STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

| | | |
|---|---|---|
| IN RE: | : | |
| | : | |
| APPLICATION OF CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE AND OPERATION OF A WIRELESS TELECOMMUNICATIONS FACILITY AT 208 KIRK ROAD (a/k/a 1075 PARADISE AVENUE) IN HAMDEN, CONNECTICUT | : | DOCKET NO. 471 |
| | : | MAY 23, 2017 |

**RESPONSES OF CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS TO CONNECTICUT SITING COUNCIL PRE-HEARING QUESTIONS – SET 2**

On May 9, 2017, the Connecticut Siting Council ("Council") issued Pre-Hearing Questions – Set 2 to Cellco Partnership d/b/a Verizon Wireless ("Cellco"), relating to Docket No. 471, Question Nos. 28 through 39. Below are Cellco's responses.

Question No. 28

As discussed at the May 2, 2017 hearing (Tr. 1, pp. 21, 24-25), would the landlord be amenable to the following:

a. Shifting the proposed parking area to the east side of the compound?

b. Shifting the compound in a northerly direction?

c. Shifting the proposed preferred access road slightly north to avoid removing shrubs and several large trees?

If so, please provide a revised site plan to account for these changes. Include revised distances of the compound fence to the Sorrentino home and property line.

Response

Cellco's landlord would be amenable to the compound modifications described above including the shifting of the parking area to the east side of the facility compound; maintaining the tower location while the shifting of the compound in a northerly direction; and the shifting of the preferred access road to the north to avoid the removal of any additional large trees in the area. A revised site plan showing these modifications is included in Attachment 1 to these responses. This plan includes revised distances between the tower, facility compound improvements, and the access drive to the Sorrentino home and property line to the south.

Question No. 29

As discussed at the May 2, 2017 hearing (Tr. 1, pp. 42-50), provide a preliminary compound screening plan using fence treatments and/or landscaping.

Response

After further consideration of fencing and screening options, Cellco has determined that the most effective way to screen equipment in the compound would be through the use of a solid, darker color (green or brown) stockade-type fence. Cellco would not object to the installation of landscaping around the outside of the fenced compound if additional screening is necessary. This approach also allows Cellco to maintain the entire compound area for the installation of equipment by additional wireless carriers. Details for the stockade fence are included on plan sheet C-8 in Attachment 1.

Question No. 30

As discussed at the May 2, 2017 hearing (Tr. 1, pp. 51-52), provide a photo-simulation of the compound area from the abutting residential property lines to the south (46 & 50 Country Club Drive).

Response

A photograph taken from the approximate location of the Sorrentino property line to the south is provided in Attachment 2. The silhouette outline of the proposed (revised) compound layout has been superimposed on the image to provide a representation of the position, distance and scale of the facility from this location.

Question No. 31

As discussed at the May 2, 2017 hearing (Tr. 1, pp. 57-66, 76-77), provide additional information regarding the need for the facility as it pertains to capacity relief. Include the following:

a. What is the specific purpose of the 700 MHz and 2100 MHz systems?

b. What are the parameters used to measure network performance?

c. Provide specific drop call data from adjacent sites.

d. What are the issues at adjacent sites/sectors that result in deficient service within the target service area?

e. Provide the anticipated exhaustion dates and the amount of anticipated relief provided by the proposed site for the Hamden North 2 700 MHz Beta; Hamden 700 MHz Beta, and Hamden 2100 MHz Beta sectors.

Once the proposed site is on-line and providing capacity relief to adjacent sites, what would be the effective service area for the 700 MHz frequency? For example, the Application lists the 700 MHz proposed service area as 11.7 square miles which overlaps with existing service from adjacent sites. Would parts of this overlapping service be handled by the existing sites, thus lessening the effective service area of the proposed site? Please explain.

Response

As discussed in the Docket No. 471 application, the Hamden 8 Facility will resolve existing gaps in wireless "coverage" in the area around the proposed facility, including poor indoor signal reception in the area surrounding the Hamden 8 Facility location. As a secondary benefit, the Hamden 8 Facility will provide capacity relief to those antenna sectors of Cellco's adjacent cell sites that are directed toward the Hamden 8 Facility.

To further illustrate the coverage needs in the area, provided in Attachment 3 is a Drive Data Map showing actual LTE (700 MHz) signal levels from existing Cellco facilities along public roadways in northwest Hamden. Cellco's goal is to provide reliable coverage throughout the area. A reliable signal level is represented by the yellow samples. The green, purple and red samples shown on the map represent areas where unreliable signal levels exist today.

Cellco uses its 700 MHz frequency service primarily as a coverage layer due to propagation benefits and user equipment capabilities of a vast majority of its subscribers. Cellco's 2100 MHz frequency serves as a capacity layer. At the higher frequency, the 2100 MHz service also provides better user experience for customers in terms of downlink (DL) throughput speeds.

Cellco primarily focuses on resolving network service issues such as dropped calls, ineffective attempts and poor data speeds. Each of these issues are directly related to either coverage problems in an area or lack of adequate network capacity, or both. The data presented below summarizes each adjacent sector's average one week voice and data performance, the projected sector exhaust date and the estimated percentage of user traffic that will be offloaded by the proposed Hamden 8 Facility once it is operational.

Table 1 LTE Voice Performance

| Facility Name | Sector | Ineffective Attempts % | Drop Call % |
|---|---|---|---|
| HAMDEN E CT | Alpha | 0.09 | 0.58 |
| HAMDEN NORTH 2 CT | Beta | 0.17 | 2.64 |
| HAMDEN 2 CT | Alpha | 0.45 | 1.79 |
| CENTERVILLE | Alpha | 0.20 | 1.27 |
| HAMDEN CT | Alpha | 0.19 | 2.19 |
| HAMDEN NORTH CT | Gamma | 0.18 | 0.84 |

Table 2 CDMA Voice Performance

| Facility Name | Sector | Ineffective Attempts % | Drop Call % |
|---|---|---|---|
| HAMDEN E CT | Alpha | 0.22 | 0.45 |
| HAMDEN NORTH 2 CT | Beta | 0.19 | 0.83 |
| HAMDEN 2 CT | Alpha | 0.20 | 0.91 |
| HAMDEN CT | Alpha | 0.17 | 1.44 |
| HAMDEN NORTH CT | Gamma | 0.12 | 0.31 |

Cellco's system performance standard is 0.75% or better for dropped calls (DC) and ineffective attempts (IA). For LTE voice services (Table 1), only one of the five surrounding antenna sectors is complying with Cellco's DC standard. For CDMA voice services (Table 2), three of the five surrounding antenna sectors are not complying with Cellco's DC standard. All of the surrounding sites are meeting Cellco's IA standard.

Table 3 LTE Data Performance

| Facility Name | Sector | Ineffective Attempts % | User Perceived DL Throughput (Mbps) |
|---|---|---|---|
| HAMDEN E CT | Alpha | 0.21 | 5.24 |
| HAMDEN NORTH 2 CT | Beta | 0.11 | 1.93 |
| HAMDEN 2 CT | Alpha | 0.38 | 2.45 |
| CENTERVILLE | Alpha | 0.26 | 2.04 |
| HAMDEN CT | Alpha | 0.34 | 2.73 |
| HAMDEN NORTH CT | Gamma | 0.16 | 2.55 |

Cellco's system performance standard for network data speeds is 5 Mbps or better. For LTE data (Table 3), only one of the five surrounding antennas sectors is meeting Cellco's data speed standard.

Table 4 Projected Exhaust Dates and Offload Percentage

| Site Name | Sector | Projected Exhaust Date | Offload % |
|---|---|---|---|
| HAMDEN E CT | Alpha | Beyond 5 years | 30% |
| HAMDEN NORTH 2 CT | Beta | Currently Exhausting | 17% |
| HAMDEN 2 CT | Alpha | Beyond 5 years | 56% |
| CENTERVILLE CT | Alpha | Beyond 5 years | 63% |
| HAMDEN CT | Alpha | Beyond 5 years | 16% |
| HAMDEN NORTH CT | Gamma | 6/28/2017 | 47% |

Once Hamden 8 Facility is activated, the effective service area for 700 MHz frequency would be approximately 8.6 square miles. This 8.6 square mile effective service area will allow Cellco to further optimize its surrounding facilities and significantly enhance wireless service in the area. For example, the existing Hamden 2 (Alpha Sector) antennas are currently "over reaching" to the north due to the lack of insufficient service coming from the other adjacent facilities to the east including Centerville, Hamden East and Hamden North. Once the Hamden 8

Facility is built and activated, we will be able to pull the coverage from the Hamden 2 (Alpha sector) antennas back (to the south) which would reduce its overlapping coverage with Hamden 8. By doing this, the Hamden 8 Facility can more effectively handle the wireless traffic proximate to its location. This will also provide some capacity benefit for the Hamden 2 site, improve overall network performance and reduce the potential for interference between these two adjacent cell sites.

Question No. 32

What service parameter requires an antenna height of 150 feet? In what ways would service be deficient if antennas were installed at 130 feet?

Response

Cellco requires its antennas to be mounted at 160 feet at the proposed Hamden 8 Facility to meet its wireless service objectives in the area. If Cellco were to install its antennas at a height significantly lower (e.g. 130 feet) areas of weaker and unreliable service would develop to the northwest and southwest of the Hamden 8 Facility due to terrain in the area. Such a change would also lower the probability that Cellco would be able to provide improved indoor signal penetration and diminishes its ability to extend service effectiveness when needed in the future.

Question No. 33

As discussed at the May 2, 2017 hearing (Tr. 1, pp. 74-76), is it possible to relocate the tower site to either the ridge immediately east of the site or to the ridge north-northeast of lessor's house? If yes, please provide site detail. If not, why not?

Response

In addition to the proposed cell site location (as modified in response to Q. 28 above), Cellco investigated the feasibility of relocating the Hamden 8 Facility to three (3) other areas on

the property, described in more detail below. Each alternative location could be accessed from Country Club Road and developed with a facility compound similar in dimensions as the proposed site.

Alternate Site 1: This alternative is located approximately 157 feet east northeast of the proposed tower site at a ground elevation of approximately 305.5 feet above mean sea level (AMSL). This location extends off the north side of the current tree farm plating area into a relatively level and wooded area. Using this alternate location would provide additional separating distances between the cell site and the neighbors to the south, while maintaining all intervening vegetation, including trees bordering the cul-de-sac where the access road would originate. Trees requiring removal to develop this location are on the north side of the subject parcel and do not provide screening to neighboring (developed) properties to the south. The neighboring property to the north is undeveloped and wooded. Although slightly higher (approximately 10') in ground elevation as compared to the proposed site, this location provides for natural topographic screening to the south and Country Club Road. To achieve a similar antenna height as the proposed Hamden 8 Facility, the height of a monopole at the Alternate Site 1 location would need to be 150 feet above ground level (AGL), ten (10) feet lower than the tower at the proposed site. A Partial Site Plan drawing for Alternate Site 1 is included in Attachment 4.

Alternate Site 2: This alternative is located approximately 336 feet east-northeast of the proposed tower site atop the central ridge of the property at a ground elevation of approximately 328 feet AMSL. This location would require a tower height of 120 feet AGL to achieve Cellco's wireless service objectives. Similar to Alternate Site 1, intervening vegetation to the southerly neighbors would be maintained; any trees requiring removal at this location do not provide

screening to abutting and nearby developed properties to the south. This location is slightly higher than the terminus of Country Club Drive and portions of the compound would be visible from some locations to the south. A Partial Site Plan drawing for Alternate Site 2 is included in Attachment 5.

Alternate Site 3: This alternative is located north-northeast of the property owner's home at a ground elevation of approximately 342 feet AMSL. The landlord indicated that this area has the deepest and most fertile soils on the property and he plans to use it for alternate agricultural use (cultivation of hops) and is therefore not available for consideration as a tower site.

A graphic showing the location of the proposed cell site and all three alternative sites described above is included in Attachment 6.

In addition to evaluating the alternative site locations from an engineering prospective, Cellco also spent time evaluating the visibility of each of the alternative locations. A technical memo summarizing the visual impact of the Alternative Site 1 and Alternative Site 2 is included in Attachment 7.

Question No. 34

As discussed at the May 2, 2017 hearing (Tr. 1, p. 82), does the woodland north of the site qualify as a core forest? If so, is the tower site within the core forest block?

Response

A forest fragmentation model has been developed by the University of Connecticut Center for Land Use Education and Research ("CLEAR") to classify forest cover into four main categories of increasing disturbance – core, perforated, edge and patch – based on a key metric

called edge width.[1] Core forest areas are sub-classified into three categories – small core, medium core, and large core – based on the area of a given core patch: large core forest is an area greater than 500 acres; medium core forest is an area between 500 and 250 acres; and small core forest is an area of less than 250 acres. Based on this forest block classification tool, the subject property forest is classified as an Edge Forest Block (±54.4 acres) as a result of the on-site and surrounding residential developments and roadways that have significantly fragmented the small core forest block (±6.4 acres) located nearby to the north. Refer to the Forest Fragmentation Map provided in Attachment 8.

Development of the proposed Hamden 8 Facility will result in approximately 0.45 acre of forest removal within the Edge Forest Block which represents ±0.8% of the total Edge Forest Block. An alternate access route through the existing cleared tree farm would reduce the Edge Forest Block clearing to ±0.18 acre. Alternate Site 1 and 2 locations would be located primarily within the cleared limits of the tree farm, resulting in minimal impact to the Edge Forest Block; ±0.1 and ±0.06 acre, respectively. Therefore, since the proposed Hamden 8 Facility and the two alternate sites will not result in fragmentation of a core forest block and clearing would be limited to minor impact to the Edge Forest Block, no significant change to the overall nature and function of this forest habitat would occur due to the proposed development.

Question No. 35

As discussed at the May 2, 2017 hearing (Tr. 1, pp. 85-87), provide a site plan for the preferred road alignment that includes stormwater controls (swales, level spreaders, silt barriers). Provide details of any proposed drainage swales along the new road alignment and how the

[1] Forest Fragmentation Assessment Model. UCONN Center for Land Use Education and Research. 2007. http://clear.uconn.edu/Projects/landscape/forestfrag/index.htm

discharge of collected stormwater would impact the site and abutting properties. Provide a cross section and profile of the preferred road alignment.

Response

Preliminary storm water controls for each of the alternative access driveway locations and tower sites provided on the site plans included in Attachments 1, 4 and 5.

Question No. 36

Identify the location of temporary soil stockpiles.

Response

Temporary stockpile locations are shown on the site plans included in Attachments 1, 4 and 5.

Question No. 37

Once constructed, describe the number of anticipated vehicle trips to the site per month. Include Cellco and diesel delivery vehicles.

Response

Once the facility is constructed, routine maintenance by a site technician is performed once a month. Unless there is an extended power outage, the emergency generator does not require re-fueling more than once a year. In the case of an emergency, when commercial power to the facility is unavailable, the generator can operate, under normal conditions for 60-65 hours before refueling would be required. Generator refueling contractors are required to utilize temporary spill prevention measures during all refueling operations.

Question No. 38

Provide an itemized cost estimate for the facility, including Cellco's installation.

Response

The total estimated cost of construction for the Hamden 8 Facility is $613,000. This estimate includes:

| | | |
|---|---|---|
| (1) | Cell site radio equipment of approximately | $170,000 |
| (2) | Tower, coax and antenna costs of approximately | 250,000 |
| (3) | Power systems costs of approximately | 50,000 |
| (4) | Equipment and platform costs of approximately | 98,000 |
| (5) | Miscellaneous costs (including site preparation and installation) of approximately | 45,000 |

Question No. 39

Describe the balloon fly that occurred on May 2, 2017 and any subsequent balloon flights conducted thereafter for proposed alternate tower sites.

Response

The public balloon float conducted on May 2, 2017 consisted of raising an approximately four-foot diameter weather balloon to a height of 160 feet AGL. Wind conditions were favorable for most of the morning hours (between 3 and 6 mph from 7:40 a.m. to noon) but then picked up considerably, ultimately topping out at speeds exceeding 20 mph, resulting in the balloon being blown to severe angles and not consistently representative of the proposed tower height. As witnessed at the Council's field review the balloon was not a reliable source for evaluation of the tower height and location after 12 p.m.

Based on the input at the Council's May 2, 2017 hearing, Cellco conducted balloon floats at the Alternate Site 1 and Alternate Site 2 locations described in the response to Q. 33 above, at heights of 150 and 120 feet AGL, respectively. These activities occurred on May 5, 2017

between the hours of 8 a.m. and 2 p.m. and were completed to assist Cellco in evaluating potential views at these locations. Winds averaged less than 5 mph for the duration of the most recent balloon floats. Photo-documentation of the May 5th balloon floats, associated photo-simulations and a technical memorandum are provided in Attachment 7.

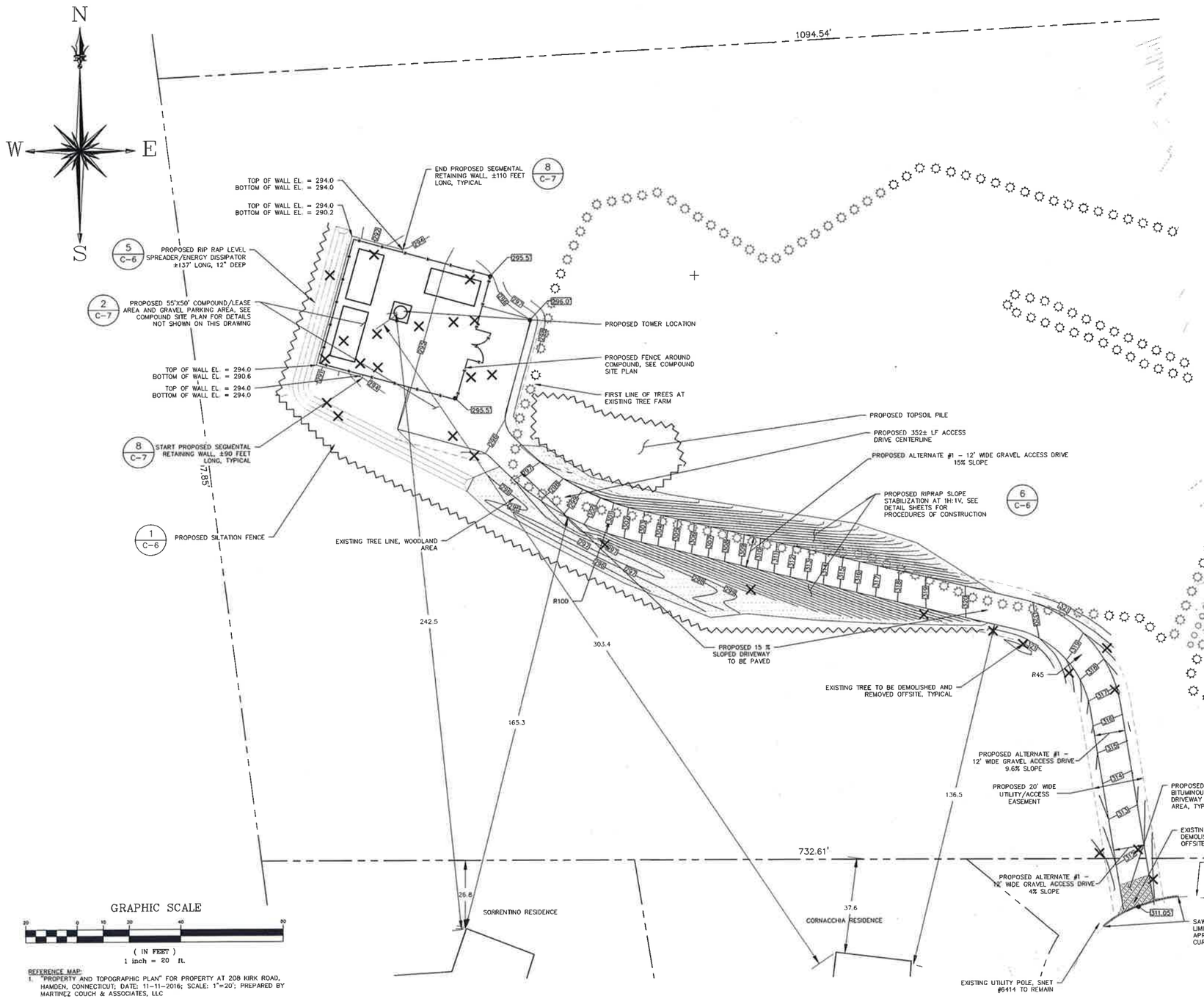
**CERTIFICATION OF SERVICE**

I hereby certify that on this 23rd day of May 2017, a copy of the foregoing was sent via electronic mail to the following:

Patricia Sorrentino
c/o Burt B. Cohen, Esq.
Murtha Cullina LLP
265 Church Street
P.O. Box 704
New Haven, CT 06503-0704
bcohen@murthalaw.com

Kenneth C. Baldwin

# ATTACHMENT 1




## GENERAL NOTES

CONSTRUCTION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL MEASUREMENTS. ANY VARIATIONS FROM CONDITIONS SHOWN ARE TO BE BROUGHT TO THE ATTENTION OF THE DESIGN PROFESSIONAL AND/OR MCA PRIOR TO BIDDING FOR RESOLUTION IN ACCORDANCE WITH CONTRACT DOCUMENT REQUIREMENTS.
2. ALL REQUIRED PERMITS ARE TO BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE.
3. ALL DIMENSIONS ARE TO THE OUTSIDE FACE OF THE NOTED ITEM.
4. WORK LIMITS SHALL BE AS NOTED. ALL ITEMS DISTURBED BY ANY AND ALL CONSTRUCTION ACTIVITIES SHALL BE RESTORED SUBSTANTIALLY TO THE CONDITION THEY EXISTED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, TO THE OWNERS APPROVAL.
5. THE CONTRACTOR AT A MINIMUM SHALL MAINTAIN ALL SEDIMENT AND EROSION CONTROL DEVICES AS DIRECTED, AS NECESSARY, AND IN ACCORDANCE WITH CONTRACT REQUIREMENTS, AND SHALL CHECK ALL SYSTEMS ON A DAILY BASIS TO ENSURE THE PREVENTION OF SEDIMENT TRANSPORT AND THE CONTROL OF EROSION.
6. THE LOCATIONS OF SITE UTILITIES ARE UNKNOWN. PRIOR TO COMMENCING ANY EXCAVATION, THE CONTRACTOR SHALL PLACE A "CALL BEFORE YOU DIG" (CBYD) REQUEST (PHONE: 1-800-922-4455). THE PROTECTION OF EXISTING UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AT HIS EXPENSE.
7. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL ACTIVITY ON THE SUBJECT PROPERTY.
8. ALL FUEL, OIL PAINTS, OR OTHER HAZARDOUS MATERIALS STORED ON-SITE DURING THE CONSTRUCTION PERIOD SHOULD BE IN A SECONDARY CONTAINER AND REMOVED TO A LOCKED INDOOR AREA WITH AN IMPERVIOUS FLOOR WHEN THEY ARE NOT BEING USED. BULK FUEL FOR CONSTRUCTION EQUIPMENT SHALL NOT TO BE STORED ON-SITE. IF THIS BECOMES NECESSARY, FUEL SHOULD BE LOCATED WITHIN A SECONDARY CONTAINMENT SYSTEM TO PREVENT LEAKS FROM ENTERING THE ENVIRONMENT, SHELTERED FROM PRECIPITATION, AND IN A SECURED AREA. A SUPPLY OF ABSORBENT SPILL RESPONSE MATERIAL SHOULD BE AVAILABLE, ESPECIALLY DURING REFUELING, TO CLEAN UP ANY SPILLS OF HAZARDOUS MATERIAL SUCH AS GASOLINE OR OIL. IF SPILL OCCURS CALL 24-HOURS A DAY AT (860) 424-3338 TO ALERT SPILL RESPONSE TEAM.
9. THE CONTRACTOR MUST MAINTAIN (REPAIR/REPLACE WHEN NECESSARY) THE SILTATION CONTROL DEVICES, AS SHOWN ON THIS SHEET AND DETAILS SHEETS, UNTIL ALL INSTALLATION IS COMPLETED AND ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED.
10. INDICATED UNDERGROUND UTILITIES ARE BASED ON INDICATED MAP REFERENCES. THE LOCATIONS ARE CONSIDERED APPROXIMATE AND ALL UTILITIES MAY NOT BE SHOWN. PRIOR TO ANY CONSTRUCTION THE CONTRACTOR SHALL CALL 1-800-922-4455 AND HAVE ALL UTILITIES MARKED ON THE GROUND.
11. ALL MATERIAL EXCAVATION, FILLING SHALL BE IN CONFORMANCE WITH APPROPRIATE SECTIONS OF THE TOWN OF HAMDEN REGULATIONS AND OSHA WORKPLACE SAFETY REGULATIONS.
12. CONTRACTOR SHALL USE WORK METHODS APPROVED BY OSHA FOR ALL TRENCHING AND EXCAVATION.
13. NO GRADED EARTH SLOPE SHALL EXCEED A 3H:1V SLOPE.
14. PROVIDE POSITIVE DRAINAGE OF FINISHED GRADE AT ALL DISTURBED AREAS AS INTENDED BY THESE PLANS.
15. ALL SITE WORK SHALL BE IN CONFORMANCE WITH CONN. D.O.T. FORM 817 OR LATEST EDITION AS A MINIMUM ACCEPTABLE STANDARD.

SURVEY NOTES

THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THRU 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ENDORSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPT. 26, 1996. THE LIMITED TOPOGRAPHIC SURVEY PORTION OF THIS PLAN CONFORMS TO A VERTICAL ACCURACY OF CLASS T-2 AND IS INTENDED TO BE USED TO DEPICT A PROPOSED TELECOMMUNICATION SITE.

THE PROPERTY/BOUNDARY LINES DEPICTED HEREON ARE COMPILED FROM OTHER MAPS, DEEDS AND LIMITED FIELD SURVEY. THESE LINES ARE NOT TO BE CONSTRUED AS A BOUNDARY OPINION AND ARE SUBJECT TO CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE. PROPERTY MAY BE SUBJECT TO ENCUMBRANCES, EASEMENTS, RIGHTS OF WAY AS A TITLE SEARCH REPORT MAY DISCLOSE. PLANIMETRIC FEATURES SUCH AS PARKING AREAS, PAVED DRIVE ARE COMPILED FROM OTHER MAPS AND LIMITED FIELD SURVEY.

NORTH ORIENTATION AND COORDINATES REFER TO CONNECTICUT GRID SYSTEM NAD 83.

ELEVATIONS BASED ON NGVD 1929 DATUM.

PARCEL OWNER OF RECORD: JOSEPH A VIGNOLA & DENISE COURTEMANCHE

PARCEL KNOWN AS 1075 PARADISE AVENUE

PARCEL AREA= 9.34± ACRES

PARCEL IS IN THE RESIDENTIAL ZONING DISTRICT R3.

MAP 2826, LOT NO. 24, HAMDEN ASSESSORS MAP

PARCEL IS NOT IN A FLOOD ZONE BASED ON THE FLOOD INSURANCE RATE MAP, NEW HAVEN COUNTY, CONNECTICUT, ALL JURISDICTIONS, PANEL 293 OF 535, COMMUNITY MAP NUMBER 09009C0293H, MAP EFFECTIVE DATE DECEMBER 17, 2010, BY FEDERAL EMERGENCY MANAGEMENT AGENCY.

PARCEL IS SUBJECT TO RIGHTS AND EASEMENTS AS OF RECORD MAY APPEAR.

ALL IMPROVEMENTS ARE NOT SHOWN.

## SYMBOLS LEGEND

- PROPERTY LINE
- EASMENT LINE
- EXISTING CONTOUR
- 297 PROPOSED CONTOUR
- CHAIN LINK FENCE
- SILT FENCE
- SILT SOCK
- ROAD CENTERLINE
- EXISTING TREE LINE
- EXISTING TREE FARM LINE
- POLE #XXXX EXISTING UTILITY POLE
- IRON PIN
- METAL POST
- DECIDUOUS TREE
- >6" DBH TREE TO BE REMOVED
- BITUMINOUS CONCRETE DRIVEWAY APRON
- GEOGRID REINFORCED GRAVEL DRIVEWAY
- RIP RAP STABILIZED SLOPE


Cellco Partnership
d/b/a Verizon Wireless
verizon
WIRELESS COMMUNICATIONS FACILITY
99 EAST RIVER DRIVE
EAST HARTFORD, CT 06108

On Air Engineering, LLC
88 Foundry Pond Road
Cold Spring, NY 10516
onair@optonline.net
201-456-4624

MCA
1084 Cromwell Avenue, Suite A-2
Rocky Hill, CT 06067
Tel: 860-436-4364
MartinezCouch.com

LICENSURE

STATE OF CONNECTICUT
RICHARD E. COUCH
PROFESSIONAL ENGINEER

RICHARD E. COUCH, P.E.
CT LIC. NO. 15480


| NO.: | DATE: | SUBMISSIONS |
|---|---|---|
| | | |

| DRAWN BY: | CHECKED BY: |
|---|---|
| EJN | RL |

--

SITE NAME:

HAMDEN 8 CT

PROJECT INFORMATION:

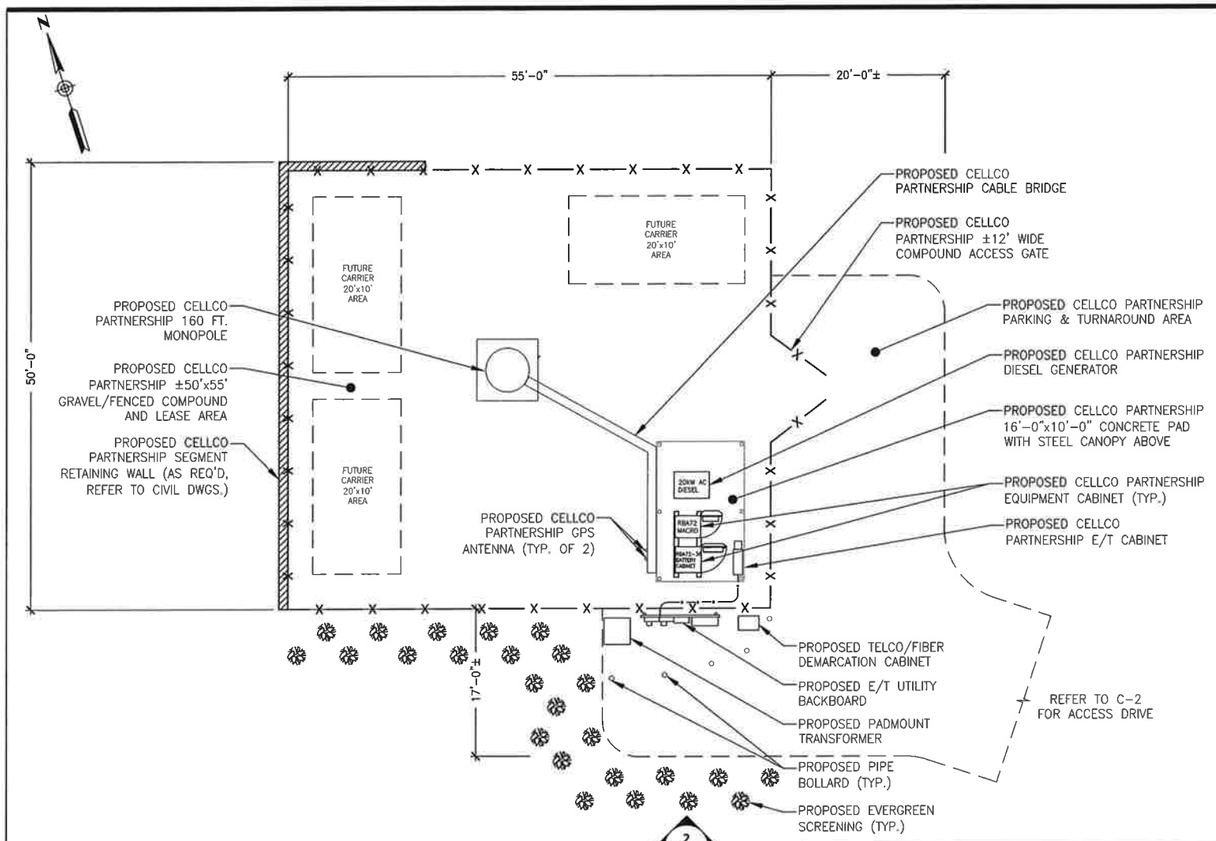
208 KIRK RD.
HAMDEN, CT 06514

DRAWING TITLE:

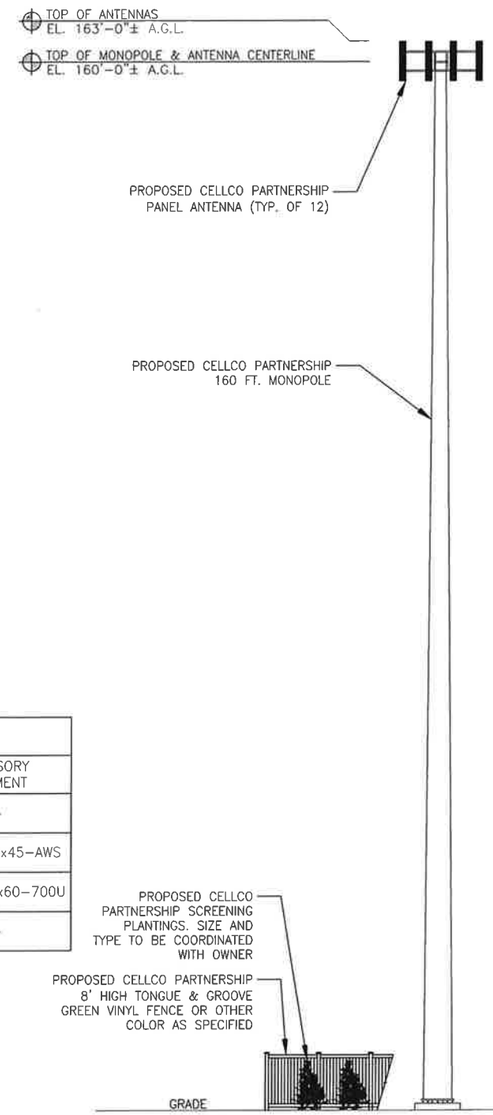
PROPOSED SITE ALTERNATE LAYOUT PARTIAL SITE PLAN

SHEET NUMBER:

C-2

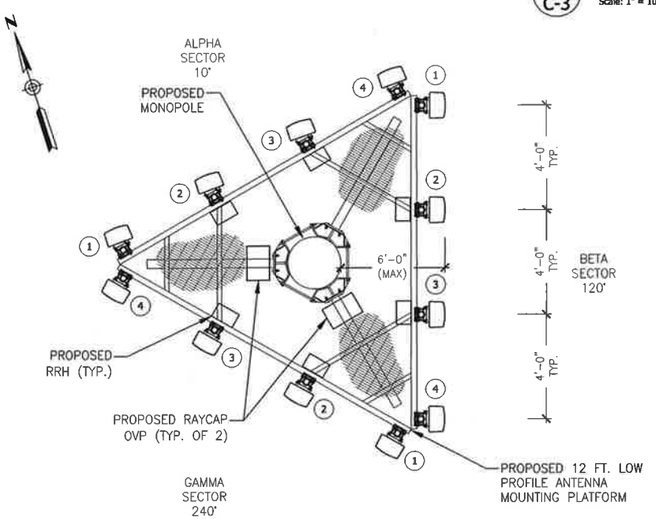



1 C-3 **COMPOUND PLAN**
Scale: 1" = 10'-0"

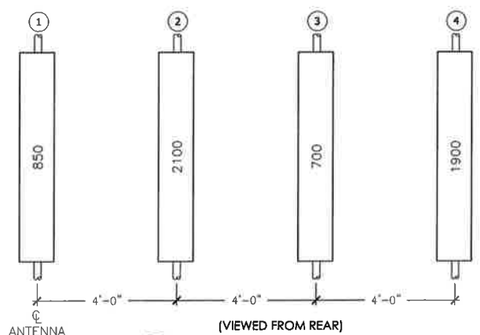



2 C-3 **SOUTH ELEVATION**
Scale: 1/32" = 1'-0"

| ANTENNA SPECIFICATIONS (TYP. AT 3 SECTORS) | | | | |
|---|---|---|---|---|
| POS. | FREQUENCY BAND | MODEL # | SIZE | ACCESSORY EQUIPMENT |
| 1 | 850-CELL | SBNHH-1D65B | 72.0"Hx11.9Wx7.1"D; 40.6 LBS. | --- |
| 2 | 2100-AWS | SBNHH-1D65B | 72.0"Hx11.9Wx7.1"D; 40.6 LBS. | ALU RRH_4x45-AWS |
| 3 | 700-LTE | SBNHH-1D65B | 72.0"Hx11.9Wx7.1"D; 40.6 LBS. | ALU RRH_2x60-700U |
| 4 | 1900-PCS | SBNHH-1D65B | 72.0"Hx11.9Wx7.1"D; 40.6 LBS. | --- |




3 C-3 **ANTENNA PLAN @ 160 FT. A.G.L.**
Scale: 3/8" = 1'-0"




4 C-3 **TYPICAL ANTENNA ELEVATION**
Scale: N.T.S.


Cellco Partnership
d/b/a Verizon Wireless

verizon

WIRELESS COMMUNICATIONS FACILITY
99 EAST RIVER DRIVE
EAST HARTFORD, CT 06108

On Air Engineering, LLC
88 Foundry Pond Road
Cold Spring, NY 10516
onair@optonline.net
201-456-4624


LICENSURE

STATE OF CONNECTICUT · DAVID A. WEINPAHL · NO. 22144 · LICENSED PROFESSIONAL ENGINEER

DAVID WEINPAHL, P.E.
CT LIC. NO. 22144

| NO.: | DATE: | SUBMISSIONS |
|---|---|---|
| 0 | 11.11.16 | REVIEW SET |
| 1 | 02.22.17 | CSC FILING |
| 2 | 05.19.17 | REVISED PER CSC COMMENTS |

| DRAWN BY: | CHECKED BY: |
|---|---|
| MF | DW |

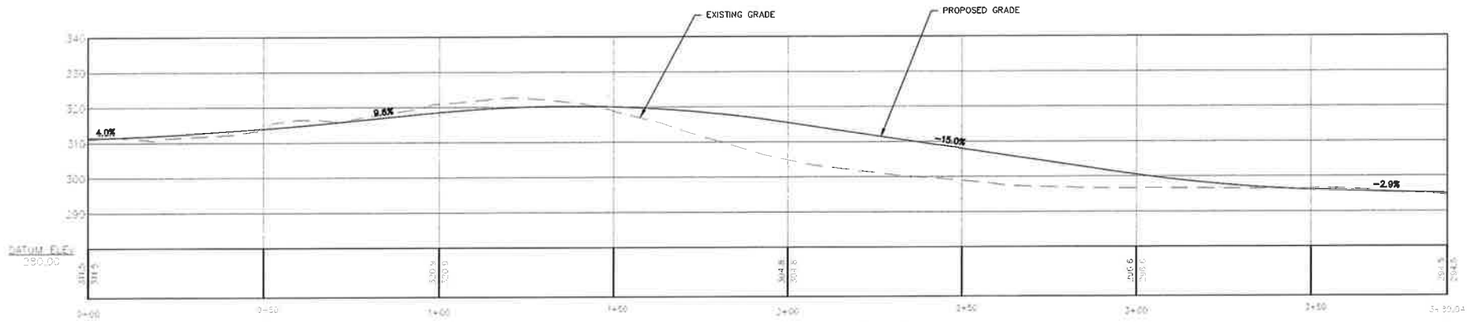
--

SITE NAME:
HAMDEN 8 CT

PROJECT INFORMATION:
208 KIRK RD.
HAMDEN, CT 06514

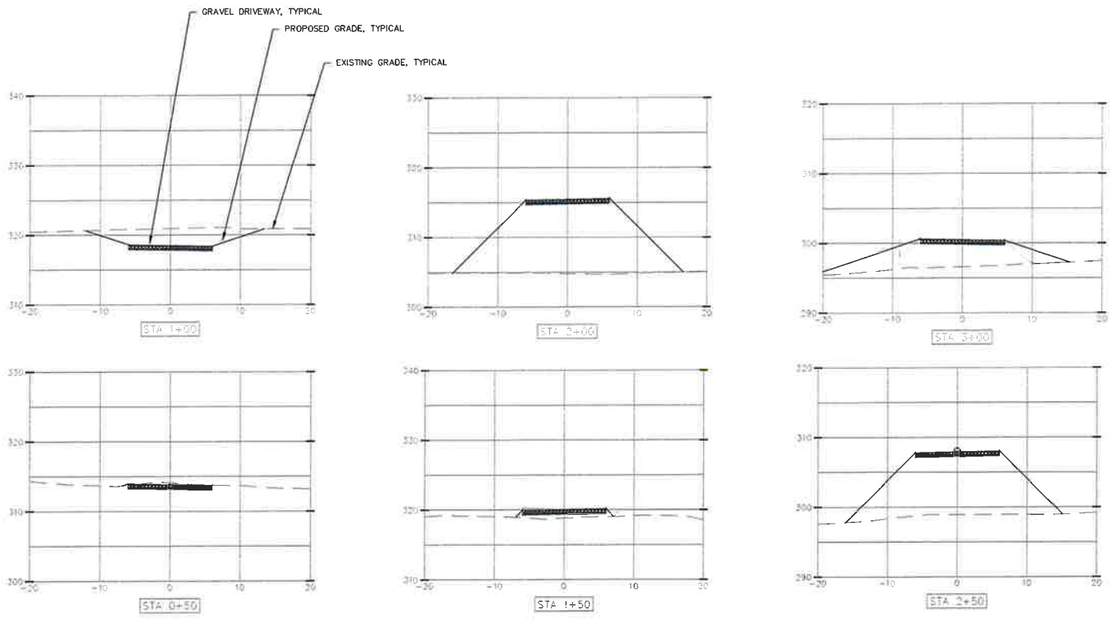
DRAWING TITLE:
PROPOSED SITE ALTERNATE LAYOUT - COMPOUND PLAN, SOUTH ELEVATION & ANTENNA PLANS

SHEET NUMBER:
C-3




## ACCESS DRIVE PROFILE

SCALE: 1" = 20'


## CROSS SECTIONS

SCALE: 1" = 10'


Cellco Partnership
d/b/a Verizon Wireless

verizon

WIRELESS COMMUNICATIONS FACILITY
99 EAST RIVER DRIVE
EAST HARTFORD, CT 06108

On Air Engineering, LLC
88 Foundry Pond Road
Cold Spring, NY 10516
onair@optonline.net
201-456-4624

MCA
1084 Cromwell Avenue, Suite A-2
Rocky Hill, CT 06067
Tel: 860-436-4364
MartinezCouch.com

LICENSURE


RICHARD B. COUCH, P.E.
CT LIC. NO. 15480

| NO.: | DATE: | SUBMISSIONS |
|---|---|---|
| 1 | 02.22.17 | CSC FILING |
| 0 | 11.11.16 | REVIEW SET |

| DRAWN BY: | CHECKED BY: |
|---|---|
| EJN | RL |

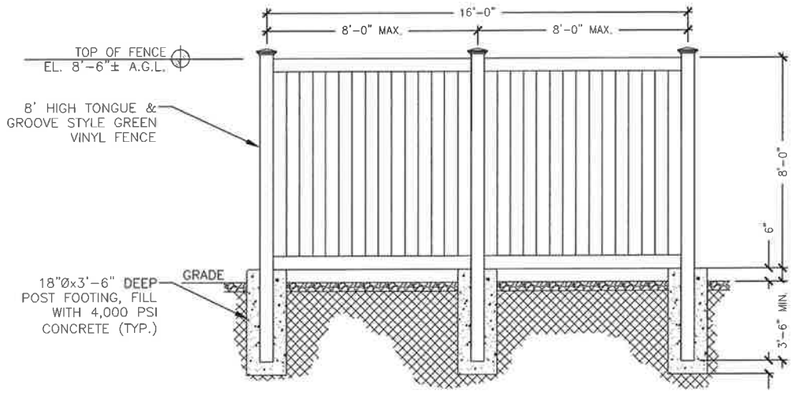
--

SITE NAME:
HAMDEN 8 CT

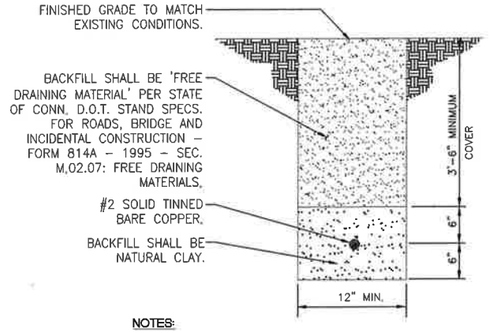
PROJECT INFORMATION:
208 KIRK RD.
HAMDEN, CT 06514

DRAWING TITLE:
PROFILES AND SECTIONS

SHEET NUMBER:
C-4



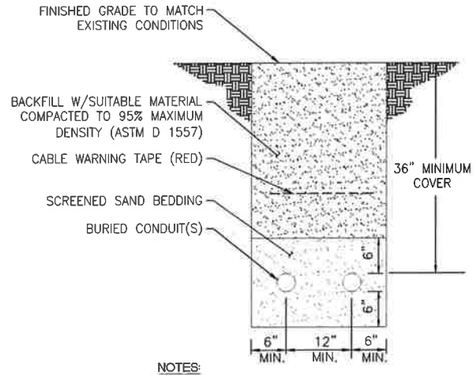

1 / C-8 **FENCE SECTION**
Scale: N.T.S.




NOTES:

1. ENGINEER SHALL INSPECT PLACEMENT OF EGR CONDUCTOR PRIOR TO BACKFILLING.
2. MAINTAIN MIN. 2'-0" LINEAR CLEARANCE BETWEEN NATURAL CLAY BACKFILL AND THE FOLLOWING: FOUNDATION, UNDERGROUND PIPING/CONDUIT, UNDERGROUND SERVICES. IN THE CLEARANCE AREAS, USE EARTH BACKFILL INSTEAD.
3. EXERCISE HANDLING AND USE PRECAUTION OF BACKFILL MATERIAL PER MFR'S REQUIREMENTS.

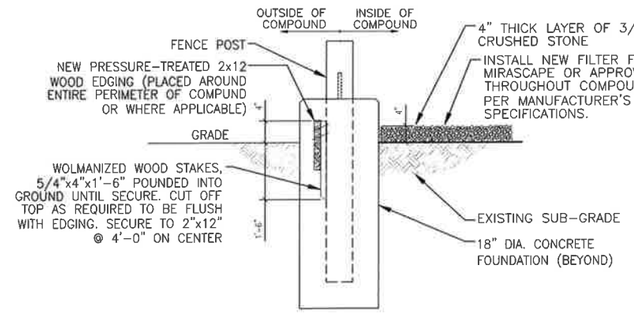
2 / C-8 **EGR TRENCH/BACKFILL DETAIL**
Scale: N.T.S.



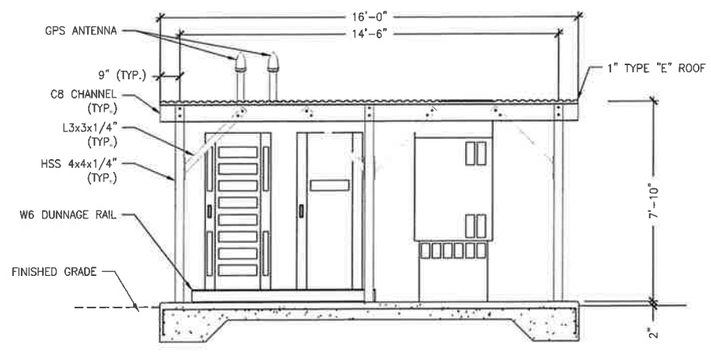

NOTES:

1. THE CLEAN FILL SHALL PASS THROUGH A 3/8" MESH SCREEN AND SHALL NOT CONTAIN SHARP STONES. OTHER BACKFILL SHALL NOT CONTAIN ASHES, CINDERS, SHELLS, FROZEN MATERIAL, LOOSE DEBRIS OR STONES LARGER THAN 2" IN MAXIMUM DIMENSION.
2. WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED, CONTRACTOR SHALL HAND DIG AND PROTECT EXISTING UTILITIES.

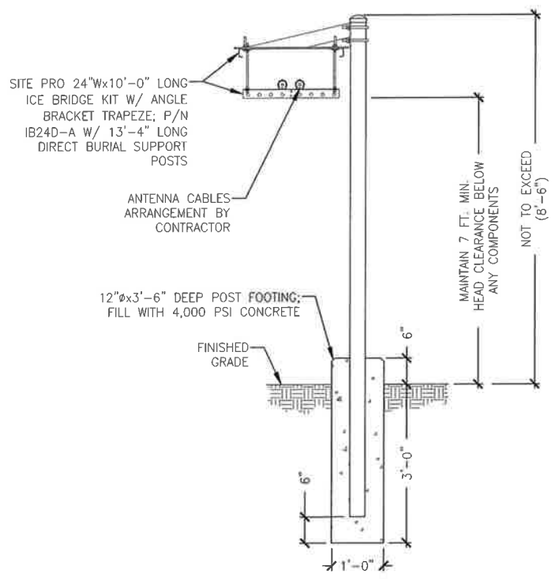
3 / C-8 **TYPICAL ELECTRICAL TRENCH DETAIL**
Scale: N.T.S.




4 / C-8 **GRADE DETAIL**
Scale: N.T.S.




5 / C-8 **EQUIPMENT PLATFORM SECTION**
Scale: N.T.S.




6 / C-8 **CABLE BRIDGE DETAIL**
Scale: N.T.S.


Cellco Partnership
d/b/a Verizon Wireless
verizon
WIRELESS COMMUNICATIONS FACILITY
99 EAST RIVER DRIVE
EAST HARTFORD, CT 06108

On Air Engineering, LLC
88 Foundry Pond Road
Cold Spring, NY 10516
onair@optonline.net
201-456-4624


LICENSURE

STATE OF CONNECTICUT · DAVID A. WEINPAHL · NO. 22144 · LICENSED PROFESSIONAL ENGINEER

DAVID WEINPAHL, P.E.
CT LIC. NO. 22144

| NO.: | DATE: | SUBMISSIONS |
|---|---|---|
| 0 | 11.11.16 | REVIEW SET |
| 1 | 02.22.17 | CSC FILING |
| 2 | 05.19.17 | REVISED PER CSC COMMENTS |

| DRAWN BY: | CHECKED BY: |
|---|---|
| MF | DW |

--

SITE NAME:
HAMDEN 8 CT

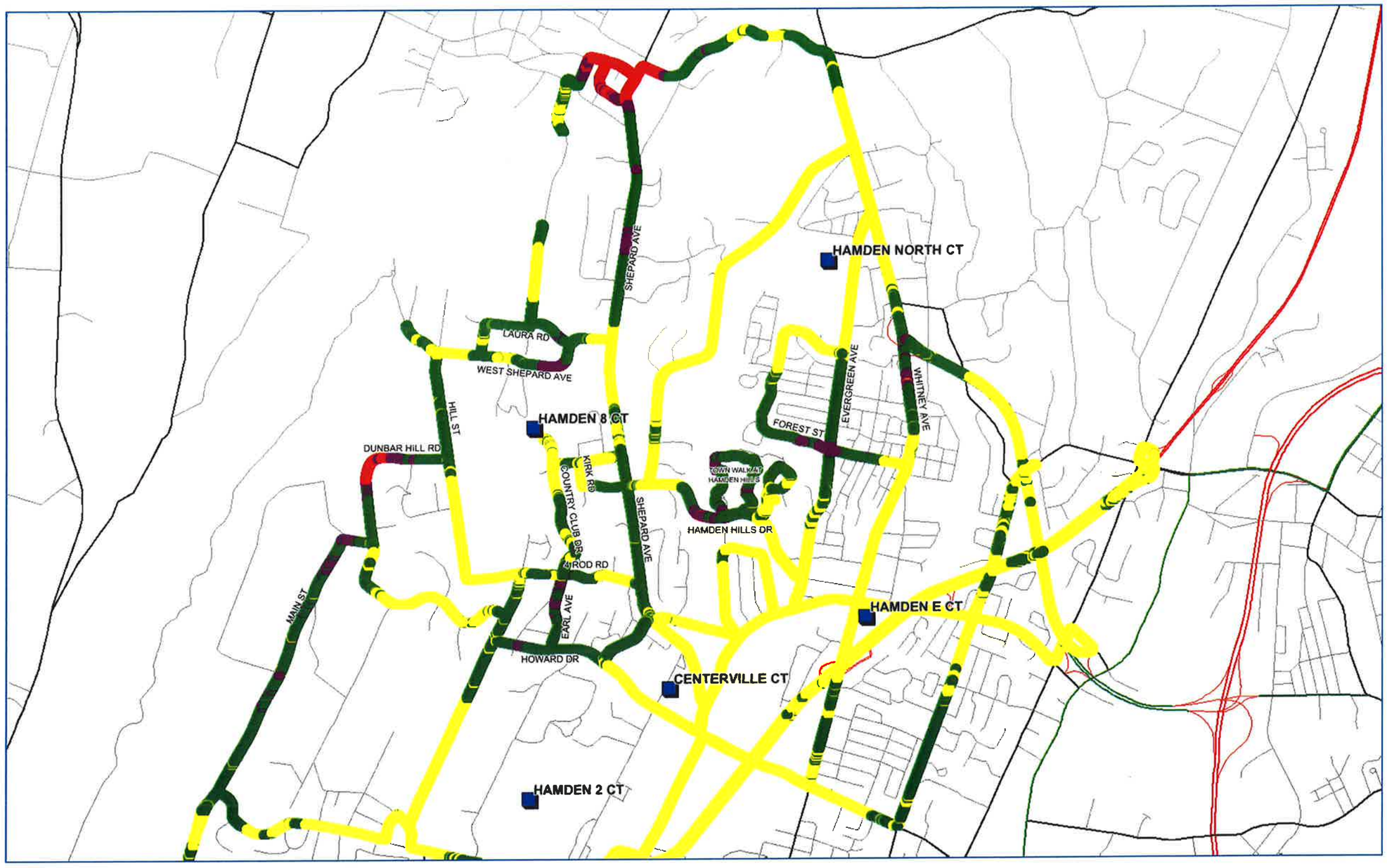
PROJECT INFORMATION:
208 KIRK RD.
HAMDEN, CT 06514

DRAWING TITLE:
PROPOSED SITE ALTERNATE LAYOUT DETAILS

SHEET NUMBER:
C-8

# ATTACHMENT 2

# ATTACHMENT 3




**Existing LTE Coverage (RSRP)**

- Reliable Coverage (>= -92 dBm)
- Unreliable Coverage - Indoor (-92 to -102 dBm)
- Unreliable Coverage - In-vehicle (-102 to -107 dBm)
- Unreliable Coverage - Outdoor (-107 to -115 dBm)
- Unusable Coverage (< -115 dBm)

# ATTACHMENT 4

## GENERAL NOTES

CONSTRUCTION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL MEASUREMENTS. ANY VARIATIONS FROM CONDITIONS SHOWN ARE TO BE BROUGHT TO THE ATTENTION OF THE DESIGN PROFESSIONAL AND/OR MCA PRIOR TO BIDDING FOR RESOLUTION IN ACCORDANCE WITH CONTRACT DOCUMENT REQUIREMENTS.
2. ALL REQUIRED PERMITS ARE TO BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE.
3. ALL DIMENSIONS ARE TO THE OUTSIDE FACE OF THE NOTED ITEM.
4. WORK LIMITS SHALL BE AS NOTED. ALL ITEMS DISTURBED BY ANY AND ALL CONSTRUCTION ACTIVITIES SHALL BE RESTORED SUBSTANTIALLY TO THE CONDITION THEY EXISTED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, TO THE OWNERS APPROVAL.
5. THE CONTRACTOR AT A MINIMUM SHALL MAINTAIN ALL SEDIMENT AND EROSION CONTROL DEVICES AS DIRECTED, AS NECESSARY, AND IN ACCORDANCE WITH CONTRACT REQUIREMENTS, AND SHALL CHECK ALL SYSTEMS ON A DAILY BASIS TO ENSURE THE PREVENTION OF SEDIMENT TRANSPORT AND THE CONTROL OF EROSION.
6. THE LOCATIONS OF SITE UTILITIES ARE UNKNOWN. PRIOR TO COMMENCING ANY EXCAVATION, THE CONTRACTOR SHALL PLACE A "CALL BEFORE YOU DIG" (CBYD) REQUEST (PHONE: 1-800-922-4455). THE PROTECTION OF EXISTING UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AT HIS EXPENSE.
7. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL ACTIVITY ON THE SUBJECT PROPERTY.
8. ALL FUEL, OIL PAINTS, OR OTHER HAZARDOUS MATERIALS STORED ON-SITE DURING THE CONSTRUCTION PERIOD SHOULD BE IN A SECONDARY CONTAINER AND REMOVED TO A LOCKED INDOOR AREA WITH AN IMPERVIOUS FLOOR WHEN THEY ARE NOT BEING USED. BULK FUEL FOR CONSTRUCTION EQUIPMENT SHALL NOT TO BE STORED ON-SITE. IF THIS BECOMES NECESSARY, FUEL SHOULD BE LOCATED WITHIN A SECONDARY CONTAINMENT SYSTEM TO PREVENT LEAKS FROM ENTERING THE ENVIRONMENT, SHELTERED FROM PRECIPITATION, AND IN A SECURED AREA. A SUPPLY OF ABSORBENT SPILL RESPONSE MATERIAL SHOULD BE AVAILABLE, ESPECIALLY DURING REFUELING. TO CLEAN UP ANY SPILLS OF HAZARDOUS MATERIAL SUCH AS GASOLINE OR OIL. IF SPILL OCCURS CALL 24-HOURS A DAY AT (860) 424-3338 TO ALERT SPILL RESPONSE TEAM.
9. THE CONTRACTOR MUST MAINTAIN (REPAIR/REPLACE WHEN NECESSARY) THE SILTATION CONTROL DEVICES, AS SHOWN ON THIS SHEET AND DETAILS SHEETS, UNTIL ALL INSTALLATION IS COMPLETED AND ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED.
10. INDICATED UNDERGROUND UTILITIES ARE BASED ON INDICATED MAP REFERENCES. THE LOCATIONS ARE CONSIDERED APPROXIMATE AND ALL UTILITIES MAY NOT BE SHOWN. PRIOR TO ANY CONSTRUCTION THE CONTRACTOR SHALL CALL 1-800-922-4455 AND HAVE ALL UTILITIES MARKED ON THE GROUND.
11. ALL MATERIAL EXCAVATION, FILLING SHALL BE IN CONFORMANCE WITH APPROPRIATE SECTIONS OF THE TOWN OF HAMDEN REGULATIONS AND OSHA WORKPLACE SAFETY REGULATIONS.
12. CONTRACTOR SHALL USE WORK METHODS APPROVED BY OSHA FOR ALL TRENCHING AND EXCAVATION.
13. NO GRADED EARTH SLOPE SHALL EXCEED A 3H:1V SLOPE.
14. PROVIDE POSITIVE DRAINAGE OF FINISHED GRADE AT ALL DISTURBED AREAS AS INTENDED BY THESE PLANS.
15. ALL SITE WORK SHALL BE IN CONFORMANCE WITH CONN. D.O.T. FORM 817 OR LATEST EDITION AS A MINIMUM ACCEPTABLE STANDARD.

SURVEY NOTES

THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THRU 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES – "MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ENDORSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPT. 26, 1996. THE LIMITED TOPOGRAPHIC SURVEY PORTION OF THIS PLAN CONFORMS TO A VERTICAL ACCURACY OF CLASS T-2 AND IS INTENDED TO BE USED TO DEPICT A PROPOSED TELECOMMUNICATION SITE.

THE PROPERTY/BOUNDARY LINES DEPICTED HEREON ARE COMPILED FROM OTHER MAPS, DEEDS AND LIMITED FIELD SURVEY. THESE LINES ARE NOT TO BE CONSTRUED AS A BOUNDARY OPINION AND ARE SUBJECT TO CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE. PROPERTY MAY BE SUBJECT TO ENCUMBRANCES, EASEMENTS, RIGHTS OF WAY AS A TITLE SEARCH REPORT MAY DISCLOSE. PLANIMETRIC FEATURES SUCH AS PARKING AREAS, PAVED DRIVE ARE COMPILED FROM OTHER MAPS AND LIMITED FIELD SURVEY.

NORTH ORIENTATION AND COORDINATES REFER TO CONNECTICUT GRID SYSTEM NAD 83.

ELEVATIONS BASED ON NGVD 1929 DATUM.

PARCEL OWNER OF RECORD: JOSEPH A VIGNOLA & DENISE COURTEMANCHE

PARCEL KNOWN AS 1075 PARADISE AVENUE

PARCEL AREA= 9.34± ACRES

PARCEL IS IN THE RESIDENTIAL ZONING DISTRICT R3.

MAP 2826, LOT NO. 24, HAMDEN ASSESSORS MAP

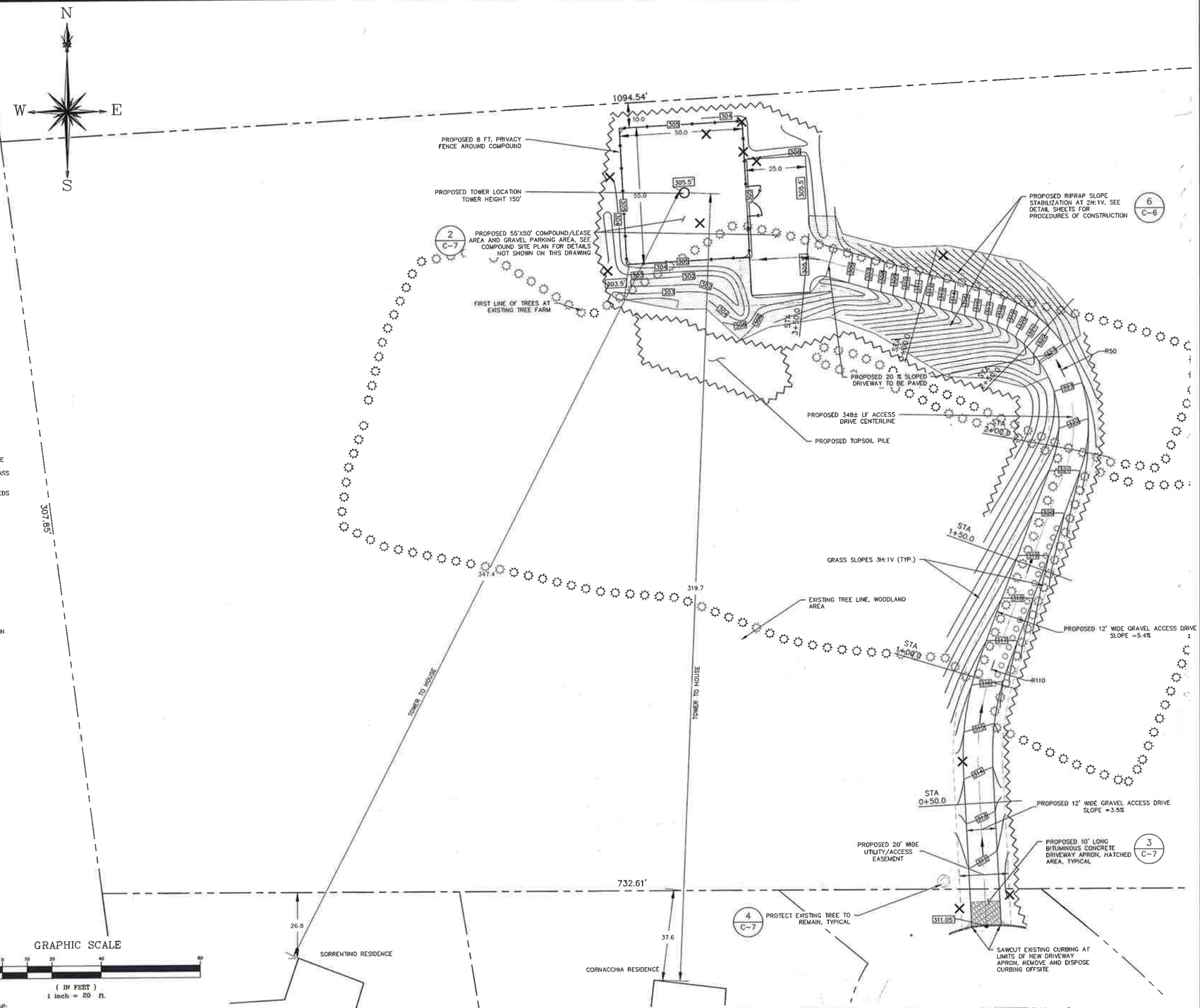
PARCEL IS NOT IN A FLOOD ZONE BASED ON THE FLOOD INSURANCE RATE MAP, NEW HAVEN COUNTY, CONNECTICUT, ALL JURISDICTIONS, PANEL 293 OF 635, COMMUNITY MAP NUMBER 09009C0293H, MAP EFFECTIVE DATE DECEMBER 17, 2010, BY FEDERAL EMERGENCY MANAGEMENT AGENCY.

PARCEL IS SUBJECT TO RIGHTS AND EASEMENTS AS OF RECORD MAY APPEAR.

ALL IMPROVEMENTS ARE NOT SHOWN.

SYMBOLS LEGEND

- PROPERTY LINE
- EASEMENT LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- CHAIN LINK FENCE
- SILT FENCE
- SILT SOCK
- ROAD CENTERLINE
- EXISTING TREE LINE
- EXISTING TREE FARM LINE
- POLE #XXXX — EXISTING UTILITY POLE
- IRON PIN
- METAL POST
- DECIDUOUS TREE
- SUBSTANTIVE (>6"DBH) TREE TO BE REMOVED
- BITUMINOUS CONCRETE DRIVEWAY APRON
- GEOGRID REINFORCED GRAVEL DRIVEWAY
- RIP RAP STABILIZED SLOPE




GRAPHIC SCALE

20 0 10 20 40 60

( IN FEET )
1 inch = 20 ft.

REFERENCE MAP:
1. "PROPERTY AND TOPOGRAPHIC PLAN" FOR PROPERTY AT 208 KIRK ROAD, HAMDEN, CONNECTICUT; DATE: 11-11-2016; SCALE: 1"=20'; PREPARED BY MARTINEZ COUCH & ASSOCIATES, LLC

# ALTERNATIVE SITE 1


Cellco Partnership
d/b/a Verizon Wireless
verizon
WIRELESS COMMUNICATIONS FACILITY
99 EAST RIVER DRIVE
EAST HARTFORD, CT 06108

On Air Engineering, LLC
88 Foundry Pond Road
Cold Spring, NY 10516
onair@optonline.net
201-456-4624

MCA
1084 Cromwell Avenue, Suite A-2
Rocky Hill, CT 06067
Tel: 860-436-4364
MartinezCouch.com

LICENSURE
STATE OF CONNECTICUT · RICHARD B. COUCH · LICENSED PROFESSIONAL ENGINEER
RICHARD B. COUCH, P.E.
CT LIC. NO. 15480


| NO.: | DATE: | SUBMISSIONS |
|---|---|---|
| 0 | 11.11.16 | REVIEW SET |
| 1 | 02.22.17 | CSC FILING |

| DRAWN BY: | CHECKED BY: |
|---|---|
| MBR/FV | GMP |

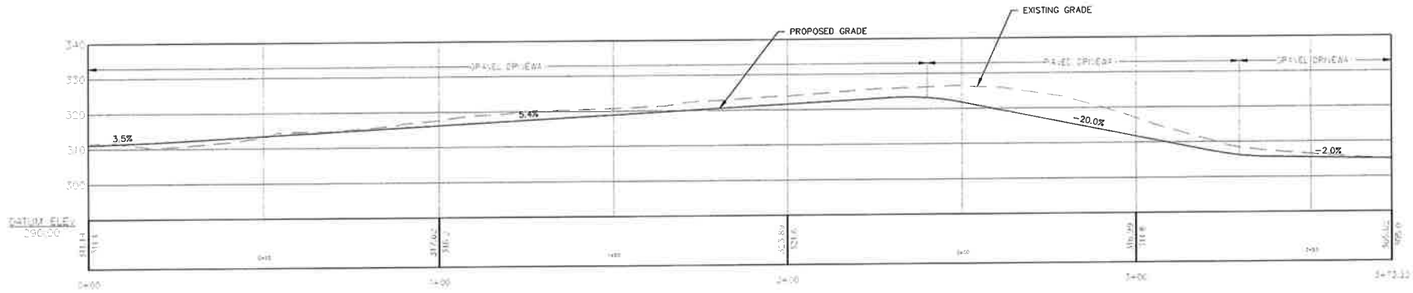
--

SITE NAME:
HAMDEN 8 CT

PROJECT INFORMATION:
208 KIRK RD.
HAMDEN, CT 06514

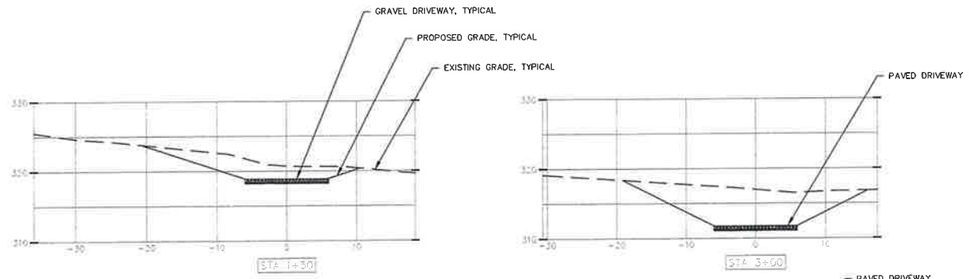
DRAWING TITLE:
PARTIAL SITE PLAN

SHEET NUMBER:
C-2A



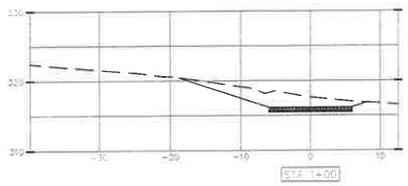

## ACCESS DRIVE PROFILE

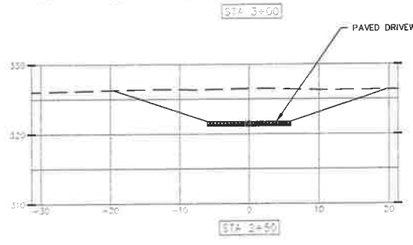
SCALE: 1" = 20'

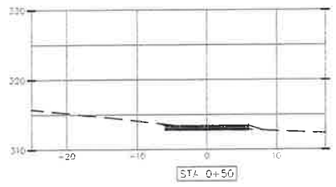



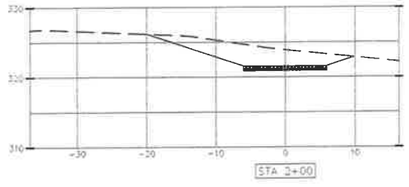


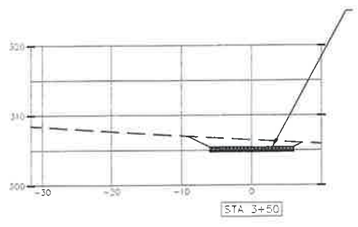





## CROSS SECTIONS

SCALE: 1" = 10'


# ALTERNATIVE SITE 1


Cellco Partnership
d/b/a Verizon Wireless

verizon

WIRELESS COMMUNICATIONS FACILITY
99 EAST RIVER DRIVE
EAST HARTFORD, CT 06108

On Air Engineering, LLC
88 Foundry Pond Road
Cold Spring, NY 10516
onair@optonline.net
201-456-4624

MCA
1084 Cromwell Avenue, Suite A-2
Rocky Hill, CT 06067
Tel: 860-436-4364
MartinezCouch.com


LICENSURE

STATE OF CONNECTICUT · RICHARD E. COUCH · LICENSED PROFESSIONAL ENGINEER

RICHARD E. COUCH, P.E.
CT LIC. NO. 15480

| NO.: | DATE: | SUBMISSIONS |
|---|---|---|
| 0 | 11.11.16 | REVIEW SET |
| 1 | 02.22.17 | CSC FILING |

| DRAWN BY: | CHECKED BY: |
|---|---|
| FV/MBR | GMP |

--

SITE NAME:
HAMDEN 8 CT

PROJECT INFORMATION:
208 KIRK RD.
HAMDEN, CT 06514

DRAWING TITLE:
PROFILES AND SECTIONS

SHEET NUMBER:
C-4A

# ATTACHMENT 5

## GENERAL NOTES

CONSTRUCTION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL MEASUREMENTS. ANY VARIATIONS FROM CONDITIONS SHOWN ARE TO BE BROUGHT TO THE ATTENTION OF THE DESIGN PROFESSIONAL AND/OR MCA PRIOR TO BIDDING FOR RESOLUTION IN ACCORDANCE WITH CONTRACT DOCUMENT REQUIREMENTS.
2. ALL REQUIRED PERMITS ARE TO BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE.
3. ALL DIMENSIONS ARE TO THE OUTSIDE FACE OF THE NOTED ITEM.
4. WORK LIMITS SHALL BE AS NOTED. ALL ITEMS DISTURBED BY ANY AND ALL CONSTRUCTION ACTIVITIES SHALL BE RESTORED SUBSTANTIALLY TO THE CONDITION THEY EXISTED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, TO THE OWNERS APPROVAL.
5. THE CONTRACTOR AT A MINIMUM SHALL MAINTAIN ALL SEDIMENT AND EROSION CONTROL DEVICES AS DIRECTED, AS NECESSARY, AND IN ACCORDANCE WITH CONTRACT REQUIREMENTS, AND SHALL CHECK ALL SYSTEMS ON A DAILY BASIS TO ENSURE THE PREVENTION OF SEDIMENT TRANSPORT AND THE CONTROL OF EROSION.
6. THE LOCATIONS OF SITE UTILITIES ARE UNKNOWN. PRIOR TO COMMENCING ANY EXCAVATION, THE CONTRACTOR SHALL PLACE A "CALL BEFORE YOU DIG" (CBYD) REQUEST (PHONE: 1-800-922-4455). THE PROTECTION OF EXISTING UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AT HIS EXPENSE.
7. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL ACTIVITY ON THE SUBJECT PROPERTY.
8. ALL FUEL, OIL PAINTS, OR OTHER HAZARDOUS MATERIALS STORED ON-SITE DURING THE CONSTRUCTION PERIOD SHOULD BE IN A SECONDARY CONTAINER AND REMOVED TO A LOCKED INDOOR AREA WITH AN IMPERVIOUS FLOOR WHEN THEY ARE NOT BEING USED. BULK FUEL FOR CONSTRUCTION EQUIPMENT SHALL NOT TO BE STORED ON-SITE. IF THIS BECOMES NECESSARY, FUEL SHOULD BE LOCATED WITHIN A SECONDARY CONTAINMENT SYSTEM TO PREVENT LEAKS FROM ENTERING THE ENVIRONMENT, SHELTERED FROM PRECIPITATION, AND IN A SECURED AREA. A SUPPLY OF ABSORBENT SPILL RESPONSE MATERIAL SHOULD BE AVAILABLE, ESPECIALLY DURING REFUELING, TO CLEAN UP ANY SPILLS OF HAZARDOUS MATERIAL SUCH AS GASOLINE OR OIL. IF SPILL OCCURS CALL 24-HOURS A DAY AT (860) 424-3338 TO ALERT SPILL RESPONSE TEAM.
9. THE CONTRACTOR MUST MAINTAIN (REPAIR/REPLACE WHEN NECESSARY) THE SILTATION CONTROL DEVICES, AS SHOWN ON THIS SHEET AND DETAILS SHEETS, UNTIL ALL INSTALLATION IS COMPLETED AND ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED.
10. INDICATED UNDERGROUND UTILITIES ARE BASED ON INDICATED MAP REFERENCES. THE LOCATIONS ARE CONSIDERED APPROXIMATE AND ALL UTILITIES MAY NOT BE SHOWN. PRIOR TO ANY CONSTRUCTION THE CONTRACTOR SHALL CALL 1-800-922-4455 AND HAVE ALL UTILITIES MARKED ON THE GROUND.
11. ALL MATERIAL EXCAVATION, FILLING SHALL BE IN CONFORMANCE WITH APPROPRIATE SECTIONS OF THE TOWN OF HAMDEN REGULATIONS AND OSHA WORKPLACE SAFETY REGULATIONS.
12. CONTRACTOR SHALL USE WORK METHODS APPROVED BY OSHA FOR ALL TRENCHING AND EXCAVATION.
13. NO GRADED EARTH SLOPE SHALL EXCEED A 3H:1V SLOPE.
14. PROVIDE POSITIVE DRAINAGE OF FINISHED GRADE AT ALL DISTURBED AREAS AS INTENDED BY THESE PLANS.
15. ALL SITE WORK SHALL BE IN CONFORMANCE WITH CONN. D.O.T. FORM 817 OR LATEST EDITION AS A MINIMUM ACCEPTABLE STANDARD.

SURVEY NOTES

THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THRU 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ENDORSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC., ON SEPT. 26, 1996. THE LIMITED TOPOGRAPHIC SURVEY PORTION OF THIS PLAN CONFORMS TO A VERTICAL ACCURACY OF CLASS T-2 AND IS INTENDED TO BE USED TO DEPICT A PROPOSED TELECOMMUNICATION SITE.

THE PROPERTY/BOUNDARY LINES DEPICTED HEREON ARE COMPILED FROM OTHER MAPS, DEEDS AND LIMITED FIELD SURVEY. THESE LINES ARE NOT TO BE CONSTRUED AS A BOUNDARY OPINION AND ARE SUBJECT TO CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE. PROPERTY MAY BE SUBJECT TO ENCUMBRANCES, EASEMENTS, RIGHTS OF WAY AS A TITLE SEARCH REPORT MAY DISCLOSE. PLANIMETRIC FEATURES SUCH AS PARKING AREAS, PAVED DRIVE ARE COMPILED FROM OTHER MAPS AND LIMITED FIELD SURVEY.

NORTH ORIENTATION AND COORDINATES REFER TO CONNECTICUT GRID SYSTEM NAD 83.

ELEVATIONS BASED ON NGVD 1929 DATUM.

PARCEL OWNER OF RECORD: JOSEPH A VIGNOLA & DENISE COURTEMANCHE

PARCEL KNOWN AS 1075 PARADISE AVENUE

PARCEL AREA= 9.34± ACRES

PARCEL IS IN THE RESIDENTIAL ZONING DISTRICT R3.

MAP 2826, LOT NO. 24, HAMDEN ASSESSORS MAP

PARCEL IS NOT IN A FLOOD ZONE BASED ON THE FLOOD INSURANCE RATE MAP, NEW HAVEN COUNTY, CONNECTICUT, ALL JURISDICTIONS, PANEL 293 OF 635, COMMUNITY MAP NUMBER 09009C0293H, MAP EFFECTIVE DATE DECEMBER 17, 2010, BY FEDERAL EMERGENCY MANAGEMENT AGENCY.

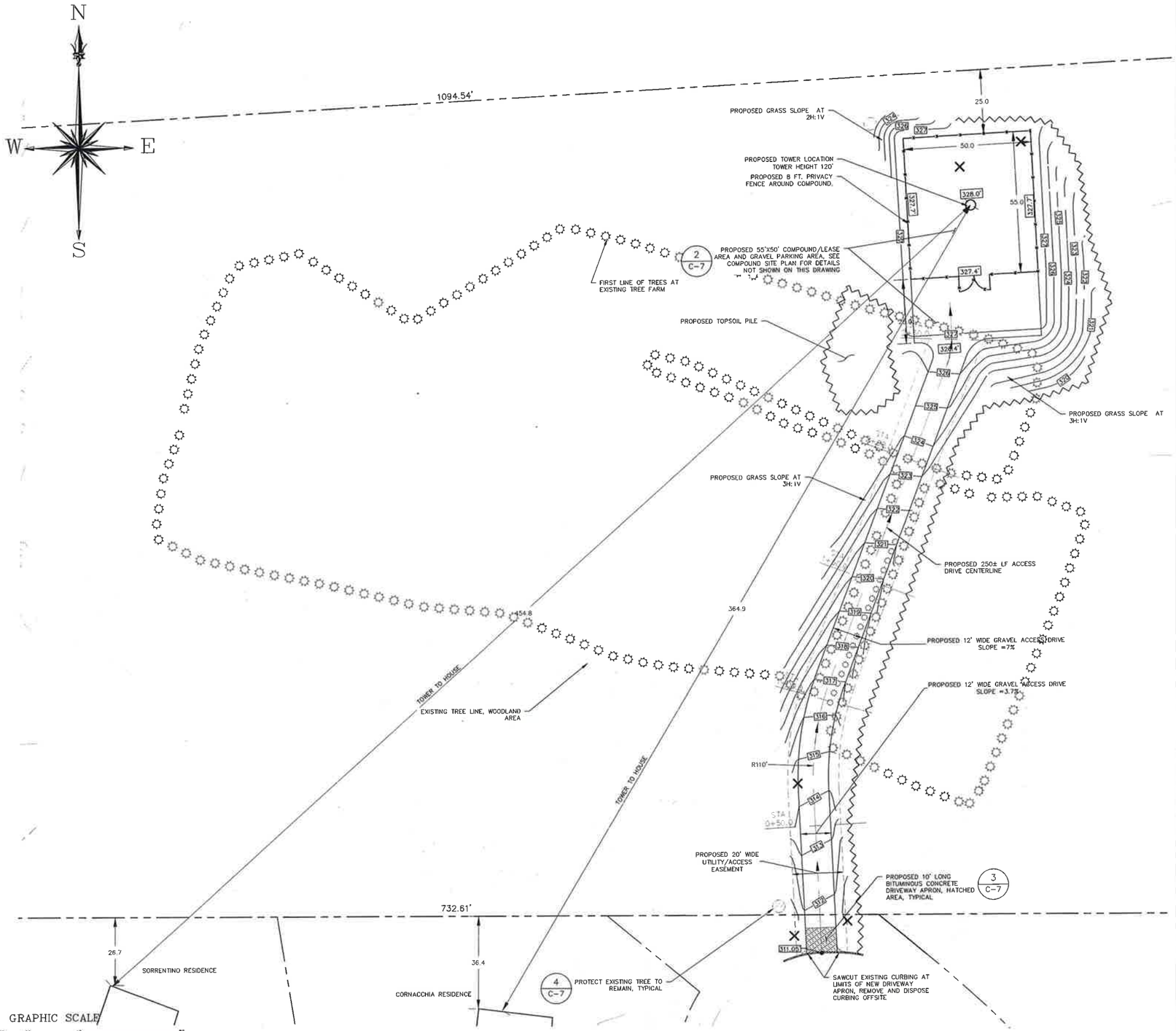
PARCEL IS SUBJECT TO RIGHTS AND EASEMENTS AS OF RECORD MAY APPEAR.

ALL IMPROVEMENTS ARE NOT SHOWN.

SYMBOLS LEGEND

- PROPERTY LINE
- EASMENT LINE
- EXISTING CONTOUR
- 325 PROPOSED CONTOUR
- CHAIN LINK FENCE
- SILT FENCE
- SILT SOCK
- ROAD CENTERLINE
- EXISTING TREE LINE
- EXISTING TREE FARM LINE
- POLE #XXXX EXISTING UTILITY POLE
- IRON PIN
- METAL POST
- DECIDUOUS TREE
- TREE TO BE DEMOLISHED
- BITUMINOUS CONCRETE DRIVEWAY APRON
- GEOGRID REINFORCED GRAVEL DRIVEWAY
- RIP RAP STABILIZED SLOPE

REFERENCE MAP:
1. "PROPERTY AND TOPOGRAPHIC PLAN" FOR PROPERTY AT 208 KIRK ROAD, HAMDEN, CONNECTICUT; DATE: 11-11-2016; SCALE: 1"=20'; PREPARED BY MARTINEZ COUCH & ASSOCIATES, LLC




# ALTERNATIVE SITE 2


Cellco Partnership
d/b/a Verizon Wireless
verizon
WIRELESS COMMUNICATIONS FACILITY
99 EAST RIVER DRIVE
EAST HARTFORD, CT 06108

On Air Engineering, LLC
88 Foundry Pond Road
Cold Spring, NY 10516
onair@optonline.net
201-456-4624

MCA
1084 Cromwell Avenue, Suite A-2
Rocky Hill, CT 06067
Tel: 860-436-4364
MartinezCouch.com


LICENSURE

STATE OF CONNECTICUT RICHARD E. COUCH 15480 LICENSED PROFESSIONAL ENGINEER

RICHARD E. COUCH, P.E.
CT LIC. NO. 15480

| NO.: | DATE: | SUBMISSIONS |
|---|---|---|
| 0 | 11.11.16 | REVIEW SET |
| 1 | 02.22.17 | CSC FILING |

| DRAWN BY: | CHECKED BY: |
|---|---|
| MBR/FV | GMP |

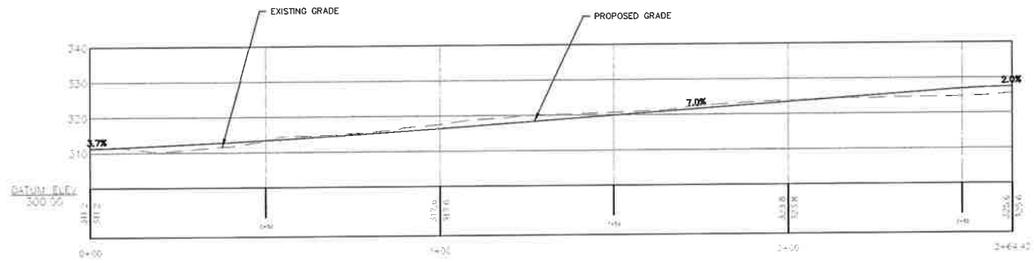
--

SITE NAME:
HAMDEN 8 CT

PROJECT INFORMATION:
208 KIRK RD.
HAMDEN, CT 06514

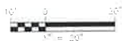
DRAWING TITLE:
PARTIAL SITE PLAN

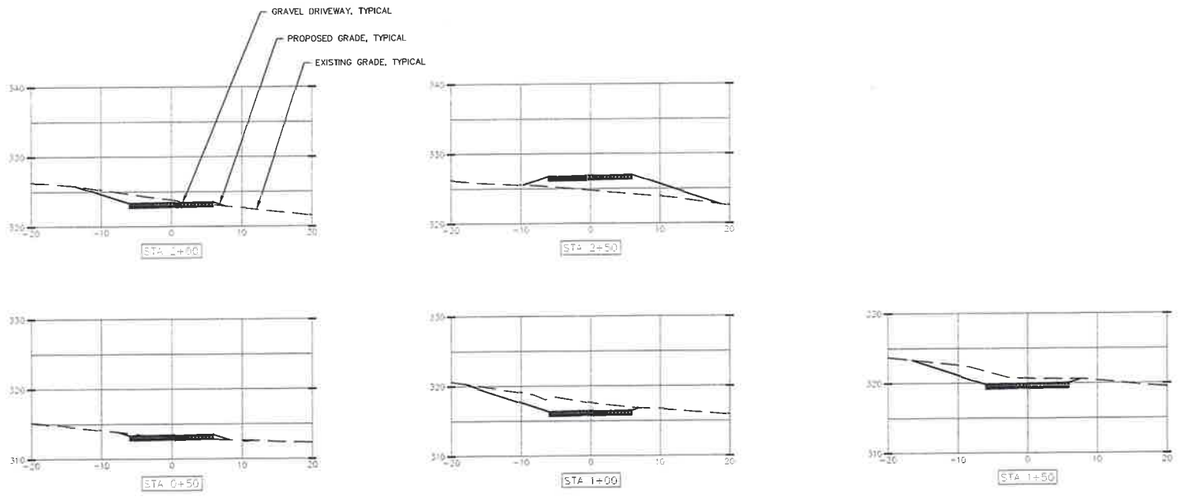
SHEET NUMBER:
C-2B




ACCESS DRIVE PROFILE

SCALE: 1" = 20'




CROSS SECTIONS

SCALE: 1" = 10'


# ALTERNATIVE SITE 2


Cellco Partnership
d/b/a Verizon Wireless

verizon

WIRELESS COMMUNICATIONS FACILITY
99 EAST RIVER DRIVE
EAST HARTFORD, CT 06108

On Air Engineering, LLC
88 Foundry Pond Road
Cold Spring, NY 10516
onair@optonline.net
201-456-4624

MCA
1084 Cromwell Avenue, Suite A-2
Rocky Hill, CT 06067
Tel: 860-436-4364
MartinezCouch.com


LICENSURE

STATE OF CONNECTICUT
RICHARD E. COUCH
LICENSED
PROFESSIONAL ENGINEER

RICHARD E. COUCH, P.E.
CT LIC. NO. 15480

| NO.: | DATE: | SUBMISSIONS |
|---|---|---|
| 0 | 11.11.16 | REVIEW SET |
| 1 | 02.22.17 | CSC FILING |

| DRAWN BY: | CHECKED BY: |
|---|---|
| FV/MBR | GMP |

--

SITE NAME:
HAMDEN 8 CT

PROJECT INFORMATION:
208 KIRK RD.
HAMDEN, CT 06514

DRAWING TITLE:
PROFILES AND SECTIONS

SHEET NUMBER:
C-4B

# ATTACHMENT 6


***Legend***

- Potential Tower Location
- Potential Tower Site Reviewed and Omitted
- Potential Site Facility Layout
- Alternate Access
- Location Reviewed and Omitted
- Approximate Subject Property Boundary
- Approximate Parcel Boundary (CTDEEP GIS)
- 2' Contour Line

N
W E
S

175 87.5 0 175 Feet

*Map Notes:*
*Base Map Source: 2012 Aerial Photograph (CT ECO)*
*Map Scale:1 inch = 175 feet*
*Map Date: May 2017*

## Alternate Sites

Proposed Wireless
Telecommunications Facility
Hamden 8 CT
208 Kirk Road
Hamden, Connecticut

verizon

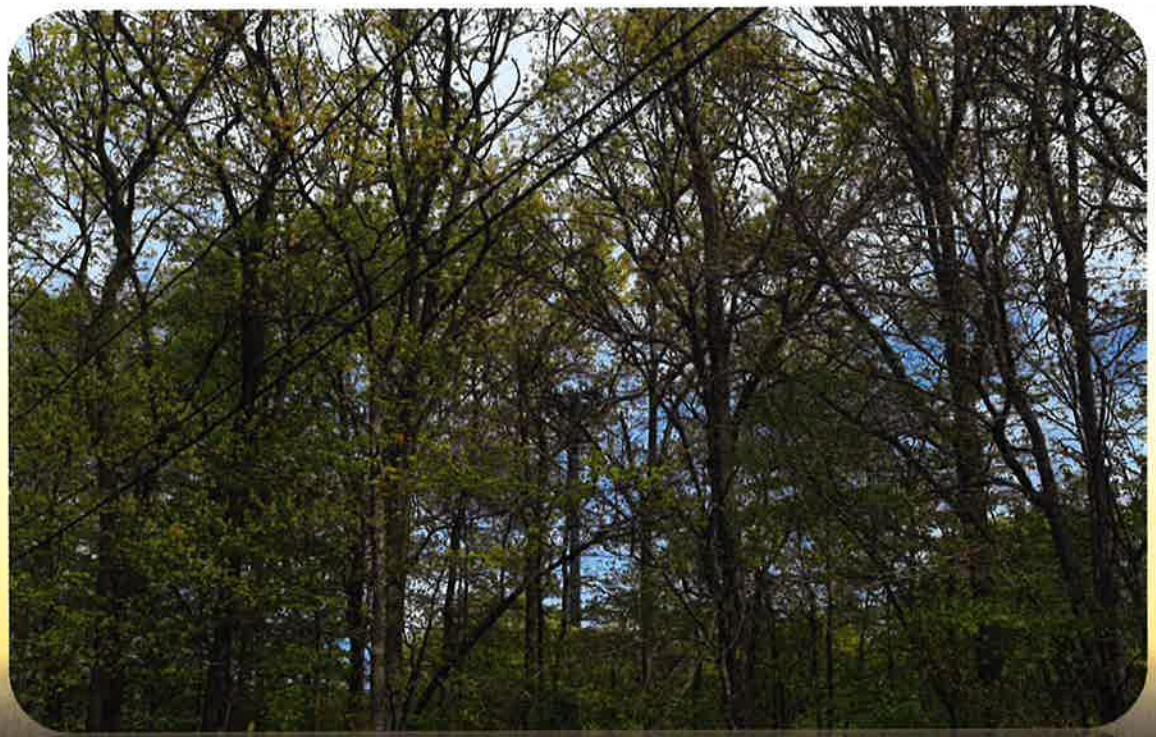
ALL-POINTS TECHNOLOGY CORPORATION

# ATTACHMENT 7

ALL-POINTS
TECHNOLOGY CORPORATION

# SUPLEMENTAL
# VISIBILITY ANALYSIS

**HAMDEN 8**
**208 KIRK ROAD**
**HAMDEN, CONNECTICUT**



**Prepared for:**

**Verizon Wireless**
**99 East River Drive**
**East Hartford CT 06108**

**Prepared by:**

**All-Points Technology Corporation, P.C.**
**3 Saddlebrook Drive**
**Killingworth, CT 06419**

**MAY 2017**

# Supplemental Visibility Analysis

At the request of Cellco Partnership (d/b/a "Verizon Wireless"), All-Points Technology Corporation, P.C. ("APT") prepared this Supplemental Visual Assessment in association with Connecticut Siting Council ("Council") Docket 472. At the May 2, 2017 public hearing, the Council asked Verizon Wireless to investigate the possibility of moving the proposed location of the telecommunications facility ("Facility") on the referenced Host Property.

Two potential alternate site locations were identified, including:

- Alternate Site 1: Located approximately 157 feet east northeast of the proposed Site at a ground elevation of 305.5 feet above mean sea level (AMSL). To achieve similar antenna heights as the proposed Site, the height of a monopole at this alternate site would need to be 150 feet above ground level ("AGL").

- Alternate Site 2: Located approximately 336 feet east northeast of the proposed Site atop the central ridge of the property at a ground elevation of 328 feet AMSL. This location would require a tower height of 120 feet AGL.

To evaluate the potential visibility associated with these potential alternate Facility sites and to assess what, if any, differences in the character of views might occur as a result of shifting the Facility location, APT conducted supplemental balloon floats. On Friday, May 5, 2017 APT tethered a helium-filled weather balloon (each approximately four feet in diameter) at Alternate Site locations 1 and 2, with string heights of 150 and 120 feet AGL at each of the two locations. Once the balloons were secured, APT personnel drove and walked the surrounding area and visually surveyed conditions from within the vicinity. APT also took photographs from several locations to document the float activities. Weather conditions were favorable, with calm winds (less than 5 mph) and partly cloudy skies.

The table on the following page identifies the locations, view orientation, and distances from where each photo was taken relative to the Alternate site locations. A Photolog Map, photographs of the balloon floats and photo-simulations (from locations where the balloons were visible) are presented in the attachments to this report. Note that APT also took numerous "non-visible" photographs (i.e., from locations where the balloons could not be seen) throughout the 2-mile Study Area (as defined in the previously submitted January 2017 Visibility Analysis Report).

| View | Location | Orientation | Distance to Site | | View Characteristics | |
|---|---|---|---|---|---|---|
| | | | Site 1 | Site 2 | Site 1 | Site 2 |
| 1 | Country Club Drive | North | ±405 Feet | ±376 Feet | *See Note | Seasonal |
| 2 | Country Club Drive | Northwest | ±413 Feet | ±368 Feet | Seasonal | *See Note |
| 3 | Bear Path Road at Country Club Drive | Northwest | ±0.19 Mile | ±0.18 Mile | Seasonal | Year Round |
| 4 | Bear Path Road at Country Club Drive | Northwest | ±0.19 Mile | ±0.18 Mile | Not Visible | Year Round |
| 5 | Earl Avenue at Sheahan Drive | North | ±0.98 Mile | ±0.98 Mile | Seasonal | Not Visible |
| 6 | Laurel View Drive | Southeast | ±0.22 Mile | ±0.25 Mile | Year Round | Seasonal |
| 7 | Laurel View Drive at Country Club Parking Lot | Southeast | ±0.16 Mile | ±0.19 Mile | Seasonal | Seasonal |
| 8 | Paradise Avenue | Southeast | ±0.25 Mile | ±0.26 Mile | Seasonal | Not Visible |
| 9 | Quinnipiac Trail | Southeast | ±0.70 Mile | ±0.72 Mile | Seasonal | Seasonal |
| 10 | Quinnipiac Trail | Southeast | ±0.84 Mile | ±0.87 Mile | Seasonal | Seasonal |
| 11 | West Rock Ridge State Park Trail | Southeast | ±0.78 Mile | ±0.83 Mile | Year Round | Year Round |
| 12 | West Rock Ridge State Park Trail | Southeast | ±0.84 Mile | ±0.88 Mile | Year Round | Year Round |
| 13 | West Rock Ridge State Park Trail | Southeast | ±0.93 Mile | ±0.97 Mile | Year Round | Year Round |

**Note: These photos were taken and simulated separately to show "worse case" representations of each respective site. It should not be construed that both sites are not visible from this general location.*

At each photo location, the geographic coordinates of the camera's position were logged using global positioning system ("GPS") technology. Photographs were taken with a Canon EOS 6D digital camera body and Canon EF 24 to 105 millimeter ("mm") zoom lens, with the lens set to 50 mm. Photographic simulations were generated to portray scaled renderings of a Facility at each of the alternate sites. Using field data, 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. For presentation purposes in this report, the photographs were produced in an approximate 7-inch by 10.5-inch format.

APT also revisited the predictive model compiled for the original proposed Site and prepared viewshed maps for each of the alternate site, incorporating their potential locations and heights, and using similar techniques as those discussed in the January 2017 Visibility Analysis Report. Information obtained during the supplemental balloon float activities was incorporated into the mapping data layers to refine the areas of visibility depicted on the supplemental viewshed maps.

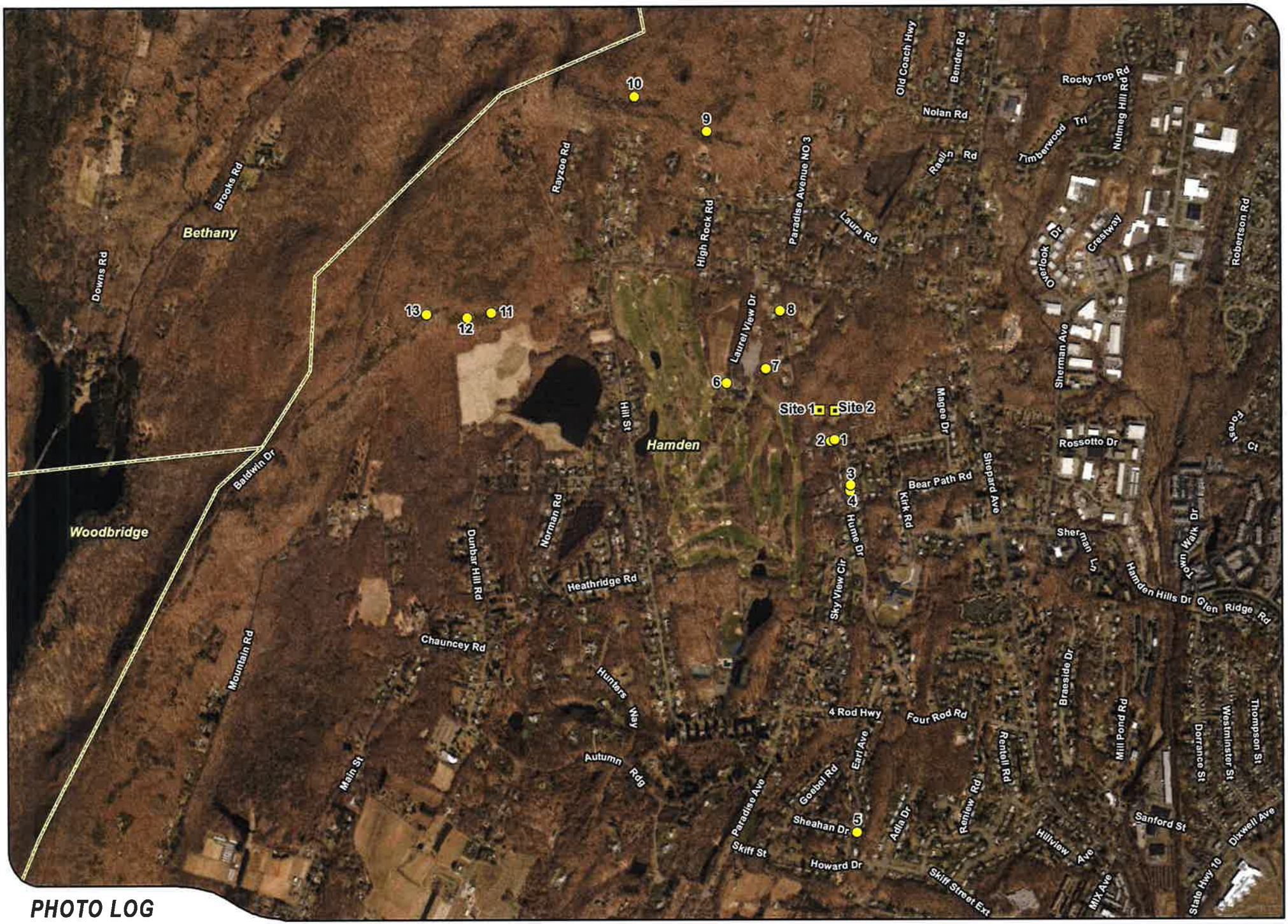
The results of the Supplemental Visual Assessment reveal that the total amount of visibility over the 2-mile Study Area would not differ substantially between the two alternate sites or the originally proposed Site. Likewise, the character of views from distances beyond approximately 0.25 mile of the property would not differ markedly between any of the potential site locations. For comparison, the originally

proposed Site location was estimated to be visible on a year-round basis over approximately 42 acres and seasonally over 385 acres. Alternate Sites 1 and 2 are predicted to be visible over 42 acres year-round and 386 acres seasonally. In all cases, the majority of seasonal views are predicted along West Rock ridge. These results are not surprising, given the close proximity of the three locations (all within less than 400 horizontal feet separation) and their sharing of common antenna centerline heights (underlying ground elevations not withstanding).

Seasonal and/or year-round views will be associated with both Sites at locations from the intersection of Bear Path Road and Country Club Drive to the northern cul-de-sac end of Country Club Drive. Views of the monopole and equipment compound at Site 2 would be more prevalent than Site 1 from locations at the end of Country Club Drive (see Photo 1) due to the higher existing ground elevation of this Site. Views of the monopole for Site 1 (Photo 2) would also exist in this area, though proportionally less so than Site 2 due to its lower ground elevation, while views of the equipment compound would be greatly reduced if not completely eliminated from most locations off the Host Property. Beyond this immediate vicinity, views become more sporadic and limited as established stands of vegetation serve to obstruct large portions of either Site (photos 3 and 4).

Similar to the originally proposed Site, a Facility at either alternate Site location could be visible from southeastern facing vistas along the Quinnipiac Trail (photos 9 and 10) and West Rock Park Trail (photos 11-13) from distances of up to one mile away, dependent on the time of year and atmospheric conditions. But due to the distances, tree canopy and backdrop of hills, either Site would be fairly unobtrusive in the landscape when viewed from these locations. Additional areas along this ridgeline that are depicted with potential visibility on the attached viewshed maps largely consist of steep rocky slopes that are beyond the trail limits and inaccessible, or at least difficult, to access by the general public.

# ATTACHMENTS




## PHOTO LOG

*Legend*

Site Location | Photo Location | Municipal Boundary

1,500 750 0 1,500 Feet

1 inch = 1,500 feet

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***EXISTING***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 2 |
|---|---|---|---|
| **1** | **COUNTRY CLUB DRIVE** | **NORTH** | **+/- 376 FEET** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


**PROPOSED**

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 2 |
|---|---|---|---|
| 1 | **COUNTRY CLUB DRIVE** | **NORTH** | **+/- 376 FEET** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***EXISTING***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 |
|---|---|---|---|
| **2** | **COUNTRY CLUB DRIVE** | **NORTHWEST** | **+/- 413 FEET** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 |
|---|---|---|---|
| **2** | **COUNTRY CLUB DRIVE** | **NORTHWEST** | **+/- 413 FEET** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***EXISTING***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 | DISTANCE TO SITE 2 |
|---|---|---|---|---|
| **3** | **BEAR PATH ROAD AT COUNTRY CLUB DRIVE** | **NORTHWEST** | **+/- 0.19 MILE** | **+/- 0.18 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 |
|---|---|---|---|
| **3** | **BEAR PATH ROAD AT COUNTRY CLUB DRIVE** | **NORTHWEST** | **+/- 0.19 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 2 |
|---|---|---|---|
| **3** | **BEAR PATH ROAD AT COUNTRY CLUB DRIVE** | **NORTHWEST** | **+/- 0.18 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***EXISTING***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 2 |
|---|---|---|---|
| **4** | **BEAR PATH ROAD AT COUNTRY CLUB DRIVE** | **NORTHWEST** | **+/- 0.18 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

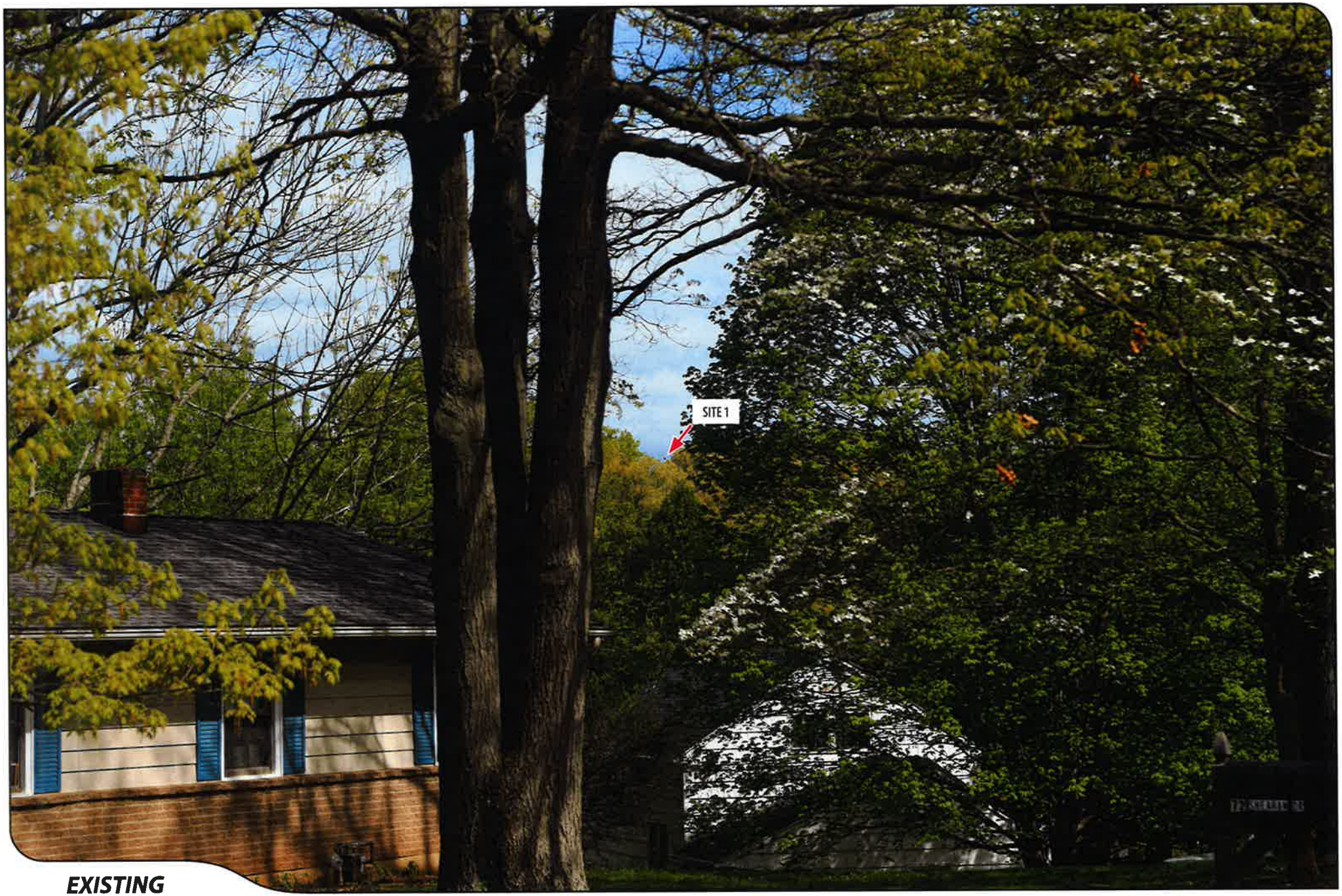
verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 2 |
|---|---|---|---|
| **4** | **BEAR PATH ROAD AT COUNTRY CLUB DRIVE** | **NORTHWEST** | **+/- 0.18 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon

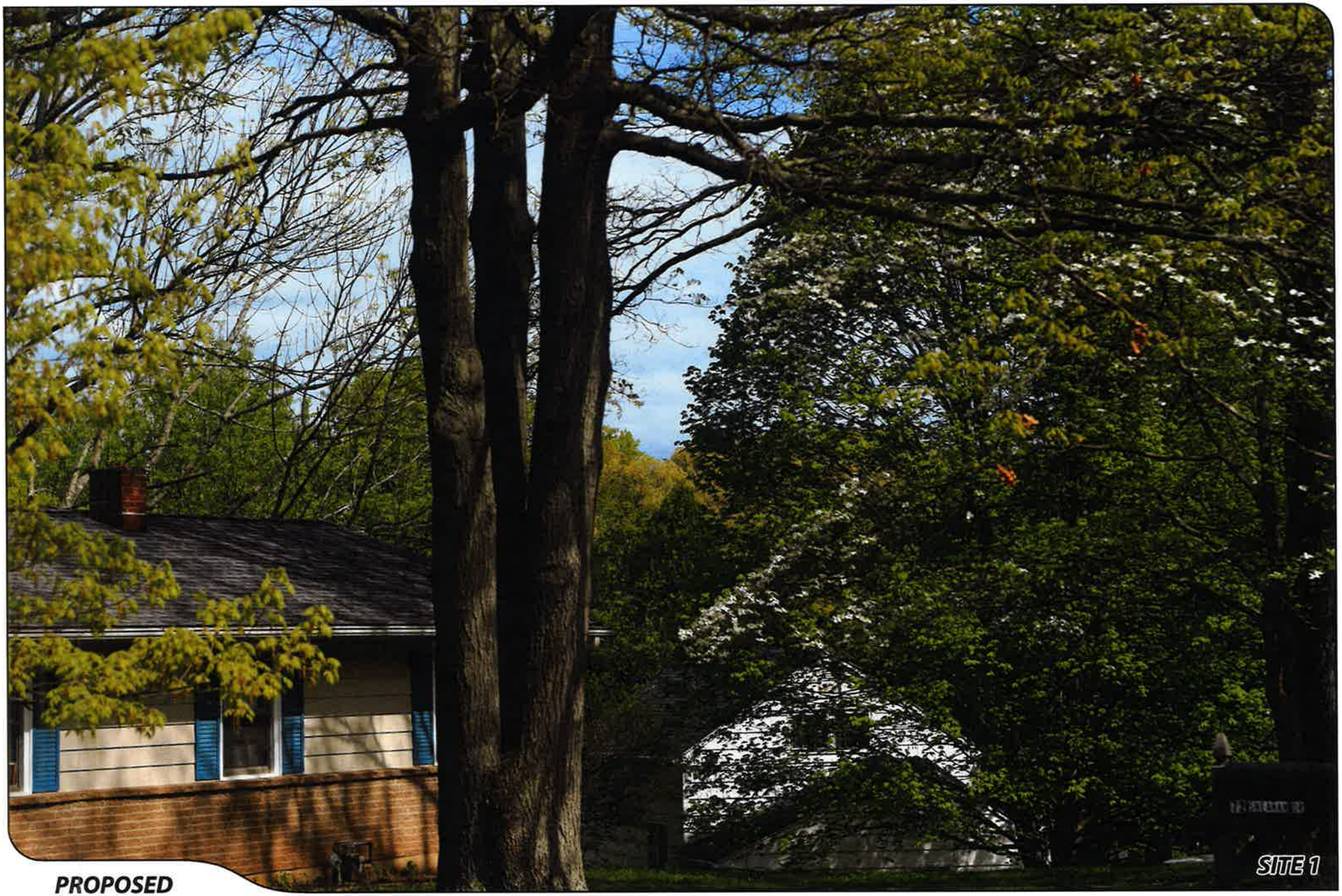



***EXISTING***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 |
|---|---|---|---|
| **5** | **EARL AVENUE AT SHEAHAN DRIVE** | **NORTH** | **+/- 0.98 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon




**PROPOSED**

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 |
|---|---|---|---|
| **5** | **EARL AVENUE AT SHEAHAN DRIVE** | **NORTH** | **+/- 0.98 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***EXISTING***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 | DISTANCE TO SITE 2 |
|---|---|---|---|---|
| **6** | **LAUREL VIEW DRIVE** | **SOUTHEAST** | **+/- 0.22 MILE** | **+/- 0.25 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 |
|---|---|---|---|
| **6** | **LAUREL VIEW DRIVE** | **SOUTHEAST** | **+/- 0.22 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 2 |
|---|---|---|---|
| **6** | **LAUREL VIEW DRIVE** | **SOUTHEAST** | **+/- 0.25 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***EXISTING***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 | DISTANCE TO SITE 2 |
|---|---|---|---|---|
| **7** | **LAUREL VIEW COUNTRY CLUB PARKING LOT** | **SOUTHEAST** | **+/- 0.16 MILE** | **+/- 0.19 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 |
|---|---|---|---|
| **7** | **LAUREL VIEW COUNTRY CLUB PARKING LOT** | **SOUTHEAST** | **+/- 0.16 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 2 |
|---|---|---|---|
| **7** | **LAUREL VIEW COUNTRY CLUB PARKING LOT** | **SOUTHEAST** | **+/- 0.19 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***EXISTING***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 |
|---|---|---|---|
| **8** | **PARADISE AVENUE** | **SOUTHEAST** | **+/- 0.25 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 |
|---|---|---|---|
| **8** | **PARADISE AVENUE** | **SOUTHEAST** | **+/- 0.25 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***EXISTING***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 | DISTANCE TO SITE 2 |
|---|---|---|---|---|
| **9** | **QUINNIPIAC TRAIL** | **SOUTHEAST** | **+/- 0.70 MILE** | **+/- 0.72 MILE** |

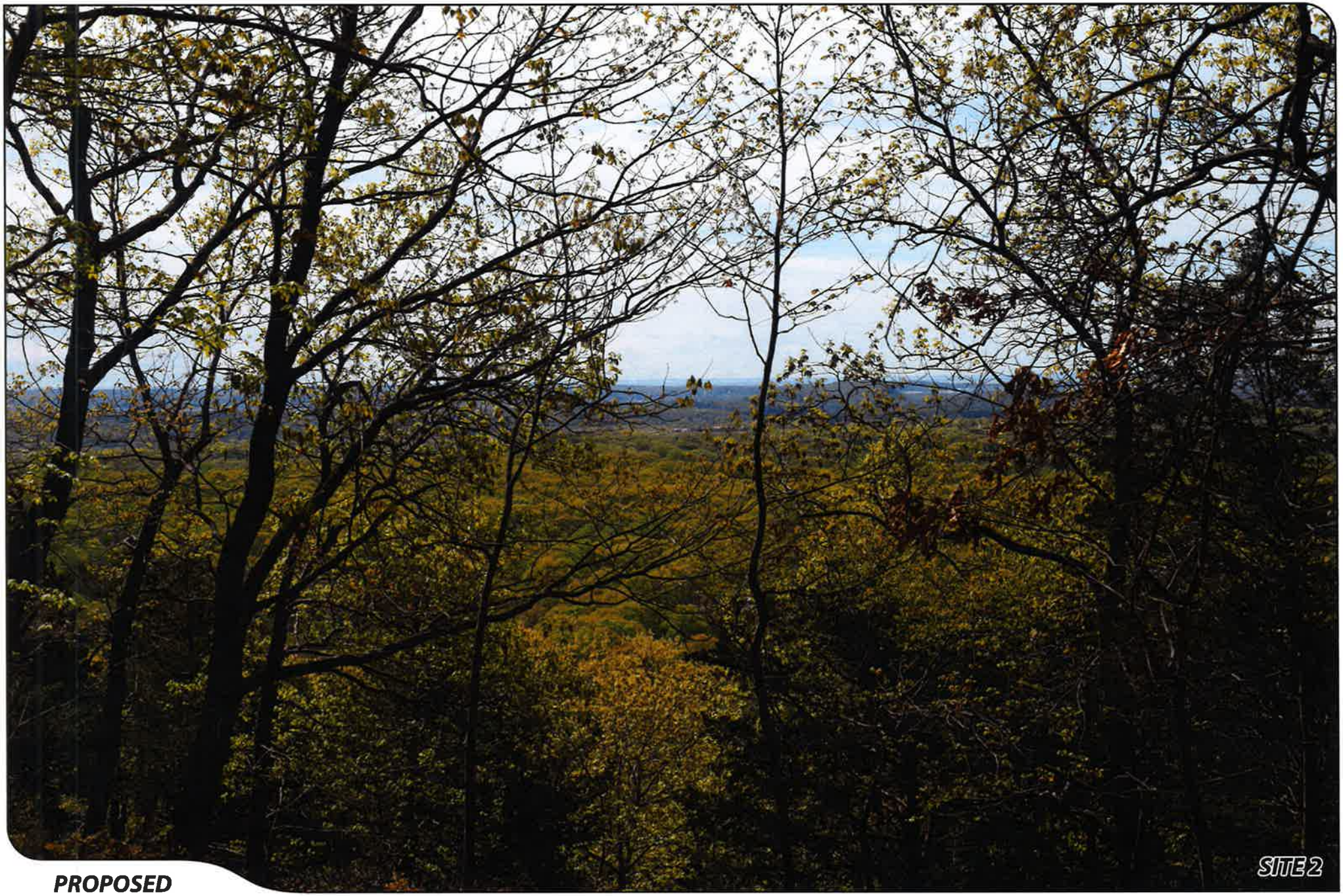
ALL-POINTS TECHNOLOGY CORPORATION verizon


**PROPOSED**

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 |
|---|---|---|---|
| **9** | **QUINNIPIAC TRAIL** | **SOUTHEAST** | **+/- 0.70 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon




***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 2 |
|---|---|---|---|
| **9** | **QUINNIPIAC TRAIL** | **SOUTHEAST** | **+/- 0.72 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***EXISTING***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 | DISTANCE TO SITE 2 |
|---|---|---|---|---|
| **10** | **QUINNIPIAC TRAIL** | **SOUTHEAST** | **+/- 0.84 MILE** | **+/- 0.87 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 |
|---|---|---|---|
| **10** | **QUINNIPIAC TRAIL** | **SOUTHEAST** | **+/- 0.84 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

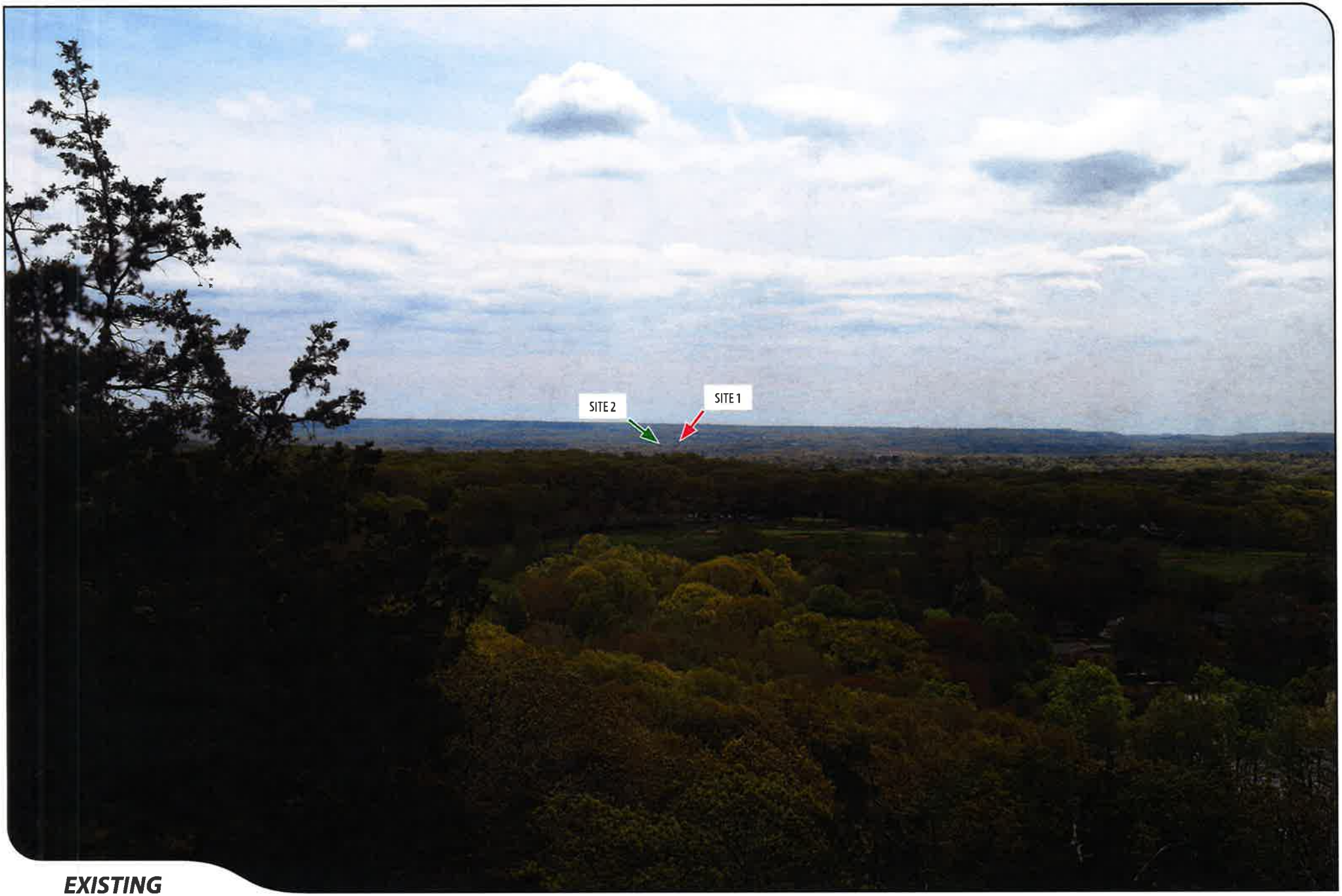
verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 2 |
|---|---|---|---|
| **10** | **QUINNIPIAC TRAIL** | **SOUTHEAST** | **+/- 0.87 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon




***EXISTING***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 | DISTANCE TO SITE 2 |
|---|---|---|---|---|
| **11** | **WEST ROCK RIDGE STATE PARK TRAIL** | **SOUTHEAST** | **+/- 0.78 MILE** | **+/- 0.83 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 |
|---|---|---|---|
| **11** | **WEST ROCK RIDGE STATE PARK TRAIL** | **SOUTHEAST** | **+/- 0.78 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 2 |
|---|---|---|---|
| **11** | **WEST ROCK RIDGE STATE PARK TRAIL** | **SOUTHEAST** | **+/- 0.83 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***EXISTING***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 | DISTANCE TO SITE 2 |
|---|---|---|---|---|
| **12** | **WEST ROCK RIDGE STATE PARK TRAIL** | **SOUTHEAST** | **+/- 0.84 MILE** | **+/- 0.88 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 |
|---|---|---|---|
| **12** | **WEST ROCK RIDGE STATE PARK TRAIL** | **SOUTHEAST** | **+/- 0.84 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 2 |
|---|---|---|---|
| **12** | **WEST ROCK RIDGE STATE PARK TRAIL** | **SOUTHEAST** | **+/- 0.88 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***EXISTING***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 | DISTANCE TO SITE 2 |
|---|---|---|---|---|
| **13** | **WEST ROCK RIDGE STATE PARK TRAIL** | **SOUTHEAST** | **+/- 0.93 MILE** | **+/- 0.97 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 1 |
|---|---|---|---|
| **13** | **WEST ROCK RIDGE STATE PARK TRAIL** | **SOUTHEAST** | **+/- 0.93 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

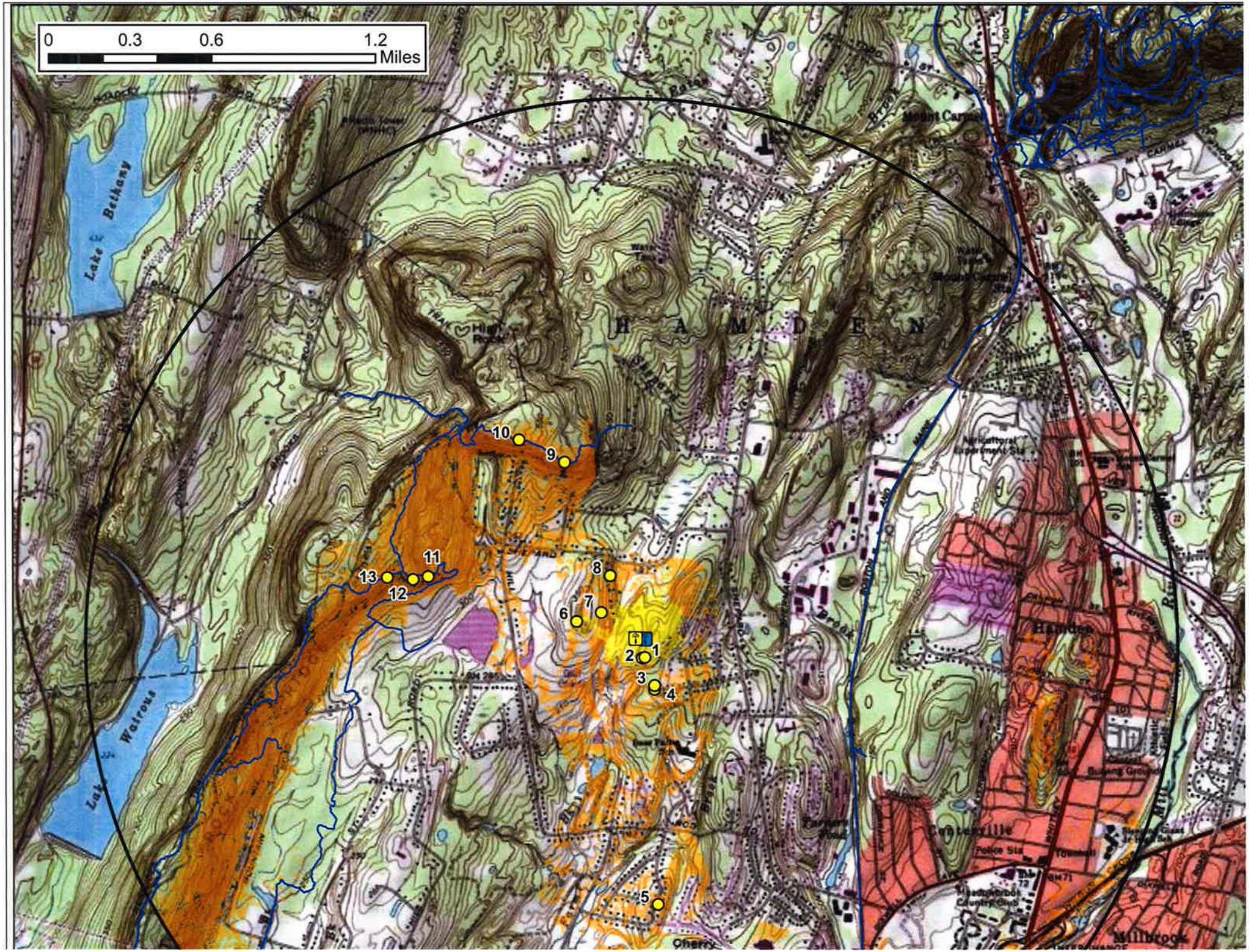
verizon

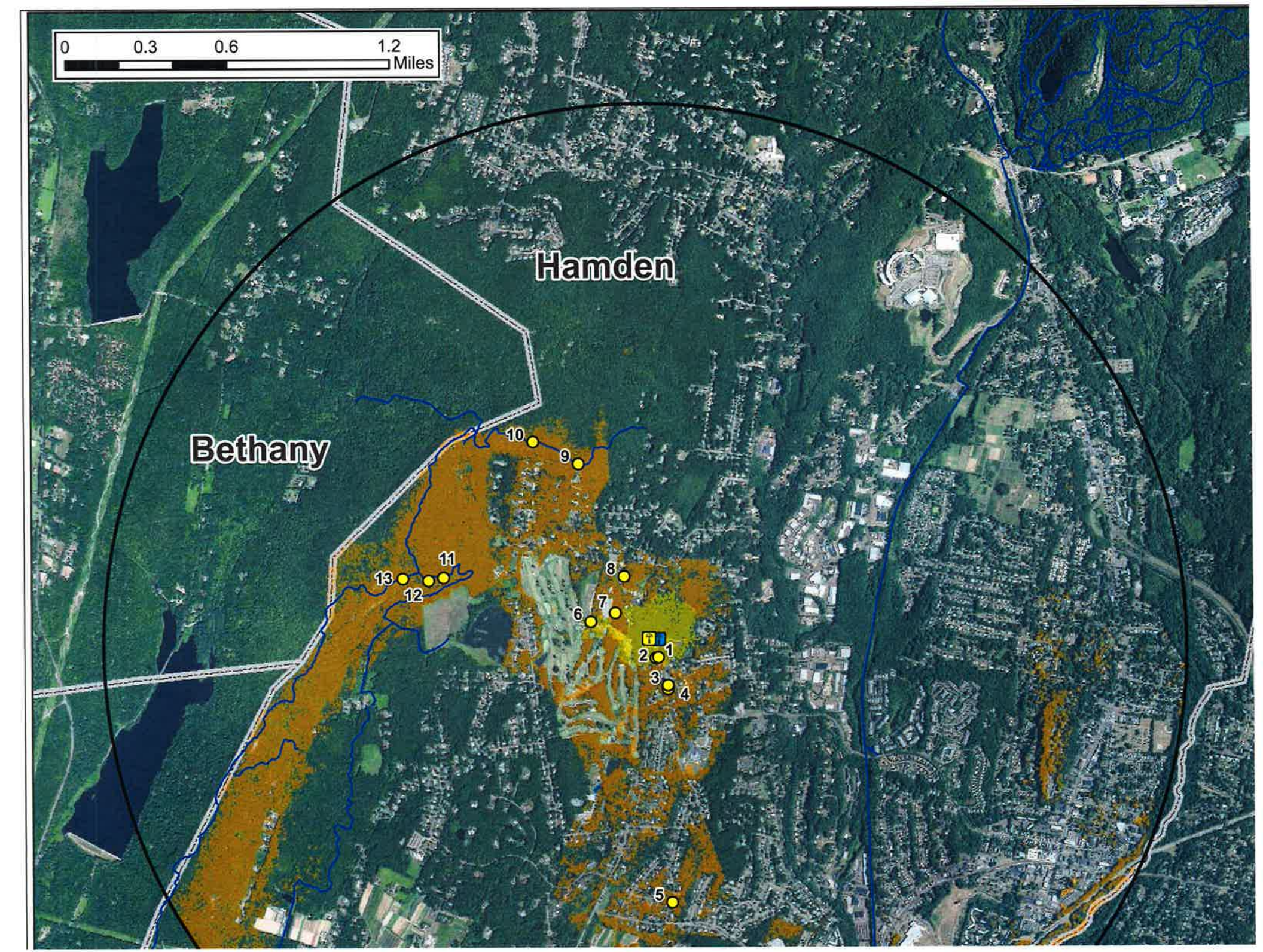

***PROPOSED***

| PHOTO | LOCATION | ORIENTATION | DISTANCE TO SITE 2 |
|---|---|---|---|
| **13** | **WEST ROCK RIDGE STATE PARK TRAIL** | **SOUTHEAST** | **+/- 0.97 MILE** |

ALL-POINTS TECHNOLOGY CORPORATION

verizon


0
0.3
0.6
1.2
Miles
Lake Bethany
Lake Watrous
HAMDEN
Mount Carmel
Hamden
Cheshire
Millbrook
1
2
3
4
5
6
7
8
9
10
11
12
13


0
0.3
0.6
1.2
Miles
Hamden
Bethany
1
2
3
4
5
6
7
8
9
10
11
12
13

# DOCUMENTATION

## SOURCES CONSULTED FOR VIEWSHED MAPS
## 208 Kirk Road
## Hamden, Connecticut

***Physical Geography / Background Data***
Digital elevation model (DEM) derived from 0.64-meter USGS lidar data obtained from NOAA (2015)

Forest areas are generated with TerrSet (Clark University) image processing from the lidar data and 2016 NRCS/NAIP digital orthophotos with 1-foot pixel resolution

Municipal Open Space, State Recreation Areas, Trails, County Recreation Areas, and Town Boundary data obtained from CT DEEP and the towns

United States Geological Survey
- *USGS topographic quadrangle maps – Mount Carmel (1984)

Department of Transportation data
- ^State Scenic Highways (updated monthly)

Heritage Consultants
- ^Municipal Scenic Roads

***Cultural Resources***
Heritage Consultants
- ^National Register
- ^ Local Survey Data

***Dedicated Open Space & Recreation Areas***
Connecticut Department of Energy and Environmental Protection (DEEP)
- *DEEP Property (May 2007)
- *Federal Open Space (1997)
- *Municipal and Private Open Space (1997)
- *DEEP Boat Launches (1994)

Connecticut Forest & Parks Association
- ^Connecticut Walk Books East & West –
  *The Guide to the Blue-Blazed Hiking Trails of Western Connecticut Western Connecticut, 19th Edition, 2006.*

***Other***
- ^ConnDOT Scenic Strips (based on Department of Transportation data)

*Available to the public in GIS-compatible format (some require fees)
^ Data not available to general public in GIS format. Reviewed independently and, where applicable, GIS data later prepared specifically for this Study Area.

***NOTE*** Not all the sources listed above appear on the Viewshed Maps. Only those features within the scale of the graphic are shown.

**LIMITATIONS**
Viewshed analysis conducted using Clark University's TerrSet. The visibility analysis map(s) presented in this report depict areas where the proposed Facility may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of 5 feet above the ground and intervening topography, tree canopy and structures. This analysis may not necessarily account for all visible locations, as it is based on the combination of computer modeling, incorporating the lidar DEM, 2012 digital aerial photographs, and in-field observations from publicly-accessible locations. No access to private properties beyond the host Property was provided to APT personnel. This analysis does not claim to depict the only areas, or all locations, where visibility may occur; it is intended to provide a representation of those areas where the Facility is likely to be seen.

# ATTACHMENT 8


***Legend***

- Proposed Tower Site
- Potential Alternate Tower Site
- Proposed Site Facility Layout
- Proposed Facility Alternate Access
- Potential Alternate Site Facility Layout
- Subject Property (+/-9.34 Acres)
- Watercourse (CTDEEP)
- Open Water (CTDEEP)
- Forest Block (+/-61 Acres)

**Forest Block Type**

- Edge Forest Block (+/-54.6 Acres)
- Small Core Forest Block (+/-6.4 Acres)

N
W E
S

450 225 0 450 Feet

*Map Notes:*
*Base Map Source: 2016 Aerial Photograph (CT ECO)*
*Map Scale:1 Inch = 450 feet*
*Map Date: May 2017*

## Forest Fragmentation Map

Proposed Wireless
Telecommunications Facility
Hamden 8 CT
208 Kirk Road
Hamden, Connecticut

verizon

ALL-POINTS TECHNOLOGY CORPORATION