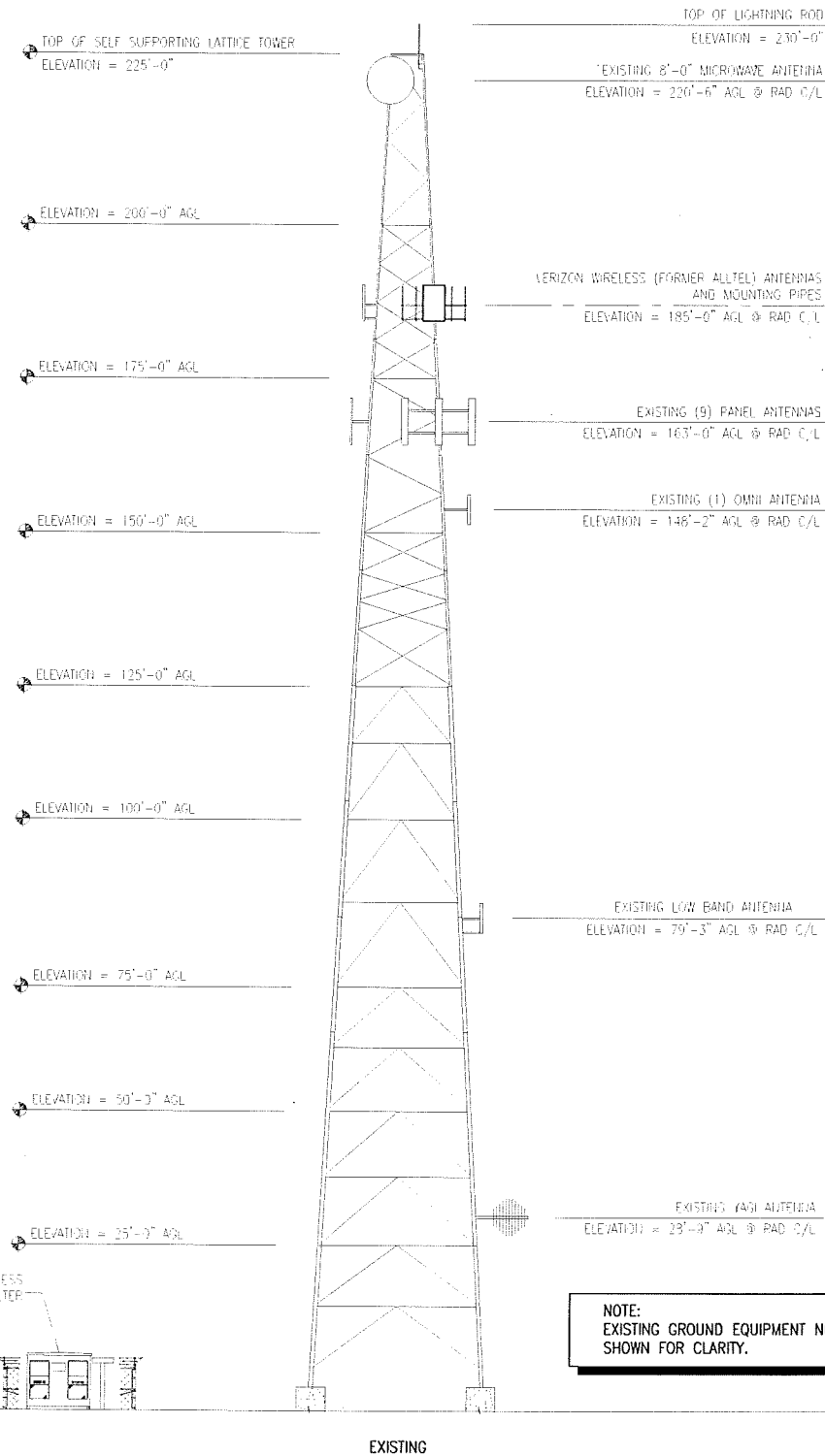
SHEET NAME:
COVER SHEET

SHEET NO.:
G-1

SHEET TOTAL:
2

SITE NOTES

1. NO SIGNS SHALL BE PERMITTED EXCEPT AS MAY BE REQUIRED FOR PUBLIC SAFETY PURPOSES, OR AS REQUIRED BY THE FAA OR FCC.
2. NO MATERIALS OR MARKINGS CONTAINING ANY ADVERTISING OR ADVERTISEMENT SHALL BE PERMITTED.
3. ALL STRUCTURES AND APPURTENANCES SHALL BE GALVANIZED FINISH OR PAINTED GRAY ABOVE THE SURROUNDING TREELINE.



ELEVATION VIEW
NO SCALE

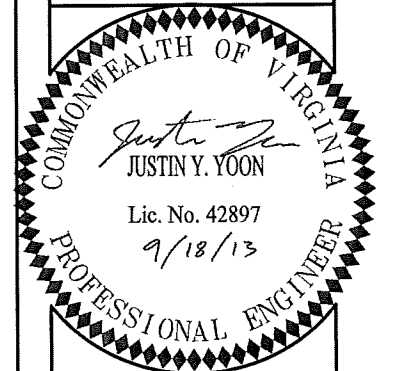
CLARK NEXSEN

Architecture & Engineering

5510 CHEROKEE AVENUE SUITE 110
ALEXANDRIA, VIRGINIA 22312
703-256-3344 FAX 703-256-6622
WWW.CLARKNEXSEN.COM

verizon wireless

1831 RADY COURT
RICHMOND, VA 23222



SITE INFO:
**DOWNTOWN
CHARLOTTESVILLE**

**COLLOCATE
SELF SUPPORT
TOWER**
WEST MAIN STREET
CHARLOTTESVILLE, VA
22911
ALBEMARLE COUNTY

DESIGN:	SPP
DRAWN:	MSA
REVIEW:	SPP
TTV DATE:	07/19/07
COMM. NO.:	3086,020

SUBMITTALS		
SYM.	DESCRIPTION	DATE
△	REVIEW SET	05/14/12
△	APPLICATION DWGS	9/18/13
△		
△		
△		
△		
△		

SHEET NAME:
**ELEVATION
VIEW**

SHEET NO.:
C-1



Existing Condition



Proposed Condition



Downtown Charlottesville
Comm. # 3036.070.AWS

CITY OF CHARLOTTESVILLE

"A World Class City"

Department of Neighborhood Development Services

City Hall Post Office Box 911
Charlottesville, Virginia 22902
Telephone 434-970-3182
Fax 434-970-3359
www.charlottesville.org



October 1, 2013

Dear Sir or Madam:

This letter is to notify you that the following application has been submitted for review by the City of Charlottesville Board of Architectural Review on property that is either abutting or immediately across a street from your property, or that has frontage on the same city street block.

Certificate of Appropriateness Application

BAR 13-10-02

819 W Main Street

Tax Map 32 Parcel 144.2

Norfolk Southern Railway company, Owner/

Verizon Wireless c/o Stuart Squier, Applicant

Replace nine existing antennas with fourth sector mount and 16 new antennas

The Board of Architectural Review (BAR) will consider these applications at a meeting to be held on **Tuesday, October 15, 2013, starting at 5:30 pm in City Council Chambers, City Hall**. Enter City Hall from the Main Street pedestrian mall entrance and go up to 2nd floor.

An agenda with approximate times and additional application information will be available on the BAR's home page accessible through <http://www.charlottesville.org>. If you need more information, please do not hesitate to contact me at 434-970-3130 or hawksm@charlottesville.org.

Sincerely yours,

A handwritten signature in cursive script, appearing to read 'Mary Joy Scala'.

Mary Joy Scala, AICP
Preservation and Design Planner

853 WEST MAIN, LLC
P O BOX 7885
CHARLOTTESVILLE VA 22906

DABNEY, KIM T & CHRIS T
43872 GLEN HAZEL DRIVE
ASHBURN VA 20147

HI-STARR LIMITED
PARTNERSHIP

UNION STATION PARTNERS, LLC
2088 UNION ST STE 1
SAN FRANCISCO CA 94123

CH'VILLE RED & HOUSING
AUTHORITY
P O BOX 1405
CHARLOTTESVILLE VA 22902

DABNEY, KIM TRAN
43872 GLENHAZEL DRIVE
ASHBURN VA 22011

HI-STARR LIMITED
PARTNERSHIP
P O BOX 7885
CHARLOTTESVILLE VA 22906

CITICO REALTY CO
TAXATION DEPT
110 FRANKLIN ROAD
ROANOKE VA 240420028
FLUVANNA HOLDINGS, LLC
P O BOX 1467
CHARLOTTESVILLE VA 22902

UNION STATION PARTNERS, LLC
2088 UNION ST STE 1
SAN FRANCISCO CA 94123