



BOROUGH OF BELMAR

DEPARTMENT OF CONSTRUCTION, PLANNING & ZONING
601 Main Street
Post Office Box A
Belmar, NJ 07719
Phone: (732) 681-3700 x225
Fax: (732) 681-3434
Web: www.belmar.com

DEVELOPMENT APPLICATION

DATE RECEIVED: _____ APPLICATION NO: _____

RECEIVED BY: _____ FEE AMOUNT PAID: _____

(Items above to be filled out by the Borough)

(Please Print)
Date Prepared: July 28, 2020 Zone: R-75

Block(s): 170 Lot(s): 13

Site Address: 1715 Ocean Avenue

Name of Owner(s): Moreva Associates, LLC

Owner Address: 308 Deer Path, Morganville, NJ 07751

Phone #: _____ Email: _____

Name of Applicant (if different than owner): New York SMSA Limited Partnership d/b/a Verizon Wireless

Applicant Address: 400 Warren Corporate Center Drive, Bldg. D, Warren, NJ 07059

Phone #: _____ Email: _____

Name of Professional Preparing Plan: Colleen Connolly, PE License #: 24GE04133700

Name of Firm: SDG-Scherer Design Group

Firm Address: 53 Frontage Road, Suite 260, Hampton, NJ 08827

Phone #: 908-323-2513 Email: _____

Name of Attorney Representing Applicant: Warren O. Stilwell, Esq.

Name of Firm: Cooper Levenson, P.A.

Firm Address: 1125 Atlantic Avenue, Atlantic City, NJ 08401

Phone #: 609-572-7624 Email: wstilwell@cooperlevenson.com

1. Application Request

a. The applicant is hereby requesting an application for the following:

- | | |
|--|--|
| ☐ Minor Subdivision | ☐ Final Major Site Plan |
| ☐ Preliminary Major Subdivision | ☐ Appeal of Zoning Officer's Decision ("A") |
| ☐ Final Major Subdivision | ☐ Interpretation of Zoning Ordinance ("B") |
| ☐ Conditionally Exempt Site Plan | ☒ Hardship or Flexible Bulk Variance ("C") |
| ☒ Minor Site Plan | ☒ Use Variance ("D") |
| ☐ Preliminary Major Site Plan | |
| ☐ Amended Preliminary, Final or Minor Subdivision | |
| ☐ Amended Preliminary, Final or Minor Site Plan | |

Is a variance or conditional use approval required? Yes If so, please specify the section of the Ordinance: _____ and provide a detailed explanation of the variances needed and attach explanation hereto. Please see Addendum attached.

2. Items of Proposed Development

a. Address: 1715 Ocean Avenue

b. Zoning District: R-75

c. Number of Existing Lots: 1 Number of Proposed Lots: 1

d. For the construction of: (check all that apply and provide # of each type)

- | | |
|---|--|
| ☐ Single Family Dwelling _____ | ☐ Accessory Use _____ |
| ☐ Two Family Dwelling _____ | ☐ Addition _____ |
| ☐ Other Residential _____ | ☐ Commercial Structure(s) _____ |

☒ Other (Describe) wireless facilities-rooftop antennas/equipment at base of building.

Number of units that will qualify as Affordable Units N/A for sale and N/A for rent.

If installing A/C Unit or Generator, provide setback and location N/A

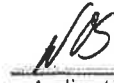
e. Provide brief description of proposed development: Please see Addendum attached

3. Consent for Site Review

- a. The applicant and owner realize that as part of the Planning Board / Zoning Board of Adjustment review of its application, that the Board may determine it necessary or advisable to visit the subject premises for the purposes of performing a site inspection and review. The applicant and owner do hereby give permission to any member of the Borough of Belmar's Planning Board and Zoning Board of Adjustment as well as any other Borough employee or officer to enter the subject premises for the purpose of performing a site inspection and review


Owner Initials

Date


Applicant Initials

July 28, 2020
Date

5. Certificate of Concurrence & Statement of the Landowner

- a. I hereby certify that I am the Owner of Record of the site depicted and that I concur with the plans presented to the Planning Board / Zoning Board of Adjustment.
- b. Application is made with my complete understanding and permission in accordance with the agreement of purchase or other option entered into between me and the applicant.
- c. Permission is hereby granted to: Verizon Wireless, otherwise known as the Applicant, to submit the proposed development plans on my behalf as the: (Tenant or Contract Purchaser if applicable): Tenant


Owner Initials

Date


Applicant Initials

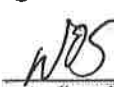
July 28, 2020
Date

6. Escrow Agreement

- a. The ordinances of the Borough of Belmar require the Applicant to pay certain sums into an escrow account for review of said application for development and for the Owner of said property to agree to the charges against same or become a lien on its property.
- b. The Applicant shall submit an escrow payment to the Borough of Belmar in the amount of to be held by the Borough in an interest bearing account pursuant to N.J.S.A. 40:55D-53.1.
- c. The Borough has the right to withdraw funds from said escrow account for payment of all invoices submitted by the professionals reviewing the application on behalf of the Borough pursuant to N.J.S.A. 40:55D-53.2.
- d. If the escrow account is reduced to 25% of its original amount or if additional payments are deemed necessary by the Planning Board / Zoning Board of Adjustment / Borough, the Applicant shall be notified of such and agrees to make an additional payment within twenty-one (21) days of receipt of request pursuant to Borough Code.


Owner Initials

Date


Applicant Initials

July 28, 2020
Date

7. Final Certification

Owner

Name: Moreva Associates, LLC

Address: 308 Deer Path
Morganville, NJ 07751

Signature: [Signature]

Applicant (if other than owner)

New York SMSA Limited Partnership d/b/a
Verizon Wireless

400 Warren Corporate Center Drive, Bldg.

Warren, NJ 07059

[Signature]

Notary Public

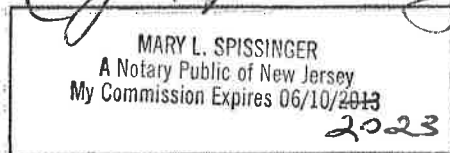
Name: Mary L. Spissinger
Cooper Levenson, P.A.

Address: 1125 Atlantic Avenue

Atlantic City, NJ 08401

Signature: [Signature]

Stamp:



Attorney on behalf of Applicant/XXXXX

Warren O. Stilwell, Esq.
Cooper Levenson, P.A.

1125 Atlantic Avenue

Atlantic City, NJ 08401

Seal:



Applicant continued

Professional Engineer/Architect

Company Name: New York SMSA Limited Partnership d/b/a Verizon Wireless

Company Name: SDG-Scherer Design Group

Address: 400 Warren Corporate Center Drive, Bldg. D

Address: Shelbourne at Hunterdon

Warren, NJ 07059

53 Frontage Road, Suite 260

Hampton, NJ 08827

Contact Name: Warren O. Stilwell, Esq.

Contact Name: _____

Signature: _____

Signature: _____

Date Submitted: _____

Date Submitted: _____

Block: 120

Lot: 13

Street Address of Property: 1715 Ocean Drive

License No.: _____



Seal

ADDENDUM TO APPLICATION

APPLICANT: New York SMSA Limited Partnership d/b/a Verizon Wireless

SITE: Block 170, Lot 13 a/k/a 1715 Ocean Avenue

PROPOSED DEVELOPMENT: Applicant proposes to mount two (2) wireless antennas, a GPS unit and two (2) RRH units on the roof of the existing building at the Site. Supporting equipment will be building-mounted in a fenced area measuring approximately 8 feet by 3.5 feet along the building's northerly base. The fence will be 6 feet tall, constructed of chain-link with privacy slats.

RELIEF REQUESTED: Wireless facilities are not a permitted use in the R-75 zone, pursuant to the regulations applicable to Wireless Telecommunications Towers and Antennas (Section 40-6.12 of Belmar's Land Use Ordinance). A D-1 "Use" variance will be required. The top height of the antennas will be 43 feet. Wireless facilities can go to 70 feet at those locations where they are permitted as a conditional use (Section 40-6.12d(14)). The maximum height allowed in the R-75 zone, however, is 35 feet. The Zoning Board may view the height as being subsumed within the D-1 use variance; otherwise a height variance under Section D-6 (N.J.S.A. 40:55D-70d-6) will be needed.

The proposed equipment compound will have a front yard setback of 19 feet, where 20 feet is required. As with the height issue, the Zoning Board may include that 1-foot shortfall in the front setback, as part of its overall consideration of the D-1 use variance. If not, a "C" or "bulk" variance will be needed for the front setback.

The Application also requests minor site plan approval.

STATEMENT OF CORPORATE OR OTHER OWNERSHIP

This is to be completed if the property is owned by a corporation or LLC.

1. Please indicate if the applicant is a(an):

a. Corporation _____

b. Partnership X

2. If the applicant is a Corporation or a Partnership, the following shall be provided:

a. The names and addresses of all stockholders owning 10% or more of its stock of any class;

b. The names and addresses of all individual partners who own 10% or greater interest therein.

3. If one or more such stockholders or partners is itself a corporation or partnership, the stockholders holding 10% or more of that corporations stock, or the individual partners owning 10% or greater interest in that partnership, as the case may be, shall also be listed.

Name: See Corporate Disclosure Attached

Name: _____

Address: _____

Address: _____

Percentage Ownership: _____

Percentage Ownership: _____

Signature: _____

Signature: _____

Date: _____

Date: _____

Name: _____

Name: _____

Address: _____

Address: _____

Percentage Ownership: _____

Percentage Ownership: _____

Signature: _____

Signature: _____

Date: _____

Date: _____

DISCLOSURE STATEMENT

New York SMSA Limited Partnership d/b/a Verizon Wireless is a New York limited partnership ("NYSMSA"), with its principal place of business at One Verizon Way, Basking Ridge, NJ 07920. It is composed of the following two partners:

- **Cellco Partnership d/b/a Verizon Wireless** ("Cellco") is a general partnership formed under the laws of the State of Delaware. Cellco has three partners in total and is indirectly, wholly owned by Verizon Communications Inc. ("Verizon"). Verizon, a publicly traded company, has its principal place of business at 1095 Avenue of the Americas, New York, New York.

Bell Atlantic Mobile Systems LLC, One Verizon Way, Basking Ridge, NJ 07920-1097, a Delaware limited liability company with its principal place of business in New Jersey, whose sole member is MCI Communications Services LLC, a Delaware limited liability company with its principal place of business in New Jersey

GTE Wireless LLC, One Verizon Way, Basking Ridge, NJ 07920-1097, a Delaware limited liability company with its principal place of business in New Jersey, whose sole member is GTE LLC, a Delaware limited liability company with its principal place of business in New Jersey

Verizon Americas LLC, One Verizon Way, Basking Ridge, NJ 07920-1097, a Delaware limited liability company with its principal place of business in New Jersey, whose sole member is Verizon Communications Inc.

- **Bell Atlantic Mobile Systems LLC** (see above)



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601 Main Street
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MINOR LAND USE – ZONING PERMIT

BLOCK: 170 LOT: 13 SITE ADDRESS: 1715 Ocean Avenue

PROPERTY USE: ☐ Residential Single Family ☐ Residential Multi-Family # of units ☒ Commercial

PROPOSED PROPERTY USE/TYPE OF CONSTRUCTION: (CHOOSE ONE)

- | | | | |
|--|--|--|--------------------------------------|
| ☐ Minor Subdivision | ☐ Major Subdivision | ☐ New House | ☐ Addition |
| ☐ Accessory Use | ☐ Driveway | ☐ Swimming Pool | ☐ Sign/Awning |
| ☐ Deck/Porch | ☐ A/C Unit | ☐ Fence | ☐ Generator |

If other, please describe: Proposed addition of antennas to roof and equipment on ground

Brief description of proposal: for small cell wireless communications facility by Verizon Wireless.

IMPORTANT NOTE: Please attach a copy of the property survey and a sketch of proposal.

The following information is required: Lot Size: 10,000 sf Zone: R-75

Setbacks: Front yard: 19 Rear yard: 44 Side Yard: 49 Total Side: N/A

A/C Unit and Generator Setback: N/A

Building Coverage: Existing: 16 % Proposed: N/C %

Impervious Coverage: Existing: 84 % Proposed: N/C %

Floor Area Ratio: Existing: 32 % Proposed: N/C %

Height of Structure: Existing: 36 ft. Proposed: 43 ft.

Lessee New York SMSA Limited Partnership d/b/a

~~XXXXXX~~ Name: Verizon Wireless Date:

Lessee (please print)

~~XXXXXX~~ Signature: Warren O. Stilwell Telephone #: 609-572-7624

Warren O. Stilwell, Esq.
Attorney for Lessee

☐ Approved ☒ Denied Date: 11/26/19 Signature: Ted Bianchi

Comments: NOT A PERMITTED USE IN A RESIDENTIAL ZONE R75

Application Fees:
Residential Home \$150
Residential Addition \$75
Minor/Major Subdivision \$75

Non-Residential Use \$375
Commercial Other \$75
Fence/Signs/Awnings/Air Conditions/Generators/Other \$50
Swimming Pool/Deck/Porch/Patio/Driveway \$65

☐ Cash

☒ Check

Date Paid: 11/26/19

#9955

LEON S. AVAKIAN, INC. *Consulting Engineers*

788 WAYSIDE ROAD • NEPTUNE, NEW JERSEY 07753

LEON S. AVAKIAN, P.E., P.L.S. (1953-2004)
PETER R. AVAKIAN, P.E., P.L.S., P.P.
MEHRYAR SHAFAI, P.E., P.P.
GREGORY S. BLASH, P.E., P.P.
LOUIS J. LOBOSCO, P.E., P.P.
GERALD J. FREDAL, P.E., P.P.
RICHARD PICATAGI, L.L.A., P.P.
JENNIFER C. BEAHM, P.P., AICP
CHRISTINE L. BELL, P.P., AICP
SAMUEL J. AVAKIAN, P.E.

November 3, 2020

Board of Adjustment
Borough of Belmar
601 Main Street
Belmar, NJ 07719

**Re: Minor Site Plan
Verizon Wireless
1715 Ocean Avenue
Block 170, Lot 13
Our File BZB 20-06**

Dear Board Members:

Our office has received and reviewed an application submitted in connection with the above referenced project. Submitted with the application are the following documents:

- A preliminary and final site plan consisting of nine (9) sheets prepared by Colleen Connolly, P.E. of Scherer Design Group, dated October 14, 2019, with the latest revisions dated July 22, 2020.
- A RF Emission Study prepared by Dominic C. Villecco, David K. Stern and Peter Longo, P.E. of V-COMM, LLC, dated July 1, 2020, with no revisions.
- A RF Analysis and Report prepared by Dominic C. Villecco, David K. Stern and Peter Longo, P.E. of V-COMM, LLC, dated July 1, 2020, with no revisions.

Our office has reviewed the plans to determine if they conform with the Development Regulations and provide the following report.

1. Description of Property

- A. The site is comprised of one (1) lot consisting of a lot area of 10,000 square feet at the northwest corner of the intersection of Eighteenth Avenue and Ocean Avenue.
- B. The existing lot currently contains a pizzeria and ice cream shop.
- C. The Applicant is proposing to mount two (2) wireless antennas, a GPS unit and two (RRH) remote radio head units on the roof of the existing building. Supporting equipment will be in a fenced area along the building's north side.

PHONE (732) 922-9229

FAX (732) 922-0044

2. **Zoning and Land Use**

- A. The property is located in the R-75 Single Family Residential Zone District in which the existing pizzeria and ice cream shop are not a permitted use.
- B. The Applicant is requesting Board approval for minor site plan and a use variance.

3. **Variances and Waivers**

- A. In accordance with Chapter 40, Article VI, Section 12.C, the ordinance does not indicate this property is deemed to be a permitted conditional use for a wireless telecommunication tower and antennas. **A d (1) Use variance is required.**

1) **Criteria for Use Variance Relief**

This application requires a use variance pursuant to N.J.S.A. 40:55D-70.d(1). Testimony is required to demonstrate that the application satisfies the positive and the negative criteria of the Municipal Land Use Law for the granting of the use variance relief. Consequently, the Applicant must demonstrate the following:

a) Positive Criteria

- (1) *That the site is particularly suited to the use*
- (2) *There are special reasons that allow a departure from the zoning regulations in this particular case.* In general, to show special reasons, the granting of a variance must be shown to implement one or more of the purposes of the Municipal Land Use Law (N.J.S.A. 40:55D-70d(1)).

b) Negative Criteria

- (1) *That the variance can be granted without substantial detriment to the public good.* This requires an evaluation of the impact of the proposed use on surrounding properties and a determination as to whether or not it causes such damage to the character of the neighborhood as to constitute a substantial detriment to the public good.
- (2) *That the variance will not substantially impair the intent and purpose of the zoning plan and ordinance.* The Applicant needs to provide an enhanced quality of proof that the use variance sought is not inconsistent with the intent and purpose of the master plan and zoning ordinance.

B. The Applicant also requires a **d(6) variance** to permit a height of a principal structure which exceeds by 10 feet or 10% the maximum height permitted in the district for a principal structure. The applicant is proposing an antenna height of 43 feet, whereas 35 feet is the maximum height permitted.

- 1) To meet the positive criteria for a d(6) variance, the applicant should prove the particular suitability of the site in accommodating the use, despite the increase in height over what is permitted in the zone district.
- 2) The negative criteria should focus on the impact of the deviation. The applicant must present evidence that the negative impacts of non-compliance with the permitted height can be mitigated to the extent that the use will not cause a substantial detriment to the public good and will not substantially impair the intent and purpose of the zone plan and zoning ordinance.

C. Bulk Requirements and Yard Area and Principal Dwelling.

- 1) An analysis of the bulk requirements of the R-75 Single Family Residential Zoned District for Yard Area and Principal dwelling are as follows:

Bulk Requirements	Permitted	Existing	Proposed
Minimum Lot Area (Corner Lot)	9,000 sf.	10,000 sf.	No Change
Minimum Lot Frontage (Corner Lot)	60 ft.	100 ft.	No Change
Minimum Front Yard Setback	20 ft.	17 ft. (Ocean Avenue) (NC)	19 ft. (Antenna) (V)
		21 ft. (Eighteenth Avenue)	32 ft. (Antenna)
Minimum One Side Yard Setback	5 ft.	45 ft.	49 ft. (Equipment Fence)
Minimum Total Side Yard Setback	15 ft.	N/A	N/A
Minimum Rear Yard Setback	40 ft.	48 ft.	44 ft. (Equipment Fence)
Maximum Building Height and Stories	35 ft.	36 ft. (NC)	43 ft. (Antenna) (V)
	2 ½ story	2 story	No Change
Maximum Floor Area Ratio for Lot Size 10,000 sf. and over	50%	32%	No Change
Maximum Lot Coverage (Impervious Surface) for Lot Size 10,000 sf. and over	40%	84% (NC)	No Change
Maximum Building Coverage for Lot Size 10,000 sf. and over	20%	16%	No Change
Accessory Buildings and Structures Side Yard Setback	3 ft.	3 ft. (Shed)	No Change
Accessory Buildings and Structures Rear Yard Setback	3 ft.	8.5 ft. (Shed)	No Change
Accessory Buildings Height and Stories	18 ft.	< 18 ft.	No Change
	1 story	1 story	No Change

(V) indicates a variance is required

(NC) indicates an existing non-conformity

2) Bulk variances or existing non-conformities are indicated for the following items as noted below:

- a) On all corner lots, the depth of the yards abutting on streets, shall not be less than the minimum front yard depth required. The minimum front yard setback permitted per the R-75 Zoned District is 20 feet. The existing front yard setback is approximately 17 feet along Ocean Avenue, which represents an existing non-conformity. The existing front yard setback is approximately 21 feet along Eighteenth Avenue, which conforms.

The Applicant is proposing a front yard setback to the antenna of approximately 19 feet along Ocean Avenue and approximately 32 feet along Eighteenth Avenue. **A variance is required for the setback from Ocean Avenue.**

- b) The maximum lot coverage (Impervious Surface) permitted per the R-75 Zoned District is 40% of the lot area. The Applicant indicates an existing lot coverage of 84%, which represents an existing non-conformity. Our office calculated an existing lot coverage of 92%. The Applicant is proposing no change to lot coverage. The Applicant should provide testimony on the lot coverage for the site.

- D. A map of the inventory of the existing and proposed sites have been provided in the RF Analysis and Report. The Applicant should provide testimony on the surrounding sites and the deficiency of the area as indicated in the report.
- E. The tower shall be either a galvanized steel finish or, subject to any applicable standards of the FAA, be painted a neutral color so as to reduce visual obtrusiveness. The Applicant has indicated the aesthetics will be neutral or compatible with the supporting structure. Testimony should be provided.
- F. The antenna and supporting electrical and mechanical equipment must be of a neutral color that is identical to, or closely compatible with, the color of the supporting structure so as to make the antenna and related equipment as visually unobtrusive as possible. The Applicant has indicated the aesthetics will be neutral or compatible with the supporting structure. Testimony should be provided.

- G. The towers shall not be artificially lighted, unless required by FAA or other applicable authority. If lighting is required, the lighting alternatives and design chosen must cause the least disturbance to the surrounding views. The Applicant indicates all proposed site lighting shall be shielded to only light the proposed equipment cabinets in the equipment area. Due to the shielding and side of the proposed lights, site lighting will not illuminate beyond the property line. Lights will be on a 60-minute manual timer to avoid being left on after technician leaves site. Testimony should be provided.
- H. No signs shall be allowed on an antenna, tower or equipment building other than those designed to enhance public safety. Only FCC required safety signs and a site identification sign will be provided. Testimony should be provided.
- I. Towers and equipment cabinet and/or like equipment shall be enclosed by security fencing not less than 6 feet in height, be equipped with an appropriate antilimbing device or of a style/configuration as approved by the BOCA Code for enclosure around a residential swimming pool, and such fencing shall have a self-latching gate complying with the standard required for enclosing a swimming pool; provided however, that the municipal agency may waive such requirements, as it deems appropriate. The Applicant is proposing a fence height of 6 feet around the equipment cabinet, which complies. The proposed gate will be self-retracting and self-latching, which complies. The 2" mesh is not an antilimbing fence. **A waiver is required.** The Applicant should provide testimony that all the equipment for the antenna will be located within the fenced in area.
- J. The cabinet or structure shall not contain more than 200 square feet of gross floor area or be more than 10 feet in height. The Applicant is proposing a cabinet area of 26.5 square feet and a height of 5 feet. The cabinet area and height comply.
- K. The Applicant is requesting the following waivers from the Applicant Checklist Items:

Item #10 Environmental Impact Report: The Applicant indicates there will be no impact to soil, no change in existing impervious coverage and the equipment design is compliant with NFIP and IBC regulations. Therefore, this installation will not require an Environmental Impact Report.

Item # 11 Stormwater Management Report: The Applicant indicates the proposed installation will cause no change in the existing impervious coverage and therefore does not require a Stormwater Management Report.

Item #12 Traffic Report: The Applicant indicates the proposed installation is unmanned and only visited as needed for maintenance (approximately once per month). This installation will not have any impact on existing traffic conditions and therefore will not require a Traffic Report.

Item #13 Proposed Written Description: The Applicant indicates the properties existing metes and bounds are to remain and there will be no request for easements in the proposed scope of work.

Item #34 Landscaping Plan: The Applicant indicates there is insufficient space on the lot to provide landscaping. The compound will be fenced in utilizing privacy slates.

Item #40 Lighting Plan: The Applicant indicates the proposed lighting consists of two 100-Watt outdoor light fixtures and is designed to face away from adjacent property lines. Specifications and details are provided but no lighting plan will be required.

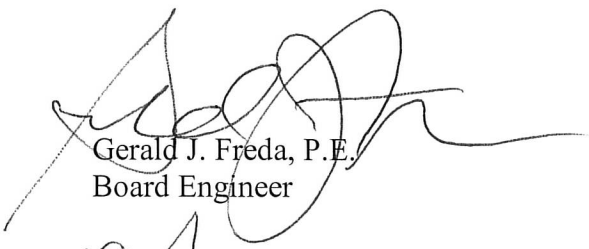
4. Conditions of Approval

- A. Payment of any outstanding real estate taxes.
- B. Granting of any required construction permits.
- C. Performance Guarantees and Inspection Fees per Borough Ordinance.

If you have any questions, or require additional information on this matter, please do not hesitate to contact our office.

Very truly yours,

LEON S. AVAKIAN, INC.



Gerald J. Freda, P.E.
Board Engineer



Christine Bell, P.P., A.I.C.P.
Board Planner

DMH:mfl

cc: April Claudio, Board Secretary
Kevin Kennedy, Esq., Board Attorney
Warren O. Stilwell, Esq., Applicant's Attorney
Colleen Connolly, P.E., Applicant's Engineer

B/ZB/20/20-06rev



SCHERER DESIGN GROUP, LLC
Consulting Engineers • Construction Inspectors

Colleen Connolly, PE
Partner/CEO
Glenn J. Scherer, PE
Partner/CFO
Steven Krug, PE
Partner/COO

January 6, 2020

Borough of Belmar
601 Main Street
Post Office Box A
Belmar, NJ 07719

Re: Verizon site: Breakers Spring Lake
1715 Ocean Avenue, Belmar, NJ 07719

Dear Borough of Belmar,

Scherer Design Group, LLC, has developed Zoning Drawings for the above referenced site. Submitted drawings detail items required by the Zoning Board of Adjustment's application checklist for the proposed installation at 1715 Ocean Avenue in Belmar, New Jersey. However, there are a few items unrelated to the proposed work being done and therefore it is being requested that these items are waived for this specific application. Please see below for a line by line list of items requesting to be waived:

Belmar applications checklist items:

- Item #10: There will be no impact to soil, no change in existing impervious coverage and the equipment design is compliant with NFIP and IBC regulations. Therefore, this installation will not require an Environmental Impact Report.
- Item #11: The proposed installation will cause no change in the existing impervious coverage and therefore does not require a Stormwater Management Report.
- Item #12: The proposed installation is unmanned and only visited as needed for maintenance (approximately once per month). This installation will not have any impact on existing traffic conditions and therefore will not require a Traffic Report.
- Item #13: The properties existing metes and bounds are to remain and there will be no request for easements in the proposed scope of work.
- Item #34: There is insufficient space on the lot to provide landscaping. The compound will be fenced in utilizing privacy slats.
- Item #40: The proposed lighting consists of two 100-Watt outdoor light fixtures and is designed to face away from adjacent property lines. Specifications and details are provided but no lighting plan will be required.

Should you have any questions/comments regarding the above information, please contact me at (908) 323-2513.

Regards,


Colleen Connolly, P.E.
PE# 24GE04133700

Shelbourne at Hunterdon • 53 Frontage Road, Suite 260 • Hampton, NJ 08827
Ph 908.323.2513 • Fax 908.323.2525

BOROUGH OF BELMAR APPLICATION CHECKLIST SUBDIVISIONS, SITE PLANS AND VARIANCE APPLICATIONS

Type of Application

☐	Minor Subdivision
☐	Preliminary Major Subdivision
☐	Final Major Subdivision
☐	Conditionally Exempt Site Plan
☒	Minor Site Plan
☐	Preliminary Major Site Plan

(Check all that apply)

☐	Final Major Site Plan
☐	Appeal of Zoning Officer's Decision ("A" Variance)
☐	Interpretation of Zoning Ordinance ("B" Variance)
☒	Hardship or Flexible Bulk Variance ("C" Variance)
☒	Use Variance ("D" Variance)

☐	Amended Preliminary, Final or Minor Subdivision
☐	Amended Preliminary, Final or Minor Site Plan
☐	Extension of Time

Notes:

- 1) An application shall not be considered complete until all applicable materials and information specified below have either been submitted, or a WRITTEN "Waiver Request" is made by the applicant for the non-submitted applicable item. Failure to submit a properly completed application checklist is reason for application incompleteness. Items denoted with an "X" are applicable for the type of application being submitted.
- 2) Applications for amended site plans and subdivisions shall comply with all checklist items below for site plans and subdivisions. Applications for extensions of time shall not be subject to the application checklist requirements below.

Site Plan		Subdivision			Site Plan			Variances				Applicant Mark			Township Mark		
		Minor	Preliminary Major	Final Major	Minor	Preliminary Major	Final Major	"A" Variance	"B" Variance	"C" Variance	"D" Variance	Complies	Waiver	N/A	Complies	Does Not Comply	N/A
Item #	Item Description																

Section 1 - Administrative Completeness Requirements

Section 1 - Administrative Completeness Requirements

1	Fourteen (14) copies of the completed Borough of Belmar "Development Application" forms.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	Fourteen (14) copies of the completed Borough of Belmar "Application Checklist" forms.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	Properly calculated escrow review fee with payment submitted via cash or individual check made out to the Borough of Belmar	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4	Application fee as required by Board Secretary or Borough Engineer.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	Statement of Corporate or other Ownership on the form provided. (if applicable)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

*** To Be Provided**

BOROUGH OF BELMAR APPLICATION CHECKLIST **SUBDIVISIONS, SITE PLANS AND VARIANCE APPLICATIONS**

Item #	Item Description	Subdivision			Site Plan			Variances				Applicant Mark			Borough Mark			
		Minor	Preliminary Major	Final Major	Minor	Preliminary Major	Final Major	"A" Variance	"B" Variance	"C" Variance	"D" Variance	Complies	Waiver	N/A	Complies	Does Not Comply	N/A	
7	Certified list of property owners within 200 feet of the property as prepared by the Borough Clerk.	X	X	X	X	X	X	X	X	X	X		X					
8	Municipal Tax Status Request form filled out and submitted as part of the package.	X	X	X	X	X	X	X	X	X	X		X					
9	Fourteen (14) copies of the plans, signed and sealed by an architect or engineer licensed in the State of New Jersey.	X	X	X	X	X	X	X	X	X	X		X					
10	Eighteen (18) copies of the full Environmental Impact Report. If applicant is requesting a waiver provide a letter stating such.	X	X	X	X	X	X						X					
11	Eighteen (18) copies of the Stormwater Management Report	X	X	X	X	X	X						X					
12	Eighteen (18) copies of the Traffic Report.	X	X	X	X	X	X						X					
13	Eighteen (18) copies of all proposed written descriptions including metes and bounds for all easements, covenants and deed restrictions affecting the property in question.	X	X	X		X	X	X	X	X								
14	Eighteen (18) copies of all written explanations for waiver requests documenting the section and paragraph of the Borough code the applicant is requesting a waiver for and the corresponding item number on the checklist.	X	X	X		X	X	X	X	X	X			X				
15	An affirmative statement in writing indicating how all applicable conditional use standards are met.				X	X	X								X			

Section 2 – Plat Requirements

[illegible]

BOROUGH OF BELMAR APPLICATION CHECKLIST SUBDIVISIONS, SITE PLANS AND VARIANCE APPLICATIONS

Section 3 - General Plan Information Requirements

Item #	Item Description	Subdivision			Site Plan			Variances				Applicant Mark			Borough Mark		
		Minor	Preliminary Major	Final Major	Minor	Preliminary Major	Final Major	"A" Variance	"B" Variance	"C" Variance	"D" Variance	Complies	Waiver	N/A	Complies	Does Not Comply	N/A

27	Plans drawn to scale not smaller than 1 inch = 50 feet or larger than 1 inch = 20 feet.	X	X	X		X	X	X	X	X	X	X					
28	Sheet size shall be no smaller than 11" x 17", 24" x 36" or 30" x 42".	X	X	X		X	X	X	X	X	X	X					
29	Scale, north arrow and reference meridian both written and graphic. The reference source (i.e. deed, Filed Map, etc.) of the meridian shall be identified.	X	X	X		X	X	X	X	X	X	X					
30	Key map showing location of parcel to be considered in relation to surrounding area, with two hundred foot (200') offset shown and block and lots labeled.	X	X	X		X	X	X	X	X	X	X					
31	Title block containing contact information of professional, lot and block number, site or subdivision name, date prepared and date of last revision by revision block.	X	X	X		X	X	X	X	X	X	X					
32	Parking plan showing spaces, size, and type, aisle width, curb cuts, drives, driveways, and all ingress and egress areas and dimensions, the number of spaces required by ordinance, and the number of spaces provided.	X	X	X		X	X	X									
33	Site Triangles	X	X	X		X	X	X									
34	Landscaping Plan	X	X	X		X	X	X	X	X	X	X					

RICHARD F. DELUCRY
EMAIL: rdelucry@cooperlevenson.com

Direct Phone (609) 572-7606
Direct Fax (609) 572-7607

FILE NO. 58438/00064

August 12, 2020

Via UPS Overnight Mail

April Claudio, Secretary
Belmar Zoning Board of Adjustment
Department of Construction, Planning &
Zoning
601 Main Street
Belmar, New Jersey 07719

**Re: Application of New York SMSA Limited Partnership d/b/a Verizon
Wireless/Block 170, Lot 13 a/k/a 1715 Ocean Avenue, Borough of Belmar, New
Jersey (Verizon Wireless Site ID: Breakers Spring Lake)**

Dear Ms. Claudio:

This office represents Verizon Wireless in connection with the proposed placement of wireless facilities – rooftop antennas and equipment at the base of the building – at the above site. As wireless facilities are not a permitted use at the location, the development will require a use variance and other relief from the Belmar Zoning Board.

Accordingly, accompanying this letter is a Zoning Board application package consisting of the following materials (14 copies of each, unless otherwise noted):

1. Development Application with Addendum and Ownership Disclosure form.
2. Plan Set prepared by SDG-Scherer Design Group (9 sheets, revised through 7-22-2020: 4 sets at 34" x 22"; 10 sets at 17" x 11").
3. July 1, 2020 "RF Analysis and Report" prepared by V-Comm, LLC Engineers.
4. July 1, 2020 "RF Emission Study" prepared by V-Comm, LLC Engineers.

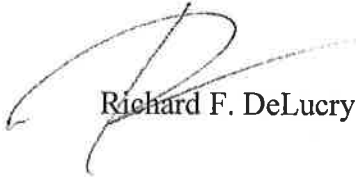
April Claudio, Secretary
August 12, 2020
Page 2

5. Checklist with Waiver Request letter prepared by SDG (18 copies).
6. Applicant's W-9 form (1 copy).
7. Check in the amount of \$750.00 payable to the Borough of Belmar for the review escrow fee.
8. One copy of 200-foot List Request.
9. One copy of Tax Certification Request.

I understand you will calculate and advise us of the application fee. Please let me know if any additional information or documentation is required in order for you to conduct the completeness review of the Application.

Thank you.

Very truly yours,



Richard F. DeLucry

RFD/mls
Enclosures

CLAC 5763744.1

Request for Taxpayer Identification Number and Certification

Give Form to the
requester. Do not
send to the IRS.

► Go to www.irs.gov/FormW9 for instructions and the latest information.

Print or type.
See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank. NEW YORK SMSA LIMITED PARTNERSHIP	
2 Business name/disregarded entity name, if different from above d/b/a Verizon Wireless	
3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes. ☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☒ Partnership ☐ Trust/estate ☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ► Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner. ☐ Other (see instructions) ►	
4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from FATCA reporting code (if any) _____ (Applies to accounts maintained outside the U.S.)	
5 Address (number, street, and apt. or suite no.) See instructions. ONE VERIZON WAY ATTN TAX DEPT.	Requester's name and address (optional)
6 City, state, and ZIP code BASKING RIDGE, NJ 07920	
7 List account number(s) here (optional)	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number								
			-					
or								
Employer identification number								
1	3	-	3	1	8	4	4	3 9

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign
Here

Signature of
U.S. person ►

Richard P. Jantzen

Date ► 1/23/2018

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

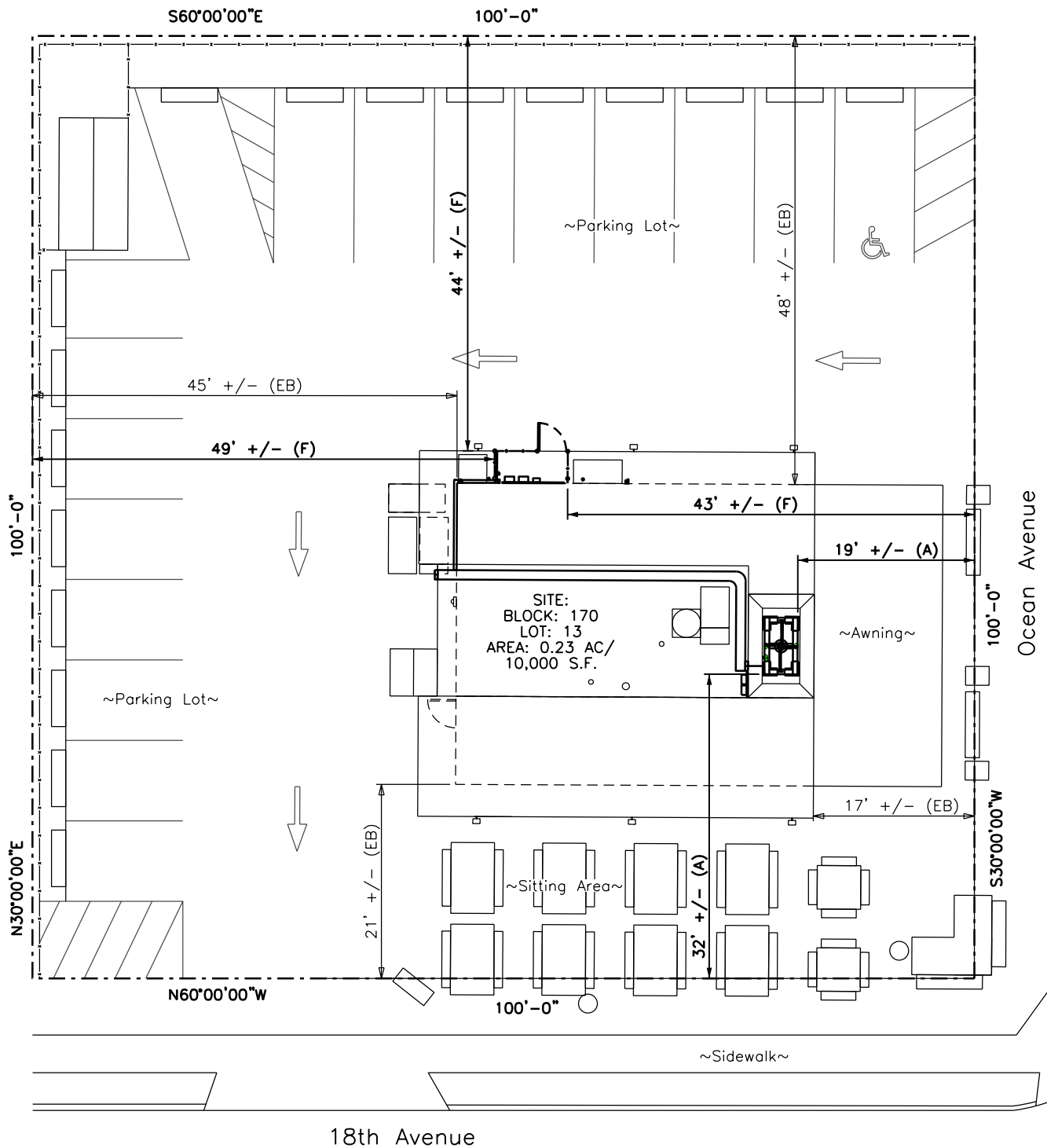
Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (Interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
 - Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
 - Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
 - Form 1099-S (proceeds from real estate transactions)
 - Form 1099-K (merchant card and third party network transactions)
 - Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
 - Form 1099-C (canceled debt)
 - Form 1099-A (acquisition or abandonment of secured property)
- Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What Is backup withholding, later.



ZONING ORDINANCE			
DISTRICT R-75	REQUIRED	EXISTING	PROPOSED
Min. Lot Area	9,000 SQ.FT.	10,000 SQ.FT.	No Change
Min. Frontage	60'	100'	No Change
Min. Front Yard (Ocean Ave.)	20'	17' +/- (EB) *	19' +/- (A) **
Min. Front Yard (18th Ave.)	20'	17' +/- (EB) *	32' +/- (A)
Min. Side Yard (One)	5'	45' +/- (EB)	49' +/- (F)
Min. Side Yard (Both)	15'	N/A	N/A
Min. Rear Yard	40'	48' +/- (EB)	44' +/- (F)
Lot Shape Diameter	30' DIA	100' DIA	No Change
Max. Height (St./Ft.)	2.5 Stories/35'	2/36'-0" *	2/43' +/- (A) **
Max. Building Coverage	20%	16%	No Change
Max. Lot Coverage Impervious Surface	40%	84% *	No Change
Max. Floor Area +	50%	32%	No Change

WIRELESS ORDINANCE - R-75			
Ordinance 40-6.12	REQUIRED	EXISTING	PROPOSED
Min. Fence Height	6'	6'	6'
Maximum Antenna Height	70'	N/A	43'
Aesthetics	Neutral or Compatible With Supporting Structure	N/A	Yes
Commercial Signage	No	N/A	No
Max. Equipment Area	200 SQ.FT.	N/A	26.5 SQ.FT.
Max. Equipment Height	10' Max	N/A	5'-0" Above BFE
Max. Roof Area	10%	N/A	N/A
Equipment for Buildings Under 65'	Location at Grade	N/A	Related Equipment At Grade

(A) = PROPOSED ANTENNA
(F) = PROPOSED FENCE
(EB) = Existing Building

* Existing Non-Conformity
** VARIANCE REQUIRED

2 BULK REQUIREMENTS

NOTES:

- SITE PLAN AND PROPERTY LINE DATA SHOWN AS PER SURVEY ENTITLED "EXISTING CONDITIONS PLAN" BY VS LAND DATA DATED 06/25/19 AND DOES NOT CONSTITUTE AS A BOUNDARY SURVEY.
- THE PROPOSED USE OF THE DEVELOPMENT IS FOR AN UNMANNED WIRELESS COMMUNICATION FACILITY, THE FACILITY WILL NOT BE STAFFED FULL TIME. IT WILL BE VISITED FOR MAINTENANCE APPROXIMATELY ONCE PER MONTH. THE SITE TECHNICIAN MAY PARK NEAR THE COMPOUND ENCLOSURE IN AN EXISTING PARKING LOT.
- ACCESS TO THE SITE WILL BE VIA 18TH AVENUE. TRAFFIC IMPACTS WILL BE NEGLIGIBLE SINCE THE SITE IS UNMANNED.
- SANITARY AND WATER FACILITIES ARE NOT REQUIRED. ELECTRIC AND FIBER ARE THE ONLY UTILITIES THAT ARE REQUIRED. UTILITIES WILL BE PROVIDED FROM EXISTING SERVICES.
- THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES AND MEET ALL CURRENT UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
- WATER COURSES OR FLOOD PLAINS WILL NOT BE AFFECTED BY THIS PROPOSAL.
- EXISTING DRAINAGE PATTERNS WILL NOT BE AFFECTED BY THIS PROPOSAL.
- ADDITIONAL NOISE, FUMES, DUST, ODOR OR VIBRATION WILL NOT RESULT FROM THE PROPOSED FACILITY.
- PROPOSED FACILITY WILL BE MONITORED 24 HOURS A DAY, 7 DAYS A WEEK FROM A REMOTE LOCATION.
- COMMERCIAL SIGNS WILL NOT BE DISPLAYED AT THE PROPOSED FACILITY. ONLY FCC REQUIRED SAFETY SIGNS AND A SITE IDENTIFICATION SIGN WILL BE PROVIDED
- TRASH DISPOSAL IS NOT REQUIRED IN CONNECTION WITH THE PROPOSED INSTALLATION.
- THE CONTRACTOR SHALL ABIDE BY ALL CURRENT LOCAL, STATE, AND NATIONAL CODES THAT ARE APPLICABLE.
- ALL PROPOSED SITE LIGHTING SHALL BE SHIELDED TO ONLY LIGHT THE PROPOSED EQUIPMENT CABINETS IN THE EQUIPMENT AREA. DUE TO SHIELDING AND SIZE OF PROPOSED LIGHTS, SITE LIGHTING WILL NOT ILLUMINATE BEYOND THE PROPERTY LINE. LIGHTS WILL BE ON A 60 MINUTE MANUAL TIMER TO AVOID BEING LEFT ON AFTER TECHNICIAN LEAVES SITE.

3 SITE NOTES



Shelbourne at Hunterdon
53 Frontage Road, Suite 260
Hampton, NJ 08827
Ph 908.323.2513 Fax 908.323.2525
www.schererdesigngroup.com

COLLEEN CONNOLLY
NJ PROFESSIONAL ENGINEER # 24GE04133700
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APPLICANT:

NEW YORK SMSA
LIMITED PARTNERSHIP
d/b/a

verizon
WIRELESS
400 WARREN CORPORATE CENTER DR.
BUILDING D
WARREN, NJ 07059

NO.	ISSUE OR REVISION	DATE	BY
0	ISSUED FOR SUBMISSION	7/22/20	SG

PROJECT TITLE:

PRELIMINARY AND FINAL
SITE PLANS

SITE ADDRESS:
1715 OCEAN AVE
BELMAR, NJ 07719
MONMOUTH COUNTY

SDG PROJECT #: 19VNJ004

SCALE: AS NOTED DATE: 10/14/19

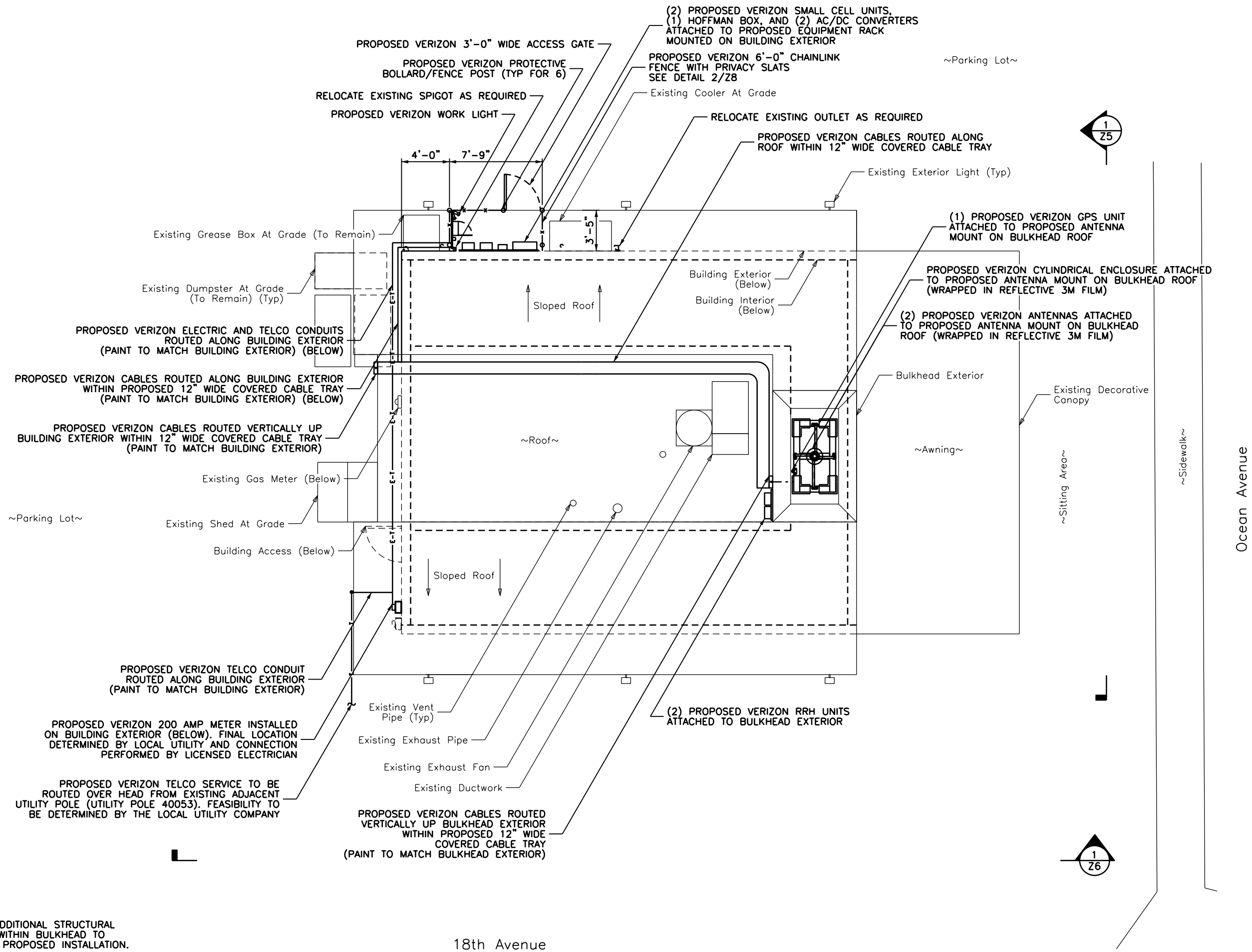
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OVERALL SITE PLAN

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Z3 3 of 9



NOTE:
PROVIDE ADDITIONAL STRUCTURAL
SUPPORT WITHIN BULKHEAD TO
FACILITATE PROPOSED INSTALLATION.

18th Avenue

1 SITE PLAN

11x17 SCALE: 1/8" = 1'-0"

22x34 SCALE: 1/4" = 1'-0"

0 4' 8'



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1715 OCEAN AVE
BELMAR, NJ 07719
MONMOUTH COUNTY

SDG PROJECT #: 19VNJ004

SCALE: AS NOTED

DATE: 10/14/19

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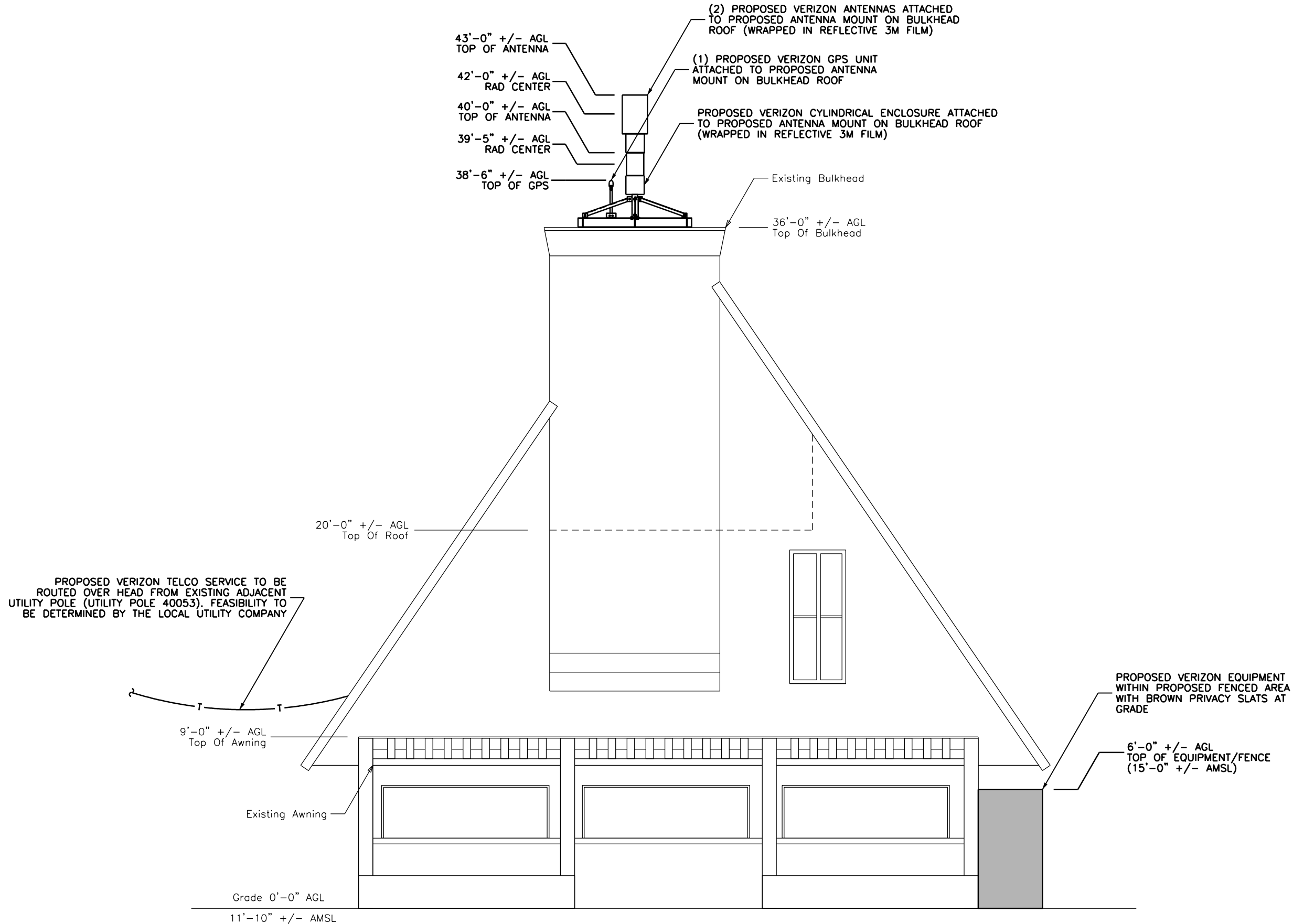
ROOF PLAN

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PAGE NO.:

Z4

4 of 9



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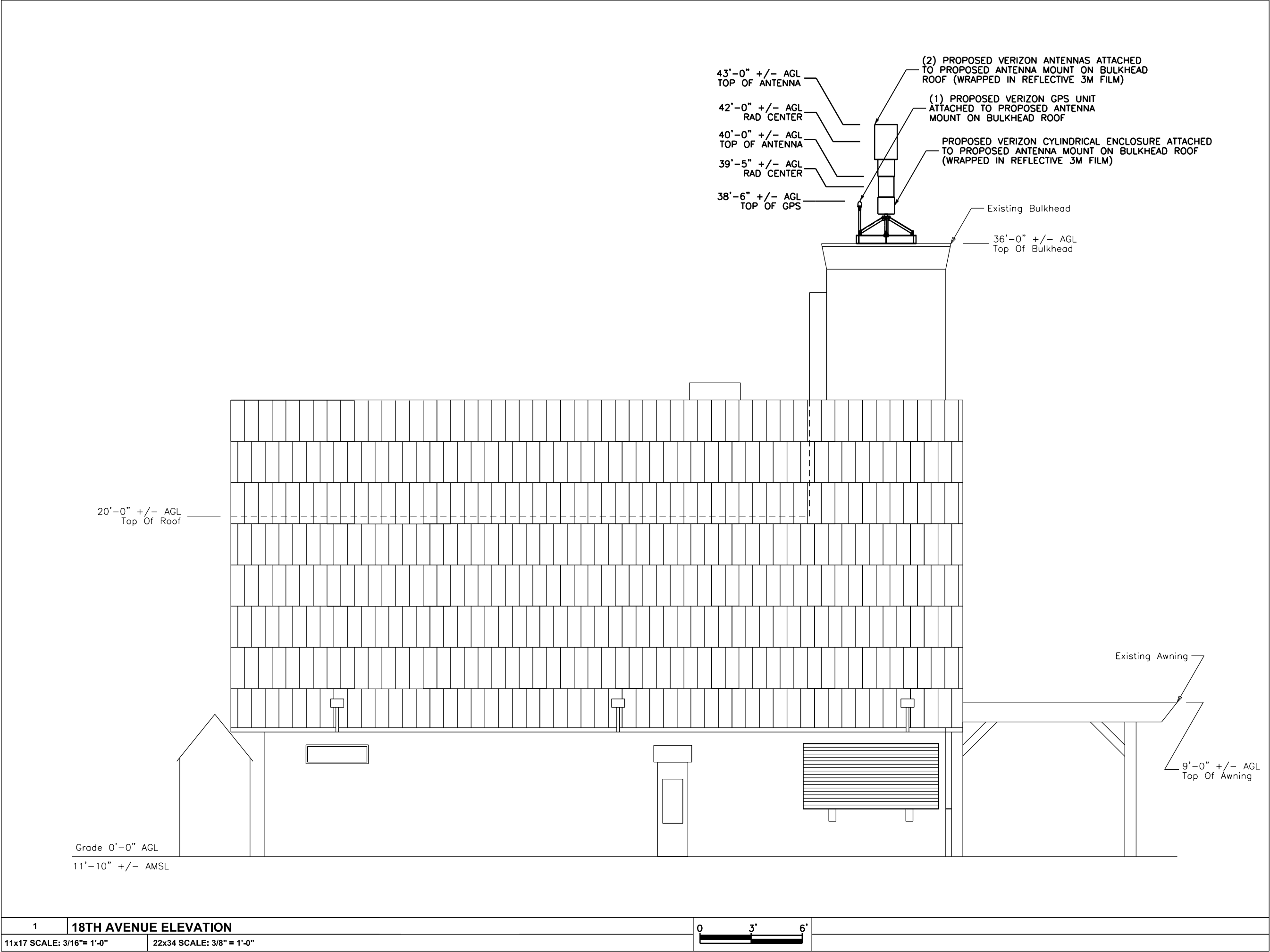
APPLICANT:
NEW YORK SMSA
LIMITED PARTNERSHIP
d/b/a
verizon
WIRELESS
400 WARREN CORPORATE CENTER DR.
BUILDING D
WARREN, NJ 07059

0	ISSUED FOR SUBMISSION	7/22/20	SG
NO.	ISSUE OR REVISION	DATE	BY

PROJECT TITLE:
PRELIMINARY AND FINAL
SITE PLANS
SITE ADDRESS:
1715 OCEAN AVE
BELMAR, NJ 07719
MONMOUTH COUNTY

SDG PROJECT #: 19VNJ004	
SCALE: AS NOTED	DATE: 10/14/19
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DRAWING NO.: Z5	PAGE NO.: 5 of 9



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APPLICANT:

NEW YORK SMSA
LIMITED PARTNERSHIP
d/b/a

verizon✓
WIRELESS
400 WARREN CORPORATE CENTER DR.
BUILDING D
WARREN, NJ 07059

0	ISSUED FOR SUBMISSION	7/22/20	SG
NO.	ISSUE OR REVISION	DATE	BY

PROJECT TITLE:

PRELIMINARY AND FINAL
SITE PLANS

SITE ADDRESS:
1715 OCEAN AVE
BELMAR, NJ 07719
MONMOUTH COUNTY

SDG PROJECT #: 19VNJ004

SCALE: AS NOTED

DATE: 10/14/19

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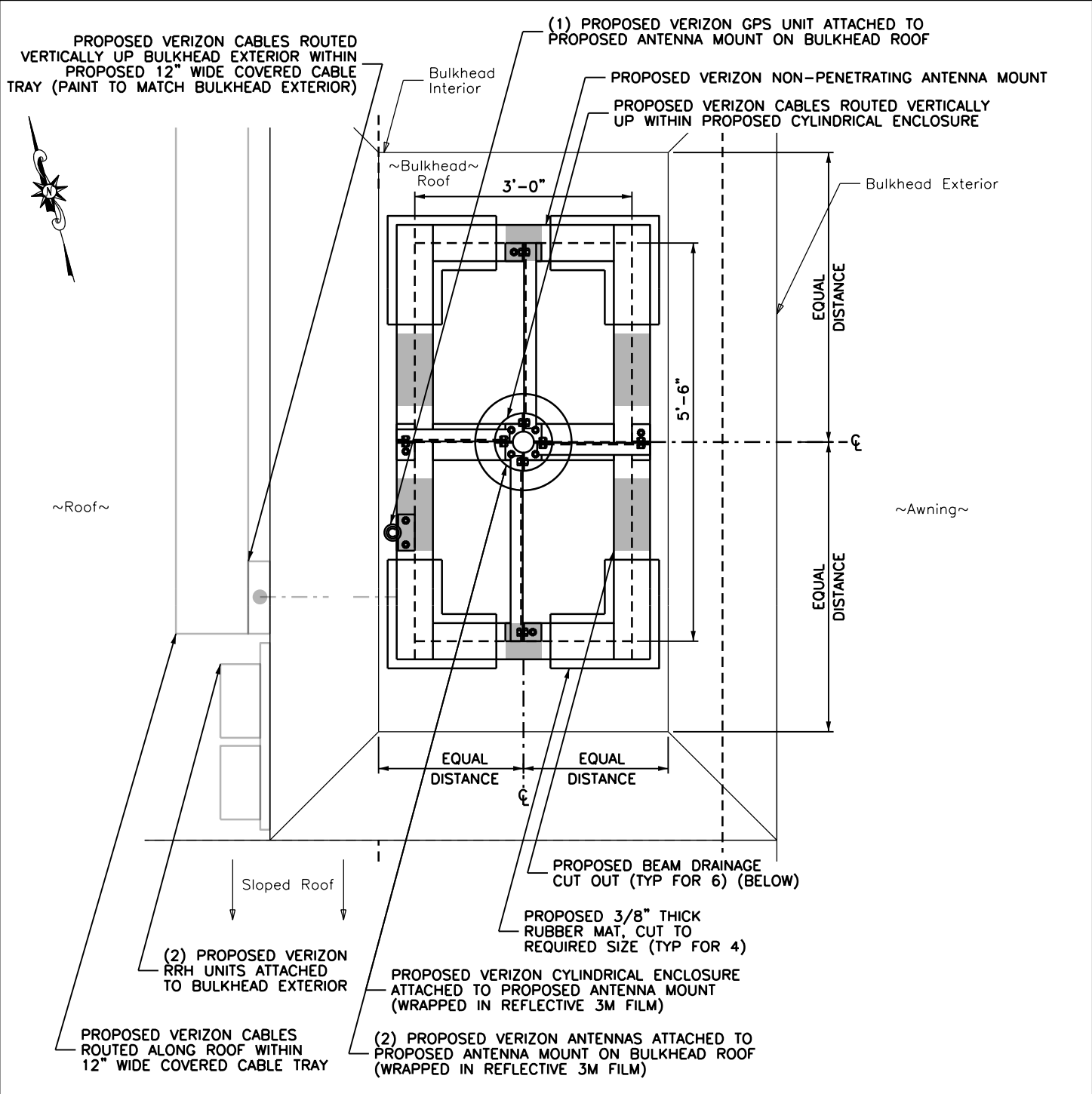
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PAGE NO.:

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6 of 9



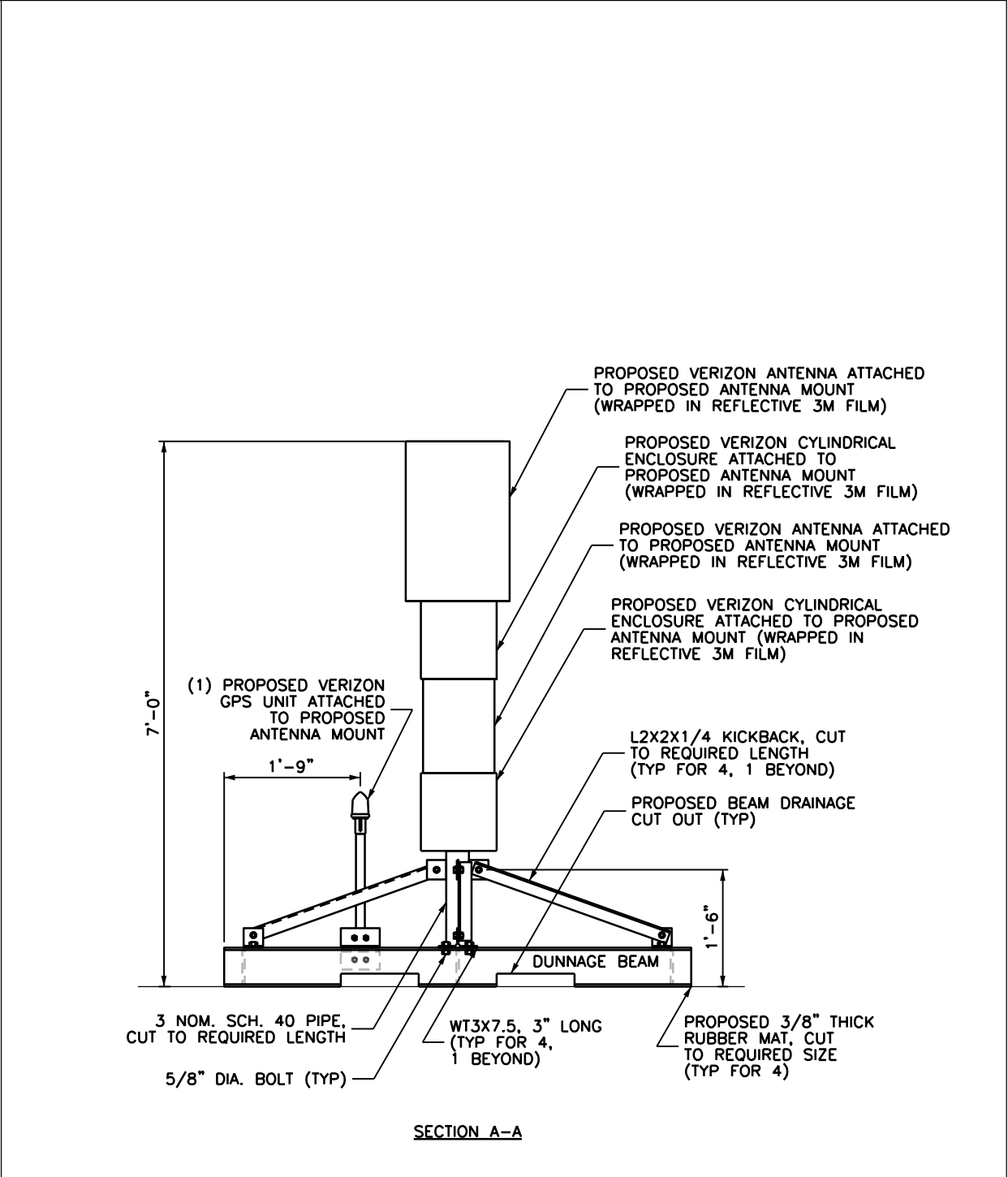
1	ANTENNA LAYOUT	0 1' 2'
11x17 SCALE: 1/2"= 1'-0"	22x34 SCALE: 1"= 1'-0"	

Conceal Film

Features	Benefits
RF transparent, non-metallic	Does not affect cellular signal/RF transmission
Mirror-like surface adapts to changing weather conditions	Blends antenna into its environment, no custom color matching required
Light scattering properties	Helps reduce intensity of reflected sun glare
Expected performance life of 10 years (unwarranted period applied to a flat, vertical, outdoor surface)	Long-term outdoor performance with minimal maintenance
Abrasion resistant coating	Reduced mechanical erosion and wear
Easy, even application using 3M adhesive technology	Clean, no fuss installation
Utilizes existing mounting hardware	No change to today's installation methods; less costly than custom solutions

Property	Value
Total film thickness (with temporary protective film and adhesive liner)	16 mil (0.016 in., 0.406 mm)
Total film thickness (without temporary protective film and adhesive liner)	7 mil (0.007 in., 0.178 mm)
Construction	100% polymeric

2	CONCEALMENT FILM SPECIFICATIONS	0 1' 2'
11x17 SCALE: NTS	22x34 SCALE: NTS	



3	ANTENNA MOUNT DETAIL	0 1' 2'
11x17 SCALE: 1/2"= 1'-0"	22x34 SCALE: 1"= 1'-0"	

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APPLICANT:
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verizon
WIRELESS
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WARREN, NJ 07059

0	ISSUED FOR SUBMISSION	7/22/20	SG
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SITE ADDRESS:
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MONMOUTH COUNTY

SDG PROJECT #: 19VNJ004

SCALE: AS NOTED	DATE: 10/14/19
DRAWN BY: DP	CHECKED BY: LM

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EQUIPMENT AND ANTENNA
LAYOUTS

DRAWING NO.:	PAGE NO.:
27	7 of 9



**NEW YORK SMSA LIMITED PARTNERSHIP d/b/a
VERIZON WIRELESS**

BREAKERS SPRING LAKE SITE

**1715 OCEAN AVENUE
BELMAR, NJ**

**RF ANALYSIS AND REPORT
JULY 1, 2020**

**Dominic C. Villecco
David K. Stern**

NJ Board of Professional Engineers
Certificate of Authorization No. 24GA28156300

Rev 1 – 7/1/2020

V-COMM, L.L.C
2540 US Highway 130, Suite 101
Cranbury, NJ 08512
609-655-1200
609-409-1927



RF Analysis and Report
Breakers Spring SNN Site
Belmar, NJ
July 1, 2020

EXPERT WITNESS RF ANALYSIS AND REPORT

V-COMM, L.L.C. has been retained by NEW YORK SMSA LIMITED PARTNERSHIP d/b/a Verizon Wireless to provide expert analysis in association with its proposed wireless communications facility at the existing building located at 1715 Ocean Ave, Belmar, NJ.

QUALIFICATIONS

V-COMM, L.L.C. is a telecommunications engineering firm primarily focused on providing engineering and related business services to network operators in the telecommunication industry as well as municipalities. V-COMM was founded in late 1995 with the intent of providing services to the emerging wireless and wired segments of the telecommunication industry. V-COMM's client base includes PCS operators, cellular, paging, ESMR and microwave operators, utility/telecommunications cooperatives, cable TV operators and Competitive Local Exchange Carriers (CLECs) and Local Governments. Services performed for these clients over the past twenty years include:

- Business and Strategic Planning
- Capital and Operational Expenditure Modeling
- Infrastructure Requests for Proposal (RFPs) and Analysis
- Infrastructure Contract Negotiation
- Technical and Financial Support in Obtaining Vendor and Equity Financing
- Interconnect Contract Negotiation
- RF Network Design, Implementation and Optimization
- Interconnect Network Design, Implementation and Optimization
- Telephony Signaling (SS-7) and Vertical Systems Design and Implementation
- Local Government Communication Systems
- Project Management of Network Implementation
- Expert Witness Zoning Testimony
- License Tender/Bid Technical Support

(Please see Mr. Villecco's and Mr. Stern's resumes at the end of the report)

THE CARRIER:

NEW YORK SMSA LIMITED PARTNERSHIP d/b/a Verizon Wireless has the B-Band Cellular License (880-894 MHz) and is licensed by the FCC to provide service in the Long Branch – Asbury Park CMA for Cellular, which includes Monmouth County, New Jersey. Further, CELLCO PARTNERSHIP d/b/a Verizon Wireless has the C-Band Personal Communications Service (PCS) Licenses (1975-1990 MHz), the F-Band Personal Communications Service (PCS) Licenses (1970-1975 MHz), the A Band and B Band Advanced Wireless Services (AWS) Licenses (2110-2130) and the 700 MHz Upper C-Band License (746-757 MHz) and is licensed by the FCC to provide service in the New York BTA for PCS, in the New York – North New Jersey BEA and Long Branch – Asbury Park CMA for AWS, and in the Northeast REA for 700 MHz, the Upper Microwave Flexible Use Service (27500-27925 MHz) to provide service in the New York BTA, which includes Monmouth County, New Jersey.



WIRELESS SYSTEMS

The FCC licenses a specific amount of Radio Frequency (RF) spectrum to each wireless carrier and stipulates that each carrier efficiently uses that spectrum to support its wireless customers. Traditionally, wireless carriers have achieved this efficiency by continuously reusing the allocated radio frequencies throughout their licensed service area. This is accomplished by building small radio base stations, or cell sites, in a particular pattern (also known as a grid). The application of the grid concept affords a wireless carrier the ability to effectively and efficiently plan the reuse of radio frequencies more easily. By following proper planning techniques (as originally defined by Bell Labs and further refined by the wireless industry), the same radio frequency can be reused at reasonably close intervals throughout the licensed area, without causing harmful interference. Noisy or dropped calls or the inability to originate a call are typical manifestations of harmful interference. When designing a wireless network, an RF Engineer starts with a theoretical grid pattern and applies it to the licensed area. Each licensed area has many variables that can affect the design and must be considered. These variables include terrain features, land use considerations, zoning ordinances, use of existing structures, traffic distribution and many others. In order to provide effective coverage while maintaining an efficient frequency reuse plan, the design engineer must perform a balancing test of all applicable variables. The primary variables that the engineer must take into consideration are the location and the overall height of the cell site. If a cell site is too high, it will have increased coverage, but cause interference throughout the rest of the wireless network thereby significantly affecting network efficiency. If a cell site is too low, it will provide ineffective coverage.

A proper wireless network design begins with strategically located cell sites. At each cell site there is a building, tower, water tank or other structure on which antennas are mounted. Typically, radio-transmitting equipment (base station) is located at the base of the structure. Radio signals leave the base station and travel through transmission lines to the antennas, or from fiber optic cable to the remote radio head (RRH) at the top of structure and then to the antennas. Radio signals are broadcast through the antennas and travel to the customer's wireless phone, completing a call. When a wireless customer places a call, the signal is received by the antennas and travels down the transmission line and into the base station. The base station converts the signal into digital data and combines it with all the other wireless calls and digital traffic at that cell site. This data is then sent over fiber optic digital leased lines to the main switching computer. The main switching computer or Mobile Switching Center (MSC) is interconnected to the Public Switched Telephone Network (PSTN) and Internet service providers, where calls are routed to other wireless or land-line phones or Internet locations.

As this technology enables mobile calling, once a wireless call is originated and the customer travels away from the cell site of origination, the system tracks the changes and begins a process of determining whether there is a better serving cell site. Upon determination of a stronger serving site, the system automatically switches the wireless customer over to the new cell site. This process is known as a handover and allows for seamless coverage within a wireless carrier's service area. By design, this process is supposed to happen so quickly that the wireless customer does not perceive it. If the network is designed efficiently, there is no interruption of service and connection quality remains adequate. This efficient design includes the proper location of sites with minimal variance from the original grid pattern.

For Verizon Wireless, the macrocell is the standard method for providing coverage and capacity, for it is the most robust solution for indoor and outdoor service. High gain antennas are mounted on a tall structure designed to support antenna systems. For this application, Verizon Wireless is utilizing a Small Network Node (SNN), which is used on a campus or in a dense urban environment to provide capacity or coverage in a specific venue to supplement the existing coverage and capacity of the macrocell network.



VERIZON WIRELESS EXISTING AND PROPOSED SITES IN AND AROUND BELMAR

V-COMM has identified Verizon Wireless' existing antenna support structures that provide coverage to the Borough of Belmar. The structures are listed in Table 1 below and depicted on the attached Map 1 – Existing Sites In and Around Belmar.

TABLE 1 – VERIZON WIRELESS EXISTING AND PROPOSED SITES IN AND AROUND BELMAR

Cell No.	Cell Name	Address	Structure	Structure Ht. in Ft.	Antenna C/L in Ft.
<i>Subject Site</i>	Breakers Spring Lake	1715 Ocean Avenue Belmar	Building	36	39.5 & 42
81	Belmar 2	1000 Ocean Avenue Belmar	Building	42	50
297 / 797	Belmar Relo	1631 West Maplewood Road Wall	Monopole	150	105
820	Belmar Train Station SNN	917 Main Street Belmar	Building	30	32
823	Belmar North SNN	601 Main Street Belmar	Building	21	25
909	Spring Lake HTS N ODAS	2401 Route 71 Spring Lake	Pole	38	39

The existing sites are depicted with red dots and the subject site is depicted with a blue dot on the map below.



RF Analysis and Report
Breakers Spring SNN Site
Belmar, NJ
July 1, 2020

MAP 1 - VERIZON WIRELESS EXISTING AND PROPOSED SITES IN AND AROUND BELMAR





RF COVERAGE

The critical issue for Verizon Wireless is the provision of “substantial” Radio Frequency (RF) service to serve its wireless customers. The wireless industry is governed by the Rules of the FCC. The FCC mandates in CFR 47, Parts §22.940 and §24.16 that each carrier must provide “substantial service” in its licensed service area, or risk having their license revoked. The FCC defines “substantial service” as service which is sound, favorable, and substantially above a level of mediocre service.

A metric called Reference Signal Received Power (RSRP) is used to specify the coverage capabilities of the Verizon Wireless network. This standard has been chosen to best represent the Long-Term Evolution (LTE) data technology (also known as 4G) being utilized as well as the Voice-Over LTE (VoLTE) technology, which is being deployed on 4G to augment and ultimately replace Verizon’s wireless voice capacity. RSRP is the average received power over all resource elements that carries a reference signal. Resource elements are the fundamental unit of frequency allocation in LTE and carry the information from the cell site to the mobile device and back. The reference signal is one of the components of the LTE channel that the mobile receiver uses to determine the channel power.

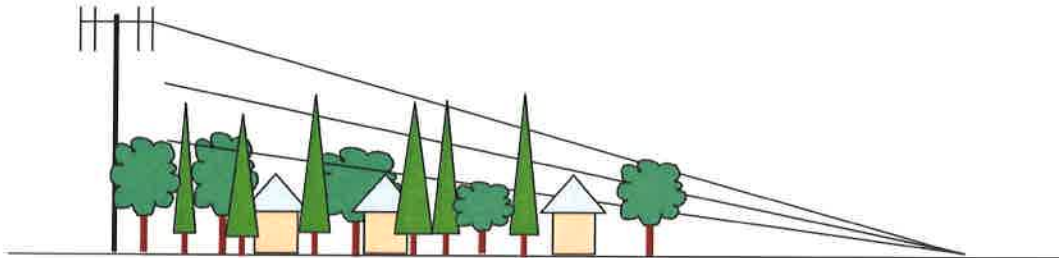
RSRP is measured in units of “decibels” referenced against 1 milliwatt, or dBm. The decibel is a logarithmic unit that allows ratios to be added or subtracted. The definition formula for decibels referenced against 1 milliwatt is $dBm = 10 \log(P / 1mW)$ with P measured in milliwatts. So 10 mW would be 10dBm, 100 mW would be 20dBm, etc.

The service boundary of a 4G site is defined using RSRP equating to an acceptable receiver signal threshold. This value is derived from industry standards, 4G received signal levels and quality and acceptable signal to noise ratios, along with statistically quantifiable variations in terrain. This threshold must also take into account additional losses associated with location of the mobile user.

To comply with FCC Rules, Verizon Wireless must provide service to all of its users including those in buildings. In order to account for users within buildings, additional margin must be added to RSRP so that adequate coverage exists inside. Industry standards and Verizon Wireless engineering policy adds an additional 10dB of margin to RSRP to be used for light suburban areas, with increasing values for higher density land usage. This additional margin also is required for in-vehicle service specifically to account for increased Path Loss associated with the use of hands-free headsets, where the phone usually winds up on the seat or center console.

As the antenna center line (ACL) descends from the proposed 39.5 & 42 feet, it enters into a range where clutter becomes an increasingly problematic factor. Examples of clutter are trees, houses, buildings, soil, and other physical objects on the ground. Clutter attenuates or weakens and disperses, the RF energy necessary for wireless telecommunications. As the ACL descends, RF energy is increasingly attenuated by the total accumulated volume of clutter. A graphic depiction of attenuation is found in Figure 1 (not to scale).

FIGURE 1 – IMPACT OF CLUTTER



V-COMM uses an industry standard RF computer-aided design tool to aid in the design of wireless networks. This tool can generate a plot of RSRP that shows underlying geographic (highways, arterial roads, etc.). For the Borough of Belmar, the subject site is in a predominately suburban area. The propagation map is drawn showing the region where the RSRP equates to the minimally acceptable received signal level for adequate service, as measured at the mobile's receiver. The propagation map includes the RSRP of the surrounding environment including the attenuation of In-Building and In-Vehicle use of service.

In the case of the Breakers Spring Lake, Verizon Wireless has adequate 4G signal coverage, but insufficient capacity to handle the projected 4G voice and data traffic in the area. Therefore, the purpose of the proposed location is the capacity relief to the existing Verizon Wireless sites. Without this capacity relief, Verizon Wireless subscribers will experience gaps in service caused by insufficient network capacity especially during the summer.

VERIZON WIRELESS SERVICE

RF Coverage

V-COMM analyzed whether there was sufficient RF coverage, and found that there was sufficient coverage for Verizon Wireless in the 700 MHz LTE and AWS frequency bands. Verizon Wireless' FCC licensed frequencies allow for 1 LTE channel in the PCS band and 1 LTE channel in the 2100 MHz AWS band, as well as a future 700 MHz LTE channel. The proposed site will provide Verizon Wireless with additional PCS LTE and AWS LTE capacity and coverage.

Capacity

A substantial deficiency in service is occurring in Verizon Wireless' telecommunication network in and around the subject site. This deficiency is a result of capacity demands that are taxing the surrounding sites in the Verizon Wireless network. The FCC mandates in CFR 47 Part §22.940 that when a Commercial Mobile Radio Service ("CMRS") licensee (i.e. "wireless carrier") is up for renewal, the carrier must demonstrate its proposal for expanding system capacity in a coordinated manner in order to meet anticipated increasing demand for both local and roamer service, or be at risk of license revocation.

Data volume, also known as throughput, is one of the factors reviewed to determine the 4G capacity for a site. An average site's throughput referred to herein as "Forward Data Volume" is typically 2500 to 6000 Mega Bytes per hour in each of the 3 sectors, based on one 4G LTE channel. The Forward Data Volume capacity is a function of bandwidth allocated on a sector at a site as well as proximity of users nearby the site and their corresponding radio link quality (i.e. Signal to Noise ratio). In Figures 2 through 4, the busy

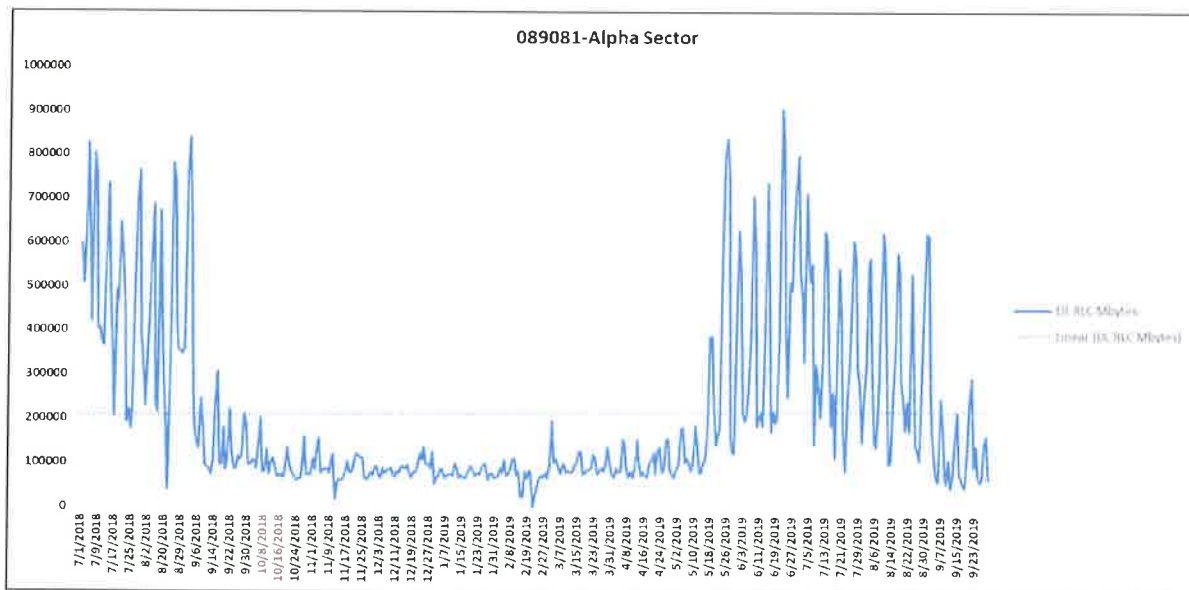


hour forward data volume is shown for each day by the green or blue lines. This data is calculated for each hour in each day and only the third busiest hour of each day is reported, rather than the peak from each day, in order to avoid forecasting system, traffic anomalies and random events associated with a mobile subscriber base.

The capacity of a 4G site can vary for each sector. The theoretical maximum throughput or capacity can be determined by using the tables in the ETSI 3GPP Technical Standard 36 for E-UTRA (i.e. the "LTE Standard"). While the theoretical maximum throughput can be determined, it can rarely be achieved in a mobile radio environment due to typical fading conditions as well as the ratios of the desired signal to noise/interference. A significant factor driving the capacity of each sector is the proximity of the users to the site. The closer the majority of the active users are to a site, the more throughput or capacity each user experiences as well as a higher overall capacity of that sector. Conversely, as the majority of users move further from a site, the throughput each user receives and the respective overall capacity of the sector will be lower. The capacity is reached when all the resource blocks (i.e. bandwidth elements) in a 4G channel are utilized simultaneously.

Sites surrounding Specifically, Belmar 2 Alpha (cell 81 sector 1) experiences high traffic especially in summer; See Figure 2. Figure 3 shows another sectors serving in and around Belmar.

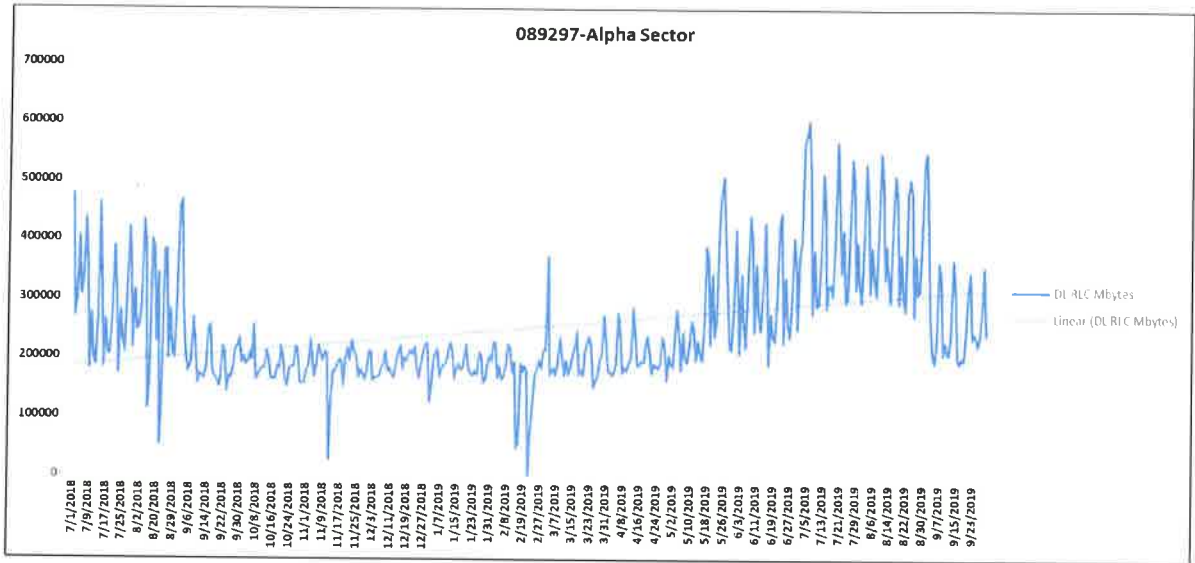
FIGURE 2 BELMAR 2 (CELL 81 SECTOR 1) ALPHA SECTOR





RF Analysis and Report
Breakers Spring SNN Site
Belmar, NJ
July 1, 2020

FIGURE 3 BELMAR RELO (CELL 297 SECTOR 1) ALPHA SECTOR





Solution to the Deficiency

When Verizon Wireless Radio Frequency engineers identify a coverage gap in the system or sites that have or will reach data capacity exhaustion, they issue a search area in order to locate a possible site to fill this gap in wireless coverage or resolve the capacity problem. A search area is a geographical area located within the poor service area. A search area is designed such that if a wireless telecommunications facility is located within its area at an appropriate height, it will provide the required coverage. The goal of this search area is to provide full and seamless coverage to users of Verizon Wireless' services in and around the subject site.

Verizon Wireless personnel investigated the area for suitable locations to fill the gaps in service and found the property located at 1715 Ocean Ave, Belmar, NJ. This site was analyzed using computer modeling, as well as a site visit. It was determined that this site would fulfill the objectives for Verizon Wireless' system throughout this section of the Borough of Belmar. Therefore, this site can be used to meet the requirements of the intended search area.

Verizon Wireless utilizes LTE technology for its wireless base stations. Currently, Verizon Wireless has 5 existing sites immediately surrounding the subject site, as previously outlined in Table 1.

The Breakers Spring Lake SNN site will be located on an existing 36 foot building located at 1715 Ocean Avenue in Belmar. Verizon Wireless proposes to install its antenna at a centerlines of 39.5 and 42 feet Above Ground Level (AGL).

To address the capacity deficiency, it is important that the proposed site become the dominate site. This is illustrated with the coverage plots known as "best server" plots. These plots differ from other propagation maps in that they depict the coverage area of a particular serving set of antennas or "sector." The propagation model takes into account factors which influence coverage such as antenna height, terrain, land use, etc., and predicts the likely or "best" server for each area. As an example, the Belmar 2 site has three (3) sectors or serving sets of antennas. The "Gamma" sector, which is oriented to the north, shows coverage in purple. The Belmar 2 "Alpha" sector is oriented south and depicted by beige, and the "Beta" sector oriented to west depicted by mint green.

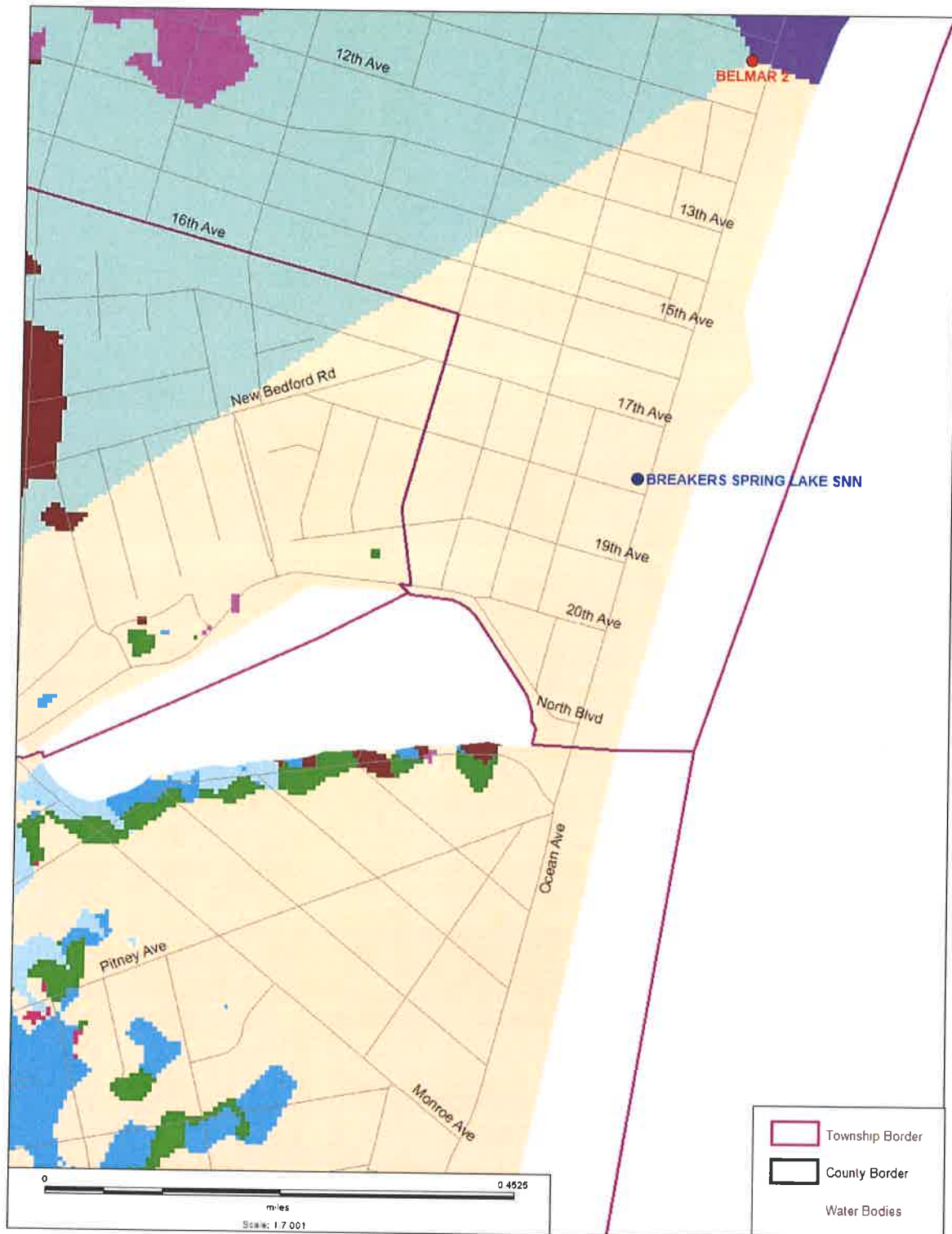
The propagation map titled "Map 2 - Verizon Wireless Existing Best Server" depicts which existing site is serving the area in a best server plot as described above. This map shows the closest existing sites without the proposed site.

The propagation map titled "Map 3 - Verizon Wireless Best Server" with "Breakers Spring Lake SNN" depicts which site is serving the area in a best server plot. The map shows the closest existing sites along with coverage from the subject "Breakers Spring Lake SNN" site. This map depicts the coverage from the proposed location. Due to its location, it becomes the best server for the high traffic venue.

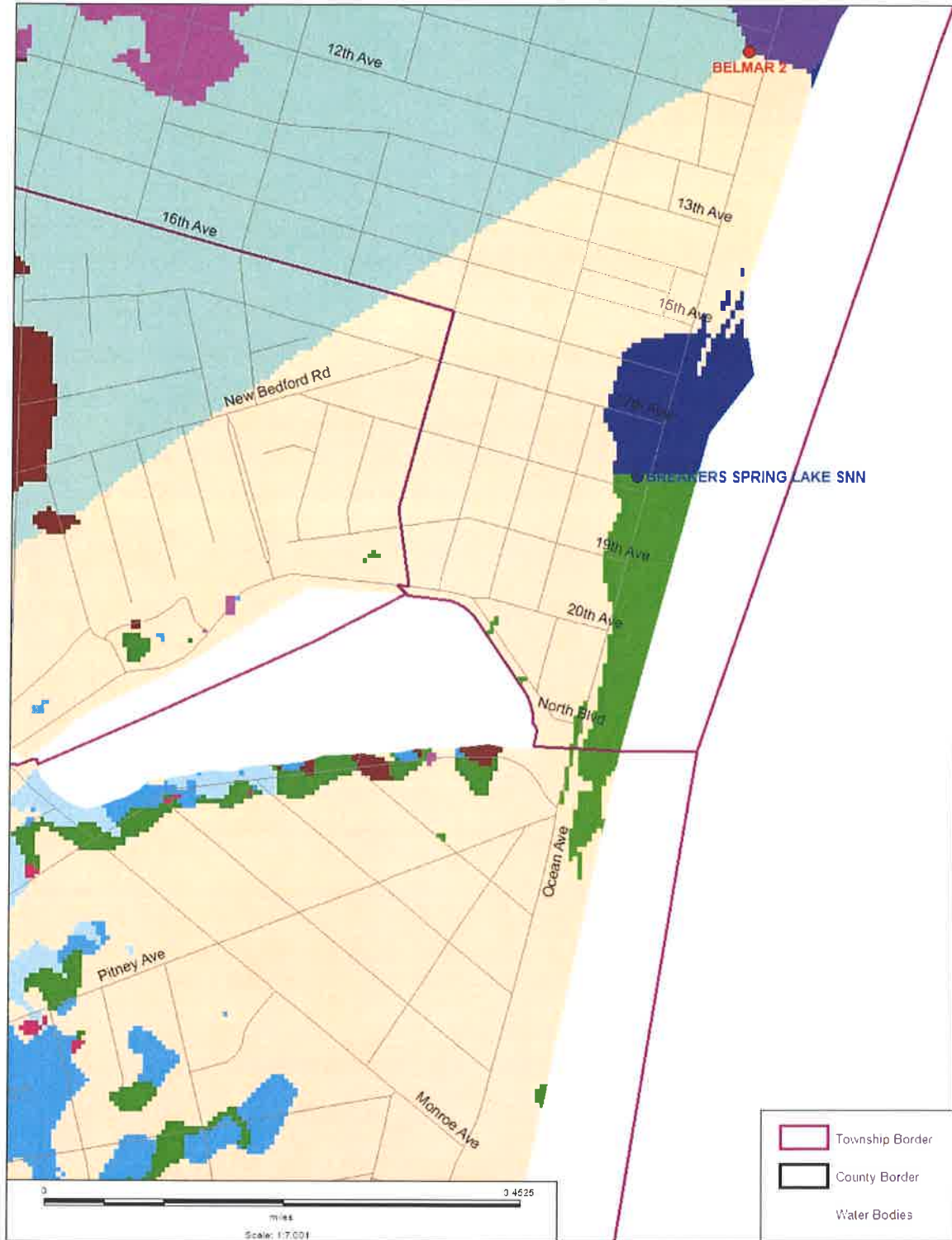
The proposed centerline heights of 39.5 & 42 feet AGL is the minimum height possible at this location to provide the desired reliable coverage. The location of the site will also provide capacity relief to the adjacent site Belmar 2. The immediate area of coverage of this Small Network Node also covers the Belmar Board walk along Ocean Ave and 16th towards 19th Avenue.



MAP 2 - VERIZON WIRELESS EXISTING BEST SERVER



MAP 3 - BEST SERVER WITH "BREAKERS SPRING SNN" SITE





BACKHAUL NETWORK

Verizon Wireless will utilize leased lines from Verizon Communications to connect its proposed facility to Public Switched Telephone Network.

ALTERNATIVE TECHNOLOGIES

Verizon Wireless normally will deploy new macrocells to augment coverage and capacity throughout their network. A single macrocell will provide the same area of coverage as 10 to 15 evenly distributed small network nodes and/or Outdoor Distributed Antenna system (ODAS) nodes, suburban areas like the Borough of Belmar. Typically, small network nodes or ODAS nodes are used in a campus or dense urban environment to provide capacity or coverage in a specific venue to supplement the existing coverage and capacity of the macrocell network.

In the case of this particular location in Borough of Belmar, the small scale, inconspicuous, and compact small network node provide additional capacity to high usage areas located between macrocells. The placement of a small network node within a macro site's coverage area allows coverage to be obtained where a traditional macrocell is not required. They are also deployed where it's not practical to deploy a macro cell due to their ground space requirement.

The ODAS nodes have several limitations and are more susceptible to failure than the small network nodes. ODAS nodes will not function during maintenance work on the electric poles where they are placed or during power outages since they do not use a generator. There is also no diverse routing deployed for an ODAS node which creates a deficiency in wireless coverage and capacity during the outage period. ODAS node heights and placement are restricted to the availability of utility poles and their heights. Taking into account the coverage, capacity, reliability and design requirements for Verizon in this particular location, it is not practical to deploy ODAS node(s) as an alternate technology in this part of Borough of Belmar.



RF Analysis and Report
Breakers Spring SNN Site
Belmar, NJ
July 1, 2020

CONCLUSIONS

V-COMM reviewed the materials provided by Verizon Wireless and prepared an analysis of the existing cell sites, their respective RF coverage and System Data usage. With the existing sites, there is a substantial gap in coverage which restricts Verizon Wireless customers from originating, maintaining or receiving calls from the "Public Switched Telephone Network" for VoLTE calls. It is our expert opinion that Verizon Wireless' subject site at the building located at 1715 Ocean Avenue in Belmar, NJ, will satisfy the coverage and 4G data needs of Verizon Wireless and its subscribers in this portion of the Borough of Belmar.

In addition, V-COMM has reviewed the overall system plan for Verizon Wireless in the Borough of Belmar and finds that the plan is sound and consistent with industry standards and practices.

Dominic C. Villecco
President, V-COMM, L.L.C.

7/1/2020

David K. Stern
Vice President, V-COMM, L.L.C.

7/1/2020

Peter Longo, P.E.
NJ Professional Engineer License #24GE03476100

7/1/2020

Date



**Dominic C. Villecco
President and Founder
V-COMM, L.L.C.**

Dominic Villecco, President and founder of V-COMM, is a pioneer in wireless telecommunications engineering, with 36 years of executive-level experience and various engineering management positions previously. Under his leadership, V-COMM has grown from a start-up venture in 1996 to a highly respected full-service consulting telecommunications engineering firm.

In managing V-COMM's growth, Mr. Villecco has overseen expansion of the company's portfolio of consulting services, which today include a full range of RF and Network support, network design tools, measurement hardware, and database services as well as time-critical engineering-related services such as business planning, zoning hearing expert witness testimony, regulatory advisory assistance, and project management.

Before forming V-COMM, Mr. Villecco spent 10 years with Comcast Corporation, where he held management positions of increasing responsibility, his last being Vice President of Wireless Engineering for Comcast International Holdings, Inc. Focusing on the international marketplace, Mr. Villecco helped develop various technical and business requirements for directing Comcast's worldwide wireless venture utilizing current and emerging technologies (GSM, PCN, ESMR, paging, etc.).

Previously he was Vice President of Engineering and Operations for Comcast Cellular Communications, Inc. His responsibilities included overall system design, construction and operation, capital budget preparation and execution, interconnection negotiations, vendor contract negotiations, major account interface, new product implementation, and cellular market acquisition. Following Comcast's acquisition of Metrophone, Mr. Villecco successfully merged the two technical departments and managed the combined department of 140 engineers and support personnel.

Mr. Villecco served as Director of Engineering for American Cellular Network Corporation (AMCELL), where he managed all system implementation and engineering design issues. He was responsible for activating the first cellular system in the world utilizing proprietary automatic call delivery software between independent carriers in Wilmington, Delaware. He also had responsibility for filing all FCC and FAA applications for AMCELL before it was acquired by Comcast.

Prior to joining AMCELL, Mr. Villecco worked as a staff engineer at Sherman and Beverage (S&B), a broadcast consulting firm. He designed FM radio station broadcasting systems and studio-transmitter link systems, performed AM field studies and interference analysis and TV interference analysis, and helped build a sophisticated six-tower arrangement for a AM antenna phasing system. He also designed and wrote software to perform FM radio station allocations pursuant to FCC Rules Part 73.

Mr. Villecco started his career in telecommunications engineering as a wireless engineering consultant at Jubon Engineering, where he was responsible for the design of cellular systems, both domestic and international, radio paging systems, microwave radio systems, two-way radio systems, microwave multipoint distribution systems, and simulcast radio link systems, including the drafting of all FCC and FAA applications for these systems.

Mr. Villecco has a BSEE from Drexel University, in Philadelphia, and is an active member of IEEE. Mr. Villecco also serves as the Vice Chairman of the Advisory Council to the Drexel University Electrical and Computer Engineering (ECE) Department.



Relevant Expert Witness Testimony Experience

Over the past twenty years, Mr. Villecco had been previously qualified and provided expert witness testimony in the following venues:

Expert Witness Zoning Testimony

- Avalon Borough, NJ
- Belleville, NJ
- Belmar, NJ
- Berkeley Heights Township, NJ
- Bernards Township, NJ
- Bernardsville, NJ
- Branchburg, NJ
- Bridgewater Township, NJ
- Brielle, NJ
- Bushkill Township, PA
- Colts Neck Township, NJ
- Cranbury Township, NJ
- Cresskill, NJ
- Cross Village / Emmett County, MI
- Cumru Township, PA
- Exeter Township, PA
- Fair Haven, NJ
- Fanwood Borough, NJ
- Franklin, NJ
- Freehold, NJ
- Garfield, NJ
- Glen Gardner, NJ
- Glen Rock, NJ
- Hampton Borough, NJ
- Hanover, NJ
- Hardyston Township, NJ
- Harrington Park, NJ
- Helmetta, NJ
- Hempstead, NY
- Highland Park, NJ
- Hoboken, NJ
- Holmdel Township, NJ
- Hopewell Borough, NJ
- Hopewell Township, NJ
- Howell Township, NJ
- Jackson Township, NJ
- Jersey City, NJ
- Kearny, NJ
- Kingston, NJ
- Lawrence Township, NJ
- Little Egg Harbor Twp., NJ
- Little Silver Borough, NJ
- Long Valley, NJ
- Lower Alsace, PA
- Middletown Township, NJ
- Millstone Township, NJ
- Morris Township, NJ
- Neptune Township, NJ
- Newark, NJ
- New Castle County, DE
- New Providence, NJ
- N. Caldwell Township, NJ
- Orange, NJ
- Plainfield, NJ
- Princeton Township, NJ
- Reading Township, NJ
- Ridgefield, NJ
- Rochelle Park, NJ
- Rutherford, NJ
- Saddle Brook Township, NJ
- Sayreville, NJ
- Somers Point, NJ
- Somerville, NJ
- South Brunswick, NJ
- South Coventry Twp., PA
- South Plainfield, NJ
- Stone Harbor, NJ
- Tenaflly, NJ
- Upper Allen Township, PA
- Upper Freehold, NJ
- Wall Township, NJ
- Wallington, NJ
- Wantage Township, NJ
- Washington Township, NJ
- Wayne Township, NJ
- Weehawken Township, NJ

United States Bankruptcy Court

Nextwave Personal Communications, Inc. vs. Federal Communications Commission (FCC)*

Pocket Communications, Inc. vs. Federal Communications Commission (FCC)*

*In these cases, Mr. Villecco was retained by the FCC and the Department of Justice as a technical expert on their behalf, pertaining to matters of wireless network design, optimization and operation



David K. Stern
Vice President and Co-Founder
V-COMM, L.L.C.

David Stern, Vice President and co-founder of V-COMM, has 35 years of hands-on operational and business experience in telecommunications engineering. While at V-COMM, Mr. Stern oversaw the design and implementation of several major Wireless markets in the Northeast United States, including T-Mobile - New York, Verizon Wireless, Unitel Cellular, West Virginia Wireless, South Canaan Cellular and Conestoga Wireless. In his position as Vice President, he has testified at a number of Zoning and Planning Boards in New Jersey, New York, Pennsylvania, West Virginia and Michigan, and qualified as an Expert Witness in US Federal District Court and Ocean County Superior Court, including:

- Bayonne, NJ
- Berkeley Township, NJ
- Brick, NJ
- Bridgewater Township, NJ
- Byram Township, NJ
- Carteret, NJ
- Cedar Grove, NJ
- Charlevoix, MI
- Charleston, WV
- Chatham Borough, NJ
- Chatham Township, NJ
- Clinton Township, NJ
- Cranford, NJ
- Dumont, NJ
- East Brunswick, NJ
- East Hempfield, PA
- Edgewater, NJ
- Edison, NJ
- Elizabeth, NJ
- Elmwood Park, NJ
- Englewood Cliffs, NJ
- Fairfield, NJ
- Fairlawn, NJ
- Fanwood, NJ
- Fort Lee, NJ
- Franklin Township, NJ
- Freehold Township, NJ
- Galloway Township, NJ
- Hackensack, NJ
- Haledon, NJ
- Hazlet, NJ
- Hempstead, NY
- Highland Park, NJ
- Hillsborough Township, NJ
- Hoboken, NJ
- Holmdel, NJ
- Hopatcong, NJ
- Hopewell Township, NJ
- Howell Township, NJ
- Huntington, NY
- Jackson Township, NJ
- Jersey City, NJ
- Keyport, NJ
- Kingwood Township, NJ
- Lakewood, NJ
- Lancaster, PA
- Lawrence Township, NJ
- Little Egg Harbor, NJ
- Livingston, NJ
- Lodi, NJ
- Long Branch, NJ
- Long Hill Township, NJ
- Lyndhurst, NJ
- Manchester Township, PA
- Manheim Township, PA
- Manalapan Township, NJ
- Marlboro Township, NJ
- Millstone Township, NJ
- Monroe Township, NJ
- Montgomery Township, NJ
- Montville Township, NJ
- Morris Township, NJ
- Mount Freedom, NJ
- Neptune, NJ
- Newark, NJ
- New Brunswick, NJ
- New Holland, PA
- Newton, NJ
- North Bergen, NJ
- North Brunswick, NJ
- Nutley, NJ
- Oakland, NJ
- Old Bridge, NJ
- Old Tappan, NJ
- Paramus, NJ
- Parsippany/Troy Hills, NJ
- Patterson, NJ
- Peapack/Gladstone, NJ
- Perth Amboy, NJ
- Plainsboro, NJ
- Piscataway, NJ
- Randolph Township, NJ
- Red Bank, NJ
- Rochelle Park, NJ
- Rockleigh, NJ
- Sayreville, NJ
- Shrewsbury, NJ
- South Plainfield, NJ
- South Brunswick, NJ
- Stafford Township, NJ
- Teaneck, NJ
- Tenaflly, NJ
- Tewksbury, NJ
- Trenton, NJ
- Union, NJ
- Union City, NJ
- Vernon, NJ
- Wall Township, NJ
- Wantage Township, NJ
- Washington Township, NJ
- Wayne, NJ
- West Caldwell, NJ
- West Milford, NJ
- West New York, NJ
- West Orange, NJ
- Woodbridge, NJ



Mr. Stern has a formidable background in wireless technologies including CDMA, EVDO, LTE, GSM, EDGE, 3G, TDMA, Project 25, and Wi-Fi. As an expert witness, David represented major wireless carriers, which aided in the expansion of their networks. One of his major accomplishments at V-COMM was the design and project management for Madison, NJ's Public Safety Communication Center. David was also a key in New York City's first PCS network launch. He is a member of APCO Region 8 and Region 28 Regional Planning Committees, and is dedicated to creating standards for 700 MHz Public Safety and Commercial Wireless deployments.

Prior to joining V-COMM, Mr. Stern spent seven years with Comcast Cellular Communications, Inc., where he held several engineering management positions. As Director of Strategic Projects, he was responsible for all technical aspects of Comcast's wireless data business, including implementation of the CDPD Cellular Packet Data network. He also was responsible for bringing into commercial service the Cellular Data Gateway, a circuit switched data solution.

Also, Mr. Stern was the Director of Wireless System Engineering, charged with evaluating new digital technologies, including TDMA and CDMA, for possible adoption. He represented Comcast on several industry committees pertaining to CDMA digital cellular technology and served on the Technology Committee of a wireless company on behalf of Comcast. He helped to direct Comcast's participation in the A- and B-block PCS auctions and won high praise for his recommendations regarding the company's technology deployment in the PCS markets.

At the beginning of his tenure with Comcast, Mr. Stern was Director of Engineering at Comcast, managing a staff of 40 technical personnel. He had overall responsibility for a network that included 250 cell sites, three Switching offices, four Motorola EMX-2500 switches, IS-41 connections, SS-7 interconnection to NACN, and a fiber optic and microwave "disaster-resistant" interconnect network.

Mr. Stern began his career at Motorola as a Cellular Systems Engineer, where he developed his skills in RF engineering, frequency planning, and site acquisition activities. His promotion to Program Manager-Northeast for the rapidly growing New York, New Jersey, and Philadelphia markets gave him the responsibility for coordinating all activities and communications with Motorola's cellular infrastructure customers. He directed contract preparations, equipment orders and deliveries, project implementation schedules, and engineering support services.

Mr. Stern earned a BSEE from the University of Illinois, in Urbana, and is a member of IEEE.



**NEW YORK SMSA LIMITED PARTNERSHIP d/b/a
VERIZON WIRELESS**

BREAKERS SPRING LAKE SNN SITE

**1715 OCEAN AVENUE
BELMAR, NEW JERSEY**

**RF EMISSION STUDY
JULY 1, 2020**

**Dominic C. Villecco
David K. Stern**

NJ Board of Professional Engineers
Certificate of Authorization No. 24GA28156300

Rev 1 – 7/1/2020

V-COMM, L.L.C
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609-655-1200
609-409-1927



RF Emission Study
1715 Ocean Avenue Site
Belmar, NJ
July 1, 2020

Introduction

V-COMM, L.L.C. has been commissioned by New York SMSA Limited Partnership d/b/a Verizon Wireless, to ensure that the proposed radio facility complies with Federal Communications Commission (FCC) regulations as required by the Telecommunications Act of 1996. This report will show, through the use of FCC suggested prediction methods, that the radio facility in question will be in compliance with all appropriate Federal regulations in regards to Radio Frequency (RF) Emissions. The final results of the analysis are summarized below:

OET-65 STANDARD	Controlled Environment	Uncontrolled Environment
Calculated Percentage of Maximum Emissions	0.5810 %	2.9054 %

Case Summary

The proposed radio facility will be located on an existing 36 foot Building at 1715 Ocean Avenue, Belmar, New Jersey. Verizon Wireless will operate two (2) small network node antennas from the Building utilizing LTE and NR technology. The Verizon Wireless antennas will be mounted at centerlines of 39.5 ft. and 42 ft. Above Ground Level (AGL) on the Building. Technical data considered for Verizon Wireless is listed in tables 1a through 1e below.

Table 1a – Technical Data for Verizon Wireless 5G

VERIZON WIRELESS	Sector 1
Antenna	Nokia VZ-AEUD-AEWD
Antenna Centerline (feet)	39.5
Orientation (deg. TN)	45
Downtilt (deg.)	0
ERP (Watts)	125
Frequency (GHz)	28
# Carriers	1
R/C Height Above Measurement Point (feet)	23.5



RF Emission Study
1715 Ocean Avenue Site
Belmar, NJ
July 1, 2020

Table 1b – Technical Data for Verizon Wireless 2100 MHz LTE

VERIZON WIRELESS	Sector 1	Sector 2
Antenna	Amphenol Antenna 4U4MTSP1X06F2ys0	Amphenol Antenna 4U4MTSP1X06F2ys0
Antenna Centerline (feet)	42	42
Orientation (deg. TN)	45	135
Downtilt (deg.)	1	1
ERP (Watts)	424	424
Frequency (MHz)	2110	2110
# Carriers	4	4
R/C Height Above Measurement Point (feet)	26	26

Table 1c – Technical Data for Verizon Wireless 1900 MHz LTE

VERIZON WIRELESS	Sector 1	Sector 2
Antenna	Amphenol Antenna 4U4MTSP1X06F2ys0	Amphenol Antenna 4U4MTSP1X06F2ys0
Antenna Centerline (feet)	42	42
Orientation (deg. TN)	45	135
Downtilt (deg.)	1	1
ERP (Watts)	444	444
Frequency (MHz)	1970	1970
# Carriers	4	4
R/C Height Above Measurement Point (feet)	26	26



RF Emission Study
1715 Ocean Avenue Site
Belmar, NJ
July 1, 2020

Table 1d – Technical Data for Verizon Wireless CBRS

VERIZON WIRELESS	Sector 1
Antenna	Amphenol Antenna 4U4MTSP1X06F2ys0
Antenna Centerline (feet)	42
Orientation (deg. TN)	45
Downtilt (deg.)	0
ERP (Watts)	9
Frequency (GHz)	3.5
# Carriers	4
R/C Height Above Measurement Point (feet)	26

Table 1e – Technical Data for Verizon Wireless LAA

VERIZON WIRELESS	Sector 1
Antenna	Amphenol Antenna 4U4MTSP1X06F2ys0
Antenna Centerline (feet)	42
Orientation (deg. TN)	45
Downtilt (deg.)	179
ERP (Watts)	2
Frequency (GHz)	5
# Carriers	2
R/C Height Above Measurement Point (feet)	26



RF Emission Study
1715 Ocean Avenue Site
Belmar, NJ
July 1, 2020

RF Exposure Prediction Methods

The FCC has established the following equation to calculate the cumulative power density in the far-field region.

$$S = \frac{(1.64) \times (0.64) \times NC \times ERP_{relative}}{\pi \times R^2}$$

$$R = \sqrt{V^2 + \Delta h^2}$$

$$ERP_{relative} = 10^{\left[\frac{10 \times \log(P) + \text{MaxAntennaGain} - \text{Pattern}(\alpha)}{10} \right]}$$

Where:

S = Power Density (milliwatts/cm²)

NC = The number of channel/carriers assigned to the antenna/site

ERP = The maximum Effective Radiated Power of the site (milliwatts)

ERP_{relative} = The Effective Radiated Power taking relative gain and main-beam calculations into account. (milliwatts)

R = The radial distance from antenna to mobile unit (cm)

V = The horizontal distance between site and mobile unit (cm)

Δh = The antenna height minus the measurement point (cm)

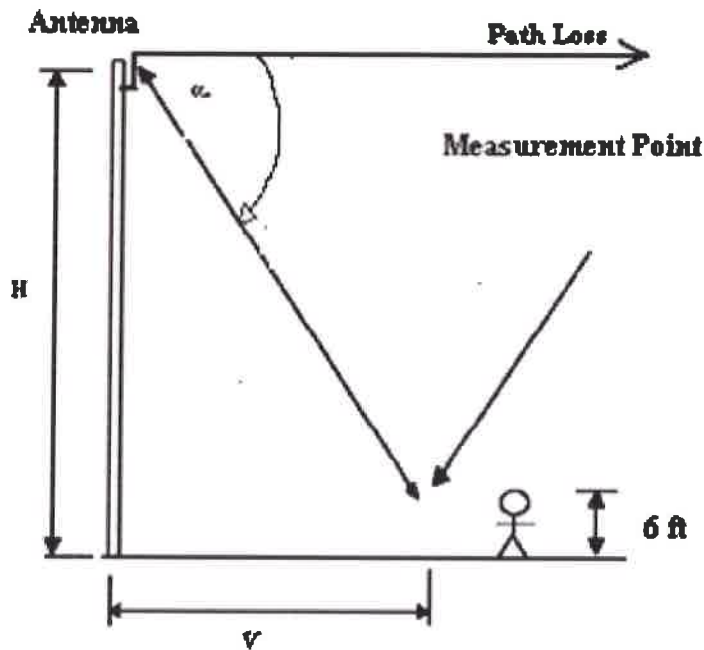
α = The elevation angle between the main beam of the antenna and any point of reference away from the antenna support structure (degrees)

Pattern (α) = The vertical antenna gain at the specified angle α (dBd)

Max Antenna Gain = The maximum antenna gain (dBd)



RF Emission Study
1715 Ocean Avenue Site
Belmar, NJ
July 1, 2020



Please note that calculations were performed using the techniques and procedures outlined in the FCC OET Bulletin No. 65 with particular emphasis on the pattern of antennas and the number of channels per sector.

Federal Regulations

The licensee planning to operate on the existing building falls under the jurisdiction of the FCC. Under the authority granted by the Telecommunications Act of 1996 (and stated in Title 47 CFR, Part 1, Section 1307 b), the FCC has mandated that all FCC licensees must be in compliance with RF Emissions guidelines, as defined in OET Bulletin 65, no later than September 1, 2000.

Additionally, as of 1997 the FCC had already made compliance with OET Bulletin 65, a prerequisite for new Common Carrier station authorization. Applicable standards for this analysis will be discussed below.



RF Emission Study
1715 Ocean Avenue Site
Belmar, NJ
July 1, 2020

State & Local Regulations

The Telecommunications Act of 1996 is the applicable Federal statute in regards to the consideration of environmental effects of RF Emissions during the siting process for wireless facilities. In regards to Common Carrier radio service, the Telecommunications Act of 1996 states the following:

“No state or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission’s regulations concerning such emissions.”

Applicable Standards

“The FCC adopted limits for Maximum Permissible Exposure” (MPE) are generally based on recommended exposure guidelines published by the National Council on Radiation Protection and Measurements (NCRP) in ‘Biological Effects and exposure Criteria for Radiofrequency Electromagnetic Fields,’ NCRP Report No. 86, Sections 17.4.1, 17.4.1.1, 17.4.2 and 17.4.3. Copyright NCRP, 1986, Bethesda, MD 20814.

In the frequency range from 100 MHz to 1500 MHz, exposure limits for power density are also generally based on the MPE limits found in Section 4.1 of, “IEEE Standard for Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz,” ANSI/IEEE C95.1-1992, Copyright 1992 by the IEEE, Inc., NY, NY 10017, and approved for use as an American National Standard by the American National Standards Institute (ANSI). (Paraphrased from FCC OET Bulletin 65). These limits and prediction methodology were reaffirmed in the latest revision of the IEEE standards, ANSI/IEEE Std C95.1-2005 Copyright 2006 by IEEE, Inc., NY, NY 10016-5997, as well as the FCC Report and Order FCC13-39, dated March 27, 2013.

The FCC has adopted 2 different sets of emission standards. The application of each standard is generally based upon the awareness and training of those people exposed to the RF emissions in question.

An uncontrolled environment implies that the people exposed to the RF emissions either have no knowledge that active transmitters are present, or that they have not been properly trained to work safely around active transmitters.

A controlled environment by definition is an environment where the only people exposed to RF emissions from a site (above those background levels that occur naturally) are aware that they are working near active transmitters, and have been fully trained in working safely around RF emissions. The uncontrolled emission standard is stricter than the controlled emission standard, as can be seen below in tables 2a and 2b.



Table 2a – Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Power Density (mw/cm ²)	Averaging Time (minutes)
0.3 – 3	100 *	6
3 – 30	(900/f ²) *	6
30 – 300	1	6
300 – 1500	f/300	6
1500 – 100000	5	6

Where: f = Frequency in MHz
* indicates Plane-wave equivalent power density

Table 2b – Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Power Density (mw/cm ²)	Averaging Time (minutes)
0.3 - 1.34	100 *	30
1.34 – 30	(180/f ²) *	30
30 – 300	0.2	30
300 – 1500	f/1500	30
1500 – 100000	1	30

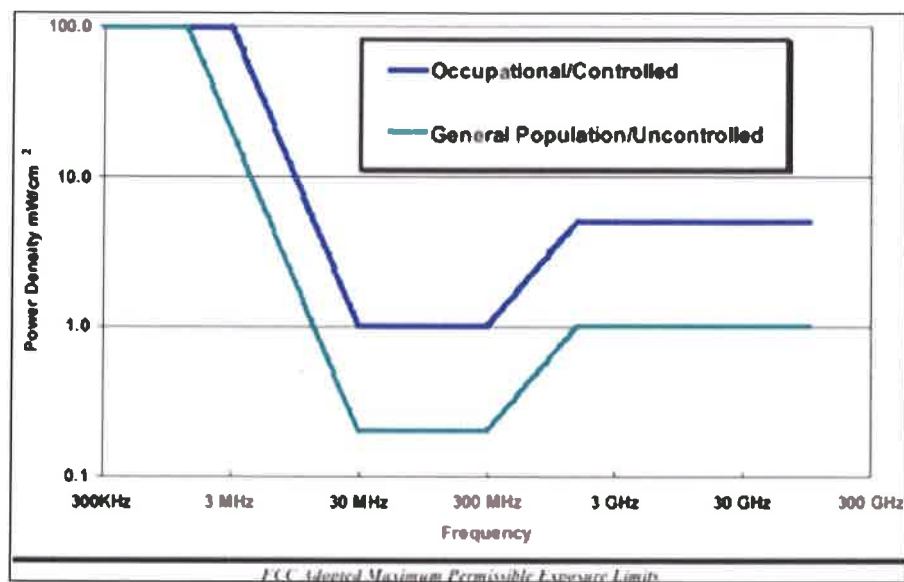
Where: f = Frequency in MHz
* indicates Plane-wave equivalent power density

In general, as specified in 47 C.F.R. 1.1307(b), as amended, when the FCC's guidelines are exceeded in an accessible area due to the emissions from multiple fixed transmitters, the following policy applies. Actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitter's contribution to the RF environment at the non-complying area exceeds 5% of the exposure limit that applies to their particular transmitter.



RF Emission Study
1715 Ocean Avenue Site
Belmar, NJ
July 1, 2020

The figure below provides a graphical illustration of both the FCC's occupational and general population MPE limits.





CONCLUSIONS

Table 3 (below) shows the calculated maximum power density levels in the environment immediately surrounding the Existing Building as measured 16 feet above ground level or equivalent to the second floor of a building. From this analysis, it can be seen that the Maximum Power Density predicted from Verizon Wireless is significantly below the FCC standard for both Controlled and Uncontrolled environments. Please note that the power densities calculated for this analysis are a worst case example, as it has been assumed that all transmitters are constantly in continuous operation and provides for expansion channels which may not be present today.

Table 3 – Individual Predicted MPE Levels & Standards

	VERIZON WIRELESS @ 39.5 FT (28 GHZ)	VERIZON WIRELESS @ 42 FT (2110 MHZ)	VERIZON WIRELESS @ 42 FT (1970 MHZ)	VERIZON WIRELESS @ 42 FT (3.5 GHZ)	VERIZON WIRELESS @ 42 FT (5 GHZ)
Max. Power Density (mw/cm²)	0.0018	0.0146	0.0121	0.0005	0.0000
MPE Limit for Power Density in a Controlled Environment (mw/cm²)	5.0000	5.0000	5.0000	5.0000	5.0000
% of MPE limit for Power Density in a Controlled Environment	0.0360 %	0.2925 %	0.2416 %	0.0101 %	0.0008 %
MPE Limit for Power Density in an Uncontrolled Environment (mw/cm²)	1.0000	1.0000	1.0000	1.0000	1.0000
% of MPE limit for Power Density in an Uncontrolled Environment	0.1800 %	1.4626 %	1.2080 %	0.0506 %	0.0042 %



By definition, the % of MPE limit for Power Density for the entire site is the sum total of the % of MPE limit for Power Density of each individual licensee on the existing building. Table 4 (below) shows the aggregate values for the current and the proposed configuration.

Table 4 - Aggregate MPE Levels and Percentages

STANDARD	Controlled Environment	Uncontrolled Environment
VERIZON WIRELESS @ 39.5 FT (28 GHZ)	0.0360 %	0.1800 %
VERIZON WIRELESS @ 42 FT (1970 MHZ)	0.2925 %	1.4626 %
VERIZON WIRELESS @ 42 FT (2110 MHZ)	0.2416 %	1.2080 %
VERIZON WIRELESS @ 42 FT (3.5 GHZ)	0.0101 %	0.0506 %
VERIZON WIRELESS @ 42 FT (5 GHZ)	0.0008 %	0.0042 %
TOTAL	0.5810 %	2.9054 %

Verizon Wireless has an ongoing program to address the occupational aspects of the rooftop antenna installations to ensure compliance to all FCC and OSHA rules and regulations, including signage and access control as required for each installation.



RF Emission Study
1715 Ocean Avenue Site
Belmar, NJ
July 1, 2020

Certification

V-COMM, L.L.C. hereby certifies that the site studied in this analysis complies with FCC mandated RF Emission MPE requirements. V-COMM, L.L.C. also certifies that the above results are based on calculations made using FCC recommended methods, with industry standard assumptions and formulas. All results shown in this report have been reviewed and are accurate within reasonable levels of engineering accuracy.

V-COMM, L.L.C. shall not be held responsible for any inaccuracies in the data supplied by Verizon Wireless. V-COMM, L.L.C. assumes that all transmitting equipment is operating within FCC Type Accepted specifications. A comprehensive field survey was not performed prior to the generation of this report. If questions arise regarding the calculations herein, V-COMM, L.L.C. recommends that a comprehensive field survey be performed to resolve any disputes.

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7/1/2020

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Date