

BOARD OF ADJUSTMENT

JEFF CHORMAN, CHAIRMAN
KEVIN E. CARSON
JOHN WILLIAMSON
JOHN T. HASTINGS



Sussex County

DELAWARE
sussexcountyde.gov
(302) 855-7878

AGENDA

November 18, 2024

6:00 PM

Call to Order

Pledge of Allegiance

Approval of Agenda

Approval of the Minutes for September 23, 2024

Approval of the Findings of Fact for September 23, 2024

Old Business

Case No. 12996 – Cellco Partnership (Verizon Wireless)

seeks a special use exception to place a telecommunications tower (Section 115-25, 115-194.2, and 115-210 of the Sussex County Zoning Code). The property is located on the west side of Old Landing Road and south of Betsy Ross Boulevard. 911 Address: 20338 Old Landing Road, Rehoboth Beach. Zoning District: AR-1. Tax Parcel: 334-18.00-76.00

Public Hearings

Case No. 13015 – Krista Wisseman

seeks a variance from the side yard setback requirement for a proposed structure (Sections 115-42 and 115-183 of the Sussex County Zoning Code). The property is located on the west side of Hickory Hill Road. 911 Address: 30880 Hickory Hill Road, Millsboro. Zoning District: GR. Tax Map: 233-4.00-29.00

Case No. 13016 – Brett Cox

seeks a special use for a private garage for more than four automobiles and with floor area of more than 900 square feet in a residential district (Sections 115-40(C) of the Sussex County Zoning Code). The property is located on the southeast side of Caroline Road. 911 Address: 30130 Caroline Road, Ocean View. Zoning District: GR. Tax Parcel: 134-9.00-91.00

Additional Business

-MEETING DETAILS-

In accordance with 29 Del. C. §10004(e)(2), this Agenda was posted on November 6, 2024, at 4:30 p.m. and at least seven (7) days in advance of the meeting.

The Agenda was prepared by the Director of Planning and Zoning and is subject to change to include the additional or deletion of items, including Executive Sessions, which arise at the time of the meeting.

Agenda items may be considered out of sequence.

The meeting will be streamed live at <https://sussexcountyde.gov/council-chamber-broadcast>

The Board of Adjustment meeting materials, including the “packet” are electronically accessible on the County’s website at: <https://sussexcountyde.gov/>.

If any member of the public would like to submit comments electronically, these may be sent to pandz@sussexcountyde.gov. All comments are encouraged to be submitted by 4:30 P.M. on Thursday, November 14, 2024.

####

Board of Adjustment Application

Sussex County, Delaware

Sussex County Planning & Zoning Department
2 The Circle (P.O. Box 417) Georgetown, DE 19947
302-855-7878 ph. 302-854-5079 fax

Case # 12996
Hearing Date 10-7-24
Application: 2024119716
RECEIVED

AUG 15 2024

SUSSEX COUNTY
PLANNING & ZONING

Type of Application: (please check all applicable)

Variance
Special Use Exception
Administrative Variance
Appeal

Existing Condition
Proposed
Code Reference (office use only)

Site Address of Variance/Special Use Exception:

20338 Old Landing Road, Rehoboth Beach, DE 19971

Variance/Special Use Exception/Appeal Requested:

A Special Use Exception to permit the construction of a 130 foot tall commercial communications monopole (to top of lightning rod)

Tax Map #: 334-18.00-76.00

Property Zoning: AR-1

Applicant Information

Applicant Name: Cellco Partnership d/b/a Verizon Wireless
Applicant Address: 512 Township Line Road, Building 2, Floor 3
City Blue Bell State PA Zip: 19422
Applicant Phone #: (267) 253-2762 Applicant e-mail: smanchel@watinc.net

Owner Information

Owner Name: Robert J. and Gwen Martin
Owner Address: 20338 Old Landing Road
City Rehoboth Beach State DE Zip: 19971 Purchase Date: 11/26/74
Owner Phone #: (302) 278-8914 Owner e-mail: gwenm504@gmail.com

Agent/Attorney Information

Agent/Attorney Name: John E. Tracey
Agent/Attorney Address: 1000 N. King Street
City Wilmington State DE Zip: 19801
Agent/Attorney Phone #: (302) 571-6740 Agent/Attorney e-mail: jtracey@ycst.com

Signature of Owner/Agent/Attorney



Date: 8/7/24



Sussex County, DE - BOA Application

Criteria for a Special Use Exception: (Please provide a written statement regarding each criteria)

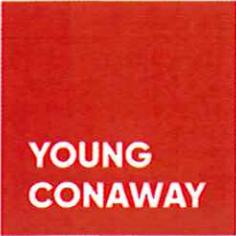
You shall demonstrate to the Board of Adjustment that the property meets all of the following criteria for a Special Use Exception to be granted.

1. Such exception will not substantially affect adversely the uses of adjacent and neighboring property.

See Submitted Materials

2. Any other requirements which apply to a specific type of special use exception as required by the Sussex County Code. (Ex. Time limitations – 5 year maximum)

Basis for Appeal: (Please provide a written statement regarding reason for appeal)



WILMINGTON
RODNEY SQUARE

NEW YORK
ROCKEFELLER CENTER

John E. Tracey
P 302.571.6740
F 302.576.3382
jtracey@ycst.com

August 9, 2024

RECEIVED

AUG 15 2024

SUSSEX COUNTY
PLANNING & ZONING

VIA FEDERAL EXPRESS

Mr. Jamie Whitehouse, AICP
Sussex County Department of Planning
2 The Circle
P.O. Box 589
Georgetown, DE 19947

Re: Cellco Partnership d/b/a Verizon Wireless; Tax Parcel No. 334-18.00-76.00 (DOV Betsy Ross)

Dear Mr. Whitehouse:

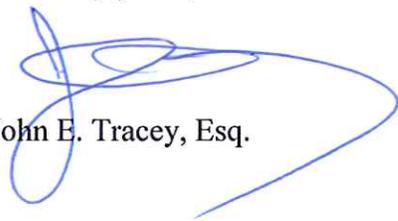
Enclosed please find the completed "Board of Adjustment Application" and \$500.00 application fee on behalf of Cellco Partnership d/b/a Verizon Wireless ("Cellco"). Cellco is seeking to locate a new 130-foot tall telecommunications tower, including a 5-foot tall lightning rod, south of Route 1 and west of Old Landing Road near Rehoboth Beach. In addition to establishing better coverage for Verizon Wireless in this area, the tower would be designed to accommodate at least two (2) additional carriers as required by the Sussex County Code. In order to construct this tower in the desired location I understand that Cellco requires a special use exception from the County's Board of Adjustment. The proposed tower includes the Code-mandated lighting and is designed to meet the required setbacks, as such no variances are needed for the structure or the enclosure.

Along with the application, enclosed are two copies of the site plan and the RF reports for the tower. As you will note, the RF Reports include the before and after coverage maps for the area, as well as the availability (or lack thereof) of tall structures within two (2) miles of the proposed location, and the justification for the required height of the structure.

Young Conaway Stargatt & Taylor, LLP
Mr. Jamie Whitehouse, AICP
August 9, 2024
Page 2

As always, should you need any further information or have any questions, please feel free to contact me at (302) 571-6740. Please be advised that I will not be available for a hearing on November 11 should that be the first available date for this matter.

Sincerely yours,



John E. Tracey, Esq.

Enclosures

cc: Ms. Sue Manchel (via e-mail and w/o enclosures)

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



March 4, 2024
 Sue Manchel
 Site Acquisition
 Verizon Wireless
 512 East Township Line Road
 Blue Bell, PA 19422

Subject: Interference Analysis
Proposed Telecommunications Facility:
“DOV – BETSY ROSS”
20338 OLD LANDING ROAD
REHOBOTH BEACH, DE 19971
Latitude: N 38° 42’ 17.08” (NAD 83)
Longitude: W 75° 08’ 02.01” (NAD 83)
6.0’ AMSL

Ms. Manchel:

I have received and executed the request that I perform an independent evaluation of the potential for harmful interference generated by the proposed Verizon Wireless telecommunications facility at the location referenced above. The intention of this study is to determine if the manifestation of harmful interference is a viable concern through the close examination of the radio frequency (hereafter RF) parameters of the installation. 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

After close examination of the details of this proposal, it is my professional opinion that **no potential exists for the manifestation of harmful interference** as a result of the proposed Verizon Wireless telecommunications facility. My findings indicate that Verizon Wireless will be operating in full compliance with all applicable standards as outlined in their Federal Communications Commission licensure.

Sincerely,

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



Licensure Discussion

Verizon Wireless is bound by its Federal Communications Commission (hereafter FCC) licensure to transmit only the specific frequencies and power levels for which they are licensed. In Sussex County, Delaware these licenses include the 'B' Cellular Band, the 'E' and 'F' PCS band, the 'A', 'B', and 'J' AWS bands, the upper 'C' 700 MHz band, portions of the "UU" (28 GHz) bands, and portions of the 3.7 GHz 'C' band licenses. Other communication facilities and services such as emergency responders, television broadcasting, AM/FM broadcasting, mobile to mobile radios, and home electronics operate at different frequencies, once again, allocated by the FCC. For this reason, the manifestation of **direct**, harmful interference is precluded by virtue of Verizon Wireless being the only entity licensed to utilize these specifically defined portions of the RF spectrum. As such, there will be no direct, significant radio frequency emissions that fall into any band other than that for which Verizon Wireless is licensed. However, when non-linear elements (such as amplifiers) are introduced in the RF path the possibility exists for **indirect** interference caused by harmonic and inter-modulated frequency emissions that may fall outside the licensed spectrum. Due to the fact that the harmonic and inter-modulated output of Cellular and PCS transmitters is extremely low (as required by FCC type approval), this only becomes a concern when there are multiple telecommunication installations in close proximity to one another. This problem is easily avoided by insuring adequate vertical separation (roughly 10') when service providers co-locate on a structure. In this specific installation, the point is moot as Verizon is the only service provider currently proposing use of the rooftop. **In the unlikely event that future radio frequency interference is reported, it is Verizon Wireless policy to identify and mitigate any interference issues as quickly as possible.**

Facility Discussion

According to the information supplied by representatives of Verizon Wireless the proposed design for this facility includes a total of up to twelve (12) new panel-style antennas at an antenna centerline height of 122' above grade. The antennas will be arranged with sector azimuths evenly spaced in the horizontal plane with respect to true north. Transmitting through these antennas will be four (4) LTE transmit paths in the 700 MHz band (per sector) at a cumulative maximum of 160 watts, up to four (4) LTE transmit paths in the 1900 MHz band (per sector) at a cumulative maximum of 160 watts, up to four (4) LTE and / or 5G NR transmit paths in the 850 MHz band (per sector) at a cumulative maximum of 160 watts, up to eight (8) LTE transmit paths in the 2100 MHz band (per sector) at a cumulative maximum of 160 watts, four (4) LTE transmit paths in the 3500 MHz band (per sector) at a cumulative maximum of 20 watts and up to sixty-four (64) 5G NR transmit paths in the 3700 MHz 'C' band (per sector) at a cumulative maximum of 320 watts.

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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 such as those used by police, fire and ambulance personnel. In contrast, commercial broadcast systems such as television and radio often transmit at power levels ten times greater or more than the systems discussed above. Due to the relatively low power output, the potential for harmful interference is greatly reduced as the harmonic and inter-modulated emissions are typically in the noise floor of most receivers when only a few hundred feet away.

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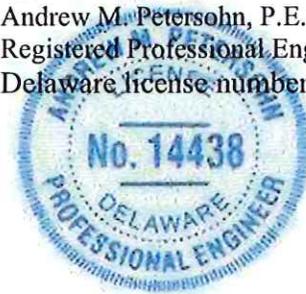
DECLARATION OF ENGINEER

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 an interference analysis for a proposed telecommunications facility.

Mr. Petersohn 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, Florida and New Jersey. He has over two decades 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 Pennsylvania Society of Professional Engineers (PSPE). 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 4th day of March, 2024.

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March 4, 2024
Sue Manchel
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SUSSEX COUNTY
PLANNING & ZONING

**Subject: Interference Analysis
Proposed Telecommunications Facility:
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Latitude: N 38° 42' 17.08" (NAD 83)
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6.0' AMSL**

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Sincerely,

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Additional Remarks

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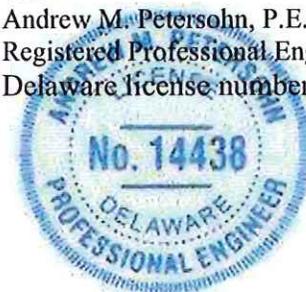
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Executed this the 4th day of March, 2024.

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March 4, 2024
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RECEIVED
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 SUSSEX COUNTY
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Subject: Electromagnetic Exposure Analysis
“DOV – BETSY ROSS”
20338 OLD LANDING ROAD
REHOBOTH BEACH, DE 19971
Latitude: N 38° 42’ 17.08” (NAD 83)
Longitude: W 75° 08’ 02.01” (NAD 83)
6.0’ AMSL

Ms. Manchel:

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 on the structure 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 less than 4.9% of the applicable FCC standard at all locations of public access.** The following charts specifically illustrate the anticipated exposure levels in areas surrounding the facility. All exposure levels 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 antenna down-tilt, maximum pattern gain, and 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.

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.

Technical Parameters of Consideration

The calculation results presented are 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) new panel-style antennas at an antenna centerline height of 122’ above grade. The antennas will be arranged with sector azimuths evenly spaced in the horizontal plane with respect to true north. Transmitting through these antennas will be four (4) LTE transmit paths in the 700 MHz band (per sector) at a cumulative maximum of 160 watts, up to four (4) LTE transmit paths in the 1900 MHz band (per sector) at a cumulative maximum of 160 watts, up to four (4) LTE and / or 5G NR transmit paths in the 850 MHz band (per sector) at a cumulative maximum of 160 watts, up to eight (8) LTE transmit paths in the 2100 MHz band (per sector) at a cumulative maximum of 160 watts, four (4) LTE transmit paths in the 3500 MHz band (per sector) at a cumulative maximum of 20 watts and up to sixty-four (64) 5G NR transmit paths in the 3700 MHz ‘C’ band (per sector) at a cumulative maximum of 320 watts.

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.

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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 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

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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

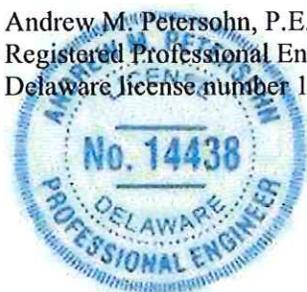
The radio-frequency emission levels from Verizon Wireless and other communications base stations are similar to that of other two-way communications systems like those used by police, fire and ambulance personnel. In contrast, commercial broadcast systems like television and radio often transmit at power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

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 applicable FCC exposure limits.**

Sincerely,



Andrew M. Petersohn, P.E.
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Delaware license number 14438



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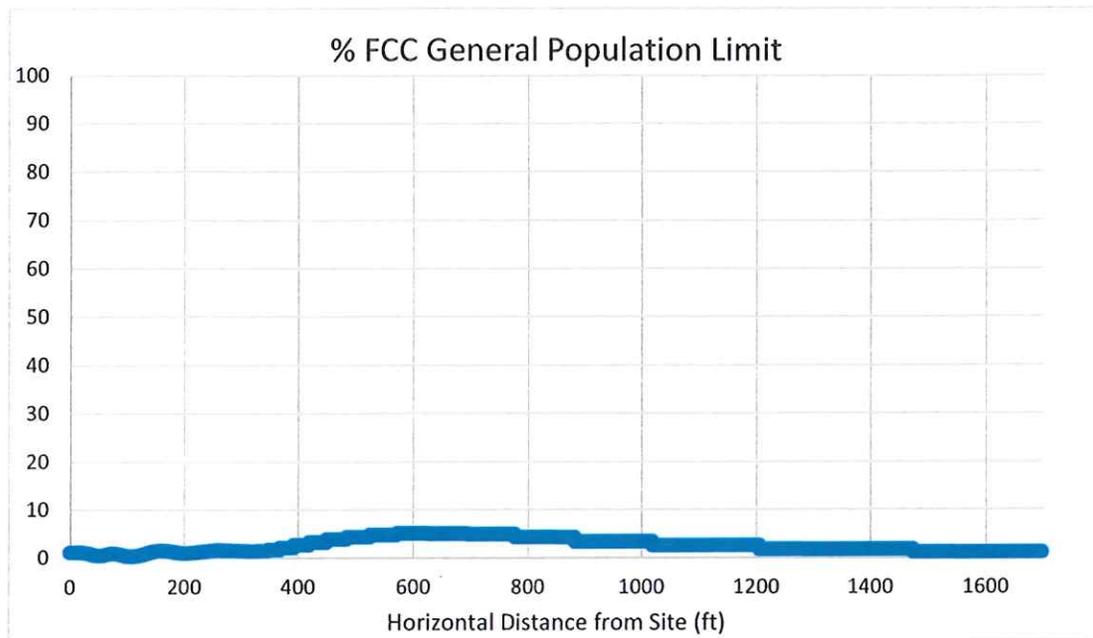


Figure-1 – calculated cumulative exposure level surrounding the proposed telecommunications facility expressed in percentage of the applicable FCC standard

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Horizontal Distance from Facility (Ft.)	Relative Height Above Ground (Ft.)	Maximum Power Density $\mu\text{W}/\text{cm}^2$ (micro-watts per square centimeter)							% of FCC Limit							Cumulative % of FCC limit across all bands
		700 MHz	850 MHz	1900 MHz	2100 MHz	3500 MHz	3700 MHz	28 GHz	700 MHz	850 MHz	1900 MHz	2100 MHz	3500 MHz	3700 MHz	28 GHz	
0	6	0.14	0	0.04	0	0.04	9.04	NA	0.03	0	0.004	0	0.004	0.904	NA	0.942
300	6	2.43	1.36	0.04	0.23	0.02	3.99	NA	0.52	0.24	0.004	0.023	0.002	0.399	NA	1.188
600	6	2.43	3.12	1.77	1.09	0.17	35.02	NA	0.52	0.55	0.177	0.109	0.017	3.502	NA	4.875
1320 (1/4 mi.)	6	0.14	0.23	0.49	0.49	0.07	13.73	NA	0.03	0.04	0.049	0.049	0.007	1.373	NA	1.548
FCC Exposure Limits for General Population ($\mu\text{W}/\text{cm}^2$)		467	567	1000	1000	1000	1000	1000								

Figure-2 – sample calculated exposure levels near the proposed telecommunications facility

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Registered Professional Engineer
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March 4, 2024
 Sue Manchel
 Site Acquisition
 Verizon Wireless
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RECEIVED

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SUSSEX COUNTY
 PLANNING & ZONING

Subject: Electromagnetic Exposure Analysis
“DOV – BETSY ROSS”
20338 OLD LANDING ROAD
REHOBOTH BEACH, DE 19971
Latitude: N 38° 42’ 17.08” (NAD 83)
Longitude: W 75° 08’ 02.01” (NAD 83)
6.0’ AMSL

Ms. Manchel:

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 on the structure 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 less than 4.9% of the applicable FCC standard at all locations of public access.** The following charts specifically illustrate the anticipated exposure levels in areas surrounding the facility. All exposure levels 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 antenna down-tilt, maximum pattern gain, and 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.

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.

Technical Parameters of Consideration

The calculation results presented are 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) new panel-style antennas at an antenna centerline height of 122’ above grade. The antennas will be arranged with sector azimuths evenly spaced in the horizontal plane with respect to true north. Transmitting through these antennas will be four (4) LTE transmit paths in the 700 MHz band (per sector) at a cumulative maximum of 160 watts, up to four (4) LTE transmit paths in the 1900 MHz band (per sector) at a cumulative maximum of 160 watts, up to four (4) LTE and / or 5G NR transmit paths in the 850 MHz band (per sector) at a cumulative maximum of 160 watts, up to eight (8) LTE transmit paths in the 2100 MHz band (per sector) at a cumulative maximum of 160 watts, four (4) LTE transmit paths in the 3500 MHz band (per sector) at a cumulative maximum of 20 watts and up to sixty-four (64) 5G NR transmit paths in the 3700 MHz ‘C’ band (per sector) at a cumulative maximum of 320 watts.

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.

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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 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

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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

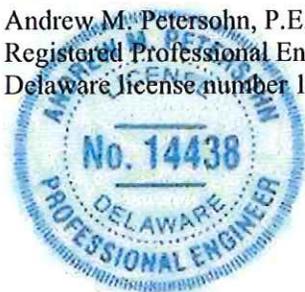
The radio-frequency emission levels from Verizon Wireless and other communications base stations are similar to that of other two-way communications systems like those used by police, fire and ambulance personnel. In contrast, commercial broadcast systems like television and radio often transmit at power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

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 applicable FCC exposure limits.**

Sincerely,



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



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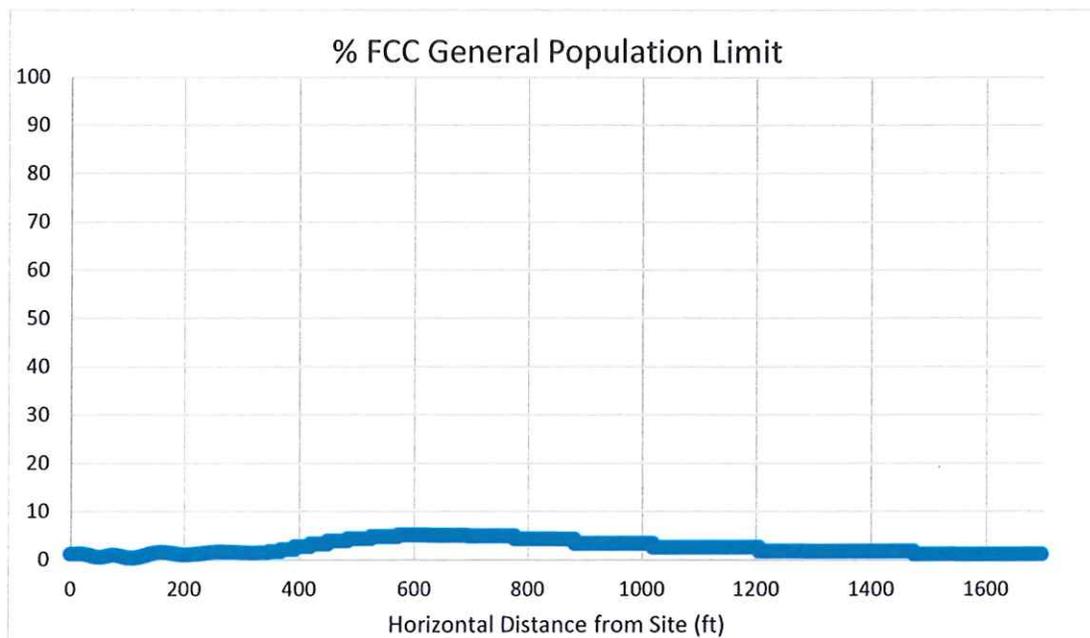


Figure-1 – calculated cumulative exposure level surrounding the proposed telecommunications facility expressed in percentage of the applicable FCC standard

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Horizontal Distance from Facility (Ft.)	Relative Height Above Ground (Ft.)	Maximum Power Density $\mu\text{W}/\text{cm}^2$ (micro-watts per square centimeter)							% of FCC Limit							Cumulative % of FCC limit across all bands
		700 MHz	850 MHz	1900 MHz	2100 MHz	3500 MHz	3700 MHz	28 GHz	700 MHz	850 MHz	1900 MHz	2100 MHz	3500 MHz	3700 MHz	28 GHz	
0	6	0.14	0	0.04	0	0.04	9.04	NA	0.03	0	0.004	0	0.004	0.904	NA	0.942
300	6	2.43	1.36	0.04	0.23	0.02	3.99	NA	0.52	0.24	0.004	0.023	0.002	0.399	NA	1.188
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Summary of Findings

In my professional opinion, the proposed facility is extremely well suited to provide enhanced wireless service in portions of Sussex County west of Dewey Beach in the geography roughly bounded by Rt 1, Rt 24, and the Rehoboth Bay that currently suffer from inadequate capacity and unreliable in-building coverage. Currently, the nearby Verizon Wireless facilities are not providing adequate capacity or coverage into the targeted geography resulting in service issues. The proposed facility is the only feasible alternative that will satisfy the design objective for affected areas. The design, location, and proposed antenna height is the least intrusive means of providing adequate service for Verizon Wireless subscribers in the targeted geography. The proposed antenna height is the absolute minimum acceptable to achieve a high percentage of the site's design goals.

Sincerely,

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Delaware license number 14438



Existing Verizon Wireless Service

Currently, Verizon has six (6) existing macro sites in the area immediately surrounding the proposed facility. These sites would be the first-tier neighbors for the proposed facility. The details and locations of these sites can be seen below:

Name	Structure Type	Antenna Centerline (ft)	Street Address
MARSHTOWN	Monopole	140	21194 John Williams Highway
DOV MIDWAY PEPPERS	Rooftop	43	18826 Coastal Highway
DOV SILVER SCARBOROUGH	Water Tank	124	1 Lincoln Street
REHOBOTH BEACH	Lattice Tower	146	Hebron Road; 75 ft. N of Burton Ave.
DOV SEA SHELL	Lattice Tower	87	36027 Airport Road
DOV HORSE ISLAND	Monopole	145	23182 Camp Arrowhead Road

Existing Verizon Wireless Coverage

The in-building (green) and in-vehicle (yellow) coverage footprints from the above existing facilities are illustrated below in figure 1. There is a significant gap in reliable in-building coverage in the mainly residential and recreational areas between Rt 1, Rt 24, and the Rehoboth Bay.



Figure 1 – Existing Coverage

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Proposed Verizon Wireless Coverage Improvement

Figure 2 below illustrates the Verizon Wireless anticipated in-building coverage improvement. The proposed facility will remedy the existing coverage issues and will enable reliable service to the many residential and recreational uses in the surrounding areas. The proposed antenna height is the minimum acceptable to provide an in-building threshold of service for Verizon subscribers in the numerous residential subdivisions and recreational facilities including the Kings Creek and Rehoboth Beach Country Clubs. Any decrease in the height of the proposed facility will significantly diminish the effectiveness of the proposed site.



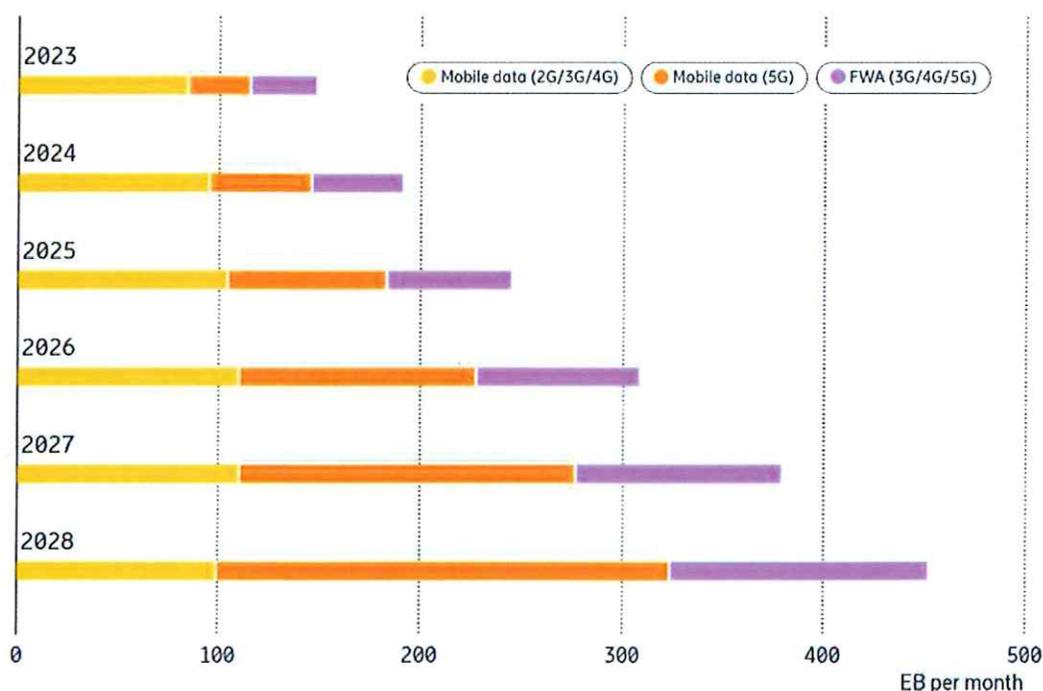
Figure 2 – Proposed Coverage

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Network Capacity

The Verizon Wireless facilities currently serving the geography surrounding the proposed facility are approaching their data capacity upper-limit “ceiling”. Spurred on by smartphones, tablets, data cards, and the various applications and content available, an explosion of 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, Ericsson has recently predicted¹ a three (3) fold increase in global mobile network data traffic between 2023 and 2028. 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.



¹ [Mobile data traffic forecast – Mobility Report - Ericsson](#)

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Existing Verizon Wireless Capacity

The best-server coverage footprint areas from the above on-air facilities are illustrated below in figure 3. The targeted areas in which the proposed facility is designed to provide capacity offload include the numerous residential subdivisions and recreational facilities including the Kings Creek and Rehoboth Beach Country Clubs. Demand in these areas is currently overburdening the “Rehoboth Beach”, “Sea Shell” and “Marshtown” sites.



Figure 3 – Existing Best Server Coverage

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Proposed Verizon Wireless Capacity Upgrade

Experience dictates that to effectively provide adequate service in a capacity starved area, a telecommunications facility must be located as close to the subscriber density as possible. Following this tenet ensures the two most important design criteria for this environment are met: First, that there is signal dominance in the congested area and second that there is adequate signal strength to penetrate the often-dense building materials typically found in an area of high subscriber density. As illustrated by the proposed site's dominant service area (figure 4 below), the new facility will provide an effective capacity offload while providing in-building coverage to the general area. Verizon Wireless mobile devices in the newly shaded coverage area will be served by the proposed facility when engaged in data-activity allowing the reduction of the data traffic load on the nearby sites. Any decrease in the height of the proposed facility will decrease its offload area and diminish the effectiveness of the proposed site.

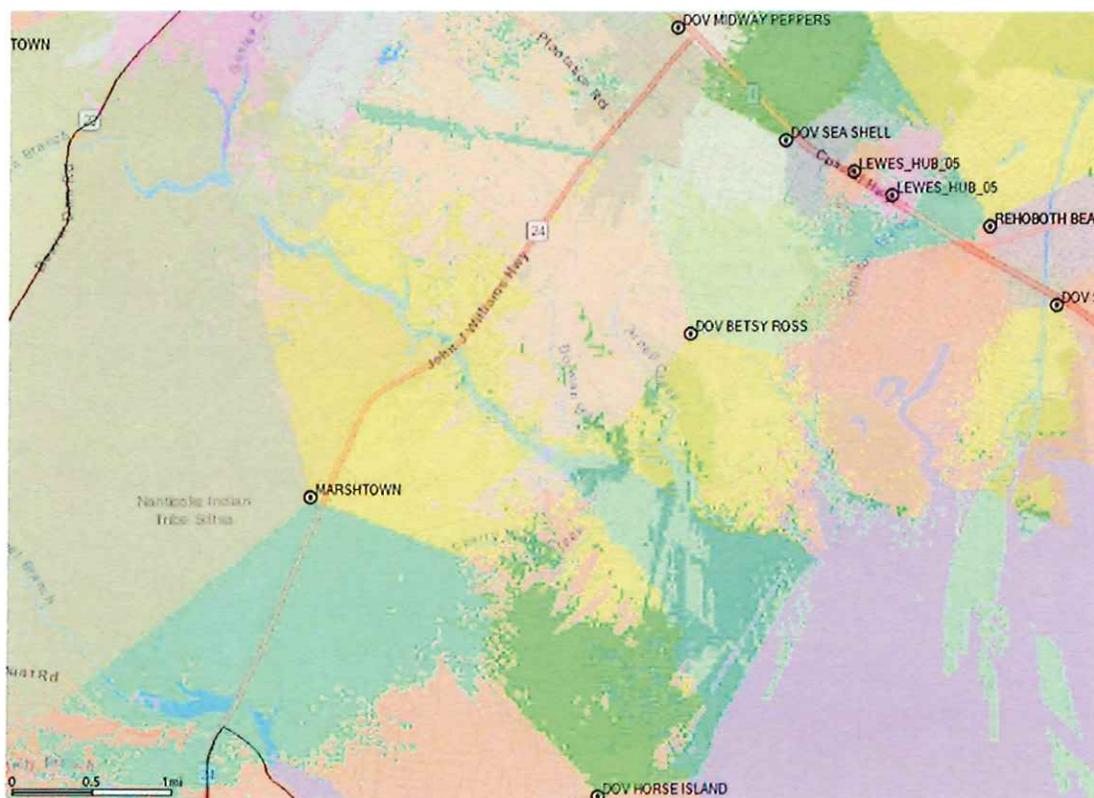


Figure 4 – Proposed Best Server Coverage

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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. 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.

Wireless Substitution

According to the CDC² 70.7% of adults and 81.7% of children lived in wireless-only households during the first half of 2022. The increase in the prevalence of adults living in wireless-only households is a continuation of the increasing trend that has been seen over time. Demographic subgroups with the highest percentages of wireless-only adults include adults aged 25–29 (89%) and 30-34 (87.3%), and adults renting their homes (84.5%) 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. It is estimated that approximately 70% of 911 calls originate from mobile devices³. In the service challenged areas, an unreliable level of wireless service could, in many cases, negatively affect the ability of an individual in need of emergency services who is dialing 911.

² <https://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless202212.pdf>

³ <https://transition.fcc.gov/cgb/consumerfacts/wireless911srvc.pdf>

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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) new panel-style antennas at an antenna centerline height of 122' above grade. The antennas will be arranged with sector azimuths evenly spaced in the horizontal plane with respect to true north. Transmitting through these antennas will be four (4) LTE transmit paths in the 700 MHz band (per sector) at a cumulative maximum of 160 watts, up to four (4) LTE transmit paths in the 1900 MHz band (per sector) at a cumulative maximum of 160 watts, up to four (4) LTE and / or 5G NR transmit paths in the 850 MHz band (per sector) at a cumulative maximum of 160 watts, up to eight (8) LTE transmit paths in the 2100 MHz band (per sector) at a cumulative maximum of 160 watts, four (4) LTE transmit paths in the 3500 MHz band (per sector) at a cumulative maximum of 20 watts and up to sixty-four (64) 5G NR transmit paths in the 3700 MHz 'C' band (per sector) at a cumulative maximum of 320 watts.

Alternate Candidates Analysis

It is Verizon Wireless policy and overwhelming preference to utilize existing, tall structures as antenna support platforms when their location, available attachment height, and structural capacity are congruent with Verizon's network requirements. This is because the co-location process is almost always less expensive, faster to market, and less involved from a permitting perspective than the construction of a new tower structure. In this specific case, there are no existing tall structures that meet the Verizon Wireless requirements within a two-mile radius of the proposed facility that Verizon is not already installed on.

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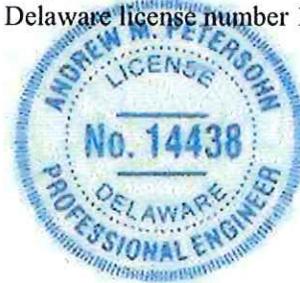
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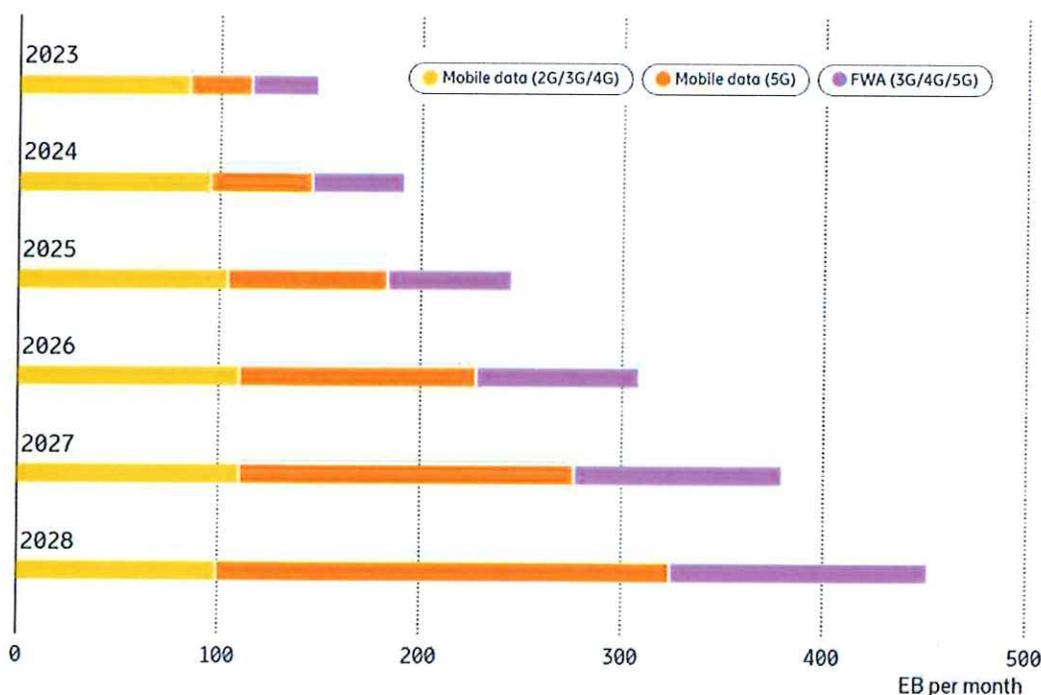
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Network Capacity

The Verizon Wireless facilities currently serving the geography surrounding the proposed facility are approaching their data capacity upper-limit “ceiling”. Spurred on by smart-phones, tablets, data cards, and the various applications and content available, an explosion of 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, Ericsson has recently predicted¹ a three (3) fold increase in global mobile network data traffic between 2023 and 2028. 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.



¹ [Mobile data traffic forecast – Mobility Report - Ericsson](#)

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Existing Verizon Wireless Capacity

The best-server coverage footprint areas from the above on-air facilities are illustrated below in figure 3. The targeted areas in which the proposed facility is designed to provide capacity offload include the numerous residential subdivisions and recreational facilities including the Kings Creek and Rehoboth Beach Country Clubs. Demand in these areas is currently overburdening the “Rehoboth Beach”, “Sea Shell” and “Marstown” sites.

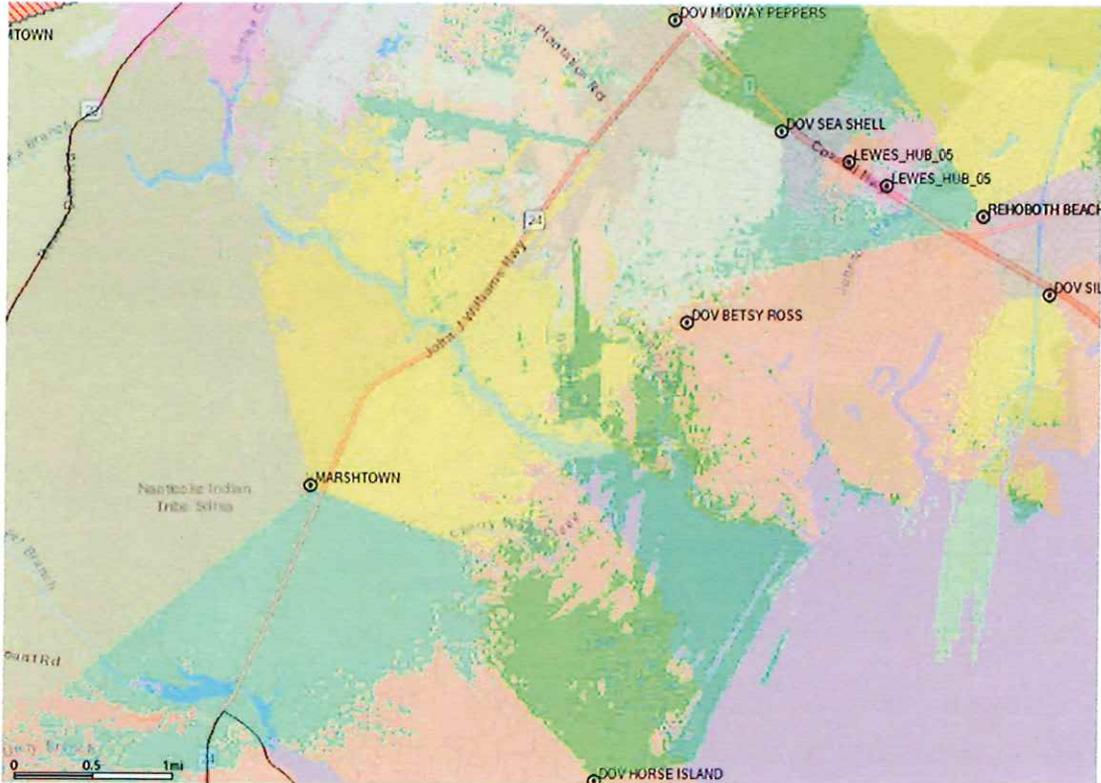


Figure 3 – Existing Best Server Coverage

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Proposed Verizon Wireless Capacity Upgrade

Experience dictates that to effectively provide adequate service in a capacity starved area, a telecommunications facility must be located as close to the subscriber density as possible. Following this tenet ensures the two most important design criteria for this environment are met: First, that there is signal dominance in the congested area and second that there is adequate signal strength to penetrate the often-dense building materials typically found in an area of high subscriber density. As illustrated by the proposed site's dominant service area (figure 4 below), the new facility will provide an effective capacity offload while providing in-building coverage to the general area. Verizon Wireless mobile devices in the newly shaded coverage area will be served by the proposed facility when engaged in data-activity allowing the reduction of the data traffic load on the nearby sites. Any decrease in the height of the proposed facility will decrease its offload area and diminish the effectiveness of the proposed site.

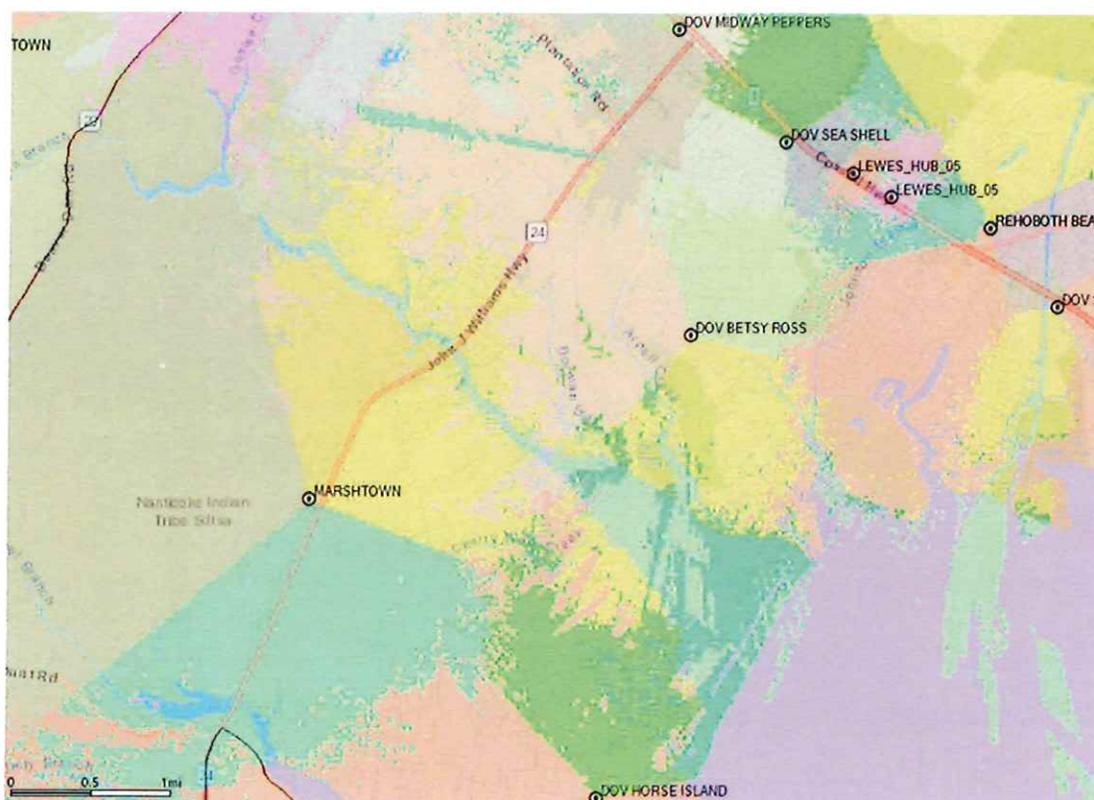


Figure 4 – Proposed Best Server Coverage

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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. 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.

Wireless Substitution

According to the CDC² 70.7% of adults and 81.7% of children lived in wireless-only households during the first half of 2022. The increase in the prevalence of adults living in wireless-only households is a continuation of the increasing trend that has been seen over time. Demographic subgroups with the highest percentages of wireless-only adults include adults aged 25–29 (89%) and 30-34 (87.3%), and adults renting their homes (84.5%) 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. It is estimated that approximately 70% of 911 calls originate from mobile devices³. In the service challenged areas, an unreliable level of wireless service could, in many cases, negatively affect the ability of an individual in need of emergency services who is dialing 911.

² <https://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless202212.pdf>

³ <https://transition.fcc.gov/cgb/consumerfacts/wireless911srv.pdf>

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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) new panel-style antennas at an antenna centerline height of 122' above grade. The antennas will be arranged with sector azimuths evenly spaced in the horizontal plane with respect to true north. Transmitting through these antennas will be four (4) LTE transmit paths in the 700 MHz band (per sector) at a cumulative maximum of 160 watts, up to four (4) LTE transmit paths in the 1900 MHz band (per sector) at a cumulative maximum of 160 watts, up to four (4) LTE and / or 5G NR transmit paths in the 850 MHz band (per sector) at a cumulative maximum of 160 watts, up to eight (8) LTE transmit paths in the 2100 MHz band (per sector) at a cumulative maximum of 160 watts, four (4) LTE transmit paths in the 3500 MHz band (per sector) at a cumulative maximum of 20 watts and up to sixty-four (64) 5G NR transmit paths in the 3700 MHz 'C' band (per sector) at a cumulative maximum of 320 watts.

Alternate Candidates Analysis

It is Verizon Wireless policy and overwhelming preference to utilize existing, tall structures as antenna support platforms when their location, available attachment height, and structural capacity are congruent with Verizon's network requirements. This is because the co-location process is almost always less expensive, faster to market, and less involved from a permitting perspective than the construction of a new tower structure. In this specific case, there are no existing tall structures that meet the Verizon Wireless requirements within a two-mile radius of the proposed facility that Verizon is not already installed on.

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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, Florida and New Jersey. He has over two decades 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 Pennsylvania Society of Professional Engineers (PSPE). Mr. Petersohn further states that all facts and statements contained in the foregoing document are true and accurate to the best of his knowledge.



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



Executed this the 4th day of March, 2024

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March 4, 2024
 Sue Manchel
 Site Acquisition
 Verizon Wireless
 512 East Township Line Road
 Blue Bell, PA 19422

RECEIVED

AUG 15 2024

SUSSEX COUNTY
 PLANNING & ZONING

**Subject: FAA Notice Criteria Tool Screening
 "DOV – BETSY ROSS"
 20338 OLD LANDING ROAD
 REHOBOTH BEACH, DE 19971
 Latitude: N 38° 42' 17.08" (NAD 83)
 Longitude: W 75° 08' 02.01" (NAD 83)
 6.0' AMSL**

Ms. Manchel:

I have received and executed the request that I perform an independent screening analysis of the proposed telecommunications facility at the above referenced coordinates. The intention of this study is to verify compliance with Federal Aviation Administration's (hereafter "FAA") guidelines for notice requirement as per Federal Aviation Regulation. 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

Based on the coordinates, ground elevation, and total structure height supplied by representatives of Verizon Wireless, this proposed facility will not exceed any standard of subpart C of 14 CFR Part 77 so **lighting and / or marking of the facility will not be required**. Filing with the FAA of form 7460-1 "Notice of Proposed Construction" is **not required**. The FAA Criteria Notice Tool results are attached.

Sincerely,

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

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference [CFR Title 14 Part 77.9](#).

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the [FAA Co-location Policy](#)
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the [Air Traffic Areas of Responsibility map](#) for Off Airport construction, or contact the [FAA Airports Region / District Office](#) for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

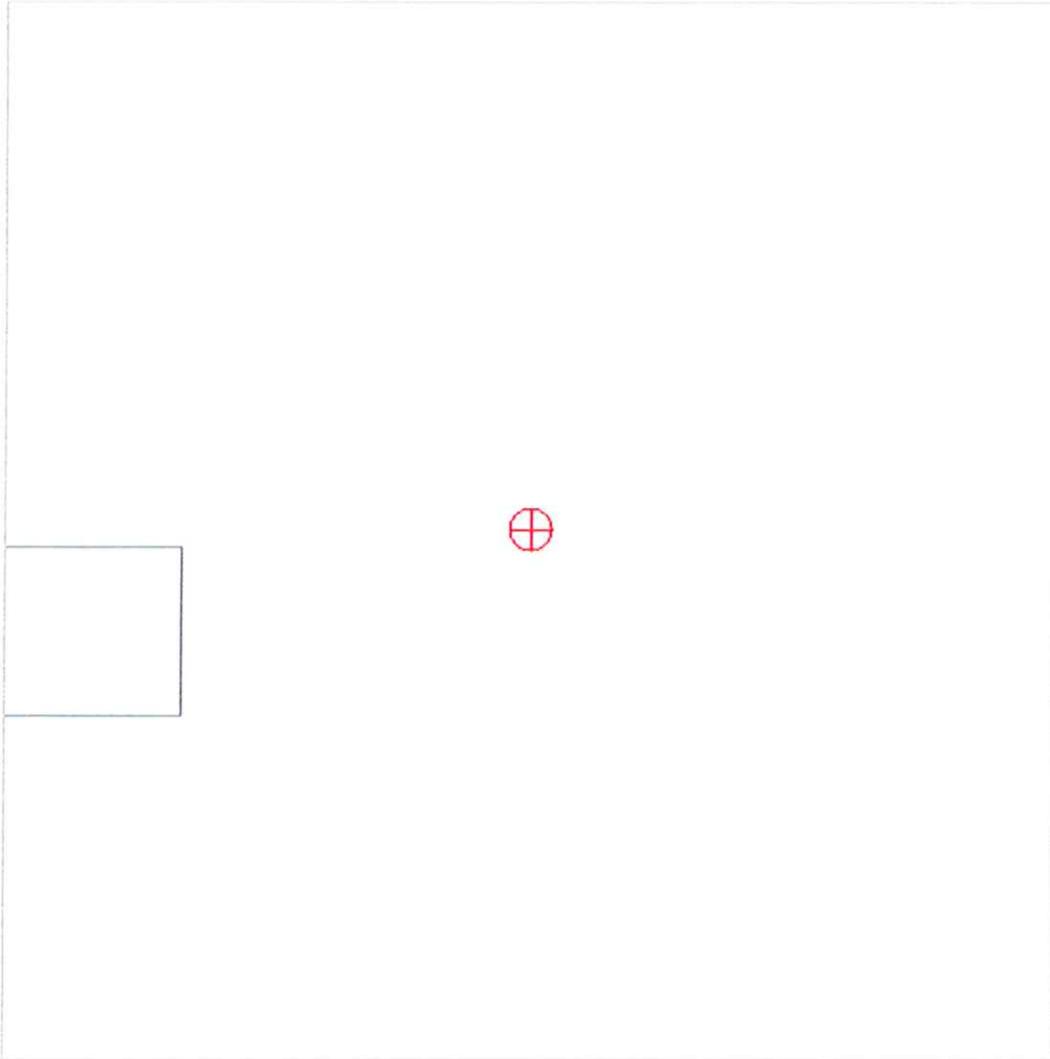
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Please select structure type and complete location point information.				
Latitude:	38	Deg	42	M 17.08 S N ▼
Longitude:	75	Deg	8	M 2.01 S W ▼
Horizontal Datum:	NAD83 ▼			
Site Elevation (SE):	6	(nearest foot)		
Structure Height :	130	(nearest foot)		
Is structure on airport:	<input checked="" type="radio"/> No <input type="radio"/> Yes			
Submit				

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 Phone: 610.304.2024
 Fax: 610.584.5387
info@dBmEng.com



Results

You do not exceed Notice Criteria.



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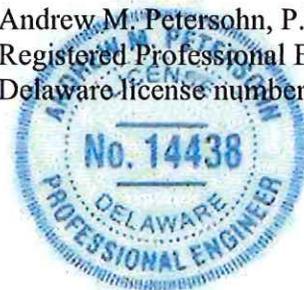
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Delaware license number 14438



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March 4, 2024
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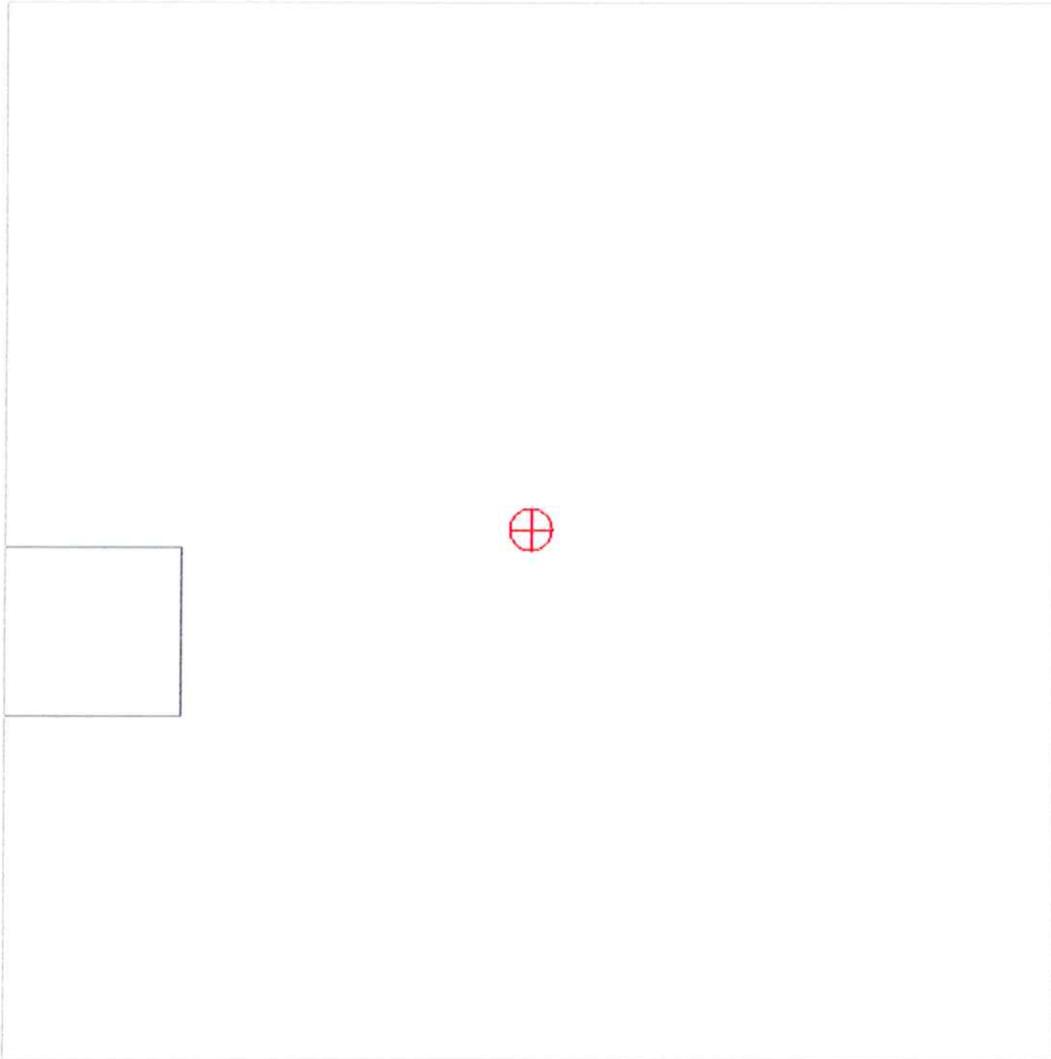
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Results

You do not exceed Notice Criteria.



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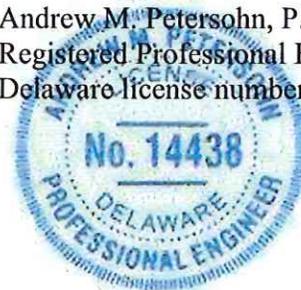
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Executed this the 4th day of March, 2024

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PROJECT NOTES

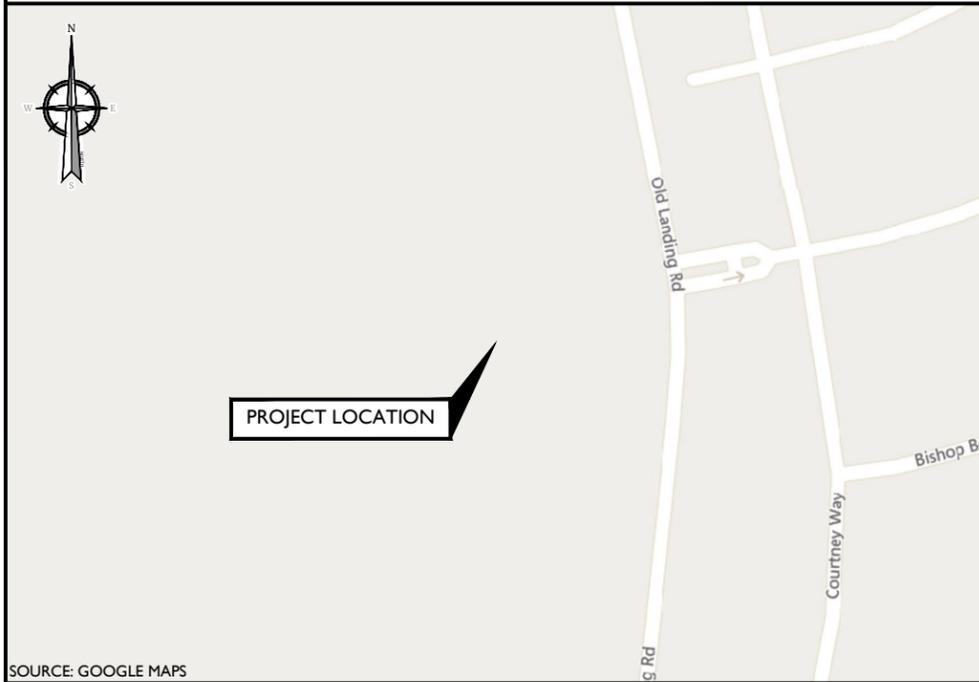
1. SITE INFORMATION OBTAINED FROM THE FOLLOWING:
 - A. CELL SITE SURVEY ENTITLED "DOV BETSY ROSS" PREPARED BY COLLIERS ENGINEERING OF MT. LAUREL, NJ DATED 08/01/23.
 - A.A. PROPERTY LINES DEPICTED HEREON ARE NOT THE RESULT OF A COMPREHENSIVE BOUNDARY SURVEY. THE LOCATION OF THE EXTERIOR BOUNDARY LINES ARE THE PARENT TACT AND ADJOINING PARCELS AS SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION AND MONUMENTATION RECOVERED DURING THE COURSE OF THIS SURVEY.
 - B. LIMITED FIELD OBSERVATION BY COLLIERS ENGINEERING & DESIGN ON 06/02/23.
2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANIES OR OTHER PUBLIC/GOVERNING AUTHORITIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
4. 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.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE AS A RESULT OF CONSTRUCTION OF THIS FACILITY AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
6. 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 MANUFACTURER'S RECOMMENDATIONS.
7. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND CONSTRUCTION DRAWINGS.
8. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THESE DRAWINGS MUST BE VERIFIED. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
9. THE PROPOSED FACILITY WILL COMPLY WITH ALL STATE AND LOCAL STORMWATER ORDINANCES.
10. NO NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY AS TO CAUSE A NUISANCE.
11. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (NO HANDICAP ACCESS IS REQUIRED).
12. THE FACILITY DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
13. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTHS WITH RF ENGINEERING PRIOR TO INSTALLATION.
14. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
15. CONTRACTOR MUST FIELD LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION.
16. CONSTRUCTION SHALL NOT COMMENCE UNTIL COMPLETION OF A PASSING STRUCTURAL ANALYSIS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. THE STRUCTURAL ANALYSIS IS TO BE PERFORMED BY OTHERS.
17. CONTRACTOR SHALL CONTACT STATE SPECIFIC ONE CALL SYSTEM THREE WORKING DAYS PRIOR TO ANY EARTH MOVING ACTIVITIES.



SITE NAME: DOV BETSY ROSS

**20338 OLD LANDING ROAD
REHOBOTH BEACH, DE 19971
SUSSEX COUNTY**

VICINITY MAP



SOURCE: GOOGLE MAPS

PROJECT INFORMATION

SITE INFORMATION
 LATITUDE: N 38° 42' 17.08" (NAD 83)
 LONGITUDE: W 75° 08' 02.01" (NAD 83)
 GROUND ELEVATION: 6.0'± AMSL (NAVD 88)
 JURISDICTION: SUSSEX COUNTY
 APN: 334-18.00-76.00
 ZONING: AR-1 - AGRICULTURAL RESIDENTIAL

APPLICANT
 COMPANY: CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS
 ADDRESS: 512 TOWNSHIP LINE ROAD BUILDING 2, FLOOR 3
 CITY, STATE, ZIP: BLUE BELL, PA 19422

PROPERTY OWNER
 NAME: ROBERT J MARTIN & GWEN MARTIN
 ADDRESS: 20338 OLD LANDING ROAD
 CITY, STATE, ZIP: REHOBOTH BEACH, DE 19971

SITE ACQUISITION
 COMPANY: WIRELESS ACCESS TECHNOLOGIES, INC.
 CONTACT: SUE MANCHEL
 PHONE: (267) 253-2762

CONSTRUCTION MANAGER
 COMPANY: CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS
 ADDRESS: 512 TOWNSHIP LINE ROAD, BUILDING 2, FLOOR 3
 CITY, STATE, ZIP: BLUE BELL, PA 19422
 CONTACT: MARK LYNCH
 PARCEL: (610) 608-6101

ENGINEERING COMPANY
 COMPANY: COLLIERS ENGINEERING & DESIGN, INC
 ADDRESS: 2000 Midlantic Drive, Suite 100
 CITY, STATE, ZIP: MT. LAUREL, NJ 08054
 CONTACT: MATTHEW GRAUBART, P.E.
 PHONE: (856) 797-0412
 E-MAIL: MATTHEW.GRAUBART@COLLIERSENG.COM

LOCATION INFORMATION

POWER PROVIDER
 COMPANY: DELAWARE ELECTRIC COOPERATIVE
 PHONE: (855) 332-9090

TELEPHONE PROVIDER
 COMPANY: VERIZON
 PHONE: (800) 837-4966

POLICE
 NAME: REHOBOTH BEACH POLICE DEPARTMENT
 ADDRESS: 229 REHOBOTH AVENUE
 CITY, STATE, ZIP: REHOBOTH BEACH, DE 19971
 PHONE: (302) 227-2577

FIRE
 NAME: REHOBOTH BEACH VOLUNTEER FIRE COMPANY
 ADDRESS: 219 REHOBOTH AVENUE
 CITY, STATE, ZIP: REHOBOTH BEACH, DE 19971
 PHONE: (302) 227-8400

IN CASE OF EMERGENCY, CALL 9-1-1

SHEET INDEX

SHEET	DESCRIPTION
T-1	TITLE SHEET
Z-1	ZONING INFORMATION
Z-2	SITE PLAN AND SITE NOTES
Z-3	PARTIAL SITE PLAN
Z-4	COMPOUND PLAN AND ELEVATION VIEW
A-1	CONSTRUCTION DETAILS
A-2	CONSTRUCTION DETAILS
A-3	CONSTRUCTION DETAILS
A-4	CONSTRUCTION DETAILS
A-5	CONSTRUCTION DETAILS

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.

- | | |
|--|--|
| 1. 2018 INTERNATIONAL BUILDING CODE | 8. INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81 IEEE C2 LATEST EDITION |
| 2. 2020 DELAWARE STATE ELECTRICAL CODE | 9. TELCORDIA GR-1275 |
| 3. 2021 DELAWARE STATE FIRE CODE | 10. ANSI T1.311 |
| 4. AMERICAN INSTITUTE OF STEEL CONSTRUCTION 360-16 | 11. PROPOSED USE: UNMANNED TELECOM FACILITY |
| 5. AMERICAN CONCRETE INSTITUTE | 12. HANDICAP REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED. |
| 6. TIA-222-H | 13. CONSTRUCTION TYPE: IIB |
| 7. TIA 607 FOR GROUNDING | 14. USE GROUP: U |

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Doing Business as **MASER CONSULTING**



CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

512 TOWNSHIP LINE ROAD
BUILDING 2, FLOOR 3
BLUE BELL, PA 19422



FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

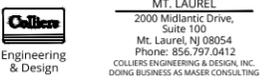
SCALE:	AS SHOWN	JOB NUMBER:	23960058
REV	DATE	ISSUED FOR	CHECKED BY
0	10/27/23	ISSUED FOR ZONING	RMD MEG
A	09/06/23	ISSUED FOR REVIEW	RMD MEG



IT IS A VIOLATION FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF THE RESPONSIBLE LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:

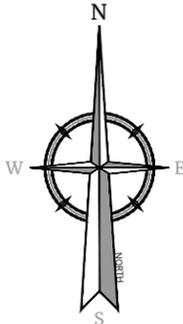
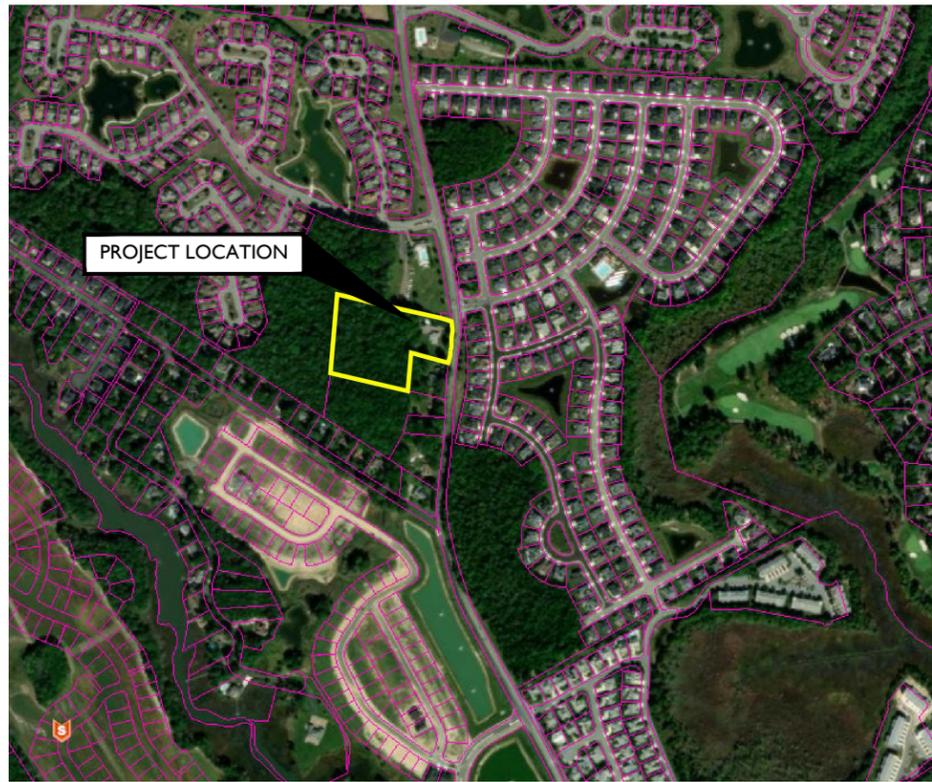
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SUSSEX COUNTY



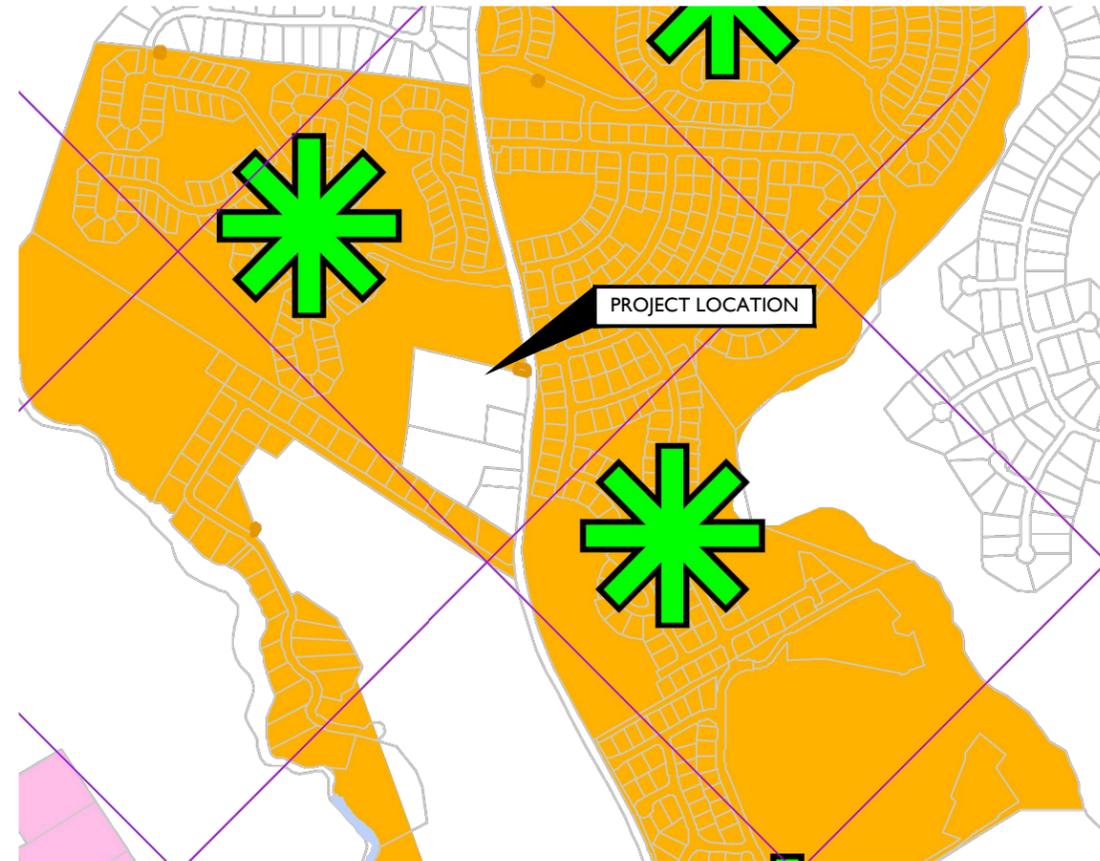
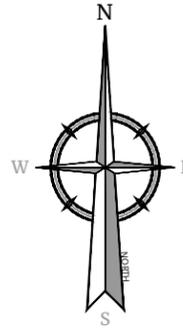
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Mt. Laurel, NJ 08054
Phone: 856.797.0412
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SHEET TITLE: **TITLE SHEET**

SHEET NUMBER: **T-1**



TAX MAP
 500 0 500 1000
 SCALE : 1" = 500' FOR 22"X34"
 (SCALE : 1" = 1000' FOR 11"X17")



ZONING MAP
 500 0 500 1000
 SCALE : 1" = 500' FOR 22"X34"
 (SCALE : 1" = 1000' FOR 11"X17")

- Residential Planned Community
- Agricultural - AR-1
- General Commercial - C-1
- State lands
- Agricultural - AR-2
- Commercial Residential - CR-1
- County lands
- Medium Residential - MR
- Marine - M
- Federal lands
- General Residential - GR
- Limited Industrial - LI-1
- Town
- High Density Residential
- Light Industrial - LI-2
- Water
- Vacation, Retire, Resident - VRP
- Heavy Industrial - HI-1
- Environmentally Sensitive Developing Districts - ES-1
- Neighborhood Business - B-1

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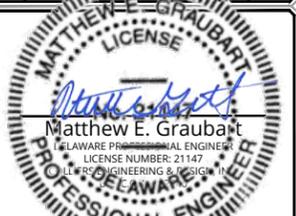


CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS

512 TOWNSHIP LINE ROAD
BUILDING 2, FLOOR 3
BLUE BELL, PA 19422

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0	10/27/23	ISSUED FOR ZONING	RMD MEG
A	09/06/23	ISSUED FOR REVIEW	RMD MEG



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SITE NAME:

DOV BETSY ROSS
 20338 OLD LANDING ROAD
 REHOBOTH BEACH, DE 19971
 SUSSEX COUNTY

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ZONING INFORMATION

SHEET NUMBER:
Z-1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

VICINITY MAP



PROJECT LOCATION

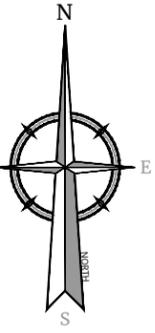
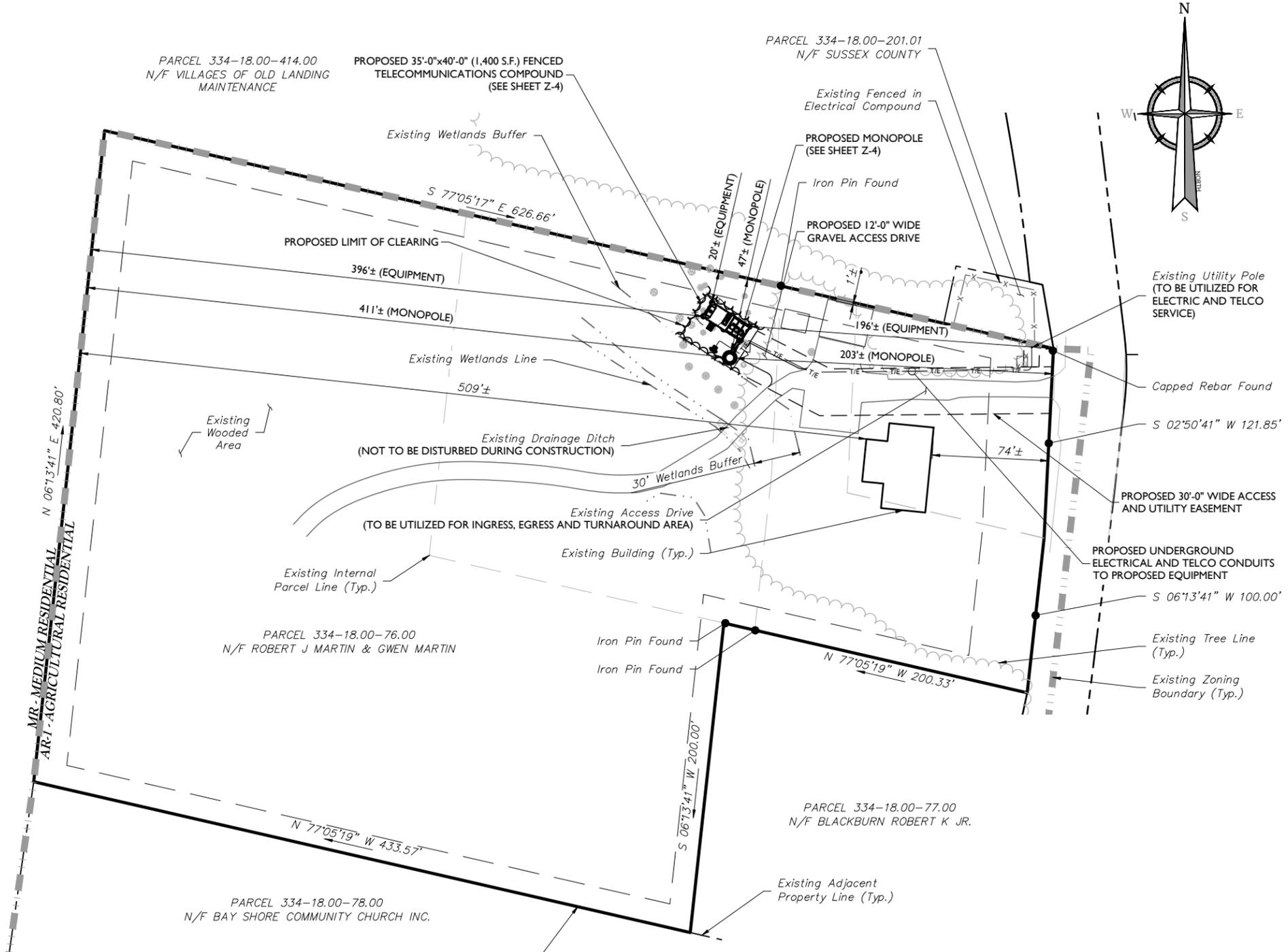
SOURCE: GOOGLE MAPS

SITE NOTES

1. THIS PROPOSAL IS FOR AN UNMANNED TELECOMMUNICATIONS FACILITY CONSISTING OF THE PLACEMENT OF PANEL ANTENNAS ON A PROPOSED MONOPOLE AND EQUIPMENT CABINETS ON A PROPOSED RAISED EQUIPMENT PLATFORM, AN OUTDOOR STANDBY GENERATOR AND ASSOCIATED APPURTENANCES WITHIN A PROPOSED FENCED COMPOUND.
2. EXTERIOR SIGNS ARE NOT PROPOSED EXCEPT AS REQUIRED BY THE FCC.
3. DISTURBANCE UNDER THIS PROPOSAL:
TOTAL AREA OF DISTURBANCE - 2,575± S.F.
4. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. CONTRACTOR SHALL CONTACT STATE SPECIFIC ONE CALL SYSTEM THREE WORKING DAYS PRIOR TO ANY EARTH MOVING ACTIVITIES.
6. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.
7. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS & INSPECTIONS REQUIRED FOR CONSTRUCTION.
8. SUBCONTRACTOR SHALL DETERMINE EXACT ROUTE OF ANY UNDERGROUND CONDUIT, IF REQUIRED.
9. THIS PROJECT WILL NOT REQUIRE STREETS OR PROPERTY TO BE DEDICATED FOR PUBLIC USE.
10. THIS PROJECT WILL NOT REQUIRE PERMANENT MONUMENTS.
11. ACCORDING TO THE FEMA FLOOD INSURANCE RATE MAPS OF SUSSEX COUNTY, DE AND INCORPORATED AREAS, FLOOD ZONE PANEL 334 OF 660, MAP NUMBER 10005C0334K DATED 03/16/2015, ALL PROPOSED IMPROVEMENTS ARE LOCATED WITHIN ZONE X - AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.
12. THE PROPOSED INSTALLATION WILL GENERATE ONE (1) VEHICLE TRIP FOR ROUTINE MAINTENANCE EVERY FOUR (4) TO SIX (6) WEEKS.

LEGEND

- Existing Subject Property Line
- - - Existing Adjacent Property Line
- ▬▬▬ Existing Zoning Boundary
- - - Existing Internal Parcel Line
- - - Existing Edge of Gravel Road
- ▭ Existing Structure
- ~ Existing Tree Line
- Existing Overhead Wire Line
- - - Existing Ditch
- - - Existing Chain Link Fence
- - - Setback Line
- - - Existing Wetlands Line
- - - Existing Wetlands Buffer
- PROPOSED LIMIT OF CLEARING
- - - PROPOSED EASEMENT
- x - x - PROPOSED CHAIN LINK FENCE
- PROPOSED FEATURES
- T/E - PROPOSED UNDERGROUND ELECTRICAL/TELCO UTILITY LINES



SITE PLAN



SCALE : 1" = 40' FOR 22"X34"
SCALE : 1" = 80' FOR 11"X17"

BULK STANDARDS FOR AR-1 - AGRICULTURAL RESIDENTIAL					
DESCRIPTION	REQUIRED	EXISTING	PROPOSED		REMARKS
MINIMUM LOT AREA	32,670 SF	224,702± SF	NO CHANGE		CONFORMING
MINIMUM LOT WIDTH	100 FEET	220± FEET	NO CHANGE		CONFORMING
MINIMUM LOT DEPTH	100 FEET	433± FEET	NO CHANGE		CONFORMING
MINIMUM FRONT YARD SETBACK	40 FEET	74± FEET	EQUIPMENT	MONOPOLE	CONFORMING
			196± FEET	203± FEET	
MINIMUM SIDE YARD SETBACK	15 FEET	1± FEET	20± FEET	47± FEET	EXISTING NON-CONFORMING
MINIMUM REAR YARD SETBACK	20 FEET	509± FEET	396± FEET	411± FEET	CONFORMING
MAXIMUM HEIGHT	42 FEET	<42± FEET	14± FEET (CANOPY)		CONFORMING
ARTICLE 115-194.2 - COMMERCIAL COMMUNICATIONS TOWERS AND ANTENNAS					
DESCRIPTION	REQUIRED	EXISTING	PROPOSED		REMARKS
MINIMUM TOWER SETBACK*	44 FEET	N/A	47± FEET		NON-CONFORMING
MINIMUM FENCE HEIGHT	6 FEET	N/A	6 FEET + 1 FOOT BARBED WIRE		CONFORMING
MINIMUM LOT AREA	1 ACRE	5,158± ACRES	NO CHANGE		CONFORMING

*DENOTES 1/3 OF PROPOSED TOWER HEIGHT

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MATTHEW E. GRAUBART
LICENSE
Matthew E. Graubart
DELAWARE PROFESSIONAL ENGINEER
LICENSE NUMBER: 21147

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SITE NAME:

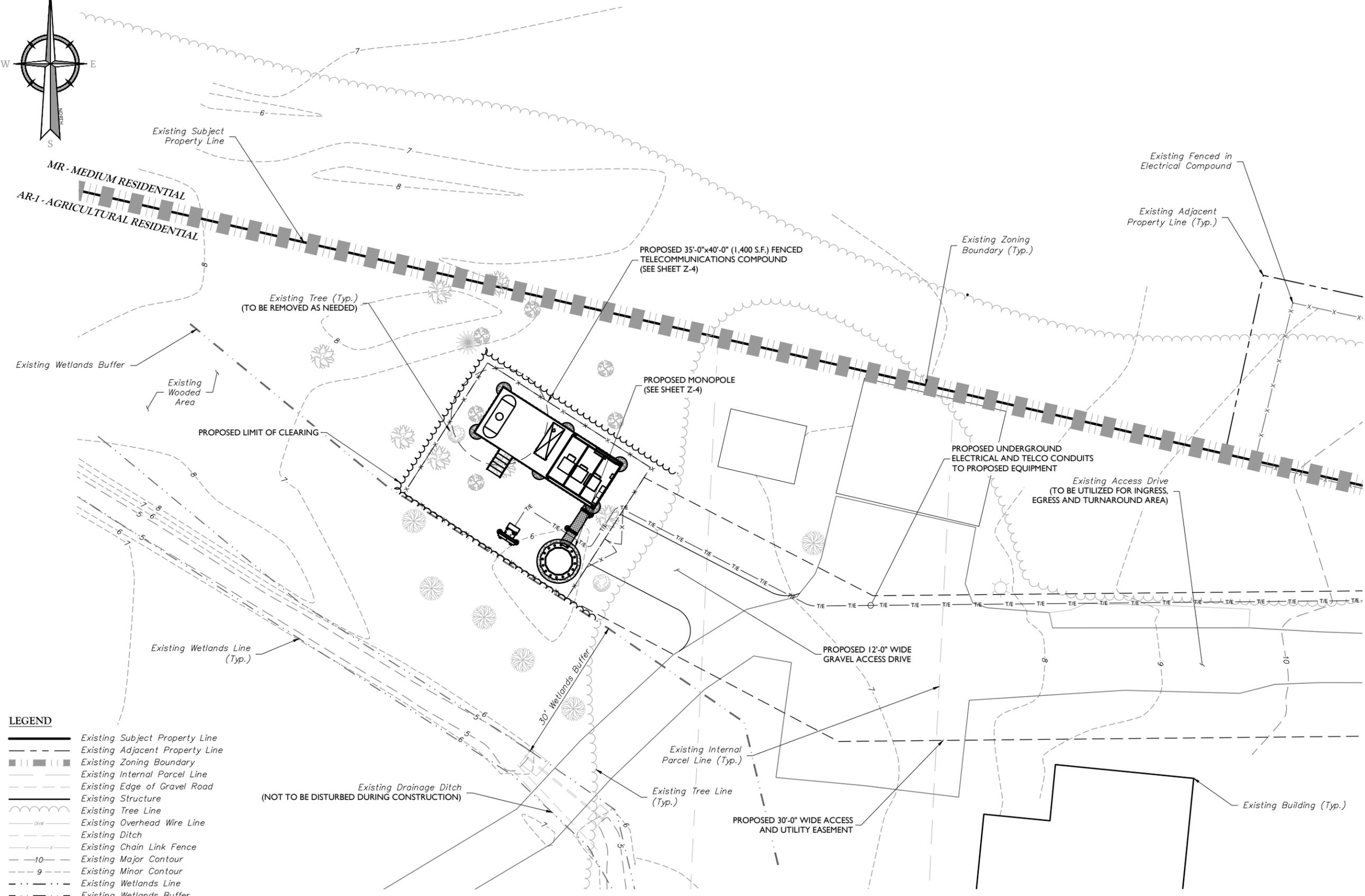
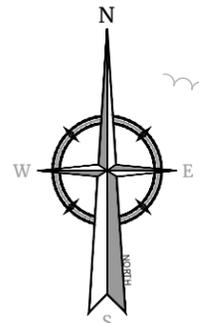
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SUSSEX COUNTY

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SHEET TITLE:
SITE PLAN AND SITE NOTES

SHEET NUMBER:
Z-2

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



- LEGEND**
- Existing Subject Property Line
 - - - Existing Adjacent Property Line
 - ▤ Existing Zoning Boundary
 - - - Existing Internal Parcel Line
 - - - Existing Edge of Gravel Road
 - ▭ Existing Structure
 - ~ Existing Tree Line
 - OHW Existing Overhead Wire Line
 - - - Existing Ditch
 - x-x Existing Chain Link Fence
 - 10- Existing Major Contour
 - 9- Existing Minor Contour
 - - - Existing Wetlands Line
 - - - Existing Wetlands Buffer
 - ~ PROPOSED LIMIT OF CLEARING
 - - - PROPOSED EASEMENT
 - x-x PROPOSED CHAIN LINK FENCE
 - - - PROPOSED FEATURES
 - T/E- PROPOSED UNDERGROUND ELECTRIC/TELCO UTILITY LINES

PARTIAL SITE PLAN
 SCALE : 1" = 10' FOR 22"X34"
 SCALE : 1" = 20' FOR 11"X17"

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MATTHEW E. GRAUBART
 LICENSE
 Delaware Professional Engineer
 License Number: 21147

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PARTIAL SITE PLAN

SHEET NUMBER: **Z-3**

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

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REV	DATE	ISSUED FOR REVIEW	DRAWN BY	CHECKED BY



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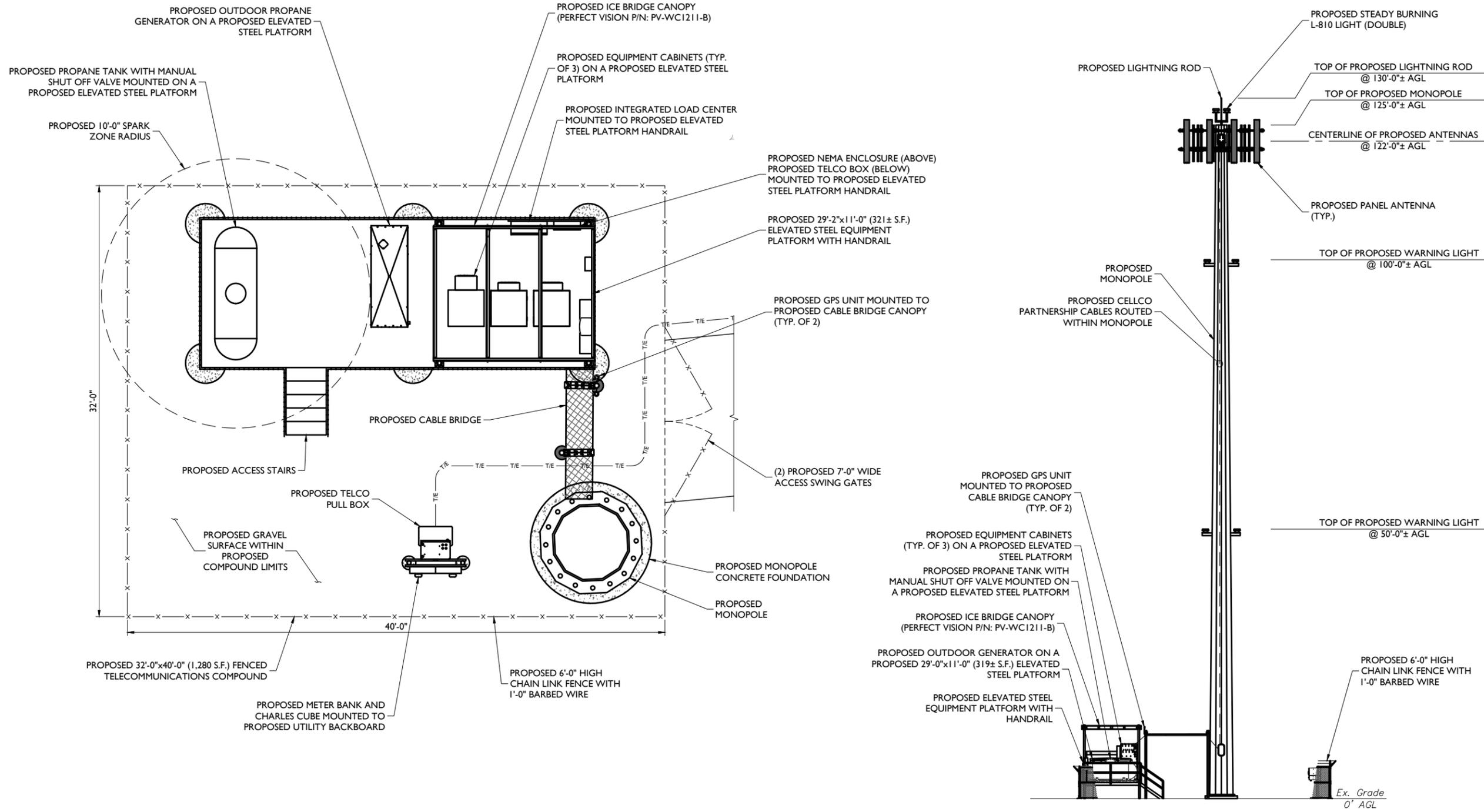
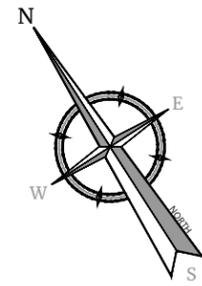
SITE NAME:

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20338 OLD LANDING ROAD
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COMPOUND PLAN AND ELEVATION VIEW

SHEET NUMBER: Z-4



LEGEND
 -X-X- PROPOSED CHAIN LINK FENCE
 - - - - PROPOSED FEATURES
 -T/E- PROPOSED UNDERGROUND ELECTRIC/TELCO UTILITY LINES

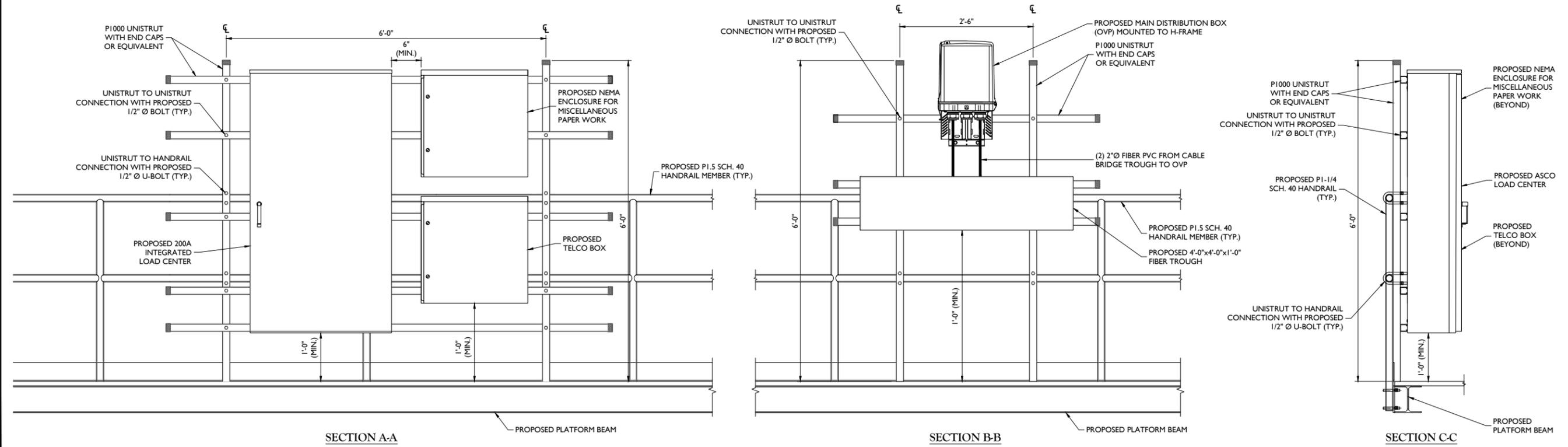
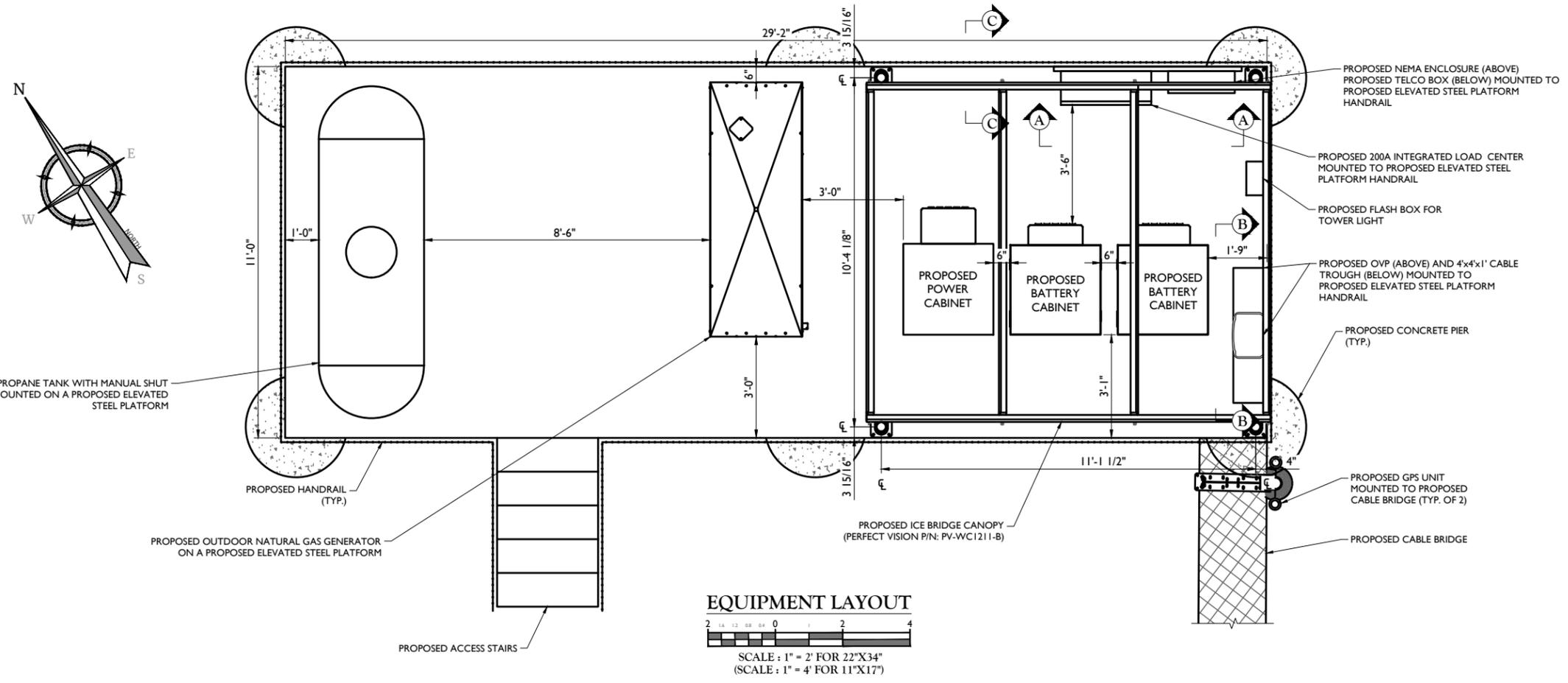
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REHOBOTH BEACH, DE 19971
SUSSEX COUNTY



- NOTES:**
- CONTRACTOR TO FIELD ADJUST UNISTRUT AS REQUIRED.
 - ALL EQUIPMENT TO BE MOUNTED TO PROPOSED UNISTRUT PER MANUFACTURER'S SPECIFICATIONS

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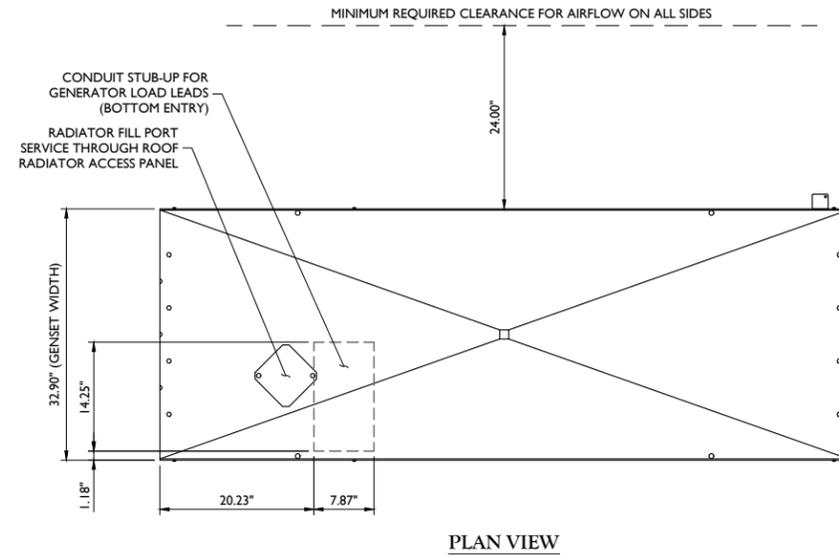
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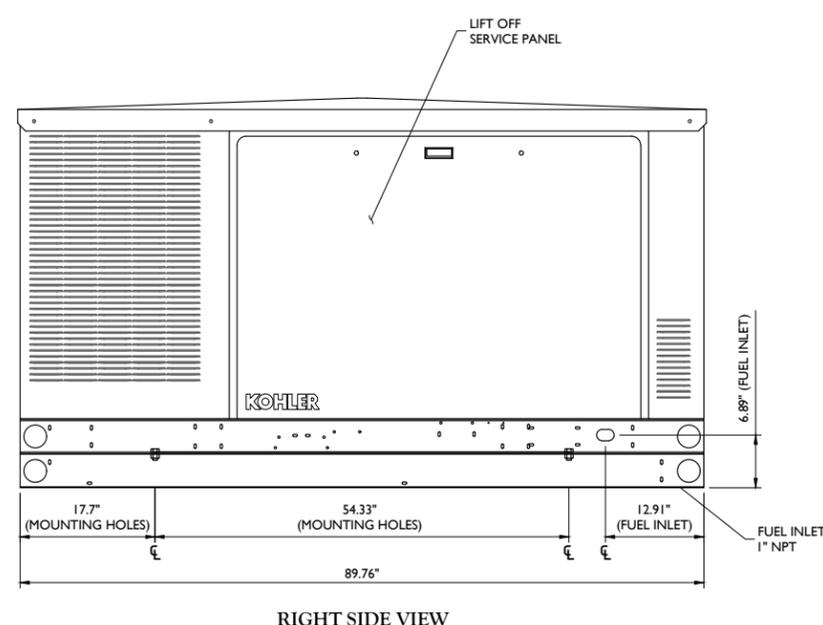
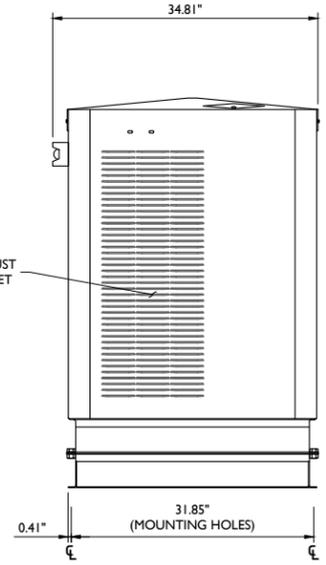
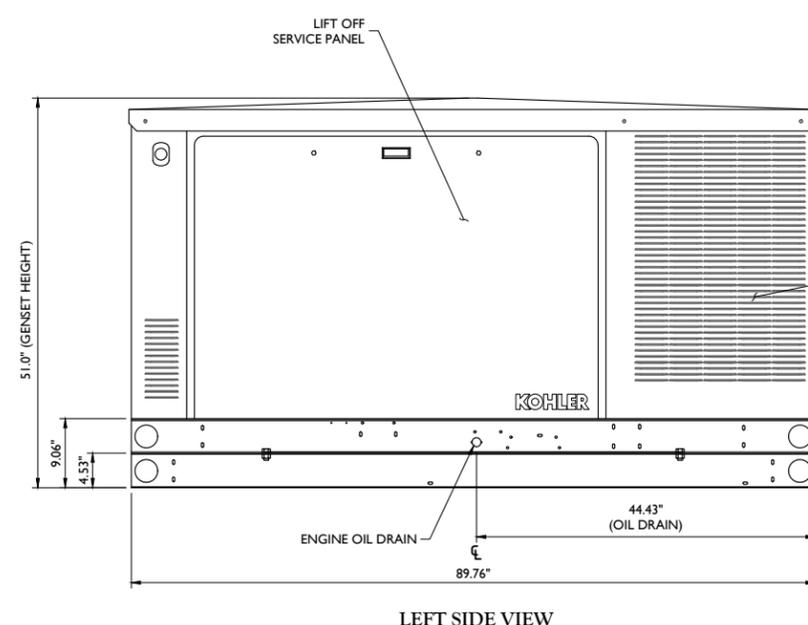
SHEET TITLE:
CONSTRUCTION DETAILS

SHEET NUMBER:
A-2



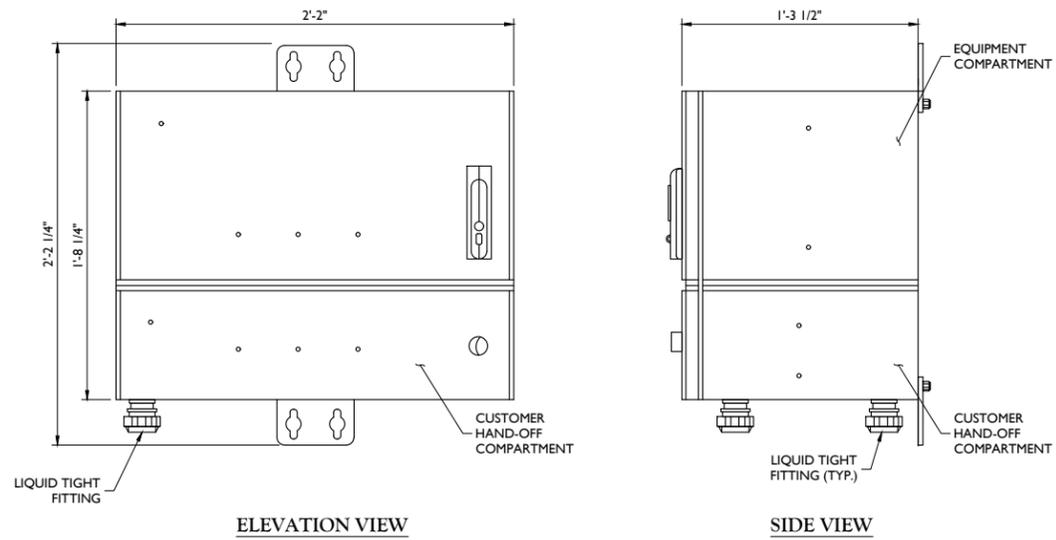
MODEL	ALTERNATOR	GENSET MAXIMUM WEIGHT
25/30CCL	4D/E	1,600 LBS
25/30CCL	4P/Q	1,630 LBS

- NOTES:**
- BOTH SIDES OF THE GENERATOR IS SERVICE ACCESSIBLE WITH EASY ACCESS SERVICE PANELS.
 - 10 AMP BATTERY CHARGER.
 - 120VAC ENGINE BLOCK HEATER.
 - GENERATOR MUST BE GROUNDED.
 - SOUND ATTENUATED ENCLOSURE STANDARD WITH GENERATOR.
 - MUST ALLOW FREE FLOW OF DISCHARGE AIR AND EXHAUST.
 - MUST ALLOW FREE FLOW OF AIR INTAKE.
 - IT IS THE RESPONSIBILITY OF THE INSTALLATION TECHNICIAN TO ENSURE THAT THE GENERATOR INSTALLATION COMPLIES WITH ALL APPLICABLE CODES, STANDARDS AND REGULATIONS.
 - SPRING ISOLATORS TO BE UTILIZED; MODEL MS-2E.
 - GENERATOR TO BE ANCHORED WITH 1 1/16"Ø A325 BOLTS, INSTALLED AND SIZE PER KOHLER RECOMMENDATIONS.
 - GENERATOR SOUND LEVEL IS 67.7 dBA @ 23 FT (7 METERS) WITH SOUND ENCLOSURE.



KOHLER PROPANE GAS GENERATOR DETAIL

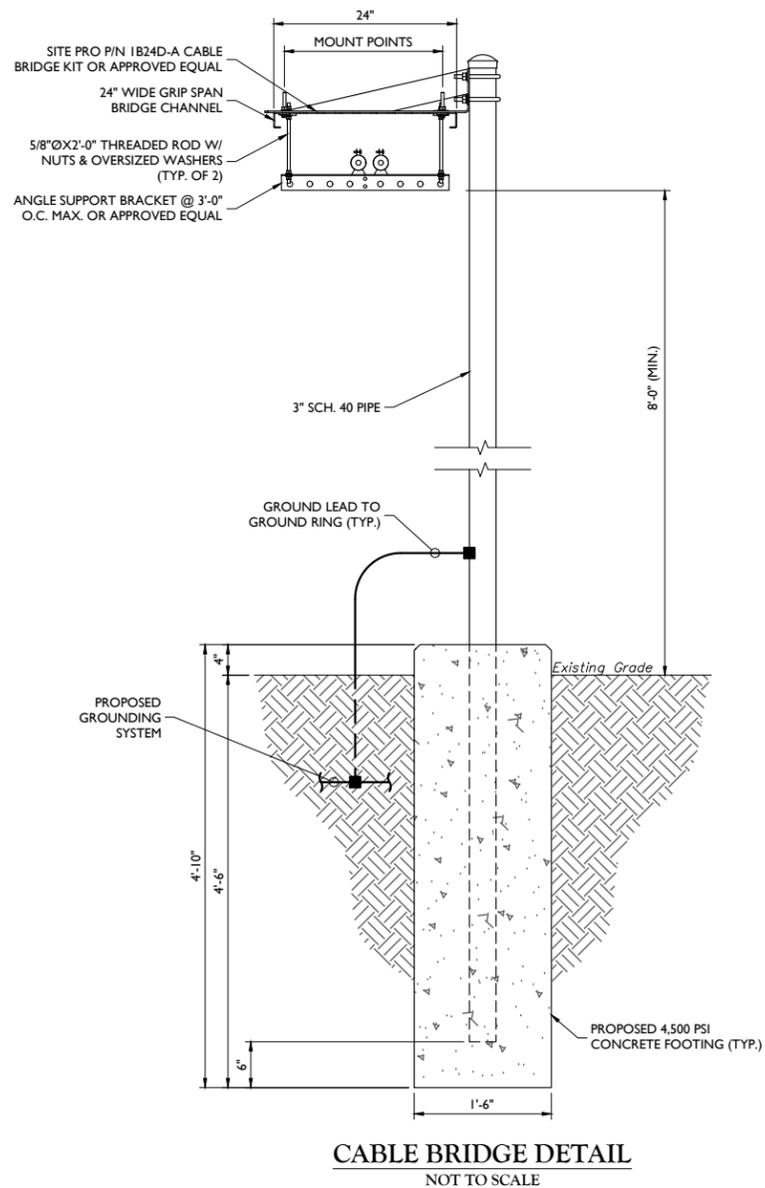
NOT TO SCALE



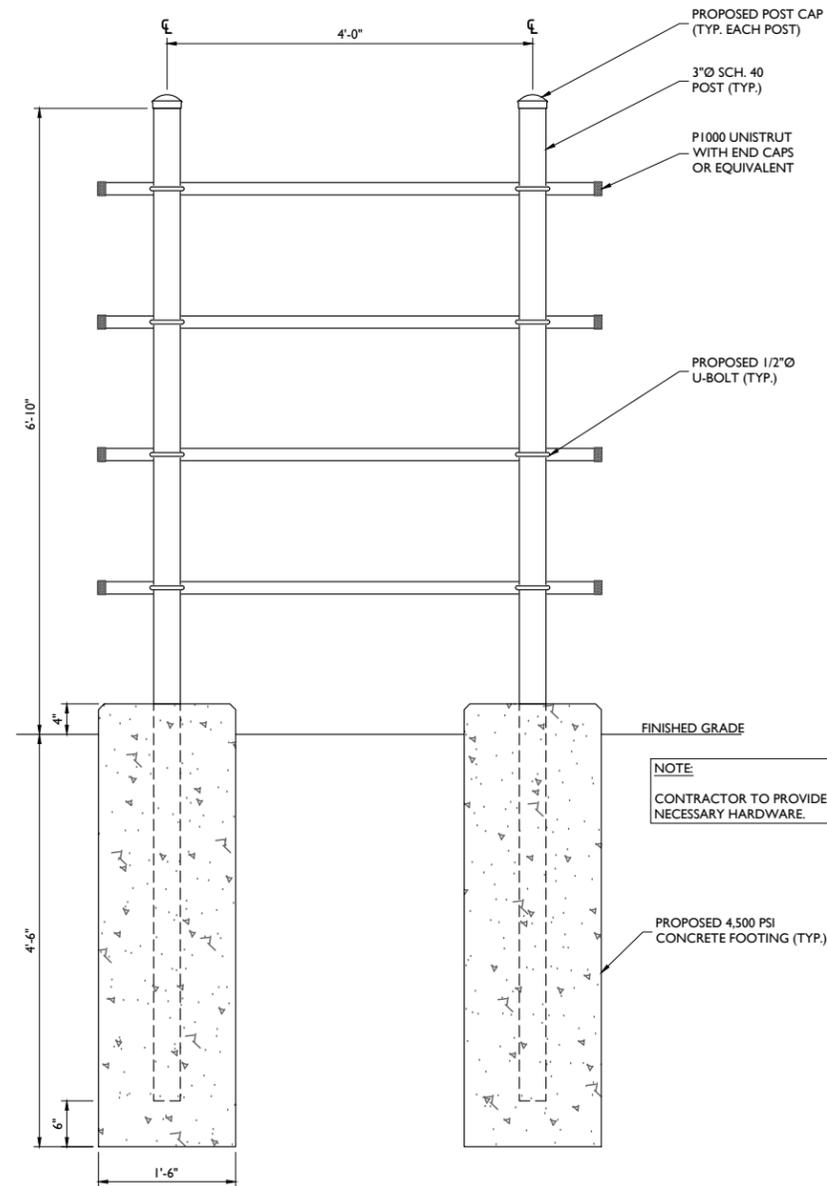
ELEVATION VIEW

SIDE VIEW

CHARLES INDUSTRIES RL2000A CUBE
NOT TO SCALE

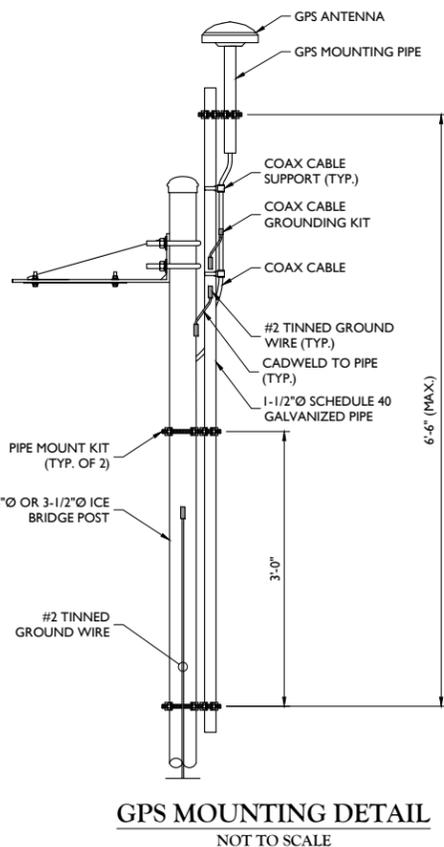


CABLE BRIDGE DETAIL
NOT TO SCALE

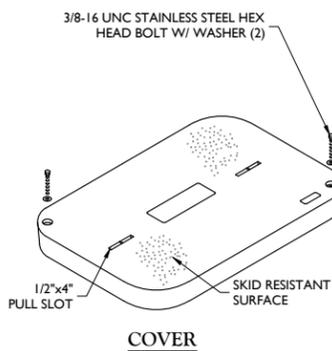


BACKBOARD DETAIL
NOT TO SCALE

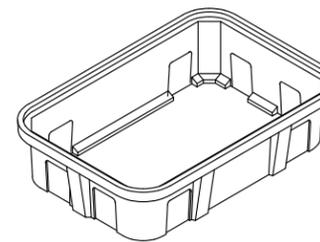
NOTE:
CONTRACTOR TO PROVIDE ALL NECESSARY HARDWARE.



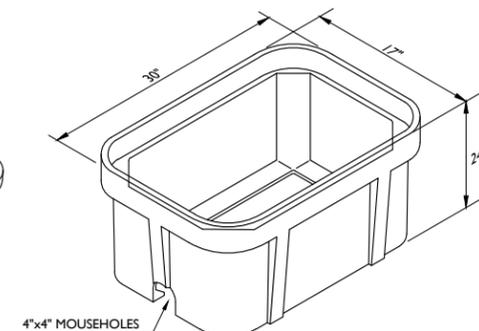
GPS MOUNTING DETAIL
NOT TO SCALE



COVER



EXTENSION



BOX

PULL BOX DETAIL
NOT TO SCALE



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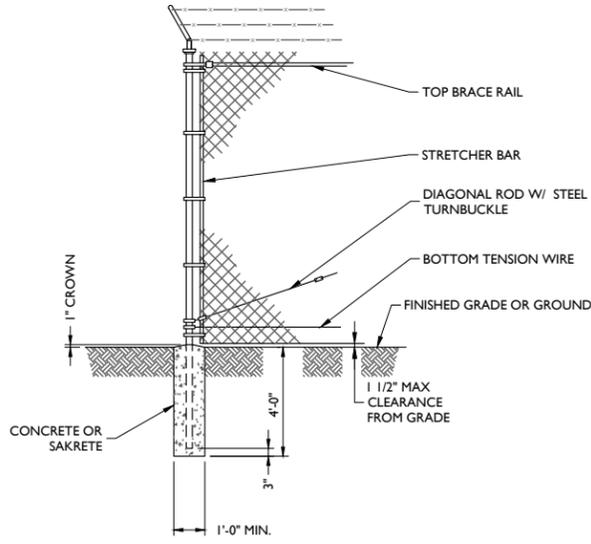
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SHEET TITLE:
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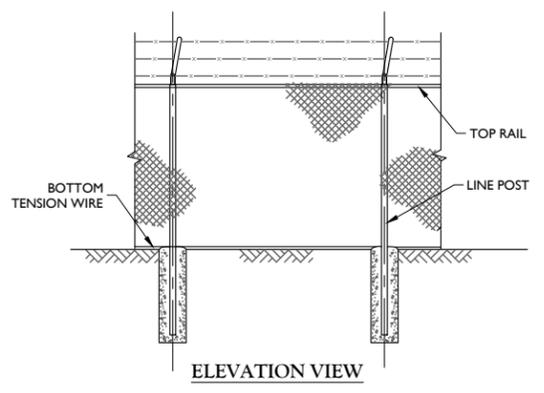
SHEET NUMBER:
A-4



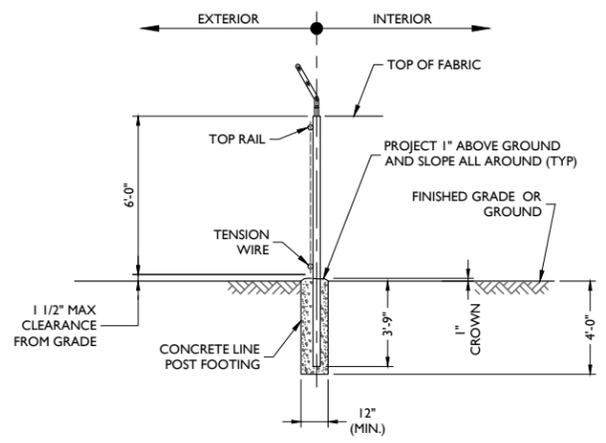
WOVEN WIRE CORNER, GATE, END, OR PULL POST
NOT TO SCALE

FENCE NOTES:

- GATE POST, CORNER, TERMINAL OR PULL POST SHALL BE 3"Ø SCHEDULE 40 FOR GATE WIDTHS UP THROUGH 7 FEET OR 14 FEET FOR DOUBLE SWING GATE PER ASTM-F1083.
- LINE POST: 2-3/8"Ø SCHEDULE 40 PIPE PER ASTM-F1083.
- GATE FRAME: 1 1/2"Ø SCHEDULE 40 PIPE PER ASTM-F1083.
- TOP RAIL & BRACE RAIL: 1 1/4"Ø SCHEDULE 40 PIPE PER ASTM-F1083.
- FABRIC: 9 GA. CORE WIRE SIZE 2" MESH, CONFORMING TO ASTM-A392 CLASS I.
- TIE WIRE: MINIMUM 11 GA GALVANIZED STEEL INSTALL A SINGLE WRAP TIE WIRE AT POSTS AND RAILS AT MAX. 24" INTERVALS. INSTALL HOG RINGS ON TENSION WIRE AT 24" INTERVALS.
- TENSION WIRE: 7 GA. GALVANIZED STEEL.
- BARBED WIRE: 3 STRANDS OF DOUBLE STRANDED 12-1/2 GAUGE TWISTED WIRE, 4 PT. BARBS SPACED ON APPROXIMATELY 5" CENTERS.
- GATE LATCH: 1-3/8" O.D. PLUNGER ROD W/ MUSHROOM TYPE CATCH AND LOCK.
- LOCAL ORDINANCE FOR BARBED WIRE PERMIT SHALL GOVERN INSTALLATION.
- HEIGHT = 6'-0" VERTICAL DIMENSION WITH 1'-0" BARBED WIRE.
- ALL WORK SHALL CONFORM WITH THE PROJECT SPECIFICATIONS.

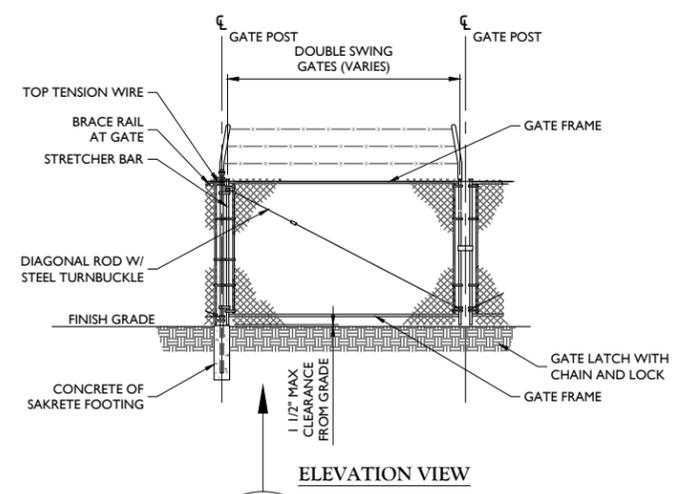


ELEVATION VIEW

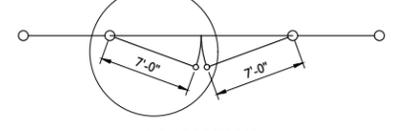


SECTION VIEW

WOVEN WIRE FENCE DETAIL
NOT TO SCALE



ELEVATION VIEW



PLAN VIEW

WOVEN WIRE SWING GATE, DOUBLE
NOT TO SCALE

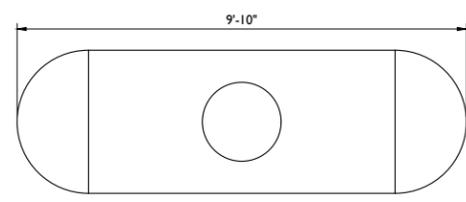


ABOVEGROUND PROPANE STORAGE TANKS
120 - 1000 Gallons

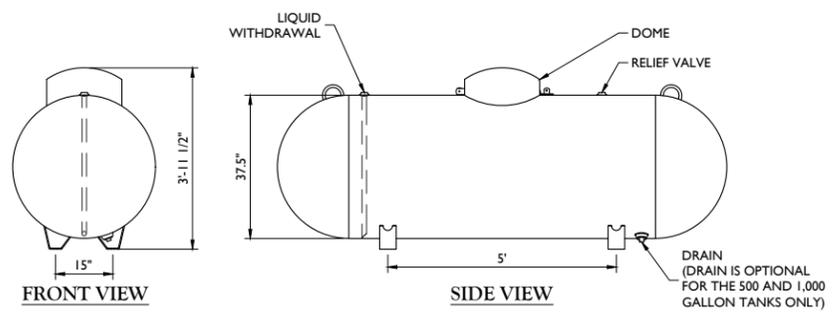
ABOVEGROUND VESSEL DIMENSIONS & SPECIFICATIONS
(All Vessel Dimensions are Approximate)

Part Number	Description	Water Capacity Gal/l	Outside Diameter In/mm	Head Type	Overall Length In/mm	Overall Height In/mm	Leg Width In/mm	Leg Spacing In/mm	Weight Lbs/kg	Quantity Full Load	Quantity Per Stack
68268**	120 Gallon Aboveground Storage Tank	120 454.2	24" 609.6	Ellip	5' 8" 1727.2	2' 10 1/4" 870	10 1/8" 257.2	3' 0" 914.4	310 140.6	96	12
68270**	250 Gallon Aboveground Storage Tank	250 946.3	30" 762	Hemi	7' 10" 2387.6	3' 4 3/16" 1020.8	12 3/4" 323.9	3' 6" 1066.8	471 213.6	54	9
68272**	320 Gallon Aboveground Storage Tank	320 1211.3	30" 762.0	Hemi	9' 7" 2921	3' 4 3/16" 1020.8	12 3/4" 323.9	4' 0 1/4" 1225.6	566 256.7	45	9
68274**	500 Gallon Aboveground Storage Tank	500 1892.7	37.5" 952.5	Hemi	9' 10" 2997.2	3' 11 1/2" 1206.5	15" 381	5' 0" 1524	920 417.3	30	6
68276**	1000 Gallon Aboveground Storage Tank	1000 3785.4	41" 1041.4	Hemi	15' 11" 4851.4	4' 2 15/16" 1293.8	16 1/4" 412.8	9' 0" 2743.2	1737 787.9	15	5

* Drain **No Drain
Federal, state or local regulations may contain specific applicable requirements for protective coatings and cathodic protection. The purchaser and installer are responsible for compliance with such federal, state, local and NFPA industry regulations, including, but not limited to, proper purging prior to putting into service. Coating (s) must be continuous, uninterrupted and must comply with local, state or national codes or regulations.



PLAN VIEW



WEIGHT = 920 LBS

MANCHESTER PROPANE TANK 500 GALLON ABOVEGROUND STORAGE DETAIL
NOT TO SCALE

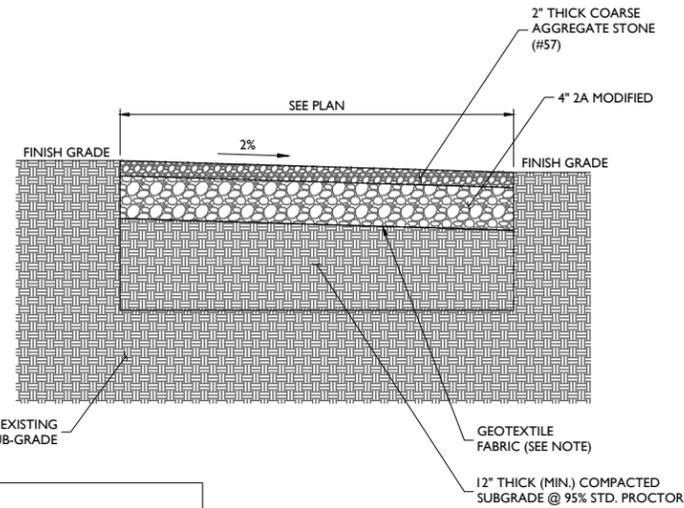
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A	09/06/23	ISSUED FOR REVIEW	RMD	MEG



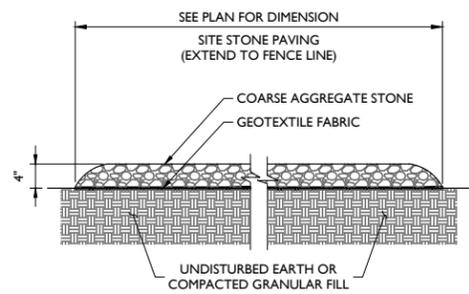
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SITE NAME:

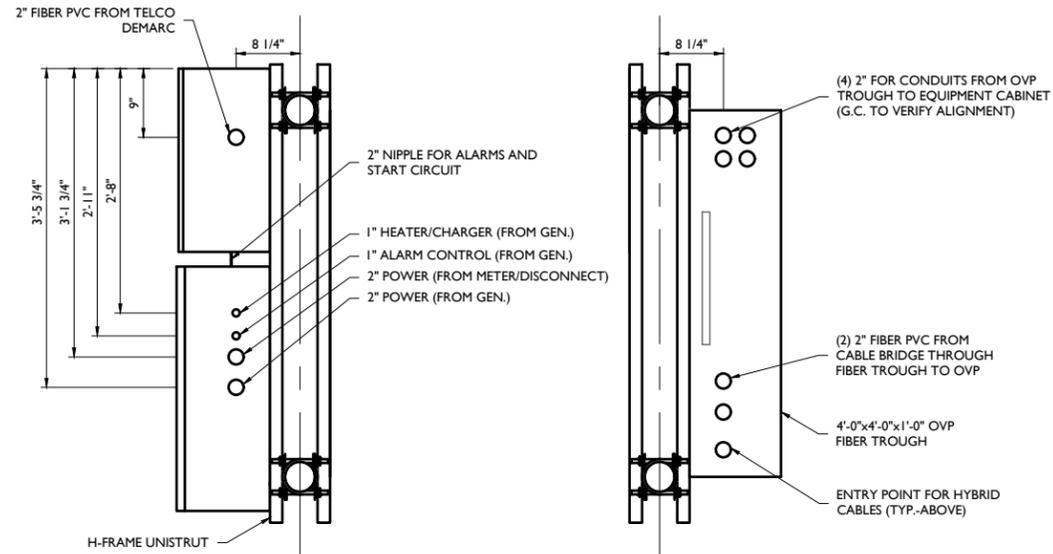
DOV BETSY ROSS
20338 OLD LANDING ROAD
REHOBOTH BEACH, DE 19971
SUSSEX COUNTY



GRAVEL DRIVEWAY SURFACING
NOT TO SCALE



GRAVEL SURFACING
NOT TO SCALE



UTILITY SECTION VIEW



SCALE : 1" = 1' FOR 22"X34"
SCALE : 1" = 2' FOR 11"X17"



L-810 (SINGLE)



L-810 (DOUBLE)

LIGHTING NOTES:

1. LIGHTING MODELS ARE TO BE FAA COMPLIANT.
2. L-810 LIGHTS TO BE STEADY BURNING AND RED.
3. LIGHTS TO BE MOUNTED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.

FAA LIGHTING DETAIL
NOT TO SCALE

- Layers
- Search
- Basemaps
- Select Area
- Eagleview
- Print



Eagleview Search Results

Selected Features: Parcels (1)

1) 334-18.00-76.00 Zoom

BOOK	740
PAGE	303
FULLNAME	MARTIN ROBERT J & GWEN E MARTIN
Second_Owner_Name	
MAILINGADDRESS	20338 OLD LANDING RD
CITY	REHOBOTH BEACH
STATE	DE
a_account	10-19-076
DESCRIPTION	W/RD 274
DESCRIPTION2	OLD LANDING RD
DESCRIPTION3	T#3840
LUC	999
SCHOOL	
MUNI	00
CAP	2
APRBLDG	25900
APRLAND	15200
PINWASSEMENTUNIT	334-18.00-76.00

- Navigation icons: Home, Previous, Next, Refresh, Stop, Full Screen

Selected Features (1)

Clear Selected

- Layers
- Search
- Basemaps
- Select Area
- Eagleview
- Print



Eagleview Search Results

Selected Features: Parcels (1)

▼ 1) 334-18.00-76.00 Zoom

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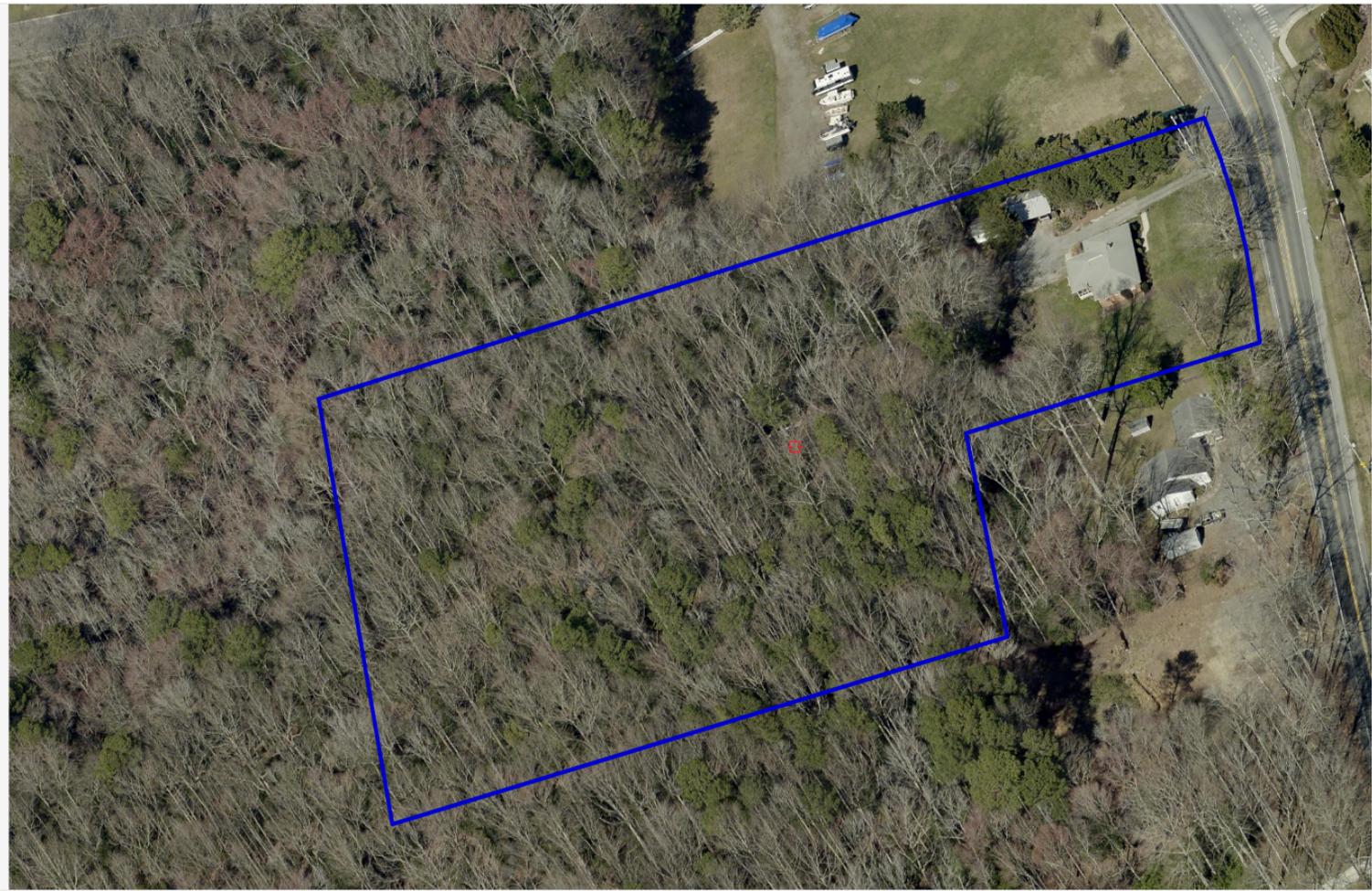
Selected Features (1)

Clear Selected



Workspaces

© 2023 Eagleview



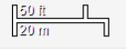
Search

Search by SUSSEXPARELS

334-18.00-76.00

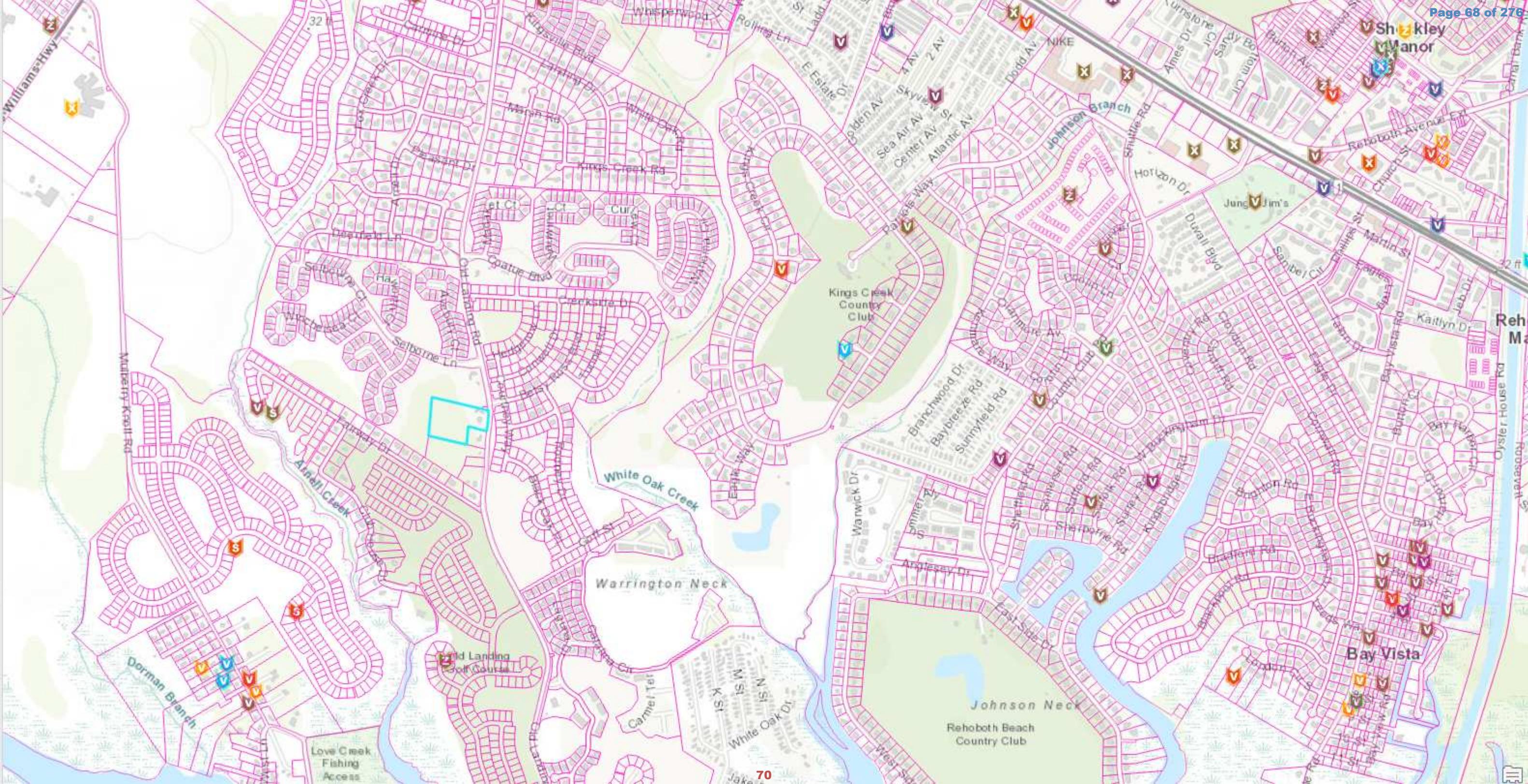
Search results (1) Options

334-18.00-76.00



map: Auto (Oblique) | Dates: Latest | image 1 of 11 | 03/06/2023





Warrington Neck

White Oak Creek

Kings Creek Country Club

Bay Vista

Johnson Neck
Rehoboth Beach Country Club

Shokley Manor

Old Landing Golf Course

Dorman Branch

Love Creek Fishing Access

Jake 70

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



October 2, 2024
 Sue Manchel
 Site Acquisition
 Verizon Wireless
 512 East Township Line Road
 Blue Bell, PA 19422

Subject: Radio Frequency Design Analysis
“DOV – BETSY ROSS”
20338 OLD LANDING ROAD
REHOBOTH BEACH, DE 19971
Latitude: N 38° 42’ 17.08” (NAD 83)
Longitude: W 75° 08’ 02.01” (NAD 83)
6.0’ AMSL

Ms. Manchel:

I have received and executed the request that I perform an independent evaluation and design review for the Verizon Wireless telecommunications facility proposed at the above referenced address. The intention of this study is to provide an objective, professional opinion regarding the proposed facilities from a Radio Frequency design perspective. Specifically, how the site complements the existing network and what service 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 wireless service in portions of Sussex County west of Dewey Beach in the geography roughly bounded by Rt 1, Rt 24, and the Rehoboth Bay that currently suffer from inadequate capacity and unreliable in-building coverage. Currently, the nearby Verizon Wireless facilities are not providing adequate capacity or coverage into the targeted geography resulting in service issues. The proposed facility is the only feasible alternative that will satisfy the design objective for affected areas. The design, location, and proposed antenna height is the least intrusive means of providing adequate service for Verizon Wireless subscribers in the targeted geography. The proposed antenna height is the absolute minimum acceptable to achieve a high percentage of the site’s design goals.

Sincerely,

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



Existing Verizon Wireless Service

Currently, Verizon has six (6) existing macro sites in the area immediately surrounding the proposed facility. These sites would be the first-tier neighbors for the proposed facility. The details and locations of these sites can be seen below:

Name	Structure Type	Antenna Centerline (ft)	Street Address
MARSHTOWN	Monopole	140	21194 John Williams Highway
DOV MIDWAY PEPPERS	Rooftop	43	18826 Coastal Highway
DOV SILVER SCARBOROUGH	Water Tank	124	1 Lincoln Street
REHOBOTH BEACH	Lattice Tower	146	Hebron Road; 75 ft. N of Burton Ave.
DOV SEA SHELL	Lattice Tower	87	36027 Airport Road
DOV HORSE ISLAND	Monopole	145	23182 Camp Arrowhead Road

Existing Verizon Wireless Coverage

The in-building (green) and in-vehicle (yellow) coverage footprints from the above existing facilities are illustrated below in figure 1. There is a significant gap in reliable in-building coverage in the mainly residential and recreational areas between Rt 1, Rt 24, and the Rehoboth Bay.

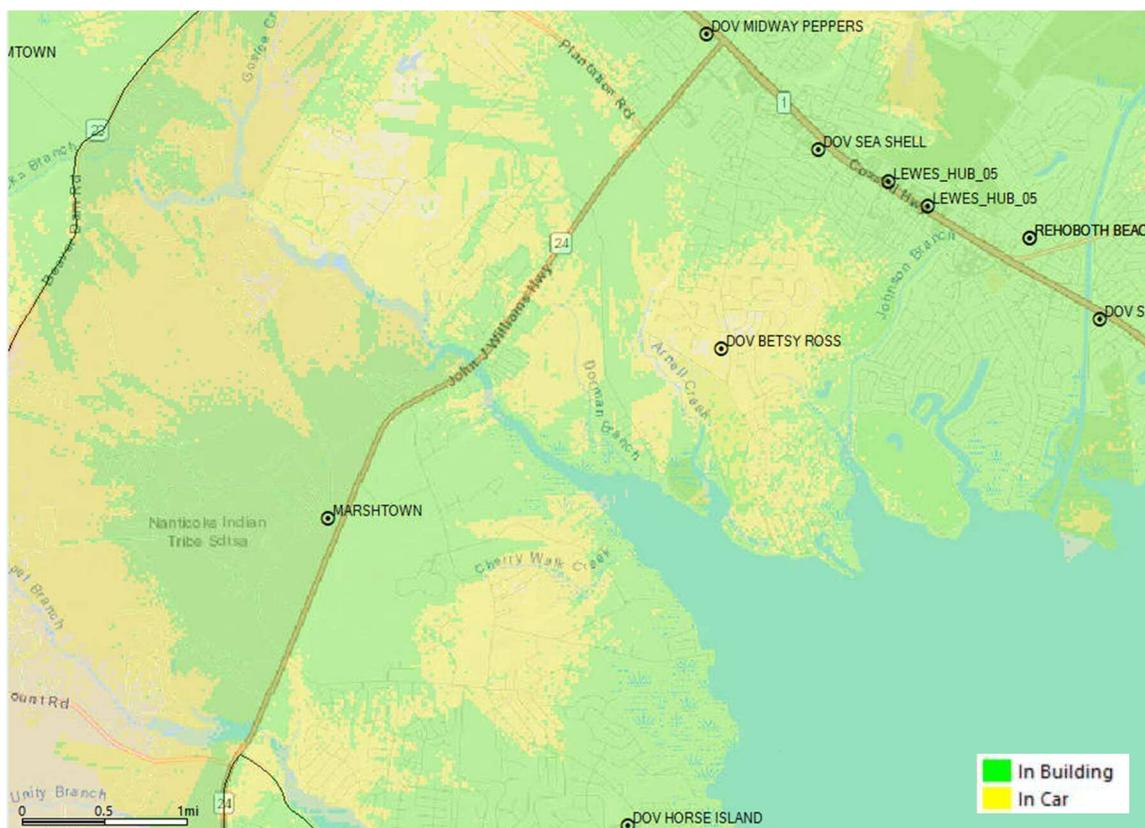


Figure 1 – Existing Coverage

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Proposed Verizon Wireless Coverage Improvement

Figure 2 below illustrates the Verizon Wireless anticipated in-building coverage improvement. The proposed facility will remedy the existing coverage issues and will enable reliable service to the many residential and recreational uses in the surrounding areas. The proposed antenna height is the minimum acceptable to provide an in-building threshold of service for Verizon subscribers in the numerous residential subdivisions and recreational facilities including the Kings Creek and Rehoboth Beach Country Clubs. Any decrease in the height of the proposed facility will significantly diminish the effectiveness of the proposed site.

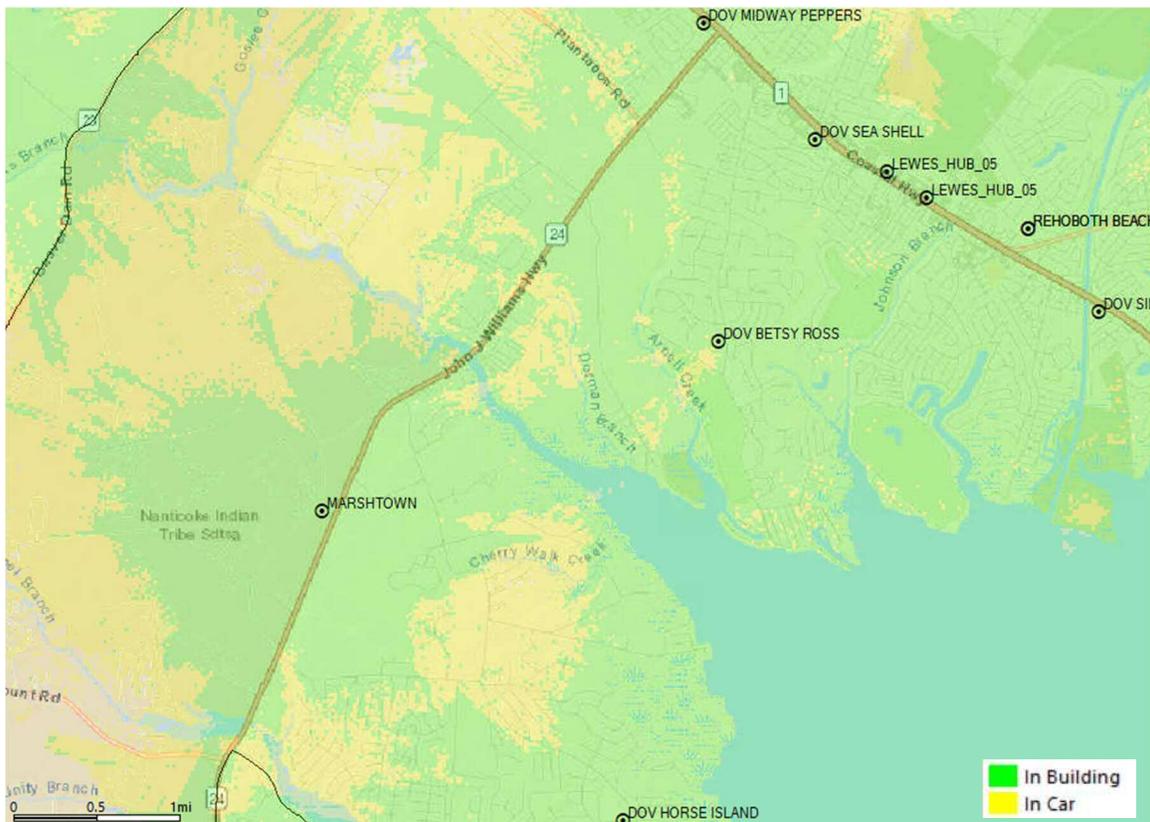
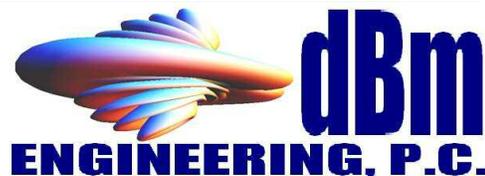


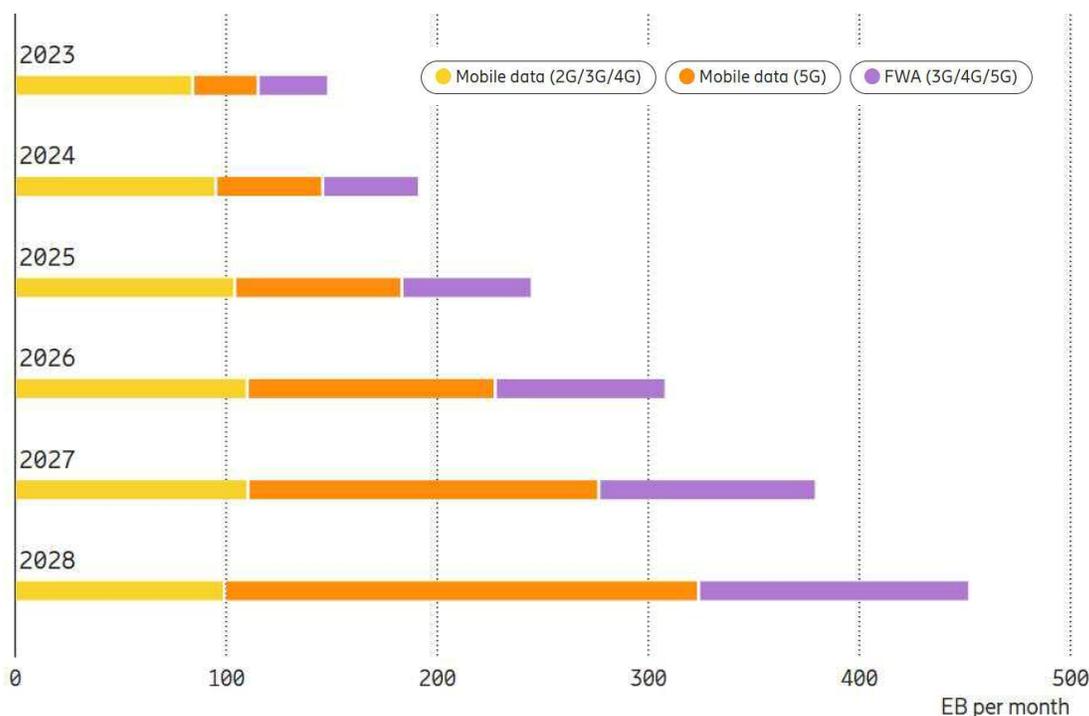
Figure 2 – Proposed Coverage

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Network Capacity

The Verizon Wireless facilities currently serving the geography surrounding the proposed facility are approaching their data capacity upper-limit “ceiling”. Spurred on by smart-phones, tablets, data cards, and the various applications and content available, an explosion of 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, Ericsson has recently predicted¹ a three (3) fold increase in global mobile network data traffic between 2023 and 2028. 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.



¹ [Mobile data traffic forecast – Mobility Report - Ericsson](#)

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Existing Verizon Wireless Capacity

The best-server coverage footprint areas from the above on-air facilities are illustrated below in figure 3. The targeted areas in which the proposed facility is designed to provide capacity offload include the numerous residential subdivisions and recreational facilities including the Kings Creek and Rehoboth Beach Country Clubs. Demand in these areas is currently overburdening the “Rehoboth Beach”, “Sea Shell” and “Marshtown” sites.

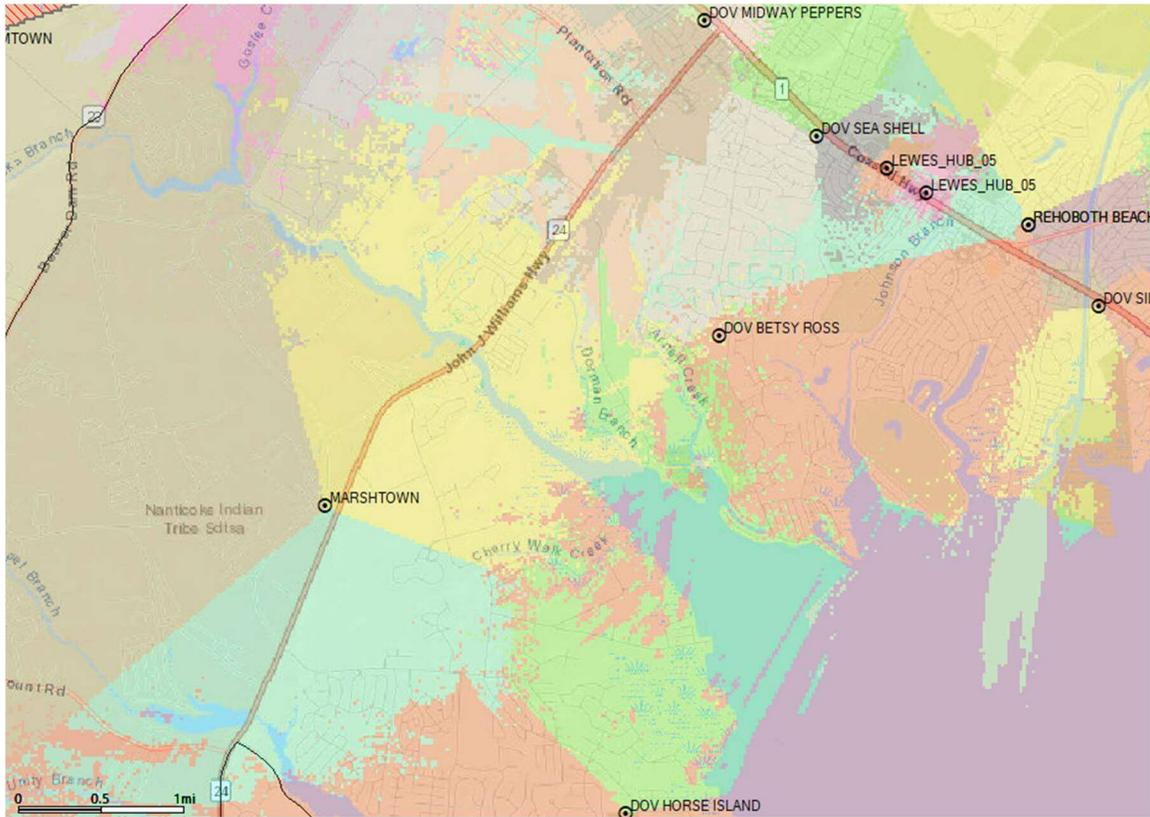


Figure 3 – Existing Best Server Coverage

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Proposed Verizon Wireless Capacity Upgrade

Experience dictates that to effectively provide adequate service in a capacity starved area, a telecommunications facility must be located as close to the subscriber density as possible. Following this tenet ensures the two most important design criteria for this environment are met: First, that there is signal dominance in the congested area and second that there is adequate signal strength to penetrate the often-dense building materials typically found in an area of high subscriber density. As illustrated by the proposed site's dominant service area (figure 4 below), the new facility will provide an effective capacity offload while providing in-building coverage to the general area. Verizon Wireless mobile devices in the newly shaded coverage area will be served by the proposed facility when engaged in data-activity allowing the reduction of the data traffic load on the nearby sites. Any decrease in the height of the proposed facility will decrease its offload area and diminish the effectiveness of the proposed site.

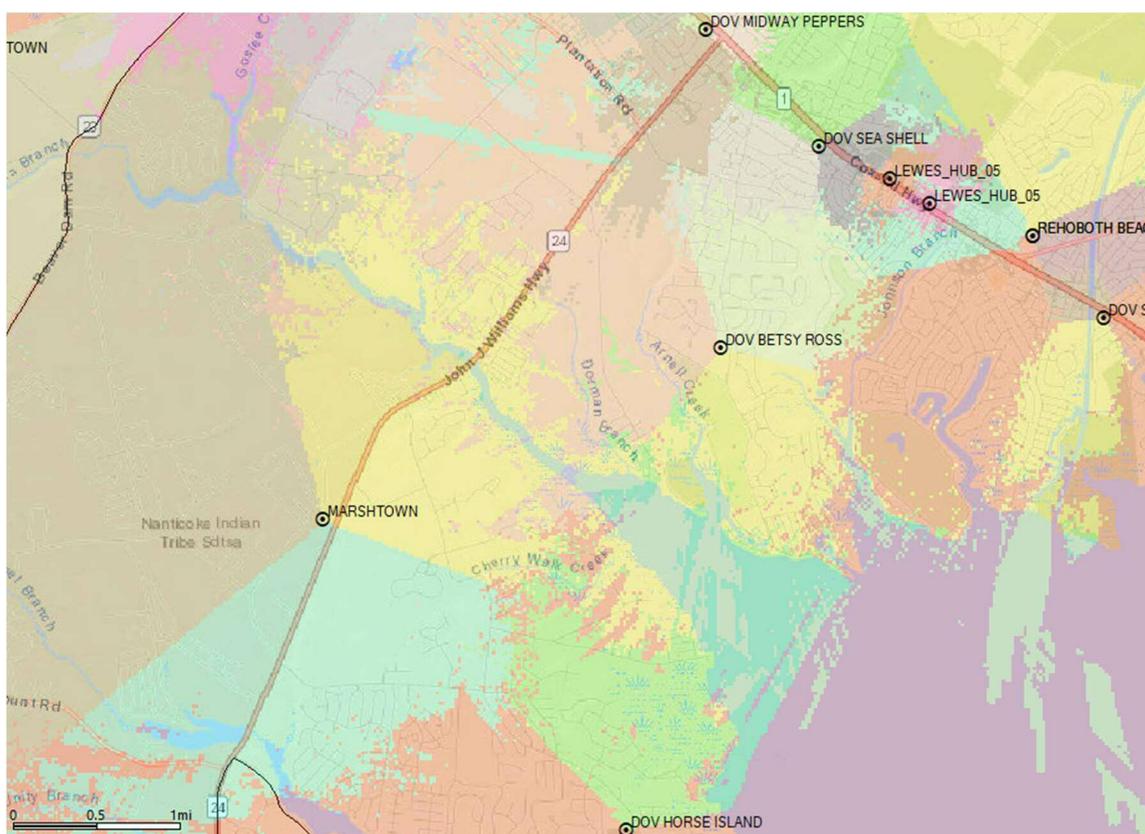


Figure 4 – Proposed Best Server Coverage

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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. 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.

Wireless Substitution

According to the CDC² 70.7% of adults and 81.7% of children lived in wireless-only households during the first half of 2022. The increase in the prevalence of adults living in wireless-only households is a continuation of the increasing trend that has been seen over time. Demographic subgroups with the highest percentages of wireless-only adults include adults aged 25–29 (89%) and 30-34 (87.3%), and adults renting their homes (84.5%) As wireless substitution continues to spread, availability of in-building wireless service, both data and voice, becomes increasingly important.

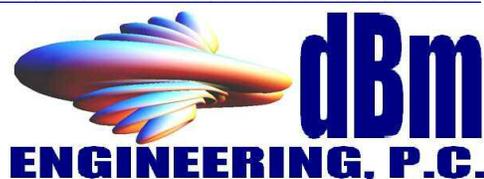
Emergency Services Implications

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. It is estimated that approximately 70% of 911 calls originate from mobile devices³. In the service challenged areas, an unreliable level of wireless service could, in many cases, negatively affect the ability of an individual in need of emergency services who is dialing 911.

² <https://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless202212.pdf>

³ <https://transition.fcc.gov/cgb/consumerfacts/wireless911srvc.pdf>

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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) new panel-style antennas at an antenna centerline height of 122' above grade. The antennas will be arranged with sector azimuths evenly spaced in the horizontal plane with respect to true north. Transmitting through these antennas will be four (4) LTE transmit paths in the 700 MHz band (per sector) at a cumulative maximum of 160 watts, up to four (4) LTE transmit paths in the 1900 MHz band (per sector) at a cumulative maximum of 160 watts, up to four (4) LTE and / or 5GNR transmit paths in the 850 MHz band (per sector) at a cumulative maximum of 160 watts, up to eight (8) LTE transmit paths in the 2100 MHz band (per sector) at a cumulative maximum of 160 watts, four (4) LTE transmit paths in the 3500 MHz band (per sector) at a cumulative maximum of 20 watts and up to sixty-four (64) 5GNR transmit paths in the 3700 MHz 'C' band (per sector) at a cumulative maximum of 320 watts.

Alternate Candidates Analysis

It is Verizon Wireless policy and overwhelming preference to utilize existing, tall structures as antenna support platforms when their location, available attachment height, and structural capacity are congruent with Verizon's network requirements. This is because the co-location process is almost always less expensive, faster to market, and less involved from a permitting perspective than the construction of a new tower structure. In this specific case, there are no existing tall structures that meet the Verizon Wireless requirements within a two-mile radius of the proposed facility that Verizon is not already installed on.

Subsequent to the completion of the original Radio Frequency Design Report, I became aware of a recently [under construction] water tank roughly one mile northwest of the proposed tower at the rear of the Beacon Middle School property on Route 24. In investigating this structure, it was learned that Verizon Wireless is currently pursuing the use of this tank as an antenna support platform **in addition to** the subject tower being proposed on Old Landing Road. Each of these facilities has independent, specific geographical areas in which they are planned to improve wireless service through more robust signal strength (coverage) and radio resource availability (capacity). Figure 5 below illustrates the anticipated coverage should both the Beacon Middle school water tank as well as the subject tower be activated. In conjunction, these two sites will blanket the geography south of Route 1 with robust in-building coverage. Figure 6 below illustrates the anticipated best server coverage should both the Beacon Middle school water tank as well as the subject tower be activated. The water tank site will provide clear server dominance and offload the cellular traffic along roughly two miles of Route 24 and the subject tower will do the same for its targeted areas including the numerous residential subdivisions and recreational facilities bounded roughly by the Arnell Creek to the west and the Johnson Branch to the east. Neither of these facilities, independent of each other,

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can provide the required service improvement to all of these areas. Further, the medical building north of the water tank would provide mainly redundant coverage with the existing Verizon facilities along Route 1 and was thus of no use as a potential candidate for co-location.

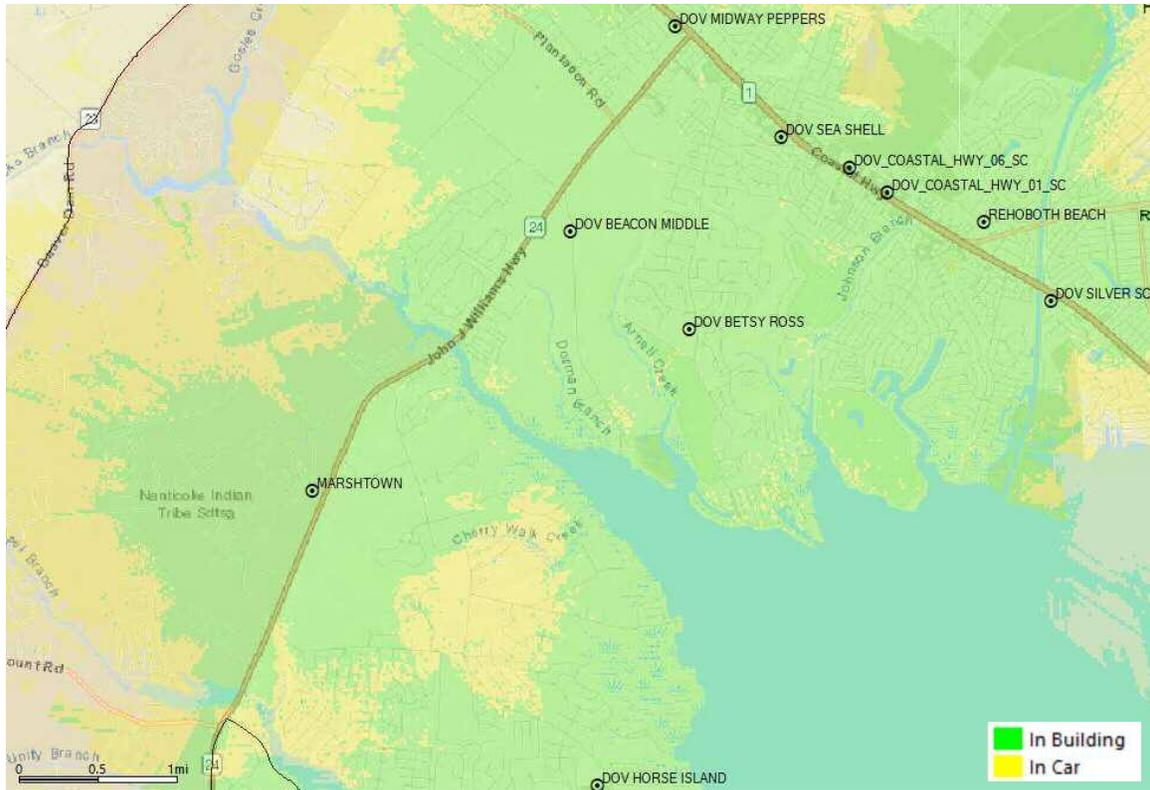


Figure 5 – Anticipated Reliable Coverage with Beacon Middle WT and Proposed Tower

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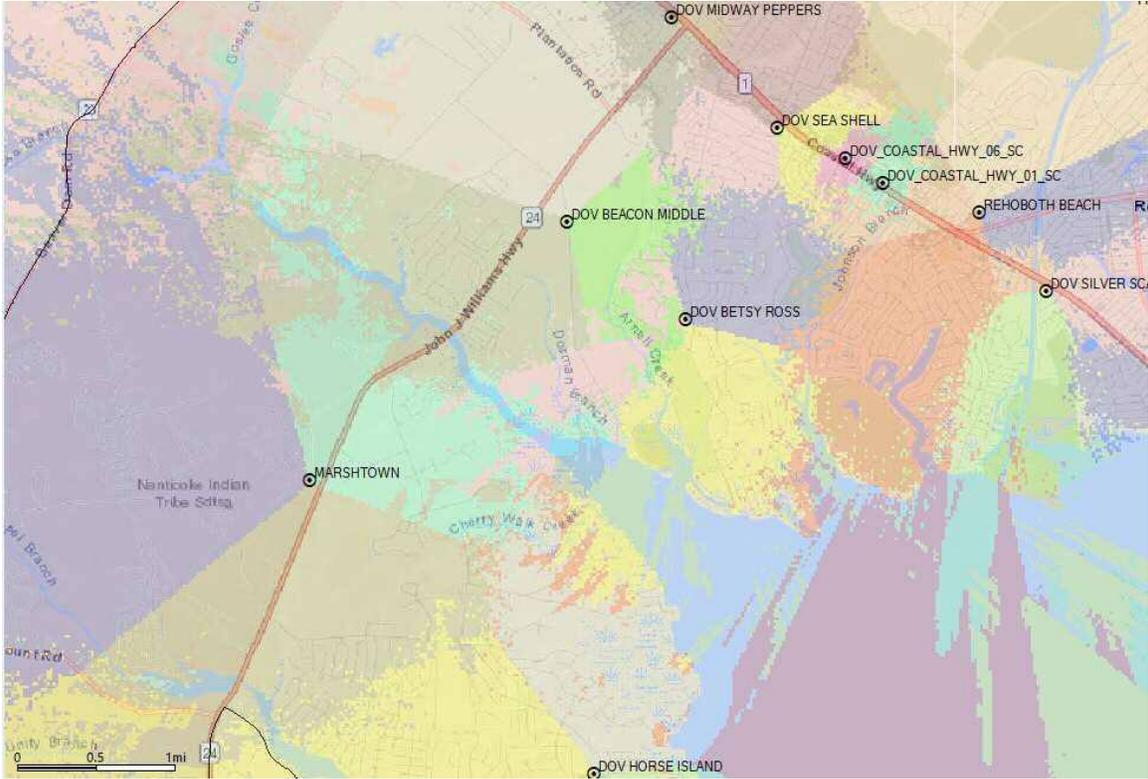


Figure 6 – Anticipated Best Server Coverage with Beacon Middle WT and Proposed Tower

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info@dBmEng.com



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, Florida and New Jersey. He has over two decades 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 Pennsylvania Society of Professional Engineers (PSPE). Mr. Petersohn further states that all facts and statements contained in the foregoing document are true and accurate to the best of his knowledge.



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



Executed this the 2nd day of October, 2024

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Fairview Village, PA 19409
Phone: 610.304.2024
Fax: 610.584.5387
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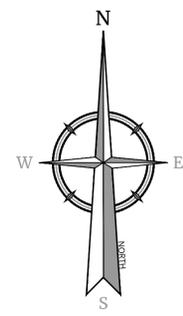
PROPOSED 35'-0" x 40'-0" (1,400 S.F.) FENCED TELECOMMUNICATIONS COMPOUND

OLD LANDING ROAD
STATE ROUTE #274

PROPOSED MONOPOLE

PROPOSED 12'-0" WIDE GRAVEL ACCESS DRIVE

Existing Subject Property Line



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BLUE BELL, PA 19422

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SCALE: AS SHOWN JOB NUMBER: 23960058

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY

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SITE NAME:

DOV BETSY ROSS
20338 OLD LANDING ROAD
REHOBOTH BEACH, DE 19971
SUSSEX COUNTY

Colliers Engineering & Design
MT. LAUREL
2000 Midlantic Drive, Suite 100
Mt. Laurel, NJ 08054
Phone: 856-797-0412
COLLIERS ENGINEERING & DESIGN, INC.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE:
AERIAL EXHIBIT

SHEET NUMBER:
AE-1

AERIAL EXHIBIT
60 0 60 120
SCALE: 1" = 60' FOR 22"X34"
(SCALE: 1" = 120' FOR 11"X17")

MAY 2024 10:52:00 AM Betsy Ross Aerial Exhibit.dwg, A:\Projects\23960058\Drawings\Aerial Exhibit.dwg, By: RYAN LUTWANT

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION

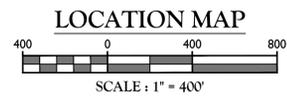
CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

SITE NAME:
DOV BETSY ROSS

SITE ADDRESS:
20338 OLD LANDING ROAD
REHOBOTH BEACH, DE 19971
SUSSEX COUNTY

DATE: 10/04/2024
COLLIERS PROJECT NO.: 23960058
PHOTOS TAKEN: 06/01/2023 & 10/04/2024*

*PHOTOS FROM GOOGLE STREET VIEWER



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Phone: 856.797.0412
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PHOTO LOCATION #1
FROM BETSY ROSS BOULEVARD
LOOKING SOUTHWEST TOWARDS SITE



PHOTO LOCATION #2
FROM DRIVEWAY
LOOKING WEST TOWARDS SITE

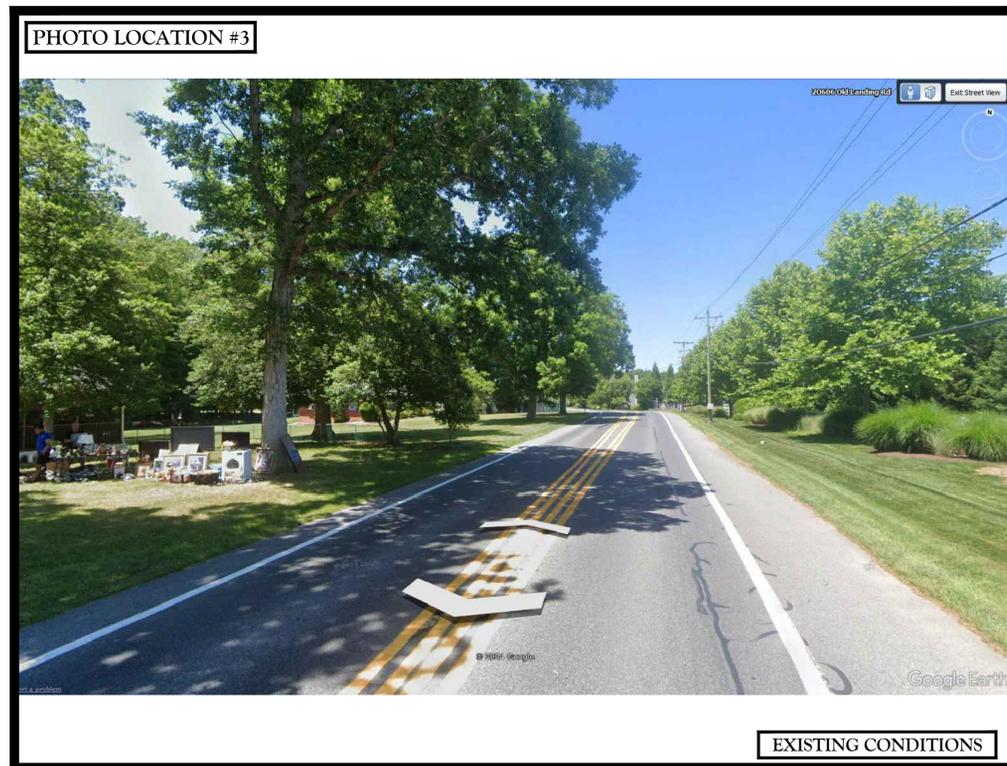


PHOTO LOCATION #3
FROM OLD LANDING ROAD
LOOKING NORTH TOWARDS SITE

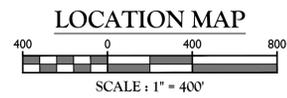
CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

SITE NAME:
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SITE ADDRESS:
20338 OLD LANDING ROAD
REHOBOTH BEACH, DE 19971
SUSSEX COUNTY

DATE: 10/04/2024
COLLIERS PROJECT NO.: 23960058
PHOTOS TAKEN: 06/01/2023 & 10/04/2024*

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PHOTO LOCATION #4
FROM OLD LANDING ROAD
LOOKING SOUTH TOWARDS THE DRIVEWAY



PHOTO LOCATION #5
FROM OLD LANDING ROAD
LOOKING NORTH TOWARDS THE SITE



PHOTO LOCATION #6
FROM SELBOURNE LANE
LOOKING SOUTH TOWARDS THE SITE



SUMMARY MARKET STUDY OF

The Effects of Communications Towers on Residential Property Values

PREPARED FOR

Young, Conaway, Stargatt, and Taylor, LLP, c/o John Tracey, Partner
Rodney Square 1000 N King St
Wilmington, DE 19801

FILE NUMBER(S)

CC19181

PREPARED BY:

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YEARS OF SERVICE



June 19, 2024

Mr. John Tracey
Young, Conaway, Stargatt, and Taylor, LLP
Rodney Square 1000 N King St
Wilmington, DE 19801

Re: **Market Study of the Effects of Communications Towers on Residential Property Values**

As requested, W.R. McCain & Associates has conducted an Independent Market Study to analyze the effects of communications towers on property values of residential properties with a particular focus on relatively new projects, located in Sussex County, Delaware and Worcester County, Maryland. In each case, the tower was in place prior to the onset of development.

It is noted that the findings from the regional sales data in this market study are for specific properties and are presented as examples for various types of residential properties. The reader is cautioned that these results may not necessarily indicate the effect that may be realized for all properties of a particular type, due in part to differing factors such as market conditions, locations, and overall market appeal. The impact on real estate values, as a result of communications towers, is a very site specific issue and not easily quantified. Moreover, any measurable impact will differ from one individual property to another.

Real estate appraisers may perform assignments that include valuation, consulting (analysis or evaluation), or both. This appraisal consulting assignment has been prepared in conformance with the requirements of the Uniform Standards of Professional Appraisal Practice (USPAP). In appraisal consulting assignments, valuation techniques are frequently used, but the objective is not necessarily to value a particular property. Instead, the focus is on decision making and providing advice for a client. In this assignment, a market value estimate for a specific piece of real

estate is not sought. The scope of work for the services being performed is limited to presenting a compilation of the existing national research on the subject, combined with our own independent market-based research, for the purpose of estimating the effect of communications towers on residential property values.

The summary results of the research are presented in table format as follows. The findings are as of May 27, 2024.

APPROACHES TO EXAMINING THE EFFECTS OF COMMUNICATIONS TOWERS ON RESIDENTIAL PROPERTY VALUES:	
REVIEW OF NATIONAL RESEARCH:	When detrimental effects have been found, they tend to be small. Furthermore, any effects diminish as the distance from the tower increases. The extent of any impact is highly parcel specific and can vary from one transaction to the next.
REGIONAL SALES DATA ANALYSIS:	Typically, nominal to no adverse impacts have been found. In the individual matched pairs, where detrimental value effects were found, the impact was usually small, almost always less than -5% to -10%. In some instances, those properties, that have a significant view of a tower, sold for more than the control properties. There is no consistent trend which suggests a diminution in value as a result of a close view or proximity to a communications tower.
FINAL CONCLUSIONS OF MARKET STUDY:	Market perception of the impact of a communications tower on property value often differs greatly from the impact observed in the actual sales data. There appears to be little to no discernable difference in residential property values as a result of proximity to communications towers.

The supporting data, analysis, and conclusions upon which this consultation is based are contained in the accompanying report and in the appraisers' workfile. **THIS LETTER MUST REMAIN ATTACHED TO THE REPORT IN ORDER FOR THE OPINION(S) SET FORTH TO BE CONSIDERED VALID.**

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "R Braxton Dees", written over a horizontal line.

R. Braxton Dees, MAI
MD Certified General #04-31651
DE Certified General #X1-0000592
VA Certified General #4001-016237
GA Certified General #307258

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CERTIFICATION

CERTIFICATION: The appraisers certify and agree that, to the best of their knowledge and belief:

1. The statements of fact contained in this report are true and correct.
2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, unbiased professional analyses, opinions, and conclusions.
3. The appraisers have no present or prospective interest in the property that is the subject of this report, and have no personal interest or bias with respect to the parties involved.
4. The appraisers have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
5. The engagement in this assignment was not contingent upon developing or reporting predetermined results.
6. The compensation of the appraisers is not contingent upon the developing or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
7. Our analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice.
8. R. Braxton Dees inspected the communications towers of focus in the Regional Sales Data Analysis.
9. Heather Hazewski (DE Appraiser Trainee #X4-0000645 / MD Appraiser Trainee #06-33754) provided significant assistance to the person signing this certification with the report setup, market research, data collection, analysis, and conclusions.
10. The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Code of Professional Ethics and Standards of Professional Appraisal Practice of the Appraisal Institute.
11. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

12. As of the date of this report, R. Braxton Dees has completed the continuing education program for Designated Members of the Appraisal Institute.
13. To the best of our knowledge, W. R. McCain & Associates has not appraised the subject property in the three years prior to this assignment.

Respectfully Submitted,



R. Braxton Dees, MAI
MD Certified General #04-31651
DE Certified General #X1-0000592
VA Certified General #4001-016237
GA Certified General #307258

ASSUMPTIONS AND LIMITING CONDITIONS

This appraisal report has been made with the following general assumptions:

1. The information furnished by others is believed to be reliable, but no warranty is given for its accuracy.

This appraisal report has been made with the following general limiting conditions:

1. Possession of this report, or a copy thereof, does not carry with it the right of publication.
2. The appraiser, by reason of this market study, are not required to give further consultation or testimony or to be in attendance in court with reference to the property in question unless arrangements have been previously made. In the event appraiser is subpoenaed or otherwise required to give testimony or attend any public or private hearing as a result of this assignment, the summoning party agrees to compensate the appraiser at his or her corresponding hourly rate.
3. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the appraiser, or the firm with which the appraiser is connected) shall be disseminated to the public through advertising, public relations, news, sales, or other media without the prior written consent and approval of the appraisers.
4. The report is based on data and information available or made available at the time the assignment is in process. Any Amendments, Addendums, and/or Modifications requested after the reports have been turned in, will be made as soon as reasonably possible, for an additional fee.

SUMMARY OF IMPORTANT DATA AND CONCLUSIONS

REPORT TYPE:	Summary Market Study File No. CC19181
REPORT DATE:	June 19, 2024
MARKET AREA:	Sussex County, Delaware and Worcester County, Maryland
CLIENT:	Young, Conaway, Stargatt, and Taylor, LLP, c/o John Tracey, Partner
INTENDED USE:	As an aid in estimating the effects of communications towers on nearby residential property values.
PROPERTY RIGHTS CONSIDERED:	Fee Simple
APPROACHES TO EXAMINING THE EFFECTS OF COMMUNICATIONS TOWERS ON RESIDENTIAL PROPERTY VALUES	
REVIEW OF NATIONAL RESEARCH:	When detrimental effects have been found, they tend to be small. Furthermore, any effects diminish as the distance from the tower increases. The extent of any impact is highly parcel specific and can vary from one transaction to the next.
REGIONAL SALES DATA ANALYSIS:	Typically, nominal to no adverse impacts have been found. In the individual matched pairs, where detrimental value effects were found, the impact was usually small, almost always less than -5% to -10%. In some instances, those properties, that have a significant view of a tower, sold for more than the control properties. There is no consistent trend which suggests a diminution in value as a result of a close view or proximity to a communications tower.
FINAL CONCLUSIONS OF MARKET STUDY:	Market perception of the impact of a communications tower on property value often differs greatly from the impact observed in the actual sales data. There appears to be little to no discernable difference in residential property values as a result of proximity to communications towers.
EFFECTIVE DATE:	May 27, 2024
APPRAISER/CONSULTANT(S):	R. Braxton Dees, MAI

PURPOSE OF MARKET STUDY

The objective of this Summary Market Study report is to analyze the effects of communications towers on residential property values. The purpose of this report is to present the data and reasoning the appraiser/consultant has used in conducting the market study, so that the client/intended user (John E. Tracey / Young Conaway Stargatt & Taylor, LLP) may use it as an aid in evaluating the impact of communications towers on residential property values.

DEFINITIONS

Market value is defined as "The most probable price in terms of money which a property will bring in a competitive and open market, under all conditions requisite to a fair sale, the buyer and seller each acting prudently, knowledgeably and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer whereby:

- Buyer and seller are typically motivated;
- Both parties are well informed or well advised, and acting in what they consider their best interests;
- A reasonable time is allowed for exposure in the open market;
- Payment is made in terms of cash in United States dollars or in terms of financial arrangements comparable thereto; and
- The price represents the normal consideration for the property sold unaffected by creative financing or sales concessions granted by anyone associated with the sale."

Federal Register, Vol. 55, No. 163, Wednesday, August 22, 1990, Rules and Regulations.

A **Market Study** can be defined as, "A macroeconomic analysis that examines the general market conditions of supply, demand, and pricing or the demographics of demand for a specific area or property type. A market study may also include analyses of construction and absorption trends." (Appraisal Institute, The Dictionary of Real Estate Appraisal, 4th Edition).

PROPERTY RIGHTS CONSIDERED

The property rights considered address the Fee Simple interest.

Fee Simple - "Absolute ownership unencumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat." ¹

¹ The Dictionary of Real Estate Appraisal, 5th Edition, Appraisal Institute.

SCOPE OF WORK

According to the Uniform Standards of Professional Appraisal Practice, it is the appraiser's responsibility to develop and report a scope of work that results in credible results that are appropriate for the appraisal problem and the intended user(s). Therefore, the appraiser must identify and consider:

- the client and intended users;
- the intended use of the report;
- the type and definition of value
- the effective date of value;
- the assignment conditions;
- typical client expectations; and
- typical appraisal work by peers for similar assignments.

Client:	Young, Conaway, Stargatt, and Taylor, LLP, c/o John Tracey, Partner
Purpose:	To present the data and reasoning the appraiser/consultant has used in conducting the market study, so that the client/intended user may use it as an aid in evaluating the impact of communications towers on residential property values
Intended Use:	As an aid in estimating the effects of communications towers on nearby residential property values
Intended User:	Young, Conaway, Stargatt, and Taylor, LLP, c/o John Tracey, Partner
Type of Value and Report Type:	Market Value / Market Study

The scope of this Market Study is to assess the impact, if any, of communications towers on the adjacent residential property values. The market area studied includes several residential projects in Sussex County, Delaware and Worcester County, Maryland, which are positioned directly adjacent to a communications tower. The extent of this valuation consultation encompasses a two-part study, including a review of the existing national research on the topic, and a comparative analysis of regional sales data of residential properties with and without a close view of a communications tower. The findings are then reconciled into final opinions regarding the property valuation implications of communications towers in the subject market.

Information presented, concerning regional data, was based upon information obtained from the State of Delaware and the State of Maryland, and the U.S. Census Bureau. Additional data was obtained from local news sources, municipal and county offices, as well as online communications tower locators. National research, regarding the effects of communications towers on residential property values, was obtained primarily through articles published by the Appraisal Institute and the International Right of Way Association. Neighborhood details were based on a physical inspection of the area, local property owners, Realtors and other knowledgeable parties. The research in preparing this appraisal report has also drawn from similar market study, consultation and valuation assignments conducted by this office in the past. Such assignments have investigated the issue of proximity impact on residential property values within the extended marketing area, for such varied external influences such as high-voltage transmission lines, new regional shopping center development, new road and sidewalk construction, and elevated roadways.

The first step of the market study is to review the existing body of national research on the effects of communications towers on residential property values. The focus of this literature review is on articles from *The Appraisal Journal*, published by the Appraisal Institute, and *Right of Way* magazine, published by the International Right of Way Association. These sources are highly respected in the right-of-way and real estate appraisal professions, with articles contributed by leading experts in many facets of the industry, including appraisal, environmental, land acquisition and real estate law. After a thorough search, only a limited number of articles and published studies specific to communications towers were found. As a result, literature pertaining to high-voltage transmission lines and their support towers was also reviewed. These structures are somewhat similar to communications towers in height, tower designs and in the perceived health concerns due to exposure to electromagnetic fields. Moreover, they are similar to communications towers in the concerns of neighboring property owners regarding a perceived loss in value due to their views and proximity. More research has been published about the impact of high-voltage transmission lines on property values and, as a result, also bears strong consideration in the matter of communications tower impact on property values.

The next step is to investigate the region-specific influence of communications towers on residential property values. This is accomplished primarily through a comparative analysis of actual settled sales of residential properties with and without a close view of a communications tower. Regional sales data has been extensively researched through the Bright Multiple Listing Service, county assessment records, and through direct contact with Realtors, property owners, and other appraisers. Upon assembling and analyzing the data defined in this scope of work, final opinions of the effects of communications towers on residential property values have been reached. As a Summary Report, only summary discussions of the data, reasoning, and analysis, that were used in the valuation process to develop the opinions, are presented. Additional supporting documentation is retained in the work file. However, all due diligence was employed to arrive at the final conclusions.

PRESENTATION OF DATA

MARKET AREA ANALYSIS

Regional:

The Delmarva Peninsula is located on the Mid-Atlantic Coast, consisting of the State of Delaware, as well as the Eastern Shores of Maryland and Virginia. It is bounded on the north by Pennsylvania, on the east by the Atlantic Ocean and the Delaware Bay and River, and on the south and west by the Chesapeake Bay. In stark contrast with the rest of the eastern seaboard, the Delmarva Peninsula is mostly rural.

State	Population (as of 7/2022)	Area (Square Miles)	Density
Delaware	1,018,396	1,954	521
Maryland (Eastern Shore)	459,170	3,323	138
Virginia (Eastern Shore)	45,331	662	68
Total	1,522,897	5,939	256

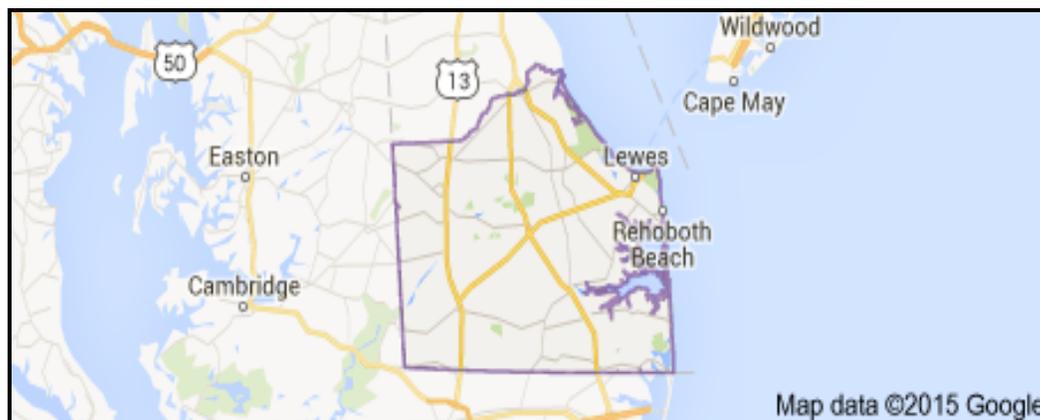
Source: US Census Bureau / QuickFacts

The Peninsula, stretching over 180 miles long, and 80 miles at its widest point, narrows as you travel south to Cape Charles, Virginia, about 16 miles north of Norfolk, Virginia. The Chesapeake Bay, which separates the Western and Eastern Shores of Maryland and Virginia, is the largest bay in the United States. The primary industries of the region include meat and poultry processing, soybean production, corn production, timber harvesting, crab, oyster, and fish harvesting and tourism. The tourism industry has been particularly fast developing due to Delmarva's proximity to the Atlantic Ocean. Several towns, such as Rehoboth Beach, Dewey Beach and Ocean City, have grown primarily as tourism centers.



Sussex County:

Sussex County is the southernmost and largest of Delaware's three counties, in terms of its geographical area. Its 960 square miles make up 49 percent of the total land statewide. It is located near the center of the Delmarva Peninsula and is bounded on the north by Kent County, on the west and south by Maryland's Eastern Shore, and on the east by the Atlantic Ocean and the Delaware Bay.



Population:

In 2010, Sussex County had a population of 197,145. Sussex County's population increased from 2010 to 2022 by more than 29 percent to 255,956. Sussex County's current population represents approximately 25 percent of Delaware's total population, making it Delaware's second largest county. Georgetown, Delaware, with a current population of 7,662, is the seat of Sussex County.²

	2010	2020	2025	2030	2035	2040	2050	Population Change 2010-2040	
								#	%
State	899,600	992,035	1,018,473	1,042,869	1,065,740	1,085,592	1,115,712	216,112	24.02%
Kent	162,955	182,481	183,690	184,613	186,828	190,631	204,411	41,456	25.44%
New Castle	538,753	571,058	578,589	585,990	593,626	599,650	603,757	65,004	12.07%
Sussex	197,892	238,496	256,194	272,266	285,286	295,311	307,544	109,652	55.41%

DELAWARE POPULATION CONSORTIUM
ANNUAL POPULATION PROJECTIONS October 31, 2021
 Version 2021.0 Dover, Delaware

The Delaware Population Consortium predicts that the county's population will grow by 55.41

² U.S. Census Bureau / QuickFacts, "Sussex County, Delaware," U.S. Census Bureau, 2010. Web, (October 22, 2020).

percent from 2010 and 2050.³ Based on the data above, Sussex County’s population growth is the largest of the three counties.

The largest age group living in Sussex County is age 60 to 69.⁴ The county is well suited for senior citizens. A study by Kiplinger rated Delaware the “#3 senior tax friendly State in the nation” in 2019.⁵ Delaware has limited income taxes for seniors, does not tax social security benefits, and has no state or local sales taxes. Additionally, the property taxes in most areas are significantly below national averages.

Income:

The US Census Bureau reports that the median household income in Sussex County was \$68,886 in from 2017-2021. This was relatively in line with the national median wage, which was \$72,724. The per capita income was \$39,066, which was slightly higher than the national per capita (\$38,917).⁶

According to the Bureau of Labor Statistics 4th quarter 2021, the average weekly wage in Sussex County was \$1,065. Although still below the national average, the county’s average weekly wage is up from the 2019 average of \$874. Sussex County has the lowest weekly wage in Delaware.⁷

Labor Force:

The unemployment rate is a driving statistic that must be analyzed to determine the strength of an area. Sussex County is seeing a downward trend in its unemployment rate as the effects of the pandemic end. This shows improved growth and stability in the job market in the area. It is also noted that, due to its vast tourist industry, the seasonal months typically have the lowest unemployment rates. These trends are better depicted in the following charts.

³ Delaware Population Consortium , “Delaware Population Consortium,” Office of State Planning, October 31, 2019.

⁴ U.S. Census Bureau (2019). American Community Survey 1-year estimates. Retrieved from Census Reporter Profile page for Sussex County, DE. Web, (October 22, 2020).

⁵ “10 Most Tax-Friendly States for Retirees, 2019,” Kiplinger, Web (October 22, 2020).

⁶ U.S. Census Bureau / QuickFacts, “Sussex County, Delaware.”

⁷ Bureau of Labor Statistics, “County Employment and Wages in Delmarva Peninsula” Bureau of Labor Statistics U.S. Department of Labor, released July 28, 2020. PDF file, (June 2, 2023).

W. R. McCain & Associates, Inc

	Sussex Dec. 2022	Sussex Dec. 2020	% Change	Delaware Dec. 2022	Delaware Dec. 2020	% Change
Labor Force	109,899	105,080	4.59%	494,576	481,840	2.64%
Employed	104,912	99,440	5.50%	473,976	453,637	4.48%
Unemployed	4,987	5,640	-11.58%	20,600	28,203	-26.96%
Unemployment Rate	4.5%	5.4%	-15.46%	4.2%	5.9%	-28.24%
Source: Bureau of Labor Statistics (BLS) Publisher: Delaware Department of Labor						

Economy:

There are numerous tax advantages in Delaware designed to attract new business and encourage the expansion of existing operations. Included in the tax advantages are a lack of state and local general sales tax, as well as personal property or inventory taxes. Additionally, there are many favorable corporate income tax credits and reductions of gross receipt taxes for both new and expanding businesses. As a result, many businesses have chosen to incorporate in Delaware, thus creating numerous job opportunities.

The Sussex County economy is specialized in Agriculture, Manufacturing, Tourism, Healthcare, Construction and Retail. The largest industry is Healthcare and Social Services and Retail Trade employing 15% and 14%, respectively of the workforce. Healthcare has been the fastest growing sector in recent years with \$400 million in new facilities underway. This category of employers includes the three hospitals in Sussex County (Bayhealth Medical Center in Milford, Beebe Medical Center in Lewes, and Nanticoke Health Services in Seaford), as well as a growing number of extended care, independent extended living, and assisted living facilities across the county. Some of the key employers in the county include Beebe Medical Center, Mountaire Farms, Merck Animal Health and Dogfish Head Brewery.⁸

Agriculture:

Agriculture is, one of the biggest employment drivers, considering the number of jobs created by some of the largest poultry companies in the nation, such as Allen Harim Foods, LLC, Mountaire Farms, Perdue, Inc. and Sea Watch International. Both Allen Harim Foods LLC and Mountaire Farms are headquartered in Sussex County. Allen Harim Foods is headquartered in Seaford and Mountaire is in Millsboro.⁹

Agricultural properties make up a large portion of Sussex County's overall land use. According to the 2017 Census of Agriculture, which is the most recent available, there are approximately 275,473 acres of farm land with approximately 1,119 farms.¹⁰ Sussex County was the number

⁸ Sussex County Economic Development, www.excitesussex.com

⁹ Ibid.

¹⁰ U.S. Census of Agriculture, "Sussex County, Delaware," U.S. Census of Agriculture, 2017. PDF file, (October 22, 2020.)

one county for “meat chicken production” in the United States.¹¹ Given the amount of land dedicated to agriculture, a large proportion of Sussex County is described as rural with the more developed areas being established around the major highway systems.

Delaware ranked eighth in the nation in 2017 for having a production value of \$1.02 billion. In the same year, Delaware produced 1.87 million pounds of chicken.¹² Sussex County is a leader in poultry production in Delaware. The 2017 Census of Agriculture also reported that Sussex County had a market value of products greater than \$1 billion. The average size farm was 246 acres and produced more than \$900,000 in products sold in 2017.¹³

Housing Data:

The housing market in Sussex County continues to grow as evidenced by the increase in the average sale price and unit sold over the past several years.

Year	Units Sold	Average Sale Price	Average Sale Price % Change from Prior Year
2021	7,322	\$471,266	12.95%
2020	7,303	\$417,179	7.94%
2019	5,855	\$373,065	5.07%
2018	5,514	\$355,065	6.01%
2017	5,533	\$334,925	5.97%

Source: Bright MLS Market Statistics Report

It is noted that Eastern Sussex County is driving the pattern of growth due to the influence of its resort areas.

Housing Facts (2017-2021 US Census Data)	
Households	96,375
Persons per household	2.40
Median household income	\$68,886
Housing Units (7/1/2022)	152,262
Median Value of owner-occupied housing units	\$285,100
Owner-occupied housing rate	81.2%
Median gross rent	\$1,101
Poverty rate	11.5%

¹¹ Delmarva Poultry Industry, Inc., “Facts About Delaware’s Meat Chicken Industry.”

¹² Ibid.

¹³ U.S. Census of Agriculture, “Sussex County, Delaware”

Building Permits (2021)

4,170

Taxation:

Property in Sussex County is taxed at a rate, which is comprised of a county tax rate and a rate established by each school district, per \$100 of assessed value based on School District. Assessments are based on 1974 property values. The tax rate in Sussex County has remained mostly constant for a number of years. These low tax rates have also led to a significant amount of planned residential communities. Due to the density of the resort areas, properties within 5 miles of the coast represent 57% of the County's tax base.¹⁴ Sussex County began a court ordered reassessment of residential, agricultural and commercial properties in 2021. The reassessment was ordered in 2020 to address the issue that the County assessments were not representative of the "true value of money". The reassessment will be over a 3 year period with new assessment values being set at what is expected to be the fair market value of the property as of July 1, 2023. The county and the school districts are capped by law on how much additional revenue can be generated from reassessment. Property tax rates will be adjusted to ensure the taxing entity does not collect more than allowed by statute. Sussex County cannot yield property tax revenues greater than 15% of the preceding year in which the reassessment occurred. The State Code caps school districts to a 10% revenue increase due to reassessment.

Education:

Because there is such a direct connection between education levels and employment opportunities, education can be a critical demographic. The Sussex County public school system consists of 7 school districts and 1 career and technology high school. In addition to these schools, there are 6 special & charter schools included in Sussex County's public school system.

	High school graduate or higher ¹⁵	Bachelor Degree or higher
Sussex County	89.6%	30.4%
Delaware	91.1%	33.6%
United States	88.9%	33.7%

Post-Secondary Schooling is a large factor in today's society. Sussex County has access to 4 post-secondary schools to accommodate these needs. These include Delaware Technical & Community College, Delaware State University, University of Delaware, and Wilmington College. These schools have local branches in Sussex County; however, their main campuses are located in Kent County and New Castle County. The lack of higher education institutions in

¹⁴ Sussex County Administrator, SCOAR presentation – December 2017

¹⁵ US Census, Quick Facts

Sussex County may contribute to the lower percentage of the population with a college degree.

Sussex County Resorts:

The easternmost section of Sussex County is primarily devoted to the tourism industry. Sussex County has a 25-mile stretch of ocean front land. Of this land, 17 miles are protected as public parklands and are not available for development. Along the remaining beaches, the towns of Rehoboth Beach, Lewes, Dewey Beach, Bethany Beach and Fenwick Island have grown. These towns are relatively quiet, though, when compared to Maryland's Ocean City. Nonetheless, the area attracts large crowds during the summer season, which pump many tourist dollars into the county and create numerous jobs associated with the industry. Overall, tourism is responsible for 1.7 billion in annual gross domestic product for the County and 18,000 jobs.¹⁶



These small resort towns are greatly influenced by the large influx of seasonal tourists from nearby metropolitan areas. Tourists come to enjoy beach activities, including surfing, wind surfing, fishing, boating, farmers markets, shopping, and relaxing. The towns are constructed to offer an all-inclusive vacation experience. Each town includes numerous housing facilities, restaurants, bars, and retail shops. Tourists are encouraged to come and park their cars for the extent of their trip.

Transportation is linked between each of these towns by Route 1. During the peak seasonal months, public transportation between the resort towns is provided for a nominal fee. This includes a bus route from Fenwick Island to Rehoboth Beach. The towns have not grown significantly in size for quite some time as a result of the limited available land within the corporate limits. Instead of growing in land area, the towns have expanded outward into numerous smaller developments, many of which provide transportation into the “beach” towns. This allows the resort towns to focus more on establishing commercial centers.

In order to succeed, several of the resort towns, such as Lewes and Rehoboth Beach, have found ways to attract visitors even in the off-season periods. The three Tanger Outlet centers have grown to become some of the most popular commercial enterprises. The outlets are established along Route 1 allowing visitors to stop and shop while on their way to their resort destination. With the influx of more year-round clientele, numerous restaurants, bars, and retail stores have aligned themselves in close proximity of the outlets. The success of these commercial centers has resulted in the outlets becoming an “anchor” to the commercial sector of the resort towns and this has led the resort areas to become year-round destinations.

¹⁶ The Convention and Visitors Bureau for Sussex County, “2018 Visitor Survey” by Visit Southern Delaware.com

Transportation / Linkages:

Most commercial activities, and the majority of Sussex County's population, reside near three major corridors: U.S. Route 13, U.S. Route 113 and Delaware Route 1. There are also a vast number of secondary roads, all in good condition. Each of these routes extends from Kent County to Sussex County's southern border. Beginning in Milford, Delaware Route 1 extends along the Atlantic coastline through or near the county's major resort towns. U.S. Route 113 runs through the center of the county from Milford to Selbyville and into Maryland. The third major connecting highway is U.S. Route 13, which provides direct access from New Castle County to Delmar through the western part of the county. This highway connects Delaware, from north to south, all the way to the southern tip of the Eastern Shore of Virginia. This highway also parallels a Norfolk-Southern (formerly Conrail) rail line, which operates two freight trains daily through the area. The main track runs north from Cape Charles, Virginia to Wilmington, Delaware, where it connects to the rest of the country. Also at Wilmington, the train track connects with the deep water port of Wilmington, where water borne freight can be shipped throughout the country and world. 10 truck lines operate in the Sussex County area, providing overnight service to most of the large cities along the eastern seaboard.

Climate:

The climate for Sussex County is mild and has a 191 day freeze free period. The average temperature during the summer is 76.2 degrees; whereas, the average temperature during the winter is 35.7 degrees. Average rainfall for the year is around 49.76 inches. This helps to provide a good seasonal mix, important for the tourism industry, as well as for livability.

Worcester County:

Worcester County is located on Maryland's Lower Eastern Shore, bounded by the Atlantic Ocean on the east, Sussex County, DE on the north; Wicomico County, MD on the north and west, Somerset County, MD on the west, and Accomack County, VA to the south. The center of Worcester County is approximately 124 miles southeast of Baltimore, 138 miles east of Washington D.C., 145 miles south of Philadelphia, 245 miles southwest of New York, and 135 miles north of Norfolk.



Population:

Worcester County had an estimated population of 53,866 in 2022. The county's represents 11 percent of the Eastern Shore of Maryland's total population, making it the third largest county in population.¹⁷ Snow Hill is the county seat of Worcester County, and it has a population of just over 2,000 in 2018. Worcester County is also home to Ocean City, which serves as the county's major resort town. In 2022, Ocean City had a population of 6,915.¹⁸

The Brief Economic Facts for Worcester County, produced by the Maryland Department of Commerce, indicates that Worcester County's population in 2020 has increased approximately 1.8% since 2010. Additionally, a 3.8 percent decrease in the number of households was indicated for the county from 2010 to 2020.¹⁹ The largest age group in the county were those between ages 45 and 64.²⁰

Labor Force and Employment:

Worcester County's total labor force has decreased 2 percent between 2015 and 2022. This rate is below the growth of Maryland's labor force, which decreased just under 1 percent between 2015 and 2022.

Worcester County currently has a higher unemployment rate than the state of Maryland. This is likely influenced by the seasonal nature of jobs in the resort area. In 2022, Worcester County's average unemployment rate was 5.4 percent, a significant decrease from the 2015 rate of 10.6 percent. Maryland's unemployment rate also decreased 50% between 2015 and 2022.²¹

	2015	2022	% Change
Worcester			
Labor Force	25,464	24,955	-2.00%
Employment	22,775	23,601	3.63%
Unemployment Rate	10.6	5.4	-49.06%
Maryland			
Labor Force	3,141,602	3,163,206	0.69%
Employment	2,981,859	3,083,676	3.41%
Unemployment Rate	5.1	2.5	-50.98%
Source: MD Dep. of Commerce; MD Dep. of Labor, Licensing, and Regulation			

¹⁷ U.S. Census Bureau / QuickFacts, "Worcester County, Maryland."

¹⁸ Ibid.

¹⁹ Maryland Department of Commerce, "Brief Economic Facts – Worcester County, Maryland," MD Dept. of Commerce, 2021. PDF file, (May 25, 2023).

²⁰ Ibid.

²¹ MD Dep. Of Commerce; MD Dep. of Labor, Licensing and Regulation. Local Area Unemployment Statistics. Web, May 25, 2023.

It is not unusual for counties on the Eastern Shore of Maryland, like Worcester, to have an unemployment rate higher than the state of Maryland. Most of Maryland's population is in the metropolitan areas of the state, such as the outskirts of Washington, D.C., Baltimore, and Annapolis. Those areas rely on federal government jobs, whereas Wicomico County and other counties are more rural and have more jobs within the private sector than the federal government. This results in Worcester County having a higher unemployment rate than the state of Maryland. Additionally, there are many seasonal jobs in the county which causes lower unemployment rates within the spring and summer months, and higher rates in the fall and winter.

The unemployment rate is a driving statistic that must be analyzed to determine the strength of an area. Worcester County is seeing a downward trend in its unemployment rate. This shows improved growth and stability in the job market in the area. It is also noted that, due to its vast tourist industry, the seasonal months typically have the lowest unemployment rates. These trends are better depicted in the next chart.²² It is noted the Covid-19 pandemic and the national shutdown has impacted these numbers for the 2020 year resulting in unemployment rates higher than they were for the same period the prior year.

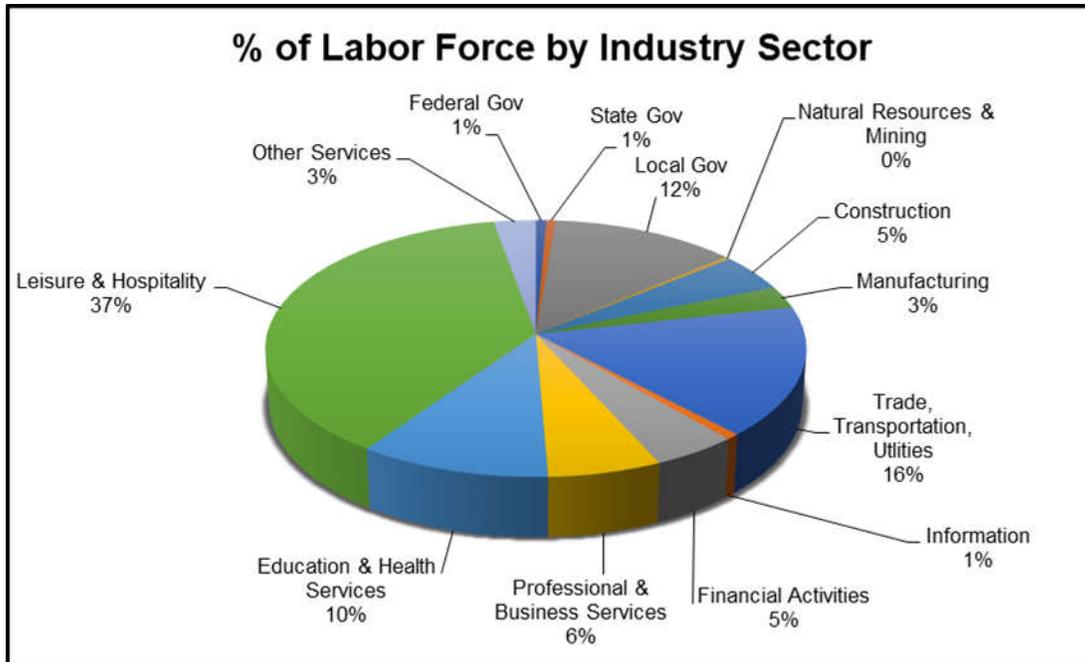
Year - 2020	Apr	May	June	July	Aug	Sep
Labor Force	25,279	25,182	25,588	25,967	25,451	23,539
Employed	19,809	20,659	22,716	23,577	23,426	21,683
Unemployment Rate	21.6	18.0	11.2	9.2	8.0	7.9

"Local Area Unemployment Statistics" (dllr.maryland.gov/lmi/laus/)
 Source: BLS, Publisher: Office of Workforce Information and Performance

The Brief Economic Facts of Worcester County produced the number of employed workers per sector in Worcester County in 2019. The figures are graphed below:²³

²² Ibid.

²³ Maryland Department of Commerce, "Brief Economic Facts – Worcester County, Maryland."



Income:

The median household income in Worcester County was \$65,396 during the years of 2016-2020. This was slightly higher than the national median wage, which was \$64,994. The per capita income for the county was \$41,055, which was higher than the national figure (\$35,384). Approximately 19.6 percent of residents commute outside the county for work during the years of 2016-2020.²⁴

Business:

Some of the major employers include the Harrison Group (hotels and restaurants), Atlantic General Hospital, Bayshore Development, Casino at Ocean Downs, Ocean Pines Association, Berlin Nursing and Rehabilitation Center and multiple restaurant and hospitality establishments. Because of the tourism in Ocean City during the summer months, there are several businesses that employ many more workers during the season to compensate for the large number of visitors in Ocean City. These employers include O.C. Seacrets (470), Dough Roller (360), Phillips Seafood (290), Carousel Resort Hotel and Condominiums (340), Clarion (340), Fager's Island (300), 91st Street Joint Venture/Princess Royale (290) and Trimper's Rides (245).²⁵ Worcester County is one of 10 jurisdictions that participate in the One Maryland Program. The program offers significant tax credits for capital investments creating jobs.

²⁴ Ibid.

²⁵ Ibid.

Agricultural and Poultry Industries:

One of the larger industries in Maryland is poultry. The Delmarva Poultry Industry, Inc. frequently reports research and data about the poultry industry on the Delmarva Peninsula. In 2017, Maryland was ranked 9th in the nation for having a production value of \$1 billion. In the same year, Maryland produced 1.84 billion pounds of chicken.²⁶

The “Facts about Maryland’s Meat Chicken Industry” reported that in 2012, Worcester County ranked 29th in the United States “among the leaders in broiler chicken production in America.”²⁷ Moreover, Worcester County ranked third in Maryland for poultry production, producing \$210,756,000 in market value of products sold in 2017, which is the most recent Agricultural Census available. The average size farm in 2017 was 269 acres and produces approximately \$675,153 in products sold in Worcester County.²⁸

According to Worcester County Building Permits, between the years of 2014 and 2016, there have been plans to build over 75 chicken houses. The average number of houses one requests to build is 2.

Taxation and Government:

The Brief Economic Facts for Worcester County reports the tax rates for Worcester County and Maryland. The county taxes property at a rate of \$0.845 per each \$100 of assessed value, using a 100 percent assessment ratio. Added to the state’s rate of \$0.112 per \$100, this results in a base tax rate of \$0.957 per \$100. The State of Maryland also taxes corporate income progressively up to 8.25 percent and has a six percent sales tax.²⁹

²⁶ Delmarva Poultry Industry, Inc., “Facts About Maryland’s Meat Chicken Industry,” Delmarva Poultry Industry, Inc., last modified December 2015. PDF file, (February 10, 2017).

²⁷ Ibid.

²⁸ U.S. Census of Agriculture, “Worcester County, Maryland,” U.S. Census of Agriculture, 2017 PDF file, (November 18, 20120).

²⁹ Maryland Department of Commerce, “Brief Economic Facts – Worcester County, Maryland.”

Households and Building Permits:

The real estate market seems to be stable in Worcester County. Residential home sales increased 4 percent from 2018 (2,328 units sold) to 2019 (2,442 units sold). The average sale price in 2019 was \$295,403, which was a 4 percent increase from 2018.³⁰ For commercial land sales, the average cost in 2019 was \$58,000 per acre for industrial land, and \$135,000 per acre for office use.³¹

Housing Facts (2017-2021 US Census Data) ³²		
	Ocean City	Worcester Co.
Households	3,723	22,573
Persons per household	1.82	2.28
Median household income	\$58,563	\$71,262
Median Value of owner-occupied housing units	\$317,100	\$279,200
Owner-occupied housing rate	71.8%	76.3%
Median gross rent	\$1,063	\$1,068
Poverty rate	8.8%	10.3%
Building Permits (2020)	Not available	304

The differences in the median value of owner-occupied housing units and the median household income are a reflection of Eastern Shore economics, which is much more rural than the State of Maryland as a whole. Although only 13% of the county's total population resides in Ocean City, over 50 percent of the total housing units are situated within Ocean City, which is due to the large number of multi-family buildings.

Education:

The Worcester County public school system consists of six elementary schools, three middle/combined schools and four high schools including a technical school. The total enrollment is almost 7,000 students.³³

In addition to the public school system, there are several private schools in Worcester County, including Worcester Preparatory School (PK-12), Seaside Christian Academy (PK-8), Snow Hill Mennonite School (1-11) and Most Blessed Sacrament Catholic School (K-9). The nearest post graduate schools include Salisbury University, a 4-year university in Salisbury offering programs leading to B.A., B.S., M.S., and M.B.A. degrees. The university also offers several evening programs, particularly in business. The University of Maryland Eastern Shore is

³⁰ Bright MLS, "Market Research – Market Statistics Report", (November 18, 2020).

³¹ Maryland Department of Commerce, "Brief Economic Facts – Worcester County, Maryland."

³² U.S. Census Bureau / QuickFacts, "Worcester County, Maryland."

³³ Maryland Department of Commerce, "Brief Economic Facts – Worcester County, Maryland."

located in Princess Anne (Somerset County) and offers programs in micro technology, electronics, computers, and robotics. In addition, Wor-Wic Community College in Salisbury offers Associate degrees and courses to benefit the community and local businesses through continuing education programs. As of 2020, 92.2% of the county's population, 25 years and older, were high school graduates or higher; 30% had bachelor's degrees or higher. Those statistics are relatively in line with the statistics for the State of Maryland; 90% of the population being high school graduates and 40% with bachelor's degrees or higher.³⁴

Transportation:

Transportation through Worcester County consists mainly of personal vehicle and motor freight. Both U.S. 50 and U.S. 113 run directly through Worcester County providing access to the major interstates on the eastern seaboard. There are currently 20 motor freight lines that regularly operate in Worcester County. Rail transportation is provided by Norfolk Southern, operating two trains through the area daily. Also, about 20 miles west, the Salisbury-Wicomico Airport offers national and international flights via U.S. Air Express. Four air freight companies operate out of the airport, including Federal Express and U.P.S. The Ocean City Municipal Airport, located in West Ocean City, can accommodate small corporate jets on its 3,400' runway.

Climate:

The climate for Worcester County is mild. The average temperature during summer is 74.8 degrees; while during winter, the average temperature is 39 degrees. Average rainfall for the year is around 44.2 inches. This helps to provide a good seasonal mix, important for the tourism industry, as well as for livability.³⁵

Ocean City Resort Market:

Worcester County is unique in Maryland in that it derives most of its income from tourism. Ocean City is located on the far eastern side of the county, bounded by the Atlantic Ocean on the east and the Isle of Wight Bay on the west. The southern boundary is the Inlet, which separates Ocean City from Assateague Island. The Delaware-Maryland state line provides the northern boundary to Ocean City. The city boasts a total population of only 6,915 people; however, on any given summer weekend, the tourist population can reach over 325,000 people. The summer average is around 300,000 people.

According to the Ocean City Public Relations Office, nearly 90 percent of Ocean City's visitors are between 18 and 54 years old. Among this group, the distribution is somewhat flat. The majority makes between \$31,000 and \$75,000 dollars per year and will stay for one week. Nearly 80 percent of Ocean City's visitors visit between one and three times per year; half stay in a hotel and the remainder stay in condominiums. In all, over 8,000,000 people visit Ocean

³⁴ U.S. Census Bureau / QuickFacts, "Worcester County, Maryland."

³⁵ Ibid.

City annually.

Ocean City also has a broad economic impact on the state of Maryland, collecting over \$68 million in taxes directly and indirectly related to Ocean City and the tourist trade. In all, visitors spend nearly \$130 million in lodging and over \$317 million on all taxable goods.

The Roland E. Powell Convention Center plays a vital role in the overall economic impact of Ocean City. Expansions of the convention center were recently completed in 2013 and 2014. Another expansion, to include an additional 30,000 square feet of exhibit all space was approved by the Town in 2016. After this expansion the convention center will provide 80,000 square feet of exhibit hall space, 21 meeting rooms and a 1,200 seat Performing Arts Center.

Ocean City's growth can be tied directly to the growth in the surrounding regions, as well as the vast time and money spent on improving U.S. Route 50 to eliminate bottlenecks in traffic. Nearly 30 percent of all the United States population and 31 percent of the United States' buying power is within one day's drive to Ocean City. However, also due to the rapid growth of the area, there is no longer much land available for commercial or residential development within Ocean City. Consequently, much of the more recent commercial development has spread to areas just west of, and outside, the resort "proper" to West Ocean City, Berlin, the more southern areas of Worcester County and the southeastern corner of Sussex County, Delaware.

In the late 1990's and early 2000's, the Ocean City residential condominium market had undergone a strong pattern of growth and development coupled with double digit appreciation rates. Since late 2005, the market has softened considerably. In the case of condominium sales, the trend continued downward through 2011. In spite of these trends, some projects that were already in the pipeline at the onset of the softening continued to move forward. This resulted in an over-supplied status that continued into 2012. Since 2014 the number of active listings has been trending downward. Recently, there has been a shift toward hotel development vs. condominiums in Ocean City. Below is a chart showing current listings of condominiums, townhouses and detached single family dwellings in Ocean City as well as sales volumes for the past year and the current months supply of each unit type.

December 2023		
Property Type	Sales Volume – Past 12 Months	Current Listings
Condominiums	750	227
Townhouses	112	31
Single Family	122	29

Hotel Market:

The hotel market in Ocean City appears to be strong with several new hotels recently built, as well as several others in the works. According to the OC Department of Tourism, hotel

occupancy rates remained fairly stable in 2023 compared to 2022.

The Americana Hotel Boardwalk on N Atlantic Ave opened in February 2021, and the Cambria Hotel opened in August 2020 on St Louis Ave. Marriott is currently building a 150-room hotel near the Route 90 bridge. Other projects in the pipeline include 2 Hyatt Place Hotels along 16th Street, one on the boardwalk and the other between Philadelphia and Baltimore Avenues. They will include a total of 170 units. A new 54 room Hotel Monte Carlo is planned along the Boardwalk at 11th Street. Harbor Mist Hotel is approved for 129 units at 25th Street and Philadelphia Avenue. There is also a new project planned at 45th Street Village as well as a Home 2 Suites planned for 67th Street.

Ocean City is a major tourist destination, with 8 million +/- visitors each year. According to the Ocean City Hotel/Motel Association, there are roughly 10,000 hotel/motel rooms in the town, and another 25,000+- condos. During the summer season, most if not all facilities are at or near full capacity. The town recently ranked #2 on the top 10 most popular summer travel destinations by HomeAway.com.

Commercial Market:

Ocean City's commercial market includes numerous restaurants, gift shops, beachwear stores, professional offices (attorney, accountants, real estate and some medical), grocery stores, convenience stores/gas stations, and amusements, all of which are intended to primarily serve the tourist population. There are several shopping centers; however, they are situated in North Ocean City where a greater portion of the population is year-round. South of 60th Street, the commercial activities become more oriented toward tourism and, south of 30th Street, they are predominantly seasonal enterprises, open from early Spring to late Fall.

New developments over the past few years include a new retail shopping center at 67th Street, which was completed in 2013, renovation and new anchor for the Gold Coast Mall at 115th Street and a new shopping center is proposed between 78th and 79th Street to include retail and office space. Frescos's restaurant was purchased, renovated and reopened as Ropewalk, which also as a location on Fenwick Island, DE. There has also been new medical office space constructed in west Ocean City in the past few years including Your Doc's In and West Ocean City Injury and Illness Center. In addition, commercial brokers are reporting increased leasing activity as the number of listings have been declining over the past four years.

A December 2023 snapshot was taken of active commercial listings in the MLS. Of the 15, 1 is situated in W. Ocean City; 4 are located south of 30th Street with the remainder north of 30th Street. Of the 15 listings in Ocean City proper, 5 are apartment buildings of varying sizes and numbers of units; 4 are for retail uses; 1 are hotels/motels; 2 is a restaurant; 4 is offices; and 1 is a warehouse. List prices ranged from as low as \$375,000 for a 1230 square foot retail condominium unit along Coastal Highway to as high as \$4,500,000 for a restaurant on Coastal Highway.

In summary, given the amount of new activity in both the lodging and retail/commercial markets, the market in Ocean City is certainly showing signs of optimism.

REVIEW OF NATIONAL RESEARCH

The investigation on the effects of communications towers on residential property values begins by summarizing the results of the most recent studies in published literature. Only a handful of publicly documented case studies were found on the topic. The most definitive research on this subject was done by Dr. Sandy Bond, PhD., who concluded that each geographical location is unique and that the value effects from towers may vary over time as market participants' perceptions change due to increased public awareness. Percentage decreases mentioned in her studies range from 2 to 20% with the percentage at the high end of the range in communities that had been subjected to large amounts of negative attention in the media, relative to the siting of towers and the possible health hazards relating to these structures. These are her three most relevant published studies on the subject:

Sandy Bond, Ph.D, "The Effect of Distance to Cell Phone Towers on House Prices", *The Appraisal Journal* (Fall 2007): 362-370. This article outlines the results of a study conducted in Florida in 2004 regarding the effect that cell phone tower proximity has on residential property prices. The study focused on an analysis of residential property sales transaction data. The results of the study show that prices of properties decreased by just over 2%, on average, after a tower was built. The effect typically diminished with distance from the tower and was almost negligible after about 365 feet. Although the results showed that a tower has a statistically measurable effect on the prices of properties located near a tower, the effect was minimal.

Sandy Bond, Ph.D., Ko-Kang Wang, "The Impact of Cell Phone Towers on House Prices in Residential Neighborhoods", *The Appraisal Journal*, (Summer 2005): 256-277. This study focused on case study areas in Christchurch, New Zealand, to examine whether proximity to cellular phone towers has an impact on residential property values and the extent of any impact. The article presented the results from both an opinion survey and market sales analysis undertaken in 2003. Both the survey and the sales analysis indicated similar negative impacts on home prices, of up to about -20%, in the study areas. It is noted that the effect of a tower on price was greatest (between negative 20.7% to 21%) in two communities where the towers were built following substantial negative media publicity. In the other two communities, where towers were built prior to the media publicity, the results indicated that a tower was either insignificant or demonstrated an increase in prices by up to +12%.

Sandy Bond, PhD., K. Beamish, "Cellular Phone Towers: Perceived Impact on Residents and Property Values", *Pacific Rim Property Research Journal* 11, no. 2 (2005):158-177. This research report presents the results of an opinion survey undertaken in 2002 in several New Zealand suburban communities. The purpose of the survey was to evaluate residents' perceptions towards living near cellular phone base station towers and how this impacts property values. From the results, it appears that people who live close to cell towers perceive the sites less negatively than those who live further away.

A more recently published study was found, written by Ermanno Affuso, J. Reid Cummings and Huubinh Le, "Wireless Towers and Home Values: An Alternative Valuation Approach Using a Spatial Econometric Analysis", *J Real Estate Finan Econ* (2018) 56: 653–676. This study assesses the impact of communication towers on the value of residential properties using a hedonic spatial autoregressive model. The study focuses on proximity to communications towers and visibility within a specific radius for homes that sold after the tower was constructed in Mobile County, Alabama. Ultimately, it was concluded that, "For properties located within 0.72 kilometers of the closest tower, results reveal significant social welfare costs with values declining 2.46% on average, and up to 9.78% for homes within tower visibility range compared to homes outside tower visibility range" (Ermanno Affuso, J. Reid Cummings and Huubinh Le 2018, p. 653).

Communications towers bear some similarities to high-voltage transmission lines (HVTL) and their support towers. Many more appraisal practitioners, right-of-way professionals, and academics have investigated the topic of HVTL and taken diverse approaches to detecting and measuring the effect on real property values over the years. HVTL structures share some resemblances to communications towers in height, tower designs and in the perceived health concerns due to exposure to electromagnetic fields. Moreover, they are similar to communications towers as it relates to the concerns of neighboring property owners over a potential loss in value due to their views and proximity. One would expect the findings in the HVTL research to relate well to communications towers and, as a result, the HVTL literature also bears consideration. The following studies referenced included a combination of literature reviews, survey research, and sales data analysis. The studies show that the impacts are varied, as are market perceptions. Many studies show no significant effect on residential properties and, for those that do show a detriment, it is, on average, in the range of -1% to -10%. The following is a summation of the numerous studies that have been examined on the topic of high-voltage transmission lines and towers influence on residential property values.

William N. Kinnard, Jr., MAI, gained a reputation as one of the foremost authorities in the valuation field. In his 1967 study, he wrote: *"When all of the findings and evidence had been assembled, the general conclusion was that very little impact is felt by individual residential property owners on the market value of their homes as a result of the proximity of a tower line right of way. In addition, any negative impact that might be experienced initially either when a tower line is newly constructed or a subdivision newly developed may be expected to disappear when the property is resold at a later date. There were individual exceptions to these general findings, of course. The important point remains that the typical individual residential property owner need not suffer any negative financial or economic consequences as a result of having his house near a high-voltage overhead electric transmission line. The owner may not like it personally; but as far as general market reaction is concerned, such a property normally is not penalized."*³⁶

36 William N. Kinnard, "Tower Lines and Residential Property Values," *The Appraisal Journal* (April 1967): 269-284

Colwell and Foley (1979) found that proximity to power lines was associated with a slight negative influence on selling prices in two Illinois subdivisions.³⁷ In 1990, Colwell re-examined this same sales data that was utilized in the 1979 study, with the addition of considering the variables of distance to a tower and the presence of a right-of-way easement. He hypothesized that residential selling prices are related to both proximity to the lines and proximity to the towers, and that any impact of the power lines and towers might be lessened through time. His estimates indicated a value loss of 2% to almost 7% of total property value, at distances of 50 to 200 feet from transmission lines. Colwell established that the negative effect of power lines declines as distance increases. Furthermore, any detriment to property values, attributable to power lines, diminishes with time.³⁸

Kinnard and Dickey revisited the topic in 1995 and identified three types of proximity impacts that could include diminished price, increased marketing time, and decreased sales volume. While they found little compelling evidence for increased marketing time or decreased sales volume, there was support for diminished prices associated with proximity to HVTL. According to their study, *“One interesting finding in studies of both attitudes and market behavior of purchasers who are in proximity to HVTLs (and other sources of claimed hazards) is that the more informed a potential buyer is about the claimed hazard, the less likely that buyer is to be deterred from purchasing near the claimed hazard. The strong implication of these findings is that conscious efforts to disseminate known factual information is in the interest of all parties concerned. Moreover, for identifying and measuring any impact on property value, buyers’ attitudes and perceptions about the effect of claimed health and safety hazards are the major influences, not the science. Indeed, what really matters is what people actually do when confronted with a purchase decision, rather than what they say they will do in an artificially contrived, hypothetical decision-making environment.”*³⁹

According to the Cowger, Bottemiller, Cahill study (1996), minimal impacts on residential property values in three Pacific Northwest metropolitan areas were found. Seattle and Vancouver subjects averaged small decreases in property values (-1% and -1.05%, respectively); and Portland subjects were worth slightly more, on the average (+1.16%) than the matched comparables. They reported that, consistent with other studies, property value impacts from proximity to power lines, when detected, are generally small.⁴⁰

Jaconetty (2001) investigated relevant market studies, public perception, medical and scientific research, and developing case law to consider the implications for real property value as a result of HVTL proximity. He concluded that, on a subjective level, most people believe that the electromagnetic fields generated by high-voltage towers and lines adversely influenced real property values, primarily because of health concerns.

37 Peter F. Colwell and Kenneth W. Foley, “Electric Transmission Lines and the Selling Price of Residential Property,” *The Appraisal Journal* (October 1979): 490-499.

38 Peter F. Colwell, “Power Lines and Land Value”, *The Journal of Real Estate Research* (Spring 1990): 117-127

39 William N. Kinnard and Sue Ann Dickey, “A Primer on Proximity Impact Research: Residential Property Values Near High Voltage Transmission Lines,” *Real Estate Issues* (April 1995): 23-29.

40 J.R. Cowger, Steven C. Bottemiller, and James M. Cahill, “Transmission Line Impact on Residential Property Values, A Study of Three Pacific Northwest Metropolitan Areas,” *Right of Way* (September/October 1996): 13-17.

On an objective level, they may not, or, if they do, it is likely that they affect residential property values only minimally.⁴¹

In Conclusion

It has been observed in the professional literature specific to communications towers, and also with consideration for the studies pertaining to HVTL proximity, as they relate to communications towers, that the following are the main implications for residential property values:

- View - the view of communications towers may cause a loss of aesthetics; the type and size of the tower structures, as well as the surrounding topography, play a part in the extent of the impact on nearby properties. If the tower structures are at least partially screened from view by trees, landscaping, or topography, any negative effects are reduced considerably or even eliminated.
- Proximity - effects diminish as the distance from the tower increases
- Media Attention - negative media attention plays a significant role in public perceptions and has the potential to affect property value negatively
- Time - any effect on value resulting from communications tower views or proximity dissipates over time.
- Primary concerns of property owners regarding proximity to communications towers include the views of the structures and a perception of loss in property value.

The extent of any impact depends on a number of factors, including *location*, *market conditions*, and *personal preference*. Location may play a part in the extent of any overall effect, as homeowners in some regions may be more sensitive to the issue than in other regions. In a strong real estate market, a potential negative externality may have less of an influence. In a slow real estate market, particularly one that is coupled with increasing inventory levels, a property with uncommon characteristics is likely to receive greater scrutiny. For many, the question of whether or not communication towers have an effect on value or marketability is a matter of personal preference. Some buyers simply do not find the view imposed by communications towers to be objectionable. In some studies, it appears that lower priced homes may be affected to a lesser degree than luxury properties. However, other positive locational factors in middle to upper priced communities may diminish the effect.

⁴¹ Thomas A. Jaconetty, "Do You Want Your Children Playing Under Those Things?: The Continuing Controversy About High Voltage Electromagnetic Fields, Human Health, and Real Property Values," *Assessment Journal* (May/June 2001): 23-30

As previously noted, when detrimental effects have been found, they tend to be nominal. The extent of any impact is highly parcel specific and can vary from one transaction to the next, even for re-sales of the same parcel, given all of the contributing factors. It is apparent that there is an inconsistency between the statistical results and the intense resistance that new communications towers generate among the general populace. Although the public perception regarding communications towers is oftentimes negative, the objective statistical results appear to indicate a relatively minimal, to barely measurable, market effect.

In the next section of this market study, regional sales data, specific to the resort areas of Sussex County, Delaware and Worcester County, Maryland, will be presented and analyzed to consider the impact, if any, as a result of a close view of, or proximity to a communications tower.

REGIONAL SALES DATA ANALYSIS

An analysis that includes actual arms-length sales of properties with close, or significant, views of existing communications towers is widely accepted as the most reliable evidence of any impact on the value.

The approach taken is to first identify properties that might be affected adversely by a communications tower. The locations of communications towers in the resort areas of Sussex and Worcester counties were obtained through various sources, including county and municipal offices, internet tower search websites and office files. Communications tower locations were verified by actual visits to the sites. These locations were cross-referenced with tax maps and aerial images to identify residential properties in close proximity to a communications tower, and with the potential for a significant view of the tower. Sales data for properties in proximity to a communications tower was obtained from several sources, including tax records, the local MLS, and Realtors and brokers in the region. These properties with proximity to the communications tower will be referred to as the “subject” properties. Subsequently, the same sources were utilized to identify comparable, or “control” properties, without a similar communications tower influence.

Numerous sales of properties that lie in proximity to communications towers have been investigated. There are, in fact, hundreds of properties throughout the region that have sold within the past 5-10 years, that were either in proximity to, or had a full or partial view of a communications tower. However, the focus of the comparative analysis is on properties with a close, or significant view of a tower. It is the opinion of the Consultant, that a property with a “close, or significant view” is located immediately adjacent to, or with a direct view of a communications tower structure. The view, in these cases, is relatively unobscured, and most of the tower structure is visible from either the front or rear of the residence. For the control properties, either they have no view of and are not in proximity to a tower, or they are judged to be far enough removed, so as to mitigate any potential influence. The following properties were selected as the most relevant for the discussion at hand and were judged representative of the marketing area. Where necessary, adjustments were quantified by the appraiser based on an analysis of market data and the opinions of market participants.

As an aid to the reader, the following describes the format and content of the matched pairs tables that will be utilized throughout the Regional Sales Data Analysis. A paired sales analysis is used to determine the value added (or value lost), due to any specific factor that may affect the overall value of a property. The basic methodology employed in a matched pairs analysis is to identify two sales that are very similar, except for the issue being evaluated. The appraiser employs the principle of substitution, identifying properties that have sold in the market and that are reasonable substitutes for the subject. For example, two very similar homes are compared; the only difference is that one home has a pool and the other does not. The difference in the sale prices is then attributed to the pool. Generally, one pair of sales is not enough to establish a value for the pool, so the paired sales analysis is performed several times in order to illustrate trends. The appraiser uses this information to make a judgement call regarding the contributory value of the pool.

In the following analyses, the *subject* is considered to be the property within close proximity to a communications tower and that has a substantial view of the same. The first step in compiling matched pair data is to locate properties with this attribute and that have sold relatively recently.

Subsequently, we've identified comparable sales that are as similar as possible in all regards, except for the issue being evaluated. Locating meaningful data is the most difficult part of performing a matched pair analysis. The consultant has made every effort to locate several matched pairs for each comparison. The data for each sale in the matched pairs tables will be presented horizontally. In each pair, a subject property, with a significant view of a communications tower, is the first property shown. The control property, without a similar communications tower influence or proximity, is provided as the second entity in the pair.

In practice, it is very difficult to develop one truly identical matched pair. In some cases, it is necessary to make adjustments for differing elements prior to performing the matched pair analysis. Where necessary, adjustments are typically made to the value indicated for the control property, with respect to differences between it and the subject. After any required adjustments are made to the value of the control property, it is then possible to evaluate the difference in sale prices between the two Comparables in each set. The comparison can either be done on a gross sale price basis or by utilizing a unit of measure (such as sale price per square foot of gross living area). An effort has been made in the data selection to allow for as few adjustments as possible. In the matched pairs analyses that follow, any adjustments made have been noted.

Finally, any resulting difference in sale prices is reported as a percentage, which is provided at the end of each set of matched pairs. Any difference between the sale prices of the subject and control property can provide an indication of value differential as a result of the issue being evaluated. For example, if the subject has a price of \$105.00/sf of GLA, and the control property has a price of \$100.00/sf of GLA, then the difference would be shown as 5%, or that the subject property has a value differential of 5% greater than the control property.

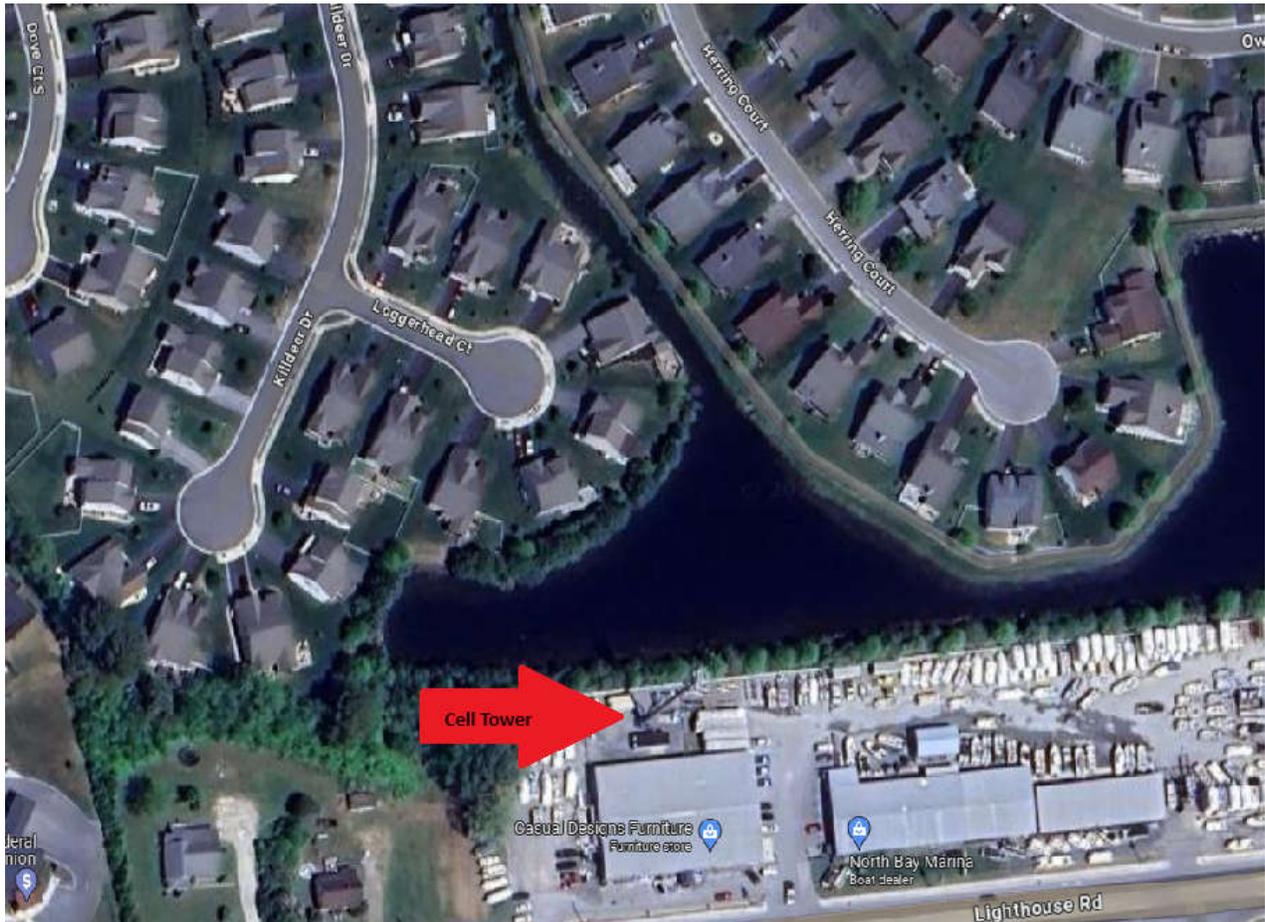
Swann Cove

Swann Cove is a 391-lot residential subdivision located on the north side of Lighthouse Road, east of its intersection with Old Mill Bridge Road in Selbyville, roughly 2.5 miles west of Route 1 (Coastal Highway). The project is situated in a fairly intensely developed area, characterized predominantly by residential uses, with more commercial uses interspersed along Lighthouse Road. Amenities include an outdoor pool and clubhouse; overall, the project has good market appeal for a single-family subdivision and is well positioned near Fenwick Island. The subdivision was developed in phases beginning in the early 2000's with the final phase developed in 2020-2021.

Fronting on Lighthouse Road (Route 54), adjacent to the subdivision, on Parcels 533-12.00 -

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78.01 and 79.00, is the North Bay Marina property and a Casual Designs Furniture store. Behind the store and directly across the Swann Cove subdivision's stormwater pond is a 150' +/- monopole communications tower. The tower predates the subdivision and was originally constructed in 1998, according to the property owner. The Swann Cove properties at the southern end of Herring Court, Loggerhead Court and Killdeer Court have a direct, full view of the communications tower.



The following matched pairs were gleaned from the sale data and provide comparisons between sales that have a full view of the tower and sales from within the subdivision that have only a limited view in the distance, or no view at all. Details regarding the sale dates and sale prices, as well as physical details such as the lot number, gross living area and year built, were taken directly from the Sussex County assessment records and the MLS. In some cases, data regarding individual unit upgrades or whether the sale included any builder incentives are unknown. The price per square foot is the unit of comparison.

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Swann Cove Matched Pairs (Selbyville, Delaware)													
	Address/Tax ID	Significant Cell Tower View (Yes or No)	Sale Date	Residence Size (Square Feet)	Year Built	Bed/Bath	Site Size (Square Feet)	Sale Price	Adjustments	Adjusted Sale Price	Adjusted Sale Price/SF	% Difference	Comments
Match 1	36870 Herring Ct, Selbyville 533-12.00-685.00 Lot 10	Yes	4/29/2021	2,340	2006	3/2.1	8,299	\$410,000		\$410,000	\$175.21		No market condition adjustments warranted - sold <1 mo. Apart
	37120 W Fenwick Blvd, Selbyville 533-12.00-772.00 Lot 97	No	5/28/2021	2,400	2004	3/2.1	7,505	\$439,000		\$439,000	\$182.92	-4%	
Match 2	36868 Herring Ct, Selbyville 533-12.00-684.00 Lot 9	Yes	7/17/2020	2,427	2005	3/2.1	8,085	\$376,500		\$376,500	\$155.13		Adjusted downward ~1%/month for market conditions
	36967 Trout Ter N, Selbyville 533-12.00-785.00 Lot 110	No	12/9/2020	2,330	2004	3/2.1	7,501	\$359,000	-\$17,950	\$341,050	\$146.37	6%	
Match 3	31572 Loggerhead Ct, Selbyville 533-12.00-927.00 Lot 196	Yes	12/9/2022	2,100	2015	4/2.1	7,725	\$470,000		\$470,000	\$223.81		Adjusted upward ~1%/month for market conditions
	36999 Owl Dr, Selbyville 533-12.00-718.00 Lot 43	No	8/19/2022	2,041	2005	3/2.1	7,500	\$440,000	\$17,600	\$457,600	\$224.20	-0.2%	
Match 4	32471 Killdeer Dr, Selbyville 533-12.00-933.00 Lot 202	Yes	10/28/2022	2,840	2013	4/3	10,532	\$650,000		\$650,000	\$228.87		Adjusted upward ~1%/month for market conditions
	30538 Homestead Ct, Selbyville 533-12.00-1080.00 Lot 283	No	6/13/2022	2,848	2017	4/3	8,754	\$660,000	\$26,400	\$686,400	\$241.01	-5%	
Match 5	36878 Herring Ct, Selbyville 533-12.00-689.00 Lot 14	Yes	7/13/2020	2,400	2007	3/2.1	8,562	\$319,900		\$319,900	\$133.29		Adjusted upward ~1%/month for market conditions
	37039 Teal Ct, Selbyville 533-12.00-764.00 Lot 89	No	5/26/2020	2,282	2005	3/2.1	7,737	\$318,000	\$6,360	\$324,360	\$142.14	-6%	

It is noted, there is one other recent sale on Herring Court with a significant view of the communications tower. The property is located at 36876 Herring Court and it is a new construction dwelling. It sold in March 2021 for \$436,900 (\$189.05/sf). Due to the dearth of recent comparable new construction dwellings available to match this property, it was not included in the above analysis.

The residential market has experienced a period of significant appreciation in the range of 10-15% per year (0.8-1.25% per month) beginning in 2020 through the end of 2023. Therefore, market condition adjustments were applied at a rate of 1% per month as all of the above properties transferred between 2020 and 2022. The comparables are generally similar in terms of age, condition, size, bathroom count, etc. Therefore, no other adjustments were warranted. **There is little difference in the average price per square foot of GLA for the properties which have a close view of the communications tower and those that do not (average sale prices from above table: \$183/sf with a close tower view vs. \$187/sf without a close tower view).** In 4 of the 5 matched pairs, the homes with a close view of the tower sold for 0.2% to 6% less than the control properties, which is minimal. In one of the matched pairs, the property with a close view of the communications tower sold for 6% more than the control property. Therefore, there is not any apparent market evidence to suggest a significant value detriment for those lots with a close view of the communications tower as compared to those that do not, and any negative impact is minimal.

Sunset Island

Sunset Island is a private resort, located at 67th Street and the bay, in Ocean City, Maryland. It features townhomes, detached single-family and flat-style units, all under condominium ownership. It offers private bayside beaches, indoor and outdoor pools, a kiddie pool, an interactive fountain for the kids, clubhouse, fitness center, walking trail, marina, crabbing and fishing pier, restaurant and other amenities. Furthermore, Sunset Island is within walking distance to Ocean City's beaches, restaurants and amusements. Sunset Island also offers a gated entry with traffic monitored 24/7 by a security guard.

The south side of Sunset Island is bordered by a canal. On the opposite side of the canal is Parcel 6685, a public works property owned by the Town of Ocean City. This property serves multiple Town uses, including the Ocean City Emergency Management Department, Engineering Department, Court and Police Department. A 340' +/- tall lattice-style communications tower is positioned on this property and is directly in view of the Sunset Island detached single-family and townhouse units immediately across the canal, at the eastern end of Island Edge Drive (odd numbered units 1 Island Edge Drive through 21 Island Edge Drive). To a lesser extent, the communications tower is also visible, but is not as imposing on the other canal-front detached single-family and townhouse units further to the west along Island Edge Drive (odd numbered units 35 Island Edge Drive through 59 Island Edge Drive). These canal front units are somewhat unique in the community as they are the only ones fronting directly on the canal with views of the community marina. Reportedly, there have been no marketing issues with the units directly across from the communications tower. On the contrary, because of the canal orientation, it was reported that these units were popular and highly sought-after, compared to some of the other interior units without water frontage or views.

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Because of the uniqueness and extensive amenities present in Sunset Island, its sales will not be compared to sales outside of the project. Similarly, because of the differences in values for the interior units (inferior) and those with full views of the Assawoman Bay (superior), these sales will not be utilized in comparison to the canal-front units. Ultimately, the best comparison that can be made is between the canal-front units closest to the communications tower and those further west on the canal with a less imposing view of the tower. Data regarding the sale dates and sale prices, as well as physical details such as the unit number, gross living area and year built, were taken directly from the Worcester County assessment records and the MLS. In some cases, details such as individual unit upgrades, or whether the sales included any seller incentives, are not known.

Sunset Island Matched Pairs (Ocean City, Maryland)													
	Address/Tax ID	Significant Cell Tower View (Yes or No)	Sale Date	Residence Size (Square Feet)	Year Built	Bed/Bath	Unit Type	Sale Price	Adjustments	Adjusted Sale Price	Adjusted Sale Price/SF	% Difference	Comments
Match 1	11 Island Edge Dr, Ocean City 10-414881 Lot 11B	Yes	4/9/2021	2,378	2003	5/4.1	End Unit Condo TH	\$740,000		\$740,000	\$311.19		Adjusted upward ~2%/month for market conditions and \$2,500 for bathroom count
	47 Island Edge Dr, Ocean City 10-423635 Lot E47	No	9/1/2020	2,216	2005	4/3.2	End Unit Condo TH	\$550,000	\$79,500	\$629,500	\$284.07	10%	
Match 2	13 Island Edge Dr, Ocean City 10-414873 Lot 13B	Yes	4/5/2019	2,378	2003	4/4.1	Interior Condo TH	\$540,000		\$540,000	\$227.08		
	43 Island Edge Dr, Ocean City 10-423651 Lot E43	No	7/11/2019	2,216	2005	4/4.1	Interior Condo TH	\$525,000		\$525,000	\$236.91	-4%	
Match 3	19 Island Edge Dr, Ocean City 10-414849 Lot 19B	Yes	3/17/2014	2,378	2003	4/4.1	Interior Condo TH	\$525,000		\$525,000	\$220.77		Adjusted downward ~6% for market conditions and up \$2,500 for bathroom count
	41 Island Edge Dr, Ocean City 10-423678 Lot E41	No	6/1/2017	2,216	2005	4/3.2	Interior Condo TH	\$540,000	-\$29,900	\$510,100	\$230.19	-4%	

As discussed, the residential market in Ocean City has experienced a period of significant appreciation in the range of 15-25% per year (1.25-2.08% per month) beginning in 2020 through the end of 2023. Therefore, market condition adjustments were applied at a rate of 2% per month as all of the above properties transferred within this time period. For the third pair, property values were increasing approximately 2% per year between 2014 and 2017, therefore, a 6% adjustment was applied to the 2014 sale in this pair. The comparables are generally similar in terms of age, condition and size. Bathroom count adjustments were applied where necessary. **The paired sale data in Sunset Island does not suggest a significant discernible diminution in values for the properties with the closest views of the communication tower. In the first match, the property with a significant view of the communication tower sold for 10% more than the control property. Moreover, the market acceptance of resort properties with positive locational factors, regardless of their proximity or view of a communications tower, is evident in the moderate-to-high sale prices noted above.**

Southampton

Southampton is a residential subdivision located on the west side of Muddy Neck Road in Ocean View, less than 2 miles west of Route 1 (Coastal Highway) and approximately 1 mile south of Atlantic Avenue (Route 26). The project is situated in a fairly intensely developed area, characterized predominantly by residential uses, with the more commercially developed areas along Atlantic Avenue and Route 1. The community includes detached single-family dwellings and townhomes condominium ownership as well as typical detached single-family dwellings on fee simple lots. Amenities include an outdoor pool, clubhouse and tennis courts. Overall, the project has good market appeal for a single-family subdivision and is well positioned near Bethany Beach.

To the north of the Southampton subdivision, located at 33388 Lazy Dazy Lane is a communications tower. Properties within the subdivision along William Chandler Boulevard and the townhomes on Greenport Lane back up to the communications tower and have a significant view of it.



The following matched pairs were gleaned from the sale data and provide comparisons between sales that have a full view of the tower and sales from within the subdivision that have only a limited view in the distance, or no view at all. Details regarding the sale dates and sale prices, as well as physical details such as the lot number, gross living area and year built, were taken directly from the Sussex County assessment records and the MLS. In some cases, data regarding individual unit upgrades or whether the sale included any builder incentives are unknown. The price per square foot is the unit of comparison.

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Southampton Matched Pairs (Ocean View, Delaware)													
	Address/Tax ID	Significant Cell Tower View (Yes or No)	Sale Date	Residence Size (Square Feet)	Year Built	Bed/Bath	Site	Sale Price	Adjustments	Adjusted Sale Price	Adjusted Sale Price/SF	% Difference	Comments
Match 1	37975 William Chandler Blvd, Ocean View 134-17.00-555.00 Lot 5	Yes	9/30/2021	1,439	2000	3/2	12,876 sf	\$317,000		\$317,000	\$220.29		
	33545 Washampton Ln, Ocean View 134-17.00-565.00 Lot 105	No	6/26/2020	1,754	1999	3/2	7,504	\$339,990	\$50,999	\$390,989	\$222.91		Adjusted upward ~1%/month for market conditions
												-1%	
Match 2	37971 William Chandler Blvd, Ocean View 134-17.00-556.00 Lot 6	Yes	7/24/2020	1,440	2002	3/2	10,925 sf	\$272,500		\$272,500	\$189.24		
	33549 Water Mill Ln, Ocean View 134-17.00-613.00 Lot 117	No	3/6/2020	1,754	2001	3/3	7,504 sf	\$327,900	\$10,616	\$338,516	\$193.00		Adjusted upward ~1%/month for market conditions and down \$2,500 for bath count
												-2%	
Match 3	37959 William Chandler Blvd, Ocean View 134-17.00-559.00 Lot 9	Yes	6/18/2021	2,300	2001	4/2.1	9,090	\$355,000		\$355,000	\$154.35		
	33571 Mystic Ln, Ocean View 134-17.00-682.00 Lot 132	No	2/8/2021	2,200	2003	4/.2.1	12,942	\$390,000	-\$23,400	\$366,600	\$166.64		Adjusted upward ~1%/month for market conditions and down 10% for property condition
												-7%	
Match 4	38157 Greenport Ln, Ocean View 134-17.00-20.00-158 Unit 158	Yes	4/3/2023	1,920	2000	4/2.1	Interior Townhouse Condo	\$385,000		\$385,000	\$200.52		
	38331 Amaganst Ln, Ocean View 137-17.00-20.00-185 Unit 185	No	4/22/2022	1,920	2001	3/3.1	Interior Townhouse Condo	\$410,000	\$19,600	\$429,600	\$223.75		Adjusted upward ~0.5%/month (6%/year - lower appreciation rate 2022-2023) and down \$5,000 for bathroom count
												-10%	
Match 5	33509 Washampton Ln, Ocean View 134-17.00-20.00-90 Unit 90	Yes	9/25/2020	2,200	2000	4/3	Detached Condo	\$350,000		\$350,000	\$159.09		
	38180 Marion Ln, Ocean View 134-17.00-20.00-98.00 Unit 98	No	8/7/2020	2,200	2001	4/2.1	Detached Condo	\$342,500	\$5,925	\$348,425	\$158.38		Adjusted upward ~1%/month for market conditions and \$2,500 for bathroom count
												0.5%	

As discussed, the residential market in Sussex County has experienced a period of significant appreciation in the range of 10-15% per year (0.8-1.25% per month) beginning in 2020 through the end of 2023. Therefore, market condition adjustments were applied at a rate of 1% per month as all of the above properties transferred between 2020 and 2023. The comparables are generally similar in terms of age, condition and size. Bathroom count adjustments were applied where necessary. **There is little difference in the average price per square foot of GLA for the properties which have a close view of the communications tower and those that do not (average sale prices from above table: \$184.70/sf with a close tower view vs. \$192.93/sf without a close tower view).** In this analysis of single-family home sale prices in Southampton, there does not appear to be any evidence of a significant value detriment for those lots which have a close view of the communications tower, as compared to those that do not.

Sycamore Chase

Sycamore Chase is a new, 104-lot residential subdivision located on the west side of Bayard

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Road, near its intersection with Central Avenue in Frankford, roughly 4 miles west of Route 1 (Coastal Highway) and 3 miles south of Atlantic Avenue (Route 26). The project is situated in an intensely developing area, characterized predominantly by residential uses, with more commercial uses to the east along Atlantic Avenue and Route 1. Amenities include an outdoor pool and clubhouse; overall, the project has good market appeal for a single-family subdivision and is well positioned near Ocean View and Bethany Beach. This is a relatively new subdivision with development beginning in 2020-2022 and several vacant lots remaining.

Fronting on Bayard Road (Route 54), at the north side of the Sycamore Chase subdivision, on Parcels 134-19.00-5.01 is a communications tower which appears to have been in place since ~2009. The Sycamore Chase properties along Carlisle Court have a direct, full view of the communications tower.



It is noted, there are currently 3 homes along Carlisle Court, however, the aerial maps are not yet updated to show them as they were very recently constructed.

The following matched pairs were gleaned from the sale data and provide comparisons between sales that have a full view of the tower and sales from within the subdivision that have only a limited view in the distance, or no view at all. Details regarding the sale dates and sale prices, as well as physical details such as the lot number, gross living area and year built, were taken directly from the Sussex County assessment records and the MLS. In some cases, data

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regarding individual unit upgrades or whether the sale included any builder incentives are unknown. The price per square foot is the unit of comparison.

Sycamore Chase Matched Pairs (Frankford, Delaware)													
	Address/Tax ID	Significant Cell Tower View (Yes or No)	Sale Date	Residence Size (Square Feet)	Year Built	Bed/Bath	Site Size (Square Feet)	Sale Price	Adjustments	Adjusted Sale Price	Adjusted Sale Price/SF	% Difference	Comments
Match 1	32049 Carlisle Ct, Frankford 134-18.00-100.00 Lot 8	Yes	4/19/2024	2,826	2024	4/3.1	8,489	\$695,000		\$695,000	\$245.93		
	36139 Windsor Park Dr, Frankford 134-18.00-188.00 Lot 96	No	11/10/2023	2,875	2023	4/3	7,560	\$699,990	\$8,000	\$707,990	\$246.26	-0.1%	Adjusted upward for smaller garage and bathroom count, No mkt. condition adjustments warranted
Match 2	32033 Carlisle Ct, Frankford 134-18.00-102.00 Lot 10	Yes	4/12/2024	2,356	2024	3/3	7,959	\$649,990		\$649,990	\$275.89		
	36257 Windsor Park Dr, Frankford 134-18.00-174.00 Lot 82	No	3/30/2023	2,328	2022	3/2	8,140	\$588,490	\$47,309	\$635,799	\$273.11	1%	Adjusted upward ~1%/month through Oct. 2023 for mkt. conditions, up for smaller garage &
Match 3	32013 Carlisle Ct, Frankford 134-18.00-105.00 Lot 13	Yes	2/9/2024	2,926	2023	5/3.1	9,571	\$745,500		\$745,500	\$254.78		
	36139 Windsor Park Dr, Frankford 134-18.00-188.00 Lot 96	No	11/10/2023	2,875	2023	4/3	7,560	\$699,990	\$4,000	\$703,990	\$244.87	4%	Adjusted upward for bathroom count

There have been 3 sales of improved properties with a direct view of the communications tower, and each are included in the above table. All properties transferred in 2023 and 2024. As discussed, the residential market in Sussex County has experienced a period of significant appreciation in the range of 10-15% per year (0.8-1.25% per month) beginning in 2020 through the end of 2023. The market is still strong, but appears to be leveling out over the current 6-9-month period. Therefore, market condition adjustments were not applied to the properties that sold after October 2023. The control property for Match #2 was adjusted upward 1% per month through October 2023. All properties are new construction and generally similar in terms of size. Adjustments for bathroom count and garage space were applied where necessary. **In Matches #2 and #3, the property with a significant view of the communication tower sold for more than the control property. The paired sale data in Sycamore Chase does not suggest a significant discernible diminution in values for the properties with the closest views of the communication tower.**

REGIONAL SALES DATA ANALYSIS SUMMARY AND CONCLUSION

The following points summarize the results of the Regional Sales Data Analysis:

- Swann Cove - In 4 of the 5 matched pairs, the homes with a close view of the tower sold for 0.2% to 6% less than the control properties, which is minimal. In one of the matched pairs, the property with a close view of the communications tower sold for 6% more than the control property. Therefore, there is not any apparent market evidence to suggest a significant value detriment for those lots with a close view of the

communications tower as compared to those that do not, and any negative impact is minimal.

- **Sunset Island** - The paired sale data in Sunset Island does not suggest a significant discernible diminution in values for the properties with the closest views of the communication tower. In the first match, the property with a significant view of the communication tower sold for 10% more than the control property. Moreover, the market acceptance of resort properties with positive locational factors, regardless of their proximity or view of a communications tower, is evident in the moderate-to-high sale prices noted above.
- **Southampton** - In 4 of the 5 matched pairs, the homes with a close view of the tower sold for 1% to 10% less than the control properties, which is minimal. In one of the matched pairs, the property with a close view of the communications tower sold for 0.5% more than the control property. There is not any apparent market evidence to suggest a significant value detriment for those lots with a close view of the communications tower as compared to those that do not, and any negative impact is considered minimal.
- **Sycamore Chase** - The paired sale data in Sycamore Chase does not suggest a significant discernible diminution in value for the properties with the closest views of the communication tower. In 2 of the 3 matched pairs, the homes with a close view of the tower sold for slightly more than the control properties without a significant view, and the one that sold for less was a very minimal difference (0.1%).

In summary of our research, the data would seem to indicate that residential property values are not being penalized as a result of proximity to, or a close view of, a communications tower, and any negative impact is very minimal, primarily below 6%. For most of the examples, the subject properties were moderately to high priced residential resort properties, which could be an indication that these types of properties can be successfully marketed, in proximity to communications towers. For example, in the Sunset Island project, it is evident that the desirable amenities in the community overshadow any potential negative influence of the adjacent communications tower. Additionally, in the Sycamore Chase project, it is evident that these homes being new construction in relatively close proximity to the resort market also overshadows any potential negative influence of the adjacent communications tower.

Numerous sales throughout the region have been evaluated and revealed little evidence supporting significant statement of detrimental impact of communications towers on property valuation. It is widely recognized that the strongest evidence on the effect of any potential impact of communications towers on the value of adjacent properties will be garnered from actual arm's length sales of properties that are in proximity to or have a close or significant view of a tower. A comparison of those sales to other selected transactions of control properties without a similar influence provides the most reliable indication of the impact of communications towers on property values. This approach reflects the actions of buyers and sellers in the open market and resulted in fairly consistent outcomes. As revealed in the sales data, there is no demonstrated reluctance by the market for buyers to purchase a property

adjacent to a communications tower and the impact on value, if any, is considered minimal.

It is noted that the results of the regional sales data found in this market study are for specific properties and are presented as examples for various property types. The impact on real estate values, as a result of communications towers, is a very site-specific issue and not easily quantified. Moreover, any measurable impact will differ from one individual property to another.

Similar to the results found in the review of national research, nominal to no adverse impacts have been found. When detrimental value effects were found for individual matched pairs, the impact was usually small, almost always less than -5% to -10%. In some instances, the properties that have a significant view of a communications tower sold for more than the control properties.

SUMMARY AND CONCLUSIONS OF MARKET STUDY

The results of each section of the market study are summarized as follows:

REVIEW OF NATIONAL RESEARCH:	When detrimental effects have been found, they tend to be small. Furthermore, any effects diminish as the distance from the tower increases. The extent of any impact is highly parcel specific and can vary from one transaction to the next.
REGIONAL SALES DATA ANALYSIS:	Typically, nominal to no adverse impacts have been found. In the individual matched pairs, where detrimental value effects were found, the impact was usually small, almost always less than -5% to -10%. In some instances, those properties, that have a significant view of a tower, sold for more than the control properties. There is no consistent trend which suggests a diminution in value as a result of a close view or proximity to a communications tower.

The ownership of real estate is one of the largest investments many people will make over the course of their lives. It is a matter which is not taken lightly, and any property owner would want to protect the value and future benefits of their investment. Accordingly, the analysis of the effects of communications towers on property values is a complex and emotional issue. Based on data found in the review of national research and in the local news headlines, the main concerns voiced by property owners, faced with the construction of a new communications tower near their property, will likely be focused on concerns for a loss in aesthetics and a fear that they will experience a decrease in property value. Communications

towers are a necessary part of the technology infrastructure that enables us to enjoy wireless communications in our homes and businesses. Most everyone will acknowledge that, in today's environment, the availability of seamless wireless communication is expected by most people that utilize the services, but the perception is that no one wants a communications tower in their backyard. It has been suggested that unobtrusively designed structures, such as towers designed to resemble trees or lighthouses could allow a communications tower as an acceptable visual addition to the landscape. Over time, however, we become accustomed to changes in our surroundings and features such as utility structures tend to go unnoticed by passers-by.

There is a wide gap between the stated reluctance of the market vs. actual market data, in regards to the effects of communications tower on property values. To reconcile the differences, one possible explanation is that in the actual sales data, many of the initial concerns are ultimately dealt with, or the prospective buyer decides that other desirable elements of the property outweigh any perceived negatives associated with the proximity to the communications tower. Also, as previously noted, it is human nature for most individuals to perceive the impact of a potentially negative outcome as being more severe than it actually ends up being.

The results of our independent research agreed with the general findings in the summary of national research and the published literature on the subject. Similarly, based on the empirical evidence in our Regional Sales Data Analysis, when any detrimental effects were found, the impact was usually less than -5% to -10%. In many instances, there was little to no discernable difference in property values as a result of the communications tower proximity.

On a subjective level, it seems that many people believe that communications towers will negatively influence residential real estate values. On an objective level, our statistical analysis of actual regional market data indicates that communications towers do not have a significant detrimental influence on residential property values or on the marketability of those properties. In those cases where detrimental effects were found, the impact was minimal.

FINAL CONCLUSIONS OF MARKET STUDY:	Market perception of the impact of a communications tower on property value often differs greatly from the impact observed in the actual sales data. There appears to be little to no discernable difference in residential property values as a result of proximity to communications towers.
---	--

Addendum

Appraisers' Qualifications

Real Estate Appraisal Qualifications of R. Braxton Dees, MAI

Licenses

Certified General Real Estate Appraiser

Maryland Real Estate Appraisers Commission (04-31651)
Delaware Real Estate Appraisers Commission (X1-0000592)
Virginia Real Estate Appraisers Board (4001 016237)
Georgia Real Estate Appraisers Commission (307258)

MAI - Member Appraisal Institute (#505024)

Education

Bachelor of Science-Corporate Finance University of North Florida Jacksonville, FL	1997
--	------

Experience

August 2019 to Present
President/CEO
W. R. McCain & Associates, Inc.
Salisbury, MD

August 2012 to August 2019
Review/Valuation Analyst
W. R. McCain & Associates, Inc.
Salisbury, MD

June 1999 to August 2012
Review Appraiser/Commercial Lender
SunTrust Banks, Inc.
Atlanta, GA

Appraisal Education Courses/Seminars

DE Council on Real Estate Appraisals, License Law and Reg.	5/2023
The Valuation of Partial Acquisition IRWA Course 421	3/2023
Broker's Panel Discussion, Wilmington, DE	1/2023
Appraiser, Appraisal Litigation Support	9/2022
Inconsistency: Its Hiding in Plain Sight in Your Appraisal (commercial)	9/2022
7-Hour National USPAP Update	8/2022
Complex Litigation Appraisal Case Studies	6/2022
Fundamentals of Apartment Appraising	2/2022
Business Practices and Ethics	1/2022
Wisely Appraising Intangibles	10/2021
DE Council on Real Estate Appraisers, License Law and Reg.	3/2021
Appraisal of Manufactured Homes Featuring Next-Gen MH	10/2020
Appraising of Automobile Dealerships	8/2020
Appraisal of Medical Office Buildings	8/2020
The Discounted Cash Flow Model: Concepts, Issues and Appls.	8/2020
7-Hour National USPAP Update	2/2020

Berach Homes Facility & Tour	9/2019
DE Council on Real Estate Appraisers, License Law and Reg.	5/2019
Delaware Real Estate and Valuation Update	11/2018
FHA Appraising - Principles and Procedures	9/2018
Eminent Domain and Condemnation	9/2018
7-Hour National USPAP Update	8/2018
The Tough One: Mixed-Use Properties - Income Cap. Approach	5/2018
Solving Land Valuation Puzzles	3/2018
DE Council on Real Estate Appraisers, License Law and Reg.	9/2017
Hospitality and Senior Health Care Valuation	5/2017
Delmarva Real Estate Outlook	12/2016
The Commercial Construction Process: The Contractor's View	11/2016
Development in New Castle County	11/2016
Subdivision Valuation	8/2016
New Technology for Real Estate Appraisers	8/2016
Small Hotel/Motel Valuation	8/2016
7-Hour National USPAP Update	2/2016
FHWA Resource Center Right-of-Way Workshop	2/2015
The Appraiser as a Trusted Advisor	11/2014
Delmarva Real Estate Outlook	9/2014
Advanced Concepts and Case Studies	6/2014
General Demonstration Report Writing	6/2014
Advanced Income Capitalization	4/ 2014
DE Subdivision Market Overview and Appraisal Techniques	1/2014
Appraising Cell Towers	12/2013
Forecasting Revenue	10/2013
Introduction to Green Buildings: Principles and Concepts	10/2013
DE Law, Rules & Regulations	6/2013
Current Appraisal Issues	6/2013
Advanced Internet Search Strategies	10/2012
7-Hour National USPAP Update	4/2012
General Appraiser Report Writing & Case Studies	10/2010
State of Atlanta: The Good, The Bad, The Ugly	9/2010
General Appraiser Income Approach Part 2	7/2010
Residential Highest and Best Use and Market Analysis	6/2010
General Appraiser Sales Comparison Approach	4/2010
Real Estate Finance, Statistics, and Valuation Modeling	1/2010
Business Practice and Ethics	10/2009
General Appraiser Market Analysis and Highest and Best Use	8/2009
General Appraiser Income Approach Part 1	6/2008
General Appraiser Site Valuation & Cost Approach	9/2007
Residential Report Writing and Case Studies	4/2006
Basic Appraisal Procedures	2/2006
Basic Appraisal Principles	1/2006
410 National USPAP 15 Hour Course	11/2005

Associations/Affiliations

Delaware Chapter of the Appraisal Institute, President	2020-2021
Delaware Chapter of the Appraisal Institute, Vice President	2018 - 2019
Delaware Chapter of the Appraisal Institute, Secretary	2016 - 2017
Appraisal Institute	2009 to Present

STATE OF MARYLAND

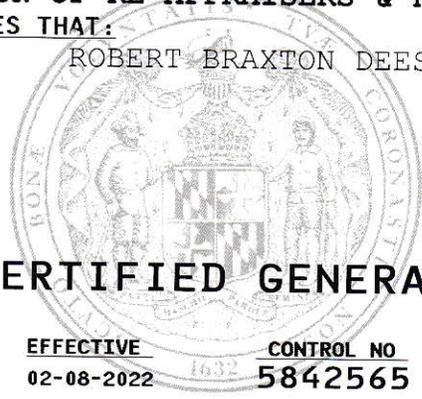
Boyd K. Rutherford
Lt. Governor

MARYLAND DEPARTMENT OF LABOR

Tiffany P. Robinson
Secretary

COMMISSION OF RE APPRAISERS & HOME INSPECTORS
CERTIFIES THAT:

ROBERT BRAXTON DEES



IS AN AUTHORIZED: **04 - CERTIFIED GENERAL**

LIC/REG/CERT

31651

EXPIRATION

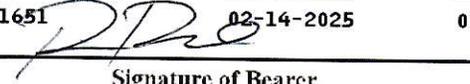
02-14-2025

EFFECTIVE

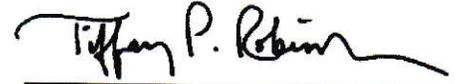
02-08-2022

CONTROL NO

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Signature of Bearer



Secretary

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COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation

9960 Mayland Drive, Suite 400, Richmond, VA 23233

Telephone: (804) 367-8500

EXPIRES ON

08-31-2024

NUMBER

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REAL ESTATE APPRAISER BOARD

CERTIFIED GENERAL REAL ESTATE APPRAISER



ROBERT BRAXTON DEES JR
120 COVERED BRIDGE LANE
FRUITLAND, MD 21826




Demetrios J. Mella, Director

Status can be verified at <http://www.dpor.virginia.gov>

(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

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NOT TRANSFERABLE

STATE OF DELAWARE
DIVISION OF PROFESSIONAL REGULATION

CANNON BUILDING
861 SILVER LAKE BLVD., SUITE 203
DOVER, DELAWARE 19904-2467

PROFESSIONAL LICENSE

PROFESSION:	Real Estate Appraisers
LICENSE TYPE:	Certified General Real Property Appraise
LICENSE NUMBER:	X1-0000592
LICENSE STATUS:	Active
ISSUE DATE:	08/17/2012
EXPIRATION DATE:	10/31/2025
ISSUED TO:	ROBERT B. DEES JR.
SIGNATURE:	

THIS CERTIFIES THAT THE PERSON NAMED IS HEREBY LICENSED TO
CONDUCT OR ENGAGE IN THE PROFESSION INDICATED ABOVE.
THIS DOCUMENT IS DULY ISSUED UNDER THE LAWS OF THE STATE OF DELAWARE



Department of State

Division of Professional Regulation

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IMPACT OF A TELECOMMUNICATIONS TOWER UPON
VALUES OF RESIDENTIAL PROPERTIES

AS OF:

August, 2005

FOR:

John Tracey, Esq.
Young, Conaway, Stargatt & Taylor

BY:

APPRAISAL-ASSOCIATES, INC.

Robert H. McKennon, CRE, MAI



APPRAISAL ASSOCIATES, INC.

August 29, 2005

John Tracey, Esq.
 Young, Conaway, Stargatt & Taylor
 1100 North Market Street
 P.O. Box 391
 Wilmington, DE 19899-0391

Re: Impact of a Telecommunications Tower Upon
 Values of Residential Properties

Dear Mr. Tracey:

In accordance with your request, a study has been completed as the basis for estimating the influence upon value that the presence of a telecommunications tower has on nearby residential properties; and to ascertain whether the development of a proposed tower would impact the value of nearby residential communities. A comparative analysis was completed of neighborhoods near several communications towers (1) before and after the installation of a telecommunications tower; or alternatively, (2) similar properties in the immediate vicinity of the tower and removed from the tower, to analyze the influence, if any, that the presence of the tower had upon property values.

The following pages contain a narrative summary of the analysis and conclusions. Reference is made to assumptions and limiting conditions which are an integral part of the study and are critical to an understanding of the underlying premises.

An analysis of residential neighborhoods near eight (8) telecommunications towers indicates no measurable differences in property values before or after installation of the towers. In recognition of this analysis, there is no reason to anticipate any measurable diminution in value to residential properties in the overall neighborhood of the proposed tower as a result of its development or presence.

Respectfully submitted,

APPRAISAL-ASSOCIATES, INC.

Robert H. McKennon, CRE, MAI

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BACKGROUND AND PURPOSE OF STUDY

Wireless communications and telephone systems that do not need telephone cabling or wires are proliferating in the nation, region, and in New Castle County. To assess the economic impact that such developments have in the community at large, this study has been commissioned, which examines the impact of telecommunications towers upon the values of residential properties in the community in which the tower is located.

It is our understanding that an approximate 120+ foot high telecommunications tower, to be of monopole construction, is proposed for a site at 2522 Foulk Road in Brandywine Hundred, New Castle County, Delaware. The site is a 7.0634 acre commercially zoned tract currently improved with a neighborhood shopping center anchored by a Safeway supermarket.

This study evaluates other locations in which telecommunications towers have been constructed to assess how the proposed project might influence the values of residential properties in the surrounding community.

DATE OF STUDY

This study is being performed in July and August of 2005. The tower sites that have been evaluated were developed between 1960 and present date.

SCOPE OF STUDY

A monopole telecommunications tower is proposed for a location at 2522 Foulk Road in Brandywine Hundred, New Castle County, Delaware. To assess the impact that this proposed development would have on the values of homes in the surrounding community, a study has been undertaken using a real estate valuation model commonly applied in the appraisal profession.

A comparative analysis was utilized which quantifies data relating to properties that may potentially be impacted by the presence of a telecommunications tower at eight (8) locations. Sales of residential building sites and existing homes located in neighborhoods surrounding the tower locations were studied, and logical pairings of the data were made. In four cases, data was studied both before and after the development of the tower. In three of the other cases, pairings of data were made based on similar properties, with one property located in close proximity to the tower and one property located well away from the tower. In one instance (Brandywine Hunt – a new, partially completed community), there was not sufficient data available from which to evaluate pairings of data; however, the impact of three nearby telecommunications towers upon the Brandywine Hunt development was analyzed.

Re: Telecommunications Study 2005

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This method of analysis is known as paired data analysis, which is defined in The Dictionary of Real Estate Appraisal as "A quantitative technique used to identify and measure adjustments to the sale prices or rents of comparable properties; to apply this technique, sales or rental data on nearly identical properties are analyzed to isolate a single characteristic's effect on value or rent."

Real Estate Damages, a 1999 appraisal text that examines the impact of potentially detrimental conditions upon value states that "One of the most useful applications of this approach is paired sales analysis....If a legitimate detrimental condition exists, there likely will be a measurable and consistent difference between the two sets of market data; if there is not, there will likely be no significant difference between the two sets of data."

The Appraisal of Real Estate, Eleventh Edition, the most fundamental text for appraisers, notes that "when market evidence indicates that one or more elements affect value, those elements can be isolated by means of paired data analysis."

This technique is also discussed in Real Estate Valuation in Litigation, Second Edition, which indicates that "One of the most commonly used and reliable methods of estimating damage is by analyzing comparable sales using the matched pairs, or paired data analysis, technique."

The sales selected within the various communities were chosen for similarity so that the primary difference in the paired sales was attributable to the presence or absence of influence of the tower. This type of analysis isolates the impact, if any, of a single key variable - in this case, the presence of a nearby telecommunications tower.

The tower sites were selected for detailed study based upon the date of installation of the tower, tower construction, characteristics of nearby neighborhoods and development, and availability of data pertaining to price trends in the immediately surrounding communities.

To furnish a representative sampling of data, neighborhoods in close proximity to the tower sites were studied. A variety of residential communities and development near each tower comprised of single, family, detached homes was initially considered. The neighborhoods were further studied to assess if they were within a distance that values in the neighborhood would be impacted by the presence of the tower, if such an impact was in fact present within the market. The selection of data was narrowed to those sales and neighborhoods in closest proximity to the tower, and for which ample data was available to detect and analyze value trends. In our opinion, due to proximity, topography, and characteristics of the tower and the neighborhood, property values in these neighborhoods would be affected if the presence of the tower were a factor which would impact the market value of the homes in its neighborhood.

Re: Telecommunications Study 2005

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After selection of appropriate neighborhoods, data was gathered from the New Castle County Board of Realtors multi-list service, New Castle County's Department of Assessment, and other records, as well as on-file data. Information on the neighborhoods as to price range, price trends over the relevant time period, typical lot size, typical price ranges, etc. was researched. A database of approximately 50 to 200 sales during the appropriate time period in the neighborhoods near each tower site was derived. Over 1000 sales were considered in total. From this larger database, pairings of data were selected and these specific comparable properties were viewed, photographed, and analyzed.

An important consideration in this valuation is the state of the real estate market. All appraisals and valuation studies are performed as of a specific effective date, and reflect market conditions at that time as closely as possible. In focusing upon the potential impact that a tower may have had upon a neighborhood, value trends within the area must be evaluated. In the past approximate 20 years, New Castle County real estate has experienced considerable volatility. In 1985 - 89 the demand for real estate soared and all projections indicated it would continue, but at a slower pace. However the growth abruptly stopped circa 1990, and a recession gripped the market in the early 1990s. During much of the 1990's, price appreciation was relatively modest, and during some time periods, non-existent. From 2000 forward, however, the market had revived and prices were increasing. Price trends in the general market areas of the towers were reviewed to analyze whether they were consistent with price trends in the neighborhoods selected in this study. This information reflects an analysis of several hundred sales each year as documented by the New Castle County Board of Realtors, and was confirmed by specific data in the communities reviewed in this study. The pattern of data indicated that price trends in the general area of the towers correlated with price trends in the communities used in this study. This review indicated no evidence that properties in the neighborhoods near the tower demonstrated price changes measurably different from the overall market that was not impacted by the presence of a tower.

Another consideration that was evaluated was the marketing time of properties in the areas of the towers, both before and after the development of the tower. A review of data concerning the length of time a property was exposed to the market prior to being sold indicated that the marketing times pre and post tower correlated with the prevailing ranges found in the area. No evidence was found that indicates that the presence of a tower in a neighborhood caused a longer marketing time than would have been anticipated if the tower were not present.

Re: Telecommunications Study 2005

Page 4

Appraisers attempt to reflect the perceptions of investors, buyers and sellers as accurately as possible. This study is an informed professional judgment based on as much data, statistics and market information as we can assemble. As a result of the study, certain projections and premises are developed in order to reach the conclusions. This projected information is considered to be a fair reflection of the market and anticipated trends. It is important to understand that while these underlying assumptions provide a reasonable basis for the projections made, some assumptions may not materialize, and unanticipated events and circumstances may occur. The actual results, therefore, may differ somewhat from the projections and the variation may be material. Nevertheless, every effort is made to be as reasonable, prudent and reliable as possible.

This report is intended as a professional opinion of value trends, as of a certain specified date, under specific assumptions. It is not intended as a substitute for legal, accounting, engineering or other professional expertise. Anyone relying on this report is urged to perform due diligence needed or required to reconcile any issues relating to these assumptions.

This study is for no purpose other than evaluation of property value trends and patterns under specific premises and assumptions, and the appraisers are neither qualified or attempting to go beyond that narrow scope. The reader should be aware that there are also inherent limitations to the accuracy of the information and analysis contained in this appraisal. Before making any decision based on this report, it is critically important to read the entire report, including assumptions, in order to understand the limitations. It is made under conditions of uncertainty, and the appraiser is limited by having only that data available and known at the time the study was made. A casual reader should understand that this report does not contain all the information concerning the properties and data referenced or the real estate market. Opinions and estimates expressed herein represent the appraiser's best judgment, which should not be construed as advice or recommendations to act. Any actions taken by you, the client, or any other should be based on your own judgment, and the decision process should consider many factors other than just the conclusions and information given in this report.

The reader is referred to the assumptions, limiting conditions, and contingencies outlined at the end of this report. In addition, certain assumptions and premises have been derived and utilized in addition to the standard assumptions and limiting conditions. All are an integral part of this report. The reader's understanding of these items is critical to an understanding of the valuation process. An elimination or change in any of these, as well as in other specific assumptions developed in the analysis, may result in different value premises and/or conclusions.

SPECIAL ASSUMPTIONS

There are several important assumptions and qualifications which have been incorporated in this study, as well as standard assumptions and limiting conditions included at the end of the report.

1. This study assumes that the proposed tower will be constructed according to prevalent industry standards within a reasonable length of time, so as to minimize any disruption to the surrounding area.
2. It is assumed that the tower site and tower will be maintained on an ongoing basis, consistent with industry standards.
3. This study analyzes the anticipated impact on property values in the overall neighborhood within reasonable proximity to the tower. It does not, however, infer conclusions as to value impacts on specific or hypothetical properties, such as a property that was directly adjacent to a tower site.
4. The study assumes that the tower will be utilized in a manner consistent with prevalent lease agreements and standards within the telecommunications industry. Such uses may include leasing space to multiple wireless companies; however, the study assumes that no unrelated uses will take place on the tower site.
5. This study is not an appraisal as such and should not be construed in any manner as an appraisal of any specific property. It does employ recognized and customary practices utilized in the appraisal profession, however, and several appraisal terms may be referenced or implied within the report. These are defined as follows:

Market value as used in this report is defined as:

The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self interest, and assuming that neither is under undue duress.
(p. 177)

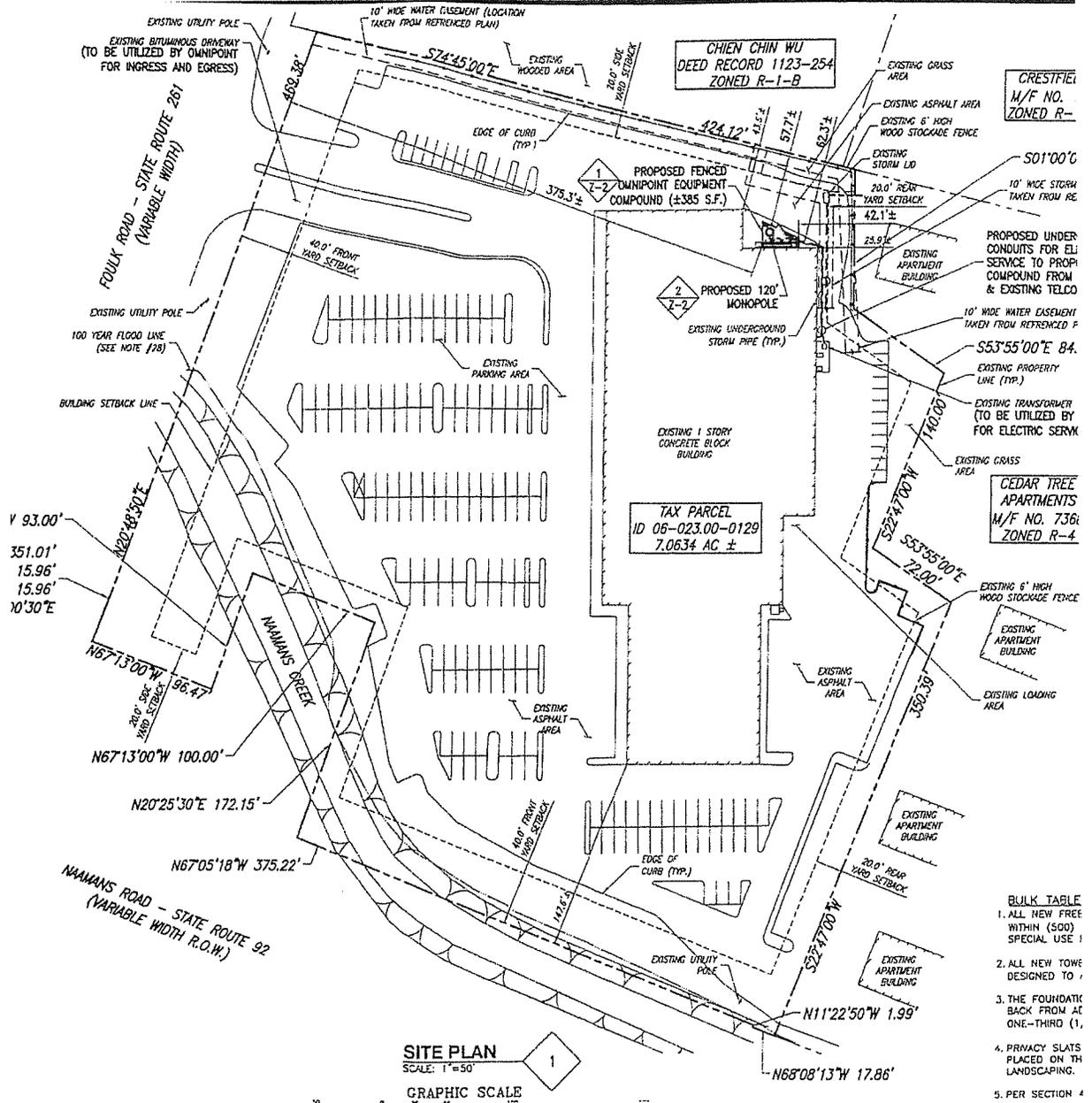
This definition and all others used in this report are from the following publication:

American Institute of Real Estate Appraisers, THE DICTIONARY OF REAL ESTATE APPRAISAL, 4th edition. (Chicago: American Institute of Real Estate Appraisers, 2002).

The fee simple interest makes up the property rights appraised. Fee simple estate is defined as:

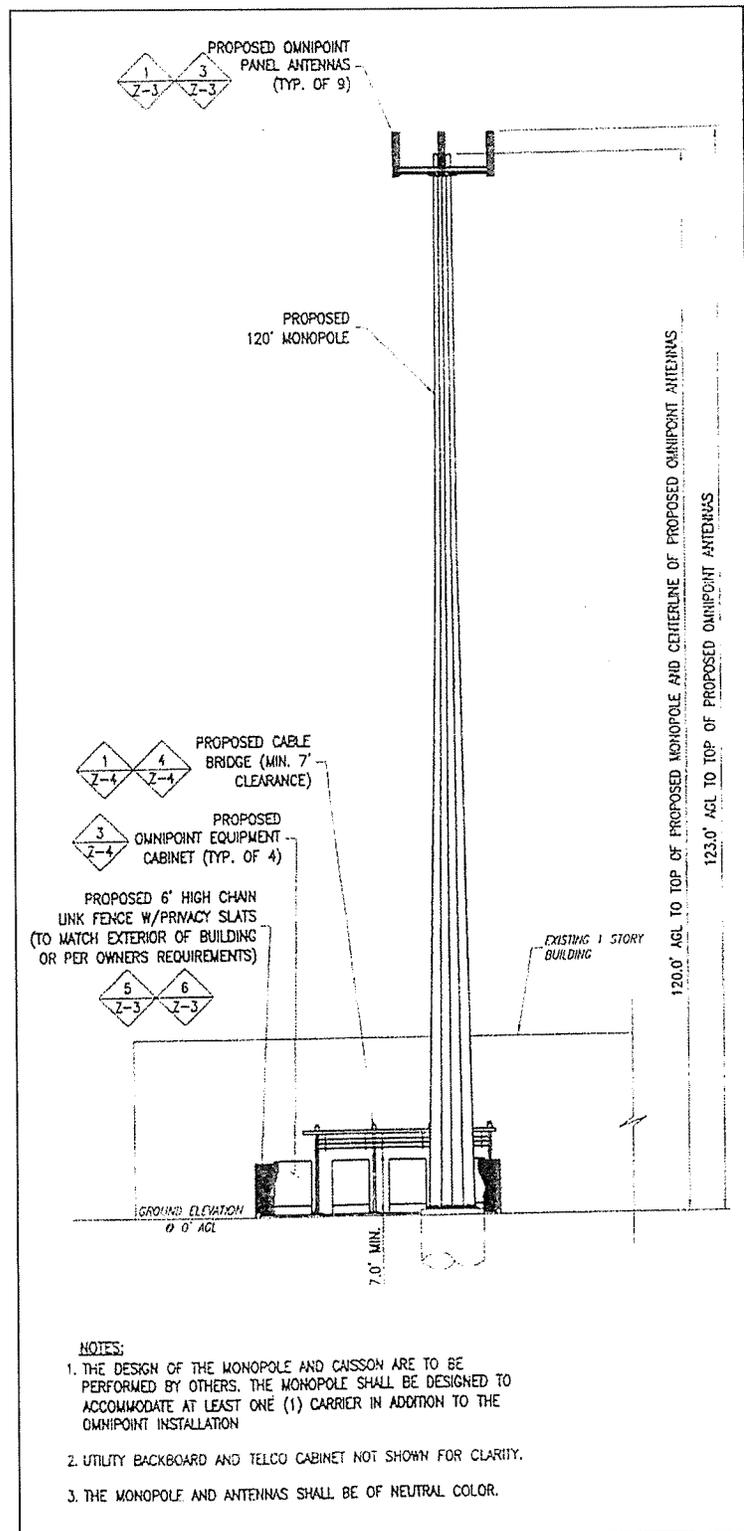
Absolute ownership unencumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat. (p. 113)

Site Plan Showing Proposed Location of Monopole



- BULK TABLE**
1. ALL NEW FREE WITHIN (500) SPECIAL USE 1
 2. ALL NEW TOWE DESIGNED TO /
 3. THE FOUNDATIK BACK FROM AT ONE-THIRD (1,
 4. PRMAYC SLATS PLACED ON TH LANDSCAPING.
 5. PER SECTION 4

Elevation View of Tower





Site of Monopole Installation



Site of Monopole Installation (Left)



View along Northern Boundary with Monopole Site at Right



View along Eastern Boundary with Monopole Site at Right



View of Shopping Center from Foulk Road



View of Service Area of Shopping Center

Re: Telecommunications Study 2005

Page 12

The surrounding neighborhood is mixed in character, consisting of a blend of commercial and residential uses. The property is zoned CR (commercial regional), as are the properties at the other corners of this commercial intersection. Other commercial uses clustered near the intersection are a neighborhood shopping center anchored by an Acme supermarket, a branch bank, a gasoline station (now closed), and Harry's Savoy Grill restaurant.

The remaining surrounding areas are zoned in residential classifications including single family, multi-family, and garden apartments. The property is abutted to the north by the single family residential community of Crestfield, a single family residence fronting Foulk Road, and the garden apartment community of Cedartree.

The residential communities in the vicinity of the property and their typical price ranges include Talley Farms (\$250,000-\$300,000), Crestfield (\$250,000-\$300,000), Cedartree (a garden apartment complex), Olde Colonial Village (\$125,000-\$210,000), Northminster (\$200,000-400,000), Ballymeade (\$250,000-\$400,000) and Weber (\$150,000-\$365,000). A representative home within each of the neighborhoods is displayed on the following pages. This is followed by a map depicting these neighborhoods in relation to the property which is planned for development with the subject tower.



Northminster



Talley Farms



Crestfield



Ballymeade



Weber

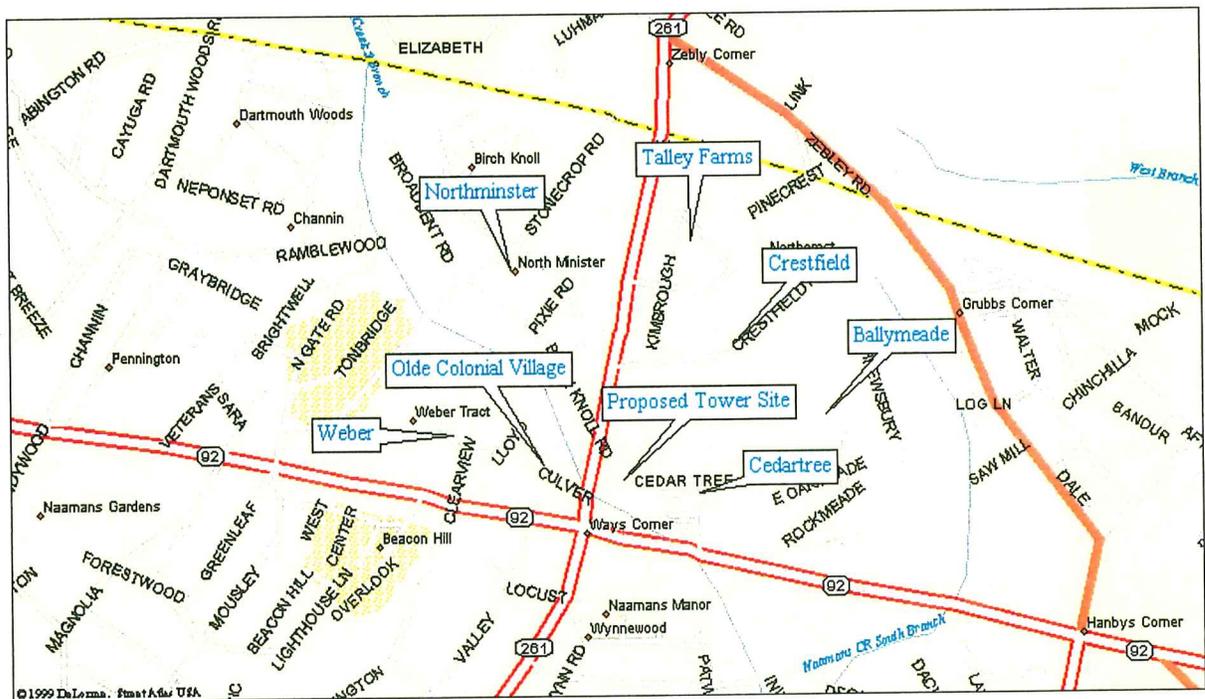


Olde Colonial Village



Cedartree

MAP OF SURROUNDING DEVELOPMENTS



TOWER AND COMMUNITY EVALUATIONS

The following sections of the report summarize data gathered from neighborhoods surrounding eight separate tower sites in New Castle County, Delaware. Four of the tower sites are situated in Brandywine Hundred, one is in Mill Creek Hundred, one is in Christiana Hundred, one is in Pencader Hundred, and one is located in St. George's Hundred. The neighborhoods demonstrated ranges in price from near \$100,000 (in a few cases several years ago) to over \$1,000,000. The specific data was selected for inclusion in this report because it met certain criteria with respect to the volume of data available for analysis, and similarities and pairings; with the price of surrounding housing ranging from approximately \$100,000 to over \$650,000 in most instances, indicating a price range that would adequately "bracket" the prevailing price points in those developments in the vicinity of the proposed subject tower.

The eight tower sites utilized in this analysis are as follows:

- The **first** tower is at Troop One headquarters of the Delaware State Police near Washington Street Extension and Philadelphia Pike; in Brandywine Hundred, New Castle County, Delaware. It is surrounded by neighborhoods such as Highpoint, North Hills, Villa Monterey, Philips Heights, Hillcrest, and Bellefonte. The prevailing price range in the surrounding community was from approximately \$100,000 to \$150,000 at the time the tower was built.
- The **second** tower is located just west of Talley Road and immediately north of I-95 on land owned by the State of Delaware and used as a maintenance facility, in Brandywine Hundred, New Castle County, Delaware. This tower is in close proximity to such neighborhoods as Weldin Ridge, Weldin Park, Rockwood Hills, Talley Hill and Little Rock Woods. The development of this tower sparked Chancery Court litigation, as well as prolonged public protest which was covered in depth by the local media. The prevailing price range in the surrounding community was from approximately \$175,000 to over \$250,000 at the time the tower was built.
- The **third** tower selected for study is located south of the Robert Kirkwood Highway and just north of Old Capitol Trail near Ferrand Drive in Mill Creek Hundred, New Castle County, Delaware. The neighborhood in closest proximity to this tower is known as Klair Estates. The prevailing price range in the surrounding community was from approximately \$100,000 to \$130,000 at the time the tower was built.
- The **fourth** tower is situated on a lot in the community of Owl's Ridge, near Centerville, Christiana Hundred, New Castle County, Delaware. This tower is surrounded by a variety of individual lots, estate residences, and developments of custom homes. The prevailing price range in the surrounding community was from approximately \$500,000 to \$1,000,000 at the time the tower was evaluated.

Re: Telecommunications Study 2005

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- The **fifth** tower is located at the intersection of Route 13 and Pole Bridge Road at Boyd's Corner, St. George Hundred, New Castle County, Delaware. This is a growing community characterized by neighborhoods such as Asbury Chase and Grandview Farms. This tower was controversial and strongly opposed by local residents. The prevailing price range in the surrounding community was from approximately \$150,000 to \$230,000 at the time the tower was built.
- The **sixth** tower is located south of Naaman's Creek Road, just to the north of the subdivision of Ballymeade, Brandywine Hundred, New Castle County, Delaware. Ballymeade is a community off Naaman's Road comprised of townhouses and single family detached residential properties. The prevailing price range is from approximately \$250,000 to \$400,000+. The proposed subject tower would be situated about 2000 feet from the development.
- The **seventh** tower is located adjoining the single family residential community of Amberwood, off Denny Road, west of Route 896, in Pencader Hundred, New Castle County, Delaware. Amberwood is a community of single family detached homes ranging in price from approximately \$350,000 to \$400,000+.
- The **eighth** site actually encompasses **three** telecommunications towers that abut the new development of Brandywine Hunt, located on the north side of Naaman's Road in Brandywine Hundred, New Castle County, Delaware. The towers are located, respectively, on Naaman's Road, on the grounds of Concord High School, and off State Line Road. All three tower sites abut single family residential lots in Brandywine Hunt, which was in the development process at the time of this study. The current price range in the development is from approximately \$685,000 to over \$800,000.

The following map depicts the location of the tower sites included in this study. The pages following summarize the data utilized in this analysis and the resulting conclusions.

TOWER SITES ANALYZED



Re: Delaware State Police Troop One

Page 20

**Delaware State Police
Troop One
Washington Street Extension at Philadelphia Pike
Brandywine Hundred
New Castle County, Delaware**



Type of Tower: Monopole communications tower

Height: 120 feet

Certificate of Occupancy: January, 1996

Comments: Residential areas in close proximity to this tower include Highpoint (\$105,000-145,000), North Hills (\$120,000-180,000), Villa Monterey (\$100,000-150,000), Hillcrest (\$90,000-135,000), and Bellefonte (\$85,000-130,000). Office and retail development is located along Philadelphia Pike. The vast majority of homes are single family detached, and 20+ years of age. Typical lot sizes are in the range of 6,000 to 10,000 square feet. Homes in the area are generally well maintained and show pride of ownership. The neighborhood is approximately three miles northeast of downtown Wilmington, with recreational facilities and other amenities in close proximity.

Re: Delaware State Police Troop One

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Re: Delaware State Police Troop One

Page 22

MATCHED PAIR #1 - BEFORE TOWER

Street Address: 10 Windsor Road
Neighborhood: North Hills
Hundred: Brandywine
Distance from Tower: 3/16 Mile (1000 feet)

**Sale Date:** September 1993**Price:** \$130,000**Seller:** Nancy Hough/DuPont Company**Buyer:** John Pedicone**Deed Record:** 1598-160**Type Residence:** Two Story**Rooms/Bedrooms/Baths:** 6/3/1.5**Lot Size:** 9,148 sq ft**Approximate Age:** 40 Years**Garage:** One Car**Basement:** Yes/Unfinished**House Size:** 1,500 ± sq ft

Comments: This is a two story house with a fireplace in the living room, a porch/breezeway between the house and garage and a wood deck at the rear of the house. The condition of the residence at the time of sale was good with new wall to wall carpet, fresh paint, central air conditioning and new appliances in the kitchen.

Re: Delaware State Police Troop One

Page 23

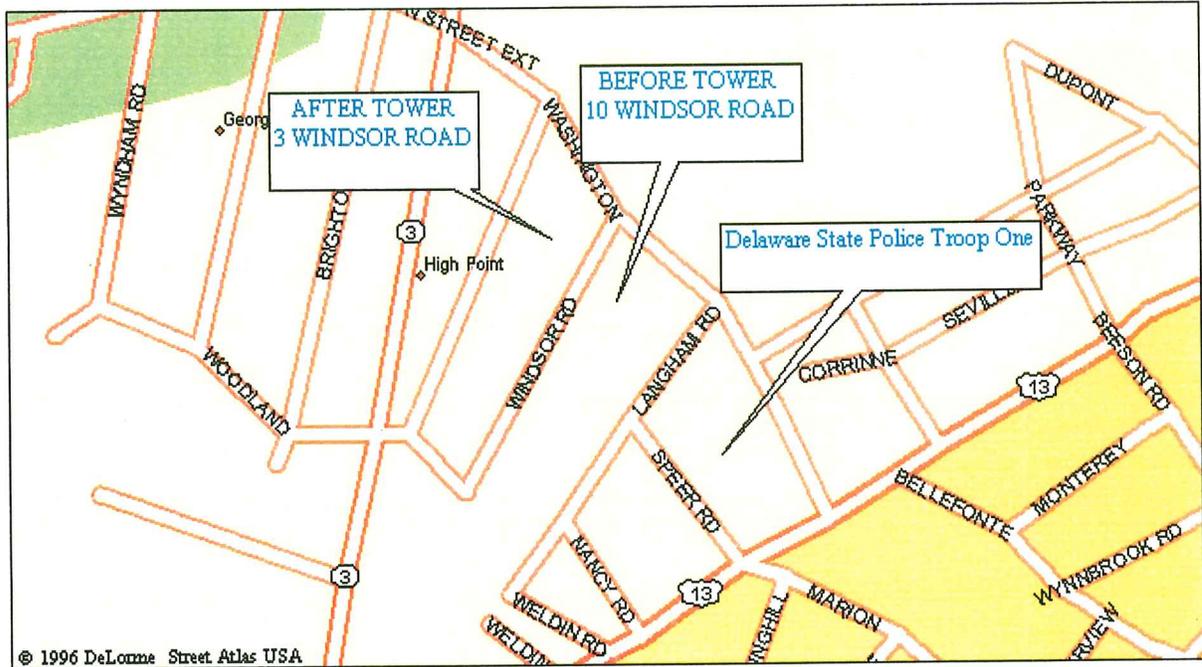
MATCHED PAIR #1 - AFTER TOWER

Street Address: 3 Windsor Road
Neighborhood: North Hills
Hundred: Brandywine
Distance from Tower: 3/16 Mile (1000 feet)

**Sale Date:** March 1996**Price:** \$123,500**Seller:** Helen Wilkie**Buyer:** Michael Guertin**Deed Record:** 2088-117**Type Residence:** Two Story**Rooms/Bedrooms/Baths:** 7/3/1.5**Lot Size:** 9,375 sq ft**Approximate Age:** 44 Years**Garage:** One Car**Basement:** Yes/Unfinished**House Size:** 2,000 ± sq ft

Comments: This is a two-story house with a fireplace in the living room and an open porch at the side of the house. It lacked central air conditioning, but was in good condition at the time of the sale

MATCHED PAIR #1 LOCATION MAP BEFORE AND AFTER



Re: Delaware State Police Troop One

Page 25

MATCHED PAIR #2 - BEFORE TOWER

Street Address: 5 Speer Road
Neighborhood: Highpoint
Hundred: Brandywine
Distance from Tower: Less than 100 feet

**Sale Date:** September 1994**Price:** \$121,000**Seller:** Bobby Joe Jackson**Buyer:** John Naylor**Deed Record:** 1818-173**Type Residence:** Bungalow**Rooms/Bedrooms/Baths:** 7/3/2**Lot Size:** 6,534 sq ft**Approximate Age:** 40 Years**Garage:** One Car**Basement:** Yes/Unfinished**House Size:** 1,350 ± sq ft

Comments: This is a bungalow style house with a fireplace in the living room and a wood deck attached to the rear of the house. It was in good condition at the time of the sale, and the property was centrally air conditioned.

Re: Delaware State Police Troop One

Page 26

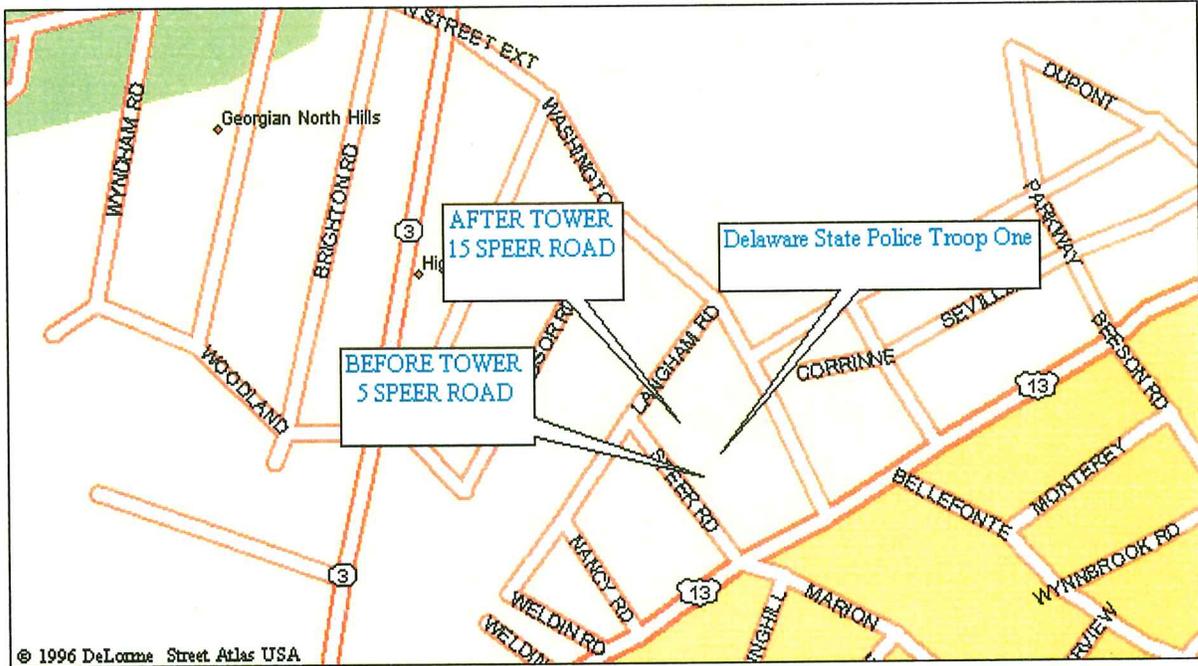
MATCHED PAIR #2 - AFTER TOWER

Street Address: 15 Speer Road
Neighborhood: Highpoint
Hundred: Brandywine
Distance from Tower: 1/16 Mile (350 feet)

**Sale Date:** July 1997**Price:** \$135,000**Seller:** Christopher and Mindy Neff**Buyer:** Nancy Willard**Deed Record:** 2308-88**Type Residence:** Bungalow**Rooms/Bedrooms/Baths:** 7/3/1**Lot Size:** 9,375 sq ft**Approximate Age:** 50 Years**Garage:** Two Car**Basement:** Yes/Unfinished**House Size:** 1,600 ± sq ft

Comments: This is a bungalow style house with an enclosed porch at the front of the house and a wood deck attached to the rear of the house. The condition was good at the time of the sale; however, the property lacked central air conditioning.

MATCHED PAIR #2 LOCATION MAP BEFORE AND AFTER



Re: Delaware State Police Troop One

Page 28

MATCHED PAIR #3 – BEFORE TOWER

Street Address: 10 Rodman Road
Neighborhood: Phillips Heights
Hundred: Brandywine
Distance from Tower: 3/16 Mile (1000 feet)

**Sale Date:** August 1994**Price:** \$104,900**Seller:** Mary Hewitt**Buyer:** Cheryl Kennedy**Deed Record:** 1791-104**Type Residence:** Ranch**Rooms/Bedrooms/Baths:** 5/2/1**Lot Size:** 13,939 sq ft**Approximate Age:** 65 Years**Garage:** One Car**Basement:** Yes/Unfinished**House Size:** 1,500 ± sq ft

Comments: This is a ranch style house with a fireplace in the living room and a heated, enclosed porch attached to the front of the house. It did not have central air conditioning. The attic is a walk-up type with the potential for future expansion. The condition was good at the time of the sale.

Re: Delaware State Police Troop One

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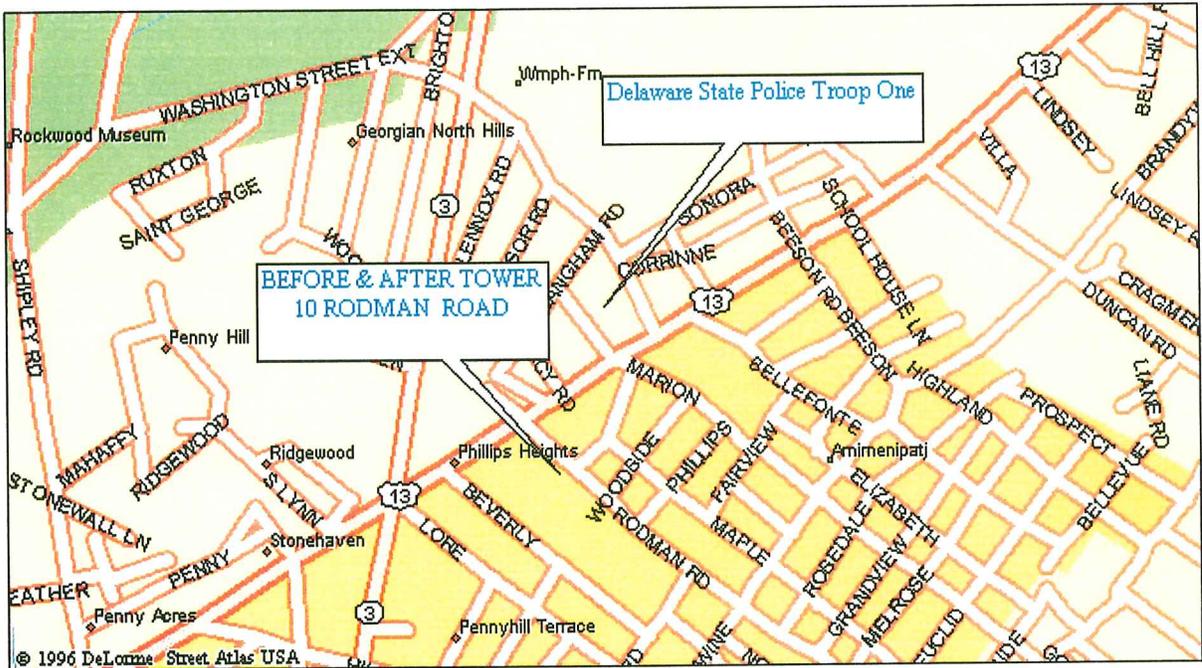
MATCHED PAIR #3 – AFTER TOWER

Street Address: 10 Rodman Road
Neighborhood: Phillips Heights
Hundred: Brandywine
Distance from Tower: 3/16 Mile (1000 feet)

**Rooms/Bedrooms/Baths:** 5/2/1**Sale Date:** February 1997**Price:** \$106,000**Seller:** Cheryl Kennedy**Buyer:** Jacy Webster and Denise Martell**Deed Record:** 2235-103**Type Residence:** Ranch**Lot Size:** 13,939 sq ft**Approximate Age:** 68 Years**Garage:** One Car**Basement:** Yes/Unfinished**House Size:** 1,500 ± sq ft

Comments: This is a ranch style house with a fireplace in the living room and a heated enclosed porch attached to the front of the house. It did not have central air conditioning. The attic is a walk up type with the potential for future expansion. The condition was good at the time of the sale.

MATCHED PAIR #3 LOCATION MAP BEFORE AND AFTER



Re: Delaware State Police Troop One

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**SALES ANALYSIS OF PROPERTIES
NEAR TROOP 1 TOWER**

Pairing	Before Tower			After Tower			Difference	Comments
	Property	Date	Sale Price	Property	Date	Sale Price		
1	10 Windsor Road	9/93	\$130,000	3 Windsor Road	4/96	\$123,500	-5%	10 Windsor Road Smaller house but with central air conditioning, screened porch, and deck
2	5 Speer Road	9/94	\$121,000	15 Speer Road	7/97	\$135,000	+10%	15 Speer Road Larger house on larger site
3	10 Rodman Road	8/94	\$104,900	10 Rodman Road	2/97	\$106,000	+1%	Same house in similar condition at both dates of sale

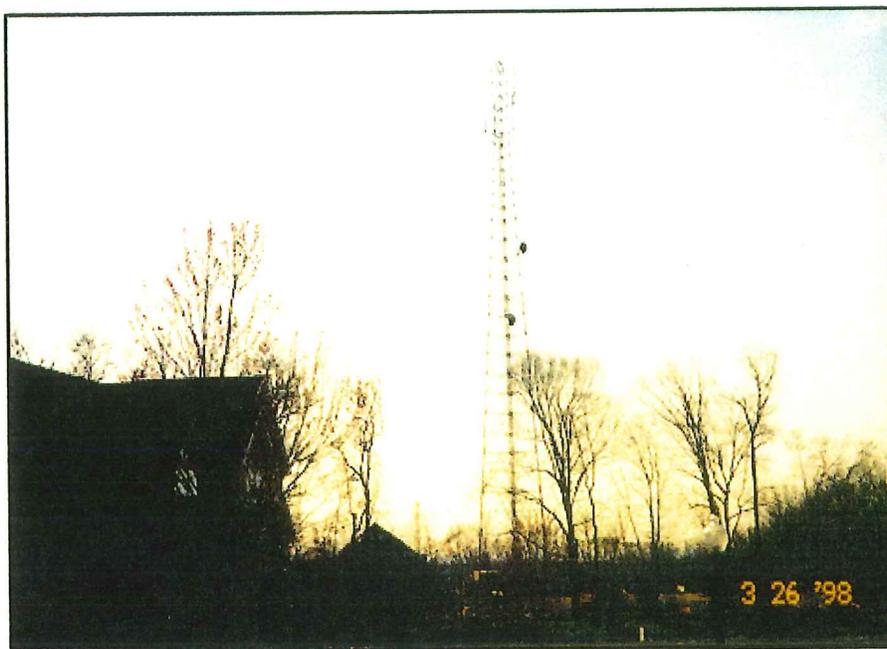
CONCLUSIONS

The paired sales utilized in this analysis represent single family detached residences, all located within approximately 1000 feet or less of the above tower site. The sales show a price variance ranging from -5 percent to +10 percent in favor of properties acquired after development of the tower. The data indicating a lower price for a residence that sold after construction of the tower had differences in the configuration or specific features of the residences that justified the price discrepancy. Given the relatively minor differences in values and characteristics of the properties analyzed, the residential neighborhoods immediately surrounding this tower have not demonstrated measurable differences in property values attributable to the influence of the tower.

Re: State of Delaware Maintenance Facility

Page 32

**State of Delaware Maintenance Facility
I-95 at Rockwood Road
Brandywine Hundred
New Castle County, Delaware**



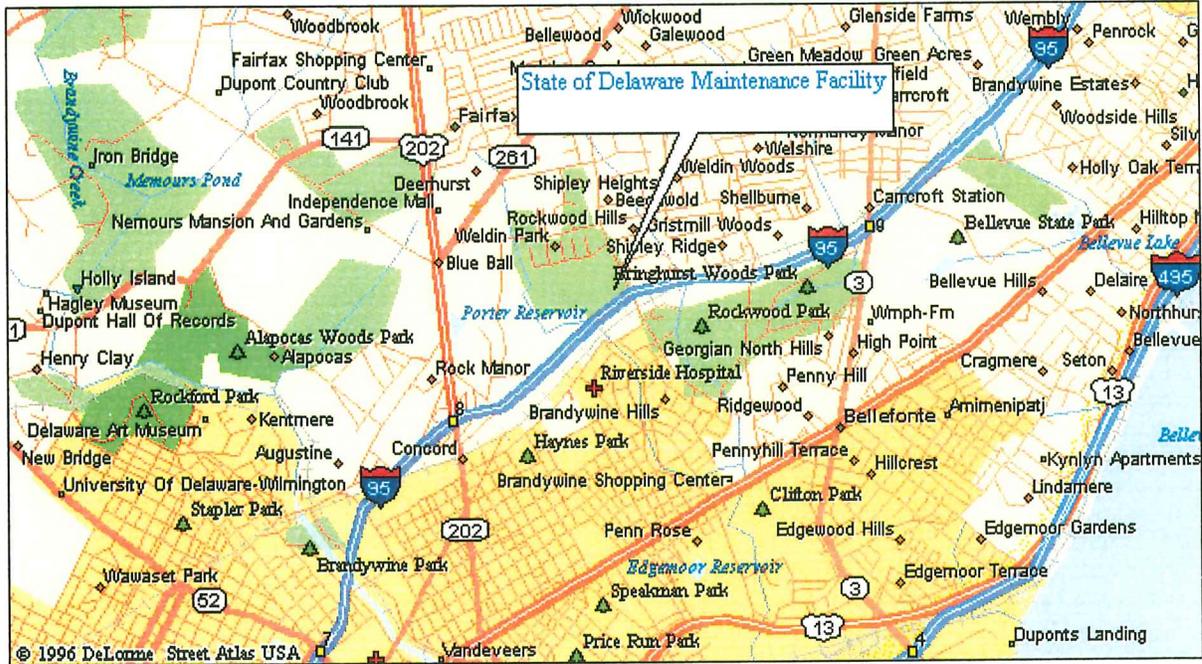
Type of Tower: Latticework

Height: 275 feet

Certificate of Occupancy: March, 1996

Comments: The area surrounding this tower, with the exception of the State of Delaware's maintenance facility which occupies 10.24 acres, is heavily residentially oriented. The closest commercial uses are one half mile southwest along Miller Road. Development in the immediate area is strictly single family detached residential, with no multi-family development within an approximate half mile of the tower site. Residential areas in close proximity include Weldin Ridge (\$250,000 to well over \$300,000), Weldin Park (\$185,000 to \$260,000), Little Rock Woods (\$180,000 to \$230,000), Talley Hill (\$175,000 to \$225,000), and Rockwood Hills (\$175,000 to \$260,000). Typical lot sizes are in the range of 10,000 to 15,000 square feet, with some lots of over one half acre. Developments range in age from 20 years and older to new construction; homes are well maintained with pride of ownership. The community is approximately two miles northeast of downtown Wilmington with recreational facilities and other amenities in close proximity.

APPRAISAL ASSOCIATES, INC.



Re: State of Delaware Maintenance Facility

Page 34

MATCHED PAIR #1 - BEFORE TOWER

Street Address: 125 Weldin Park Drive
Neighborhood: Weldin Park
Hundred: Brandywine
Distance from Tower: 3/16 Mile (1000 feet)

**Sale Date:** July 1992**Price:** \$215,000**Seller:** Louis and Josephine Mauro**Buyer:** Lawrence and Susan Isaacs**Deed Record:** 1368-319**Type Residence:** Two Story**Rooms/Bedrooms/Baths:** 9/4/2.5**Lot Size:** 12,632 sq ft**Approximate Age:** 14 Years**Garage:** Two Car**Basement:** Yes/Unfinished**House Size:** 2,700 ± sq ft

Comments: This is a two story house with a fireplace in the living room and a patio at the rear of the house. The property was in good condition at the time of the sale.

Re: State of Delaware Maintenance Facility

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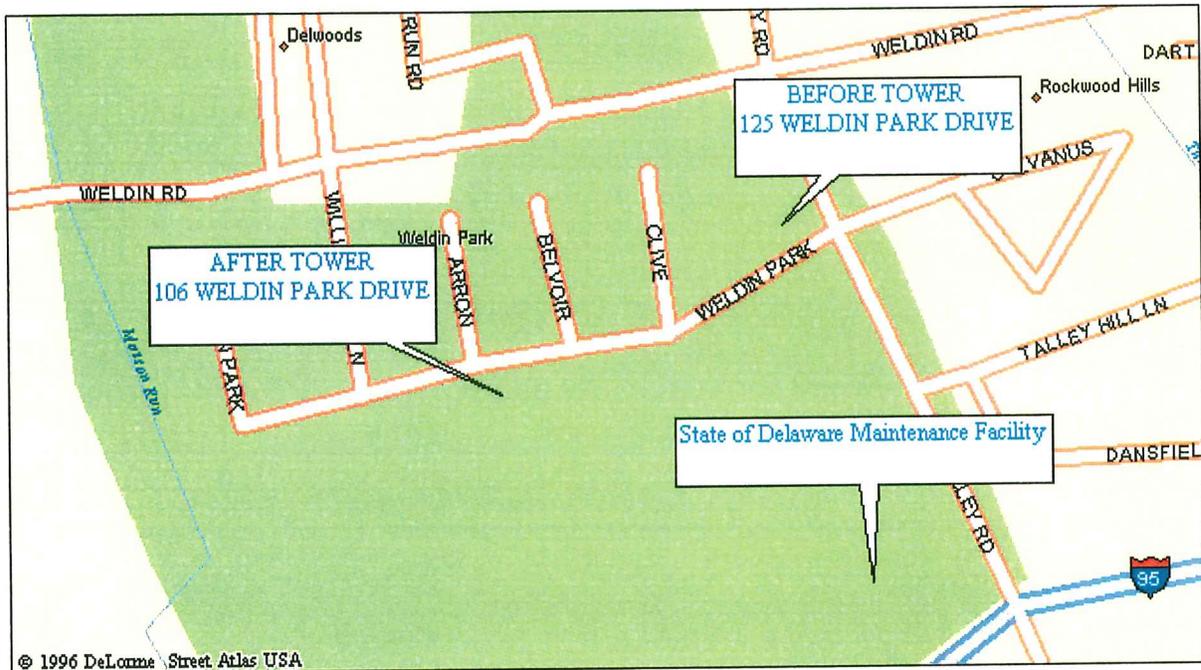
MATCHED PAIR #1 – AFTER TOWER

Street Address: 106 Weldin Park Drive
Neighborhood: Weldin Park
Hundred: Brandywine
Distance from Tower: 5/16 Mile (1650 feet)

**Sale Date:** March 1996**Rooms/Bedrooms/Baths:** 9/4/2.5**Price:** \$224,000**Lot Size:** 15,682 sq ft**Seller:** James and Temple Wilson**Approximate Age:** 17 Years**Buyer:** Peter Vari, Jr.**Garage:** Two Car**Deed Record:** 2073-176**Basement:** Yes/Unfinished**Type Residence:** Two Story**House Size:** 2,400 ± sq ft

Comments: This is a two-story house with two fireplaces and a deck attached to the rear of the house. The property's condition was good at the time of the sale.

MATCHED PAIR #1 LOCATION MAP BEFORE AND AFTER



Re: State of Delaware Maintenance Facility

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MATCHED PAIR #2 - BEFORE TOWER

Street Address: 4613 Little Rock Drive
Neighborhood: Little Rock Woods
Hundred: Brandywine
Distance from Tower: ¼ Mile (1320 feet)

**Sale Date:** August 1993**Price:** \$215,000**Seller:** David and Lisa Boothe**Buyer:** James and Brigid Kerrigan**Deed Record:** 1568-275**Type Residence:** Two Story**Rooms/Bedrooms/Baths:** 9/4/2.5**Lot Size:** 15,246 sq ft**Approximate Age:** 12 Years**Garage:** Two Car**Basement:** Yes/Unfinished**House Size:** 2,400 ± sq ft

Comments: This is a two story house with a fireplace in the family room, a three season porch attached to the rear of the house and a wood deck adjoining the porch. The condition was good at the time of the sale.

Re: State of Delaware Maintenance Facility

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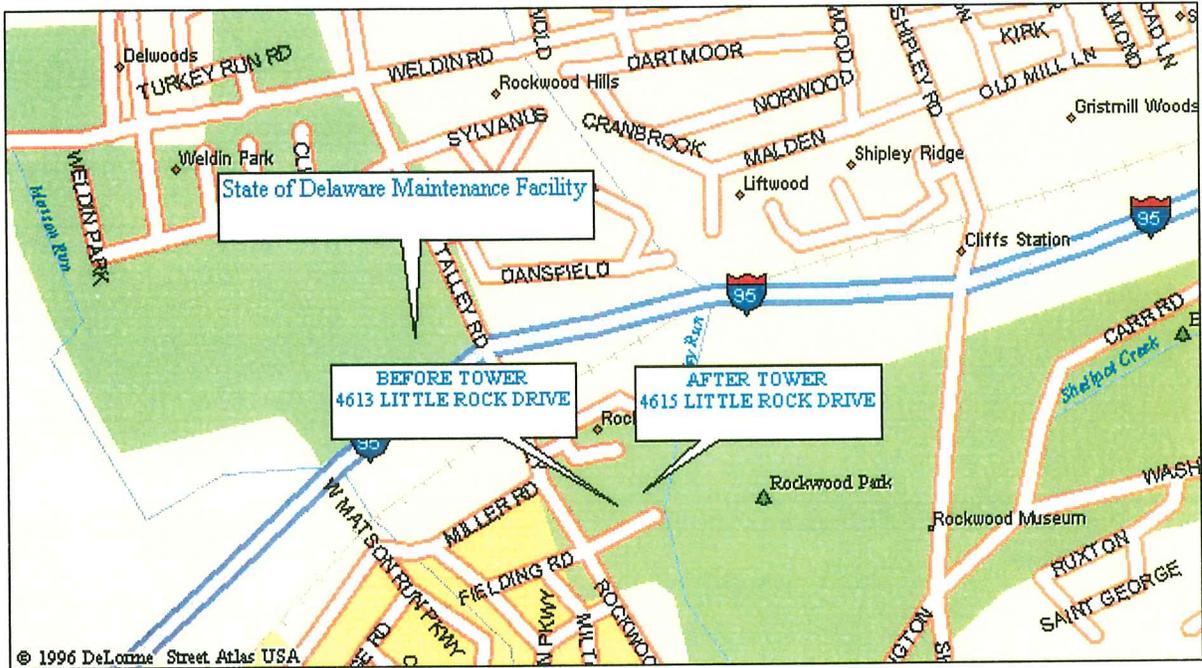
MATCHED PAIR #2 - AFTER TOWER

Street Address: 4615 Little Road Drive
Neighborhood: Little Rock Woods
Hundred: Brandywine
Distance from Tower: ¼ Mile (1320 feet)

**Sale Date:** May 1997**Price:** \$225,000**Seller:** Alan and Carole Seltzer**Buyer:** Donald and Nancy Roberts**Deed Record:** 2277-63**Type Residence:** Two Story**Rooms/Bedrooms/Baths:** 9/4/2.5**Lot Size:** 16,177 sq ft**Approximate Age:** 14 Years**Garage:** Two Car**Basement:** Yes/Playroom**House Size:** 2,250 ± sq ft

Comments: This is a two story house with a fireplace in the family room and a screened porch. The condition was good at the time of the sale.

MATCHED PAIR #2 LOCATION MAP BEFORE AND AFTER



Re: State of Delaware Maintenance Facility

Page 40

MATCHED PAIR #3 - BEFORE TOWER

Street Address: 115 Weldin Park Drive
Neighborhood: Weldin Park
Hundred: Brandywine
Distance from Tower: 1/4 Mile (1320 feet)

**Sale Date:** September 1993**Price:** \$228,000**Seller:** David McChesnet/DuPont Company**Buyer:** Jason Bobiak and Kathy Stevenson**Deed Record:** 1589-297**Type Residence:** Two Story**Rooms/Bedrooms/Baths:** 8/4/2.5**Lot Size:** 14,375 sq ft**Approximate Age:** 15 Years**Garage:** Two Car**Basement:** Yes/Unfinished**House Size:** 2,400 ± sq ft

Comments: This is a two story house with a fireplace and a wood deck attached to the rear of the house. The condition was good at the time of the sale.

Re: State of Delaware Maintenance Facility

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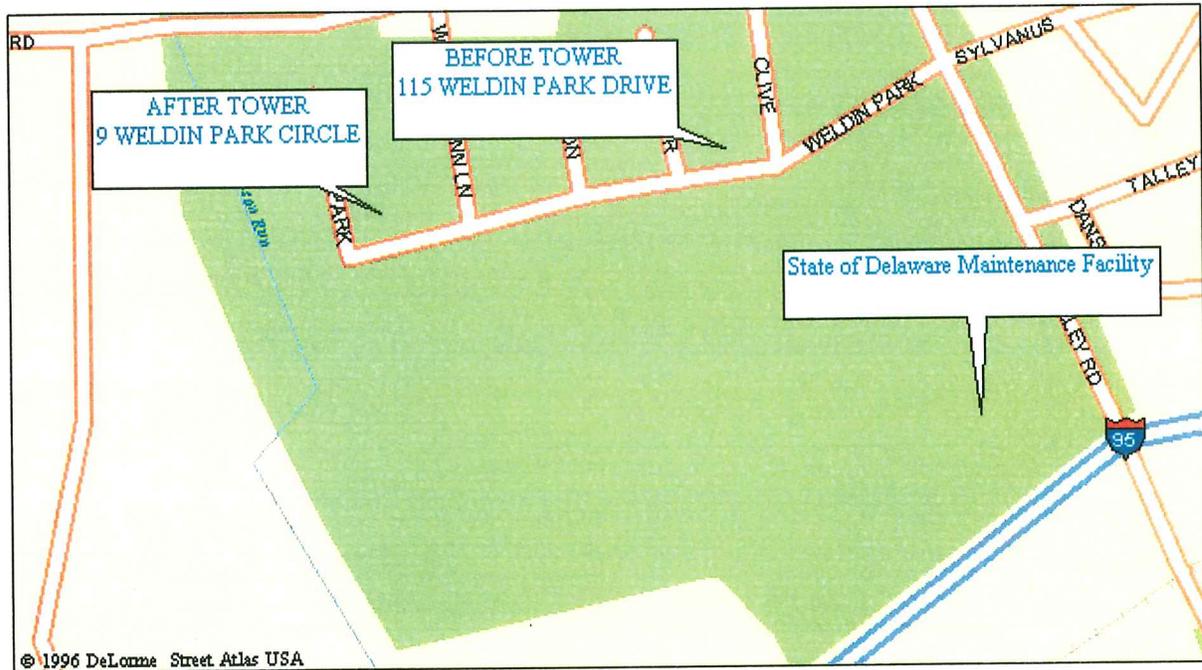
MATCHED PAIR #3 - AFTER TOWER

Street Address: 9 Weldin Park Drive
Neighborhood: Weldin Park
Hundred: Brandywine
Distance from Tower: 3/8 Mile (1980 feet)

**Sale Date:** November 1996**Price:** \$229,900**Seller:** Bausch & Lomb Realty Company**Buyer:** George Zlupko**Deed Record:** 2199-136**Type Residence:** Two Story**Rooms/Bedrooms/Baths:** 10/4/2.5**Lot Size:** 15,000 sq ft**Approximate Age:** 15 Years**Garage:** Two Car**Basement:** Yes/Unfinished**House Size:** 2,650 ± sq ft

Comments: This is a two-story house with two fireplaces. The condition was good at the time of the sale.

MATCHED PAIR #3 LOCATION MAP BEFORE AND AFTER



**SALES ANALYSIS OF PROPERTIES
NEAR DELDOT MAINTENANCE YARD TOWER**

Pairing	Before Tower			After Tower			Difference	Comments
	Property	Date	Sale Price	Property	Date	Sale Price		
1	125 Weldin Park Drive	7/92	\$215,000	106 Weldin Park Drive	3/96	\$224,000	+4%	106 Weldin Park Drive Smaller house, two fireplaces
2	4613 Little Rock Drive	8/93	\$215,000	4615 Little Rock Drive	5/97	\$225,000	+4%	4615 Little Rock Drive Smaller house with finished basement
3	115 Weldin Park Drive	9/93	\$228,000	9 Weldin Park Drive	11/96	\$229,900	+1%	9 Weldin Park Drive Larger house with two fireplaces

CONCLUSIONS

The paired sales show a price variance ranging from less than +1 percent to +4 percent in favor of properties constructed after the tower. There were other characteristics with positive and negative attributes relating to the properties being reviewed justifying these minor price discrepancies. The sales selected for detailed analysis were all within less than 2000 feet of the tower and had a high degree of comparability.

Given the minor differences in values and characteristics, the communities surrounding this tower have not demonstrated measurable differences in property values before or after development of the tower.

Re: Kirkwood Highway and Old Capitol Trail

Page 44

**Kirkwood Highway and Old Capitol Trail
Mill Creek Hundred
New Castle County, Delaware**

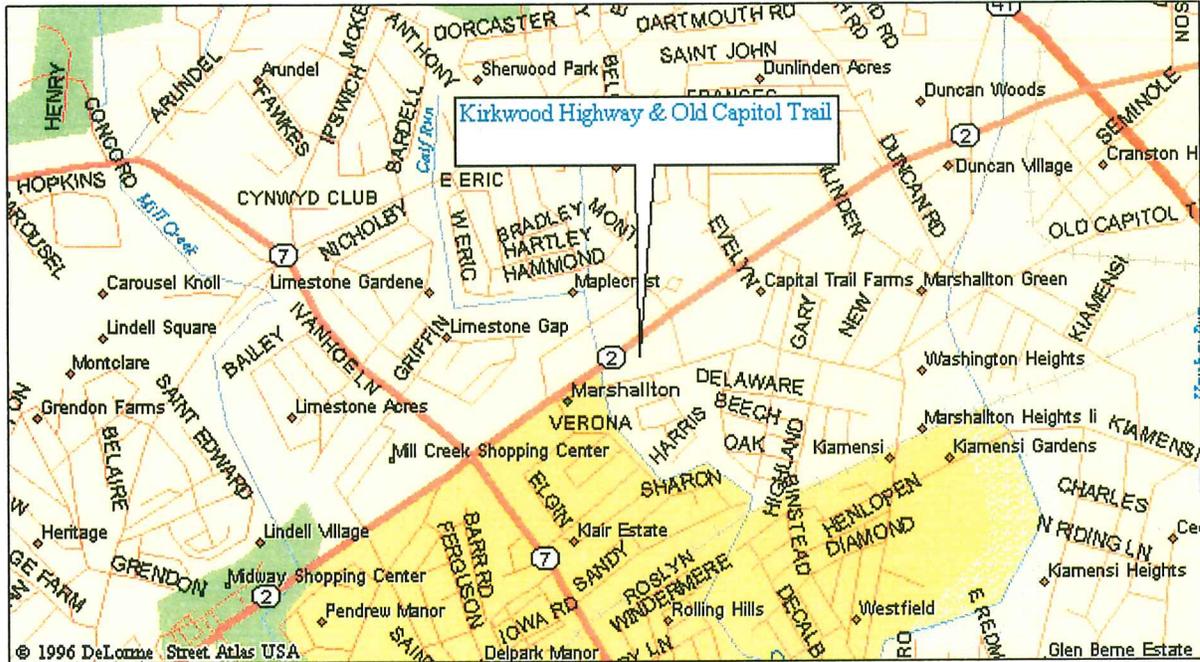


Type of Tower: Monopole communications tower

Height: 152 feet

Certificate of Occupancy: June, 1996

Comments: This tower is situated between the heavily commercialized Kirkwood Highway and Old Capitol Trail, a secondary road. Surrounding residential communities include, among others, Klair Estates (the closest community-\$85,000 to \$150,000), Marshallton Heights (\$75,000 to \$100,000), Kirkwood Gardens (\$90,000 to \$105,000), and Sheridan Square (\$100,000 to \$130,000). Typical lot sizes are in the range of 6,500 to 15,000 square feet. The vast majority of homes are single family detached and 20+ years of age or older. The residences are for the most part well maintained and exhibit pride of ownership. This location is approximately five miles southwest of downtown Wilmington and in good proximity to recreational facilities and other amenities.



Re: Kirkwood Highway and Old Capitol Trail

Page 46

MATCHED PAIR #1 - BEFORE TOWER

Street Address: 4 Weer Circle
Neighborhood: Klair Estates
Hundred: Mill Creek
Distance from Tower: 1/8 Mile (660 feet)

**Sale Date:** August 1995**Price:** \$101,000**Seller:** Kathleen Livingston**Buyer:** Jeffrey and Michelle Maris**Deed Record:** 1935-247**Type Residence:** Ranch**Rooms/Bedrooms/Baths:** 6/3/1**Lot Size:** 9,125 sq ft**Approximate Age:** 41 Years**Garage:** One Car**Basement:** None**House Size:** 1,100 ± sq ft

Comments: This is a typical ranch style house for this community, in good condition good at the time of the sale. The financing was FHA with a selling price \$1,100 higher than the asking price, indicating a sales concession to the buyer.

Re: Kirkwood Highway and Old Capitol Trail

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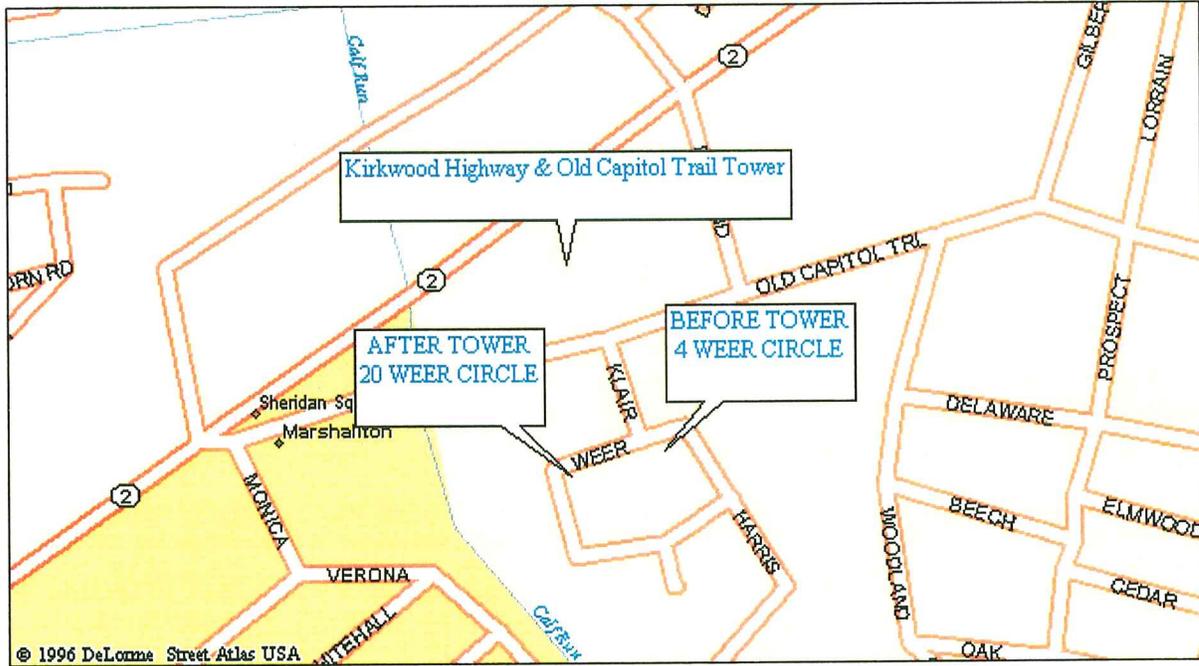
MATCHED PAIR #1 - AFTER TOWER

Street Address: 20 Weer Circle
Neighborhood: Klair Estates
Hundred: Mill Creek
Distance from Tower: 1/16 Mile (330 feet)

**Sale Date:** August 1996**Price:** \$96,900**Seller:** Bernard McGuinness**Buyer:** Jeffrey and Patricia Godwin**Deed Record:** 2153-225**Type Residence:** Ranch**Rooms/Bedrooms/Baths:** 6/3/1**Lot Size:** 10,890 sq ft**Approximate Age:** 35 Years**Garage:** One Car**Basement:** None**House Size:** 1,100 ± sq ft

Comments: This is a typical ranch style house in good condition at the time of the sale. The financing was VA with a selling price \$2,000 higher than the asking price, indicating a sales concession to the buyer.

MATCHED PAIR #1 LOCATION MAP BEFORE AND AFTER



Re: Kirkwood Highway and Old Capitol Trail

Page 49

MATCHED PAIR #2 - BEFORE TOWER

Street Address: 4515 Hendry Avenue
Neighborhood: Klair Estates
Hundred: Mill Creek
Distance from Tower: 1/4 Mile (1320 feet)

**Sale Date:** July 1994**Price:** \$119,000**Seller:** Stan and Shirley Dziegielewski**Buyer:** Connie Woo**Deed Record:** 1780-61**Type Residence:** Split Level**Rooms/Bedrooms/Baths:** 7/3/1.5**Lot Size:** 8,395 sq ft**Approximate Age:** 38 Years**Garage:** One Car**Basement:** Yes/Recreation**House Size:** 1,600 ± sq ft

Comments: This is a split level style house with a fireplace in the living room. The kitchen, exterior siding, and windows were updated; and an in ground swimming pool is located in the rear yard. The condition was good at the time of the sale.

Re: Kirkwood Highway and Old Capitol Trail

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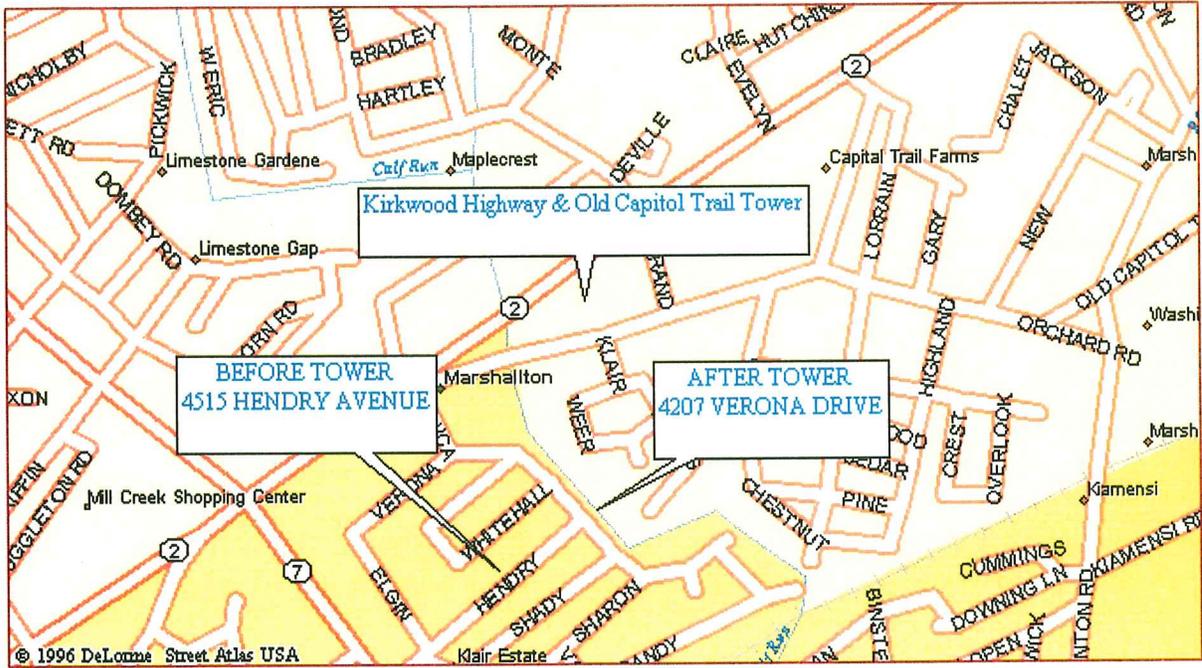
MATCHED PAIR #2 - AFTER TOWER

Street Address: 4207 Verona Drive
Neighborhood: Klair Estates
Hundred: Mill Creek
Distance from Tower: 3/16 Mile (990 feet)

**Sale Date:** June 1996**Price:** \$118,500**Seller:** John and Irene Carroll**Buyer:** Matthew and Monika Wientzek**Deed Record:** : 2128-49**Type Residence:** Split Level**Rooms/Bedrooms/Baths:** 8/3/2.0**Lot Size:** 20,038 sq ft**Approximate Age:** 35 Years**Garage:** One Car**Basement:** Yes/Recreation Room**House Size:** 1,750 ± sq ft

Comments: This is a centrally air conditioned, split level style house with no fireplace. The rear yard is improved with a tennis court and basketball court. The ground level offered an in law suite. The condition was average at the time of the sale.

MATCHED PAIR #2 LOCATION MAP BEFORE AND AFTER



Re: Kirkwood Highway and Old Capitol Trail

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MATCHED PAIR #3 - BEFORE TOWER

Street Address: 4528 Shady Drive
Neighborhood: Klair Estates
Hundred: Mill Creek
Distance from Tower: 3/8 Mile (1980 feet)

**Sale Date:** September 1993**Price:** \$97,500**Seller:** Alma Igle**Buyer:** Wendy Davis**Deed Record:** 1591-140**Type Residence:** Ranch**Rooms/Bedrooms/Baths:** 6/3/1**Lot Size:** 14,375 sq ft**Approximate Age:** 39 Years**Garage:** One Car**Basement:** None**House Size:** 1,200 ± sq ft

Comments: This is a typical ranch style house with a fireplace in the living room and a breezeway between the house and garage. It was in average condition at the time of the sale.

Re: Kirkwood Highway and Old Capitol Trail

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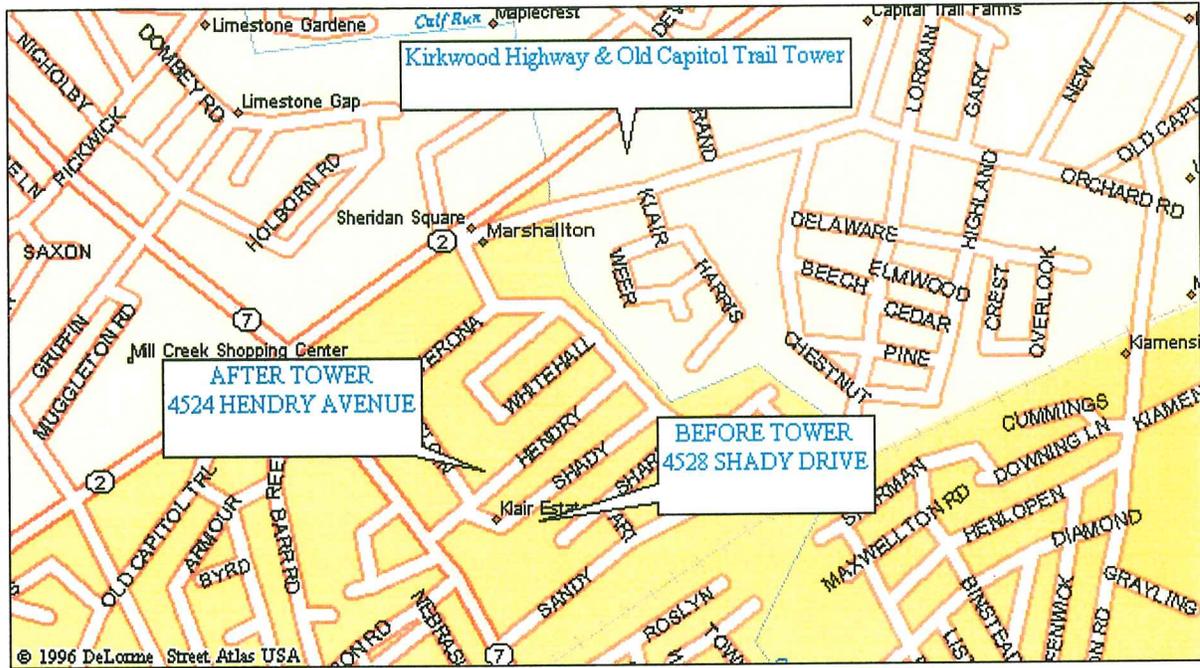
MATCHED PAIR #3 – AFTER TOWER

Street Address: 4524 Hendry Avenue
Neighborhood: Klair Estates
Hundred: Mill Creek
Distance from Tower: 5/16 Mile (1650 feet)

**Sale Date:** September 1997**Price:** \$99,900**Seller:** Peter Blondin**Buyer:** Marie Donnelly**Deed Record:** 2329-42**Type Residence:** Ranch**Rooms/Bedrooms/Baths:** 6/3/1**Lot Size:** 8,050 sq ft**Approximate Age:** 45 Years**Garage:** One Car**Basement:** None**House Size:** 1,200 ± sq ft

Comments: This is a typical ranch style house with a fireplace in the living room, a breezeway between the house and garage, and wood deck at the rear of the house. The condition was good at the time of the sale.

MATCHED PAIR #3 LOCATION MAP BEFORE AND AFTER



Re: Kirkwood Highway and Old Capitol Trail

Page 55

**SALES ANALYSIS OF PROPERTIES
NEAR KIRKWOOD HIGHWAY TOWER**

Pairing	Before Tower			After Tower			Difference	Comments
	Property	Date	Sale Price	Property	Date	Sale Price		
1	4 Weer Circle	8/95	\$101,000	20 Weer Circle	8/6	\$96,900	-4%	20 Weer Circle Sold due to job transfer
2	4515 Hendry Avenue	7/94	\$119,000	4207 Verona Drive	6/96	\$118,500	0%	4515 Hendry Avenue In ground pool, smaller site, fireplace, updated kitchen
3	4528 Shady Drive	9/93	\$97,500	4524 Hendry Avenue	9/97	\$99,900	+2%	4524 Hendry Avenue Superior condition, deck

CONCLUSIONS

The paired sales utilized showed a price variance ranging from -4 percent to +2 percent in favor of the properties after construction of the tower. Each of the sales had characteristics justifying these price discrepancies. Given the minor differences in prices and the high degree of comparability exhibited by the paired sales, the closest surrounding neighborhood to this tower has not demonstrated any measurable differences in property values before or after the influence of the tower.

Re: Boyd's Corner

Page 56

**Boyd's Corner Tower
St. George's Hundred
New Castle County, Delaware**



Type of Tower: Monopole

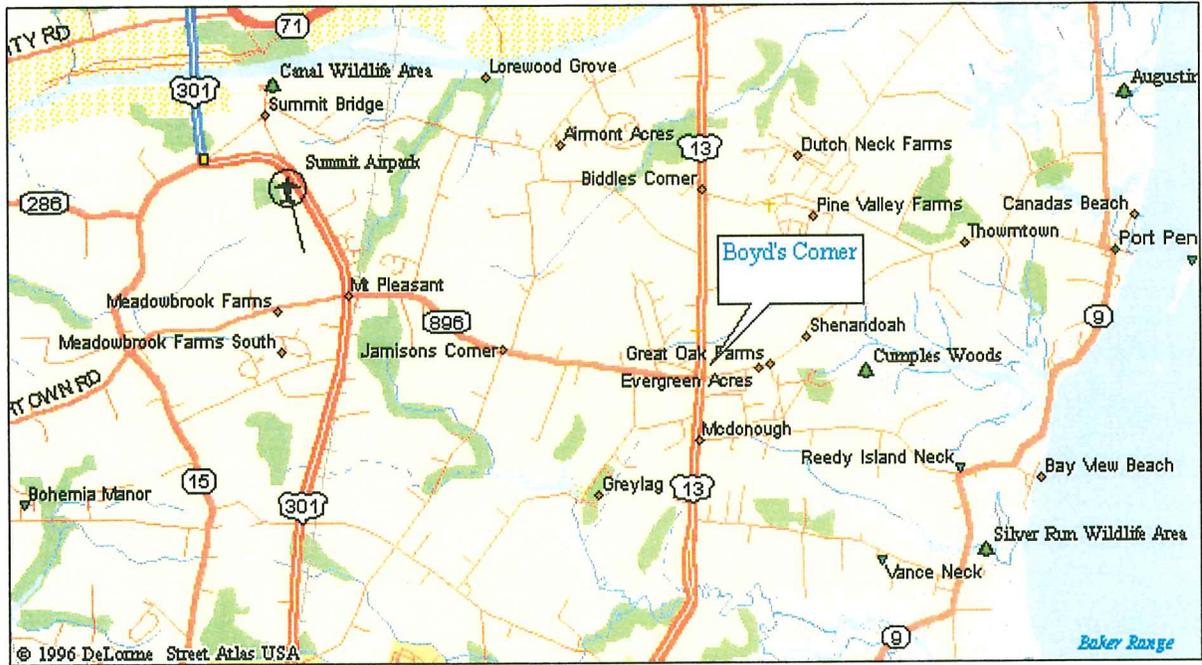
Height: 133 feet

Certificate of Occupancy: Approximately June 29, 1998

Comments: This tower is situated at the northeast corner of the intersection of Pole Bridge Road and South DuPont Highway (Route 13). It is located on a commercially zoned parcel developed with a small strip shopping center anchored by a Wawa convenience store. The residential subdivision of Grande View Farms is located directly across from the tower in the northwest corner of the intersection, and has demonstrated price ranges from approximately \$150,000 to \$235,000. The vast majority of homes in the vicinity are single family detached residences of less than ten years of age. The residences are for the most part well maintained and exhibit pride of ownership. This location is approximately five miles northwest of downtown Wilmington and in good proximity to recreational facilities and other amenities. In this case, the potential impact of the tower has been measured by comparing the sales of lots in Grande View farms, the nearest subdivision to the tower, both pre and post tower.

Re: Boyd's Corner

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Re: Boyd's Corner

Page 58

MATCHED PAIR #1

Street Address: 242 Milford Drive
Neighborhood: Grande View Farms
Hundred: St. George's Hundred
Distance from Tower: ± 4,000 Feet northeast of the tower

**Before Sale Date:** June 1993**Price:** \$36,000**Seller:** Douglas P. Williams**Buyer:** James & Nicolette Lewis**Deed Record:** 1544-310**Lot Size:** 1.00 acre**After Sale Date:** August 1998**Price:** \$44,000**Seller:** James & Nicolette Lewis**Buyer:** Tim & Karen B. Lewis**Deed Record:** 2490-61**Lot Size:** 1.00 acre

Comments: This site sold prior to construction of the tower for \$36,000 and \$44,000 after construction of the tower. The property was subsequently developed with a Cape Cod style residence.

Re: Boyd's Corner

Page 59

MATCHED PAIR #2

Street Address: 716 Bullen Court
Neighborhood: Grande View Farms
Hundred: St. George's Hundred
Distance from Tower: ± 2,000 Feet northeast of the tower

**Before Sale Date:** March 1998**Price:** \$36,500**Seller:** Nick Canavati**Buyer:** Tuye Murdock**Deed Record:** 2416-37**Lot Size:** 1.12 acre**After Sale Date:** October 1999**Price:** \$42,500**Seller:** Tuye Murdock**Buyer:** M. Barbato & H. McCloskey**Deed Record:** 2722-254**Lot Size:** 1.12 acre

Comments: This represents the sale of a building site which sold for \$36,500 before the tower was built and \$42,500 after the construction of the tower. It was subsequently developed with a two story residence. The tower is visible from this property.

Re: Boyd's Corner

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MATCHED PAIR #3

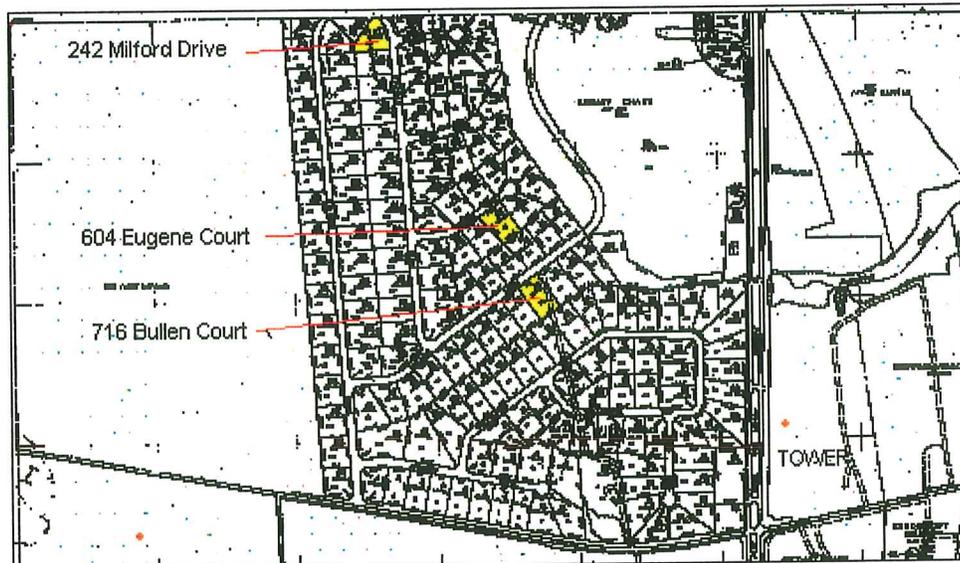
Street Address: 604 Eugene Court
Neighborhood: Grande View Farms
Hundred: St. George's Hundred
Distance from Tower: ± 2,500 Feet northeast of the tower

**Before Sale Date:** January 1996**Price:** \$38,500**Seller:** Maria Perdikis**Buyer:** Durga D. & Pushpa R. Singh**Deed Record:** 2040-145**Lot Size:** 1.00 acre**After Sale Date:** January 1999**Price:** \$41,000**Seller:** Durga D. & Pushpa R. Singh**Buyer:** Stephen M. & Ingrid M. Bennett**Deed Record:** 2567-216**Lot Size:** 1.00 acre

Comments: This one story residence was developed on this site subsequent to the construction of the tower. The lot sold for \$38,500 before the tower was constructed and for \$41,000 after the construction of the tower. The tower is visible from the property.

Re: Boyd's Corner

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**SALES ANALYSIS OF PROPERTIES
NEAR BOYD'S CORNER TOWER**

Pairing	Before Tower			After Tower			Difference	Comments
	Property	Date	Sale Price	Property	Date	Sale Price		
1	242 Milford Drive	6/93	\$36,000	242 Milford Drive	7/98	\$44,000	+22%	N/A
2	716 Bullen Court	3/98	\$36,500	716 Bullen Court	10/99	\$42,500	+16%	N/A
3	604 Eugene Court	1/96	\$38,500	604 Eugene Court	12/98	\$41,000	+7%	N/A

The data reviewed encompasses three lots in Grande View Farms, each of which sold prior to construction of the tower, and resold after the development of the tower. Grande View Farms is the closest residential development to the tower, located directly across Route 13 from the tower site. The tower was the subject of stringent objections by neighboring landowners and the County Council member from their district. The differences in the sale prices pre and post tower range from + 7 percent to + 22 percent in favor of the sales that

Re: Boyd's Corner

Page 62

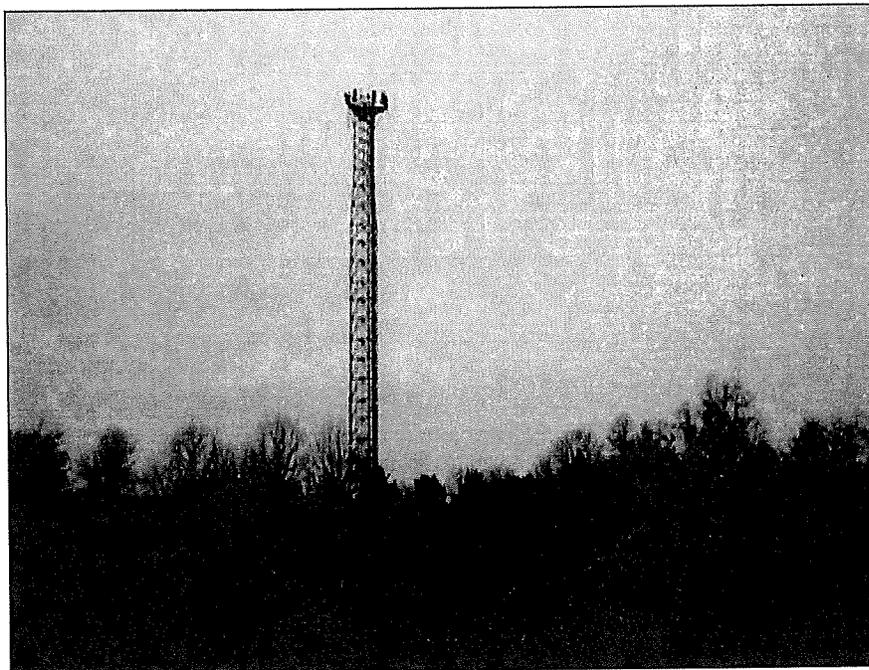
took place after the development of the tower. These differences were consistent with price trends in the neighborhood and area during the time period during which the sales occurred.

A review of lot sales in this community pre and post tower sheds additional light on the possible influence of the tower. From 1993 forward, there were seven lot sales that occurred prior to the development of the tower in June of 1998. These sales represented single building sites in Grande View Farms, ranging in price from \$32,000 to \$39,000, with an average price of approximately \$36,600. Interestingly, there have been five sales occurring since the development of the tower. These sales ranged in price from \$40,000 to \$44,000, with an average price of \$41,650. This increase in prices is reflective of market trends in the area, and demonstrates no diminution in value within the closest neighborhood to the tower.

Re: Owl's Ridge

Page 63

Owl's Ridge
Christiana Hundred
New Castle County, Delaware



Type of Tower: Lattice work
Height: Approximately 150 feet
Date of Construction: 1992 - 1994

Comments:

This tower is situated at the end of a cul de sac in the residential development of Owl's Ridge on a parcel of 2.69 acres. Owl's Ridge is a community of seven lots of two+ acres each. The tower itself is situated upon Lot #5. Owl's Ridge was developed after the construction of the tower, with homes in the \$725,000 price range. Other surrounding residential communities include, among others, Shanlyn (\$675,000 to \$2,100,000), Owl's Nest (\$400,000 to \$545,000), and Way Ridge (\$650,000 to \$940,000). Lot sizes in these neighborhoods are typically 2 acres or larger. The vast majority of homes are of single family detached custom construction, reflective of market norms in this quadrant of Christiana Hundred. This area is considered one of the most prestigious locations in New Castle County. In this instance, a comparison of matched pairs of building lots in close proximity to the tower and away from any possible influence of the tower were reviewed.

Re: Owl's Ridge

Page 64

MATCHED PAIR #1 - NEAR THE TOWER

Street Address: 2 Shanlyn Drive
Neighborhood: Shanlyn
Hundred: Christiana
Distance from Tower: ± 1300 Feet northeast of the tower



Date: March 1999

Price: \$210,000

Seller: Samuel F. & Mary Ellen Frabbizzio

Buyer: Norman V. & Pierrette S. Merkosky

Deed Record: 2613-216

Lot Size: 2 acres

Comments: This is a typical lot in the development of Shanlyn. It is located at the entrance of the development and backs to Owl's Nest Road.

Re: Owl's Ridge

Page 65

MATCHED PAIR #1 – AWAY FROM THE TOWER

Street Address: Alison's Way
Neighborhood: Centerville Tract
Hundred: Christiana
Distance from Tower: ± 2,600 Feet north of the tower



Sale Date: December 1998

Price: \$155,000

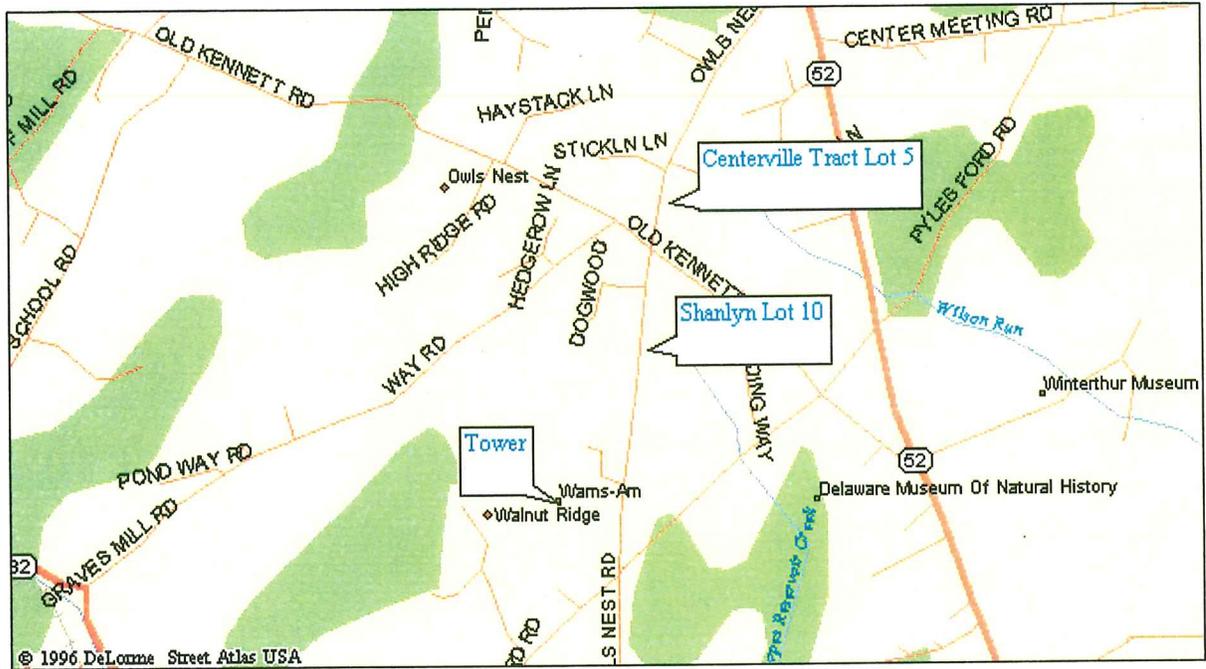
Seller: John A. Corrozzi

Buyer: John W. Dolan & Mary Ann Quarry

Deed Record: 2566-126

Lot Size: 2.11 acres

Comments: This is a typical, mostly rectangular shaped lot which has frontage on Owl's Nest Road.

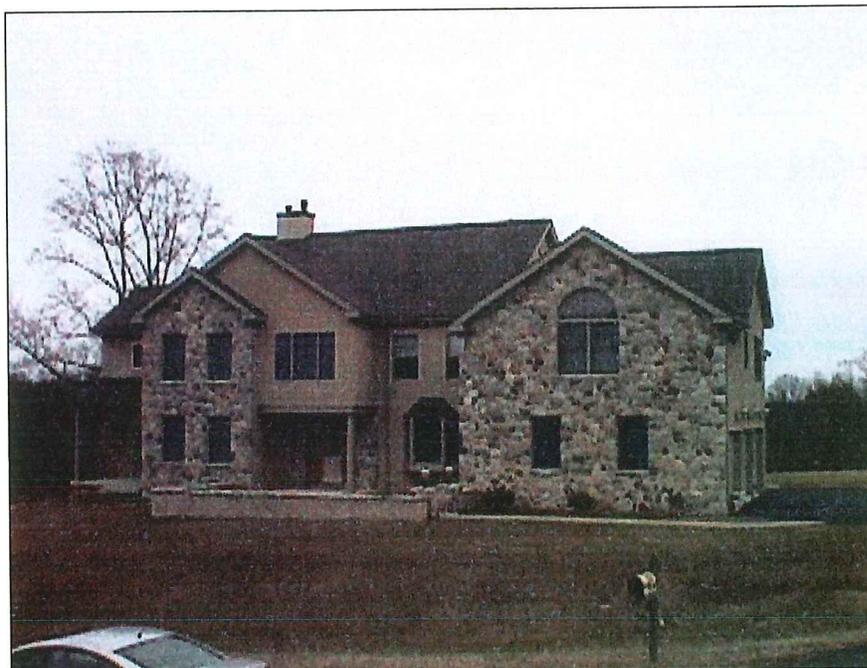


Re: Owl's Ridge

Page 67

MATCHED PAIR #2 – NEAR THE TOWER

Street Address: 1005 Talon Lane
Neighborhood: Owl's Ridge
Hundred: Christiana
Distance from Tower: 700 feet west of the tower



Sale Date: August 1996

Price: \$175,000

Seller: Kraus Contracting Co.

Buyer: Edmund and Christine Martinez

Deed Record: 2155-89

Lot Size: 2.00 acres

Comments: This two acre lot is located in the residential subdivision of Owl's Ridge. It is located only three lots from the tower location at the end of the cul de sac.

Re: Owl's Ridge

Page 68

MATCHED PAIR #2 – AWAY FROM THE TOWER

Street Address: Deer Valley Lane
Neighborhood: Deer Valley
Hundred: Christiana
Distance from Tower: 6,000 feet south of the tower



Sale Date: October 1995

Price: \$160,000

Seller: Serge & Linda C. Riley

Buyer: Richard & Eva M. Lodeski

Deed Record: 1900-57

Lot Size: 2.00 acres

Comments: This two acre lot in the residential development of Deer Valley is located on a cul de sac at the end of Deer Valley Lane.



Re: Owl's Ridge

Page 70

MATCHED PAIR #3 – NEAR THE TOWER

Street Address: 813 Owls Nest Road
Neighborhood: Non development
Hundred: Christiana
Distance from Tower: 900 feet northeast of the tower



Sale Date: February 1997

Price: \$240,000

Seller: Edward H. Porter, et al

Buyer: Thomas D. & Diane R. Wren

Deed Record: 2235-58

Lot Size: 3.06 acres

Comments: This three acre lot is located on Owl's Nest Road directly across from the entrance to Shanlyn. It is a mostly rectangular shaped, relatively level lot with approximately 235 feet of frontage on Owl's Nest Road.

Re: Owl's Ridge

Page 71

MATCHED PAIR #3 – AWAY FROM THE TOWER

Street Address: 1105 Hillside Road
Neighborhood: Non development
Hundred: Christiana
Distance from Tower: 5,000 feet southeast of the tower



Sale Date: February 1998

Price: \$235,000

Seller: Thomas C. & Jill Canters Cirbis

Buyer: Gerard J. & Michelle B. Capano

Deed Record: 2398-212

Lot Size: 2.60 acres

Comments: This lot is a flag shaped parcel located just east of the intersection of Hillside Road and Centerville Road.



Re: Owl's Ridge

Page 73

**SALES ANALYSIS OF PROPERTIES
IN THE VICINITY OF THE OWL'S NEST TOWER**

Pairing	Near Tower			Away From Tower			Difference	Comments
	Property	Date	Sale Price	Property	Date	Sale Price		
1	Shanlyn Lot 10	3/99	\$210,000	Centerville Tract Lot 5	12/98	\$155,000	+35%	Centerville Tract lot offered less privacy
2	Owl's Ridge Lot 6A	5/97	\$182,000	Deer Valley Lot 10	10/95	\$160,000	+14%	Owl's ridge lot sold over a year after the Deer Valley sale
3	813 Owl's Nest Road	2/97	\$240,000	1105 Hillside Road	2/98	\$235,000	+2%	Hillside Road is a flag shaped lot

CONCLUSIONS

This tower site was analyzed in a different manner than the other sites. This tower was installed in the early 1990s. The market was initially studied to ascertain if there were sales of properties both pre and post tower that would indicate the impact of the tower on the surrounding neighborhood. The research produced no data that could be related in this manner; therefore, the market was studied to determine whether participants would differentiate between a property in close proximity to the tower, and another similar property well removed from the influence of the tower. This methodology produced ample data from which to analyze this segment of the market.

The paired sales utilized showed a price variance ranging from +2 percent to +35 percent in favor of the properties that are closer to the tower. There were characteristics of each of the sales justifying these price discrepancies. Given the logical differences in prices and the high degree of comparability exhibited by the paired sales, the neighborhoods and properties near this tower have not demonstrated any measurable differences in property values before or after the influence of the tower.

The differences in prices demonstrated by these sales is somewhat higher than the price ranges indicated by sales near the other four tower sites. This is reasonable since the price

Re: Owl's Ridge

Page 74

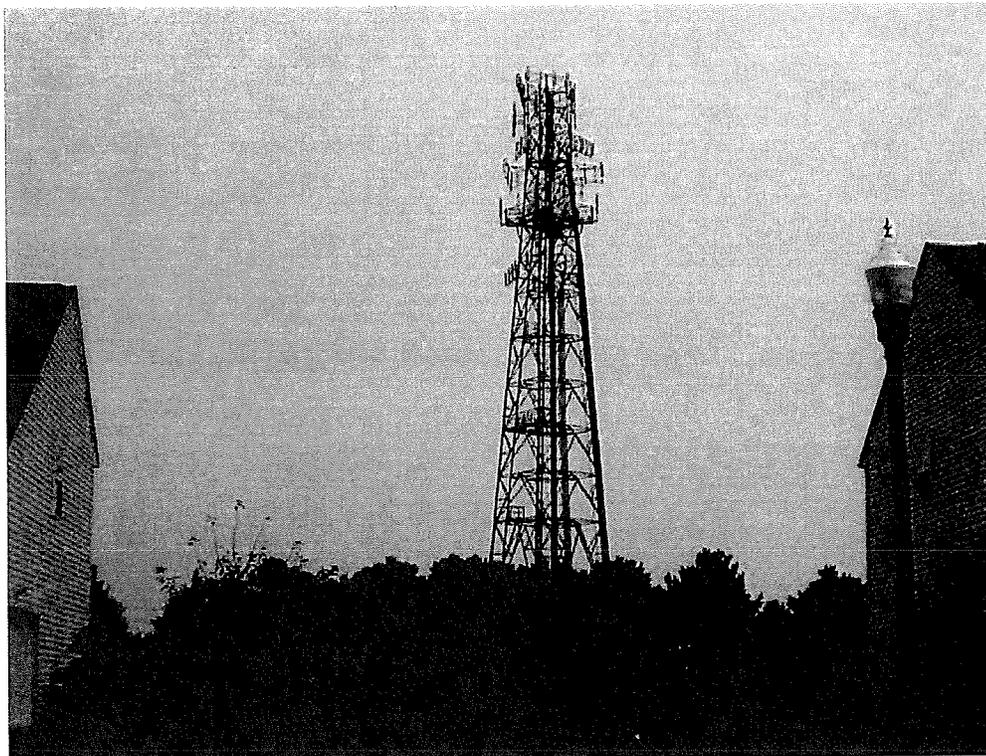
ranges in this area, which is populated almost exclusively by custom homes and "estate" residences, is broader than in the more homogeneous communities surrounding the other tower sites. Although this data has a wider degree of fluctuation than the data surrounding the four other tower sites, it is presented because it represents a valid analysis of the potential impact of a tower installation in the heart of a prestigious community of custom residences.

This result was tested by a review of other similar lot sales for each of these matched pairs. In each case, no positive correlation was found between proximity to the tower and a reduction in price. When other differences between the various sales were considered the tower was clearly indicated to be a neutral variable.

Re: Amberwood

Page 75

**Amberwood
Pencader Hundred
New Castle County, Delaware**



Type of Tower: Lattice work

Height: 100+ feet

Date of Construction: Circa 1960's

Comments: This tower is situated at 2472 Denny Road, just west of its intersection with Route 896 on a parcel of 3.34 acres. The tower is adjacent to the development of Amberwood, a community of approximately 170 lots of 1/2 acres each, with the exception of the homes located on Silver Birch Lane which are custom homes on lots of one acre or more. The tower itself is behind lots 18, 19 & 20 with the addresses of 33, 31 & 29 Karens Way. Amberwood was developed after the construction of the tower, with homes in the \$200,000 price range at the time of development. Current prices in Amberwood range from approximately \$350,000 to \$400,000+. Other surrounding residential communities include, among others, Clairborne at Lexington Farms (\$265,000 to \$395,000), Brennan Estates (\$200,000 to \$370,000), and Clear Creek At Lexington Farms (\$330,000 to \$430,000). Lot sizes in these neighborhoods range from less than 1/2 acre to just over one acre. The vast majority of homes are of single family detached construction, reflective of market norms in this quadrant of Pencader Hundred. In this instance, a comparison of matched pairs of lots adjacent to the tower, as opposed to lots in lesser proximity to the tower and away from any possible influence of the tower were reviewed.

Re: Amberwood

Page 76

MATCHED PAIR #1 - NEAR THE TOWER

Street Address: 35 Karens Way
Neighborhood: Amberwood
Hundred: Pencader
Distance from Tower: Adjacent Lot

**Sale Date:** February 2001**Price:** \$249,000**Seller:** Melville W. & Juanita Gail Hedges**Buyer:** Cheryl E. & Jonathan L. Lund**Deed Record:** 20010223 0012079**Type Residence:** 2 Story Colonial**Rooms/Bedrooms/Baths:** 4 2/1/**Lot Size:** 23,087 square feet**Approximate Age:** 1 Years**Garage:** Three Car**Basement:** Full Unfinished**House Size:** 2,750 ± sq ft

Comments: This is a typical residence in the development of Amberwood, located adjacent to the cell tower.

Re: Amberwood

Page 77

MATCHED PAIR #1 – AWAY FROM THE TOWER

Street Address: 117 Amberwood Drive
Neighborhood: Amberwood
Hundred: Pencader
Distance from Tower: ± 1,250 Feet south of the tower

**Sale Date:** March 2001**Price:** \$251,330**Seller:** Marra Corporation**Buyer:** Kathy W. & Thomas P. Kelly**Deed Record:** 20010323 0019987**Type Residence:** 2 Story Colonial**Rooms/Bedrooms/Baths:** 4/2/1**Lot Size:** 21,780 square feet**Approximate Age:** 0 Years**Garage:** Two Car**Basement:** Full Unfinished**House Size:** 3,200 ± sq ft

Comments: This is a typical residence in the development of Amberwood, situated approximately one block away from the tower. The tower is visible from the residence, but the view is far less prominent than that from the residence at 35 Karens Way.

Re: Amberwood

Page 78

MATCHED PAIR #2 – NEAR THE TOWER

Street Address: 31 Karens Way
Neighborhood: Amberwood
Hundred: Pencader
Distance from Tower: Adjacent to the tower

**Sale Date:** December 2003**Price:** \$305,000**Seller:** Judith A. & David B. Downes**Buyer:** Aquerrevere Olga & Luis Gonzales**Deed Record:** 20040106 002198**Type Residence:** 2 Story Colonial**Rooms/Bedrooms/Baths:** 4/2/1**Lot Size:** 23,522 square feet**Approximate Age:** 4 Years**Garage:** Two Car**Basement:** Full Unfinished**House Size:** 3,125 ± sq ft**Comments:** This lot is located adjacent to the tower in the subdivision of Amberwood.

Re: Amberwood

Page 79

MATCHED PAIR #2 – AWAY FROM THE TOWER

Street Address: 303 Red Cedar Lane
Neighborhood: Amberwood
Hundred: Pencader
Distance from Tower: 1,000 feet south of the tower

**Sale Date:** August 2003**Price:** \$335,000**Seller:** Robin A. Tobin & James R. Duncan**Buyer:** Lisa A. & Eric M. Bliss**Deed Record:** 20030819 0099495**Type Residence:** 2 Story Colonial**Rooms/Bedrooms/Baths:** 4/2/1**Lot Size:** 21,780 square feet**Approximate Age:** 3 Years**Garage:** Two Car**Basement:** Full Unfinished**House Size:** 3,800 ± sq ft

Comments: This lot in the residential development of Amberwood is located approximately one block away from the tower. The tower is visible from the residence, but the view is far less prominent than that from the residence at 31 Karens Way.

Re: Amberwood

Page 80

MATCHED PAIR #3 – NEAR THE TOWER

Street Address: 35 Karens Way
Neighborhood: Amberwood
Hundred: Pencader
Distance from Tower: Adjacent Lot

**Sale Date:** June 2005**Price:** \$374,000**Seller:** Cheryl E. & Jonathan L. Lund**Buyer:** Prudential Residential Services**Deed Record:** 20050624 0062514**Type Residence:** 2 Story Colonial**Rooms/Bedrooms/Baths:** 4 2/1/**Lot Size:** 23,087 square feet**Approximate Age:** 1 Years**Garage:** Three Car**Basement:** Full Unfinished**House Size:** 2,750 ± sq ft

Comments: This is a typical lot and residence in the development of Amberwood. It is located adjacent to the cell tower.

Re: Amberwood

Page 81

MATCHED PAIR #3 – AWAY FROM THE TOWER

Street Address: 8 Riva Ridge Lane
Neighborhood: Clear Creek at Lexington Farms
Hundred: Pencader
Distance from Tower: Approximately 2,500 feet southwest of the tower

**Sale Date:** April 2005**Price:** \$360,000**Seller:** Vincent & Colleen Disabella**Buyer:** Robert E. & Eileen M. Schultz**Deed Record:** 20050502 0041010**Type Residence:** 2 Story Contemporary**Rooms/Bedrooms/Baths:** 4 2/1/**Lot Size:** 15,682 square feet**Approximate Age:** 5 Years**Garage:** Two Car**Basement:** Full Finished**House Size:** 2,850 ± sq ft

Comments: This lot is a rectangular shaped parcel located in the subdivision of Clear Creek. The residences in Clear Creek were developed in the same general time period as those in Amberwood and are in the same competitive market. Clear Creek adjoins Amberwood, however, the tower is not visible from this residence, and it is well removed from any reasonable influence on prices.

Re: Amberwood

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Relative Location of Matched Pairs

Yellow – Matched Pair #1
 Green - Matched Pair #2
 Orange – Matched Pair #3

**SALES ANALYSIS OF PROPERTIES
 IN THE VICINITY OF THE AMBERWOOD TOWER**

Pairing	Near Tower			Away From Tower			Difference	Comments
	Property	Date	Sale Price	Property	Date	Sale Price		
1	35 Karens Way	2/01	\$249,000	117 Amberwood Drive	3/01	\$251,330	Less than 1 %	117 Amberwood is larger house, 35 Karens Way has 3 car garage
2	31 Karens Way	12/03	\$305,000	303 Red Cedar Lane	8/03	\$335,000	+9.8%	303 Red Cedar is much larger house
3	35 Karens Way	6/05	\$374,000	8 Riva Ridge Lane	4/05	\$360,000	+3.8%	Karens Way is larger house

APPRAISAL ASSOCIATES, INC.

Re: Amberwood

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CONCLUSIONS

This tower site was analyzed in a different manner than the other sites. This tower was installed circa the 1960s. Since the tower was in place at the time the neighborhood was developed, the method of analyzing sales of properties both pre and post tower was not viable. Therefore, the market was studied to determine (1) whether participants would differentiate between a property adjacent to the tower and a similar property in the same neighborhood but removed from direct proximity to the tower; and (2), between a property adjacent to the tower and a similar property in a nearby development removed from any potential influence of the tower. This methodology produced ample data from which to analyze this segment of the market.

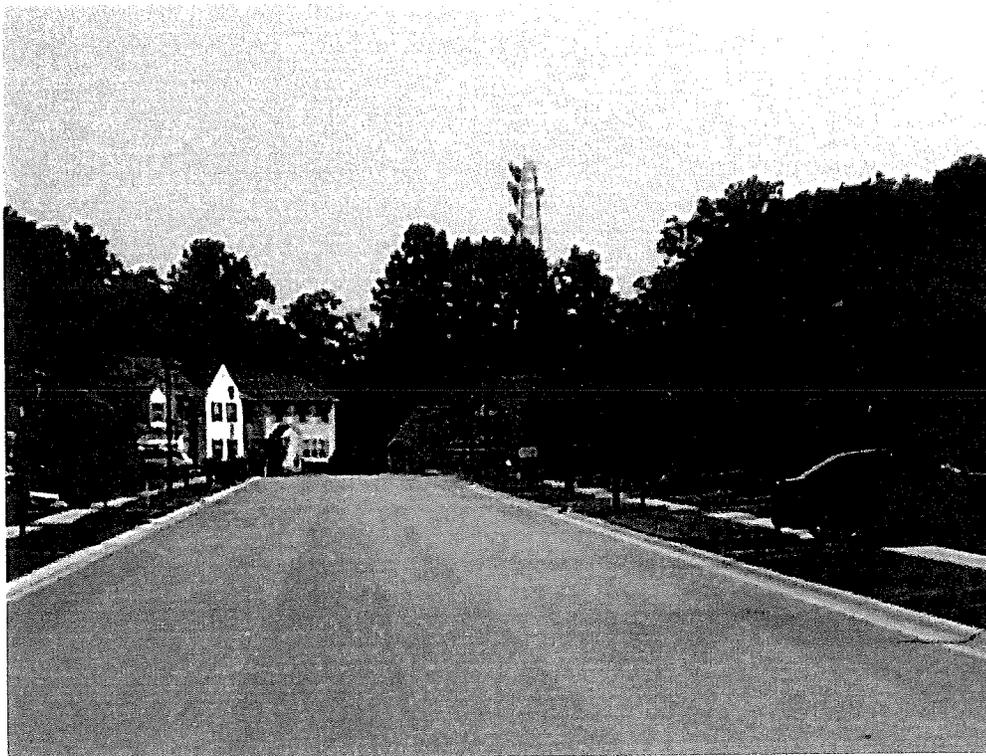
The paired sales utilized showed a price variance ranging from less than 1 percent to approximately +10 percent in favor of the properties that are closer to the tower. There were characteristics of each of the sales justifying these price discrepancies. Given the logical differences in prices and the high degree of comparability exhibited by the paired sales, the neighborhoods and properties near this tower have not demonstrated any measurable differences in property values before or after the influence of the tower.

This result was tested by a review of other similar lot sales for each of these matched pairs. In each case, no positive correlation was found between proximity to the tower and a reduction in price. When other differences between the various sales were considered the tower was clearly indicated to be a neutral variable.

Re: Ballymeade

Page 84

**Ballymeade
Brandywine Hundred
New Castle County, Delaware**



Type of Tower: Lattice work

Height: Approximately 100+ feet

Date of Construction: Unknown (Predated the development of Ballymeade)

Comments:

This tower is situated on the south side of Naamans Creek Road just east of Steven James Drive on a parcel of 13.29 acres. The tower is visible from Ballymeade Drive in Ballymeade, as shown in the above photograph. Ballymeade was developed after the construction of the tower, with homes in the \$200,000+ price range. Other surrounding residential communities include, among others, Talley Farms (\$260,000 to \$300,000), Crestfield (\$380,000 to \$490,000), and Northcrest (\$150,000 to \$320,000). Ballymeade is a development of both townhomes and single family residences. In this instance, a comparison of paired sales encompassed homes from which the tower was visible, and homes from which the tower was not visible.

Re: Ballymeade

Page 85

MATCHED PAIR #1 - NEAR THE TOWER

Street Address: 119 Ballymeade Drive
Neighborhood: Ballymeade
Hundred: Brandywine
Distance from Tower: ±2,800 feet (Tower is visible)

**Sale Date:** June 1999**Price:** \$246,295**Seller:** Baldini West**Buyer:** Lalit K. & Poonan Narang**Deed Record:** 2666 257**Type Residence:** 2 Story Colonial**Rooms/Bedrooms/Baths:** 4 2/1/**Lot Size:** 10,890 square feet**Approximate Age:** 0 Years**Garage:** Two Car**Basement:** Full Unfinished**House Size:** 2,850 ± sq ft

Comments: This is a typical lot in the development of Ballymeade. The cell tower is visible from this location.

Re: Ballymeade

Page 86

MATCHED PAIR #1 – AWAY FROM THE TOWER

Street Address: 110 Shrewsbury Drive
Neighborhood: Ballymeade
Hundred: Brandywine
Distance from Tower: ±3,200 feet (Tower is not visible)

**Sale Date:** June 1999**Price:** \$217,000**Seller:** John & Kristina Worthington**Buyer:** Michele Marcus**Deed Record:** 2667 28**Type Residence:** 2 Story Colonial**Rooms/Bedrooms/Baths:** 4 2/1/**Lot Size:** 7,450 square feet**Approximate Age:** 1 Years**Garage:** Two Car**Basement:** Full Unfinished**House Size:** 2,575 ± sq ft

Comments: This is a typical lot in the development of Ballymeade. Due to the topography of the development and screening by trees, the tower is not visible from this site.

Re: Ballymeade

Page 87

MATCHED PAIR #2 – NEAR THE TOWER

Street Address: 108 Ballymeade Drive
Neighborhood: Ballymeade
Hundred: Brandywine
Distance from Tower: ±3,000 feet (Tower is Visible)

**Sale Date:** May 2005**Price:** \$402,500**Seller:** Michael A. & Rachel D. Abrams**Buyer:** Katherine E. H. & John A. Skrobot III**Deed Record:** 20050601 0051298**Type Residence:** 2 Story Colonial**Rooms/Bedrooms/Baths:** 4 2/1/**Lot Size:** 7,450 square feet**Approximate Age:** 6 Years**Garage:** Two Car**Basement:** Full Finished**House Size:** 2,575 ± sq ft

Comments: This is a typical lot in the development of Ballymeade. The tower is visible from this residence.

Re: Ballymeade

Page 88

MATCHED PAIR #2 – AWAY FROM THE TOWER

Street Address: 124 Shrewsbury Drove
Neighborhood: Ballymeade
Hundred: Brandywine
Distance from Tower: ±3,000 feet (Tower is not visible)

**Sale Date:** April 2005**Price:** \$400,000**Seller:** Donna W. & David T. Donat**Buyer:** Robert V. Brogan Jr.**Deed Record:** 20050420 0037287**Type Residence:** 2 Story Colonial**Rooms/Bedrooms/Baths:** 4 2/1**Lot Size:** 6,534 square feet**Approximate Age:** 6 Years**Garage:** Two Car**Basement:** Full Unfinished**House Size:** 2,575 ± sq ft

Comments: This is a typical lot in the development of Ballymeade. Due to the topography of the development and screening by trees, the tower is not visible from this site. Due to the topography of the development and screening by trees, the tower is not visible from this site.

Re: Ballymeade

Page 89

MATCHED PAIR #3 – NEAR THE TOWER

Street Address: 105 Ballymeade Drive
Neighborhood: Ballymeade
Hundred: Brandywine
Distance from Tower: ±3,100 feet (Tower is visible)

**Sale Date:** September 2001**Price:** \$279,900**Seller:** Jhalman & Kulwant Dhillon**Buyer:** Susan & Stephen J. Desmond**Deed Record:** 20011001 0080518**Type Residence:** 2 Story Colonial**Rooms/Bedrooms/Baths:** 4/3/0**Lot Size:** 9,148 square feet**Approximate Age:** 2 Years**Garage:** Two Car**Basement:** Full Unfinished**House Size:** 2,775 ± sq ft

Comments: This is a typical lot in the development of Ballymeade. The tower is visible from this site.

Re: Ballymeade

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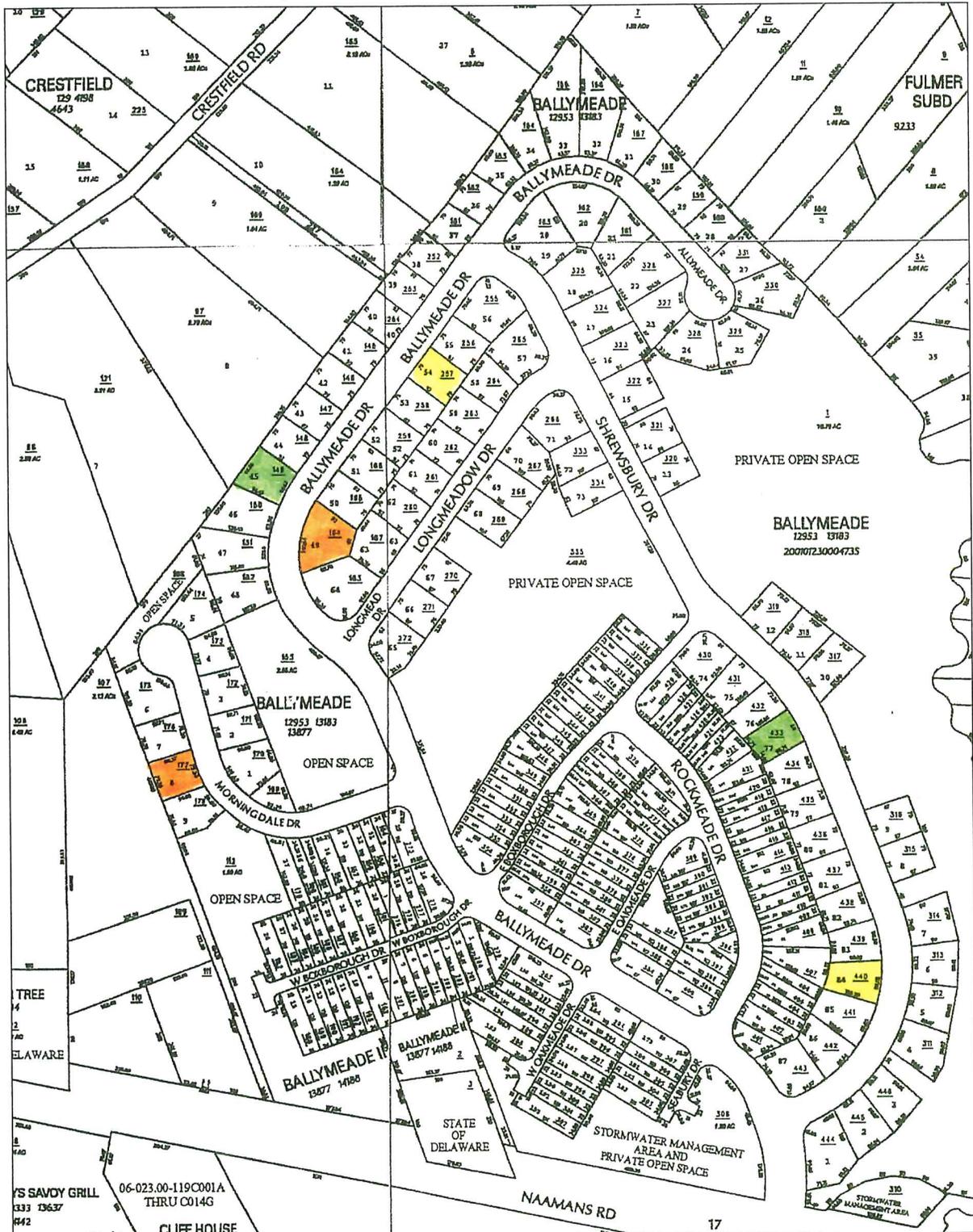
MATCHED PAIR #3 – AWAY FROM THE TOWER

Street Address: 921 Morningdale Drive
Neighborhood: Ballymeade
Hundred: Brandywine
Distance from Tower: ±3,900 feet (Tower not visible)

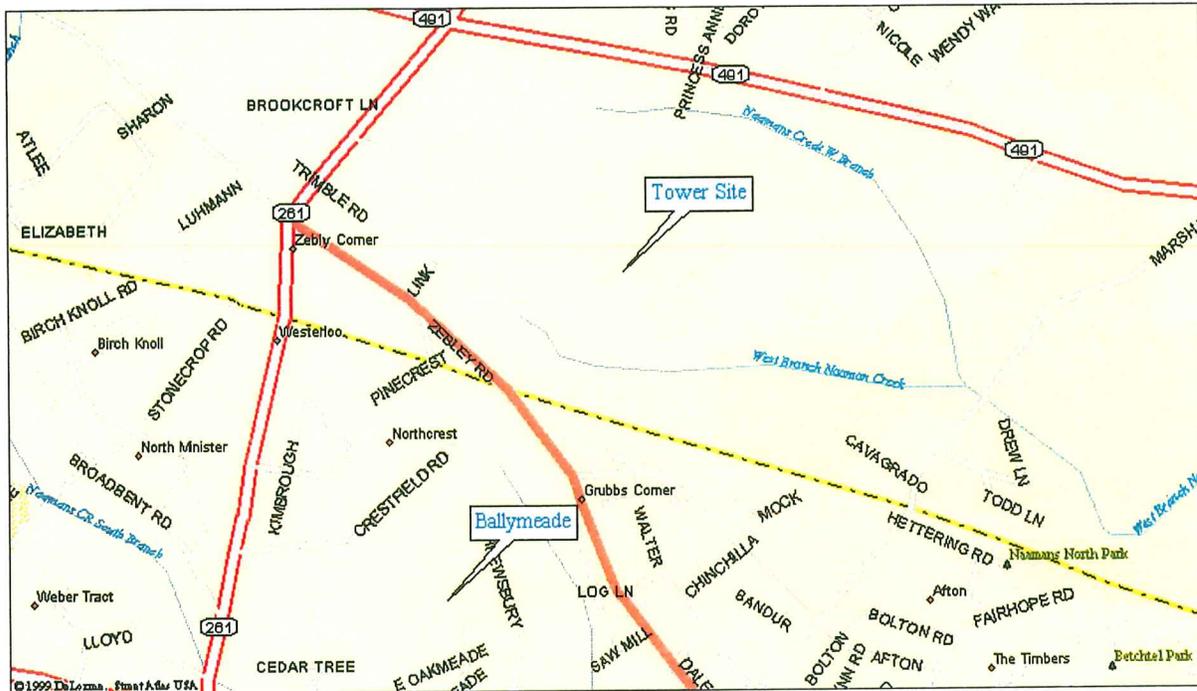
**Sale Date:** December 2001**Price:** \$259,900**Seller:** Baldini West**Buyer:** Xiu Juan & Shao Dong Wu**Deed Record:** 2000104 0001301**Type Residence:** 2 Story Colonial**Rooms/Bedrooms/Baths:** 4/3/0**Lot Size:** 7,600 square feet**Approximate Age:** 0 Years**Garage:** Two Car**Basement:** Full Unfinished**House Size:** 2,775 ± sq ft

Comments: This is a typical lot in the development of Ballymeade. Due to the topography of the development and screening by trees, the tower is not visible from this site.

Relative Location of Matched Pairs



Yellow - Matched Pair #1
 Green - Matched Pair #2
 Orange - Matched Pair #3



**SALES ANALYSIS OF PROPERTIES
IN THE VICINITY OF THE BALLYMEADE TOWER**

Pairing	Near Tower			Away From Tower			Difference	Comments
	Property	Date	Sale Price	Property	Date	Sale Price		
1	119 Ballymeade Drive	6/99	\$246,295	110 Shrewsbury Drive	6/99	\$217,000	+14%	119 Ballymeade is larger house on larger lot
2	108 Ballymeade Drive	5/05	\$402,500	124 Shrewsbury Drive	4/05	\$400,000	Less than 1%	Similar model
3	105 Ballymeade Drive	9/01	\$279,900	921 Morningside Drive	12/01	\$259,900	+7%	105 Ballymeade is on larger site

CONCLUSIONS

This tower was installed circa the 1960s and was present when the development was constructed. The market was studied to ascertain whether participants would differentiate between a property that had a view of the tower as opposed to a similar property that was in a location in the neighborhood that was shielded from and did not have a view of the tower. This methodology produced ample data from which to analyze this segment of the market.

Re: Ballymeade

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The paired sales utilized showed a price variance ranging from less than 1 percent to approximately +14 percent in favor of the properties that are closer to the tower. There were characteristics of each of the sales justifying these price discrepancies. Given the logical differences in prices and the high degree of comparability exhibited by the paired sales, the properties that had a view of the tower have not demonstrated any measurable differences in prices from those within the neighborhood that did not have a view of the tower.

This result was tested by a review of other similar lot sales for each of these matched pairs. In each case, no positive correlation was found between proximity to the tower and a reduction in price. When other differences between the various sales were considered the tower was clearly indicated to be a neutral variable.

The development was well received when it was originally marketed, with a brisk sales pace. Sales agents at the time Ballymeade was originally developed and as of recent date indicated that there was no effect on prices as a result of being able to view the tower from areas within the neighborhood, and it was noted by one agent who sold several homes in the neighborhood that Ballymeade has been arguably the highest appreciating community in Brandywine Hundred since the time it was developed.

Re: Brandywine Hunt

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**Brandywine Hunt
Brandywine Hundred
New Castle County, Delaware**

NOTE: Brandywine Hunt has three adjoining telecommunications towers. This represents one of the three towers, referred to as the Concord High School tower.



Type of Tower: Monopole

Height: Approximately 120+ feet

Location: Property of Concord High School

Date of Construction: Circa 2001

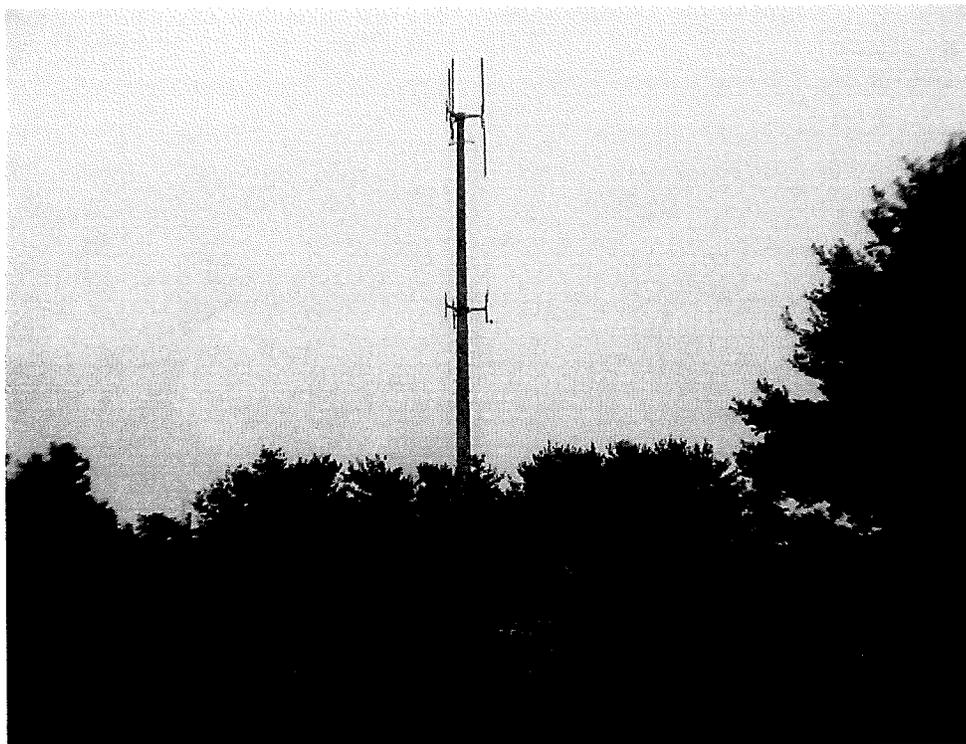
Comments: This tower is situated on the north side of Naamans Road just east of Sulky Circle in Brandywine Hunt on a parcel of 49 acres. The tower is visible from several vantage points in the development of Brandywine Hunt, most prominently from the cul de sac of Sulky Drive, where it is located just behind several residences.

Re: Brandywine Hunt

Page 95

**Brandywine Hunt
Brandywine Hundred
New Castle County, Delaware**

NOTE: Brandywine Hunt has three adjoining telecommunications towers. This represents one of the three towers, referred to as the Naamans Road tower.



Type of Tower: Monopole

Height: Approximately 120+ feet

Location: Property of Delmarva Power & Light

Date of Construction: Circa 2004

Comments: This tower is situated on the north side of Naamans Road just southeast of Sulky Circle in Brandywine Hunt on a parcel of .92 acres. The tower is visible from several vantage points in the development of Brandywine Hunt, most prominently on Sulky Drive where its site abuts two lots. A portion of one of the residences being constructed on Sulky Drive is visible at the right side of the photograph.

Re: Brandywine Hunt

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**Brandywine Hunt
Brandywine Hundred
New Castle County, Delaware**

NOTE: Brandywine Hunt has three adjoining telecommunications towers. This represents one of the three towers, referred to as the State Line tower.



Type of Tower: Monopole

Height: Approximately 130+ feet

Date of Construction: Circa 2000

Comments: This tower is situated on the south side of State Line Road just north of Derby Way in Brandywine Hunt on a parcel of 2.3 acres. The tower is visible from several vantage points in the development of Brandywine Hunt, most prominently on Derby Way where it sits above several lots. One of the undeveloped lots in Brandywine Hunt is situated in the foreground.

Pictures of Neighborhood & Tower Influence



View of State Line Tower From Model Home



View of Concord High School Tower From Model Home



View of Concord High School Tower From Sulky Drive Cul De Sac



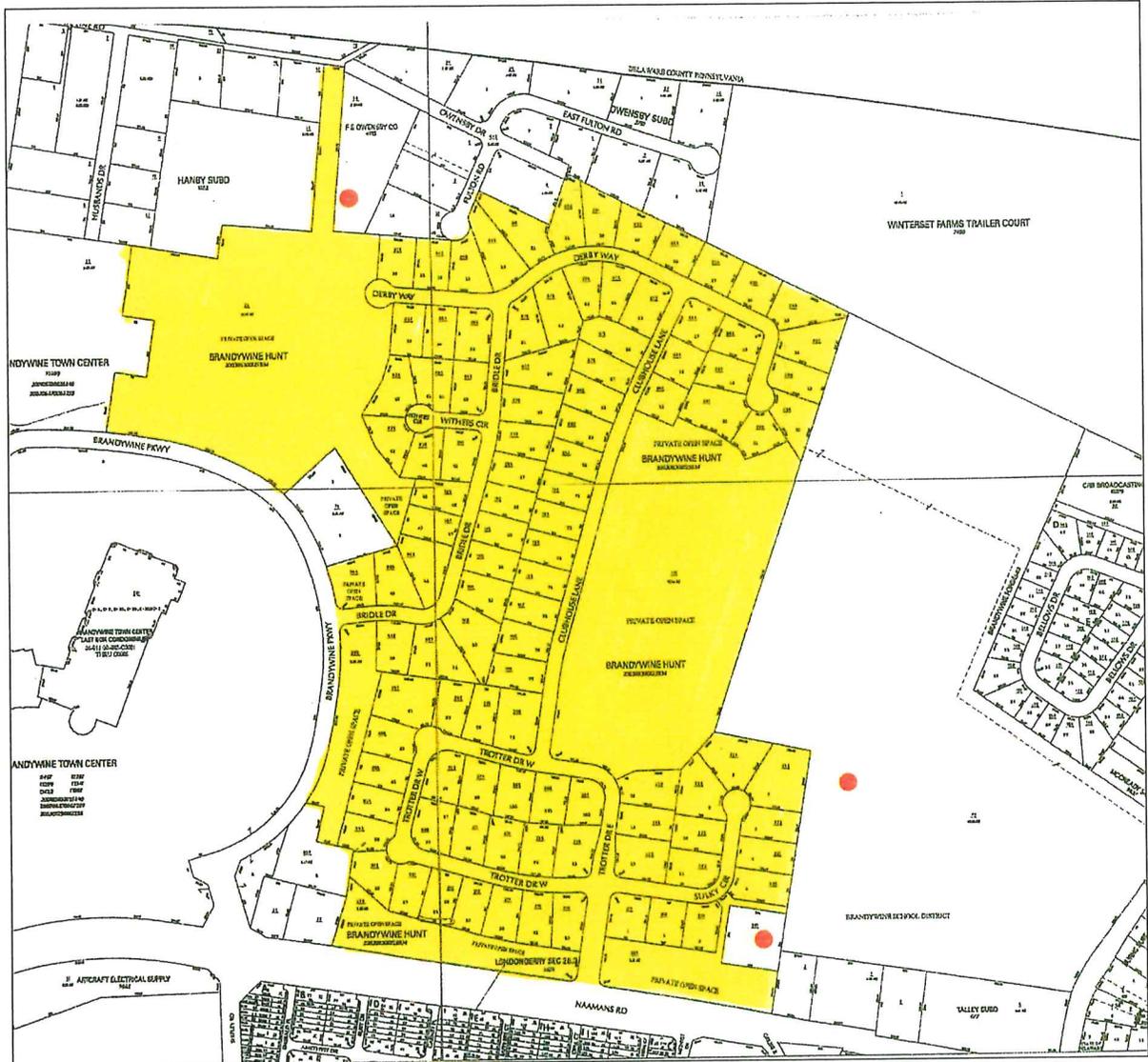
View of Concord High School Tower From Sulky Drive Cul De Sac

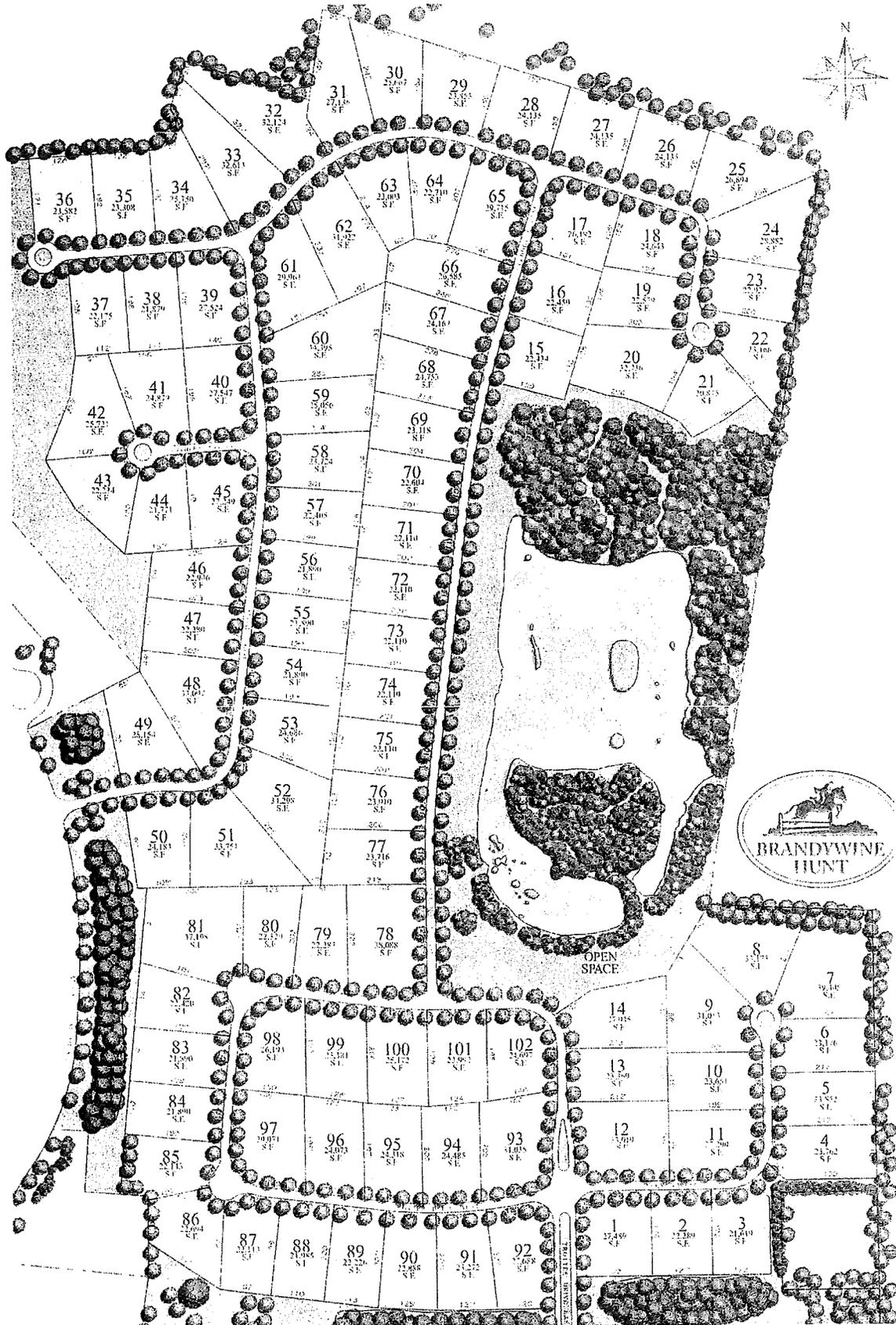


View of Naaman's Road Tower From Model Home



View of Naamans Road Tower From Sulky Drive





Re: Brandywine Hunt

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CONCLUSIONS

Two of the three towers that adjoin the residential subdivision of Brandywine Hunt were in place at the time the development process began, and all three were in place during the construction of the development. All are monopole installations, and all loom directly over residential lots within the community, a 102 lot, single family residential subdivision being developed as of the date of this study. All the towers are visible from numerous points throughout the development (including the model home), as well as being in close proximity to a number of lots.

The land for Brandywine Hunt was sold as a "raw" tract in September of 2002 to a group of investors for \$8,500,000, or approximately \$80,000 per acre, representing the highest price paid to date per acre for a significant parcel of raw land zoned for single family residential use in Brandywine Hundred. The tract was subdivided and resold in February of 2004 to Toll Brothers for \$21,000,000, or approximately \$195,000 per acre. This sale, in turn, represented the highest price paid per acre in Brandywine Hundred for a significant tract approved for single family residential subdivision.

The parcel's 102, one-half acre lots are being improved with single family semi-custom homes with base prices ranging from approximately \$685,000 to over \$800,000. 20 homes have been sold to date ranging in price from approximately \$675,000 to \$885,000, with an average sale price of approximately \$765,000. Of these 20 sales, the average sale price of the five homes located on a street directly under two of the towers was approximately \$775,000. The sales manager for the Brandywine Hunt project indicated that the presence of the towers was not an obstacle in selling the overall project or in selling those specific homes near the towers; and that there was no price differential for homes within direct proximity to the tower.

These represent the highest priced homes being sold in Brandywine Hundred (with the exception of a few homes near the Brandywine River that are custom residences in Delaware's "Chateau Country" and represent an entirely different market). The pace of sales/absorption is similar to that found in other successful Toll Brothers projects developed with similar type homes in Hockessin, another desirable Delaware market.

Although there is not enough sales data to create a logical "paired sales" analysis within the community, the evidence to date strongly indicates that the presence of three towers, all of which can be seen from numerous locations within the subdivision, and all of which are in close proximity to a number of lots within the community, has not negatively impacted values in this subdivision.

FINAL RECONCILIATION AND CONCLUSIONS

Eight communications tower locations were selected and the surrounding residential neighborhoods examined in order to ascertain any measurable diminution of value due to the presence of the tower. Numerous sales were reviewed in surrounding neighborhoods and specific data was studied and analyzed in detail in order to compare prices before and after development of the tower. Price variances range from -4 percent to +35 percent in favor of the properties after development of the tower. In all but one case the data ranged from -4 percent to +14 percent in favor of the properties after the development of the tower. This represents a tight range even prior to considering other differences between the sales. In all cases the paired sales had characteristics other than the tower such as differing lot and house sizes, condition, amenities, etc. which justified these minor price variances.

The data demonstrates that residences in close proximity to a tower (less than one quarter mile or 2,000 feet in the case of the vast majority of the sales studied) did not incur a measurable diminution in value after development of the tower. This information reflects market transactions involving knowledgeable buyers and sellers who purchased properties both before and after development of the tower; or alternatively, properties in close proximity to or well removed from the influence of the tower.

A final consideration is that of differences in the market areas studied as they relate to neighborhoods near the proposed subject tower. Seven of the neighborhoods examined in this study were in upper New Castle County, with one neighborhood in lower New Castle County below the C & D Canal. These locations were selected of necessity due to the availability of sufficient data to provide a valid measure of any ascertainable price differences as a result of the development or presence of the tower. In our opinion, the data selected represents the best and most probative evidence from which this type of potential impact can be objectively evaluated. This information measures market reactions of buyers and sellers to similar towers, in price ranges bracketing the prevailing values in the area surrounding the proposed tower.

Several additional points should be made.

First, the study involved a close analysis of homes demonstrating a wide range of prices, from approximately \$100,000 to well over \$750,000, which brackets the price range prevalent in the area of the proposed tower. Buyers and sellers of homes in the area of the proposed tower have similar income characteristics to the purchasers and sellers who acquired and sold homes located in a number of the neighborhoods in the study.

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Second, we were able to examine price trends of houses in upper New Castle County which were much closer to the actual location of the tower than would be the vast majority of houses in the neighborhoods near the proposed tower. In some cases the homes reviewed were literally adjacent to the tower. In the myriad of neighborhoods reviewed and the literally hundreds of sales data examined, not only did we find affirmative evidence that no measurable diminution in value took place due to the presence of a nearby tower, we found absolutely no indications of contradictory evidence that there was any negative impact due to the tower.

Finally, it should be noted that buyers are very discriminatory within any given price range. Buyers acquiring homes in a \$100,000 neighborhood will resist purchasing a residence near what they feel is an undesirable influence. Purchasers and homeowners in a \$100,000 neighborhood are just as tenacious as buyers in a \$500,000+ neighborhood, and will protest any perceived problems impacting their neighborhoods and discount their purchase prices accordingly if warranted by the market. The need and desire for privacy and freedom from undesirable influences cuts across price ranges.

In recognition of the data analyzed and based on our knowledge of the proposed telecommunications tower development, subject to the assumptions and limiting conditions noted therein; there is no reasonable basis to anticipate any measurable diminution of value to surrounding neighborhoods after development of the proposed tower.

STANDARD ASSUMPTIONS AND LIMITING CONDITIONS

1. This analysis is applicable only under the assumptions and limiting conditions stated. No fractional part of this appraisal is to be used in conjunction with another appraisal; such use renders it invalid.
2. No responsibility is assumed for matters legal in nature. Title is assumed to be marketable and free and clear of all liens and encumbrances, except as specifically described in the appraisal report.
3. Exhibits (if any) are included to assist the reader in visualizing the property. No survey of the property has been made by the appraiser and no responsibility is assumed in connection with such matters. The exhibits included in the report are for illustrative purposes only. The analysis covers the property as described within the report, and areas and dimensions noted are assumed to be correct.
4. Unless otherwise noted herein, it is assumed that there are no encroachments, zoning or restriction violations existing in subject property. No responsibility is assumed by us for matters of these natures such as validity and enforceability of leases and other rights, compliances, zoning and other laws, nor is any opinion on title rendered. The appraisal assumes that there are no existing judgments or pending or threatened litigation that may affect the value of the property.
5. Information, estimates and opinions contained in the report are obtained from sources considered reliable; however, no liability for them is assumed by the appraiser.
6. The appraiser, by reason of this report, is not required to appear in or give testimony in court, attend pre-trial conferences, or appear as required by subpoena with reference to the property appraised unless prior written arrangements have been made.
7. All mortgages, liens, encumbrances, leases and servitudes have been disregarded unless so specified within the report. The property is appraised as though under responsible ownership and competent management.
8. It is assumed that there are no hidden or unapparent conditions of the property, subsoil or structures which would render it more or less valuable. No responsibility is assumed for such conditions or for engineering which may be required to discover them.
9. It is assumed that all required licenses, consents or other legislative or administrative authority from any governmental or private or organization have been or can be obtained or renewed for any use on which the value estimate in this report is based.
10. It is assumed that there is full compliance with all applicable federal, state and local environmental regulations and laws unless non-compliance is stated, defined and considered in the appraisal report.
11. Portions of the property not inspected by the appraiser (if any) are assumed to be as reported or similar to other portions which were inspected.
12. No responsibility is assumed for events, actions, conditions or circumstances affecting the property or its value that take place subsequent to the date of value contained in the report, or the date of field inspection, whichever occurs first.
13. No changes in the federal, state or local laws, regulations or codes (including, without limitation, the Internal Revenue Code) are anticipated.

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14. The value conclusion(s) applies to the real estate only; it does not include personal property, machinery and equipment, trade fixtures, business value, goodwill or other non-realty items. Income tax considerations have not been included or valued. The appraisers make no representations as to the value increment which may be attributed to such considerations, unless noted herein.
15. The assumption is made that the property is not contaminated now nor will it be hazardous in the future. It must be clearly understood that the existence of hazardous material, which may or may not be present on the property, was not observed by the appraiser, nor is there any knowledge of the existence of such materials on or in the property. The appraiser, however, is not qualified to detect such substances. The presence of potentially hazardous materials may affect the value of the property. The value estimate is predicated on the assumption that there is no such material on or in the property that would cause a loss in value. No responsibility is assumed for any such conditions, or for any expertise or engineering knowledge required to discover them. The client is urged to retain an expert in this field, if desired.
16. The valuation is limited to the surface rights of the property and does not consider positive or negative effects to value due to subsoil conditions, mineral rights, etc. which would render the property more or less valuable. No subsoil analysis or testing was authorized or performed, and no responsibility is assumed for such conditions or for engineering which may be required to discover them.
17. No chemical or scientific tests were performed by the appraiser on the subject property, and it is assumed that the air, water, ground, and general environment associated with the property present no physical or health hazard of any kind unless otherwise noted in the report. It is further assumed that the site does not contain any type of dump site and that there are no underground tanks (or any underground source) leaking toxic or hazardous chemicals into the ground water or the environment unless otherwise noted in the report.
18. The assumption is made that all necessary building permits, subdivision permits and approvals, ingress and egress easements, offsite improvements, and other permits are in place and paid for and that the property will be delivered on an essentially "free and clear" basis. Mortgage requirements or other debt are not factored into the value estimates.
19. The Americans With Disabilities Act (ADA) became effective January 26, 1992. A compliance survey and analysis of this property to determine whether or not it is in conformity with the various detailed requirements of the ADA has not been completed. It is possible that a compliance survey of the property, together with a detailed analysis of the requirements of the ADA, could reveal that the property is not in compliance with one or more of the requirements. If so, this fact could have a negative effect upon the value of the property. Since we have no direct evidence relating to this issue, we do not consider possible noncompliance with the requirements of the ADA in estimating the value of the property.

20. The physical conditions of any building, structure, site improvements or other improvements noted herein or on the property are based on casual visual inspection. Electrical, heating, cooling, plumbing, roofing, sewer and/or septic system, mechanical equipment, water supply and the like are not specifically tested, but are assumed to be in good working order and adequate unless otherwise specified. No liability is assumed for these items or for the soundness of structural members since no engineering tests were made. If the client or any reader of the report has any concern regarding the structural, mechanical or protective components of the property described herein, or the adequacy or quality of utilities or the improvements, it is suggested that independent contractors, engineers or other experts in these disciplines be retained.
21. Economic conditions are generally assumed to be consistent with the current state of the economy, including interest rates on loans that were available as of the date of the analysis. No responsibility is assumed for changes in market conditions or for the inability of the client or any other party to achieve their desired results based upon the analysis herein. The analysis necessarily incorporates numerous estimates and assumptions regarding property performance, general and local business and economic conditions, the absence of material changes in the competitive environment and other matters. Some estimates and assumptions, however, will inevitably not materialize. Non-anticipated events and circumstances may occur; therefore, actual results achieved during the period covered by the analysis will vary from the estimates, and the variations may be material.
22. This report represents a value estimate based on the analysis as of a specific date and upon information known at the time the analysis was made. We do not assume any responsibility for incorrect analysis based on incorrect or incomplete information. If new information of significance comes to light, conclusions in this report are subject to change without notice.
23. This report was not prepared and shall not be used in connection with raising funds for the purchase of an equity interest in the property, including real estate limited partnerships and syndications.
24. No responsibility is accepted by us for considerations requiring expertise in other fields. Such considerations include, but are not limited to, legal descriptions and other legal matters; geologic considerations such as soils and seismic stability; and civil, mechanical, electrical, structural and other engineering and environmental matters.
25. Disclosure of the contents of this report is governed by the bylaws and regulations of the Appraisal Institute. No part of the report or the identity of the appraiser shall be disseminated to the general public by use of advertising, public relations media, news media, sales media or any other media for public communication, including public and private offerings, memoranda, etc. without the prior written consent of the author of the report. This restriction applies particularly as to the conclusions, the identity of the analysts or any reference to the Appraisal Institute or to the SRA and/or MAI designations.

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CERTIFICATION

I certify that, to the best of my knowledge and belief:

The statements of fact contained in this report are true and correct.

The reported analyses, opinions and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial and unbiased professional analyses, opinions, and conclusions.

I have no present or prospective interest in the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.

I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.

My engagement in this assignment was not contingent upon developing or reporting predetermined results.

My compensation is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.

My value conclusions, as well as other opinions expressed herein, are not based on a requested minimum valuation, a specific valuation, or the approval of a loan.

My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice and the requirements of the Code of Professional Ethics and the Standards of Professional Practice of the Appraisal Institute.

I have read, understood and satisfied the competency provision of USPAP.

I have made a personal inspection of the property that is the subject of this report.

The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

As of the date of this report, I have completed the requirements of the continuing education program of the Appraisal Institute.

No one provided professional assistance to the person signing this report.



Robert H. McKennon, CRE, MAI

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QUALIFICATIONS**ROBERT H. McKENNON, CRE, MAI**Business Experience:

Current - Owner & President, Appraisal-Associates, Inc.
 1982-1989 - Partner & Director, Appraisal-Associates, Inc.
 1982 - Vice President, Appraisal-Consultants, Inc.
 1977-1982 - Associated with Appraisal-Consultants, Inc.
 1975-1976 - Associated in real estate sales

Professional Affiliations:

Member of the Appraisal Institute, MAI, since 1983 (Certificate #6752)
 Member, The Counselors of Real Estate, CRE, since 1994 (Certificate #1619)
 Certified General Real Property Appraiser - State of Delaware (Certification #X1-0000026)
 Certified General Real Property Appraiser - State of Pennsylvania (Certification #GA-000928-L)
 Public Arbitrator, National Association of Securities Dealers Regulation (Arbitrator #A30850)
 Member, New Castle County Board of Realtors

Education:

Graduate of Tower Hill School, Wilmington, Delaware, 1970
 B.A. Tulane University, majoring in Economics, 1974

Appraisal Education:

Successfully completed all courses and experience requirements to qualify for the MAI designation.
 Currently certified under Appraisal Institute's continuing education program.

Scope of Appraisal Activity:

Experienced in various property types and aspects of real estate valuation including: residential, agricultural, condominium, institutional, office, commercial, industrial, conservation and other easements, unimproved land, development projects, partial takings for condemnation cases, investment, partial interests, limited partnerships, limited liability companies, special use properties, damages, and complex valuation problems.

Qualified expert - Various courts and arbitration hearings

Assignments have been completed in the States of Delaware, Maryland, Pennsylvania, New Jersey, and North Carolina.

Mr. McKennon's firm provides real estate appraisal and counseling services to financial institutions, attorneys, corporations, investors, developers, governmental agencies and individuals.

A partial list of clients for which assignments have been completed include:

Artisans' Savings Bank	PNC Financial Corp.
Bellevue Holding Company	Pennsylvania National Bank
Brandywine Conservancy	Salvation Army
Chase Manhattan Bank (USA), N.A.	Sprint PCS
Cingular	State of Delaware - various departments
Conectiv	Sun Oil Company
Conservation Fund	Sun National Bank
Delaware Solid Waste Authority	Texaco, Inc.
Delaware State Highway Department	U. S. Postal Service
Delle Donne & Associates	United States Life Insurance Company
E. I. duPont de Nemours & Company	Verizon
Exxon Corporation	Wachovia
First Union	Westvaco
ICI Americas, Inc.	Wilmington, City of
Mellon Bank	Wilmington Parking Authority
National Life of Vermont	Wilmington Savings Fund Society
New Castle County	Wilmington Trust Company
Numerous individuals, investors, attorneys, etc.	Winner Group Management

Bibliography

"The Impact of Communications Towers on Residential Property Values", Right of Way, March/April, 1999

"Impact of Commercial Development on Adjacent Residential Properties", The Appraisal Journal, January 1998

"Valuation of Wireless Communications Towers", Right of Way, September/October 2001

"The Impact of Cell Phone Towers on House Prices in Residential Neighborhoods", The Appraisal Journal, Summer 2005

"Telecommunications, the Wireless Personal Communications Services (PCS) Industry", The Appraisal Journal, April 1996

"The Impact of Detrimental Conditions on Property Values", The Appraisal Journal, October 1998

"Further Analysis of Transmission Line Impact on Residential Property Values", The Appraisal Journal, July 2003

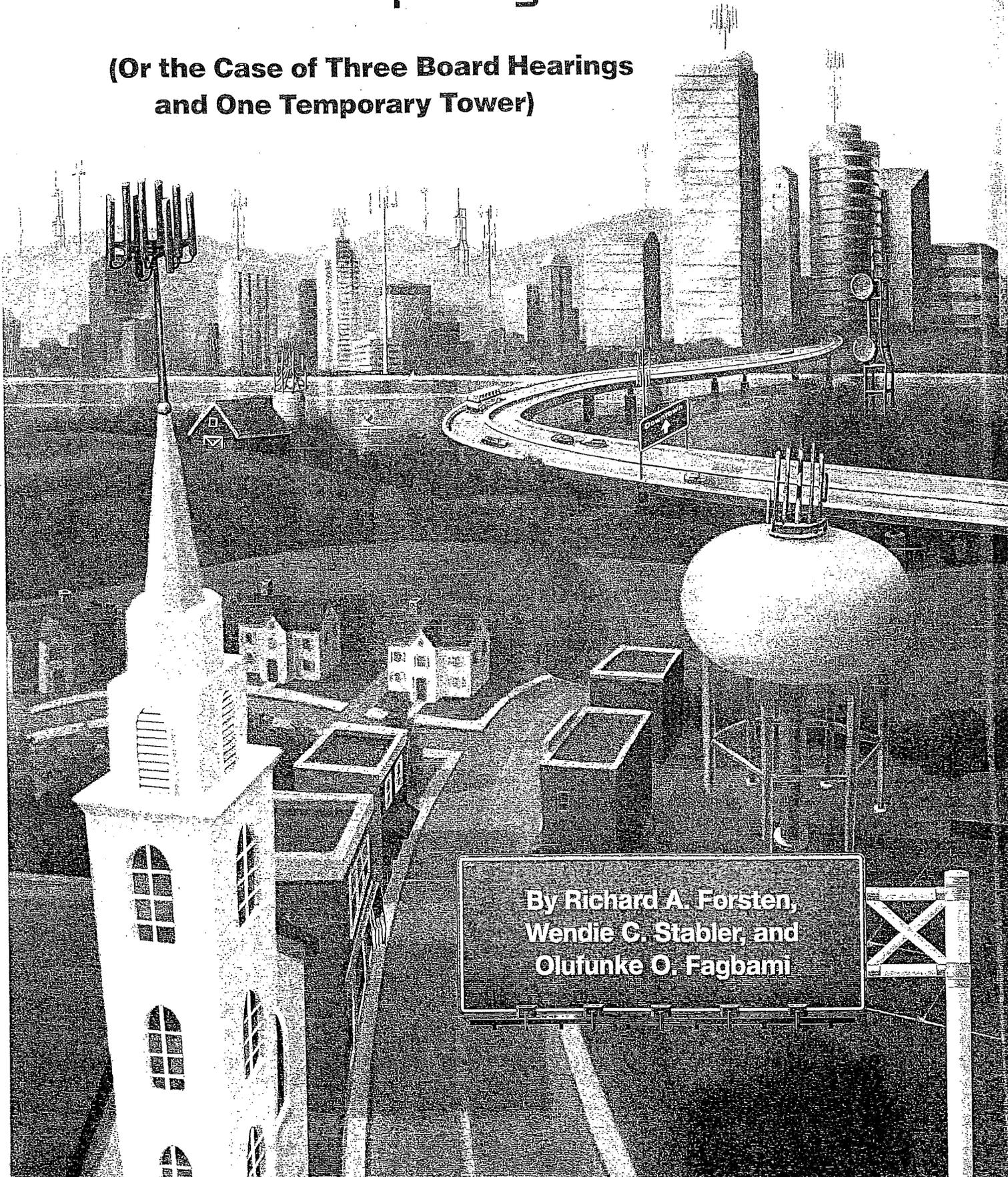
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Cell Phone Towers Do Not Affect Property Values

(Or the Case of Three Board Hearings and One Temporary Tower)



By Richard A. Forsten,
Wendie C. Stabler, and
Olufunke O. Fagbami

Cell phone use has exploded. Ten years ago, the iPhone did not exist. Smartphones did not exist. The iPad did not exist. Blackberries were cutting edge. There was no Twitter, no Instagram, no Pinterest. Facebook was still nascent, and MySpace was still popular. Today, people regularly access the Internet over their smartphones and tablets. They tweet, they post, they snapchat.

In just an eight-year period, from 2007 to 2014, AT&T saw a 100,000% increase in mobile data traffic on its wireless network—not a 100% increase, not a 1,000% increase, but a 100,000% increase. See Randall Stephenson, *Chairman's Letter*, AT&T 2014 Annual Report (Feb. 10, 2015), www.att.com/Investor/ATT_Annual/2014/letter_to_investors.html. National mobile data traffic is estimated to increase another sixfold from 2015 to 2020, at a compound annual growth rate of 42%. See Cisco, *VNI Mobile Forecast Highlights, 2015–2020*, www.cisco.com/assets/sol/sp/vni/forecast_highlights_mobile/index.html (last visited Feb. 23, 2016).

People have responded to this technology. And they like it. A lot.

But one thing people do not seem to like is cell towers—the infrastructure necessary to make the network work. Despite pundits who predicted that technology would reduce the number of towers, the need for additional towers and network capacity is greater than ever, as the network capacity to transmit data has been far outstripped by the ever-growing demands of a population abandoning its landlines in favor of the convenience of smartphones and mobile data access.

In most jurisdictions, proposed new cell towers must undergo some sort of public application process involving a public hearing. Given the chance, those in the area will oppose any proposed new tower. While the Federal Telecommunications Act of 1996, 47 U.S.C. § 332 (7)(B)(iv), prohibits jurisdictions from denying cell tower applications on the basis of alleged ill-health effects,

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neighbors invariably argue that a new tower will adversely affect property values (specifically theirs), so the pending tower application should be rejected.

Appraisers argue to the contrary. Cell towers, they point out, are much like other modern infrastructure (telephone poles, utility lines, streetlights, and so on). Although cell towers may initially be noticed, they quickly fade into the background and have no appreciable effect on value—just as telephone poles, utility lines, streetlights, and the other infrastructure of modern life do not affect value. Although this conclusion may seem counterintuitive to many, and certainly those opposing a new tower will vehemently disagree, it is borne out by the statistics and studies.

Recently, in Sussex County, Delaware, a unique set of circumstances made it possible to review the effect of a proposed tower on the property values of surrounding properties *before* the final approval was granted. Specifically, after an approval for a proposed tower was granted, it was challenged. While the challenge was pending, a temporary tower was erected in the location proposed for the permanent tower. The challenged approval was reversed and a new hearing ordered. Because the county has a policy of allowing zoning code violations to remain in place while the property owner seeks a variance or undertakes other remedial action (in this case, the new hearing process), the county allowed the temporary tower to remain.

Over the course of the next two years, while the challenges to the tower played out before the Sussex County Board of Adjustment and the Delaware courts, the temporary tower remained, allowing the tower applicant to analyze property values before and after the temporary tower was constructed and to measure its effect on local property values as compared to the market as a whole. In fact, as further described herein, and consistent with the broader literature on the subject, the actual data for the site in question confirmed no effect on value.

This article is divided into three parts. First, it reviews various studies

and analyses available on the valuation question, all of which generally indicate that cell towers have little or no effect on the value of nearby properties. Following this general review, the article examines the case of *AT&T v. Sussex County Board of Adjustment*, No. S14A-04-001 MJB, 2015 WL 1975629 (Del. Super. Ct. Apr. 30, 2015), in which AT&T was able to demonstrate that its proposed tower would have no effect on value because, during the pendency of the lengthy appeals process concerning the originally-approved tower, AT&T had erected a temporary tower, which was shown to have no effect on value. Put another way, unlike most cell tower applications in which opponents argue that studies from other areas are not indicative of the effect the proposed tower will have on their properties, AT&T was able to conclusively demonstrate that the proposed tower in the proposed location would have no effect on nearby property values. Finally, this article concludes with some other lessons from the *AT&T* case.

Generally Speaking, Cell Towers Do Not Affect Property Value

Generally speaking, most studies of the issue conclude that proximity to a cell tower has no significant effect on property values. For example, a 2001 study by Thorn Consultants, which examined 85 transactions involving homes and 26 transactions involving vacant lots, concluded that “proximity to the cell site did not affect sale prices of homes or residential lots within the Potomac study area.” See Thorne Consultants, Inc., *Monopole Impact Study on Residential Real Estate Prices for Homes and Residential Lots in the Vicinity of the Bullis School, Potomac, Montgomery County, Maryland* (May 2, 2001), at 3. The 2001 study, in turn, referenced a 1998 study in the Richmond, Virginia, area that examined six towers and 140 properties, and that also concluded “there was no consistent market evidence suggesting any negative impact upon improved residential properties exposed to such facilities in the areas included in the study.” See Allen G. Dorin Jr., MAI, SRA & Joseph W. Smith III, *The Impact of Communications Towers*

on Residential Property Values, Right of Way, Mar./Apr. 1999, at 17, available at <https://www.irwaonline.org/eweb/upload/0399b.pdf>. A 2004 study of homes in Orange County, Florida, found a minimal effect of 2% on value. See Sandy Bond, *Using GIS to Measure the Impact of Distance to Cell Phone Towers on House Prices in Florida*, Appraisal J., Fall 2007. A 2013 study from Chatham County, North Carolina, concluded that "the proposed tower will not adversely affect property values in the general vicinity of the tower," and a study from that same year in Holly Springs, North Carolina, concluded that for an existing tower, "there does not appear to be any significant or consistent change in value from the properties located [closer to or farther from the tower] . . . concluding that the tower does not affect the value of the properties as distance increases from [the] tower." See David A. Smith, *Impact Analysis of a Proposed Telecommunications Tower on the Values of Properties in the General Vicinity of the Tower Located on Poythress Road, Chatham County, North Carolina* (Sept. 10, 2013), at 1, available at www.chathamnc.org/RezoningSubdivisionCases/2013/9-16-13_BOC/Meacham_Cell_Lot/PH_Comments/Impact%20Analysis%20SK011715.pdf; Tom J. Keith & Associates, Inc., *Impact of Cell Tower on Surrounding Properties*, available at http://d39pcpjksqjx5i.cloudfront.net/media/re-research/cell_tower_study.pdf (last visited Feb. 23, 2016). Finally, a 2005 study from New Castle County, Delaware, looked at eight tower sites and similarly concluded that "the market demonstrates no ascertainable diminution of value to surrounding neighborhoods due to the installation or presence of a nearby communications tower." See Appraisal-Associates, Inc., *Impact of a Telecommunications Tower upon Values of Residential Properties* (Aug. 2005), at 93. "The data demonstrates that residences in close proximity to a tower (less than one quarter mile or 2,000 feet in the case of the vast majority of the sales studied) did not incur a measurable diminution in value after development of the tower." *Id.* at 92.

A 2005 survey conducted by researchers in New Zealand found an interesting bias. Although the study concluded that proximity to a tower did seem to affect value, it also found that those in the "control group," who did not live near a tower, expressed a great deal more concern over the effect of a tower on property value than those who lived near a tower. See Sandy Bond & Ko-Kang Wang, *The Impact of Cell Phone Towers on House Prices in Residential Neighborhoods*, Appraisal J., Summer 2005, at 256, 262-65. Specifically, almost half of the control group expressed concern about the effect on value, while only 13% of those living near a tower expressed concern, and more than 60% were not worried about the effect on value. *Id.* The researchers theorized that this difference between those who did not live near a tower versus those who did may be because those living near a tower did not want to express fears about property value decline that would then, in fact, lead to lower property values. *Id.* An explanation just as likely, if not more so, is posited by researchers whose studies find no general effect on value—that is, that because cell towers are perceived as part of today's modern infrastructure, they simply fade into the background and are not noticed. Those living near towers do not express concern, or do not perceive the cell towers as having a negative effect on property values, because the towers have simply faded into the background as part of the existing landscape.

Despite the general consensus that cell towers do not adversely affect property values, courts have sometimes allowed boards and administrative bodies to ignore studies from other jurisdictions and locations, on the apparent theory that such studies fail to take local factors into account. For example, in *Cingular Pennsylvania, LLC v. Sussex County Board of Adjustment*, No. 05A-12-003-RFS, 2007 WL 152548 (Del. Super. Ct. Jan. 19, 2007), at *8, the Delaware Superior Court justified the board's refusal to consider two out-of-state analyses because they "were not substantially similar to the proposed area in question." The court then suggested that Cingular could have

studied the effect its proposed tower would have on properties in the immediate area, but how to study an un-built tower was not explained. Indeed, this is the conundrum facing many applications—while studies and data based on other towers indicate no significant effect on value, opponents claim that such studies involving other areas and other towers should not apply to their particular properties.

In 2013, though, AT&T would find itself in the unique and unanticipated position of demonstrating that its proposed tower would have no effect on value based on actual market data from the actual geographic area surrounding the actual proposed tower. Thus, the challenge of disproving a negative had just become much easier.

AT&T v. Sussex County: One Cell Tower, Three Hearings, No Effect on Value

The case that would become *AT&T v. Sussex County Board of Adjustment* began in the early 2000s, when New Cingular Wireless PCS (which would later be acquired by AT&T) first identified the need for a new cell tower as part of its network in the general vicinity of Bethany Beach, Sussex County, Delaware. After several years of fits and starts, Cingular finally found a suitable site with a willing property owner—the rear of a combination Arby's Restaurant/BP Gas Station parking lot. The property was located on the east side of Route 1, the major north/south artery serving the Delaware beaches from Fenwick Island at the Maryland line to Rehoboth Beach to the north. A late night drive-thru for the Arby's was located on the back side of the building (the same side as the proposed tower) and a water retention pond was located at the very rear of the property. To the immediate south of the property was a furniture store and to the immediate north, a small undeveloped parcel. To the east and a portion of the southern boundary was a small (46-unit) condominium community called "Sea Pines." To the south of Sea Pines were a Holiday Inn Express and a seafood restaurant, and to the east of Sea Pines was the much larger, and considerably taller, Sea Colony

Condominiums, consisting of multiple nine-story buildings. See Figure 1.

Under the Sussex County Zoning Code, if a cell tower "is to be erected within 500 feet of any residentially zoned lot," as was the case here, a special use exception is required from the Board of Adjustment. Sussex County Code § 115-194.2(A). In addition to meeting certain technical requirements regarding height, setback, and lighting, among others, the applicant must also demonstrate that the special use exception will not "substantially affect adversely the uses of the adjacent and neighboring property." Sussex County Code § 115-210.

Cingular submitted its original cell tower application in September 2009. Neighbors opposed the tower, but the board granted the request by a 3-2 vote. Opponents of the project then appealed to the Delaware Superior Court; while the appeal was pending, Cingular, with the permission of the county, installed a temporary cell tower. After the temporary tower was erected and while the appeal was pending, it was discovered that the county had posted notice of the hearing on the wrong property (the undeveloped adjacent parcel to the north). Thus, the superior court held that, even though posting of a property is not *required* under county rules, and all other notices (for example, newspaper and mailings) had been properly given, if the county was going to post on a property, it needed to post on the correct property, and a new hearing was ordered. See *Sea Pines Vill. Condo. Ass'n of Owners v. Bd. of Adjustment*, No. S10A-01-003 THG, 2010 WL 8250842 (Del. Super. Ct. Oct. 28, 2010).

So, Cingular (now a part of AT&T) went back to the board for a new hearing. This time, more opponents showed up and the board voted 3-2 to deny the request; in doing so, the board noted in its written decision that "it was impossible for the Board to disregard the large number of individuals opposing the tower." This time Cingular appealed, first to the superior court, which affirmed the board, and then to the Delaware Supreme Court. The supreme court reversed the board's decision because the board applied the wrong standard in

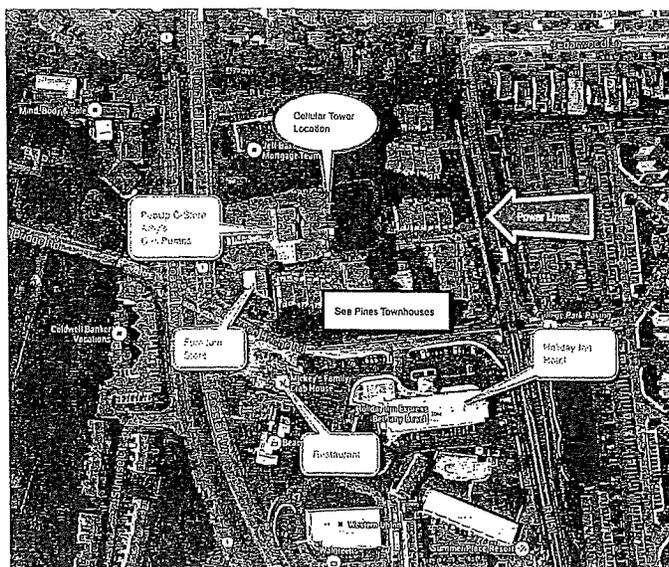


Figure 1.

evaluating the application; the board found only that the proposed tower would "adversely affect" neighboring properties, not "substantially affect adversely" as required by the Sussex County Code. See *New Cingular Wireless PCS v. Bd. of Adjustment*, 65 A.3d 607, 611-12 (Del. 2013). The matter then returned to the board for a third hearing, some four years after the first hearing, and the stage was now set: with a temporary tower having been in place for over three years, one could look at the movement of property values in the vicinity of the temporary tower both before and after the tower was constructed and compare those movements to the movement of property values in the wider market; or, put another way, one could determine with relative certainty what effect, if any, a tower at the proposed location might have.

The Temporary Tower Has No Effect on Property Value

AT&T had two appraisers look at the market effects of the temporary tower. The first appraiser looked at sales of two-bedroom nonwater-view condominium units (that is, units comparable to the condominium units adjoining the cell tower site). He found a total of 36 sales, of which the top two sales, and six of the top 10 sales, were in the Sea Pines Condominium community immediately adjoining the cell tower site. If the tower were going to have an

effect on value, one would think that the top sales prices would not be achieved in the community immediately surrounding the tower.

AT&T's other appraiser tracked the movement of prices in the Sea Pines community and the larger beach community for two years before and through two years after the installation of the temporary tower. His analysis demonstrated that as the larger real estate market moved up and down, so did the Sea Pines community in approximately the same way. See Figure 2 on page 14. In testifying before the Sussex County Board of Adjustment, the appraiser explained:

In this high density mixed use area, there's a lot of influences surrounding this project already. So people, when they're making a purchase decision in Sea Pines and other areas in this resort market, there are many things that impact your decision, your view, your access. And a cell tower pole, a single monopole, really is an expected thing in today's world. As we showed, one side of this property is lined with power lines that have been there forever. People need power. They're an accepted part of the landscape. Apparently, people have been making purchase decisions in Sea Pines for many years in the presence of those lines and the other uses like gas pumps and the convenience store, and we just didn't see any evidence of this one particular structure [having] a unique influence on property value.

Opponents of the project testified at the hearing before the board as well. They

offered no appraisal or other direct evidence of any effect on value. In fact, some of their testimony actually bolstered AT&T's case when two residents testified that they had experienced no problems in fully renting their units during the rental season after the temporary tower was installed—or, put another way, the temporary tower did not affect the ability of unit owners to rent their units. Moreover, no unit owners complained of having to lower rents to secure tenants or of any other adverse economic effect. One of AT&T's appraisers also did a study of rental rates and found that Sea Pines's rental rates were consistent with the local market and that there was no effect on rental rates associated with the temporary tower.

In sum, then, the case of the Sussex County temporary tower confirms what studies have shown for years—that cell towers have become part of the suburban landscape and have no appreciable effect on value. Like telephone poles, power lines, streetlights, and the other infrastructure of modern life, cell towers fade into the background and draw no more attention than other infrastructure.

Some Other Lessons from the AT&T Case

AT&T's experience in this case provides two further lessons. First, a land use applicant needs to be absolutely certain that all procedures are followed properly; and, for better or worse, this means confirming that the local governmental body has given the proper notices and made the proper mailings and postings. But for the county's inadvertent error in posting notice of the hearing on the wrong property in 2009, AT&T could have avoided four years of additional litigation. One need not be heavy-handed in confirming that things are done properly, but confirmation should be obtained.

More importantly, the Delaware Superior Court's 2015 opinion, following the third hearing by the board, marks something of a watershed for Delaware courts in the way they deal with decisions by boards of adjustment. Under Delaware law, appeals from the board go to the Delaware

Superior Court, which, by statute, has the power to reverse, affirm, or modify a decision of the board. See Del. Code Ann. tit. 9, §§ 1314(f), 4918(f), 6918(f); Del. Code Ann. tit. 22, § 328(c). Significantly, unlike other Delaware statutes

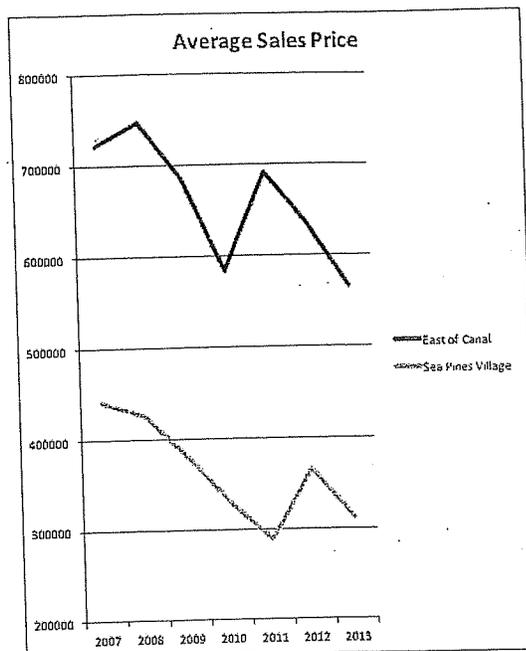


Figure 2.

regarding appeals from other boards and administrative bodies, there is no power to "remand" a decision back to the board of adjustment. (For examples of statutes in which remand is specifically listed as a remedy, see, e.g., Del. Code Ann. tit. 7, § 6612(b); Del. Code Ann. tit. 7, § 6214(b); Del. Code Ann. tit. 9, § 8312(c); Del. Code Ann. tit. 14, § 1414; Del. Code Ann. tit. 18, § 328(h); and Del. Code Ann. tit. 19, § 2350(b).) And this lack of remand is most likely not an accident.

Most matters before a board of adjustment involve homeowners seeking minor dimensional variances for things such as screened porches or additions to their homes. Judicial review, of course, can be a time-consuming and expensive process. Rather than remands and multiple hearings, the Delaware General Assembly gave the superior court the ability to decide the matter (reverse, affirm, or modify) as part of its decision on appeal, rather than remand back to the board for further proceedings. Indeed, although most appeals are on the record, the General Assembly further provided

that the superior court could receive additional evidence as part of the appeal process. Del. Code Ann. tit. 9, §§ 1314(e), 4918(e), 6918(e). The only reason for the court to receive additional evidence would be for the court to make findings on its own and resolve the matter once and for all, rather than remand a proceeding back to the board for another hearing and, potentially, another appeal. Homeowners should not be faced with years of litigation over whether they can build an additional two feet into a setback.

But, despite the lack of the power to remand, when reversing a board decision denying a permit or variance request, courts have almost always said that reversal does not constitute a grant of the permit or variance—rather, the court requires the applicant to go back to the board and re-apply for the permit or variance with a new hearing and an entirely new process. In other words, reviewing courts have done the functional

equivalent of a remand, even though the courts do not call what they're doing a "remand."

The superior court's 2015 decision is significant, then, because the court did *not* reverse the board and then require AT&T to go back to the board and re-apply (for what would have been the fourth time) for a special use exception for the cell tower. Rather, the court specifically recognized that it did not have the power to remand and therefore modified the board's decision by ordering the special exception granted. Specifically, the court explained:

At this stage, Appellant [AT&T] has been before the Board and the Court three times regarding this project. The first time, the Board's approval was reversed on procedural grounds. The second time, the Board applied the wrong standard and denied the application, resulting in the decision ultimately being reversed by the Supreme Court. Because the statute provides no authority to remand, Appellant has had to file

a new application each time. While courts typically reverse rather than modify decisions of the Board of Adjustment Review, the statute [] clearly provides the Court with the power to modify when appropriate. This is such an instance. . . . The statute in the instant case only allows the court to affirm, reverse, or modify. In the absence of the option to remand, the Court finds Appellant's argument that the decision be modified to grant the permit especially compelling. . . . For the foregoing reasons, the decision of the Sussex County Board of Adjustment is MODIFIED and AT&T's Application for a special use exception to construct a permanent 100-foot telecommunications tower on [the] Property is GRANTED.

AT&T, 2015 WL 1975629 at *14-15. Thus, the court granted AT&T the special use exception it needed to construct a permanent tower. When opponents did not appeal the superior court decision, AT&T's odyssey was finally over.

The court stated that it was modifying the board's decision, not reversing

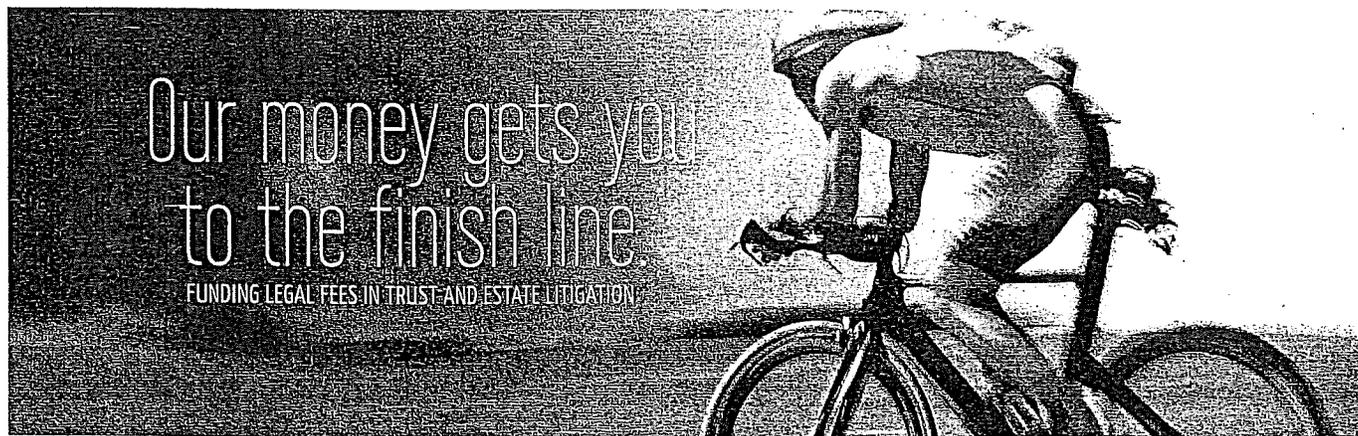
it. Certainly the statute states that a court may "affirm, reverse, or modify," although one would think that granting a previously-denied application is the very epitome of a "reversal," not a "modification." "Modification" would seem to be reserved for those situations in which, perhaps, the board imposed conditions on a variance and the court modified those conditions or lessened or increased the dimensional component of a granted variance but otherwise left the grant in place. Regardless, though, the *AT&T* court's decision is good news for property owners and other applicants who receive denials from a board—the court has explicitly recognized that it lacks the power of remand and acted accordingly. Perhaps future applicants will now be spared the cycle of hearing, judicial review, new hearing, more judicial review, and so on.

Conclusion

Studies have long shown that cell towers have no appreciable effect on property values, but opponents of towers, and some boards that consider these applications, refuse to believe these studies. Nevertheless, the results

are supported by empirical data, and, although it may seem counterintuitive, the results ultimately make sense. As one appraiser in the *AT&T* case observed, "a cell tower pole, a single monopole, really is an expected thing in today's world. . . . people have been making purchase decisions [] for many years in the presence of those lines and the other uses like gas pumps and the convenience store, and we just didn't see any evidence of this one particular structure [having] a unique influence on property value."

The *AT&T* case is especially interesting and uniquely helpful because it allowed the cell tower applicant to demonstrate that there would be no effect on value for the very location at issue. Property values in the vicinity of the temporary tower moved in the same way as property values in the larger market. Not only is this conclusion consistent with the general literature and studies in this area, but AT&T was actually able to demonstrate that its proposed tower in its proposed location would not affect property values in the immediate area. ■



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November 3, 2024
 Sue Manchel
 Site Acquisition
 Verizon Wireless
 512 East Township Line Road
 Blue Bell, PA 19422

**Subject: Supplemental Radio Frequency Design Analysis
 “DOV – BETSY ROSS”
 20338 OLD LANDING ROAD
 REHOBOTH BEACH, DE 19971
 Latitude: N 38° 42’ 17.08” (NAD 83)
 Longitude: W 75° 08’ 02.01” (NAD 83)
 6.0’ AMSL**

Ms. Manchel:

As you are aware, at the October 7, 2024 public meeting of the Sussex County Board of Adjustment on this application, both before and during this meeting several area residents raised opposition to the application to construct a new telecommunications monopole at the above referenced location. Concerns from aesthetics to potential predatory fowl impacts we raised, however, the issue of Verizon’s planned use of the Beacon Middle School (hereafter Beacon MS) water tank and the impact of that use to the “Betsy Ross” application was given the greatest attention. Although the coverage and capacity impact of the Beacon MS water tank was contemplated in the revised RF report of October 2, 2024, the Board asked specifically for a further analysis of the Beacon MS water tank coverage and capacity benefits and shortcomings. The analysis was to focus on the Beacon MS water tank as a single site solution to the existing service issues in the area. The intention of this study is to provide an objective, professional opinion regarding the use of *only* the Beacon MS water tank from a Radio Frequency design perspective. Specifically, how the Beacon MS water tank site complements the existing network and what service 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 Beacon MS water tank facility is extremely well suited to provide enhanced wireless service in portions of Sussex County west of Rehoboth Beach on and around Rt. 24. However, the addition of *only* the Beacon MS water tank site would leave significant areas on and around Old Landing Road without improved in-building coverage or additional capacity which would leave unfulfilled objectives of improvement for the area. The inverse is also true in that the Betsy Ross site, on its own, would leave significant areas on and around Route 24 without improved in-building coverage or additional capacity which would leave unfulfilled objectives of improvement for the area.

Sincerely,



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



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Fairview Village, PA 19409
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Existing Verizon Wireless Coverage

The in-building (green) and in-vehicle (yellow) coverage footprints from the existing Verizon Wireless facilities are illustrated below in figure 1. There is a significant gap in reliable in-building coverage in the mainly residential and recreational areas between Rt 1, Rt 24, and the Rehoboth Bay.



Figure 1 – Existing Coverage

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Verizon Wireless Coverage Improvement from the Beacon MS water tank

Figure 2 below illustrates the Verizon Wireless anticipated coverage improvement with the addition of **only** the Beacon MS water tank (Betsy Ross is show for locational purposes only). The facility will remedy the existing coverage issues on and around Rt. 24 but areas due east along and around Old Landing Road are not improved.



Figure 2 – Anticipated Reliable Coverage with Beacon Middle WT

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Proposed Verizon Wireless Coverage Improvement

Figure 3, originally shown in the October 2, 2024 Design Report, below illustrates the anticipated coverage should both the Beacon Middle school water tank and the “Betsy Ross” facility be activated. In conjunction, these two sites will blanket the geography surrounding Route 24 and south of Route 1 with robust in-building coverage. Neither of these facilities, independent of the other, can provide the required coverage improvement to all of these areas.

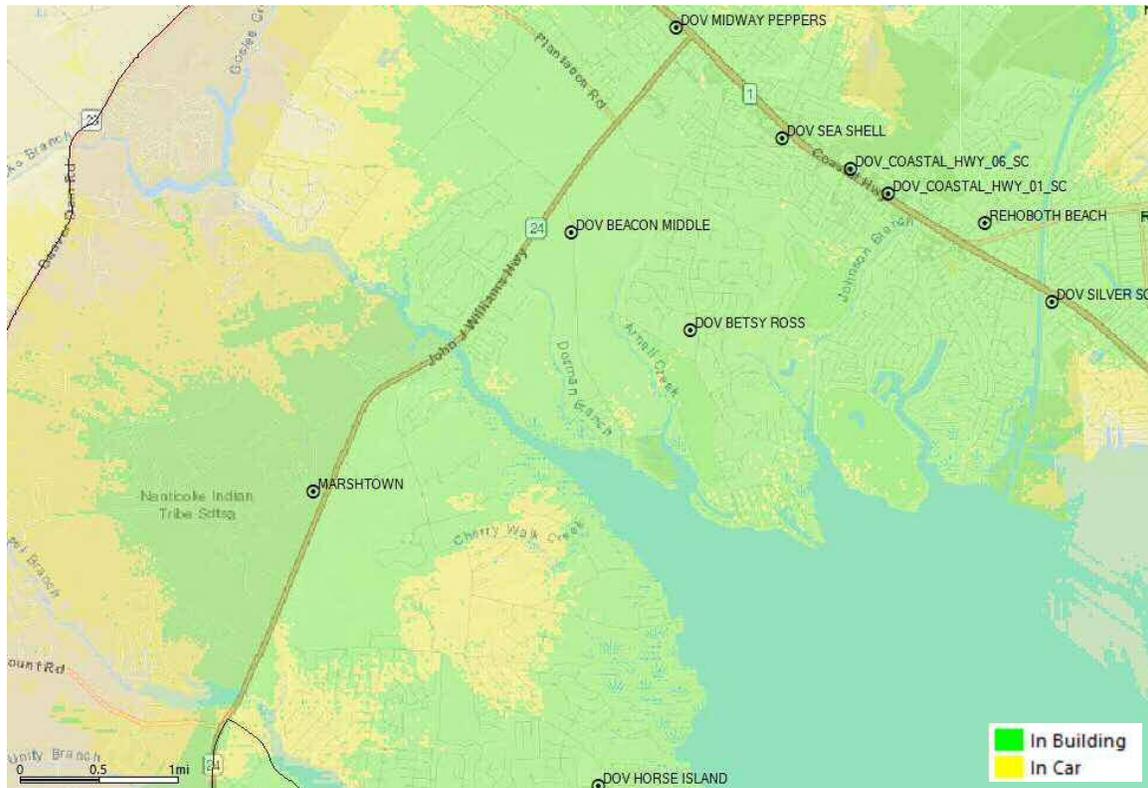


Figure 3 – Anticipated Reliable Coverage with Beacon Middle WT and Proposed Tower

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Existing Verizon Wireless Capacity

The best-server coverage footprint areas from the above on-air facilities are illustrated below in figure 4. The targeted areas in which the “Betsy Ross” facility is designed to provide capacity offload include the numerous residential subdivisions and recreational facilities including the Kings Creek and Rehoboth Beach Country Clubs. Demand in these areas is currently overburdening the “Rehoboth Beach”, “Sea Shell”, “Horse Island” and “Marstown” sites.

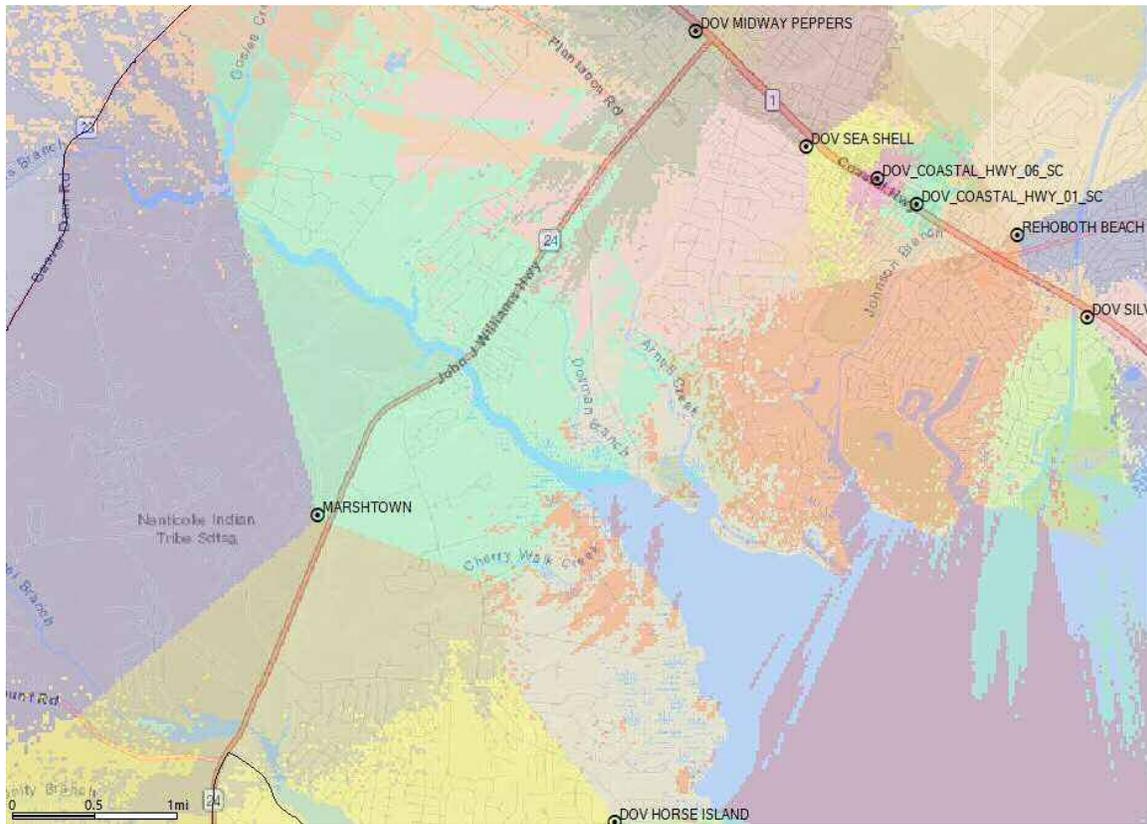


Figure 4 – Existing Best Server Coverage

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Verizon Wireless Capacity Improvement from the Beacon MS water tank

Figure 5 below illustrates the anticipated best server coverage should **only** the Beacon MS water tank be activated (Betsy Ross is shown for locational purposes only). The water tank site will provide clear server dominance and offload the cellular traffic along roughly two miles of Route 24 and areas surrounding Route 24 but will not provide capacity offload for the southwesterly facing sector of the “Rehoboth Beach” site (red below) or for the northerly facing sector of the “Horse Island” site (gray below). Without the additional “Betsy Ross” site, the “Rehoboth Beach” and “Horse Island” sites will continue to overreach into areas, and attempt to service subscribers, for which they cannot accommodate demand at times of peak usage.

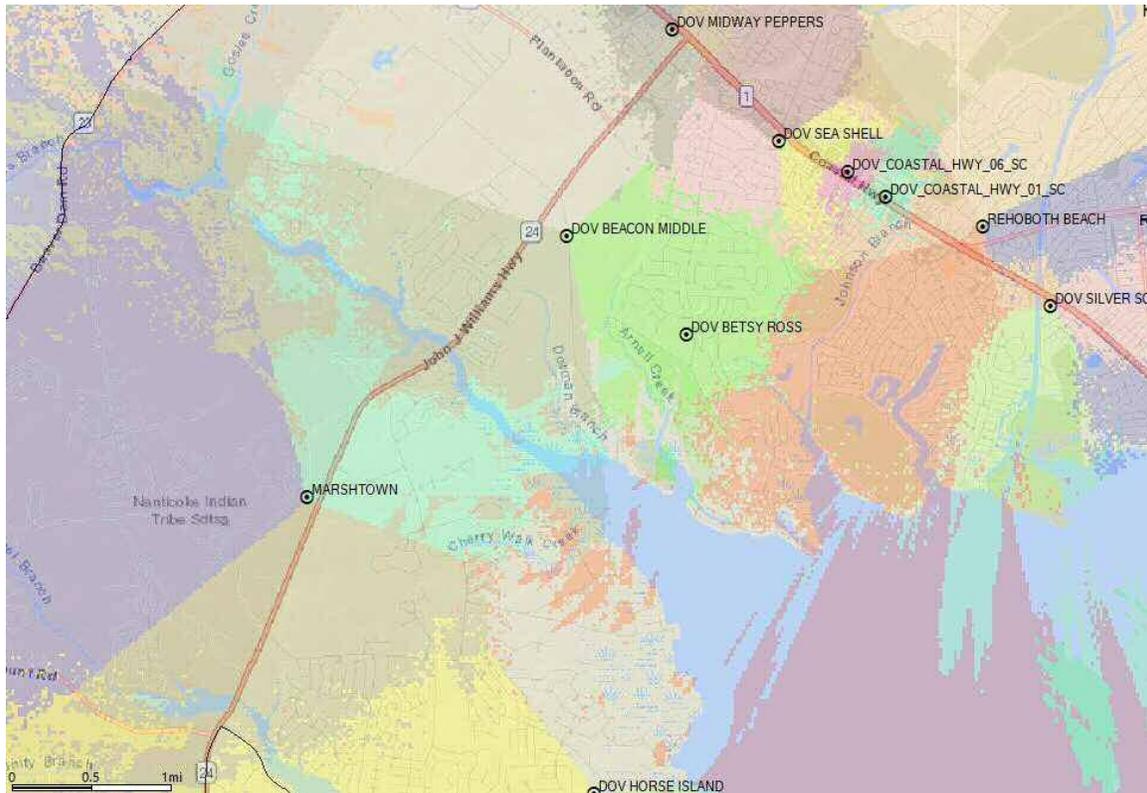


Figure 5 – Anticipated Best Server Coverage with Beacon Middle WT

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Proposed Verizon Wireless Capacity Upgrade

Figure 6 below illustrates the anticipated best server coverage should both the Beacon MS water tank and the “Betsy Ross” sites be activated. In conjunction, these two sites will provide the Verizon subscribers connecting through the “Midway Peppers” and “Marshstown” sites the additional radio resources they need along and around Rt. 24 from the Beacon MS water tank and provide the Verizon subscribers connecting through the “Rehoboth Beach” and “Horse Island” sites the additional radio resources they need along and around Old Landing Road from the “Betsy Ross” facility. Neither of these facilities, independent of each other, can provide the required capacity offload improvement to all of these areas.

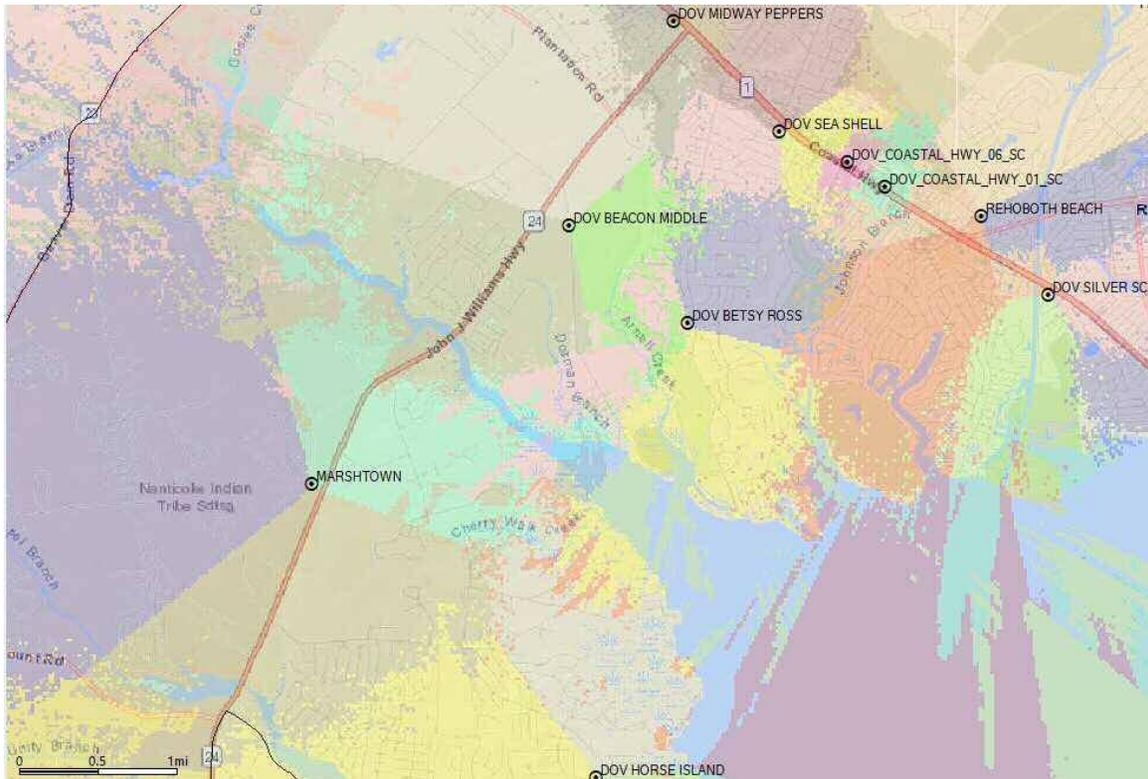


Figure 6 – Proposed Best Server Coverage with Beacon Middle WT and Betsy Ross

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Additional Remarks

In addition to the general testimony focused on the use of the Beacon Middle School water tower, some other concerns are worth addressing in this supplement.

One person testified that the “Betsy Ross” facility was being proposed in the center of three very busy residential neighborhoods. This position supports the location chosen by Verizon Wireless. This location is optimal from a radio frequency design perspective for absorbing traffic and offloading the neighboring “Rehoboth Beach” and “Horse Island” sites that are currently overburdened. By placing the new facility in a location central to the demand, we ensure the radio resources are as close to the subscriber density as possible and each of the three sectors is doing the appropriate amount of offloading. Following this tenet ensures the two most important design criteria for this environment are met: first, that there is signal dominance in the congested area and second that there is adequate signal strength to penetrate the often-dense building materials typically found in an area of high subscriber density.

Another person pointed to the ongoing development along and around the Rt. 24 corridor including the addition of office space, shopping centers, libraries, schools, and residential subdivisions. These uses are notorious drivers of wireless connectivity demand which explains the current overburdening of the “Midway Peppers” and “Marshtown” sites that currently underserve the corridor. Verizon subscribers living, working and traveling in these existing and anticipated developments need reliable, robust wireless service to safely and comfortably conduct their daily lives. In addition, business and first responders require reliable, robust wireless service to execute the responsibilities they are called upon to perform. As the original report noted, greater than 70% percent of 911 calls originate from wireless devices and many first responders rely on wireless devices in their vehicles (as well as phones) to perform these tasks. As illustrated, the Beacon MS water tank site will accommodate the existing and anticipated traffic on and around the Rt. 24 corridor which alone, the “Betsy Ross” site cannot fully accomplish. By the same token, the “Betsy Ross” site provides these services primarily along and around the Old Landing Road corridor.

Alternative Design

During the course of the Board of Adjustment hearing, inquiries were raised as to whether the monopole could be designed in such a way to further minimize its visual impact (such as a tree). In a follow-up to that hearing, at least one area resident reached out to counsel for Verizon Wireless to suggest such a design alteration be pursued. To that end, Verizon Wireless commissioned a balloon flight to measure the height of the tower and then developed photo simulations to depict the monopole designed as a tree. Verizon Wireless has constructed a number of “monopines” in Delaware and throughout the Country where required by statute or as an accommodation to a municipal agency, board or body as part

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of the approval process. If the Sussex County Board of Adjustment were to determine that a tree design was appropriate for this location, Verizon Wireless would not object to such a condition. These photo simulations are attached as Exhibit 1 to this report.

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DECLARATION OF ENGINEER

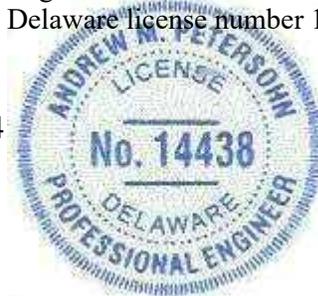
Andrew M. Petersohn, P.E., hereby states that he is a graduate telecommunications consulting engineer possessing Master and Bachelor Degrees in Electrical Engineering from Lehigh University (2005 and 1999, respectively). His corporation, dBm Engineering, P.C., has been retained by representatives of 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, Florida and New Jersey. He has over two decades 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 Pennsylvania Society of Professional Engineers (PSPE). Mr. Petersohn further states that all facts and statements contained in the foregoing document are true and accurate to the best of his knowledge.



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

Executed this the 3rd day of November, 2024



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Exhibit 1

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

PHOTOSIMULATIONS FOR PROPOSED ANTENNA INSTALLATION ON A PROPOSED MONOPINE

SITE NAME:
DOV BETSY ROSS

SITE ADDRESS:
20338 OLD LANDING ROAD
REHOBOTH BEACH, DE 19971
SUSSEX COUNTY

DATE: 11/01/2024
COLLIERS PROJECT NO.: 23960058
PHOTOS TAKEN: 10/23/2024

PREPARED BY:



Engineering & Design

www.colliersengineering.com

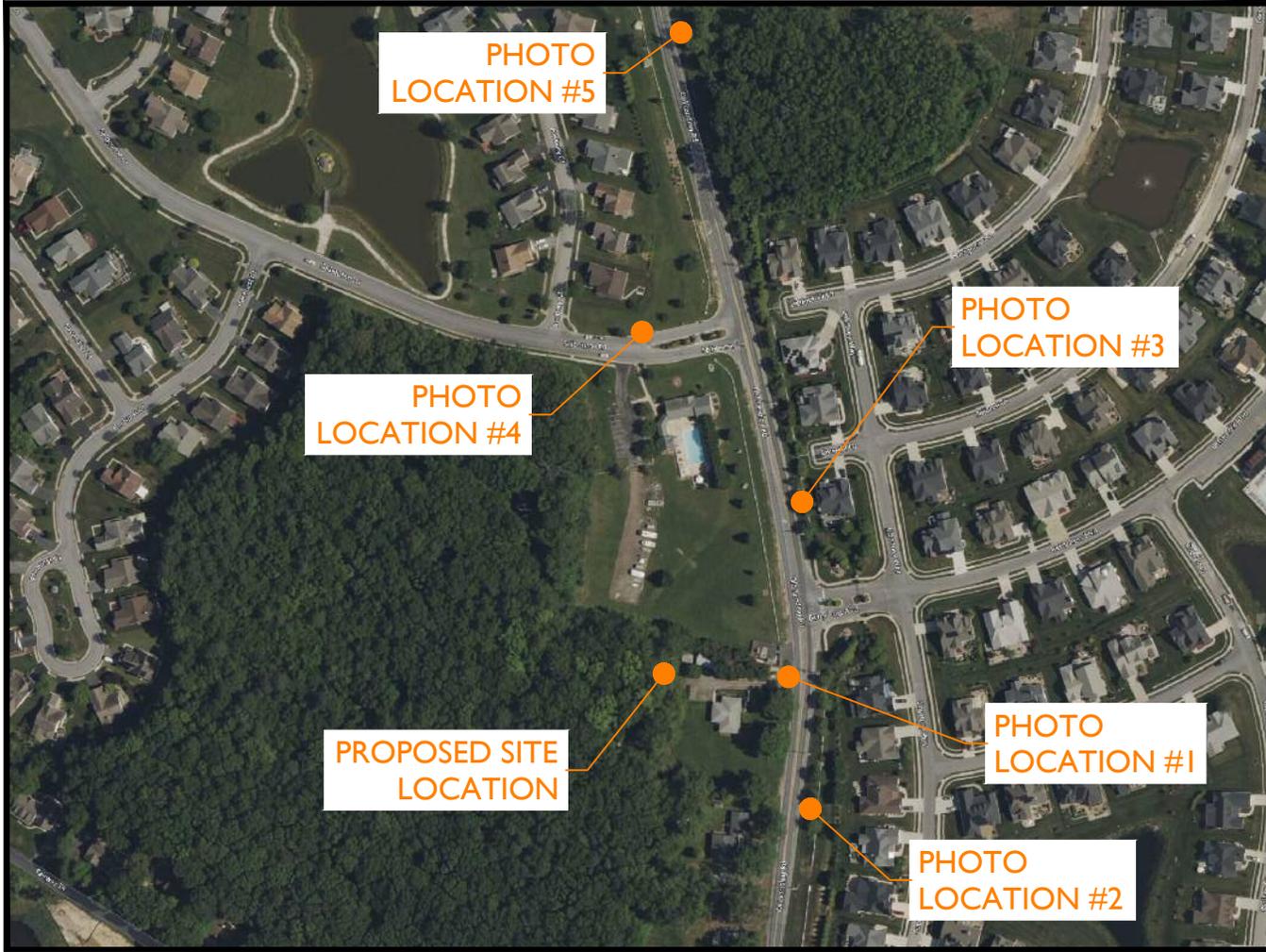
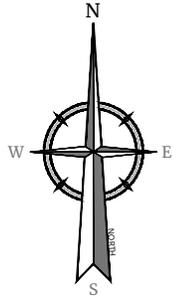
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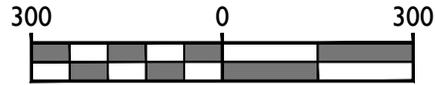
2000 Midlantic Drive,
Suite 100
Mt. Laurel, NJ 08054
Phone: 856.797.0412

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LOCATION MAP



SCALE : 1" = 300'

PHOTO LOCATION	DISTANCE FROM PROPOSED SITE LOCATION (FEET)
PHOTO LOCATION #1	210± FEET
PHOTO LOCATION #2	335± FEET
PHOTO LOCATION #3	370± FEET
PHOTO LOCATION #4	575± FEET
PHOTO LOCATION #5	1,070± FEET

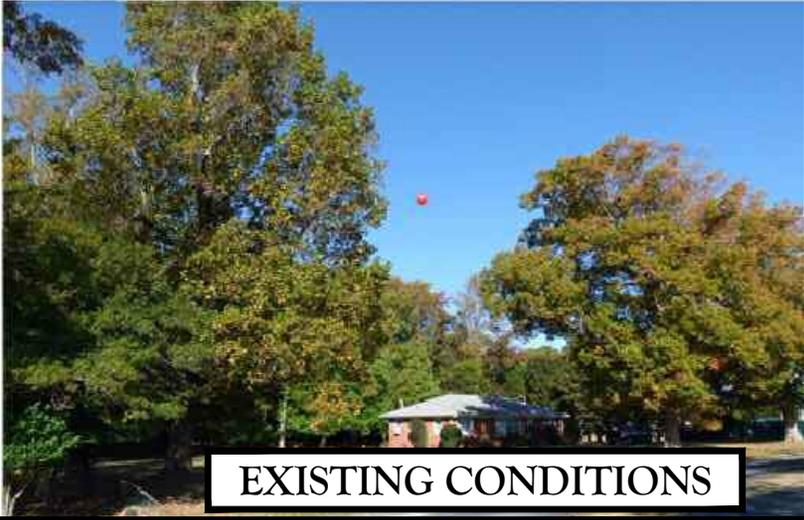
PHOTO LOCATION #1

PROPOSED
MONOPINE



PHOTO LOCATION #2

PROPOSED
MONOPINE



EXISTING CONDITIONS

PHOTO LOCATION #3

PROPOSED
MONOPINE



EXISTING CONDITIONS

PHOTO LOCATION #4

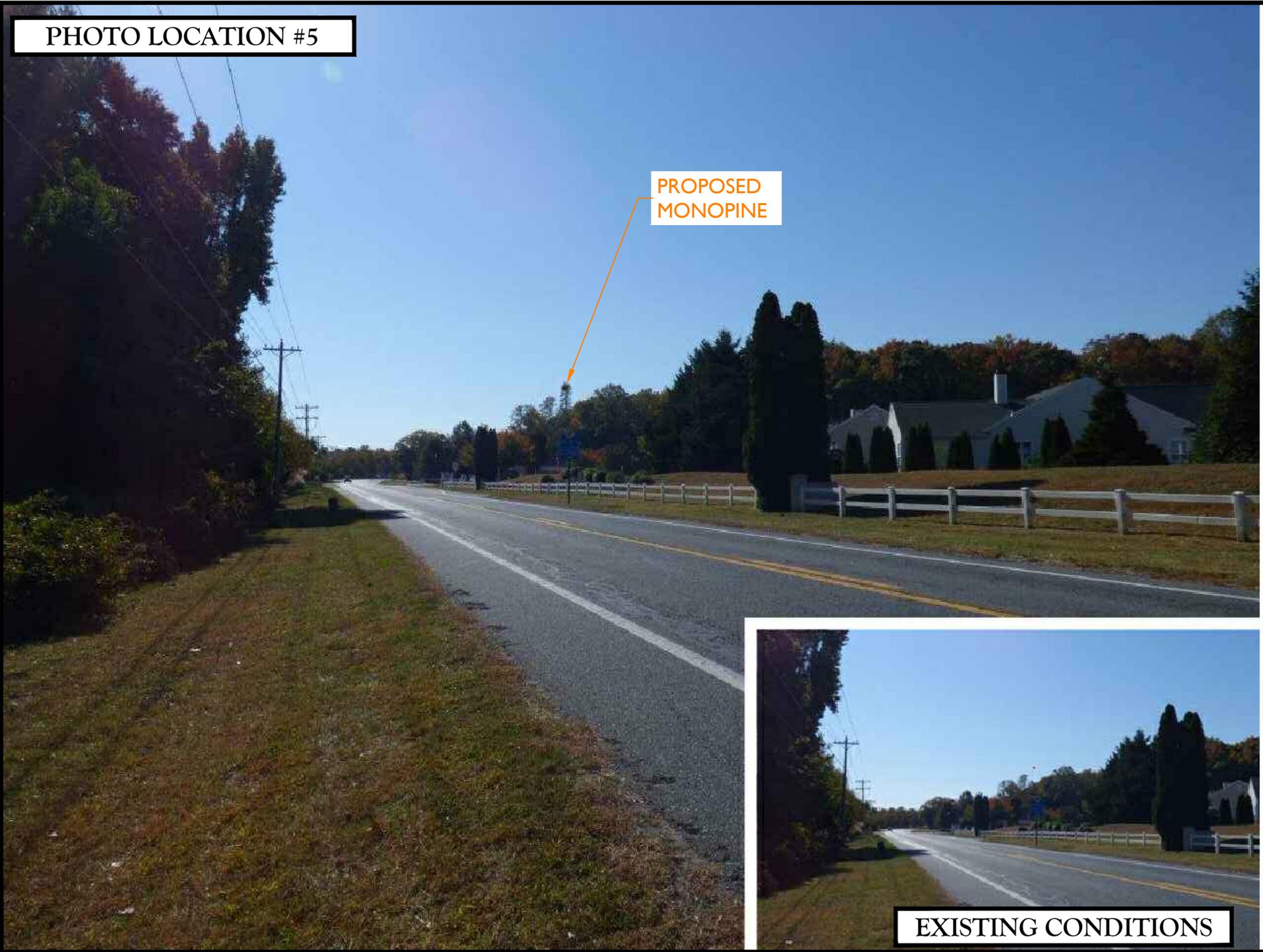
PROPOSED
MONOPINE



EXISTING CONDITIONS

PHOTO LOCATION #5

**PROPOSED
MONOPINE**



EXISTING CONDITIONS

Board of Adjustment Application Sussex County, Delaware

Sussex County Planning & Zoning Department
2 The Circle (P.O. Box 417) Georgetown, DE 19947
302-855-7878 ph. 302-854-5079 fax

Case # 13015
Hearing Date 11/18/24
202414645

Type of Application: (please check all applicable)

Variance
Special Use Exception
Administrative Variance
Appeal

Existing Condition
Proposed
Code Reference (office use only)

Site Address of Variance/Special Use Exception:

30880 Hickory Hill RD, Millsboro, DE 19966

Variance/Special Use Exception/Appeal Requested:

Requesting to build an accessory building 3 feet away from 1 side of property line.

Tax Map #: 233-4.00-29.00

Property Zoning: RES GR

Applicant Information

Applicant Name: Krista Burton Wisseman
Applicant Address: 30880 Hickory Hill RD
City Millsboro State DE Zip: 19966
Applicant Phone #: (302) 245-3950 Applicant e-mail: burtonkg@gmail.com

Owner Information

Owner Name: Krista Burton Wisseman
Owner Address: 30880 Hickory Hill RD
City Millsboro State DE Zip: 19966 Purchase Date: 10/3/24
Owner Phone #: (302) 245-3950 Owner e-mail: burtonkg@gmail.com

Agent/Attorney Information

Agent/Attorney Name: _____
Agent/Attorney Address: _____
City _____ State _____ Zip: _____
Agent/Attorney Phone #: _____ Agent/Attorney e-mail: _____

Signature of Owner/Agent/Attorney



Date: 10/4/24



Sussex County, DE - BOA Application

Criteria for a Variance: (Please provide a written statement regarding each criteria).

You shall demonstrate to the Board of Adjustment that the property meets all of the following criteria for a Variance to be granted.

In granting any variance the Board may attach such reasonable conditions and safeguards as it may deem necessary to implement the purposes of the Zoning Ordinance or Code. The Board is empowered in no case, however, to grant a variance in the use of land or structures thereon.

1. Uniqueness of property:

That there are unique physical circumstances or conditions, including irregularity, narrowness, or shallowness of lot size or shape, or exceptional topographical or other physical conditions peculiar to the particular property and that the exceptional practical difficulty is due to such conditions and not to circumstances or conditions generally created by the provisions of the Zoning Ordinance or Code in the neighborhood or district in which the property is located.

The property is not the typical 4-sided lot. There is limited length across the rear property line creating a diagonal across the property and there is limited space in the cut out on the left side of the property.

2. Cannot otherwise be developed:

That because of such physical circumstances or conditions, there is no possibility that the property can be developed in strict conformity with the provisions of the Zoning Ordinance or Code and that the authorization of a variance is therefore necessary to enable the reasonable use of the property.

The property size does not allow sub-dividing/developing.

3. Not created by the applicant:

That such exceptional practical difficulty has not been created by the appellant.

The property was purchased by the applicant as is.

4. Will not alter the essential character of the neighborhood:

That the variance, if authorized, will not alter the essential character of the neighborhood or district in which the property is located and nor substantially or permanently impair the appropriate use of development of adjacent property, nor be detrimental to the public welfare.

The reason for the variance request is to be able to build an accessory building. The neighboring property and many other properties in the area have similar accessory buildings and such would not alter the character of the neighborhood.

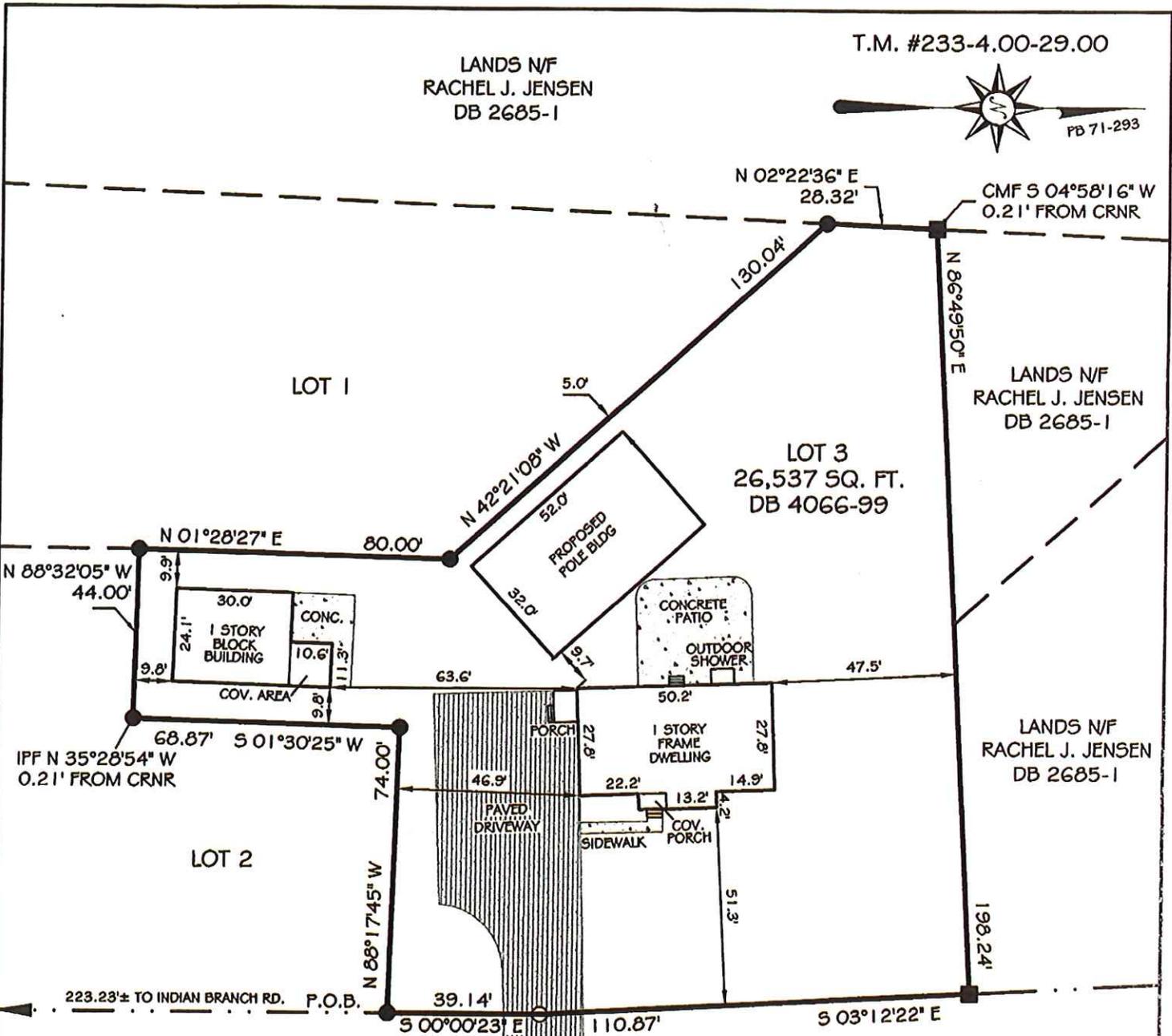
5. Minimum variance:

That the variance, if authorized, will represent the minimum variance that will afford relief and will represent the least modification possible of the regulation in issue.

The placement of the accessory building with requested variance affects one property line versus any other option that would effect multiple property lines.

LANDS N/F
RACHEL J. JENSEN
DB 2685-1

T.M. #233-4.00-29.00



- CONCRETE MONUMENT (FOUND)
- IRON PIPE (FOUND)
- POINT

SEE PLOT BOOK 71 PAGE 293 FOR EASEMENT RESERVATIONS. THIS SURVEY AND PLAT DOES NOT VERIFY THE EXISTENCE OR NON-EXISTENCE OF RIGHTS-OF-WAY OR EASEMENTS CROSSING THIS PROPERTY OTHER THAN THOSE SHOWN. NO TITLE SEARCH PROVIDED OR STIPULATED.

I, DONALD K. MILLER REGISTERED AS A PROFESSIONAL LAND SURVEYOR IN THE STATE OF DELAWARE, HEREBY STATE THAT THE INFORMATION SHOWN ON THIS PLAN HAS BEEN PREPARED UNDER MY SUPERVISION AND MEETS THE STANDARDS OF PRACTICE AS ESTABLISHED BY THE STATE OF DELAWARE BOARD OF PROFESSIONAL LAND SURVEYORS. ANY CHANGES TO THE PROPERTY CONDITIONS, IMPROVEMENTS, BOUNDARY OR PROPERTY CORNERS AFTER THE DATE SHOWN HEREON SHALL NECESSITATE A NEW REVIEW AND CERTIFICATION FOR ANY OFFICIAL OR LEGAL USE.

Donald K. Miller
DONALD K. MILLER, PLS 407
10/3/24
DATE
SURVEY CLASS: SUBURBAN

BOUNDARY SURVEY FOR

KRISTA BURTON-WISSEMAN

30880 HICKORY HILL ROAD, MILLSBORO, DE 19966
LOT #3 OF "RONALD & JANICE CHORMAN" SUBDIV.
DAGSBORO HUNDRED SUSSEX COUNTY
STATE OF DELAWARE
SCALE 1" = 40' OCTOBER 2, 2024

PREPARED BY:

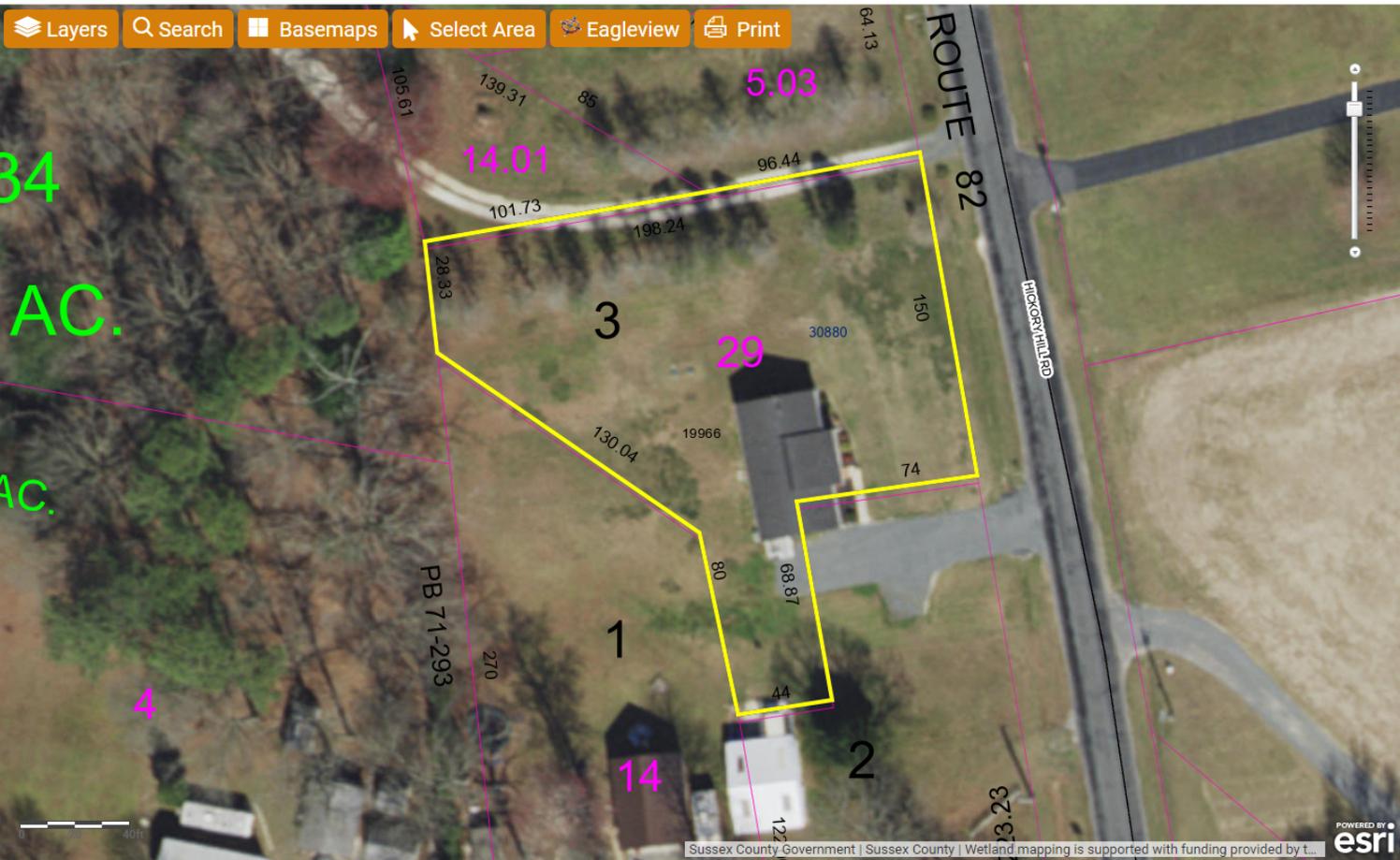
MILLER LAND SURVEYING
LEWIS, INC.

PH: 302-629-9895
FAX: 302-629-2391

1560 MIDDLEFORD RD.

SEAFORD, DE. 19973

Layers Search Basemaps Select Area Eagleview Print



Eagleview Search Results

Selected Features: Parcels (1)

▼ 1) 233-4.00-29.00 Zoom

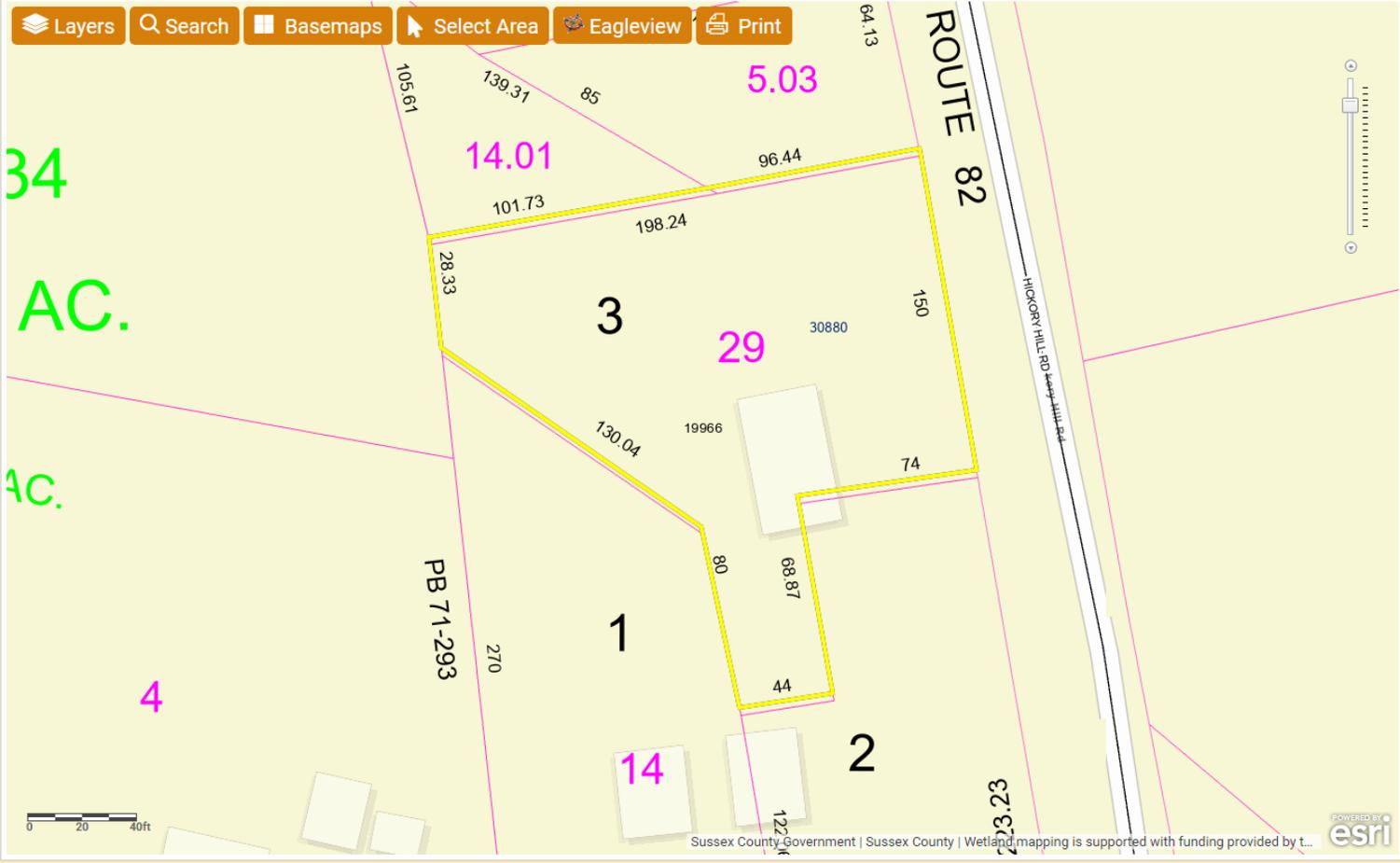
BOOK	4066
PAGE	99
FULLNAME	BURTON KRISTA
Second_Owner_Name	
MAILINGADDRESS	210 LAUREL RD
CITY	MILLSBORO
STATE	DE
a_account	
DESCRIPTION	W/RT 82
DESCRIPTION2	LOT 3
DESCRIPTION3	
LUC	999
SCHOOL	
MUNI	00
CAP	1
APRBLDG	27600
APRLAND	1500
PINWASSEMENTUNIT	233-4.00-29.00
PIN	233-4.00-29.00

Selected Features (1)

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Layers Search Basemaps Select Area Eagleview Print

34
AC.
AC.



Eagleview Search Results

Selected Features: Parcels (1)

▼ 1) 233-4.00-29.00 Zoom

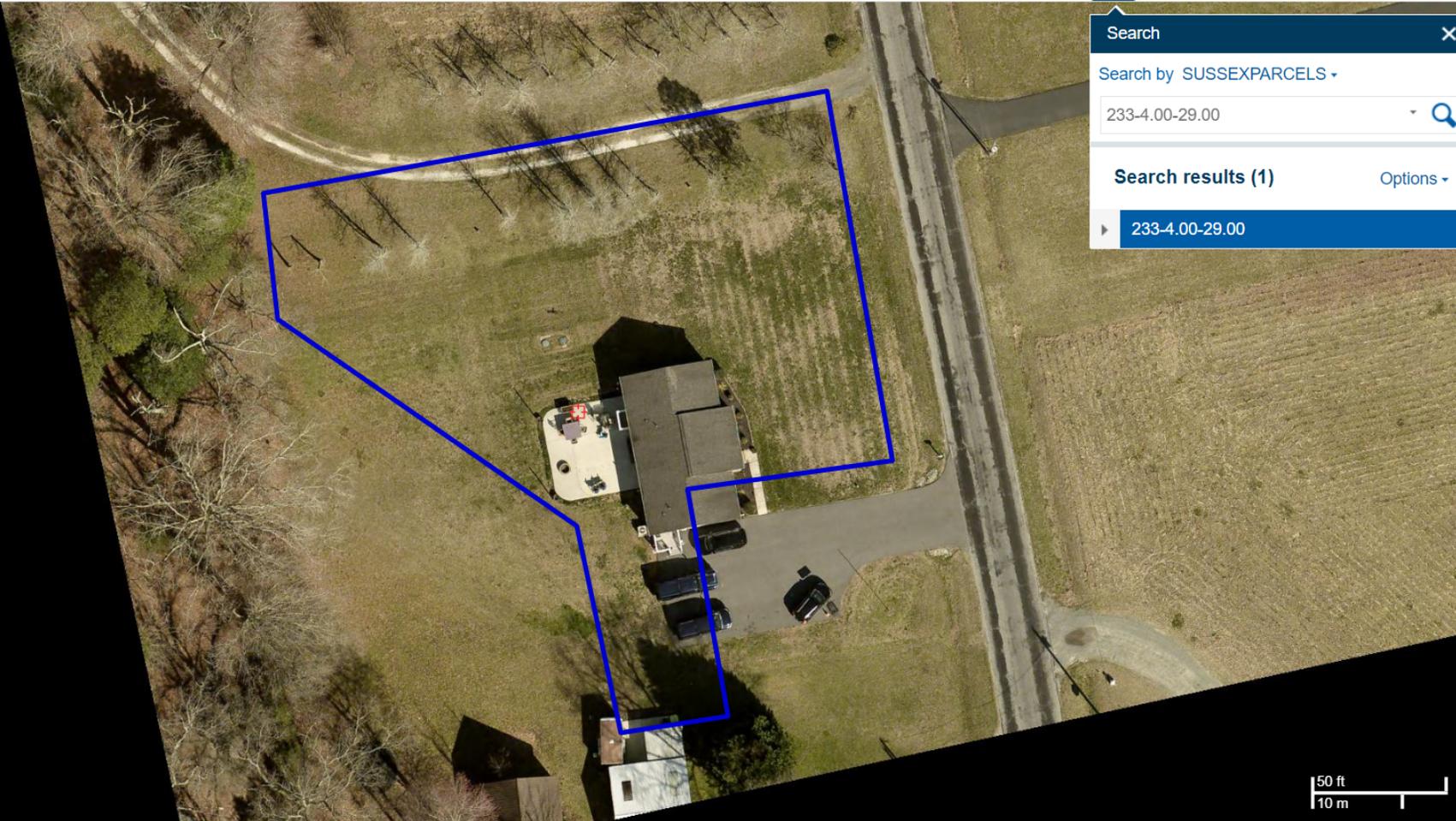
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CAP	1
APRBLDG	27600
APRLAND	1500
PINWASSEMENTUNIT	233-4.00-29.00
PIN	233-4.00-29.00

Selected Features (1)
Clear Selected

0 20 40ft



Workspaces ▾



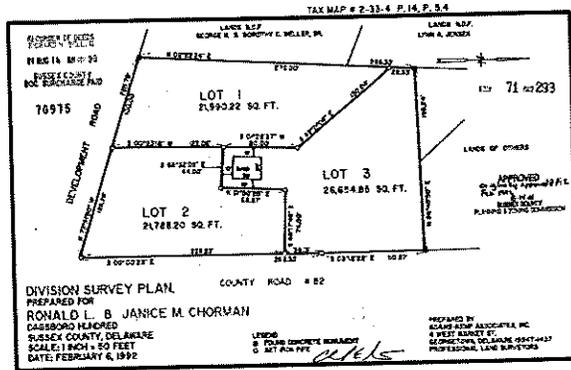
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Search by SUSSEXPARCELS ▾

233-4.00-29.00 [Search Icon]

Search results (1) Options ▾

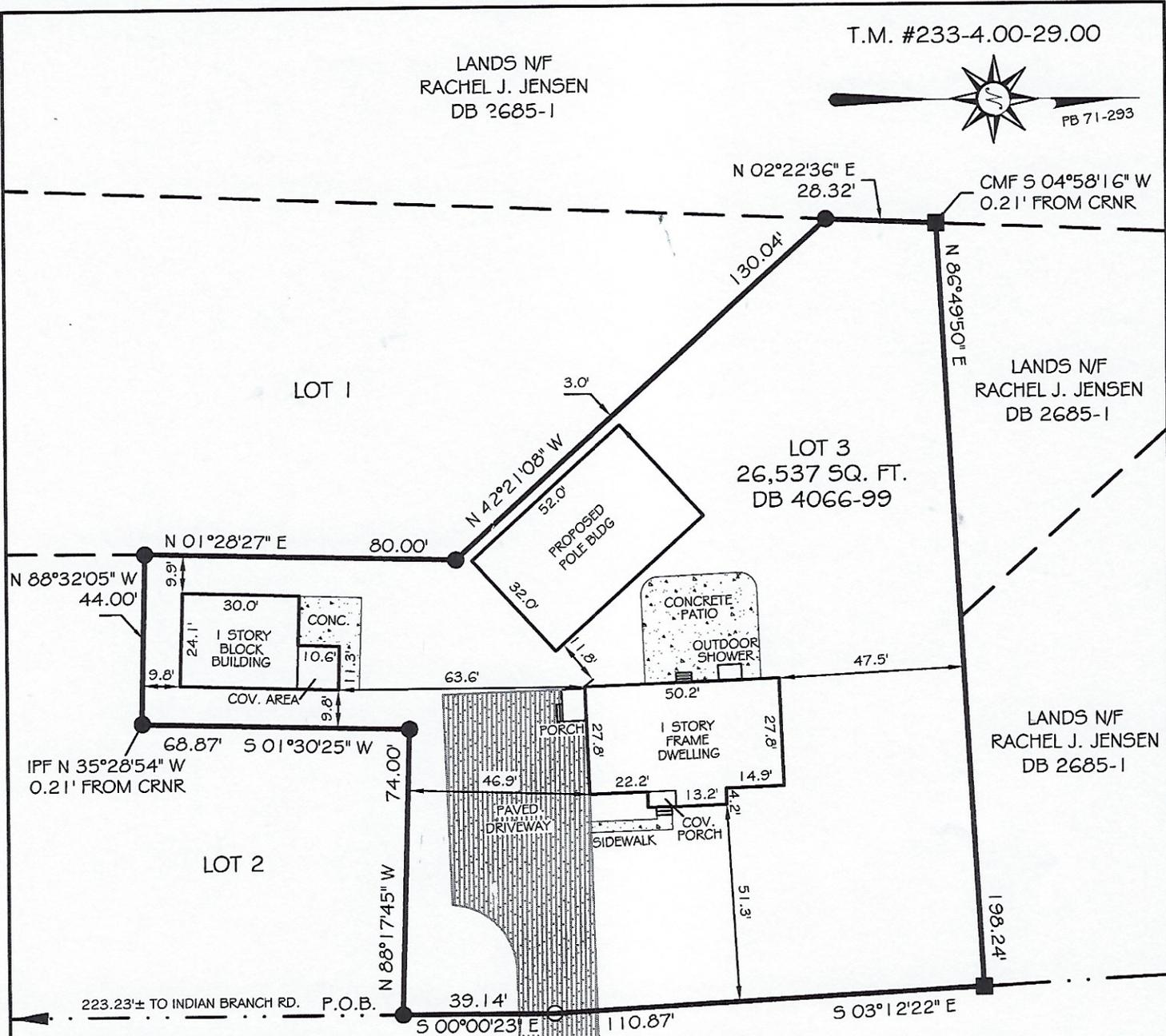
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A C S GOVERNMENT SERVICES

T.M. #233-4.00-29.00

LANDS N/F
RACHEL J. JENSEN
DB 2685-1



- CONCRETE MONUMENT (FOUND)
- IRON PIPE (FOUND)
- POINT

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Donald K. Miller
DONALD K. MILLER, PLS 407
10/16/24
DATE

SURVEY CLASS: SUBURBAN

S.C.R. 82 - HICKORY HILL ROAD (50' RW)

BOUNDARY SURVEY FOR

KRISTA BURTON-WISSEMAN

30880 HICKORY HILL ROAD, MILLSBORO, DE 19966
LOT #3 OF "RONALD & JANICE CHORMAN" SUBDIV.
DAGSBORO HUNDRED SUSSEX COUNTY
STATE OF DELAWARE

SCALE 1" = 40' OCTOBER 16, 2024

PREPARED BY:

MILLER
LEWIS, INC. LAND SURVEYING

PH: 302-629-9895
FAX: 302-629-2391

1560 MIDDLEFORD RD.

SEAFORD, DE. 19973

Board of Adjustment Application Sussex County, Delaware

Sussex County Planning & Zoning Department
2 The Circle (P.O. Box 417) Georgetown, DE 19947
302-855-7878 ph. 302-854-5079 fax

Case # 13016
Hearing Date NOV. 18, 2024
202415138

Type of Application: (please check all applicable)

Variance

Special Use Exception

Administrative Variance

Appeal

Existing Condition

Proposed

Code Reference (office use only)

115-23 c1

Site Address of Variance/Special Use Exception:

30130 Caroline Rd, Ocean View 19970

Variance/Special Use Exception/Appeal Requested:

garage over 900 sqft w/ more than 4 vehicles

Tax Map #: 134-9.00-91.00

Property Zoning: GR

Applicant Information

Applicant Name: Brett Cox

Applicant Address: 30145 Bayshore Drive

City Ocean View State DE Zip: 19970

Applicant Phone #: 302-249-6920 Applicant e-mail: _____

Owner Information

Owner Name: _____

Owner Address: _____

City _____ State _____ Zip: _____ Purchase Date: _____

Owner Phone #: _____ Owner e-mail: _____

Agent/Attorney Information

Agent/Attorney Name: _____

Agent/Attorney Address: _____

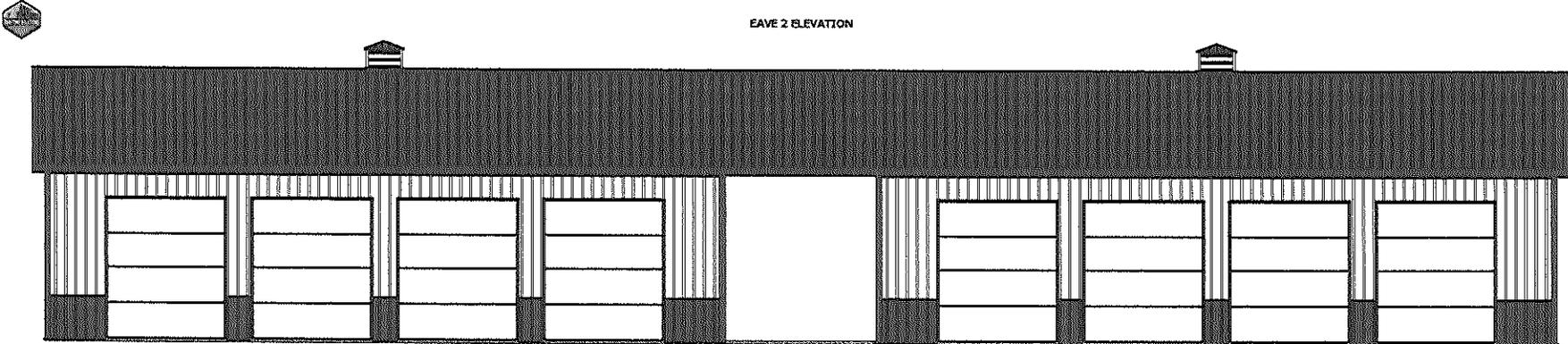
City _____ State _____ Zip: _____

Agent/Attorney Phone #: _____ Agent/Attorney e-mail: _____

Signature of Owner/Agent/Attorney

Date: _____

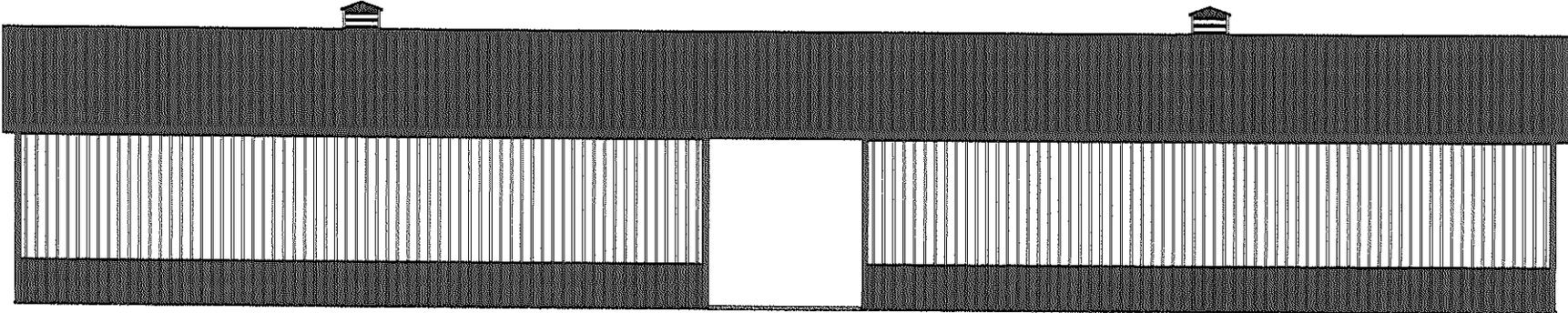




EAVE 2 ELEVATION

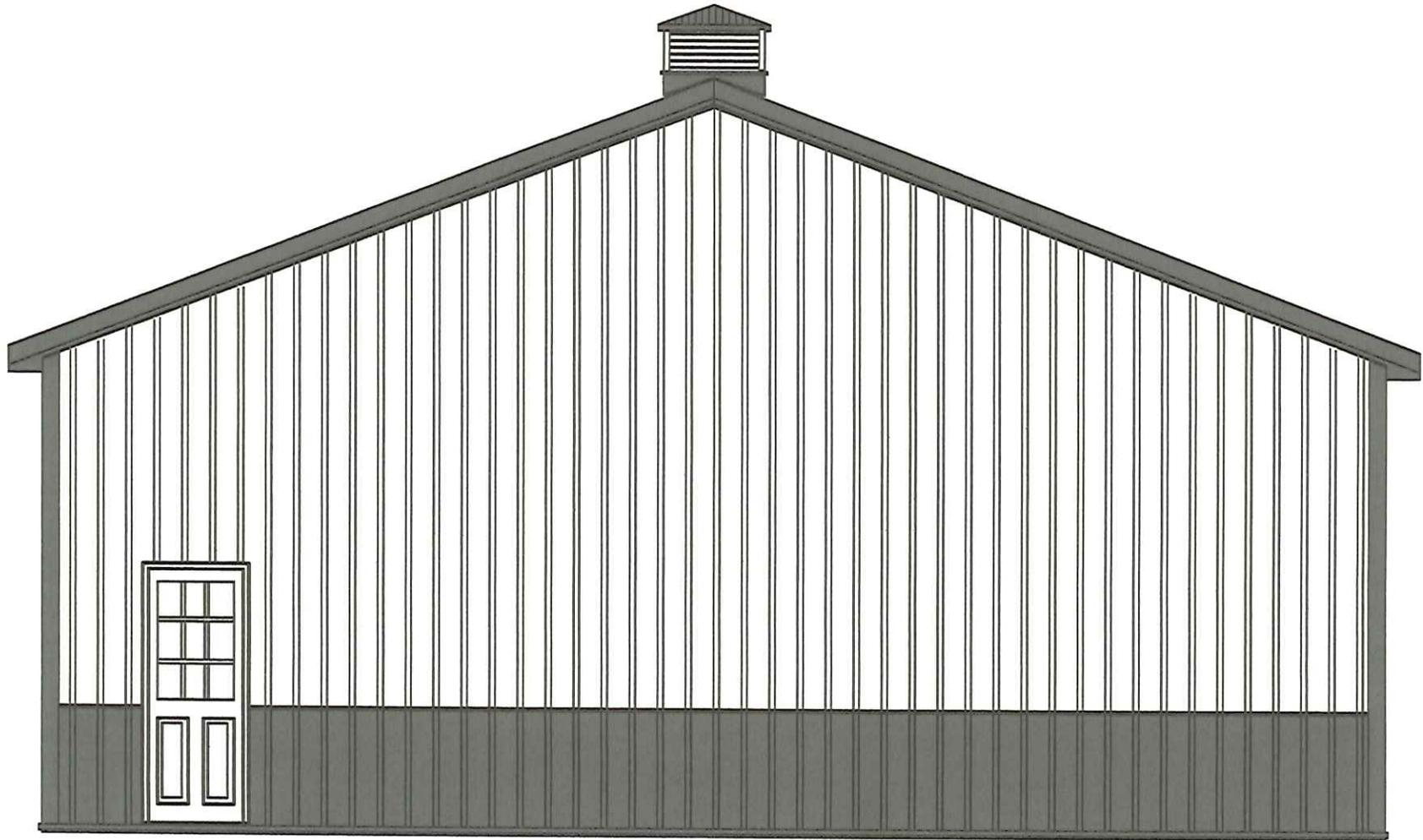


GAVE 1 ELEVATION





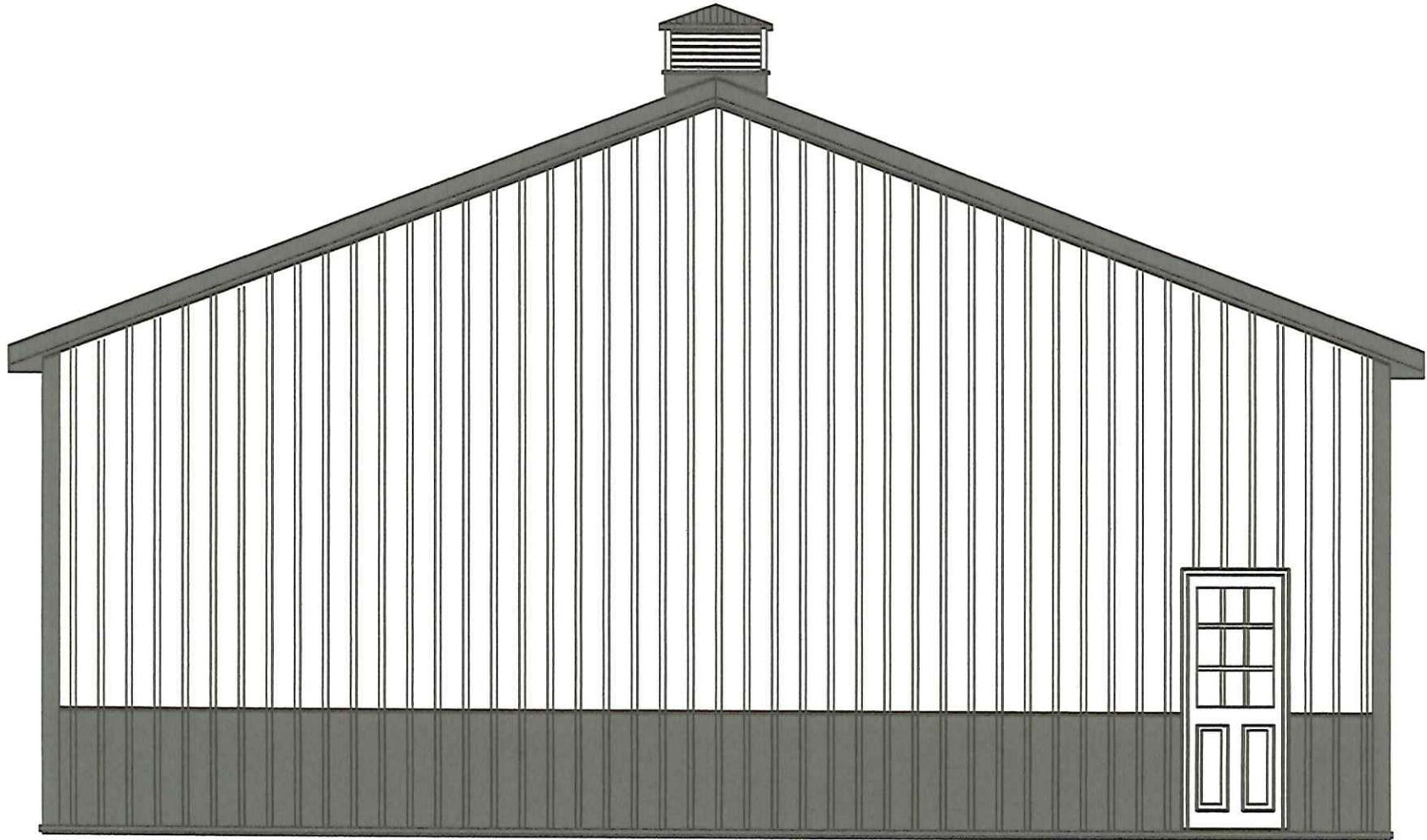
GABLE 2 ELEVATION



Brett Cox
40x68x12 Addition



GABLE 1 ELEVATION



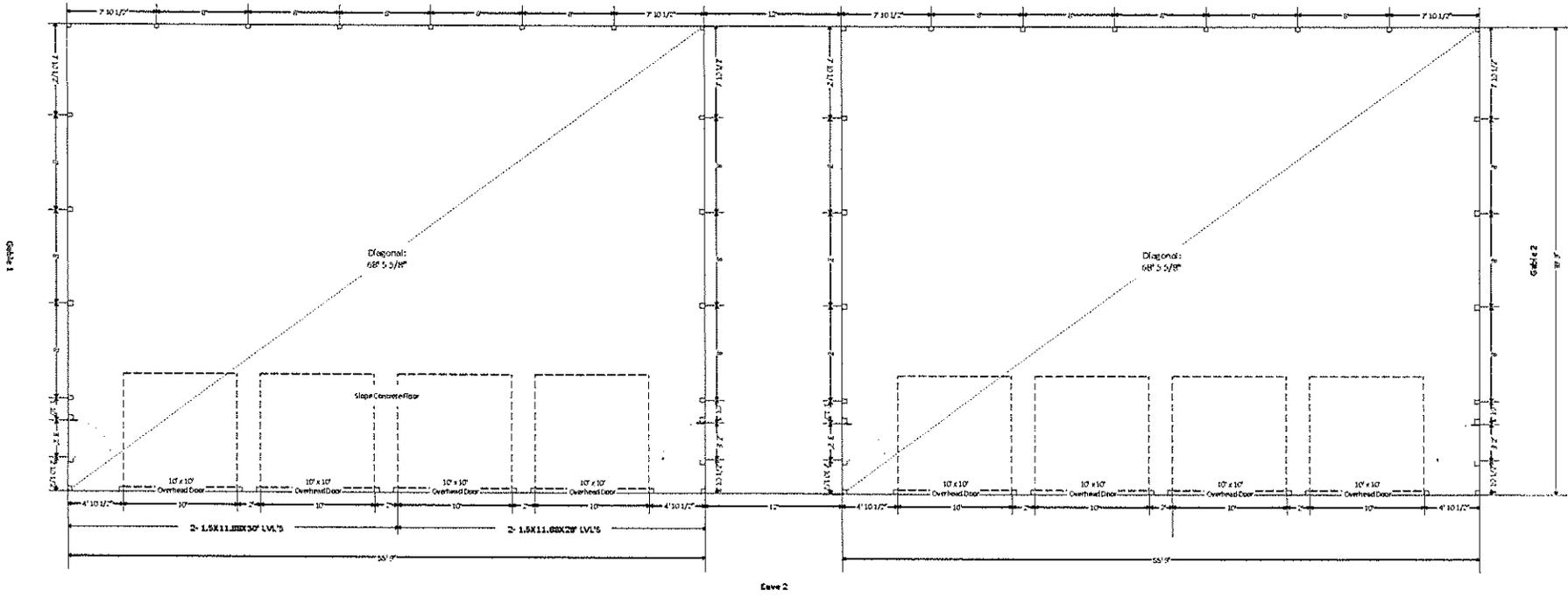
Brett Cox
40x68x12 Addition



POLE LAYOUT

Residential Use, 7770 sq. ft. ADDITION

Eave 1



CROSS SECTION

ROOF LAYER 1: RFOIL BUBBLE WHITE/FOIL 750 1/8 IN
X 72 IN X 125 FT
ROOF LAYER 2: G-RIB STEEL PANEL

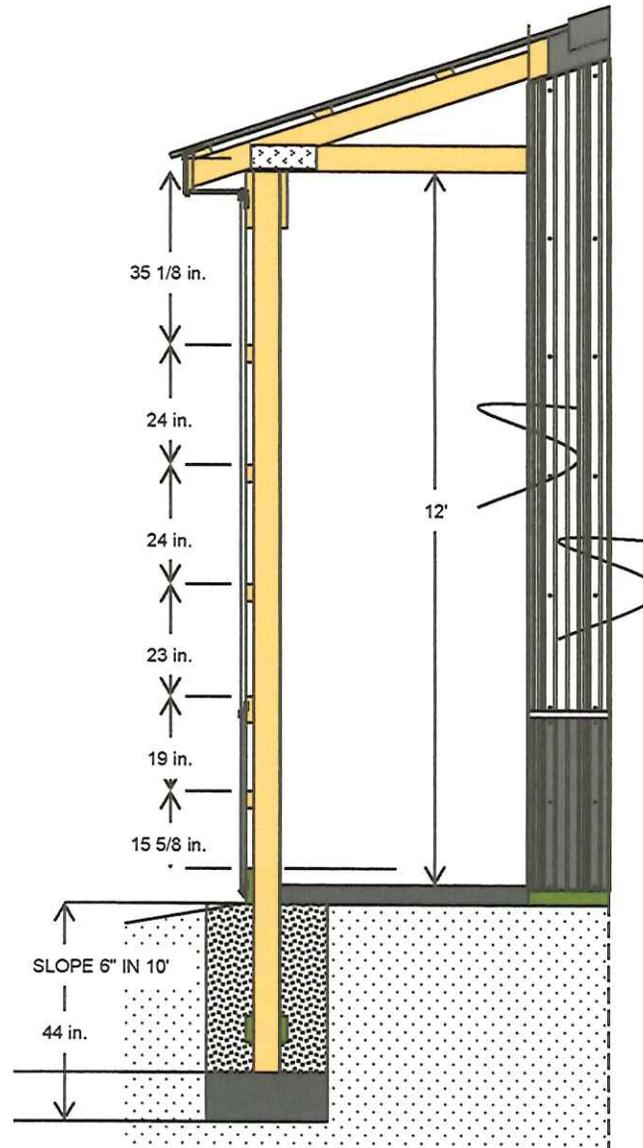
PURLINS: 2 X 4 SPF #2/BETTER FASTENED LAYING FLAT
SUB FACIA: 2 X 8 SYP #1
FACIA COVERING: STEEL 1 1/2 IN. X 7 1/2 IN. ANGLE 8
X 10 FT
UNDEREAVE: VINYL CENTER VENT SOFFIT 12 IN X 12
FT

CORNER POSTS: 3 PLY 4.5 X 5.25
INTERMEDIATE POSTS: 3 PLY 4.5 X 5.25 SPACING 8 FT
O.C.
EXTERIOR CARRIER: SYP #1 2 X 12
INTERIOR CARRIER: SYP #1 2 X 12
EXTERIOR WALL GIRTS: SPF #2/BETTER 2 X 4
WALL LAYER 1: G-RIB STEEL PANEL

EXTERIOR SKIRT BOARD: TREATED 2 X 8

SIDING BEGINS 4 1/8 IN. BELOW THE TOP OF SKIRT
BOARD

EARTH GRADE BEGINS 7 IN. BELOW THE TOP OF SKIRT
BOARD



4/12 PITCH TRUSS SYSTEM WITH A STANDARD HEEL
(HEEL HEIGHT: 0-5-12 OR 5 3/4 IN.)
TRUSS SPACING: 48 IN. O.C.
TRUSS LOADING INFORMATION: TCELL/TCDL/BCLL/BCDL
20-5-0-5
TOTAL TRUSS LOADING = 30 P.S.F.
BRACE PER TRUSS MANUFACTURER'S
RECOMMENDATIONS

INTERIOR FINISHED FLOOR HT. WILL BE 3 1/4 IN.
BELOW THE TOP OF THE SKIRT BOARD
4 IN. CONCRETE FLOOR W/STRUCTURAL STRENGTH -
4000 P.S.I.
UNDISTURBED SOIL OR COMPACTED SAND FILL
BACKFILL HOLE WITH SAND/GRAVEL FILL & COMPACT
PIER FOOTING USING REDI-MIX CONCRETE
WITH MINIMUM STRENGTH/2500 P.S.I.

BARRIER BETWEEN SIDE METAL AND TREATED SKIRT
BOARD
POST CLEATS: TREATED 2 X 6 ON EACH SIDE OF POST
STARTING 6 IN. ABOVE THE FOOTING

Layers Search Basemaps Select Area Eagleview Print



Eagleview Search Results

Selected Features: Parcels (1)

1) 134-9.00-91.00 Zoom

BOOK	4652
PAGE	173
FULLNAME	COX BRETT M REVOCABLE TRUST
Second_Owner_Name	
MAILINGADDRESS	30145 BAYSHORE DR
CITY	OCEAN VIEW
STATE	DE
a_account	11-03-091
DESCRIPTION	N/RD 358
DESCRIPTION2	
DESCRIPTION3	
LUC	999
SCHOOL	
MUNI	00
CAP	0
APRBLDG	4100
APRLAND	73900
PINWASSEMENTUNIT	134-9.00-91.00
PIN	134-9.00-91.00

Navigation icons: Home, Previous, Next, Refresh, Stop

Selected Features (1)

Clear Selected

Layers Search Basemaps Select Area Eagleview Print



Eagleview Search Results

Selected Features: Parcels (1)

1) 134-9.00-91.00 Zoom

BOOK	4652
PAGE	173
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CITY	OCEAN VIEW
STATE	DE
a_account	11-03-091
DESCRIPTION	N/RD 358
DESCRIPTION2	
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LUC	999
SCHOOL	
MUNI	00
CAP	0
APRBLDG	4100
APRLAND	73900
PINWASSEMENTUNIT	134-9.00-91.00
PIN	134-9.00-91.00

Navigation icons: back, forward, home, search, etc.

Selected Features (1)

Clear Selected



Workspaces



Search [X]

Search by SUSSEXPARELS -

134-9.00-91.00 [X]

Search results (1) Options -

134-9.00-91.00

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map: Auto (Oblique) | Dates: Latest | < image 1 of 3 > | 03/02/2023



Marina Truitt

From: Bret Cox <lhlc@mchsi.com>
Sent: Thursday, November 14, 2024 10:26 AM
To: Planning and Zoning
Subject: Brett Cox Case# 13016

Categories: Marina, Hannah

CAUTION: This email originated from outside of the organization. Do not click links, open attachments, or reply unless you recognize the sender and know the content is safe. Contact the IT Helpdesk if you need assistance.

Sussex County Council,

The proposed additional pole building will be used for the following:

- 1999 Ford Pick-Up being restored (my deceased Father's)
- 1972 Vintage Chevy Suburban being restored (my deceased Grandfather's)
- 2001 Suzuki Motorcycle (my deceased Father's)
- Vintage Farmall Cub Tractor with all attachments (my deceased Grandfather's)
- 72" zero turn mower used to cut field
- 9N ford tractor(with many attachments)
- 3 pt. Hitch 2 row corn planter
- 3 pt. Hitch seeder
- 3 pt. Hitch 6' disc
- 5' bush hog

The above items have been stored outside and other places. I am trying to get everything in one place and under cover to preserve them from deterioration.

The proposed breezeway will be used for the motorhome. (See pic below)

The existing pole building is used for the following:

- 24 ft pontoon boat
- 18 ft jon boat
- 2003 Ford Excursion
- 2024 Jeep Wagoneer

And additional smaller items

See attached pics for existing building









Thank you for your consideration

Brett Cox