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Also admitted in Massachusetts

February 12, 2020

Via Hand Delivery

David Cox, Town Manager
East Hampton Town Hall
20 East High Street
East Hampton, CT 06424

Re: **Submission of Technical Information Concerning a Proposal to Construct a Wireless Telecommunications Facility at 8½ Lakeview Street, East Hampton, Connecticut**

Dear Mr. Cox:

This firm represents Crown Castle USA, Inc. ("Crown"), in its proposal to construct a new wireless telecommunications facility (the "Proposed Facility") in the southerly portion of a 17.37 acre parcel at 8½ Lakeview Street, East Hampton, Connecticut (the "Property"). The Property is owned by Richard Anderson. The Proposed Facility at the Property would replace Crown's existing wireless telecommunications facility currently located at 94 East High Street in East Hampton. The existing 94 East High Street facility is currently shared by Verizon Wireless, AT&T, Sprint and T-Mobile (collectively, the "Wireless Carriers"). The Wireless Carriers' antennas and equipment will be relocated to the Proposed Facility.

This Technical Report is submitted pursuant to Connecticut General Statutes ("Conn. Gen. Stat.") § 16-50*l*(g), which establishes local input requirements for the siting of a wireless telecommunications facility under the exclusive jurisdiction of the Connecticut Siting Council (the "Council"). This statutory provision requires the submission of technical information to officials in the municipality where the Proposed Facility will be located and any municipality within 2,500 feet of the Proposed Facility location.

Correspondence and/or communications regarding the information contained in this report should be addressed to:

Pascelle Saint-Laurent
Real Estate Project Manager
Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

A copy of all such correspondence or communications should also be sent to Crown's attorney:

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

Crown intends to submit an application to the Council for a Certificate of Environmental Compatibility and Public Need ("Certificate") for the construction, maintenance and operation of a wireless telecommunications facility in the southerly portion of the Property. The Proposed Facility would provide wireless service along portions of State Routes 66, 196 and 16, as well as local roads and to residential and commercial land uses in the area. *See* Site Schematic included in Attachment 1. The Proposed Facility will, at a minimum, provide wireless service comparable to that currently enjoyed by the Wireless Carriers at the 94 High Street facility.[1] (*See* RF Design Analysis included in Attachment 2).

Cell Site Information

Crown proposes to install a 250-foot monopole tower within a 75' x 75' compound and 100' x 100' leased area in the southerly portion of the Property. The Proposed Facility would support the relocated antennas owned and operated by Sprint, at the 246-foot level; Verizon Wireless, at the 234-foot level; AT&T, at the 222-foot level; and T-Mobile, at the 210-foot level. Equipment associated with each carriers' antennas would be located on the ground, near the base of the tower within the fenced compound. Access to the facility would extend from Main Street (Route 66) along a proposed gravel access driveway to the proposed tower site. Utilities would extend from existing utility service along Main Street. Included in Attachment 3 is a set of

[1] The ground elevation (G.E.) at the 94 High Street tower site is significantly higher (165') than the G.E. at the Proposed Facility. A taller tower is needed to satisfy the Wireless Carriers' coverage objectives.

Project Plans for the Proposed Facility.

Connecticut Siting Council Jurisdiction

Municipal jurisdiction over the siting of the Proposed Facility described in this report is pre-empted by provisions of the Public Utilities Environmental Standards Act ("PUESA"), Conn. Gen. Stat. § 16-50g et seq. The PUESA gives exclusive jurisdiction over the location, type and modification of telecommunications towers, to the Council (Conn. Gen. Stat. § 16-50x(a); 16-50i(a)(6)). Accordingly, the telecommunications facility described in this report is exempt from the Town's land use (zoning and inland wetlands) regulations.

Upon receipt of an application, the Council will assign a docket number and, following a completeness review, set the schedule for the docket, including a hearing date. At that time, the Town may choose to become an intervenor or party in the proceeding. Other procedures followed by the Council include serving the applicant and other participants with interrogatories, holding a pre-hearing conference, and conducting a public hearing. The public hearing would be held at a location in the Town. Following the public hearing, the Council will issue findings of fact, an opinion and a decision and order. Prior to construction, the Council will also require the Applicant to submit a development and management plan ("D&M Plan") which is, in essence, a final site development plan showing the details of the facility incorporating any conditions imposed by the Council. These procedures are also outside the scope of the Town's jurisdiction and are governed by the Connecticut General Statutes, the Regulations of Connecticut State Agencies, and the Council's Rules of Practice. If the Council approves the cell site described in this report, Crown will submit to the Building Official an application for approval of a local building permit. Under Section 16-50x of the General Statutes, which provides for the exclusive jurisdiction of the Council, the building official must honor the Council's decision.

Municipal Consultation Process

Pursuant to Section 16-50*l* of the General Statutes, Town officials are entitled to receive technical information regarding the Proposed Facility at least ninety (90) days prior to the filing of an application with the Council. This Technical Report is provided to the Town in accordance with these provisions and includes information on the need for improved reliable wireless service in the area; the location of existing wireless facilities in and around the area; details of the Proposed Facility; the location of alternative sites considered and rejected; the location of schools and commercial day care facilities in the area and the aesthetic impacts of the facility on those schools and day care facilities, if any; a description of the site selection process; and a discussion of potential environmental effects associated with the Proposed Facility.

Not later than sixty (60) days after the initial consultation meeting, the municipality may, in cooperation with Crown, hold a public information hearing on the facility proposal. If such a hearing is held, the applicant must notify all abutting landowners and publish notice of the hearing in a newspaper of general circulation in the municipality, at least fifteen (15) days prior to the hearing.

Not later than thirty (30) days after the initial consultation meeting, the municipality may present the prospective applicant with alternative sites, including municipal parcels, for its consideration. If not previously considered, these alternatives will be evaluated and discussed in its application to the Council.

Pursuant to Section 16-50*l*(e) of the General Statutes, Crown must provide a summary of the Town's comments and recommendations, if any, to the Council within fifteen (15) days of the filing of an application.

Need for the Proposed Wireless Facility

The principal need for the Proposed Facility is to replace the service the Wireless Carriers currently provide from Crown's existing 94 East High Street tower. If the Proposed Facility is approved, Crown's existing East High Street facility will be removed. (*See* Attachment 2).

Environmental Effects

In our experience, the primary impact of a wireless facility such as the Proposed Facility is visual. The visual impact of the Proposed Facility tower will vary from place to place around the site location, depending upon factors such as vegetation, topography, distance from the tower, and the location of buildings or other structures (utility infrastructure) in the sight-line of the cell site.

To more fully assess the visual impact of the Proposed Facility, Crown's consultant, Gould Digital Imaging has prepared a preliminary Visibility Analysis for the Proposed Facility. Visual impact of the Proposed Facility will vary, significantly within a one mile radius around the tower site. (*See* Attachment 4). A more detailed visual assessment will be prepared and included in Crown's Certificate application to the Council.

Pursuant to the provisions of Conn. Gen. Stat. § 16-50p(a)(3)(G), new telecommunications facilities must be located at least 250 feet from buildings containing schools (defined in C.G.S. §10-154a) and commercial day care facilities (defined in C.G.S. §19a-

77(a)(1)) unless the location selected is acceptable to the Town's chief elected official or the Council finds that the facility will not have a substantial adverse effect on the aesthetics or scenic quality of the neighborhood where the school or commercial day care use is located. The Proposed Facility is not located within 250 feet of any building containing a school or commercial day care facility.

Based on field surveys, Crown has determined that the construction of the Proposed Facility will have no direct impact on inland wetlands or watercourses, within or near the tower compound or elsewhere on the Property. Crown anticipates that all other physical environmental effects associated with the Proposed Facility would be minimal.

Radio Frequency Emissions

The Federal Communications Commission ("FCC") has adopted a standard (the "Standard") for exposure of radio frequency ("RF") emissions from telecommunications base stations like the Crown Facility. To ensure compliance with the Standard, Crown has commissioned an RF Safety and NIER Analysis Report ("RF Report") for the Proposed Facility according to the methodology described in FCC Office of Science and Technology Bulletin No. 65 ("OST Bulletin 65"). The calculation included in the RF Report is a conservative, worst-case approximation of RF emissions at the closest accessible point to the antenna (i.e., the base of the tower), and assumes that all antennas are transmitting simultaneously, on all channels, at full power. The worst-case calculated RF emissions level would be 1.9% of the FCC Standard for all carriers on the proposed tower. (*See* Attachment 5).

Scenic Natural Historic or Recreational Impacts

To further assess the environmental impacts of the Proposed Facility, Crown will be working with its consultant team to prepare a National Environmental Policy Act ("NEPA") Environmental Screening Checklist (the "NEPA Checklist") and other related environmental reviews to determine if the facility will have any significant adverse environmental effects. The NEPA Checklist will include information from the Environmental and Geographic Information Center of the Connecticut Department of Energy and Environmental Protection ("DEEP"), the U.S. Fish and Wildlife Service ("USFWS") and the State Historic Preservation Officer ("SHPO"). Copies of the DEEP, USFWS and the SHPO determinations will also be submitted as a part of the Council's Certificate Application.

Site Search Process

Crown conducted a search of suitable cell site locations in the area around the existing 94 East High Street tower site and investigated a total of nine (9) parcels in the area as potential alternative tower locations. Six (6) of the nine (9) parcels were under contract or owned by individuals who were not willing to lease ground space to Crown for a new tower site. The remaining three (3) parcels are all owned by Richard Anderson and include the Property at 8½ Lakeview Street. A list of alternative candidate sites investigated by Crown and a map showing their respective locations are included in Attachment 6.

Tower Sharing

As stated above, Crown intends to build a replacement tower that will support the antennas and equipment of four (4) wireless carriers and emergency service providers, if a need exists. Crown's intent to share the tower is consistent with the intent of the General Assembly when it adopted Conn. Gen. Stat. § 16-50aa and with Council policy.

Conclusion

This Technical Report is submitted in accordance with Conn. Gen. Stat. § 16-50*l* which requires Crown to supply the Town with information regarding the Proposed Facility. This report includes information regarding the site selection process, public need, and the potential environmental impacts of the Proposed Facility. Crown submits that its Proposed Facility would not have any significant adverse environmental effects. Moreover, Crown submits that the public need for high quality wireless service, and a competitive framework for providing such service has been determined by the FCC to be in the public interest and that such public need far outweighs any perceived environmental effects of the Proposed Facility.

Please contact me if you have any additional questions regarding the Proposed Facility.

Sincerely,

Kenneth C. Baldwin

KCB/kmd
Enclosures
Copy to:
Kevin Kuhr, Chair, East Hampton Planning and Zoning Commission
Jeff Foran, Chair, East Hampton Inland/Wetlands Watercourse Agency
Pascelle Saint-Laurent

ATTACHMENT 1

Legend

- Proposed Site Layout
- Proposed Equipment
- Proposed Gravel Access Drive
- Subject Property
- Approximate Parcel Boundary (CTDEEP)

Site Schematic

Proposed Wireless
Telecommunications Facility
Site Number 876352
8 1/2 Lakeview Street
East Hampton, Connecticut

N
W E
S

250 125 0 250
Feet

Map Notes:
Base Map Source: 2019 Aerial Photograph (CTECO)
Map Scale: 1 inch = 250 feet
Map Date: February 2020

ALL-POINTS TECHNOLOGY CORPORATION

ATTACHMENT 2

WIRELESS NETWORK CONSULTING

Crown Site# 876352

Richard Wall Site

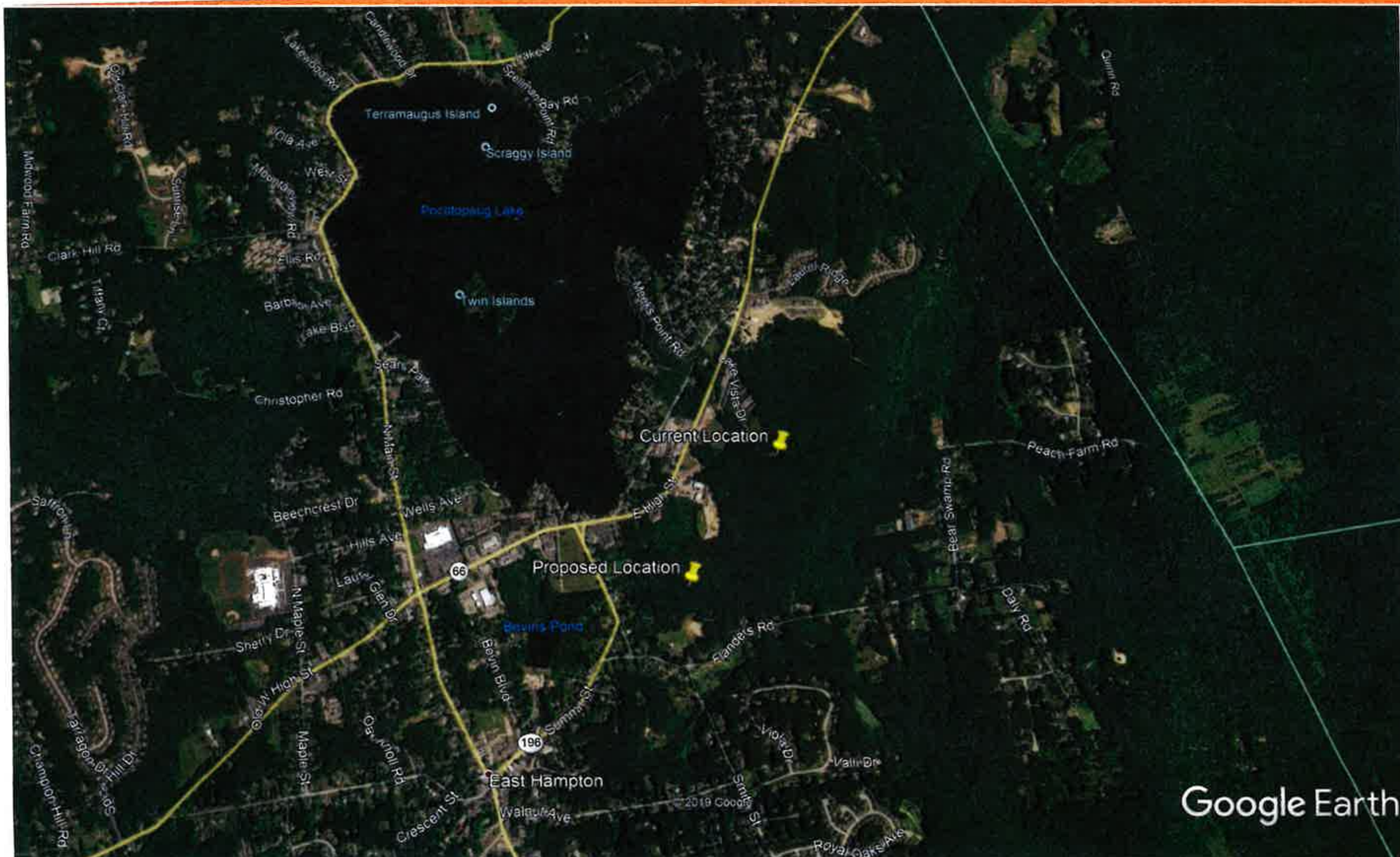
RF DESIGN ANALYSIS

2019

Current/Proposed Site

- Existing 117′ Monopole Tower
  - 94 East Hight Street East Hampton, CT 06424
    - Latitude: 41 35 14.2 (NAD83)
    - Longitude: -72 29 19.6 (NAD83)
    - 688′ AMSL Ground Elevation
    - Sprint 117′, Verizon 105′, AT&T 91′,
- Proposed 250′ Monopole Tower
  - 8 ½ Lakeview Street East Hampton, CT 06424
    - Latitude: 41 34 56.92 (NAD83)
    - Longitude: -72 29 35.29 (NAD83)
    - 523′ Ground Elevation
    - Sprint 246′, Verizon 234′, AT&T 222′, T-Mobile 210′

Sites


Current Location
Proposed Location
East Hampton
Pocotopaug Lake
Terramaugus Island
Scraggy Island
Twin Islands
Bevins Pond
Google Earth

2019

Objective of new site

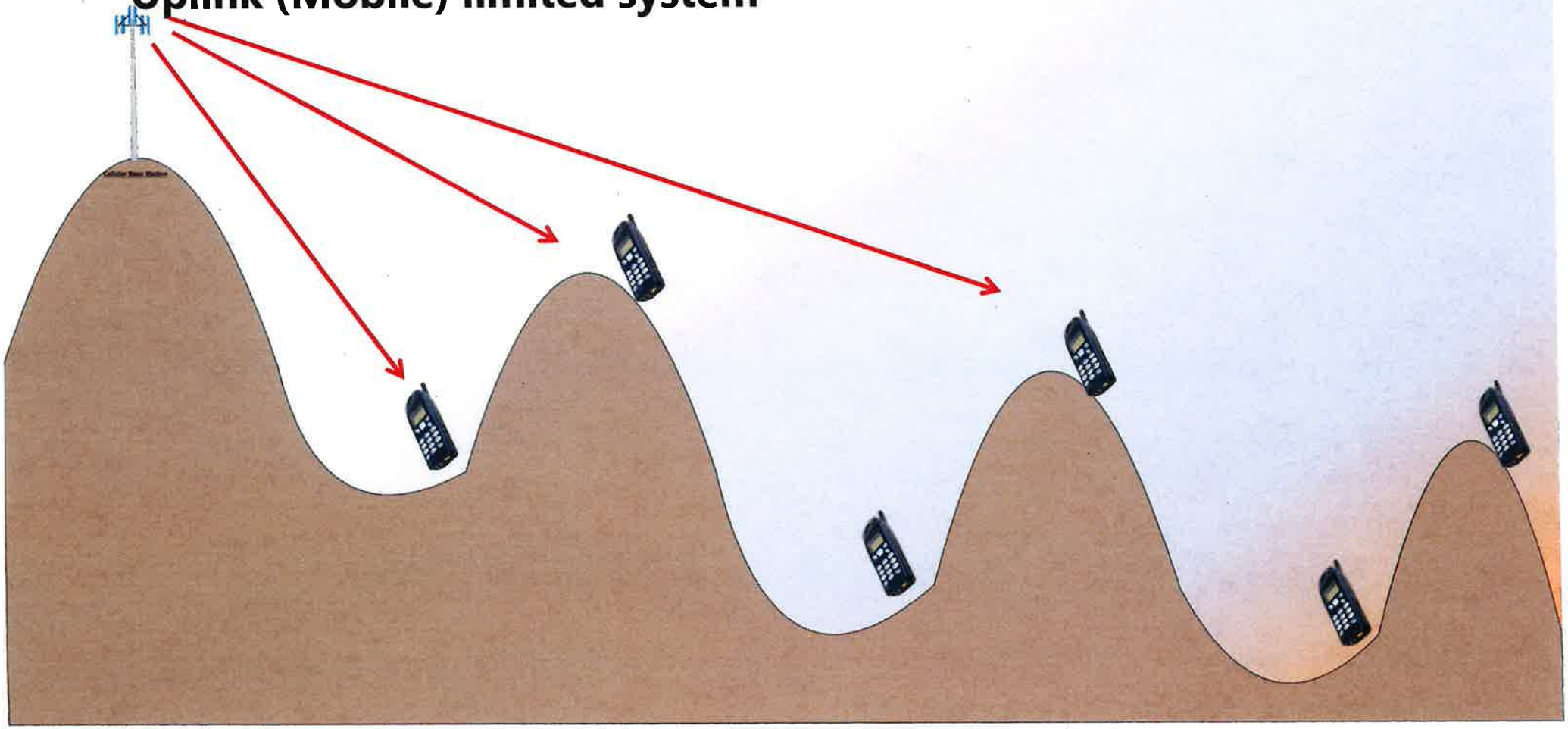
- Replace existing coverage for (3) carriers that provide service to Hwy 16, Hwy 66, Hwy 196 and East Hampton
- Site would also continue to provide services to users on Pocotopaug Lake
- Since ground elevation differs between locations by 165' a taller structure is needed for the proposed location to duplicate existing coverage

Antenna Height Requirements

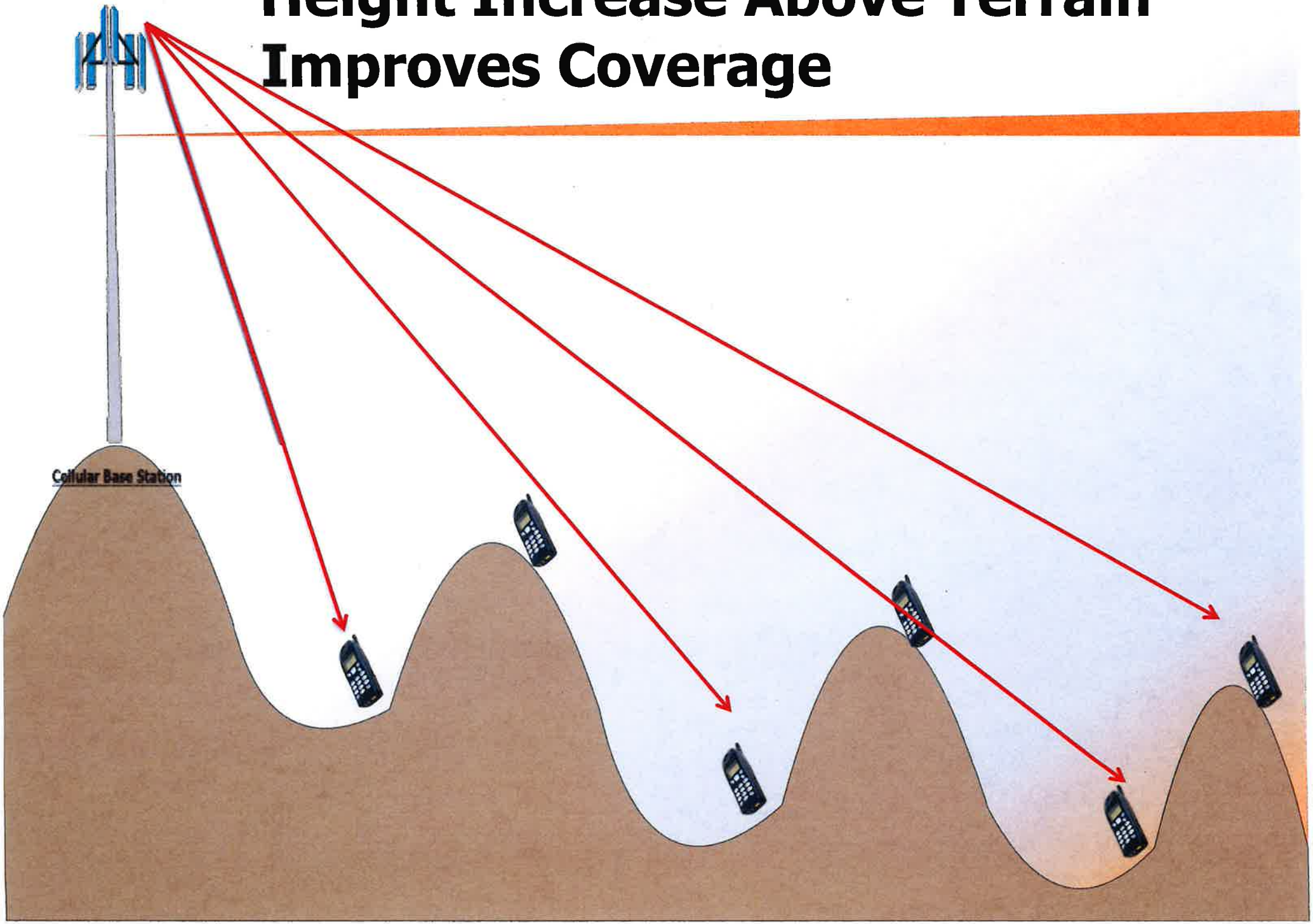
- Terrain is a significant impact to the sites coverage area
- With the loss of 165' in Ground elevation the replacement tower is taller than the existing tower
- With the taller proposed tower the carriers are able to duplicate the existing coverage of the site that will be removed

Terrain can limit coverage

- Wireless antenna must be above the terrain in order to provide services to customers
- Limited primarily to "Line of Sight" communications
- Uplink (Mobile) limited system



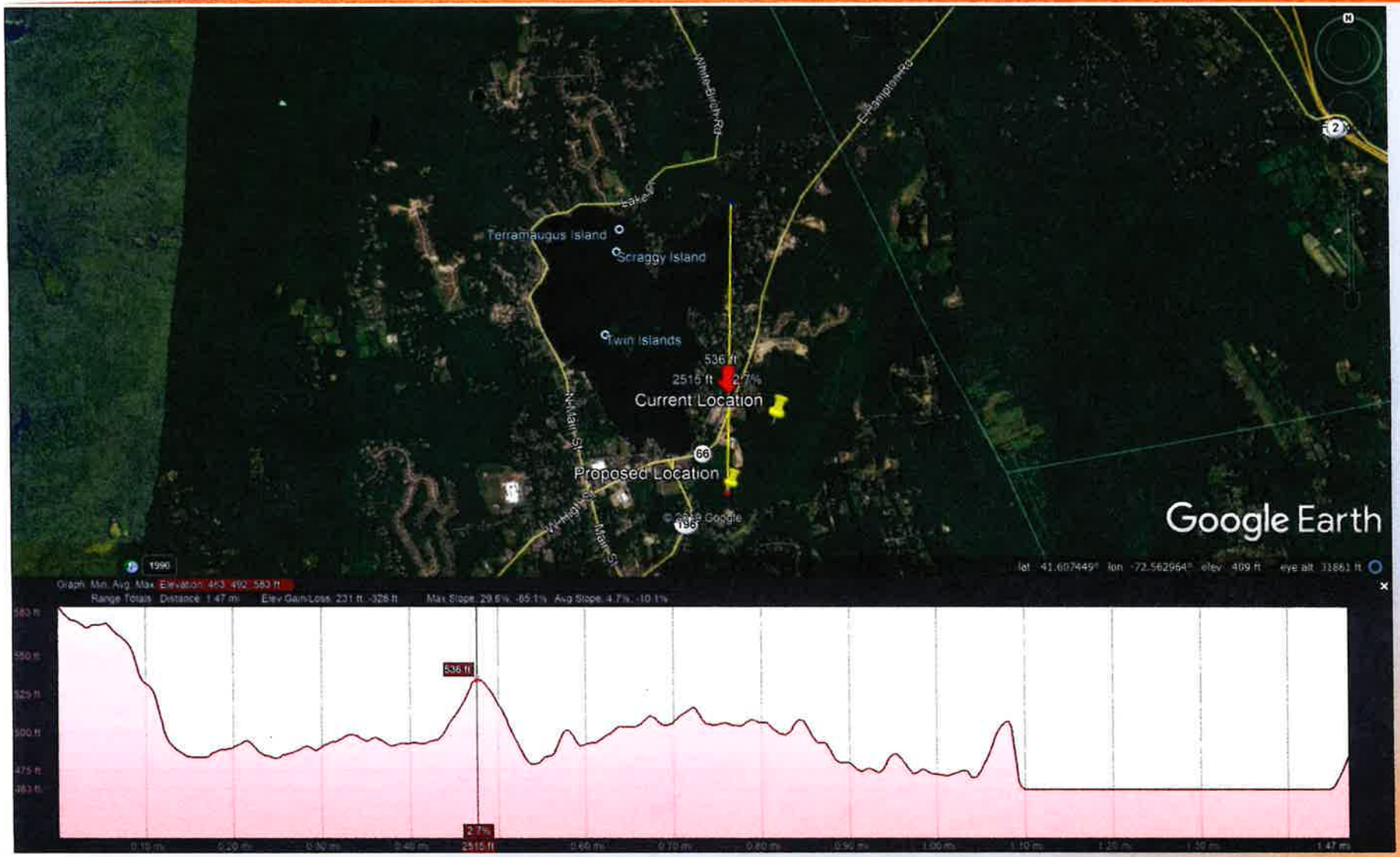
Height Increase Above Terrain Improves Coverage



Terrain

2019

Terrain profile going North

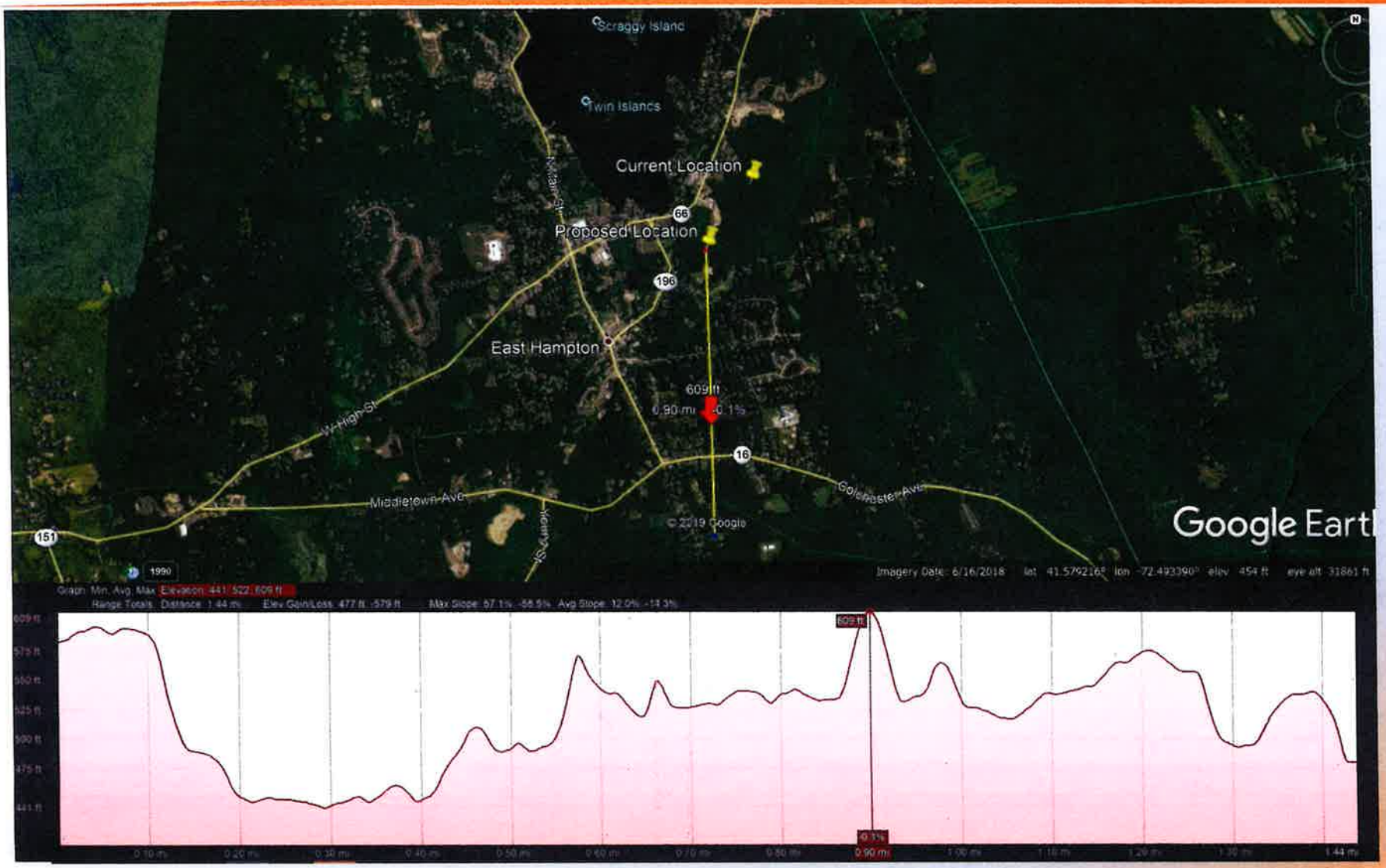


2019

Terrain profile going East

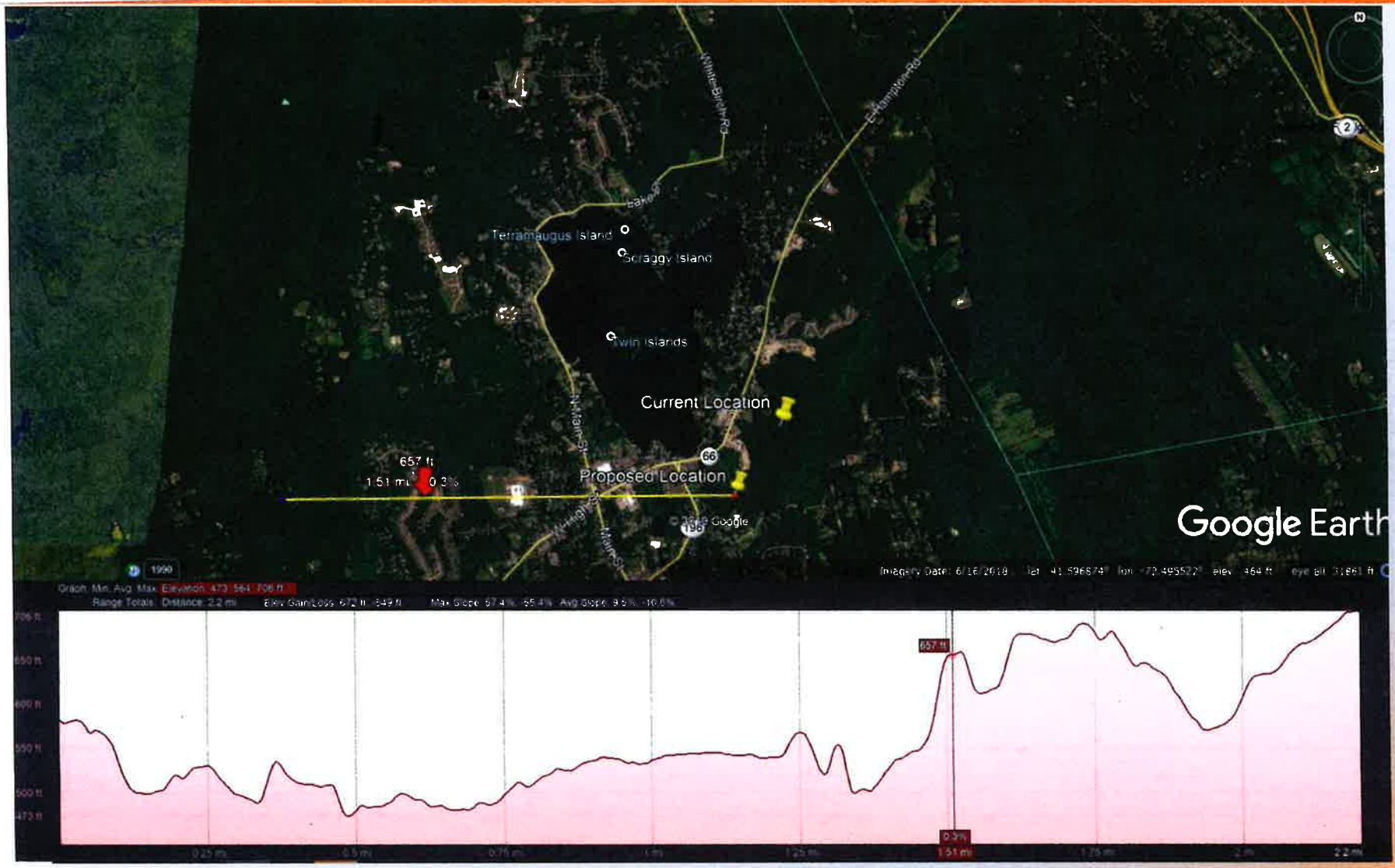
2019

Terrain profile going South

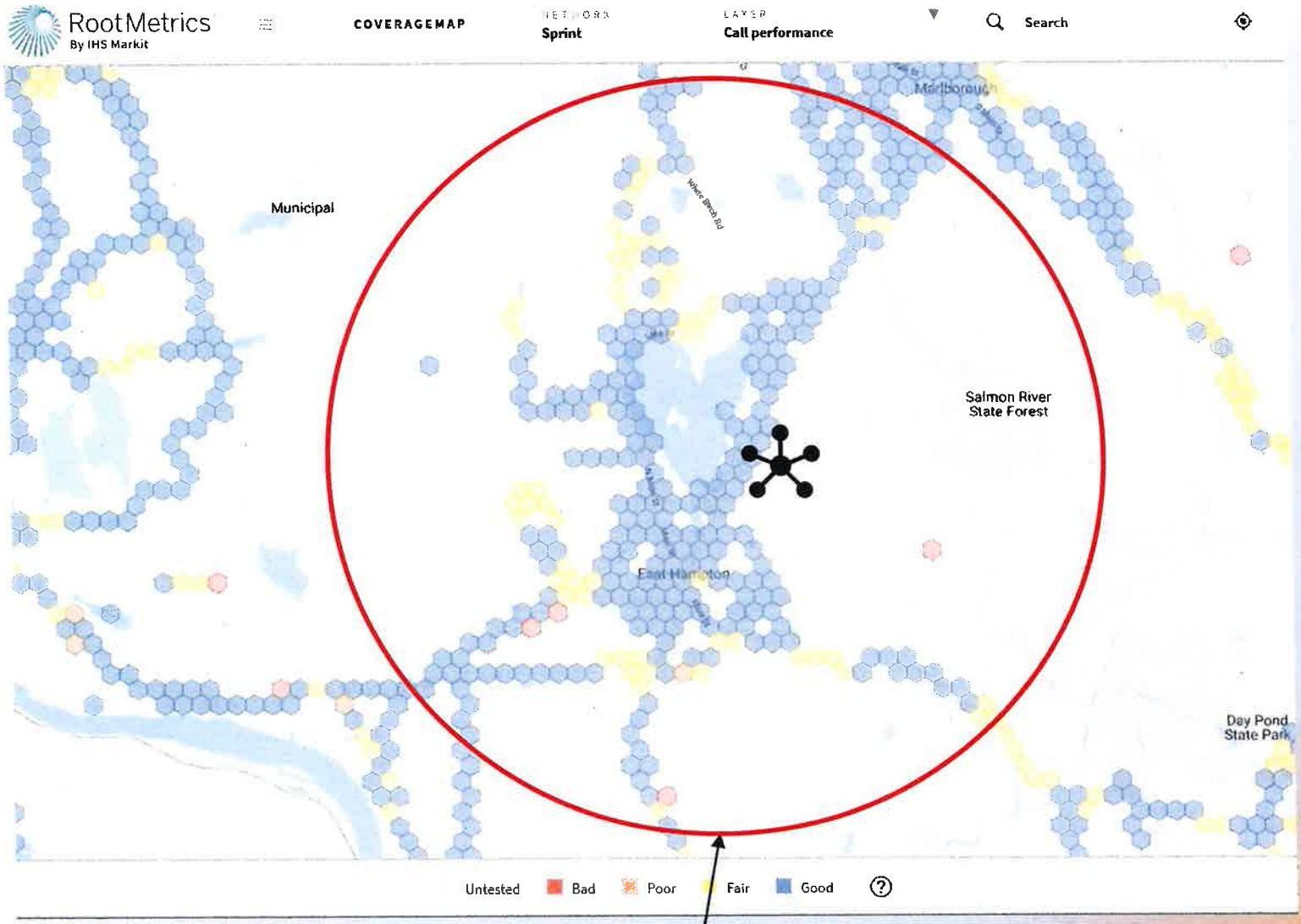


2019

Terrain profile going West

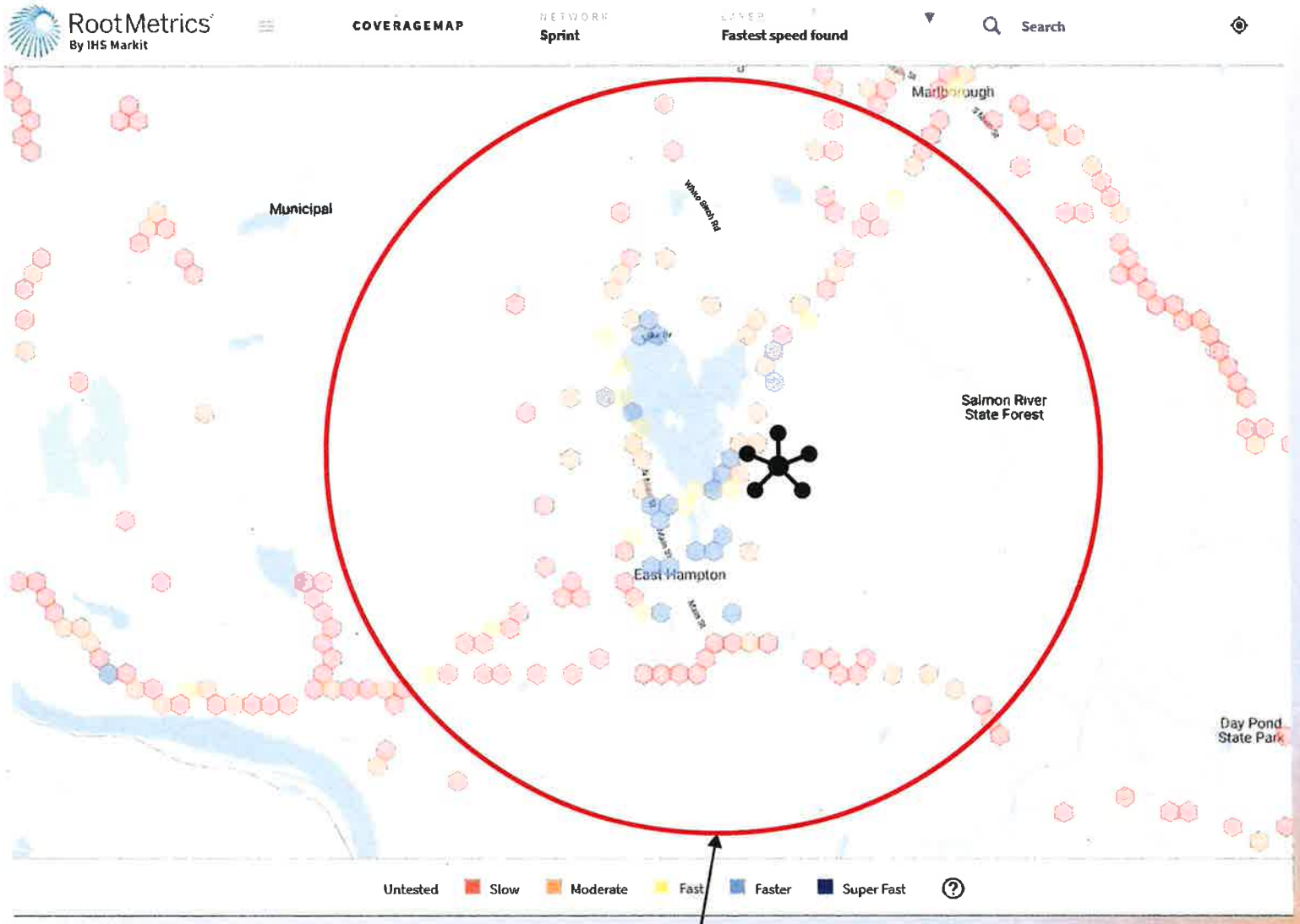


RootMetrics – Sprint Coverage Map



2019

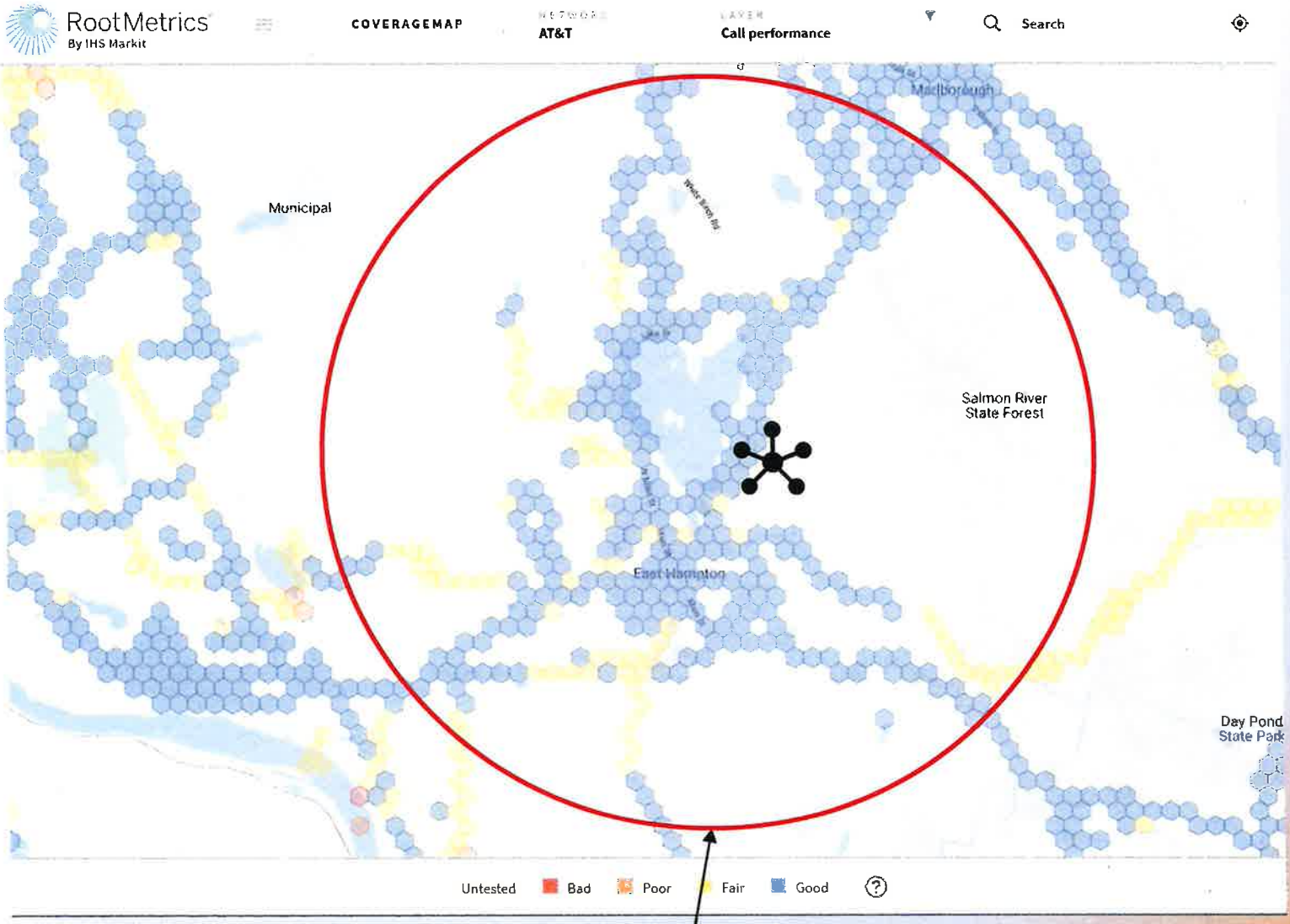
RootMetrics – Sprint Throughput Map



Area where existing site provides coverage and capacity

2019

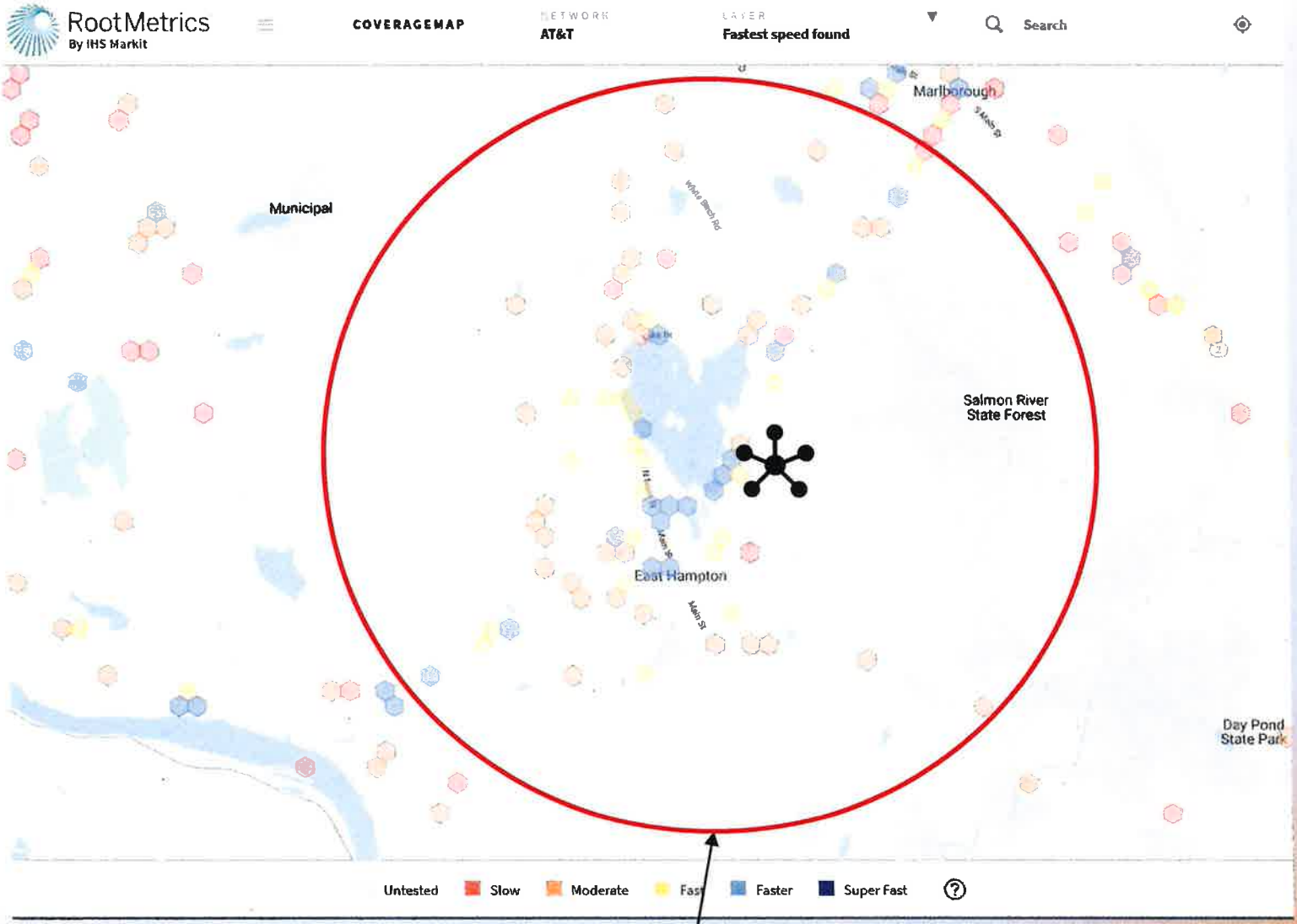
RootMetrics – AT&T Coverage Map



Area where existing site provides coverage and capacity

2019

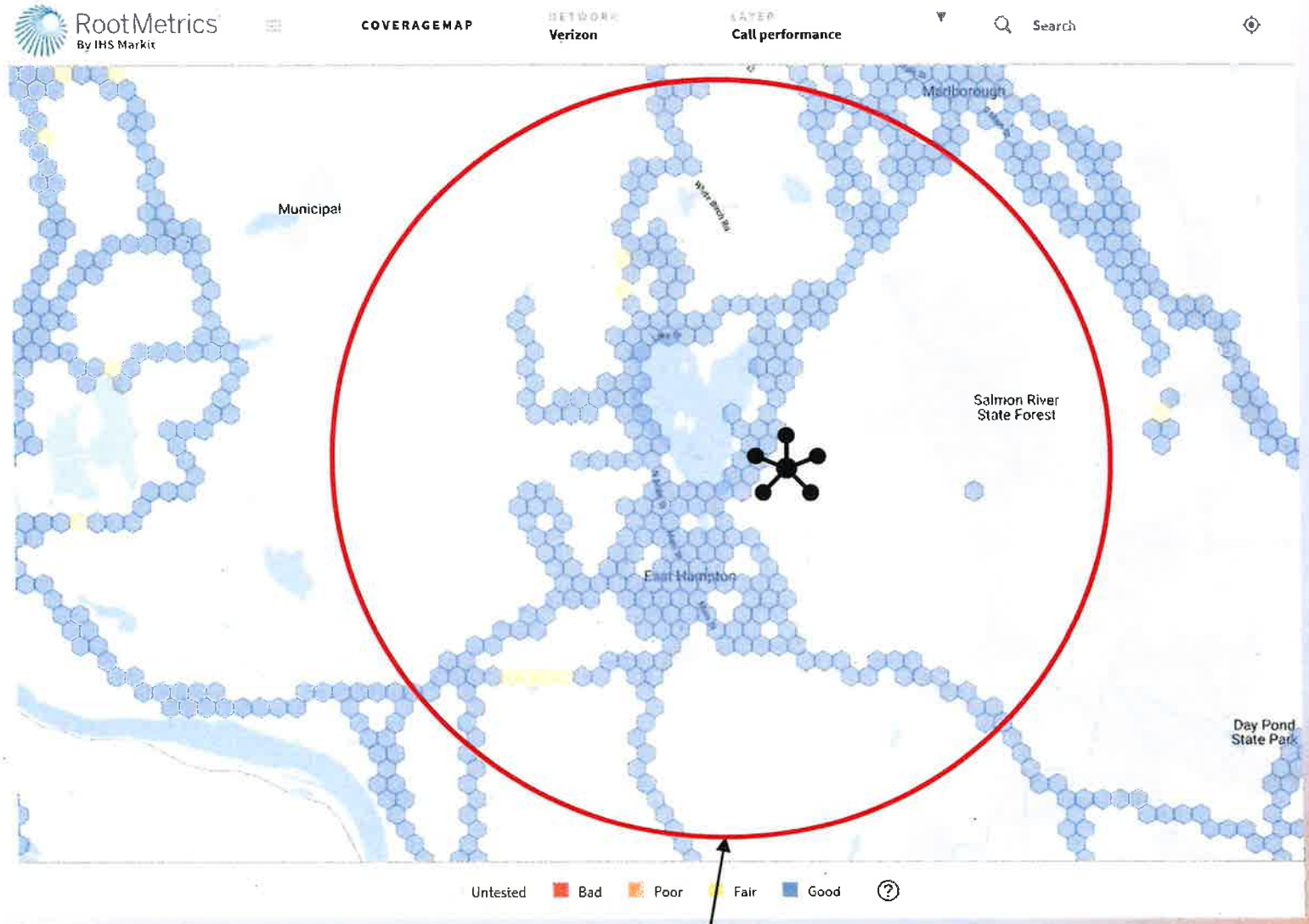
RootMetrics – AT&T Throughput Map



Area where existing site provides coverage and capacity

2019

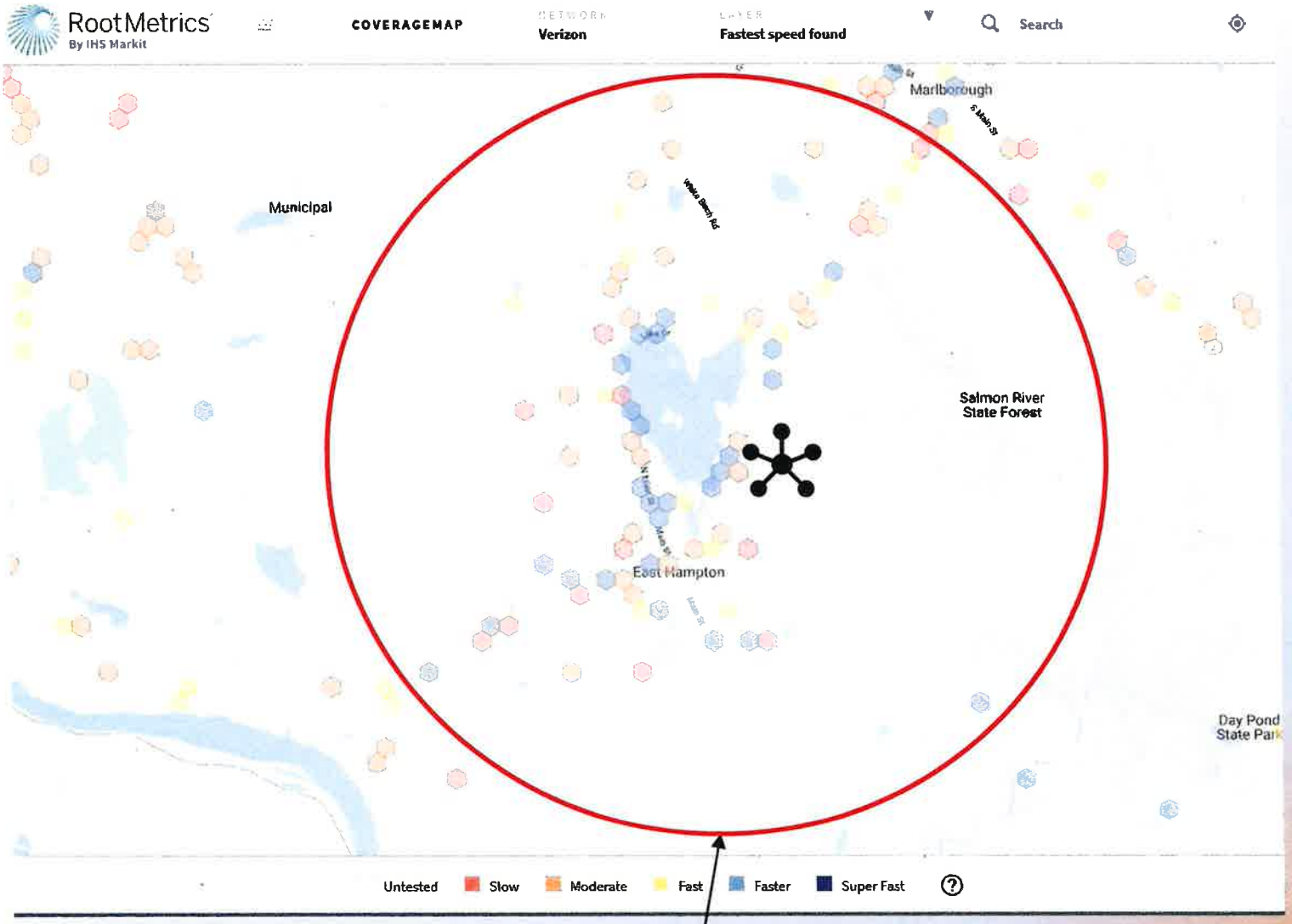
RootMetrics – Verizon Coverage Map



Area where existing site provides coverage and capacity

2019

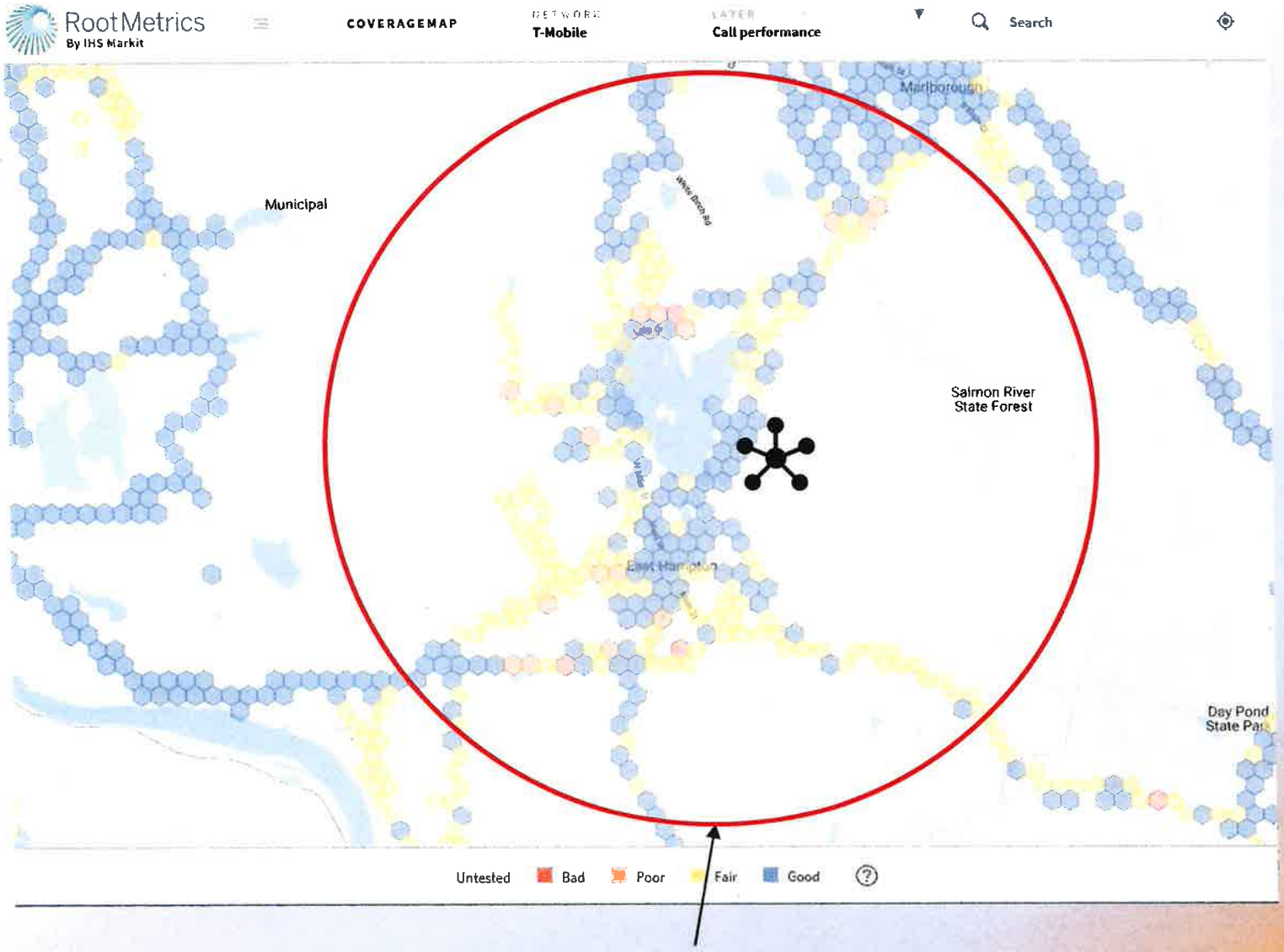
RootMetrics – Verizon Throughput Map



Area where existing site provides coverage and capacity

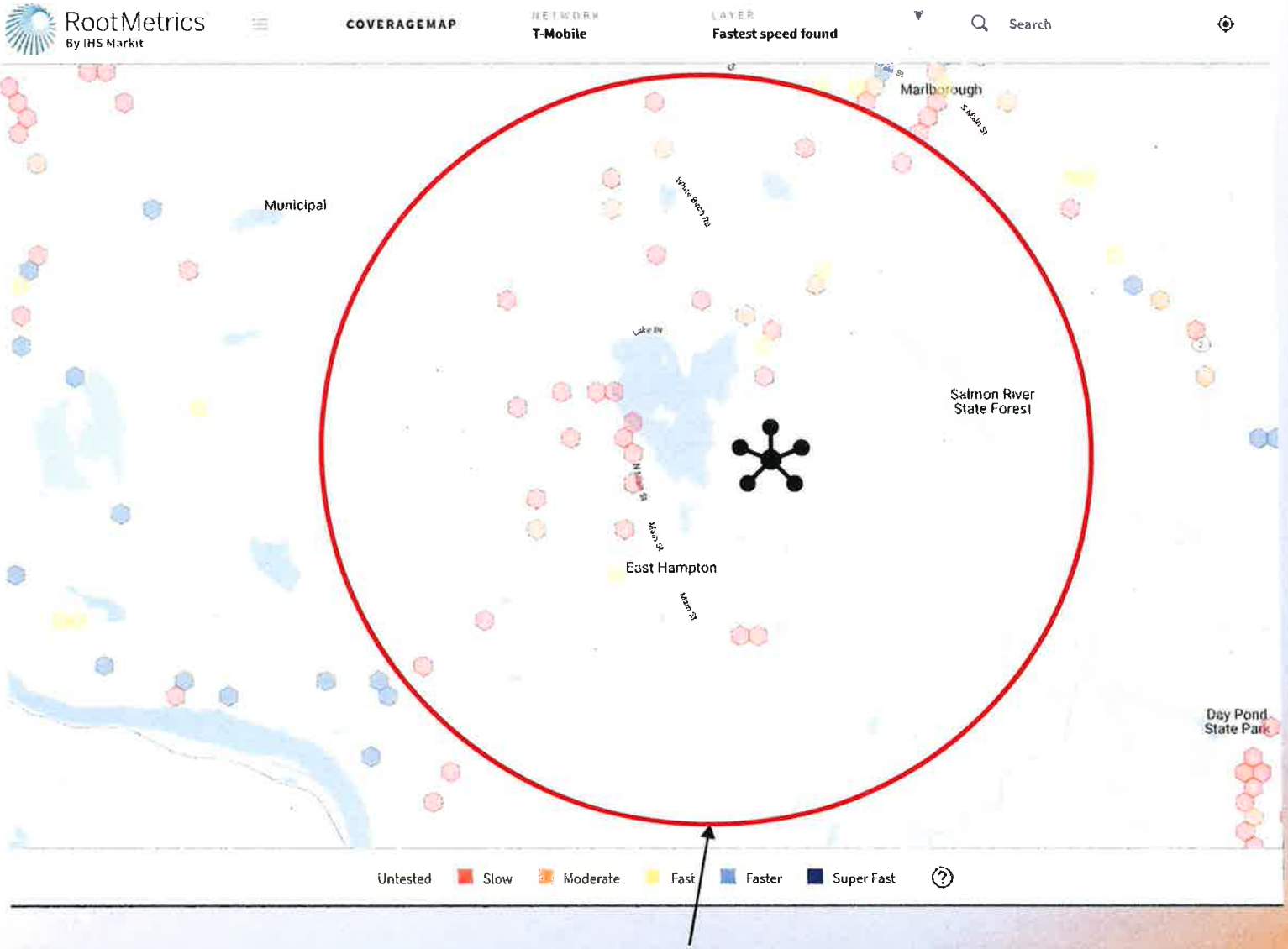
2019

RootMetrics – T-Mobile Coverage Map



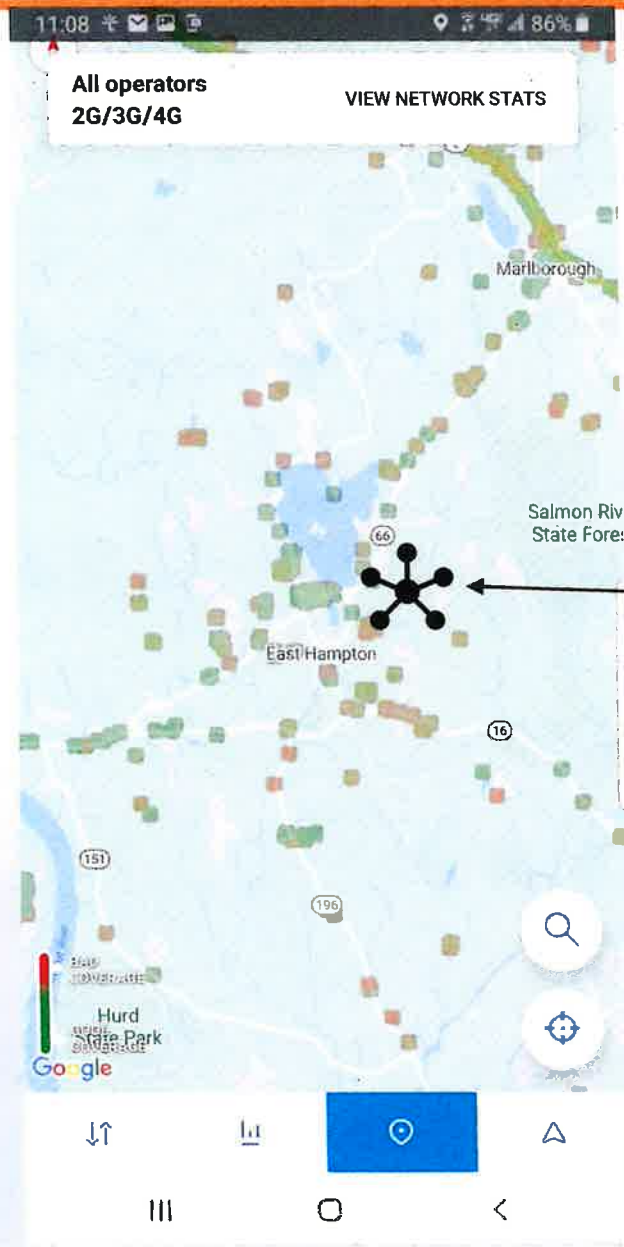
2019

RootMetrics – T-Mobile Throughput Map



2019

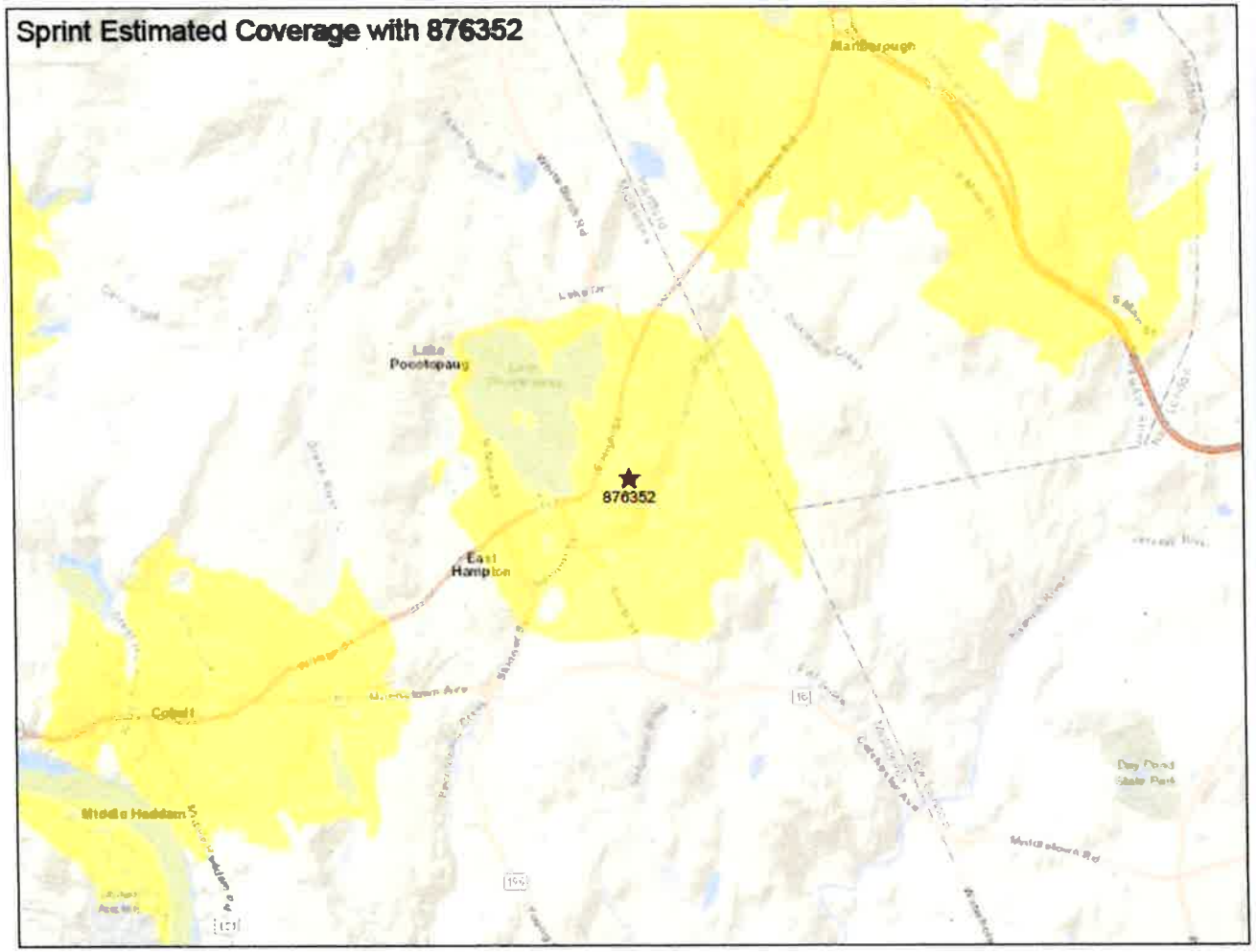
Open Signal – Quality Map



Area where existing site provides coverage and capacity

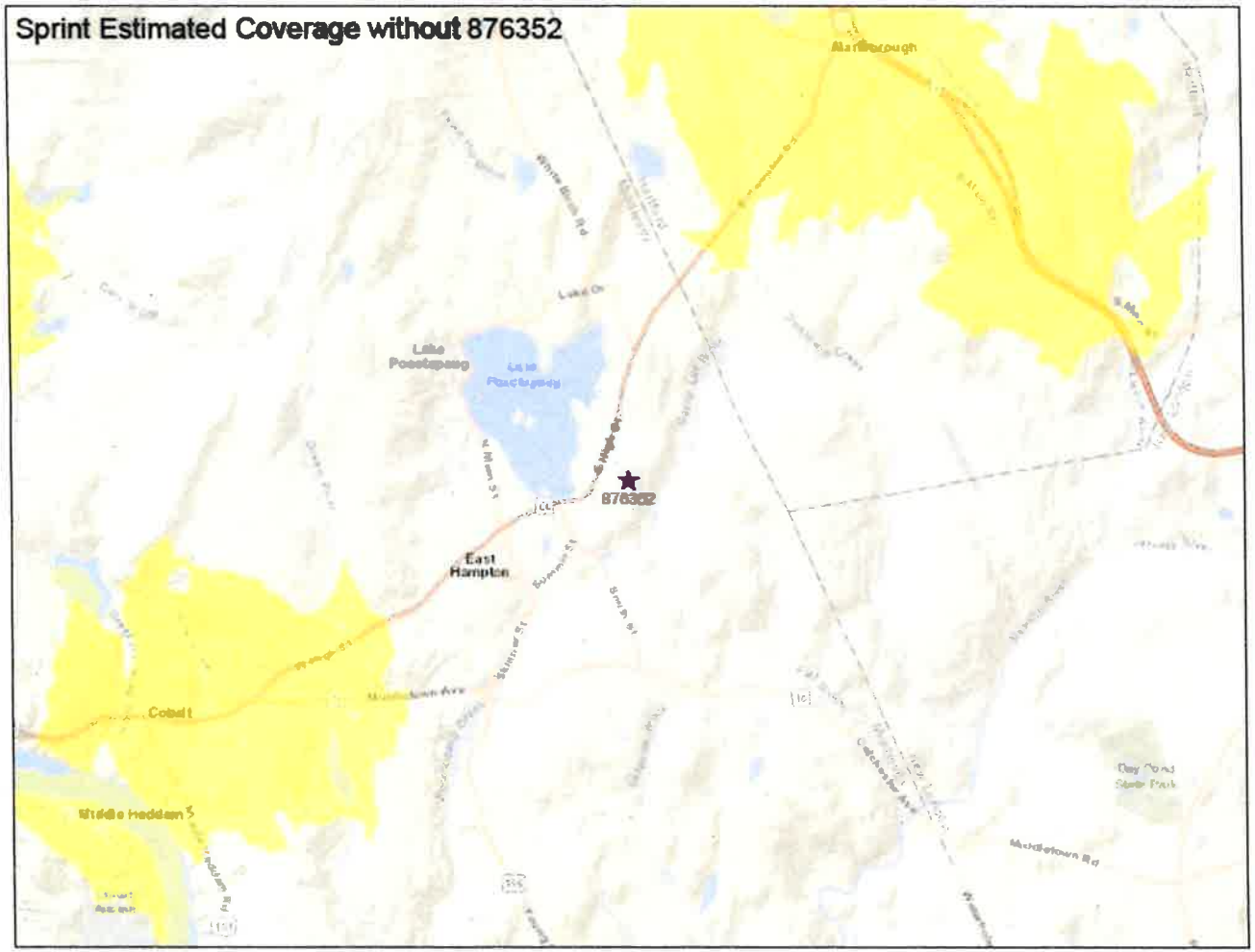
2019

Sprint Current Coverage

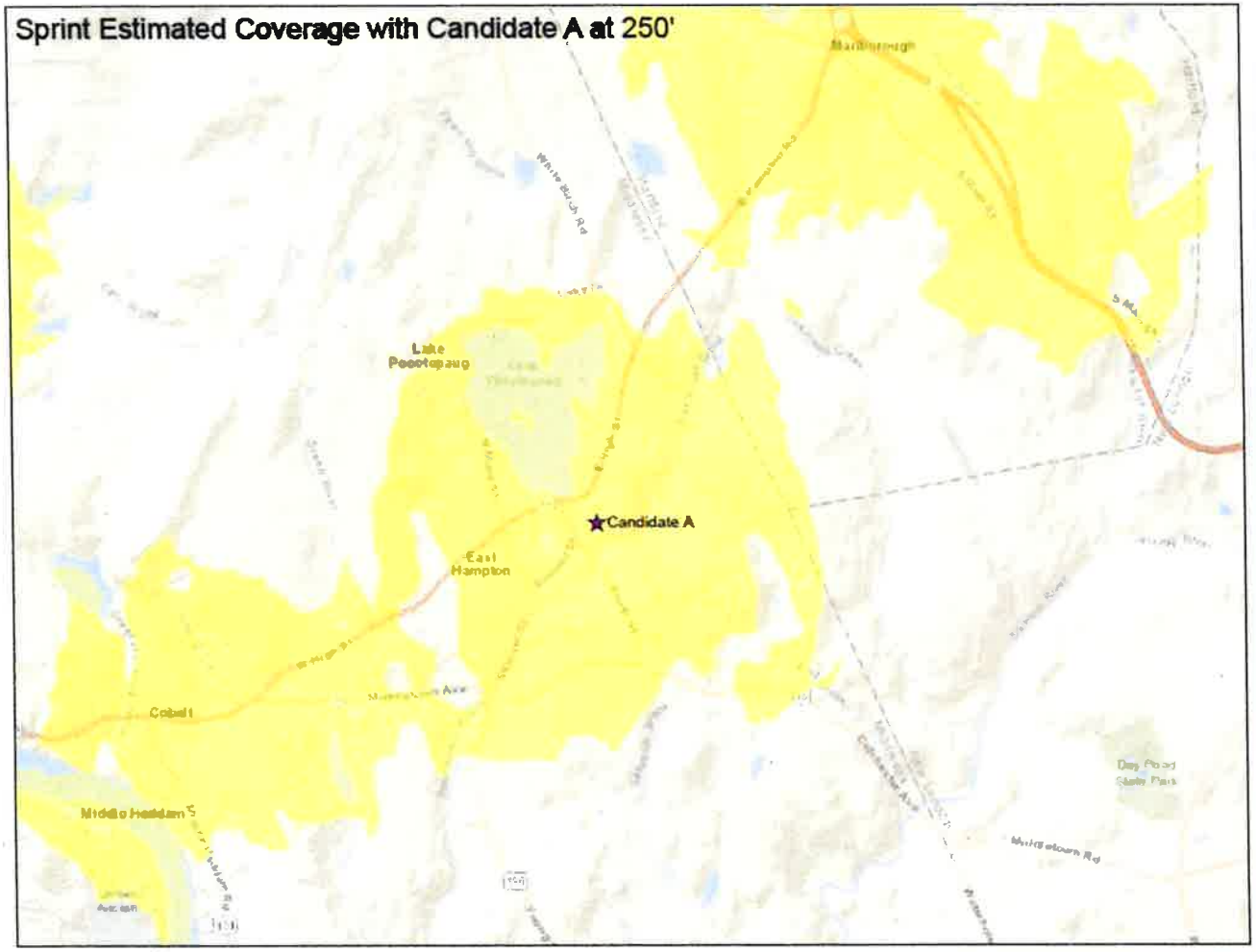


2019

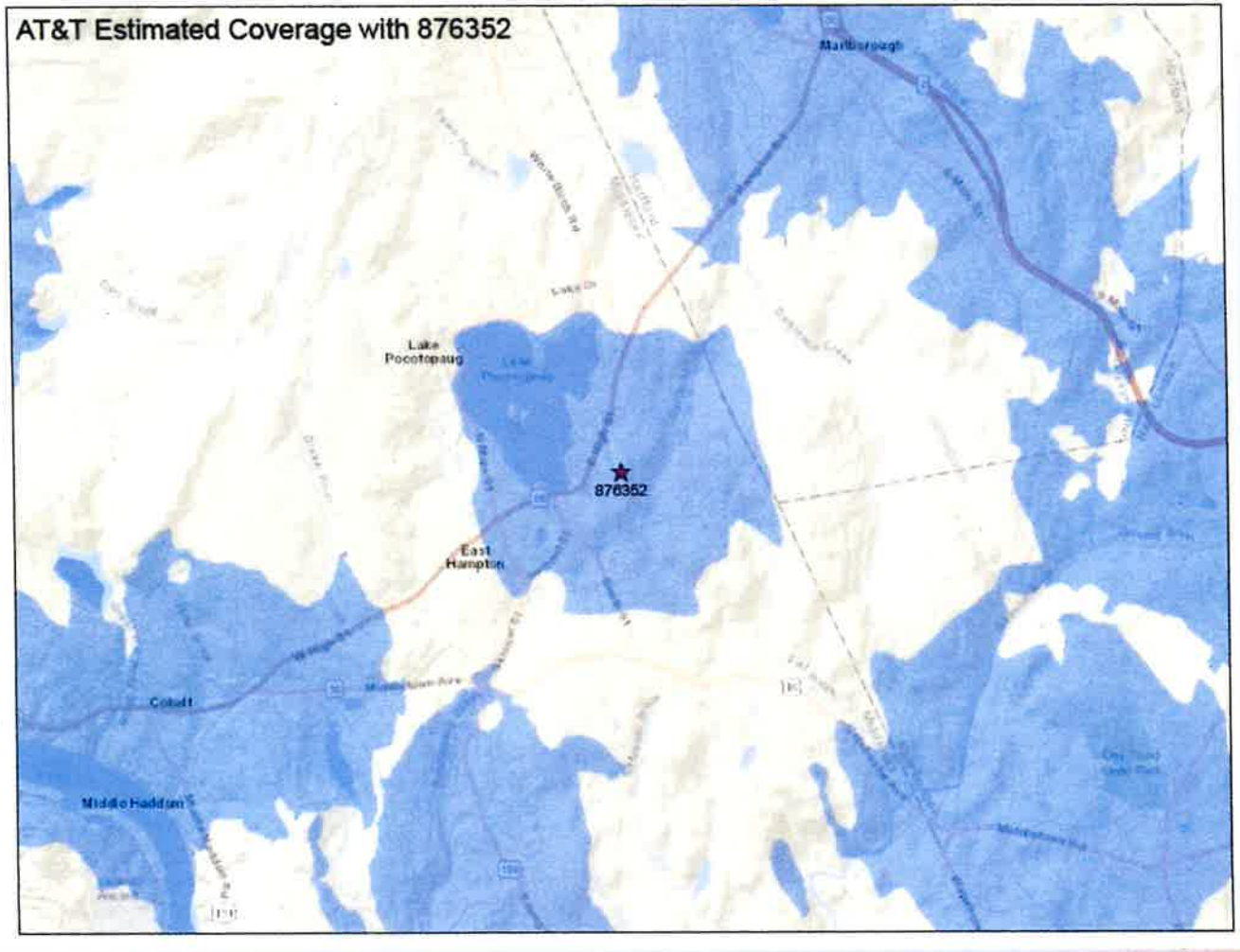
Sprint Coverage without proposed site



Sprint Coverage with proposed site

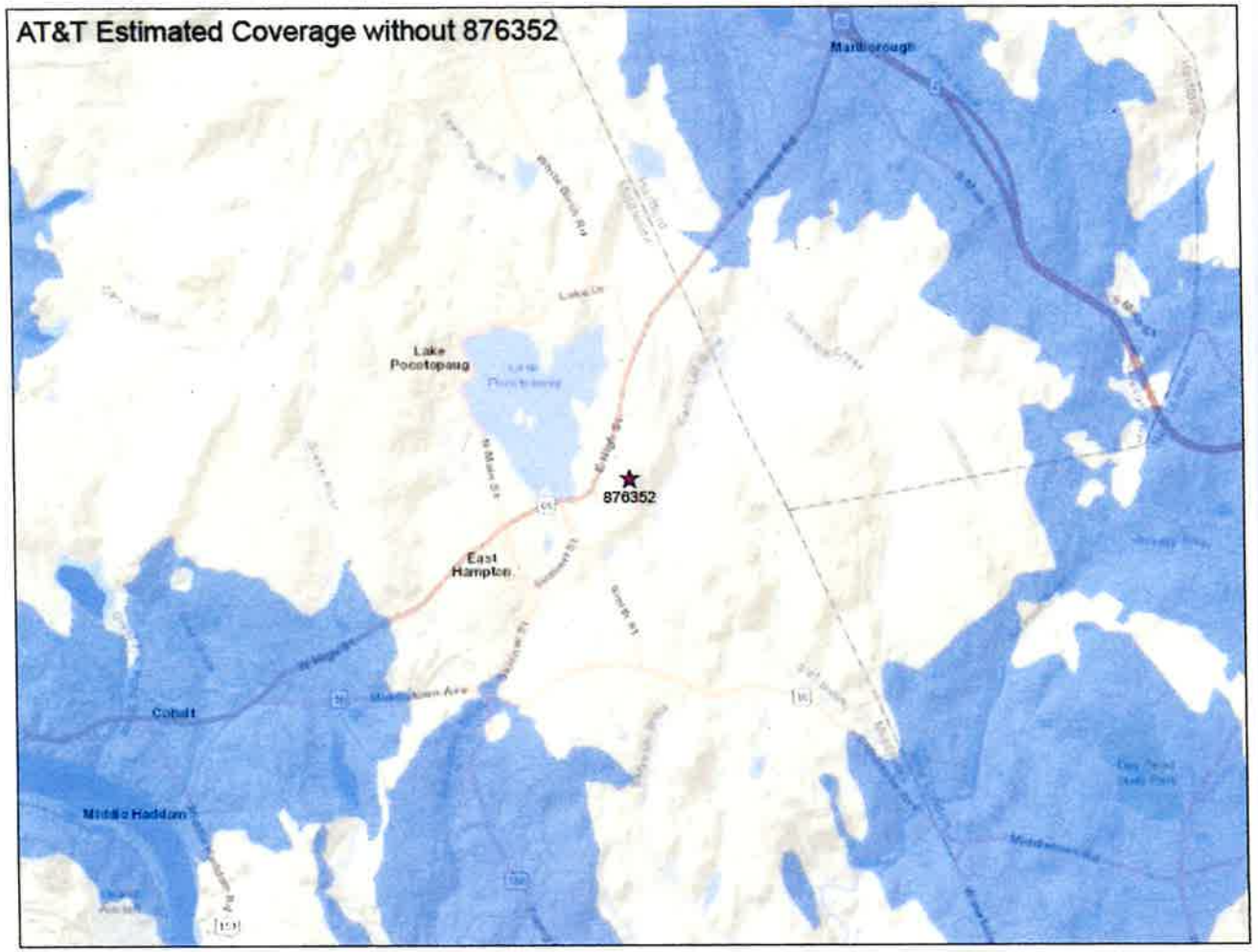


AT&T Current Coverage



2019

AT&T Coverage without proposed site



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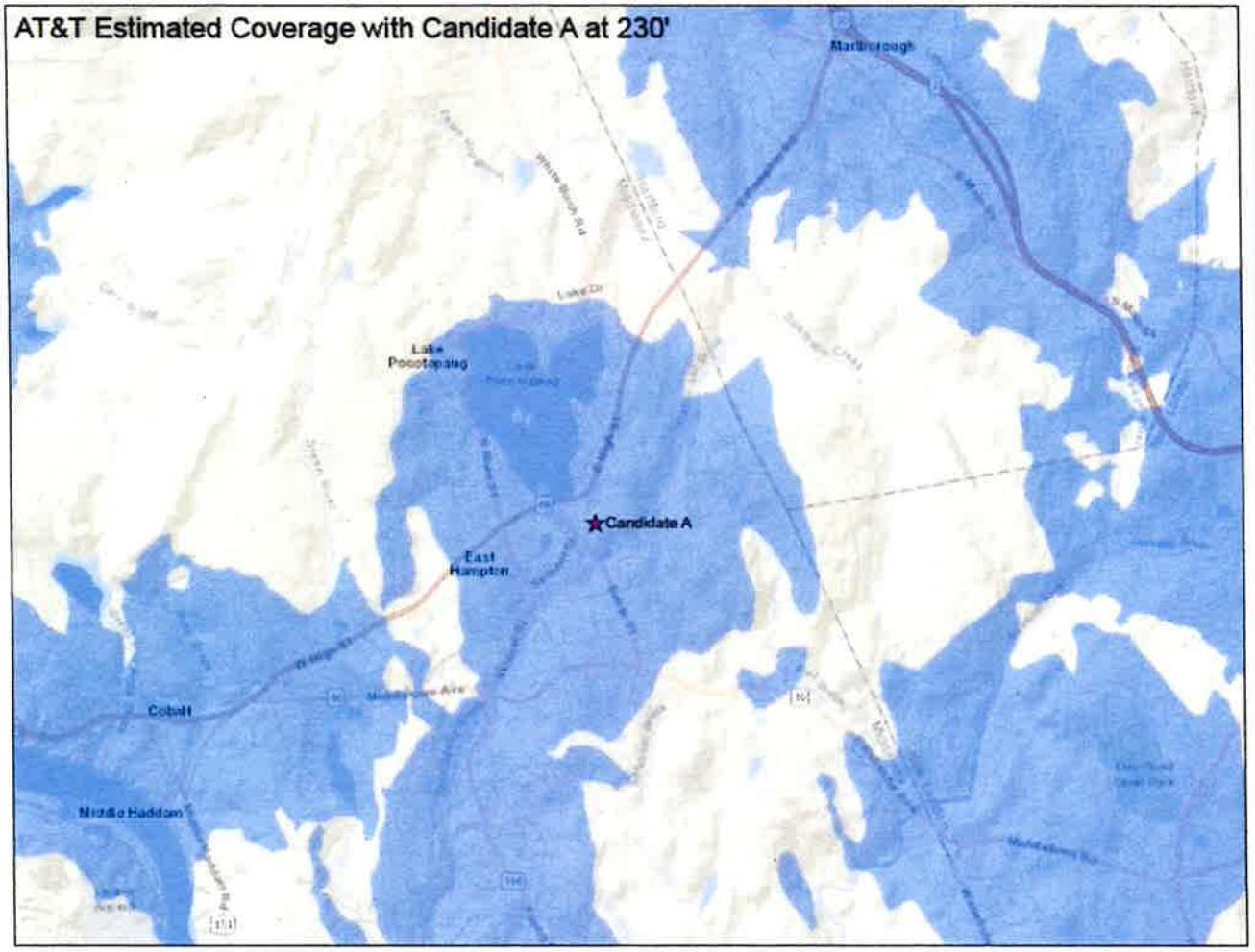
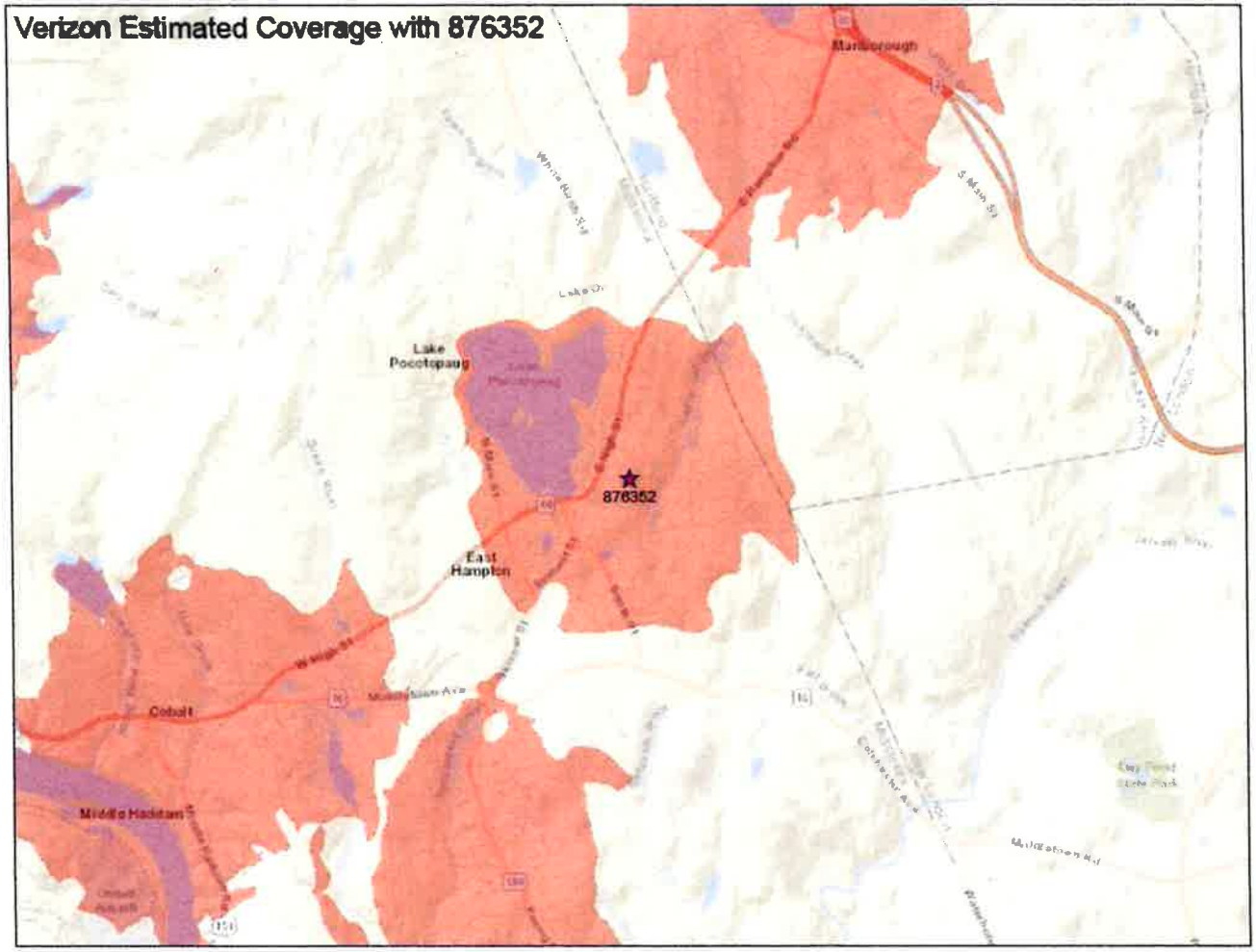
AT&T Coverage with proposed site

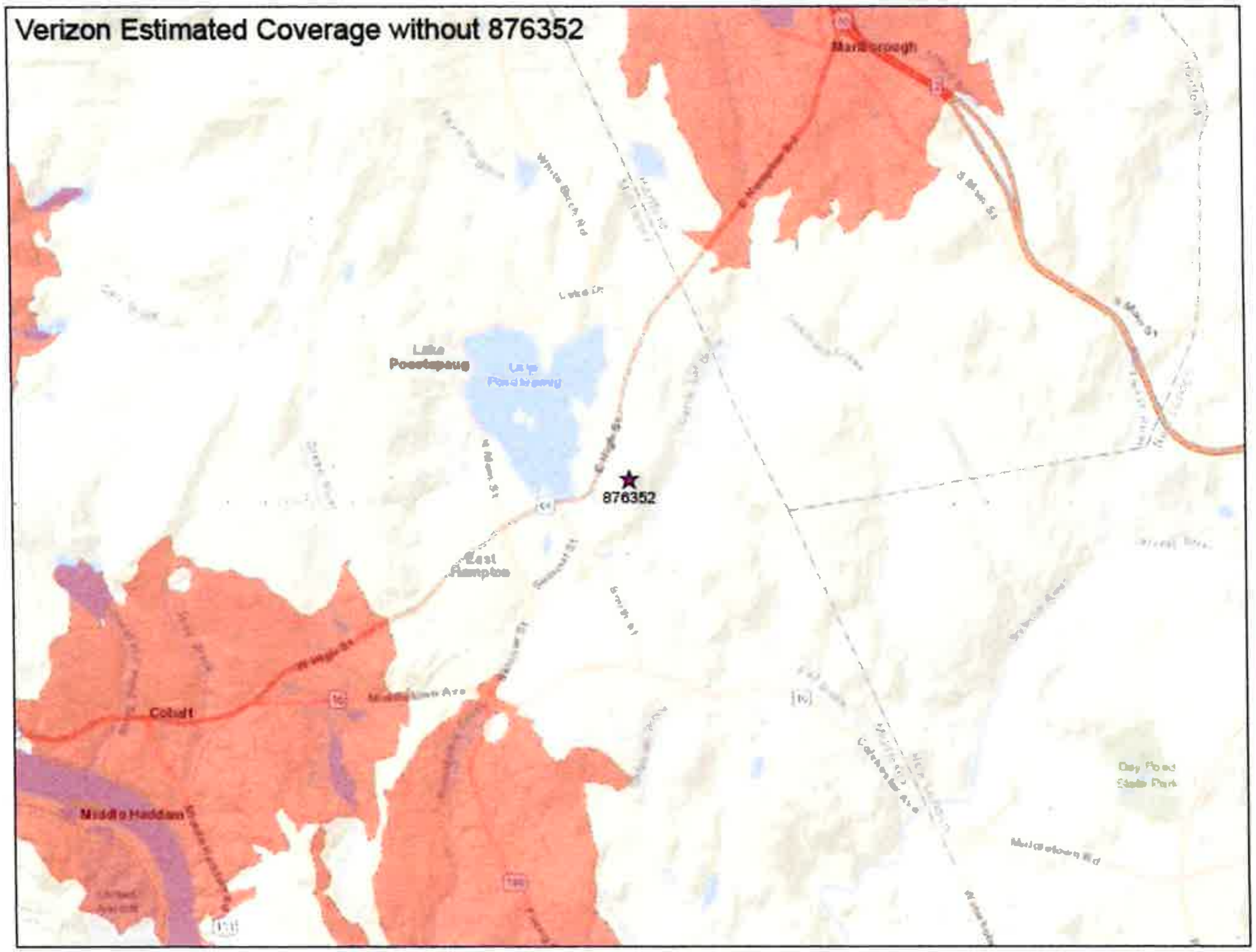


2019

Verizon Current Coverage



Verizon Coverage without proposed site



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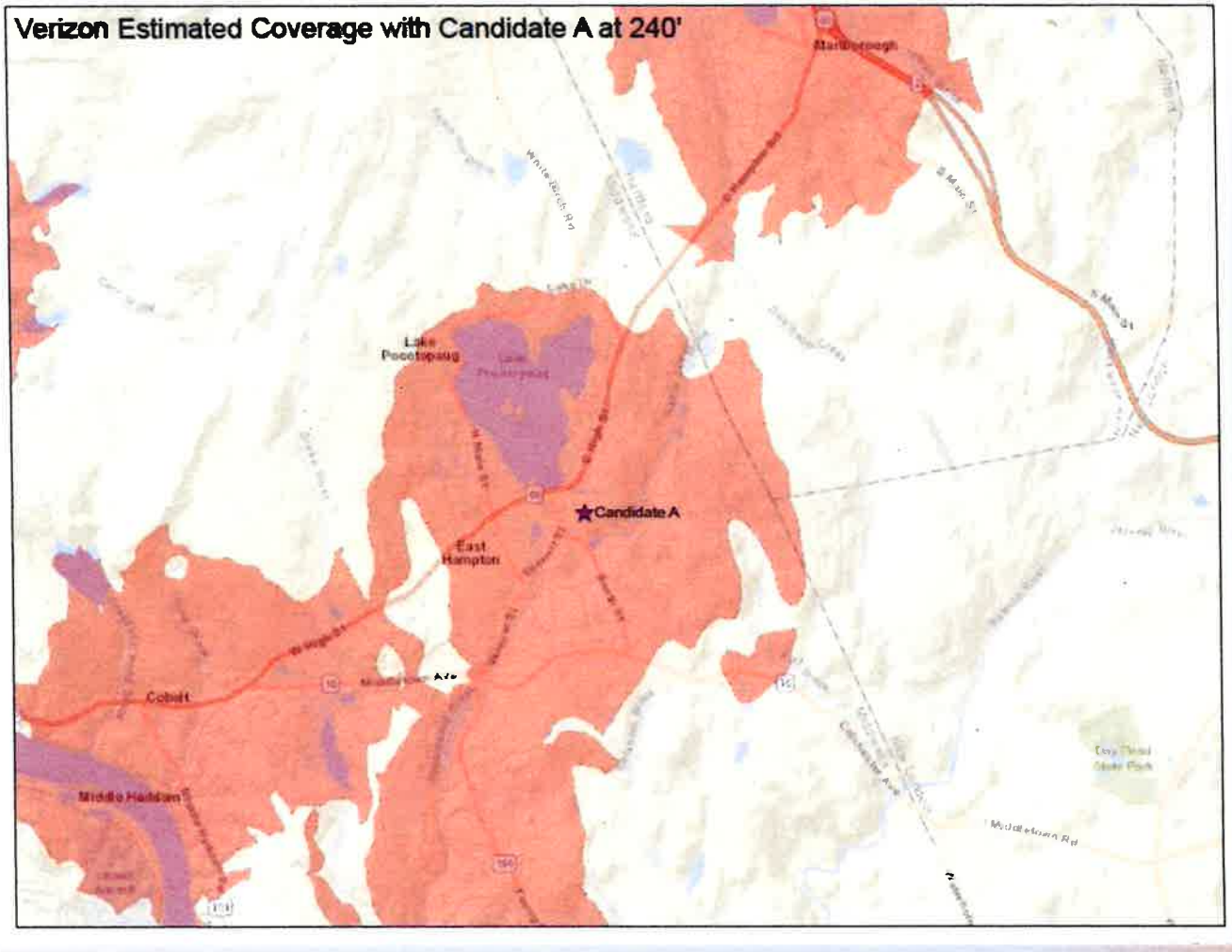
Verizon Coverage with proposed site



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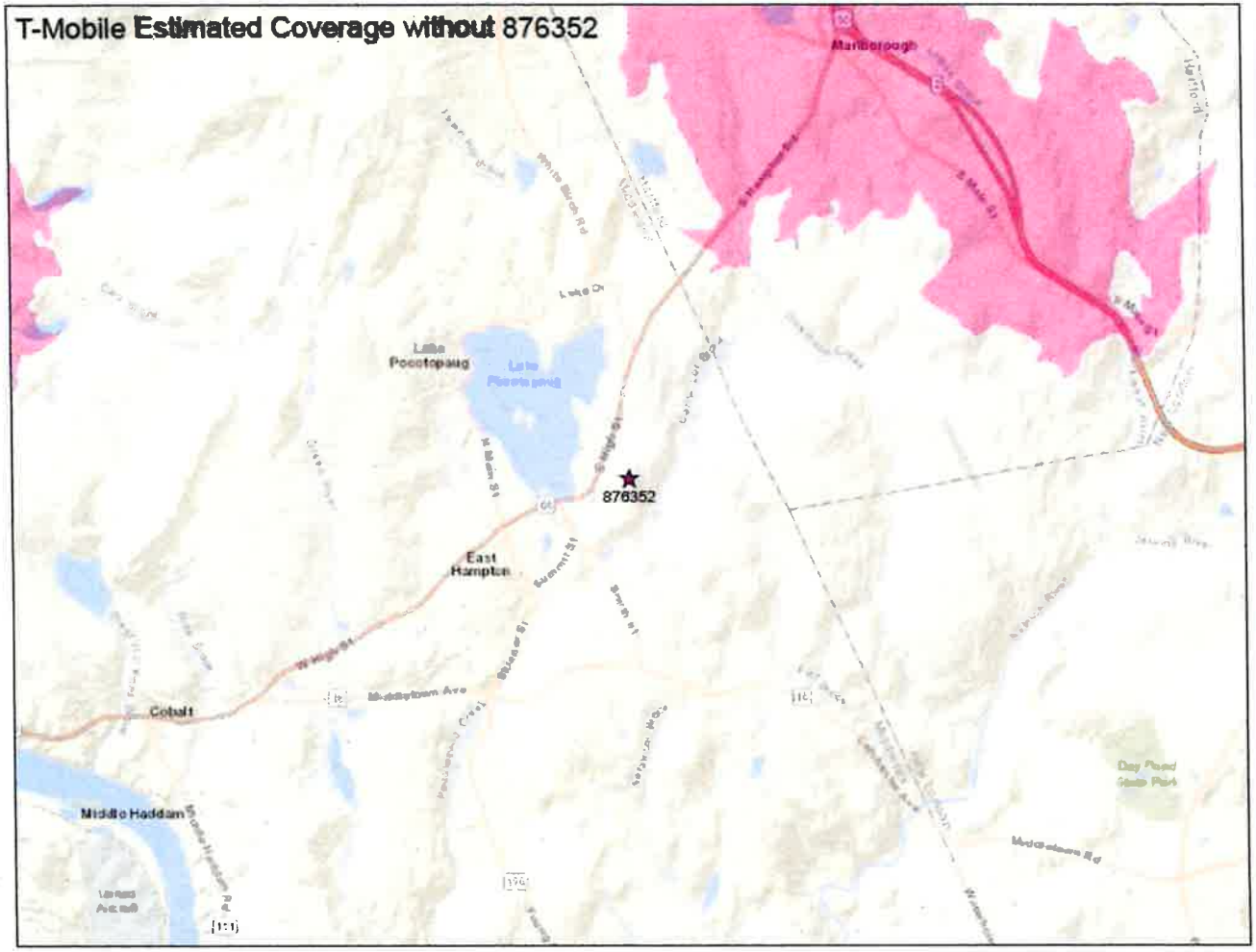
T-Mobile Coverage without proposed site



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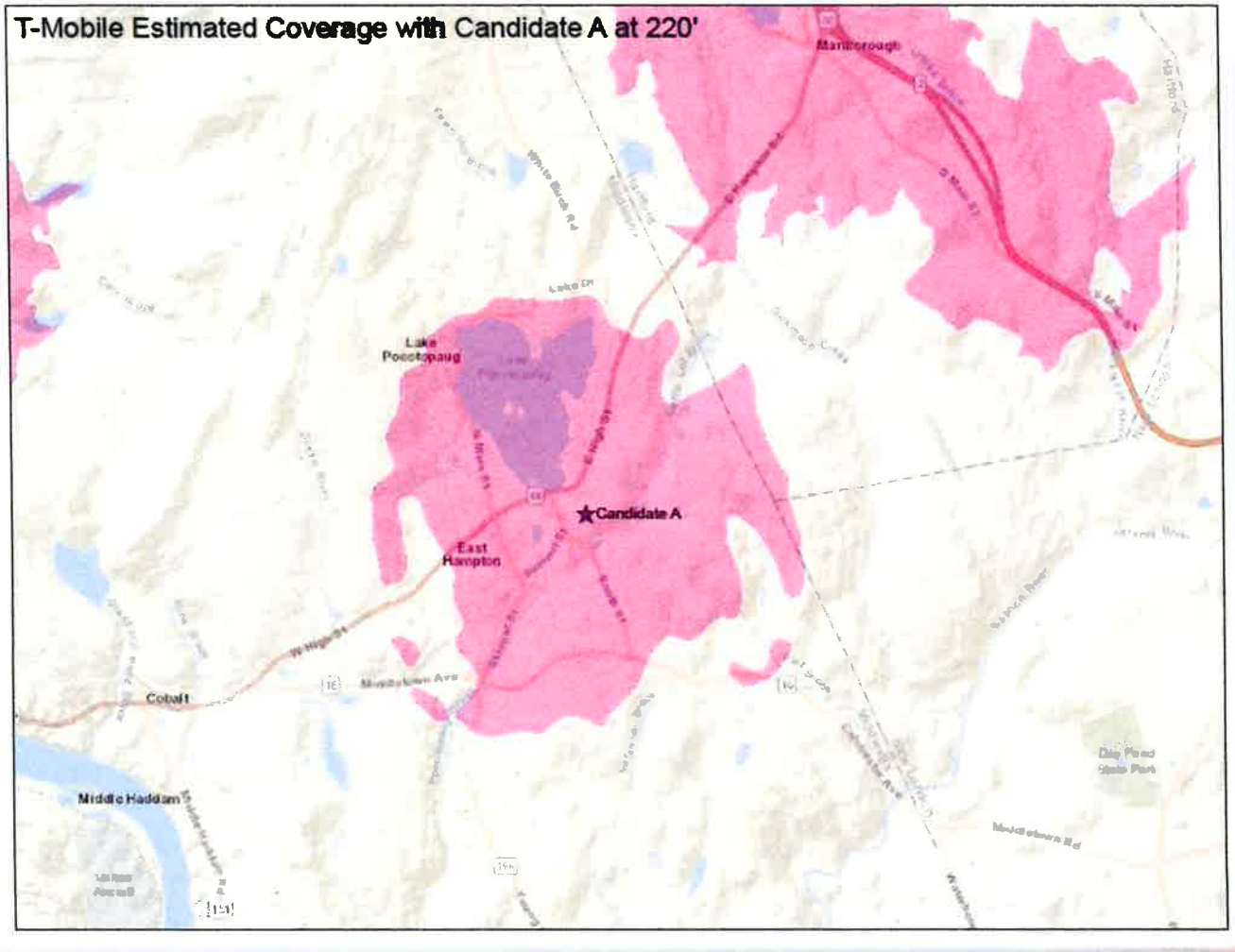
T-Mobile Coverage with proposed site



2019

ATTACHMENT 3

RELOCATION PROJECT DRAWINGS

PROPOSED 250-FT MONOPOLE

SITE OVERVIEW

TYPE OF OCCUPANCY:	TELECOMMUNICATIONS
SITE TYPE:	RAWLAND
TOWER TYPE:	MONOPOLE
TOWER HEIGHT:	250-FT +/-
TOWER LATITUDE:	41° 34' 56.92" N (41.58248°)
TOWER LONGITUDE:	72° 29' 35.29" W (72.49314°)
COUNTY:	MIDDLESEX
DEED BOOK & PAGE:	349; 358
PARCEL ID:	26-85-25
PARCEL AREA:	17.37 ACRES
DISTURBED AREA:	0.80 ACRES (34,700 SF)
POWER COMPANY:	EVERSOURCE
TELCO/FIBER COMPANY:	FRONTIER

PROJECT CONTACT DIRECTORY

LAND OWNER: RICHARD ANDERSON
8 1/2 LAKEVIEW STREET
EAST HAMPTON, CT 06424
(860) 301-4884

APPLICANT: CROWN CASTLE USA, INC.
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
(724) 416-2000

SITE ENGINEER: DELTA OAKS GROUP
4904 PROFESSIONAL COURT, 2ND FLOOR
RALEIGH, NC 27609
CONTACT: BRANDON WALLER, PE
(919) 342-8247

CODE COMPLIANCE

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

1. UNIFORM CONSTRUCTION CODE (UCC)
2. ANSI/TIA/EIA-222-E
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES
5. 2015 INTERNATIONAL RESIDENTIAL CODE
6. 2015 INTERNATIONAL BUILDING CODE
7. 2015 INTERNATIONAL FIRE CODE
8. 2015 INTERNATIONAL PLUMBING CODE
9. 2015 INTERNATIONAL MECHANICAL CODE
10. 2015 INTERNATIONAL FUEL GAS CODE
11. 2015 INTERNATIONAL ENERGY CONSERVATION CODE
12. 2017 NATIONAL ELECTRICAL CODE

CBYD.COM 811
Call Before You Dig, Inc.
DIG SAFE SYSTEMS, INC.
CALL 811
48 HOURS BEFORE YOU DIG

GENERAL NOTES

- THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. THEREFORE HANDICAP ACCESS IS NOT REQUIRED.
- A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE APPROX. ONE TRIP PER MONTH.
- THE PROJECT WILL NOT RESULT IN A SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE.
- NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED.
- NO COMMERCIAL SIGNAGE IS PROPOSED.

SHEET INDEX

SHEET NO.	DESCRIPTION	SHEET NO.	DESCRIPTION
T-1	TITLE SHEET	–	–
C-1.1	OVERALL SITE PLAN	–	–
C-1.2	SITE PLAN	–	–
C-2.1	GRADING & EROSION CONTROL PLAN	–	–
C-2.2	GRADING & EROSION CONTROL PLAN	–	–
C-2.3	GRADING & EROSION CONTROL PLAN	–	–
C-3	TOWER PROFILE & COMPOUND LAYOUT	–	–
C-4	CIVIL DETAILS	–	–
C-5	CIVIL DETAILS	–	–
C-6	CIVIL DETAILS	–	–
C-7	CIVIL DETAILS	–	–
C-8	CIVIL DETAILS	–	–
C-9	CIVIL DETAILS	–	–
GN-1	GENERAL NOTES	–	–
–	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–

SITE NAME

RICHARD WALL

SITE ID

BU# 876352

SITE COORDINATES

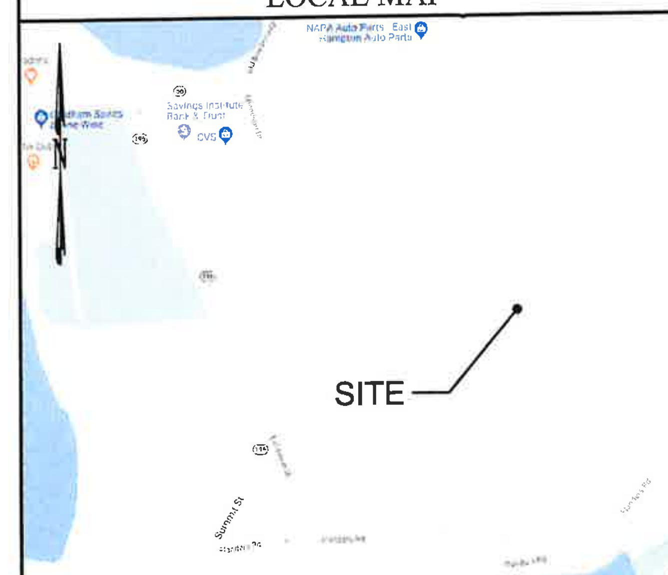
41° 34' 56.92" N, 72° 29' 35.29" W

SITE ADDRESS

8 1/2 LAKEVIEW STREET
EAST HAMPTON, CT 06424

VICINITY MAP

LOCAL MAP



DIRECTIONS

FROM THE BRADLEY INTERNATIONAL AIRPORT, WINDSOR LOCKS, CT

HEAD SOUTHWEST AND TAKE THE RAMP TO BRADLEY INTERNATIONAL AIRPORT CON (0.3 MILES). CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON (1.2 MILES). CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON (2.6 MILES). USE THE RIGHT 2 LANES TO MERGE ONTO I-91 S TOWARD HARTFORD (9.8 MILES). USE THE LEFT LANE TO TAKE EXIT 30 FOR INTERSTATE 84 E TOWARD CT-2/EAST HARTFORD/NEW LONDON (0.2 MILES). MERGE ONTO I-84 E (0.5 MILES). TAKE EXIT 55 FOR CT-2 E TOWARD NORWICH/NEW LONDON/I-84 E (0.4 MILES). CONTINUE ONTO CT-2 E (14.3 MILES). TAKE EXIT 13 FOR CT-66 TOWARD WILLIMANTIC/MARIBOROUGH (0.2 MILES). SLIGHT RIGHT ONTO CT-66 W (4.1 MILES). TURN LEFT ONTO CT-196 S (0.3 MILES). THE SITE WILL BE ON LEFT AT APPROX. COORDINATES 41° 34' 56.92" N, 72° 29' 35.29" W .

PREPARED FOR:

CROWN CASTLE

CROWN CASTLE USA, INC.
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
PHONE: (724) 416-2000

PREPARED BY:

DELTA OAKS GROUP

DELTA OAKS GROUP
4904 PROFESSIONAL COURT, 2ND FLOOR
RALEIGH, NC 27609
PHONE: (919) 342-8247

STATE OF CONNECTICUT
JOSEPH V. BORRELLI JR.
No. 31317
LICENSED PROFESSIONAL ENGINEER
12/16/19

12/16/19

JOSEPH V. BORRELLI JR, P.E.
CONNECTICUT LICENSE NO. 31317

DRAWN BY	BJW
CHECKED BY	WRB
APP'D	MLL
PROJECT NO	[illegible]

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
11-20-19	PRELIM ZDs	0	BJW
12-16-19	FINAL ZDs	1	BJW

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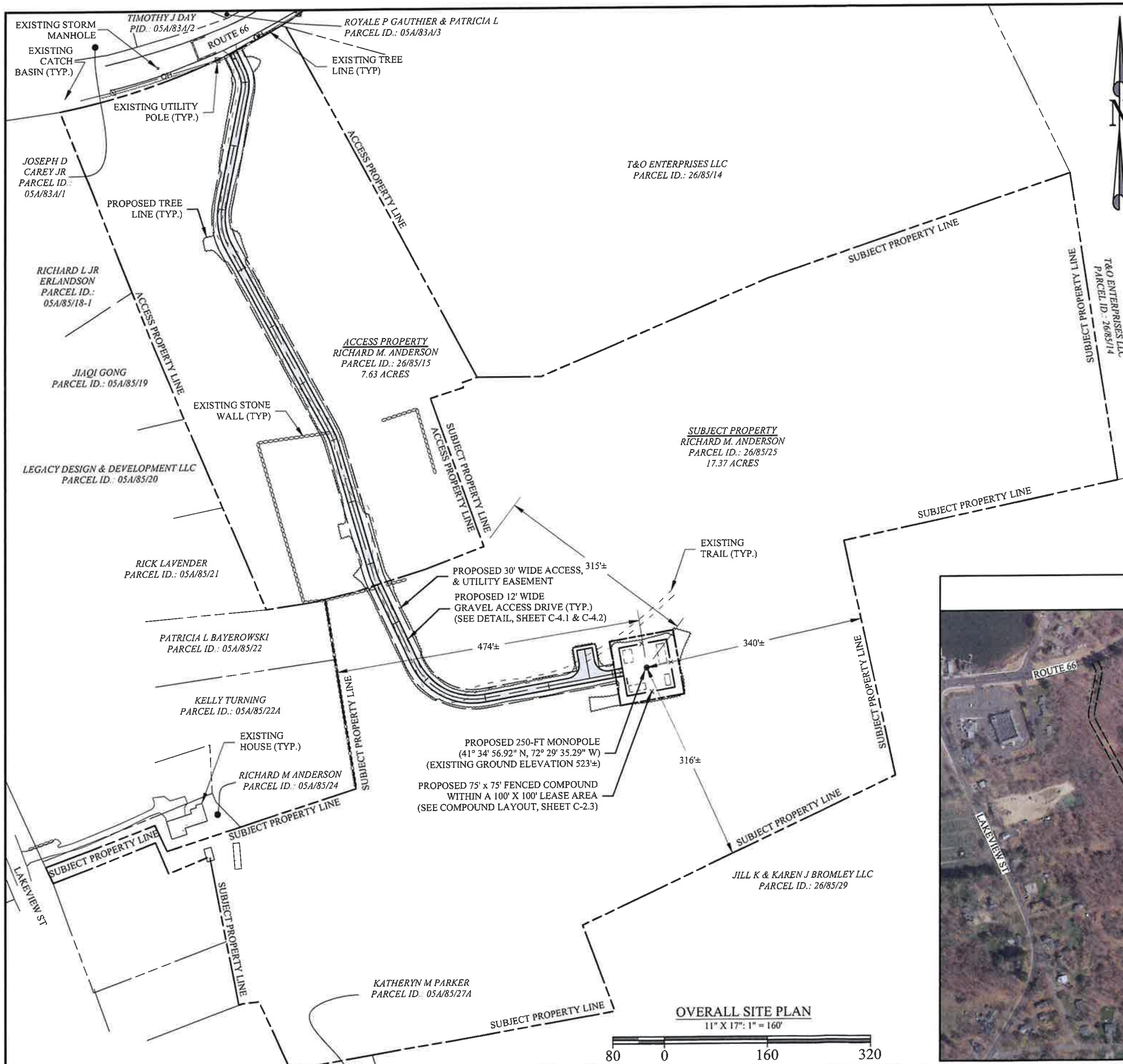
SITE NAME:
RICHARD WALL

SITE ADDRESS:
8 1/2 LAKEVIEW ST.
EAST HAMPTON, CT 06424

SITE ID:
BU# 876352

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



OVERALL SITE PLAN
11" X 17": 1" = 160'
80 0 160 320

LEGEND

— - — - —	PROPERTY LINE/ROW
— — —	PROPOSED EASEMENT
— - - —	PROPOSED LEASE AREA
—x—x—	EXISTING FENCE
—x—x—	PROPOSED FENCE
— - — -	ROADWAY CENTERLINE
———	EXISTING EDGE OF PAVEMENT
———	PROPOSED EDGE OF PAVEMENT
—OH—	OVERHEAD UTILITY
—UE—	UNDERGROUND ELECTRIC LINE

SITE PLAN NOTES:

1. SEE GENERAL NOTES SHEET GN-1.
2. EXISTING TOPOGRAPHIC, UTILITY PLANIMETRIC AND BOUNDARY INFORMATION IS TAKEN FROM ALTA SURVEY DRAWING ENTITLED "RICHARD WALL", BY JONATHAN MURPHY PROFESSIONAL LAND SURVEYING.
3. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE PROPOSED EQUIP. & TOWER AREA.
4. VEGETATED AREAS DISTURBED BY THE WORK OF THIS PROJECT SHALL BE GRADED TO UNIFORM SLOPE, FERTILIZED, SEEDED, AND STABILIZED AS SPECIFIED.
5. AUTHORIZATION FOR WORK WITHIN PUBLIC R.O.W. SHALL BE OBTAINED BY THE CONTRACTOR.
6. EROSION CONTROL MEASURES SHALL BE INSTALLED IN CONFORMANCE WITH CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.
7. THE PROPOSED PROJECT WILL NOT RESULT IN A SIGNIFICANT AREA OF DISTURBANCE AND WILL NOT SIGNIFICANTLY INCREASE STORM WATER RUNOFF.
8. NO SIGNIFICANT NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
9. THE SITE WILL GENERATE APPROX. 4 TRIPS PER MONTH BY TECHNICIANS PERFORMING ROUTINE MAINTENANCE.
10. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION. THERE IS NO HANDICAP ACCESS REQUIRED.
11. THE FACILITY DOES NOT REQUIRE WATER OR SANITARY SEWER SERVICE.
12. THE PROPOSED TOWER LEASE AREA IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD ZONE PER FEMA FIRM#09007C0155G WITH EFFECTIVE DATE OF AUGUST 28, 2008.

AERIAL IMAGE

PREPARED FOR:

CROWN CASTLE
CROWN CASTLE USA, INC.
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
PHONE: (724) 416-2000

PREPARED BY:

DELTA OAKS GROUP
DELTA OAKS GROUP
4904 PROFESSIONAL COURT, 2ND FLOOR
RALEIGH, NC 27609
PHONE: (919) 342-8247

STATE OF CONNECTICUT JOSEPH V. BORRELLI JR. No. 31317 LICENSED PROFESSIONAL ENGINEER
12/16/19

JOSEPH V. BORRELLI JR. P.E.
CONNECTICUT LICENSE NO. 31317
12/16/19

DRAWN BY:	BJW
CHECKED BY:	WRD
APPV'D:	MLL
PROJECT NO:	[illegible]

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
11/20/19	PRELIM ZDs	0	BJW
12/16/19	FINAL ZDs	1	BJW

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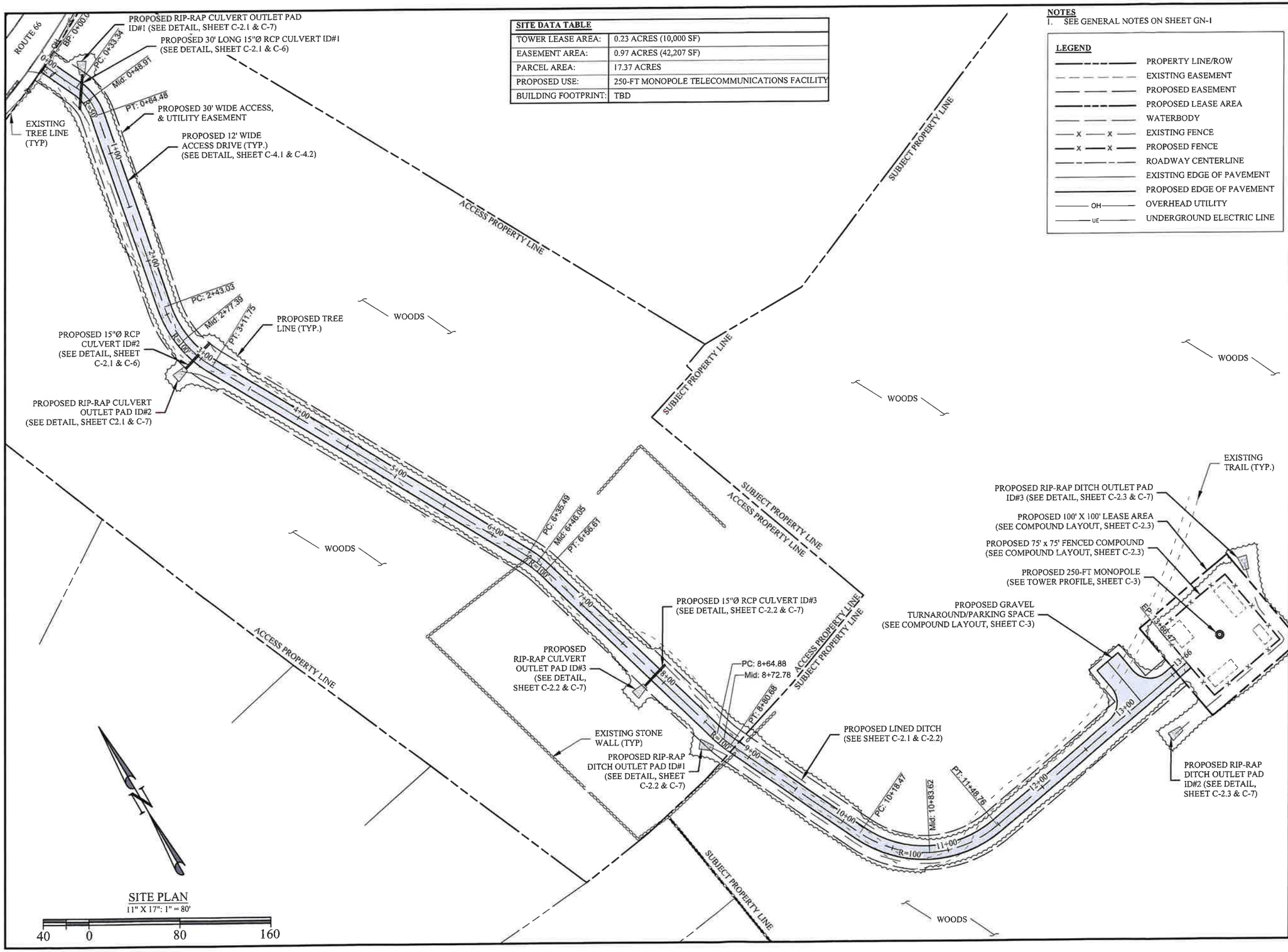
SITE NAME:
RICHARD WALL

SITE ADDRESS:
8 1/2 LAKEVIEW ST.
EAST HAMPTON, CT 06424

SITE ID:
BU# 876352

SHEET TITLE
OVERALL SITE PLAN
(NEW LOCATION)

SHEET NUMBER
C-1.1



SITE DATA TABLE	
TOWER LEASE AREA:	0.23 ACRES (10,000 SF)
EASEMENT AREA:	0.97 ACRES (42,207 SF)
PARCEL AREA:	17.37 ACRES
PROPOSED USE:	250-FT MONOPOLE TELECOMMUNICATIONS FACILITY
BUILDING FOOTPRINT:	TBD

NOTES

1. SEE GENERAL NOTES ON SHEET GN-1

LEGEND

- PROPERTY LINE/ROW
- EXISTING EASEMENT
- PROPOSED EASEMENT
- PROPOSED LEASE AREA
- WATERBODY
- EXISTING FENCE
- PROPOSED FENCE
- ROADWAY CENTERLINE
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- OH — OVERHEAD UTILITY
- UE — UNDERGROUND ELECTRIC LINE

PREPARED FOR:

CROWN CASTLE

CROWN CASTLE USA, INC.
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
PHONE: (724) 416-2000

PREPARED BY:

DELTA OAKS GROUP

DELTA OAKS GROUP
4904 PROFESSIONAL COURT, 2ND FLOOR
RALEIGH, NC 27609
PHONE: (919) 342-8247

STATE OF CONNECTICUT
JOSEPH V. BORRELLI JR
No. 31317
LICENSED PROFESSIONAL ENGINEER
12/16/19

12/16/19
JOSEPH V. BORRELLI JR, P.E.
CONNECTICUT LICENSE NO. 31317

DRAWN BY	DJW
CHECKED BY	WRD
APPVD	MLL
PROJECT NO.	18-01258

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
11/26/19	PRELIM ZDs	0	RBW
12/16/19	FINAL ZDs	1	DJW

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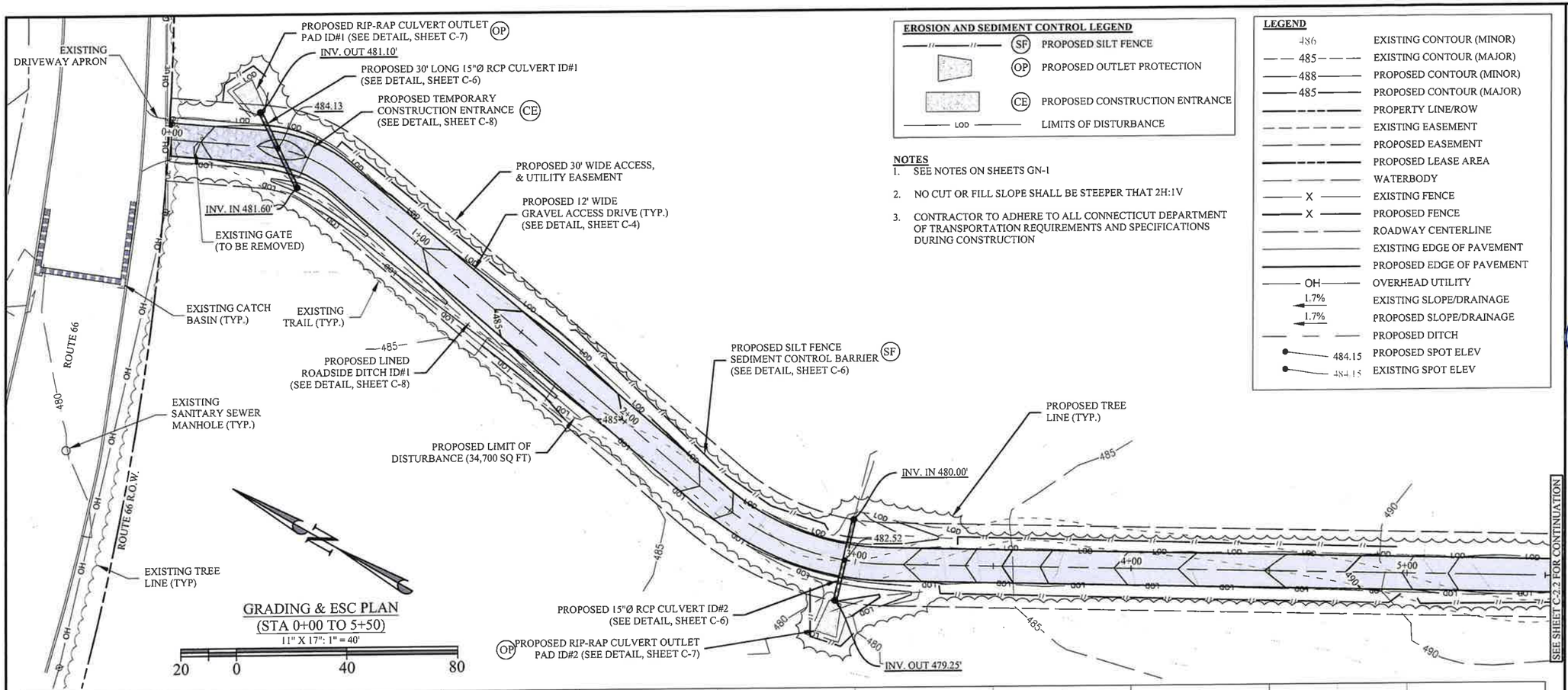
SITE NAME:
RICHARD WALL

SITE ADDRESS:
8 1/2 LAKEVIEW ST.
EAST HAMPTON, CT 06424

SITE ID:
BU# 876352

SHEET TITLE
SITE PLAN

SHEET NUMBER
C-1.2



GRADING & ESC PLAN
(STA 0+00 TO 5+50)
11" X 17": 1" = 40'

20 0 40 80

EROSION AND SEDIMENT CONTROL LEGEND

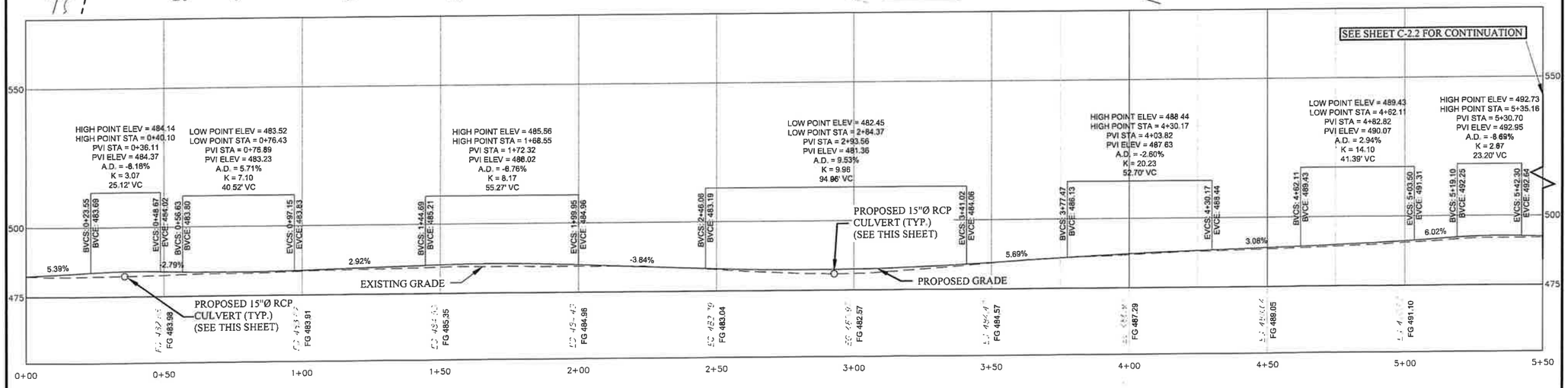
SF	PROPOSED SILT FENCE
OP	PROPOSED OUTLET PROTECTION
CE	PROPOSED CONSTRUCTION ENTRANCE
LOD	LIMITS OF DISTURBANCE

NOTES

1. SEE NOTES ON SHEETS GN-1
2. NO CUT OR FILL SLOPE SHALL BE STEEPER THAT 2H:1V
3. CONTRACTOR TO ADHERE TO ALL CONNECTICUT DEPARTMENT OF TRANSPORTATION REQUIREMENTS AND SPECIFICATIONS DURING CONSTRUCTION

LEGEND

486	EXISTING CONTOUR (MINOR)
485	EXISTING CONTOUR (MAJOR)
488	PROPOSED CONTOUR (MINOR)
485	PROPOSED CONTOUR (MAJOR)
	PROPERTY LINE/ROW
	EXISTING EASEMENT
	PROPOSED EASEMENT
	PROPOSED LEASE AREA
	WATERBODY
X	EXISTING FENCE
X	PROPOSED FENCE
	ROADWAY CENTERLINE
	EXISTING EDGE OF PAVEMENT
	PROPOSED EDGE OF PAVEMENT
OH	OVERHEAD UTILITY
1.7%	EXISTING SLOPE/DRAINAGE
1.7%	PROPOSED SLOPE/DRAINAGE
	PROPOSED DITCH
484.15	PROPOSED SPOT ELEV
484.15	EXISTING SPOT ELEV



ACCESS ROAD PROFILE
(STA 0+00 TO 5+50)
11" X 17": 1" = 40'

20 0 40 80

PREPARED FOR:

CROWN CASTLE

CROWN CASTLE USA, INC.
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
PHONE: (724) 416-2000

PREPARED BY:

DELTA OAKS GROUP

DELTA OAKS GROUP
4904 PROFESSIONAL COURT, 2ND FLOOR
RALEIGH, NC 27609
PHONE: (919) 342-8247

STATE OF CONNECTICUT
JOSEPH V. BORRELLI JR
No. 31317
LICENSED PROFESSIONAL ENGINEER
12/16/19

12/16/19

JOSEPH V. BORRELLI JR, P.E.
CONNECTICUT LICENSE NO. 31317

DRAWN BY	BJW
CHECKED BY	WRB
APPVD	MLE
PROJECT NO	15407224

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
11/20/19	PRELIM ZDS	0	BJW
12/16/19	FINAL ZDS	1	BJW

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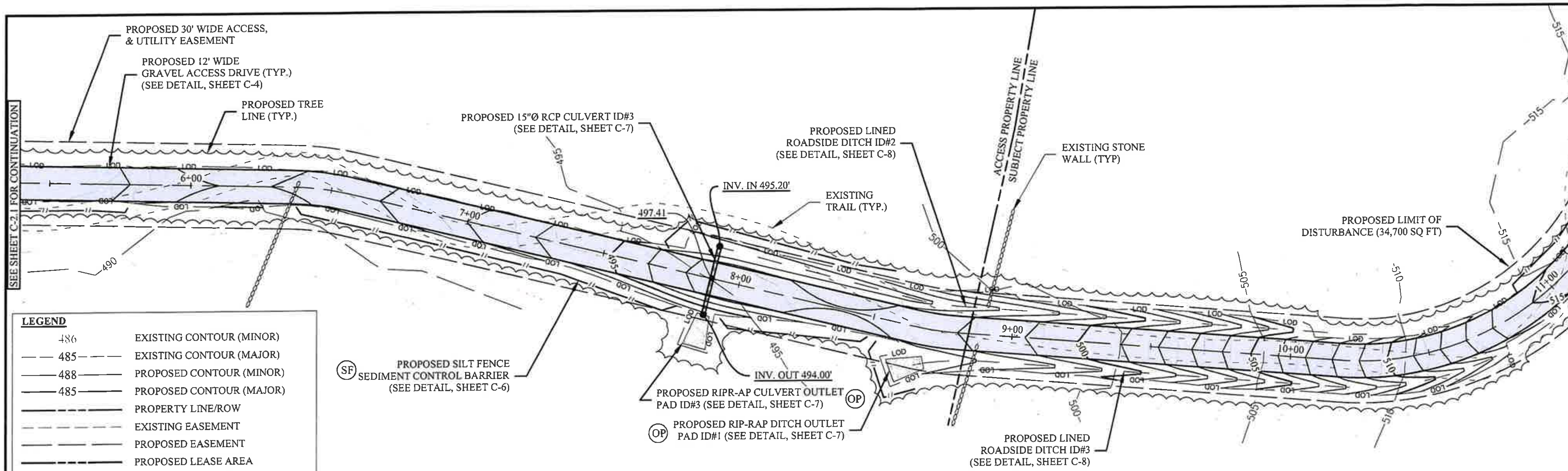
SITE NAME:
RICHARD WALL

SITE ADDRESS:
8 1/2 LAKEVIEW ST.
EAST HAMPTON, CT 06424

SITE ID:
BU# 876352

SHEET TITLE
GRADING AND EROSION CONTROL PLAN

SHEET NUMBER
C-2.1



LEGEND

486	EXISTING CONTOUR (MINOR)
485	EXISTING CONTOUR (MAJOR)
488	PROPOSED CONTOUR (MINOR)
485	PROPOSED CONTOUR (MAJOR)
	PROPERTY LINE/ROW
	EXISTING EASEMENT
	PROPOSED EASEMENT
	PROPOSED LEASE AREA
	WATERBODY
X	EXISTING FENCE
X	PROPOSED FENCE
	ROADWAY CENTERLINE
	EXISTING EDGE OF PAVEMENT
	PROPOSED EDGE OF PAVEMENT
OH	OVERHEAD UTILITY
1.7%	EXISTING SLOPE/DRAINAGE
1.7%	PROPOSED SLOPE/DRAINAGE
	PROPOSED DITCH
484.15	PROPOSED SPOT ELEV
484.15	EXISTING SPOT ELEV

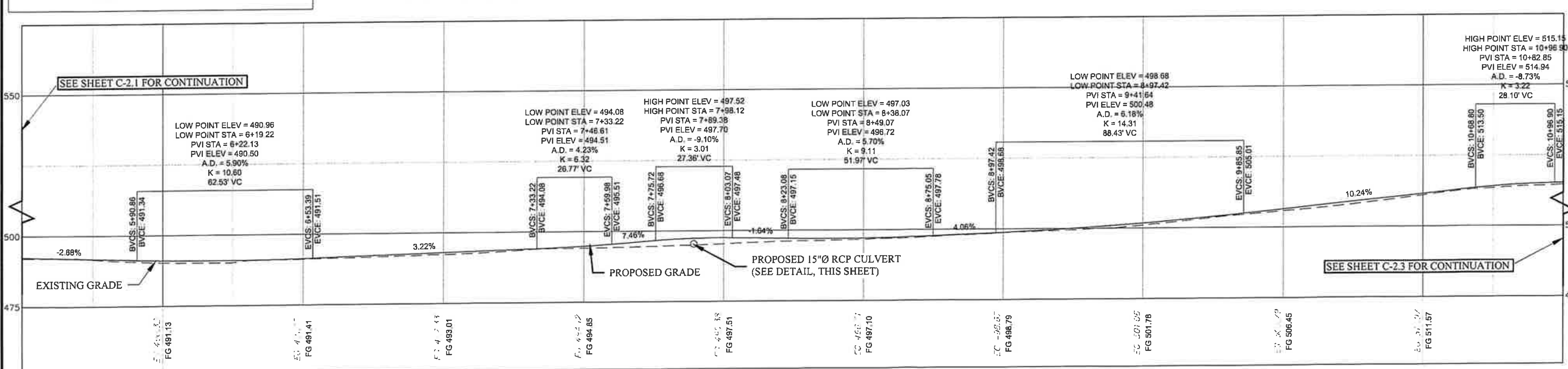
NOTES

1. SEE NOTES ON SHEETS GN-1
2. NO CUT OR FILL SLOPE SHALL BE STEEPER THAT 2H:1V
3. CONTRACTOR TO ADHERE TO ALL CONNECTICUT DEPARTMENT OF TRANSPORTATION REQUIREMENTS AND SPECIFICATIONS DURING CONSTRUCTION

GRADING & ESC PLAN
(STA 5+50 TO 11+00)
11" X 17": 1" = 40'
20 0 40 80

EROSION AND SEDIMENT CONTROL LEGEND

SF	PROPOSED SILT FENCE
OP	PROPOSED OUTLET PROTECTION
CE	PROPOSED CONSTRUCTION ENTRANCE
LOD	LIMITS OF DISTURBANCE



ACCESS ROAD PROFILE
(STA 5+50 TO 11+00)
11" X 17": 1" = 40'
20 0 40 80

PREPARED FOR:
CROWN CASTLE
CROWN CASTLE USA, INC.
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
PHONE: (724) 416-2000

PREPARED BY:
DELTA OAKS GROUP
DELTA OAKS GROUP
4904 PROFESSIONAL COURT, 2ND FLOOR
RALEIGH, NC 27609
PHONE: (919) 342-8247

STATE OF CONNECTICUT
JOSEPH V. BORRELLI JR.
No. 31317
LICENSED PROFESSIONAL ENGINEER
12/4/19

JOSEPH V. BORRELLI JR, P.E.
CONNECTICUT LICENSE NO. 31317
12/16/19

DRAWN BY:	BJW
CHECKED BY:	WRD
APP'VD:	MLT
PROJECT NO:	19-0124

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
11.20.19	PRELIM ZDs	0	BJW
12.16.19	FINAL ZDs	1	BJW

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SITE NAME:
RICHARD WALL

SITE ADDRESS:
8 1/2 LAKEVIEW ST.
EAST HAMPTON, CT 06424

SITE ID:
BU# 876352

SHEET TITLE
GRADING AND EROSION CONTROL PLAN

SHEET NUMBER
C-2.2

LEGEND

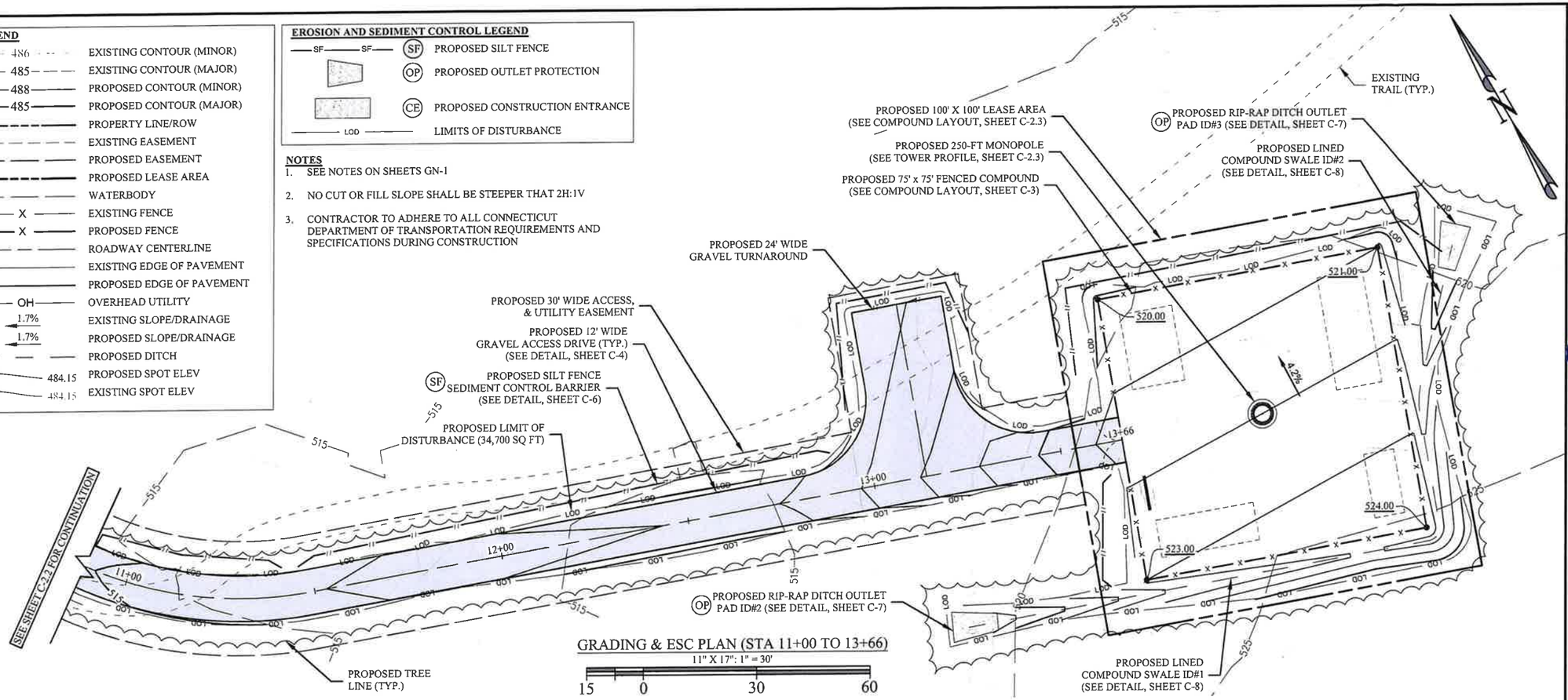
- EXISTING CONTOUR (MINOR) — 486
- EXISTING CONTOUR (MAJOR) — 485
- PROPOSED CONTOUR (MINOR) — 488
- PROPOSED CONTOUR (MAJOR) — 485
- PROPERTY LINE/ROW
- EXISTING EASEMENT
- PROPOSED EASEMENT
- PROPOSED LEASE AREA
- WATERBODY
- EXISTING FENCE — X
- PROPOSED FENCE — X
- ROADWAY CENTERLINE
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- OVERHEAD UTILITY — OH
- EXISTING SLOPE/DRAINAGE — 1.7%
- PROPOSED SLOPE/DRAINAGE — 1.7%
- PROPOSED DITCH
- PROPOSED SPOT ELEV — 484.15
- EXISTING SPOT ELEV — 484.15

EROSION AND SEDIMENT CONTROL LEGEND

- SF — PROPOSED SILT FENCE
- OP — PROPOSED OUTLET PROTECTION
- CE — PROPOSED CONSTRUCTION ENTRANCE
- LOD — LIMITS OF DISTURBANCE

NOTES

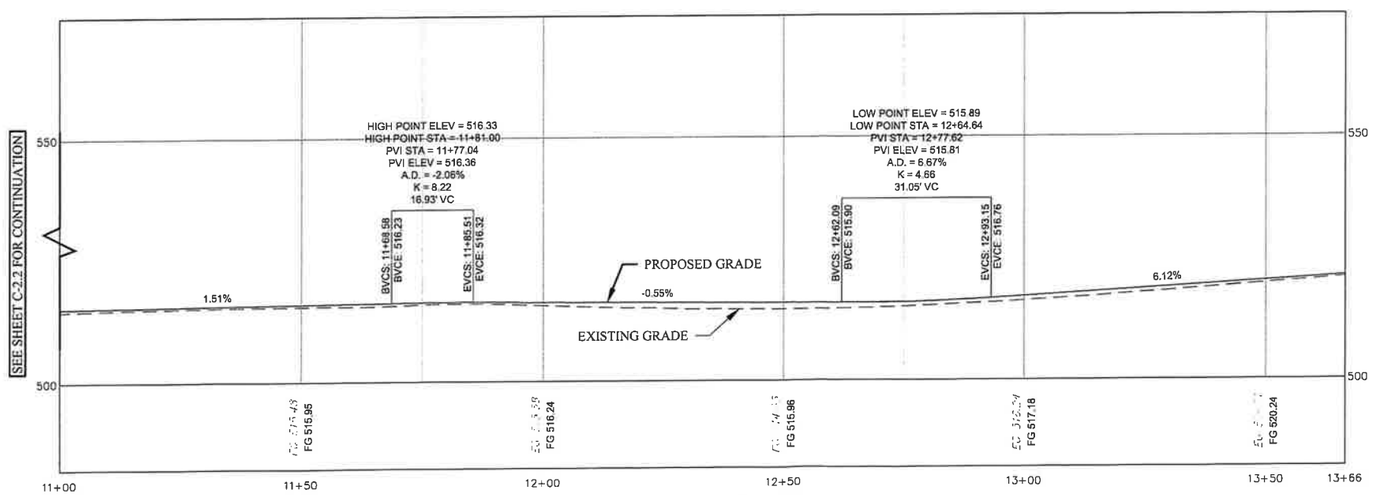
1. SEE NOTES ON SHEETS GN-1
2. NO CUT OR FILL SLOPE SHALL BE STEEPER THAT 2H:1V
3. CONTRACTOR TO ADHERE TO ALL CONNECTICUT DEPARTMENT OF TRANSPORTATION REQUIREMENTS AND SPECIFICATIONS DURING CONSTRUCTION



GRADING & ESC PLAN (STA 11+00 TO 13+66)

11" X 17": 1" = 30'

15 0 30 60



ACCESS ROAD PROFILE (STA 11+00 TO 13+66)

11" X 17": 1" = 30'

15 0 30 60

PREPARED FOR:

CROWN CASTLE

CROWN CASTLE USA, INC.
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
PHONE: (724) 416-2000

PREPARED BY:

DELTA OAKS GROUP

DELTA OAKS GROUP
4904 PROFESSIONAL COURT, 2ND FLOOR
RALEIGH, NC 27609
PHONE: (919) 342-8247

STATE OF CONNECTICUT
JOSEPH V. BORRELLI JR
No. 31317
LICENSED PROFESSIONAL ENGINEER
12/16/19

12/16/19

JOSEPH V. BORRELLI JR, P.E.
CONNECTICUT LICENSE NO. 31317

DRAWN BY:	BJW
CHECKED BY:	WRB
APPVD:	MLL
PROJECT NO:	876352

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
11/20/19	PRELIM ZDS	0	BJW
12/16/19	FINAL ZDS	1	BJW

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SITE NAME:
RICHARD WALL

SITE ADDRESS:
8 1/2 LAKEVIEW ST.
EAST HAMPTON, CT 06424

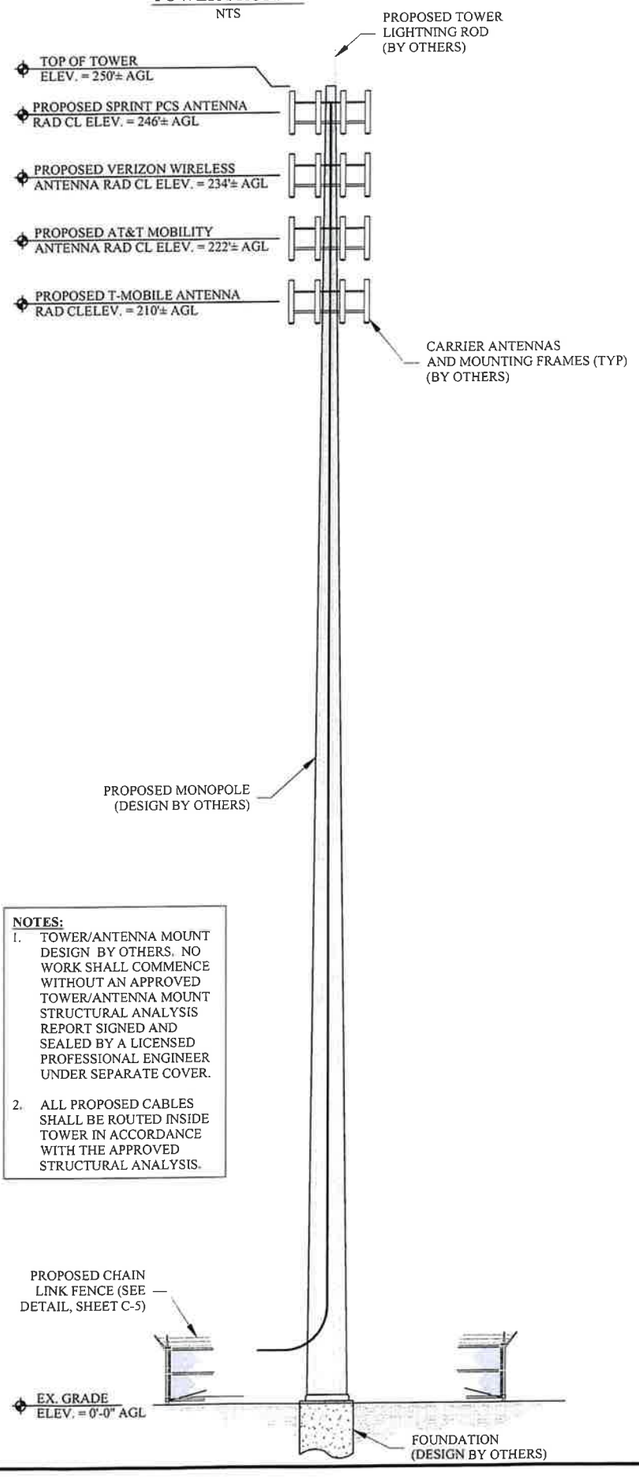
SITE ID:
BU# 876352

SHEET TITLE
GRADING AND EROSION CONTROL PLAN

SHEET NUMBER
C-2.3

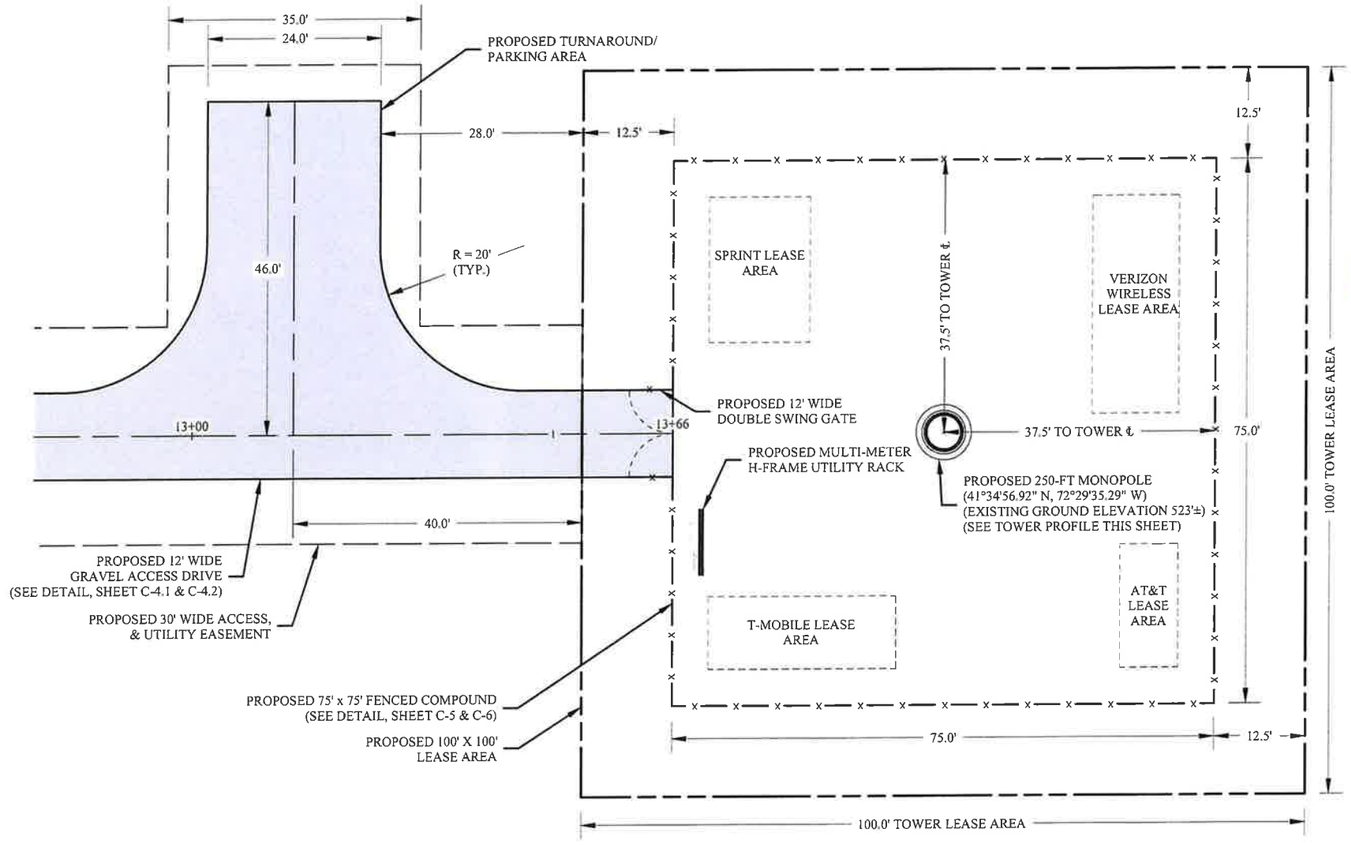
TOWER PROFILE

NTS



NOTES:

1. TOWER/ANTENNA MOUNT DESIGN BY OTHERS. NO WORK SHALL COMMENCE WITHOUT AN APPROVED TOWER/ANTENNA MOUNT STRUCTURAL ANALYSIS REPORT SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER UNDER SEPARATE COVER.
2. ALL PROPOSED CABLES SHALL BE ROUTED INSIDE TOWER IN ACCORDANCE WITH THE APPROVED STRUCTURAL ANALYSIS.

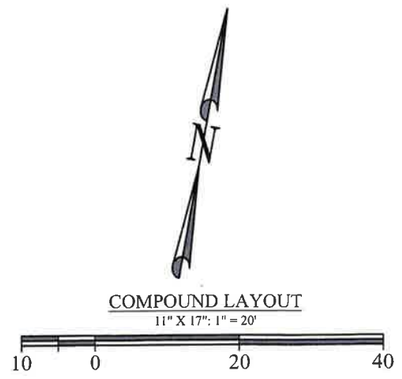


NOTES

1. SEE GENERAL NOTES ON SHEET GN-1

LEGEND

———————	PROPERTY LINE/ROW
— — — — — —	EXISTING EASEMENT
—— —— ——	PROPOSED EASEMENT
———————	PROPOSED LEASE AREA
—— —— ——	WATERBODY
——x——x——	EXISTING FENCE
——x——x——	PROPOSED FENCE
—— — —— —	ROADWAY CENTERLINE
———————	EXISTING EDGE OF PAVEMENT
———————	PROPOSED EDGE OF PAVEMENT
——— OH———	OVERHEAD UTILITY



PREPARED FOR:

CROWN CASTLE

CROWN CASTLE USA, INC.
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
PHONE: (724) 416-2000

PREPARED BY:

DELTA OAKS GROUP

DELTA OAKS GROUP
4904 PROFESSIONAL COURT, 2ND FLOOR
RALEIGH, NC 27609
PHONE: (919) 342-8247

JOSEPH V. BORRELLI JR. P.E.
CONNECTICUT LICENSE NO. 31317

12/16/19

DRAWN BY:	BJW
CHECKED BY:	WRB
APP'D:	MLL
PROJECT NO:	15-03253

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
11/20/19	PRELIMINARY	0	BJW
12/16/19	FINAL ZD's	1	BJW

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SITE NAME:
RICHARD WALL

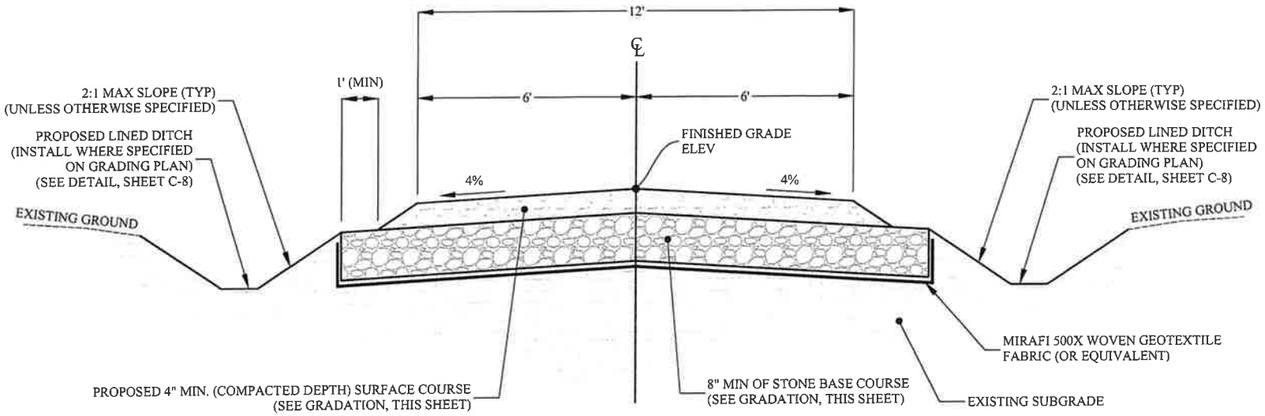
SITE ADDRESS:
8 1/2 LAKEVIEW ST.
EAST HAMPTON, CT 06424

SITE ID:
BU# 876352

SHEET TITLE
TOWER PROFILE & COMPOUND LAYOUT

SHEET NUMBER
C-3

TYPICAL NORMAL CROWN ACCESS ROAD SECTION



NOTES

1. REMOVE ALL TOPSOIL, ORGANIC MATERIAL, AND WET OR POOR SOILS ALONG ACCESS DRIVE. CONTRACTOR TO REVIEW SITE CONDITIONS AND CONSULT GEOTECHNICAL REPORT FOR ANTICIPATED DEPTH OF SOILS THAT WILL REQUIRE REMOVAL (IF AVAILABLE). IF POOR SOILS ARE ENCOUNTERED AT A DEPTH OF MORE THAN 12", CONTACT CONSTRUCTION MANAGER FOR GUIDANCE.

2. SUBGRADE TO BE COMPACTED TO 95% STANDARD PROCTOR AND VERIFIED BY PROOF-ROLL AND OR GEOTECHNICAL PROFESSIONAL OBSERVATION AND OR TESTING.

3. CONSULT GRADING PLAN OR SITE PLAN FOR FINAL SITE GRADES.

ROADBED, GRAVEL COURSE, AND SUBGRADE REQUIREMENTS

1. THICKNESS OF GRAVEL DRIVE BASE COURSE TO BE DETERMINED BASED ON THE EXISTING SOIL BEARING CAPACITY (PER UFC DESIGN RECOMMENDATIONS):

BEARING CAPACITY (PSF)	TOTAL AGGREGATE THICKNESS (IN)
1000	16
1500	12
2000	8

*A HIGH PERFORMANCE, WOVEN GEOTEXTILE FABRIC MAY BE USED TO REPLACE UP TO 50% OR 6" OF AGGREGATE THICKNESS, WHICHEVER IS LESS (MIRAFI HP 270 OR EQUIVALENT). FOR SITES WITH POOR SOILS, THE EQUIVALENT AGGREGATE THICKNESS SHOULD BE DETERMINED FROM THE GEOTECHNICAL REPORT OR FROM SITE SPECIFIC CALCULATIONS.

2. IF POOR OR WET SOILS ARE PRESENT BELOW BASE COURSE, CONTRACTOR TO INSTALL 6" MIN. WELL-GRADED GRAVEL SAND SUB-BASE TO FACILITATE ADEQUATE DRAINAGE AND STABILITY.

3. CONSULT GEOTECHNICAL REPORT (AS AVAILABLE) FOR ANTICIPATED SOIL CONDITIONS.

4. AGGREGATE LAYER GRADATIONS SHALL BE AS FOLLOWS:

REQUIREMENT SIEVE	AGGREGATE BASE COURSE % PASSING	GRAVEL SURFACE COURSE % PASSING
2.5"	-	-
2"	100	-
1.5"	-	-
1"	-	-
3/4"	52-100	100
1/2"	-	-
3/8"	36-70	-
No. 4	24-50	50-78
No. 8	16-38	37-67
No. 16	10-30	-
No. 40	-	15-35
No. 200	0-10	4-15
PLASTICITY INDEX	0-6	4-12

NOTES (FOR IMPROVEMENTS TO EXISTING GRAVEL ROADS)

1. PRIOR TO PLACEMENT OF ADDITIONAL SURFACE OR BASE MATERIAL, EXISTING GRAVEL AND OR DIRT ROADS SHALL BE EXCAVATED AND RESHAPED AS NECESSARY TO REMOVE DEPRESSIONS, POTHOLES, EROSION, RUTTING, WASHBOARDS, OR OTHER SURFACE IRREGULARITIES IN ORDER TO RESTORE THE SPECIFIED ROADWAY SECTION (NORMAL CROWN, SUPER-SLOPED, ETC.).

2. EXISTING ROADWAY SURFACE SHALL BE SCARIFIED PRIOR TO PLACEMENT OF NEW MATERIAL IN ORDER TO ENSURE A SUFFICIENT BOND.

3. FOR AREAS WHERE PAVEMENT IS REMOVED TO CONSTRUCT THE ACCESS ROAD, ALL EXISTING PAVEMENT AGGREGATE LAYERS SHALL BE REMOVED, AND THE EXISTING SUBGRADE COMPACTED AND REWORKED AS NECESSARY TO PROVIDE THE COMPACTION AND SECTION REQUIREMENTS SPECIFIED HEREIN OR IN THE ASSOCIATED GEOTECHNICAL REPORT, WHICHEVER IS MORE STRINGENT.

PREPARED FOR:

CROWN CASTLE

CROWN CASTLE USA, INC.
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
PHONE: (724) 416-2000

PREPARED BY:

DELTA OAKS GROUP

DELTA OAKS GROUP
4904 PROFESSIONAL COURT, 2ND FLOOR
RALEIGH, NC 27609
PHONE: (919) 342-8247

STATE OF CONNECTICUT
JOSEPH V. BORRELLI JR
No. 31317
LICENSED PROFESSIONAL ENGINEER
12/16/19

12/16/19
JOSEPH V. BORRELLI JR, P.E.
CONNECTICUT LICENSE NO. 31317

DRAWN BY	BJW
CHECKED BY	WRB
APPVD	MLL
PROJECT NO.	[illegible]

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
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12/16/19	FINAL ZDS	1	BJW

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RICHARD WALL

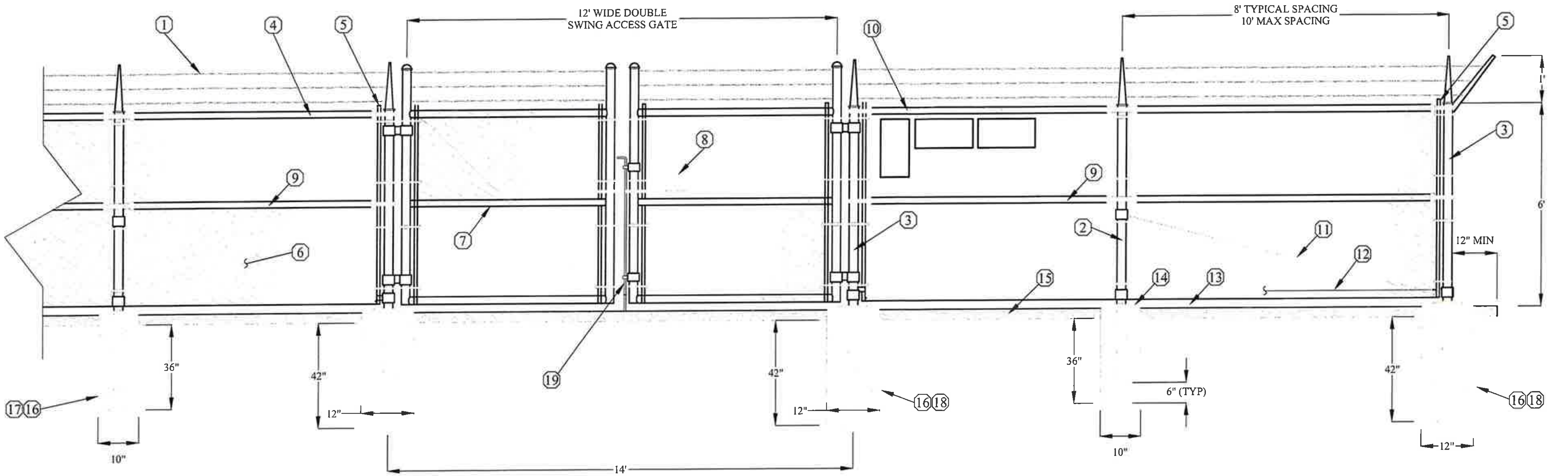
SITE ADDRESS:
8 1/2 LAKEVIEW ST.
EAST HAMPTON, CT 06424

SITE ID:
BU# 876352

SHEET TITLE
CIVIL DETAILS

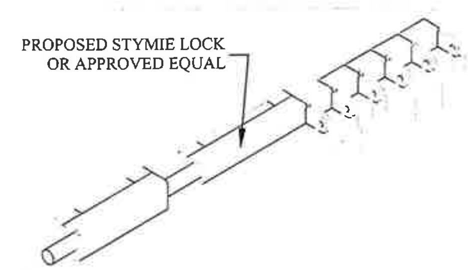
SHEET NUMBER
C-4

COMPOUND FENCE



KEYNOTES:

1. 3 STRANDS OF DOUBLE 12 ½ GAUGE TWISTED STRAND WIRE, WITH 4 POINT 14 GAUGE BARBS SPACED 5" O.C.
2. 2-1/2" NOMINAL GALVANIZED STEEL SCHEDULE 40 INTERMEDIARY LINE POSTS (PER ASTM-F1083). LINE POSTS SHALL BE EQUALLY SPACED AT MAXIMUM 10' O.C.
3. 3" O.D. GALVANIZED STEEL SCHEDULE 40 CORNER AND GATE POSTS (PER ASTM-F1083). IF GATE LEAF WIDTH GREATER THAN OR EQUAL TO 10-FT OR IF FENCE FABRIC EXTENDED OVER 6-FT AND GATE LEAF WIDTH OVER 6-FT, GATE POST SHALL BE 4" O.D. GALVANIZED STEEL SCHEDULE 40 (PER ASTM-F1083).
4. 1-5/8" O.D. SCHEDULE 40 ROUND TOP BRACE RAIL (PER ASTM-F1083)
5. STRETCHER BAR TO EXTEND FULL HEIGHT OF FENCE FABRIC; NOT LESS THAN $\frac{3}{16}$" X $\frac{3}{4}$" CROSS SECTION; PLACE ON ALL GATES AND POSTS
6. 9 GAUGE 1-1/2" X 1-1/2" ANTI-CLIMB MESH FENCE FABRIC (TO CONFORM TO ASTM-A392)
7. GATE FRAME BRACE
8. STYMIE LOCK OR OTHER APPROVED MULTI-TENANT LOCKING DEVICE
9. 1-5/8" DIAMETER POST BRACE (AS REQUIRED)
10. GATE SIGNS (SEE DETAIL, THIS SHEET)
11. 3/8" DIAGONAL BRACE ROD WITH GALVANIZED STEEL TURNBUCKLE OR DIAGONAL THREADED ROD
12. 9 GAUGE ALUMINUM TIE WIRE. PROVIDE HOG RING FABRIC TIES SPACED 12" O.C. FOR POSTS AND GATES AND 24" O.C. FOR RAILS AND WIRE.
13. MAINTAIN A 1" MAXIMUM CLEARANCE FROM FINISHED GRADE
14. PROVIDE CROWNED PITCHED FINISH FOR FENCE POST PIER FOUNDATIONS
15. COMPOUND SECTION AND MATERIALS (SEE DETAIL, SHEET C-5)
16. CONCRETE PIER FOUNDATION: TO ACHIEVE A MINIMUM STRENGTH OF 3000 PSI AT 28 DAYS. CONCRETE DEPTH TO BE AS SPECIFIED HEREIN, AS SPECIFIED BY MANUFACTURER, OR A MINIMUM OF 6" BELOW FROST LINE, WHICHEVER IS GREATER
17. LINE POST CONCRETE PIER FOUNDATION
18. CORNER GATE POST CONCRETE PIER FOUNDATION
19. COMMERCIAL GRADE DROP ROD AND CENTERSTOP (HOOVER FENCE OR EQUIV)

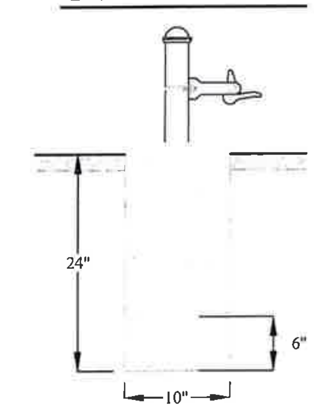


NOTES:

1. FENCE DESIGN AND INSTALLATION NOTES ARE INDUSTRY STANDARDS AND/OR MINIMUM REQUIREMENTS AND ARE FOR GENERAL GUIDANCE ONLY. REFER TO MANUFACTURER'S RECOMMENDATIONS OF THE SPECIFIED PRODUCT AND APPLICABLE GOVERNING CODES FOR FULL INSTALLATION DETAILS. IN THE EVENT OF DISCREPANCIES, MANUFACTURER'S RECOMMENDATIONS OR APPLICABLE CODE SHALL GOVERN, WHICHEVER IS MORE STRINGENT.
2. ALL FENCING TO BE INSTALLED PER ASTM F-567. ALL SWING GATES TO BE INSTALLED PER ASTM F-900.
3. BARBED WIRE PERMIT REQUIRED SHALL BE COMPLETED IF LOCAL ORDINANCE REQUIRES.
4. POST & GATE PIPE SIZES ARE INDUSTRY STANDARDS. ALL PIPE TO BE GALVANIZED (HOT DIP, ASTM A120 GRADE "A" STEEL). ALL GATE FRAMES SHALL BE WELDED. ALL WELDINGS SHALL BE COATED WITH (3) COATS OF GOLD GALV. (OR EQUAL). ALL OPEN POSTS SHALL HAVE END-CAPS.
5. ALL SIGNS MUST BE MOUNTED ON INSIDE OF FENCE FABRIC USING GALVANIZED HOG-RING WIRE.
6. ALL SIGNS AND SIGN PLACEMENT SHALL ADHERE TO THE REQUIREMENTS OF OSHA 1910.145 AND 1910.200 AND ALL APPLICABLE FCC CODES.
7. DROP ROD AND CENTERSTOP REQUIRED FOR GATE. GENERAL CONTRACTOR RESPONSIBLE FOR GATE LOCK.

GATE SIGNS

GATE KEEPER



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JOSEPH V. BORRELLI JR, P.E.
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CHECKED BY	WRB
APPV'D	MLL
PROJECT NO.	[illegible]

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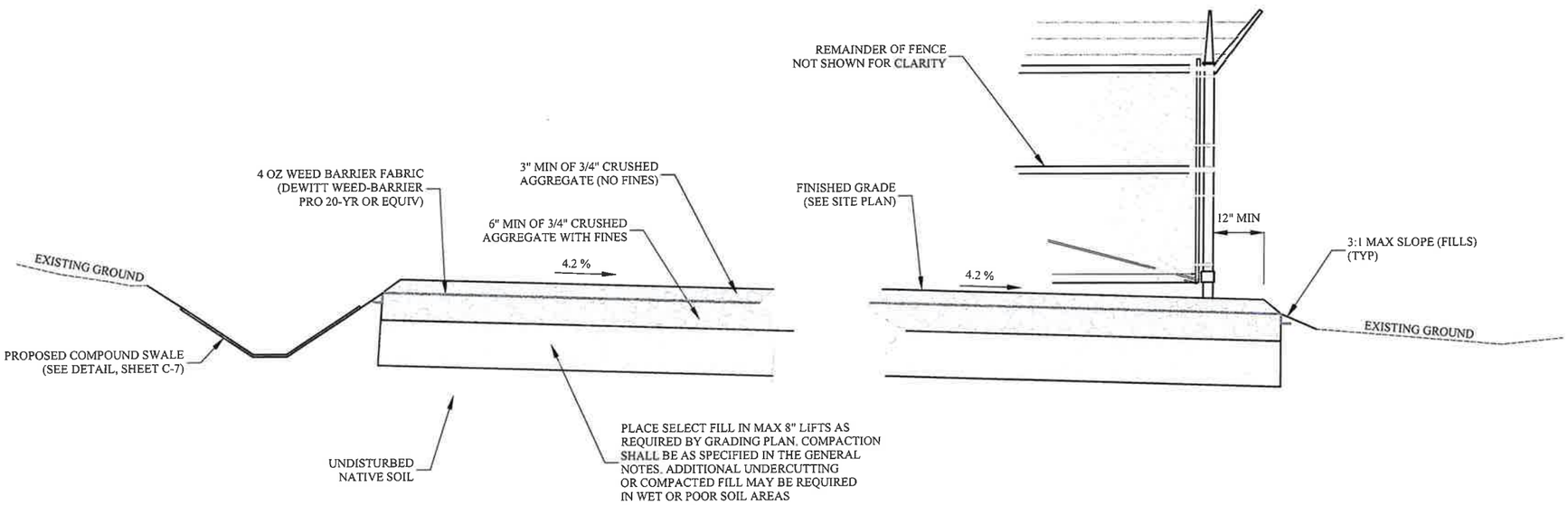
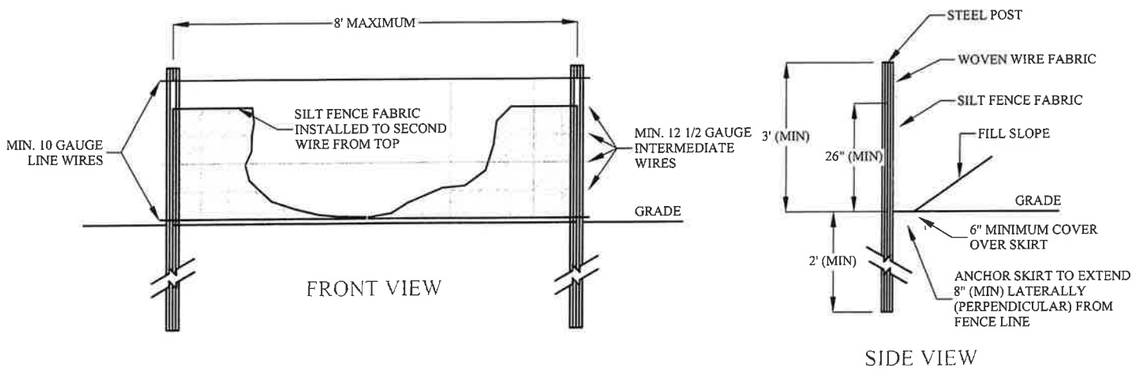
SHEET TITLE
CIVIL DETAILS

SHEET NUMBER
C-5

COMPOUND SECTION



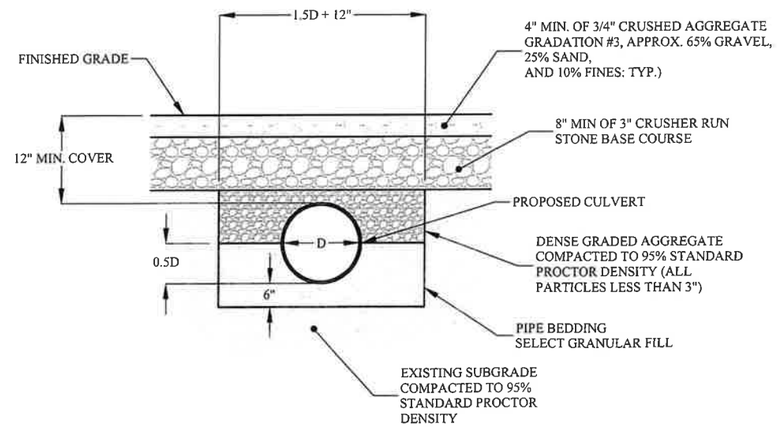
TEMPORARY SILT FENCE



NOTE:

1. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.

CULVERT TRENCH DETAIL (TRAFFIC AREAS)



NOTES:
BEDDING ZONE SHOULD BE FREE OF DEBRIS. PLACE BEDDING MATERIAL AT MIN. 6" THICKNESS.

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STATE OF CONNECTICUT
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12/16/19

12/16/19
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CONNECTICUT LICENSE NO. 31317

DRAWN BY:	BJW
CHECKED BY:	WRB
APPV'D:	MLL
PROJECT NO:	18-01256

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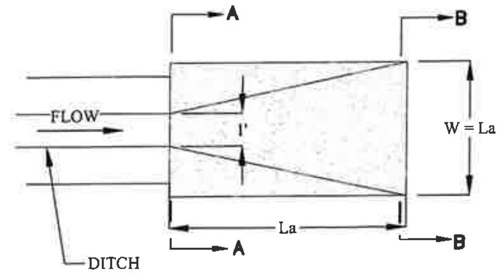
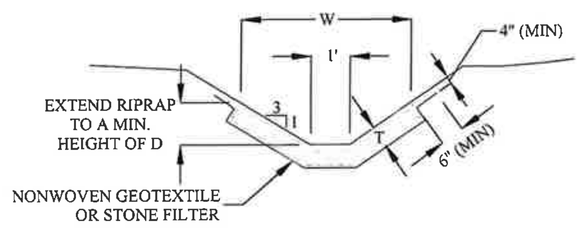
SHEET TITLE
CIVIL DETAILS

SHEET NUMBER
C-6

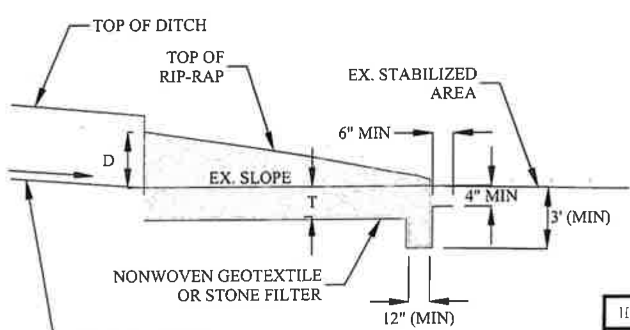
RIP-RAP OUTLET
(DISCHARGE FROM DITCH TO UNCONFINED AREA)



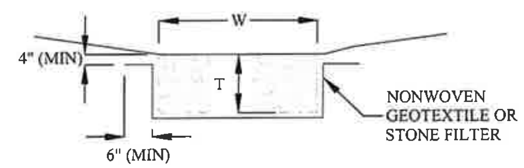
PLAN VIEW



SECTION A-A



PROFILE



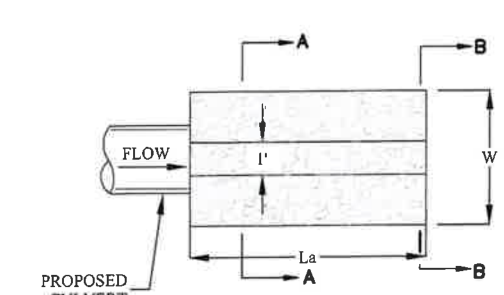
SECTION B-B

ID	D	La	W	T	RIP-RAP MATERIAL
1	1'	10'	10'	12"	D50 = 6 IN
2	1'	10'	10'	12"	D50 = 6 IN

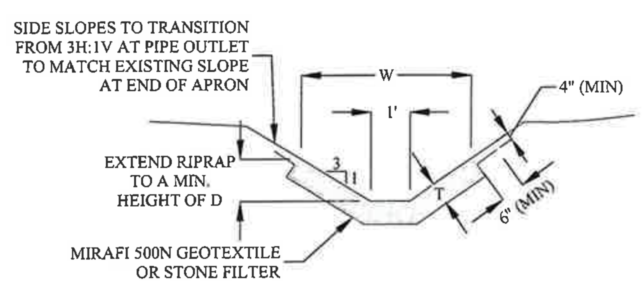
CONSTRUCTION SPECIFICATIONS

1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (¾ TO 1½ INCH MINIMUM STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
5. THE THICKNESS SPECIFIED ABOVE IS MEASURED NORMAL TO THE UNDERLYING GROUND SLOPE AND SHALL BE MAINTAINED THROUGH THE ENTIRE LENGTH AND LATERAL EXTENTS OF THE RIP-RAP SECTION. IN NO CASE SHALL THE THICKNESS BE LESS THAN THE MAXIMUM STONE DIAMETER OF THE SPECIFIED RIP-RAP MATERIAL.
6. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
7. CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLODGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

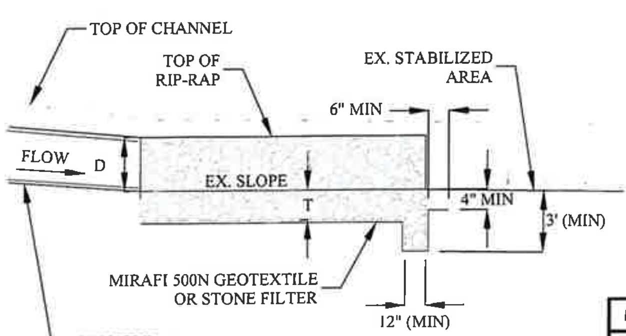
RIP-RAP OUTLET PROTECTION
(CULVERT DISCHARGE TO CONFINED AREA)



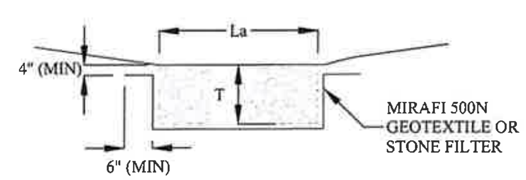
PLAN VIEW



SECTION A-A



PROFILE



SECTION B-B

ID	D	La	W	T	RIP-RAP MATERIAL
1	15"	10'	7'	12"	D50 = 6 IN
2	15"	10'	7'	12"	D50 = 6 IN
3	15"	10'	7'	12"	D50 = 6 IN

PREPARED FOR:

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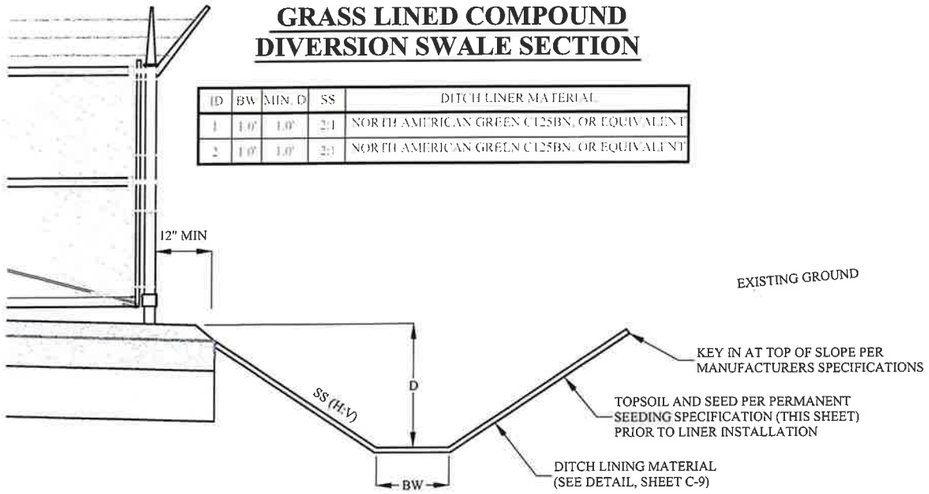
SHEET TITLE
CIVIL DETAILS

SHEET NUMBER
C-7

GRASS LINED COMPOUND DIVERSION SWALE SECTION

ID	BW	MIN. D	SS	DITCH LINER MATERIAL
1	1.0'	1.0'	2:1	NORTH AMERICAN GREEN C125BN, OR EQUIVALENT
2	1.0'	1.0'	2:1	NORTH AMERICAN GREEN C125BN, OR EQUIVALENT



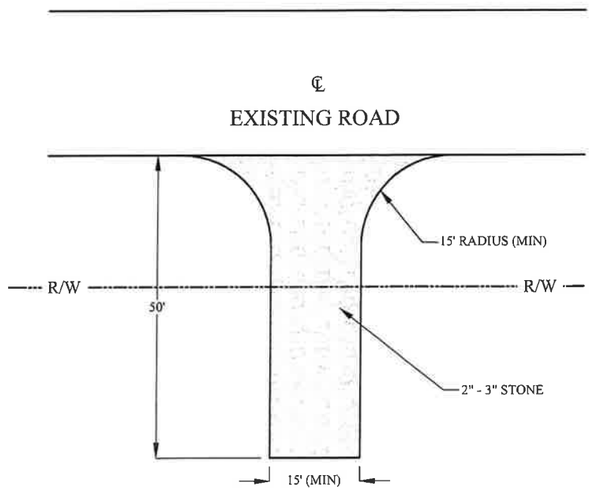
NOTES

1. REMOVE ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL FROM THE CHANNEL SECTION AND DISPOSE OF PROPERLY (THE CHANNEL SECTION SHOULD BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH OBSTRUCT NORMAL FLOW).
2. EXCAVATE AND SHAPE CHANNEL TO DIMENSIONS SHOWN ON PLANS. OVERCUT ENTIRE CHANNEL 0.3 FT TO ALLOW FOR BULKING DURING SEED BED PREPARATION AND GROWTH OF VEGETATION.
3. GRADE SITE AND ROAD SO THAT SURFACE WATER MAY ENTER THE CHANNEL FREELY. AVOID BERMING SOIL ALONG THE ADJACENT ROADWAY OR CUT SLOPE THAT WOULD PREVENT RUNOFF FROM ENTERING THE CHANNEL SECTION.
4. STABILIZE OUTLETS AND INSTALL SEDIMENT TRAPS AS NEEDED DURING CHANNEL INSTALLATION.
5. VEGETATE THE CHANNEL PER PERMANENT SEEDING SPECIFICATION IMMEDIATELY AFTER GRADING. SMOOTH SLOPES FACILITATE MAINTENANCE.
6. CONTRACTOR TO MAXIMIZE "BW" AS SPACE ALLOWS.

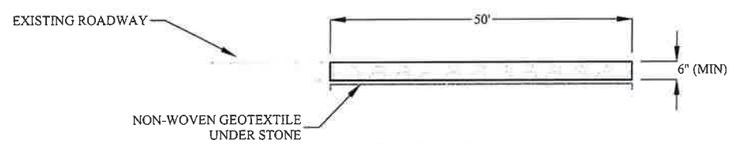
TEMPORARY CONSTRUCTION ENTRANCE

NOTES

1. TURNING RADIUS TO BE INCREASED AS REQUIRED TO ACCOMMODATE CONSTRUCTION TRAFFIC
2. CONSTRUCTION TRAFFIC SHOULD ENTER AND LEAVE SITE AT CONSTRUCTION ENTRANCES ONLY (UTILIZE SILT FENCE OR OTHER BARRIER TO ENCOURAGE USE OF CONSTRUCTION ENTRANCE)
3. MATERIAL TRACKED ONTO THE ADJACENT ROADWAY MUST BE CLEANED IMMEDIATELY
4. CONSTRUCTION ENTRANCE MUST BE MAINTAINED IN GOOD WORKING CONDITION AT ALL TIMES. FAILURE OF THE CONSTRUCTION ENTRANCE TO REMOVE SEDIMENT FROM CONSTRUCTION TRAFFIC PRIOR TO LEAVING THE SITE MAY NECESSITATE A WASHING STATION.



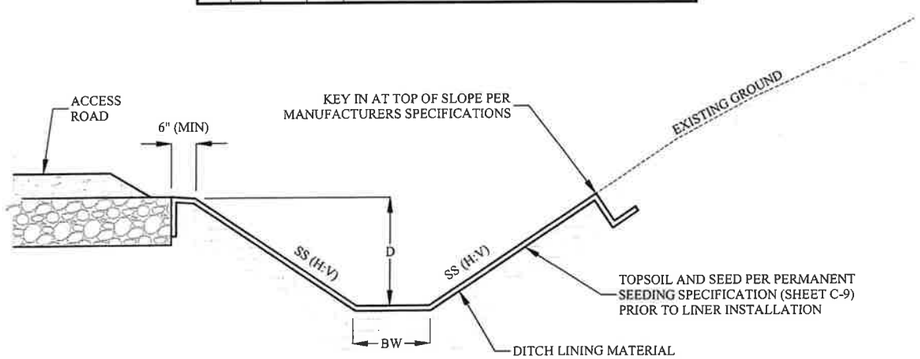
PLAN VIEW



CROSS SECTION

ROADWAY DITCH SECTION

ID	BW	MIN. D	SS	EROSION CONTROL MATTING
1	1.0'	1.0'	2:1	NORTH AMERICAN GREEN ROLLMAX BIONET C125BN
2	1.0'	1.0'	2:1	NORTH AMERICAN GREEN ROLLMAX BIONET C125BN
3	1.0'	1.0'	2:1	NORTH AMERICAN GREEN ROLLMAX BIONET C125BN



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DRAWN BY	BJW
CHECKED BY	WRD
APPVD.	MLL
PROJECT NO.	19-0325

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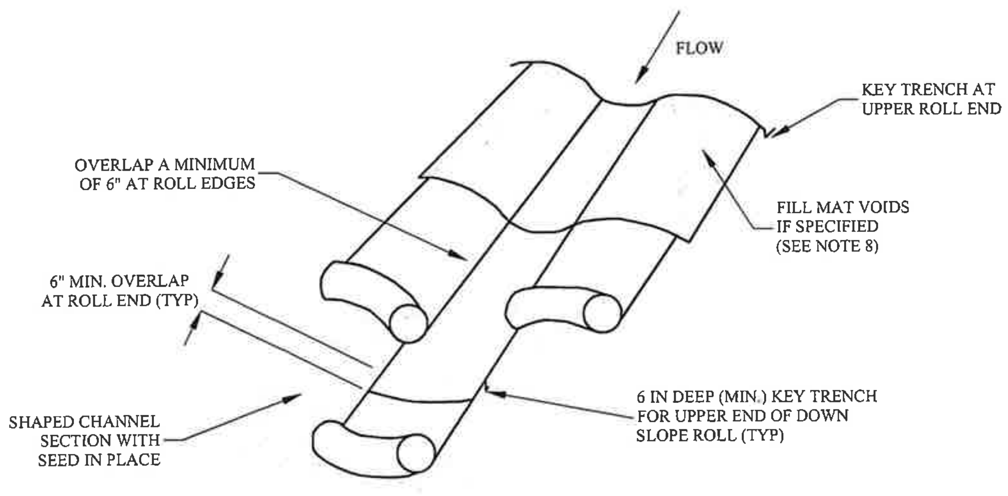
SITE ID:
BU# 876352

SHEET TITLE
CIVIL DETAILS

SHEET NUMBER
C-8

PERMANENT SOIL STABILIZATION MATTING - CHANNEL



ISOMETRIC VIEW

* MATTING INSTALLATION NOTES ARE MINIMUM REQUIREMENTS AND ARE FOR GENERAL GUIDANCE ONLY. REFER TO MANUFACTURER'S RECOMMENDATIONS OF THE SPECIFIED PRODUCT FOR FULL INSTALLATION DETAILS. IN THE EVENT OF DISCREPANCIES, MANUFACTURER'S RECOMMENDATIONS SHALL GOVERN.

NOTES:

1. USE PERMANENT NORTH AMERICAN GREEN C125BN OR APPROVED EQUIVALENT.
2. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
3. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
4. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
5. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
6. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
7. STAPLE STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
8. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL MAT CONTACT WITHOUT CRUSHING MAT.

PERMANENT SEEDING SPECIFICATION

SEEDING SCHEDULE

1. STRIP AND STOCKPILE TOPSOIL IN THE DESIGNATED LOCATIONS SHOWN ON THE GRADING AND EROSION CONTROL PLAN. SPREAD TOPSOIL TO A MIN. 4 TO 6-INCH DEPTH IN ALL DISTURBED AREAS NOT RECEIVING A GRAVEL SURFACE TREATMENT.
2. SHAPE ALL AREAS TO TYPICAL CROSS SECTION AND DRESS SAME AS REQUIRED.
3. SPREAD FERTILIZER AND PREPARE SEED BED (SEE GENERAL NOTES, SHEET GN-1). THE REQUIRED FERTILIZER AND AGRICULTURAL LIMESTONE SHALL BE SPREAD UNIFORMLY OVER THE AREA TO BE TOP SEEDED (THE FERTILIZER ONLY APPLIED IF IT WAS APPLIED IN PREVIOUS OPERATION). AFTER THE FERTILIZER AND LIMESTONE HAS BEEN SPREAD, THE AREA SHALL BE THOROUGHLY PULVERIZED AND THE FERTILIZER INCORPORATED IN THE TOP FOUR (4) INCHES OF THE GRADED AREAS.
4. IN THE ABSENCE OF A SOIL TEST, FERTILIZER AND AGRICULTURAL LIMESTONE SHALL BE APPLIED AT THE FOLLOWING RATES:
   COMBINATION FERTILIZER (10-20-20) - 500 LBS. PER ACRE
   AGRICULTURAL LIMESTONE - 2.5TONS PER ACRE (IF APPLICABLE)
5. SEEDING AND/OR SODDING IS REQUIRED ON DISTURBED AREAS. ALL AREAS SHOULD RECEIVE SEED MIX AS FOLLOWS:
   RED FESCUE - 10 LBS. PER ACRE
   CANADA WILDRYE - 5 LBS. PER ACRE
   PERENNIAL RYEGRASS - 10 LBS. PER ACRE
   KENTUCKY BLUEGRASS - 5 LBS. PER ACRE
6. SEEDING OPERATIONS SHOULD BE PERFORMED WITHIN ONE OF THE FOLLOWING PERIODS:
   SPRING (MARCH 15 - JUNE 30) &
   FALL (AUGUST 15 TO OCTOBER 31
7. ALL AREAS SHALL BE COVERED WITH A BALED STRAW MULCH (OAT, WHEAT, RICE, BARLEY, ETC.) AT THE RATE OF 1.5 TO 2.0 TONS PER ACRE. THE MULCH SHALL BE DRY AND FREE OF WEEDS. THE MULCH SHALL BE SPREAD AND ANCHORED IN SUCH A MANNER AS TO GIVE A UNIFORM COVER OVER THE ENTIRE AREA.
8. THE CONTRACTOR SHALL MAINTAIN THE GRASSED AREAS IN A SATISFACTORY MANNER UNTIL A GOOD GROWTH IS ASSURED AND FINAL ACCEPTANCE IS MADE BY THE CLIENT. MAINTENANCE WORK SHALL INCLUDE WATERING (WHEN NECESSARY), RESTORING/ REPLACING GRASS, FILLING WASHES AND MOWING, IF NECESSARY.
9. WHEN GRASS OR GRASSES HAVE OVERLAPPING GROWTH (MIN. 85% COVERAGE), THE AREA SHALL BE CONSIDERED TO HAVE SATISFACTORY GROWTH.

CONSTRUCTION SEQUENCE

CONSTRUCTION SEQUENCE

1. PROJECT STAKEHOLDERS TO CONDUCT PRE-CONSTRUCTION MEETINGS AS REQUIRED BY THE GOVERNING AUTHORITY
2. INSTALL SILT FENCE (AS SHOWN ON THE PLANS AND DOWNSTREAM OF ALL EXCAVATED AREAS), CONSTRUCTION ENTRANCE, AND/OR SOIL STOCKPILING AREAS PRIOR TO THE COMMENCEMENT OF GRADING
3. CLEAR AND GRUB REMAINING AREAS AND PROCEED WITH ROUGH GRADING (INCLUDING DITCHES AND SWALES); INSTALL ADDITIONAL EROSION CONTROL MEASURES AFTER GRADING BEGINS AS REQUIRED
4. INSTALL ON-SITE UTILITIES AND STORMWATER MANAGEMENT FACILITIES (PROPOSED CULVERTS AND OTHER STORMWATER COLLECTION SYSTEMS) AND TEMPORARY STABILIZATION AS SHOWN ON PLANS
5. CONSTRUCT TOWER FOUNDATION AND COMMUNICATION FACILITIES AS APPLICABLE
6. FINISH GRADE PROPOSED ACCESS DRIVE, STORAGE CHANNELS, INFILTRATION TRENCH, AND TOWER COMPOUND
7. STABILIZE GRAVEL AND PAVED AREAS PER PLANS, TOPSOIL AND PERMANENTLY SEED DENUDED CUT/FILL SLOPES AND INSTALL EROSION CONTROL MATTING, CHANNEL LINING, RIP-RAP APRONS, ETC. AS SPECIFIED ON PLANS (PERMANENT COVER SHOULD BE INSTALLED WITHIN 7-DAYS AFTER FINISHED GRADES HAVE BEEN ESTABLISHED)
8. MAINTAIN PERIMETER SILT FENCE AND OTHER PERIMETER SOIL EROSION CONTROL MEASURES AS APPLICABLE UNTIL PERMANENT GROUND COVER IS ESTABLISHED
9. REMOVE ANY EROSION CONTROL MEASURES FROM AREAS THAT HAVE BEEN PERMANENTLY STABILIZED AND STABILIZE AREAS OF THE DEVICE(S) REMOVAL
10. FOR ANY DENUDED AREA TO BE CONSIDERED PERMANENTLY STABILIZED, THE DENUDED AREA SHOULD BE UNIFORMLY COVERED IN PERENNIAL VEGETATION WITH A DENSITY OF 85% OR GREATER, OR COVERED IN OTHER NON-VEGETATIVE MATERIAL WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION

PREPARED FOR:
CROWN CASTLE
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PREPARED BY:
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4904 PROFESSIONAL COURT, 2ND FLOOR
RALEIGH, NC 27609
PHONE: (919) 342-8247

JOSEPH V. BORRELLI JR, P.E.
CONNECTICUT LICENSE NO. 31317
12/16/19

DRAWN BY	BJW
CHECKED BY	WRB
APP'VD	MLL
PROJECT NO	[illegible]

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
11/20/19	PRELIM ZDs	0	BJW
12/16/19	FINAL ZDs	1	BJW

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GENERAL NOTES

1. THE SCOPE OF WORK DEPICTED IN THIS PLANSET MUST BE COMPLETED UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE SUBSTANTIAL EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS PROJECT, THE CONTRACTOR IS CONFIRMING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY TO COMPLETE THE WORK, THAT HE IS KNOWLEDGEABLE OF THE SCOPE OF WORK TO BE PERFORMED AND THAT HE IS LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE AND/OR COUNTY IN WHICH IT IS TO BE PERFORMED.
2. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST VERSION OF THE LOCAL AND NATIONAL BUILDING CODE, WHICHEVER IS MORE STRINGENT.
3. SHOP DRAWINGS AND/OR MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS REGARDING ANY HARDWARE, INFRASTRUCTURE, OR MATERIALS SPECIFIED HEREIN SHALL BE FOLLOWED EXACTLY AND SHALL SUPERCEDE ANY CONFLICTING INFORMATION CONTAINED HEREIN.
4. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS NOT PROVIDED BY OWNER. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PERMITS AS ISSUED AND ANY AND ALL APPLICABLE STATE, COUNTY, AND LOCAL CODES.
5. THE CONTRACTOR SHALL VERIFY ALL EXISTING TOPOGRAPHY, DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS ARE AS INDICATED ON THESE DRAWINGS. ADDITIONALLY, THE CONTRACTOR SHALL ESTABLISH THE LOCATION OF UNDERGROUND AND OVERHEAD UTILITIES AND SERVICES. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND OWNER'S ENGINEER FOR RESOLUTION AND/OR MODIFICATION PRIOR TO COMMENCEMENT OF THE WORK.
6. EXISTING IMPROVEMENTS DAMAGED OR DESTROYED AS A RESULT OF CONSTRUCTION OPERATIONS SHALL BE REPLACED OR RESTORED TO THEIR ORIGINAL CONDITION OR BETTER, AND TO THE SATISFACTION OF THE OWNER OF THE IMPROVEMENTS
7. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONS, CERTIFICATIONS, AND/OR ANY OTHER REQUIREMENTS WHICH MUST BE MET TO FULFILL THE SCOPE OF WORK AS REPRESENTED IN THIS PLAN SET, OBTAIN A CERTIFICATE OF OCCUPANCY, OR OTHERWISE ALLOW FOR THE FULL INTENDED USE OF THE PROPOSED FACILITY
8. THESE PLANS/DRAWINGS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR ENGINEER SHALL NOT INCLUDE INSPECTION OF THE CONSTRUCTION PROCEDURES AND DOES NOT ALLEVIATE CONTRACTOR FROM THE FOREGOING. ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND/OR METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
9. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE AND IMPLEMENT BOTH THE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE, ALL SURROUNDING INFRASTRUCTURE, WORKSPACE, EMPLOYEES, AND PUBLIC DURING ERECTION AND/OR MODIFICATIONS. THIS INCLUDES BUT IS NOT LIMITED TO TEMPORARY BRACING, GUYS, TIE DOWNS, OR OTHER SUPPORTS THAT MAY BE NECESSARY DURING CONSTRUCTION.
10. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTION MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION.
11. IF DEVIATIONS FROM THE DRAWINGS OR SPECIFICATIONS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEVIATION AND REASONS THEREOF SHALL BE SUBMITTED TO THE OWNER AND ENGINEER FOR REVIEW. NO DEVIATIONS FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE OWNER AND/OR ENGINEER
12. THE CONTRACTOR MUST, AT ALL TIMES, KEEP THE PREMISES FREE FROM ACCUMULATIONS OF WASTE MATERIALS OR RUBBISH CAUSED BY HIM, HIS EMPLOYEES, OR HIS WORK. ALL DEBRIS SHALL BE REMOVED FROM THE PROJECT SITE ON A DAILY BASIS
13. CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS (INCLUDING THE GENERAL PUBLIC) AND PROPERTY (INCLUDING ADJOINING PROPERTIES). THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY, AND HOLD THE OWNER AND DESIGN PROFESSIONAL HARMLESS OF ANY AND ALL LIABILITY REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR DESIGN PROFESSIONAL.

GENERAL NOTES (CONT.)

13. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL WORK ASSOCIATED WITH THIS PROJECT COMPLIES WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL SAFETY CODES AND OTHER REGULATIONS GOVERNING THE WORK.
14. ACCESS TO THE PROPOSED SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER OR THE OWNER'S REPRESENTATIVE REGARDING ALL CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIAL ACCESS.

EXISTING INFRASTRUCTURE

1. EXISTING TOPOGRAPHIC, UTILITY, PLANIMETRIC, AND BOUNDARY INFORMATION IS TAKEN FROM ALTA SURVEY DRAWING ENTITLED "RICHARD WALL" BY JONATHAN MURPHY PROFRESSIONAL LAND SURVEYING OF 10505 LEAFWOOD PLACE, RALEIGH, NC 27613; (919)280-8189.
2. THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES IN THE AREA OF ANY PROPOSED CONSTRUCTION OR PROPOSED DISTURBANCE DUE TO CONSTRUCTION. THE LOCATION OF ALL EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON THE PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COSTS LOCATE ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE, OTHER OBSTRUCTIONS OR FROM ANY DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES AND IS RESPONSIBLE FOR CONTACTING ALL NON-SUBSCRIBING UTILITIES. CONTACT ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLANS OR IF THERE APPEARS TO BE A CONFLICT BETWEEN EXISTING AND PROPOSED UTILITY LOCATIONS.

UTILITIES

1. CONTRACTOR SHALL COORDINATE WITH THE OWNER REGARDING THE REQUIREMENTS AND LIMITS OF CLEARANCE FOR OVERHEAD AND/OR UNDERGROUND ELECTRICAL SERVICE
2. ALL UNDERGROUND UTILITIES SHALL BE INSTALLED AND TESTED SATISFACTORILY PRIOR TO COMMENCING ANY PAVING ACTIVITY WHERE SUCH UTILITIES ARE WITHIN THE LIMITS OF PAVEMENT
3. UNLESS OTHERWISE SPECIFIED HEREIN, MINIMUM COVER FOR CONDUITS SHALL BE 36-INCHES

GRADING

1. CONTRACTOR IS TO CONTACT 811 CONNECTICUT, INC AT 1-888-922-4455 FOR UNDERGROUND UTILITY LOCATION 48 HOURS PRIOR TO ANY GROUND DISTURBANCE.
2. ALL CONSTRUCTION AREAS ARE TO BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL, ORGANICS AND UNSUITABLE MATERIALS PRIOR TO GRADING AND IN ACCORDANCE WITH THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT.
3. EXCAVATIONS SHOULD BE SLOPED OR SHORED IN ACCORDANCE AND COMPLIANCE WITH OSHA 29 CFR PART 1926, EXCAVATION TRENCH SAFETY STANDARDS AS WELL AS LOCAL, STATE AND FEDERAL REGULATIONS.
4. ALL FILL PLACEMENT INCLUDING SUITABILITY OF FILL MATERIALS AND COMPACTION OF MATERIALS SHOULD BE CONDUCTED IN ACCORDANCE WITH THE RECOMMENDATONS SET FORTH IN THE GEOTECHNICAL REPORT. IN THE ABSENCE OF FILL SPECIFICATIONS, THE FOLLOWING MINIMUM REQUIREMENTS SHOULD BE ADHERED TO:
   - 4.1. FILL LIFT THICKNESS SHOULD NOT EXCEED 8 INCHES LOOSE.
   - 4.2. FILL MATERIALS SHOULD NOT BE PLACED ON SATURATED OR FROZEN SURFACES
   - 4.3. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER OJECTIONABLE MATERIALS THAT WOULD PREVENT THE CONSTRUCTION AND/OR COMPACTION OF SATISFACTORY FILLS. THIS INCLUDES SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS
   - 4.4. ALL FILLS SHOULD BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE, OR OTHER RELATED PROBLEMS. ALL FILL AREAS WITHIN BUILDINGS OR OTHER STRUCTURES, TRAVEL/ACCESS ROUTES, PARKING AREAS AND EXTENDING 5-FT (MINIMUM) OUTSIDE OF THOSE AREAS' FOOTPRINT, SHOULD BE COMPACTED TO +/- 95% OF MAXIMUM DRY DENSITY OF THE MATEIRAL AS OBATINED BY THE STANDARD PROCTOR METHOD.

** DELTA OAKS GROUP MAKES NO CLAIM TO THE VALIDITY OF THESE RECOMMENDATIONS TO THE SITE'S SPECIFIC GEOTECHNICAL CONDITIONS AND STRONGLY RECOMMENDS A SITE-SPECIFIC GEOTECHNICAL INVESTIGATION BE PERFORMED. ANY AND ALL FILL RECOMMENDATIONS PRESENTED IN SUCH A REPORT WILL TAKE PRECEDENCE OVER THE INFORMATION PRESENTED HEREIN.*

GRADING (CONT.)

5. THE CONTRACTOR SHALL REWORK ALL MATERIALS NOT SUITABLE FOR USE IN THEIR PRESENT STATE DUE TO MOISTURE CONTENT VARIATION. IF THE MATERIAL REMAINS UNSUITABLE AFTER INITIAL REWORKING, THE CONTRACTOR SHALL REMOVE AND REPLACE WITH NEW MATERIAL IN ACCORDANCE WITH THE GEOTECHNICAL REPORT RECOMMENDATIONS.
6. IN THE ABSENCE OF A GEOTECHNICAL REPORT A GEOTECHNICAL ENGINEER SHOULD BE RETAINED TO PROVIDE SITE SPECIFIC RECOMMENDATIONS/OVERSIGHT.
7. DELTA OAKS GROUP MAKES NO CLAIMS TO THE SUITABILITY OF ANY ON-SITE MATERIALS FOR USE AS FILL TO SUPPORT ANY PROPOSED INFRASTRUCTURE.
8. SPOT ELEVATIONS REPRESENT FINISHED GRADE UNLESS OTHERWISE NOTED.
9. ALL TEMPORARY AND FINISHED GRADES MUST MAINTAIN ADEQAUTE SURFACE DRAINAGE SO THAT RUN-OFF IS DIRECTED TO DEDICATED OFF-SITE AREAS OR TO ON-SITE COLLECTION POINTS SUCH AS SWALES, CATCH BASINS, DROP INLETS, CULVERTS, STORMWATER BMP'S, ETC. TO PREVENT SURFACE PONDING, STANDING WATER, OR EXTENDED PERIODS OF SOIL SATURATION.

EROSION AND SEDIMENT CONTROL

1. THE DISTURBED AREA IS APPROXIMATELY 34,700 SQUARE FEET.
2. THE RECEIVING WATERCOURSE IS POCOTOPAUG LAKE.
3. THE PROPOSED TOWER LEASE AREA IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD ZONE PER FIRM #09007C0155G WITH EFFECTIVE DATE AUGUST 28, 2008.
4. CUT AND FILL SLOPES SHOULD BE STABILIZED WITHIN 7 DAYS DURING ANY PHASE OF GRADING
5. STREETS ADJACENT TO THE PROJECT SHALL BE KEPT CLEAN AT ALL TIMES FROM SEDIMENT OR OTHER CONSTRUCTION GENERATED MATERIAL OR A WASH STATION WILL BE REQUIRED
6. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS REGARDING EROSION AND SEDIMENT CONTROL FOR THE AGENCY HAVING JURISDICTION OVER CLEARING AND GRADING PROCEDURES. UTILIZE BEST MANAGEMENT PRACTICES (BMPS) DESCRIBED IN THE GOVERNING AGENCY'S OR APPLICABLE STATE'S CODE IN ORDER TO BOTH PREVENT/MINIMIZE CONCENTRATED FLOWS THROUGH OR ACROSS UNSTABILIZED/DENUDED AREAS AND PREVENT/MINIMIZE SEDIMENT LADEN STORMWATER RUNOFF FROM LEAVING THE CONSTRUCTION SITE. SPECIFIC BMP EXAMPLES INCLUDE SILT FENCE, CONSTRUCTION ENTRANCE(S), PERIMETER DIVERSION SWALES, INLET PROTECTION, AND OTHER APPLICABLE MEASURES.
7. CONTRACTOR AND/OR OWNER SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL DEVICES SPECIFIED HEREIN AND ANY ADDITIONAL CONTROLS THAT MAY BECOME NECESSARY IN ORDER TO ENSURE THE PROTECTION OF ADJACENT PROPERTIES AND WATERWAYS. ALL TEMPORARY DEVICES SHALL BE APPROPRIATELY MAINTAINED UNTIL ALL EARTH DISTURBING ACTIVITIES HAVE CEASED AND THE PROJECT IS STABILIZED AND APPROVED.
8. EROSION CONTROL MEASURES SHALL BE CHECKED DAILY AND IMMEDIATELY FOLLOWING ANY RAINFALL EVENTS. ANY NOTED DEFICIENCIES WILL BE CORRECTED IMMEDIATELY (NO LATER THAN THE END OF EACH DAY). IMMEDIATELY UPON THE DISCOVERY OF UNFORESEEN CIRCUMSTANCES THAT POSE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE CONTRACTOR SHALL IMPLEMENT APPROPRIATE BMPS TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENTATION.
9. ALL DENUDED CUT/FILL SLOPES STEEPER THAN OR EQUAL TO 2:1 SHALL BE PROTECTED WITH NORTH AMERICAN GREEN SC125 OR EQUIVALENT UNLESS ALTERNATIVE SLOPE PROTECTION MEASURES ARE APPROVED
10. ALL CONSTRUCTION TRAFFIC SHALL ENTER AND EXIT THE SITE VIA THE CONSTRUCTION ENTRANCES

PANEL SCHEDULE

1. SERVICE BOND IS TO BE MADE BY DEVICES (STRAPS, SCREWS, ETC. SUPPLIED BY EQUIPMENT MANUFACTURER. IF NO SUCH DEVICE IS SUPPLIED, BOND IS TO BE MADE IN ACCORDANCE WITH NEC ARTICLE 250
2. CONDUCTOR OVERCURRENT PROTECTION DEVICES ARE SELECTED IN ACCORDANCE WITH NEC ARTICLE 240-3.
3. CONDUCTOR SIZING IS SELECTED FROM NEC ARTICLE 310-16
4. ALL LUGS THAT HOLD MORE THAN ONE WIRE SHALL BE LISTED FOR MULTI-BARREL CONNECTIONS
5. ALL CONDUCTORS SHALL BE INSULATED THHN WIRE

CONSTRUCTION REQUIREMENTS

1. UPON ISSUANCE OF BID AWARD, CONTRACTOR WILL BE REQUIRED TO PROVIDE PROOF OF LICENSE TO PERFORM WORK IN APPLICABLE JURISDICTION
2. CONTRACTOR WILL PROVIDE A CONSTRUCTION SCHEDULE PRIOR TO COMMENCEMENT OF CONSTRUCTION. SCHEDULE SHALL BE UPDATED IMMEDIATELY AND SUBMITTED TO OWNER IN EVENT OF DELAYS OR REQUIRED TIME EXTENSTIONS. ALL DELAYS AND/OR TIME EXTENSIONS WILL BE ACCOMPANIED BY EXPLANATIONS FOR EACH OCCURRENCE.
3. DURING CONSTRUCTION, CONTRACTOR SHALL PROVIDE OWNER OR OWNER'S REPRESENTATIVE WITH PHOTOGRAPHS OF MAJOR CONSTRUCTION MILESTONES AS THEY OCCUR.
4. CONTRACTOR OR CONTRACTOR'S REPRESENTATIVE SHALL BE PREPARED TO ATTEND WEEKLY CONFERENCE CALLS WHERE SPECIFIC DETAILS, INCLUDING PROGRESS REPORTS, UNFORESEEN SITE CONDITIONS, SCHEDULE CHANGES, SAFETY CONCERNS, ETC. REGARDING THE SITE WILL BE DISCUSSED.
5. CONTRACTOR WILL UTILIZE, ADHERE TO, AND SUBMIT (AS REQUIRED) ALL OWNER PROVIDED DOCUMENTATION.
6. CONTRACTOR IS RESPONSIBLE FOR COMPLETION OF ALL CONCRETE COMPRESSIVE STRENGTH TESTING (INCLUDING THE SUBMITTAL OF FINAL TESTING RESULTS AND CLOSE-OUT BOOK)
7. CONTRACTOR IS RESPONSIBLE FOR ALL GRADING AND FILL COMPACTION TESTING REQUIRED AS SET FORTH IN THE GEOTECHNICAL REPORT PROVIDED BY OWNER.
8. CONTRACTOR IS RESPONSIBLE FOR GROUND MEG TESTING.
9. CONTRACTOR SHALL ASSIST IN COORDINATING AND OBTAINING PRIMARY POWER TO THE SITE PRIOR TO TOWER ERECTION. CONTRACTOR SHALL ALSO ASSIST IN COORDINATING AND OBTAINING TELCO/FIBER SERVICE PRIOR TO PROJECT COMPLETION (ON SITE VISITS WITH UTILITY COMPANY REPRESENTATIVES AS NECESSARY).
10. CONTRACTOR SHOULD BE PREPARED FOR RANDOM SAFETY INSPECTIONS AT ALL TIMES.
11. CONTRACTOR IS EXPECTED TO MAINTAIN PROPER WORKING CONDITIONS AND PROCEDURES PER OSHA STANDARDS AT ALL TIMES.
12. CONTRACTOR WILL BE REQUIRED TO OBTAIN ALL NECESSARY CONSTRUCTION AND/OR CLOSE-OUT RELATED PERMITS, INCLUDING ELECTRICAL PERMITS AND INSPECTIONS, CERTIFICATES OF OCCUPANCY, ETC. AS REQUIRED BY JURISDICTION.
13. CONTRACTOR IS EXPECTED TO CLOSE-OUT THE JOB SITE AS QUICKLY AS POSSIBLE (OBTAINING A CERTIFICATE OF OCCUPANCY AND GETTING OWNER'S SIGN-OFF ON THE SITE).
14. CONTRACTOR WILL PROVIDE A COMPLETED TOWER HEIGHT VERIFICATION FORM AND TAPE DROP WITHIN 24 HOURS OF REACHING OVERALL HEIGHT.

SEEDBED PREPARATION

1. SCARIFY COMPACTED AREAS AND REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM. FILL ANY EXISTING RILLS AND GULLIES
2. IMMEDIATELY PRIOR TO SPREADING TOPSOIL, CORRECT PH OF THE SUBSOIL WITH LIME PER RECOMMENDATION OF SOILS TEST OR AT A RATE SUITABLE TO THE SITE CONDITIONS. LOOSEN THE SUBGRADE OF THE SITE TO RECEIVE THE TOPSOIL BY DISKING OR SCARIFYING TO A DEPTH OF AT LEAST 2-INCHES TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.
3. UNIFORMLY SPREAD TOPSOIL 3-INCHES DEEP IN AREAS AS REQUIRED
4. APPLY LIME AND/OR FERTILIZER AS NECESSARY AND TILL SOIL UNTIL A WELL-MIXED, PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED. THE PREPARED SEEDBED SHOULD BE 4 TO 6 INCHES DEEP.
5. SEED A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING
6. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH
7. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 70% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES
8. SEE PERMANENT SEEDING SPECIFICATION SHEET C-7.

PREPARED FOR:

CROWN CASTLE

CROWN CASTLE USA, INC.
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
PHONE: (724) 416-2000

PREPARED BY:

DELTA OAKS GROUP

DELTA OAKS GROUP
4904 PROFESSIONAL COURT, 2ND FLOOR
RALEIGH, NC 27609
PHONE: (919) 342-8247

STATE OF CONNECTICUT · JOSEPH V. BORRELLI JR · No. 31317 · LICENSED · PROFESSIONAL ENGINEER

12/16/19

12/16/19

JOSEPH V. BORRELLI JR, P.E.
CONNECTICUT LICENSE NO. 31317

DRAWN BY	BJW
CHECKED BY	WRB
APP'VD:	MLL
PROJECT NO.	[illegible]

SUBMITTALS

DATE	DESCRIPTION	REV	ISSUED BY
11/20/19	PRELIM ZDs	0	BJW
12/16/19	FINAL ZDs	1	BJW

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SITE NAME:
RICHARD WALL

SITE ADDRESS:
8 1/2 LAKEVIEW ST.
EAST HAMPTON, CT 06424

SITE ID:
BU# 876352

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

ATTACHMENT 4

GOULD
DIGITAL IMAGING

VISIBILITY ANALYSIS

8 1/2 LAKEVIEW STREET
EAST HAMPTON, CT 06424

PREPARED FOR

CROWN CASTLE

CROWN CASTLE USA, INC.
2000 CORPORATE DRIVE
CANONBURG, PA 15317
PHONE: (724) 416-2000

PREPARED BY

GOULD DIGITAL IMAGING

GOULD DIGITAL IMAGING, LLC
890 ATLANTA STREET, SUITE 190
ROSWELL, GA 30075
PHONE (770) 617-2958

Project Introduction

Crown Castle USA, Inc. is pursuing approval for the development of a new wireless communications facility ("Facility") at 8 ½ Lakeview Street, East Hampton, Connecticut (the "Host Property"). At the request of Crown Castle, Gould Digital Imaging, LLC ("GDI") prepared this Visibility Analysis to evaluate the potential visual impacts associated with the proposed Facility from within a one-mile radius (the "Study Area").

Site Description and Setting

The Host Property consists of 17.37 acres of land that consists of 80.2% deciduous forest, 7.6% developed open space, 6.1% developed low density, 5.3% woody wetlands, and 0.8% herbaceous wetlands. *See Figure 1 – Site Location Map.* The Facility Site is located in the center of the Host Property. This portion of the host property is currently undeveloped and wooded. The proposed Facility would include a ±250-foot tall monopole, with appurtenances, surrounded by a fenced, 75-foot by 75-foot, gravel base equipment compound at an approximate ground elevation of 523 feet Above Mean Sea Level ("AMSL"). Sprint PCS antennas would be installed at a centerline height approximately 4 feet below the top of the monopole RAD Center of 246 feet AGL. Verizon antennas would be installed at a centerline height approximately 16 feet below the top of the monopole RAD Center of 234 feet AGL. AT&T antennas would

be installed at a centerline height approximately 28 feet below the top of the monopole RAD Center of 222 feet AGL. T-Mobile antennas would be installed at a centerline height approximately 40 feet below the top of the monopole RAD Center of 210 feet AGL. *See Figure 2 – Proposed Equipment Elevation Plan.* The proposed Facility components and their locations are illustrated in Figure 3 – Proposed Equipment Location Plan. Access to the Facility would be provided by a new ±12-foot wide gravel drive (±315 feet long) that splits off Route 66 from the north. New underground utilities would be routed from the equipment compound and follow the proposed access road to an existing utility pole located on the south side of Route 66 west of new access road where connections would be made. Land use within the immediate vicinity of the Property is a mix of farmland, undeveloped wooded land and residences. The topography within the Study Area is undulating with rolling to steep hills stretching out in all directions. Ground elevations range from approximately 463 feet AMSL to 703 feet AMSL. The tree cover within the Study Area (consisting primarily of mixed deciduous hardwoods with interspersed stands of conifers) occupies approximately 2,533 acres of the 4,021-acre study area (±63%).

Methodology

GDI used the combination of a predictive computer models and Google Earth Street View imagery analysis to evaluate the visibility associated with the proposed. The predictive model provides a measurable assessment of potential visibility throughout the Study Area including areas where imagery was available. A description of the procedures used in the analysis is provided below.

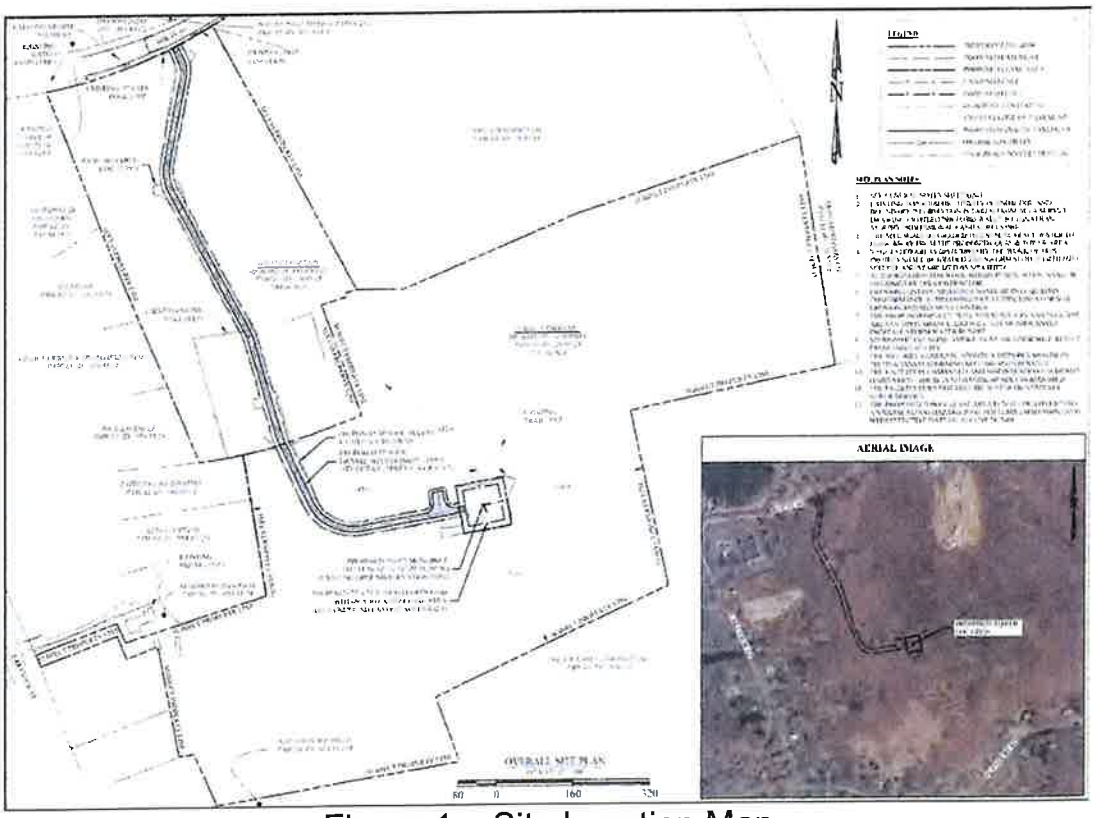


Figure 1 – Site Location Map

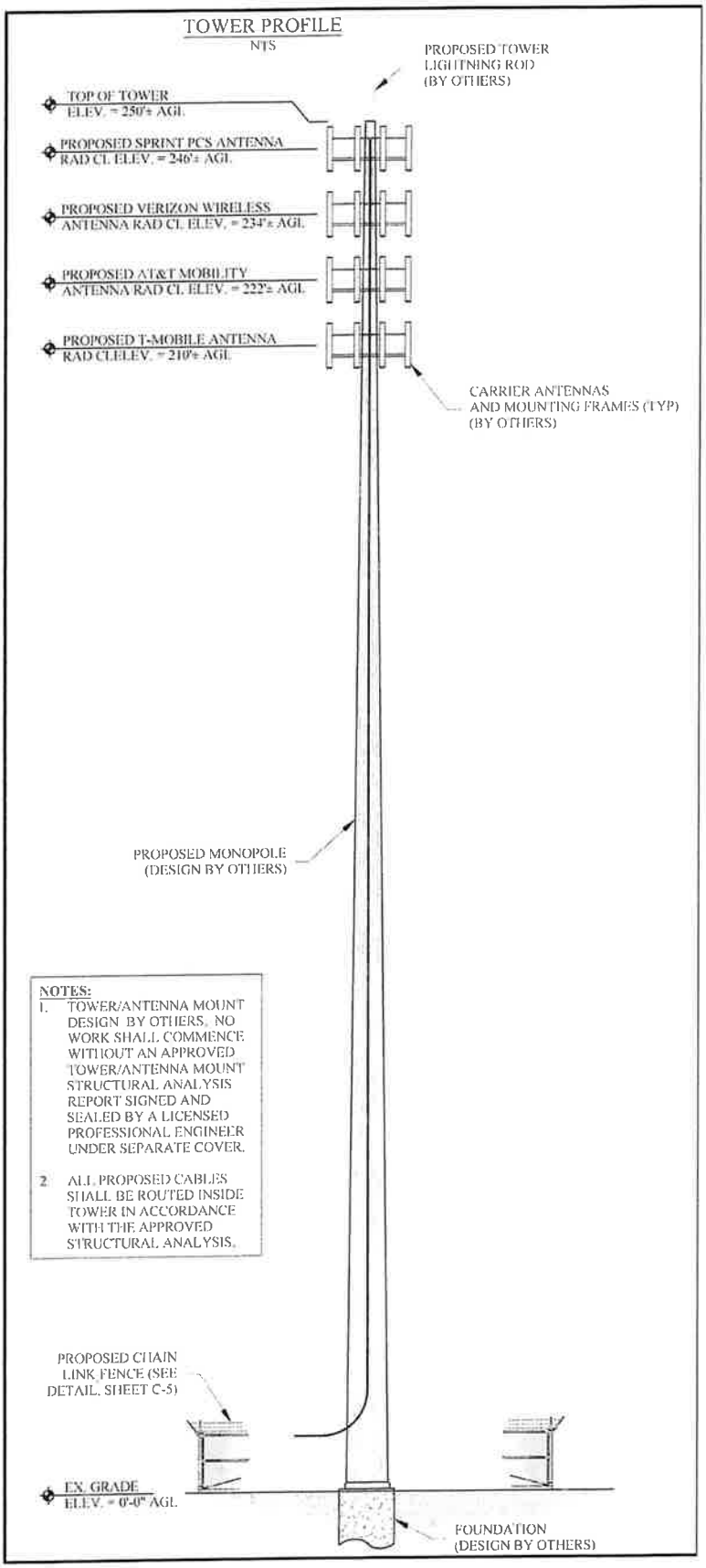


Figure 2 – Proposed Equipment Elevation Plan

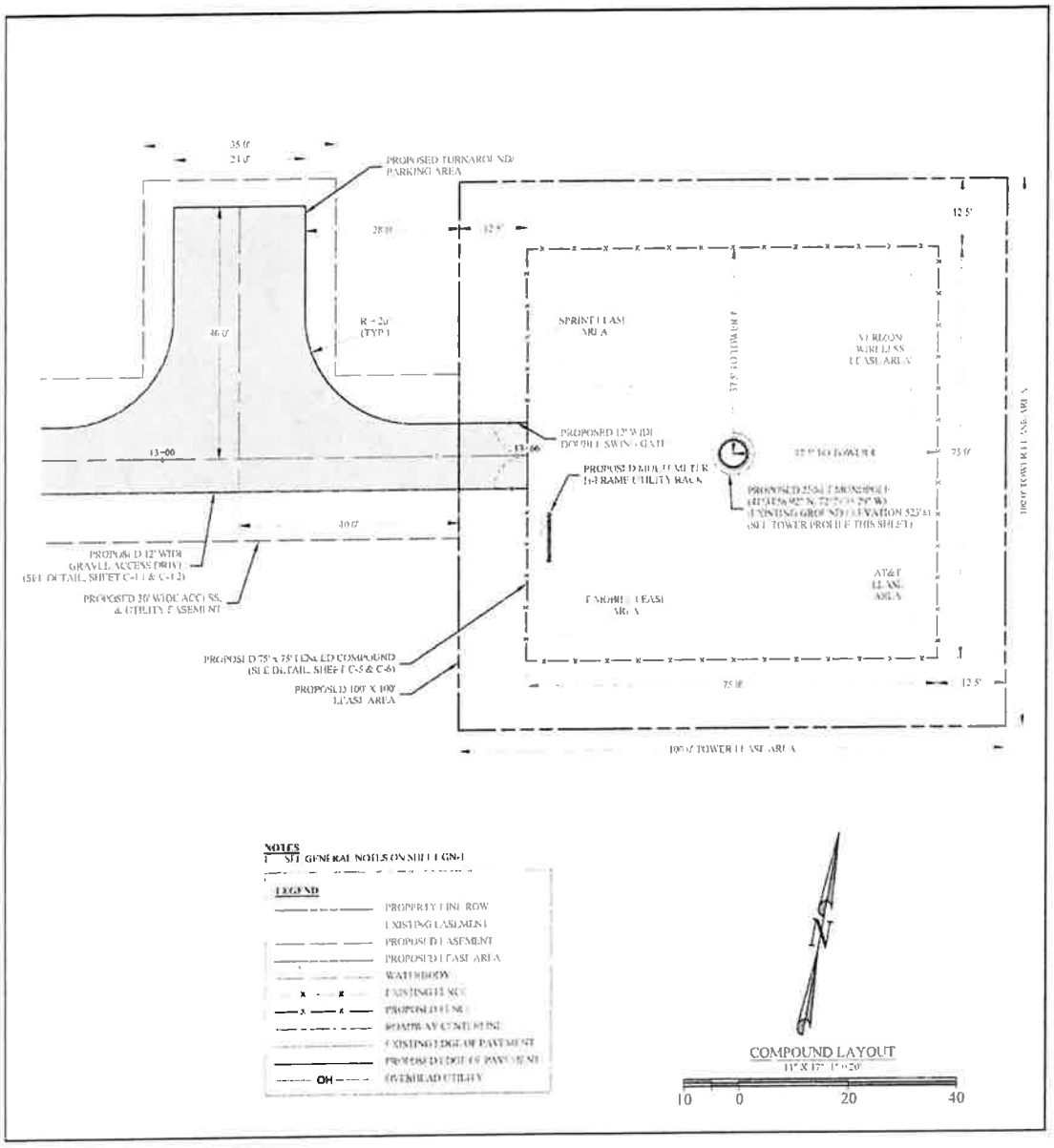


Figure 3 – Proposed Equipment Location Plan

Preliminary Computer Modeling

To conduct this assessment, a predictive computer model was developed specifically for this project using ArcGIS Pro, an image analysis program developed by ESRI Geographic Information System Company, to provide an estimation of potential visibility throughout the Study Area. The predictive model incorporates Project and Study Area-specific data, including the site location, its ground elevation and the proposed Facility height, as well as the surrounding topography. LIDAR data was not available for the East Hampton area.

The Facility however may not necessarily be visible from all locations within those areas identified by the predictive model. Although large portions of the predicted viewshed may theoretically offer visibility of the Facility, because of these unavoidable limitations the quality of those views may not be sufficient for the human eye to recognize the tower or discriminate it from other surrounding objects. Visibility also varies seasonally with increased, albeit obstructed, views occurring during "leaf-off" conditions. Once the data layers were entered, image processing tools were applied and overlaid onto USGS topographic base maps and aerial photographs to achieve an estimate of locations where the Facility might be visible.

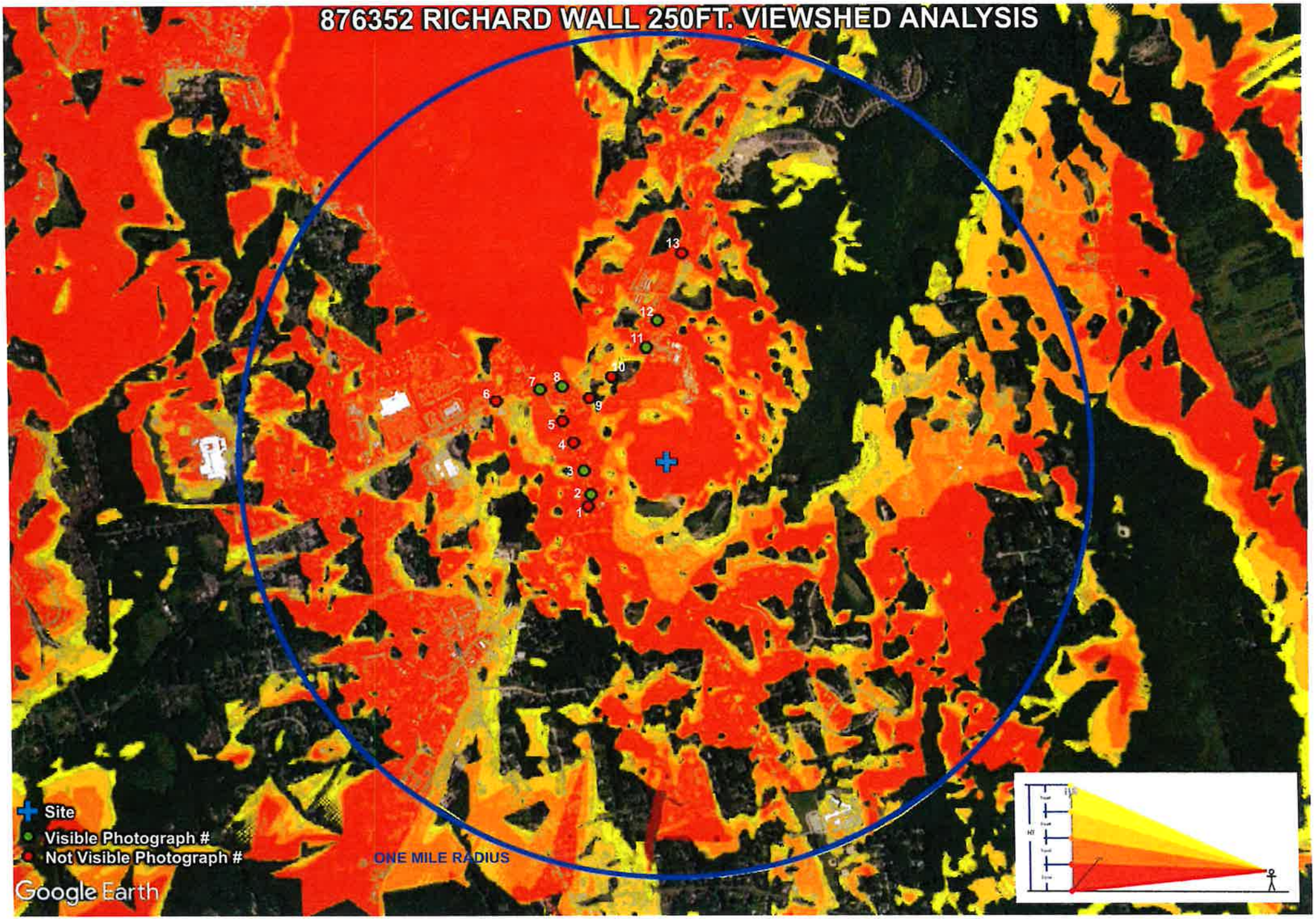
Photographic Simulations

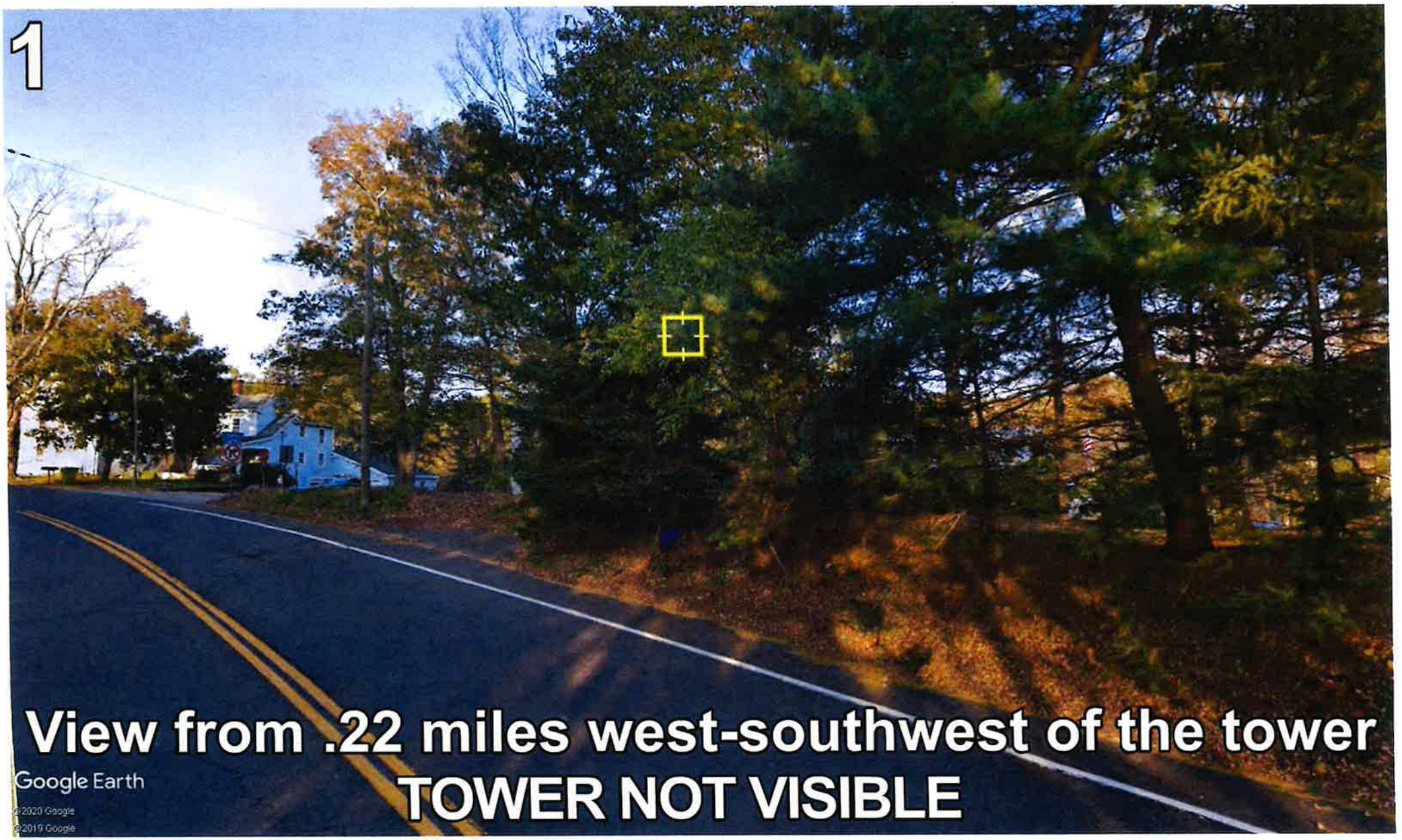
Photographic simulations were generated to portray scaled renderings of the proposed Facility from six representative locations where the proposed Facility would be visible seasonally or year-round. Using Google Earth Street View Imagery, site plan information and 3-dimension (3D) modeling software, spatially referenced models of the Site area and Facility were generated and merged. The geographic coordinates obtained in the field for the photograph locations were incorporated into the

model to produce virtual camera positions within the spatial 3D model. Photo simulations were then created using a combination of renderings generated in the 3D model and photo-rendering software programs.

It is important to consider that the publicly-accessible locations selected are typically representative of a "worst case" scenario. They were chosen to present unobstructed view lines (wherever possible), are static in nature and do not necessarily characterize the prevailing views from all locations within a given area. For example, moving a few feet in either direction from a specific photo location may significantly alter the view, including obscuring the Facility altogether. In several cases, a view of the Facility may be limited to the immediate area of the specific photo location presented herein.

876352 RICHARD WALL 250FT. VIEWSHED ANALYSIS




1
View from .22 miles west-southwest of the tower
TOWER NOT VISIBLE
Google Earth
©2020 Google
©2019 Google


2
View from .20 miles west-southwest of the tower
TOWER VISIBLE
Google Earth
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3
View from .20 miles west of the tower
TOWER VISIBLE
Google Earth
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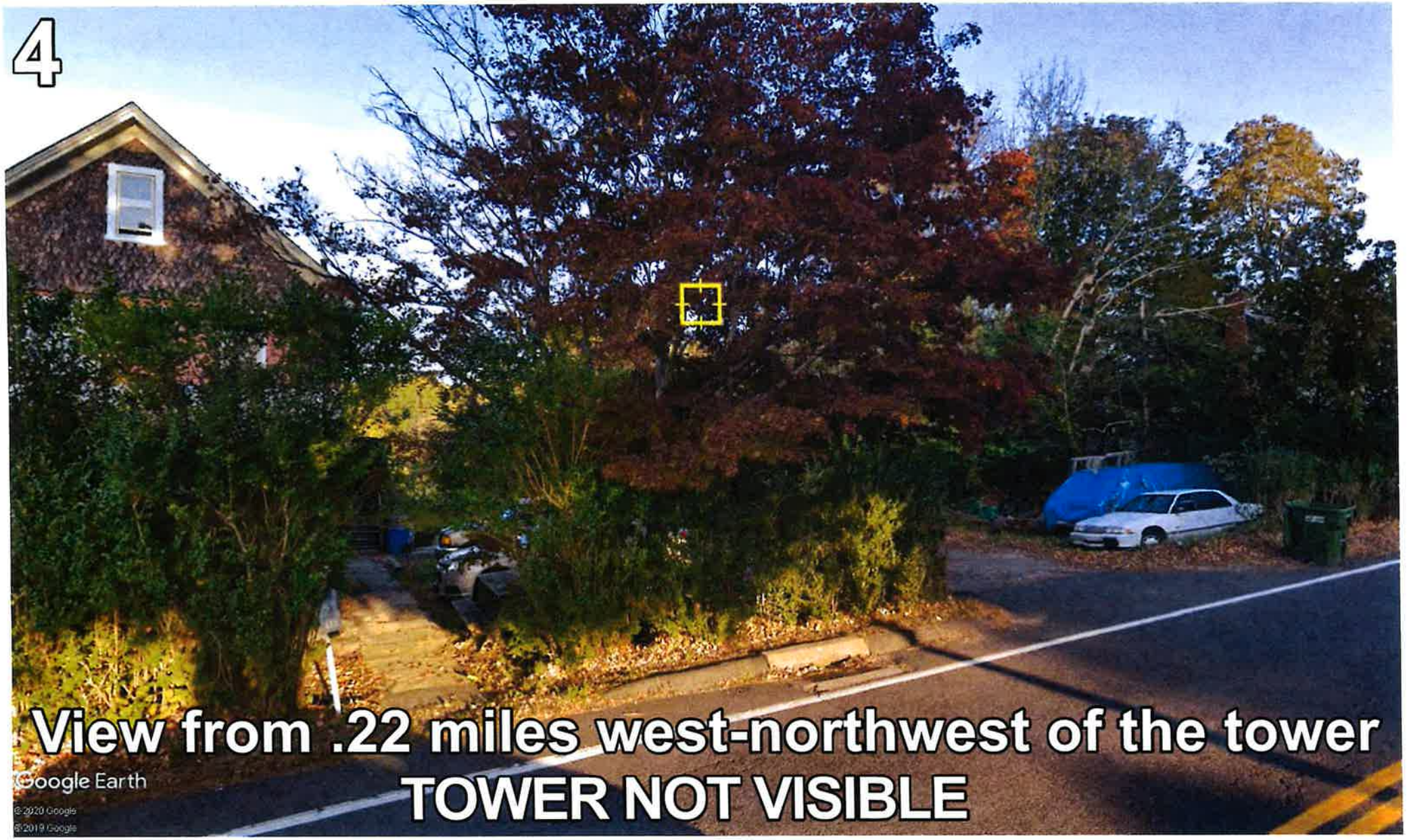
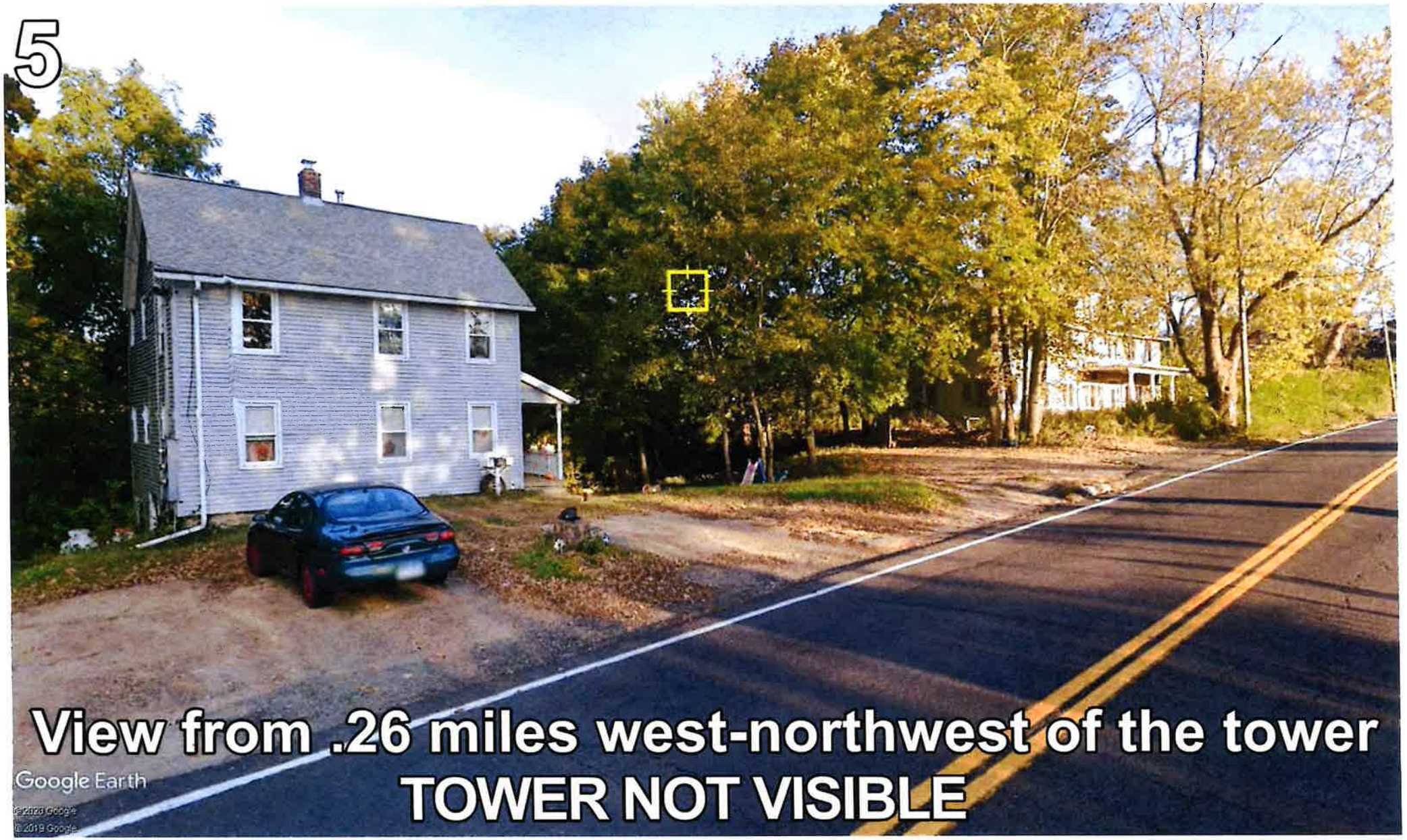

4
View from .22 miles west-northwest of the tower
TOWER NOT VISIBLE
Google Earth
© 2020 Google
© 2019 Google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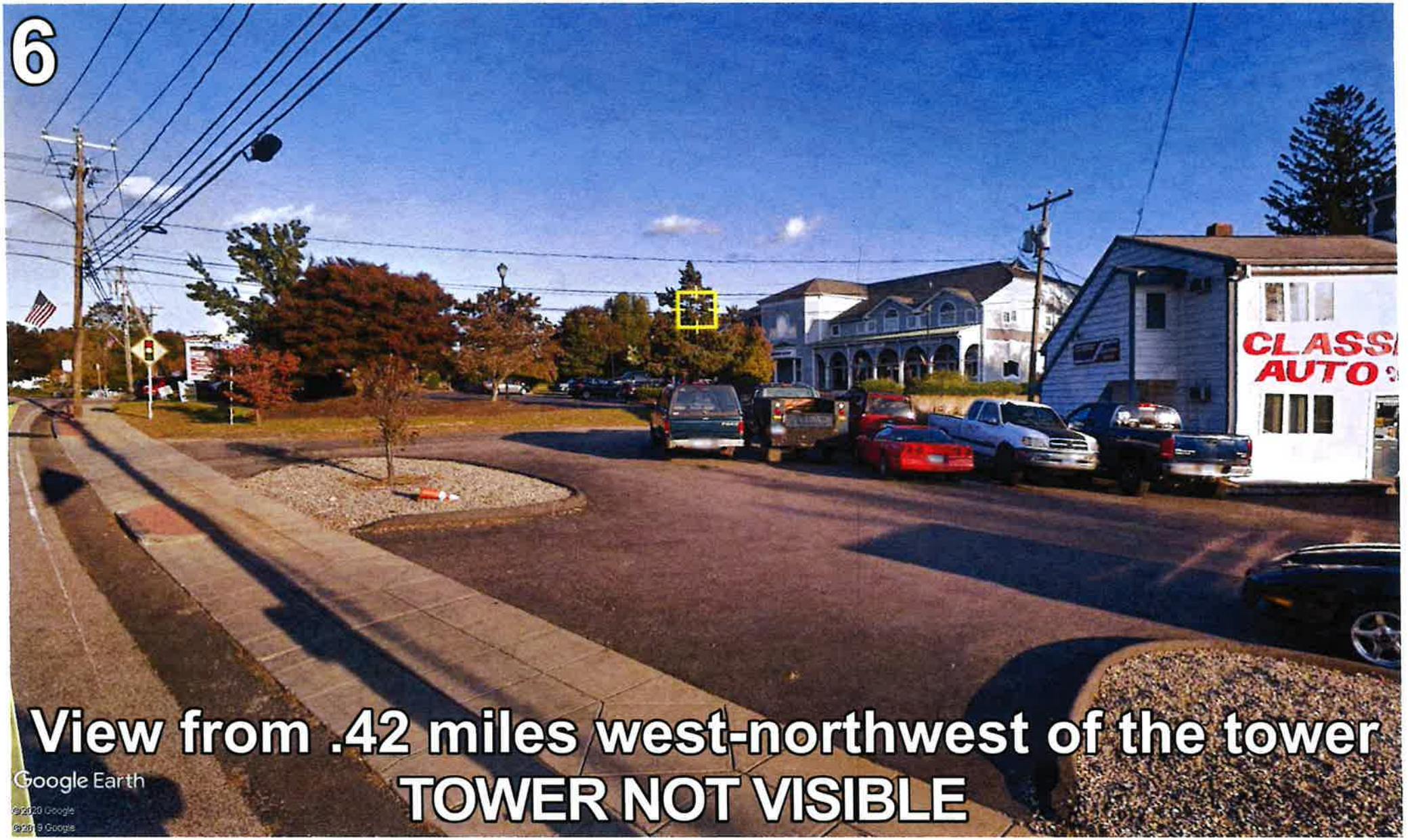
View from .26 miles west-northwest of the tower
TOWER NOT VISIBLE
Google Earth


6
CLASS
AUTO
View from .42 miles west-northwest of the tower
TOWER NOT VISIBLE
Google Earth
©2020 Google
©2019 Google


7
View from .34 miles northwest of the tower
TOWER VISIBLE
Google Earth
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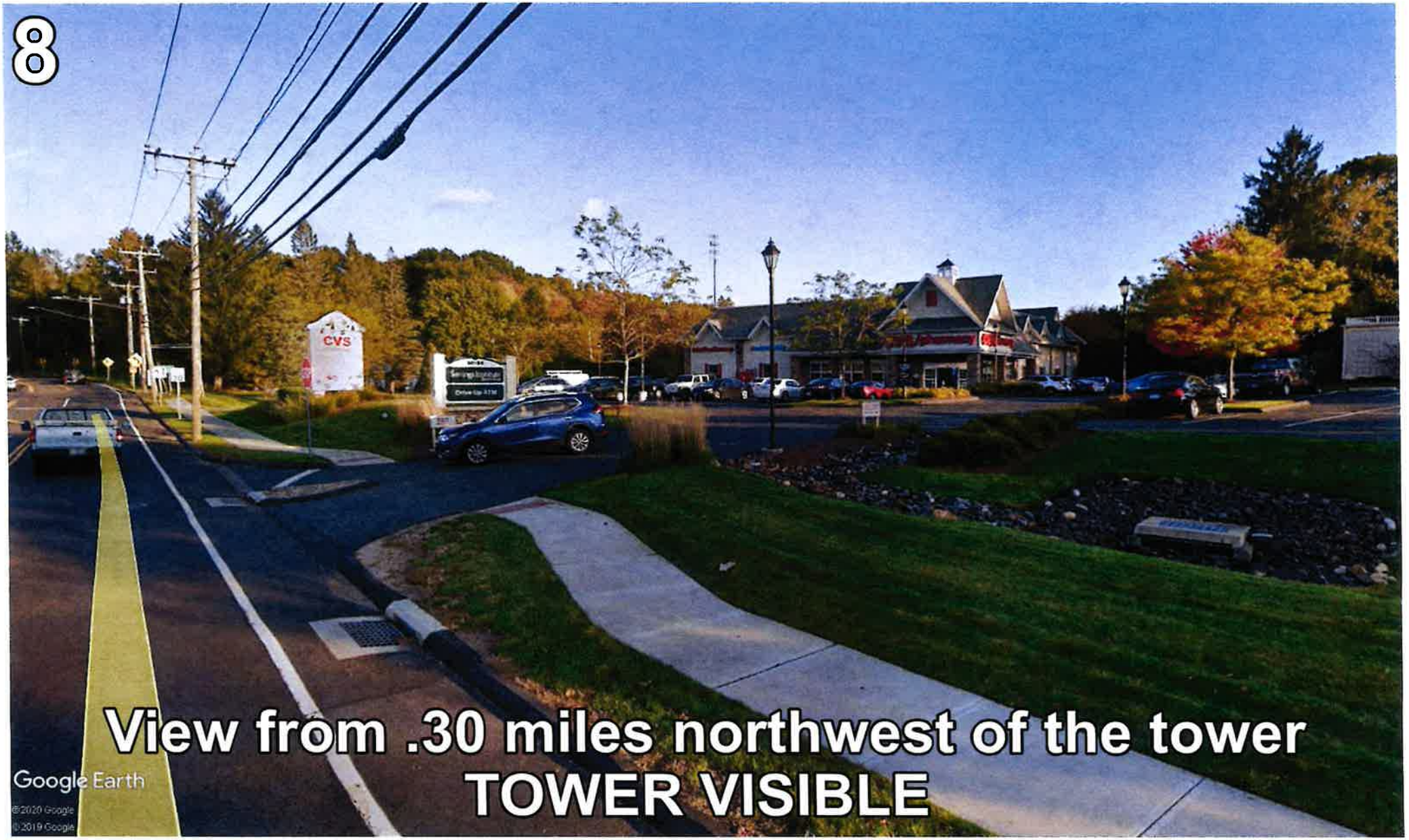
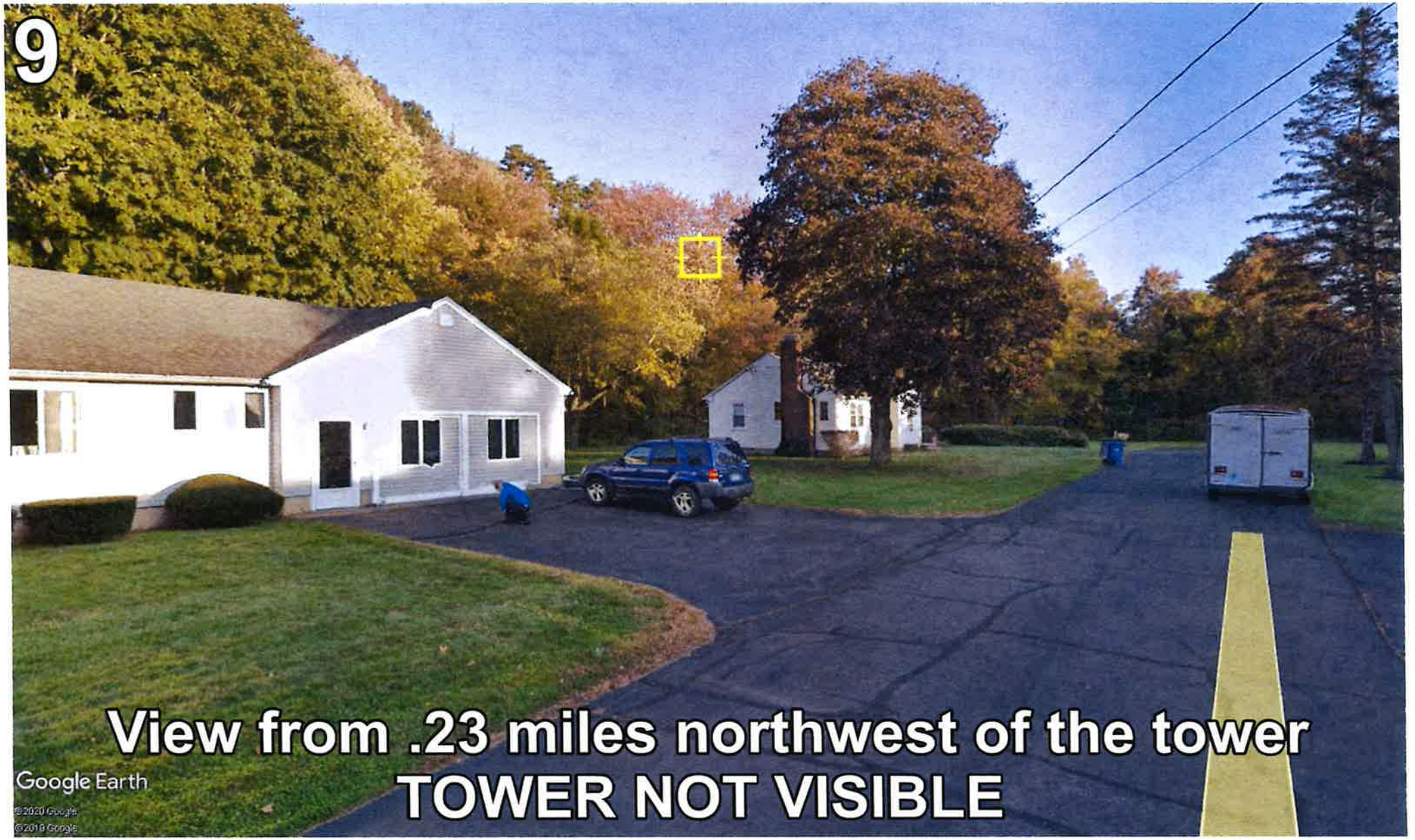
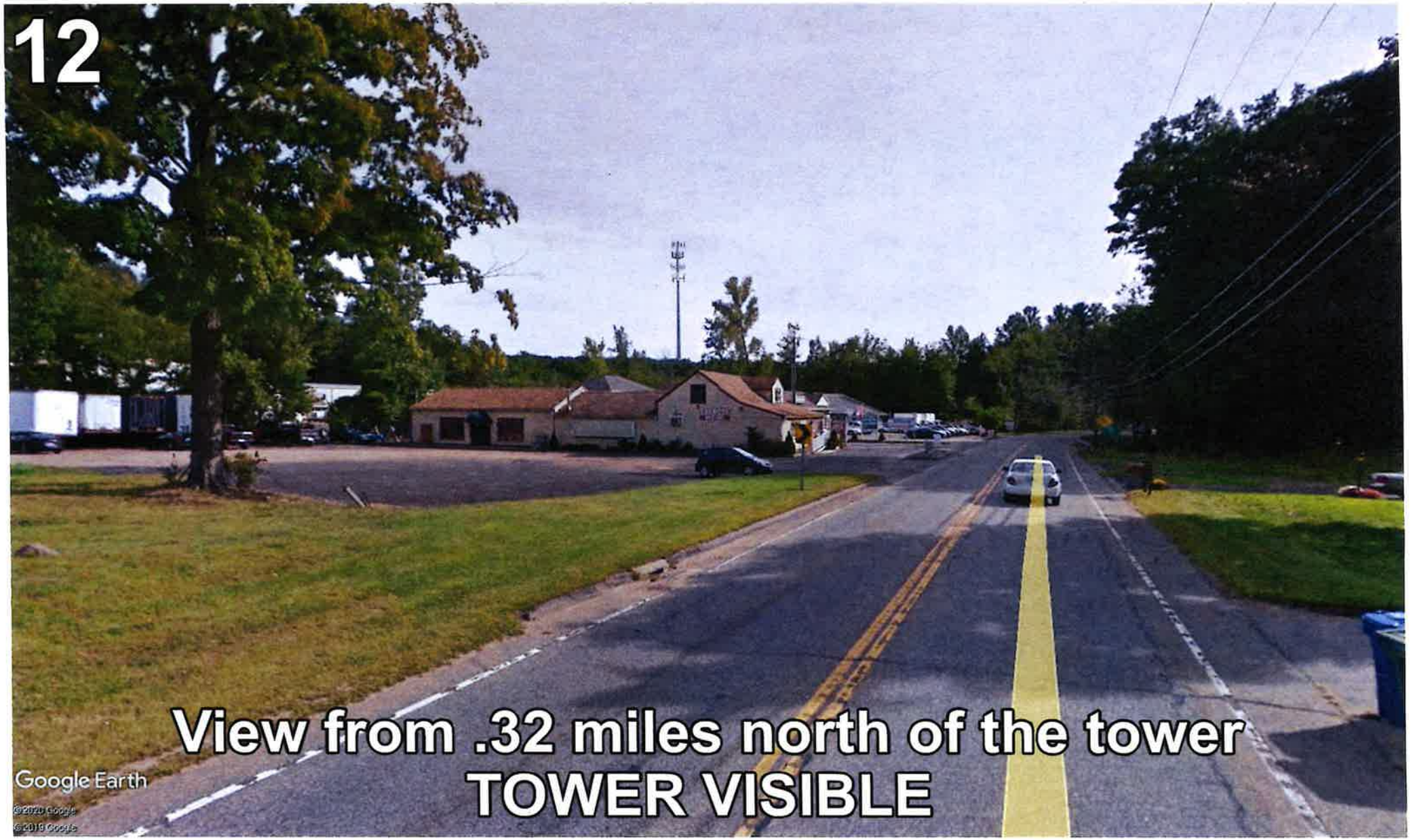
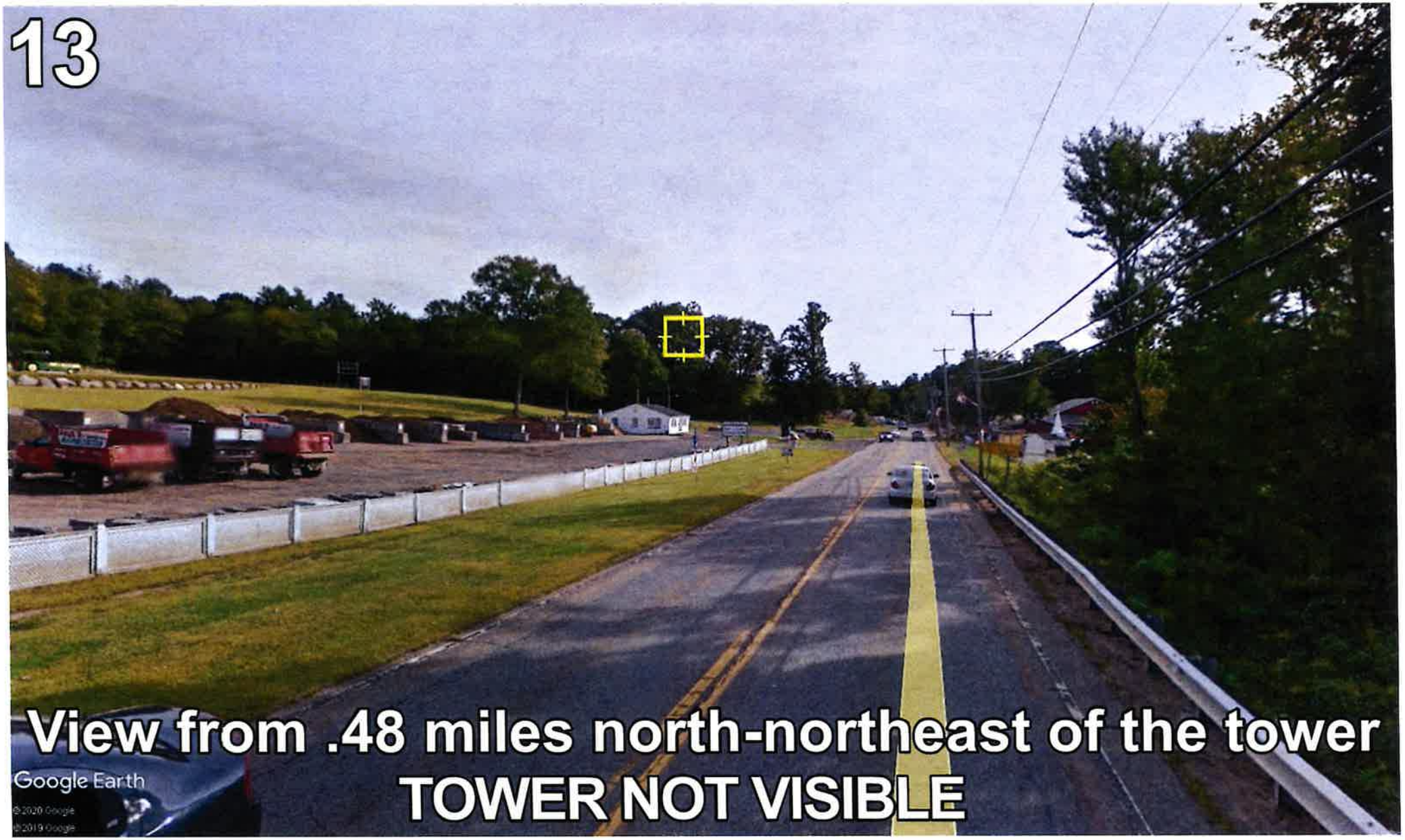

8
CVS
View from .30 miles northwest of the tower
TOWER VISIBLE
Google Earth
©2020 Google
©2019 Google


9
View from .23 miles northwest of the tower
TOWER NOT VISIBLE
Google Earth
©2020 Google
©2019 Google


10
View from .23 miles north-northwest of the tower
TOWER NOT VISIBLE
Google Earth
© 2020 Google
© 2019 Google


11
View from .26 miles north of the tower
TOWER VISIBLE
Google Earth
© 2020 Google
© 2019 Google


12
View from .32 miles north of the tower
TOWER VISIBLE
Google Earth
©2020 Google
©2019 Google


13
View from .48 miles north-northeast of the tower
TOWER NOT VISIBLE
Google Earth
© 2020 Google
© 2019 Google

ATTACHMENT 5

Biwabkos Consultants, LLC

RF Safety and NIER Analysis Report

January 8, 2020

Site: RICHARD WALL (876352)

EAST HAMPTON, CT

Prepared for:

CROWN CASTLE

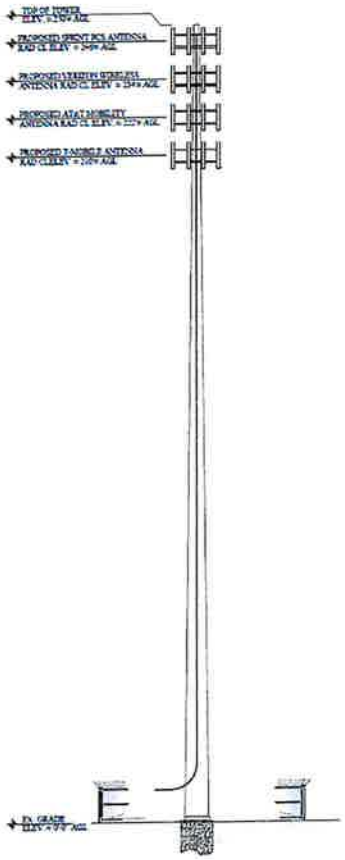


Table of Contents

1 Certification

This report, prepared by Biwabkos Consultants LLC for **Crown Castle**, is intended to document compliance and evaluate power density levels as outlined in the report. The computations, analysis, and resulting report and conclusions were based on applicable FCC guidelines and regulations for maximum permissible exposure to humans consistent with FCC OET Bulletin 65, Edition 97-01.

Additionally, Biwabkos Consultants LLC certifies that the assumptions are valid and that the data used within Biwabkos Consultants' control are accurate, including information collected as part of Biwabkos Consultants' field surveys (if applicable). Biwabkos Consultants LLC does not however certify the accuracy or correctness of any data provided to Biwabkos Consultants LLC for this analysis and report by Crown Castle.

I certify that the attached RF exposure analysis and report is correct to the best of my knowledge, and all calculations, assumptions and conclusions are based on generally acceptable engineering practices:

Report Prepared By
David Dodson, RF Engineer
01/08/2020

Report Reviewed By
Steven Kennedy, Engineering Manager
1/10/2020

2 Executive Summary

This report provides the results of an RF power density analysis performed for **Crown Castle** at site **RICHARD WALL (876352)** in accordance with the Federal Communications Commission (FCC) rules and regulations for RF emissions described in OET Bulletin 65, Edition 97-01.

This report addresses RF safety for two classified groups defined by OET Bulletin 65: Occupational/ Controlled and General Population/ Uncontrolled. Based on the analysis, this site will be **Compliant** with FCC rules and regulations and Crown Castle Signage and Barrier Policy since the mitigation details provided in Table 1 are implemented.

Minimum Required For Compliance							
Mitigation Information							
	Notice	Caution	Warning	Guidelines	Site Info	Barrier	Marker
Access Point							
Alpha							
Beta							
Gamma							
Delta							
Omni							

Notes/ Additional Compliance Requirements(s):
No Mitigation Required

Table 1: Mitigation Requirements for Compliance

2.1 Conclusion and Recommendations:

- The results of the analysis indicate that the power density levels in the generally accessible areas on the Ground level will not exceed the FCC's MPE limit for both General Population and Occupational environment.
- The max theoretical % MPE (Occupational) is 1.9%.
- No mitigation is required.
- This site will operate in general compliance with FCC OET Bulletin 65 and Crown Castle's Signage and Barrier policy.

3 Introduction

The purpose of this analysis and report is to evaluate the cumulative power density levels of all non-excluded antennas located on the Monopole and identify any areas of concern that require mitigation. This report also assesses the Monopole's compliance with FCC OET Bulletin 65; "Guidelines for Human Exposure to Radio-frequency Electromagnetic Fields".

The power density simulation performed for this site utilized RoofView® analysis software. All antennas were assigned an operating frequency and transmit power and were deemed to be operating at 100% of their rated output power.

3.1 Site Description:

- **Site Name:** RICHARD WALL
- **Street Address:** 8 1/2 LAKEVIEW STREET
  EAST HAMPTON, CT 06424
- **Latitude:** 41° 34' 56.92" N
- **Longitude:** 72° 29' 35.29" W
- **Structure Type**: Monopole
- **Structure Height**: 250' AGL
- **BTS Equipment Location**: Within the shelters inside the fenced-in compound.
- **Co-Locators/ Other Antennas**: Total of (3) co-locators and (24) antennas
- **Access**: Access is through a locked gate on the east side of the fenced-in compound.
- **Other Notes**: There are no other adjacent structures where the General Population would get within an unsafe distance.

3.2 Site Configuration Being Modeled:

- This site has (3) carriers with (3) sectors each
- There is a total of (24) antennas
- Each sector supports various LTE carriers including, but not limited to 700 MHz, 850 MHz, 1900 MHZ, 2100 MHZ frequencies.
- All LTE supports MIMO.

3.3 Assumptions:

- The fenced-in compound will remain locked and is not accessible to the General Population.

4 Predictive Analysis Details:

For purposes of this analysis, RoofView® was configured to provide an output based on the appropriate MPE limit(s) published in the FCC's guidelines. The antenna information was loaded into RoofView®, an MPE predictive analysis tool by Richard Tell and Associates, Inc.

4.1 Analysis Locations:

Number of Elevations Analyzed: 1

- The Ground level is accessible to the General Population outside the fenced-in compound and is accessible to the Occupational population within the fenced-in compound.

4.2 Antenna Inventory:

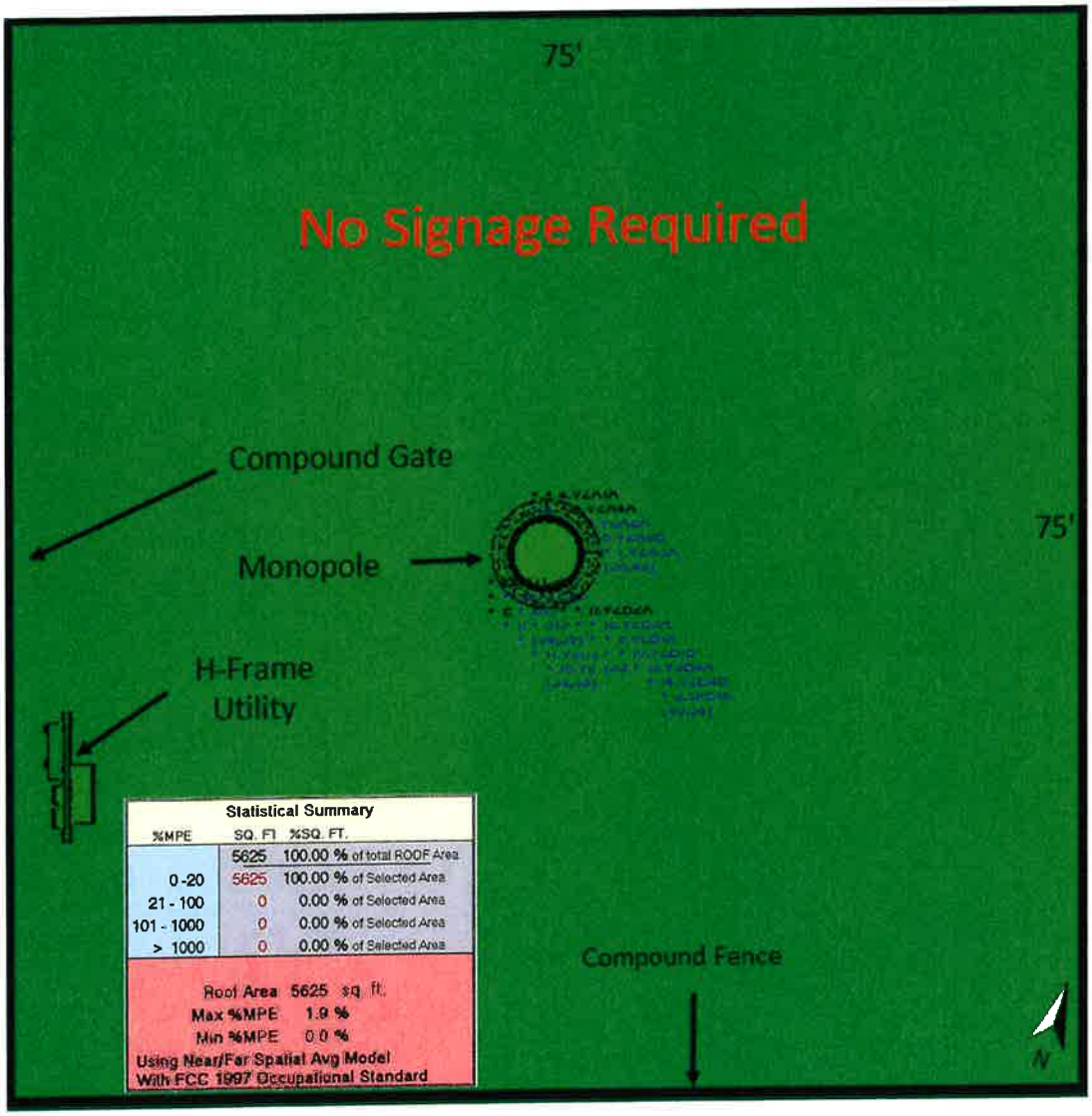
The following table contains the technical data used to simulate the power density that may be encountered with all antennas simultaneously operating at full rated power with the exception of any excluded antennas cited in this document. If Co-Locator antennas exist and specific antenna details could not be secured, generic antennas, frequencies, and Tx powers were used for modeling. The assumptions used are based on past experience with communications carriers.

ID	Name	(MHz) Freq	Trans Power	Trans Count	Other Loss	Calc Power	Mfg	Model	Height (ft) Ground	Type	(ft) Aper	dBd Gain	BWdth Pt,Dir
SPA1A	C1900	1950	20	3	0.5	53.5	RFS	APXVSPP18-C-A20	243.0	X-Pole	6	15.9	65;0
SPB1A	C1900	1950	20	3	0.5	53.5	RFS	APXVSPP18-C-A20	243.0	X-Pole	6	15.9	65;120
SPC1A	C1900	1950	20	3	0.5	53.5	RFS	APXVSPP18-C-A20	243.0	X-Pole	6	15.9	65;220
VZA1A	C850	850	20	4	0.5	71.3	Andrew	DB846F65ZAXY	231.0	Diplole	6	14.8	65;0
VZA2A	L1900	1960	30	4	0.5	107.0	Amphenol	BXA-171063-12BF	231.0	X-Pole	5.975	16.5	65;0
VZA2B	L2100	2150	40	4	0.5	142.6	Amphenol	BXA-171063-12BF	231.0	X-Pole	5.975	16.9	60;0
VZA3A	L700	730	30	2	0.5	53.5	Amphenol	BXA-70063-6CF	231.0	X-Pole	5.916666667	14.0	65;0
VZA4A	C850	850	20	4	0.5	71.3	Andrew	DB846F65ZAXY	231.0	Diplole	6	14.8	65;0
VZB1A	C850	850	20	4	0.5	71.3	RFS	APL866513-42T0	232.0	Dipole	4	13.0	65;120
VZB1B	L700	730	30	2	0.5	53.5	RFS	APL866513-42T0	232.0	Dipole	4	13.0	65;120
VZB2A	L1900	1960	30	4	0.5	107.0	Amphenol	BXA-171063-8BF	232.0	X-Pole	4.041666667	14.9	65;120
VZB3A	L2100	2150	40	4	0.5	142.6	Amphenol	BXA-171063-8BF	232.0	X-Pole	4.041666667	15.3	60;120
VZB4A	C850	850	20	4	0.5	71.3	RFS	APL866513-42T0	232.0	Dipole	4	13.0	65;240
VZB4B	L700	730	30	2	0.5	53.5	RFS	APL866513-42T0	232.0	Dipole	4	13.0	65;240
VZC1A	C850	850	20	4	0.5	71.3	Andrew	DB846F65ZAXY	231.0	Diplole	6	14.8	65;240
VZC2A	L1900	1960	30	4	0.5	107.0	Amphenol	BXA-171063-12BF	231.0	X-Pole	5.975	16.5	65;240
VZC2B	L2100	2150	40	4	0.5	142.6	Amphenol	BXA-171063-12BF	231.0	X-Pole	5.975	16.9	60;240
VZC3A	L700	730	30	2	0.5	53.5	Amphenol	BXA-70063-6CF	231.0	X-Pole	5.916666667	14.0	65;23
VZC4A	C850	850	20	4	0.5	71.3	Andrew	DB846F65ZAXY	231.0	Diplole	6	14.8	65;23
ATA1A	G850	850	20	2	0.5	35.7	Powerwave	7770-00	219.7	Quadport	4.583333333	11.4	85;23
ATA2A	L700	730	40	1	0.5	35.7	KMW	AM-X-CD-16-65	218.0	Quadport	6	13.4	65;23
ATA2B	L2100	2120	40	4	0.5	142.6	KMW	AM-X-CD-16-65	218.0	Quadport	6	15.0	69;23
ATA3A	G850	850	20	2	0.5	35.7	Powerwave	7770-00	218.1	Quadport	4.583333333	11.4	85;23
ATB1A	G850	850	20	2	0.5	35.7	Powerwave	7770-00	218.0	Quadport	4.583333333	11.4	85;141
ATB2A	L700	730	40	1	0.5	35.7	KMW	AM-X-CD-16-65	219.7	Quadport	6	13.4	65;141
ATB2B	L2100	2120	40	4	0.5	142.6	KMW	AM-X-CD-16-65	219.7	Quadport	6	15.0	69;141
ATB3A	G850	850	20	2	0.5	35.7	Powerwave	7770-00	218.0	Quadport	4.583333333	11.4	85;141
ATC1A	G850	850	20	2	0.5	35.7	Powerwave	7770-00	218.1	Quadport	4.583333333	11.4	85;264
ATC2A	L700	730	40	1	0.5	35.7	KMW	AM-X-CD-16-65	218.0	Quadport	6	13.4	65;264
ATC2B	L2100	2120	40	4	0.5	142.6	KMW	AM-X-CD-16-65	218.0	Quadport	6	15.0	69;264
ATC3A	G850	850	20	2	0.5	35.7	Powerwave	7770-00	219.7	Quadport	4.583333333	11.4	85;264

Table 2- Antenna Inventory

4.3 RF Emissions Diagram(s)- All Transmitters:

The following Diagram(s) represent the theoretical spatially averaged Maximum Permissible Exposure (MPE) percentages that are expected for each study's elevation from all Transmitters.



Green ≤ 20% Occupational Limit (≤ 100% General Population Limit)
Blue > 20% through 100% Occupational Limit (> 100% General Population Limit)
Yellow > 100% through 1000% Occupational Limit
Red > 1000% Occupational Limit

Diagram 1- MPE% for Ground Level

5 Signage/ Mitigation:

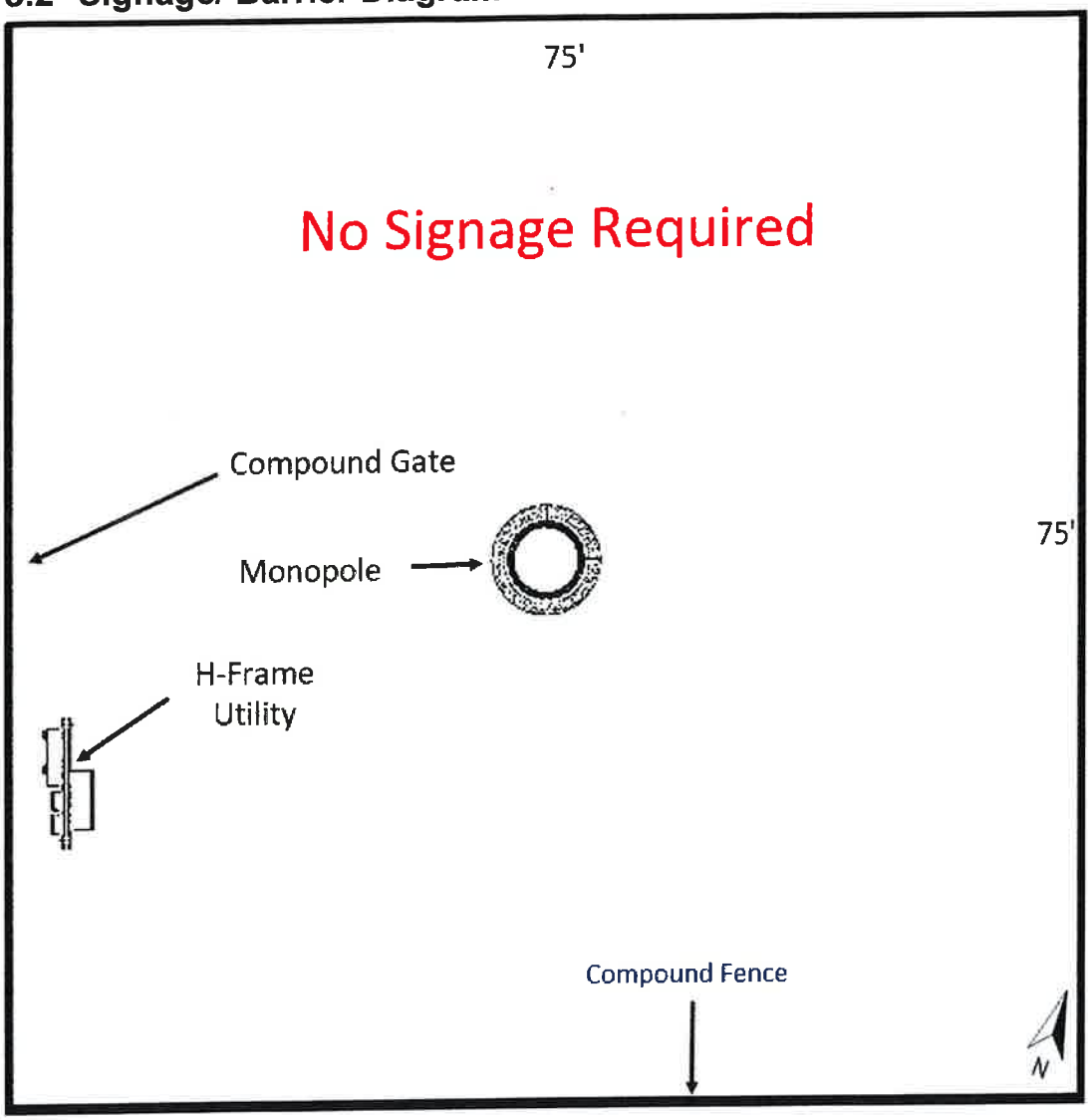
5.1 Signage/ Barrier Detail

Minimum Required For Compliance							
Mitigation Information							
	Notice	Caution	Warning	Guidelines	Site Info	Barrier	Marker
Access Point							
Alpha							
Beta							
Gamma							
Delta							
Omni							

Table 3-Mitigation Requirements for Compliance

Notes/ Additional Mitigation Details from Audit:
No Mitigation Required

5.2 Signage/ Barrier Diagram



6 Conclusions and Recommendations:

- The results of the analysis indicate that the power density levels in the generally accessible areas on the Ground level will not exceed the FCC's MPE limit for both General Population and Occupational environment.
- The max theoretical % MPE (Occupational) is 1.9%.
- No mitigation is required.
- This site will operate in general compliance with FCC OET Bulletin 65 and Crown Castle' Signage and Barrier policy.

Note: Modifications to the site; and/or increases in channel counts or power levels exceeding those listed in this report will require additional evaluation to determine compliance

7 Appendix A: FCC Compliance and RF Safety Policies

In August of 1997, the FCC published OET Bulletin 65 Edition 97-01 to regulate methods for evaluating compliance with FCC guidelines for human exposure to radiofrequency (RF) electromagnetic fields. The FCC guidelines for human exposure to RF electromagnetic fields incorporate two categories of limits; namely "Controlled" (a.k.a. Occupational) and "Uncontrolled" (a.k.a. General Public). The guidelines offer suggested methods for evaluating fixed RF transmitters to insure that the controlled and uncontrolled limits deemed safe by the FC for human exposure are not exceeded.

OET Bulletin 65 recommended guidelines are intended to allow an applicant to "make a reasonably quick determination as to whether a proposed facility is in compliance with the limits." In addition, the guidelines offer alternate supplementary considerations and procedures such as field measurements and more detailed analysis that should be used for multiple emitter situations.

These guidelines define RF as emissions in the frequency range of 300 kHz to 100 GHz. The FCC define Maximum Permissible Exposure (MPE) limits within this frequency range based on limits recommended by the National Council on Radiation Protection and Measurement, the Institute of Electrical and Electronics Engineers (IEEE), and by the American National Standards Institute (ANSI).

The specific MPE limits defined by the FCC are as follows:

Limits for Occupational/Controlled Exposure				
Frequency Range [MHz]	**Electric Field Strength (E) [V/m]**	**Magnetic Field Strength (H) [A/m]**	**Power Density (S) [mW/Cm^2]**	**Averaging Time |E|^2, |H|^2 or S [minutes]**
0.3 - 3.0	614	1.63	100*	6
3.0 - 30	1842/f	4.89/f	900/f^2*	6
30 - 300	61.4	0.163	1	6
300 - 1,500	-	-	f/300	6
1,500 - 100,000	-	-	5	6

Limits for General Population/Uncontrolled Exposure				
Frequency Range [MHz]	**Electric Field Strength (E) [V/m]**	**Magnetic Field Strength (H) [A/m]**	**Power Density (S) [mW/Cm^2]**	**Averaging Time |E|^2, |H|^2 or S [minutes]**
0.3 - 3.0	614	1.63	100*	30
3.0 - 30	842/f	2.19/f	180/f^2*	30
30 - 300	27.5	0.073	0.2	30
300 - 1,500	-	-	f/1500	30
1,500 - 100,000	-	-	1	30

f = frequency *Plane-wave equivalent power density

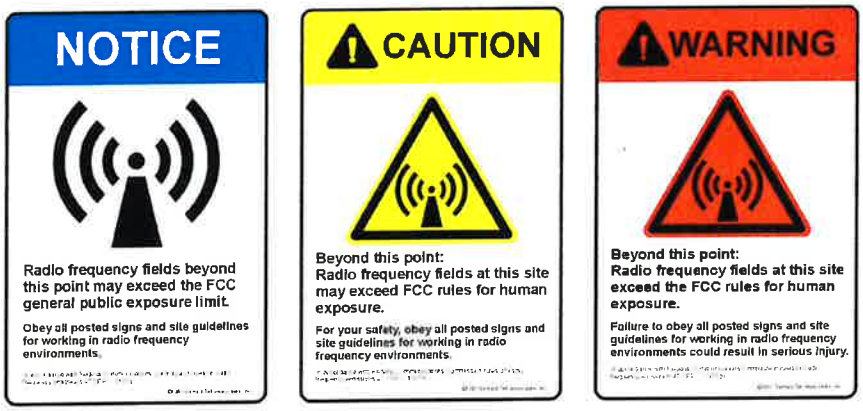
The FCC states that "Occupational/ Controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for

Occupational/ Controlled exposure also apply in situations when an individual is transient through a location where Occupational/ Controlled limits apply provided he or she is made aware of the potential for exposure."

For General Population/ Uncontrolled limits, the FCC states that "General Population/ Uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not fully be aware of the potential for exposure or cannot exercise control over their exposure."

For purposes of this analysis, all limits are evaluated against the Power Density limits.

Typical guidelines for determining whether Occupational/ Controlled limits can be applied include insuring the environment (such as a rooftop) as limited/controlled access via locked doors or physical barrier that are preferably controlled by a landlord that is aware of the situation and can inform anyone going through the locked door of the existence of the RF emissions. Such notification/awareness is typically accomplished by means of signage on the door, or other access to the area of concern, as well as signage on or near the antennas. Examples of such signs include the following:



Standards for when to use each of the above signs for Occupational situations are as follows:

No sign required: <20% of Occupational MPE
Blue Sign, Notice: 20% to <100% of MPE
Yellow Sign, Caution: 100% to <1000% of MPE
Red Sign, Warning: >1000% of MPE

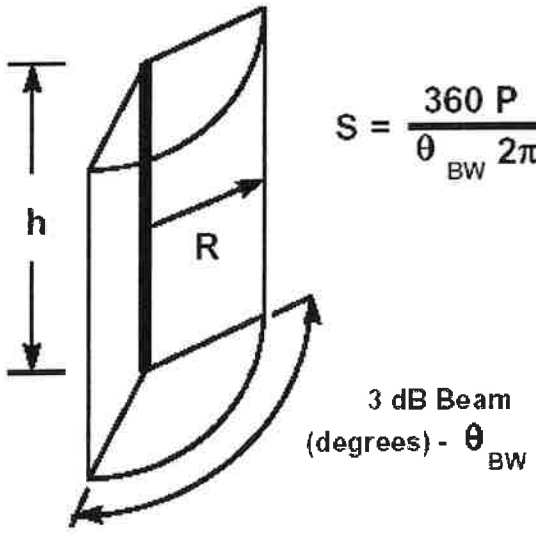
All MPE references are to the FCC Occupational limits.

8 Appendix B: Overview of RoofView® Functions and Assumptions

RoofView® is a tool developed and supported by Richard Tell Associates, Inc. to be used for analysis of RF field levels at telecommunications sites produced by antennas of the type commonly used in cellular, paging, SMR, PCS and two-way radio communications services. Although its name suggests that the tool is only for use in evaluating emissions for roof top applications, it can also be used to evaluate ground level effects of tower facilities.

RoofView® allows the user to apply near field, far field, or a combination of near and far field computational methods as desired by the user. For this analysis, near field computations are used for areas within the near field, and far field computations are used beyond the near field. Specific break points are dynamic based on the aperture of the antenna being analyzed.

The near field methodology is based on a cylindrical model that assumes the power into an antenna is distributed as a cylinder around the aperture of the antenna. Research by Richard Tell Associates, Inc. found that using such a model, along with corrections for height and antenna pattern, is very accurate, if not slightly conservative in estimating RF exposure. FCC Bulletin 65 recognizes the use of the cylindrical model for near field calculations. The following picture and corresponding equation summarizes the computations used by RoofView® on a bin-by-bin basis when the near field method is used:



Each bin's results are then also adjusted by spatially averaging the portion of a 6 foot tall human that intercepts the aperture over 6 feet. Once the antenna is completely above (or below) the height that corresponds to a 6 foot tall human, the cylindrical results are reduced

to 10% of their results and then dissipated inversely in proportion to the square of the distance.

Once bins being analyzed fall outside of the near field (as determined by a method and variable that is user-selectable; see below for method and variable used in this analysis), a far-field spatial average is calculated. Spatially averaged power density in the far-field is calculated by reducing the spatially averaged power density inversely, by the square of the distance from the antenna(s).

There are several input variables to RoofView® that can impact the results produced when evaluating specific cell sites. Those variables are summarized accordingly:

Standard
FCC 1997 Occupational (default)
FCC 1997 General Population (as applicable)

Model
Near/Far Spatial Average

Uptime
100% (vary as applicable)

Near/Far Field Transition Method
X ApHt

Near/Far Field Transition At Ht Factor
1.5

9 References

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

Richard Tell Associates, Inc. (2003). RoofView® User Guide Version 4.15, Richard Tell Associates, Inc., February 10, 2003.

10 Limited Warranty

Biwabkos Consultants LLC warrants that this analysis was performed in good faith using the methodologies and assumptions covered in this report and that data used for the analysis and report were obtained by Biwabkos Consultants LLC employees or representatives via site surveys or research of Crown Castle' available information. In the event that specific third party details were not available, best efforts were made to use assumptions that are based on industry experience of various carriers' standards without violating any confidential information obtained under non-disclosure terms.

Biwabkos Consultants LLC also warrants that this analysis was performed in accordance with industry acceptable standards and methods.

There are no other warranties, express or implied, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose, relating to this agreement or to the services rendered by Biwabkos Consultants hereunder. In no event shall Biwabkos Consultants be held liable to Crown Castle, or to any third party, for any indirect, special, incidental, or consequential damages, including but not limited to loss of profits, loss of data, loss of good will, and increased expenses. In no event shall Biwabkos Consultants be liable to Crown Castle for damages, whether based in contract, tort, negligence, strict liability, or otherwise, exceeding the amount payable hereunder for the services giving rise to such liability.

ATTACHMENT 6

Alternate Candidate Properties

	Subject Property	Parcel ID	Owner
1.	East High Street	10A-85-5C	Edgewater Hill Properties LLC
2.	128 East High Street	10A-85-10	Edgewater Hill Properties LLC
3.	140 East High Street	32-85-5	Edgewater Hill Properties LLC
4.	138 East High Street	10A-85-5A	Edgewater Hill Properties LLC
5.	130 East High Street	10A-85-5B	Edgewater Hill Properties LLC
6.	8 1/2 Lakeview Street (Proposed Candidate)	26-85-25	Anderson, Richard
7.	East High Street	26-85-15	Anderson, Richard
8.	8 1/2 Lakeview Street	05A-85-24	Anderson, Richard
9.	19 Flanders Road	26-85-29	Bromley, Jill K.

Legend

- Site Investigated
- Approximate Parcel Boundary

Sites Investigated:

1. **East High Street, East Hampton, CT**
2. **128 East High Street, East Hampton, CT**
3. **140 East High Street, East Hampton, CT**
4. **138 East High Street, East Hampton, CT**
5. **130 High Street, East Hampton, CT**
6. **Lakeview Street (Proposed Candidate), East Hampton, CT**
7. **East Hight Street**
8. **8 1/2 Lakeview Street**
9. **19 Flanders Raod, East Hampton, CT**

Site Search Summary Map

Proposed Wireless Telecommunications Facility
Site Number 876352
8 1/2 Lakeview Street
East Hampton, Connecticut

N W E S

800 400 0 800 Feet

ALL-POINTS TECHNOLOGY CORPORATION

Map Notes:
Base Map Source: 2019 Aerial Photograph (CT ECO)
Map Scale: 1 inch = 800 feet
Map Date: February 2020