County of Fairfax, Virginia

MEMORANDUM

DATE: July 21, 2010

TO: David Marshall, Chief
Facilities Planning Branch, Planning Division, DPZ

FROM: Kevin Guinaw, Chief
Special Projects/Applications Management Branch, Zoning Evaluation Division, DPZ

SUBJECT: Proposed Clearwire Telecommunications Facility at 7617 Little River Turnpike; Tax Map 70-2 ((1)) 1A; 2232 Application FS-B09-134

This is in response to a request for a determination as to whether the telecommunications facility proposed by Clearwire at 7617 Little River Turnpike is in substantial conformance with the proffers accepted by the Board of Supervisors in conjunction with the approval of Rezoning RZ 2000-BR-061 and with the development conditions approved by the Board of Supervisors with Special Exception Amendment SEA 89-A-071. As described in the 2232 application dated December 14, 2009, revised July 20, 2010, from Adam Knubel, agent for the applicant, five (5) dish antennas (2 - 8-inch diameter; 1 - 15.3-inch diameter; 2 - 26.1-inch diameter) are proposed to be flush-mounted on the exterior wall of the rooftop penthouse. The antennas will be painted to match the building exterior. No additional equipment cabinets are proposed with this application. A copy of the 2232 application with illustrations of the proposed locations of the telecommunications equipment is attached.

The Zoning Administration Division has determined that a telecommunications facility as described above is a permitted use pursuant to the provisions of Sect. 2-514 of the Zoning Ordinance provided that it is determined to be in substantial conformance with any applicable rezoning and special exception. It is my determination that the proposed telecommunications facility would be in substantial conformance with the above-referenced applications. Please note that this proposal is subject to 2232 review requirements and that Clearwire's ability to proceed is dependent upon approval of the pending 2232 application by the Fairfax County Planning Commission. This determination has been made in my capacity as the duly authorized agent of the Zoning Administrator. If you have any questions regarding this memorandum, please call Carrie Lee at (703) 324-1290.

KG/CDL/N:\ActionAssignments\Antennas\7617 Little River Tnpk_rooftop\7617 Little River Tnpk_Clearwire.doc

Attachments: A/S

cc: John C. Cook, Supervisor, Braddock District
Suzanne F. Harsel, Planning Commissioner, Braddock District
Regina C. Coyle, Director, Zoning Evaluation Division, DPZ
Diane Johnson-Quinn, Deputy Zoning Administrator, Zoning Permit Review, ZAD, DPZ
Adam Knubel, Network Building & Consulting, 7380 Coca Cola Drive, Suite 106, Hanover, MD 21076
File: RZ 2000-BR-061, SEA 89-A-071, ANT 0912 135, Imaging, Reading File

County of Fairfax, Virginia

MEMORANDUM

RECEIVED
Dept. of Planning & Zoning
DEC 15 2009
Zoning Administration Div.

TO: Lorrie Kirst, Deputy Zoning Administrator, ZAD **DATE:** 12-14-09
Other: _____

FROM: David B. Marshall, Chief
Facilities Planning Branch, DPZ

SUBJECT: Request for Review: 2232 Application 2009-0707

RE: Application Number: FS-B09-134 Tax Map: 70-2 ((1)) 1A

Attached for your review and comment is a 2232 Review application: 7617 Little River Tnpk

RECEIVED FROM: Clearwire
PROPOSED USE: Rooftop collocation
LOCATION OF USE: 7617 Little River Tpke
ADDITIONAL COMMENTS: (do you have a record of this? (no previous record in our mail log or in my files although this looks familiar)

Please send your comments to David Marshall by: 12/28/09
Staff Coordinator: Sandi Smith **Phone**: 703-324-1239 **Email:** sandi.smith@fairfaxcounty.gov

****ZAD COMMENTS:**

Property is zoned C-Y

_____ Proposed use is permitted by Zoning Ordinance and meets all zoning requirements.
_____ Proposed use does not meet all Zoning requirements as follows:

RECEIVED
Department of Planning & Zoning
DEC 16 2009
Zoning Evaluation Division

See attached

Referred to ZED for the following: Must be in substantial conformance
ZAD comments prepared by: BParsons Date: 12-16-09
with proffered conditions associated with RZ 2000-BR-061 and SEA 89-A-071

****ZED COMMENTS:**

_____ Proposed use is in substantial conformance with all development conditions and/or proffers.
_____ Proposed use is not in substantial accord with all development conditions and proffers.

**ZED comments prepared by: _____ Date: _____

Department of Planning and Zoning
Planning Division
12055 Government Center Parkway, Suite730
Fairfax, Virginia 22035-5509
Phone 703-324-1380
Fax 703-324-3056
www.fairfaxcounty.gov/dpz/

DEPARTMENT OF PLANNING & ZONING

Kirst, Lorrie

To: Smith, Sandi M.
Cc: Parsons, Brian S.
Subject: FW: FS-B09-134, 7617 Little River Turnpike, Clearwire

RE: FS-B09-134

7617 Little River Turnpike (Note that the address is 7617 and not 7616 Little River Turnpike)

70-2 ((1)) 1A

Clearwire - collocation on rooftop

Zoned: C-4

This proposal involves the installation or 5 microwave dish antennas on the penthouse of a 10-story office building. These antennas will be connected to an existing Sprint equipment cabinets located in the basement of the office building.

The proposed us is permitted by the Zoning Ordinance and meets all zoning requirements pursuant to Par. 1 of Sect. 2-514 of the Zoning Ordinance.

Referred to ZED: The proposal must be in substantial conformance with the proffered conditions associated with RZ 2000-BR-061 and SEA 89-A-071.

COUNTY OF FAIRFAX, VIRGINIA

APPLICATION FOR DETERMINATION PURSUANT TO SECTION 15.2–2232 OF THE CODE OF VIRGINIA

Application Number: FS-B09-134
(assigned by staff)

The application con ains three parts: I. Application Summary; II. Statement of Justification; and I Telecommunication Proposal Details. Please do not staple, bind or hole-punch this application. Please provide at least one copy of all pages, including maps and drawings, on 8.5 x 11 inch paper.

(Please Type or Print All Requested Information)

PART I: APPLICATION SUMMARY

ADDRESS OF PROPOSED USE

Street Address 7617 Little River Turnpike

City/Town Annandale Zip Code 22003

APPLICANT(S)

Name of Applicant Adam Knubel for Clearwire

Street Address 7380 Coca Cola Drive, Suite 106

City/Town Hanover State MD Zip Code 20176

Telephone Number: Work (410) 712-7092 x1083 Fax (410) 712-5046

E-mail Address aknubel@nbcllc.com

Name of Applicant's Agent/Contact (if applicable) N/A

Agent's Street Address _____

City/Town _____ State _____ Zip Code _____

Telephone: Work (____) _____ Fax (___) _____

PROPOSED USE

Street Address 7617 Little River Turnpike

Fairfax Co. Tax Map and Parcel Number(s) 0702 01 0001A

Brief Description of Proposed Use

An unmanned telecommunication facility, two (2) 8", one (1) 15.3", and two (2) 26.1" dish antenna. All antenna will be mounted near the existing antenna and painted to match the building to which they are mounted. There are no new radio cabinets proposed with this application.

Total Area of Subject Parcel(s) 184,668 sf (acres or square feet)

Portion of Site Occupied by Proposed Use 4 sf (acres or square feet)

Fairfax County Supervisor District Braddock

Planned Use of Subject Property (according to Fairfax County Comprehensive Plan)

Zoning of Subject Property (comm w/mix of comm zoning)

List all applicable Proffer Conditions, Development Plans, Special Exceptions, Special Permits or Variances previously approved and related to this site

PROPERTY OWNER(s) OF RECORD

Owner BOURJ LTD

Street Address 7619 LITTLE RIVER TURNPIKE, SUITE 840

City/Town ANNANDALE State VA Zip Code 22003

PART II, *entitled "Statement of Justification," pages 4 through 6, shall be completed by all applicants and included as part of the application.* ***PART III,*** *entitled "Telecommunication Proposal Details," pages 7 through 9, also shall be completed and included for all proposed telecommunication uses.*

Name of Applicant or Agent Adam Knubel for Clearwire

Signature of Applicant or Agent

Date 7/20/2009

****

Please do not staple, bind or hole-punch this application. Please provide at least one copy of all pages, including maps and drawings, on 8.5 x 11 inch paper.

Submit completed application to:

Fairfax County
Department of Planning and Zoning, Planning Division
Herrity Building
12055 Government Center Parkway, Suite 730
Fairfax, Virginia 22035

****

FOR STAFF USE ONLY

Date application received: 7/29/09

By: AMS

Additional information requested to complete application:

HOLD - Non-flush mount
Revised

Date application accepted: __/__/__

By: _____

RECEIVED
Department of Planning & Zoning

JUL 20 2010

Zoning Evaluation Division

PART III: TELECOMMUNICATION PROPOSAL DETAILS

Please complete and provide all requested information. If question is not applicable to the proposed use, please indicate with N/A.

PROPOSED TELECOMMUNICATION USE

Use is (check one):

- ☐ New structure (monopole, tower or camouflaged facility)
- ☐ Replacement of existing pole or tower at same location with another pole or tower
- ☑ Antenna placement on building or penthouse facade
- ☐ Antenna placement on building or penthouse rooftop
- ☐ Collocation on other existing telecommunications structure (monopole or tower)
- ☐ Collocation on other non-telecommunications structure (such as an electric transmission tower/pole, utility pole, water tower, etc.)
- ☐ Modification to telecommunications facility previously approved for same applicant:
  Prior 2232 Review application number: _____
  Date of Planning Commission approval: _____

PROJECT DETAILS

1. ANTENNA

Number and Type: 5 Microwave Antenna
Dimensions: height _____ width _____ depth _____ diameter 26.1"
Location / Placement: Flush mounted to the penthouse
Wattage: 100 watts
Material and Color: Plastic & Steel; painted to match
Material and Color of the Antenna Mounting: Steel; painted to match
Height Above Ground: 132 feet

2. EQUIPMENT

Number and Type of Cabinets or Structures: existing equipment
Cabinet / Structure Dimensions: height _____ width _____ depth _____
Height of equipment platforms, if any: _____
Material and Color: _____
Location: Basement
Method of Screening: Inside the building

3. STRUCTURE ON WHICH ANTENNAS WILL BE MOUNTED

Maximum Height: 134 feet
Material: Steel & Concrete
Color: Brown & White
If structure is within a utility right-of-way, state right-of-way width:
_____

NETWORK BUILDING
& CONSULTING, LLC

RECEIVED
Department of Planning & Zoning
JUL 20 2010
Zoning Evaluation Division

July 20, 2010 (Revised)

Mr. James P. Zook, Director
Fairfax County Office of Comprehensive Planning
12055 Government Center Parkway, Suite 730
Fairfax, Virginia 22035-5505

RE: Feature Shown Application
7617 Little River Turnpike
Annandale, VA 22003
Applicant: Clearwire
Clearwire Site Number: DC-WSH5093

Dear Mr. Zook:

Clearwire, an FCC licensed provider of wireless personal telecommunications services, proposes to install an unmanned telecommunications facility, An unmanned telecommunication facility, two (2) 8", one (1) 15.3", and two (2) 26.1" dish antenna. All antenna will be mounted near the existing antenna on the building penthouse and painted to match the building to which they are mounted. There are no new radio cabinets proposed with this application.

APPLICANT:

Clearwire
5808 Lake Washington Blvd., Suite 300
Kirkland, WA 98033

APPLICANT'S AGENT:

Adam Knubel
7380 Coca Cola Drive, Suite 106
Hanover, Maryland 21076
410.712.7092
aknubel@nbcllc.com

SITE LOCATION:

Tax Map: 0702 01 0001A
Address: 7617 Little River Turnpike
Zoning District: (comm w/mix of comm zoning)
Use: Telecommunication Facility
Use Group: U
Supervisor District: Braddock

NETWORK BUILDING
& CONSULTING, LLC

RECEIVED
Department of Planning & Zoning
JUL 20 2010
Zoning Evaluation Division

DESCRIPTION OF PROPOSAL:

At 7617 Little River Turnpike., Clearwire plans to collocate two (2) 8", one (1) 15.3", and two (2) 26.1" dish antenna. All antenna will be mounted near the existing antenna on the building penthouse and painted to match the building to which they are mounted. There are no new radio cabinets proposed with this application. The locations of the proposed dish antennas are shown plan drawings prepared by Fullerton.

The facility will operate automatically and will not require personnel or hours of attendance. It will operate twenty-four (24) hours a day, 365 days a year. It is anticipated that a technician will need to perform routine maintenance on the facility at a rate of once or twice per month or on an "as needed" basis for cases of emergency repair.

REQUIREMENT FOR PROPOSED USE:

The proposed installation is part of Clearwire's communications network. Clearwire's technology is line of site technology, which accounts for the placement of its installations on existing towers and tall structures.

ANTICIPATED IMPACTS ON ADJOINING PROPERTIES:

Clearwire has eliminated the need for a new telecommunications monopole or tower in the search area and employs an antenna and equipment cabinet configuration that minimizes the visual impact of the project on the surrounding property owners. Due to the fact that the facility will be unmanned, there will be no other impact of the underlying Amendment to Feature Shown.

RELATIONSHIP OF THE PROPOSAL TO THE COMPREHENSIVE PLAN:

The location, character and extent of the application should be found to be in substantial accord with the Comprehensive Plan.

The instant application is also consistent with the objectives found under the Policy Plan of the Comprehensive Plan concerning "Mobile and Land-Based Telecommunication Services."

Under the "General Guidelines" section, it states:

Objective 42: In order to provide for the multiple and land-based telecommunication network for wireless telecommunication systems licensed by the Federal Communications Commission, and in order to achieve opportunities for the collocation of related facilities and the reduction of their visual impact,

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& CONSULTING, LLC

locate the network's necessary support facilities which include antennas, monopoles, lattice towers and equipment building in accordance with the following policies:

Policy b. ***Avoid construction of new structures by locating mobile and land-based telecommunication facilities on available existing structures such as building rooftops, telecommunication broadcast poles and towers, electrical utility poles and towers, and water storage facilities when the telecommunication facilities can be placed inconspicuously to blend with existing structures.***

Proposal is consistent.

Policy g. ***Design, site and/or landscape mobile and land-based telecommunication facilities to minimize impacts on the character of the property and surrounding areas. Demonstrate the appropriateness of the design through facility schematics and plans which detail the type, location, height, and material of the proposed structures and their relationship to other structures on the property and surrounding areas.***

Proposal is consistent.

Policy i. ***Locate telecommunication facilities to ensure the protection of historically significant landscapes. The views of and vistas from architecturally and/or historically significant structures should not be impaired or diminished by the placement of telecommunication facilities.***

Proposal is consistent.

Policy j. ***Site proposed facilities to avoid areas of environmental sensitivity.***

Proposal is consistent.

Objective 43: Design telecommunication facilities to mitigate their visual presence and prominence, particularly when located in residential areas, by concealing their intended purpose in a way that is consistent with the character of the surrounding area.

Policy a. ***Disguise and camouflage the appearance of telecommunication facilities so as to resemble other man-made structures and natural features (such as flagpoles, bell towers, and trees) that are typically found in a similar context and belong to the setting where placed.***

Collocation on an existing building minimizes impact by avoiding a need for a new site.

Objective 44: With Planning Commission approval, consider mobile and land-based telecommunication facilities to be located on existing or replacement structures a "feature shown" of the Comprehensive Plan to be processed without a public hearing when placed in conformance with the following policies:

Policy a.: ***Locate telecommunication facilities on existing buildings and structures at the following properties:***

- ***commercial and industrial zoned property and in the commercial areas of PDH, PDC, PRM and PRC zoning districts***

The proposed facility is located within a Commercial zoning district. In addition, by utilizing an existing building Clearwire has avoided the need to construct a new tower or monopole.

Policy c.: ***In determining that the proposed telecommunication facilities are a feature shown of the Comprehensive Plan, ensure that the following general factors are met:***

- ***the proposed installation has no material adverse impact on the visual quality or character of the general area in which it is to be placed including any surrounding residential properties;***

Proposal is consistent.

- ***the proposed installation is located and designed to blend with the structure on which it is placed such as flush-mounting antennas or screening the antennas and equipment as appropriate to the site;***

This is a collocation on an existing 134' Building, flush mounted to the penthouse wall and locating its equipment inside an existing cabinet.

- ***the proposed installation, when in a grouping of other similar structures, is consistent with the pattern of those surrounding structures;***

Proposal is consistent.

NETWORK BUILDING
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- ***related equipment cabinets or shelters located on the ground or on a rooftop should be appropriately screened or placed to obscure their visibility from surrounding properties;***

Proposal is consistent.

ALTERNATIVE SITES CONSIDERED FOR THIS PROPOSAL

Clearwire is expanding its own antenna installation to meet its customers needs in this area and for this reason chose to collocate additional antennas at this site. Since the installation is a collocation and meets the objectives of the plan, Clearwire does not see any need to evaluate alternative locations.

The applicant submits to the Planning Commission that the proposal is consistent with the Comprehensive Plan as to character, location and extent and requests that the Planning Commission determine that the facility is a feature shown. If you have any questions, or need further information, please feel free to contact me at 410.459.8573 or **aknubel@nbcllc.com**.

Sincerely,

Adam Knubel
Zoning Project Manager
Network Building & Consulting
Consultant to ClearWire

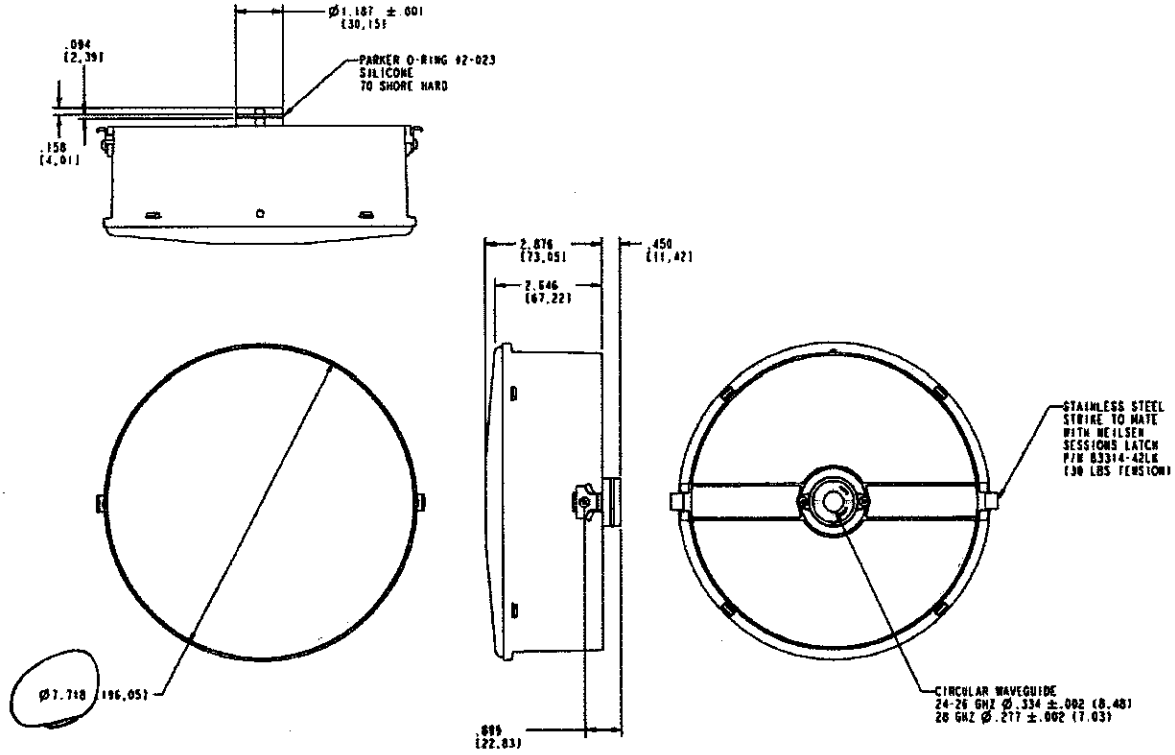
HIGH PERFORMANCE ANTENNAS
DIAMETER: 0.15 m

The antenna is designed to integrate with DragonWave radio products and select multi-function, multi-beam antenna systems, such as sector CDMA/BRS/Backhaul panels. Please consult DragonWave for further information.

ELETRICAL SPECIFICATIONS

Model	74-000128-01-01	74-000128-02-01
Frequency Band, GHz	24.00 – 25.25	27.50 – 28.35
Minimum Gain, dBi	29	30.5
Maximum Beamwidth, degrees	5	5
Front/Back, dB	45.0	45.0
XPD, dB	30.0	30.0
Return Loss, dB	14	14
Radiation Pattern		
ETSI EN201215 Class	TS2	TS2
Antenna Pattern	RPE-74-000128-01-01	RPE-74-000128-02-01

OUTLINE DIMENSIONS (ANTENNA ONLY)

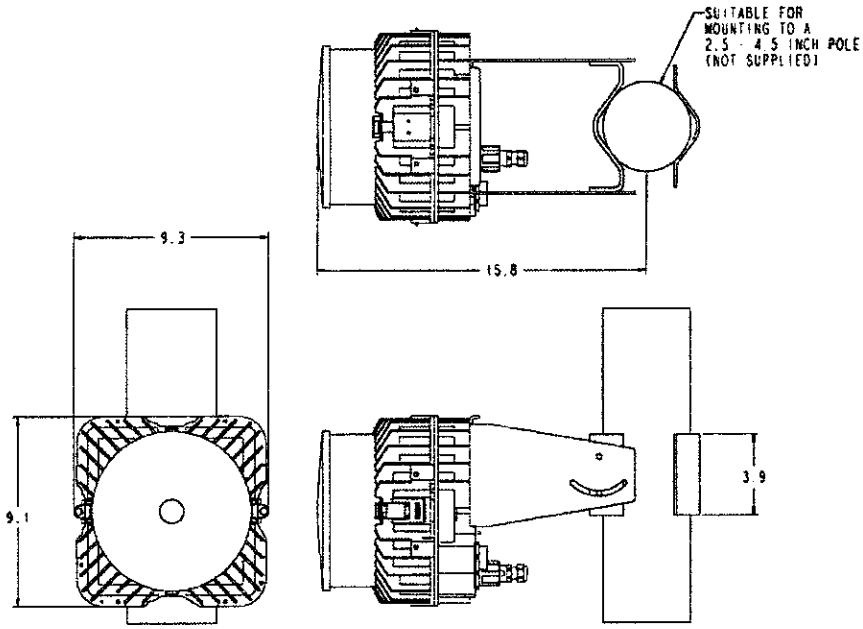


dimension in inches

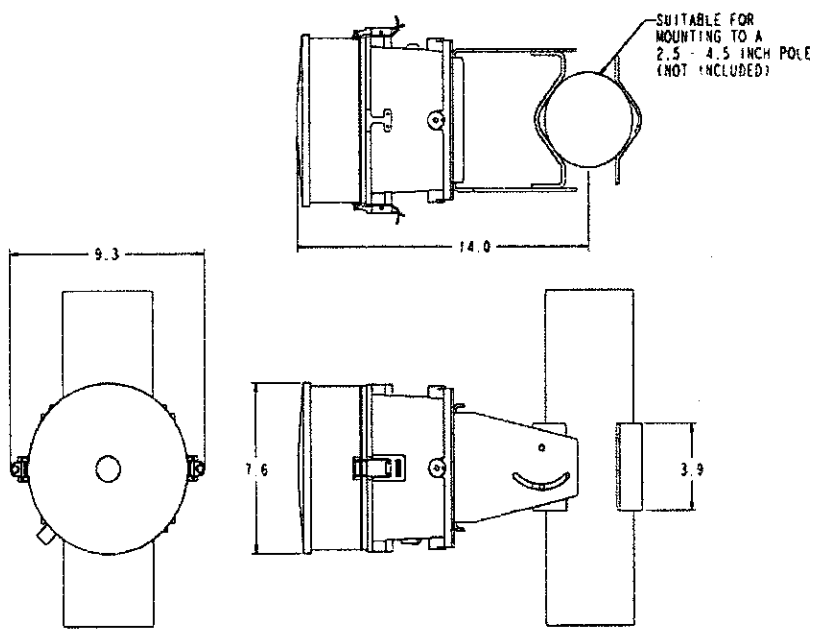
HIGH PERFORMANCE ANTENNA – DIAMETER: 0.15 M

OUTLINE DIMENSIONS (ANTENNA INTEGRATED WITH DRAGONWAVE RADIO)

DragonWave Horizon radio



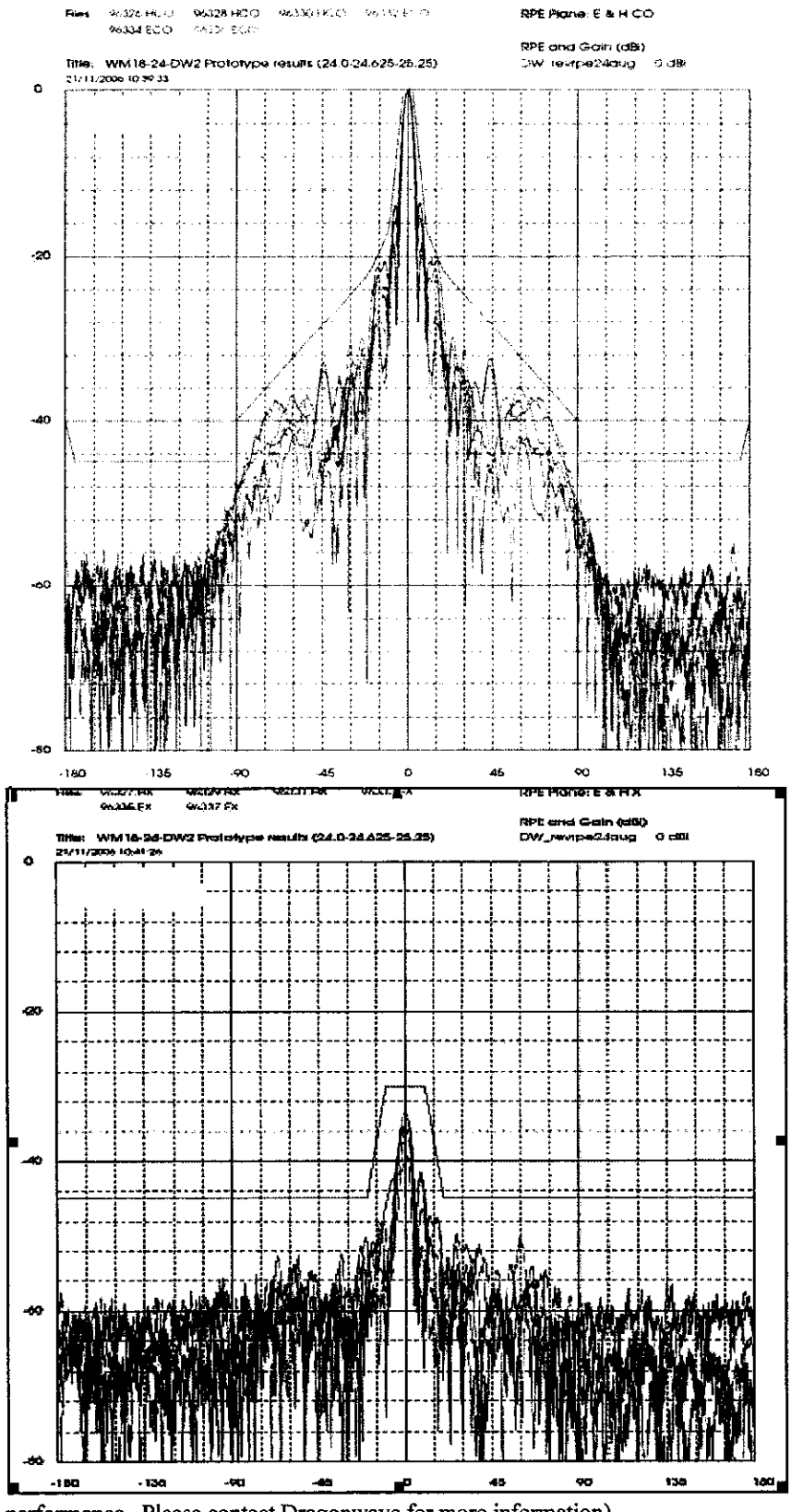
DragonWave Release 4 Radio



Actual antenna appearances may differ from shown.

HIGH PERFORMANCE ANTENNA – DIAMETER: 0.15 M

ANTENNA PATTERNS

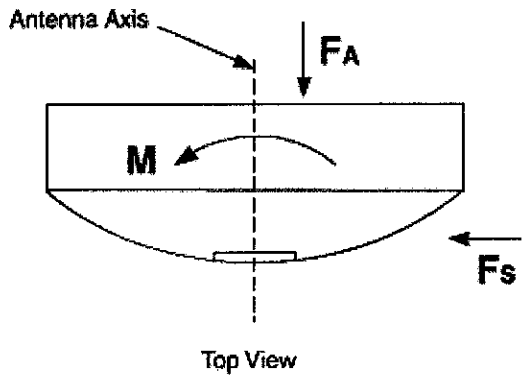


(not guaranteed performance. Please contact Dragonwave for more information)

HIGH PERFORMANCE ANTENNA – DIAMETER: 0.15 M

WIND FORCES

The axial, side and twisting moment forces provided are maximum loads applied to the tower by the antenna at a wind survival speed of 200 km/h (125 mph). In every instance they are the result from the most critical direction for each parameter. The individual maximums may not occur simultaneously. All forces are referenced to the antenna mounting pipe. Due to the relative small size of the antenna the effects of the radio need to be considered in the drag force assessment. Therefore two sets of forces are presented; 1) for the 0.15 meter antenna installed with a release 4 Dragonwave radio and 2) for the 0.15 meter antenna installed with a Dragonwave Horizon radio.



0.15 meter Antenna with DragonWave Release 4 Radio			
Axial Force	F_a max	17.5 lbf	78 N
Side Force	F_s max	15 lbf	67 N
Moment	M_T max	13 ft-lb	18 N-m

0.15 meter Antenna with Dragonwave Horizon Radio			
Axial Force	F_a max	27.2 lbf	121 N
Side Force	F_s max	20 lbf	88.5 N
Moment	M_T max	21.6 ft-lb	29.3 N-m

Antenna Weight (Excluding Radio)

Net Weight, kg 0.73

Antenna Gross Weight (Crated)

Gross Weight, kg 1.1

Antenna Crated Dimensions (Single Unit)

Dimensions, cm (in) 27.5 x 27.5 x 17 (10.8 x 10.8 x 6.7)

DragonWave

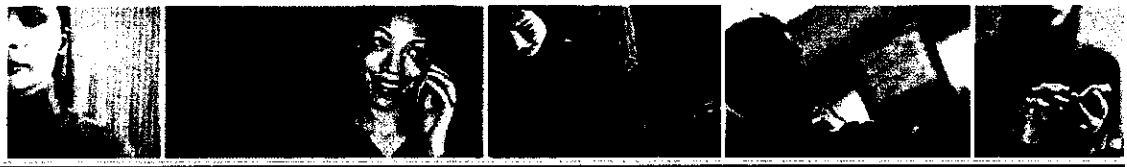
Connect with us today!

600-411 Legget Drive
Ottawa, Ontario, Canada, K2K 3C9
Tel: 613-599-9991
Fax: 613-599-4225

nasales@dragonwaveinc.com
emeasales@dragonwaveinc.com

www.dragonwaveinc.com

DragonWave

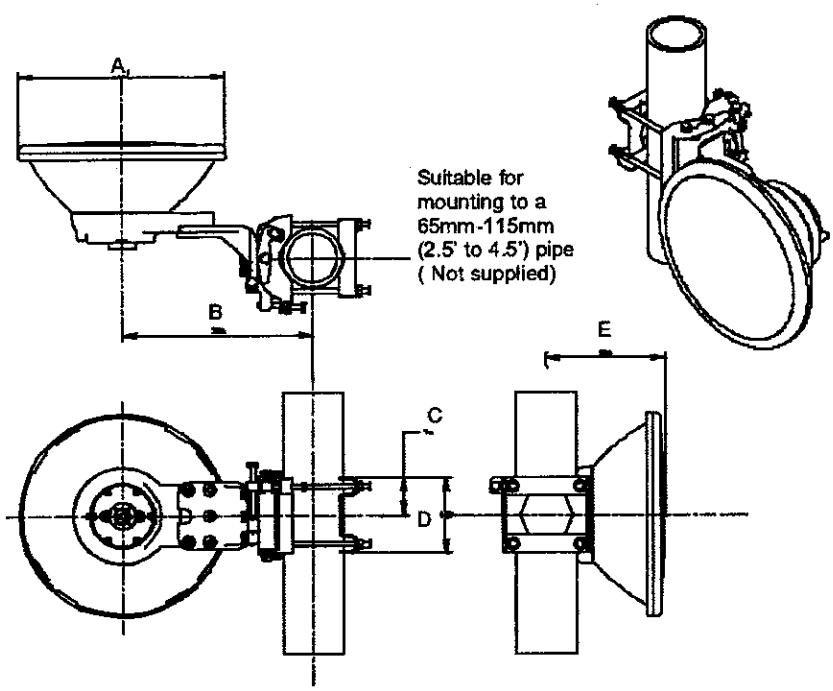


HIGH PERFORMANCE ANTENNAS
DIAMETER: 0.3 m

ELETRICAL SPECIFICATIONS

	A-ANT-11G-1-C	A-ANT-13G-1-C	A-ANT-15G-1-C	A-ANT-18G-1-C	A-ANT-23G-1-C	A-ANT-26G-1-C	A-ANT-28G-1-C	A-ANT-38G-1-C
Frequency Band, GHz	10.7-11.7	12.7-13.25	14.25-15.35	17.7-19.7	21.2-23.6	24.25-26.25	27.3-31.3	37.0-40.0
Bottom Band Gain, dBi	27.2	30.8	31.6	33.1	34.0	35.3	35.8	38.5
Mid Band Gain, dBi	27.5	30.9	32.1	33.6	34.4	35.7	36.1	38.7
Top Band Gain, dBi	27.8	31.0	32.6	34.0	34.8	35.9	36.3	38.9
Beamwidth, degrees	7.0	4.7	4.3	3.3	3.0	2.6	2.2	1.8
Front/Back, dB	42.0	53.0	54.0	57.0	60.0	62.0	64.0	61.0
XPD, dB	25.0	30.0	30.0	28.0	30.0	30.0	30.0	30.0
Return Loss, dB	16.1	17.7	17.7	16.1	16.1	16.1	16.1	16.1
Pattern								
ETSI EN201217 Class	-	R1C2	R2C3	R2C3	R3C3	R4C3	R4C3	R5C3
FCC Part 101	-	-	-	-	Cat A	Cat A	-	Cat A
Antenna Pattern	RPE-74-000119-01-01	RPE-74-000120-01-01	RPE-74-000121-01-01	RPE-74-000066-01-01	RPE-74-000067-01-01	RPE-74-000068-01-01	RPE-74-000125-01-01	RPE-74-000126-01-01

OUTLINE DIMENSIONS



Antenna Dimensions, mm (in)	
A	389 (15.30)
B	358 (14.10)
C	72 (2.80)
D	143 (5.60)
E	220 (8.70)

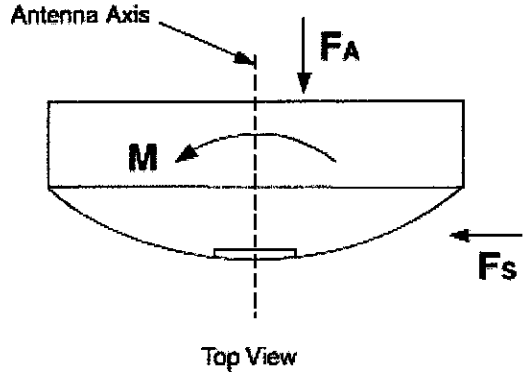
Antenna Fine Adjustment	
Fine Azimuth	± 10°
Fine Elevation	± 25°

Actual antenna appearances may differ from shown.

HIGH PERFORMANCE ANTENNA – DIAMETER: 0.3 M

WIND FORCES

The axial, side and twisting moment forces provided are maximum loads applied to the tower by the antenna at a wind survival speed of 200 km/h (125 mph). In every instance they are the result from the most critical direction for each parameter. The individual maximums may not occur simultaneously. All forces are referenced to the antenna mounting pipe.



Axial Force	F_a max	284 N
Side Force	F_s max	125 N
Moment	M_T max	101 N

Antenna Weight Including Mount

Net Weight, kg 6.8

Antenna Gross Weight (Crated)

Gross Weight, kg 8.95

Antenna Crated Dimensions (Single Unit)

Dimensions, cm (in) 63.5 x 45.5 x 32.5 (25 x 18 x 13.75)

DragonWave

Connect with us today!

600-411 Legget Drive
Ottawa, Ontario, Canada, K2K 3C9
Tel: 613-599-9991
Fax: 613-599-4225

nasales@dragonwaveinc.com
emeasales@dragonwaveinc.com

www.dragonwaveinc.com

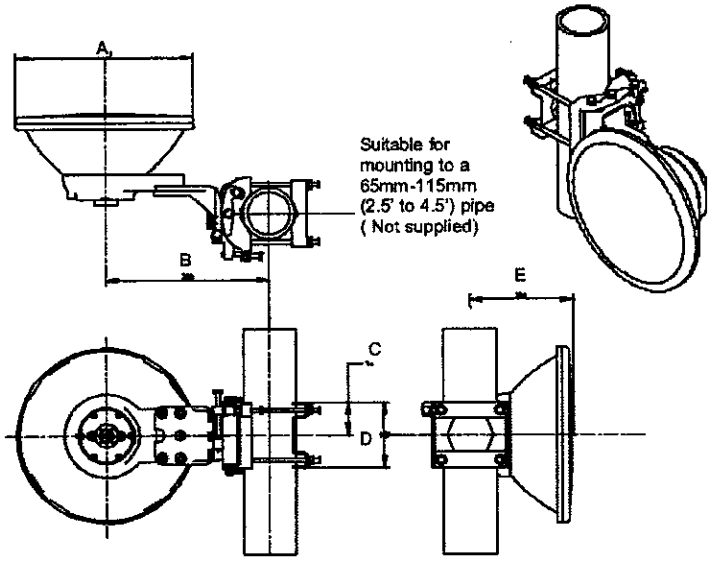
DragonWave

HIGH PERFORMANCE ANTENNAS
DIAMETER: 0.6 m

ELECTRICAL SPECIFICATIONS

	A-ANT-11G-2-C	A-ANT-13G-2-C	A-ANT-15G-2-C	A-ANT-18G-2-C	A-ANT-23G-2-C	A-ANT-26G-2-C	A-ANT-28G-2-C	A-ANT-38G-2-C
Frequency Band, GHz	10.7-11.7	12.7-13.25	14.25-15.35	17.7-19.7	21.2-23.6	24.25-26.25	27.3-31.3	37.0-40.0
Bottom Band Gain, dBi	34.2	35.6	36.8	38.2	39.7	40.7	41.8	44.0
Mid Band Gain, dBi	34.5	35.8	37.0	38.6	40.2	41.1	42.2	44.3
Top Band Gain, dBi	34.8	36.0	37.3	39.0	40.7	41.5	42.7	44.7
Beamwidth, degrees	3.4	2.8	2.4	2.1	1.7	1.5	1.3	1.0
Front/Back, dB	55.0	62.0	64.0	67.0	66.0	68.0	68..0	66.0
XPD, dB	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Return Loss, dB	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
Pattern								
ETSI EN201217 Class	R1C2	R1C3	R2C3	R2C3	R3C3	R4C3	R4C3	R5C3
FCC Part 101	-	-	-	Cat A	Cat A	Cat A	-	Cat A
Antenna Pattern	RPE-74-000119-02-01	RPE-74-000120-02-01	RPE-74-000121-02-01	RPE-74-000066-02-01	RPE-74-000067-02-01	RPE-74-000068-02-01-	RPE-74-000125-02-01	RPE-74-000126-02-01

OUTLINE DIMENSIONS



Antenna Dimensions, mm (in)	
A	663 (26.10)
B	358 (14.10)
C	72 (2.80)
D	143 (5.60)
E	335 (13.20)

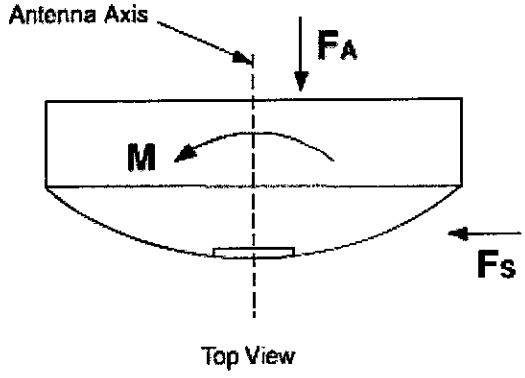
Antenna Fine Adjustment	
Fine Azimuth	± 10°
Fine Elevation	± 25°

Actual antenna appearances may differ from shown.

HIGH PERFORMANCE ANTENNAS –DIAMETER: 0.6 M

WIND FORCES

The axial, side and twisting moment forces provided are maximum loads applied to the tower by the antenna at a wind survival speed of 200 km/h (125 mph). In every instance they are the result from the most critical direction for each parameter. The individual maximums may not occur simultaneously. All forces are referenced to the antenna mounting pipe.



Axial Force	F_a max	682 N
Side Force	F_s max	317 N
Moment	M_T max	244 N

Antenna Weights Including Mount

Net Weight, kg 12.3

Antenna Packed Weights (Gross)

Gross Weight, kg 21.7

Antenna Dimensions (Single Unit Pack)

Dimensions, cm (in) 71 x 71 x 61 (29 x 29 x 27)

DragonWave

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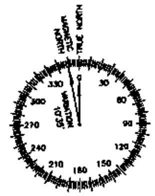
Ottawa, Ontario, Canada, K2K 3C9
Tel: 613-599-9991
Fax: 613-599-4225

nasales@dragonwaveinc.com
emeasales@dragonwaveinc.com

www.dragonwaveinc.com



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SITE NAME:

VA0457

SITE NUMBER:

DC-WSH5093-A

FIVE NEW MICROWAVE DISHES TO BE INSTALLED AND NEW COAX RUN FROM EACH DISH TO EXISTING SPRINT EQUIPMENT ROOM

RECEIVED
Department of Planning & Zoning
JUL 14 2010
Zoning Evaluation Division

SITE INFORMATION

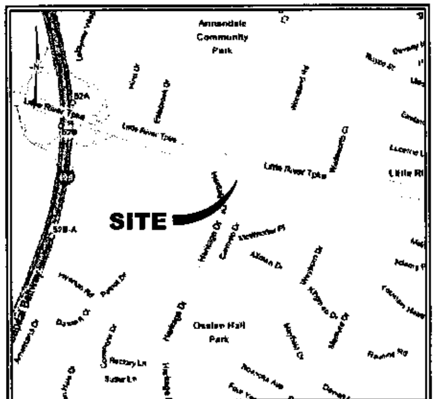
SITE NAME:	VA0457
SITE NUMBER:	DC-WSH5093-A
SITE ADDRESS:	7617 LITTLE RIVER TURNPIKE ANNANDALE, VIRGINIA 22003
JURISDICTION:	FAIRFAX COUNTY, VIRGINIA
MAP:	0702 01 0001A
PARCEL SIZE:	184,868 S.F.
SITE COORDINATES:	N 38° 49' 55.08" (NAD 83) W 77° 12' 34.08" (NAD 83)
GROUND ELEVATION:	268'± (NAVD 88)
STRUCTURE TYPE:	BUILDING
STRUCTURE HEIGHT:	134'± AGL (TOP OF MAIN ROOF)
MICROWAVE RAD CENTER:	141'±, 139'± AGL
GROUND LANDLORD NAME:	BOURJ, LTD
GROUND LANDLORD ADDRESS:	7619 LITTLE RIVER TURNPIKE SUITE 840 CARE ROYAL MGMT COMPANY & DEVLP ANNANDALE, VIRGINIA 22003
LANDLORD NAME:	BOURJ, LTD
LANDLORD ADDRESS:	7619 LITTLE RIVER TURNPIKE SUITE 840 CARE ROYAL MGMT COMPANY & DEVLP ANNANDALE, VIRGINIA 22003
APPLICANT:	CLEARWIRE US, LLC 4400 CARILLON POINT KIRKLAND, WASHINGTON 98033
APPLICANT PHONE:	(425) 216-7600
APPLICANT FAX:	(425) 216-7900
CONSTRUCTION MANAGER CONTACT:	XXXXXXXX (XXX) XXX-XXXX

CODE ANALYSIS

BUILDING CODE:	IBC 2006
ELECTRICAL CODE:	NEC 2005
FIRE SAFETY CODE:	NFPA 101
USE GROUP:	U (UTILITY)
CONSTRUCTION TYPE:	IIB

PROJECT DESCRIPTION

1. (5) NEW MICROWAVE DISHES AND ALL ASSOCIATED PARTS TO BE INSTALLED.
2. NEW 3/8" COAX CABLE TO BE INSTALLED FROM EACH MICROWAVE DISH TO EXISTING SPRINT EQUIPMENT ROOM.



AREA MAP

ANNANDALE, VIRGINIA

DIRECTIONS:
HEADING FROM REAGAN NATIONAL AIRPORT: TAKE RIGHT EXIT FOR FOLLOW SIGNS FOR GEORGE WASHINGTON MEMORIAL PARKWAY NORTH / GW PARKWAY NORTH. TAKE RIGHT EXIT FOR I-395 SOUTH / HENRY G SHIRLEY MEMORIAL HIGHWAY SOUTH TOWARD RICHMOND. TAKE RIGHT EXIT FOR I-495 NORTH / I-495 INNERLOOP / CAPITAL BELTWAY TOWARD TYSONS CORNER. TAKE RIGHT EXIT FOR SR-236 EAST / LITTLE RIVER TURNPIKE TOWARD ANNANDALE, TURN RIGHT ONTO LITTLE RIVER TURNPIKE. ARRIVE AT 7617 LITTLE RIVER TURNPIKE.

SHEET INDEX

SHEET NO.	SHEET DESCRIPTION
T-1	TITLE SHEET
C-1	SITE PLAN & ROOFTOP PLAN
C-2	ELEVATION & CONSTRUCTION DETAILS

CLEARWIRE REVIEW

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 MODIFICATIONS.

CLEARWIRE R.F.: ______________ DATE: ________
CLEARWIRE ZONING: ______________ DATE: ________
CLEARWIRE S.A.: ______________ DATE: ________
CLEARWIRE PST: ______________ DATE: ________
CLEARWIRE CONST.: ______________ DATE: ________
CLEARWIRE A&E MGR.: ______________ DATE: ________
PROPERTY OWNER: ______________ DATE: ________

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CMX
FORTY COLUMBIA CORPORATE CENTER
10480 LITTLE PATUXENT PARKWAY
SUITE 1000
COLUMBIA, MARYLAND 21044
PH (443) 367-0083 FAX (443) 367-0013

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2		
1		
0	06-04-09	ISSUED FOR 90% REVIEW(CD'S)

DRAWN BY:	C.L.S.
CHECKED BY:	
SCALE:	NOTED
JOB NO:	080194301

DRAWING TITLE:
TITLE SHEET

DRAWING SHEET:
T-1

SITE NAME: **VA0457**
SITE NUMBER: **DC-WSH5093-A**
SITE ADDRESS: **7617 LITTLE RIVER TURNPIKE ANNANDALE, VIRGINIA 22003**

SHEET NO. 1 OF 3

NOT FOR CONSTRUCTION

JAMES SKOKOWSKI, P.E.
VA PROFESSIONAL ENGINEER LIC. NO.

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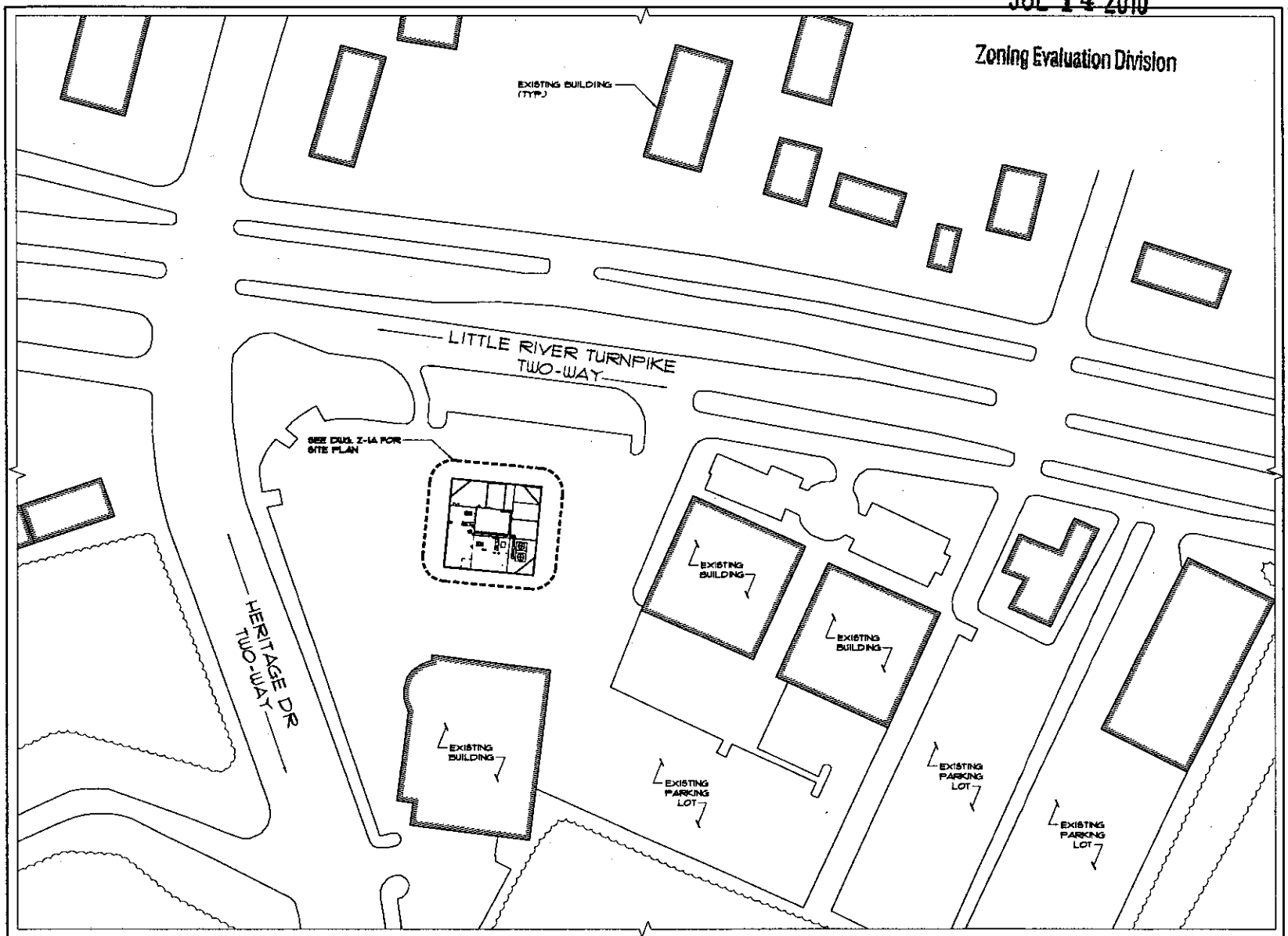

OVERALL SITE PLAN
SCALE: 1" = 100'-0"

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15201 DIAMONDBACK DRIVE
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ROCKVILLE, MD 20850
PHONE: (240) 243-5185

Fullerton Engineering Consultants, Inc.
2600 W. BRYN MAWR AVENUE, SUITE 200
ROSEMONT, ILLINOIS 60018
TEL: 847-292-0200
FAX: 847-292-0206

CHECKED BY:	PD	
APPROVED BY:	MB	
#	DATE	DESCRIPTION	INT.
	7/07/10	ZONING	AA

DATE SIGNED: _____

SITE NAME
VA0457

SITE NUMBER
DC-WSH5093-A

SITE ADDRESS
7617 LITTLE RIVER TURNPIKE
ANNANDALE, VA 22003

SHEET NAME
OVERALL SITE PLAN

SHEET NUMBER
Z-1

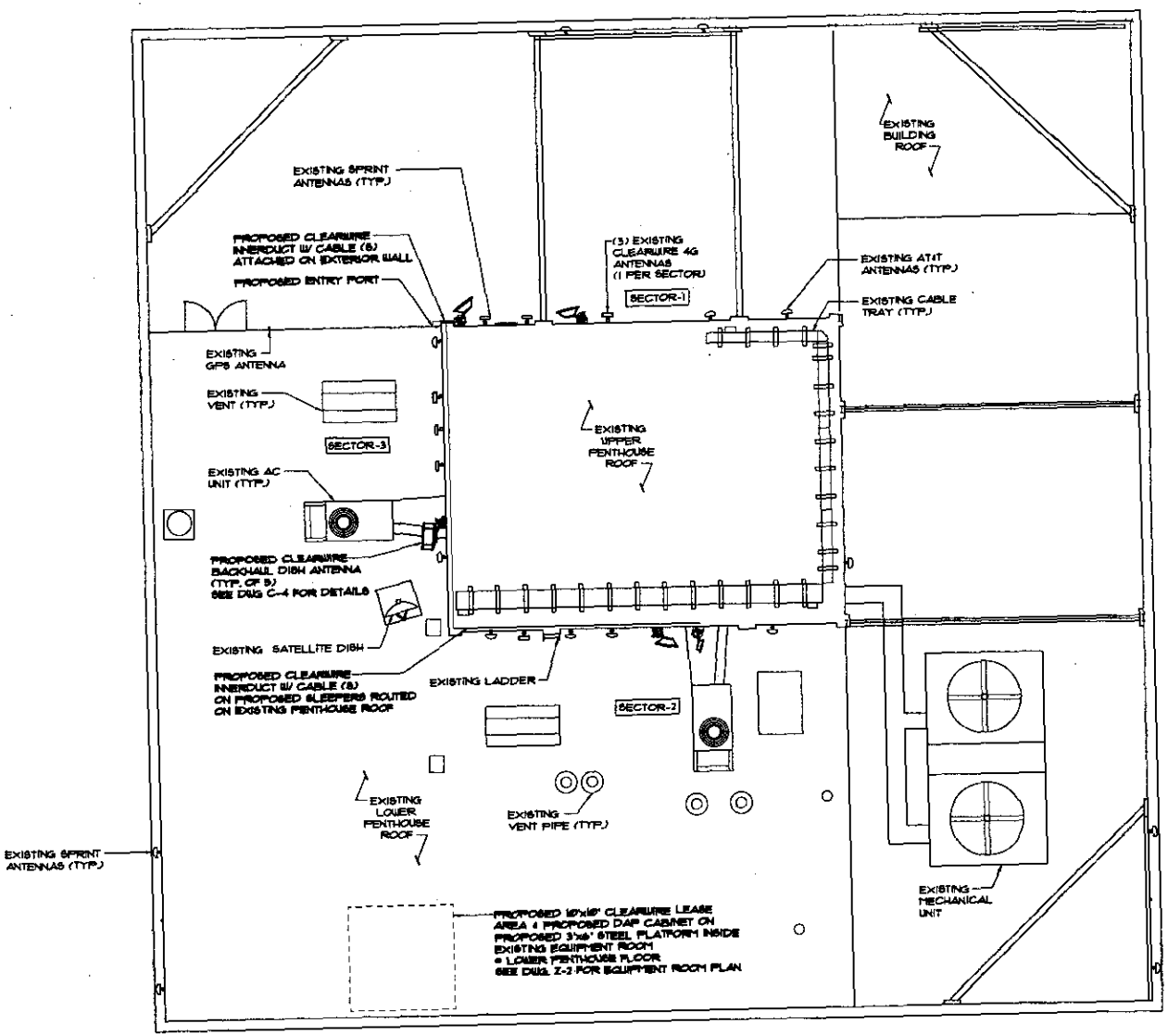
7-14-10

ABBREVIATIONS

4G	4th GENERATION
AFF	ABOVE FINISHED FLOOR
AGL	ABOVE GRADE LEVEL
AMSL	ABOVE MEAN SEA LEVEL
APPROX	APPROXIMATE
AWG	AMERICAN WIRE GAUGE
BH	BACKHAUL
BLDG	BUILDING
BTS	BASE TRANSMISSION STATION
CAB	CABINET
COL	COLUMN
CONC	CONCRETE
CND	CONDUIT
DWG	DRAWING
FT	FOOT(FEET)
EGB	EQUIPMENT GROUND BAR
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ELEV	ELEVATION
EQUIP	EQUIPMENT
(E)	EXISTING
FND	FOUNDATION
GALV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
MAX	MAXIMUM
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
NTS	NOT TO SCALE
OE/OT	OVERHEAD ELECTRIC/TELCO
(P)	PROPOSED
PCS	PERSONAL COMMUNICATIONS SERVICES
POS	POSITION
RGS	RIGID GALVANIZED STEEL
IN	INCH(ES)
LB(S)	POUND(S)
SF	SQUARE FOOT
STL	STEEL
TYP	TYPICAL
UE/UT	UNDERGROUND ELECTRIC/TELCO
UNO	UNLESS NOTED OTHERWISE
VIF	VERIFY IN FIELD
W/	WITH
XFMR	TRANSFORMER
℄	CENTERLINE
⏥	PLATE

SYMBOLS

- UTILITY POLE
- WORK POINT
- REVISION
- MASONRY
- BRICK
- CONCRETE
- EARTH
- STEEL
- GRAVEL
- CENTER LINE
- PROPERTY LINE
- LEASE LINE
- EASEMENT LINE
- CHAIN LINK FENCE
- WOOD FENCE
- BELOW GRADE ELECTRIC
- BELOW GRADE TELEPHONE
- OVERHEAD ELECTRIC/TELEPHONE
- SECTION REFERENCE



SITE PLAN
SCALE: 3/32" = 1'-0"

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FAX: 847-252-0206

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APPROVED BY:	MB	
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	7/07/10	ZONING	AA

DATE SIGNED: _____

SITE NAME: VA0457

SITE NUMBER: DC-WSH5093-A

SITE ADDRESS: 7671 LITTLE RIVER TURNPIKE ANNANDALE, VA 22003

SHEET NAME: SITE PLAN

SHEET NUMBER: Z-1A

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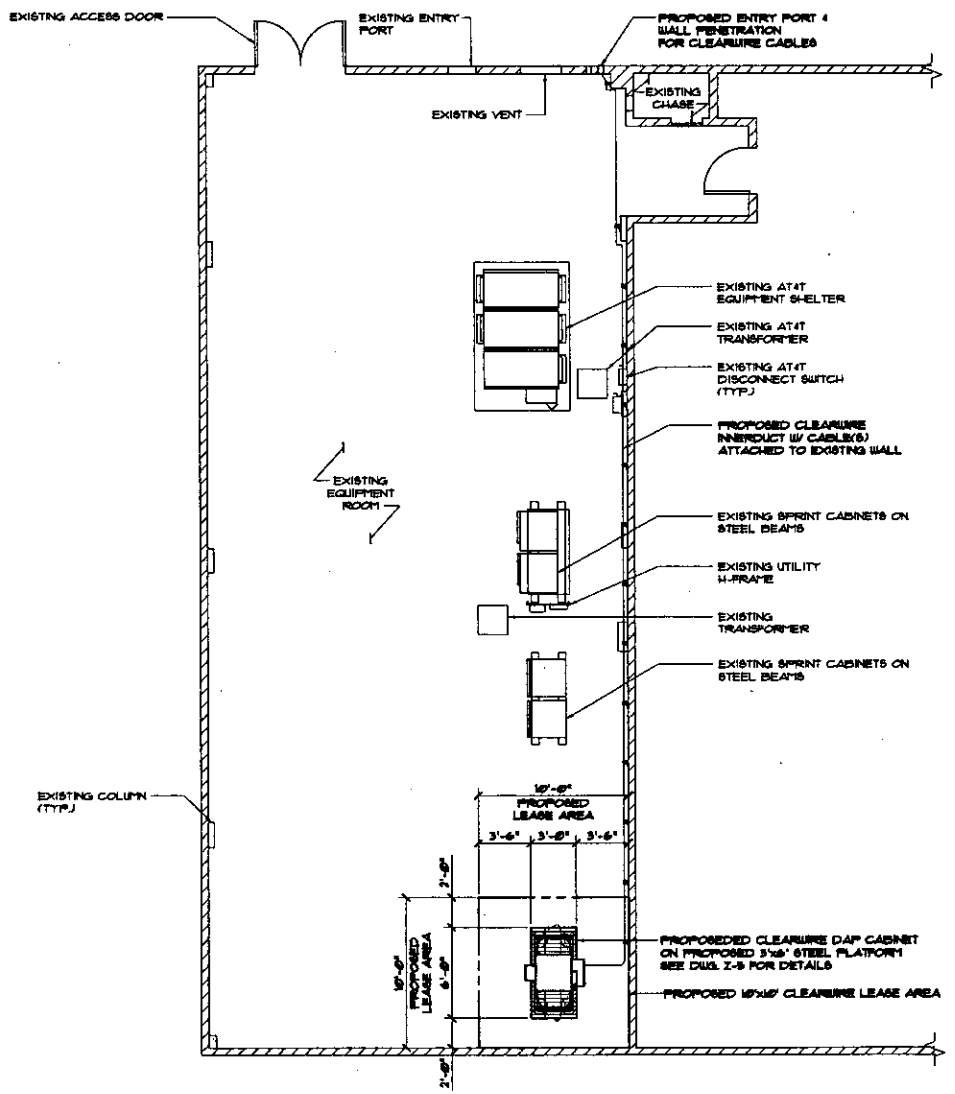

EQUIPMENT ROOM PLAN
SCALE: 1/8" = 1'-0"

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FAX: 847-292-0026

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DATE SIGNED: _____

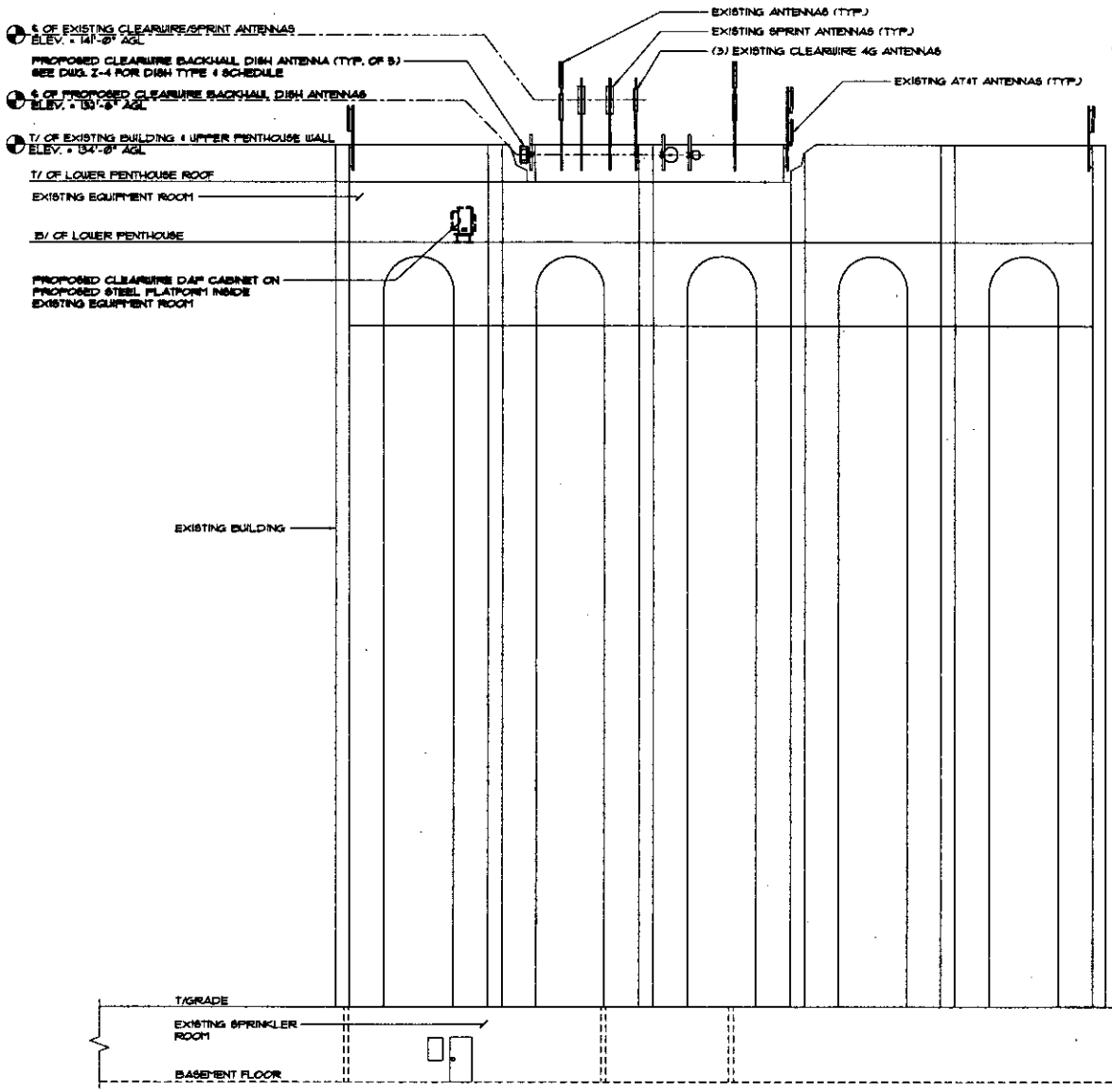
SITE NAME
VA0457

SITE NUMBER
DC-WSH5093-A

SITE ADDRESS
7617 LITTLE RIVER TURNPIKE
ANNANDALE, VA 22003

SHEET NAME
EQUIPMENT ROOM PLAN

SHEET NUMBER
Z-2



SITE ELEVATION
SCALE: N.T.S.

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CHECKED BY:	PD	
APPROVED BY:	MB	
#	DATE	DESCRIPTION	INT.
	7/07/10	ZONING	AA

DATE SIGNED: _____

SITE NAME
VA0457

SITE NUMBER
DC-WSH5093-A

SITE ADDRESS
7671 LITTLE RIVER TURNPIKE
ANNANDALE, VA 22003

SHEET NAME
SITE ELEVATION

SHEET NUMBER
Z-3