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REPLY TO:

Westchester office

August 24, 2022

Honorable Chair Loretta Taylor
and Members of the Planning Board
Town of Cortlandt
1 Heady Street
Cortlandt Manor, New York 10567

RE: Homeland Towers, LLC and New York SMSA Limited Partnership d/b/a Verizon Wireless Special Permit and Site Plan Application to Install a Public Utility Personal Wireless Facility at the Property Known as 52 Montrose Station Road, Town of Cortlandt, NY

Hon. Chair Taylor and Members of the Planning Board:

We are the attorneys for Homeland Towers, LLC ("Homeland Towers") and New York SMSA Limited Partnership d/b/a Verizon Wireless ("Verizon Wireless") (collectively, "Applicants") in connection with a request for a special permit and site plan approval to install a public utility personal wireless facility ("Facility") at the above captioned property ("Property"). The Facility consists of a telecommunications tower ("Tower") with small panel antennas, together with equipment within a fence compound at the base thereof.

The Facility consists of a 140 foot monopole to be located toward the rear of the Property in a manner where the Facility will meet all of the setbacks of the Town of Cortlandt Code ("Town Code"). The Property consists of over 6 wooded acres and is currently used for non-residential purposes.[1] In accordance with Chapter 277 of the Town Code, the Town of Cortlandt ("Town") permits personal wireless facilities, such as the Facility, on the Property by special permit from the Town Planning Board.

We are in receipt of comments from the Town Consultant in this matter Henningson, Durham & Richardson ("HDR"), in a memo dated July 7, 2022 ("HDR Memo"). In response to

[1] An application for this Facility was first submitted on February 21, 2019 ("Initial Design") to the Planning Board and the Facility was revised/updated ("Current Design") in a submission to this Board dated August 18, 2021. As noted above, the Facility now consists of a 140 foot monopole, rather than the previously proposed lattice tower, so that its footprint has been reduced. The Facility was also relocated to the rear of the Property in a manner where the Facility will now meet all of the setbacks of the Town Code. Moreover, the Tower's new location is 34.5 feet lower in ground elevation than the original location so that it will be lower in appearance.

the comments in the HDR Memo, please see the responses below and documents submitted herewith.

Response to the Comments in the HDR Memo:

Response to Comment "A" Regarding a Second Balloon Test

Comment: *HDR recommends that a new balloon test and updated visual resource evaluation be conducted. A balloon test was conducted in May 2019 during "off-leaf" conditions and a visual resource evaluation report was prepared (dated April 27, 2019). That report included 2 viewshed maps, 29 viewpoints (VPs), and 7 photosimulations. However, the simulations provided were for a then-proposed lattice tower design. The August 2019 visual submittals are relevant for the current design; however, as the balloon test was conducted over three years ago, and because the tower location has been shifted, a second balloon test is recommended.*

Response: A second balloon test ("Second Balloon Test") was discussed with this Board at its meeting on July 12, 2022 and was scheduled for July 23, 2022. The Second Balloon Test was conducted on July 23, 2022 by Homeland Tower's visual consultant, Saratoga Associates ("Saratoga").

Comment: *In addition to the 29 VPs examined during the first balloon test and in the 2019 visual resources evaluation report, the following VPs are suggested to be added for the follow-on balloon test based on a review of the 2019 visual resources evaluation and map resources of the area:*

- ***o Near VP 28 – additional photos from the Mount Florence historic district (having numerous listed buildings) – along Maple Ave. This area should be discussed in the revised visual resources evaluation.***
- ***o North of VP 28 – there is a second historic district (Villa Loretto)***

Response: During the Second Balloon Test, Saratoga took photos from the locations requested by HDR, which included locations from the prior Visual Resource Evaluation report prepared in connection with first balloon test for this Facility in 2019 ("2019 VRE"), as well as, additional locations requested by HDR. See the list/chart of the photo locations on Page 10 of the Visual Resource Evaluation report ("2022 VRE") prepared by Saratoga based on the Second Balloon Test, attached hereto as Exhibit 1.

Comment: *It is noted that during the balloon test, additional VPs may be identified in the field. HDR will work with the applicant representatives to plan for the follow-on balloon test and keep the Planning Department informed (i.e., methods to be used to float balloons; field schedule; etc.). HDR will coordinate with the applicant and the Planning Department leading up to field work and establish a mobile phone / email chain to confirm if the balloon test is "on" or "off" based on the weather forecast. Wind / weather forecasts are not generally available more than 36 hours in advance, so a phone / email chain is important to keep all parties appraised. It is possible that Board members may want to meet the applicant's visual assessment team in the field during the*

balloon test to discuss possible points of visibility and the means and methods of collecting photos and notes.

Response: No response is required for this comment as the Balloon Test occurred on July 23, 2022. Notwithstanding, the Applicants and its consultants discussed the Second Balloon Test with the Planning Board at its July 12, 2022 meeting, and coordinated with the Town Planning Department and HDR regarding the details of the Second Balloon Test.

Comment: *The applicant should confirm if the balloon needs to be raised in a different (off-set) location than as proposed on the current Drawings (considering clearing up through existing tree canopy). Confirmation if a crane (vs. tether float) is proposed as part of the field test should also be provided, along with means for monitoring the balloon for the duration of the field test to (a) document times when the balloon may not have been flown to maximum height, and (b) be prepared to replace the balloon if problems are encountered. An additional, alternate color balloon may be added to the scope to allow for continued assessment of alternate tower height and potential co-location. A date of* ***Saturday July 23, 2022****, has tentatively been identified for the balloon test (see draft notice in Attachment A of this memo, should the Town require advertising of the balloon test in the local newspaper of record and/or on its website).*

Response: No response is required for this comment as the Second Balloon Test occurred on July 23, 2022. Notwithstanding, as noted above, the Applicants and its consultants discussed the Second Balloon Test with the Planning Board at its July 12, 2022 meeting, and coordinated with the Town Planning Department and HDR regarding the details of the Second Balloon Test, including, but not limited to, size, color, height and duration of the Second Balloon Test.

Comment: *It is noted that prior to the balloon test, the contents of the updated visual resources evaluation report should be scoped (i.e., photosimulation development, including alternate tower configurations and heights; updated viewshed maps; utilization of the NYSDEC Visual Assessment Policy and other guidance). Confirmation and mapping of hiking trails, cultural resources, historic sites, scenic roadways, and other resources that may be in the viewshed should be included in the updated report. The need for separate notices/outreach to specific parties [e.g., Westchester County] in advance of the balloon test and as a supplement to the above-described noticing should be discussed with the Planning Department. HDR will make field observations on the day of the balloon test to confirm the balloon float and set-up and areas from where the balloon is and is not visible.*

Response: No response is required for this comment as the Second Balloon Test occurred on July 23, 2022. Notwithstanding, as noted above, the Applicants and its consultants discussed the Second Balloon Test with the Planning Board at its July 12, 2022 meeting, and coordinated with the Town Planning Department and HDR regarding the details of the Second Balloon Test.

Comment: *The scope, logistics, and schedule for a follow-on balloon test at 52 Montrose Station Road will be discussed further at the July 12, 2022, Planning Board meeting.*

Response: No response is required for this comment as the Second Balloon Test occurred on July 23, 2022. Notwithstanding, as noted above, the Applicants and its consultants discussed the Second Balloon Test with the Planning Board at its July 12, 2022 meeting, and coordinated with the Town Planning Department and HDR regarding the details of the Second Balloon Test.

Response to Comment "B" regarding a Visual Resources Evaluation based on the Second Balloon Test

Comment: *With the tower location and elevation change, updated viewshed maps (modeled visibility with bare topography, and with vegetation / land cover) should be provided prior to the balloon test. All VPs (prior, and the ones noted above) should be shown on the maps.*

Response: As noted above, the 2022 VRE prepared by Saratoga based on the Second Balloon Test is attached hereto as Exhibit 1. Included in the 2022 VRE are Viewshed Maps (modeled visibility with bare topography, and with vegetation / land cover), which were updated from the 2019 VRE. The viewshed maps included all viewpoints requested by HDR, including those from the 2019 VRE. Pursuant to HDR's request, a copy of the Viewshed Maps were provided to HDR and the Town Planner prior to the Second Balloon Test.

Comment: *Following the balloon test, the field notes and VP photos collected will be discussed with the applicant, HDR, and the Planning Department. The number of photosimulations and VPs to use, tower configurations / designs to depict, and co-location scenarios will be scoped for the future visual resources evaluation submittal. These may include:*

- *Photosimulations of the tower (top half; near field and distance views) and the ground-based equipment area (including proposed fencing and tree removal / clearing) will be requested. The photosimulations submitted with the initial tower design (August 2019) will be reviewed to streamline the supplemental photosimulation needs. 1-2 simulations will be requested using identical views from the 2019 assessment so that changes in monopole design, location, and base elevation can be better assessed from a visual impact standpoint.*

Response: Photo simulations from all of the photo locations where the balloon was visible are included in the 2022 VRE. See Figures C-1 through C-18 of the 2022 VRE attached hereto as Exhibit 1. All areas of the Facility that would be visible in such photos were simulated. The photo simulations included 4 locations from which simulations were also done in the 2019 VRE, so that changes in monopole design, location, and base elevation can be better assessed from a visual impact standpoint.

Comment: *Alternate monopole colors (e.g., conventional grey galvanized and brown) and scenarios with and without co-location will be requested.*

Response: Pursuant to HDR's request, for each photo where the balloon was visible, the 2022 VRE contains two simulations each using a different monopole color, (specifically, conventional grey galvanized and brown). See Figures C-1 through C-18 of the 2022 VRE attached hereto as

Exhibit 1. As there are no carriers other than Verizon Wireless that are a part of this application, the simulations show Verizon Wireless' proposed Facility only.

Comment: *Although not always a viable option for many tower locations, photosimulations of a stealth tree design may be requested for this site based on its setting and modified location to a slightly lower grade.*

Response: Based on prior discussions with the Town, it is our understanding that stealth tree poles are not an acceptable design for wireless towers in the Town.

Comment: *Visual Resources Evaluation report –*

- *The updated visual resources evaluation report should include the Blue Mountain Reservation trails, and specifically discuss the areas within the Reservation where the 140 ft monopole is and is not visible (locations and acreage) based on desktop models.*

Response: The 2022 VRE also includes requested details regarding the Blue Mountain Reservation, including trails, and area[s] within the Reservation where the 140 ft monopole is and is not visible. According to the 2022 VRE, the Facility was not visible from the Blue Ridge Mountain Reservation except "from a brief segment of the utility road where the road passes within a cleared natural gas transmission corridor." See Pages 6-7 of the 2022 VRE, attached hereto as Exhibit 1. See also the Visual Impact Assessment Maps, Photos 7, 8 and 30 and Figures C13, C14 and C15 of the 2022 VRE. As detailed in the 2022 VRE, "it is clear the Facility will not cause a diminishment of the public enjoyment and appreciation of any scenic or historic resource, or one that impairs the character or quality of such a place. As such, the proposed Facility will not result in any adverse visual impact to the area." See Page 12 of the 2022 VRE, attached hereto as Exhibit 1.

Comment: *All field equipment and methods utilized during the balloon test (GPS to confirm tower and photo locations; confirmation of balloon float height; etc.), balloon colors and diameters, camera / lens specification, and the software and tools used to develop the viewshed maps and photosimulations for the updated evaluation should be described.*

Response: Details of the field equipment and methods utilized during the balloon test (GPS to confirm Tower and photo locations; confirmation of balloon float height; etc.), balloon colors and diameters, camera / lens specification, and the software and tools used to develop the viewshed maps and photo simulations for the updated evaluation are included in the 2022 VRE. See Pages 8, 9, 10 and 11 of the 2022 VRE attached hereto as Exhibit 1.

Comment: *Photo examples from similar Homeland projects (conventional and stealth tree monopoles) should be submitted, including the ground-based equipment areas. For the stealth tree option, typical branch density, length of branch zone, and taper should be apparent in the examples provided.*

Response: It is respectfully submitted that the photo simulations included in the 2022 VRE indicate how the Facility will appear at the proposed location. See Figures 1-18 of the 2022 VRE attached hereto as Exhibit 1. Moreover, as noted above, based on prior discussions with the Town,

it is our understanding that stealth tree poles are not an acceptable design for wireless towers in the Town.

Comment: *It is requested that updated viewshed maps (bare earth and with vegetation / land cover added) with all proposed VPs (29 initial and the additional ones noted above) be presented for discussion at the July 12, 2022 Planning Board meeting.*

Response: No response is required for this comment as the Second Balloon Test occurred on July 23, 2022. Notwithstanding, as noted above, the Applicants and its consultants discussed the Second Balloon Test with the Planning Board at its July 12, 2022 meeting, and coordinated with the Town Planning Department and HDR regarding the details of the Second Balloon Test.

Response to Comment "C" Inventory of Project Changes

Comment: *The Verizon application was first reviewed in 2019 by the Planning Board. To better understand the re-design that is now proposed vs. the initial proposal, the information in the below Table should be reviewed by the applicant representatives with clarifications and supplemental information inserted and/or provided in a separate narrative to provide a side-by-side comparison.*

Response: Attached hereto as Exhibit 2 is a structural letter, dated August 10, 2022 ("Structural Letter") from Scherer Design Group ("SDG"). Included as a part of the 2022 Structural Letter is the Table requested by HDR which has be completed by SDG.

Additionally, Sheet Z-13 of the plans, prepared by Scherer Design Group ("SDG"), dated August 10, 2022 ("August 2022 Drawings") and submitted herewith, also contains a table and details, which shows the changes between the Initial Design and the proposed Current Design.

Response to Comment "D" RF Justification (C-Squared Report)

Comment: *RF Reports and data were submitted by C-Squared with the initial application filing (report dated February 20, 2019, including drive test data, existing and proposed cell site information, and coverage maps) and in August 2021 in response to Town comments. Based on the information provided, a gap in Verizon service has been depicted for the site area. To confirm the RF justification information, updated responses are requested as noted in the below bullets.*

> *o The applicant and its RF Engineer should confirm that the Tables of Existing and Proposed Verizon cell sites and the low-band and high-band Verizon coverage maps submitted prior are inclusive of all current existing and approved sites in the search area. The table listing these sites within the report should be updated if necessary, and any updates to the current existing / proposed Verizon cell sites should be added to the coverage maps. If there are no updates required, the RF Engineer shall describe how the*

information in the 2019 and 2021 reports was confirmed to be representative of Verizon's current network conditions in the area.

Response: Attached hereto as Exhibit 3 is an updated report from Verizon Wireless' RF consultant C Squared Systems, LLC ("C Squared"), dated August 19, 2022 ("C Squared 8.2022 Report"), which includes an updated Table of Existing and Proposed Verizon cell sites, as several of the "proposed" sites from the prior report are now "existing." See the "Existing and Proposed Sites" table attached to the C Squared 8.2022 Report as Exhibit A. The C Squared 8.2022 Report also confirms that "Verizon Wireless has no new sites that are currently contemplated in" a 2-3 year range within the Town or within 2 miles from the proposed site.

The C Squared 8.2022 Report also contains coverage maps, attached as Exhibit B thereto, "depicting: (i) the existing coverage from the surrounding sites ("Existing 750 MHZ LTE Coverage") and, (ii) existing and proposed coverage, with the Facility included ("Existing & Proposed 750 MHZ LTE Coverage")." See Page 1 of the C Squared 8.2022 Report and Exhibit B thereto. The C Squared 8.2022 Report also provides that "the existing and proposed coverage has not changed since C Squared's report dated August 12, 2021… [and that] [s]uch maps have merely been updated to include some existing site locations and identifiers."

Comment: *The Verizon frequencies should be confirmed and listed to reflect what is currently proposed. 5G services, if proposed, should be noted. Renewed or updated FCC licenses for all proposed Verizon operation frequencies – if different than earlier submittals - should be submitted for the file. Specification and model numbers for all proposed Verizon antennas, RRH units, and other tower-mounted equipment should be updated from prior filings, if necessary to reflect the current proposal.*

Response: Verizon Wireless' applicable FCC licenses for all proposed frequencies are attached to the C Squared 8.2022 Report as Exhibit C. Additionally, Page Z-8 of the August 2022 Drawings includes specifications and model numbers for all proposed Verizon Wireless antennas, RRH units, and other \Tower-mounted equipment.

Comment: *HDR understands that the need for the tower site (and Verizon service) is predominately based on coverage, based on a review of the C-Squared report. It is requested that the applicant confirm if increased capacity / densification for Verizon's local area network is also an objective. If so, capacity charts for surrounding cell sites should be provided.*

Response: C Squared, in the C Squared 8.2022 Report, confirms the RF justification information previously submitted. Specifically, C Squared confirmed that "[a]s previously stated, the need for the site is driven by coverage" due to an "existing significant gap in coverage in the vicinity of the Site" and that the "proposed Facility will provide coverage to that existing significant gap." See Page 2 of the C Squared 8.2022 Report attached hereto as Exhibit 3.

Comment: *Verizon should update the longer-range (2-3 year) communications facilities plan for the Town, if any new contemplated sites within the Town or 2 miles from the site proposed at 52*

Montrose Station Road have been identified since the prior RF justification submittals. Verizon should also inform the Planning Board of its conceptual plans to roll-out 5G operations in the Town.

Response: On Page 2 of the C Squared 8.2022 Report, attached hereto as Exhibit 3, C Squared confirms that "Verizon Wireless has no new sites that are currently contemplated in" a 2-3 year range within the Town or within 2 miles from the proposed site.

Comment: *It is noted here that RF justification information is under review by HDR.*

Response: No response is necessary to this comment.

Response to Comment "E" Drawings and Specifications

Comment: *The drawing set dated 8-5-2021 should be updated to reflect Homeland as the tower owner. All relevant maintenance, recertification, and other requirements of Town Code Chapter 277 should be added as notes. Maintenance of the access drive and visual aspects of the facility based on the approved ("final") site plan should also be added to the notes.*

Response: Submitted herewith are the August 2022 Drawings, prepared by SDG, which now reference Homeland Towers. Additionally, requirements of Town Code Chapter 277 are included on Page Z-3 of the August 2022 Drawings. Moreover, a note regarding the maintenance of the access drive and visual aspects, including inspections, of the Facility has been added to the notes. See Note 16 on Page Z-1 of the August 2022 Drawings.

Comment: *Conceptually, if there is known interest in co-location at the site by other carrier(s) such as T-Mobile, AT&T, or DISH Wireless, information for those carriers can be added to the Drawings in terms of co-location height, antenna and ground-based equipment specifications, and location of ground-based equipment in the proposed fenced compound at the tower's base. At minimum, potential co-location scenarios should be added to one of the Drawing x-sections of the monopole. [Co-location interest by other carriers – if known at this time – should be noted in the responses-to-comments.]*

Response: Although Verizon Wireless is the only carrier that is a part of the application, another carrier has expressed interest and, therefore, generic details for another carrier has been added to the August 2022 Drawings, including co-location height and location of ground-based equipment in the proposed fenced compound at the Tower's base. See Pages Z-4, Z-5 and Z-6 of the August 2022 Drawings submitted simultaneously herewith.

Comment: *For reference and comparison to the proposed conventional monopole design, a stealth tree design – with Verizon and potential co-location – should be added as a new cross-section image in the Drawing set (allowing side-by-side comparison).*

Response: As noted above, based on prior discussions with the Town, it is our understanding that stealth tree poles are not an acceptable design for wireless towers in the Town.

Comment: *The comments submitted on March 11, 2019 and September 25, 2019, from the Town Department of Technical Services should be confirmed to be incorporated into the Drawing set. It is understood that updates to the 8-5-2021 ("latest") Drawings set will need to be made (e.g., tree survey, tree removal, tree protection plan; add soil erosion and sediment control measures; add material stockpiling / staging plan; add profile view for length of access drive – existing and proposed improvements– along with spec of gravel / bedding material proposed).*

Response: Responses to the relevant comments submitted on March 11, 2019 and September 25, 2019, from the Town Department of Technical Services were already incorporated in prior submissions, including prior drawings on which the August 2022 Drawings is based. Additionally, submitted herewith are the August 2022 Drawings, which include and updated tree removal plan (See Page Z-12), and the location of the proposed access road (See Pages Z-3 and Z-12). Moreover, as indicated on Page 2 of the 2022 Structural Letter, attached hereto as Exhibit 2, "[r]oad construction shall at all times minimize ground disturbance and vegetation-cutting [and] [r]oad grades shall closely follow natural contours to assure minimal visual disturbance and reduce soil erosion potential." The remaining requested details will be submitted and reviewed in the future as part of the Building Permit phase of the project, should the current application be approved.

Comment: *Specification for the proposed 20 kW diesel emergency back-up generator should be added. Sound attenuation and intrinsic fuel containment / overfill protection should be included in the selected generator model.*

Response: Specifications for the proposed 50 kW diesel emergency back-up generator (previously a 20kw generator was proposed) is included on the August 2022 Drawings. See Page Z-9 of the August 2022 Drawings.

Comment: *Lighting detail (for ground-based equipment area) should be provided in the Drawings.*

Response: A detail showing the "ISO Foot Candle Plot," indicating the limited amount of light proposed in connection with the ground-based equipment area of the Facility, is now included as Detail 3 on Page Z-7 of the August 2022 Drawings submitted simultaneously herewith. Such lighting is proposed to only be used only during the maintenance of the Facility.

Comment: *Add notes that state that maintenance of the full extent of the access drive will be conducted by the applicant over the long-term, to safely accommodate access by the applicant, utility and fuel delivery companies, and Town officials including fire and emergency services vehicles. This includes periodic inspection and maintenance, clearing of snow, ice, or other impediments. The location of the nearest hydrant should be indicated (depiction on DWG and/or note to be added). If any additional fire suppression is included as part of the proposed cell site layout, please indicate.*

Response: A note indicating that the maintenance, including "periodic inspection and maintenance, clearing of snow, ice, or other impediments", of the full extent of the access drive will be conducted by the Applicants, "to accommodate access by the applicant, utility and fuel delivery companies, and Town officials including fire and emergency services vehicles." See the Note 16 on Page Z-1 August 2022 Drawings submitted simultaneously herewith. The location of the nearest hydrant is noted in 1/Z-3 of the August 2022 Drawings.

Comment: *DWGs Z5 and Z6. Add background tree line and ground surface profile to the cross-section views. For all 4 cross-sections, the length of profile shown should be extended to 100 ft in both directions.*

Response: The existing tree line and ground surface in the area of the Facility, as they relate to the proposed location of the Facility, are shown in the photo simulations C-7, C-8 and C-9 and C16, C-17 and C-18 from the 2022 VRE, attached hereto as Exhibit 1.

Response to Comment "F" RF Emissions

Comment: *An RF Emissions report was provided as part of the initial filings (Pinnacle Telecom Group, dated December 19, 2018). The applicant should confirm that all proposed Verizon frequency bands are included in the RF emissions analysis. The Verizon frequencies should be confirmed and listed to reflect what is currently proposed. 5G services, if proposed, should be noted. The RF emissions report should be checked to confirm that the equipment assumptions (number and type of Verizon antennas) and analyses are based on the Verizon equipment included on the most-recent Drawings and in the RF Justification reports. Updates to the RF Emissions report, the Drawings, and/or the RF Justification reports should be made so that the information is consistent.*

Response: Attached hereto as Exhibit 4 is an updated RF Emissions Report from Pinnacle Telecom Group, dated July 19, 2022 ("2022 Pinnacle Report"). The 2022 Pinnacle Report is based on Verizon Wireless' Current Design, including proposed frequencies and number and type of antenna. The 2022 Pinnacle Report provides, on Page 14 therein, that its results "provide clear demonstration of [the Facility's] compliance with the FCC MPE limit." Moreover, as noted above, Verizon Wireless' applicable FCC licenses for all Verizon Wireless frequencies are attached to the C Squared 8.2022 Report as Exhibit C, which report is attached hereto as Exhibit 3.

Comment: *It should be confirmed that high-frequency ("mmWave") 5G services are not proposed as part of this application.*

Response: As noted above, the 2022 Pinnacle Report, attached hereto as Exhibit 4, includes all of the proposed Verizon Wireless frequency bands and Verizon Wireless' applicable FCC licenses for all proposed Verizon Wireless operation frequencies are attached to the C Squared 8.2022 Report as Exhibit C, which report is attached hereto as Exhibit 3.

Comment: *Co-location by 3 additional wireless carriers (in addition to Verizon; speculative at this time) should also be included in the RF emissions analyses to evaluate potential co-location scenarios.*

Response: The 2022 Pinnacle Report includes other speculative additional carries (AT&T, DISH and T-Mobile). As noted above, even when incorporating all of the requested information, including the aforementioned speculative additional carriers, the 2022 Pinnacle Report provides that its results "provide clear demonstration of [the Facility's] compliance with the FCC MPE limit." See Page 14 of the 2022 Pinnacle Report attached hereto as Exhibit 4.

Response to Comment G Structural Analysis

Comment: *Although a full structural and foundation analysis would need to be submitted and reviewed in the future as part of the Building Permit phase of the project (should the current application be approved), descriptions of geotechnical borings to assess subsurface conditions and inform the foundation design; potential construction methods (dewatering; type(s) of foundation construction options; possibility of rock blasting; grading for equipment slabs and access road improvements; material handling) should be provided at this time to supplement the February 8, 2019, structural certification letter and the information provided on the Drawings.*

Response: As noted above, attached as Exhibit 2 is the 2022 Structural Letter, which supplements the prior structural certification letter, dated February 8, 2019. The 2022 Structural Letter confirms that the Facility,

> "will be designed to meet the ANSI/TIA-222-H 'Structural Standard for Antenna Supporting Structures, Antennas and Small Wind Turbine Support Structures' and all county, state, and federal structural requirements for loading, including wind and ice loads. The tower will be designed to support additional co-locators. Moreover, same will be designed to meet all applicable provision of the Town Code Chapter 277, to the extent necessary."

See Page 1 of the 2022 Structural Letter attached hereto as Exhibit 2. As indicated in the HDR Memo, it is understood that "a full structural and foundation analysis would need to be submitted and reviewed in the future as part of the Building Permit phase of the project (should the current application be approved)." See Page 9 of the HDR Memo. To that end, as noted on Page 1 of the 2022 Structural Letter,

> "Any descriptions of geotechnical borings to assess subsurface conditions and inform the foundation design will be provided by tower manufacturer and completed once site plan approval is granted. Additionally, the potential construction methods (dewatering; type(s) of foundation construction options; possibility of rock blasting; grading for equipment slabs and access road improvements; material handling) will be confirmed by the contractor for the project once the site plan has been approved and the tower information and foundation design confirmed."

Comment: *An example monopole specification / vender cut sheet from a similar Homeland project - showing structural elements, typical welded sections, monopole diameter / taper, and other information - should also be provided as a reference.*

Response: As indicated on Page 2 of the 2022 Structural Letter attached hereto as Exhibit 2, "[m]onopole specifications, cut sheet, structural element details, typical welded sections, diameter, taper, and other information will be provided and submitted during the building permit process after site plan approval."

As detailed above, Verizon Wireless has addressed comments provided by the Town's consultant HDR in the HDR Memo. We look forward to discussing this matter this with the Planning Board at the September 6, 2022 public hearing for this matter.

If you have any questions, please call me or Leslie Snyder at (914) 333-0700.

Respectfully submitted,
Snyder & Snyder, LLP

By: _____
Michael P. Sheridan

Enclosures
MS:ka
cc: Verizon Wireless
Z:\SSDATA\WPDATA\SS4\WP\NEWBANM\MAYBECK\CORTLANDT\ZONING\HLT\RESPONSE.LTR.V2.FIN.DOCX

Exhibit 1

SARATOGA ASSOCIATES

Proposed Wireless Telecommunications Facility

Site Name: Cortlandt 2 (NY-057)
52 Montrose Station Rd
Cortlandt, NY 10567

VISUAL ASSESSMENT

HOMELAND TOWERS

Prepared for:
Homeland Towers, LLC
9 Harmony Street, 2nd Floor
Danbury, CT 06810

August 18, 2022

Landscape Architects, Architects, Engineers and Planners, P.C.

Homeland Towers, LLC. and New York SMSA Limited Partnership d/b/a Verizon Wireless seek special permit approval from the Town of Cortlandt Planning Board to construct a wireless telecommunications facility (the "Facility") on property at 52 Montrose Station Road ("host property" or "site"). To address issues of potential visual impact, Saratoga Associates, Landscape Architects, Architects, Engineers, and Planners, P.C. was retained to conduct a Visual Resource Assessment ("VRA") of the proposed project.

The viewshed for this VRA extends to a two-mile radius from the Facility (hereafter referred to as the "2-mile viewshed area"). Viewshed analysis demonstrates that the Facility will be substantially or completely screened by existing woodland vegetation beyond a radius of 1-mile (refer to Figure A2 in Appendix A herein). As such, assessment of the potential impact of the Facility on specific visual resources is largely focused on viewpoints within a 1-mile radius ("1-mile VRA study area") of the Facility.

Project Description

The Facility will be located at 41° 16' 11.15" N, 73° 53' 48.26" W ("Facility site"). The 6.1± acre host property is identified in Town of Cortlandt tax records as tax parcel 44.07-1-4.

The Facility includes the construction of a 140-foot-tall galvanized steel monopole type telecommunications tower designed to support collocation. The telecommunications tower will be located within a fenced enclosure. Associated ground equipment will be within an approximately 930 square foot fenced compound. Access to the Facility site will be from a new access drive leading to Montrose Station Road.

At the request of the Town of Cortlandt this analysis also considers the use of a brown colored monopole designed to minimize visual contrast with surrounding woodland vegetation. Photo simulations illustrating the visual characteristics of the brown color monopole alternative, as well as, the proposed steel galvanized finish are provided in Appendix C.

2019 Tower Proposal

An application for a telecommunications tower on this same property was made by Verizon Wireless in 2019 ("2019 tower proposal"). The 2019 tower proposal was similar to the current tower design with minor differences. The 2019 tower proposal, also 140 feet tall, was located approximately 100 feet south of the currently proposed position. The 2019 tower proposal was situated at a higher base elevation resulting in a top elevation approximately 34.5 feet higher than the currently proposed Facility. The 2019 tower proposal was a galvanized steel lattice frame design as compared to the currently proposed galvanized monopile tower design.

A visual assessment report (dated August 27, 2019) was prepared by Saratoga Associates for the 2019 tower proposal. As might be expected with both projects being similar in location and height, the findings of the 2019 visual analysis are substantially the same as findings of this

visual assessment report. However, given the currently proposed tower has a top elevation approximately 35 feet lower than the 2019 tower proposal, visual analysis demonstrates that the Facility as currently proposed results in small reduction in affected area on the viewshed map and a decrease in the visible top of tower elevation as compared to the 2019 tower proposal.

LANDSCAPE SETTING

The Facility is proposed within the Town of Cortlandt, NY (2021 estimated population 42,092[1]). The 2-mile viewshed area is largely suburban in character comprised of low to moderate density (i.e., 1 to 5+ acre) single-family residential lots and undeveloped woodland open space.

The topography within the 2-mile viewshed area is characterized by a rolling and often steeply sloped landscape. The tree canopy occupies approximately 5,842 acres of the 8,041-acre 2-mile viewshed area (72.7%).[2]

The host property is zoned R-40 (Residence – 40,000 square foot lot) as defined by the Cortlandt Code. The host property is substantially wooded. Built structures include an occupied caretaker residence, horse stables, multi-function building and riding corrals.

Montrose Station Road is a dead-end street terminating at a cul-de-sac at the Blue Sky Stables (host property).

The host property is directly adjacent to the 1,538-acre Blue Mountain Reservation, a Westchester County Park.

VIEWSHED ANALYSIS

Viewshed mapping identifies the limited geographic area within which there is a relatively high probability that some portion of the Facility could be visible within the 2-mile viewshed area.

One viewshed overlay was prepared defining the area within which visibility of the Facility is theoretically possible considering the screening effect of intervening topography only. This "bare earth" condition identifies the maximum potential geographic area within which further investigation is appropriate. A second viewshed overlay was prepared illustrating the screening effect of existing mature vegetation and buildings. The more realistic "land cover" condition identifies the geographic area where one would expect to be substantially screened by intervening forest vegetation.

[1] https://www.census.gov/quickfacts/fact/table/cortlandttownwestchestercountynewyork/PST045218

[2] Tree cover calculations are based on areas with 50% or greater tree canopy coverage within 30-meter x 30-meter grid cells as presented in the National Land Cover Database (NLCD) 2011 Percent Tree Canopy dataset. https://viewer.nationalmap.gov/basic/#productSearch

Global Mapper 23.0 GIS software was used to generate viewshed areas based on publicly LiDAR data acquired from the NYS GIS Clearinghouse. A digital surface model (DSM) was created from the LiDAR LAS data points. The DSM captures the natural and built features of the earth's surface. Using Global Mapper's viewshed analysis tool, the proposed Facility location and height were input and a conservative offset of 5' 9" was applied to account for the observer's eye level. The resulting viewshed identifies grid cells with a theoretical line-of-sight to the Facility high point (i.e., 550.5 feet AMSL).

It is noteworthy that untrained reviewers often misinterpret "bare earth" condition viewshed maps to represent wintertime, or leafless condition visibility. In fact, deciduous woodlands provide a substantial visual barrier in all seasons. The land cover viewshed map is substantially representative of both leaf-on and leaf-off seasons. Most importantly, the bare earth condition map is provided only to assist experienced visual analysts identify the maximum potential geographic area within which further investigation is appropriate. Such bare earth viewshed maps are generally not appropriate for public interpretation, and do not represent visibility in leafless conditions.

By themselves, the viewshed maps do not determine how much of the proposed Facility would be visible above intervening landform, structures or vegetation (e.g., 100%, 50%, 10% etc. of total tower height), but rather the geographic area within which some portion of the Facility would theoretically be visible. Their primary purpose is to provide a general understanding of a Facility's potential visibility and identify areas to be visited during field reconnaissance.

Figure A1 identifies areas of potential project visibility at a macro scale within the 2-mile viewshed area. Figure A2 provides a more localized assessment potential visibility within the 1-mile VRA study area. Figure A1 and Figure A2 are provided in Appendix A.

The land cover viewshed overlay illustrates that of the 8,041 acres within the 2-mile viewshed area, a direct view (e.g., not screened or filtered by intervening vegetation) of some portion of the Facility is theoretically possible from approximately 0.10% of such viewshed area. This compares to 0.13% visible area for the 2019 tower proposal.[3] The land cover viewshed overlay illustrates that of the 2,010 acres within the 1-mile VRA study area, a direct view of some portion of the Facility is theoretically possible from approximately 0.38% of such viewshed area. This compares to 0.48% visible area for the 2019 tower proposal.

[3] A difference is noted between the calculation of viewshed area found in the 2019 visual assessment report and the viewshed area calculations included herein. This difference results from the use of the LIDAR based DSM compared to the slightly less accurate digitized vegetative cover analysis. This minor difference is inconsequential for the purpose of visual analysis. The comparison of viewshed areas for both the 2019 and current tower proposals included herein are both calculated using the more current LIDAR based DSM.

Notwithstanding, the photos herein (refer to Appendix B) confirm that the actual total area from which the Facility can be viewed is significantly less than even the small theoretical percentage within the 2-mile and 1-mile study areas indicated by the land cover viewshed maps.

This assessment finds that there are no large geographic areas where Facility views will occur. Places within the public right-of-way where Facility views are found are isolated locations where narrow view corridors exist through rare small openings in roadside vegetation and between structures. In all cases, affected road segments are short and Facility views will be brief and intermittent through roadside vegetation. Moreover, given the complex visual stimuli encountered by motorists travelling in a moving vehicle, even if the Facility is visible, it is probable that viewer recognition of the Facility would be limited to a fraction of the total available viewing time. As the tendency of motorists is to focus down the road, peripheral views of the Facility will go largely unnoticed by most travelers.

VISUAL RESOURCES

Scenic Resources of Statewide Significance - To avoid subjectivity in assessing potential visual impact, the New York State Department of Environmental Conservation's ("NYSDEC") Program Policy on Assessing and Mitigating Visual Impact (DEP-00-02 [revised 12/13/2019]) ("DEC Visual Policy") provides guidance in the determination of visual significance under the State Environmental Quality Review Act (SEQRA). Aesthetic impact is defined by the DEC Visual Policy as follows:

> "Aesthetic impact occurs when there is a detrimental effect on the perceived beauty of a place or structure. Mere visibility of a project should not be a threshold for decision making. Instead a project, by virtue of its visibility, must clearly interfere with or reduce the public's enjoyment or appreciation of the appearance of a significant place or structure."[4]

The DEC Visual Policy defines an "aesthetically significant place" as a place formally designated and visited because of its beauty.[5] Aesthetically significant places are established by federal or state government pursuant to statutory authority, are a matter of public record and are not arbitrarily or subjectively determined. The DEC Visual Policy contains specific criteria defining places considered to be aesthetic resources of statewide significance. These places are high value sites including state parks, scenic roads, wild, scenic and recreational rivers, state forests, wildlife management areas, scenic areas of statewide significance, Heritage Areas, National

[4] DEC Visual Policy, p.15. (https://www.dec.ny.gov/docs/permits_ej_operations_pdf/visualpolicydep002.pdf)
[5] DEC Visual Policy, p.15.

Natural Landmarks, state or federally designated trails, properties or districts listed or eligible for listing on the National Register of Historic Places, among others.

The DEC Policy also does not apply to potentially affected places that are not open to the general public. The DEC Visual Policy states:

> "The Visual Policy is intended to address places or locations that have been officially designated for their aesthetic qualities and that are accessible to the public at large as opposed to places that may have individual or private importance only." [6]

No "inventoried resources" are found within the 1-mile VRA study radius. Both the viewshed analysis and the balloon test demonstrate that the Facility is substantially or fully screened by dense woodland vegetation beyond the immediate Facility area. Therefore, due to vegetation and distance, the Facility will not be readily visible from any scenic resource of statewide or national significance beyond the 1-mile VRA study radius.

Aesthetic Resources of Local Importance - Aesthetic resources of local importance are publicly accessible places generally recognized and enjoyed by community residents and visitors for their unique aesthetic value. Aesthetic resources of local importance are established through local democratic processes and are not arbitrarily or subjectively determined. Such places are most commonly municipal parks, trails, bikeways, and may also include not-for-profit conservation lands and open space preserves.

Places meeting this criterion with the 1-mile VRA study area include:

- Blue Mountain Reservation – The 1,538-acre Blue Mountain Reservation is a county park that features miles of trails for mountain biking, strolling and nature study, and offers challenging hikes to the tops of two large peaks, Mt. Spitzenberg and Blue Mountain. Also located at the park is the Sportsman Center, a recreation facility offering target ranges. The Blue Mountain Reservation is heavily wooded with few opportunities for views beyond the immediate foreground.

  No views of the Facility were found from any designated trail inside the park during the balloon test due to the dense local vegetation.

  No view of the Facility was found from the summit of Blue Mountain (elev. 680 feet) (refer to photo 8 included in Figure B4 in Appendix B)[7].

[6] DEC Visual Policy, p.4.

[7] Saratoga Associates hiked the trail to the Blue Mountain summit in April 2019 during a balloon visibility test conducted as part of the 2019 tower proposal visual assessment. Due to dense forest vegetation no visibility of the balloon was identified at that time. In consultation with Town consultant HDR it was agreed that photos

The only Facility view found within the Blue Mountain Reservation was along a park utility road where it intersects with the Montrose Station Road cul-de-sac, and from a brief segment of the utility road where the road passes within a cleared natural gas transmission corridor. Such visibility is limited in nature. Accordingly, the Facility will not be readily visible to park visitors. Figures C13-C15 in Appendix C illustrate this view.

- Briarcliff-Peekskill Trailway – The Briarcliff-Peekskill Trailway is a 12-mile unpaved walking trail that runs from Ossining to the Blue Mountain Reservation. Based on viewshed analysis, the Facility will not be visible from the Briarcliff-Peekskill Trailway due to the density of the forest vegetation.
- City of Peekskill Parks – A portion of the City of Peekskill's Depew Park is located approximately 3/4-mile northwest of the Facility. Based on viewshed analysis, the Facility will not be visible from this recreation facility.

The location of these aesthetic resources of local importance is indicated on Figures A1 and A2.

Other Areas of Local Interest - While not rising to the threshold of national or statewide significance or local importance, other places of local interest have been included in this visual assessment at the request of Town staff to represent potential Facility views from roadways, residential neighborhoods and adjacent or nearby residential properties. Such locations are not representative of any aesthetically significant place as defined under the DEC Visual Policy and are not directly addressed under SEQRA. These places include:

- Residential Areas - Within the ½-mile of the Facility residential development includes single-family parcels fronting, or directly accessed from Montrose Station Road, Maple Avenue and Furnace Wood Road. Other residential development is within planned single-family subdivisions on Galloway Lane and Fairgreen Court.

  Between ½- and 1-mile from the Facility residential development is located along, or in planned single-family residential neighborhoods off of Maple Avenue, Lafayette Avenue, Furnace Woods Road and Watch Hill Road including, but not limited to Cortlandt Estates, Hill and Dale Road, Lake View Avenue, Dimond Avenue and Manor Drive.

  Dense woodland and well landscaped understory areas commonly limit views from residential properties to the immediate foreground. From most residential properties, views of the Facility will be substantially screened by intervening dense mature woodland vegetation – even during winter leaf-off-season.

taken from the Blue Mountain summit in April 2019 (during leaf-off condition) should be used herein to document existing visual screening from this key observation point.

Facility views along Montrose Station Road will be substantially limited to the vicinity of the cul-de-sac at Blue Sky Stables. Figures C5-C6, C7-C9 and C16-C17 in Appendix C illustrate this view. A very brief, isolated and intermittent glimpse of the upper portion of the Facility is found on Montrose Station Road north of Blue Sky Stables. This view is limited to approximately 100 feet of road frontage on Montrose Station Road. Figures C1-C3 in Appendix C illustrate this view. No other Facility views were discovered on Montrose Station Road.

- Roadways - Approximately 16 miles of public roadways are within the 1-mile VRA study area. Maple Avenue at Montrose Station Road has an AADT of 2,445 vehicles. Furnace Woods Road has an AADT of 1,965 vehicles and Watch Hill Road at Blue Mountain Middle School has an AADT of 3,367 vehicles.

  Views of the Facility from these public roads will be substantially or fully screened by dense roadside vegetation from virtually all public roadways within the 1-mile VRA study area.

  A discrete project view is found on Furnace Wood Road near the intersection with Galloway Lane. This view through an opening in roadside vegetation is limited to approximately 200 feet of road frontage. No other Facility views were discovered on Furnace Wood Road. Figure C10-C12 in Appendix C illustrates this view.

STUDY AREA RECONNAISSANCE

A balloon visibility test was conducted on July 23, 2022, to allow the general public and local decision-makers an opportunity to observe the location and potential visibility of the Project.

The methodology for the balloon test was developed in consultation with Town of Cortlandt Director of Planning and Town consultant HDR. Key observation points to be visited during the balloon test were discussed and agreed to in advance by Homeland Towers and HDR. Homeland Towers identified 28 locations to be visited during the balloon test. HDR agreed with these locations and requested four additional locations also be visited. These locations are identified in Table 1 below.

One 4-foot± diameter red balloon was raised to the approximately top elevation of the proposed tower. The balloon was raised at approximately 9:00am and remained aloft until 1:25pm. The weather was clear and winds were calm for the duration of the balloon test.

Town of Cortlandt consultant HDR attended the balloon test and was in communication with Saratoga Associates throughout the test to confirm all key observation points were visited and photographed.

While the balloon was in the air, an experienced visual analyst (Matthew Allen, RLA) visited each predetermined location and took a photograph from the nearest publicly accessible vantage point in the vicinity of the subject location. For each photographed view, the visual analyst took care to select a photo position where the balloon was most exposed. Photos were also taken from other locations where balloon was not visible to balance the photo record and document visual conditions representative of the surrounding area.

Photographs were taken using a Canon EOS 6D Mark II digital single lens reflex ("DSLR") 26-mega pixel camera with a lens setting of 50mm to simulate normal human eyesight relative to scale. The precise coordinate of each photo location was recorded in the field using a handheld global positioning system (GPS) unit. The Canon EOS D6 Mark II also has a built in GPS sensor which imbeds photo coordinates in the photo file meta data.

Photographs taken during the field reconnaissance are provided in Appendix B in the order listed below (photographs 1–35 a/k/a Figures B1-B18). Simulations of the proposed Facility are included as Appendix C and those simulations are indicated in the last column below (Figures C1-C17).

Photographs taken from visual resources during the July 23, 2022 balloon test are provided as in Appendix B. Photographs were taken from the following places:

Table 1 – Key Observation Points

Map ID/ Picture # (Appendix B)	Location Description	Direction to Tower	Distance to Tower (feet)	Theoretical View Indicated by Land Cover Viewshed - (See Figure A2)	Balloon Visible*	Photo/ Simulation Provided as
1	Montrose Station Road near #32 and #36	W	430	NO	**NO	
2	Montrose Station Road near #34	W	800	YES	NO	
3	Montrose Station Road near #5	SSW	1,390	NO	NO	
4	Montrose Station Road near #20	SSW	1,090	YES	YES	Figure C1-3
5	Montrose Station Road near #26 and #39	S	500	YES	YES	Figure C4-6
6	Montrose Station Road near #49 and #57	SSE	410	YES	YES	Figure C7-9
7	Blue Summit Reservation – Utility Road	ESE	1,260	NO	NO	
8	Blue Mountain Reservation – Blue Mountain Summit	ESE	1,870	NO	NO	
9	Montrose Station Road at Maple Avenue	SSW	2,070	NO	NO	
10	Maple Avenue near #2117	SSW	1,610	YES	**NO	
11	Maple Avenue near #2139	SW	1,570	NO	NO	
12	Maple Avenue near Furnace Woods Road	WSW	2,020	YES	NO	
13	Fairgreen Court at Maple Avenue	WSW	2,450	NO	NO	
14	Furnace Woods Road near Galloway Lane	W	2,120	YES	YES	Figure C10-12
15	Veronica Court near #10	NW	2,710	NO	NO	
16	Veronica Court at Furnace Woods Road	WNW	3,170	NO	NO	
17	Fairgreen Court at cul-de-sac	WSW	2,820	YES	NO	
18	Hill and Dale Road at Maple Avenue	W	3,890	NO	NO	
19	Rosalind Rd at Cross Road	W	6,850	YES	NO	
20	Croton Avenue near #200	WSW	9,020	NO	NO	
21	Dickerson Road at Hilltop Drive	WNW	7,910	NO	NO	
22	Furnace Dock Road near #343	NW	6,790	NO	NO	
23	Charles Cook Park	NNW	8,720	NO	NO	
24	Watch Hill Road near Furnace Woods Elem. School	SSE	4,750	YES	NO	
25	Montrose Station Road at Washington Street	ENE	6,900	NO	NO	
26	Lafayette Avenue near Damian Way	S	3,430	YES	NO	
27	Greenlawn Road at Robbie Road	W	5,420	NO	NO	
28	Chapel Hill Drive	SSE	5,570	NO	NO	
29	1969 Crompond Rd. (NY Pres. Hudson Valley Hospital)	S	8,040	NO	NO	
30	Blue Mountain Reservation – Utility Road at Gas ROW	ENE	1,510	YES	YES	Figure C13-15
31	Montrose Station Road	S	440	YES	YES	Figure C16-17
32	Main St at Dayton La (near Beecher-McFadden Estate)	S	9,650	YES	NO	
33	Villa Loretto NR Site	SSE	7,370	NO	NO	
34	Maple Avenue at Mount Florence NR Historic District	SSE	5,940	NO	NO	
35	Underhill La (Mount Florence NR Historic District)	SSE	4,680	YES	NO	

Terminology

* "Balloon Visible" differs from "Theoretical View Indicated by Land Cover Viewshed" due to the use of LIDAR data which underestimates tree height in viewshed calculation.

** The balloon was not visible from this location during the July 23, 2022 balloon visibility test which was conducted during summer leaf-on conditions. However, a balloon flown on May 4, 2019 representing the 2019 tower proposal was partially visible through deciduous branching during winter leaf-off-season. The currently proposed tower may be partially visible through deciduous branches during winter leaf-off season.

PHOTO SIMULATIONS

To illustrate how the Facility will appear photo simulations were prepared from five (5) affected photo locations. Photo simulations were developed by superimposing a rendering of a three-dimensional computer model of the proposed Facility into the base photograph taken from each corresponding visual receptor and adjusting to ensure the model reflects the appropriate

size and exact location of the tower. The three-dimensional computer model was developed using *3D Studio Max Design®* software (3D Studio Max).

Simulated perspectives (camera views) were matched to the corresponding base photograph for each simulated view by replicating the precise coordinates of the field camera position (as recorded by handheld GPS) and the focal length of the camera lens used (e.g. 50mm). Precisely matching these parameters assures scale accuracy between the base photograph and the subsequent simulated view. The camera's elevation (Z) value is derived from digital elevation model (DEM) data plus the camera's height above ground level. The camera's target position was set to match the bearing of the corresponding existing condition photograph as recorded in the field. With the existing conditions photograph displayed as a "viewport background," and the viewport properties set to match the photograph's pixel dimensions, minor camera adjustments were made (horizontal and vertical positioning, and camera roll) to align the horizon in the background photograph with the corresponding features of the 3D model.

To verify the camera alignment, elements visible within the photograph (e.g., balloon, existing buildings, utility poles, topography, etc.) were identified and digitized from digital orthophotos as needed. Each element was assigned a Z value based on DEM data and then imported to 3D Studio Max. A 3D terrain model was also created (using DEM data) to replicate the existing local topography. The digitized elements were then aligned with corresponding elements in the photograph by adjusting the camera target. If necessary, slight camera adjustments were made for accurate alignment.

A daylight system was created matching the exact date and time of each baseline photograph to assure proper shading and shadowing of modeled elements.

Once the camera alignment was verified, a to-scale 3D model of the proposed 140-foot-tall monopole style telecommunications tower was merged into the model space. The 3D model of Facility was constructed in sufficient detail to accurately convey visual character and reveal impacts. The scale, alignment, elevations and location of the visible elements of the proposed tower are true to the conceptual design. Post production editing (i.e., airbrush out portion of tower that falls below or behind foreground topography and vegetation) was completed using Adobe Photoshop software. The methodology accurately represents the location, height and visual character of the proposed tower. Photo simulations are provided in Appendix C.

Summary and Conclusions

The Facility involves the construction of a 140-foot-tall galvanized steel monopole telecommunications tower designed to support to support collocation.

The study area is characterized by a rolling, steeply sloped and heavily wooded landscape with broad tracts of mature second growth deciduous forest that effectively block or screen views of the Facility from most locations.

An application for a telecommunications tower on this same property was made by Verizon Wireless in 2019 ("2019 tower proposal"). The 2019 tower proposal was similar to the current tower design with minor differences. A visual assessment report (dated August 27, 2019) was prepared by Saratoga Associates for the 2019 tower proposal. The findings of the 2019 visual analysis are substantially the same as findings of this visual assessment report. However, given the currently proposed tower has a top elevation approximately 35 feet lower that the 2019 tower proposal, visual analysis demonstrates that the Facility as currently proposed results in small reduction in affected area on the viewshed map and a decrease in visible top of tower elevation as compared to the 2019 tower proposal.

This assessment demonstrates that there are no large geographic areas where Facility views will occur. Places where Facility views are found are isolated locations where narrow view corridors exist through rare small openings in roadside vegetation.

Additionally, as demonstrated above, the Facility will not be visible from any scenic resource of statewide or national significance, including places listed on or eligible for listing on the National Register of Historic Places.

Based on the location of the Facility, it is clear that project visibility is not of a size or extent that it would constitute an unacceptable magnitude.

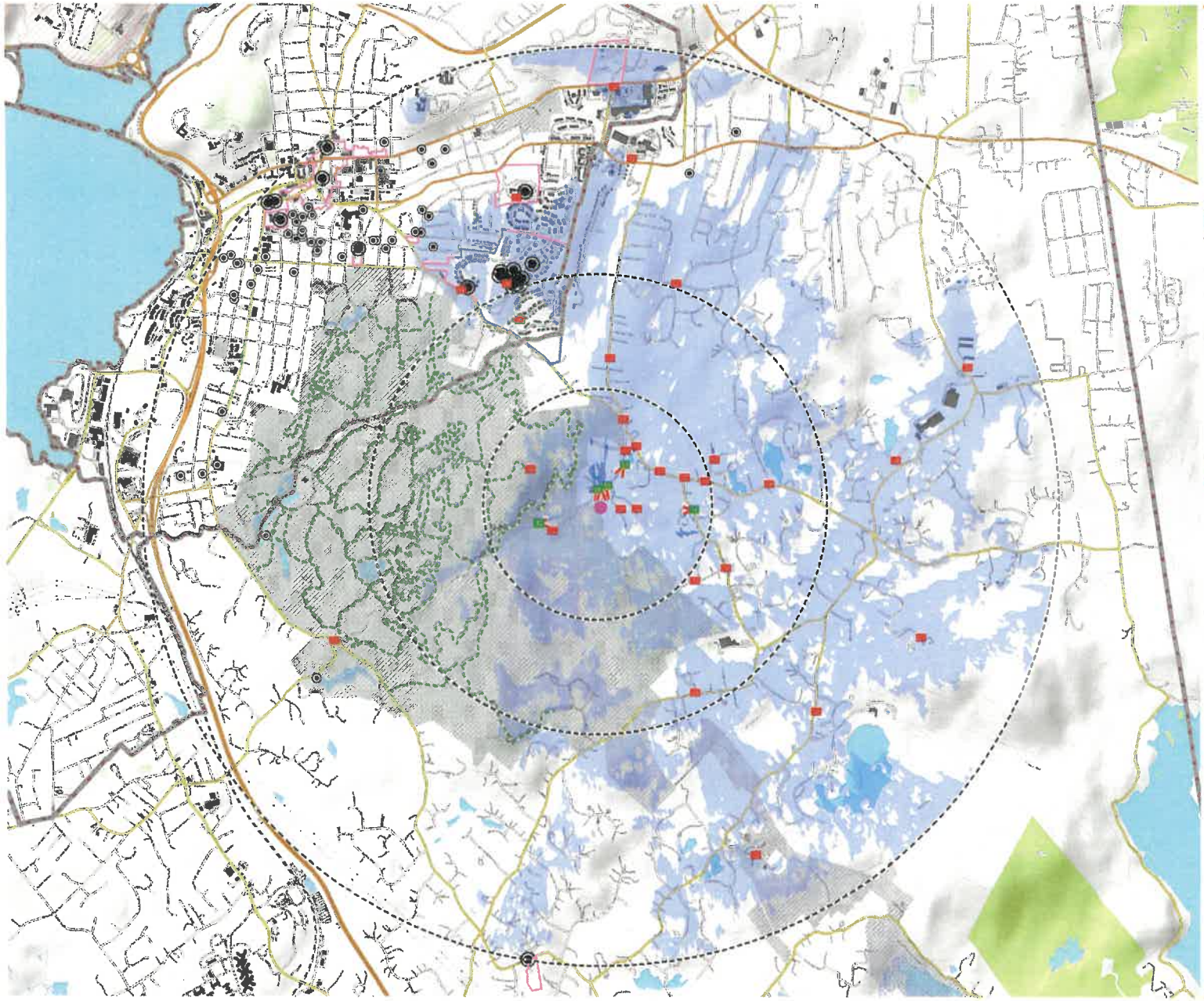
When considered within the framework of the DEC Visual Policy's definition of "significant adverse visual impact", it is clear the Facility will not cause a diminishment of the public enjoyment and appreciation of any scenic or historic resource, or one that impairs the character or quality of such a place. As such, the proposed Facility will not result in any adverse visual impact to the area.

Submitted by:

Matthew W. Allen, RLA

APPENDIX A

Viewshed Maps



CORTLANDT 2 (NY057)

52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Visual Impact Assessment

Figure A1 - Viewshed Map (2 mile radius)

Legend

- Bare Earth Viewshed (140ft Tower)
- Land Cover Viewshed Area (140ft Tower)
- Municipal Boundaries

Visually Sensitive Resources

- Municipal Recreation Area
- National Register Historic Site/District
- Trail
- National Register Eligable Site
- National Register of Historic Places Site

Balloon Test Photo Locations

- Balloon Visible
- Balloon not Visible
- Photo Simulation (see Appendix C)

Note: Viewshed mapping provides a general understanding of where the proposed project is theoretically visible based on regional topographic, forest and building cover data sources.

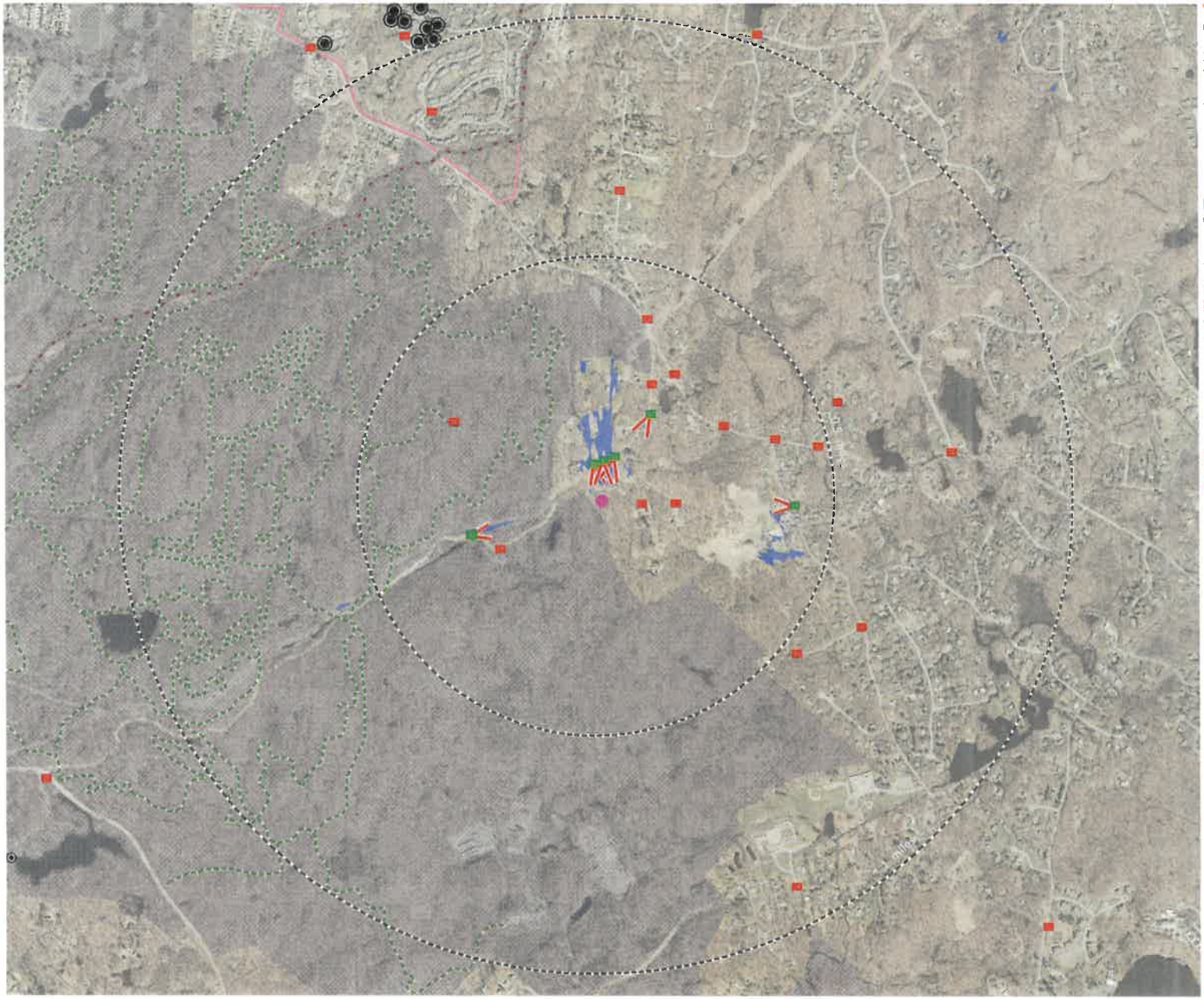
The "Bare Earth' condition overlay identifies areas where the proposed telecommunictions tower high point may be visible without consideration of the screening effect of existing vegetation or built structures. Bare earth analysis is provided to assist experienced visual analysts identify the maximum potential geographic area within which further investigation is appropriate. This topography-only viewshed map is not representative of project visibility during winter season leaf-off conditions.

The "Land Cover" condition viewshed area includes the screening effect of intervening vegetation and buildings. The location and height of vegetated areas and buildings is based on UAGS 3 County 2014 LIDAR data aquired from NYSGIS Clearinghouse.

1000 ft 3000 ft 5000 ft

SARATOGA ASSOCIATES

HOMELAND TOWERS



CORTLANDT 2 (NY057)

52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Visual Impact Assessment

Figure A2 - Viewshed Map (1 mile radius)

Legend

- Land Cover Viewshed Area (140ft Tower)
- Municipal Boundaries

Visually Sensitive Resources

- Municipal Recreation Area
- National Register Historic Site/District
- Trail
- National Register Eligable Site
- National Register of Historic Places Site

Balloon Test Photo Locations (see Appendix B)

- Balloon Visible
- Balloon not Visible
- Photo Simulation (see Appendix C)

Note: Viewshed mapping provides a general understanding of where the proposed project is theoretically visible based on regional topographic, forest and building cover data sources.

The "Land Cover" condition viewshed area includes the screening effect of intervening vegetation and buildings. The location and height of vegeteted areas and buildings is based on UAGS 3 County 2014 LIDAR data aquired from NYSGIS Clearinghouse.

0 ft 500 ft 1500 ft 2500 ft

SARATOGA ASSOCIATES

HOMELAND TOWERS

APPENDIX B

Photographs

Existing View

Photo	Location	Distance to Site	Visibility
1	Montrose Station Road near #32 and #36	430 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
2	Montrose Station Road near #34	800 ft	Not Visible

PHOTO LOG

Figure B1

SARATOGA ASSOCIATES

HOMELAND TOWERS

Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester Coutny, NY

Existing View

Photo	Location	Distance to Site	Visibility
3	Montrose Station Road near #5	1,390 ft	Visible

Existing View

Photo	Location	Distance to Site	Visibility
4	Montrose Station Road near #20	1,090 ft	Visible

PHOTO LOG

Figure B2

Existing View

Photo	Location	Distance to Site	Visibility
5	Montrose Station Road near #26 and #39	500 ft	Visible

Existing View

Photo	Location	Distance to Site	Visibility
6	Montrose Station Road near #49 and #57	410 ft	Visible

Existing View

Photo	Location	Distance to Site	Visibility
7	Blue Mountain Reservation - Utility Road	1,260 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
8	Blue Mountain Reseravtion - Blue Mountain Summit (2019 photo)	1,870 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
9	Montrose Station Road at Maple Avenue	2,070 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
10	Maple Avenue near #2117	1,610 ft	Not Visible

PHOTO LOG

Figure B5

SARATOGA ASSOCIATES

HOMELAND TOWERS

Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester Coutny, NY

Existing View

Photo	Location	Distance to Site	Visibility
11	Maple Avenue near #2139	1,570 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
12	Maple Avenue near Furnace Woods Road	2,020 ft	Not Visible

Existing View

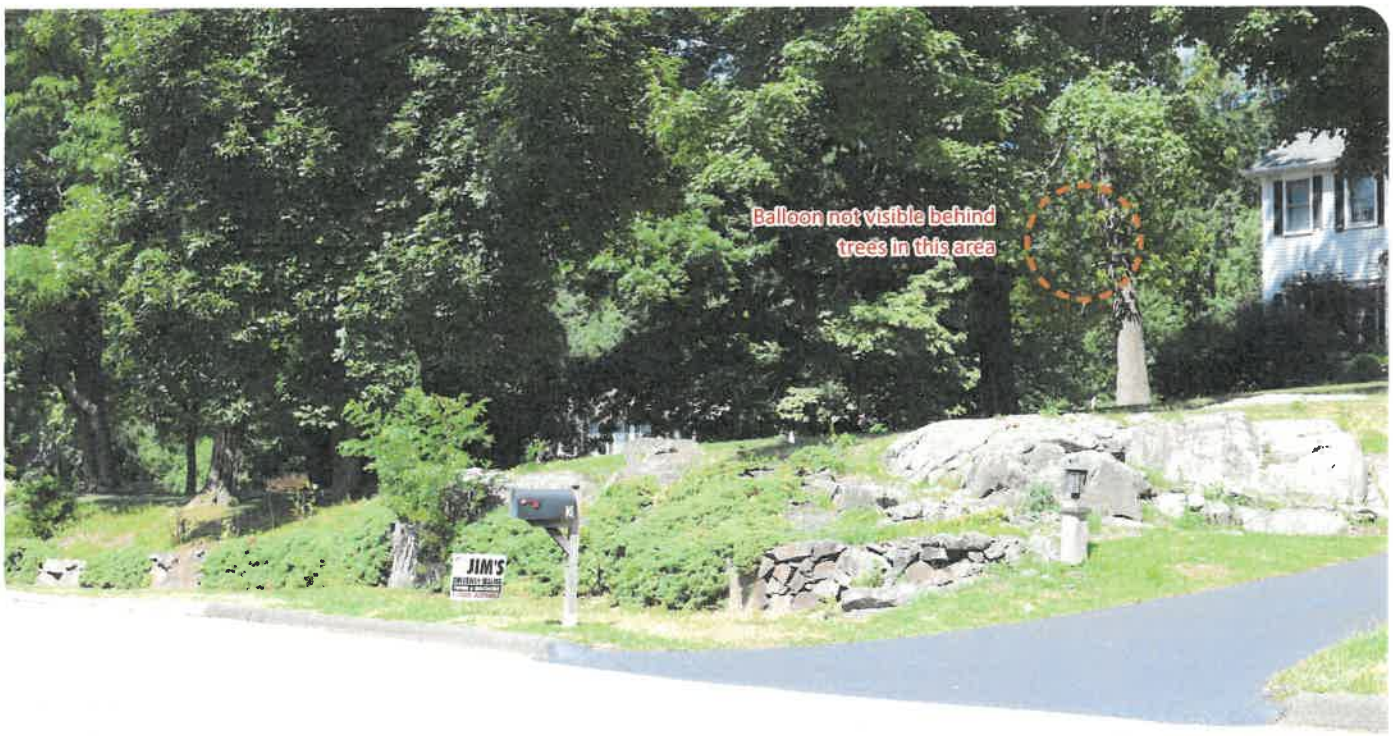
Photo	Location	Distance to Site	Visibility
13	Fairgreen Court at Maple Avenue	2,450 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
14	Furnace Woods Road near Galloway Lane	2,120 ft	Visible

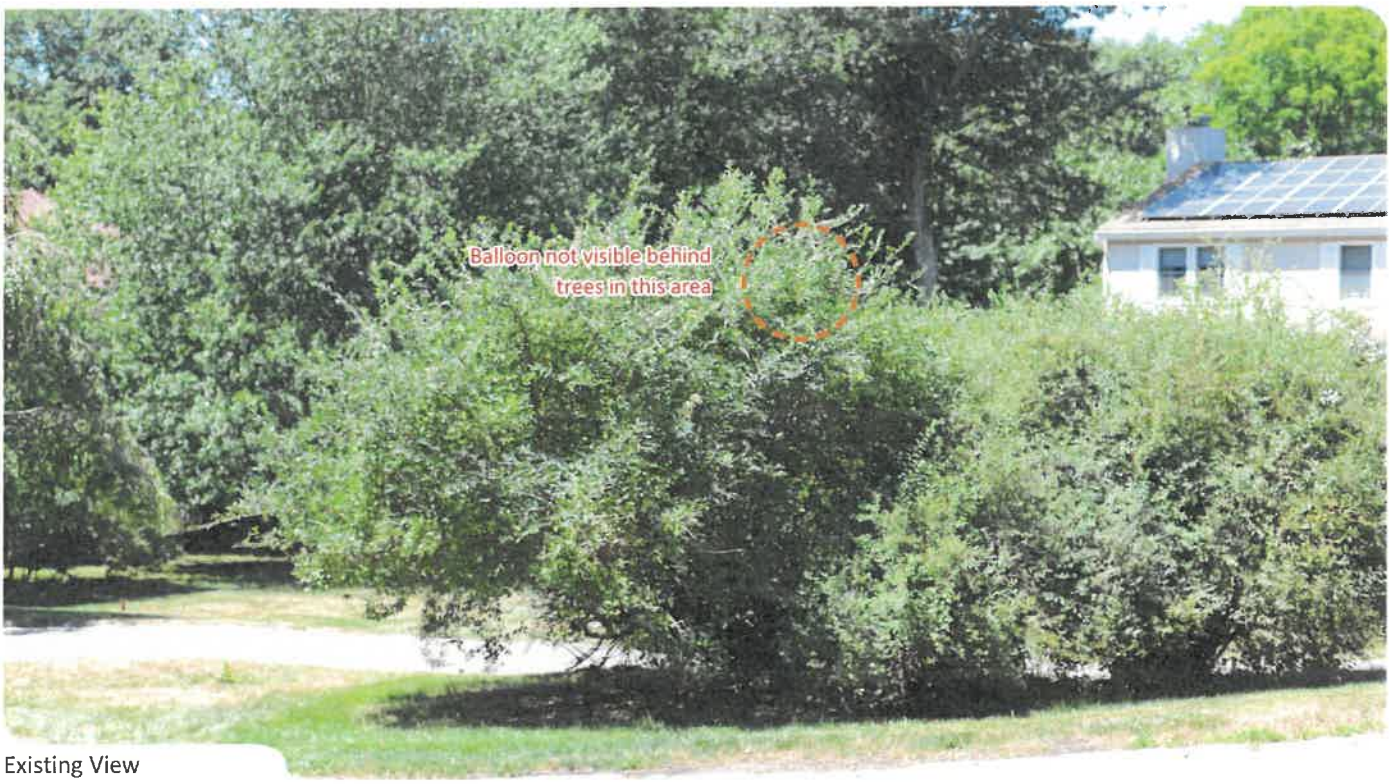
Existing View

Photo	Location	Distance to Site	Visibility
15	Veronica Court near #10	2,710 ft	Not Visible



Existing View

Photo	Location	Distance to Site	Visibility
16	Veronica Court at Furnace Woods Road	3,170 ft	Not Visible



Existing View

Photo	Location	Distance to Site	Visibility
17	Fairgreen Court at cul-de-sac	2,820 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
18	Hill and Dale Road at Maple Avenue	3,890 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
19	Rosalind Rd at Cross Road	6,850 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
20	Croton Avenue near #200	9,020 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
21	Dickerson Road at Hilltop Drive	7,910 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
22	Furnace Dock Road near #343	6,790 ft	Not Visible

SARATOGA ASSOCIATES

HOMELAND TOWERS

Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester Coutny, NY

Existing View

Photo	Location	Distance to Site	Visibility
23	Charles Cook Park (2019 photo)	8,720 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
24	Watch Hill Road near Furnace Woods Elementary School	4,750ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
25	Montrose Station Road at Washington Street	6,900 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
26	Layfayette Avenue near Damian Way	3,430 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
27	Greenlawn Road at Robie Road	5,420 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
28	Chapel Hill Drive	5,570 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
29	1969 Crompond Road (NY Presbyterian Hudson Valley Hospital)	8,040 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
30	Blue Mountain Reservation - Utility Road at Gas ROW	1,510 ft	Visible

PHOTO LOG

Figure B15

Existing View

Photo	Location	Distance to Site	Visibility
31	Montrose Station Road	440 ft	Visible

Existing View

Photo	Location	Distance to Site	Visibility
32	Main Street at Dayton Lane (near Beecher-McFadden Estate - NR Site)	9,650 ft	Not Visible

PHOTO LOG

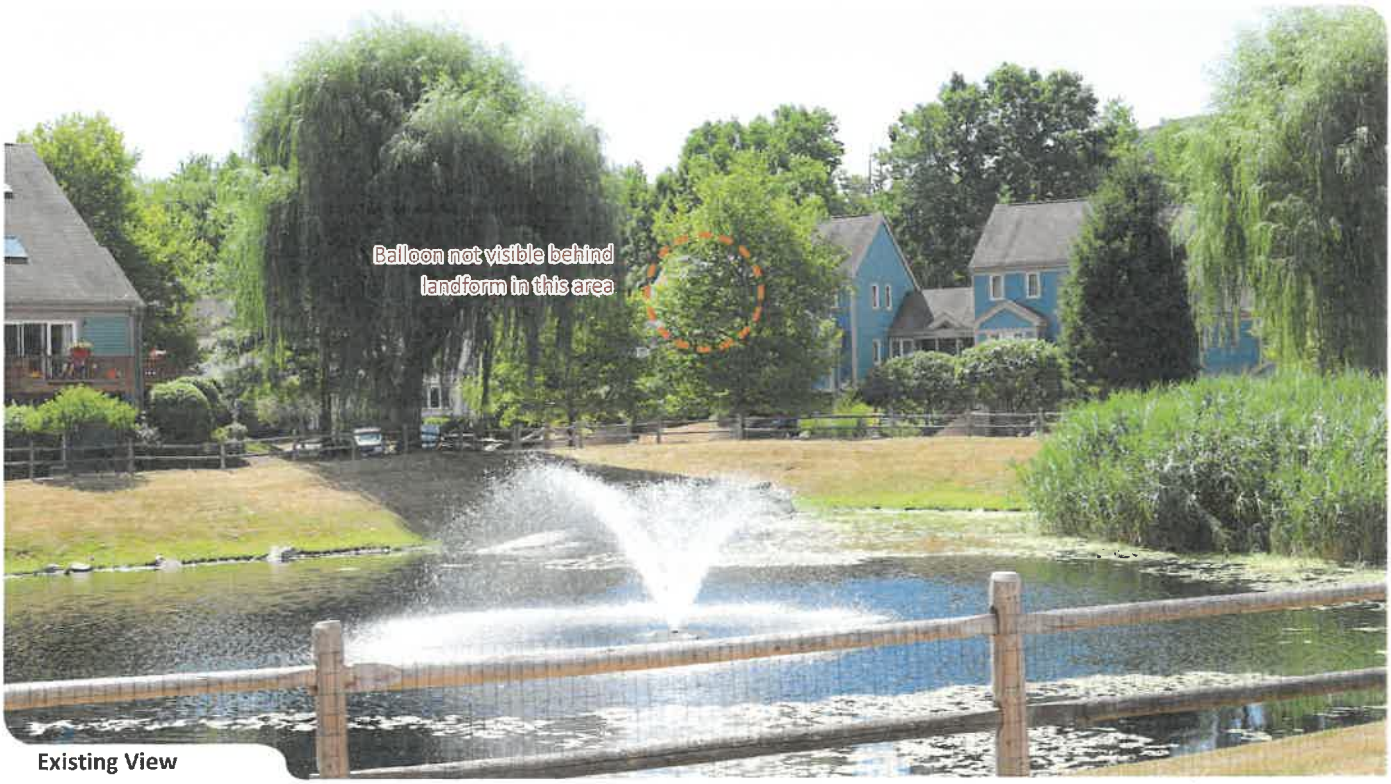
Figure B16

Existing View

Photo	Location	Distance to Site	Visibility
33	Villa Loretto NR Site	7,370 ft	Not Visible

Existing View

Photo	Location	Distance to Site	Visibility
34	Maple Avenue at Mount Florence NR Historic District	5,940 ft	Not Visible



Existing View

Photo	Location	Distance to Site	Visibility
35	Underhill Lane (Mount Florence NR Historic District)	4,680 ft	Not Visible

APPENDIX C

Photo Simulations

Photo 4 - Montrose Station Road near #20
EXISTING CONDITION

SARATOGA ASSOCIATES

This photograph was taken using a 50mm normal angle lens. To appear at the correct scale this page is intended to be viewed approximately 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	July 23, 2022	Photo Location:	41° 16' 20.5422" N 73° 53' 41.2259" W
Time:	10:36 AM		
Focal Length:	50mm	Distance to Tower:	1,090 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C1
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 4 - Montrose Station Road near #20
SIMULATED CONDITION: 140FT TOWER (GALVANIZED FINISH)

SARATOGA ASSOCIATES

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Photograph Information

Date:	July 23, 2022	Photo Location:	41° 16' 20.5422" N 73° 53' 41.2259" W
Time:	10:36 AM		
Focal Length:	50mm	Distance to Tower:	1,090 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C2
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 4 - Montrose Station Road near #20
SIMULATED CONDITION: 140FT TOWER (BROWN COLOR)

SARATOGA ASSOCIATES

This photograph was taken using a 50mm normal angle lens. To appear at the correct scale this page is intended to be viewed approximately 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	July 23, 2022	Photo Location:	41° 16' 20.5422" N
Time:	10:36 AM		73° 53' 41.2259" W
Focal Length:	50mm	Distance to Tower:	1,090 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C3
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 5 - Montrose Station Road near #26 and #39
EXISTING CONDITION

SARATOGA ASSOCIATES

This photograph was taken using a 50mm normal angle lens. To appear at the correct scale this page is intended to be viewed approximately 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	July 23, 2022	Photo Location:	41° 16' 15.9240" N 73° 53' 46.5360" W
Time:	9:21 AM		
Focal Length:	50mm	Distance to Tower:	500 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C4
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 5 - Montrose Station Road near #26 and #39
SIMULATED CONDITION: 140FT TOWER (GALVANIZED FINISH)

SARATOGA ASSOCIATES

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Time:	9:21 AM		
Focal Length:	50mm	Distance to Tower:	500 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C5
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 5 - Montrose Station Road near #26 and #39
SIMULATED CONDITION: 140FT TOWER (BROWN COLOR)

SARATOGA ASSOCIATES

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Time:	9:21 AM		
Focal Length:	50mm	Distance to Tower:	500 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C6
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 6 - Montrose Station Road near #49 and #57
EXISTING CONDITION

SARATOGA ASSOCIATES

This photograph was taken using a 50mm normal angle lens. To appear at the correct scale this page is intended to be viewed approximately 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	July 23, 2022	Photo Location:	41° 16' 15.1333" N 73° 53' 49.5396" W
Time:	9:18 AM		
Focal Length:	35mm	Distance to Tower:	410 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C7
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 6 - Montrose Station Road near #49 and #57
SIMULATED CONDITION: 140FT TOWER (GALVANIZED FINISH)

SARATOGA ASSOCIATES

This photograph was taken using a 50mm normal angle lens. To appear at the correct scale this page is intended to be viewed approximately 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	July 23, 2022	Photo Location:	41° 16' 15.1333" N 73° 53' 49.5396" W
Time:	9:18 AM		
Focal Length:	35mm	Distance to Tower:	410 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C8
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 6 - Montrose Station Road near #49 and #57
SIMULATED CONDITION: 140FT TOWER (BROWN COLOR)

SARATOGA ASSOCIATES

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Time:	9:18 AM		
Focal Length:	35mm	Distance to Tower:	410 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C9
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 14 - Furnace Woods Road near Galloway Lane
EXISTING CONDITION

SARATOGA ASSOCIATES

This photograph was taken using a 50mm normal angle lens. To appear at the correct scale this page is intended to be viewed approximately 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	July 23, 2022	Photo Location:	41° 16' 10.4322" N 73° 53' 20.5158" W
Time:	12:00 PM		
Focal Length:	50mm	Distance to Tower:	2,120 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C10
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 14 - Furnace Woods Road near Galloway Lane
SIMULATED CONDITION: 140FT TOWER (GALVANIZED FINISH)

SARATOGA ASSOCIATES

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Photograph Information

Date:	July 23, 2022	Photo Location:	41° 16' 10.4322" N 73° 53' 20.5158" W
Time:	12:00 PM		
Focal Length:	50mm	Distance to Tower:	2,120 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C11
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 14 - Furnace Woods Road near Galloway Lane
SIMULATED CONDITION: 140FT TOWER (BROWN COLOR)

SARATOGA ASSOCIATES

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Time:	12:00 PM		
Focal Length:	50mm	Distance to Tower:	2,120 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C12
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 30 - Blue Mountain Reservation Utility Road at Gas ROW
EXISTING CONDITION

SARATOGA ASSOCIATES

This photograph was taken using a 50mm normal angle lens. To appear at the correct scale this page is intended to be viewed approximately 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	July 23, 2022	Photo Location:	41° 16' 07.5045" N 73° 54' 07.4805" W
Time:	1:22 PM		
Focal Length:	35mm	Distance to Tower:	1,510 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C13
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 30 - Blue Mountain Reservation Utility Road at Gas ROW
SIMULATED CONDITION: 140FT TOWER (GALVANIZED FINISH)

SARATOGA ASSOCIATES

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Photograph Information

Date:	July 23, 2022	Photo Location:	41° 16' 07.5045" N 73° 54' 07.4805" W
Time:	1:22 PM		
Focal Length:	35mm	Distance to Tower:	1,510 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C14
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 30 - Blue Mountain Reservation Utility Road at Gas ROW
SIMULATED CONDITION: 140FT TOWER (BROWN COLOR)

SARATOGA ASSOCIATES

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Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C15
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 31 - Montrose Station Road
EXISTING CONDITION

SARATOGA ASSOCIATES

This photograph was taken using a 50mm normal angle lens. To appear at the correct scale this page is intended to be viewed approximately 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	July 23, 2022	Photo Location:	41° 16' 15.7200" N 73° 53' 47.6579" W
Time:	10:09 AM		
Focal Length:	35mm	Distance to Tower:	440 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C16
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 31 - Montrose Station Road
SIMULATED CONDITION: 140FT TOWER (GALVANIZED FINISH)

SARATOGA ASSOCIATES

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Focal Length:	35mm	Distance to Tower:	440 Feet
Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C17
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Photo 31 - Montrose Station Road
SIMULATED CONDITION: 140FT TOWER (BROWN COLOR)

SARATOGA ASSOCIATES

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Camera:	Canon EOS 6D Mark II		

HOMELAND TOWERS

Figure C18
PHOTO SIMULATIONS
Visual Resource Assessment
CORTLANDT 2 (NY-079)
Wireless Telecommunications Facility
52 Montrose Station Road
Town of Cortlandt, Westchester County, NY

Exhibit 2

SCHERER DESIGN GROUP, LLC

Colleen Connolly, PE
Partner/CEO
Steven Krug, PE
Partner/COO

August 10, 2022

Chris Kehoe, AICP
Director, Department of Planning & Community Development
Town of Cortland
1 Heady Street
Cortland Manor, New York 10567

Re: Homeland Towers/Verizon Wireless
Application for Site Plan and Special Use Permit
52 Montrose Station Road – New Tower Site
Review Memo #1 (Inventory and Completeness)

The Review Memo #1 (Inventory and Completeness), prepared by HDR dated 07/07/2022, has been reviewed. Revised drawings dated 08/10/22, submitted simultaneously herewith, and the following information are offered as a response.

Structural/Project Design

The proposed Tower, all attachments, and the Tower's foundation will be designed to meet the ANSI/TIA-222-H "Structural Standard for Antenna Supporting Structures, Antennas and Small Wind Turbine Support Structures" and all county, state, and federal structural requirements for loading, including wind and ice loads. The tower will be designed to support additional co-locators. Moreover, same will be designed to meet all applicable provision of the Town Code Chapter 277, to the extent necessary.

Specifically, the proposed telecommunications tower will be maintained in a safe manner and in compliance with all conditions of the special use permit, without exception, unless specifically granted relief by the Board in writing, as well as all applicable and permissible local codes, ordinances, and regulations, including any and all applicable county, state and federal laws, rules, and regulations.

Any descriptions of geotechnical borings to assess subsurface conditions and inform the foundation design will be provided by tower manufacturer and completed once site plan approval is granted. Additionally, the potential construction methods (dewatering; type(s) of foundation construction options; possibility of rock blasting; grading for equipment slabs and access road improvements; material handling) will be confirmed by the contractor for the project once the site plan has been approved and the tower information and foundation design confirmed.

Notwithstanding, the proposed monopole will be built and installed as per manufacturer's specifications. Monopole specifications, cut sheet, structural element details, typical welded sections, diameter, taper, and other information will be provided and submitted during the building permit process after site plan approval.

An access road and parking will be provided to assure adequate emergency and service access. Maximum use of existing roads, whether public or private, shall be made to the extent not commercially or physically impracticable. Road construction shall at all times minimize ground disturbance and vegetation-cutting. Road grades shall closely follow natural contours to assure minimal visual disturbance and reduce soil erosion potential. Usual requirements regarding weight and carrying capacity for emergency vehicles should apply to access roads.

Comparison between Prior Design and Current Design

The Verizon application was first reviewed in 2019 by the Planning Board. The information in the table below is provided to better understand the re-design that is now proposed vs. the initial proposal.

Item	Initial Application	Current Homeland/ Verizon Application
Letter of Authorization	Provided	Update Includes Homeland Towers
Latitude/Longitude	41°16'09.00", -73°53'48.00"	41°16'11.15", -73°53'48.26" (±150' Northwest of Location from Initial Application)
Property Survey Provided?	Provided in response to comments	Survey attached to revised drawings dated 8/10/2022 submitted simultaneously herewith
Setback distances/property lines and area variance	See separate table below	See separate table below
Ground Elevation, Compound (ft amsl)	435' +/-	410'-6" +/-
Ground elevation, Tower (ft amsl)	445' +/-	410'-6 +/-
Proposed Tower Type	Lattice	Monopole
Tower Height (ft agl)	±140' (±145' for lightning rod)	±140' (±145' for lightning rod)

Ground-based equipment compound (size, s.f.)	±1,425 SF	±929 SF
SEQRA EAF Submitted	Yes	Yes - Noted edits made to prior version
SHPO Determination	Yes, see SEQRA Submission	Update pending
Referrals (municipalities and county)	Adjacent municipalities and County	Town confirmed project referrals sent are compliant.
Tree Survey	Yes (12/20/2019)	See Z-12 of revised drawings dated 8/10/2022 submitted simultaneously herewith
# Trees to be removed	35	19
Existing utilities included on drawings	Yes	Yes
Visual Impact Analysis (Balloon test)	May 4, 2019 balloon test and August 2019 Visual Resource Evaluation test from Saratoga Associates	July 23, 2022 balloon test and August 2022 Visual Resource Evaluation Saratoga Associates submitted simultaneously herewith
Photosimulations and viewshed maps provided	Included in the August 2019 Visual Resource Evaluation test from Saratoga Associates	Included in the August 2022 Visual Resource Evaluation Saratoga Associates submitted simultaneously herewith
Viewshed Analysis - net area of visibility	Included in the August 2019 Visual Resource Evaluation test from Saratoga Associates	Included in the August 2022 Visual Resource Evaluation Saratoga Associates submitted simultaneously herewith
Requested Waivers (Chapter 277)	Min. Side Yard	Minimum side yard setback now met, no variance required

100 Corporate Drive, Suite 202 • Lebanon, NJ 08833
Ph: 908.323.2513 • Fax: 908.323.2525

Certified Woman Owned Business Enterprise

Setback distances/property lines and area variance needs

(Section 307-17)			Initial Application	Current Homeland/ Verizon Application
	Required	Existing	Proposed	Proposed
Min. Lot Area	40,000 SF	261,664 SF	No Change	No Change
Min. Lot Width	150'	552'	No Change	No Change
Max. Height	2-1/2 Stories/35'	1-1/2 Stories/ ±20'	±9' (Equipment Canopy)	±9' (Equipment Canopy)
Min. Front Yard	50'	±25' *	±221'	±189'-7"
Min. Side Yard	30'	±65'	±7'-0" **	±62'-3"
Min. Rear Yard	30'	±148'	±66	±181
Max. Building Coverage	65% Of F.A.R.	±3%	±3.07%	±3.35
Min. Landscape Coverage	60%	±72%	±69%	±69
* = Existing Non-Conformity				
** = Waiver Required				

Should you have any questions regarding any of the above information, please call me at 908-323-2513 or via email at cconnolly@schererdesigngroup.com.

Regards,

Colleen Connolly, P.E.
NY PE#087018

100 Corporate Drive, Suite 202 • Lebanon, NJ 08833
Ph: 908.323.2513 • Fax: 908.323.2525

Certified Woman Owned Business Enterprise

Exhibit 3

C Squared Systems

August 19, 2022

C Squared Systems, LLC ("C Squared"), a firm specializing in radio-frequency engineering and wireless communication networks, submits this supplemental report in connection with the application made by Homeland Towers, LLC and New York SMSA Limited Partnership d/b/a Verizon Wireless ("Verizon Wireless") for the proposed public utility wireless telecommunication facility ("Facility") at 52 Montrose Station Road, Cortlandt, New York ("Site"). This report was prepared in response to comments from HDR Engineering, Inc. dated 7/7/22. Kindly see our responses below.

Town Consultant Comment: *The applicant and its RF Engineer should confirm that the Tables of Existing and Proposed Verizon cell sites and the low-band and high-band Verizon coverage maps submitted prior are inclusive of all current existing and approved sites in the search area. The table listing these sites within the report should be updated if necessary, and any updates to the current existing / proposed Verizon cell sites should be added to the coverage maps. If there are no updates required, the RF Engineer shall describe how the information in the 2019 and 2021 reports was confirmed to be representative of Verizon's current network conditions in the area.*

Response: The table of existing and proposed sites has been updated and attached hereto as Exhibit A. Verizon has confirmed that to the extent any modifications have been made to the surrounding sites since C Squared's previous report for this Facility, dated August 12, 2021, same did not impact the coverage footprint from those sites. Attached hereto as Exhibit B are maps depicting: (i) the existing coverage from the surrounding sites ("Existing 750 MHZ LTE Coverage") and, (ii) existing and proposed coverage, with the Facility included ("Existing & Proposed 750 MHZ LTE Coverage"). The Existing 750 MHZ LTE Coverage map shows the existing significant gap in coverage in the vicinity of the Facility, and identifies the existing facilities surrounding the gap. The Existing & Proposed 750 MHZ LTE Coverage map shows the coverage from the proposed site together with the existing coverage from the surrounding sites, illustrating how the proposed coverage will fill the existing significant gap in coverage and connect to the existing coverage from the existing sites. Please note, as detailed herein, the existing and proposed coverage has not changed since C Squared's report dated August 12, 2021. Therefore, the coverage maps attached hereto as Exhibit B identify the same

significant gap and proposed coverage as those previously submitted with C Squared's August 12, 2021 report. Such maps have merely been updated to include some existing site locations and identifiers.

Town Consultant Comment: *The Verizon frequencies should be confirmed and listed to reflect what is currently proposed. 5G services, if proposed, should be noted. Renewed or updated FCC licenses for all proposed Verizon operation frequencies - if different than earlier submittals - should be submitted for the file. Specification and model numbers for all proposed Verizon antennas, RRH units, and other tower-mounted equipment should be updated from prior filings, if necessary to reflect the current proposal.*

Response: Verizon Wireless has added CBRS and C Band frequencies to the site since the previous submission. These frequencies do not expand the coverage footprint of the site and therefore do not alter the coverage justification or the coverage maps. Verizon Wireless applicable FCC licenses are attached hereto as Exhibit C.

Town Consultant Comment: *HDR understands that the need for the tower site (and Verizon service) is predominately based on coverage, based on a review of the C-Squared report. It is requested that the applicant confirm if increased capacity/densification for Verizon's local area network is also an objective. If so, capacity charts for surrounding cell sites should be provided.*

Response: As previously stated, the need for the site is driven by coverage. Exhibit B, attached hereto, details the existing significant gap in coverage in the vicinity of the Site and shows how the proposed facility will provide coverage to that existing significant gap.

Town Consultant Comment: *Verizon should update the longer-range (2-3 year) communications facilities plan for the Town, if any new contemplated sites within the Town or 2 miles from the site proposed at 52 Montrose Station Road have been identified since the prior RF justification submittals. Verizon should also inform the Planning Board of its conceptual plans to roll-out 5G operations in the Town.*

Response: Verizon Wireless has no new sites that are currently contemplated in the area detailed above in the timeframe noted above.

Conclusion

As detailed herein and in our previous reports, C Squared has demonstrated that Verizon Wireless has a significant gap in coverage in the Town of Cortlandt and the proposed Facility at the Site (52 Montrose Station Road) will remedy that significant gap in coverage. Moreover, there is no feasible alternative to the proposed Facility at the Site which would remedy the significant gap in coverage. Therefore, it is respectfully submitted that the proposed Facility at the 52 Montrose Station Road site should be approved forthwith.

Qualifications and Statement of Certification

I am a Radio Frequency Engineer for C Squared Systems, LLC, which has been retained by Verizon Wireless. I have extensive experience in the design and testing of Verizon Wireless' communication facilities as part of its federally licensed network in New York. For example, I have participated in the design and performance of the Verizon Wireless' network in New York, participated in engineering efforts to provide a quality system build-out, evaluated zoning provisions applicable to wireless communication facilities in various communities, testified before local zoning boards in zoning hearings, prepared search areas for new installations, participated in drive tests and reviewed drive test results, participated in site visits, prepared RF designs for proposed installations, reviewed plans and prepared RF packages for zoning hearings, tested and evaluated new sites, and located and corrected system performance problem areas.

I have been involved in Verizon Wireless' design of the proposed wireless communication facility at the above site. I have personally visited the area, reviewed coverage data for the proposed installation, and reviewed RF coverage information for Verizon Wireless' existing sites. I certify to the best of my knowledge that the statements in this report are true and accurate.

Martin J. Lavin

Senior RF Engineer

Date: August 19, 2022

C² Systems

Resume of: Martin J. Lavin 65 Dartmouth Drive, Auburn, NH 603-644-2820

SUMMARY: Over thirty years of experience in the RF and wireless communications industry.

EXPERIENCE:

C Squared Systems, LLC **2008-Present**
Senior RF Engineer

- Zoning Hearing Expert Testimony
- Advanced Wireless Services RF System Design
- Wireless Broadband Access Systems Engineering
- Drive Test Services
- Intermodulation Studies
- RF Exposure Studies

U.S. Cellular, Bedford, NH **2002-2008**
Senior RF Engineer

- West Virginia / Maryland / Pennsylvania CDMA System Design and Optimization
- CDMA Capacity Planning and New Site Builds
- Subject Matter Expert for E-911, Public Safety Interference Issues, Collocation, and Technology Transitions

Independent Wireless One (Sprint Network Affiliate), Londonderry, NH **2000-2002**
Senior RF Engineer

- CDMA System Buildout in New Hampshire and Vermont
- Organized Field Office
- RF System Design and Site Selection Point of Contact with Site Acquisition and Construction
- Capacity Planning
- System Performance

Nextel, Reston, VA **1999-2000**
Senior Manager – Technology Development

- New Feature Development for the Motorola iDEN system
- Corporate RF Engineering Standards
- Evaluation of international and domestic spectrum acquisition opportunities

USI, Chantilly, VA **1999**
Program Manager

- Software development projects in Europe and U.S., including budget and schedule responsibility.
- Direct client contact for requirements gathering and proposal writing.

LCC International, McLean, VA **1991-1998**
Manager of Engineering

- Domestic and International Cellular & PCS System Design and Buildout
- Nationwide GSM Network Buildouts of Australia and New Zealand
- FCC PCS Pioneer's Preference
- Strategic Planning for LCC Initial Public Offering
- Responsible for RF Design and Site Selection for Los Angeles MTA
- Wrote network equipment RFP for two PCS MTAs
- Software Product Manager for CellCAD, ANET, and MetroNET
- Managed Drive Test Services, including all Timesheet and Expense Approval

Carl T. Jones Corporation / SAIC, Springfield, VA **1987-1991**
EMC/EMI Engineer

- Test and Measurement consulting for FCC compliance
- Broadcast (AM-FM-TV) consulting

EDUCATION:

University of New Hampshire – Whittemore School of Business and Economics
Master of Business Administration

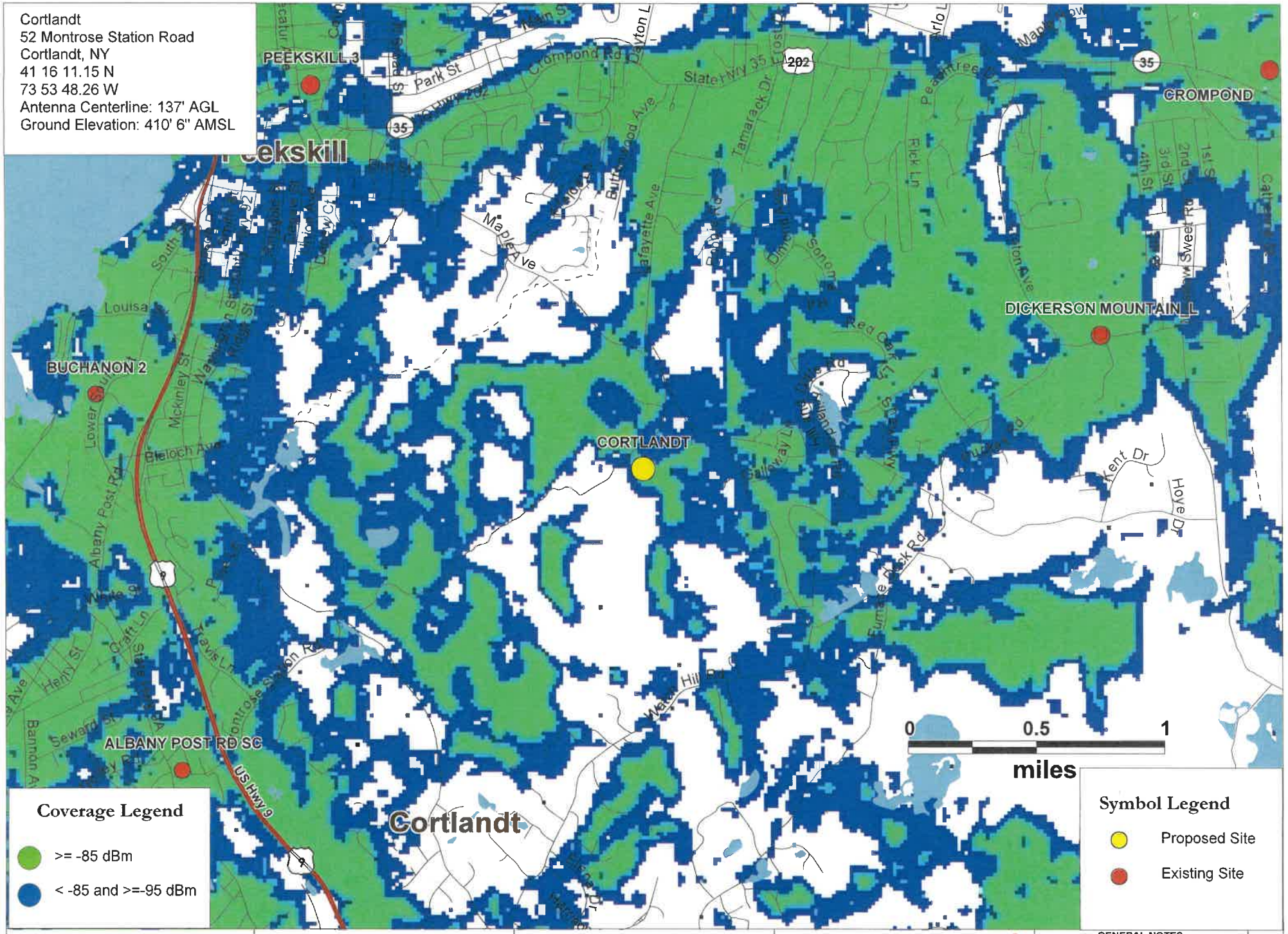
Rensselaer Polytechnic Institute
Bachelor of Science, Electrical Engineering

EXHIBIT A

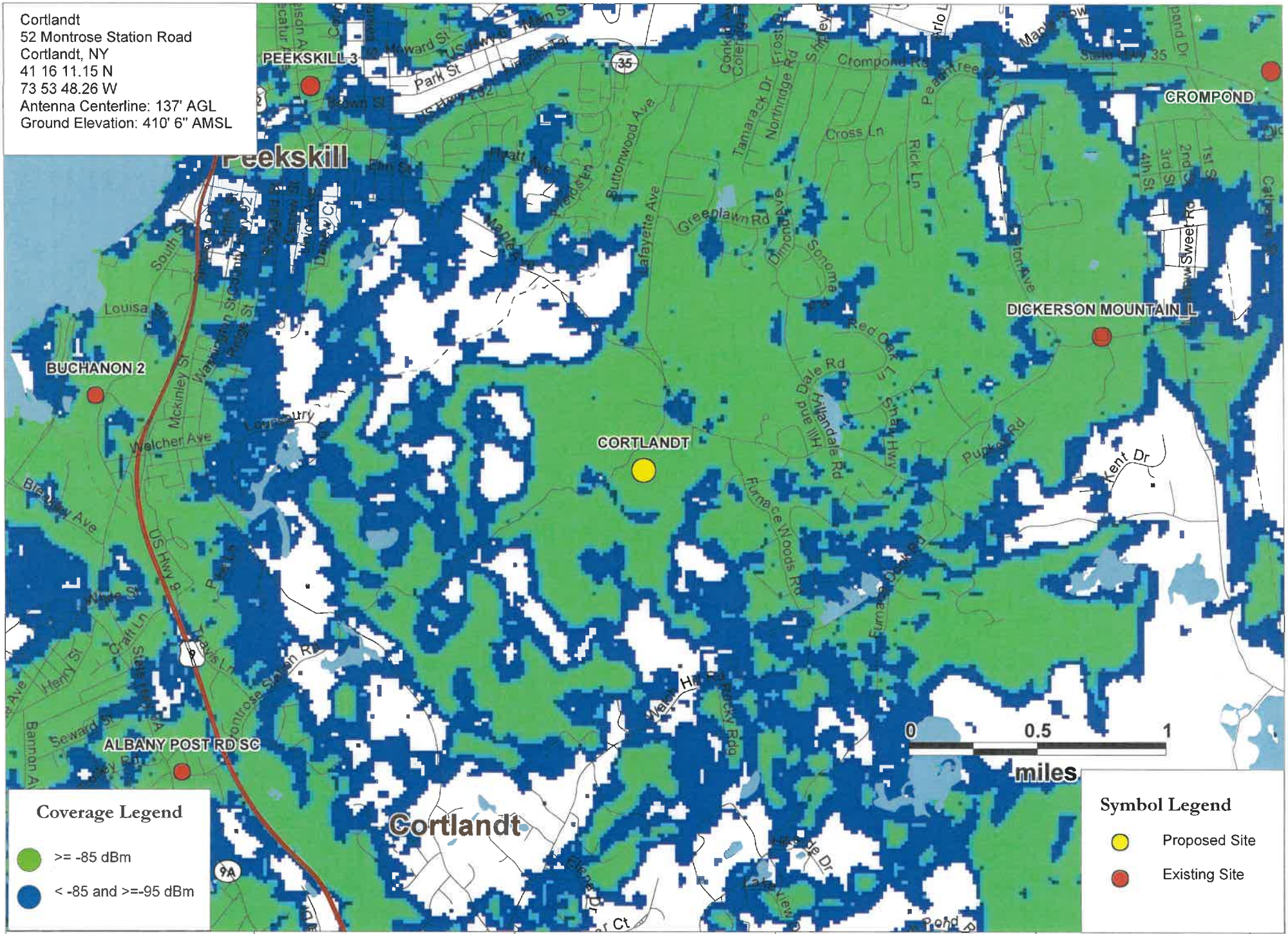
Existing & Proposed Sites

Site	Address	City	Latitude	Longitude
Buchanan	Con Ed Tower	Cortlandt	41.2609	-73.9629
Crugers	138 Albany Post Road	Montrose	41.2408	-73.9313
Peekskill 3	901 Main St	Peekskill	41.2914	-73.9217
Crompond	3800 Crompond Rd	Yorktown	41.2923	-73.8496
Peekskill	Winchester Ave.	Peekskill	41.3016	-73.8955
Dickerson Mountain	260 Croton Avenue	Cortlandt	41.2773	-73.8623
Furnace Woods	51 Scenic Drive	Cortlandt	41.2286	-73.9019
East Cortlandt Manor	1033 Oregon Road	Cortlandt	41.3135	-73.8951
Roe Park	3105 East Main Street	Cortlandt	41.3078	-73.8714
Roa Hook	1 Bayview Drive	Peekskill	41.2983	-73.9461
Mohegan Lake	Woodland Ave	Yorktown	41.3220	-73.8449
Buchanan 2	300 Railroad Avenue	Peekskill	41.2740	-73.9379
Mount Airy	1065 Quaker Ridge Road	Cortlandt	41.2160	-73.8601
Albany Post Road SC	2143 Albany Post Road	Cortlandt	41.2528	-73.9315
Cortlandt (**Proposed Site**)	52 Montrose Station Road	Cortlandt	41.2694	-73.8966
Croton on Hudson 2	1 Van Wyck Street	Croton on Hudson	41.2082	-73.8878

EXHIBIT B



Existing 750 MHz LTE Coverage	Cortlandt	52 Montrose Station Road Cortlandt, NY	verizon	GENERAL NOTES PREPARED ON DATE: 08/09/2021 REV 0



Existing & Proposed 750 MHz LTE Coverage	Cortlandt	52 Montrose Station Road Cortlandt, NY	verizon	GENERAL NOTES PREPARED ON DATE: 07/26/2022 REV 0

EXHIBIT C

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQGB263	0009783847
Radio Service AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
01-11-2022	01-11-2022	11-29-2036	01-12-2022

Market Number	Channel Block	Sub-Market Designator
CMA001	A	0

Market Name
New York, NY-NJ/Nassau-Suffolk

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations. See, e.g., FCC and NTIA Coordination Procedures in the 1710-1755 MHz Band, Public Notice, FCC 06-50, WTB Docket No. 02-353, rel. April 20, 2006.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

The license is subject to compliance with the provisions of the January 12, 2001 Agreement between Deutsche Telekom AG, VoiceStream Wireless Corporation, VoiceStream Wireless Holding Corporation and the Department of Justice (DOJ) and the Federal Bureau of Investigation (FBI), which addresses national security, law enforcement, and public safety issues of the FBI and the DOJ regarding the authority granted by this license. Nothing in the Agreement is intended to limit any obligation imposed by Federal lawor regulation including, but not limited to, 47 U.S.C. Section 222(a) and (c)(1) and the FCC's implementing regulations. The Agreement is published at VoiceStream-DT Order, IB Docket No. 00-187, FCC 01-142, 16 FCC Rcd 9779, 9853 (2001).

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQGB263 **File Number:** 0009783847 **Print Date:** 01-12-2022

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQGA906	0009773259
Radio Service AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
12-21-2021	12-21-2021	11-29-2036	12-21-2021

Market Number	Channel Block	Sub-Market Designator
BEA010	B	15

Market Name
New York-No. New Jer.-Long Isl

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations. See, e.g., FCC and NTIA Coordination Procedures in the 1710-1755 MHz Band, Public Notice, FCC 06-50, WTB Docket No. 02-353, rel. April 20, 2006.

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQGA906 **File Number:** 0009773259 **Print Date:** 12-21-2021

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
KNLH264	0007716974
Radio Service: CW - PCS Broadband	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
06-02-2017	06-02-2017	06-27-2027	06-06-2017

Market Number	Channel Block	Sub-Market Designator
BTA321	F	0

Market Name
New York, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-27-2002			

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

This authorization is conditioned upon the full and timely payment of all monies due pursuant to Sections 1.2110 and 24.716 of the Commission's Rules and the terms of the Commission's installment plan as set forth in the Note and Security Agreement executed by the licensee. Failure to comply with this condition will result in the automatic cancellation of this authorization.

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNLH264 **File Number:** 0007716974 **Print Date:** 06-06-2017

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQBT539	0007490681
Radio Service	
CW - PCS Broadband	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
12-06-2016	12-06-2016	01-03-2027	12-07-2016

Market Number	Channel Block	Sub-Market Designator
BTA321	C	4

Market Name
New York, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
12-07-2003			

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

This authorization is conditioned upon the full and timely payment of all monies due pursuant to Sections 1.2110 and 24.711 of the Commission's Rules and the terms of the Commission's installment plan as set forth in the Note and Security Agreement executed by the licensee. Failure to comply with this condition will result in the automatic cancellation of this authorization.

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQBT539 **File Number:** 0007490681 **Print Date:** 12-07-2016

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

Pursuant to Order DA 03-617 (rel. March 3, 2003), the designated entity holding period for this license is extended by 703 days, or until the licensee meets its five-year construction requirement, whichever is sooner.

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AIRTOUCH CELLULAR

ATTN: REGULATORY
AIRTOUCH CELLULAR
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
KNLF644	0007490664
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0006146468

Grant Date	Effective Date	Expiration Date	Print Date
12-02-2016	12-02-2016	01-03-2027	12-03-2016

Market Number	Channel Block	Sub-Market Designator
BTA321	C	3

Market Name
New York, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
12-07-2003	01-03-2007		

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station is licensed under the prior name.

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Licensee Name: AIRTOUCH CELLULAR

Call Sign: KNLF644 **File Number:** 0007490664 **Print Date:** 12-03-2016

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQJQ689	0008587211
Radio Service	
WU - 700 MHz Upper Band (Block C)	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
09-11-2019	09-11-2019	06-13-2029	09-13-2019

Market Number	Channel Block	Sub-Market Designator
REA001	C	0

Market Name
Northeast

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-13-2013	06-13-2019		

Waivers/Conditions:

If the facilities authorized herein are used to provide broadcast operations, whether exclusively or in combination with other services, the licensee must seek renewal of the license either within eight years from the commencement of the broadcast service or within the term of the license had the broadcast service not been provided, whichever period is shorter in length. See 47 CFR §27.13(b).

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

This authorization is conditioned upon compliance with section 27.16 of the Commission's rules

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQJQ689 **File Number:** 0008587211 **Print Date:** 09-13-2019

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRNE581	
Radio Service PM - 3.7 GHz Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
07-23-2021	07-23-2021	07-23-2036	

Market Number	Channel Block	Sub-Market Designator
PEA001	A1	0

Market Name
New York, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
07-23-2029	07-23-2033		

Waivers/Conditions:

Operation for this combination license grants both interim and final rights for this PEA and is not impacted by the relocation process pursuant to 47 CFR ? 27.1412(g).

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRNE581 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRNE582	
Radio Service PM - 3.7 GHz Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
07-23-2021	07-23-2021	07-23-2036	

Market Number	Channel Block	Sub-Market Designator
PEA001	A2	0

Market Name
New York, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
07-23-2029	07-23-2033		

Waivers/Conditions:

Operation for this combination license grants both interim and final rights for this PEA and is not impacted by the relocation process pursuant to 47 CFR ? 27.1412(g).

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRNE582 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRNE583	
Radio Service PM - 3.7 GHz Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
07-23-2021	07-23-2021	07-23-2036	

Market Number	Channel Block	Sub-Market Designator
PEA001	A3	0

Market Name
New York, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
07-23-2029	07-23-2033		

Waivers/Conditions:

Operation for this combination license grants both interim and final rights for this PEA and is not impacted by the relocation process pursuant to 47 CFR ? 27.1412(g).

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRNE583 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRNE584	
Radio Service PM - 3.7 GHz Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
07-23-2021	07-23-2021	07-23-2036	

Market Number	Channel Block	Sub-Market Designator
PEA001	A4	0

Market Name
New York, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
07-23-2029	07-23-2033		

Waivers/Conditions:

This interim license, in conjunction with one or more final licenses, collectively provides authorization during the full 15-year license term. Operation under this final license may begin on the earlier of (1) 12/5/2025 or (2) the date that thecertification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR ? 27.1412(g). Assignment application(s) and transfers of control filed for this interim license must be done in conjunction with any linked final license.

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRNE584 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRNE585	
Radio Service PM - 3.7 GHz Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
07-23-2021	07-23-2021	07-23-2036	

Market Number	Channel Block	Sub-Market Designator
PEA001	A5	0

Market Name
New York, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
07-23-2029	07-23-2033		

Waivers/Conditions:

This interim license, in conjunction with one or more final licenses, collectively provides authorization during the full 15-year license term. Operation under this final license may begin on the earlier of (1) 12/5/2025 or (2) the date that thecertification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR ? 27.1412(g). Assignment application(s) and transfers of control filed for this interim license must be done in conjunction with any linked final license.

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:
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Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRNE585 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRNE586	
Radio Service PM - 3.7 GHz Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
07-23-2021	07-23-2021	07-23-2036	

Market Number	Channel Block	Sub-Market Designator
PEA001	B1	0

Market Name
New York, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
07-23-2029	07-23-2033		

Waivers/Conditions:

This interim license, in conjunction with one or more final licenses, collectively provides authorization during the full 15-year license term. Operation under this final license may begin on the earlier of (1) 12/5/2025 or (2) the date that thecertification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR ? 27.1412(g). Assignment application(s) and transfers of control filed for this interim license must be done in conjunction with any linked final license.

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:
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Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRNE586 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRNE587	
Radio Service PM - 3.7 GHz Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
07-23-2021	07-23-2021	07-23-2036	

Market Number	Channel Block	Sub-Market Designator
PEA001	B2	0

Market Name
New York, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
07-23-2029	07-23-2033		

Waivers/Conditions:

This interim license, in conjunction with one or more final licenses, collectively provides authorization during the full 15-year license term. Operation under this final license may begin on the earlier of (1) 12/5/2025 or (2) the date that thecertification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR ? 27.1412(g). Assignment application(s) and transfers of control filed for this interim license must be done in conjunction with any linked final license.

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:
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Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRNE587 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRNE588	
Radio Service PM - 3.7 GHz Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
07-23-2021	07-23-2021	07-23-2036	

Market Number	Channel Block	Sub-Market Designator
PEA001	B3	0

Market Name
New York, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
07-23-2029	07-23-2033		

Waivers/Conditions:

This interim license, in conjunction with one or more final licenses, collectively provides authorization during the full 15-year license term. Operation under this final license may begin on the earlier of (1) 12/5/2025 or (2) the date that thecertification for accelerated relocation for this PEA is validated by the FCC pursuant to 47 CFR ? 27.1412(g). Assignment application(s) and transfers of control filed for this interim license must be done in conjunction with any linked final license.

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

Conditions:

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Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRNE588 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: VERIZON WIRELESS NETWORK PROCUREMENT LP

ATTN: REGULATORY
VERIZON WIRELESS NETWORK PROCUREMENT LP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRLD749	0009223228
Radio Service PL - 3.5 GHz Band Priority Access License	

FCC Registration Number (FRN): 0029515327

Grant Date	Effective Date	Expiration Date	Print Date
03-12-2021	03-12-2021	03-12-2031	03-17-2021

Market Number	Channel Block	Sub-Market Designator
D36119		0

Market Name
WESTCHESTER, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
03-12-2031			

Waivers/Conditions:
NONE

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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Licensee Name: VERIZON WIRELESS NETWORK

Call Sign: WRLD749 **File Number:** 0009223228 **Print Date:** 03-17-2021

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: VERIZON WIRELESS NETWORK PROCUREMENT LP

ATTN: REGULATORY
VERIZON WIRELESS NETWORK PROCUREMENT LP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRLD750	0009223228
Radio Service PL - 3.5 GHz Band Priority Access License	

FCC Registration Number (FRN): 0029515327

Grant Date	Effective Date	Expiration Date	Print Date
03-12-2021	03-12-2021	03-12-2031	03-17-2021

Market Number	Channel Block	Sub-Market Designator
D36119		0

Market Name
WESTCHESTER, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
03-12-2031			

Waivers/Conditions:

NONE

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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Licensee Name: VERIZON WIRELESS NETWORK

Call Sign: WRLD750 **File Number:** 0009223228 **Print Date:** 03-17-2021

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: VERIZON WIRELESS NETWORK PROCUREMENT LP

ATTN: REGULATORY
VERIZON WIRELESS NETWORK PROCUREMENT LP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRLD751	0009223228
Radio Service PL - 3.5 GHz Band Priority Access License	

FCC Registration Number (FRN): 0029515327

Grant Date	Effective Date	Expiration Date	Print Date
03-12-2021	03-12-2021	03-12-2031	03-17-2021

Market Number	Channel Block	Sub-Market Designator
D36119		0

Market Name
WESTCHESTER, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
03-12-2031			

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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Licensee Name: VERIZON WIRELESS NETWORK

Call Sign: WRLD751 **File Number:** 0009223228 **Print Date:** 03-17-2021

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: VERIZON WIRELESS NETWORK PROCUREMENT LP

ATTN: REGULATORY
VERIZON WIRELESS NETWORK PROCUREMENT LP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRLD752	0009223228
Radio Service PL - 3.5 GHz Band Priority Access License	

FCC Registration Number (FRN): 0029515327

Grant Date	Effective Date	Expiration Date	Print Date
03-12-2021	03-12-2021	03-12-2031	03-17-2021

Market Number	Channel Block	Sub-Market Designator
D36119		0

Market Name
WESTCHESTER, NY

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
03-12-2031			

Waivers/Conditions:

NONE

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

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Licensee Name: VERIZON WIRELESS NETWORK

Call Sign: WRLD752 **File Number:** 0009223228 **Print Date:** 03-17-2021

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Exhibit 4

PINNACLE TELECOM GROUP
Professional and Technical Services

Telecom Consulting

ANTENNA SITE FCC RF COMPLIANCE ASSESSMENT AND REPORT

PREPARED FOR

HOMELAND TOWERS
NEW YORK SMSA LIMITED PARTNERSHIP
d/b/a VERIZON WIRELESS

"CORTLANDT" SITE
52 MONTROSE STATION ROAD
CORTLANDT, NY

July 19, 2022

14 RIDGEDALE AVENUE - SUITE 260 • CEDAR KNOLLS, NJ 07927 • 973-451-1630

Contents

Introduction and Summary

At the request of Homeland Towers and New York SMSA Limited Partnership d/b/a Verizon Wireless ("Verizon Wireless"), Pinnacle Telecom Group has performed an independent assessment of radiofrequency (RF) levels and related FCC compliance for the proposed installation of a wireless base station antenna operation on a new monopole to be erected at 52 Montrose Station Road in Cortlandt, NY. Verizon Wireless refers to the site as "Cortlandt", and the proposed operation involves directional panel antennas to facilitate wireless service provision in the 700 MHz, 850 MHz, 1900 MHz, 2100 MHz, 3500 MHz and 3700 MHz frequency bands licensed to Verizon Wireless by the FCC. At this time, mmWave frequencies, frequencies on the order of 28 and 39 GHz, are not proposed at this location.

The FCC requires wireless antenna operators to perform an assessment of potential human exposure to radiofrequency (RF) fields emanating from all the transmitting antennas at a site whenever antenna operations are added or modified, and to ensure compliance with the Maximum Permissible Exposure (MPE) limit in the FCC regulations. In this case, the compliance assessment will include the RF effects of a hypothetical collocation of three wireless carriers' antennas. Note that FCC regulations require any future antenna collocators to assess and assure continuing compliance based on the cumulative effects of all then-proposed and then-existing antennas at the site.

This report describes a mathematical analysis of RF levels resulting around the site in areas of unrestricted public access, that is, at street level around the site. The compliance analysis employs a standard FCC formula for calculating the effects of the antennas in a very conservative manner, in order to overstate the RF levels and to ensure "safe-side" conclusions regarding compliance with the FCC limit for safe continuous exposure of the general public.

The results of a compliance assessment can be described in layman's terms by expressing the calculated RF levels as simple percentages of the FCC MPE limit. If the normalized reference for that limit is 100 percent, then calculated RF levels higher than 100 percent indicate the MPE limit is exceeded and there is a need to

mitigate the potential exposure. On the other hand, calculated RF levels consistently below 100 percent serve as a clear and sufficient demonstration of compliance with the MPE limit. We can (and will) also describe the overall worst-case result via the "plain-English" equivalent "times-below-the-limit" factor.

The results of the FCC RF compliance assessment in this case are as follows:

- At street level around the site, the conservatively calculated maximum RF level from the combination of antenna operations is 4.4298 percent of the FCC MPE limit. In other words, even with the significant degree of conservatism in the calculations, the worst-case calculated RF level is still more than 20 times below the FCC limit for safe, continuous exposure to the RF emissions from antennas.
- The results of the calculations provide a clear demonstration that the RF levels from the combination of antenna operations at the site satisfy the applicable criteria for controlling potential human exposure to RF fields, and the RF levels will be in clear compliance with the FCC regulations and limit concerning RF safety. Moreover, because of the conservative methodology and incorporated assumptions, RF levels actually caused by the antennas will be even less significant than the calculation results here indicate.

The remainder of this report provides the following:

- relevant technical data on the proposed Verizon Wireless antenna operations at the site, as well as on the other proposed antenna operations;
- descriptions of the applicable FCC mathematical models for assessing MPE compliance, and application of the relevant technical data to those models; and
- the results of the analysis, and the compliance conclusion for the site.

In addition, Appendix A provides background on the FCC MPE limit, along with a list of FCC references on compliance.

Note on Non-Interference

In connection with the RF emissions from the proposed antenna operation, we note that Verizon Wireless has been granted by the FCC exclusive geographic rights to its channel frequencies, and is further subject to strict FCC technical standards on parameters such as maximum power and out-of-band emissions, as well as regulations related to non-interference. Therefore, we can provide a clear assurance that the proposed antenna operation will not interfere with public safety communications, or the usual and customary reception of radio, television, or other communications services enjoyed by the nearby residential and non-residential properties, or other existing telecommunications devices. At the same time, however, we would be professionally remiss in omitting a reference to a July 2003 FCC decision – a "Memorandum Opinion and Order" in "WT Docket No. 02-100" that related to interference. That FCC Order concluded that any local ordinance requiring a certification of non-interference related to a wireless antenna siting application represents "impermissible regulation" of RF interference, an area under exclusive FCC jurisdiction and federally-preempted from local regulation.

Antenna and Transmission Data

The table that follows provides the key compliance-related data for the proposed Verizon Wireless operations.

General Data	
Frequency Bands	700 MHz, 850 MHz, 1900 MHz, 2100 MHz, 3500 MHz and 3700 MHz
Service Coverage Type	Sectorized
Antenna Type	Directional Panel
Antenna Centerline Height AGL	137 ft.
Antenna Line Loss	0 dB (conservatively ignored)
700 MHz Antenna Data	
Antenna Model (Max. Gain)	Commscope NHH-65B-R2B (14.9 dBi)
RF Channels per Sector	Four 40 watts channels
850 MHz Antenna Data	
Antenna Model (Max. Gain)	Commscope NHH-65B-R2B (15.0 dBi)
RF Channels per Sector	Four 40 watts channels

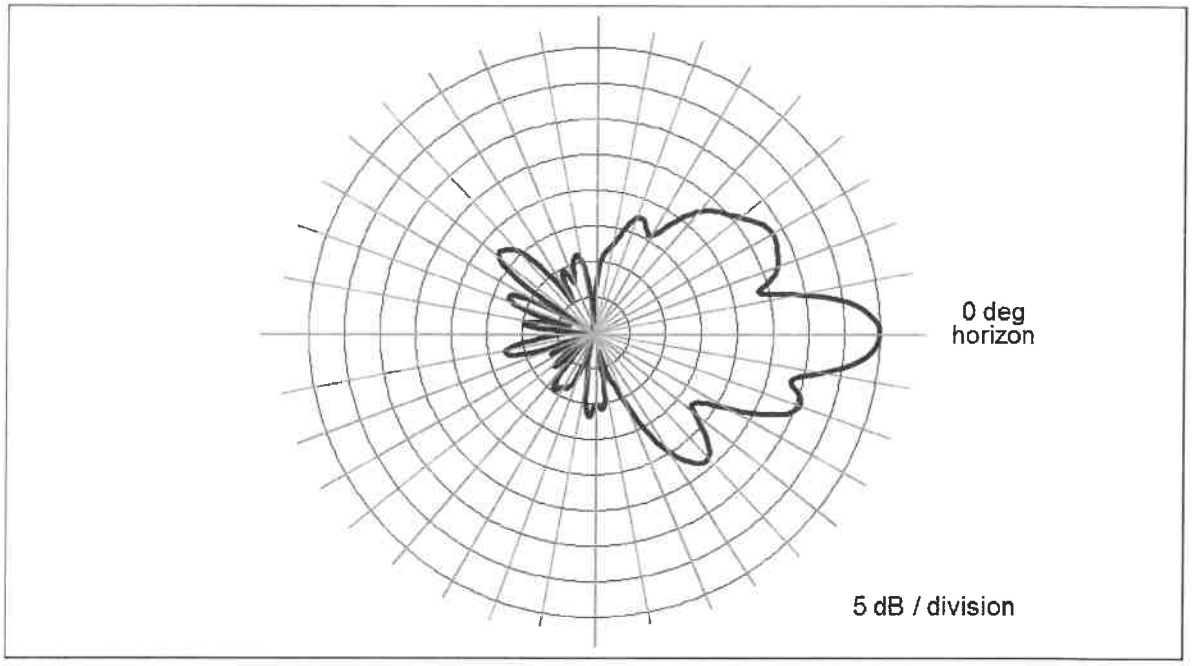
1900 MHz Antenna Data	
Antenna Model (Max. Gain)	Commscope NHH-65B-R2B (17.9 dBi)
RF Channels per Sector	Four 40 watts channels
2100 MHz Antenna Data	
Antenna Model (Max. Gain)	Commscope NHH-65B-R2B (18.4 dBi)
RF Channels per Sector	Four 40 watts channels
3500 MHz Antenna Data	
Antenna Model (Max. Gain)	Samsung XXDWMM-12.5-65-8T-C BRS (12.7 dBi)
RF Channels per Sector	Four 5-watt channels
3700 MHz Antenna Data	
Antenna Model (Max. Gain)	Samsung MT6407-77A (25.5 dBi)
RF Channels per Sector	Two 50-watt channels

The antenna vertical-plane radiation pattern is used in the calculations of RF levels at street level around a site. Figure 1 that follows shows the vertical-plane pattern of the proposed antenna model in 700 MHZ band.

In this type of antenna pattern diagram, the antenna is effectively pointed at the three o'clock position (the horizon) and the pattern at different angles is described using decibel units. Note that the use of a decibel scale to describe the relative pattern at different angles actually serves to significantly understate the actual focusing effects of the antenna. Where the antenna pattern reads 20 dB the relative RF energy emitted at the corresponding downward angle is 1/100th of the maximum that occurs in the main beam (at 0 degrees); at 30 dB, the energy is only 1/1000th of the maximum.

Note that the automatic pattern-scaling feature of our internal software may skew side-by-side visual comparisons of different antenna models, or even different parties' depictions of the same antenna model.

Figure 1. Commscope NHH-65B-R2B – 700 MHz Vertical-plane Pattern



As noted at the outset, the assessment will include the RF effects of a hypothetical collocation of three wireless carriers' antennas and we will conservatively assume operation with maximum channel capacity and at maximum transmitter power per channel to be used in each of its FCC-licensed frequency bands.

AT&T is licensed to operate in the 700, 850, 1900, 2100 and 2300 MHz frequency bands. In the 700 MHz band, AT&T uses 370 watts of input power per sector. In the 850 MHz band, AT&T uses 160 watts of input power per sector. In the 1900 MHz band, AT&T uses 160 watts of input power per sector. In the 2100 MHz band, AT&T uses 160 watts of input power per sector. Lastly, in the 2300 MHz band, AT&T uses 100 watts of input power per sector.

DISH Wireless is licensed to operate in 600 MHz, 700 MHz, 1900 MHz and 2100 MHz frequency bands. In the 600 MHz band, DISH uses four 30-watt channels per sector. In the 700 MHz band, DISH uses four 40-watt channels per sector. In the 1900 MHz band, DISH uses four 40-watt channels per sector. Lastly, in the 2100 MHz band, DISH uses four 40-watt channels per sector.

T-Mobile is licensed to operate in the 600 MHz, 700 MHz, 1900 MHz and 2100 MHz frequency bands. In the 600 MHz band, T-Mobile uses four 40-watt channels per sector. In the 700 MHz band, T-Mobile uses one 40-watt channel per sector. In the 1900 MHz band, T-Mobile uses one 40-watt channel and four 30-watt channels per sector. Lastly, in the 2100 MHz band, T-Mobile uses one 40-watt channel and two 60-watt channels per sector.

Compliance Analysis

FCC Office of Engineering and Technology Bulletin 65 ("OET Bulletin 65") provides guidelines for mathematical models to calculate the RF levels at various points around transmitting antennas.

At street-level around an antenna site (in what is called the "far field" of the antennas), the RF levels are directly proportional to the total antenna input power and the relative antenna gain in the downward direction of interest – and the levels are otherwise inversely proportional to the square of the straight-line distance to the antenna.

Conservative calculations also assume the potential RF exposure is enhanced by reflection of the RF energy from the intervening ground. Our calculations will assume a 100% "perfect", mirror-like reflection, which is the absolute worst-case scenario.

The formula for street-level RF compliance calculations for any given wireless antenna operation is as follows:

$$MPE\% = (100 * TxPower * 10^{(Gmax-Vdisc/10)} * 4) / (MPE * 4\pi * R^2)$$

where

MPE%	=	RF level, expressed as a percentage of the MPE limit applicable to continuous exposure of the general public
100	=	factor to convert the raw result to a percentage
TxPower	=	maximum net power into antenna sector, in milliwatts, a function of the number of channels per sector, the transmitter power per channel, and line loss

$10^{(Gmax-Vdisc/10)}$	=	numeric equivalent of the relative antenna gain in the downward direction of interest, referenced to any applied antenna mechanical downtilt; data on the antenna vertical-plane pattern is taken from manufacturer specifications
4	=	factor to account for a 100-percent-efficient energy reflection from the ground, and the squared relationship between RF field strength and power density ($2^2 = 4$)
MPE	=	FCC general population MPE limit
R	=	straight-line distance from the RF source to the point of interest, centimeters

The street-level MPE% calculations are performed out to a distance of 500 feet from the facility to points 6.5 feet (approximately two meters, the FCC-recommended standing height) off the ground, as illustrated in the Figure 2, below.

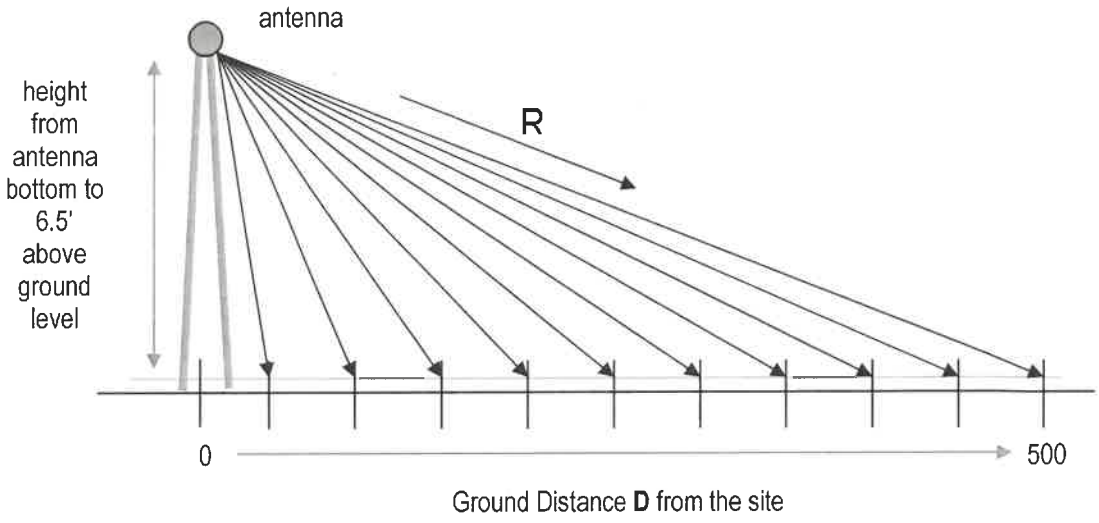


Figure 2. MPE% Calculation Geometry

It is popularly understood that the farther away one is from an antenna, the lower the RF level – which is generally but not universally correct. The results of MPE% calculations fairly close to the site will reflect the variations in the vertical-plane antenna pattern as well as the variation in straight-line distance to the antennas.

Therefore, RF levels may actually increase slightly with increasing distance within the range of zero to 500 feet from the site. As the distance approaches 500 feet and beyond, though, the antenna pattern factor becomes less significant, the RF levels become primarily distance-controlled and, as a result, the RF levels generally decrease with increasing distance. In any case, the RF levels more than 500 feet from a wireless antenna site are well understood to be sufficiently low to be comfortably in compliance.

FCC compliance for a collocated antenna site is assessed in the following manner. At each distance point along the ground, an MPE% calculation is made for each antenna operation (including each frequency band), and the sum of the individual MPE% contributions at each point is compared to 100 percent, the normalized reference for compliance with the MPE limit. We refer to the sum of the individual MPE% contributions as "total MPE%", and any calculated total MPE% result exceeding 100 percent is, by definition, higher than the FCC limit and represents non-compliance and a need to mitigate the potential exposure. If all results are consistently below 100 percent, on the other hand, that set of results serves as a clear and sufficient demonstration of compliance with the MPE limit.

Note that according to the FCC, when directional antennas (e.g., panels or dishes) are involved, the compliance assessments are based on the RF effect of a single (facing) sector or antenna, as the RF effects of directional antennas facing generally away from the point of interest are insignificant.

The following conservative methodology and assumptions are incorporated into the MPE% calculations on a general basis:

1. The antennas are assumed to be operating continuously at maximum power and maximum channel capacity.
2. The power-attenuation effects of shadowing or other obstructions to the line-of-sight path from the antenna to the point of interest are ignored.
3. The calculations intentionally minimize the distance factor (R) by assuming a 6'6" human and performing the calculations from the bottom (rather than the centerline) of each operator's lowest-mounted antenna, as applicable.

4. The calculations also conservatively take into account, when applicable, the different technical characteristics and related RF effects of the use of multiple antennas for transmission in the same frequency band.
5. The RF exposure at ground level is assumed to be 100-percent enhanced (increased) via a "perfect" field reflection from the intervening ground.

The net result of these assumptions is to significantly overstate the calculated RF exposure levels relative to the levels that will actually occur – and the purpose of this conservatism is to allow very "safe-side" conclusions about compliance.

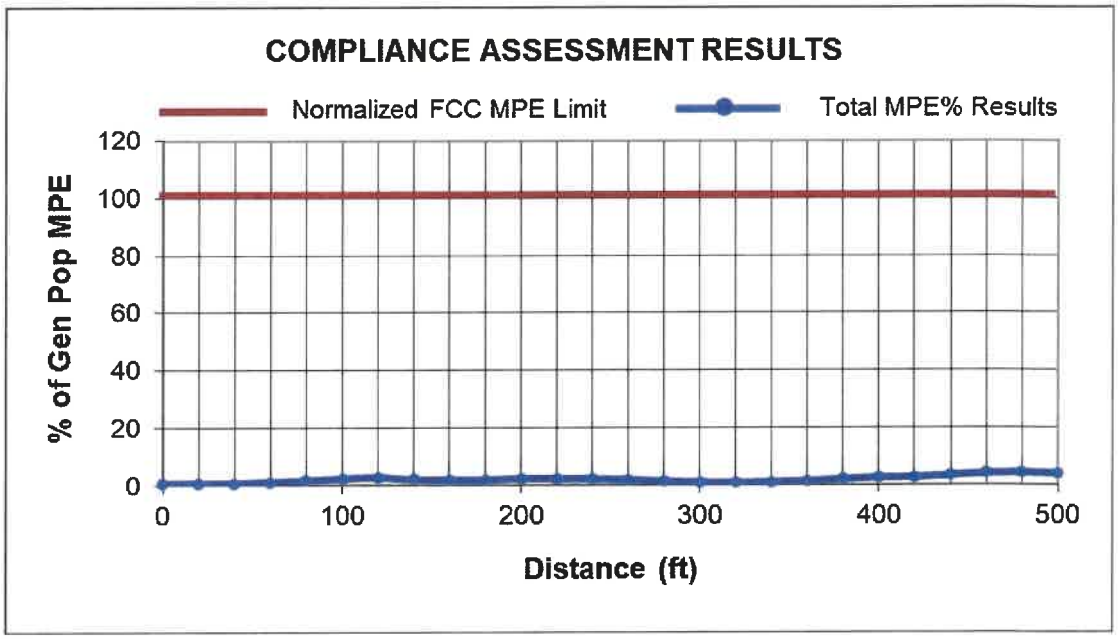
The tables that follow provide the results of the MPE% calculations for each antenna operation, with the maximum (worst-case) overall result highlighted in bold in the last column of the last table.

Ground Distance (ft)	Verizon Wireless 700 MHz MPE%	Verizon Wireless 850 MHz MPE%	Verizon Wireless 1900 MHz MPE%	Verizon Wireless 2100 MHz MPE%	Verizon Wireless 3500 MHz MPE%	Verizon Wireless 3700 MHz MPE%	Subtotal MPE%
0	0.0052	0.0883	0.0007	0.0080	0.0003	0.4020	0.5044
20	0.0006	0.0846	0.0001	0.0174	0.0021	0.3749	0.4798
40	0.0236	0.0845	0.0097	0.0510	0.0034	0.1133	0.2856
60	0.1413	0.0270	0.0277	0.0741	0.0024	0.1657	0.4382
80	0.2259	0.0110	0.0358	0.0045	0.0003	0.1919	0.4694
100	0.1059	0.0516	0.4673	0.0194	0.0046	0.0269	0.6757
120	0.0208	0.0870	0.5324	0.1719	0.0115	0.1360	0.9596
140	0.0202	0.1564	0.0152	0.2525	0.0180	0.4429	0.9052
160	0.0745	0.1812	0.0341	0.0100	0.0169	0.4264	0.7432
180	0.1832	0.0825	0.0116	0.0109	0.0080	0.3758	0.6722
200	0.3412	0.0249	0.0586	0.0342	0.0025	0.5922	1.0535
220	0.4251	0.0421	0.0121	0.0700	0.0002	0.6798	1.2294
240	0.4872	0.1269	0.0509	0.0461	0.0037	0.6382	1.3530
260	0.4291	0.1457	0.0695	0.0580	0.0107	0.5130	1.2260
280	0.3221	0.1737	0.0524	0.0874	0.0213	0.2386	0.8955
300	0.2414	0.1572	0.0327	0.0693	0.0256	0.0995	0.6256
320	0.1409	0.1001	0.0307	0.0426	0.0309	0.0174	0.3626
340	0.1186	0.0558	0.0284	0.0441	0.0412	0.1426	0.4307
360	0.1316	0.0197	0.0161	0.0401	0.0448	0.3896	0.6418
380	0.1787	0.0019	0.0026	0.0226	0.0478	0.7563	1.0099
400	0.2564	0.0083	0.0031	0.0066	0.0435	1.2262	1.5442
420	0.3576	0.0448	0.0185	0.0134	0.0447	1.1220	1.6010
440	0.3283	0.0411	0.0170	0.0123	0.0461	1.5238	1.9686
460	0.4350	0.1028	0.0325	0.0388	0.0465	2.0761	2.7318
480	0.5471	0.1887	0.0305	0.0586	0.0430	1.9181	2.7860
500	0.5068	0.1748	0.0283	0.0543	0.0427	1.7647	2.5715

Ground Distance (ft)	Subtotal MPE%	AT&T MPE%	DISH Wireless MPE%	T-Mobile MPE%	Total MPE%
0	0.5044	0.0952	0.0095	0.0263	0.6354
20	0.4798	0.1223	0.0440	0.0414	0.6875
40	0.2856	0.2518	0.0495	0.1014	0.6883
60	0.4382	0.4629	0.1462	0.0836	1.1309
80	0.4694	0.5418	0.3138	0.3956	1.7206
100	0.6757	0.3397	0.6633	0.6903	2.3690
120	0.9596	0.2360	1.2347	0.3227	2.7530
140	0.9052	0.6093	0.4087	0.1153	2.0385
160	0.7432	0.8701	0.1816	0.1070	1.9019
180	0.6722	0.9829	0.1335	0.1234	1.9120
200	1.0535	0.8598	0.3641	0.1332	2.4106
220	1.2294	0.7083	0.2550	0.1049	2.2976
240	1.3530	0.5829	0.1867	0.1075	2.2301
260	1.2260	0.4072	0.2225	0.1214	1.9771
280	0.8955	0.2682	0.1961	0.1197	1.4795
300	0.6256	0.1336	0.1364	0.1165	1.0121
320	0.3626	0.1861	0.1584	0.1253	0.8324
340	0.4307	0.3112	0.1416	0.1426	1.0261
360	0.6418	0.4881	0.2340	0.1439	1.5078
380	1.0099	0.6786	0.3205	0.1509	2.1599
400	1.5442	0.6169	0.3985	0.1184	2.6780
420	1.6010	0.7803	0.3634	0.0687	2.8134
440	1.9686	0.9365	0.4609	0.0501	3.4161
460	2.7318	0.8610	0.6333	0.0274	4.2535
480	2.7860	1.0286	0.5837	0.0315	**4.4298**
500	2.5715	0.9516	0.5397	0.0292	4.0920

As indicated, even with the significant degree of conservatism built into the calculations, the maximum calculated RF level is 4.4298 percent of the FCC general population MPE limit – well below the 100-percent reference for compliance.

A graph of the overall street-level calculation results, provided on the next page, provides a clearer *visual* illustration of the relative insignificance of the calculated RF levels. The line representing the overall calculation results barely rises above the graph's baseline, and shows an obviously clear, consistent margin to the FCC MPE limit.



Compliance Conclusion

According to the FCC, the FCC MPE limit has been constructed in such a manner that continuous human exposure to RF emissions up to and including 100 percent of the MPE limit is acceptable and safe.

As described, the analysis in this case shows that the maximum calculated RF level from the combination proposed operations at the site, is 4.4298 percent of the FCC MPE limit. In other words, the worst-case calculated RF level from the antenna operations is more than 20 times below the limit established as safe for continuous human exposure to the RF emissions from antennas.

The results of the calculations provide a clear demonstration of compliance with the FCC MPE limit. Moreover, because of the conservative calculation methodology and operational assumptions we applied in the analysis, RF levels actually caused by the antennas will be even less significant than the calculation results here indicate.

Certification

The undersigned verify as follows:

1. We have read and are familiar with the FCC regulations concerning RF safety and the control of human exposure to RF fields (47 CFR 1.1301 *et seq*).
2. To the best of our knowledge, the statements and information disclosed in this report are true, complete and accurate.
3. The analysis of site RF compliance provided herein is consistent with the applicable FCC regulations, additional guidelines issued by the FCC, and industry practice.
4. The results of the assessment indicate that the subject antenna operations were in full compliance with the FCC regulations concerning the control of potential RF exposure on the date tested.

Daniel J Collins
Chief Technical Officer

7/19/22
Date

Peter M. Longo, PE
Principal
PML Consulting Engineers, LLC
New York License No. 081318

STATE OF NEW YORK * PETER M. LONGO * 081318 LICENSED PROFESSIONAL ENGINEER

7/19/22
Date

Appendix A. Background on the FCC MPE Limit

FCC Rules and Regulations

As directed by the Telecommunications Act of 1996, the FCC has established limits for maximum continuous human exposure to RF fields.

The FCC maximum permissible exposure (MPE) limits represent the consensus of federal agencies and independent experts responsible for RF safety matters. Those agencies include the National Council on Radiation Protection and Measurements (NCRP), the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the American National Standards Institute (ANSI), the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA). In formulating its guidelines, the FCC also considered input from the public and technical community – notably the Institute of Electrical and Electronics Engineers (IEEE).

The FCC's RF exposure guidelines are incorporated in Section 1.301 *et seq* of its Rules and Regulations (47 CFR 1.1301-1.1310). Those guidelines specify MPE limits for both occupational and general population exposure.

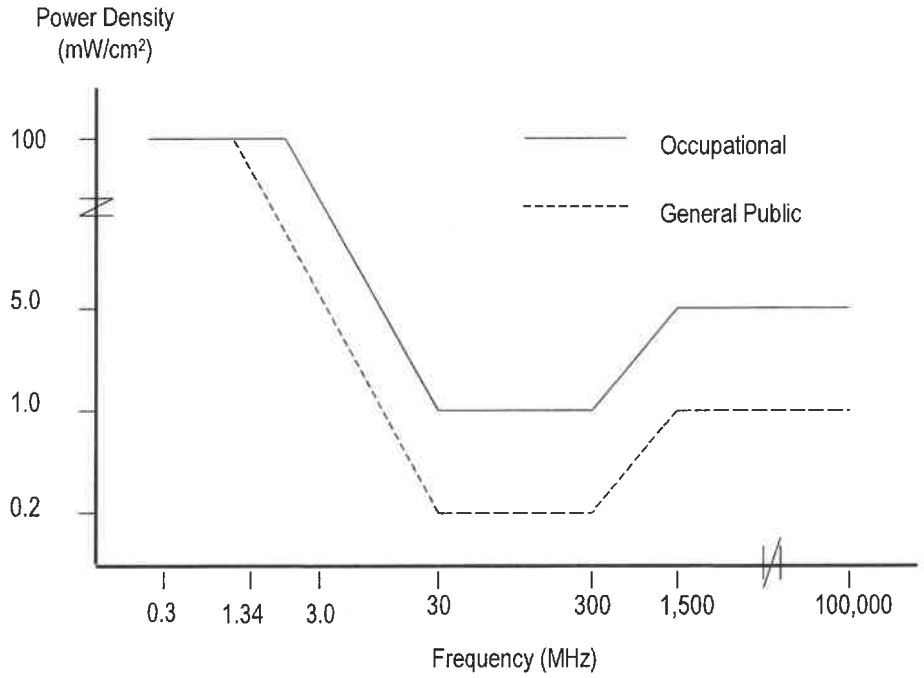
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in the form of heat). The occupational MPE guidelines incorporate a safety factor of 10 or greater with respect to RF levels known to represent a health hazard, and an additional safety factor of five is applied to the MPE limits for general population exposure. Thus, the general population MPE limit has a built-in safety factor of more than 50. The limits were constructed to appropriately protect humans of both sexes and all ages and sizes and under all conditions – and continuous exposure at levels equal to or below the applicable MPE limits is considered to result in no adverse health effects or even health risk.

The reason for *two* tiers of MPE limits is based on an understanding and assumption that members of the general public are unlikely to have had appropriate RF safety training and may not be aware of the exposures they receive; occupational exposure in controlled environments, on the other hand, is assumed to involve individuals who have had such training, are aware of the exposures, and know how to maintain a safe personal work environment.

The FCC's RF exposure limits are expressed in two equivalent forms, using alternative units of field strength (expressed in volts per meter, or V/m), and power density (expressed in milliwatts per square centimeter, or mW/cm^2). The table on the next page lists the FCC limits for both occupational and general population exposures, using the mW/cm^2 reference, for the different radio frequency ranges.

Frequency Range (F) (MHz)	Occupational Exposure (mW/cm^2)	General Public Exposure (mW/cm^2)
0.3 - 1.34	100	100
1.34 - 3.0	100	$180 / F^2$
3.0 - 30	$900 / F^2$	$180 / F^2$
30 - 300	1.0	0.2
300 - 1,500	F / 300	F / 1500
1,500 - 100,000	5.0	1.0

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



Because the FCC's MPE limits are frequency-shaped, the exact MPE limits applicable to the instant situation depend on the frequency range used by the systems of interest.

The most appropriate method of determining RF compliance is to calculate the RF power density attributable to a particular system and compare that to the MPE limit applicable to the operating frequency in question. The result is usually expressed as a percentage of the MPE limit.
For potential exposure from multiple systems, the respective percentages of the

MPE limits are added, and the total percentage compared to 100 (percent of the limit). If the result is less than 100, the total exposure is in compliance; if it is more than 100, exposure mitigation measures are necessary to achieve compliance.

Note that the FCC "categorically excludes" certain types of antenna facilities from the routine requirement to specifically (i.e., mathematically) demonstrate compliance with the MPE limit. Among those types of facilities are cellular antennas mounted on any type of tower, when the bottoms of the antennas are more than 10 meters (c. 32.8 feet) above ground. The basis for the categorical exclusion, according to the FCC, is the understanding that because of the low power and the directionality of the antennas, such facilities – individually and collectively – are well understood to have no significant effect on the human environment. As a result, the FCC automatically deems such facilities to be in compliance.

In addition, FCC Rules and Regulations Section 1.1307(b)(3) describes a provision known in the industry as "the 5% rule". It describes that when a specific location – like a spot on a rooftop – is subject to an overall exposure level exceeding the applicable MPE limit, operators with antennas whose MPE% contributions at the point of interest are less than 5% are exempted from the obligation otherwise shared by all operators to bring the site into compliance, and those antennas are automatically deemed by the FCC to satisfy the rooftop compliance requirement.

FCC References on Compliance

47 CFR, FCC Rules and Regulations, Part 1 (Practice and Procedure), Section 1.1310 (Radiofrequency radiation exposure limits).

FCC Second Memorandum Opinion and Order and Notice of Proposed Rulemaking (FCC 97-303), *In the Matter of Procedures for Reviewing Requests for Relief From State and Local Regulations Pursuant to Section 332(c)(7)(B)(v) of the Communications Act of 1934 (WT Docket 97-192), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (ET Docket 93-62), and Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Amendment of the Commission's Rules to Preempt State and Local Regulation of Commercial Mobile Radio Service Transmitting Facilities*, released August 25, 1997.

FCC First Memorandum Opinion and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released December 24, 1996.

FCC Report and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released August 1, 1996.

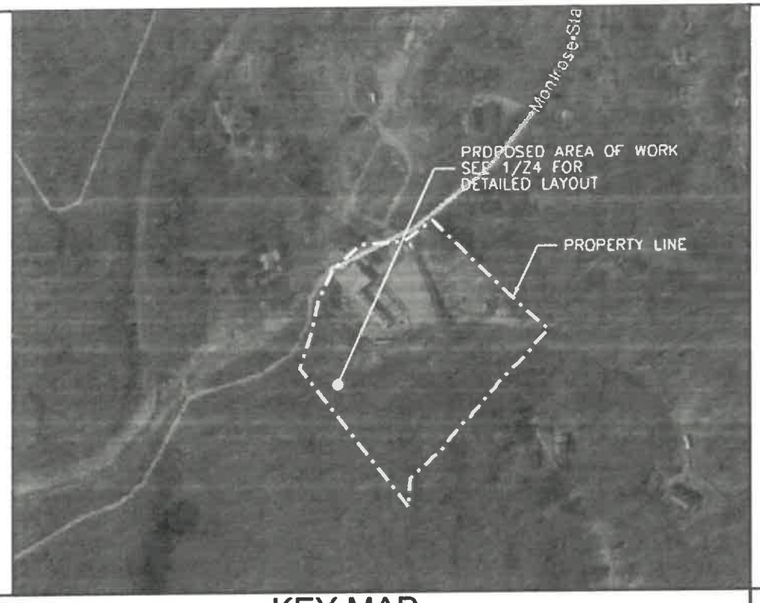
FCC Office of Engineering and Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 97-01, August 1997.

HOMELAND TOWERS

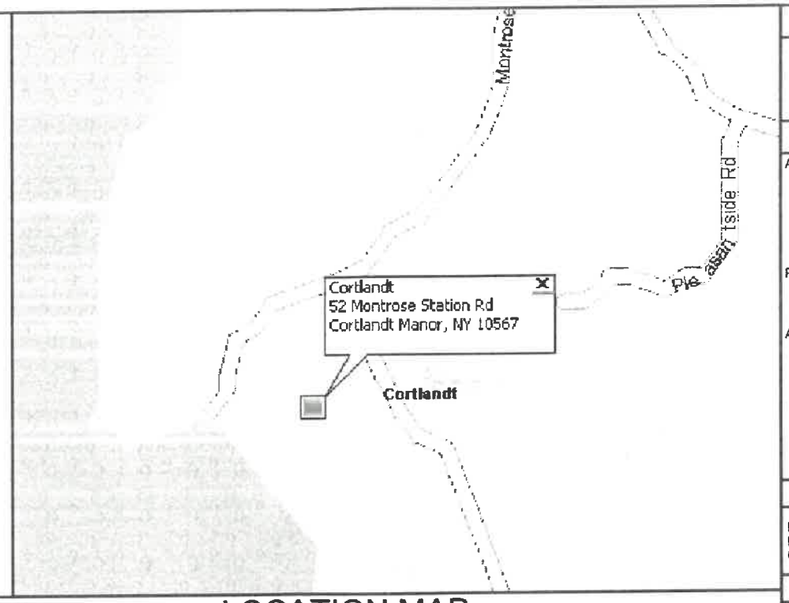
CORTLANDT
52 MONTROSE STATION RD
CORTLANDT, NY 10567
WESTCHESTER COUNTY

verizon

4 CENTEROCK ROAD
WEST NYACK, NY 10994



KEY MAP
22x34 SCALE: 1" = 200'-0"
11x17 SCALE: 1"= 400'-0"



LOCATION MAP
22x34 SCALE: 1" = 200'-0"
11x17 SCALE: 1"= 400'-0"

SCOPE OF WORK

The Installation Of An Unmanned Telecommunications Facility Including Small Antennas And Related Equipment With Associated Appurtenances On A Proposed Monopole And The Installation Of Proposed Equipment Cabinets Within A Proposed Fenced Compound At Grade.

PROJECT DIRECTORY

APPLICANT:
Verizon Wireless
4 Centerock Road
West Nyack, NY 10994

Homeland Towers
9 Harmony Street, 2nd Floor
Danbury, CT 06810

PROPERTY OWNER:
Bezo Enterprises LLC
34 Dearborn Avenue
Rye, NY 10580

ATTORNEY:
Robert Gaudioso
Snyder & Snyder, LLP
94 White Plains Road
Tarrytown, NY 10591
(914) 333-0700

VERIZON:

RF ENGINEER:
Ali Aljibori
(914) 714-7224

ENGINEERING PROJECT MANAGER:
Steve Krug
(908) 323-2513

SITE COORDINATES

LATITUDE: N41°16'11.15" (NAD83)
LONGITUDE: W73°53'48.26" (NAD83)
GROUND ELEVATION: 410'-6" +/- (NAVD88)

LEGAL DESCRIPTION

BLOCK: 1
LOT: 4

ZONE: R-40
SECTION: 44.7

DWG.	DWG. TITLE
Z1	COVER PAGE
Z2	RADIUS MAP
Z3	SITE PLANS AND SITE PLAN NOTES
Z4	COMPOUND LAYOUT
Z5	ELEVATIONS
Z6	ELEVATIONS
Z7	DETAILS
Z8	SPECIFICATIONS
Z9	GENERATOR SPECIFICATIONS
Z10	PROPERTY OWNERS LIST
Z11	PRELIMINARY EXISTING CONDITIONS SURVEY
Z12	PRELIMINARY TREE REMOVAL PLAN
Z13	OLD AND NEW SITE PLAN ZONING COMPARISON

(TYPICAL DRAFTING STANDARDS FOR ALL SHEETS)	
Existing	Light, Upper And Lower Case Lettering When Labeling Existing Features
PROPOSED	BOLD, UPPER CASE LETTERING WHEN LABELING PROPOSED FEATURES
———	Light Lines Represent Existing Features
———	DARK LINES REPRESENT PROPOSED FEATURES

APPLICABLE BUILDING CODES AND STANDARDS

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

BUILDING CODE: INTERNATIONAL BUILDING CODE (IBC), 2020 AS ADOPTED BY NEW YORK

CODE SUPPLEMENT: 2017 NYS UNIFORM CODE SUPPLEMENT, EFFECTIVE DATE OCTOBER 31, 2017

ELECTRICAL CODE: NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 70 - 2017, NATIONAL ELECTRICAL CODE AS ADOPTED BY NEW YORK

MECHANICAL CODE: INTERNATIONAL MECHANICAL CODE (IMC), 2020 AS ADOPTED BY NEW YORK

PLUMBING CODE: NATIONAL STANDARD PLUMBING CODE, 2020 AS ADOPTED BY NEW YORK

LIGHTNING PROTECTION CODE: NFPA 780 - 2006, LIGHTNING PROTECTION CODE

FUEL GAS CODE: INTERNATIONAL FUEL GAS CODE (IFGC), 2020 AS ADOPTED BY NEW YORK

ENERGY CODE: INTERNATIONAL ENERGY CONSERVATION CODE (IECC), 2018 AS ADOPTED BY NEW YORK

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST APPROVED OF THE FOLLOWING STANDARDS:

AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION

ANSI/TIA-222-H ADDENDUMS 1-4, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES

TIA 807 COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 101 (2015), LIFE SAFETY CODE, NFPA 37 (2002), STATIONARY COMBUSTION ENGINES AND GAS TURBINES. NFPA 853 (2003), STANDARD FOR THE INSTALLATION OF STATIONARY FUEL POWER PLANTS

AMERICAN WELDING SOCIETY (AWS) D1.1 (2004), STRUCTURAL WELDING CODE - STEEL

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

IEEE C2 NATIONAL ELECTRIC SAFETY CODE (NESC) 2012

TELCORDIA GR-1275 GENERAL INSTALLATION REQUIREMENTS

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

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

PROJECT NOTES

1. ALL SURVEYS SHOWN IN THESE DRAWINGS ARE PRELIMINARY. FINAL SURVEYS SHALL BE COMPLETED ONCE PRELIMINARY SITE LAYOUT IS APPROVED
2. ENVIRONMENTAL: ANALYSIS OF THE PROPOSED SITE LOCATION, INCLUDING GEOMORPHOLOGIC AND STEEP SLOPE STUDIES, TO BE COMPLETED ONCE PRELIMINARY SITE LAYOUT IS APPROVED.
3. FINAL TREE REMOVAL AND TOPOGRAPHICAL ALTERATION PLANS TO BE SUBMITTED ONCE PRELIMINARY SITE LAYOUT IS APPROVED
4. TOWN CONSULTANT ARBORIST TO IDENTIFY SPECIES, TYPE, AND SIZE OF TREES TO BE REMOVED ONCE FINAL TREE SURVEY IS COMPLETED
5. TOTAL LAND DISTURBANCE IS TO BE BELOW 1 ACRE AND AS SUCH NO STORM WATER POLLUTION PREVENTION PLAN IS REQUIRED.
6. FINAL COMPLETED LONG FORM ENVIRONMENTAL ASSESSMENT FORM AND VISUAL ENVIRONMENTAL ASSESSMENT FORM TO BE SUBMITTED ONCE PRELIMINARY SITE LAYOUT IS APPROVED
7. LANDSCAPING PLAN DEPICTING SITE REMEDIATION TO BE COMPLETED ONCE PRELIMINARY SITE LAYOUT IS APPROVED.
8. ALL PROPOSED SITE LIGHTING SHALL BE SHIELDED TO ONLY LIGHT THE PROPOSED EQUIPMENT CABINETS IN THE EQUIPMENT COMPOUND DUE TO SHIELDING AND SIZE OF PROPOSED LIGHTS, SITE LIGHTING WILL NOT BE VISIBLE BEYOND PROPERTY LINE. LIGHTS WILL BE ON A 60 MINUTE MANUAL TIMER TO AVOID BEING LEFT ON AFTER TECHNICIAN LEAVES SITE
9. BREAK POINT ANALYSIS OF THE PROPOSED MONOPOLE TO BE COMPLETED ONCE PRELIMINARY SITE LAYOUT IS APPROVED
10. FINAL SIGNED AND SEALED STRUCTURAL CERTIFICATION AND ANALYSIS REPORTS OF THE PROPOSED MONOPOLE TO BE COMPLETED AND SUBMITTED ONCE PRELIMINARY SITE LAYOUT IS APPROVED.
11. PROPOSED MONOPOLE AND EQUIPMENT LOCATIONS TO BE STAKED OUT PRIOR TO CONSTRUCTION
12. CONSTRUCTION DRAWINGS SHOWING COMPLETE SPECIFICATIONS, DETAILS, AND INSTALLATION INFORMATION FOR THE PROPOSED MONOPOLE, EQUIPMENT LOCATION, AND ALL REQUIRED FOUNDATIONS TO BE COMPLETED ONCE PRELIMINARY SITE LAYOUT IS APPROVED.
13. CONSTRUCTION SHALL NOT COMMENCE UNTIL BUILDING PERMIT HAS BEEN RECEIVED
14. VERIZON TO MAINTAIN ITS EQUIPMENT/STRUCTURES AT SITE INCLUDING THE TOWER, WHILE IT IS OWNER OF SAME. MONTHLY SITE VISITS ARE EXPECTED IN CONNECTION WITH SAME
15. APPLICANT TO COMPLY WITH CODE REQUIREMENTS REGARDING ABANDONMENT/DISCONTINUANCE IN THE UNLIKELY EVENT SAME OCCURS
16. APPLICANT SHALL PERFORM MAINTENANCE OF THE FULL EXTENT OF ACCESS DRIVE OVER THE LONG-TERM TO ACCOMODATE ACCESS BY THE APPLICANT, UTILITY AND FUEL DELIVERY COMPANIES, AND TOWN OFFICIALS INCLUDING FIRE AND EMERGENCY SERVICES VEHICLES. THIS INCLUDES PERIODIC INSPECTION AND MAINTENANCE, CLEARING OF SNOW, ICE, OR OTHER IMPEDIMENTS
17. THE NEAREST FIRE HYDRANT IS LOCATED BETWEEN THE EXISTING RESIDENCE AND BARN (41.270850°, -73.896866) SEE 1/Z3.

SDG
SCHERER DESIGN GROUP, LLC
100 Corporate Drive, Suite 202
London, NY 10963
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STATE OF NEW YORK
COLLEEN M. KELLY
LICENSED PROFESSIONAL ENGINEER
CIVIL ENGINEERING
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APPLICANT:

HOMELAND TOWERS
9 HARMONY ST, 2ND FLOOR
DANBURY CT, 06810

NO.	ISSUE OR REVISION	DATE	BY
6	CLIENT COMMENTS	08/10/22	RR
5	CLIENT COMMENTS	07/08/22	RR
4	CLIENT COMMENTS	03/08/22	RR
3	RF UPDATE	08/05/21	YM
2	ATTORNEY COMMENTS	12/17/20	AL

PROJECT TITLE:

PRELIMINARY SITE PLAN

CORTLANDT

52 MONTROSE STATION RD
CORTLANDT, NY 10567
WESTCHESTER COUNTY

BLOCK: 1 LOT: 4
ZONE: R-40

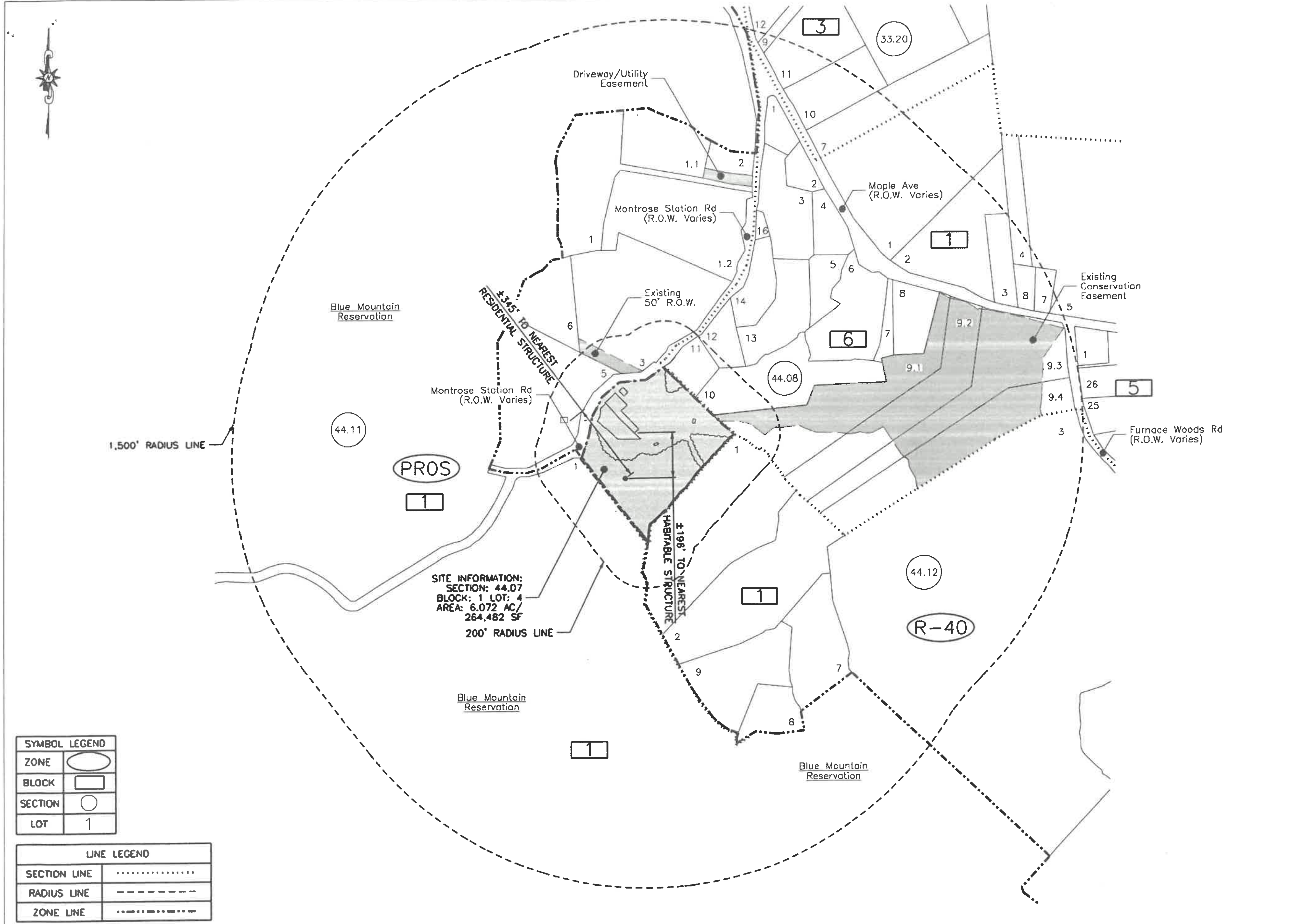
SDG PROJECT #: 16VZN071

SCALE: AS NOTED	DATE: 08/31/20
DRAWN BY: JM	CHECKED BY: SK

DRAWING TITLE:

COVER PAGE

DRAWING NO.:	PAGE NO.:
Z1	1 of 13



1 RADIUS MAP

11x17 SCALE: 1" = 400'-0"

22x34 SCALE: 1" = 200'-0"

0 200' 400'

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RADIUS MAP

DRAWING NO.: Z2

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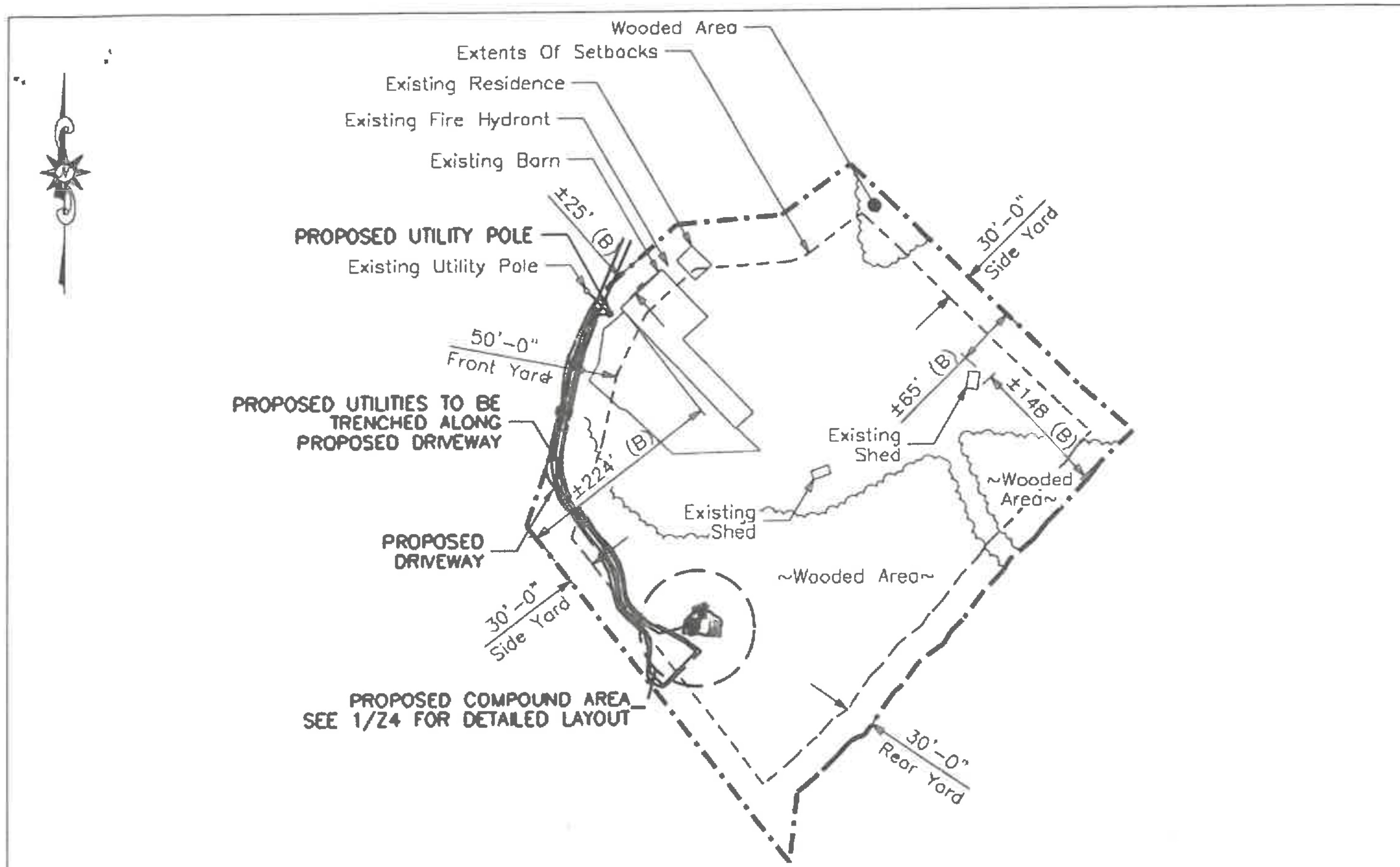
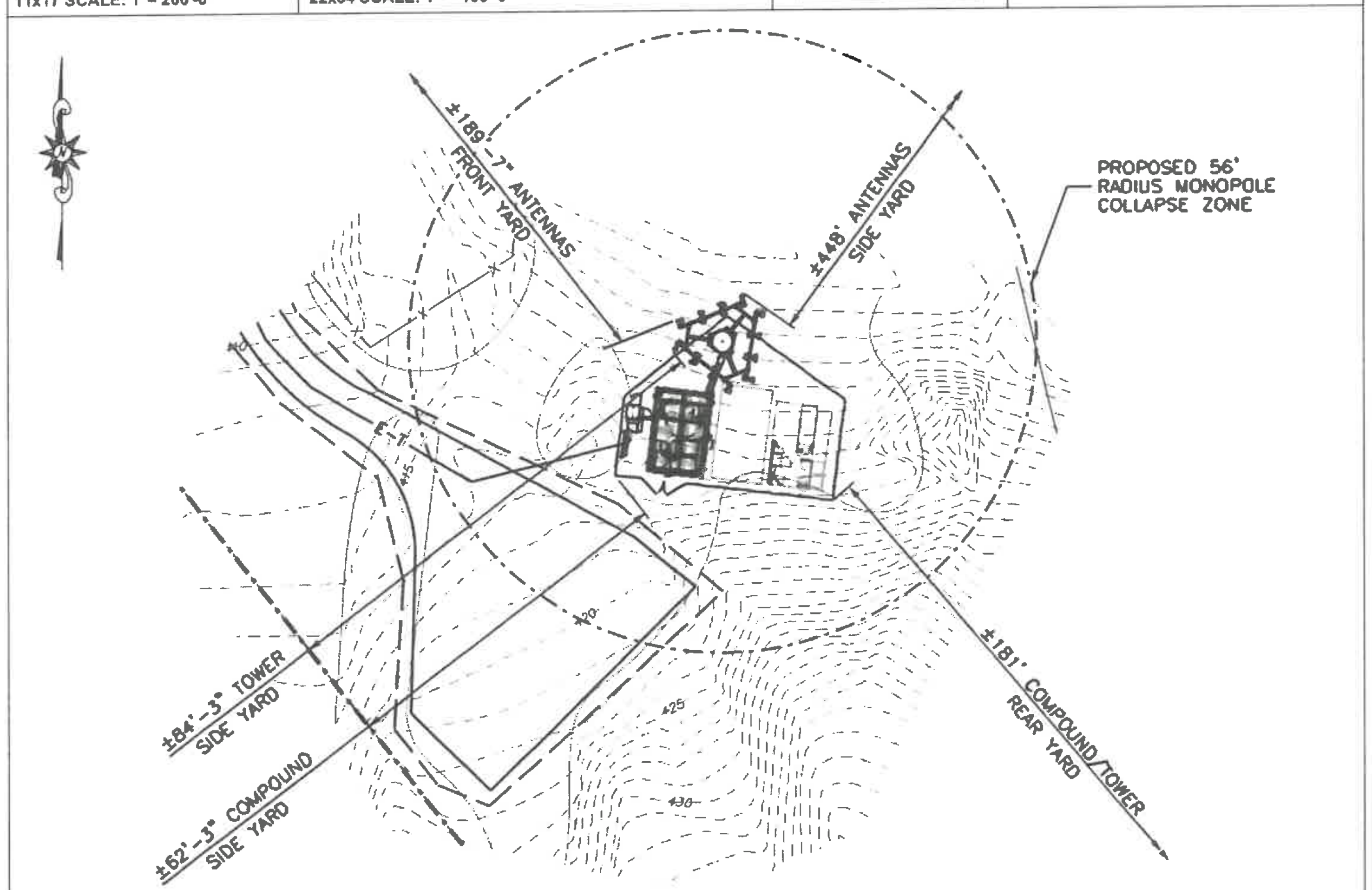


1	OVERALL SITE PLAN	0 100' 200'
11x17 SCALE: 1"= 200'-0"	22x34 SCALE: 1" = 100'-0"	



2	DETAILED SITE PLAN	0 16' 32'
11x17 SCALE: 1/32" = 1'-0"	22x34 SCALE: 1/16" = 1'-0"	

ZONING ORDINANCE DISTRICT R-40

(SECTION 307-17)	REQUIRED	EXISTING	PROPOSED
Min. Lot Area	40,000 SF	261,664 SF	No Change
Min. Lot Width	150'	552'	No Change
Max. Height	2-1/2 Stories/35'	1-1/2 Stories/±20'	±9' (Equipment Canopy)
Min. Front Yard	50'	±25' *	±189'-7"
Min. Side Yard	30'	±65'	±62'-3"
Min. Rear Yard	30'	±148'	±181'
Max. Building Coverage	65% Of F.A.R	±3%	±3.35%
Min. Landscape Coverage	60%	±72%	±69%

WIRELESS ORDINANCE

(CHAPTER 277)	REQUIRED	EXISTING	PROPOSED
Nearest Residential Structure	N/A	N/A	±345'
Nearest Habitable Structure	N/A	N/A	±196'
Proposed Utilities	Installed Underground	N/A	Installed Underground
Max. Tower Height	140'/ 3 Carriers	N/A	±140'
Tower Setback From Property Line	1/2 The Height Of The Tower (70')	N/A	±84'-3"

* = EXISTING NON-CONFORMITY

3	BULK REQUIREMENTS
11x17 SCALE: NTS	22x34 SCALE: NTS

1. SITE PLAN AND PROPERTY LINE DATA SHOWN WAS DERIVED FROM THE WESTCHESTER COUNTY GIS (LAST REVISED OCTOBER, 2015), EXISTING CONDITIONS SURVEY BY COPPENS LAND SURVEYING (DATED 11/14/19), FIELD MEASUREMENTS PERFORMED BY SCHERER DESIGN GROUP AND AERIAL PHOTOGRAPHY. THIS OVERALL SITE PLAN DOES NOT CONSTITUTE A BOUNDARY SURVEY.
2. BASED ON FIELD WORK PERFORMED NOVEMBER 2019.
3. DATUM (ESTABLISHED WITH GPS) HORIZONTAL: NAD83, NEW YORK EAST PLANE VERTICAL: NAVD88 (Geoid12a)
4. REFERENCES:
   - 4.1. WESTCHESTER COUNTY GIS MAPPING
   - 4.2. TOWN OF CORTLANDT TAX MAP 44.07
   - 4.3. DEED CONTROL NO. 493503018
   - 4.4. "LAND SURVEY MAP PREPARED FOR ROBERT A. VITOLO & JOANNE MANN-VITOLO BY J. CHARLES BOOKLUKOS DATED MARCH 2, 2002.
5. BASED ON FINDINGS CONTAINED IN ATTORNEYS SEARCH REPORT, SEARCH NO. SSBT-15483 AS ISSUED BY BARTECH TITLE AGENCY INC., DATED OF DECEMBER 7, 2016.
6. AN UNDERGROUND UTILITY SEARCH WAS NOT PERFORMED ON THIS SITE. ANY UTILITIES SHOWN ARE BASED ON SURFACE EVIDENCE/LOCATIONS. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES AND MEET ALL CURRENT UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
7. THE PROPOSED USE OF THE DEVELOPMENT IS FOR AN UNMANNED WIRELESS COMMUNICATION FACILITY. THE FACILITY WILL NOT BE STAFFED FULL TIME. IT WILL BE VISITED FOR MAINTENANCE APPROXIMATELY ONCE PER MONTH. THE SITE TECHNICIAN MAY PARK NEAR THE COMPOUND IN A PROPOSED GRAVEL AREA.
8. ACCESS TO THE SITE WILL BE VIA A PROPOSED DRIVEWAY. TRAFFIC IMPACTS WILL BE NEGLIGIBLE SINCE THE SITE IS UNMANNED.
9. SANITARY AND WATER FACILITIES ARE NOT REQUIRED. ELECTRIC AND TELEPHONE ARE THE ONLY UTILITIES THAT ARE REQUIRED. UTILITIES WILL BE PROVIDED FROM EXISTING SERVICES.
10. WATER COURSES OR FLOOD PLAINS WILL NOT BE AFFECTED BY THIS PROPOSAL.
11. THE TOTAL SOIL DISTURBANCE SHALL NOT EXCEED 1 ACRE. A GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES IS NOT REQUIRED.
12. SOIL EROSION AND SEDIMENT CONTROL PERMIT IS NOT REQUIRED SINCE THE PROPOSED AREA OF DISTURBANCE IS LESS THAN 1 ACRE.
13. PROPOSED FACILITY WILL BE MONITORED 24 HOURS A DAY, 7 DAYS A WEEK FROM A REMOTE LOCATION.
14. TOWER LIGHTING IS NOT PROPOSED.
15. TRASH DISPOSAL IS NOT REQUIRED IN CONNECTION WITH THE PROPOSED INSTALLATION.
17. THE CONTRACTOR SHALL ABIDE BY ALL CURRENT LOCAL, STATE, AND NATIONAL CODES THAT ARE APPLICABLE.
18. THE TOWER WITH ALL PROPOSED EQUIPMENT AND ANTENNAS ATTACHED SHALL BE CONFIRMED TO MEET OR EXCEED THE REQUIREMENTS OF INTERNATIONAL BUILDING CODE, 2020, AS ADOPTED BY NEW YORK AND TIA-222-H.

4	SITE PLAN NOTES
11x17 SCALE: NTS	22x34 SCALE: NTS

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SITE PLANS AND SITE PLAN NOTES

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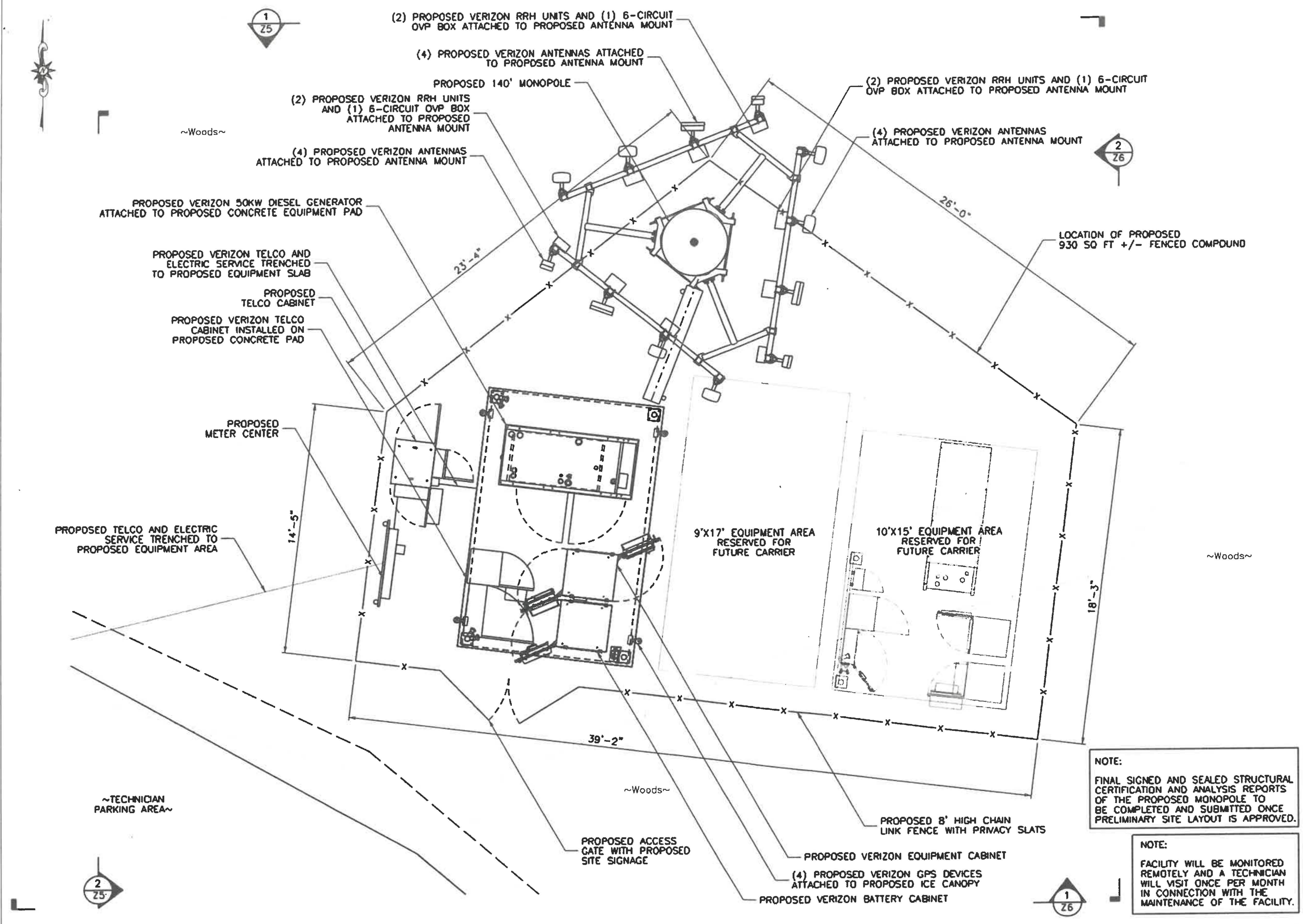

NOTE:

FINAL SIGNED AND SEALED STRUCTURAL CERTIFICATION AND ANALYSIS REPORTS OF THE PROPOSED MONOPOLE TO BE COMPLETED AND SUBMITTED ONCE PRELIMINARY SITE LAYOUT IS APPROVED.

NOTE:

FACILITY WILL BE MONITORED REMOTELY AND A TECHNICIAN WILL VISIT ONCE PER MONTH IN CONNECTION WITH THE MAINTENANCE OF THE FACILITY.

1	COMPOUND LAYOUT
11x17 SCALE: 3/16"= 1'-0"	22x34 SCALE: 3/8" = 1'-0"

0 3' 6'

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COMPOUND LAYOUT

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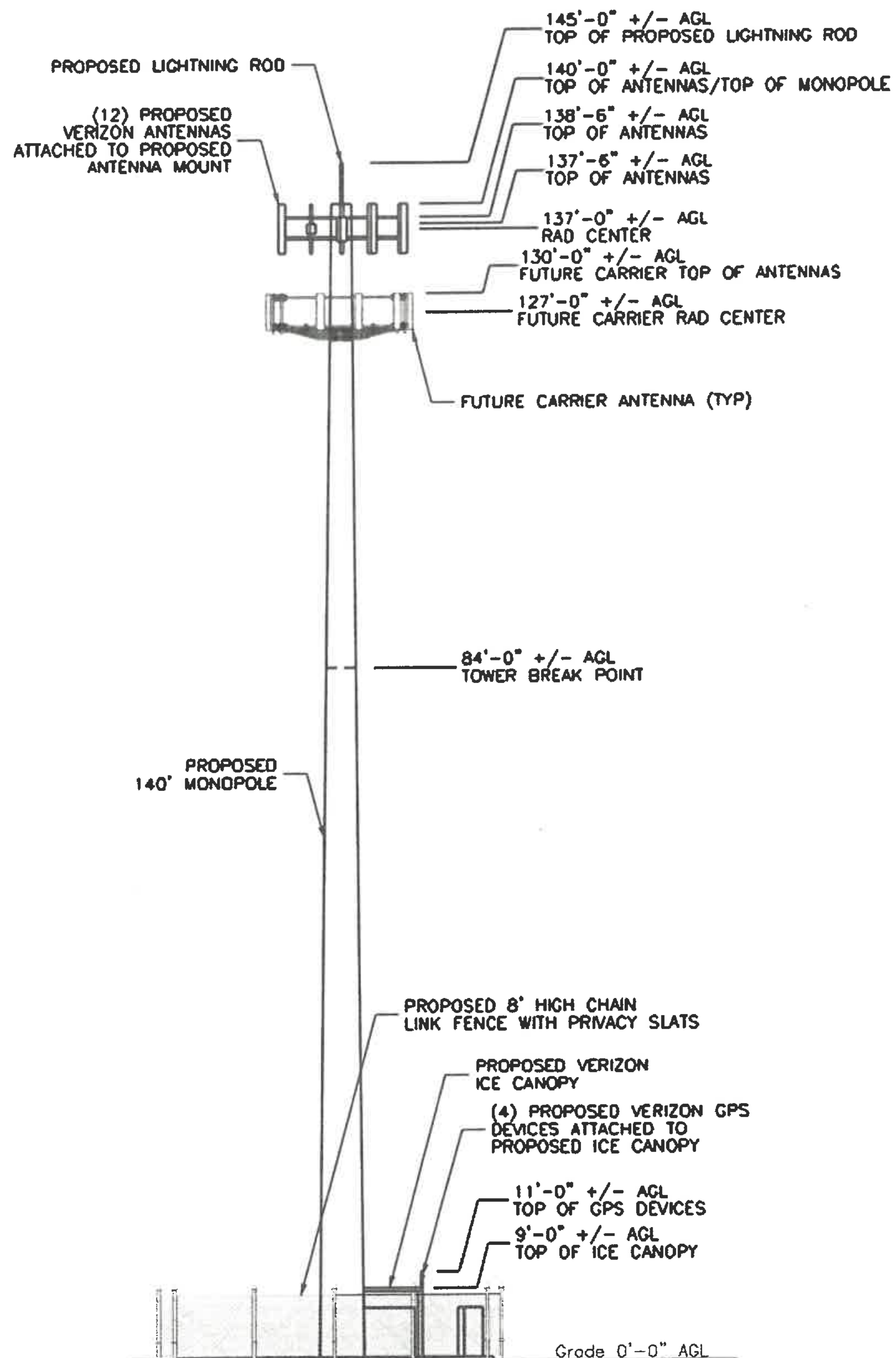

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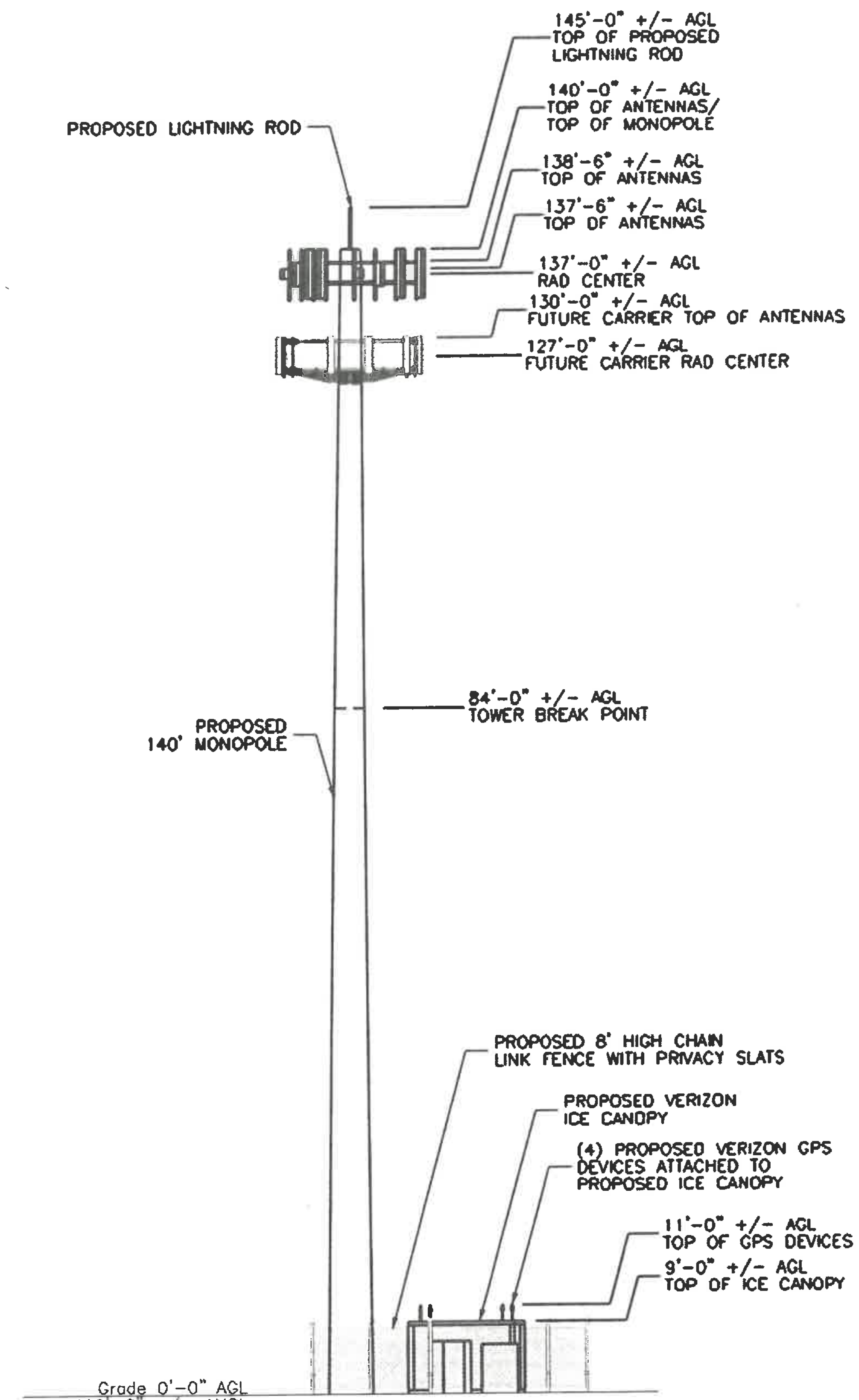
1 **NORTHERN ELEVATION**

11x17 SCALE: 1"= 20'-0" 22x34 SCALE: 1" = 10'-0"

0 10' 20'



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2 **WESTERN ELEVATION**

11x17 SCALE: 1"= 20'-0" 22x34 SCALE: 1" = 10'-0"

0 10' 20'

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COLLEEN CONNOLLY
LICENSED PROFESSIONAL ENGINEER

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ELEVATIONS

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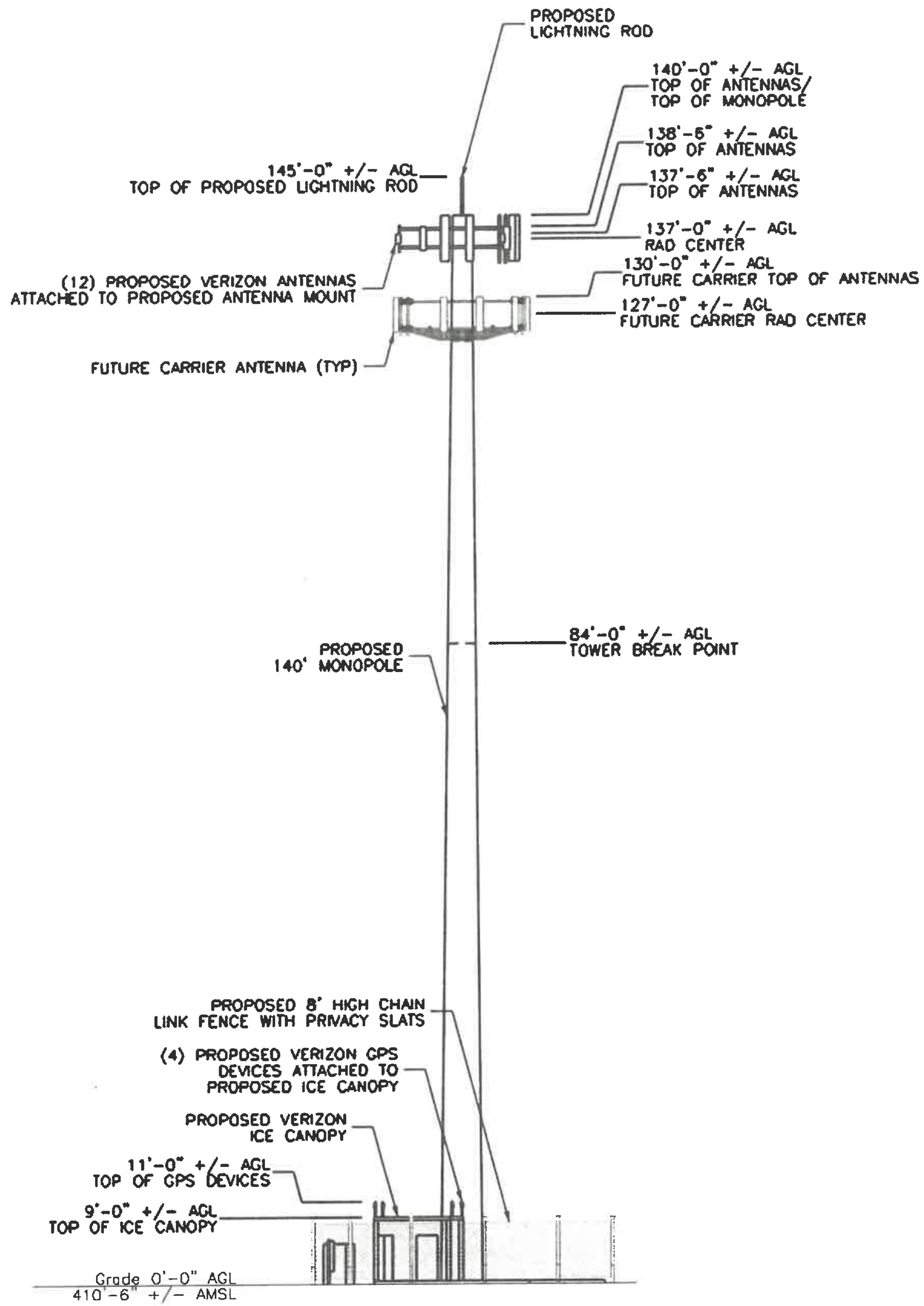

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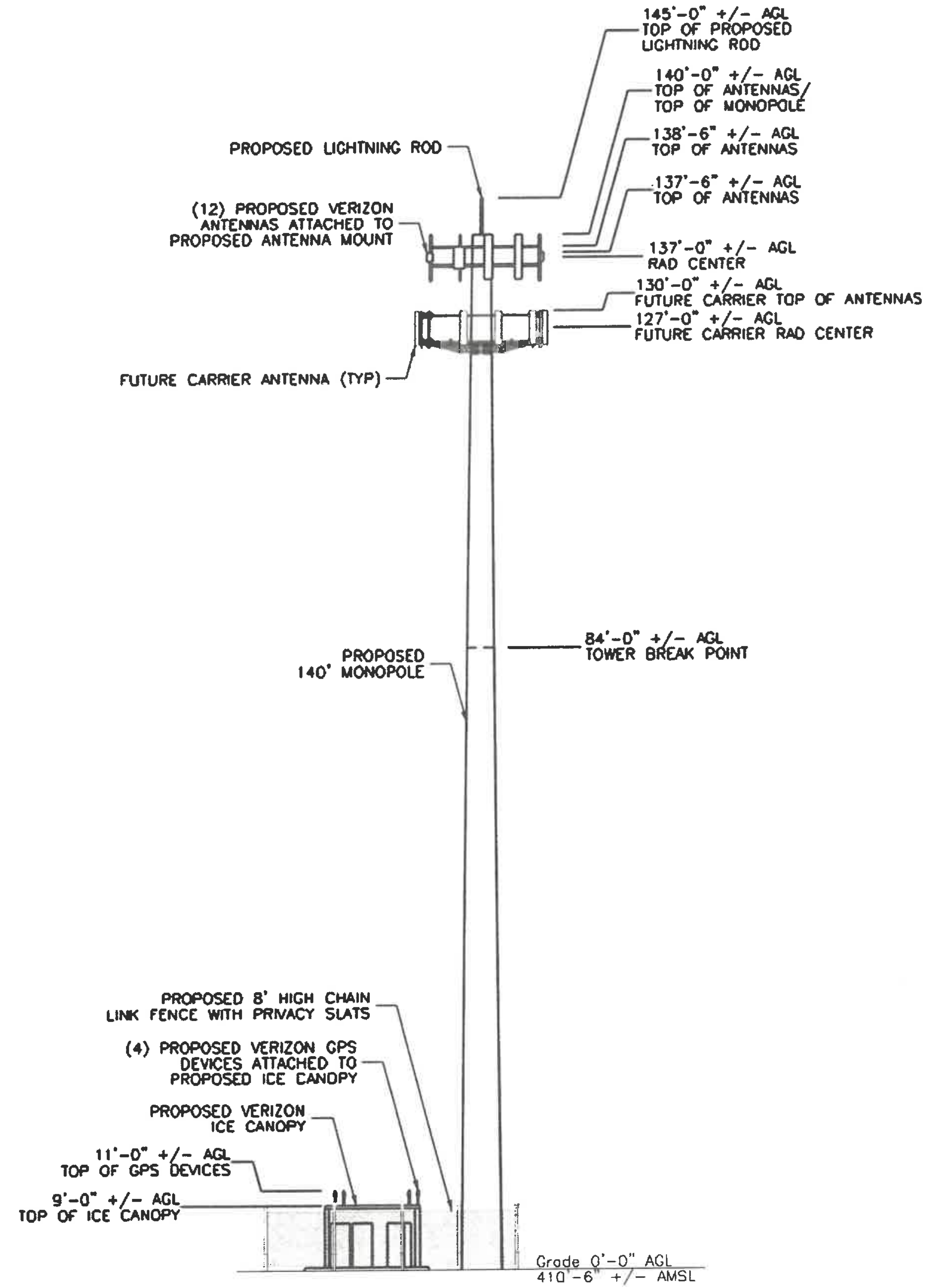
1 **SOUTHERN ELEVATION**

0 10' 20'

11x17 SCALE: 1"= 20'-0" 22x34 SCALE: 1" = 10'-0"



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2 **EASTERN ELEVATION**

0 10' 20'

11x17 SCALE: 1"= 20'-0" 22x34 SCALE: 1" = 10'-0"

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ELEVATIONS

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GPS/AVIATION SPECIAL PURPOSE ANTENNAS
GPS Timing Reference Antennas

GPS-TMG-40H, 40 dB Internal Amplifier

The GPS-TMG-40 timing reference antennas are specifically designed for long-lasting, trouble-free deployments in congested cell-site applications. Their 40 dB high gain amplifier is well suited to address attenuation issues associated with applications requiring longer cable runs.

The proprietary quadrifilar helix design, coupled with multi-stage filtering provides superior out-of-band rejection and lower elevation pattern performance than traditional patch antennas.

Their unique radome shape sheds water and ice, while eliminating problems associated with bird perching. The antenna may be purchased by itself or with pipe mounting hardware. Custom models or site kits options are also available.

This antenna is made of materials that fully comply with provisions stipulated by EU directives RoHS 2002/95/EC.

This antenna also features ESD, reverse polarity protection and transit voltage suppression.

Antenna Element Electrical Specifications

Frequency Band	Antenna Gain	Nominal Impedance	VSWR	Polarization	Connector
1575.42 +/- 10 MHz	3.5 dBic	50 ohms	≤ 1.5:1	Right hand circular	N, female (one - bottom fed)

Mechanical Specifications

Antenna Dimensions	Shipping Dimensions	Antenna Weight	Shipping Weight	Radome Color
5.0" H x 3.2" D (126 H x 81 mm)	7.5" L x 4.4" W x 3.8" D (190 x 112 x 96 mm)	0.6 lbs (0.3 kg)	1.9 lbs (0.9 kg)	White

Environmental Specifications

Temperature Range	Humidity
- 40° C to + 85° C	95%

Mounting

All mounting options fit pipes of 1"-1.45" (25 mm-37 mm) maximum diameter.

Model	Options
GPS-TMG-40H	Does not include mounting hardware.
GPS-TMG-40MHS	Includes universal mounting hardware consisting of collar (GPS-TMG-MRT) and pipe clamp (GPS-TMG-LMHT).
GPS-TMG-40MCS	Includes economy collar mount (GPS-TMG-MRMHNT).

PCTEL

Low Noise Amplifier Specifications

Frequency Band (MHz): 1575.42 +/- 12 MHz
Amplifier Gain: 40 dB +/- 4 dB
Nominal Impedance: 50 ohms
Output VSWR: < 2.0:1
Maximum Noise Figure: < 2.5 dB @ +25°C
DC Voltage: 1.3-9.0 V (regulated)
DC Current: ≤ 40 mA
Filtering: 3 stage filtering including pre-selector
Bandwidth: ≥ 60 dB @ +/- 10 MHz off center frequency

PCTEL, Inc. WEB: www.antenna.com 177

INFORMATION

This is an ACCESS POINT to an area with transmitting antennas.

Obey all postings and boundaries beyond this point.

Call Verizon Wireless at 1-800-264-6620 for more information.

STATE: _____ SWITCH: _____

Site ID: _____

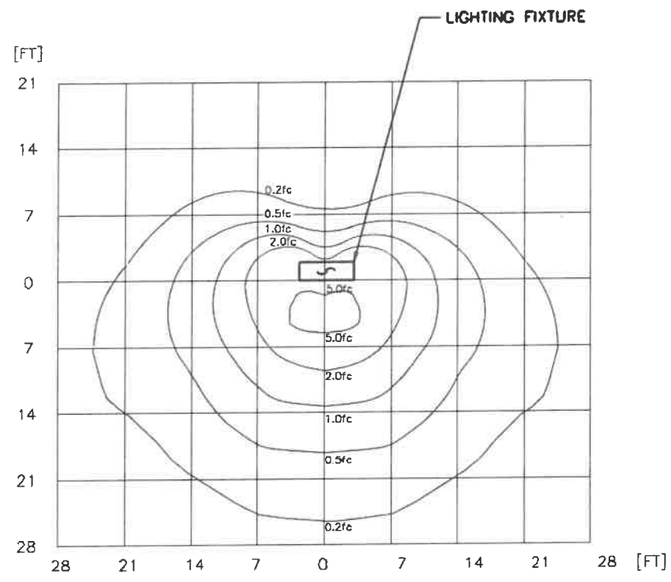
verizon✓

⚠ NOTICE ⚠

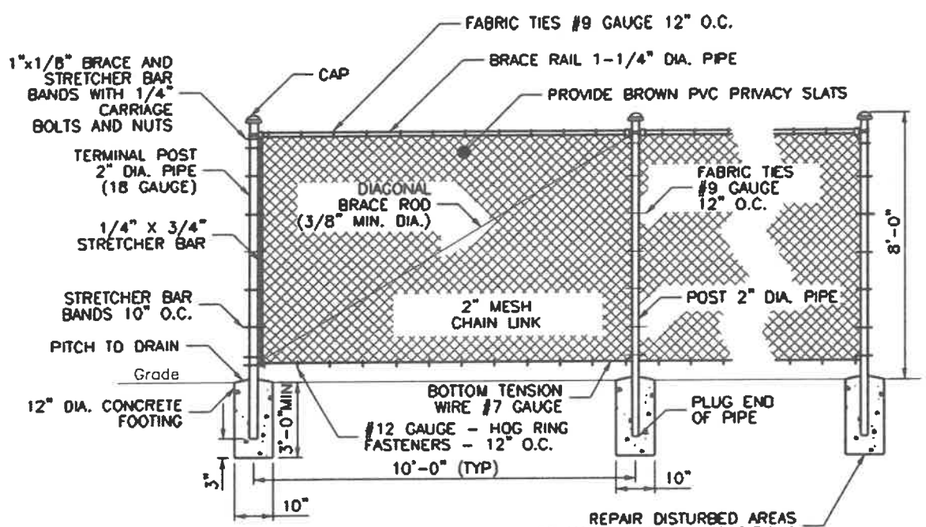
GENERAL RADIO FREQUENCY (RF) SAFETY GUIDELINES

Until ALL applicable antennas have been deactivated, please observe the following:

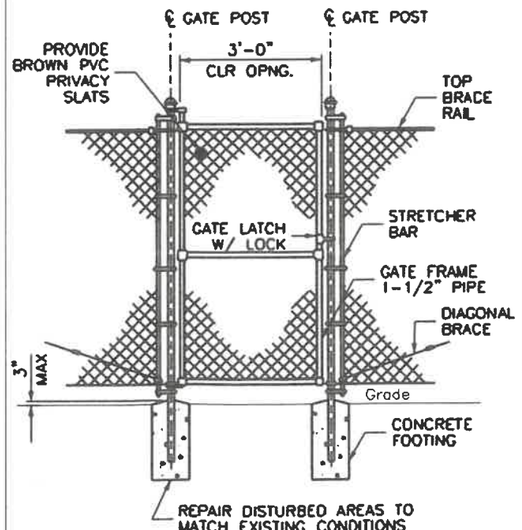
- Obey all posted signs.
- Assume all antennas are transmitting.
- Do not touch any antenna.
- Do not stand in front of any antenna.
- Do not walk in front of any antenna.
- Do not walk beyond any signs, barriers, or visual markers towards any antenna.
- Contact antenna owner or property owner if there are any questions or concerns.



1	GPS SPECIFICATION	2	VERIZON ANTENNA SIGNS	3	ISO FOOT CANDLE PLOT	0 8' 16'
11x17 SCALE: NTS	22x34 SCALE: NTS	11x17 SCALE: NTS	22x34 SCALE: NTS	11x17 SCALE: 1/16"= 1'-0"	22x34 SCALE: 1/8" = 1'-0"	



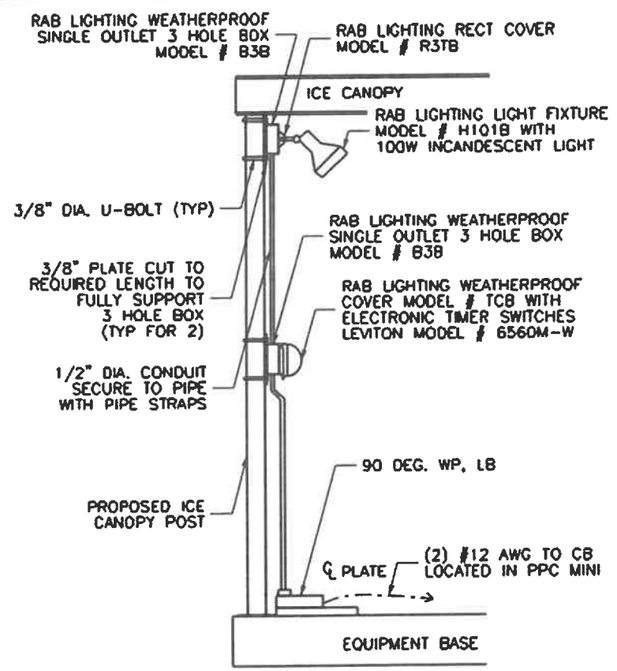
4	FENCE DETAIL
11x17 SCALE: NTS	22x34 SCALE: NTS



NOTE:

GATE LATCH SHALL BE 1-3/8" O.D. PLUNGER ROD WITH MUSHROOM TYPE CATCH AND LOCK. KEYED OR COMBINATION AS PER CONSTRUCTION COORDINATOR.

5	GATE DETAIL
11x17 SCALE: NTS	22x34 SCALE: NTS



6	WORK LIGHT DETAIL
11x17 SCALE: NTS	22x34 SCALE: NTS

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DETAILS

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SAMSUNG LTE 700/850MHZ
RFV01U-D2A

WEIGHT: 70.3 lbs (WITH FINGER GUARD)

DIMENSIONS: H15.5"xW15.9"xD10.0"

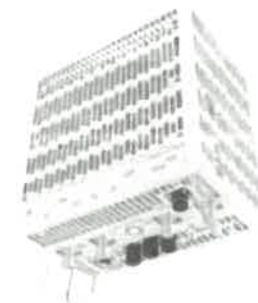
1 **AWS RRH UNIT SPEC.**

11x17 SCALE: NTS | 22x34 SCALE: NTS

SAMSUNG LTE AWS/PCS
RFV01U-D1A

WEIGHT: 70.3 lbs (WITH FINGER GUARD)

DIMENSIONS: H15.5"xW15.9"xD10.0"



2 **PCS RRH UNIT SPEC.**

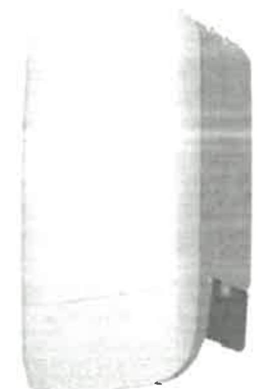
11x17 SCALE: NTS | 22x34 SCALE: NTS

SAMSUNG RT4401-48A
CBRS 4T4R

DIMENSIONS: H13.91"xW8.55"xD4.15" (W/O CABLE COVER)

WEIGHT: 18.64 lbs (WITHOUT MOUNTING BRACKET)

AREA: 0.4 SQ.FT.



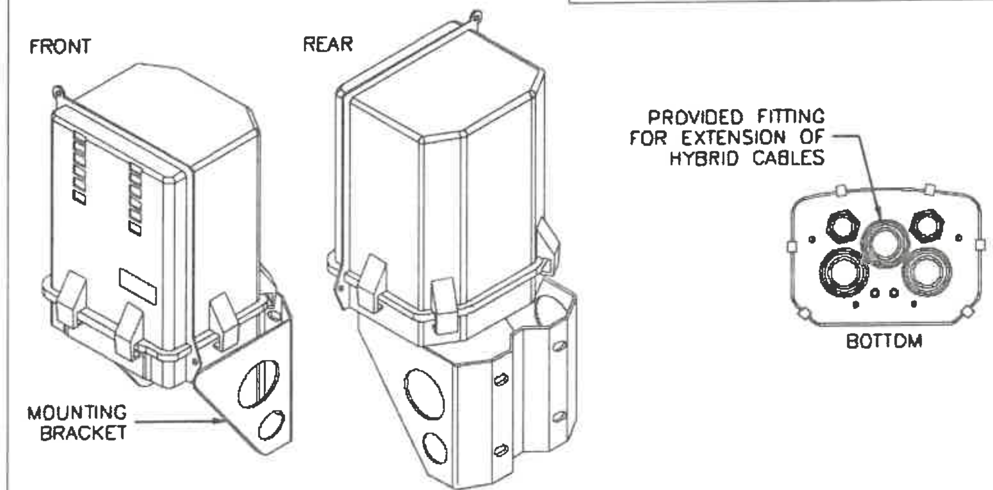
3 **CBRS INTEGRATED ANTENNA/RRH SPEC.**

11x17 SCALE: NTS | 22x34 SCALE: NTS

MANUFACTURER: RAYCAP

DIMENSIONS: 10.31"Dx15.73"Wx19.15"H

WEIGHT: 32.0 LBS (SYSTEM)
5.5 LBS (MOUNT)
37.5 LBS (TOTAL)



MAIN DISTRIBUTION BOX

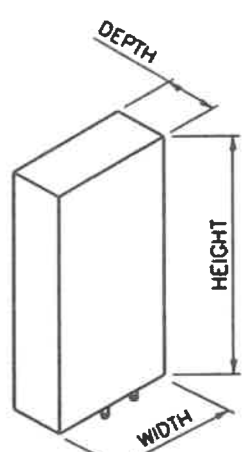
4 **6-CIRCUIT OVP BOX SPECIFICATION**

11x17 SCALE: NTS | 22x34 SCALE: NTS

NHH-65B-R2B
WEIGHT: 43.7 lbs (WITHOUT BRACKETS)
DIMENSIONS: H72.0"xW11.9"xD7.1"

MT6407-77A
DIMENSIONS: H35.06"xW16.06"xD5.51"
WEIGHT: 81.57 lbs (WITHOUT MOUNTING BRACKET)

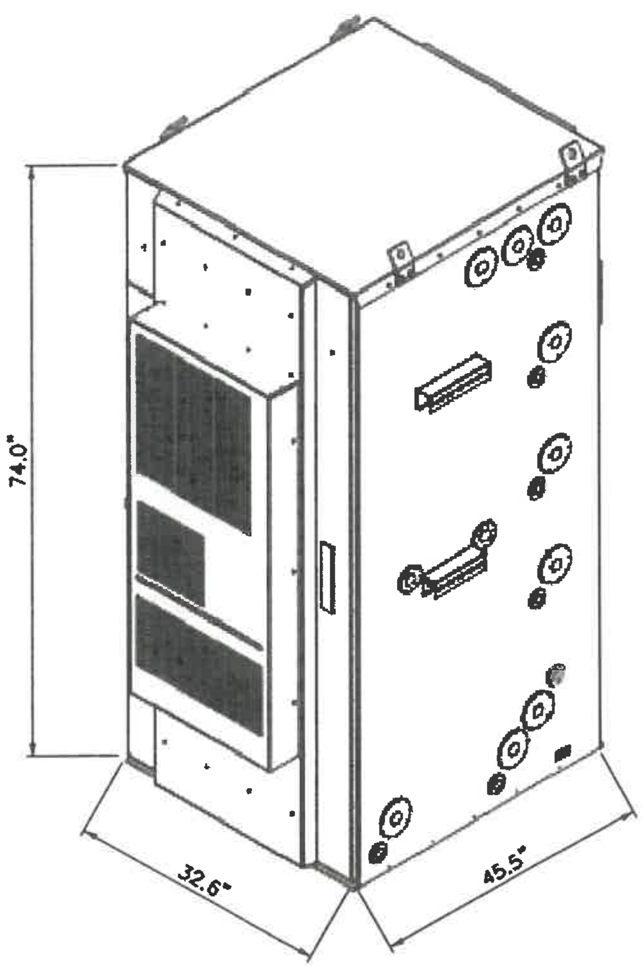
XXDWMM-12.5-65-8T-CBRS
WEIGHT: 2.87 lbs (WITHOUT BRACKETS)
DIMENSIONS: H12.3"xW8.7"xD1.4"



NOTE:
ANTENNAS AND RRHS SUBJECT TO CHANGE BASED UPON AVAILABILITY AT THE TIME OF CONSTRUCTION.

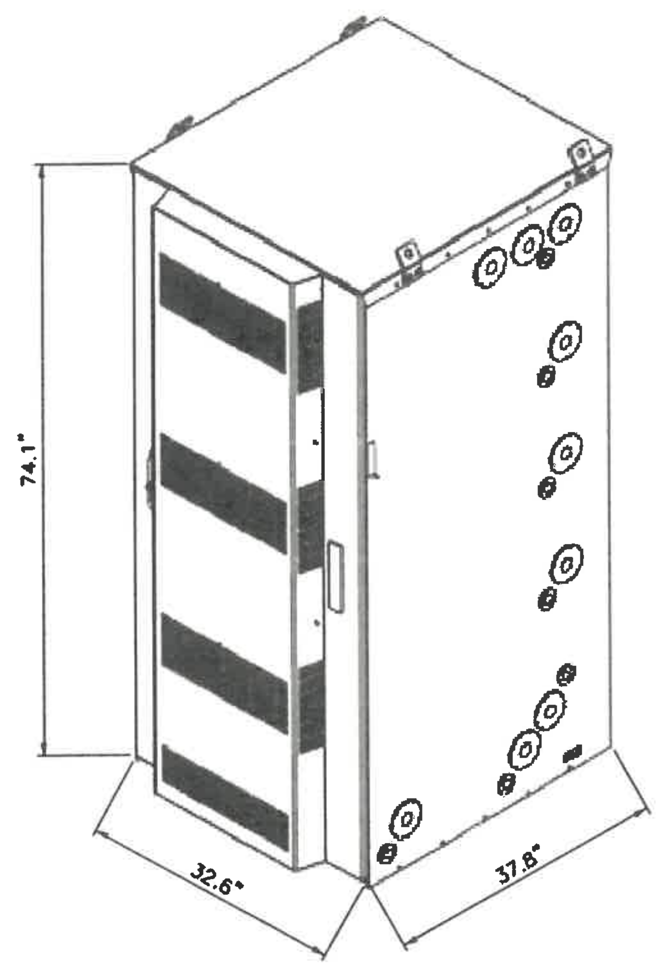
5 **ANTENNA SPECIFICATIONS**

11x17 SCALE: NTS | 22x34 SCALE: NTS



6 **BASE TRANSCEIVER STATION**

11x17 SCALE: NTS | 22x34 SCALE: NTS



7 **BATTERY CABINET**

11x17 SCALE: NTS | 22x34 SCALE: NTS

SCHERER DESIGN GROUP, LLC
100 Corporate Drive, Suite 202
Lebanon, NJ 08833
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APPLICANT:

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9 HARMONY ST, 2ND FLOOR
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2	ATTORNEY COMMENTS	12/17/20	AL

PROJECT TITLE:

PRELIMINARY SITE PLAN

CORTLANDT

52 MONTROSE STATION RD
CORTLANDT, NY 10567
WESTCHESTER COUNTY

BLOCK: 1 LOT: 4
ZONE: R-40

SDG PROJECT #: 16VZN071

SCALE: AS NOTED	DATE: 08/31/20
DRAWN BY: JM	CHECKED BY: SK

DRAWING TITLE:

SPECIFICATIONS

DRAWING NO.:	PAGE NO.:
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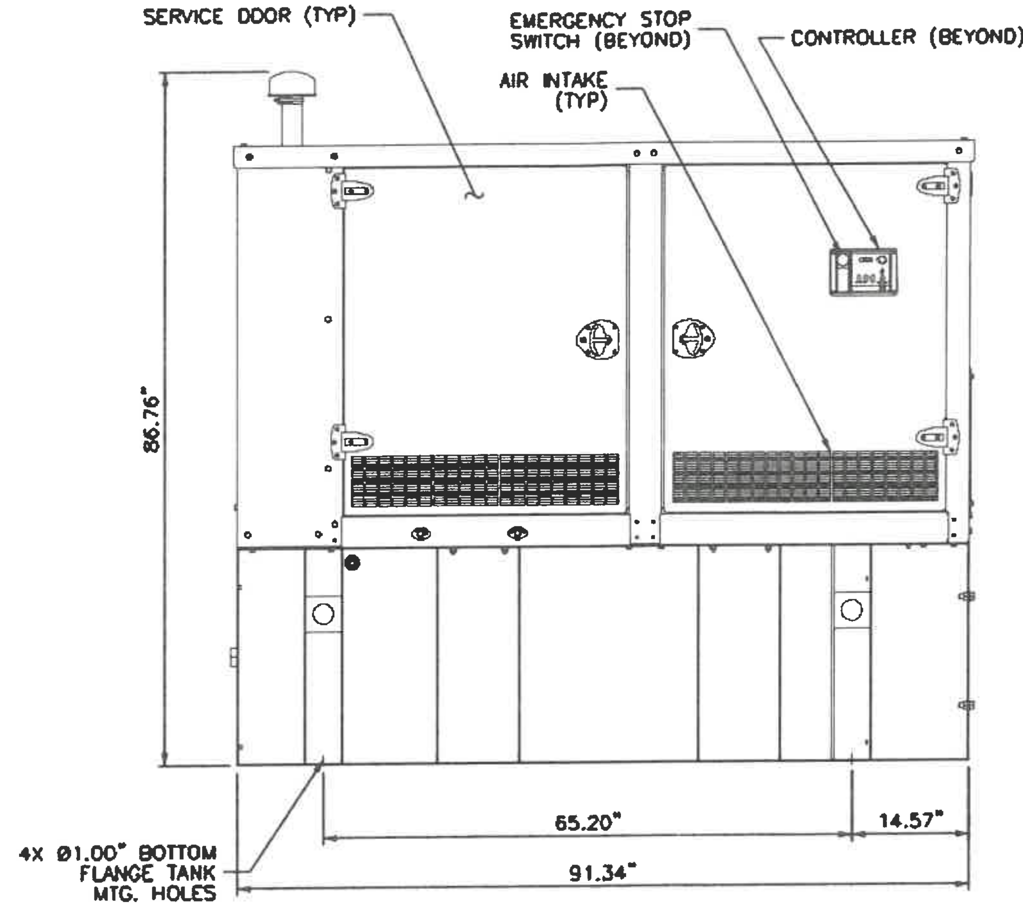
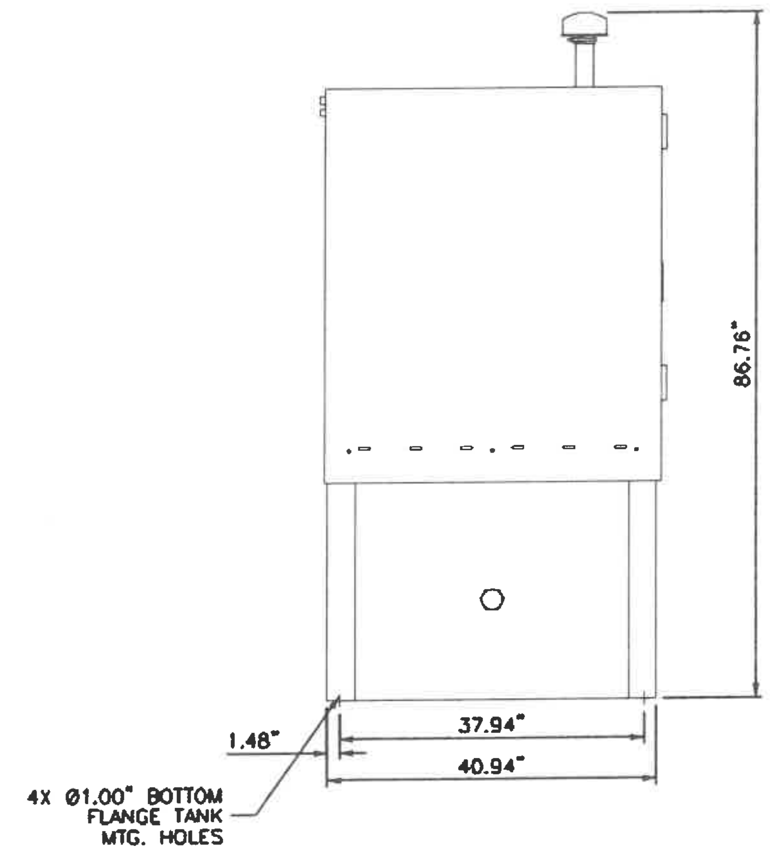
NOTES:

1) 6 AMP BATTERY CHARGER
2) 120VAC ENGINE BLOCK HEATER.
3) GENERATOR MUST BE GROUNDED.
4) MUST ALLOW FREE FLOW OF DISCHARGE AIR AND EXHAUST.
5) MUST ALLOW FREE FLOW OF INTAKE AIR.
6) BASE TANK REQUIRES ALL STUB-UPS TO BE IN THE REAR TANK STUB-UP AREA.
7) 210 FILLABLE. 197 GALLONS USEABLE CAPACITY.
8) TANK EQUIPPED WITH FIRE SAFETY VALVE ON FUEL SUPPLY LINE.
9) IT IS THE RESPONSIBILITY OF THE INSTALLATION TECHNICIAN TO ENSURE THAT THE GENERATOR INSTALLATION COMPLIES WITH ALL THE APPLICABLE CODES, STANDARDS, AND REGULATIONS.



GENERATOR (SIDE VIEW)



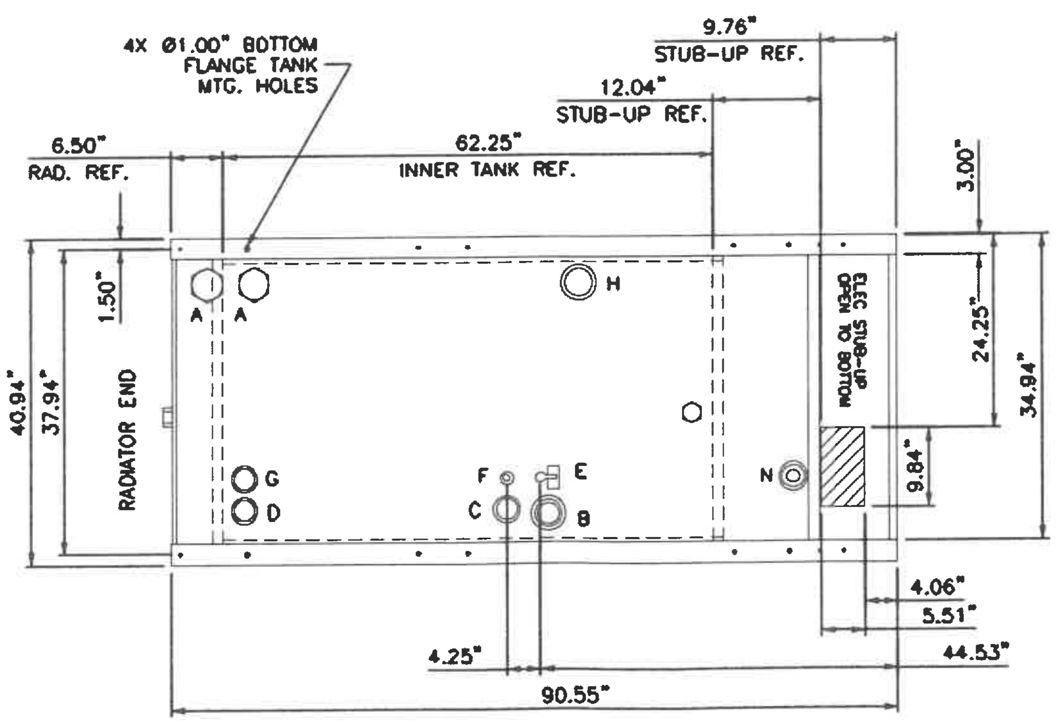
GENERATOR (REAR VIEW)

50KW KOHLER POWER SYSTEMS DIESEL GENERATOR	
GENERATOR	
MANUFACTURER:	KOHLER POWER SYSTEMS
GENERATOR MODEL NUMBER:	50REOZJE-V
ENGINE	
MANUFACTURER:	JOHN DEERE
MODEL:	4045TF280
CYLINDERS:	4 INLINE
DISPLACEMENT, L (CU. IN.)	4.5 (275)
GOVERNOR TYPE	MECHANICAL, STANADYNE DB4
EXHAUST OUTLET SIZE AT ENGINE HOOKUP	3.27" OD
EXHAUST TEMP. AT RATED kW, °C (°F)	579 (1074)
ENGINE ELECTRICAL	
BATTERY CHARGING ALTERNATOR:	
ALTERNATOR GROUND (NEGATIVE/POSITIVE)	NEGATIVE
VOLTS (DC)	12
AMPERE RATING	75
BATTERY VOLTAGE (DC)	12
FUEL	
TYPE:	DIESEL
FUEL SUPPLY LINE INLET, mm (in)	11.0 (0.44)
MAX FUEL FLOW, Lpg (gph)	45 (16.5)
DIMENSIONS AND WEIGHT	
SIZE (WITH ENCLOSURE) (LxWxH)(IN.):	91.34"x41.80"x86.76"
WEIGHT (LBS.):	3,605 LBS.

SOUND PRESSURE LEVEL AT 60Hz WITH FULL LOAD: 64 dB(A)

LOG AVERAGE SOUND PRESSURE LEVEL OF 8 MEASURED POSITIONS AROUND THE PERIMETER OF THE UNIT AT A DISTANCE OF 7m (23 ft)

REFER TO TIB-114 FOR DETAILS



GENERATOR (SKID PLAN)

TANK FITTINGS:

A) 3" NPT EMERGENCY VENT FITTINGS PER NFPA 30 WITH VENT CAPS (QTY. 2)

B) 4" NPT FUEL FILL FITTINGS WITH 95% OVERFILL PREVENTION VALVE

C) 2" NPT FITTING FOR FUEL LEVEL SENDING UNIT WITH MECHANICAL INDICATOR NEEDLE.

D) 2" NPT NORMAL VENT FITTING WITH MUSHROOM VENT CAP AND RISER.

E) 1/2" NPT FITTING REMOVABLE ENGINE SUPPLY DIP TUBE WITH FIRE SAFETY VALVE.

F) 1/2" NPT FITTING REMOVABLE FUEL RETURN DIP TUBE.

G) 2" NPT FITTING FOR HIGH FUEL LEVEL ALARM SET AT 90% FULL.

N) 2" NPT FITTING BUSHED DOWN TO 2" NPT WITH 45° ELBOW AND PIPE PLUGGED.

1	GENERATOR SPECIFICATIONS (KOHLER POWER MODEL #50REOZJE-V)
11x17 SCALE: NTS	24x36 SCALE: NTS

SDG
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WESTCHESTER COUNTY

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ZONE: R-40

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GENERATOR SPECIFICATIONS

DRAWING NO.:	PAGE NO.:
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Street No.	Street Name	Owner	Co-Owner	Owner Address 2	Owner City	Owner Zip
32	MONTROSE STATION RD	SALAMON JONATHAN H		32 MONTROSE STATION RD	CORTLANDT MANOR, NY	10567
2091	MAPLE AVE	S4K MAPLE AVE LLC		540 NORTH STATE, SUITE 7	BRIARCLIFF MANOR, NY	10510
5	MONTROSE STATION RD	TRUE ROSEMARY		5 MONTROSE STATION RD	CORTLANDT MANOR, NY	10567
2094	MAPLE AVE	ARTOPE WESTLEY	MONTAGUE CLARA M	2094 MAPLE AVE	CORTLANDT MANOR, NY	10567
141	FURNACE WOODS RD	CONGREGATION YESHIVATH	OHR HAMEIR	PO BOX 2130	PEEKSKILL, NY	10566
24	MONTROSE STATION RD	SEIFERHELD REGINA P	C/O RENO	10 SEDGEWICK RD	POUGHKEEPSIE, NY	12603
0	MONTROSE STATION RD	TOWN OF CORTLANDT		1 HEADY STREET	CORTLANDT MANOR, NY	10567
52	MONTROSE STATION RD	BEZO ENTERPRISES LLC		34 DEARBORN AVENUE	RYE, NY	10580
310	LAFAYETTE AVE	TRACEY STEVEN J & KATE M		310 LAFAYETTE AVE	CORTLANDT MANOR, NY	10567
170	FURNACE WOODS RD	SARI JORGE G INGA		170 FURNACE WOODS RD	CORTLANDT MANOR, NY	10567
2158	MAPLE AVE	COSTABLE HANNAH L/E	COSTABLE JOHN & SEPHEN & PAUL	2158 MAPLE AVE	CORTLANDT MANOR, NY	10567
2127	MAPLE AVE	FONTANA JOSEPH C & LORRAINE F		2127 MAPLE AVE	CORTLANDT MANOR, NY	10567
0	MAPLE AVE	PERRY ALAN W		2091 MAPLE AVE	CORTLANDT MANOR, NY	10567
2124	MAPLE AVE	SCHMIDT NANCY		2124 MAPLE AVE	CORTLANDT MANOR, NY	10567
0	MAPLE AVE	TURNER KIM	KUCNY TOMAS	2137 MAPLE AVE	CORTLANDT MANOR, NY	10567
16	MONTROSE STATION RD	S4K MAPLE AVE LLC		540 NORTH STATE RD. SUITE 7	BRIARCLIFF MANOR, NY	10510
173	FURNACE WOODS RD	PICCIANO PAZ T LIVING TRUST		PO BOX 92	VERPLANCK, NY	10596
0	MAPLE AVE	TOWN OF CORTLANDT		1 HEADY STREET	CORTLANDT MANOR, NY	10567
36	MONTROSE STATION RD	CURRY HOLLY R & JOHN P		27 FLAX POND WOODS RD.	SETAUKET, NY	11733
0	MAPLE AVE	TOWN OF CORTLANDT		1 HEADY STREET	CORTLANDT MANOR, NY	10567
2177	MAPLE AVE	PALKA RICHARD & MICHELE		2177 MAPLE AVE	CORTLANDT MANOR, NY	10567
2137	MAPLE AVE	TURNER KIM	KUCNY TOMAS	2137 MAPLE AVE	CORTLANDT MANOR, NY	10567
2119	MAPLE AVE	PERRY ALAN	REDA PATRICIA	2119 MAPLE AVE	CORTLANDT MANOR, NY	10567
181	WATCH HILL RD	COUNTY OF WESTCHESTER	BLUE MT RES	148 MARTINE AVE RM 720	WHITE PLAINS, NY	10607
39	MONTROSE STATION RD	ERRICO MICHAEL & STEPHANIE		39 MONTROSE STATION RD	CORTLANDT MANOR, NY	10567
2100	MAPLE AVE	ALBERTS SANDRA L		2100 MAPLE AVE	CORTLANDT MANOR, NY	10567
33	MONTROSE STATION RD	PICCIANO PAZ LIVING TRUST		216 8TH ST	VERPLANCK, NY	10596
2170	MAPLE AVE	WHALEN SEAN C	NATHANSON ARIEL B	2170 MAPLE AVE	CORTLANDT MANOR, NY	10567
57	MONTROSE STATION RD	MULLER ADRIAN	NOYA-MULLER VANESSA	57 MONTROSE STATION RD	CORTLANDT MANOR, NY	10567
26	MONTROSE STATION RD	FEIN JONATHAN L	& KARDOS THERESA E	26 MONTROSE STATION RD	CORTLANDT MANOR, NY	10567
174	FURNACE WOODS RD	GARMAJO DARWIN L		174 FURNACE WOODS RD	CORTLANDT MANOR, NY	10567
0	MAPLE AVE	TOWN OF CORTLANDT		1 HEADY ST	CORTLANDT MANOR, NY	10567
28	MONTROSE STATION RD	TOWN OF CORTLANDT		1 HEADY ST	CORTLANDT MANOR, NY	10567
20	MONTROSE STATION RD	HANLEY JOHN & LINDA		20 MONTROSE STATION RD	CORTLANDT MANOR, NY	10567
2146	MAPLE AVE	TATLIAN EDWARD		2146 MAPLE AVE	CORTLANDT MANOR, NY	10567
9	MONTROSE STATION RD	KEMPSKI MICHAEL	PUSEY-KEMPSKI DAWN	9 MONTROSE STATION RD	CORTLANDT MANOR, NY	10567
2139	MAPLE AVE	MAHONEY SHARRON		2139 MAPLE AVE	CORTLANDT MANOR, NY	10567
2117	MAPLE AVE	S4K MAPLE AVE LLC		540 NORTH STATE RD. SUITE 7	BRIARCLIFF MANOR, NY	10510
165	FURNACE WOODS RD	PICCIANO ENTERPRISES LLC		216 8TH ST	VERPLANCK, NY	10596
34	MONTROSE STATION RD	GARCIA CRISTIAN O	SALCE-GARCIA BRENDA	34 MONTROSE STATION RD	CORTLANDT MANOR, NY	10567
2154	MAPLE AVE	MILLER PATRICIA	KOZIOL BRIAN	2154 MAPLE AVE	CORTLANDT MANOR, NY	10567
35	MONTROSE STATION RD	PICCIANO PAZ LIVING TRUST		216 8TH ST	VERPLANCK, NY	10596
1	MONTROSE STATION RD	RENZI DAVID M		1 MONTROSE STATION RD	CORTLANDT MANOR, NY	10567
2169	MAPLE AVE	GHIGLIAZZA PAULA		2169 MAPLE AVE	CORTLANDT MANOR, NY	10567
7	MONTROSE STATION RD	FUERST ROBERT & LINDA		7 MONTROSE STATION RD	CORTLANDT MANOR, NY	10567
2123	MAPLE AVE	PERRY CHARLES W & MARION L L/E	PERRY ALAN	2123 MAPLE AVE	CORTLANDT MANOR, NY	10567
0	MONTROSE STATION RD	COUNTY OF WESTCHESTER		148 MARTINE AVE RM 720	WHITE PLAINS, NY	10607
49	MONTROSE STATION RD	BOYLE FAMILY IRREV TRUST	DUBRISINGH M /BOYLE D TRUSTEE	49 MONTROSE STATION RD	CORTLANDT MANOR, NY	10567

1 **PROPERTY OWNERS LIST**

11x17 SCALE: NTS | 22x34 SCALE: NTS

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PRELIMINARY
SITE PLAN

CORTLANDT

52 MONTROSE STATION RD
CORTLANDT, NY 10567
WESTCHESTER COUNTY

BLOCK: 1 LOT: 4
ZONE: R-40

SDG PROJECT #: 16VZN071

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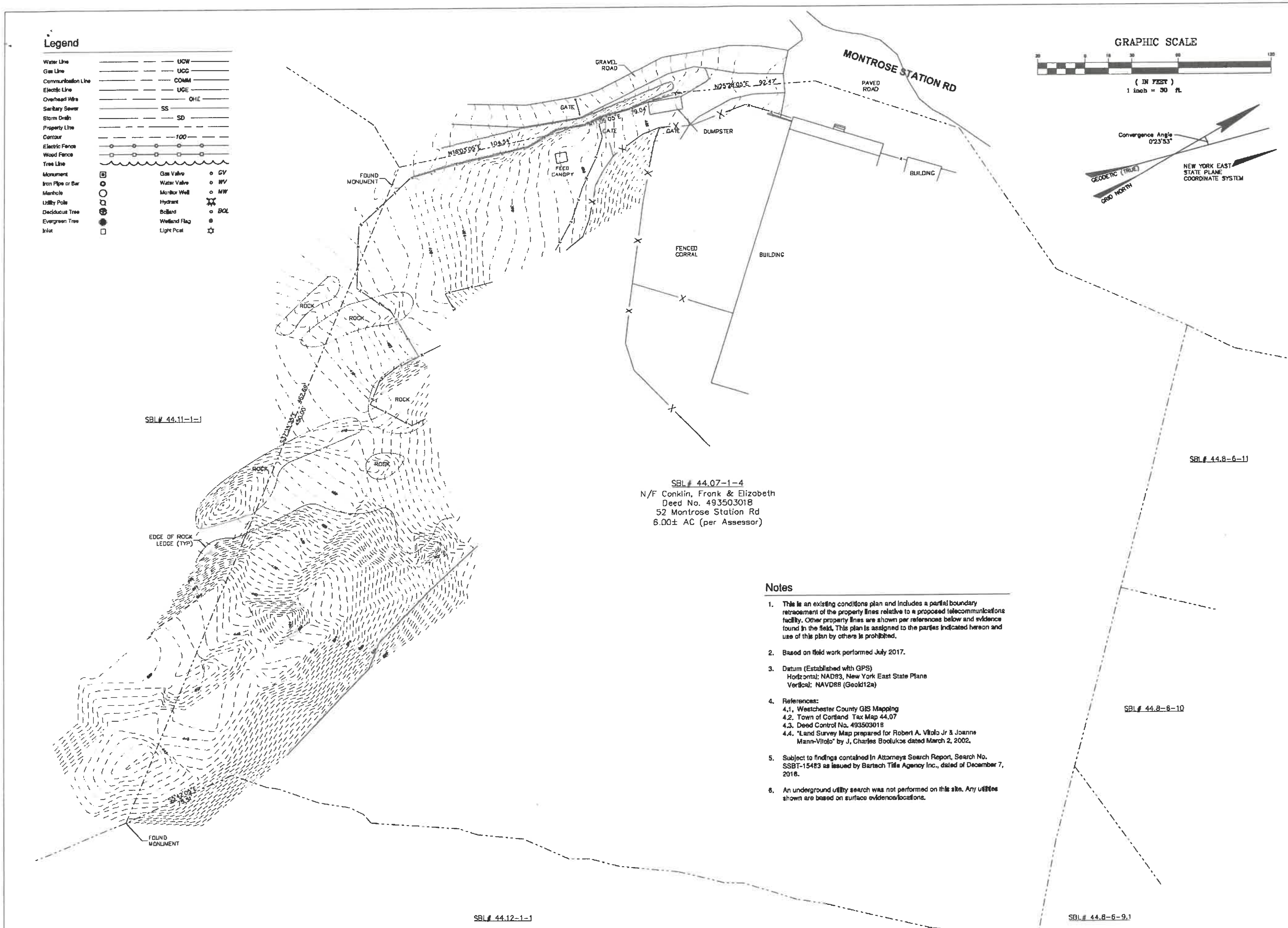

Notes

1. This is an existing conditions plan and includes a partial boundary retracement of the property lines relative to a proposed telecommunications facility. Other property lines are shown per references below and evidence found in the field. This plan is assigned to the parties indicated hereon and use of this plan by others is prohibited.
2. Based on field work performed July 2017.
3. Datum (Established with GPS)
   Horizontal: NAD83, New York East State Plane
   Vertical: NAVD88 (Geoid12a)
4. References:
   4.1. Westchester County GIS Mapping
   4.2. Town of Cortland Tax Map 44.07
   4.3. Deed Control No. 493503018
   4.4. "Land Survey Map prepared for Robert A. Vitolo Jr & Joanne Mann-Vitolo" by J. Charles Boolukos dated March 2, 2002.
5. Subject to findings contained in Attorneys Search Report, Search No. SSBT-15483 as issued by Bartech Title Agency Inc., dated of December 7, 2016.
6. An underground utility search was not performed on this site. Any utilities shown are based on surface evidence/locations.

1 **EXISTING CONDITIONS SURVEY**

11x17 SCALE: NTS | 22x34 SCALE: NTS

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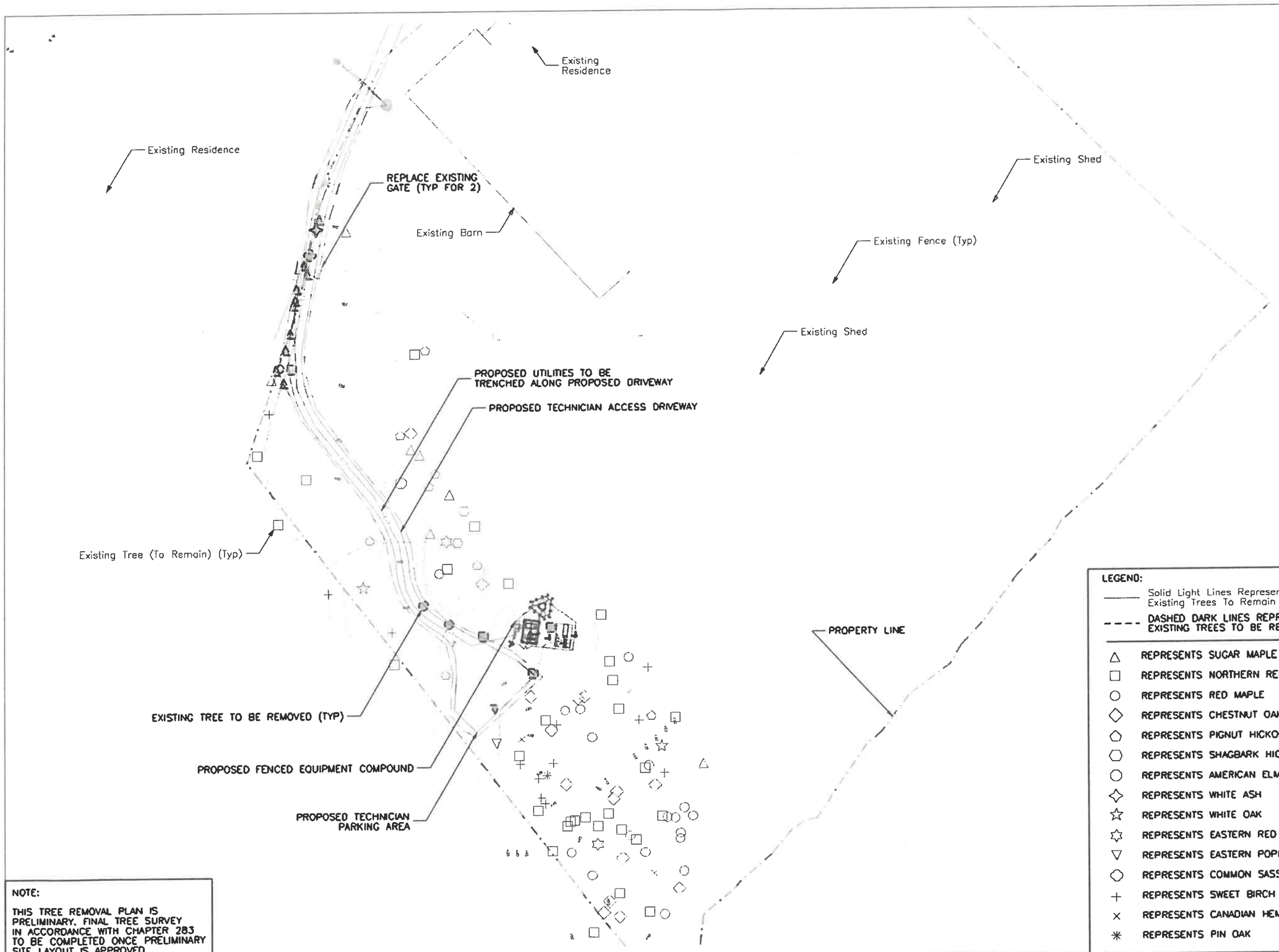

NOTE:

THIS TREE REMOVAL PLAN IS PRELIMINARY. FINAL TREE SURVEY IN ACCORDANCE WITH CHAPTER 283 TO BE COMPLETED ONCE PRELIMINARY SITE LAYOUT IS APPROVED.

LEGEND:

Solid Light Lines Represent Existing Trees To Remain

DASHED DARK LINES REPRESENT EXISTING TREES TO BE REMOVED

- REPRESENTS SUGAR MAPLE
- REPRESENTS NORTHERN RED OAK
- REPRESENTS RED MAPLE
- REPRESENTS CHESTNUT OAK
- REPRESENTS PIGNUT HICKORY
- REPRESENTS SHAGBARK HICKORY
- REPRESENTS AMERICAN ELM
- REPRESENTS WHITE ASH
- REPRESENTS WHITE OAK
- REPRESENTS EASTERN RED CEDAR
- REPRESENTS EASTERN POPLAR
- REPRESENTS COMMON SASSAFRAS
- REPRESENTS SWEET BIRCH
- REPRESENTS CANADIAN HEMLOCK
- REPRESENTS PIN OAK

1 **ESTIMATED TREE REMOVAL PLAN**

11x17 SCALE: 1"= 60'-0" | 22x34 SCALE: 1" = 30'-0"

0 30' 60'

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PRELIMINARY TREE REMOVAL PLAN

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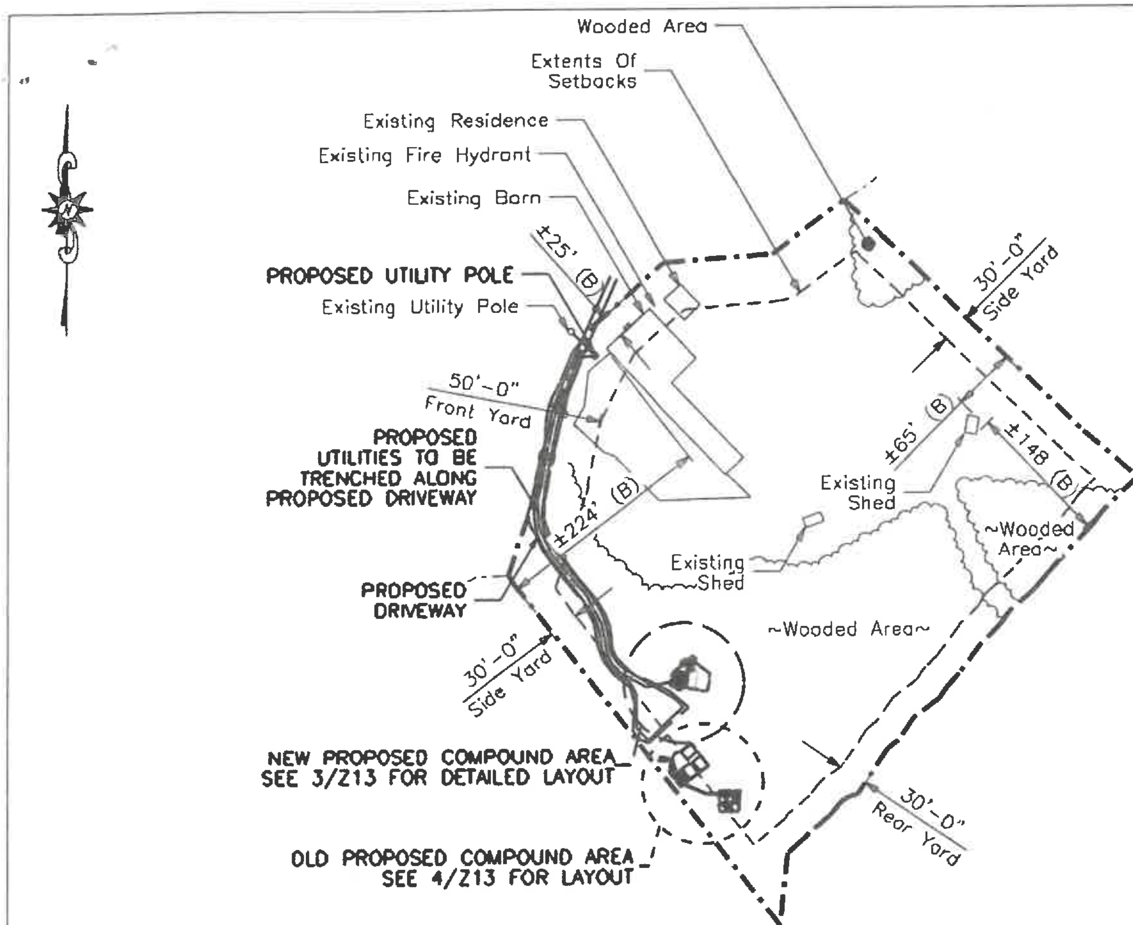


1 **OLD & NEW OVERALL SITE PLANS**

11x17 SCALE: 1"= 200'-0" | 22x34 SCALE: 1" = 100'-0" | 0 100' 200'

ZONING ORDINANCE DISTRICT R-40

(SECTION 307-17)	REQUIRED	EXISTING	PROPOSED (OLD)	PROPOSED (NEW)
Min. Lot Area	40,000 SF	261,664 SF	No Change	No Change
Min. Lot Width	150'	552'	No Change	No Change
Max. Height	2-1/2 Stories/35'	1-1/2 Stories/±20'	±9' (Equipment Canopy)	±9' (Equipment Canopy)
Min. Front Yard	50'	±25' *	±221'	±189'-7"
Min. Side Yard	30'	±65'	±7'-0" **	±62'-3"
Min. Rear Yard	30'	±148'	±66'	±181'
Max. Building Coverage	65% Of F.A.R	±3%	±3.07%	±3.35%
Min. Landscape Coverage	60%	±72%	±69%	±69%

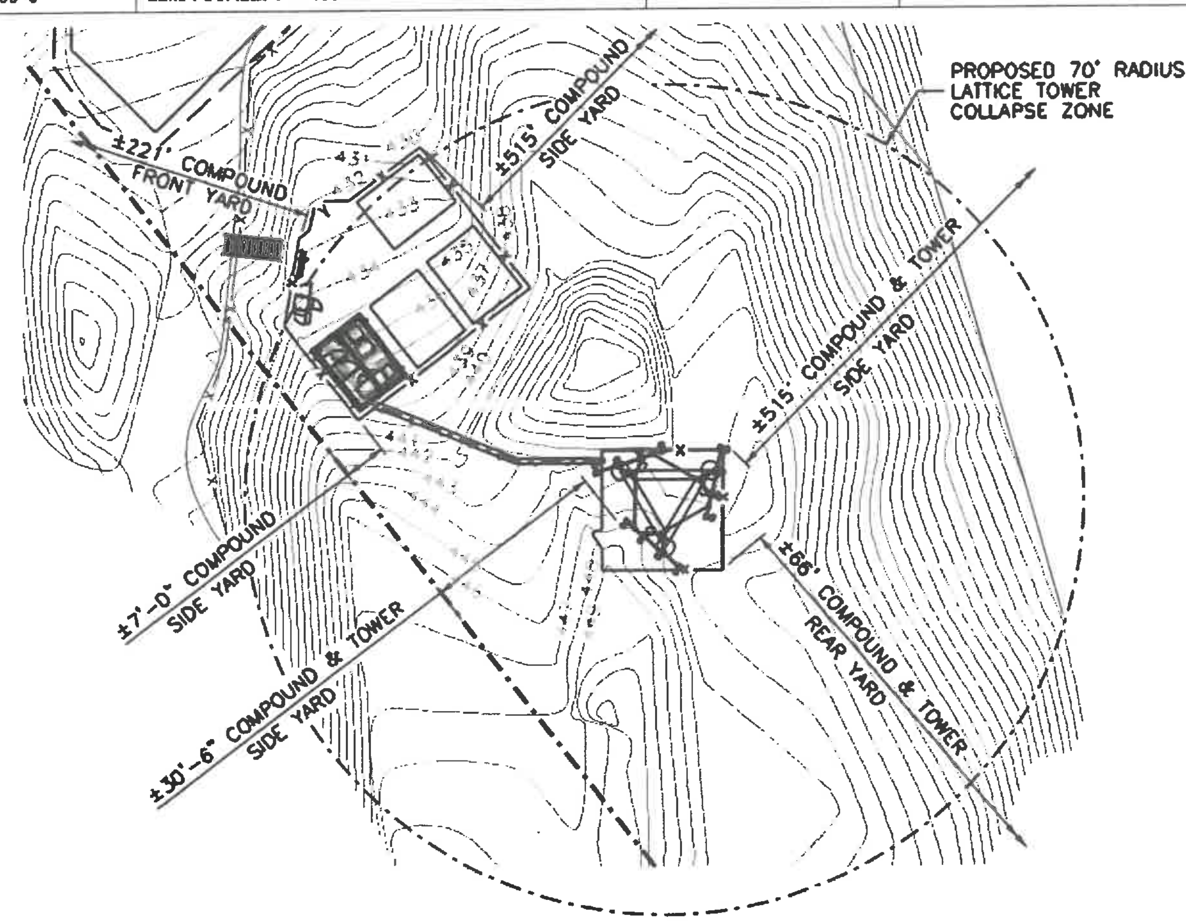
WIRELESS ORDINANCE

(CHAPTER 277)	REQUIRED	EXISTING	PROPOSED (OLD)	PROPOSED
Nearest Residential Structure	N/A	N/A	±480'	±345'
Nearest Habitable Structure	N/A	N/A	±340'	±196'
Proposed Utilities	Installed Underground	N/A	Installed Underground	Installed Underground
Max. Tower Height	140'/ 3 Carriers	N/A	±140'	±140'
Tower Setback From Property Line	1/2 The Height Of The Tower (70')	N/A	±34'-0" **	±84'-3"

* = EXISTING NON-CONFORMITY
** = WAIVER REQUIRED

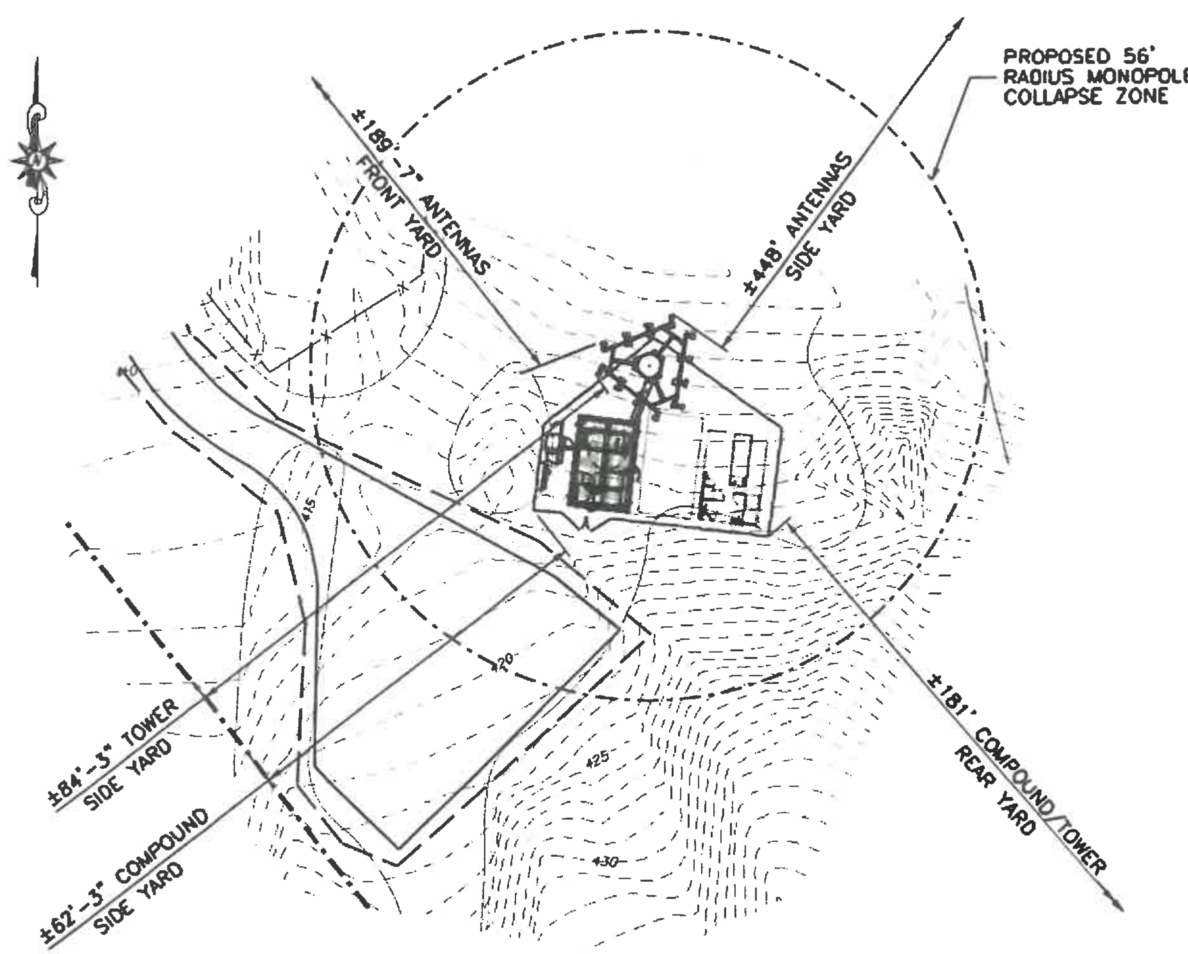
2 **BULK REQUIREMENTS**

11x17 SCALE: NTS | 22x34 SCALE: NTS



3 **DETAILED SITE PLAN (OLD)**

11x17 SCALE: 1/32"= 1'-0" | 22x34 SCALE: 1/16" = 1'-0" | 0 16' 32'



4 **DETAILED SITE PLAN (NEW)**

11x17 SCALE: 1/32"= 1'-0" | 22x34 SCALE: 1/16" = 1'-0" | 0 16' 32'

SDG
SCHERER DESIGN GROUP, LLC

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APPLICANT:

HOMELAND TOWERS
9 HARMONY ST, 2ND FLOOR
DANBURY CT, 06810

NO.	ISSUE OR REVISION	DATE	BY
6	CLIENT COMMENTS	08/10/22	RR
5	CLIENT COMMENTS	07/08/22	RR
4	CLIENT COMMENTS	03/08/22	RR
3	RF UPDATE	08/05/21	YM
2	ATTORNEY COMMENTS	12/17/20	AL

PROJECT TITLE:

PRELIMINARY SITE PLAN

CORTLANDT

52 MONTROSE STATION RD
CORTLANDT, NY 10567
WESTCHESTER COUNTY

BLOCK: 1 LOT: 4
ZONE: R-40

SDG PROJECT #: 16VZN071

SCALE: AS NOTED | DATE: 08/31/20

DRAWN BY: JM | CHECKED BY: SK

DRAWING TITLE:

OLD AND NEW SITE PLAN ZONING COMPARISON

DRAWING NO.: Z13 | PAGE NO.: 13 of 13