CITY OF DOVER BOARD OF ADJUSTMENT
AGENDA
Wednesday, June 17, 2015 at 9:00 AM

City Hall Council Chambers
15 Loockerman Plaza, Dover, Delaware

ROLL CALL

APPROVAL OF AGENDA

APPROVAL OF MINUTES of April 15, 2015 Meeting

NEW BUSINESS

Applicant #V-15-08
1255 College Park Drive. Cellco Partnership dba Verizon Wireless has applied to the Board of Adjustment for a variance from the requirements of Article 4 § 4.16 of the *Zoning Ordinance* pertaining to maximum permitted building height in order to allow construction of a 158 foot telecommunications tower and associated facilities. Subject property is zoned M (Manufacturing Zone). The Tax Parcel is ED-05-067.00-02-12.06-000. The owner of record is Bay Developers Inc.

Applicant #V-15-09
615 Ridgely Street. Clara Ridgley Properties LLC has applied to the Board of Adjustment for a variance from the requirements of Article 4 § 4.16 of the *Zoning Ordinance* pertaining to maximum permitted building height and minimum required setbacks in order to allow construction of a 125 foot telecommunications tower and associated facilities. Subject property is zoned IPM (Industrial Park Manufacturing Zone). The Tax Parcel is ED-05-076.08-01-01.00-000. The owner of record is Clara Ridgley Properties LLC.

ADJOURN
29 Del.C. § 10004(e)(2)

THE AGENDA ITEMS MAY NOT BE CONSIDERED IN SEQUENCE. THIS AGENDA IS SUBJECT TO CHANGE TO INCLUDE THE ADDITION OR THE DELETION OF ITEMS, INCLUDING EXECUTIVE SESSIONS.

CITY OF DOVER
BOARD OF ADJUSTMENT MINUTES
April 15, 2015

A Regular Meeting of the City of Dover Board of Adjustment was held on Wednesday, April 15, 2015 at 9:00 A.M. with Chairman Sheth presiding. Members present were Mr. Hufnal, Colonel Ericson, Mr. Keller, Mr. Senato, and Chairman Sheth.

Staff members present were Mrs. Townshend, Mrs. Purnell, Mr. Cook and City Solicitor Nick Rodriguez.

APPROVAL OF AGENDA

Mr. Hufnal moved to approve the agenda as submitted, seconded by Mr. Senato and unanimously carried 5-0.

APPROVAL OF THE REGULAR BOARD OF ADJUSTMENT MEETING MINUTES OF MARCH 18, 2015

Mr. Keller moved to approve the meeting minutes of March 18, 2015 with the necessary correction, seconded by Mr. Hufnal and unanimously carried 5-0.

OPENING REMARKS CONCERNING DEVELOPMENT APPLICATION

Mrs. Townshend, Director of Planning and Community Development stated that the meeting would be conducted in accordance with the agenda. There is one item (new application) on the agenda under New Business. The application file will be read, and the floor will be opened for questions of the applicant by the Board and for public testimony. If the Board needs to consult the City Solicitor they will adjourn to discuss legal matters. If the applicant must leave, they can contact the Planning Office at 736-7196 to learn of the Board's decision. A formal notice of the decision will be mailed to the applicants. Approved variances expire after one year if the approved project has not commenced.

All public notice for the new application on the agenda today was completed in accordance with code requirements. The meeting agenda was posted in accordance with Freedom of Information Act requirements.

NEW BUSINESS

Applicant #V-15-07

74 Laurel Drive. Thomas Bugbee and Sherrill Brekke have applied to the Board of Adjustment for a variance from the requirements of Article 5 § 11.211 (c) of the *Zoning Ordinance* pertaining to new residential construction within the flood hazard area. They have specifically requested to build to the six (6) foot contour. Subject property is zoned R-10 (One Family Residence Zone). The Tax Parcel is ED-05-077.14-01-32.00-000. The owners of record are Thomas J. Bugbee and Sherrill L. Brekke. *Variance #V-14-05 was approved by the Board of Adjustment at its meeting of March 19, 2014. The variance expired because construction did not commence.*

Mrs. Ann Marie Townshend Exhibits for the record: Staff Report and plans submitted by the

applicant.

The legal notice was published in the Delaware State News on April 5, 2015, and the public was notified in accordance with the regulations.

Mrs. Townshend gave a brief overview of the application.

Chairman Sheth questioned if there was any member present who had a conflict of interest and there was none.

Representative: Mr. Thomas Bugbee & Sherrill Brekke

Mr. Thomas Bugbee and Ms. Sherrill Brekke were sworn in by Mr. Rodriguez.

Responding to Chairman Sheth's question whether there were any changes since the last time, Mr. Bugbee stated no. They did not complete everything necessary in order to start construction which included selling their current house. They have a builder and the process took longer than anticipated.

Responding to Mr. Keller's question whether there was a projected start date and if the construction would start this year, Mr. Bugbee stated that he did not have a projected start date, but the project would start this year. They are still in the process of selling their home. They had their home up for sale, but it did not sell. It was taken off the market and they had plans to rent the home. Upon going to CNB Bank they were not able to get that type of financing and therefore had to put the home back up for sale through a realtor. The delay is due to the applicant's principal home not being sold.

Mr. Keller questioned Exhibit D that was included in the packet if the request was to allow the construction to take place back to the 6 foot contour line, Mrs. Townshend concurred.

Mr. Keller questioned the variance application exhibit, which cites as though there is a Step 2 to reduce the 25 foot yard setback. He recalled that there were questions regarding the front yard setback as well as the width of the roadway, and that the 25 foot yard setback was not an issue with the allowance of the house being allowed to be built farther from the roadway. While included in the packet, the application does not relate to the 25 foot yard setback issue.

Mrs. Townshend stated that these are the materials that had been submitted with previous applications. There are Deed Restrictions with a 35 foot yard setback, but that was relaxed to allow the 25 foot yard setback. The proposed construction would not encroach into the 25 foot yard setback. It is truly the flood plain issue that is being reviewed by the Board.

Mr. Keller also stated that on Exhibit B that was submitted by Scott Engineering and using their scale it appears that this is a projected possible site for the dwelling itself, that it is at the 25 foot line and not encroaching closer than that, Mrs. Townshend concurred.

Chairman Sheth questioned if there was any member present who had a conflict of interest with the case and there was none.

Chairman Sheth opened a public hearing and after seeing no one wishing to speak closed the public hearing.

Chairman Sheth questioned if there was any additional correspondence for the record. There was none.

Chairman Sheth asked if there were any questions.

Colonel Ericson moved to approve application V-15-07 based upon all of the previous reasons that have been presented and in light of the applicant delay to reapprove the variance to include Staff recommendations and Advisory Comments in full to the applicant. Mr. Senato seconded the motion and unanimously carried 5-0.

Mr. Senato moved to adjourn the meeting, seconded by Mr. Keller and unanimously carried 5-0.

Meeting adjourned at 9:18 A.M.

Sincerely,

Maretta Savage-Purnell
Secretary

City of Dover
Board of Adjustment

June 17, 2015

V-15-08

Location:	1255 College Park Drive
Applicant/Owner:	Cellco Partnership dba Verizon Wireless Bay Developers Inc. (Owner)
Tax Parcel:	ED-05-067.00-02-12.06-000
Application Date:	May 13, 2015
Present Zoning:	M (Manufacturing Zone)
Present Use:	Vacant Lot
Proposed Use:	Telecommunications monopole and associated facilities
Reviewed By:	Bill Cook, Planner I
Variance Type:	Area Variance
Variances Requested:	Allow a structure to exceed the maximum height of 35 feet. Allow for an additional 123 feet in height.

Project Description
The applicant is requesting an area variance from the requirements of Article 4 § 4.16 of the *Zoning Ordinance* Zoning Bulk and Parking Regulations pertaining to the maximum permitted building height in the M (Manufacturing Zone). Specifically they are requesting a variance to exceed the maximum height requirement by 123 feet in order to allow construction of a 158 foot telecommunications tower and associated facilities.

Adjacent Zoning and Land Use
The 1.05 acre property is located at 1255 College Park Drive and is currently vacant. College Park Drive is a dead-end street that extends approximately 1,600 feet from College Road, located between the railroad tracks and McKee Road in a small industrial park known as “College

Business Park." The subject property and five adjacent commercial and light industrial properties are zoned M (Manufacturing Zone).

Along the northeast property line the subject property abuts the railroad right of way. Along the southeast (rear) property line the property abuts property zoned CPO (Commercial Professional Office). The properties south on College Park Drive, and across the street are zoned M. Properties closer to the intersection of College Park Drive and College Road are zoned CPO (Commercial Professional Office) and IO (Institutional/Office Zone).

A Zoning Map exhibit (Exhibit B) prepared by staff is found in the Appendix of this report showing the subject property location and surrounding zoning.

Code Citations
Bulk and parking regulations, Article 4 § 4.16 for M (Manufacturing Zone) are as follows:

For All Permitted Uses:	**M (Manufacturing)**
Lot area	½ acre
Lot width (ft.)	100
Lot depth (ft.)	150
Front yard (ft.)	40
Side yard (ft.)	20
Rear yard (ft.)	20
Side or rear yard which adjoins a residential zone (ft.)	50
Off-street parking space:	
Per 800 sq. ft. of floor area	1
Per employee, per largest working shift (if greater than the requirement under the floor area calculation)	1
Maximum permitted:	
Building height	
Stories	2
Feet	35
Floor area ratio	0.5

Applicant's Proposed Project

The applicant has submitted eight (8) pages illustrating the proposed plans for the site, found in Exhibit C attached. References are made to the sheet numbers on the plans.

The overall site plan, shown on Sheet Z-1 identifies the monopole and compound location placed in the right rear corner of the property relative to the street. The compound is accessed via a driveway proposed to connect with the cul-de-sac and wrap around the left side of the property and across the rear. An elevation view of the compound and monopole height to scale is shown on Sheet Z-3.

The other sheets are available to the Board as general information. Any Site Development Plan will be subject to procedures specified in *Zoning Ordinance* Article 10 §2, and Code Interpretation Memo #4 of January 26, 1999 relating to telecommunications antennae.

Exceptional Practical Difficulties Tests

Zoning Ordinance Article 9 §2 dictates the specific powers and duties of the Board of Adjustment with regard to granting variances. Specifically, the Board must determine:

> 2.1 Variance – The board shall have the authority to authorize variances from provisions of the Zoning Ordinance that are not contrary to public interest where the board determines that a literal interpretation of the Zoning Ordinance would result in undue hardship or exceptional practical difficulties to the applicant. In granting variances, the board shall determine that the spirit of the Zoning Ordinance is observed and substantial justice is done.
>
> 2.11 Area Variance. A variance shall be considered an area variance if it relates to bulk standards, signage regulations, and other provisions of the Zoning Ordinance that address lot layout, buffers, and dimensions. In considering a request for an area variance, the board shall evaluate the following criteria and document them in their findings of fact:
>
> > (a) the nature of the zone in which the property lies;
> > (b) the character of the immediate vicinity and the contained uses therein;
> > (c) whether, if the restriction upon the applicant's property were removed, such removal would seriously affect neighboring properties and uses; and
> > (d) whether, if the restriction is not removed, the restriction would create unnecessary hardship or exceptional practical difficulty for the owner in his efforts to make normal improvements in the character of that use of the property that is a permitted use under the provisions of the Zoning Ordinance.

Review of Application
As part of the application, the applicant was asked to summarize how the requested variance relates to the criteria.

1. The nature of the zone in which the property lies.

   Applicant Responses:
   "The subject property is typical of other properties in the Manufacturing Zoning District."

   Staff Response:
   The M (Manufacturing Zone) permits manufacturing, processing, and handling of materials, laboratories, storage, contractors yards and public utilities uses. Nearby businesses include a medical lab, electrical supply company, and businesses that serve other businesses.

2. The character of the immediate vicinity and the contained uses therein.

   Applicant Responses:
   "The subject property is wooded and unimproved. The subject property is located at the end of a cul-de-sac road in a small industrial park, adjacent to railroad tracks and high tension wires."

   Staff Response:
   Staff concurs with applicant response. The surrounding businesses are as noted in response #1.

3. Whether, if the restriction upon the applicant's property were removed, such removal would seriously affect neighboring properties and uses.

   Applicant Responses:
   "The construction of a 158' monopole would not adversely affect neighboring properties and users, because the subject property is within a small industrial park in the Manufacturing Zoning District and adjacent to a railroad line and high tension wires. The proposed monopole will benefit neighboring properties and users, by improving telecommunications service."

   Staff Response:
   The additional 123 feet in height would not impact surrounding uses. The location and distance away from College Road and location near the railroad corridor may lessen the noticeability of the structure. The proposed location as noted on the plans (Exhibit C: Sheet Z-1) at the rear of the site behind existing trees and vegetation provides some degree of visual screening of the compound structures from selected neighboring

properties, but it would be visible to others since the adjoining properties are grassy and cleared where they meet the corner of the subject property.

4. Whether, if the restriction is not removed, the restriction would create unnecessary hardship or exceptional practical difficulty for the owner in his efforts to make normal improvements in the character of that use of the property that is a permitted use under the provisions of the *Zoning Ordinance*.

   Applicant Responses:
   "The imposition of a 35' height restriction would result in exceptional practical difficulty to Verizon Wireless. Verizon would not be able to satisfy its service objectives and fill significant gaps in coverage and/or capacity if unable to construct a 158' telecommunications monopole at the subject property. A 35' tall monopole would not provide adequate coverage or even have the ability to communicate with the rest of the Applicant's telecommunications network. Telecommunications uses are permitted as utility uses in the Manufacturing Zoning District."

   Staff Response:
   A Code Interpretation Memo of January 26, 1999 considers telecommunications antennae and associated compounds as public utility uses, and the use is permitted in all zones. Such antennae are considered as a "building" and subject to height requirements for the zone.

   Staff cannot comment on the issue of service capacity, but notes that the proposed site is less than one mile from North DuPont Highway frontage near DSU, Dover International Speedway, and Dover Mall, all sites where large gatherings occur which likely increase demand for service. Height requirements in other zones vary, but a variance for height would likely be required in most cases unless the lot was very large. The denial of a variance may create degradation in service for Verizon Wireless customers in the area, which could be an exceptional practical difficulty if the company were unable to do adequate business in the area. The applicant has stated that an antenna at the 35 foot height limit is technically unfeasible at providing service.

Variance Recommendations:

Staff recommends approval of the area variance for reasons as follows:

- The applicant has demonstrated exceptional practical difficulty as a monopole that complied with the 35 foot height maximum would reduce the effectiveness of services provided and the monopole is needed to provide adequate services.
- The placement of a monopole and associated compound is in keeping with the surrounding mix of commercial and industrial uses.
- The placement of a monopole and associated compound is in keeping with the permitted uses of the M zone as public utility infrastructure, and in keeping with past practice and code interpretation.

Advisory Comments:

- Improvements to the property are subject to Conditional Use Site Development Plan approval processes and appropriate permits from the City of Dover Planning Department and other agencies.
- Variances become null and void if work has not commenced within one (1) year of the date the variance was granted. At present there is no provision for extension of variance approvals.

GUIDE TO ATTACHMENTS

Exhibit	Description/Author	# Pages
A	Board of Adjustment Application (Applicant)	1
B	Zoning Exhibit Map (Staff)	1
C	Site Plans: "DOV- Silver Lake" (Applicant) Pages cited in Report: "Z-1", and "Z-3"	8

City of Dover, DE
Department of Planning and Inspections
P.O. Box 475, Dover, Delaware 19903
(302) 736-7010 Fax: (302) 736-4217
www.cityofdover.com

X Area Variance
_____ Use Variance
_____ Appeal
_____ Pre-App Date

Board of Adjustment Application

Application Information

Property Address: 1255 College Park Drive, Dover, DE

Tax Parcel Number: 2-05-067 000-02-1206-000

Owner Name: Cellco Partnership d/b/a Verizon Wireless

Property Zoning: M-Manufacturing

Variance (s) Requested: Area Variance from Zoning Code Article 4, Section 4.16, in the area and bulk table for Column "M", relating to a maximum permitted height of 35', to allow for the construction of a 158' telecommunications monopole

*Provide eight (8) copies of any survey, drawings, photos, site plan, etc. that may help support your application, and your response to the criteria. The criteria for a use variance and appeal are on the back of the form.

Area Variance

An area variance shall be evaluated on the following criteria: **Please state how your request meets each of these four (4) criteria.**

1. The nature of the zone in which the property lies;
2. The character of the immediate vicinity and the contained uses therein;
3. Whether, if the restriction upon the applicant's property were removed, such removal would seriously affect neighboring properties and uses; and
4. Whether, if the restriction is not removed, the restriction would create unnecessary hardship or exceptional practical difficulty for the owner in his efforts to make normal improvements in the character of that use of the property that is permitted uses under the provisions of the zoning ordinance.

Signature

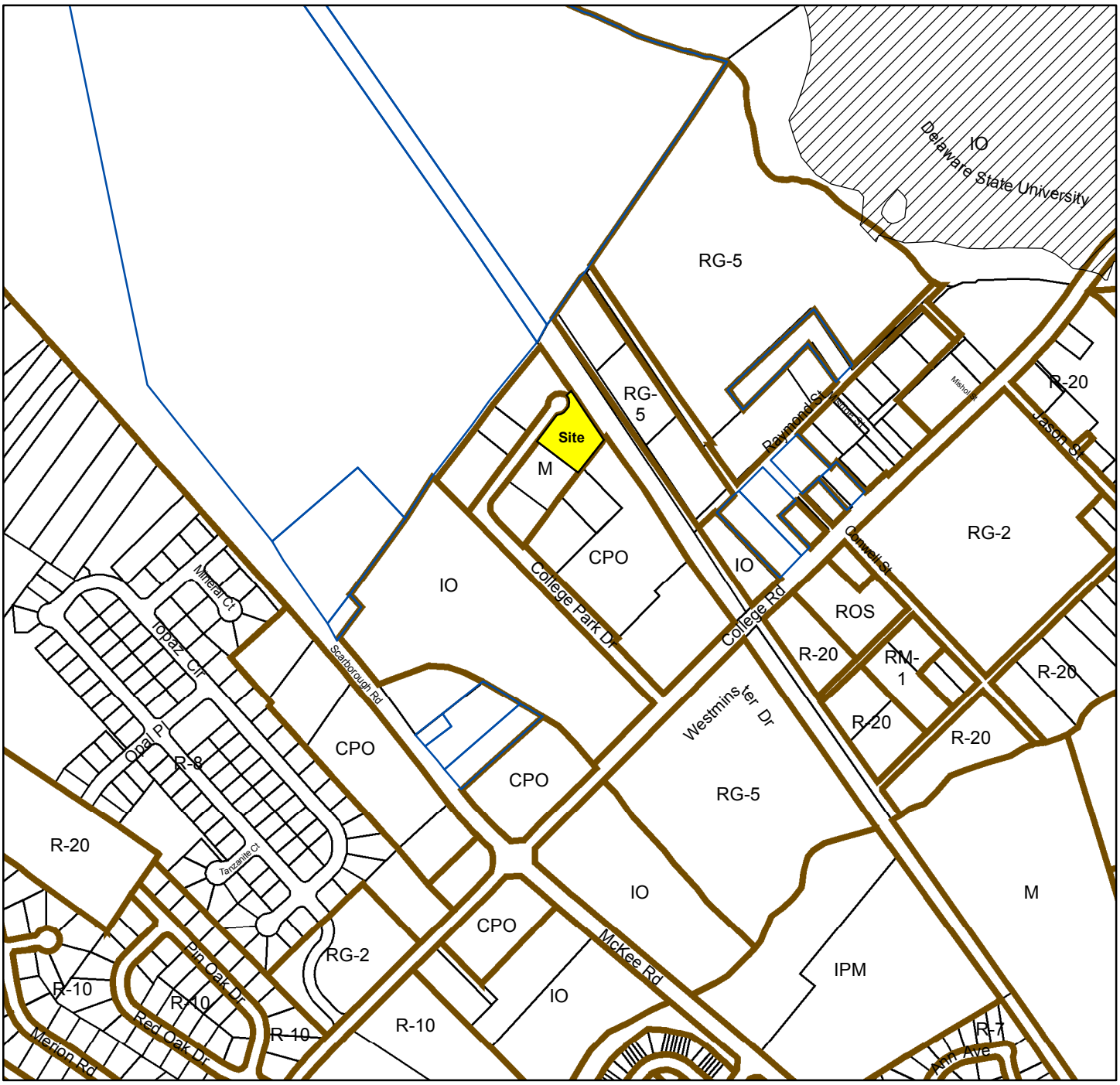
I Jonathan A. Jordan, Esquire do affirm that I am authorized to file this application by the property owner on which the variance is sought and that all the information provided in this application is accurate to the best of my knowledge and belief.

Signature | Attorney (Title) | 5/13/15 (Date)

City of Dover

Department of Planning & Inspections

Application No.: V-15-08



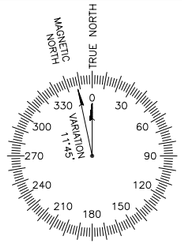
Application #: V-15-08
Address: 1255 College Park Dr
Parcel ID: ED-05-067.00-02-12.06-000
Variance Type: Area Variance
Subject Parcel Zoning: M
Owners: Bay Developers Inc.
Date: 6/9/2015

Legend

- Subject Property
- Zoning
- Dover Parcels
- Kent County Parcels

N
W
E
S

0 375 750 1,500 Feet



MAGNETIC DECLINATION
DATE: 04-01-15

CELLCO PARTNERSHIP d/b/a

verizonwireless

SITE NAME:

DOV-SILVER LAKE

NEW BUILD

1255 COLLEGE PARK DRIVE
DOVER, DELAWARE 19904

NOTE TO GENERAL CONTRACTOR

NO WORK IS TO BE PERFORMED ON THIS SITE WITHOUT REVIEW OF THE APPROVED STRUCTURAL ANALYSIS. IF ANY DISCREPANCIES ARE FOUND THE GENERAL CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING. AT NO TIME WILL ANY ADDITIONAL ANTENNAS BE INSTALLED WITHOUT WRITTEN CONSENT FROM ENGINEER.

SITE INFORMATION

SITE NAME:	DOV-SILVER LAKE
SITE ADDRESS:	1255 COLLEGE PARK DRIVE DOVER, DELAWARE 19904
JURISDICTION:	CITY OF DOVER KENT COUNTY, DELAWARE
ZONING:	M - MANUFACTURING DISTRICT
APN:	2-05-06700-02-1206-000
PARCEL SIZE / COMPOUND SIZE:	43,560 S.F. / 1,600 S.F.
SITE COORDINATES:	N 39° 10' 51" (NAD 83) W 75° 33' 09" (NAD 83)
GROUND ELEVATION:	44.0' (NAVD 88)
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	158'-0"± AGL (TOP OF LIGHTNING ROD)
ANTENNA RAD CENTER:	150'-0"± AGL
LANDLORD NAME:	BAY DEVELOPERS, INC.
LANDLORD ADDRESS:	200 WESTON DRIVE DOVER, DELAWARE 19904
APPLICANT:	CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS 5175 CAMPUS DRIVE PLYMOUTH MEETING, PENNSYLVANIA 19462

CODE ANALYSIS

BUILDING CODE:	IBC 2012
ELECTRICAL CODE:	NEC 2011
FIRE SAFETY CODE:	IFC 2012
USE GROUP:	U (UTILITY)
CONSTRUCTION TYPE:	IIB

PROJECT DESCRIPTION

1. NEW EQUIPMENT SHELTER, GENERATOR AND MONOPOLE TO BE INSTALLED IN PROPOSED LEASE AREA.
2. NEW ANTENNAS AND NEW ANTENNA PLATFORM TO BE INSTALLED ON THE NEW 150'-0" MONOPOLE.
3. TWO (2) HYBRID CABLES TO BE INSTALLED ON THE INTERIOR OF THE NEW MONOPOLE AND ALONG NEW ICE BRIDGE.
4. NEW ELECTRICAL SERVICE TO BE INSTALLED TO SHELTER.
5. NEW TELEPHONE SERVICE TO BE INSTALLED TO SHELTER.



AREA MAP

DOVER, DELAWARE
SCALE: 1" = 2000'-0"

DIRECTIONS:

HEADING FROM 5175 CAMPUS DRIVE: DEPART CAMPUS DRIVE TOWARD BUTLER PIKE. TURN LEFT ONTO COLD POINT HILL ROAD. KEEP STRAIGHT ONTO BUTLER PIKE. TURN RIGHT ONTO PLYMOUTH ROAD. TAKE RAMP LEFT FOR I-476 SOUTH TOWARD VALLEY FORGE / CHESTER. TAKE RAMP RIGHT FOR I-95 SOUTH TOWARD CHESTER. AT EXIT 11, TAKE RAMP RIGHT FOR I-495 SOUTH TOWARD BALTIMORE / PORT OF WILMINGTON. KEEP STRAIGHT ONTO I-95 S / US-202 SOUTH. AT EXIT 4A, TAKE RAMP RIGHT FOR SR-7 SOUTH / SR-1 SOUTH TOWARD DOVER / BEACHES. BEAR RIGHT ONTO US-13 SOUTH / SR-1 SOUTH / SOUTH DUPONT HIGHWAY. KEEP STRAIGHT ONTO SR-1 SOUTH. AT EXIT 104, TAKE RAMP RIGHT FOR SCARBOROUGH RD. TOWARD NORTH DOVER. BEAR LEFT ONTO SR-15 / MCKEE ROAD. TURN LEFT ONTO COLLEGE ROAD. TURN LEFT ONTO COLLEGE PARK DRIVE. SITE IS ON THE RIGHT AT 1255 COLLEGE PARK DRIVE.

SHEET INDEX

DRAWING SHEET	DRAWING TITLE
T-1	TITLE SHEET
Z-1	SITE PLAN
Z-2	COMPOUND PLAN
Z-3	ELEVATION
Z-4	SHELTER, FOUNDATION DETAILS & NOTES
Z-5	CONSTRUCTION DETAILS
Z-6	GENERATOR & DETAILS
Z-7	ANTENNA PLAN & DETAILS

PROJECT CONTACT INFO

VERIZON WIRELESS ENGINEER:	TARA GOSNELL
VERIZON WIRELESS RF ENGINEER:	LELAND BROWN
VERIZON WIRELESS OPERATIONS MANAGER:	BRAD WUNDERLY
VERIZON WIRELESS REAL ESTATE CONTACT:	JOHN HERRIOTT
VERIZON WIRELESS AE CONTACT:	JASON PERTUIT
POWER CONTACT:	CITY OF DOVER
TELCO CONTACT:	VERIZON

CELLCO PARTNERSHIP d/b/a

verizonwireless

5175 CAMPUS DRIVE
PLYMOUTH MEETING,
PENNSYLVANIA 19462

advantage engineers

7070 SAMUEL MORSE DRIVE, SUITE 150
COLUMBIA, MARYLAND 21046
PHONE: (443) 367-0003
FAX: (443) 367-3548

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2		
1	05-12-15	ISSUED FOR ZONING
0	05-08-15	ISSUED FOR 90% REVIEW (ZDs)

DRAWN BY:	EV
CHECKED BY:	JP
SCALE:	NOTED
JOB NO:	M130533.00

DRAWING TITLE:

TITLE SHEET

DRAWING SHEET:

T-1

SHEET NUMBER:

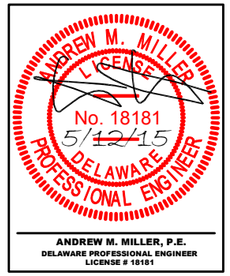
1 OF 8

SITE INFORMATION:

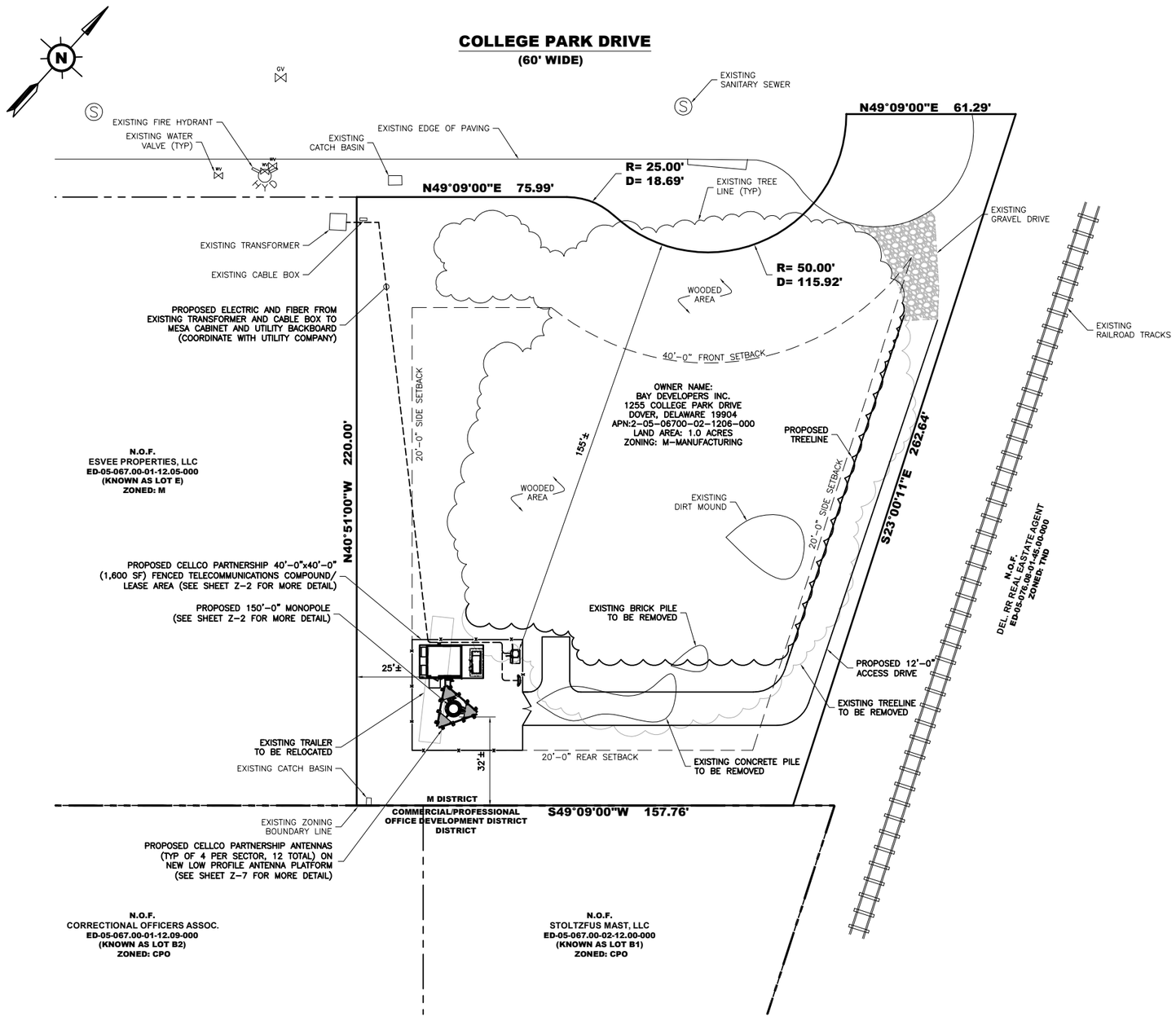
SITE NAME:
DOV-SILVER LAKE

SITE ADDRESS:
1255 COLLEGE PARK DRIVE
DOVER, DELAWARE 19904

JURISDICTION:
CITY OF DOVER
KENT COUNTY, DELAWARE



ANDREW M. MILLER, P.E.
DELAWARE PROFESSIONAL ENGINEER
LICENSE # 18181



1 Z-1 **SITE PLAN**
SCALE: 1" = 20'-0"

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20ft.

(SCALE BASED ON FULL SIZE 24"x36" SHEETS ONLY)
(DO NOT USE SCALE ON OTHER SIZED DRAWINGS)

BULK REQUIREMENTS

ZONING DISTRICT:	M - MANUFACTURING DISTRICT		
DESCRIPTION	**REQUIRED**	**EXISTING**	**PROPOSED**
MIN. LOT AREA:	0.5 ACRES	1 ACRE	NO CHANGE
MIN. LOT WIDTH:	100 FT	157.76± FT	NO CHANGE
MIN. LOT DEPTH:	150 FT	220.00± FT	NO CHANGE
MIN. FRONT YARD:	40 FT	N/A	155± FT
MIN. REAR YARD:	20 FT	N/A	32± FT
MIN. SIDE YARD:	20 FT	N/A	25± FT
MIN. BUFFER TO RESIDENTIAL PROPERTY:	50 FT	** 115± FT	NO CHANGE
MAX. BUILDING HEIGHT:	35 FT	0 FT	* 158 FT

* VARIANCE REQUESTED (TOP OF LIGHTING ROD)
** RESIDENTIAL ZONE ON OPPOSITE SIDE OF RAILROAD R.O.W. (115'±)

GENERAL NOTES

1. THIS PLAN WAS PREPARED USING A DRAWING ENTITLED "BOUNDARY PLAN & TOPOGRAPIC SURVEY" BY CLANCY & ASSOCIATES, INC., FROM NATIONAL PARK, NEW JERSEY, DATED 01/15/15 AND SHOULD NOT BE CONSTRUED AS AN ACCURATE SURVEY.
2. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF. THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
3. NO NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
4. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. (THERE IS NO HANDICAP ACCESS REQUIRED).
5. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
6. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 1988).
7. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE STREET SIGNS OF ANY TYPE.
8. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.
9. ACCORDING TO THE F.I.R.M. COMMUNITY PANEL #10001C0166H, DATED 05/05/2003, THE PROPOSED SITE IS NOT IN A FLOOD PLAIN.

811 Know what's **below.** **Call** before you dig.
PROTECT YOURSELF, GIVE THREE WORKING DAYS NOTICE
THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERE TO APPURTENANT.

CELLCO PARTNERSHIP d/b/a
verizonwireless
5175 CAMPUS DRIVE
PLYMOUTH MEETING,
PENNSYLVANIA 19462

advantage engineers
7070 SAMUEL MORSE DRIVE, SUITE 150
COLUMBIA, MARYLAND 21046
PHONE: (443) 367-0003
FAX: (443) 367-3548

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
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3		
2		
1	05-12-15	ISSUED FOR ZONING
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DRAWN BY:	EV
CHECKED BY:	JP
SCALE:	NOTED
JOB NO:	M130533.00

DRAWING TITLE:
SITE PLAN

DRAWING SHEET:
Z-1

SHEET NUMBER:
2 OF 8

SITE INFORMATION:

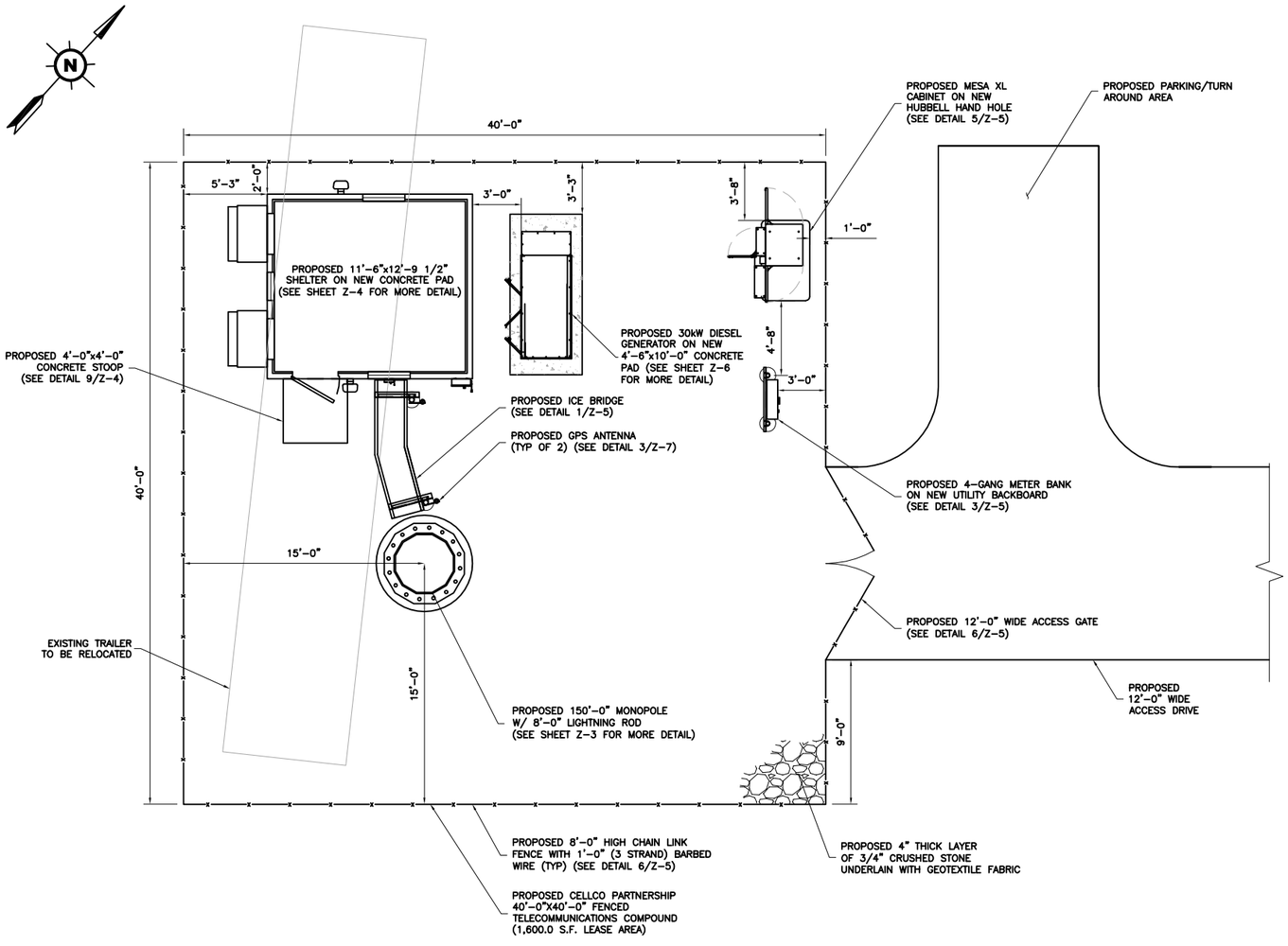
SITE NAME:
DOV-SILVER LAKE

SITE ADDRESS:
1255 COLLEGE PARK DRIVE
DOVER, DELAWARE 19904

JURISDICTION:
CITY OF DOVER
KENT COUNTY, DELAWARE

ANDREW M. MILLER LICENSE No. 18181 5/12/15 DELAWARE PROFESSIONAL ENGINEER

ANDREW M. MILLER, P.E.
DELAWARE PROFESSIONAL ENGINEER
LICENSE # 18181



1 / Z-2 **COMPOUND PLAN**
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)
1/4 inch = 1 ft.

(SCALE BASED ON FULL SIZE 24"x36" SHEETS ONLY)
(DO NOT USE SCALE ON OTHER SIZED DRAWINGS)

GENERAL NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANIES OR OTHER PUBLIC AUTHORITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
5. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. THIS PLAN WAS PREPARED USING A DRAWING ENTITLED "BOUNDARY PLAN & TOPOGRAPIC SURVEY" BY CLANCY & ASSOCIATES, INC., FROM NATIONAL PARK, NEW JERSEY, DATED 01/15/15 AND SHOULD NOT BE CONSTRUED AS AN ACCURATE SURVEY.
8. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF. THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
9. NO NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
10. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (THERE IS NO HANDICAP ACCESS REQUIRED).
11. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
12. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.
13. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
14. TOWER, MOUNTS AND ANTENNAS ARE DESIGNED TO MEET ANSI/TIA-222-G-1 AS PER IBC 2012 REQUIREMENTS.
15. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
16. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
17. IF ANY PIPING EXISTS BENEATH THE SITE AREA, CONTRACTOR MUST LOCATE IT AND CONTACT OWNERS REPRESENTATIVE.
18. CONSTRUCTION TO COMMENCE UPON COMPLETION OF A PASSING STRUCTURAL ANALYSIS. STRUCTURAL ANALYSIS TO BE PERFORMED BY OTHERS.

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

PROTECT YOURSELF, GIVE THREE WORKING DAYS NOTICE

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CELLCO PARTNERSHIP d/b/a
verizonwireless
5175 CAMPUS DRIVE
PLYMOUTH MEETING,
PENNSYLVANIA 19462

advantage engineers
7070 SAMUEL MORSE DRIVE, SUITE 150
COLUMBIA, MARYLAND 21046
PHONE: (443) 367-0003
FAX: (443) 367-3548

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2		
1	05-12-15	ISSUED FOR ZONING
0	05-08-15	ISSUED FOR 90% REVIEW (ZDs)

DRAWN BY:	EV
CHECKED BY:	JP
SCALE:	NOTED
JOB NO:	M130533.00

DRAWING TITLE:
COMPOUND PLAN

DRAWING SHEET:
Z-2

SHEET NUMBER:
3 OF 8

SITE INFORMATION:

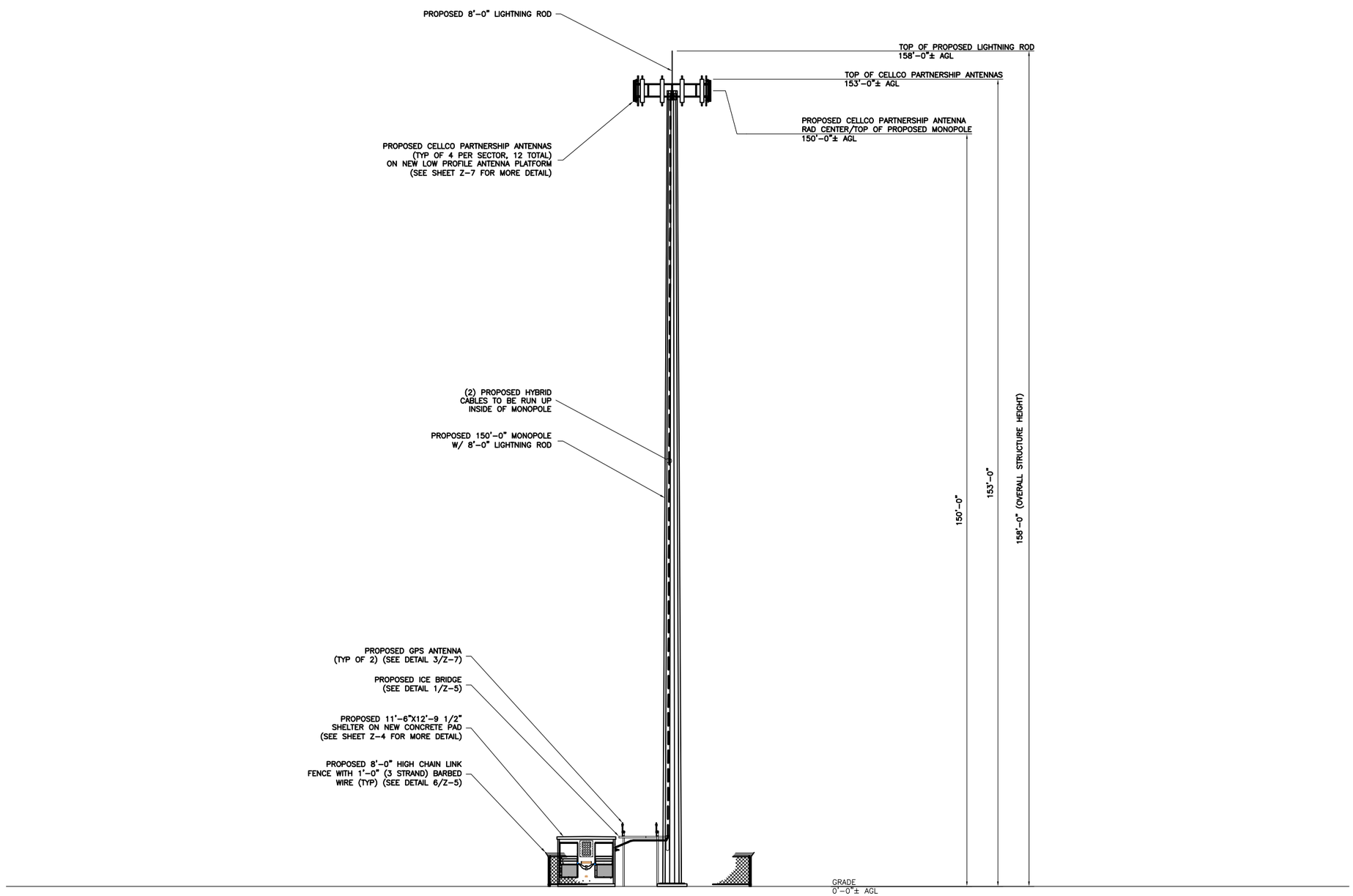
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1 / Z-3 **ELEVATION**
SCALE: 1" = 10'-0"

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10ft.
(SCALE BASED ON FULL SIZE 24"x36" SHEETS ONLY)
(DO NOT USE SCALE ON OTHER SIZED DRAWINGS)

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SCALE:	NOTED
JOB NO:	M130533.00

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ELEVATION

DRAWING SHEET:

Z-3

SHEET NUMBER:

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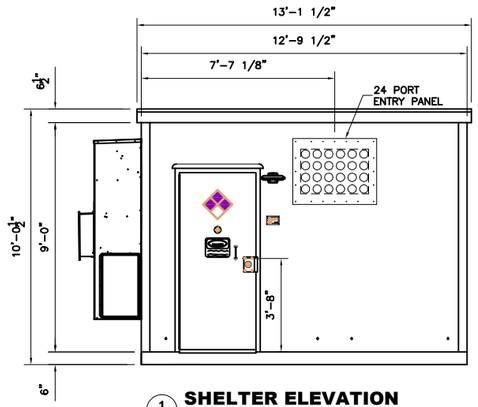
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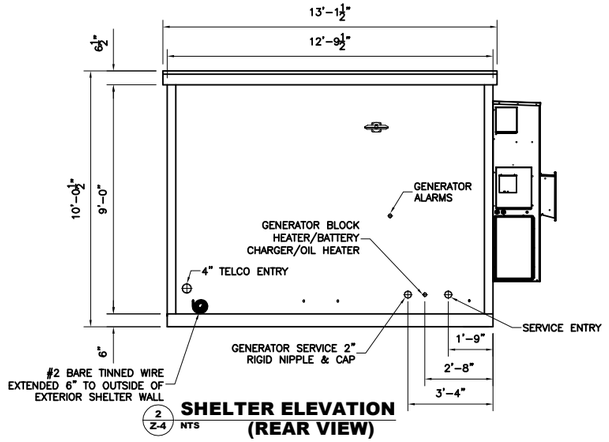
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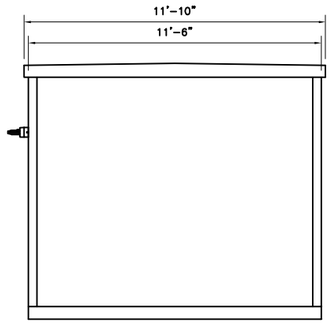
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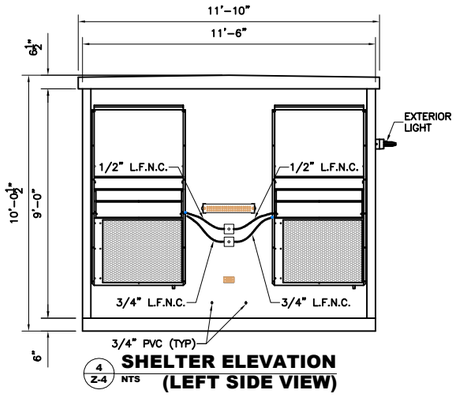
1 Z-4 NTS **SHELTER ELEVATION (FRONT VIEW)**



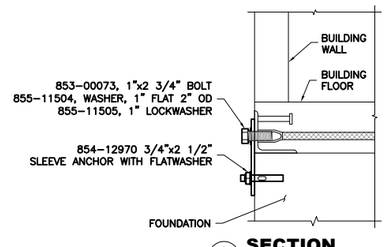
2 Z-4 NTS **SHELTER ELEVATION (REAR VIEW)**



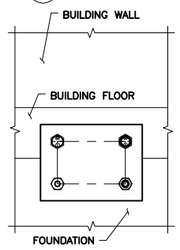
3 Z-4 NTS **SHELTER ELEVATION (RIGHT SIDE VIEW)**



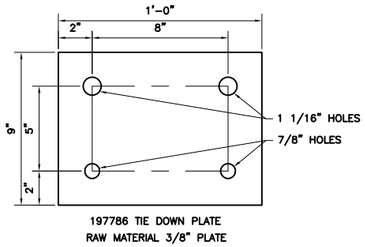
4 Z-4 NTS **SHELTER ELEVATION (LEFT SIDE VIEW)**



6 Z-4 NTS **SECTION**

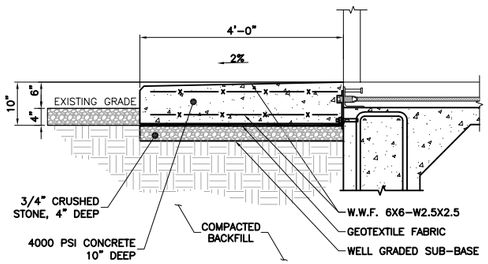


7 Z-4 NTS **SECTION**

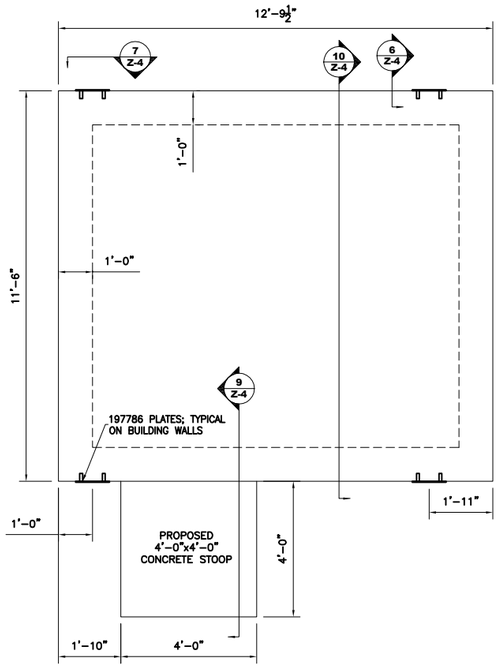


197786 TIE DOWN PLATE
RAW MATERIAL 3/8" PLATE

8 Z-4 NTS **TIE DOWN PLATE DETAIL**

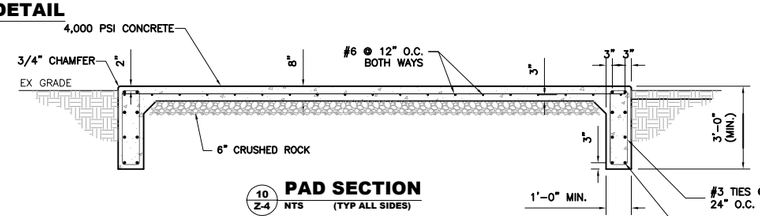


9 Z-4 NTS **CONCRETE STOOP DETAIL**



5 Z-4 NTS **FOUNDATION PLAN**

NOTE: VERIFY ACTUAL SIZE OF CONCRETE PAD WITH SHELTER MANUFACTURER'S SPECIFICATIONS.



10 Z-4 NTS (TYP ALL SIDES) **PAD SECTION**

NOTES

1. ALL FILL/BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557).
2. ALL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH (FC') OF 4000 PSI. CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACI 318-11 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-11). REINFORCING STEEL: ASTM A615, GRADE 60, WELDED WIRE FABRIC: ASTM A185. ALL CONCRETE EXPOSED TO THE WEATHER SHALL CONTAIN AN AIR ENTRAINING ADMIXTURE AT A RATE THAT SHALL RESULT IN AN AIR CONTENT OF 6% +\- 1%.
3. PROVIDE 3'-0" #2 AWG COPPER PIGTAIL CAD-WELDED TO LONGEST REBAR MEMBER STUBBED OUT 6" BELOW FINISHED GRADE FOR CONNECTION TO ELECTRICAL GROUNDING SYSTEM.

FOUNDATION NOTES:

1. DESIGN INFORMATION AND GENERAL REQUIREMENTS

1.1 CODES

a. DESIGN CONFORMS TO INTERNATIONAL BUILDING CODE IBC 2012.

b. AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 318-11.

2. EARTHWORK

2.1 FOUNDATIONS

a. FOUNDATIONS HAVE BEEN DESIGNED TO BEAR ON (UNDISTURBED RESIDUAL SOILS/COMPACTED STRUCTURAL FILL), CAPABLE OF SAFELY SUPPORTING A NET ALLOWABLE BEARING PRESSURE OF 2000 PSF. IF FOUNDATION CONDITIONS PROVE UNACCEPTABLE AT ELEVATIONS SHOWN, EXCAVATION SHALL BE CARRIED DEEPER AND SHALL BE BACKFILLED WITH LEAN CONCRETE TO PLAN FOOTING BOTTOM, OR REDESIGN OF FOUNDATIONS WILL BE REQUIRED AT THE DIRECTION OF THE ENGINEER.

b. DESIGN, FURNISH AND INSTALL ALL TEMPORARY SHEETING, SHORING AND DRAINAGE NECESSARY TO MAINTAIN THE EXCAVATION AND PROTECT SURROUNDING STRUCTURES AND UTILITIES.

c. THOROUGHLY COMPACT ALL BOTTOM OF FOOTINGS PRIOR TO PLACING ANY CONCRETE.

3. CONCRETE

3.1 FORMWORK

a. CONCRETE CONSTRUCTION SHALL CONFORM TO "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS," (ACI 301-89).

b. FORMWORK SHALL CONFORM TO ACI 301-89 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS."

3.2 REINFORCEMENT

a. REINFORCING STEEL ASTM A615, GRADE 60. WELDED WIRE ASTM A185 (FLAT SHEET). LAPS 40 BAR DIAMETERS UNLESS NOTED. BARS SHALL BE SECURELY HELD IN ACCURATE POSITION BY SUITABLE ACCESSORIES, TIE BARS, SUPPORT BARS, ETC. HOOK LENGTHS SHALL BE 12 BAR DIAMETERS.

b. CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED.
FOOTINGS & SLABS CAST AGAINST GROUND . . . . . 3"
CONCRETE TO BE IN CONTACT WITH GROUND OR WEATHER
AT BARS GREATER THAN #5 . . . . . 2"
AT BARS #5 OR LESS . . . . . 1 1/2"
CONCRETE NOT TO BE EXPOSED TO GROUND OR WEATHER
BEAMS, GIRDERS & COLUMNS . . . . . 1 1/2"
SLABS & WALLS . . . . . 3/4"

3.3 CAST-IN-PLACE-CONCRETE

a. MINIMUM 28 DAY CYLINDER STRENGTH AND MAXIMUM SLUMP, PRIOR TO ADDITION OF SUPER PLASTICIZERS, AS FOLLOWS:

		F'c (PSI)	SLUMP
CLASS I	FOOTINGS	3000	3"
CLASS III	INTERIOR ELEVATED SLABS & WALLS	4000	4"
CLASS V	OTHER WORK	4000	4"
CLASS VI	LEAN CONCRETE FOR OVER-EXCAVATION OF FOUNDATIONS	2000	N/A

b. MIX DESIGN TO BE IN ACCORDANCE WITH ACI 318, CHAPTER 5. NO CALCIUM CHLORIDE OR ADMIXTURE CONTAINING CHLORIDES SHALL BE USED IN ANY CONCRETE.

c. COARSE AGGREGATE FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C33 SIZE #57. COARSE AGGREGATE FOR LIGHT WEIGHT CONCRETE SHALL CONFORM TO ASTM C330 GRADED 3/4" TO 1/4".

d. COLD WEATHER PLACEMENT SHALL COMPLY WITH ACI 306.1

e. HOT WEATHER PLACEMENT SHALL COMPLY WITH ACI 305 R.

f. CHAMFER ALL EXPOSED EDGES 3/4".

g. THE MAXIMUM TEMPERATURE OF ALL CONCRETE AT DELIVERY TO THE SITE SHALL BE 85°F. TOTAL DELIVERY TIME SHALL BE LESS THAN 75 MIN.

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SCHEDULE OF REVISIONS

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DRAWN BY:	EV
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DRAWING TITLE:
SHELTER, FOUNDATION DETAILS & NOTES

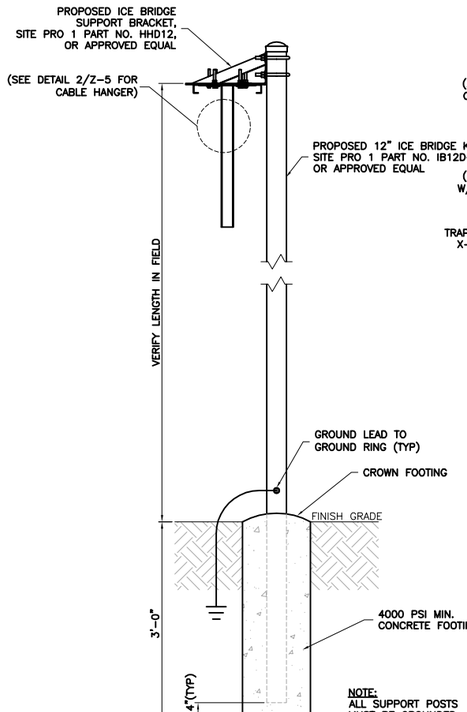
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SHEET NUMBER:
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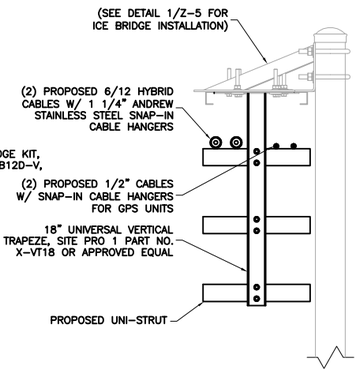
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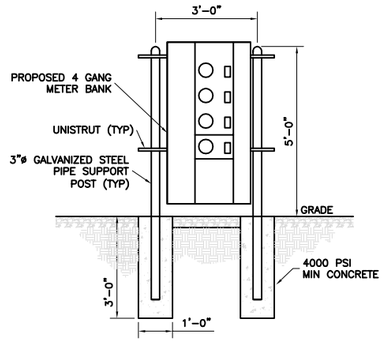
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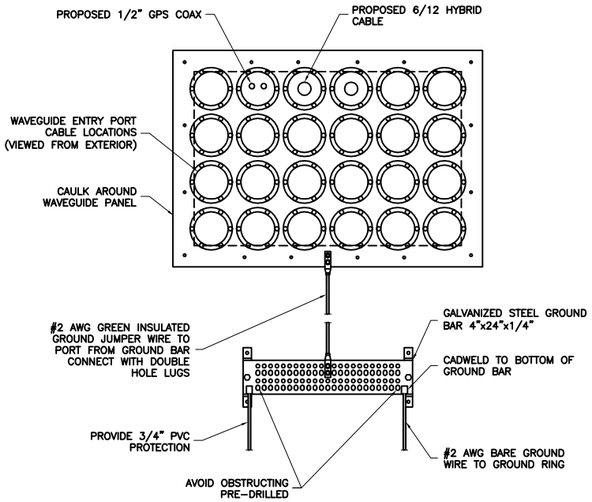
PROPOSED ICE BRIDGE DETAIL
ICE BRIDGE SECTION
1 / Z-5 NTS



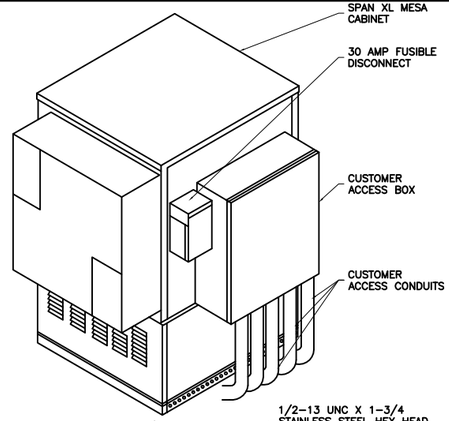
CABLE SUPPORT SECTION
2 / Z-5 NTS

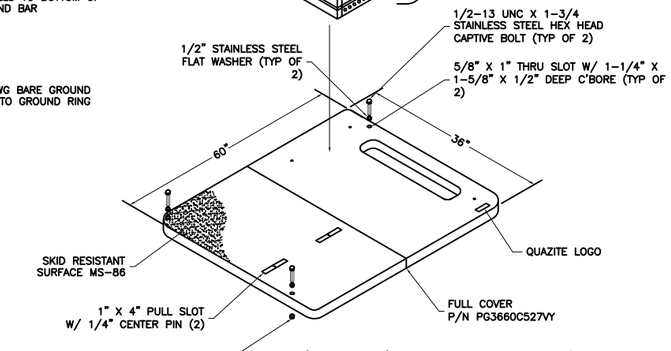


UTILITY BACKBOARD DETAIL
3 / Z-5 NTS

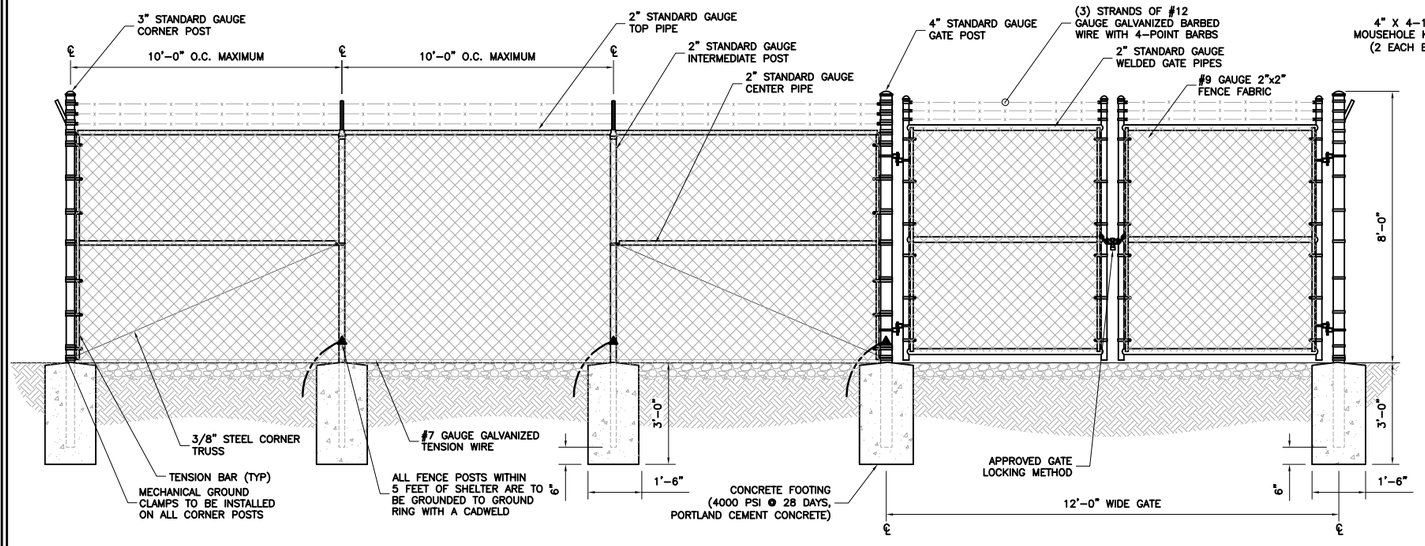


CABLE ENTRY PORT DETAIL
(EXTERIOR VIEW)
4 / Z-5 NTS





MESA CABINET DETAIL
5 / Z-5 NTS



TYPICAL FENCE & GATE DETAIL
6 / Z-5 NTS

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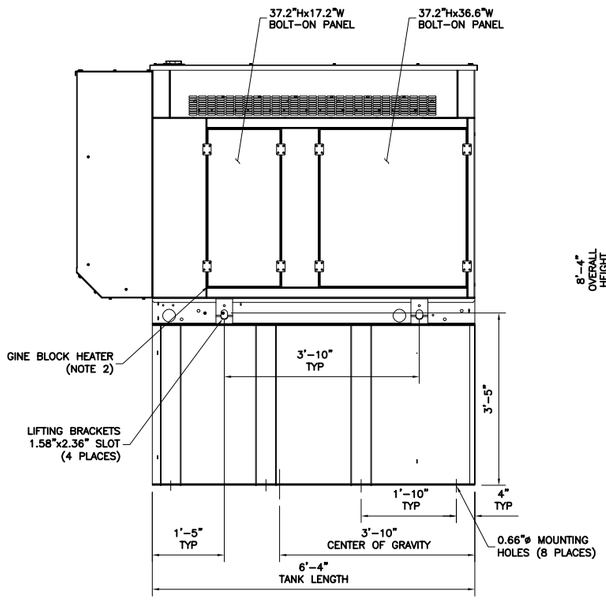
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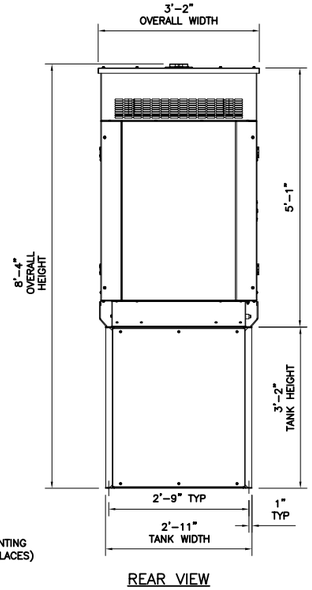
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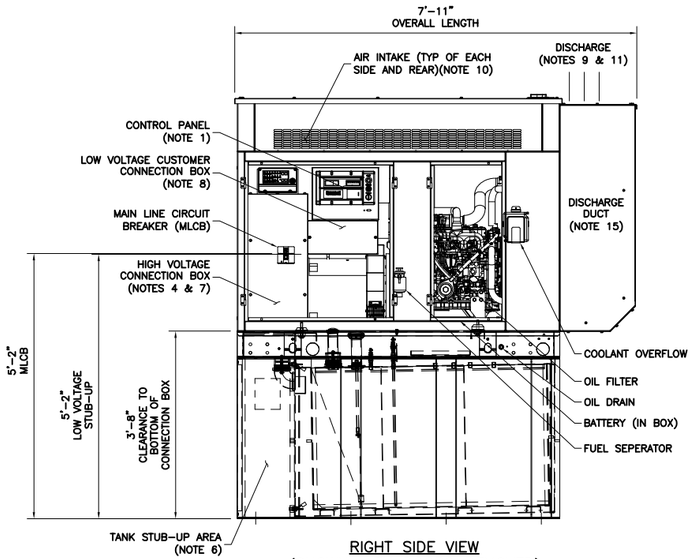
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LEFT SIDE VIEW

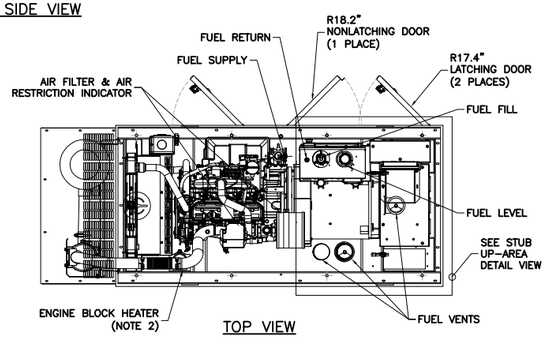


REAR VIEW



RIGHT SIDE VIEW
(SHOWN WITH DOORS REMOVED)

RECOMMENDED ELECTRICAL STUB-UPS	
DESCRIPTION	INSIDE BASE
HIGH VOLTAGE STUB-UP AREA 1) AC LOAD LEAD CONDUIT AREA. 2) 120/240 VAC FROM UTILITY (BY OTHERS) (GLAND PLATE INCLUDED)	A
LOW VOLTAGE STUB-UP AREA 1) TRANSFER SWITCH/ COMMUNICATION CONDUITS. COMMUNICATIONS AND 2-WIRE START MUST NOT BE RUN IN CONDUIT WITH AC WIRING. (SEE NOTE 8)	B



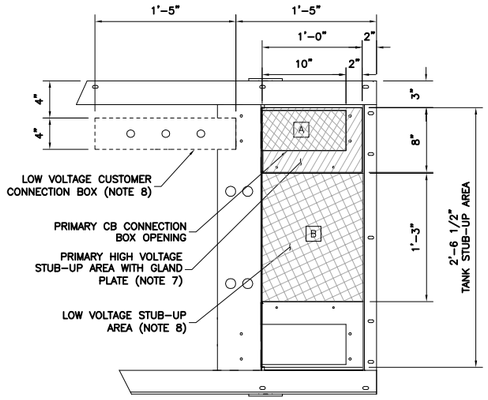
TOP VIEW

WEIGHT DATA: (INCLUDES EMPTY FUEL TANK)
GENERATOR: 1432 KG (3157 LBS)
GENERATOR WITH WOODEN SHIPPING SKID: 1491 KG (3287 LBS)

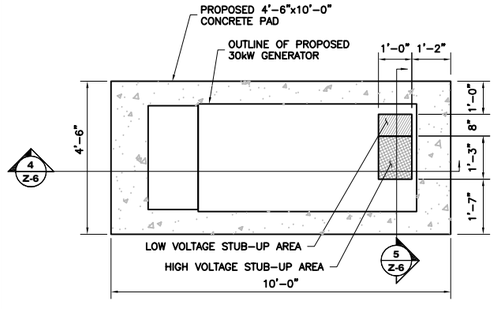
1 Z-6 NTS 30kW DIESEL GENERATOR

NOTES:

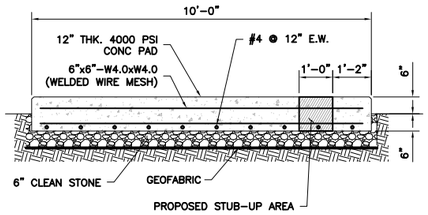
1. CONTROL PANEL INCLUDES BATTERY CHARGER WITH THREE PRONG CORD.
2. 1500W 120VAC ENGINE BLOCK HEATER WITH THREE PRONG CORD.
3. 12 VOLT NEGATIVE GROUND SYSTEM.
4. GENERATOR MUST BE GROUNDED.
5. CENTER OF GRAVITY & WEIGHT MAY SHIFT SLIGHTLY DUE TO UNIT OPTIONS.
6. STUB-UPS: BASE TANK REQUIRES ALL STUB-UPS TO BE IN THE REAR TANK STUB-UP AREA.
7. HIGH VOLTAGE STUB-UP AREA INCLUDES THE AC LOAD LEAD CONNECTION TO THE MAIN LINE CIRCUIT BREAKER, THE NEUTRAL CONNECTION, AND AUXILIARY 120/240V CONNECTION.
8. CONNECTION POINTS FOR CONTROL WIRES. BOTTOM OF LOW VOLTAGE CUSTOMER CONNECTION BOX HAS KNOCKOUTS FOR 1/2" AND 3/4" CONDUIT FITTINGS.
9. MUST ALLOW FREE FLOW OF DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
10. MUST ALLOW FREE FLOW OF INTAKE AIR. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
11. GENERATOR MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM THE RADIATOR IS NOT RECIRCULATED.
12. IT IS THE RESPONSIBILITY OF THE INSTALLATION TECHNICIAN TO ENSURE THAT THE GENERATOR INSTALLATION COMPLIES WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS.
13. 210 GALLON USEABLE CAPACITY BASETANK IS INCLUDED WITH GENERATOR.
14. UNIT IS SHIPPED WITH FUEL SUPPLY AND RETURN LINES DISCONNECTED AND PLUGGED BETWEEN ENGINE AND FUEL TANK. THIS HAS BEEN DONE TO FACILITATE PRESSURE TESTING OF THE TANK IN THE FIELD. FOR INFORMATION REGARDING CONNECTING THE FUEL SUPPLY AND RETURN LINES PRIOR TO START UP, SEE THE FUEL TANK FIELD TESTING PROCEDURE (0E5082) SUPPLIED IN THE TANK LOOSE VENTS KIT, WHICH IS SHIPPED WITH THIS GENERATOR.
15. SEE DRAWING 0C3850 FOR DISCHARGE DUCT REMOVAL. REMOVAL OF DUCT WILL PROVIDE ACCESS TO MUFFLER FOR SERVICING.



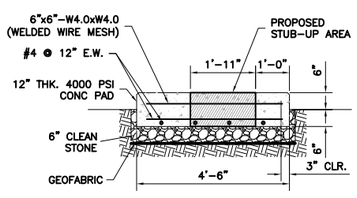
2 Z-6 NTS 30kW DIESEL GENERATOR STUB-UP AREA



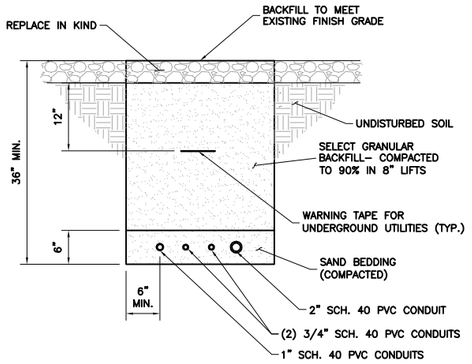
3 Z-6 NTS GENERATOR CONCRETE PAD DETAIL



4 Z-6 NTS CONCRETE PAD SECTION



5 Z-6 NTS CONCRETE PAD SECTION



6 Z-6 NTS GENERATOR CONDUIT TRENCH DETAIL

811
Know what's below.
Call before you dig.
PROTECT YOURSELF, GIVE THREE WORKING DAYS NOTICE

THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERE TO APPURTENANT.

CELLCO PARTNERSHIP d/b/a
verizonwireless
5175 CAMPUS DRIVE
PLYMOUTH MEETING,
PENNSYLVANIA 19462

advantage engineers
7070 SAMUEL MORSE DRIVE, SUITE 150
COLUMBIA, MARYLAND 21046
PHONE: (443) 367-0003
FAX: (443) 367-3548

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2		
1	05-12-15	ISSUED FOR ZONING
0	05-08-15	ISSUED FOR 90% REVIEW (ZDs)

DRAWN BY:	EV
CHECKED BY:	JP
SCALE:	NOTED
JOB NO:	M130533.00

DRAWING TITLE:
GENERATOR & DETAILS

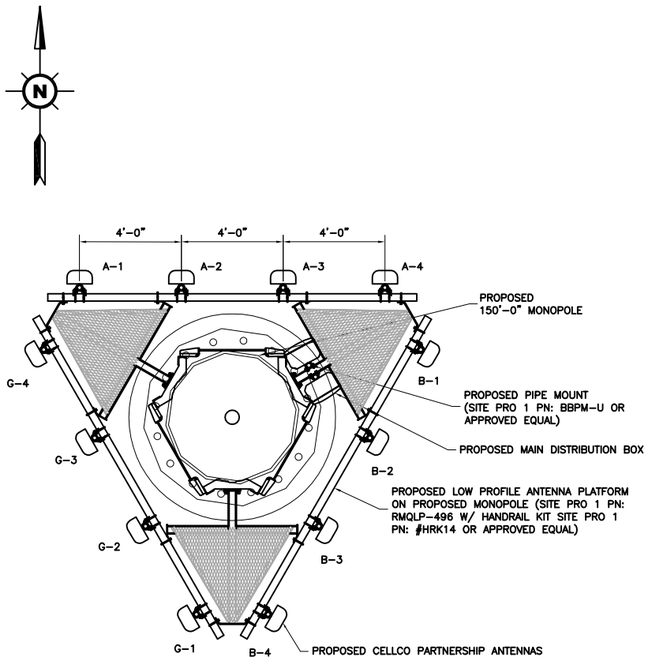
DRAWING SHEET:
Z-6

SHEET NUMBER:
7 OF 8

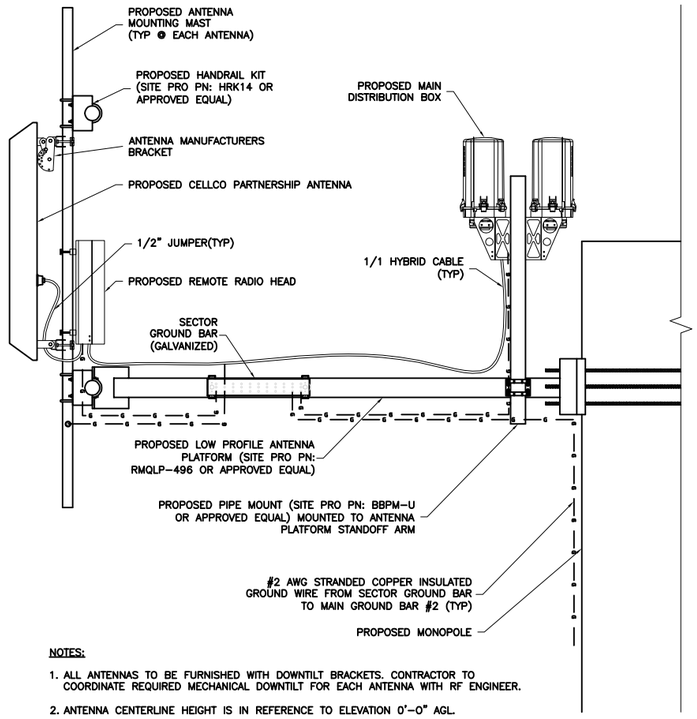
SITE INFORMATION:
SITE NAME:
DOV-SILVER LAKE
SITE ADDRESS:
1255 COLLEGE PARK DRIVE
DOVER, DELAWARE 19904
JURISDICTION:
CITY OF DOVER
KENT COUNTY, DELAWARE

ANDREW M. MILLER
LICENSE
No. 18181
5/12/15
DELAWARE
PROFESSIONAL ENGINEER

ANDREW M. MILLER, P.E.
DELAWARE PROFESSIONAL ENGINEER
LICENSE # 18181



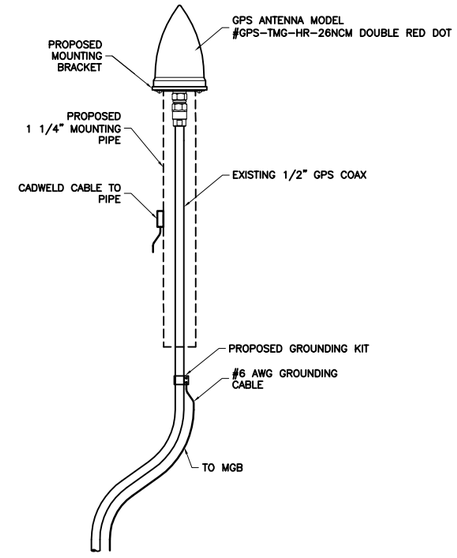
1 Z-7 **PROPOSED ANTENNA PLAN** N.T.S.



NOTES:

1. ALL ANTENNAS TO BE FURNISHED WITH DOWNTILT BRACKETS. CONTRACTOR TO COORDINATE REQUIRED MECHANICAL DOWNTILT FOR EACH ANTENNA WITH RF ENGINEER.
2. ANTENNA CENTERLINE HEIGHT IS IN REFERENCE TO ELEVATION 0'-0" AGL.
3. CHECK WITH RF ENGINEER FOR LATEST ANTENNA TYPE & AZIMUTH.
4. CONTRACTOR SHALL VERIFY ANTENNA TYPE AND AZIMUTH WITH CONSTRUCTION.

2 Z-7 **ANTENNA MOUNTING DETAIL (SIDE VIEW)** N.T.S.



NOTE:

THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 1 1/4", SCH. 40 GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE MUST BE THREADED AT THE ANTENNA MOUNT END. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH (MINIMUM OF 18 INCHES) USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. A HACK SAW SHALL NOT BE USED. THE CUT PIPE SHALL BE DEBURRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.

3 Z-7 **GPS ANTENNA ELEVATION DETAIL** NTS

CELLCO PARTNERSHIP d/b/a
verizonwireless
5175 CAMPUS DRIVE
PLYMOUTH MEETING,
PENNSYLVANIA 19462

advantage engineers
7070 SAMUEL MORSE DRIVE, SUITE 150
COLUMBIA, MARYLAND 21046
PHONE: (443) 367-0003
FAX: (443) 367-3548

SCHEDULE OF REVISIONS

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1	05-12-15	ISSUED FOR ZONING
0	05-08-15	ISSUED FOR 90% REVIEW (ZDs)

DRAWN BY:	EV
CHECKED BY:	JP
SCALE:	NOTED
JOB NO:	M130533.00

DRAWING TITLE:
ANTENNA PLAN & DETAILS

DRAWING SHEET:
Z-7

SHEET NUMBER:
8 OF 8

SITE INFORMATION:

SITE NAME:
DOV-SILVER LAKE

SITE ADDRESS:
1255 COLLEGE PARK DRIVE
DOVER, DELAWARE 19904

JURISDICTION:
CITY OF DOVER
KENT COUNTY, DELAWARE

ANDREW M. MILLER LICENSE No. 18181 5/12/15 DELAWARE PROFESSIONAL ENGINEER

ANDREW M. MILLER, P.E.
DELAWARE PROFESSIONAL ENGINEER
LICENSE # 18181

City of Dover
Board of Adjustment

June 17, 2015

V-15-09

Location:	615 Ridgely Street
Applicant/Owner:	Clara Ridgely Properties LLC
Tax Parcel:	ED-05-076.08-01-11.01-000, ED-05-076.08-01-01.00-000
Application Date:	May 7, 2015
Present Zoning:	IPM (Industrial Park Manufacturing Zone)
Present Use:	Warehouse
Proposed Use:	Telecommunications monopole and associated facilities
Reviewed By:	Bill Cook, Planner I
Variance Type:	Area Variance
Variances Requested:	Allow a 17 foot reduction in the side yard setback to permit construction 23 feet from the property line. Allow a structure to exceed the maximum height of 23 feet to allow for an additional 102 feet in height.[1]

Project Description
The applicant is requesting an area variance from the requirements of Article 4 § 4.16 of the *Zoning Ordinance* Zoning Bulk and Parking Regulations pertaining to the maximum permitted building height and minimum side yard setback in the IPM (Industrial Park Manufacturing

[1] The applicant submission noted the proposed monopole as approximately 3 feet in diameter. The distance from the monopole to the nearest side property line was shown on plans as measured from the center of the tower. According to code the distance between the property line and the monopole should be measured from the edge of the structure, not the center. For purposes of this report, staff calculated the requested variances based on the measure of the outside edge of the monopole to the nearest side property line, which is 20 feet.

Zone). Specifically they are requesting a variance for a 20 foot reduction in the side yard setback requirements in order to place the monopole a minimum of 20 feet from the nearest property line. They are also requesting a variance to exceed the maximum height requirement by 105 feet in order to allow construction of a 125 foot telecommunications tower and associated facilities at the selected location on the site.

Adjacent Zoning and Land Use

The monopole and compound are primarily located on a 28.50 acre site located north of the terminus of Ridgely Street and addressed as 615/631 Ridgely Street. The subject parcel primarily contains a large warehouse, with access to it from Clara Street Extended. The proposed location of the monopole and facility compound is at a corner of the property located furthest south, where it meets the eastern property line of the property addressed as 200 Weston Drive (Parcel ED-05-076.08-01-11.01-000) and the northern property line of the property addressed as 100 Ridgely Street (Parcel ED-05-076.08-01-01.01-000).

Note that the proposed compound crosses the property line and a portion is located on 200 Weston Drive. At present the properties have common ownership interests.

Immediate surrounding properties are zoned IPM, and M (Manufacturing Zone) and consist of commercial and industrial uses. 100 Ridgely Street is vacant land. 200 Weston Drive is planned as a self-storage facility (S-14-21 approved by the Planning Commision at its meeting of November 17, 2014) and also includes an existing monopole tower (approx. 80 feet tall) and compound. The subject property borders the grounds of William Henry Middle School located to the west.

A Zoning Map exhibit (Exhibit B) prepared by staff is found in the Appendix of this Report showing the subject property location and surrounding zoning.

Code Citations
Bulk and parking regulations, Article 4 § 4.16 for IPM (Industrial Park Manufacturing Zone) are as follows:

For All Permitted Uses:	**IPM (Conventional Planned)**	
	REQUIRED	**REQUESTED**
Lot area	2½ acres	2½ acres
Lot width (ft.)	200	200
Lot depth (ft.)	300	300
Front yard (ft.)	60	60
Side yard (ft.)	40	20
Rear yard (ft.)	40	40
Side or rear yard which adjoins a residential zone (ft.)	100	100
Off-street parking space:		
Per 800 sq. ft. of floor area	1	1
Per employee, per largest working shift (if greater than the requirement under the floor area calculation)	1	1
Maximum permitted:		
Building height		
Stories	No limit	No limit
Feet	Equal to distance to nearest lot line (20)	125
Floor area ratio	0.5	0.5

Applicant's Proposed Project

The applicant has submitted three (3) pages illustrating the proposed plans for the site, found in Exhibit B attached. References are made to the sheet numbers printed on the lower right corners on the plans.

The overall site plan, shown on Sheet Z-1 identifies the location of the proposed tower and compound and the relationship to the subject property and surrounding properties.

Sheet Z-2 shows a more detailed plan of the compound layout and an elevation view of the compound and monopole. From this view, it can be noted that a portion of the proposed compound site crosses the property line with the adjacent 200 Weston Drive property. At present the two properties have common ownership interests.

Access to the compound is planned via 200 Weston Drive also. Any Site Development Plan will be subject to procedures specified in *Zoning Ordinance* Article 10 §2.

Exceptional Practical Difficulties Tests
Zoning Ordinance Article 9 §2 dictates the specific powers and duties of the Board of Adjustment with regard to granting variances. Specifically the Board must determine:

> 2.1 Variance – The board shall have the authority to authorize variances from provisions of the Zoning Ordinance that are not contrary to public interest where the board determines that a literal interpretation of the Zoning Ordinance would result in undue hardship or exceptional practical difficulties to the applicant. In granting variances, the board shall determine that the spirit of the Zoning Ordinance is observed and substantial justice is done.
>
> 2.11 Area Variance. A variance shall be considered an area variance if it relates to bulk standards, signage regulations, and other provisions of the Zoning Ordinance that address lot layout, buffers, and dimensions. In considering a request for an area variance, the board shall evaluate the following criteria and document them in their findings of fact:
>
> > (a) the nature of the zone in which the property lies;
> > (b) the character of the immediate vicinity and the contained uses therein;
> > (c) whether, if the restriction upon the applicant's property were removed, such removal would seriously affect neighboring properties and uses; and
> > (d) whether, if the restriction is not removed, the restriction would create unnecessary hardship or exceptional practical difficulty for the owner in his efforts to make normal improvements in the character of that use of the property that is a permitted use under the provisions of the Zoning Ordinance.

Review of Application
As part of the application, the applicant was asked to summarize how the requested variance relates to the criteria.

1. The nature of the zone in which the property lies.

   Applicant Responses:
   "The subject property lies with the IPM ("Industrial Park Manufacturing - Conventional Planned") zone. This zone permits a wide variety of significant industrial, manufacturing, commercial and agricultural uses. Commercial telecommunications towers are permitted in the IPM zone subject (unless a variance is needed) only to administrative site plan approval, thus the proposed installation is consistent with the nature of the zone."

   Staff Response:

Staff concurs with the applicant's description.

2. The character of the immediate vicinity and the contained uses therein.

Applicant Responses:
"The subject property is located in the middle of an industrial park to the north of Division Street (Route 8). The park contains a variety of uses, including large warehousing to the north and smaller uses around the area of the proposed installation. A new storage facility has been approved to the north of our installation on a parcel controlled by our landlord. The property to the west has a variety of educational uses, the property to the south (beyond the boundaries of the park) contain a mix of commercial and storage uses, the property to the east, on the opposite side of active railroad tracks, contains industrial property with residential behind that, and, to the north, are a series of larger industrial uses. While there is a tower located on an adjacent parcel, that structure is unavailable for further colocation. The existing enclosure is at capacity and thus cannot accommodate an additional equipment shed. The enclosure cannot be expanded as it is bounded to the south and east by existing drainage facilities, wetlands and their associated buffers, it is immediately adjacent to the access drive for the property, and it is boxed in to the west by the existing utilities that serve the tower and associated equipment (as well as other easements serving this and other properties). The addition of a second monopole in this area would not be out of character with the Industrial park zoning (and development) that surrounds this parcel."

Staff Response:
Staff concurs with applicant's description of surrounding properties and uses. The area of wetlands noted is found in the southeastern corner of the property adjacent and parallel to the railroad right-of-way. Previous Code interpretation has considered telecommunications antennae and facilities as public utility uses, which is among the permitted uses in IPM and would therefore be in character.

3. Whether, if the restriction upon the applicant**'**s property were removed, such removal would seriously affect neighboring properties and uses.

Applicant Responses:
"The applicant believes that the granting of this application would have no adverse impact on surrounding properties or uses. As the Board is likely aware, these installations take up minimal space. In this instance, the proposed installation is located at the middle of a developed (and developing) industrial park setting with a similar structure nearby. As the attached aerial photographs show, the area is decidedly nonresidential in the vicinity of this proposed tower, with a number of buildings and other structures existing (or proposed) for the area. The addition of this monopole, roughly 3 feet in diameter (with a five foot lightning rod at the top) will not be out of character with the area nor will it detract from the uses that currently are located in this area. In addition, this installation

will serve to improve the quality of Verizon Wireless's coverage in this area by assisting in resolving current capacity shortfalls that exist in this heavily travelled area of Dover."

Staff Response:
Staff does not believe the granting of a variance would impact neighboring properties. A similar type of facility is located adjacent to the subject site. The applicant additionally provided an *Electromagnetic Exposure Analysis*, Exhibit C (attached) stating that the facility will be well below established radio frequency exposure thresholds and is of no concern from a health perspective. The analysis also states that the facility would not preclude co-location of other types of services on the site.

4. Whether, if the restriction is not removed, the restriction would create unnecessary hardship or exceptional practical difficulty for the owner in his efforts to make normal improvements in the character of that use of the property that is a permitted use under the provisions of the *Zoning Ordinance*.

Applicant Responses:
"The application is being pursued due to existing capacity concerns within Verizon Wireless's network. As the proliferation of wireless technology has increased (cell phones, smart phones, IPADs, IPODS, etc.), so has the demand for connectivity. As families acquire more of these devices, and homes and business move to increased wireless technology, the ability of wireless service providers to provide reliable service is negatively impacted. These usage concerns, which result not only from cell phone calls but the increased use of text messaging, email and downloading capabilities provided by and expected from today's smartphones, have now risen to the extent that there is a substantial gap in both in-vehicle and in-building coverage in this area of Dover. The radio frequency spectrum licensed to Verizon Wireless in this area by the FCC is exhausted.

To handle these issues, new sites are necessary to provide additional capacity for new and existing customers. Verizon Wireless has investigated whether the existing tower on the adjacent property could accommodate our facilities and determined that it simply will not for two reasons. The available height on this tower for Verizon Wireless (80 feet +/-) is insufficient to provide the necessary offloading for this area such that the facility could not serve its intended purpose. In addition, and as discussed above, even if the appropriate height were available, there is no ability to expand the existing compound to accommodate the required equipment shelter for Verizon Wireless's equipment.

The particular variance in this application, of course, relates to the height of the structure and its placement in proximity to the side property line (such structures, of course, are permitted in the IPM District). The tower, at 125 feet, would otherwise be required to be 125 from this property line. The location was chosen for two reasons. First, it is proximate to the existing tower in order to keep like structures in the same area. More importantly, the placement of the tower to the side of the property preserves the ability

(and utility) of the remaining parcel. As the aerial photograph of the site shows, it is largely paved and ready for development. Placement of the tower to the side of the property avoids conflicts with buildings, drive aisle, parking spaces and other aspects of future development of the parcel. Moreover, the side of the property chosen is adjacent to a parcel that is owned by the principals who own the subject parcel such that the parcel "most" impact is under common ownership."

Staff Response:
A Code Interpretation Memo of January 26, 1999 considers telecommunications antennae and associated compounds as public utility uses, and the use is permitted in all zones. Such antennae are considered as a "building" and subject to height requirements for the zone.

Staff cannot comment on the issue of service capacity, but notes that the proposed site is on the west side of town, a short distance from commercial/industrial employment centers, and that new residential development has taken place in the past decade in areas near the western city limits.

The denial of a variance may create degradation in service for Verizon Wireless customers in the area, which could be an exceptional practical difficulty if the company were unable to maintain adequate service in the area to meet demand.

Staff notes that while there are other interior locations on the property where a monopole and compound could be sited without requiring variances, the desire to locate the tower adjacent to an existing one is a compatible arrangement as described by the applicant. Staff concurs that an interior placement could potentially constrain further use of the property.

Variance Recommendations:

Staff recommends approval of the area variance for reasons as follows:

- The placement of a monopole and associated compound is in keeping with the surrounding mix of commercial and industrial uses.
- The placement of a monopole and associated compound is in keeping with the permitted uses of the IPM zone as public utility infrastructure, and in keeping with past practice and code interpretation.
- The applicant has demonstrated exceptional practical difficulty as existing adjacent facilities are at capacity and the new monopole is needed to provide adequate services.
- The applicant has demonstrated exceptional practical difficulty with regard to the location of the compound on the subject property, and that the proposed location is the most effective at avoiding conflicts found elsewhere on the property.

Advisory Comments:

- Staff recommends rearrangement of the compound or shifting the location to the east by approximately five (5) feet so that the compound is completely located on one parcel and does not straddle the property line with 200 Weston Drive.
- Improvements to the property are subject to Site Development Plan approval processes and appropriate permits from the City of Dover Planning Department and other agencies.
- Any proposed Site Development Plan would be evaluated by the Planning Department and other agencies regarding impacts of the encroachment onto 200 Weston Drive and the approved Site Development Plan for that property.
- Variances become null and void if work has not commenced within one (1) year of the date the variance was granted. At present there is no provision for extension of variance approval.

GUIDE TO ATTACHMENTS

Exhibit	Description/Author	# Pages
A	Board of Adjustment Application	1
B	Zoning Exhibit Map (Staff)	1
C	Site Plans: "DOV- Carol Pear" (Applicant) Pages cited in Report: "Z-1", and "Z-2"	3
D	Electromagnetic Exposure Analysis (Applicant)	6
E	Radiofrequency Design of Proposed Communication Facility (Applicant)	7

Exhibit A

City of Dover, DE
Department of Planning and Inspections
P.O. Box 475, Dover, Delaware 19903
(302) 736-7010 Fax: (302) 736-4217
www.cityofdover.com

X Area Variance
_____ Use Variance
_____ Appeal
_____ Pre-App Date

Board of Adjustment Application

Application Information

Property Address: 631 615 Ridgley Street Dover DE 19904

Tax Parcel Number: 2-05-07608-01-1101-000

Owner Name: Clara Ridgley Properties LLC

Property Zoning: IPM

Variance (s) Requested: A variance from the requirements of Article 4, §416, to construct a 125' tall cellular telecommunications monopole and related facilities 23 feet from the side property line

*Provide eight (8) copies of any survey, drawings, photos, site plan, etc. that may help support your application, and your response to the criteria. The criteria for a use variance and appeal are on the back of the form.

Area Variance

An area variance shall be evaluated on the following criteria: **Please state how your request meets each of these four (4) criteria.**

1. The nature of the zone in which the property lies;
2. The character of the immediate vicinity and the contained uses therein;
3. Whether, if the restriction upon the applicant's property were removed, such removal would seriously affect neighboring properties and uses; and
4. Whether, if the restriction is not removed, the restriction would create unnecessary hardship or exceptional practical difficulty for the owner in his efforts to make normal improvements in the character of that use of the property that is permitted uses under the provisions of the zoning ordinance.

Signature

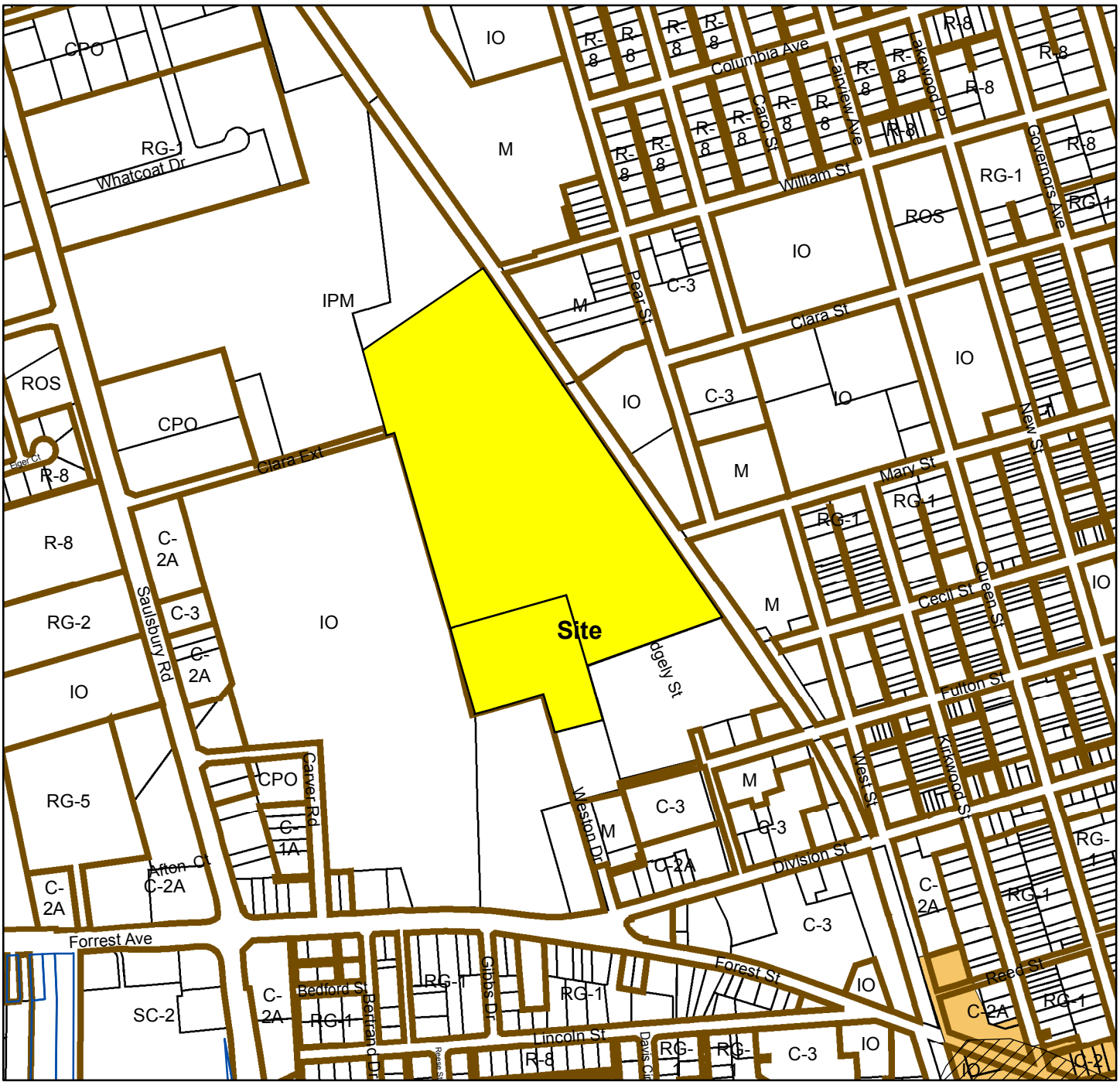
I HENRY S. MAST do affirm that I am the property owner on which the variance is sought and that all the information provided in this application is accurate to the best of my knowledge and belief.

Signature Title 5/7/15 Date

City of Dover

Department of Planning & Inspections

Application No.: V-15-09



Application #: V-15-09
Address: 615 Ridgley Street
Parcel ID: ED-05-076.08-01-11.01-000
ED-05-076.08-01-01.00-000
Variance Type: Area Variance
Subject Parcel Zoning: IPM
Owners: Clara Ridgley Properties LLC
Date: 6/9/2015

Legend

- Subject Property
- Zoning
- Dover Parcels

N
W
E
S

0 375 750 1,500 Feet

PROJECT INFORMATION

SCOPE OF WORK:	THIS PROPOSAL IS FOR AN UNMANNED TELECOMMUNICATIONS FACILITY CONSISTING OF THE PLACEMENT OF TWELVE (12) PANEL ANTENNAS ON A PROPOSED MONOPOLE, AN EQUIPMENT SHELTER, AN OUTDOOR STANDBY GENERATOR, AND ASSOCIATED APPURTENANCES WITHIN A PROPOSED FENCED COMPOUND	
LATITUDE (TOWER):	N 39° 09' 43.4" (NAD 83)	
LONGITUDE (TOWER):	W 75° 32' 15.0" (NAD 83)	
GROUND ELEVATION (TOWER):	33.5'± (NAVD 88)	
JURISDICTION:	CITY OF DOVER	
ZONING DISTRICT CLASSIFICATION:	IPM – INDUSTRIAL PARK MANUFACTORING	
PARCEL ID:	2-05-07608-01-1101-000	2-05-07608-01-0100-00001
SITE ADDRESS:	615 RIDGLEY STREET DOVER, DE 19904	615 RIDGLEY STREET DOVER, DE 19904
PARCEL SIZE:	5.35± ACRES	28.65± ACRES
EXISTING USE:	STORAGE AND TELECOMMUNICATIONS FACILITY	
PROPOSED USE:	TELECOMMUNICATIONS FACILITY AND ALL CURRENTLY APPROVED USES	
PROPERTY OWNER:	CLARA RIDGLEY PROPERTIES, LLC 200 WESTONE DRIVE DOVER, DE 19904	
NAME OF APPLICANT:	CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS 5175 CAMPUS DRIVE PLYMOUTH MEETING, PA 19462	

DRAWING INDEX

		REV
T-1	TITLE SHEET	1
Z-1	SITE PLAN	1
Z-2	COMPOUND LAYOUT AND ELEVATION VIEW	1

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CELLCO PARTNERSHIP d/b/a

verizonwireless

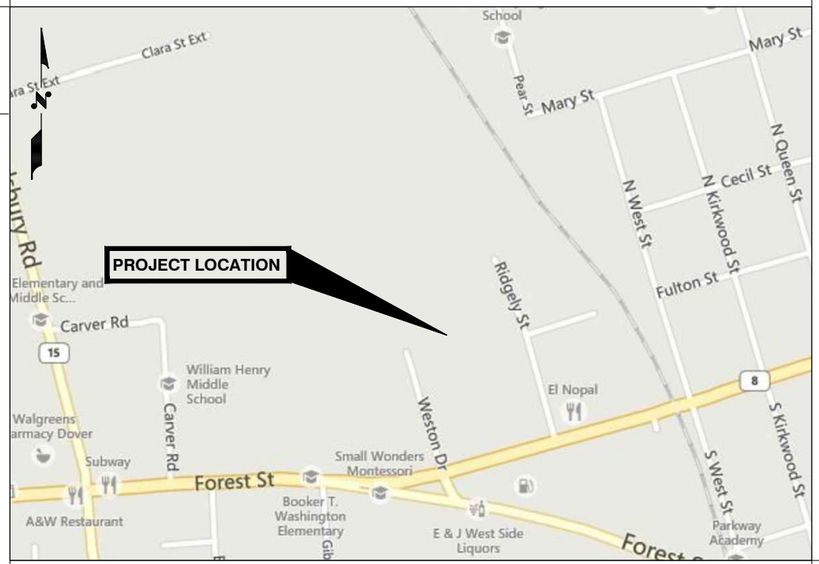
SITE NAME: DOV CAROL PEAR

VICINITY MAP

DIRECTIONS:

DEPART CAMPUS DR TOWARD BUTLER PIKE. TURN LEFT ONTO COLD POINT HILL ROAD. KEEP STRAIGHT ONTO BUTLER PIKE. TURN RIGHT ONTO PLYMOUTH ROAD. TAKE RAMP LEFT FOR I-476 SOUTH TOWARD VALLEY FORGE/CHESTER. TAKE RAMP RIGHT FOR I-95 SOUTH TOWARD CHESTER. AT EXIT 11, TAKE RAMP RIGHT FOR I-495 SOUTH TOWARD BALTIMORE/PORT OF WILMINGTON. KEEP STRAIGHT ONTO I-95 SOUTH/US-202 SOUTH. AT EXIT 4A, TAKE RAMP RIGHT FOR SR-7 SOUTH/SR-1 SOUTH TOWARD DOVER/BEACHES. BEAR RIGHT ONTO US-13 SOUTH/SR-1 SOUTH/SOUTH DUPONT HWY. AT EXIT 98, TAKE RAMP RIGHT FOR SR-8 TOWARD LITTLE CREEK/DOWNTOWN DOVER. TURN RIGHT ONTO SR-8/NORTH LITTLE CREEK ROAD. TURN RIGHT ONTO WESTON DRIVE AND THE SITE IS ON THE RIGHT.

LOCATION MAP



NOT TO SCALE

MISS UTILITY

DELAWARE LAW REQUIRES
TWO WORKING DAYS NOTICE PRIOR TO
ANY EARTH MOVING ACTIVITIES.
800-282-8555

APPLICABLE BUILDING CODES AND STANDARDS

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE: 2012 INTERNATIONAL BUILDING CODE
NATIONAL ELECTRICAL CODE: NEC 2008
FIRE/LIFE SAFETY CODE: NFPC 1996
CONSTRUCTION TYPE: 11B NONCOMBUSTIBLE/UNPROTECTED
USE GROUP: U – UTILITY AND MISCELLANEOUS

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS.
AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM
IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT

IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")

TELCORDIA GR-1275, GENERAL INSTALLATION REQUIREMENTS

TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

ANSI T1.311, FOR TELECOM – DC POWER SYSTEMS – TELECOM, ENVIRONMENTAL PROTECTION

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

CONTACT INFORMATION

	NAME	COMPANY	PHONE NO.
A&E	MICHAEL CLEARY	MASER CONSULTING P.A.	856-797-0412
SAC	JAMES RODGERS	WAT	610-999-0427
CONST.	MARK LYNCH	VERIZON WIRELESS	610-715-6061
UTILITIES			
POWER:		DELMARVA POWER	1-800-375-7117
TELCO:		VERIZON	800-VERIZON

MASER CONSULTING N.A.
Consulting, Municipal & Environmental Engineers
Planners ▪Surveyors ▪Landscape Architects
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Customer Loyalty through Client Satisfaction
2000 Midlantic Drive, Suite 100
Mt. Laurel, NJ 08054
856-797-0412
DE COA #2840 JOB # 12960161A

SITE NAME:
DOV CAROL PEAR
615 RIDGLEY STREET
DOVER, DE 19904

CELLCO PARTNERSHIP d/b/a
verizonwireless
5175 CAMPUS DRIVE
PLYMOUTH MEETING, PA 19462

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	06/04/15	ISSUED FOR BOARD OF ADJUSTMENT	RCG	CJZ	PET
0	05/05/15	ISSUED FOR BOARD OF ADJUSTMENT	MPC	CJZ	PET

SCALE: AS SHOWN | DESIGNED BY: RCG | DRAWN BY: RCG

SEAL

MICHAEL P. CLEARY
LICENSE
No. 19205
DELAWARE
PROFESSIONAL ENGINEER

DE LICENSE NO. 19205

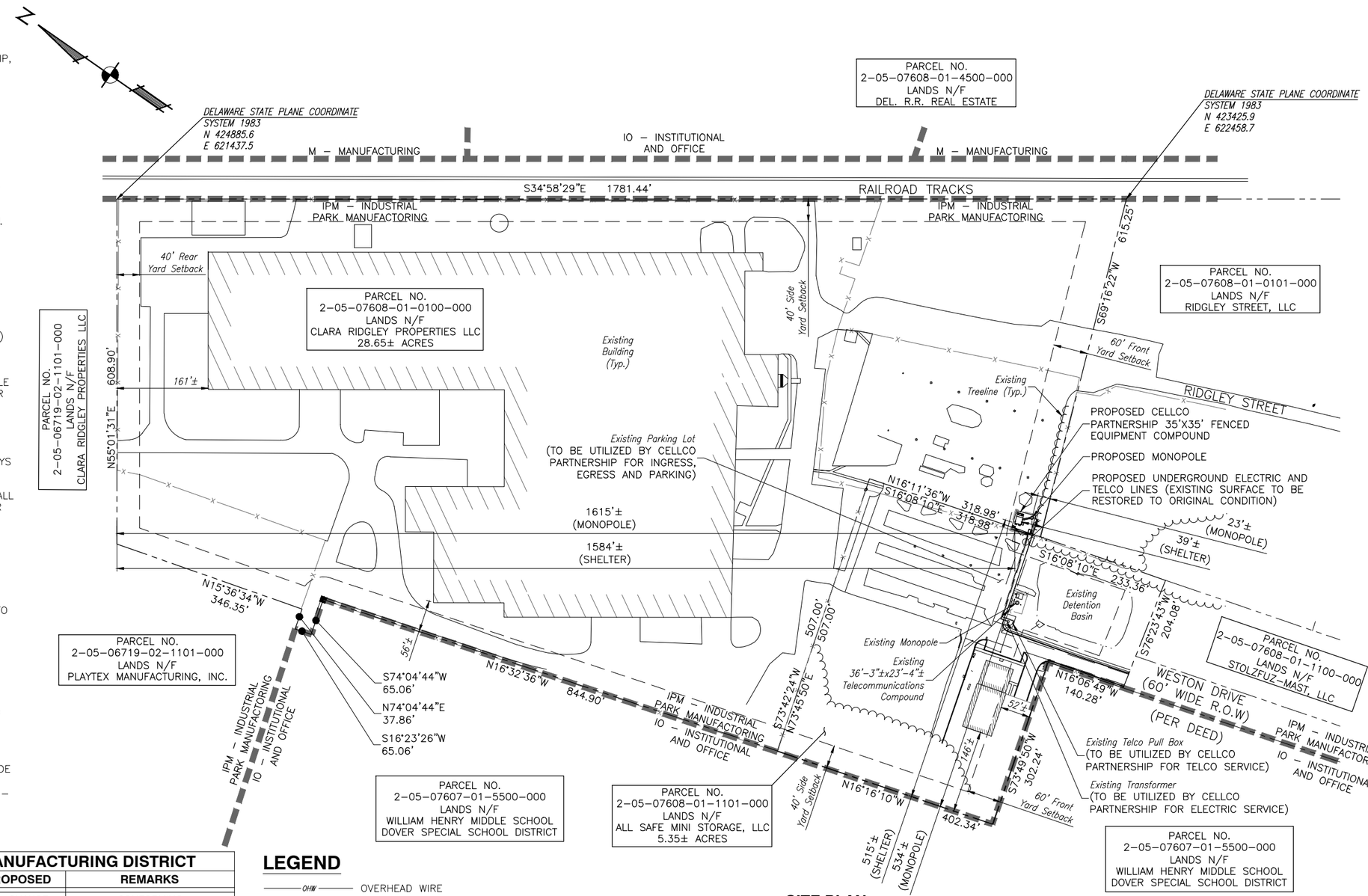
CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

TITLE SHEET

SITE	DRAWING NUMBER	REV
DOV CAROL PEAR	T-1	1

PROJECT NOTES

1. SITE AND BOUNDARY INFORMATION OBTAINED FROM THE FOLLOWING:
   - A. A TOPOGRAPHIC SURVEY ENTITLED "DOV CAROL PEAR", PREPARED FOR CELLCO PARTNERSHIP, BY MASER CONSULTING P.A. OF LOGAN TOWNSHIP, NJ LAST DATED 03/30/15. THIS PLAN WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
   - B. LIMITED FIELD OBSERVATIONS PERFORMED BY MASER CONSULTING P.A. ON 10/22/14.
2. THIS PROPOSAL IS FOR AN UNMANNED TELECOMMUNICATIONS FACILITY CONSISTING OF THE PLACEMENT OF TWELVE (12) PANEL ANTENNAS ON A PROPOSED MONOPOLE, AN EQUIPMENT SHELTER, A STANDBY OUTDOOR GENERATOR, AND ASSOCIATED APPURTENANCES WITHIN A PROPOSED FENCED COMPOUND.
3. THE PROPOSED FACILITY IS UNMANNED AND IS NOT FOR HUMAN HABITATION. (NO HANDICAP ACCESS IS REQUIRED)
4. NO NOISE, SMOKE, DUST, VAPORS OR ODOR WILL RESULT FROM THIS PROPOSAL.
5. EXTERIOR SIGNS ARE NOT PROPOSED EXCEPT AS REQUIRED BY THE FCC.
6. TOTAL AREA OF DISTURBANCE UNDER THIS PROPOSAL: 2,100± S.F.
7. THE PROPOSED FACILITY WILL CAUSE ONLY AN INSIGNIFICANT ("DE MINIMUS") INCREASE IN STORMWATER RUNOFF, THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
8. ALL CONSTRUCTION FOR SITE IMPROVEMENTS SHALL CONFORM TO APPLICABLE SPECIFICATIONS, STANDARDS, AND REQUIREMENTS OF THE GOVERNMENTAL OR UTILITY AUTHORITIES HAVING JURISDICTION.
9. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
10. CONTRACTOR SHALL CONTACT THE MISS UTILITY SYSTEM THREE WORKING DAYS PRIOR TO ANY EARTH DISTURBING CONSTRUCTION @ 1-800-282-8555.
11. ALL CONSTRUCTION AND DESIGN FOR THE PROPOSED ANTENNA MOUNTS SHALL CONFORM IN ACCORDANCE WITH THE CURRENT STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES (TIA-222-G-2-2009).
12. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.
13. SUBCONTRACTOR TO VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
14. SUBCONTRACTOR SHALL FIELD LOCATE ALL UNDERGROUND UTILITIES PRIOR TO ANY PROPOSED EXCAVATION.
15. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS & INSPECTIONS REQUIRED FOR CONSTRUCTION.
16. SUBCONTRACTOR SHALL DETERMINE EXACT ROUTE OF ANY UNDERGROUND CONDUIT, IF REQUIRED.
17. THIS PROJECT WILL NOT REQUIRE STREETS OR PROPERTY TO BE DEDICATED FOR PUBLIC USE.
18. THIS PROJECT WILL NOT REQUIRE PERMANENT MONUMENTS.
19. ACCORDING TO THE FEMA FLOOD INSURANCE RATE MAP OF KENT COUNTY, DE (ALL JURISDICTIONS), PANEL 166 OF 435, MAP 10001C0166H, DATED 05/05/2003, ALL PROPOSED IMPROVEMENTS ARE LOCATED WITHIN ZONE X - AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.
20. THE PROPOSED INSTALLATION WILL GENERATE ONE (1) VEHICLE TRIP FOR ROUTINE MAINTENANCE EVERY FOUR (4) TO SIX (6) WEEKS.



BULK STANDARDS FOR IPM - INDUSTRIAL PARK MANUFACTURING DISTRICT

DESCRIPTION	REQUIRED	EXISTING	PROPOSED	REMARKS
MINIMUM LOT AREA	2.5 ACRES	34.02 ACRES	NO CHANGE	CONFORMING
MINIMUM LOT WIDTH	200 FEET	204± FEET	NO CHANGE	CONFORMING
MINIMUM LOT DEPTH	300 FEET	1,643± FEET	NO CHANGE	CONFORMING
MINIMUM FRONT YARD SETBACK	60 FEET	52± FEET	23± FEET	NON-CONFORMING
MINIMUM SIDE YARD SETBACK	40 FEET	56± FEET	515± FEET	CONFORMING
MINIMUM REAR YARD SETBACK	40 FEET	161 FEET±	1,584 FEET±	CONFORMING
MAXIMUM BUILDING HEIGHT	39 FEET*	20 FEET±	10 FEET	CONFORMING
FLOOR AREA RATIO	.5	29.38±%	29.39±%	CONFORMING
IMPERVIOUS AREA**	-	67.23±%	67.24±%	-

*EQUAL TO DISTANCE TO NEAREST LOT LINE
**CHECKLIST ITEM 2.54J

LEGEND

- OHW — OVERHEAD WIRE
- PROPERTY LINE
- ADJACENT PROPERTY LINE
- COMMON OWNERSHIP PROPERTY LINE
- SETBACK LINE
- EXISTING CHAINLINK FENCE
- PROPOSED CHAINLINK FENCE
- PROPOSED UNDERGROUND UTILITY LINE
- HEAVY LINEWEIGHT INDICATES PROPOSED FACILITIES
- LIGHT LINEWEIGHT INDICATES EXISTING FACILITIES
- TREELINE
- ZONING BOUNDARY LINE

SITE PLAN

GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
SCALE: 1" = 100' FOR 24"X36" DRAWINGS
(DO NOT SCALE 11"X17" DRAWINGS)

MICHAEL P. CLEARY LICENSE No. 19205 DELAWARE PROFESSIONAL ENGINEER

MASER CONSULTING P.A.
Consulting, Municipal & Environmental Engineers
Planners ▪Surveyors ▪Landscape Architects
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DE COA #2840
JOB # 12960161A

SITE NAME:
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615 RIDGLEY STREET
DOVER, DE 19904

CELLCO PARTNERSHIP d/b/a verizonwireless
5175 CAMPUS DRIVE
PLYMOUTH MEETING, PA 19462

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0	05/05/15	ISSUED FOR BOARD OF ADJUSTMENT	MPC	CJZ	PET

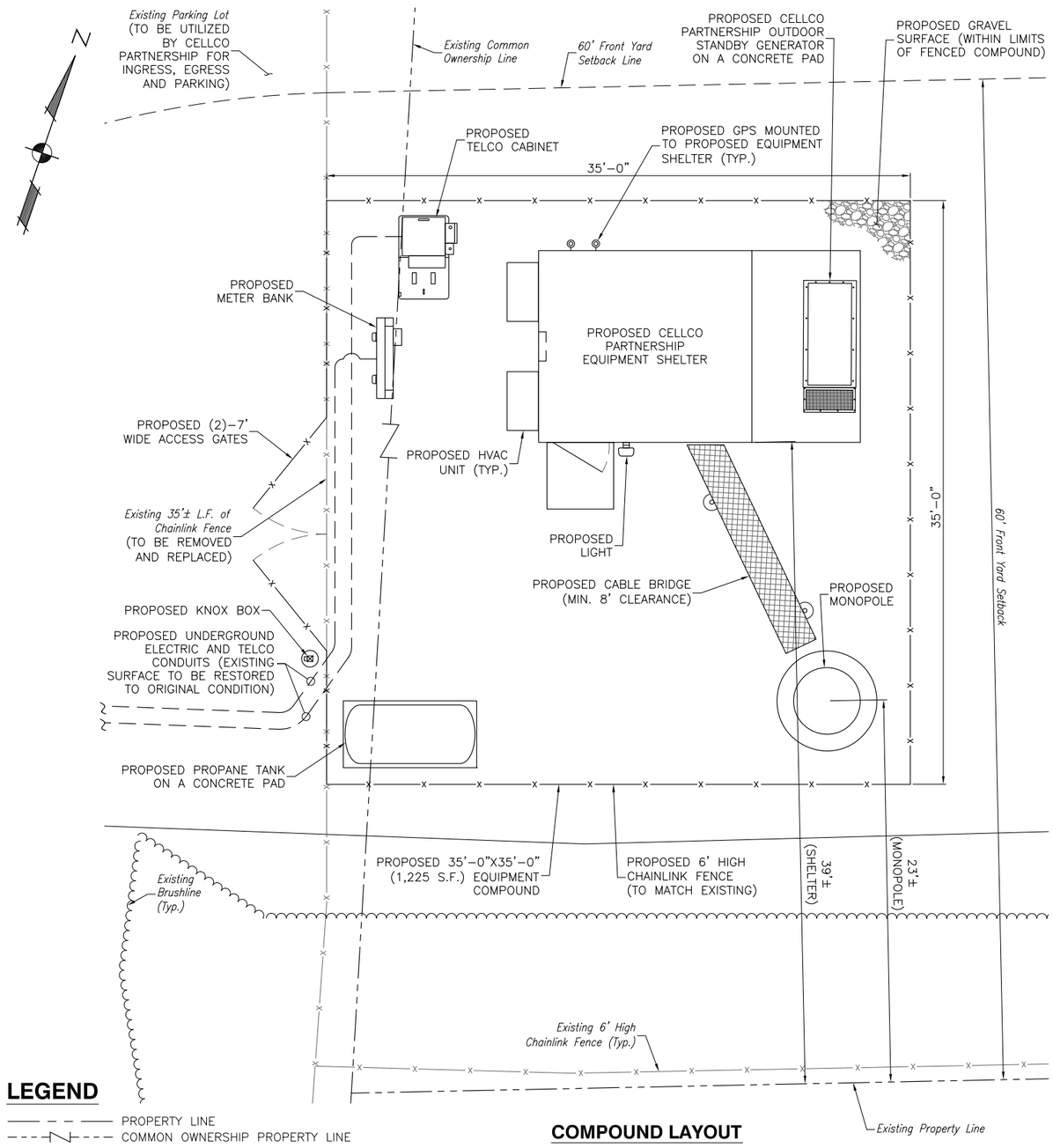
SCALE: AS SHOWN | DESIGNED BY: RCG | DRAWN BY: RCG

SEAL
MICHAEL P. CLEARY
PROFESSIONAL ENGINEER
DE LICENSE NO. 19205

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

SITE PLAN AND PROJECT NOTES

SITE	DRAWING NUMBER	REV
DOV CAROL PEAR	Z-1	1



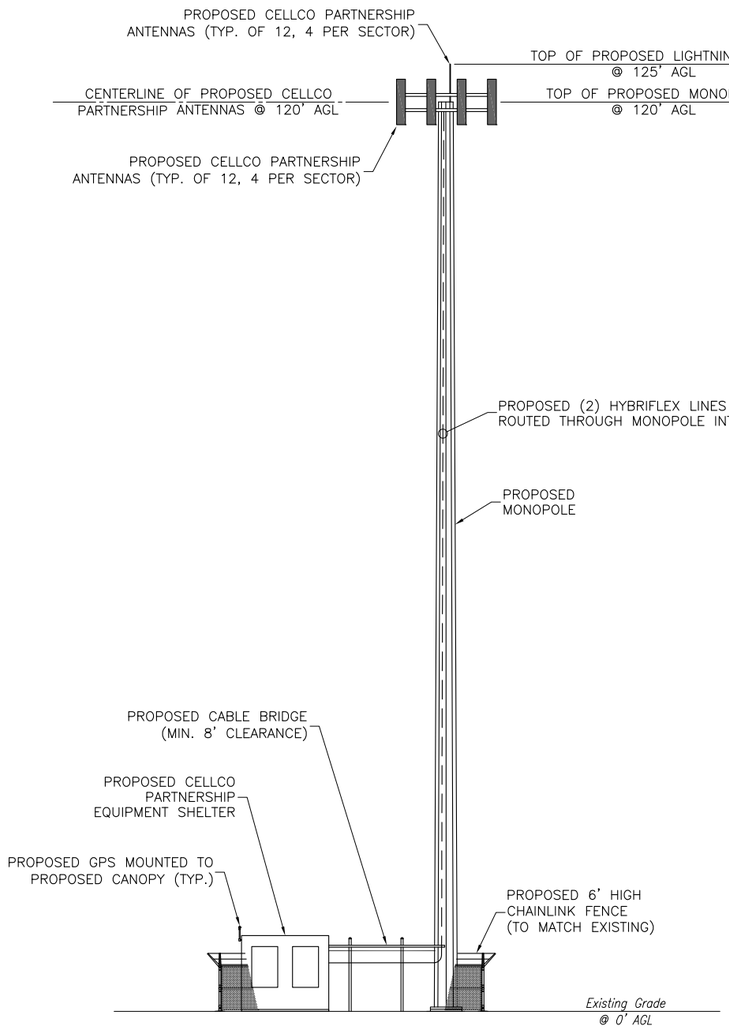
LEGEND

- PROPERTY LINE
- COMMON OWNERSHIP PROPERTY LINE
- SETBACK LINE
- EXISTING CHAINLINK FENCE
- PROPOSED CHAINLINK FENCE
- PROPOSED UNDERGROUND UTILITY LINE
- HEAVY LINEWEIGHT INDICATES PROPOSED FACILITIES
- LIGHT LINEWEIGHT INDICATES EXISTING FACILITIES
- TREELINE

COMPOUND LAYOUT

GRAPHIC SCALE
4 0 2 4 8
(IN FEET)
SCALE: 1" = 4' FOR 24"X36" DRAWINGS
(DO NOT SCALE 11"X17" DRAWINGS)

NOTE:
MONOPOLE AND MONOPOLE FOUNDATION TO BE DESIGNED BY OTHERS.



ELEVATION VIEW

GRAPHIC SCALE
10 0 5 10 20
(IN FEET)
SCALE: 1" = 10' FOR 24"X36" DRAWINGS
(DO NOT SCALE 11"X17" DRAWINGS)

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SCALE: AS SHOWN | DESIGNED BY: RCG | DRAWN BY: RCG

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MICHAEL P. CLEARY LICENSE No. 19205 DELAWARE PROFESSIONAL ENGINEER
MICHAEL P. CLEARY
PROFESSIONAL ENGINEER
DE LICENSE NO. 19205

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

COMPOUND LAYOUT AND ELEVATION VIEW

SITE	DRAWING NUMBER	REV
DOV CAROL PEAR	Z-2	1

PO Box 165
Fairview Village, PA 19409
Phone: 610.304.2024
Fax: 610.584.5387
info@dBmEng.com

May 5, 2015
James Rodgers
Site Acquisition
Verizon Wireless
5175 Campus Drive
Plymouth Meeting, PA 19462

Subject: **Electromagnetic Exposure Analysis**
"CAROL PEAR"
615 Ridgley Street
Dove, DE 19904
Latitude: N 39º 09' 43.4"
Longitude: W 75º 32' 15.0"

Mr. Rodgers:

I have received and executed your request that I perform an independent evaluation and certification of the anticipated radio-frequency exposure levels for the Verizon Wireless telecommunications facility proposed at the above referenced coordinates. The intention of this study is to verify compliance with Federal Communications Commission (hereafter "FCC") guidelines for human exposure limits to radio-frequency electromagnetic fields as per FCC Code of Federal Regulation 47 CFR 1.1307 and 1.1310. As a registered Professional Engineer, I am bound by a code of ethics to hold paramount the safety, health, and welfare of the public. All statements and calculations offered herein are made in an objective and truthful manner pursuant to that code.

Summary of Findings

The maximum exposure to radio-frequency emissions from the proposed Verizon Wireless facility will be far below FCC exposure limits. **Using upper limit assumptions for the Verizon Wireless equipment configuration, the cumulative radio-frequency exposure levels would be at least two-hundred (200) times less than the FCC limits at all locations of public access.** The following chart (Figure-1) specifically illustrates anticipated exposure levels for a variety of scenarios. All exposure limits have been calculated using the methods prescribed in FCC Office of Engineering and Technology (OET) Bulletin 65 "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio-frequency Electromagnetic Fields". These upper-limit conditions include maximum traffic loading, significant subscriber growth, six degrees of main beam down-tilt, and 100% constructive interference from ground reflection. Additionally, signal attenuation due to environmental clutter such as buildings, trees, and roadways has been ignored which will overestimate actual power densities. Also worth mentioning is the fact that the FCC exposure limits already include a significant margin of safety. Continuous

exposure at 100% of FCC limit is considered by the scientific community to be just as safe as continuous exposure at 1% of FCC limit.

Horizontal Distance from Facility (Ft.)	Height Above Ground (Ft.)	Maximum Power Density µW/cm2 (micro-watts per square centimeter)						% of FCC Limit						Cumulative % of FCC limit across all bands
		150 MHz	700 MHz	850 MHz	1900 MHz	2100 MHz	2600 MHz	150 MHz	700 MHz	850 MHz	1900 MHz	2100 MHz	2600 MHz	
0	6	N/A	< 0.6	N/A	< 0.6	< 0.6	N/A	N/A	< 0.12	N/A	< 0.06	< 0.06	N/A	< 0.24
100	6	N/A	< 1.2	N/A	< 1.2	< 1.2	N/A	N/A	< 0.26	N/A	< 0.12	< 0.12	N/A	< 0.5
200	6	N/A	< 0.6	N/A	< 0.6	< 0.6	N/A	N/A	< 0.11	N/A	< 0.06	< 0.06	N/A	< 0.23
1320 (1/4 mi.)	6	N/A	< 0.1	N/A	< 0.1	< 0.1	N/A	N/A	< 0.02	N/A	< 0.01	< 0.01	N/A	< 0.04
FCC Exposure Limits for General Population		300 µW/cm²	467 µW/cm²	567 µW/cm²	1000 µW/cm²	1000 µW/cm²	1000 µW/cm²							

Figure-1 – calculated exposure levels near the proposed telecommunications facility

Applicability of the National Telecommunications Act of 1996

This Act states that "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 (Federal Communications) Commission's regulations concerning such emissions". As indicated above, this proposed facility will be in full compliance with the FCC's emissions standards and as such is beyond regulation in that regard.

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Fairview Village, PA 19409
Phone: 610.304.2024
Fax: 610.584.5387
info@dBmEng.com

Technical Parameters of Consideration
The above calculations were based on the equipment configuration information furnished by representatives of Verizon Wireless. Specifically for this installation, Verizon Wireless plans to install up to twelve (12) panel style antennas arranged in three sectors with azimuths evenly spaced in the horizontal plane. The antenna centerline height is planned at 120' above ground level. Transmitting through these antennas will be two (2) LTE radios in the 700 MHz band (per sector) at a maximum of 600 watts ERP (effective radiated power) per radio, two (2) LTE radios in the 1900 MHz band (per sector) at a maximum of 600 watts ERP (effective radiated power) per radio and two (2) LTE radios in the 2100 MHz band (per sector) at a maximum of 600 watts ERP (effective radiated power) per radio.

Co-location of Other Wireless Providers
In an attempt to halt the proliferation of telecommunications structures and preserve as much of their natural landscape as possible many municipalities have adopted telecommunications ordinances that specifically require new structures to accommodate additional wireless providers from a structural standpoint. **From the standpoint of radio-frequency exposure**, the installation of the proposed Verizon Wireless equipment would in no way preclude the use of this facility by other providers.

Background Information
In 1985, the FCC first adopted guidelines to be used for evaluating human exposure to RF emissions. The FCC revised and updated these guidelines on August 1, 1996, as a result of a rule-making proceeding initiated in 1993. The new guidelines incorporate limits for Maximum Permissible Exposure (MPE) in terms of electric and magnetic field strength and power density for transmitters operating at frequencies between 300 kHz and 100 GHz.

The FCC's MPE limits are based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits were developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC's limits, and the NCRP and ANSI/IEEE limits on which they are based, are derived from exposure criteria quantified in terms of specific absorption rate (SAR). The basis for these limits is a whole-body averaged SAR threshold level of 4 watts per kilogram (4 W/kg), as averaged over the entire mass of the body, above which expert organizations have determined that potentially hazardous exposures may occur. The MPE limits are derived by incorporating safety factors that lead, in some cases, to limits that are more conservative than the limits originally adopted by the FCC in 1985. Where

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more conservative limits exist, they do not arise from a fundamental change in the RF safety criteria for whole-body averaged SAR, but from a precautionary desire to protect subgroups of the general population who, potentially, may be more at risk.

The FCC exposure limits are also based on data showing that the human body absorbs RF energy at some frequencies more efficiently than at others. The most restrictive limits occur in the frequency range of 30-300 MHz where whole-body absorption of RF energy by human beings is most efficient. At other frequencies, whole-body absorption is less efficient, and consequently, the MPE limits are less restrictive.

MPE limits are defined in terms of power density (units of milliwatts per centimeter squared: mW/cm^2), electric field strength (units of volts per meter: V/m) and magnetic field strength (units of amperes per meter: A/m). The far-field of a transmitting antenna is where the electric field vector (E), the magnetic field vector (H), and the direction of propagation can be considered to be all mutually orthogonal ("plane-wave" conditions).

Occupational / controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

General population / uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment-related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area. **In the case of this study, the general population exposure limits have been applied as they are the more conservative set of standards.**

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Additional Remarks

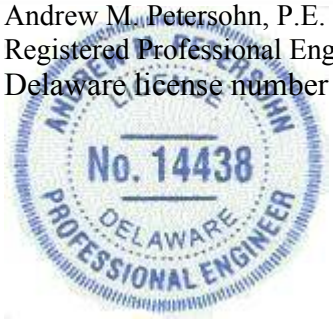
The radio-frequency emission levels from Verizon Wireless and other PCS and Cellular communications base stations are similar to that of other two-way communications systems like those used by police, fire and ambulance personnel. In contrast, commercial broadcast systems like television and radio often transmit at power levels ten times greater or more than the systems discussed above.

The biological effects on humans of non-ionizing radio-frequency exposure have been studied extensively now for decades. There have been thousands of reports produced by government agencies, universities, and private research groups that support the standards adopted by the FCC. **To date, there have been no credible studies conducted whose results showed evidence of any adverse health effects at the above exposure limits.**

Sincerely,



Andrew M. Petersohn, P.E.
Registered Professional Engineer
Delaware license number 14438



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dBm ENGINEERING, P.C.

DECLARATION OF ENGINEER

Andrew M. Petersohn, P.E., hereby states that he is a graduate telecommunications consulting engineer possessing Master and Bachelor Degrees in Electrical Engineering from Lehigh University (2005 and 1999, respectively). His corporation, dBm Engineering, P.C., has been retained by representatives of Verizon Wireless to perform an electromagnetic emissions analysis for a proposed telecommunications facility.

Mr. Petersohn also asserts that the calculations and/or measurements described in this report were made personally and in a truthful and objective manner. Mr. Petersohn is a Registered Professional Engineer licensed in Pennsylvania, Delaware, Maryland, Virginia, New York, and New Jersey. He has over a decade of engineering experience in the field of wireless communications. Mr. Petersohn is an active member of the National Society of Professional Engineers (NSPE) and the Institute of Electronic and Electrical Engineers (IEEE). Mr. Petersohn further states that all facts and statements contained in the foregoing document are true and accurate to the best of his knowledge. He believes, under penalty of perjury, the foregoing to be correct.



Andrew M. Petersohn, P.E.
Registered Professional Engineer
Delaware license number 14438



Executed this the 5th day of May, 2015.

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info@dBmEng.com

May 5, 2015
James Rodgers
Site Acquisition
Verizon Wireless
5175 Campus Drive
Plymouth Meeting, PA 19462

Subject: **Radio Frequency Design of Proposed Communication Facility:**
"CAROL PEAR"
615 Ridgley Street
Dove, DE 19904
Latitude: N 39º 09' 43.4"
Longitude: W 75º 32' 15.0"

Mr. Rodgers:

I have received and executed your request that I perform an independent evaluation and design review for the Verizon Wireless telecommunications facility proposed at the above referenced coordinates. The intention of this study is to provide an objective, professional opinion regarding the proposed facility from a Radio Frequency design perspective. Specifically, how the site compliments the existing network and what coverage and capacity objectives it fulfills. As a registered Professional Engineer, I am bound by a code of ethics to hold paramount the safety, health, and welfare of the public. All statements and calculations offered herein are made in an objective and truthful manner pursuant to that code.

Summary of Findings
In my professional opinion, the proposed facility is extremely well suited to provide enhanced service to the portions of Dover surrounding the site that currently suffer from a lack of reliable wireless service. The proposed facility is the only feasible alternative that will meet the design objectives of this search ring. The location and proposed structure height are the least intrusive means of providing reliable coverage for Verizon Wireless subscribers in the targeted portions of Dover. The designed antenna height is the absolute minimum acceptable in order to achieve a high percentage of the site's design goals.

Sincerely,

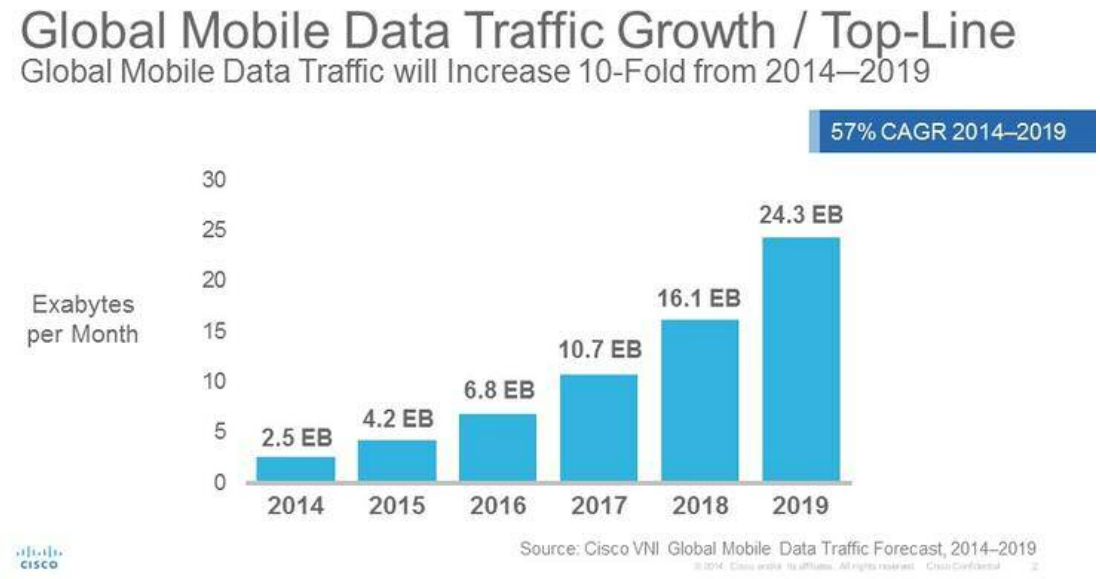




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Network Capacity

The Verizon Wireless facilities currently serving the portion of Dover surrounding the site have reached their data capacity upper-limit "ceiling". Spurred on by smart-phones, tablets, data cards, and the various applications and content available, an exponential growth in data use over the past few years has left providers, equipment manufacturers, and the FCC looking for solutions and radio spectrum to address the demand. As illustrated below, Cisco has recently predicted a 57% compound annual growth rate for global mobile data traffic between 2014 and 2019 resulting in an anticipated 10 fold increase in traffic during that time frame. Because Verizon Wireless can only broadcast and receive in the bands for which they are licensed, there is a finite amount of data throughput that can be supported even using the most modern equipment offered by base-station manufacturers. The traffic demand in the area has already begun to overrun the available resources particularly during peak times of day. Without proper action, the data growth trend will result in a significant degradation in customer experience including services that affect public safety.



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Existing Verizon Wireless Coverage

Currently, Verizon has four (4) existing sites and one (1) planned* in the areas immediately surrounding the gap in coverage. These would be the first tier of neighbors for the proposed facility. These sites are detailed below:

Name	Structure Type	Structure Ht (feet)	Street Address
WEST DOVER	Water Tank	126	Hazlettville Road
FOX HALL	Water Tank	127	1293 Walker Road
DOVER DOWNS	Monopole	125	0 Bacon Avenue
SOUTH DOVER	Water Tank	139	391 UNITED WAY
CENTRAL DOVER	Monopole*	±120	TBD

The reliable strong in-building coverage from the above existing facilities is illustrated in yellow below in figure 1. Highlighted with a green ring are the areas of inadequate coverage and capacity that define the design objectives for this search ring.

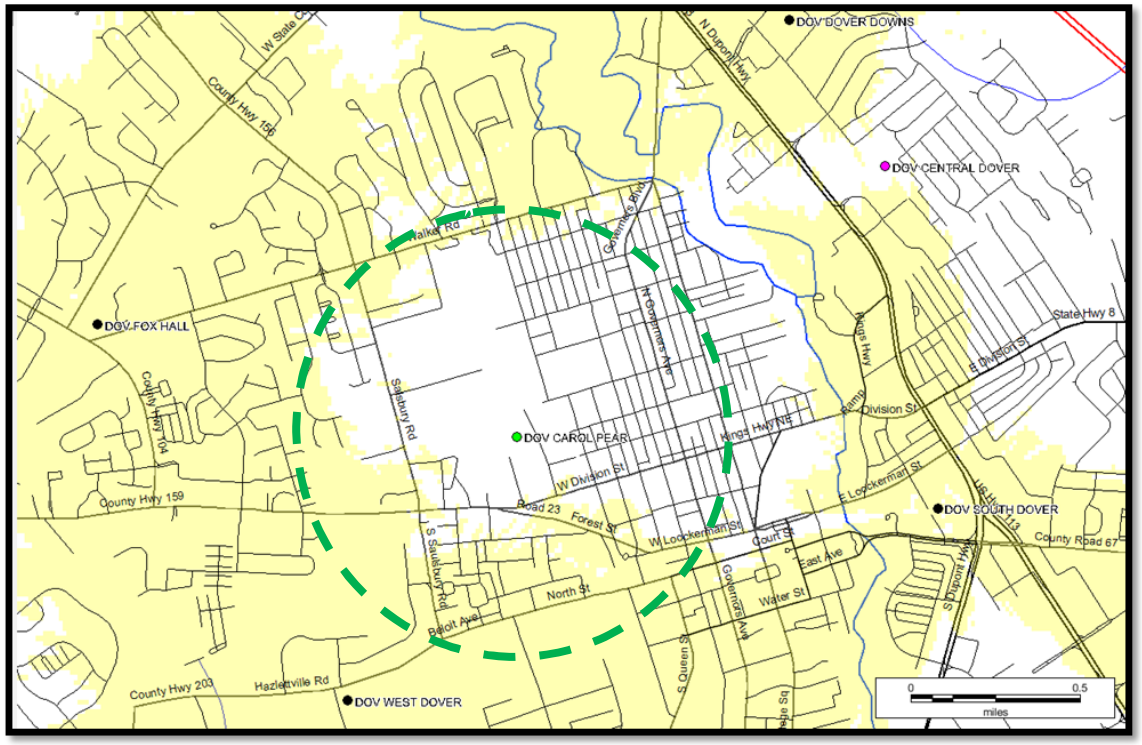


Figure 1 – Existing Coverage

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Proposed Verizon Wireless Coverage

Figure 2 below illustrates the Verizon Wireless anticipated reliable coverage should the proposed facility be constructed as planned. The new coverage (green) from the proposed facility addresses the vast majority of the previously unreliable service areas.

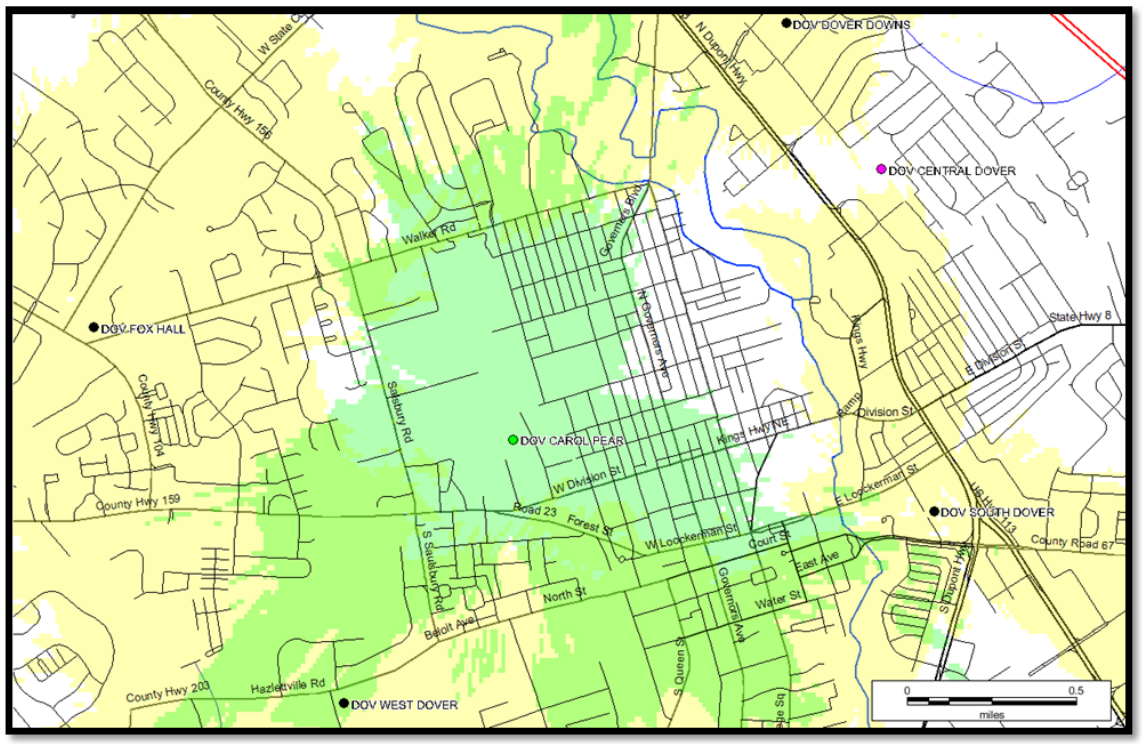


Figure 2 – Proposed Coverage

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Reliable Service

The term "reliable" is used to describe areas where a Verizon Wireless subscriber has the ability to place, receive, and maintain a phone call. Additionally, the concept of reliable service extends beyond just voice communication; access to the data network with a high probability of success and adequate throughput is now a pre-requisite to reliable service. Without adequate capacity, there cannot be reliable service as users attempting to access the network through an overburdened facility will be rejected until such time that resources become available. When the network is not dimensioned properly, delays in network availability become as detrimental to the user experience as coverage gaps as both will result in a denial of service to the customer. Reliable service provided from a facility is affected by many factors including surrounding topography, clutter types, foliage, and subscriber loading during the site's hour of heaviest use, its "busy hour". Because the network must maintain reliability under all conditions, these factors are taken into consideration when designing a new facility. Currently, busy hour exhaustion of the sites serving the area targeted for improvement represents a potential for voice and data service interruptions that may impact public safety. If left unaddressed, the busy hour exhaustion will become increasingly prevalent as subscriber demand continues to increase resulting in exhaustion for greater periods of the day. Eventually, the network resources in the area will be in a state of chronic exhaustion with subscribers consistently experiencing call blocks, data session rejections, and unacceptable data throughput rates. This includes 911 emergency calls and public safety related data requests such as an officer's ability to process a license plate or driving record during a traffic stop.

Wireless Substitution

According to the CDC[1] more than two in every five American homes (44.0%) had only wireless telephones (also known as cellular telephones, cell phones, or mobile phones) during the first half of 2014. This represents an increase of 3 percentage points since the second half of 2013. More than one-half of all adults aged 18-44 and more than one-half of all of children under age 18 were living in wireless-only households. As wireless substitution continues to spread, availability of in-building wireless service, both data and voice, becomes increasingly important.

Emergency Services Implications

Wireless devices are widely used by municipal emergency services for voice and data services including those that impact public safety. Additionally enhanced 911 (E911) services, which allow a mobile caller to be located by the dispatch center, are dependent on an adequate service level to provide help in an emergency.

[1] http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201412.pdf

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Technical Parameters of Consideration

According to the configuration information furnished by its representatives, Verizon Wireless plans to install a total of not more than twelve (12) panel style antennas arranged in three sectors at azimuths evenly spaced in the horizontal plane. The antenna centerline height above ground level is planned at 120'. Transmitting through these antennas will be two (2) LTE radios in the 700 MHz band (per sector) at a maximum of 600 watts ERP (effective radiated power) per radio, two (2) LTE radios in the 2100 MHz band (per sector) at a maximum of 600 watts ERP (effective radiated power) per radio, and two (2) LTE radios in the 1900 MHz band (per sector) at a maximum of 600 watts ERP (effective radiated power) per radio.

Co-location Opportunities

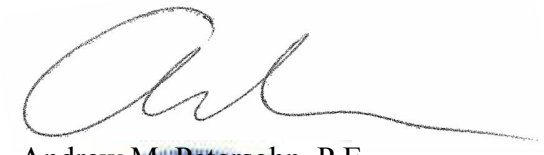
It is Verizon Wireless policy and strong preference to co-locate on existing tall structures when they are appropriately located and structurally capable of supporting the new proposed load. In this case there is an existing monopole immediately adjacent to the proposed location owned by SBA. Unfortunately in this case that monopole is unavailable for co-location due to a lack of ground space for the Verizon Wireless equipment crucial to the functionality of the facility.

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DECLARATION OF ENGINEER

Andrew M. Petersohn, P.E., hereby states that he is a graduate telecommunications consulting engineer possessing Master and Bachelor Degrees in Electrical Engineering from Lehigh University (2005 and 1999, respectively). His corporation, dBm Engineering, P.C., has been retained by representatives of Verizon Wireless to perform a radio frequency design analysis for a proposed telecommunications facility.

Mr. Petersohn also asserts that the calculations and/or measurements described in this report were made personally and in a truthful and objective manner. Mr. Petersohn is a Registered Professional Engineer licensed in Pennsylvania, Delaware, Maryland, Virginia, New York and New Jersey. He has over a decade of engineering experience in the field of wireless communications. Mr. Petersohn is an active member of the National Society of Professional Engineers (NSPE) and the Institute of Electronic and Electrical Engineers (IEEE). Mr. Petersohn further states that all facts and statements contained in the foregoing document are true and accurate to the best of his knowledge. He believes, under penalty of perjury, the foregoing to be correct.



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Executed this the 5th day of May, 2015.

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