

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE: :
: :
A PETITION OF CELLCO PARTNERSHIP : PETITION NO. ____
D/B/A VERIZON WIRELESS FOR A :
DECLARATORY RULING ON THE NEED :
TO OBTAIN A SITING COUNCIL :
CERTIFICATE FOR THE REPLACEMENT :
AND MINOR EXTENSION OF AN :
EXISTING TELECOMMUNICATIONS :
TOWER AT ST. ANDREWS ROAD, :
BLOOMFIELD, CONNECTICUT : JULY 28, 2014

PETITION FOR A DECLARATORY RULING:
INSTALLATION HAVING NO
SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT

I. Introduction

Pursuant to Sections 16-50j-38 and 16-50j-39 of the Regulations of Connecticut State Agencies (“R.C.S.A.”), Cellco Partnership d/b/a Verizon Wireless (“Cellco”) hereby petitions the Connecticut Siting Council (the “Council”) for a declaratory ruling (“Petition”) that no Certificate of Environmental Compatibility and Public Need (“Certificate”) is required under Section 16-50k(a) of the Connecticut General Statutes (“C.G.S.”) to replace an existing 180-foot lattice tower and with a new 185-foot lattice tower on an approximately 40-acre parcel off St. Andrews Road in Bloomfield, Connecticut (the “Property”). For the purposes of this Petition, Cellco identifies this facility as its “Tariffville” cell site. The Property is owned by The Connecticut Light and Power Company (“CL&P”).

II. Factual Background

At the Property, CL&P currently owns and maintains an 180-foot self-supporting lattice tower at a ground elevation (“GE”) of approximately 412 feet above mean sea level (“AMSL”).

The existing tower was approved by the Council in Docket No. 158 in 1993.¹ The existing tower is currently shared by CL&P, which has several whip and dish antennas at various levels on the tower; AT&T which has antennas at the 158-foot level and Cellco which has antennas at the 150-foot level. The tower is also shared by the Town of Bloomfield Police Department and the Town of Simsbury Police Department. (See Tower Inventory Drawing included in Attachment 1). Several small equipment cabinets and shelters are located on the ground near the base of the tower. Cellco's equipment is located in an existing 600 square foot shelter to the southwest of the existing tower. Cellco also maintains a back-up generator on the ground, adjacent to its shelter. The existing tower, all equipment cabinets, shelters and generators are located within an irregularly shaped facility compound. The compound is surrounded by a six-foot security fence and gates with one-foot of barbed wire at the top. Access to the existing tower compound extends from St. Andrews Road, along an existing paved access roadway, a distance of approximately 2,655 feet. (See Project Plans included in Attachment 2).

A. Cellco's Need and Proposed Facility Modifications

Cellco is licensed to provide wireless telecommunications services in the 700 MHz, 850 MHz, 1900 MHz and 2100 MHz frequency ranges in the Town of Bloomfield and throughout the State of Connecticut. Cellco's existing Tariffville facility currently provides wireless service along portions of Routes 189, 187 and 315 and local roads in the area and serves industrial, commercial and residential land uses in the Towns of Bloomfield, Windsor, Simsbury and East Granby. Cellco's existing Tariffville cell site interacts with its North Bloomfield, Simsbury,

¹ Prior to 1993, CL&P maintained a 140-foot guyed-lattice tower at the Property. Springwich Cellular Limited Partnership (now AT&T) received Council approval to attach antennas at the 50-foot level on the 140-foot tower in 1992. The Council's Docket No. 158 approval authorized AT&T to remove the existing 140-foot guyed-lattice tower and replace it with a 180-foot self-supporting lattice tower on the same parcel.

Simsbury NW, East Granby 2, East Granby 3 and Windsor 2 cell sites. Plots showing Cellco's wireless service in the area are included in Attachment 3.

In an effort to improve wireless service in the area, Cellco intends to make certain modifications to the Tariffville facility. These modifications will involve the removal of its existing antennas and the installation of new antennas, remote radio heads and new fiber optic antenna cables. The existing CL&P tower, however, is not structurally capable of supporting Cellco's proposed modifications. Structural reinforcement of the existing tower was explored but was determined to be more costly than replacing the existing CL&P tower altogether.

Cellco, therefore, proposes to construct a new self-supporting lattice tower approximately 75 feet to the southwest of the existing CL&P lattice tower. The ground elevation in this portion of the Property is approximately five (5) feet lower (407 feet AMSL) than the ground elevation at the existing tower site. In order to maintain the same overall height (AMSL) of the existing antennas on the CL&P tower, the replacement tower will be constructed five (5) feet taller (185 feet), than the existing tower. A listing of proposed antennas heights on the new, taller tower is included in the "Antenna Schedule" on Plan Sheet C-2, in Attachment 2.

The new tower will be designed to accommodate all existing entities sharing the CL&P tower, as well as Cellco's proposed modified facility. The new tower will also be designed with excess structural capacity so that new facilities, or further modifications to existing facilities, can be accommodated. CL&P will own the replacement tower. After the new tower is constructed and all existing equipment is relocated onto the new tower, the existing 180-foot lattice tower will be removed.

Cellco intends to install twelve (12) antennas and six (6) remote radio heads (RRHs) at the 155-foot level on the replacement tower. Specifications for Cellco's new antennas and RRHs

are included in Attachment 4. Cellco will continue to maintain its radio equipment inside its existing shelter and use its existing back-up generator to provide back-up power to the site.

III. Discussion

A. The Proposed Facility Modifications Will Not Have A Substantial Adverse Environmental Effect

The Public Utility Environmental Standards Act (the “Act”), C.G.S. § 16-50g et seq., provides for the orderly and environmentally compatible development of telecommunications towers in the state to avoid “a significant impact on the environment and ecology of the State of Connecticut.” C.G.S. § 16-50g. To achieve these goals, the Act established the Council, and requires a Certificate of Environmental Compatibility and Public Need for the construction of cellular telecommunication towers “that may, as determined by the council, have a substantial adverse environmental effect”. C.G.S. § 16-50k(a).

1. Physical Environmental Effects

Cellco respectfully submits that the minor expansion of the facility compound and the construction of a replacement tower, approximately 75 feet to the southwest of the existing CL&P tower will not involve a significant alteration in the physical or environmental characteristics of the Property or the surrounding area. To accommodate the tower relocation and antenna cable routing, the southwest portion of the facility compound and a small area to the west of the compound will need to be regraded and a portion of the facility compound fence will be relocated, expanding the overall improved portion of the communications facility compound. Seventeen (17) trees, greater than 6” diameter at breast height will need to be removed to accommodate this construction activity. (*See Attachment 2, Plan Sheet C-1A*). Vehicular access and utility service to the expanded CL&P tower compound will not change in any way.

2. Wetlands and Vernal Pool Evaluation

Dean Gustafson, a Professional Soil Scientist with All Points Technology Corporation (“APT”) determined that there are no direct wetland impacts resulting from the proposed telecommunications facility modifications at the Property. (See Wetlands & Vernal Pool Evaluation Report included in Attachment 5). The expansion of the facility compound area does not encroach any closer to the nearest wetland area which is located approximately 170 feet to the north. The nearest grading activity, to the west of the expanded facility compound will remain approximately 140 feet away from this same wetland area. Wetland areas along the existing access drive will likewise not be impacted by the proposed facility improvements since no access drive improvements are required or proposed.

Vernal pool habitat, identified in portions of the on-site wetland areas, was also evaluated. The site improvements described in this Petition will not result in any direct physical impacts on any of the identified vernal pool areas. To avoid any indirect or unintentional impacts on these vernal pool areas APT has developed a series of Best Management Practices which will be in place prior to and throughout construction of the new tower improvements.

3. Visual Effects

As discussed in numerous other Council filings and proceedings, visual impact of a tower is often the most significant and, in many cases, the only discernible environmental effect associated with such facilities. To assess these conditions, Cellco asked All-Points Technologies (“APT”) to review the overall visual impact of the existing 180-foot tower and the relocated 185-foot tower described in this Petition. A copy of the APT Visibility Analysis is included in Attachment 6.

The APT report concludes that the visual impact of the new 185-foot tower will not differ from that of the existing 180-foot CL&P tower. Several existing views would change, slightly, in character due to the shift in tower location (75± feet to the southwest) but the overall visual impact of the new tower will not be significant.

4. FCC Compliance

Radio frequency (“RF”) emissions from the relocated tower will not exceed the standards adopted by the Federal Communications Commission (“FCC”). Included in Attachment 7 is a cumulative RF emissions calculation (General Power Density table) confirming that the existing AT&T antennas together with the modified Cellco installation will operate well within the RF emissions standards established by the FCC.

5. FAA Summary Report

Included in Attachment 8 of this Petition is a Federal Airways & Airspace Summary Report for the 185-foot replacement tower at the Property. Due to its proximity to Bradley International Airport, information regarding the replacement tower will be filed with the FAA.

B. Notice to the Mayor, Town Manager and Abutting Landowners

On July 28, 2014, copies of this Petition were sent to Bloomfield’s Mayor Sydney Schulman and Town Manager Phillip Schenck, Jr. and to Simbury’s First Selectman Mary Glassman. Notice of Cellco’s intent to file this Petition together with a copy of the project plans was also sent to the owners whose land abuts the Property. Included in Attachment 9 are copies of the letters sent to Mayor Schulman, Town Manager Schenck and First Selectman Glassman, a sample abutter’s notice letter, and the list of those abutting landowners who were sent notice of the filing of the Petition.

C. A Conclusion That the Proposed Facility Modifications Will Not Have a Substantial Adverse Environmental Effect Would Be Consistent With Siting Council Precedent

The Council has previously determined, under similar circumstances, that the relocation and extension of an existing tower would have no substantial adverse environmental effect, does not require a Certificate and, most importantly, is preferable to the construction of a new tower in a particular area. Similar Petitions have been approved by the Council in, for example, Petition No. 827, Cellco's 40-foot extension and the relocation of an existing CL&P tower at 705 West Johnson Avenue in Cheshire; and Petition No. 722, Cellco's 40-foot extension and the relocation of its antennas from an existing AT&T tower at 70 Platt Road in Shelton.

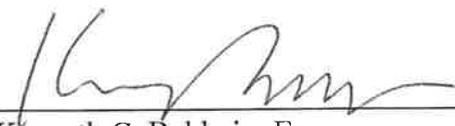
IV. Conclusion

Based on the information provided above, Cellco respectfully requests that the Council issue a determination in the form of a declaratory ruling that the relocation and extension of the existing tower at the Property, will not have a substantial adverse environmental effect and does not require the issuance of a Certificate of Environmental Compatibility and Public Need pursuant to § 16-50k of the General Statutes.

Respectfully submitted,

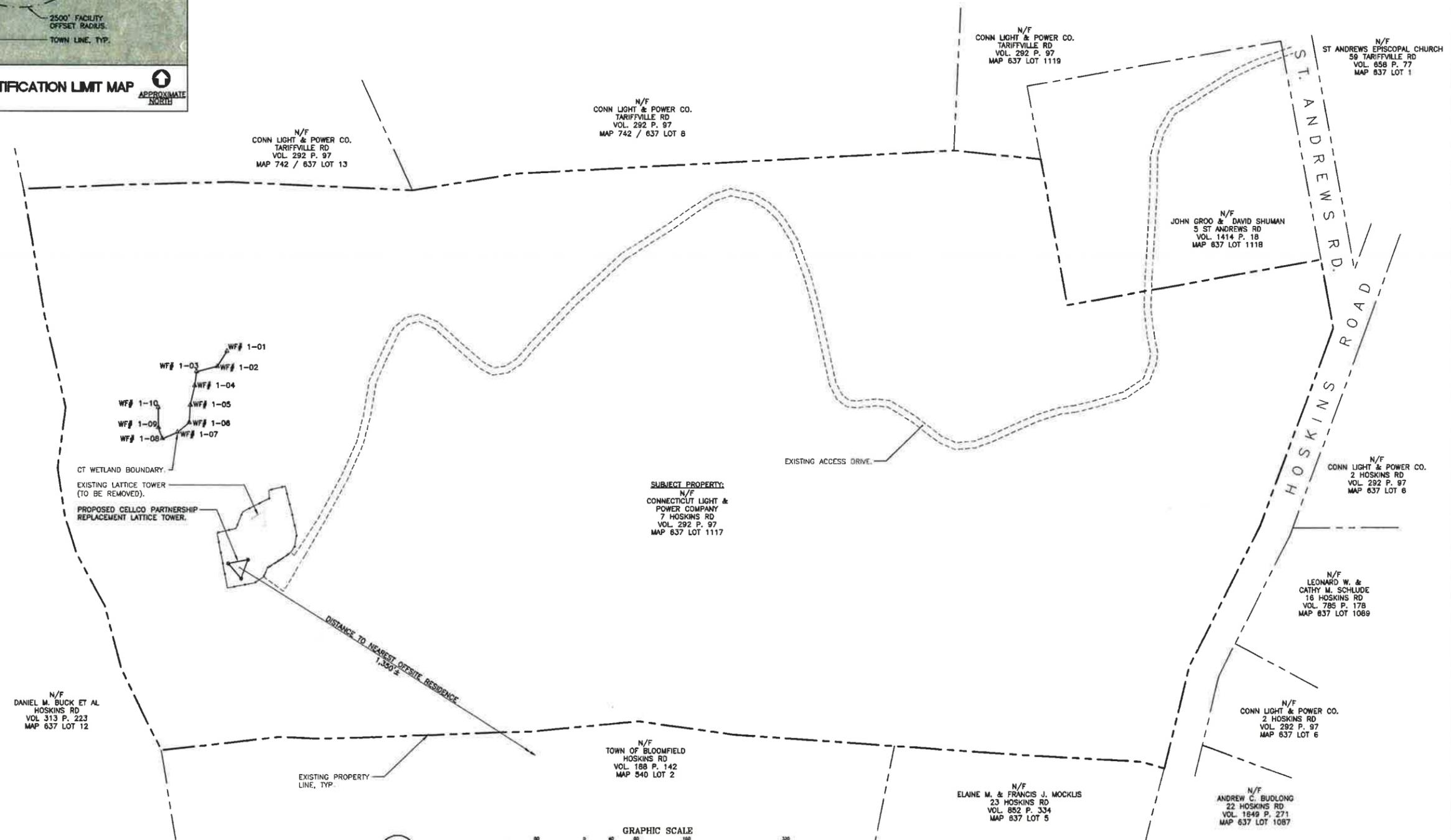
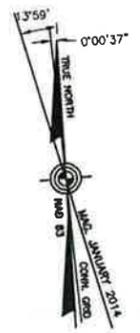
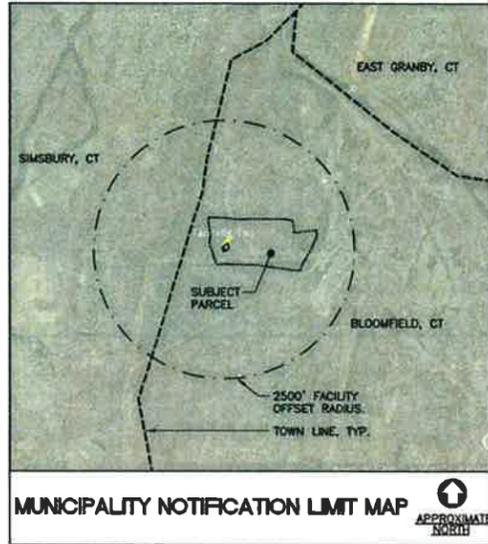
CELLCO PARTNERSHIP d/b/a VERIZON
WIRELESS

By


Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597
(860) 275-8200
Its Attorneys

ATTACHMENT 1

ATTACHMENT 2



PROFESSIONAL ENGINEER SEAL Centek Engineering 2031 494-0580 2031 494-4597 Fax 65-2 North Ironford Road Ironford, CT 06405 www.CentekEng.com	
Celco Partnership d.b.a. Verizon Wireless	
Cellco Partnership d/b/a Verizon Wireless WIRELESS COMMUNICATIONS FACILITY TARIFFVILLE RELO. ST. ANDREWS ROAD BLOOMFIELD, CT 06002	
DATE:	02/20/14
SCALE:	AS NOTED
JOB NO.:	13030.000
ABUTTERS MAP	
C-1 Sheet No. 2 of 2	

REV.	DATE	BY	CHK'D BY	DESCRIPTION
2	07/09/14	DMD	CPC	REVISED ISSUED FOR CSC - STREET NAMES ADDED
1	05/05/14	JMR	DMD	ISSUED FOR CSC
0	02/20/14	JMR	DMD	ISSUED FOR CSC-CLIENT REVIEW

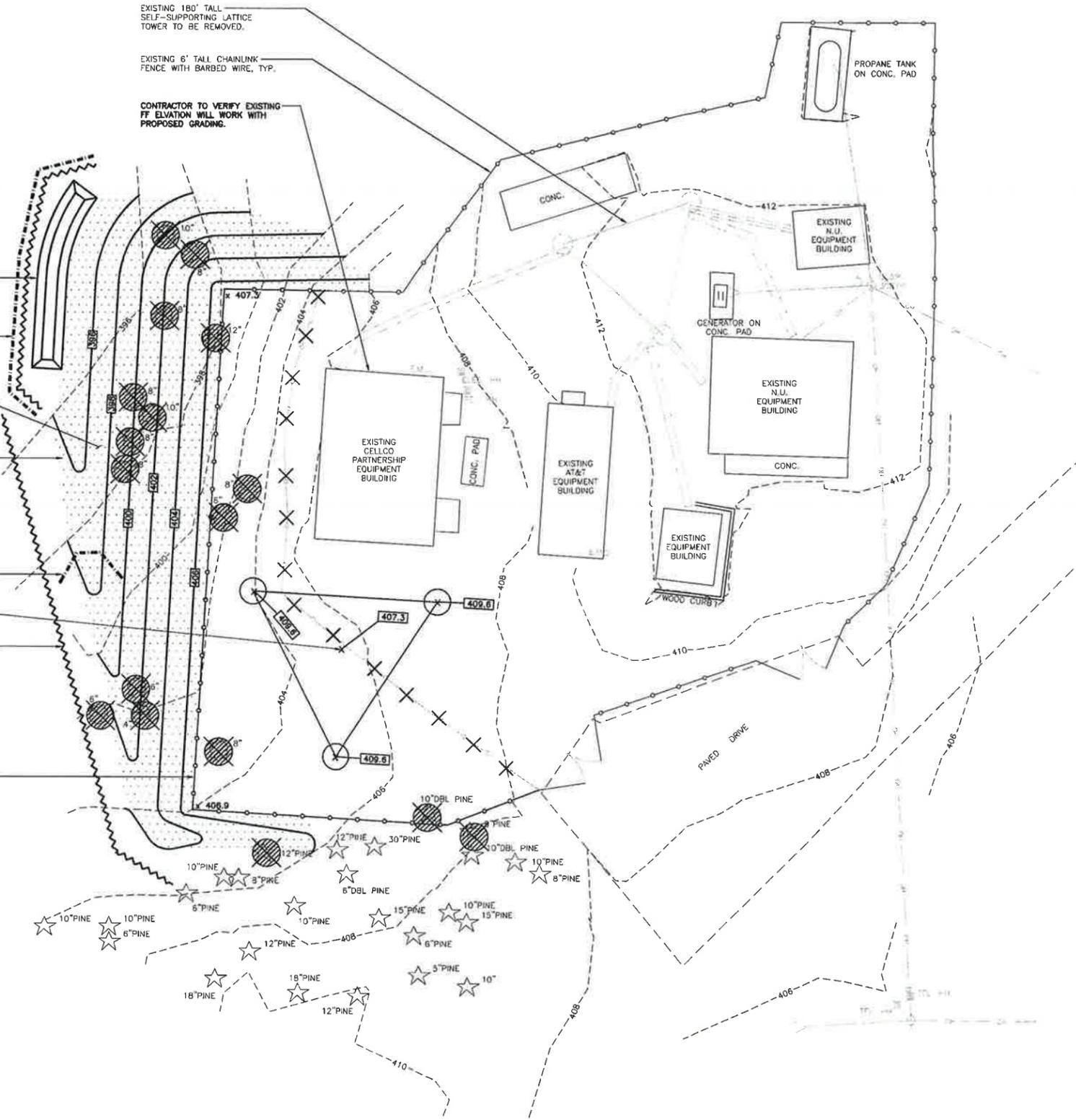


EXISTING 180' TALL SELF-SUPPORTING LATTICE TOWER TO BE REMOVED.

EXISTING 6' TALL CHAINLINK FENCE WITH BARBED WIRE, TYP.

CONTRACTOR TO VERIFY EXISTING FF ELEVATION WILL WORK WITH PROPOSED GRADING.

- 1 C-4 PROPOSED LEVEL SPREADER (D=9', L=35'±).
- 1 C-3 PROPOSED SILT FENCE/HAYBALES, TYP.
- PROPOSED NORTH AMERICAN GREEN S150BN EROSION BLANKET, TYP. REFER TO SHEET C-3.
- 2 C-4 PROPOSED GRASS LINED SWALE, TYP.
- 3 C-4 PROPOSED HAY BALE CHECK DAM.
- PROPOSED CELCO PARTNERSHIP TOWER LOCATION.
- 2 C-3 PROPOSED SILT FENCE, TYP.
- 1 C-5 PROPOSED 6' TALL CHAINLINK FENCE WITH BARBED WIRE TO MATCH EXISTING, TYP.



SYMBOLS LEGEND	
---	EXISTING ACCESS DRIVE
---	CONTOUR LINE
---	GRADING LINE
○	UTILITY POLE
○	EXISTING DECIDUOUS TREE
○	EXISTING CONIFEROUS TREE
○	EXISTING DECIDUOUS TREE TO BE REMOVED
○	EXISTING CONIFEROUS TREE TO BE REMOVED
---	SILTATION FENCE/ HAYBALES/ SILTATION FENCE "SANDWICH"
---	EXISTING FENCE LINE
---	EXISTING FENCE TO BE REMOVED
X	SPOT ELEVATION (PROPOSED)

MISCELLANEOUS SITE INFORMATION	
DISTANCE TO NEAREST OFF SITE RESIDENCE*	= 1,350'±
DISTANCE TO NEAREST MUNICIPALITY (SIMSBURY)*	= 720'±
ACCESS LENGTH OFF ST. ANDREWS ROAD	= 2,655'±
NUMBER OF RESIDENTIAL STRUCTURES WITHIN 1000' OF TOWER	= 0
TOTAL NUMBER OF TREES TO BE REMOVED	= 17
DISTANCE TO NEAREST PROPERTY LINE*	= 200'±

* DISTANCES TAKEN FROM CENTER OF PROPOSED TOWER

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. IT IS A BOUNDARY & TOPOGRAPHIC MAP AND IS BASED UPON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS A+2 AND A VERTICAL ACCURACY OF CLASS 1-2 AND IS INTENDED TO BE USED TO DEPICT A PROPOSED TELECOMMUNICATION SITE.

VERTICAL DATUM IS BASED ON NGVD 29.

COORDINATES REFER TO NAD 83.

PARCEL OWNER OF RECORD: CONNECTICUT LIGHT & POWER COMPANY
P.O. BOX 2370
HARTFORD, CT 06101

PARCEL AREA = 38.3 ACRES.

PARCEL ID: MAP 637, LOT 1117 BLOOMFIELD ASSESSOR'S OFFICE.

PARCEL LIES WITHIN A R-80 ZONING DISTRICT.

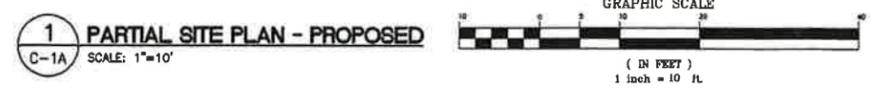
PARCEL IS NOT IN A FLOOD HAZARD ZONE ON THE FLOOD INSURANCE RATE MAP, HARTFORD COUNTY, CONNECTICUT, PANEL 194 OF 676, COMMUNITY PANEL NUMBERS 0900300194E, MAP REVISED SEPTEMBER 26, 2008, BY FEDERAL EMERGENCY MANAGEMENT AGENCY.

- REFERENCE IS MADE TO THE FOLLOWING MAPS
- PROPERTY PURCHASE - BLOOMFIELD, ST ANDREWS PARISH OF THE PROTESTANT EPISCOPAL CHURCH, SCALE 1"=100', DATED 8-54, BY THE CONNECTICUT POWER COMPANY, ENGINEERING DIVISION.
 - PROPERTY SURVEY, LAND TO BE CONVEYED BY THE CONNECTICUT LIGHT & POWER COMPANY, ST. ANDREWS ROAD, BLOOMFIELD, CONNECTICUT, SCALE 1"=40', DATED 1-11-06, BY NORTHEAST UTILITIES SERVICE CO.

NOT ALL IMPROVEMENTS SHOWN.

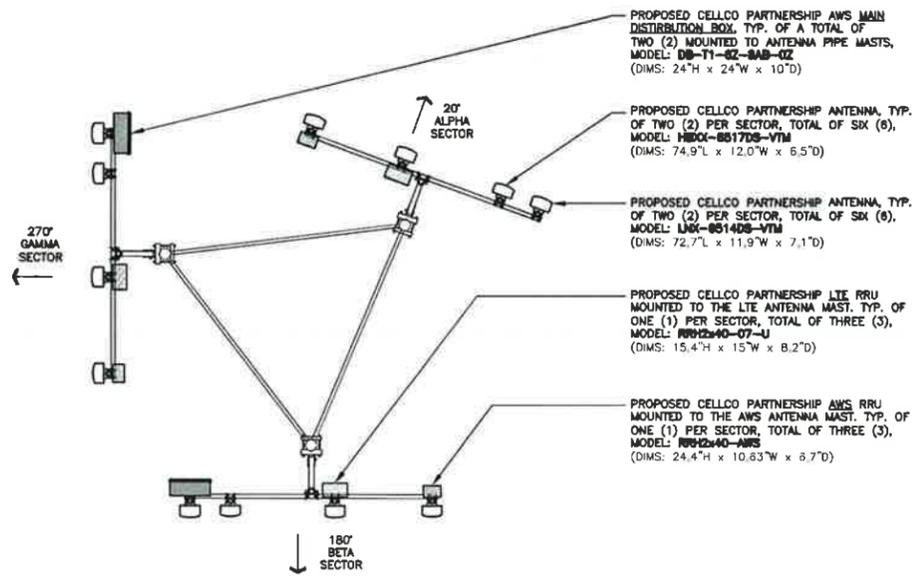
TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE AND SEAL



1 PARTIAL SITE PLAN - PROPOSED
C-1A SCALE: 1"=10'

<p>PROFESSIONAL ENGINEER SEAL</p> <p>Cellco Partnership d/b/a Verizon Wireless</p> <p>CENTEK engineering Centralized Solutions 2031 484-0500 2031 484-0507 Fax 432 North Branford Road Branford, CT 06405 www.CentekEng.com</p>	<p>DATE: 02/20/14 SCALE: AS NOTED JOB NO. 13030.000</p> <p>TARIFFVILLE RELO.</p> <p>ST. ANDREWS ROAD BLOOMFIELD, CT 06002</p> <p>PARTIAL SITE PLAN</p> <p>C-1A</p> <p>Sheet No. 3 of 7</p>
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3 ANTENNA MOUNTING CONFIGURATION PLAN
 SCALE: 1/4" = 1'-0"
 APPROXIMATE NORTH

PROPOSED CELCO PARTNERSHIP AWS MAIN DISTRIBUTION BOX, TYP. OF A TOTAL OF TWO (2) MOUNTED TO ANTENNA PIPE MASTS, MODEL: DB-11-02-84B-02 (DIMS: 24"H x 24"W x 10"D)

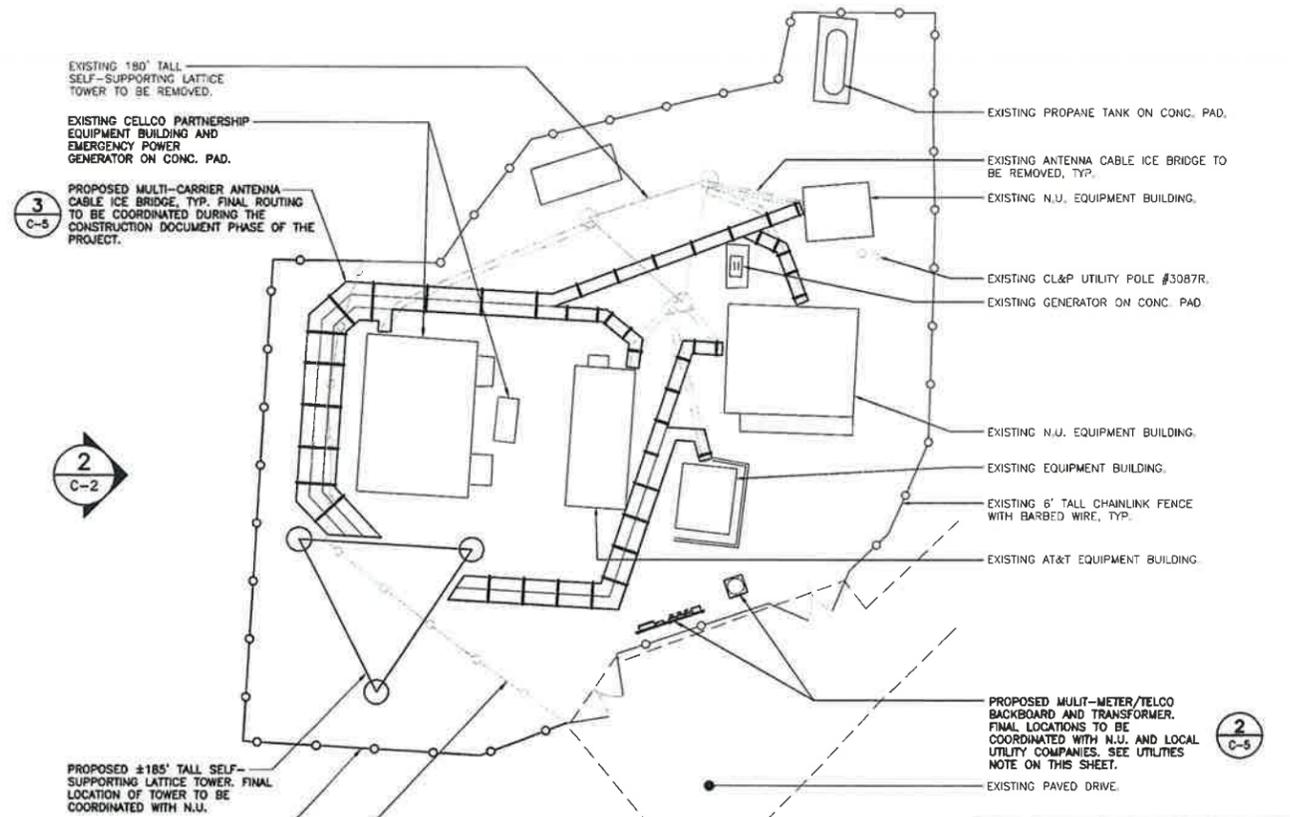
PROPOSED CELCO PARTNERSHIP ANTENNA, TYP. OF TWO (2) PER SECTOR, TOTAL OF SIX (6), MODEL: H800-85170S-VTM (DIMS: 74.9"L x 12.0"W x 5.5"D)

PROPOSED CELCO PARTNERSHIP ANTENNA, TYP. OF TWO (2) PER SECTOR, TOTAL OF SIX (6), MODEL: L8K-05140S-VTM (DIMS: 72.7"L x 11.9"W x 7.1"D)

PROPOSED CELCO PARTNERSHIP LTE RRU MOUNTED TO THE LTE ANTENNA MAST, TYP. OF ONE (1) PER SECTOR, TOTAL OF THREE (3), MODEL: RRH2040-07-U (DIMS: 15.4"H x 15"W x 8.2"D)

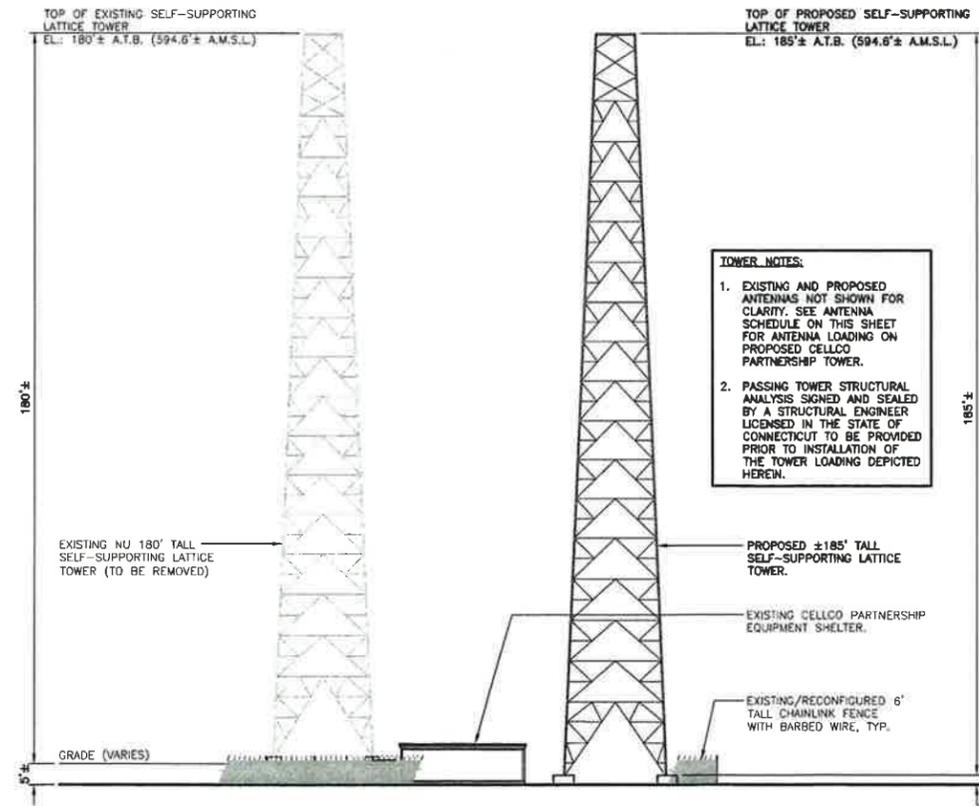
PROPOSED CELCO PARTNERSHIP AWS RRU MOUNTED TO THE AWS ANTENNA MAST, TYP. OF ONE (1) PER SECTOR, TOTAL OF THREE (3), MODEL: RRH2040-AWS (DIMS: 24.4"H x 10.83"W x 8.7"D)

Antenna #	Elev.	Leg	Antenna Make/Model	TX Line	Mount	License
193	B		DB589Y-9" Omni W/TTA	(2) 1-5/8" (1) 1/2"	Pipe Mount	NU
189	A		DB201 Ground Plain	1-5/8"	Pipe Mount	NU
189	C		10-ft, 8-bay dipole	7/8"	Pipe Mount	Bloomfield PD
190	A		1142, 10-ft omni	7/8"	Pipe Mount	NU
192	B		Kreco 14-flomni	7/8"	Pipe Mount	NU
191	C		20-ft, 8-bay dipole	7/8"	Pipe Mount	Bloomfield PD
185	C		ITL Dual LED Flash Head	3/8" Power	Top of Leg	NU
181	B		RFS PADXB-59A Dish	(2) EW63	Pipe Mount	NU
181	A		RFS PADXB-59A Dish	(2) EW63	Pipe Mount	NU
181	C		RFS PADXB-59A Dish	(2) EW63	Pipe Mount	NU
171	A		RFS PADXB-59A Dish	(2) EW63	Pipe Mount	NU
171	B		RFS PADXB-59A Dish	(2) EW63	Pipe Mount	NU
171	C		RFS PADXB-59A Dish	(2) EW63	Pipe Mount	NU
165	C		3' x 6' Grid paraflector	7/8"	Pipe Mount	Simsbury PD
175	A		ANT450F-10, 20'-4" omni	7/8"	3-ft Side Arm	NU
165	ABC		(3) Powerwave 7770 antennas (9) CCI HPA-65R-BUJ-HB antennas (3) Andrew E15Z01P1.3 TMA's (6) Ericsson RRUS-11 RRH's (6) Ericsson RRUS-12 RRH's (6) Ericsson RRUS-A2 Modules (3) Ericsson RRUS-32 RRH's (3) Raycap DC6-48-60-BF	(6) 1-5/8" (1) Fiber Trunk (3) DC Cables	(3) 12" Antenna sector frame mounts	AT&T
155	ABC		Verizon Wireless	(18) 1-5/8"	(3) 12" Antenna sector frame mounts	Verizon Wireless
140	ABC		Future Carrier (60 S.F. Reserved Flat Plate Area)	(18) 1-5/8"	(3) 12" Antenna sector frame mounts	Future Carrier
135	C		RFS PADXB-59A Dish	(2) EW63	Pipe Mount	NU
135	B		RFS PA3-57A Dish	EW90	Pipe Mount	NU
125	B		RFS PADXB-59A Dish	(2) EW63	Pipe Mount	NU
135	A		20-ft omni	7/8"	6-ft Side Arm	NU
132	A		Kreco 14-fl omni	7/8"	6-ft Side Arm	NU
123	A		10-ft yaggi	7/8"	3-ft Side Arm	NU
109	A		12-ft single dipole	7/8"	6-ft Side Arm	NU
103	ABC		(3) IT L-810, LED sidelights	3/8" Power	(1) sidelight per leg	NU
100	B		RFS PADXB-59A Dish	(2) EW63	Pipe Mount	NU
98	C		Kreco 14-fl omni	7/8"	6-ft Side Arm	NU
85	A		12-ft single dipole	7/8"	6-ft Side Arm	NU
74	B		10-ft, 4-bay dipole	7/8"	6-ft Side Arm	NU



1 COMPOUND PLAN
 SCALE: 1" = 15'
 APPROXIMATE NORTH

UTILITIES NOTE:
 1. THE EXISTING UNDERGROUND UTILITY CONDUITS ROUTED WITHIN PROXIMITY OF THE PROPOSED REPLACEMENT TOWER SHALL BE RELOCATED OUT OF THE PROPOSED TOWER CONSTRUCTION AREA AND FED FROM THE PROPOSED FACILITY MULTI-METER/TELCO BACKBOARD TO THE RESPECTIVE CARRIER EQUIPMENT LOCATIONS. SUCH EFFORT SHALL BE COORDINATED WITH N.U. AND LOCAL UTILITY COMPANIES.



2 WEST ELEVATION
 SCALE: 1" = 10'
 GRAPHIC SCALE (IN FEET) 1 inch = 10 ft

TOWER NOTES:
 1. EXISTING AND PROPOSED ANTENNAS NOT SHOWN FOR CLARITY. SEE ANTENNA SCHEDULE ON THIS SHEET FOR ANTENNA LOADING ON PROPOSED CELCO PARTNERSHIP TOWER.
 2. PASSING TOWER STRUCTURAL ANALYSIS SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT TO BE PROVIDED PRIOR TO INSTALLATION OF THE TOWER LOADING DEPICTED HEREIN.

PROFESSIONAL ENGINEER SEAL

Cellco Partnership
 d/b/a Verizon Wireless

CENTEK engineering
 Continued in Solutions™
 (203) 484-0590
 (203) 484-8397 Fax
 45-2 North Branford Road
 Branford, CT 06405
 www.CentekEng.com

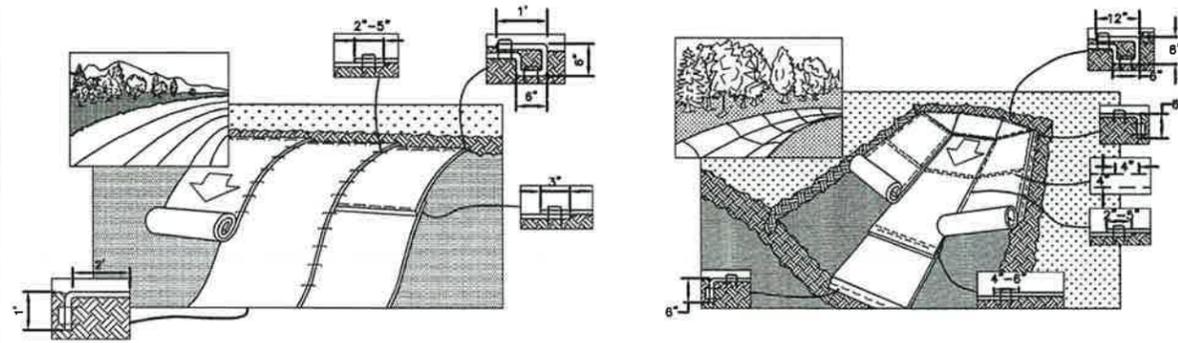
Cellco Partnership d/b/a Verizon Wireless
 WIRELESS COMMUNICATIONS FACILITY
TARIFFVILLE RELO.
 ST. ANDREWS ROAD
 BLOOMFIELD, CT 06002

DATE: 02/20/14
 SCALE: AS NOTED
 JOB NO. 13030.000

COMPOUND PLAN, ELEVATION AND ANTENNA SCHEDULE

C-2
 Sheet No. 4 of 7

EROSION CONTROL BLANKET STABILIZATION



3 TYPICAL EROSION MAT INSTALLATION ON SLOPE
C-3 NOT TO SCALE

4 TYPICAL EROSION MAT INSTALLATION IN CHANNEL
C-3 NOT TO SCALE

STABILIZATION CRITERIA

- CONTRACTOR SHALL IMPLEMENT EROSION CONTROL BLANKET SLOPE STABILIZATION & SWALE CONSTRUCTION WHEN STABLE EARTH CUTS ARE PREVALENT (IN LOCATIONS WITHOUT LEDGE OR LARGE AMOUNTS OF SUBGRADE ROCK)

STABILIZATION PRODUCT SPECIFICATION

NORTH AMERICAN GREEN, PRODUCT NUMBER S150BN, 12 MONTH BIODEGRADABLE.

EROSION MAT ON SLOPES

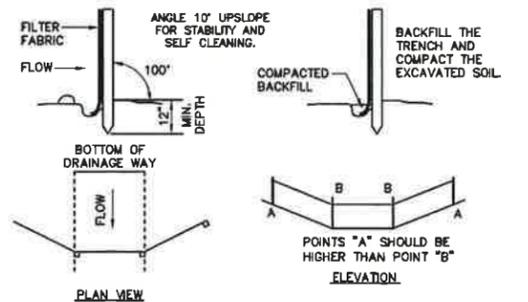
- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLE/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
- ROLL THE BLANKET DOWN OR HORIZONTALLY ACROSS THE SLOPE. BLANKET WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL ROLLED EROSION CONTROL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM(TM), STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
- THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY A 2"-5" OVERLAP DEPENDING ON BLANKET TYPE.
- CONSECUTIVE ROLLED EROSION CONTROL BLANKET SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
* IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKET.
- THE EDGE OF THE BLANKET IS TO EXTEND A MINIMUM 24 INCHES BEYOND THE TOE OF THE SLOPE AND ANCHORED BY PLACING THE STAPLES/STAKES IN A 12 INCH DEEP x 6 INCH WIDE ANCHOR TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12 INCH APART IN THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING (STONE OR SOIL MAY BE USED AS BACKFILL).
- REFER TO MANUFACTURERS STAPLE GUIDE FOR CORRECT STAPLE PATTERN. MINIMUM 4 SPIKES PER ONE SQ. FT.

EROSION MAT IN CHANNEL

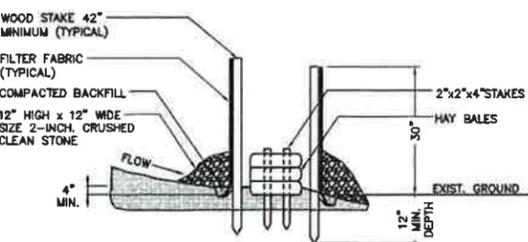
- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
- BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLE/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
- ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM(TM), STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
- PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE BLANKETS.
- FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
- ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2"- 5" AND STAPLED TO ENSURE PROPER SEAM ALIGNMENT. PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH(TM) ON THE BLANKET BEING OVERLAPPED.
- THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
- REFER TO MANUFACTURERS STAPLE GUIDE FOR CORRECT STAPLE PATTERN. MINIMUM 4 SPIKES PER ONE SQ. FT. THE CONTRACTOR SHALL MAINTAIN THE BLANKET UNTIL ALL WORK ON THE CONTRACT HAS BEEN COMPLETED AND ACCEPTED. MAINTENANCE SHALL CONSIST OF THE REPAIR OF AREAS WHERE DAMAGED BY ANY CAUSE. ALL DAMAGED AREAS SHALL BE REPAIRED TO RE-ESTABLISH THE CONDITIONS AND GRADE OF THE SOIL PRIOR TO APPLICATION OF THE COVERING AND SHALL BE REFERTILIZED, RESEED, AND REMULCHED AS DIRECTED.

MAINTENANCE

THE CONTRACTOR SHALL MAINTAIN THE BLANKET UNTIL ALL WORK ON THE CONTRACT HAS BEEN COMPLETED AND ACCEPTED. MAINTENANCE SHALL CONSIST OF THE REPAIR OF AREAS WHERE DAMAGED BY ANY CAUSE. ALL DAMAGED AREAS SHALL BE REPAIRED TO RE-ESTABLISH THE CONDITIONS AND GRADE OF THE SOIL PRIOR TO APPLICATION OF THE COVERING AND SHALL BE REFERTILIZED, RESEED, AND REMULCHED AS DIRECTED.



2 PLACEMENT AND CONSTRUCTION OF SILTATION FENCE
C-3 NOT TO SCALE



1 SILTATION FENCE/HAY BALE SILTATION FENCE 'SANDWICH' EROSION CONTROL
C-3 NOT TO SCALE

GENERAL CONSTRUCTION / PRE-CONSTRUCTION NOTES

- PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES, A MANDATORY ON-SITE PRE-CONSTRUCTION MEETING SHALL BE CONDUCTED WITH THE VERIZON WIRELESS CONSTRUCTION MANAGER, CONTRACTOR'S CONSTRUCTION MANAGER, THE PROJECT EROSION AND SEDIMENTATION CONTROL/ENVIRONMENTAL MONITOR AND THE ENGINEER OF RECORD.
- THE SOUTHERN PROPERTY LINE ADJACENT TO THE PROPOSED ACCESS DRIVE IS STAKED IN FIELD. THE CONTRACTOR SHALL MAINTAIN THE PROPERTY LINE STAKE LOCATIONS DURING THE ENTIRE PERIOD OF CONSTRUCTION. ALL CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED ON THE SUBJECT PROPERTY.

GENERAL CONSTRUCTION SEQUENCE

THIS IS A GENERAL CONSTRUCTION SEQUENCE OUTLINE SOME ITEMS OF WHICH MAY NOT APPLY TO PARTICULAR SITES.

- CUT AND STUMP AREAS OF PROPOSED CONSTRUCTION.
- INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES AS REQUIRED.
- REMOVE AND STOCKPILE TOPSOIL. STOCKPILE SHALL BE SEED TO PREVENT EROSION.
- CONSTRUCT CLOSED DRAINAGE SYSTEM. PRECEPT CULVERT INLETS AND CATCH BASINS WITH SEDIMENTATION BARRIERS.
- CONSTRUCT ROADWAYS AND PERFORM SITE GRADING, PLACING HAY BALES AND SILTATION FENCES AS REQUIRED TO CONTROL SOIL EROSION.
- INSTALL UNDERGROUND UTILITIES.
- BEGIN TEMPORARY AND PERMANENT SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEED OR MULCHED IMMEDIATELY AFTER THEIR CONSTRUCTION. NO AREA SHALL BE LEFT UNSTABILIZED FOR A TIME PERIOD OF MORE THAN 30 DAYS.
- DAILY, OR AS REQUIRED, CONSTRUCT, INSPECT, AND IF NECESSARY, RECONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT FENCES AND SEDIMENT TRAPS INCLUDING MULCHING AND SEEDING.
- BEGIN EXCAVATION FOR AND CONSTRUCTION OF TOWERS AND PLATFORMS.
- FINISH PAVING ALL ROADWAYS, DRIVES, AND PARKING AREAS.
- COMPLETE PERMANENT SEEDING AND LANDSCAPING.
- NO FLOW SHALL BE DIVERTED TO ANY WETLANDS UNTIL A HEALTHY STAND OF GRASS HAS BEEN ESTABLISHED IN REGARDED AREAS.
- AFTER GRASS HAS BEEN FULLY GERMINATED IN ALL SEEDING AREAS, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.

SOIL EROSION AND SEDIMENT CONTROL SEQUENCE

- ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES, SUCH AS CONSTRUCTION ENTRANCE / ANTI TRACKING PAD, SILTATION FENCE, AND SILTATION FENCE / HAY BALE SHALL BE IN PLACE PRIOR TO ANY GRADING ACTIVITY. INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES. MEASURES SHALL BE LEFT IN PLACE AND MAINTAINED UNTIL CONSTRUCTION IS COMPLETED AND/OR AREA IS STABILIZED.
- THE ENTRANCE TO THE PROJECT SITE IS TO BE PROTECTED BY STONE ANTI TRACKING PAD OF ASTM C-33, SIZE NO. 2 OR 3, OR D.O.T. 2" CRUSHED GRAVEL. THE STONE ANTI TRACKING PAD IS TO BE MAINTAINED AT ALL TIMES DURING THE CONSTRUCTION PERIOD.
- THE ENTRANCE TO THE PROJECT SITE IS TO BE PROTECTED BY STONE ANTI TRACKING PAD OF ASTM C-33, SIZE NO. 2 OR 3, OR D.O.T. 2" CRUSHED GRAVEL. THE STONE ANTI TRACKING PAD IS TO BE MAINTAINED AT ALL TIMES DURING THE CONSTRUCTION PERIOD.
- LAND DISTURBANCE WILL BE KEPT TO A MINIMUM AND RESTABILIZATIONS WILL BE SCHEDULED AS SOON AS PRACTICAL.
- ALL SOIL EROSION AND SEDIMENT CONTROL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE CONNECTICUT GUIDELINES FOR EROSION AND SEDIMENT CONTROL INCLUDING THE LATEST DATE FROM THE COUNCIL ON SOIL AND WATER CONSERVATION.
- ANY ADDITIONAL EROSION/SEDIMENTATION CONTROL DEEMED NECESSARY BY TOWN STAFF DURING CONSTRUCTION, SHALL BE INSTALLED BY THE DEVELOPER. IN ADDITION, THE DEVELOPER SHALL BE RESPONSIBLE FOR THE REPAIR/REPLACEMENT/MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL ALL DISTURBED AREAS ARE STABILIZED TO THE SATISFACTION OF THE TOWN STAFF.
- IN ALL AREAS, REMOVAL OF TREES, BUSHES AND OTHER VEGETATION AS WELL AS DISTURBANCE OF THE SOIL IS TO BE KEPT TO AN ABSOLUTE MINIMUM WHILE ALLOWING PROPER DEVELOPMENT OF THE SITE. DURING CONSTRUCTION, EXPOSE AS SMALL AN AREA OF SOIL AS POSSIBLE FOR AS SHORT A TIME AS POSSIBLE.
- SILTATION FENCE SHALL BE PLACED AS INDICATED BEFORE A CUT SLOPE HAS BEEN CREATED. SEDIMENT DEPOSITS SHOULD BE PERIODICALLY REMOVED FROM THE UPSTREAM SIDES OF SILTATION FENCE. THIS MATERIAL IS TO BE SPREAD AND STABILIZED IN AREAS NOT SUBJECT TO EROSION, OR TO BE USED IN AREAS WHICH ARE NOT TO BE PAVED OR BUILT ON. SILTATION FENCE IS TO BE REPLACED AS NECESSARY TO PROVIDE PROPER FILTERING ACTION. THE FENCE IS TO REMAIN IN PLACE AND BE MAINTAINED TO INSURE EFFICIENT SILTATION CONTROL UNTIL ALL AREAS ABOVE THE EROSION CHECKS ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED.
- SWALE DISCHARGE AREA WILL BE PROTECTED WITH RIP RAP SPLASH PAD/ ENERGY DISSIPATER.
- ALL FILL AREAS SHALL BE COMPACTED SUFFICIENTLY FOR THEIR INTENDED PURPOSE AND AS REQUIRED TO REDUCE SLIPPING, EROSION OR EXCESS SATURATION.
- THE SOIL SHALL NOT BE PLACED WHILE IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBGRADE IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING OR PROPOSED SODDING OR SEEDING.
- AFTER CONSTRUCTION IS COMPLETE AND GROUND IS STABLE, REMOVE SILTS IN THE RIP RAP ENERGY DISSIPATERS. REMOVE OTHER EROSION AND SEDIMENT DEVICES.

CONSTRUCTION SPECIFICATIONS - SILT FENCE

- THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.
- THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
- WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES.
- FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MID-SECTION AND BOTTOM.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED.
- FENCE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG AND DRIVEN A MINIMUM OF 16 INCHES INTO THE GROUND. WOOD POSTS SHALL BE OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED TO PREVENT BUILD UP IN THE SILT FENCE DUE TO DEPOSITION OF SEDIMENT.

MAINTENANCE - SILT FENCE

- SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS THAT ARE REQUIRED SHALL BE MADE IMMEDIATELY.
- IF THE FABRIC ON A SILT FENCE SHOULD DECOMPOSE OR BECOME INEFFECTIVE DURING THE EXPECTED LIFE OF THE FENCE, THE FABRIC SHALL BE REPLACED PROMPTLY.
- SEDIMENT SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACHED APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
- SEDIMENT DEPOSITS THAT ARE REMOVED OR LEFT IN PLACE AFTER THE FABRIC HAS BEEN REMOVED SHALL BE GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.

PROFESSIONAL ENGINEER SEAL

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d.b.a. Verizon Wireless
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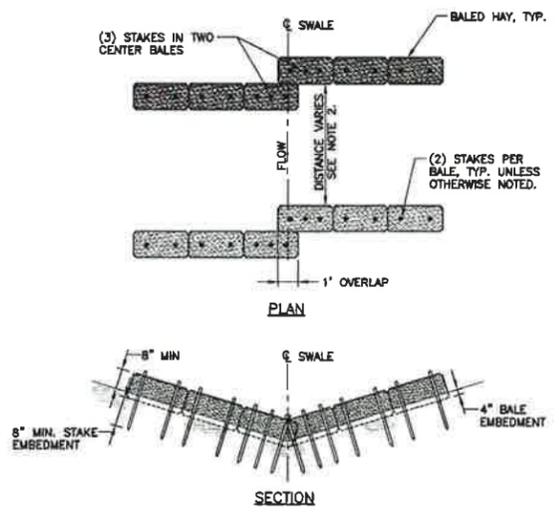
203 496-0990
203 496-8597 Fax
682 North Broad Road
Bloomfield, CT 06002

TARIFFVILLE RELO.
8T. ANDREWS ROAD
BLOOMFIELD, CT 06002

DATE: 02/20/14
SCALE: AS NOTED
JOB NO. 13030.000

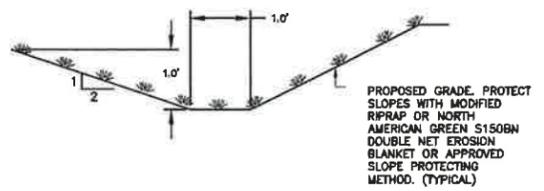
SITE CONSTRUCTION
&E CONTROL
NOTES & DETAILS

C-3
Sheet No. 5 of 7

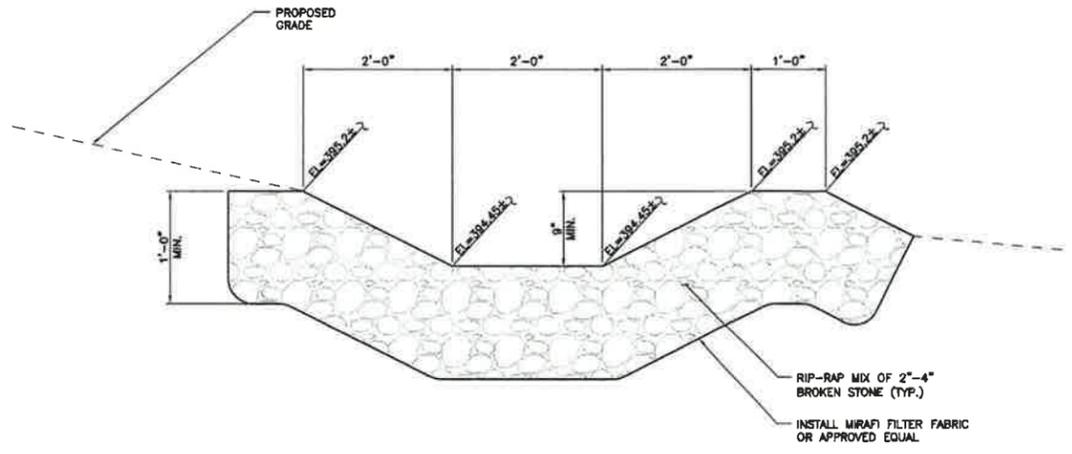


- NOTES:**
- CHECKDAM SHALL BE INSTALLED IN LOCATIONS INDICATED ON SITE PLAN (SHEET C-1A) IN DRAINAGE SWALE WITH BED WIDTHS OF 2 FEET OR LESS.
 - THE DISTANCE BETWEEN HAYBALE CHECKDAMS SHALL BE DETERMINED BY THE SLOPE OF THE SWALE. CHECKDAMS SHALL BE SET AT EVERY 2 FEET DROP IN SWALE ELEVATION.
 - BALES SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
 - INSTALL 3 STAKES PER BALE WITHIN SWALE BED AREAS.
 - HAYBALES CAN BE SUBSTITUTED WITH EITHER STRAW WATTLE OR COMPOST SOCK/FILTER (E.G., SILTSOX™ OR APPROVED EQUIVALENT).

3 TYP. HAYBALE CHECKDAM
C-4 NOT TO SCALE

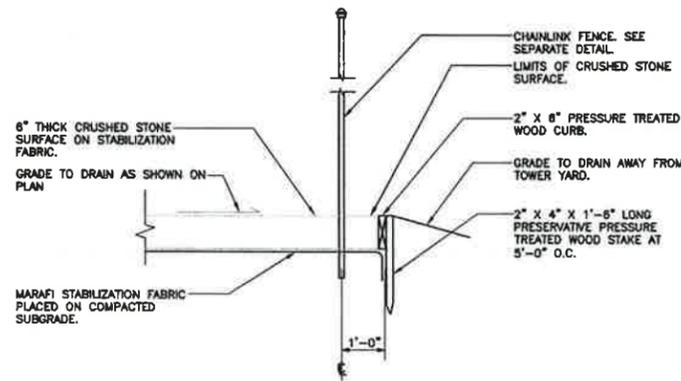


2 TYPICAL GRASS SWALE - SECTION
C-4 NOT TO SCALE

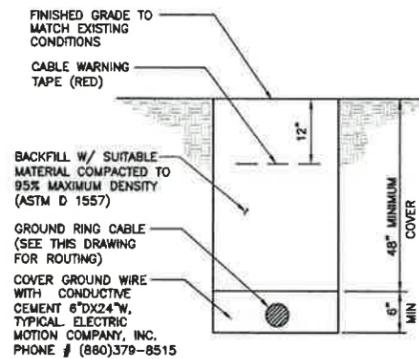


1 LEVEL SPREADER TYPICAL ELEVATION
C-4 NOT TO SCALE

PROFESSIONAL ENGINEER SEAL	ISSUED FOR CSC-CLOUDY REVIEW
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SCALE: AS NOTED	JOB NO. 13030.000
TARIFFVILLE RELO.	
ST. ANDREWS ROAD BLOOMFIELD, CT 06002	
C-4	
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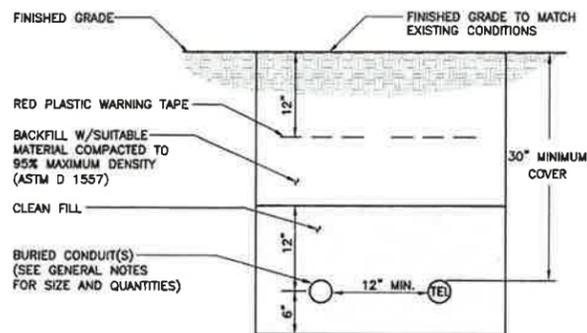


6 COMPOUND SURFACING DETAIL
C-5 NOT TO SCALE



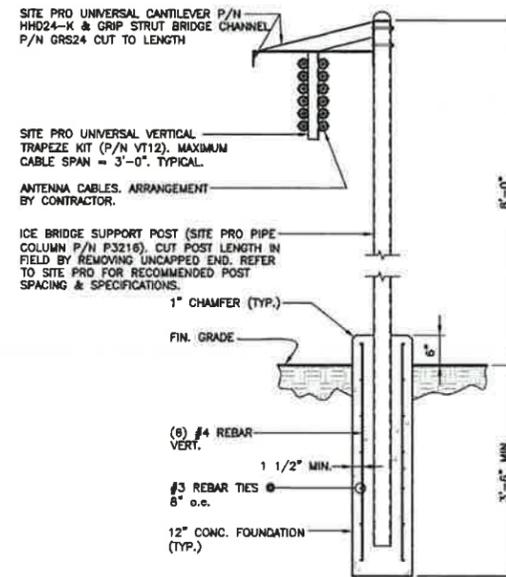
- NOTES:**
- BACK FILL SHALL NOT CONTAIN ASHES, CINDERS, SHELLS, FROZEN MATERIAL, LOOSE DEBRIS OR STONES LARGER THAN 2" IN MAXIMUM DIMENSION.
 - WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED, CONTRACTOR SHALL HAND DIG AND PROTECT EXISTING UTILITIES.

5 TYPICAL BURIAL GROUND CABLE DETAIL
C-5 NOT TO SCALE

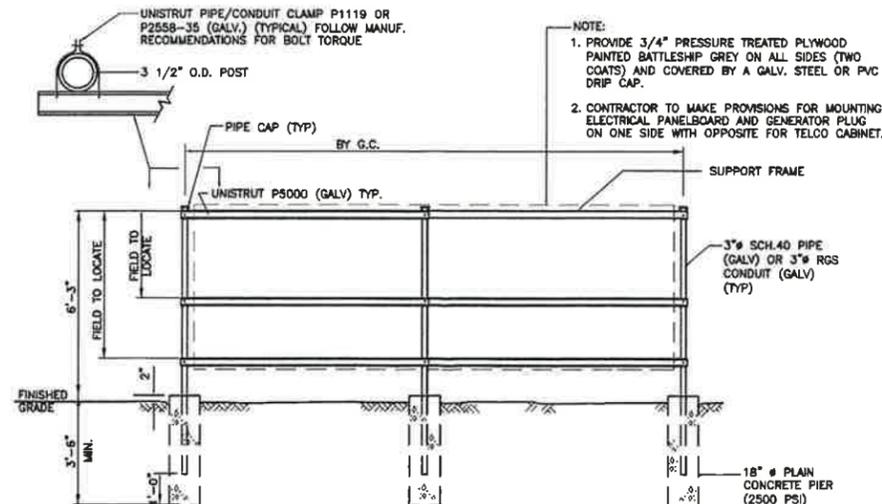


- NOTES:**
- THE CLEAN FILL SHALL PASS THROUGH A 3/8" MESH SCREEN AND SHALL NOT CONTAIN SHARP STONES. OTHER BACKFILL SHALL NOT CONTAIN ASHES, CINDERS, SHELLS, FROZEN MATERIAL, LOOSE DEBRIS OR STONES LARGER THAN 2" IN MAXIMUM DIMENSION.
 - WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED, CONTRACTOR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

4 TYPICAL ELECTRICAL/TEL TRENCH DETAIL
C-5 NOT TO SCALE



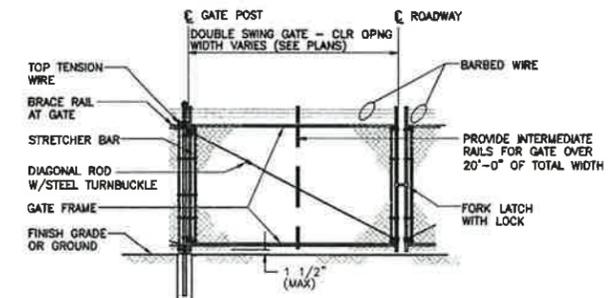
3 ICE BRIDGE DETAIL
C-5 NOT TO SCALE



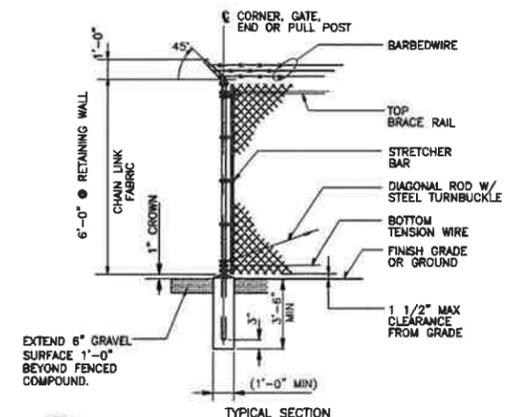
2 UTILITY SUPPORT FRAME (TYP)
C-5 NOT TO SCALE

WOVEN WIRE FENCE NOTES

- GATE POST, CORNER, TERMINAL OR PULL POST 2 1/2" # SCHEDULE 40 PIPE PER ASTM-F1083.
- LINE POST: 2" # SCHEDULE 40 PIPE PER ASTM-F1083.
- GATE FRAME: 1 1/2" # SCHEDULE 40 PIPE PER ASTM-F1083.
- TOP RAIL & BRACE RAIL: 1 1/2" # SCHEDULE 40 PIPE PER ASTM-F1083.
- FABRIC: 12 GA. CORE WIRE SIZE 2" MESH, CONFORMING TO ASTM-A392.
- TIE WIRE: MINIMUM 11 GA. GALVANIZED STEEL AT POSTS AND RAILS A SINGLE WRAP OF FABRIC TIE AND AT TENSION WIRE BY HOG RINGS SPACED MAX 24" INTERVALS.
- TENSION WIRE: 7 GA. GALVANIZED STEEL.
- BARBED WIRE: DOUBLE STRAND 12-1/2" O.D. TWISTED WIRE TO MATCH W/FABRIC 14 GA., 4 PT. BARBS SPACED ON APPROXIMATELY 5" CENTERS.
- GATE LATCH: DROP DOWN LOCKABLE FORK LATCH AND LOCK, KEYED ALIKE FOR ALL SITES IN A GIVEN MTA.
- LOCAL ORDINANCE OF BARBED WIRE PERMIT REQUIREMENT SHALL BE COMPLIED WITH IF REQUIRED.
- COMPOUND FENCE HEIGHT = 6' VERTICAL + 1' BARBED WIRE VERTICAL DIMENSION.
- SAFETY FENCE HEIGHT = 6' VERTICAL DIMENSION (NO BARBED WIRE REQUIRED).



1A WOVEN WIRE SWING GATE-DOUBLE
C-5 NOT TO SCALE



1 WOVEN WIRE FENCE DETAIL
C-5 NOT TO SCALE

DATE:	02/20/14
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SITE DETAILS AND NOTES	
C-5	
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TARIFFVILLE RELO.

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BLOOMFIELD, CT 06002

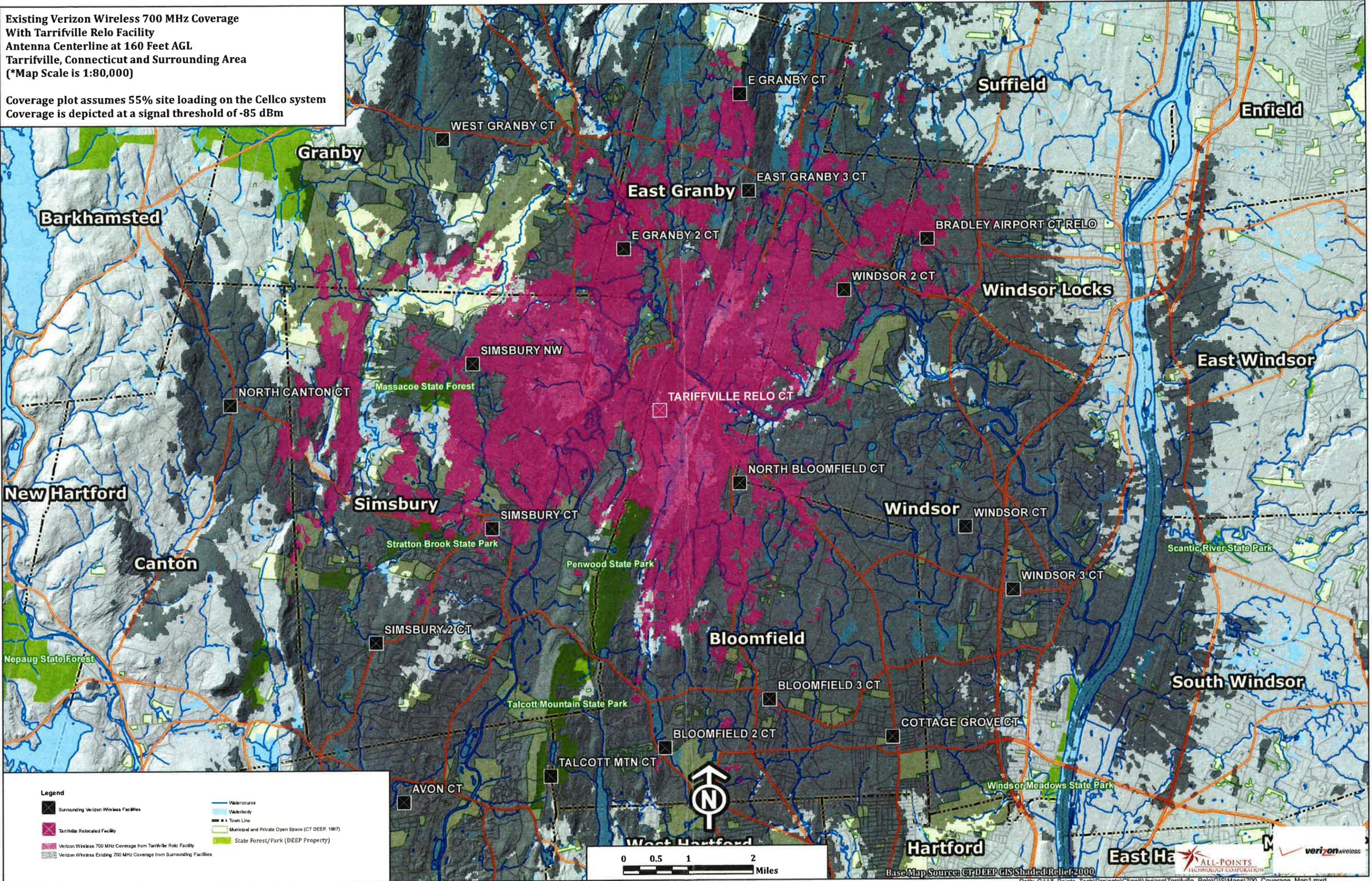
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www.CenTelcEng.com

CenTelc Partnership d/b/a Verizon Wireless
WIRELESS COMMUNICATIONS FACILITY

ATTACHMENT 3

Existing Verizon Wireless 700 MHz Coverage
 With Tarrifville Relo Facility
 Antenna Centerline at 160 Feet AGL
 Tarrifville, Connecticut and Surrounding Area
 (*Map Scale is 1:80,000)

Coverage plot assumes 55% site loading on the Cellco system
 Coverage is depicted at a signal threshold of -85 dBm



- Legend**
- Surrounding Verizon Wireless Facilities
 - Tarrifville Relocated Facility
 - Verizon Wireless 700 MHz Coverage from Tarrifville Relo Facility
 - Verizon Wireless Existing 700 MHz Coverage from Surrounding Facilities
 - Watercourse
 - Waterbody
 - Town Line
 - Municipal and Private Open Space (CT DEEP, 1987)
 - State Forest/Park (DEEP Property)

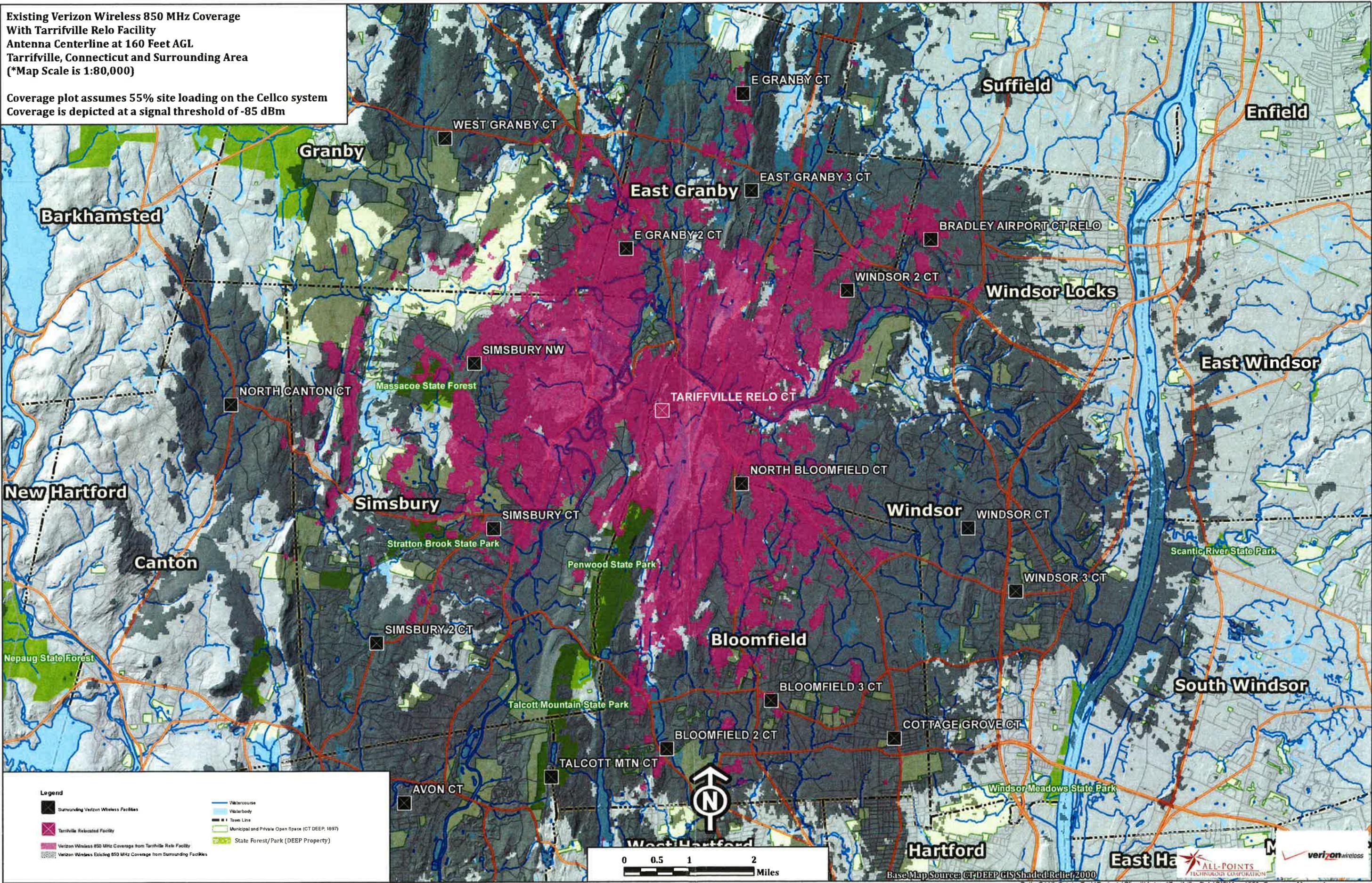


Base Map Source: CT DEEP GIS Shaded Relief 2000



Existing Verizon Wireless 850 MHz Coverage
 With Tarrifville Relo Facility
 Antenna Centerline at 160 Feet AGL
 Tarrifville, Connecticut and Surrounding Area
 (*Map Scale is 1:80,000)

Coverage plot assumes 55% site loading on the Cellco system
 Coverage is depicted at a signal threshold of -85 dBm



- Legend**
- Surrounding Verizon Wireless Facilities
 - Tarrifville Relocated Facility
 - Verizon Wireless 850 MHz Coverage from Tarrifville Relo Facility
 - Verizon Wireless Existing 850 MHz Coverage from Surrounding Facilities
 - Watercourse
 - Waterbody
 - Town Line
 - Municipal and Private Open Space (CT DEEP, 1997)
 - State Forest/Park (DEEP Property)

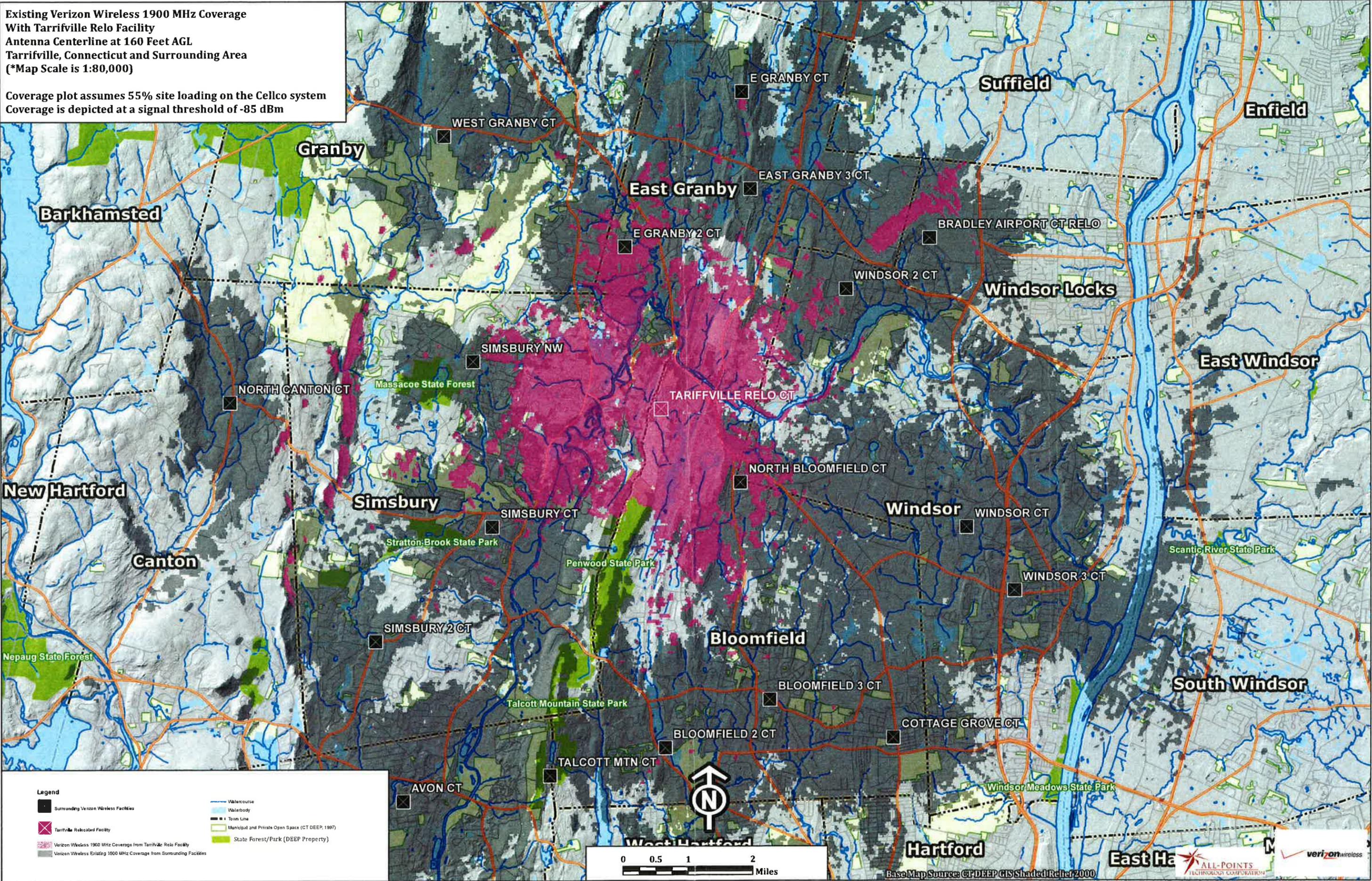


Base Map Source: CT DEEP GIS Shaded Relief 2000

East Hartford
 ALL-POINTS TECHNOLOGY CORPORATION
 verizon wireless

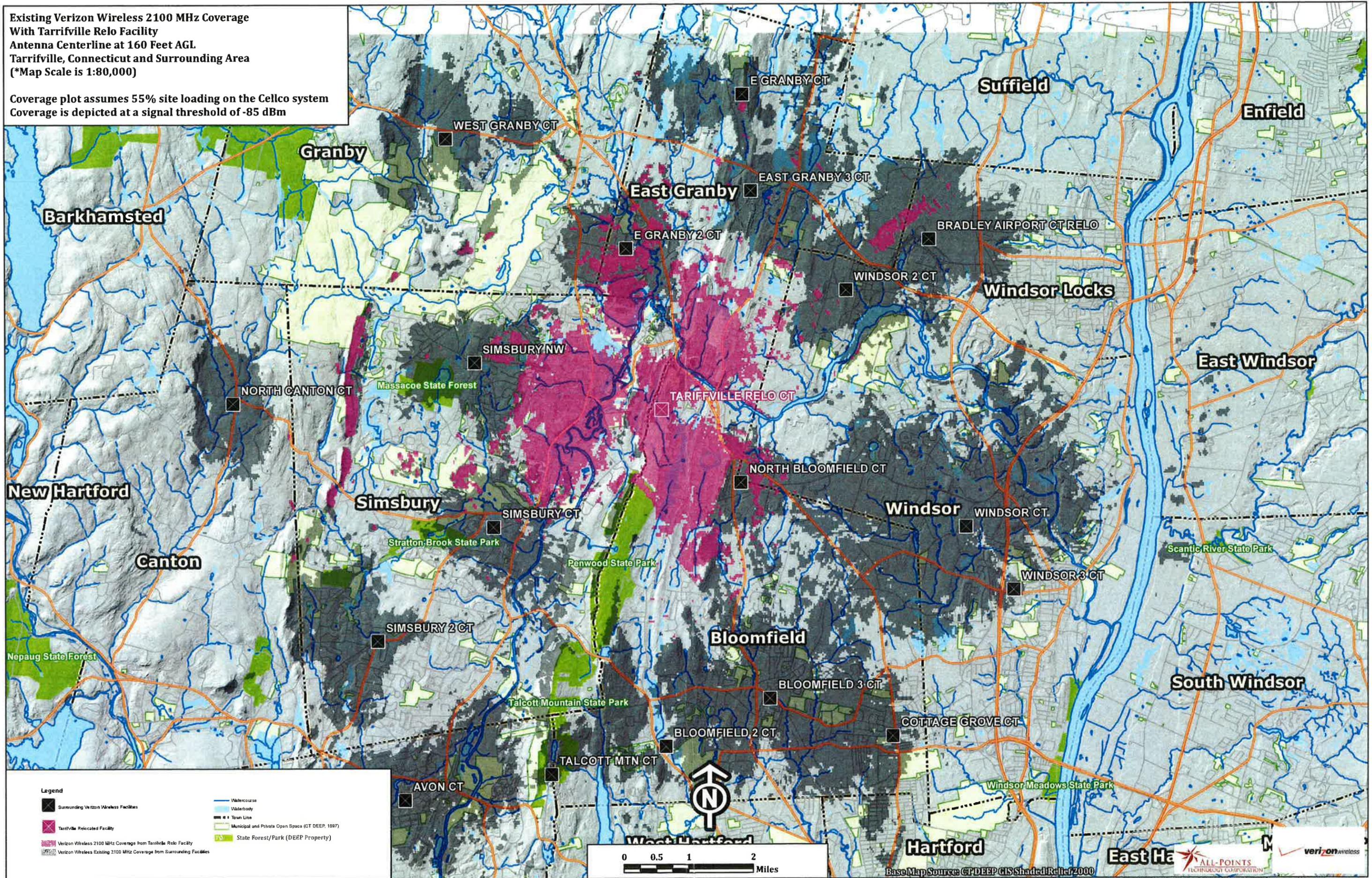
Existing Verizon Wireless 1900 MHz Coverage
 With Tarrifville Relo Facility
 Antenna Centerline at 160 Feet AGL
 Tarrifville, Connecticut and Surrounding Area
 (*Map Scale is 1:80,000)

Coverage plot assumes 55% site loading on the Cellco system
 Coverage is depicted at a signal threshold of -85 dBm

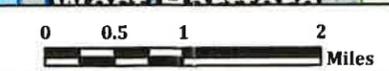


Existing Verizon Wireless 2100 MHz Coverage
 With Tarrifville Relo Facility
 Antenna Centerline at 160 Feet AGL
 Tarrifville, Connecticut and Surrounding Area
 (*Map Scale is 1:80,000)

Coverage plot assumes 55% site loading on the Cellco system
 Coverage is depicted at a signal threshold of -85 dBm



- Legend**
- Surrounding Verizon Wireless Facilities
 - Tarrifville Relocated Facility
 - Verizon Wireless 2100 MHz Coverage from Tarrifville Relo Facility
 - Verizon Wireless Existing 2100 MHz Coverage from Surrounding Facilities
 - Watercourse
 - Waterbody
 - Town Line
 - Municipal and Private Open Space (CT DEEP, 1987)
 - State Forest/Park (DEEP Property)



Base Map Source: CTDEEP GIS Shaded Relief 2000

East H_a

ATTACHMENT 4

LPA-80080-4CF-EDIN-X

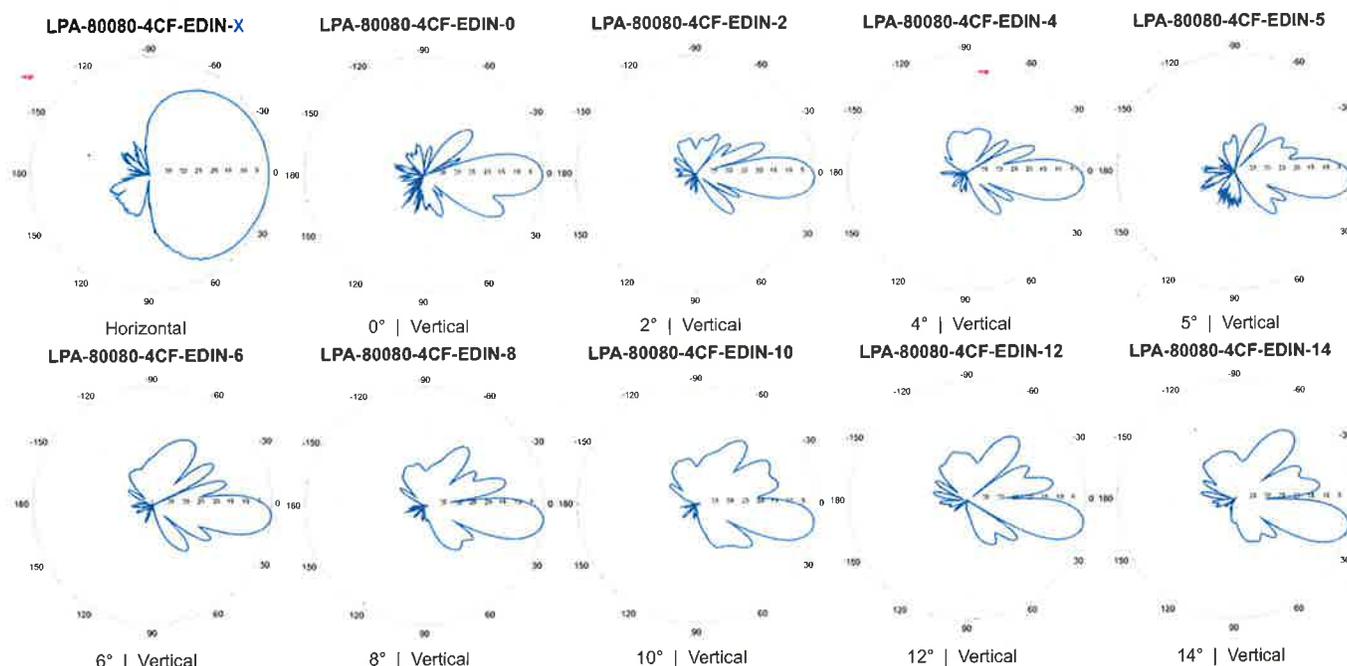
V-Pol | Log Periodic | 80° | 12.5 dBd

Replace "X" with desired electrical downtilt.

Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering.



Electrical Characteristics		
Frequency bands	806-960 MHz	
Polarization	Vertical	
Horizontal beamwidth	80°	
Vertical beamwidth	15°	
Gain	12.5 dBd (14.6 dBi)	
Electrical downtilt (X)	0, 2, 4, 5, 6, 8, 10, 12, 14	
Impedance	50Ω	
VSWR	≤1.4:1	
Upper sidelobe suppression (0°)	-14.2 dB	
Front-to-back ratio (+/-30°)	-34.7 dB	
Null fill	15% (-16.48 dB)	
Input power	500 W	
Lightning protection	Direct Ground	
Connector(s)	1 Port / EDIN or NE / Female / Center (Back)	
Mechanical Characteristics		
Dimensions Length x Width x Depth	1200 x 140 x 335 mm 47.2 x 5.5 x 13.2 in	
Depth of antenna with z-bracket	375 mm 14.8 in	
Weight without mounting brackets	5.4 kg 12 lbs	
Survival wind speed	> 201 km/hr > 125 mph	
Wind area	Front: 0.17 m ² Side: 0.40 m ² Front: 1.8 ft ² Side: 4.3 ft ²	
Wind load @ 161 km/hr (100 mph)	Front: 254 N Side: 574 N Front: 57 lbf Side: 129 lbf	
Mounting Options		
Part Number	Fits Pipe Diameter	Weight
2-Point Mounting & Downtilt Bracket Kit (0-20°)	21699999 50-102 mm 2.0-4.0 in	5.4 kg 12 lbs
Lock-Down Brace	If the lock-down brace is used, the maximum diameter of the mounting pipe is 88.9 mm or 3.5 in.	



Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

BXA-70063-6CF-EDIN-X

X-Pol | FET Panel | 63° | 14.5 dBd

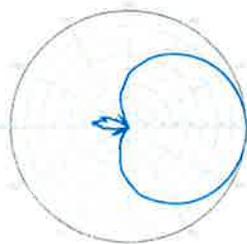
Replace "X" with desired electrical downtilt

Antenna is also available with NE connector(s). Replace "EDIN" with "NE" in the model number when ordering

Electrical Characteristics	696-900 MHz		
Frequency bands	696-806 MHz	806-900 MHz	
Polarization	±45°		
Horizontal beamwidth	65°	63°	
Vertical beamwidth	13°	11°	
Gain	14.0 dBd (16.1 dBi)	14.5 dBd (16.6 dBi)	
Electrical downtilt (X)	0, 2, 3, 4, 5, 6, 8, 10		
Impedance	50Ω		
VSWR	≤1.35:1		
Upper sidelobe suppression (0°)	-18.3 dB	-18.2 dB	
Front-to-back ratio (+/-30°)	-33.4 dB	-36.3 dB	
Null fill	5% (-26.02 dB)		
Isolation between ports	< -25 dB		
Input power with EDIN connectors	500 W		
Input power with NE connectors	300 W		
IM3 (2x20W carriers)	< -153 dBc		
Lightning protection	Direct Ground		
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)		
Mechanical Characteristics			
Dimensions Length x Width x Depth	1804 x 285 x 132 mm	71.0 x 11.2 x 5.2 in	
Depth with z-brackets	172 mm	6.8 in	
Weight without mounting brackets	7.9 kg	17 lbs	
Survival wind speed	> 201 km/hr	> 125 mph	
Wind area	Front: 0.51 m ² Side: 0.24 m ²	Front: 5.5 ft ² Side: 2.6 ft ²	
Wind load @ 161 km/hr (100 mph)	Front: 759 N Side: 391 N	Front: 169 lbf Side: 89 lbf	
Mounting Options	Part Number	Fits Pipe Diameter	Weight
3-Point Mounting & Downtilt Bracket Kit	36210008	40-115 mm 1.57-4.5 in	6.9 kg 15.2 lbs
Concealment Configurations	For concealment configurations, order BXA-70063-6CF-EDIN-X-FP		

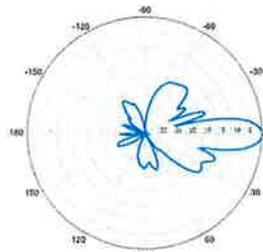


BXA-70063-6CF-EDIN-X



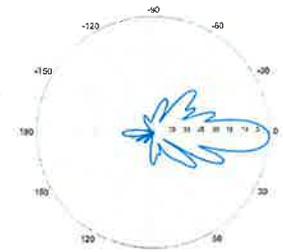
Horizontal | 750 MHz

BXA-70063-6CF-EDIN-0

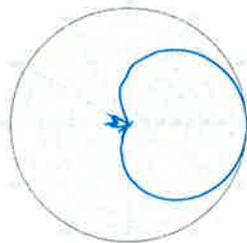


0° | Vertical | 750 MHz

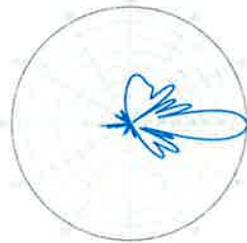
BXA-70063-6CF-EDIN-2



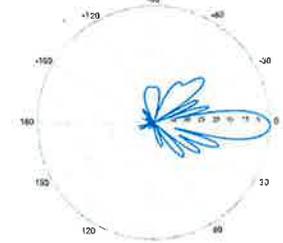
2° | Vertical | 750 MHz



Horizontal | 850 MHz



0° | Vertical | 850 MHz



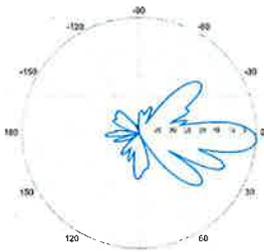
2° | Vertical | 850 MHz

Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

BXA-70063-6CF-EDIN-X

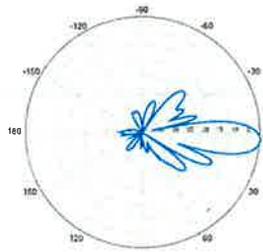
X-Pol | FET Panel | 63° | 14.5 dBd

BXA-70063-6CF-EDIN-3



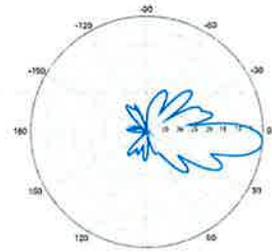
3° | Vertical | 750 MHz

BXA-70063-6CF-EDIN-4

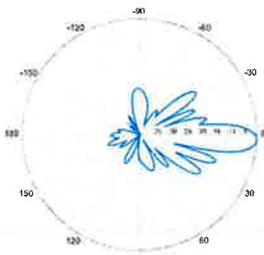


4° | Vertical | 750 MHz

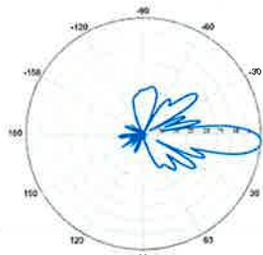
BXA-70063-6CF-EDIN-5



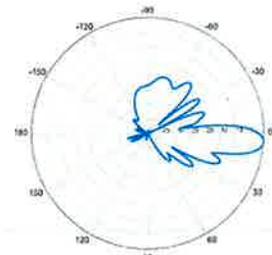
5° | Vertical | 750 MHz



3° | Vertical | 850 MHz

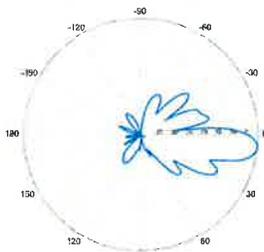


4° | Vertical | 850 MHz



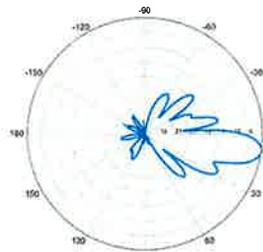
5° | Vertical | 850 MHz

BXA-70063-6CF-EDIN-6



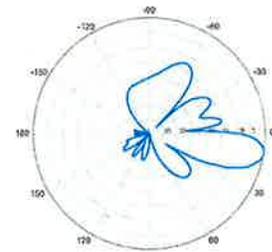
6° | Vertical | 750 MHz

BXA-70063-6CF-EDIN-8

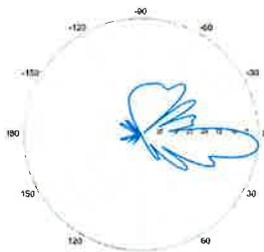


8° | Vertical | 750 MHz

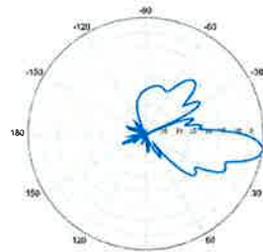
BXA-70063-6CF-EDIN-10



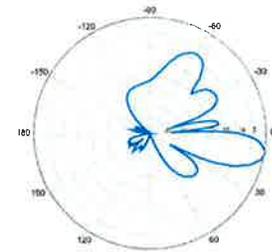
10° | Vertical | 750 MHz



6° | Vertical | 850 MHz



8° | Vertical | 850 MHz



10° | Vertical | 850 MHz

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BXA-171063-12CF-EDIN-X

X-Pol | FET Panel | 63° | 19.0 dBi

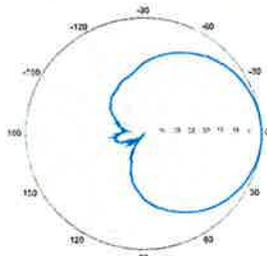
Replace "X" with desired electrical downtilt

Antenna is also available with NE connectors!
Replace "EDIN" with "NE" in the model number when ordering



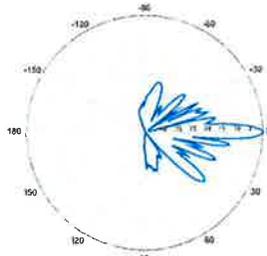
Electrical Characteristics	1710-2170 MHz		
	1710-1880 MHz	1850-1990 MHz	1920-2170 MHz
Frequency bands	1710-1880 MHz	1850-1990 MHz	1920-2170 MHz
Polarization	±45°	±45°	±45°
Horizontal beamwidth	68°	65°	60°
Vertical beamwidth	4.5°	4.5°	4.5°
Gain	16.1 dBd / 18.2 dBi	16.5 dBd / 18.6 dBi	16.9 dBd / 19.0 dBi
Electrical downtilt (X)		0, 2, 5	
Impedance		50Ω	
VSWR		≤1.5:1	
First upper sidelobe		< -17 dB	
Front-to-back ratio		> 30 dB	
In-band isolation		< -25 dB	
IM3 (20W carrier)		< -150 dBc	
Input power		300 W	
Lightning protection		Direct Ground	
Connector(s)	2 Ports / EDIN or NE / Female / Center (Back)		
Operating temperature	-40° to +60° C / -40° to +140° F		
Mechanical Characteristics			
Dimensions Length x Width x Depth	1842 x 154 x 105 mm		72.5 x 6.1 x 4.1 in
Depth with z-brackets	133 mm		5.2 in
Weight without mounting brackets	5.8 kg		12.8 lbs
Survival wind speed	> 201 km/hr		> 125 mph
Wind area	Front: 0.28 m ² Side: 0.19 m ²	Front: 3.1 ft ² Side: 2.1 ft ²	
Wind load @ 161 km/hr (100 mph)	Front: 460 N Side: 304 N	Front: 103 lbf Side: 68 lbf	
Mounting Options	Part Number	Fits Pipe Diameter	Weight
2-Point Mounting Bracket Kit	26799997	50-102 mm 2.0-4.0 in	2.3 kg 5 lbs
2-Point Mounting & Downtilt Bracket Kit	26799999	50-102 mm 2.0-4.0 in	3.6 kg 8 lbs
Concealment Configurations	For concealment configurations, order BXA-171063-12CF-EDIN-X-FP		

BXA-171063-12CF-EDIN-X



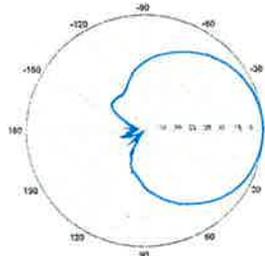
Horizontal | 1710-1880 MHz

BXA-171063-12CF-EDIN-0



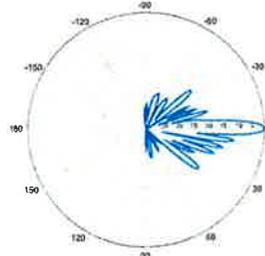
0° | Vertical | 1710-1880 MHz

BXA-171063-12CF-EDIN-X



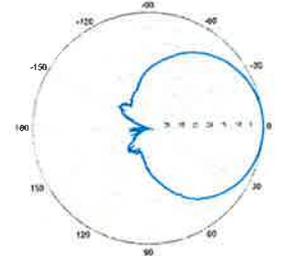
Horizontal | 1850-1990 MHz

BXA-171063-12CF-EDIN-0



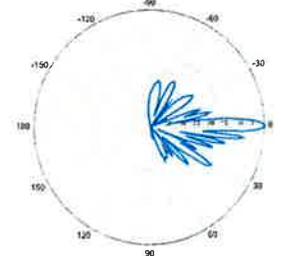
0° | Vertical | 1850-1990 MHz

BXA-171063-12CF-EDIN-X



Horizontal | 1920-2170 MHz

BXA-171063-12CF-EDIN-0



0° | Vertical | 1920-2170 MHz

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Alcatel-Lucent RRH2x40-07-U

REMOTE RADIO HEAD

The Alcatel-Lucent RRH2x40-07-U is a high-power, small form-factor Remote Radio Head (RRH) operating in the North American Digital Dividend / 700MHz frequency band (3GPP Band 13). The Alcatel-Lucent RRH2x40-07-U is designed with an eco-efficient approach, providing operators with the means to achieve high quality and capacity coverage with minimum site requirements.



A distributed eNodeB expands deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radio-frequency (RF) elements. This modular design optimizes available space and allows the main components of an eNodeB to be installed separately, within the same site or several kilometres apart.

The Alcatel-Lucent RRH2x40-07-U is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals along with operations, administration and maintenance (OA&M) information. The Alcatel-Lucent RRH2x40-07-U has two transmit RF paths, 40 W RF output power per transmit path, and is designed to manage up to two-way receive diversity. The device is ideally suited to support macro coverage, with multiple-input multiple-output (MIMO) 2x2 operation in up to 10 MHz of bandwidth.

The Alcatel-Lucent RRH2x40-07-U is designed to make available all the benefits of a distributed eNodeB, with excellent RF characteristics, with low

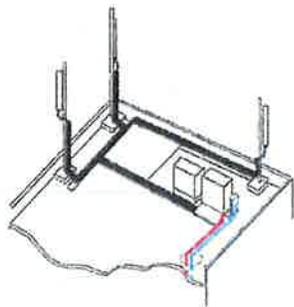
capital expenditures (CAPEX) and low operating expenditures (OPEX). The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment or require costly cranes to be employed, leaving coverage holes. However, many of these sites can host an Alcatel-Lucent RRH2x40-07-U installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

Fast, low-cost installation and deployment

The Alcatel-Lucent RRH2x40-07-U is a zero-footprint solution and operates noise-free, simplifying negotiations with site property owners and minimizing environmental impacts. Installation can easily be done by a single person because the Alcatel-Lucent RRH2x40-07-U is compact and weighs less than 23 kg (50 lb), eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day — a fraction of the time required for a traditional BTS.

Excellent RF performance

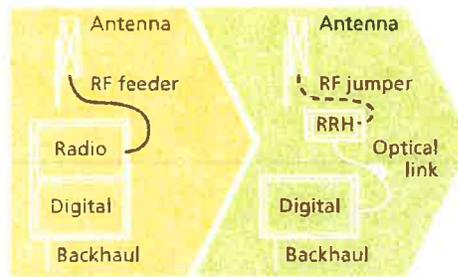
Because of its small size and weight, the Alcatel-Lucent RRH2x40-07-U can be installed close to the antenna. Operators can therefore locate the Alcatel-Lucent RRH2x40-07-U where RF engineering is deemed ideal, minimizing trade-offs between available sites and RF optimum sites. The RF feeder cost and installation costs are reduced or eliminated, and there is no need for a Tower Mounted Amplifier (TMA) because losses introduced by the RF feeder are greatly reduced. The Alcatel-Lucent RRH2x40-07-U provides more RF power while at the same time consuming less electricity.



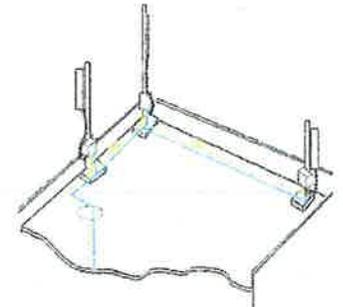
Macro

Features

- Zero-footprint deployment
- Easy installation, with a lightweight unit can be carried and set up by one person
- Optimized RF power, with flexible site selection and elimination of a TMA
- Convection-cooled (fanless), noise-free, and heaterless unit
- Best-in-class power efficiency, with significantly reduced energy consumption



RRH for space-constrained cell sites



Distributed

Benefits

- Leverages existing real estate with lower site costs
- Reduces installation costs, with fewer installation materials and simplified logistics
- Decreases power costs and minimizes environmental impacts, with the potential for eco-sustainable power options
- Improves RF performance and adds flexibility to network planning

Technical specifications

Physical dimensions

- Height: 390 mm (15.4 in.)
- Width: 380 mm (15 in.)
- Depth: 210 mm (8.2 in.)
- Weight (without mounting kit): less than 23 kg (50 lb)

Power

- Power supply: -48V

Operating environment

- Outdoor temperature range:
 - With solar load: -40°C to +50°C (-40°F to +122°F)
 - Without solar load: -40°C to +55°C (-40°F to +131°F)
- Passive convection cooling (no fans)

- Enclosure protection
 - IP65 (International Protection rating)

RF characteristics

- Frequency band: 700 MHz; 3GPP Band 13
- Bandwidth: up to 10 MHz
- RF output power at antenna port:
 - 40 W nominal RF power for each Tx port
- Rx diversity: 2-way or 4-way
- Noise figure: below 2.5 dB typical
- ALD features
 - TMA
 - Remote electrical tilt (RET) support (AISG v2.0)

Optical characteristics

Type/number of fibers

- Up to 3.12 Gb/s line bit rate
- Single-mode variant
 - One SM fiber (9/125 μm) per RRH2x, carrying UL and DL using CWDM (at 1550/1310 nm)
- Multi-mode variant
 - Two MM fibers (50/125 μm) per RRH2x: one carrying UL, the other carrying DL (at 850 nm)

Optical fiber length

- Up to 500 m (0.31 mi), using MM fiber
- Up to 20 km (12.43 mi), using SM fiber

Alarms and ports

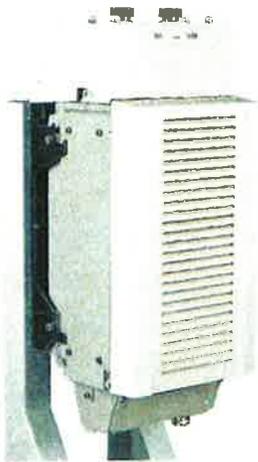
- Six external alarms
- Two optical ports to support daisy-chaining

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Alcatel-Lucent RRH2x40-AWS

REMOTE RADIO HEAD

The Alcatel-Lucent RRH2x40-AWS is a high-power, small form-factor Remote Radio Head (RRH) operating in the AWS frequency band (1700/2100MHz - 3GPP Band 4). The Alcatel-Lucent RRH2x40-AWS is designed with an eco-efficient approach, providing operators with the means to achieve high quality and capacity coverage with minimum site requirements.



A distributed eNodeB expands deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radio-frequency (RF) elements. This modular design optimizes available space and allows the main components of an eNodeB to be installed separately, within the same site or several kilometres apart.

The Alcatel-Lucent RRH2x40-AWS is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals along with operations, administration and maintenance (OA&M) information. The Alcatel-Lucent RRH2x40-AWS has two transmit RF paths, 40 W RF output power per transmit path, and is designed to manage up to four-way receive diversity. The device is ideally suited to support macro coverage, with multiple-input multiple-output (MIMO) 2x2 operation in up to 20 MHz of bandwidth.

The Alcatel-Lucent RRH2x40-AWS is designed to make available all the benefits of a distributed eNodeB, with excellent RF characteristics, with low

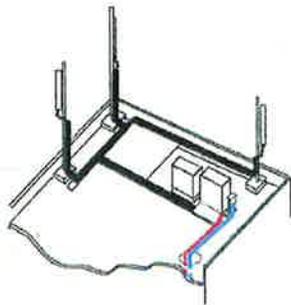
capital expenditures (CAPEX) and low operating expenditures (OPEX). The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment or require costly cranes to be employed, leaving coverage holes. However, many of these sites can host an Alcatel-Lucent RRH2x40-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

Fast, low-cost installation and deployment

The Alcatel-Lucent RRH2x40-AWS is a zero-footprint solution and operates noise-free, simplifying negotiations with site property owners and minimizing environmental impacts. Installation can easily be done by a single person because the Alcatel-Lucent RRH2x40-AWS is compact and weighs less than 20 kg (44 lb), eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day — a fraction of the time required for a traditional BTS.

Excellent RF performance

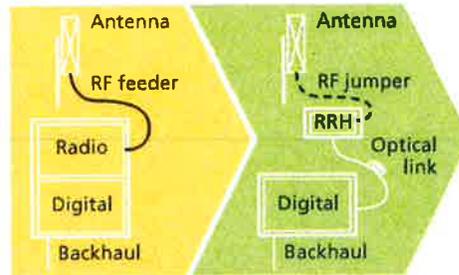
Because of its small size and weight, the Alcatel-Lucent RRH2x40-AWS can be installed close to the antenna. Operators can therefore locate the Alcatel-Lucent RRH2x40-AWS where RF engineering is deemed ideal, minimizing trade-offs between available sites and RF optimum sites. The RF feeder cost and installation costs are reduced or eliminated, and there is no need for a Tower Mounted Amplifier (TMA) because losses introduced by the RF feeder are greatly reduced. The Alcatel-Lucent RRH2x40-AWS provides more RF power while at the same time consuming less electricity.



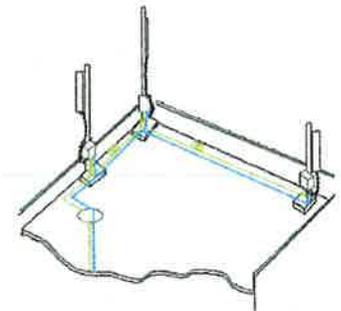
Macro

Features

- Zero-footprint deployment
- Easy installation, with a lightweight unit can be carried and set up by one person
- Optimized RF power, with flexible site selection and elimination of a TMA
- Convection-cooled (fanless)
- Noise-free
- Best-in-class power efficiency, with significantly reduced energy consumption



RRH for space-constrained cell sites



Distributed

Benefits

- Leverages existing real estate with lower site costs
- Reduces installation costs, with fewer installation materials and simplified logistics
- Decreases power costs and minimizes environmental impacts, with the potential for eco-sustainable power options
- Improves RF performance and adds flexibility to network planning

Technical specifications

Physical dimensions

- Height: 620 mm (24.4 in.)
- Width: 270 mm (10.63 in.)
- Depth: 170mm (6.7 in.)
- Weight (without mounting kit): less than 20 kg (44 lb)

Power

- Power supply: -48VDC

Operating environment

- Outdoor temperature range:
 - With solar load: -40°C to +50°C (-40°F to +122°F)
 - Without solar load: -40°C to +55°C (-40°F to +131°F)

- Passive convection cooling (no fans)
- Enclosure protection
 - IP65 (International Protection rating)

RF characteristics

- Frequency band: 1700/2100 MHz (AWS); 3GPP Band 4
- Bandwidth: up to 20 MHz
- RF output power at antenna port: 40 W nominal RF power for each Tx port
- Rx diversity: 2-way or 4-way with optional Rx Diversity module
- Noise figure: below 2.0 dB typical
- Antenna Line Device features
 - TMA and Remote electrical tilt (RET) support via AISG v2.0

Optical characteristics

Type/number of fibers

- Single-mode variant
 - One Single Mode Single Fiber per RRH2x, carrying UL and DL using CWDM
 - Single mode dual fiber (SM/DF)
- Multi-mode variant
 - Two Multi-mode fibers per RRH2x: one carrying UL, the other carrying DL

Optical fiber length

- Up to 500 m (0.31 mi), using MM fiber
- Up to 20 km (12.43 mi), using SM fiber

Digital Ports and Alarms

- Two optical ports to support daisy-chaining
- Six external alarms

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HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution, 1-5/8", Single-Mode Fiber

Product Description

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments.

It was developed to reduce installation complexity and costs at Cellular sites, HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

Features/Benefits

- Aluminum corrugated armor with outstanding bending characteristics - minimizes installation time and enables mechanical protection and shielding
- Same accessories as 1 5/8" coaxial cable
- Outer conductor grounding - Eliminates typical grounding requirements and saves on installation costs
- Lightweight solution and compact design - Decreases tower loading
- Robust cabling - Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH - Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable - Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
- Outdoor polyethylene jacket - Ensures long-lasting cable protection



Figure 1: HYBRIFLEX Series

Technical Specifications

Outer Conductor Armor	Corrugated Aluminum	(mm (in.))	46.5 (1.83)
Jacket	Polyethylene, PE	(mm (in.))	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Weight, Approximate		(kg/m (lb/ft))	1.9 (1.30)
Minimum Bending Radius, Single Bending		(mm (in.))	200 (8)
Minimum Bending Radius, Repeated Bending		(mm (in.))	500 (20)
Recommended/Maximum Clamp Spacing		(m (ft))	1.0 / 1.2 (3.25 / 4.0)
DC-Resistance Outer Conductor Armor		(Ω/km (Ω/1000ft))	068 (0.205)
DC-Resistance Power Cable 3.4mm ² (8AWG)		(Ω/km (Ω/1000ft))	2.1 (0.307)
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		(μm)	50/125
Primary Coating (Acrylate)		(μm)	245
Buffer Diameter, Nominal		(μm)	900
Secondary Protection, Jacket, Nominal		(mm (in.))	2.0 (0.08)
Minimum Bending Radius		(mm (in.))	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL34-V0 UL1666 Ro-S Compliant
Size (Power)		(mm (AWG))	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		(mm (AWG))	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		(mm (in.))	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-95-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1292/FT4 Ro-S Compliant
Installation Temperature		(°C (°F))	-40 to +65 (-40 to 149)
Operation Temperature		(°C (°F))	-40 to +65 (-40 to 149)

* This data is provisional and subject to change

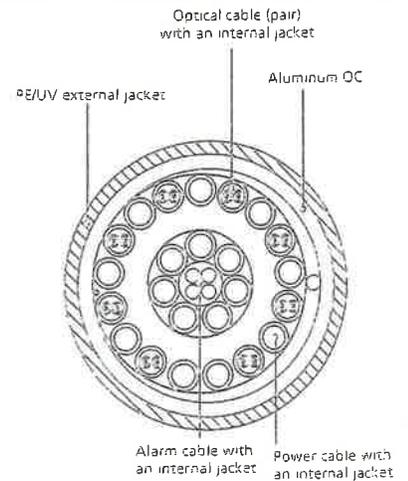


Figure 2: Construction Detail

All information contained in the present datasheet is subject to confirmation at time of ordering

ATTACHMENT 5



WETLAND & VERNAL POOL EVALUATION

June 20, 2014

Verizon Wireless
99 East River Drive
East Hartford, CT 06108

APT Project No.: CT1412210

Attn: Alexandria Carter

Re: **Proposed Tariffville Relo. Facility**
St. Andrews Road
Bloomfield, Connecticut

Dear Ms. Carter,

All-Points Technology Corporation, P.C. ("APT") understands that a wireless telecommunications facility relocation ("Facility") is proposed by Verizon Wireless at St. Andrews Road in Bloomfield, Connecticut ("Subject Property"). An existing 180-foot tall self-supporting lattice tower owned by Connecticut Light & Power ("CL&P") is proposed to be replaced with a 185-foot tall self-supporting lattice tower. At your request, Matthew Gustafson, a Connecticut registered Soil Scientist with APT conducted an inspection of the Subject Property on April 3, 2014 to determine the presence or absence of wetlands and watercourses within approximately 200 feet of proposed development activities ("Study Area"). The delineation methodology followed was consistent with both the Connecticut Inland Wetlands and Watercourses Act (IWWA) and the *Corps of Engineers Wetland Delineation Manual* (1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0* (January 2012). Wetland resources identified on the Subject Property were also found to support vernal pool habitat and subsequently further evaluated on April 25, 2014. The results of these investigations are provided below.

Site and Project Description:

The Subject Property consists of an approximately 40.4-acre developed parcel. The area proposed for the Facility will require an expansion of approximately 2,150 sf to the western side of the existing compound. A paved access road currently provides access to the CL&P facility from St. Andrews Road; this access road is also used by CL&P for access to maintain existing electrical transmission corridors located on the Subject Property. No improvements are required to the access road for this project. The Study Area for the wetland investigation is dominated by complexes of upland forested and scrub/shrub habitats, a wetland resource area and an electrical transmission corridor. The Subject Property in its entirety contains additional wetland resources including a number of vernal pool habitat features. The surrounding land use generally consists of residential use to the east, maintained electrical transmission corridors, large core forest blocks to the north, south and west, and a CL&P substation (North Bloomfield Substation) farther to the east across Hoskins Road.

Wetland Investigation

One wetland was delineated within the Study Area consisting of a hillside seep wetland system that transitions to a depressional wetland area found to support vernal pool breeding habitat. Please refer to the enclosed Wetland Delineation Map for the approximate location of the identified wetland resource. Wetlands were

ALL-POINTS TECHNOLOGY CORPORATION, P.C.

3 SADDLEBROOK DRIVE · KILLINGWORTH, CT 06419 · PHONE 860-663-1697 · FAX 860-663-0935

P.O. BOX 504 · 116 GRANDVIEW ROAD · CONWAY, NH 03818 · PHONE 603-496-5853 · FAX 603-447-2124

marked with pink and blue plastic flagging tape numbered with the following sequence: WF 1-01 to 1-10. General weather conditions encountered during the April inspection included low 50° F temperatures with sunny skies.

Regulation of Wetlands:

Wetlands and watercourses are regulated by local, state and federal regulations, with each regulatory agency differing slightly in their definition and regulatory authority of resource areas, as discussed below. The proposed Facility is under the exclusive jurisdiction of the State of Connecticut Siting Council and therefore exempt from local regulation, although local wetland regulations are considered by the Siting Council. If wetlands are identified on the Subject Property and direct impact is proposed, those wetlands may be considered Waters of the United States and therefore the activity may also be subject to jurisdiction by the U.S. Army Corps of Engineers (“ACOE”) New England District.

Town of Bloomfield: The Town of Bloomfield regulates activities within wetlands and watercourses and within 100 feet of wetlands and 200 feet of watercourses through administration of the Connecticut Inland Wetlands and Watercourses Act (“IWWA”).

State of Connecticut: **Freshwater Wetlands:** The IWWA requires the regulation of activities affecting or having the potential to affect wetlands under Sec. 22a-36 through 22a-45 of the Connecticut General Statutes. The IWWA is administered through local municipalities. The IWWA defines wetlands as areas of poorly drained, very poorly drained, floodplain, and alluvial soils, as delineated by a soil scientist. Watercourses are defined as bogs, swamps, or marshes, as well as lakes, ponds, rivers, streams, etc., whether natural or man-made, permanent or intermittent. Intermittent watercourse determinations are based on the presence of a defined permanent channel and bank, and two of the following characteristics: (1) evidence of scour or deposits of recent alluvium or detritus; (2) the presence of standing or flowing water for a duration longer than a particular storm incident; and (3) the presence of hydrophytic vegetation.

ACOE: The ACOE regulates the discharge of dredged or fill material into waters of the United States under Section 404 of the Clean Water Act. Waters of the United States are navigable waters, tributaries to navigable waters, wetlands adjacent to those waters, and/or isolated wetlands that have a demonstrated interstate commerce connection. The ACOE Wetlands Delineation Manual defines wetlands as “[t]hose areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”

Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) prohibits the unauthorized obstruction or alteration of any navigable water of the United States. This section provides that the construction of any structure in or over any navigable water of the United States, or the accomplishment of any other work affecting the course, location, condition, or physical capacity of such waters is unlawful unless the work has been approved by the ACOE.

Soil Description:

Soil types encountered throughout the Study Area were generally consistent with digitally available soil survey information obtained from the Natural Resources Conservation Service ("NRCS")¹. Wetland soils field identified consist of Wilbraham and Menlo soils as well as Timakwa and Natchaug soils. The non-wetland soils were examined along the wetland boundary and more distant upland areas during the delineation, including the proposed Facility location. They are dominated by Holyoke-Rock outcrop complex, Cheshire-Holyoke complex, Rainbow silt loam, and Agawam sandy loam. Detailed descriptions of wetland and upland soil types are provided below.

Wetland Soils:

The **Menlo** series consists of very poorly drained loamy soils formed in subglacial till. They are very deep to bedrock and moderately deep to a densic contact (hardpan). They are nearly level soils in depressions and drainageways of till covered plains and hills. Depth to bedrock is commonly more than 6 feet. Menlo soils have a water table at or above the surface most of the year (i.e., the soil may be ponded).

The **Natchaug** series consists of very poorly drained soils that formed in deep deposits of organic material between 16 inches and 51 inches thick. Natchaug soils are located in depressions consisting of organic materials over alluvium, till, glaciolacustrine, or glaciofluvial deposits. Depth to seasonal water table can range from 1 to 12 inches; ponding depths of 1 to 12 inches are common, particularly during the fall, winter and spring.

The **Timakwa** series consists of very deep, very poorly drained soils formed in woody and herbaceous organic materials over sandy deposits in depressions on lake plains, outwash plains, till plains, moraines, and flood plains. Saturated hydraulic conductivity is moderately low to high in the organic layers and high or very high in the sandy material. Slope ranges from 0 to 2 percent. Mean annual temperature is about 13 degrees C and the mean annual precipitation is about 1258 mm.

The **Wilbraham** series consists of poorly drained loamy soils formed in subglacial till. The soils are very deep to bedrock and moderately deep to a densic contact. They are nearly level to gently sloping soils in drainageways and low-lying positions of till hills. Wilbraham soils have a water table at or near the surface much of the year. They have an aquic moisture regime.

Upland Soils:

The **Agawam** series consists of very deep, well drained soils formed in a loamy mantle over sandy, water deposited materials. They are level to steep soils on outwash plains and high stream terraces. Most areas are on slopes that are less than 15 percent. Steeper slopes are on terrace escarpments and steep sides of gullies in dissected outwash plains. The Canton series consists of very deep, well drained soils formed in a loamy mantle underlain by sandy glacial till. They are on nearly level to very steep glaciated plains, hills, and ridges. Slope ranges from 0 to 35 percent. Permeability is moderately rapid in the solum and rapid in the substratum. The soils developed in a fine sandy loam mantle over acid sandy glacial till of Wisconsin age derived mainly from granite and gneiss and some fine-grained sandstone.

The **Cheshire** series consists of very deep, well drained loamy soils formed in supraglacial till on uplands. They are nearly level to very steep soils on till plains and hills. The soils formed in acid glacial till derived mostly from reddish sandstone, shale, and conglomerate with some basalt.

¹ NRCS Web Soil Survey, <http://websoilsurvey.nrcs.usda.gov/app/>, accessed on April 2, 2014.

The **Holyoke** series consists of shallow, well drained and somewhat excessively drained soils formed in a thin mantle of till derived mainly from basalt and red sandstone, conglomerate, and shale. They are nearly level to very steep soils on bedrock controlled ridges and hills. Rock outcrops range from few to many. Hard bedrock is typically present within the upper 20".

The **Rainbow** series consists of moderately well drained loamy soils formed in silty mantled subglacial till. The soils are very deep to bedrock and moderately deep to a densic contact. They are nearly level to strongly sloping soils on till plains, hills and drumlins. Slope ranges from 0 to 15 percent. Permeability is moderate in the surface layer and subsoil, and slow or very slow in the dense substratum.

Wetlands Discussion:

Wetland 1 Classification Summary:

Wetland 1 ² (WF 1-01 to 1-10)	System Palustrine	Subsystem	Class Forested	Subclass Broad-leaved Deciduous	Water Regime Seasonally Flooded	Special Modifier Partly Drained
Watercourse Type (None)	Perennial <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input type="checkbox"/>	Special Aquatic Habitat (Classic Type)	Vernal Pool <input checked="" type="checkbox"/>	Other <input type="checkbox"/>

Wetland 1 Description:

Wetland 1 is a hillside seep wetland system formed in dense glacial till that quickly transitions to a depressional wetland area for the bulk of its area. The depressional portion of this wetland system contained approximately 12 plus inches of inundation at the time of the wetland investigation (April 3, 2014) and was observed to contain vernal pool features. A complete description of this pool, identified as Vernal Pool 1, is contained in the following section (Vernal Pool Evaluation). The northern limits of Wetland 1, as the pool approaches the maintained CL&P electrical transmission corridor, contained some alteration of the natural hydrology. An artificially dug drainage swale was observed conveying high water flows from the northern edge of Wetland 1 under a gravel maintenance road associated with the CL&P corridor. The surrounding land use of this pool is largely intact core forest blocks beyond the areas maintained for the CL&P corridors.

Wetland 1 Dominant Vegetation:

Dominant Wetland Species Common Name (Latin Name)	Dominant Adjacent Upland Species Common Name (Latin Name)
Eastern Hemlock (<i>Tsuga canadensis</i>)	Eastern Hemlock (<i>Tsuga canadensis</i>)
Red Maple (<i>Acer rubrum</i>)	American Beech (<i>Fagus grandifolia</i>)
Winterberry (<i>Ilex verticillata</i>)	Black Birch (<i>Betula lenta</i>)
Spicebush (<i>Lindera benzoin</i>)	Witchhazel (<i>Hamamelis virginiana</i>)
Spagnum spp.	Asiatic Bittersweet* (<i>Celastrus orbiculatus</i>)
Multiflora Rose* (<i>Rosa multiflora</i>)	
Tussock Sedge (<i>Carex stricta</i>)	

* denotes Connecticut Invasive Plants Council invasive species

² Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online. <http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm - contents>.

Vernal Pool Analysis:

In addition to the wetland area delineated within the Study Area, numerous other wetland resources were identified along the existing paved access drive consisting of complexes of forested and scrub/shrub hillside seep systems, depressional systems, intermittent stream channels and emergent wet marshes. Recognizing that vehicles and equipment will use this access for construction of the Facility, APT conducted an inspection of these wetland areas on April 25, 2014 to evaluate the potential for amphibian breeding by vernal pool species. Two additional wetland areas were observed to provide vernal pool breeding habitat. This section provides a discussion of these additional vernal pool habitats and analyzes the potential impact to these special aquatic habitats by the proposed relocation Facility. Please refer to the enclosed Vernal Pool Analysis Map for the approximate location of the identified wetland areas along the existing access drive and vernal pool habitats.

Closer inspection Vernal Pool 1 on April 25, 2014 revealed a number of spotted salamander egg masses (primarily focused along the northern edges of the pool; *Ambystoma maculatum*) and numerous adult eastern newts (aquatic adult life stage; *Notophthalmus viridescens*). Much of this pool is classified as classic vernal pool habitat with some hummock/hollow topography within southern portions of the pool resulting in some cryptic style habitat (abundant attachment sites present within both cryptic and classic vernal pool habitat areas). The natural hydrology of the northern portion of this pool has been altered by drainage swale which conveys high water flows from the northern edge of Wetland 1 under a gravel maintenance road. Areas surrounding Vernal Pool 1 consist of largely intact core forest blocks beyond those areas maintained by CL&P. The surrounding upland areas are prolific with downed coarse woody debris and a substantial duff layer providing good cover habitat for herpetofauna along with other species.

Vernal Pool 2 is centrally located on the Subject Property within a generally level area primarily within cleared portions of the transmission corridor. Hydrology is received from the surrounding upland areas, as well as a culvert that conveys water from the northern end of Wetland 1 under an existing gravel CL&P maintenance road into Vernal Pool 2. This vernal pool resource is classified as cryptic style vernal pool habitat with numerous tussock sedge (*Carex stricta*) hummocks. At the time of inspection, a single wood frog (*Rana sylvatica*) was briefly heard chorusing. Upon closer inspection of the interior portions of the pool, two spotted salamander egg masses were identified. In addition, numerous adult green frogs (*Rana clamitans*) were observed within Vernal Pool 2.

Vernal Pool 3, classic style vernal pool habitat, is located in the eastern portion of the Subject Property along the north side of the existing paved access drive. The limits of this wetland and vernal pool habitat are quite broad, extending more than 500 linear feet north of the access drive. This vernal pool receives a significant portion of its hydrology from the surrounding forested uplands, but also appears to have an intermittent stream system that feeds it from the north. This vernal pool and wetland area generally drains to the south under the existing paved access drive via a culvert. During the inspection, numerous (>100) spotted salamander egg masses were observed within the pool. In addition, wood frog larva (tadpoles), fairy shrimp (*Eubranchipus vernalis*), fingernail clams (*Pisidiidae* spp.) and predacious diving beetles (*Dytiscidae* spp.) were observed within the pool.

Physical Impact to Vernal Pool and Surrounding Terrestrial Habitat

This section details a recognized scientific method for analyzing the potential impact a project may have on a particular vernal pool and its surrounding upland habitat.

Construction and operation of the Facility would not result in direct physical impact to any of the identified vernal pools. It is widely documented that vernal pool dependent amphibians are not only solely dependent upon the actual vernal pool habitat for breeding and egg and juvenile development, but require surrounding upland habitat for most of their adult lives. Recent studies recommend protection of adjacent habitat up to 750 feet from

the vernal pool edge for obligate pool-breeding amphibians.³ Since Vernal Pool 1 represents the nearest resource to the proposed Facility expansion, an evaluation of potential impacts the proposed project may have on this vernal pool habitat was performed.

In order to evaluate potential impacts to Vernal Pool 1 and its surrounding upland habitat, the resource was assessed using methodology developed by Calhoun and Klemens (2002). This methodology assesses vernal pool ecological significance based on two parameters: 1) biological value of the vernal pool, and 2) conditions of the critical terrestrial habitat. The biological rating is based on the presence of federal or state-listed species and abundance and diversity of vernal pool indicator species. (Note: based on the observations collected to date of this vernal pool, the highest biological value is assumed to be supported.) The terrestrial habitat is assessed based on the integrity of the vernal pool envelope (within 100 feet of the pool's edge) and the critical terrestrial habitat (within 100 to 750 feet of the pool's edge). A priority rating of Tier I was assigned to Vernal Pool 1, with Tier I considered to have relatively high breeding activity and relatively intact terrestrial habitat⁴ (Tier II and III pools represent lower amphibian productivity and fragmented terrestrial habitat). Pools with 25% or less developed areas in the critical terrestrial habitat are identified as having high priority for maintaining less than 25% development within this terrestrial habitat, including site clearing, grading and construction¹.

The vernal pool evaluated in this assessment was rated based on these criteria for both the existing condition and the proposed development to determine if the compound expansion disturbances would result in a reduction in the tier rating system or reduce the terrestrial habitat integrity below the critical 75% non-development criterion. As previously discussed, it was conservatively assumed that Vernal Pool 1 currently has the highest conservation priority rating of Tier I. The results of this analysis show that the proposed development will not result in further degradation of the existing tier rating or terrestrial habitat integrity of Vernal Pool 1 due to the small amount of disturbance associated with expansion of the CL&P compound (approximately 2,150 sf). The vernal pool envelope will not be impacted as the proposed Facility development (northwest corner of the proposed compound expansion) is located approximately 260 feet south of the closest vernal pool edge. The total area of the critical terrestrial habitat associated with Vernal Pool 1, which includes land located off the Subject Property, is 2,500,000± sf with 12,000± sf consisting of existing development (primarily associated with the existing paved access drive but also includes the existing tower facility). Please refer to the enclosed Vernal Pool Analysis Map. This equates to approximately 0.48% of the critical terrestrial habitat as being already developed. The proposed Facility compound expansion is located within the critical terrestrial habitat, resulting in development of 2,150 sf, which represents an increase of only 0.08% of the total critical terrestrial habitat of the vernal pool. Therefore, the proposed Verizon Wireless development represents a de minimis increase in development of the vernal pool's critical terrestrial habitat and does not result in the tipping point of reduction below the 75% non-development criterion⁵. Therefore, the proposed development will not result in a likely adverse impact to existing amphibian productivity and will not result in long-term adverse impact to the terrestrial habitat considering the relatively small area of development associated with the expansion of the compound area and limited traffic it will generate.

The potential exists for possible short-term impact to herpetofauna associated with the nearby vernal pool habitat due to possible encounters with migrating and basking individuals that may intercept the proposed development footprint during construction. Best Management Practices ("BMPs"; Calhoun and Klemens, 2002) are

³ Calhoun, A.J.K. and M.W. Klemens. 2002. Best Development Practices (BDPs): Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States. WCS/MCA Technical Paper No. 5.

⁴ Vernal Pool Assessment Sheet (source: Calhoun and Klemens 2002)

⁵ This threshold is generally used for prioritizing vernal pool conservation efforts: Calhoun, A.J.K. and M.W. Klemens. 2002. Best Development Practices (BDPs): Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States. WCS/MCA Technical Paper No. 5. Pg. 10.

proposed during construction in a subsequent section of this document to avoid/minimize the potential for short-term impact to herpetofauna.

Hydraulic Alterations

Land-use changes (i.e., clearing, increases in impervious surface) can increase surface runoff in the watershed of a vernal pool. Direct inputs of stormwater flows into a pool may produce sudden water level increases in a short period of time and may lengthen the duration of flooding (hydroperiod). Diversion of stormwater flows past a pool may have the opposite effect of decreasing water levels and shortening the pool's hydroperiod. In addition, stormwater features that create temporary pools of water can result in a biological "sink" as breeding amphibians deposit eggs into a water body without the necessary hydraulic period to allow for successful development of the eggs into juveniles.

Site clearing and grading activities will not de-water nearby Vernal Pool 1 or alter surface water drainage patterns associated with this pool. Impervious surfaces associated with the proposed Verizon Wireless project have been minimized with the use of a gravel surface for expansion of the existing wireless telecommunications Facility compound. The proposed development will not alter existing surface or subsurface flow conditions or directions. Therefore, the proposed development will not alter the hydrology of the nearby vernal pool. In addition, no stormwater management features are proposed that would result in creation of a temporary pool and "sink", including two grass lined swales and a rip-rap level spreader, which could potentially affect breeding amphibians intercepted on their migration to the nearby vernal pool. Similarly, the proposed development will not adversely impact Vernal Pools 2 and 3.

Vernal Pool Recommended Best Management Practices

As a result of the proposed development's location in the vicinity of vernal pool habitat, the following BMPs are recommended to avoid unintentional impact or mortality to vernal pool herpetofauna (i.e., spotted salamander, wood frog, turtles, etc.) during construction activities. These BMPs would be implemented should construction activities occur during peak amphibian movement periods (early spring breeding [March 1st to May 15th] and late summer dispersal [July 15th to September 15th]). The complete details of the recommended BMPs will be included in the Development and Management Plan should the site be approved by the Connecticut Siting Council.

The proposed BMPs will focus on the tower relocation work zone. Although the existing access road is controlled by CL&P for accessing both their tower facility and electrical transmission corridors and is used by others that are collocated on the tower facility, Verizon Wireless will employ some protective measures due to the proximity to vernal pool habitats (e.g., Vernal Pools 2 and 3). The focus of protective measures along the existing paved access drive would consist of precautions to avoid unintentional mortality to herpetofauna that may be crossing the access drive during Verizon Wireless' construction activities. Details of the proposed protection plan are provided below.

Vernal Pool Protection Plan

A qualified professional from APT would serve as the Environmental Monitor for this project to ensure that vernal pool protection measures are implemented properly. The proposed vernal pool protection program consists of several components including: isolation of the project perimeter; periodic inspection and maintenance of isolation structures; herpetofauna sweeps; education of all contractors and sub-contractors prior to initiation of work on the site; protective measures; and, reporting.

1. Erosion and Sedimentation Controls

- a. Plastic netting used in a variety of erosion control products (i.e., erosion control blankets, fiber rolls [wattles], reinforced silt fence) has been found to entangle wildlife, including reptiles, amphibians, birds and small mammals. No permanent

erosion control products or reinforced silt fence will be used on the project. Temporary erosion control products that will be exposed at the ground surface represent a potential for wildlife entanglement will use either erosion control blankets and fiber rolls composed of processed fibers mechanically bound together to form a continuous matrix (netless) or netting composed of planar woven natural biodegradable fiber to avoid/minimize wildlife entanglement.

- b. Installation of erosion and sedimentation controls, required for erosion control compliance and creation of a barrier to possible migrating/dispersing herpetofauna, shall be performed by the Contractor following clearing activities and prior to any earthwork. The Environmental Monitor will inspect the work zone area prior to and following erosion control barrier installation to ensure the area is free of herpetofauna and satisfactorily installed. The intent of the barrier is to segregate the majority of the work zone from migrating/dispersing herpetofauna. Oftentimes complete isolation of a work zone is not feasible due to accessibility needs and locations of staging/material storage areas, etc. In those circumstances, the barriers will be positioned to deflect migrating/dispersal routes away from the work zone to minimize potential encounters with herpetofauna.
- c. No equipment, vehicles or construction materials shall be stored within 100 feet of wetland resources.
- d. All silt fencing shall be removed within 30 days of completion of work and permanent stabilization of site soils so that reptile and amphibian movement between uplands and wetlands is not restricted.

2. Contractor Education:

- a. Prior to work on site and initial deployment/mobilization of equipment and materials, the Contractor shall attend an educational session at the pre-construction meeting with APT. This orientation and educational session will consist of information such as, but not limited to: representative photographs of typical herpetofauna that may be encountered, Connecticut and Federal listing status of species that could be encountered, typical species behavior, and proper procedures if species are encountered. The meeting will further emphasize the non-aggressive nature of these species, the absence of need to destroy such animals and the need to follow Protective Measures as described in Section 4 below. The Contractor will designate one of its workers as the "Project Monitor", who will receive more intense training on the identification and protection of herpetofauna.
- b. The Contractor will designate a member of its crew as the Project Monitor to be responsible for the periodic "sweeps" for herpetofauna within the construction zone each morning, during any and all transportation of vehicles along the access drive, and for any ground disturbance work. This individual will receive more intense training from APT on the identification and protection of herpetofauna in order to perform sweeps during large vehicle/equipment movements. This sweep will include an escort by the Project Monitor for large vehicle/equipment movements and include visual inspection of the work area for any herpetofauna along the existing paved access drive. Any herpetofauna discovered would be translocated outside the work zone in the general direction the animal was oriented.
- c. The Contractor's Project Monitor will be provided with cell phone and email contacts for APT personnel to immediately report any encounters with herpetofauna. Educational poster materials will be provided by APT and displayed on the job site to maintain worker awareness as the project progresses.

- d. APT will also post Caution Signs throughout the project site for the duration of the construction project providing notice of the environmentally sensitive nature of the work area, the potential for encountering various amphibians and reptiles and precautions to be taken to avoid injury to or mortality of these animals.

3. Petroleum Materials Storage and Spill Prevention

- a. Certain precautions are necessary to store petroleum materials, refuel and contain and properly clean up any inadvertent fuel or petroleum (i.e., oil, hydraulic fluid, etc.) spill due to the project's location in proximity to sensitive wetlands.
- b. A spill containment kit consisting of a sufficient supply of absorbent pads and absorbent material will be maintained by the Contractor at the construction site throughout the duration of the project. In addition, a waste drum will be kept on site to contain any used absorbent pads/material for proper and timely disposal off site in accordance with applicable local, state and federal laws.
- c. The following petroleum and hazardous materials storage and refueling restrictions and spill response procedures will be adhered to by the Contractor.
 - i. Petroleum and Hazardous Materials Storage and Refueling
 - 1. Refueling of vehicles or machinery shall occur a minimum of 100 feet from wetlands or watercourses and shall take place on an impervious pad with secondary containment designed to contain fuels.
 - 2. Any fuel or hazardous materials that must be kept on site shall be stored on an impervious surface utilizing secondary containment a minimum of 100 feet from wetlands or watercourses.
 - ii. Initial Spill Response Procedures
 - 1. Stop operations and shut off equipment.
 - 2. Remove any sources of spark or flame.
 - 3. Contain the source of the spill.
 - 4. Determine the approximate volume of the spill.
 - 5. Identify the location of natural flow paths to prevent the release of the spill to sensitive nearby waterways or wetlands.
 - 6. Ensure that fellow workers are notified of the spill.
 - iii. Spill Clean Up & Containment
 - 1. Obtain spill response materials from the on-site spill response kit. Place absorbent materials directly on the release area.
 - 2. Limit the spread of the spill by placing absorbent materials around the perimeter of the spill.
 - 3. Isolate and eliminate the spill source.
 - 4. Contact the appropriate local, state and/or federal agencies, as necessary.
 - 5. Contact a disposal company to properly dispose of contaminated materials.
 - iv. Reporting
 - 1. Complete an incident report.
 - 2. Submit a completed incident report to the Connecticut Siting Council.

4. Protective Measures

- a. A thorough cover search of the construction area will be performed by APT's Environmental Monitor for herpetofauna prior to and following installation of the silt fencing barrier to remove any species from the work zone prior to the initiation of construction activities. APT's Environmental Monitor will also sweep the existing paved access drive in advance of the Contractor's initial mobilization of equipment and materials to the Subject Property. Any herpetofauna discovered would be

translocated outside the work zone in the general direction the animal was oriented. Periodic inspections will be performed by APT's Environmental Monitor throughout the duration of the construction.

- b. The Contractor's Project Monitor will escort large vehicle/equipment movements along the existing paved access drive to visually inspect for any herpetofauna. Any herpetofauna discovered would be translocated outside the work zone in the general direction the animal was oriented.
- c. Any stormwater management features, ruts or artificial depressions that could hold water created intentionally or unintentionally by site clearing/construction activities will be properly filled in and permanently stabilized with vegetation to avoid the creation of vernal pool "decoy pools" that could intercept amphibians moving toward the vernal pools. Stormwater management features such as level spreaders will be carefully reviewed in the field to ensure that standing water does not endure for more than a 24 hour period to avoid creation of decoy pools and may be subject to field design changes. Any such proposed design changes will be reviewed by the design engineer to ensure stormwater management functions are maintained.
- d. Erosion control measures will be removed no later than 30 days following final site stabilization so as not to impede migration of herpetofauna or other wildlife.

5. Herbicide and Pesticide Restrictions

- a. Verizon Wireless and its contractors will avoid the use of herbicides and pesticides at the existing wireless telecommunications Facility.

6. Reporting

- a. Monthly inspection reports (brief narrative and applicable photos) will be submitted to the Connecticut Siting Council for compliance verification. Any observations of herpetofauna will be included in the reports. Any observations of rare species will be reported to the Connecticut Department of Energy & Environmental Protection Natural Diversity Data Base.

Wetland Impact Analysis:

No direct impact to wetlands will result from the proposed relocation Facility project. The Facility would result in a relatively small expansion to the existing compound and be located primarily within existing disturbed and upland forested areas. The location of the compound expansion does not encroach closer to the nearest wetland area than the existing fenced compound. The nearest wetland to the proposed fenced compound is located approximately 170 feet to the north at wetland flag 1-07; grading would be located ± 140 feet away. While the existing paved access drive is located in proximity to a number of wetland resources, no improvements are required to the drive and as a result no impact to these wetland areas would occur.

Possible short-term wetland impacts associated with the proposed compound expansion would be minimized by the proper installation and maintenance of erosion and sedimentation controls in accordance with *2002 Connecticut Guidelines For Soil Erosion and Sediment Control*. Possible long-term temporary impacts are minimized by the unoccupied nature of the Facility and limited traffic generated by routine maintenance visits (approximately once per month for Verizon Wireless). Impervious surfaces associated with the proposed compound expansion have been minimized with the use of a gravel surface that promotes stormwater infiltration. The proposed stormwater management features, a grass-lined swale and rip-rap lined level spreader, will control stormwater runoff and not alter existing surface water drainage patterns or nearby wetland hydrology.

In addition, as no direct impact to federal wetlands would result from Verizon Wireless' proposed development activities, a Finding of No Significant Impact ("FONSI") is issued since **no significant change in surface features** (e.g., wetland fill, deforestation or water diversion) would result in accordance with National Environmental Policy Act ("NEPA") Categorical Exclusion checklist item 7.

If you have any questions regarding the above-referenced information, please feel free to contact me by telephone at (860) 617-0613 or via email at mgustafson@allpointstech.com.

Sincerely,

All-Points Technology Corporation, P.C.

Report Prepared by:



Matthew Gustafson

Registered Soil Scientist

Report Reviewed by:



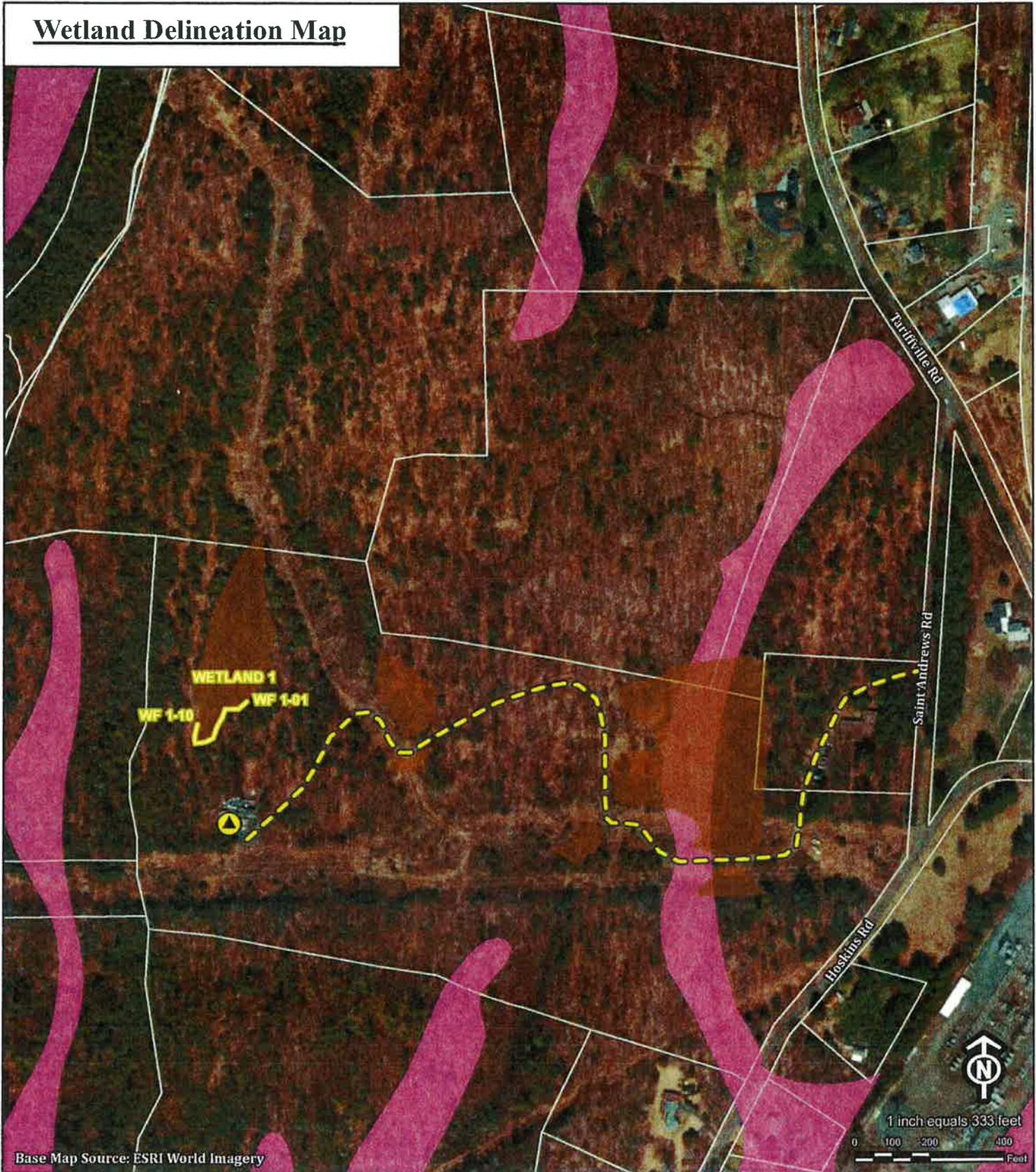
Dean Gustafson

Professional Soil Scientist

Enclosures

Wetland Delineation Map

Wetland Delineation Map



Base Map Source: ESRI World Imagery

- Legend**
- Proposed Tower Location
 - Existing Paved Access
 - APT Delineated Wetland Boundary
 - Approximate Wetland Area
 - CTDEEP Parcel (updated 8/10)
 - CT DEEP Mapped Wetland

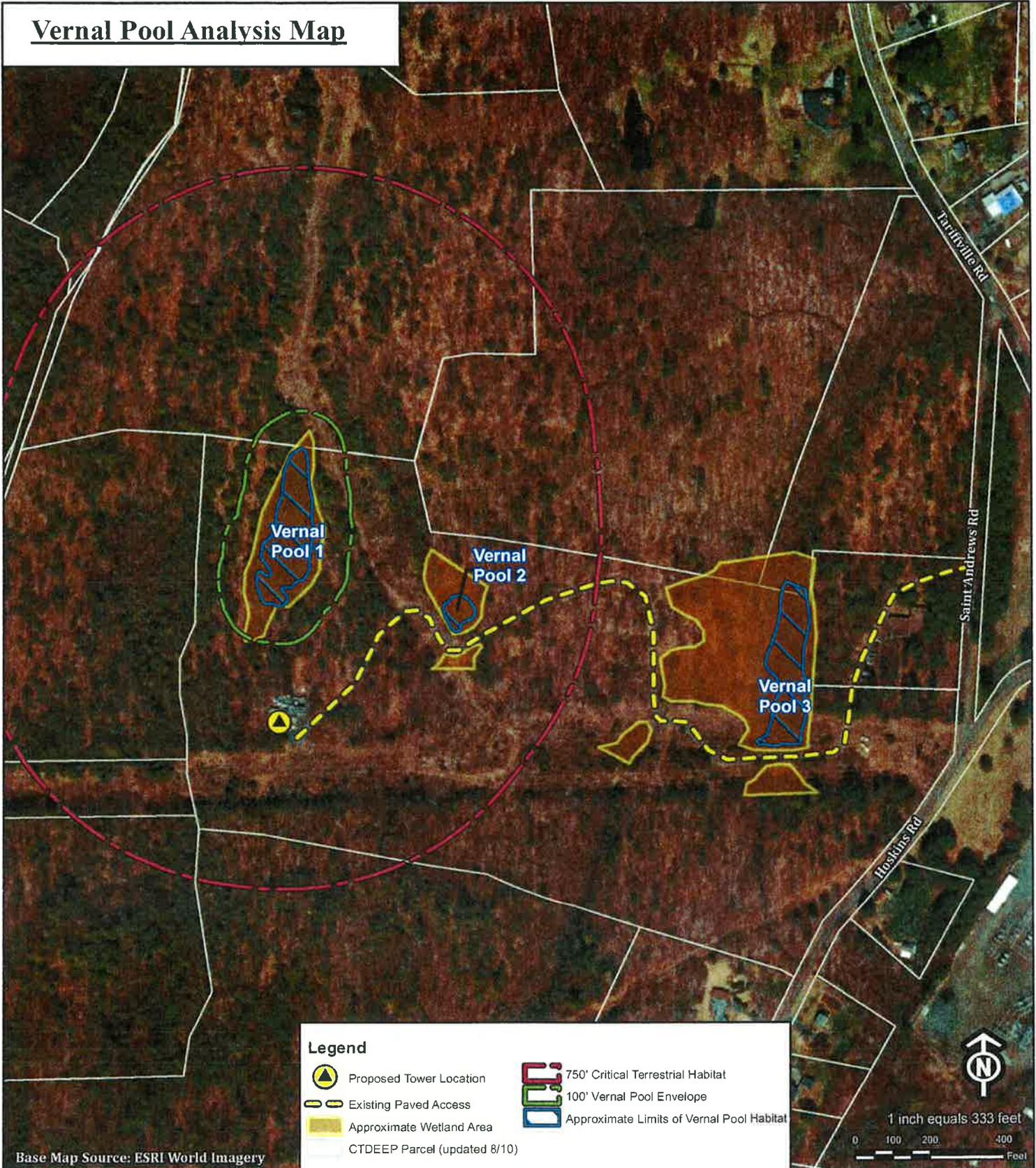
Proposed Verizon Tarrifville Relo Facility
St. Andrews Road
Bloomfield, Connecticut

Wednesday, June 18, 2014



Vernal Pool Analysis Map

Vernal Pool Analysis Map



Base Map Source: ESRI World Imagery

Legend

- Proposed Tower Location
- Existing Paved Access
- Approximate Wetland Area
- CTDEEP Parcel (updated 8/10)
- 750' Critical Terrestrial Habitat
- 100' Vernal Pool Envelope
- Approximate Limits of Vernal Pool Habitat



Proposed Verizon Tarrifville Relo Facility
St. Andrews Road
Bloomfield, Connecticut



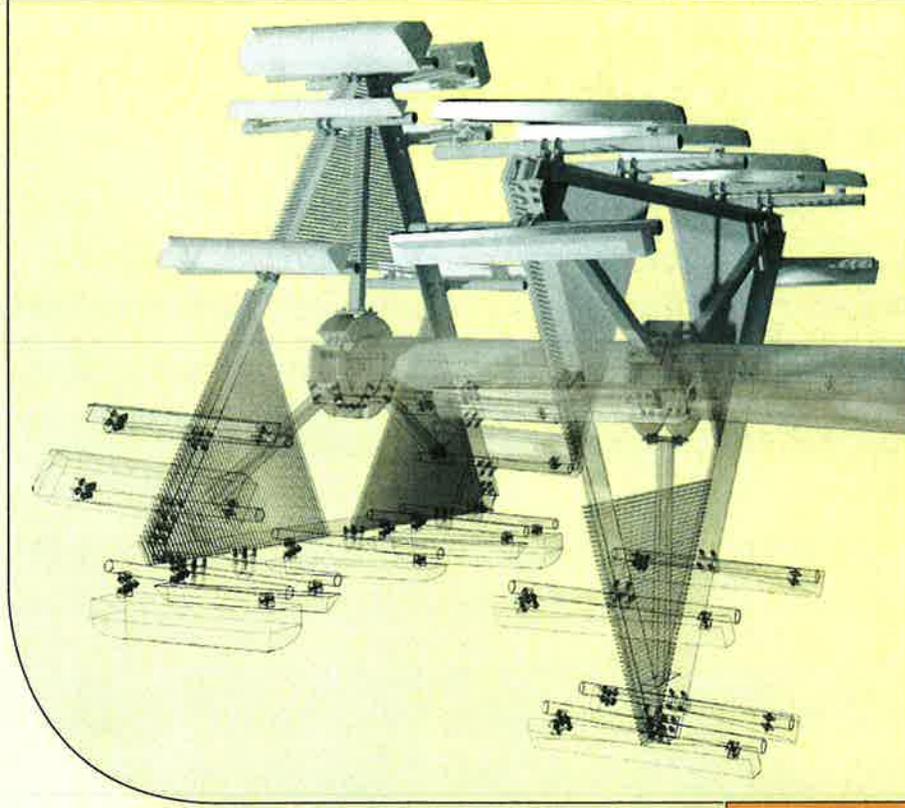
Thursday, June 05, 2014

ATTACHMENT 6

Visibility Analysis

TARIFFVILLE RELO
ST. ANDREWS ROAD
BLOOMFIELD, CT

Prepared in March 2014 by:
All-Points Technology Corporation, P.C.
3 Saddlebrook Drive
Killingworth, CT 06141



Prepared for Verizon Wireless



Project Introduction

Cellco Partnership d/b/a Verizon Wireless is pursuing a Petition that no Certificate of Environmental Compatibility and Public Need is required from the Connecticut Siting Council ("Council") for replacing an existing wireless communications facility ("Replacement Facility") on property off St. Andrews Road in Bloomfield, Connecticut ("host Property"). At the request of Verizon Wireless, All-Points Technology Corporation, P.C. ("APT") prepared this Visibility Analysis to evaluate the potential visual impacts associated with the proposed Replacement Facility.

Site Description and Setting

The 38.3-acre host Property rises over 200 feet above and west of St. Andrews Road and Hoskins Road in northern Bloomfield. The host Property is identified in Bloomfield Assessor records as Lot 1117 on Map 637 but has no numerical street designation. A 180-foot tall, self-supporting lattice tower currently occupies an area in the western portion of the host Property, at an approximate ground elevation of four hundred twelve (412) feet Above Mean Sea Level ("AMSL"). The proposed Replacement Facility would be located approximately 75 feet to the south of the existing tower, at an approximate ground elevation of four hundred and seven (407) feet AMSL. The Replacement Facility would be of similar design as exists today (a self-supporting, steel lattice tower) but would be five feet taller, rising to 185 feet above ground level, such that current antenna center line heights may be maintained.

The portion of the host Property that is developed with the existing tower compound is remoteLand use within the immediate vicinity is primarily a mix of rural residential, agricultural and undeveloped forest.

Field Reconnaissance

APT completed an in-field analysis on January 31, 2014 to evaluate the visibility associated with the existing Facility and determine what, if any, changes would occur with the proposed Replacement Facility. The in-field analysis included a vehicular reconnaissance to record existing conditions, inventory locations where the existing Facility could be seen above/through the trees, and to provide photographic documentation for developing photo-simulations of the Replacement Facility publicly accessible locations.

Photographic Documentation and Simulations

Photographs were obtained from several vantage points to document views of the existing Facility and for use in preparing photo-simulations of the Replacement Facility. The geographic coordinates of the camera's position at each photo location were logged using global positioning system (GPS) equipment technology.

Photographs were taken with a Canon EOS 6D digital camera body and Canon 24 to 105 millimeter ("mm") zoom lens, with the lens set to 50 mm.

"The lens that most closely approximates the view of the unaided human eye is known as the normal focal-length lens. For the 35 mm camera format, which gives a 24x36 mm image, the normal focal length is about 50 mm."¹

Simulations of the Replacement Facility were generated for thirteen (13) of the seventeen (17) photographs presented herein where the existing Facility was found to be visible. The simulations portray scaled renderings of the Replacement Facility from these viewing locations. Using field data, site plan information and 3-dimensional ("3D") modeling software, spatially referenced models of the site location, its vicinity and the Replacement 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 programs².

As stated earlier, APT used a 50 mm focal length to balance preserving the integrity of the scene's setting while depicting the modified Facility in a way similar to what an observer might see. For presentation purposes in this report, the photographs are produced in an approximate 7" by 10.5" format. When viewing in this format size, we believe it is important to provide the largest representational image while maintaining an accurate relation of sizes between objects within the frame of the photograph.

¹ Warren, Bruce. Photography, West Publishing Company, Eagan, MN, c. 1993, (page 70).

² As a final step, the accuracy and scale of select simulations are tested against photographs of existing Facilities with recorded camera position, focal length, photo location, and Facility location.

The following table summarizes the photographs and simulations presented in the attachment to this report including the photo number (as it corresponds to the photolog map), a description of each photo location, view orientation, the distance from where the photo was taken relative to the Facility location, as well as the characteristic of the view.

Photo No.	Photo Location	View Orientation	Distance to Facility	View Characteristics
1	International Drive	Southwest	±2.71 Miles	Year-round*
2	Stark Drive	Southwest	±1.62 Miles	Year-round
3	Winding Hills Road	Southwest	±1.06 Miles	Seasonal*
4	Cedar Ridge Road	Southwest	±0.99 Mile	Year-round
5	Route 189	Southwest	±0.70 Mile	Year-round
6	Intersection of Tariffville Road and Hoskins Road	West	±0.48 Mile	Year-round
7	Hoskins Road	West	±0.35 Mile	Year-round
8	Wolcott Road	Southeast	±1.80 Miles	Year-round
9	Wolcott Road	Southeast	±1.59 Miles	Year-round
10	Tariffville Road	Southeast	±1.14 Miles	Year-round
11	Hopmeadow Street & Westwood Drive	East	±1.20 Miles	Seasonal
12	Springwood Lane	Northwest	±0.62 Mile	Seasonal
13	Duncaster Road	Northwest	±0.85 Mile	Seasonal*
14	Beaudry Lane	Northwest	±1.25 Miles	Seasonal
15	Beaudry Lane	Northwest	±1.32 Miles	Seasonal
16	Route 187	Northwest	±1.30 Miles	Year-round
17	Route 187	Northwest	±2.10 Miles	Year-round*

*No photo-simulation prepared for this view

Photo-documentation and simulations are presented in the attachment at the end of this report.

Visibility of the Replacement Facility

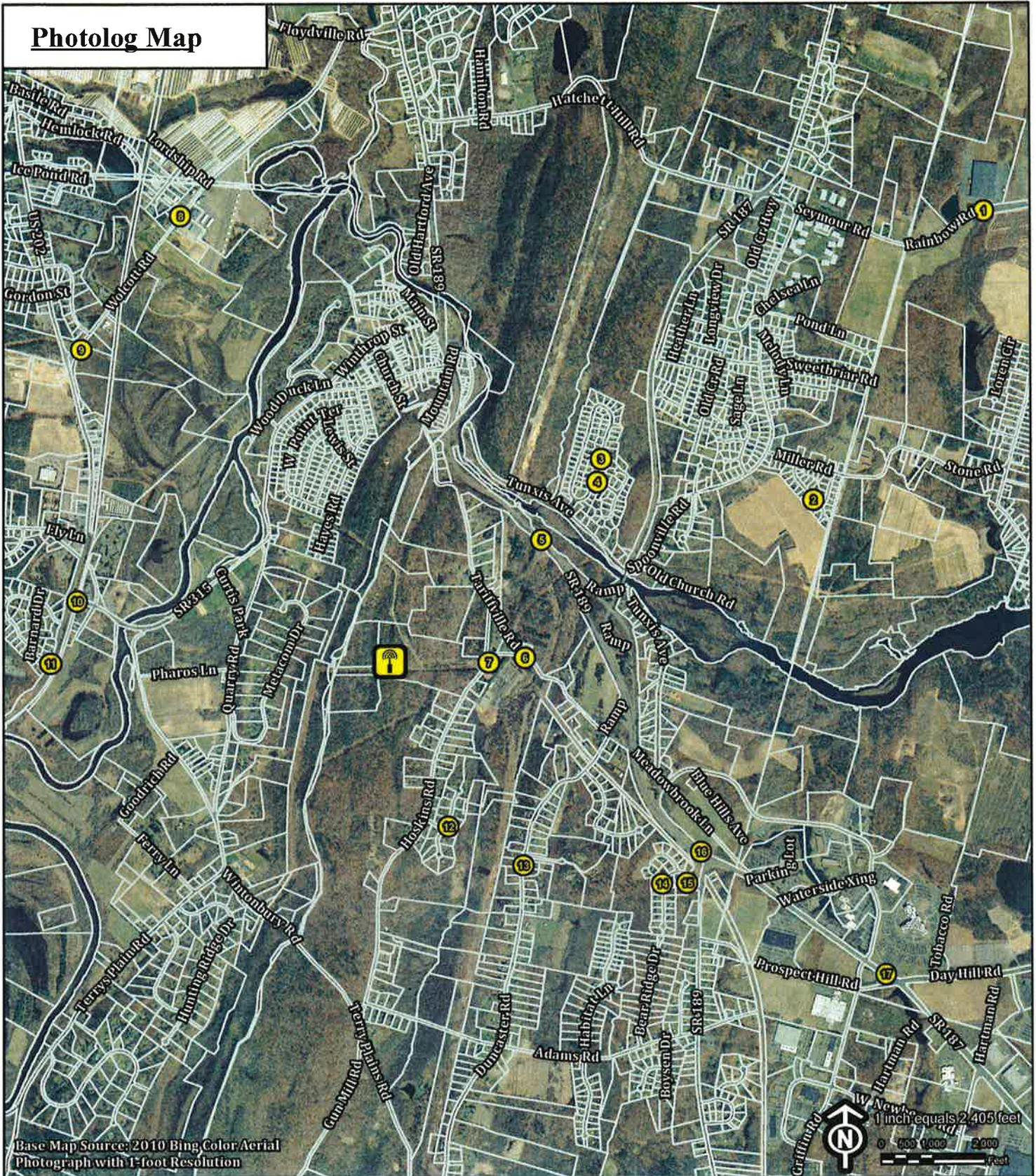
Based on the results of the field reconnaissance, the viewshed of the Replacement Facility will not differ from that of the existing tower, so the proposed activity would not result in a substantial change to the overall visibility footprint. What would change slightly is the character of some existing views as the move in tower location on the site of 75± feet would result in a modest shift of the Replacement Facility to the left or right depending upon the direction an observer is standing.

The nearest views of the tower are from the Hoskins Road, St. Andrews Road and Tariffville Road confluence at distances of 0.35 – 0.5 mile away (see photos 6 and 7). This area features a large electrical substation and overhead utility corridor that extends in multiple directions, including westward onto the host Property. The access drive follows this corridor. Because of the general remoteness of the host Property, near-range views are severely limited to a few locations. Most views of the existing Facility occur at distance of a mile and beyond.

ATTACHMENTS

ATTACHMENTS

Photolog Map



Base Map Source: 2010 Bing Color Aerial Photograph with 1-foot Resolution

Legend



Proposed Tower Location



Photo Point (PP)



CT DEEP Parcel (updated 8/10)

Proposed Verizon Tarriffville Relo Facility St. Andres Road Bloomfield, Connecticut

Wednesday, February 12, 2014





DOCUMENTATION

PHOTO

1

LOCATION

INTERNATIONAL DRIVE

ORIENTATION

SOUTHWEST

DISTANCE TO SITE

+/- 2.71 MILES

VISIBILITY

YEAR ROUND



DOCUMENTATION

PHOTO

2

LOCATION

STARK DRIVE

ORIENTATION

SOUTHWEST

DISTANCE TO SITE

+/- 1.62 MILES

VISIBILITY

YEAR ROUND



SIMULATION

PHOTO

2

LOCATION

STARK DRIVE

ORIENTATION

SOUTHWEST

DISTANCE TO SITE

+/- 1.62 MILES

VISIBILITY

YEAR ROUND





DOCUMENTATION

PHOTO

3

LOCATION

WINDING HILLS ROAD

ORIENTATION

SOUTHWEST

DISTANCE TO SITE

+/- 1.06 MILES

VISIBILITY

SEASONAL



DOCUMENTATION

PHOTO

4

LOCATION

CEDAR RIDGE ROAD

ORIENTATION

SOUTHWEST

DISTANCE TO SITE

+/- 0.99 MILE

VISIBILITY

YEAR ROUND



SIMULATION

PHOTO

4

LOCATION

CEDAR RIDGE ROAD

ORIENTATION

SOUTHWEST

DISTANCE TO SITE

+/- 0.99 MILE

VISIBILITY

YEAR ROUND



DOCUMENTATION

PHOTO

5

LOCATION

ROUTE 189

ORIENTATION

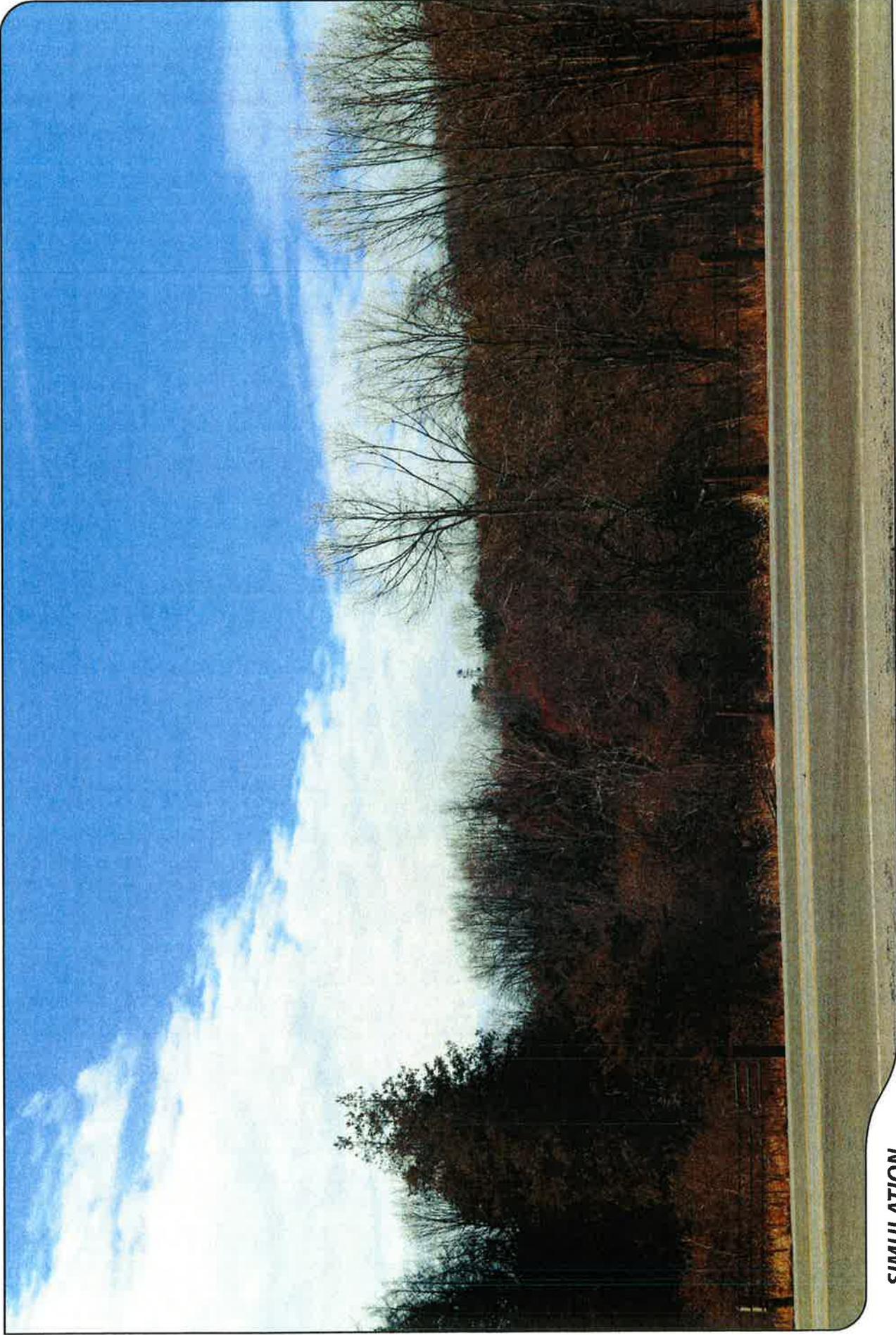
SOUTHWEST

DISTANCE TO SITE

+/- 0.70 MILE

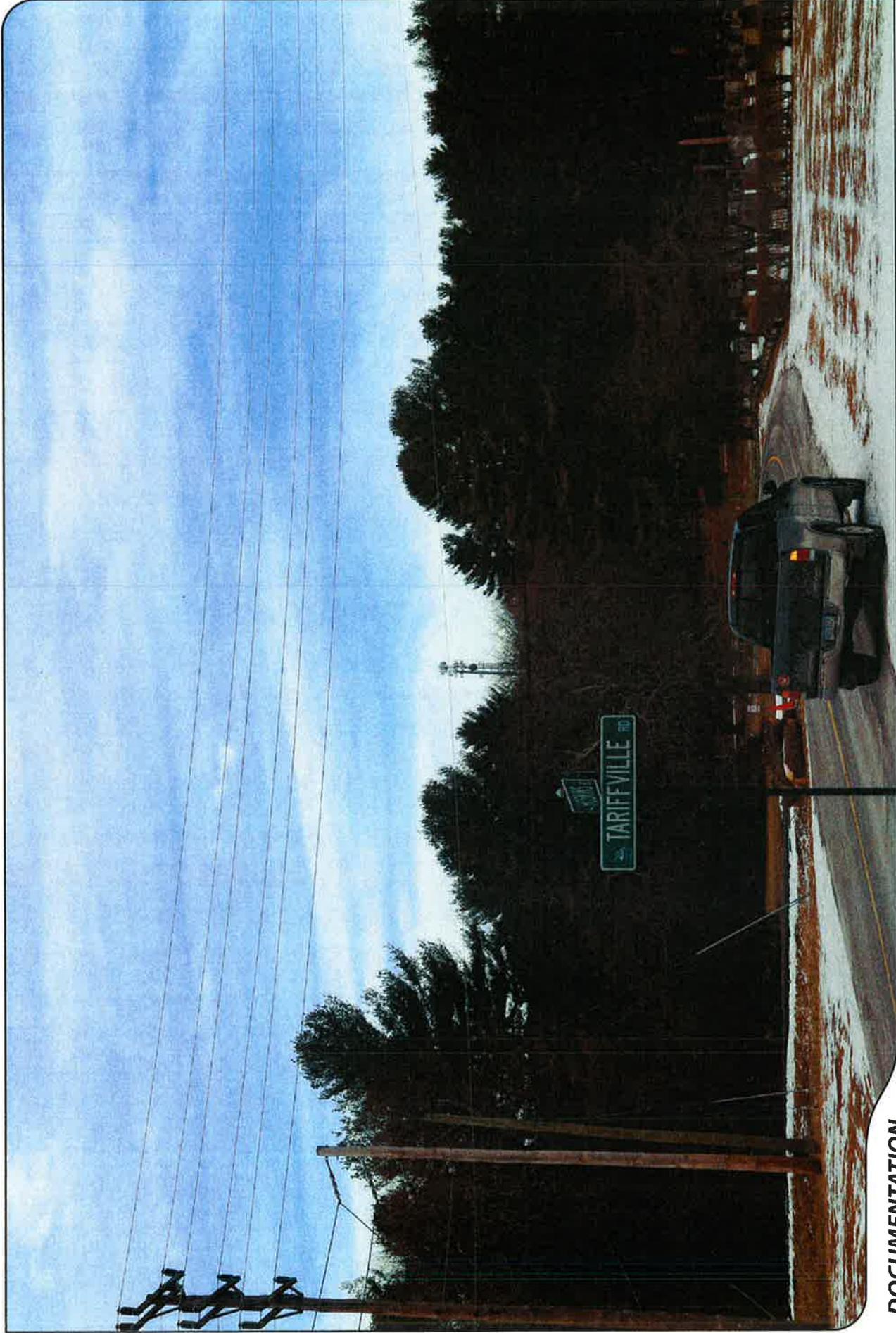
VISIBILITY

YEAR ROUND



SIMULATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
5	ROUTE 189	SOUTHWEST	+/- 0.70 MILE	YEAR ROUND



DOCUMENTATION

PHOTO

6

LOCATION

INTERSECTION OF TARIFFVILLE ROAD AND HOSKINS ROAD

ORIENTATION

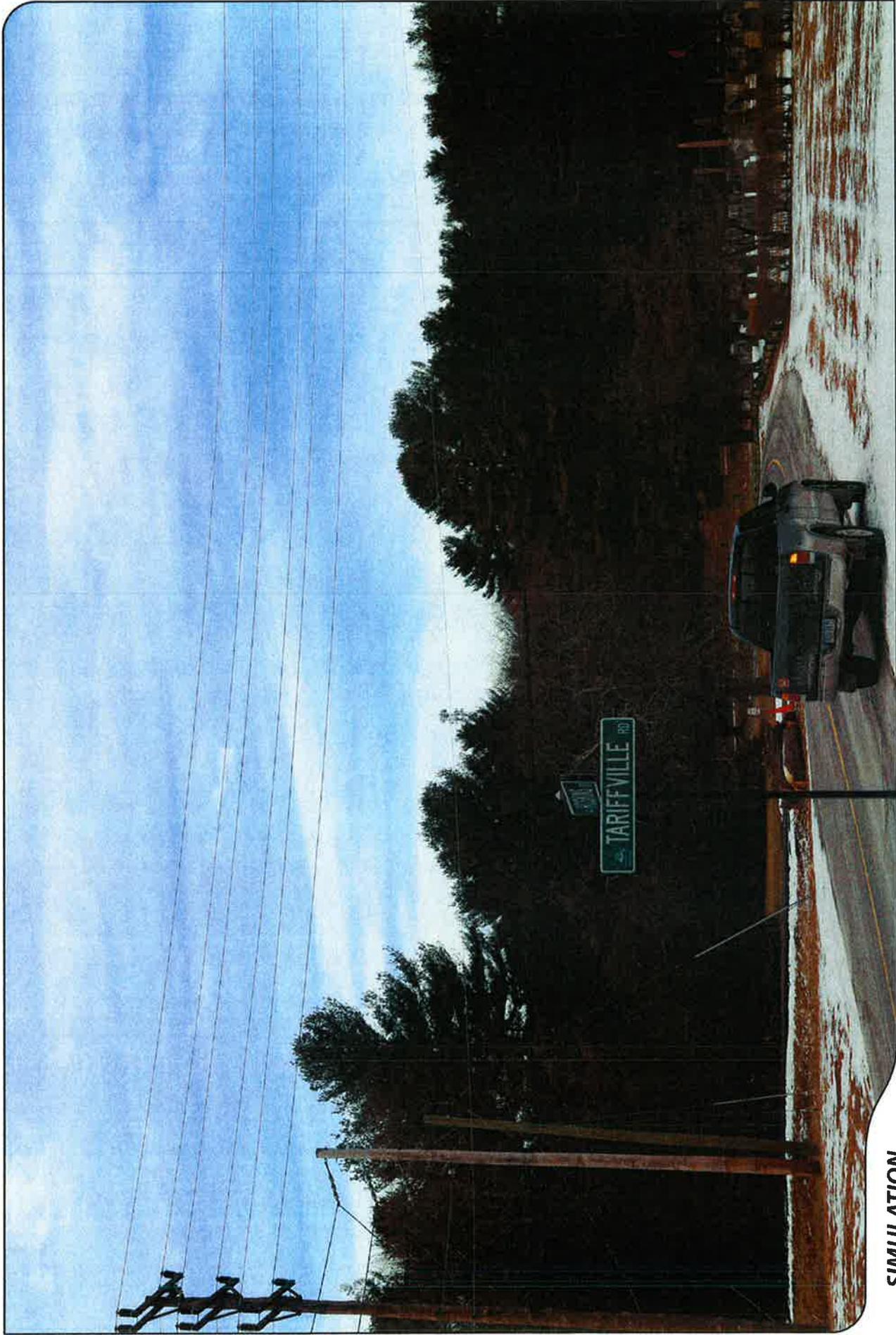
WEST

DISTANCE TO SITE

+/- 0.48 MILE

VISIBILITY

YEAR ROUND



SIMULATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	INTERSECTION OF TARIFFVILLE ROAD AND HOSKINS ROAD	WEST	+/- 0.48 MILE	YEAR ROUND



DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
7	HOSKINS ROAD	WEST	+/- 0.35 MILE	YEAR ROUND



SIMULATION

PHOTO

7

LOCATION

HOSKINS ROAD

ORIENTATION

WEST

DISTANCE TO SITE

+/- 0.35 MILE

VISIBILITY

YEAR ROUND





DOCUMENTATION

PHOTO

8

LOCATION

WOLCOTT ROAD

ORIENTATION

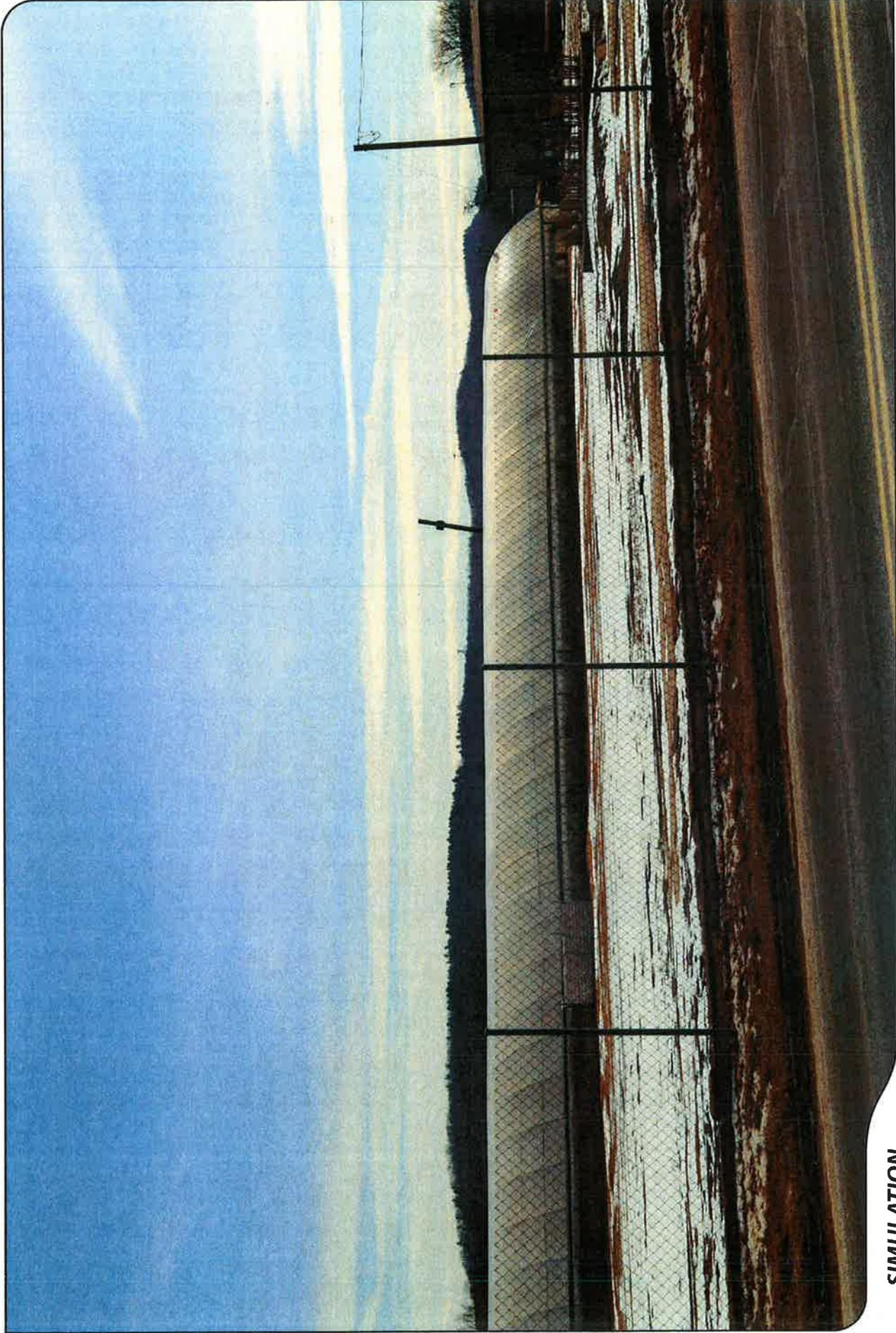
SOUTHEAST

DISTANCE TO SITE

+/- 1.80 MILES

VISIBILITY

YEAR ROUND



SIMULATION

PHOTO

8

LOCATION

WOLCOTT ROAD

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 1.80 MILES

VISIBILITY

YEAR ROUND



DOCUMENTATION

PHOTO

9

LOCATION

WOLCOTT ROAD

ORIENTATION

SOUTHEAST

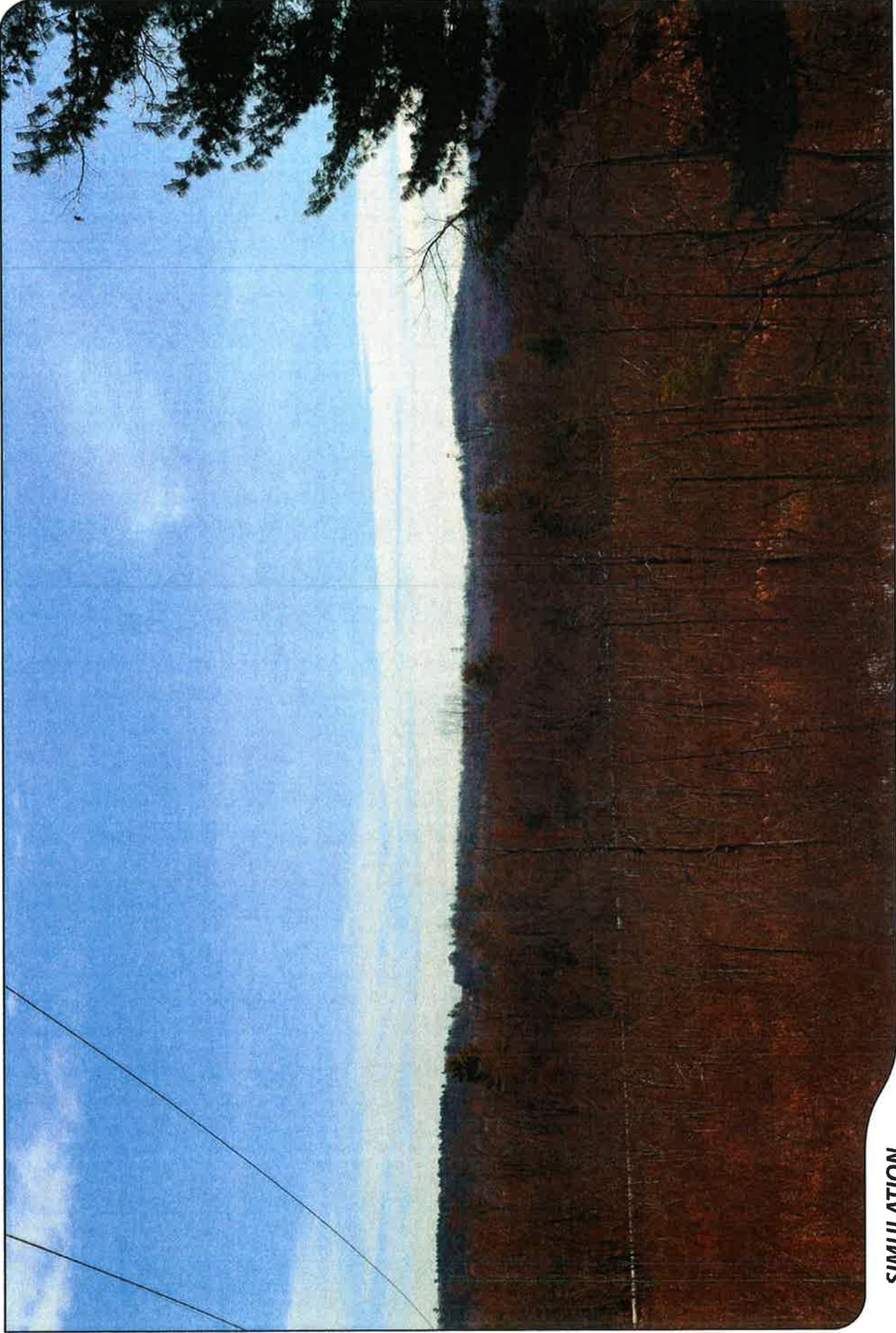
DISTANCE TO SITE

+/- 1.59 MILES

VISIBILITY

YEAR ROUND





SIMULATION

PHOTO

9

LOCATION

WOLCOTT ROAD

ORIENTATION

SOUTHEAST

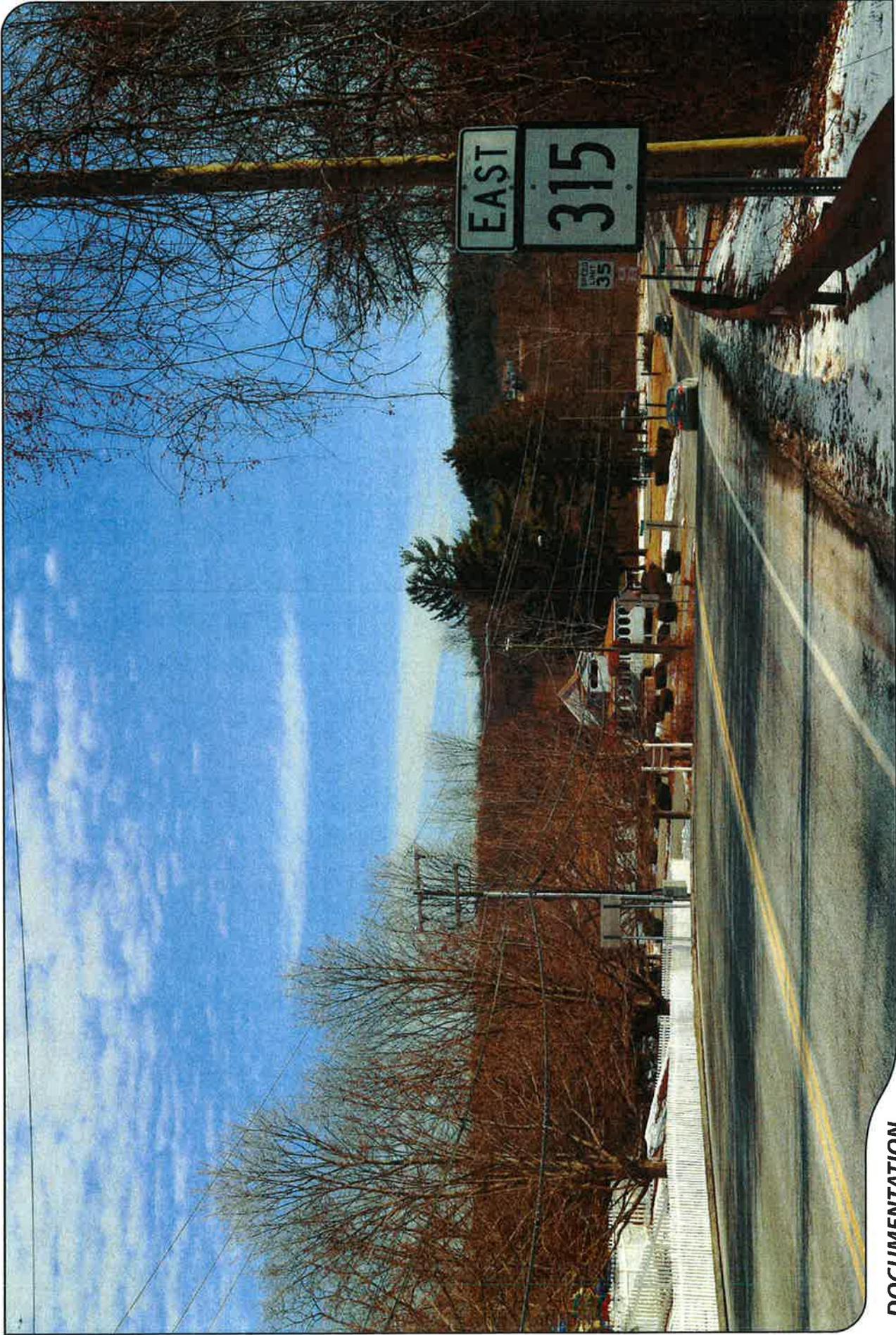
DISTANCE TO SITE

+/- 1.59 MILES

VISIBILITY

YEAR ROUND





DOCUMENTATION

PHOTO

10

LOCATION

TARIFFVILLE ROAD

ORIENTATION

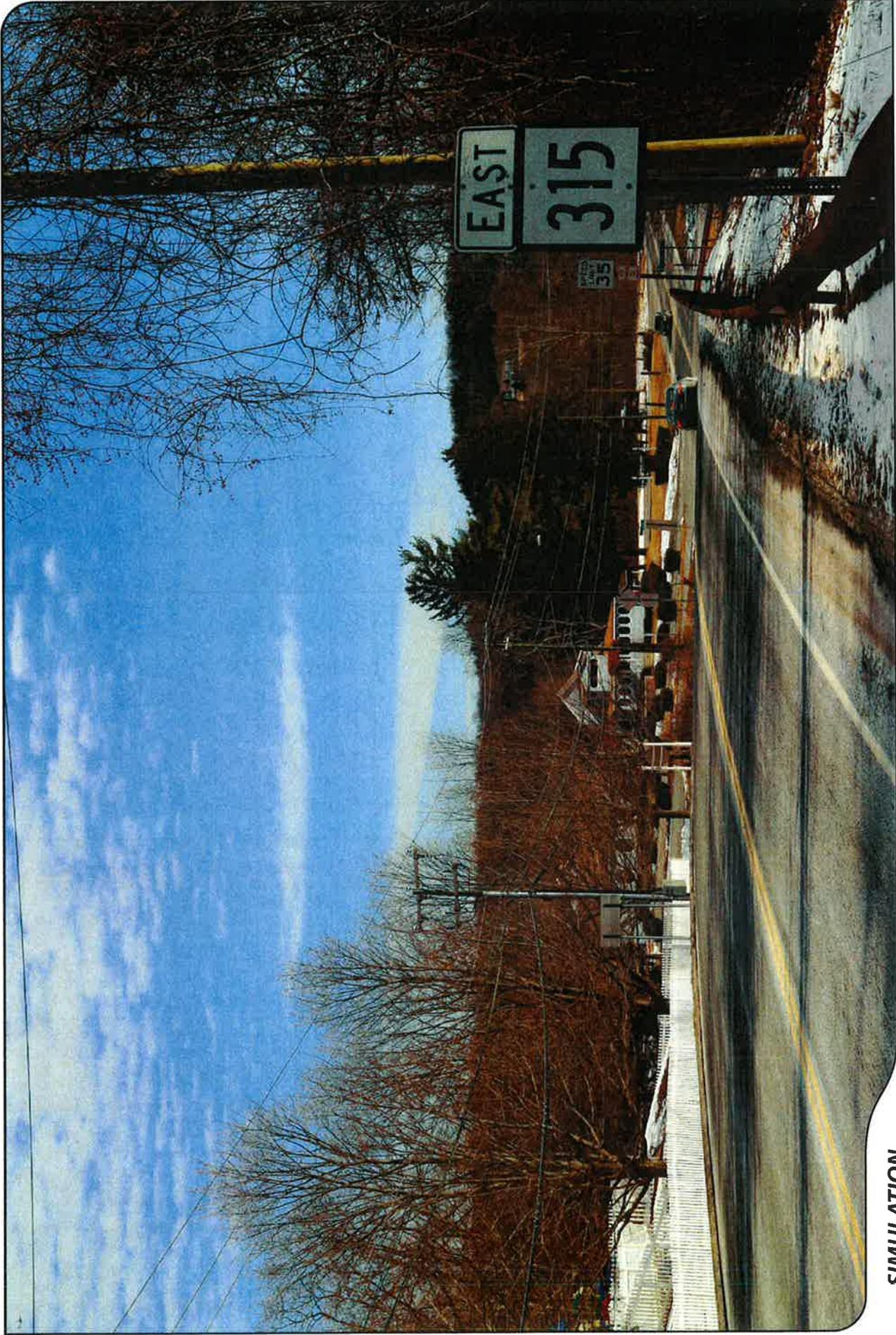
SOUTHEAST

DISTANCE TO SITE

+/- 1.14 MILES

VISIBILITY

YEAR ROUND



SIMULATION

PHOTO

10

LOCATION

TARIFFVILLE ROAD

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 1.14 MILES

VISIBILITY

YEAR ROUND



DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
11	INTERSECTION OF HOPMEADOW STREET AND WESTWOOD DRIVE	EAST	+/- 1.20 MILES	SEASONAL



SIMULATION

PHOTO

11

LOCATION

INTERSECTION OF HOPMEADOW STREET AND WESTWOOD DRIVE

ORIENTATION

EAST

DISTANCE TO SITE

+/- 1.20 MILES

VISIBILITY

SEASONAL



DOCUMENTATION

PHOTO

12

LOCATION

SPRINGWOOD LANE

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 0.62 MILE

VISIBILITY

SEASONAL



SIMULATION

PHOTO
12

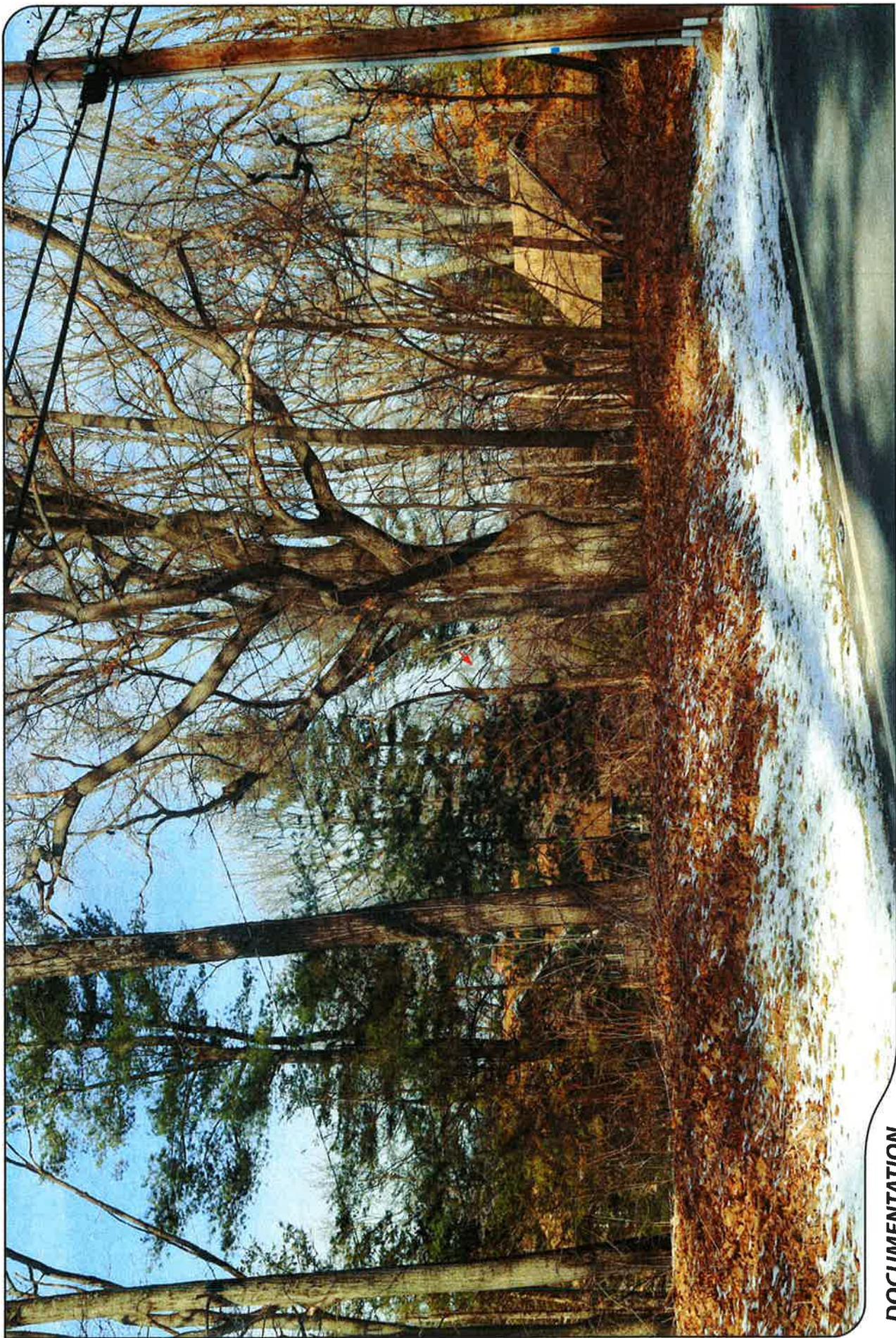
LOCATION
SPRINGWOOD LANE

ORIENTATION
NORTHWEST

DISTANCE TO SITE
+/- 0.62 MILE

VISIBILITY
SEASONAL





DOCUMENTATION

PHOTO

13

LOCATION

DUNCASTER ROAD

ORIENTATION

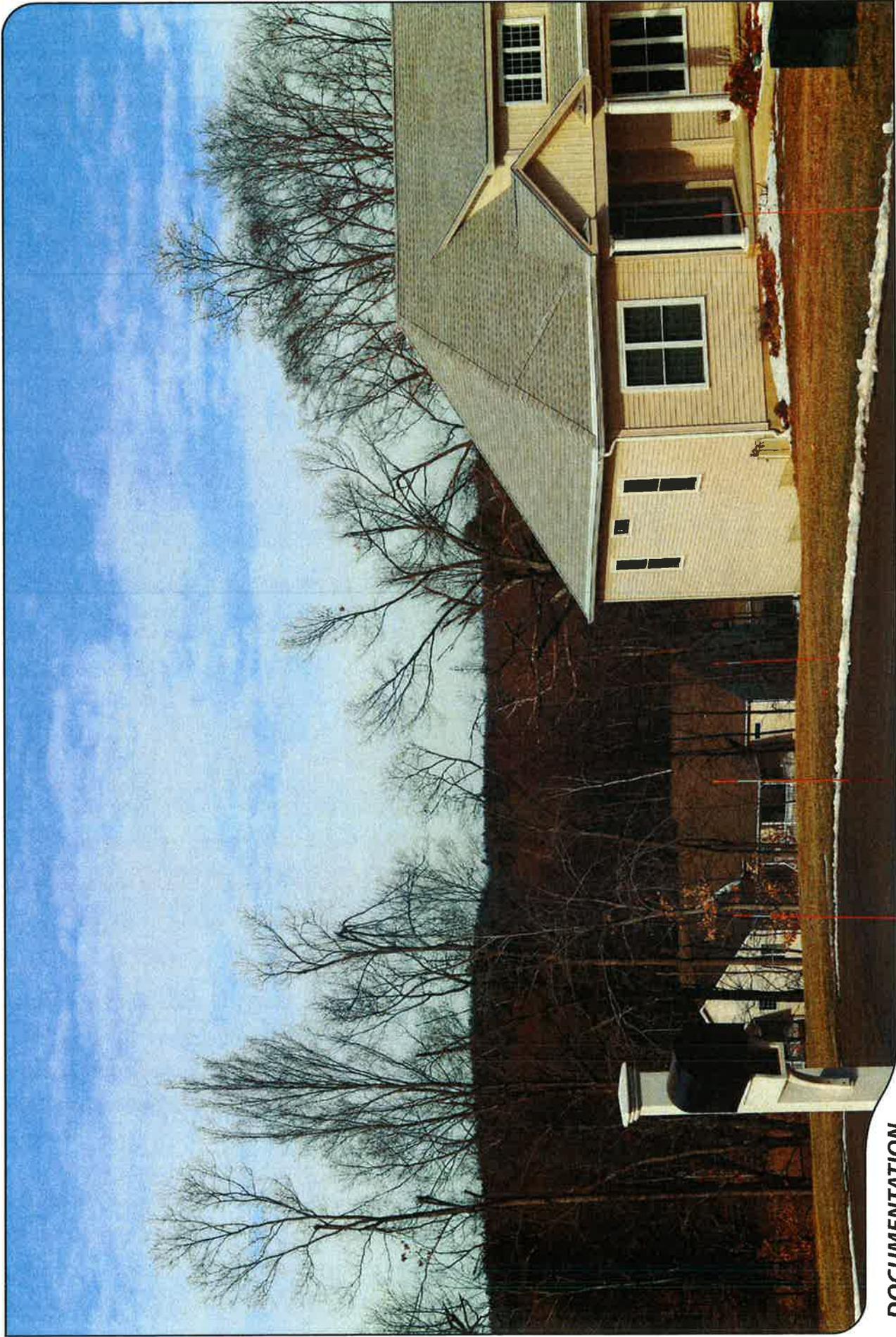
NORTHWEST

DISTANCE TO SITE

+/- 0.85 MILE

VISIBILITY

SEASONAL



DOCUMENTATION

PHOTO

14

LOCATION

BEAUDRY LANE

ORIENTATION

NORTHWEST

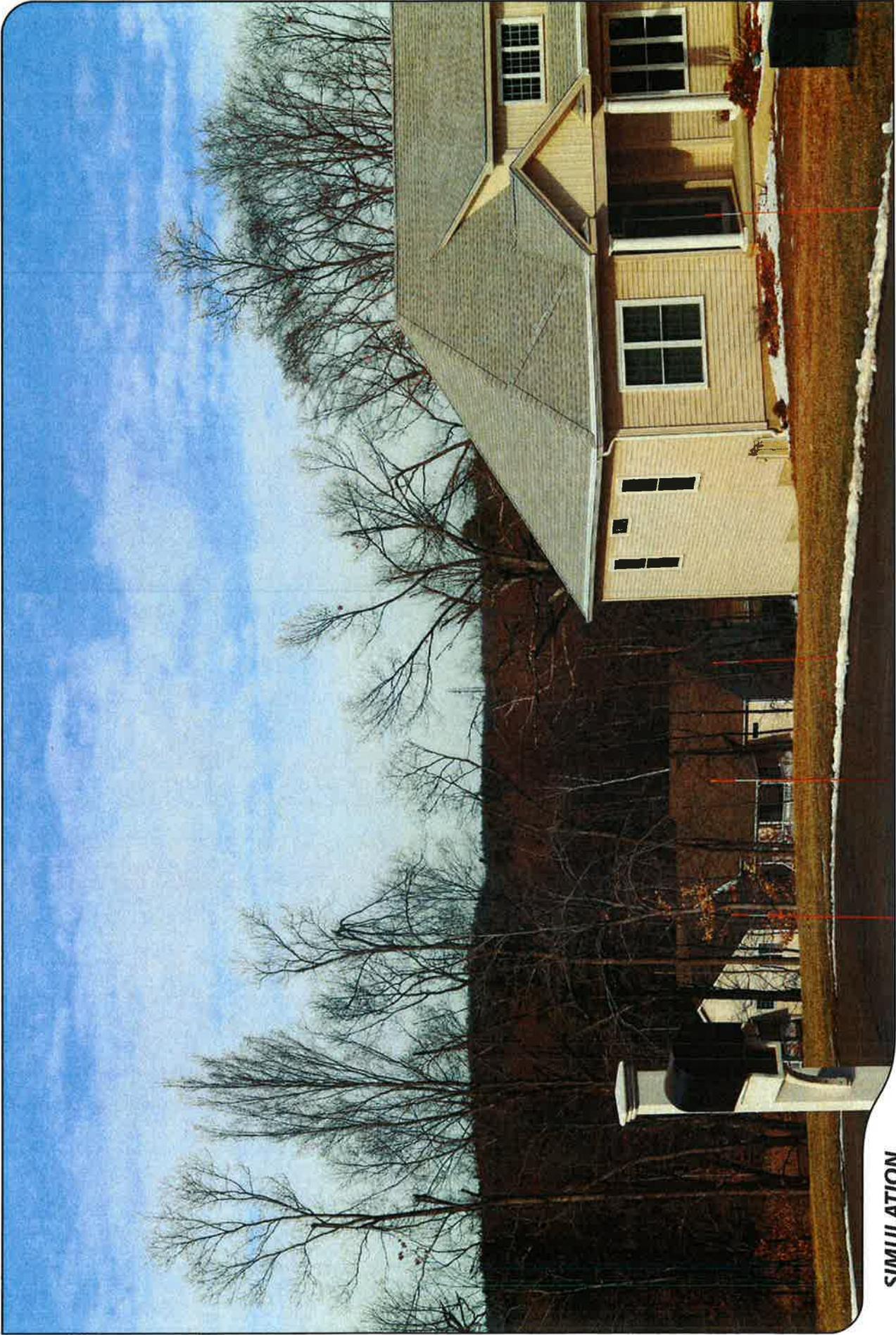
DISTANCE TO SITE

+/- 1.25 MILE

VISIBILITY

SEASONAL





SIMULATION

PHOTO

14

LOCATION

BEAUDRY LANE

ORIENTATION

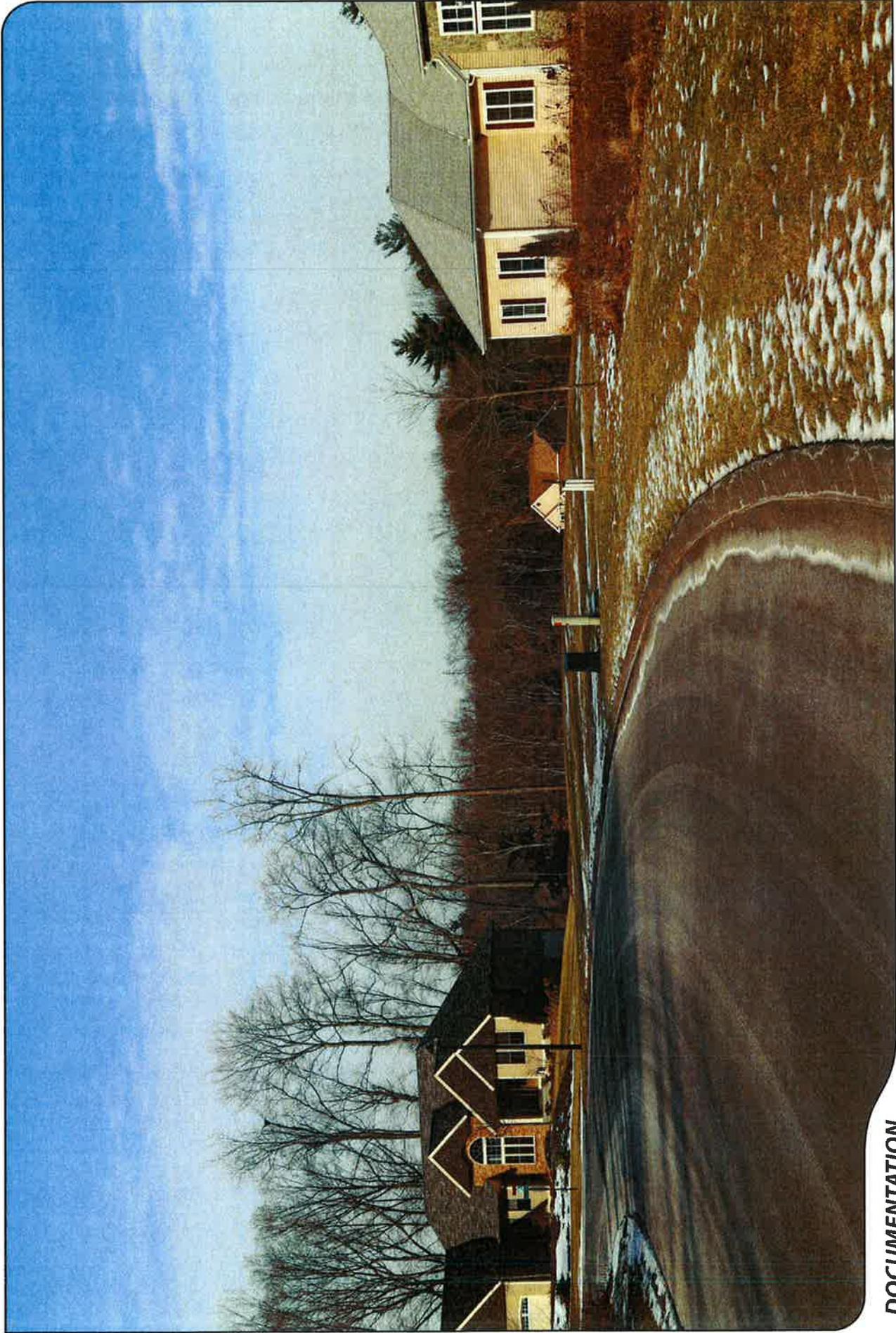
NORTHWEST

DISTANCE TO SITE

+/- 1.25 MILE

VISIBILITY

SEASONAL



DOCUMENTATION

PHOTO

15

LOCATION

BEAUDRY LANE

ORIENTATION

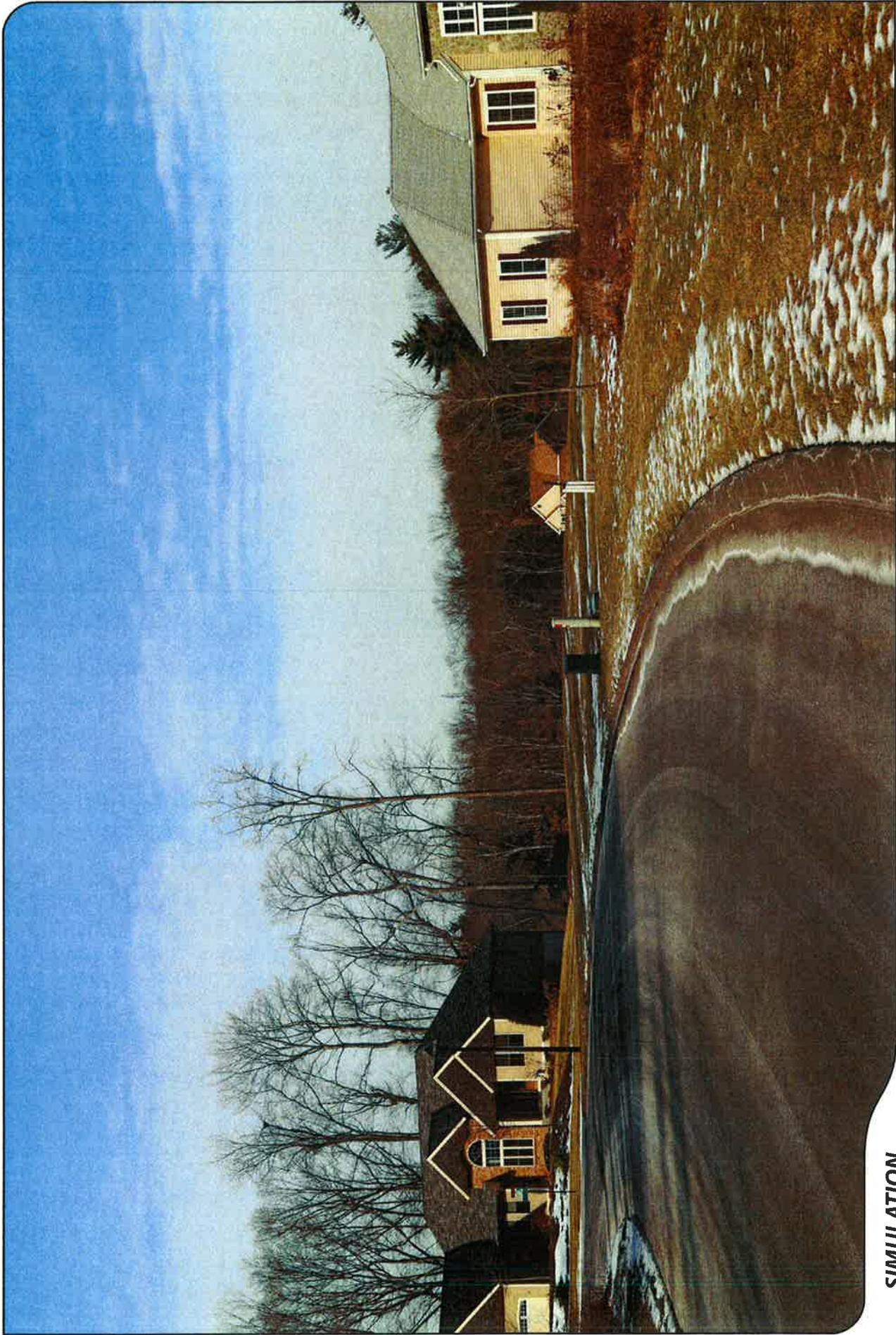
NORTHWEST

DISTANCE TO SITE

+/- 1.32 MILES

VISIBILITY

SEASONAL



SIMULATION

PHOTO

15

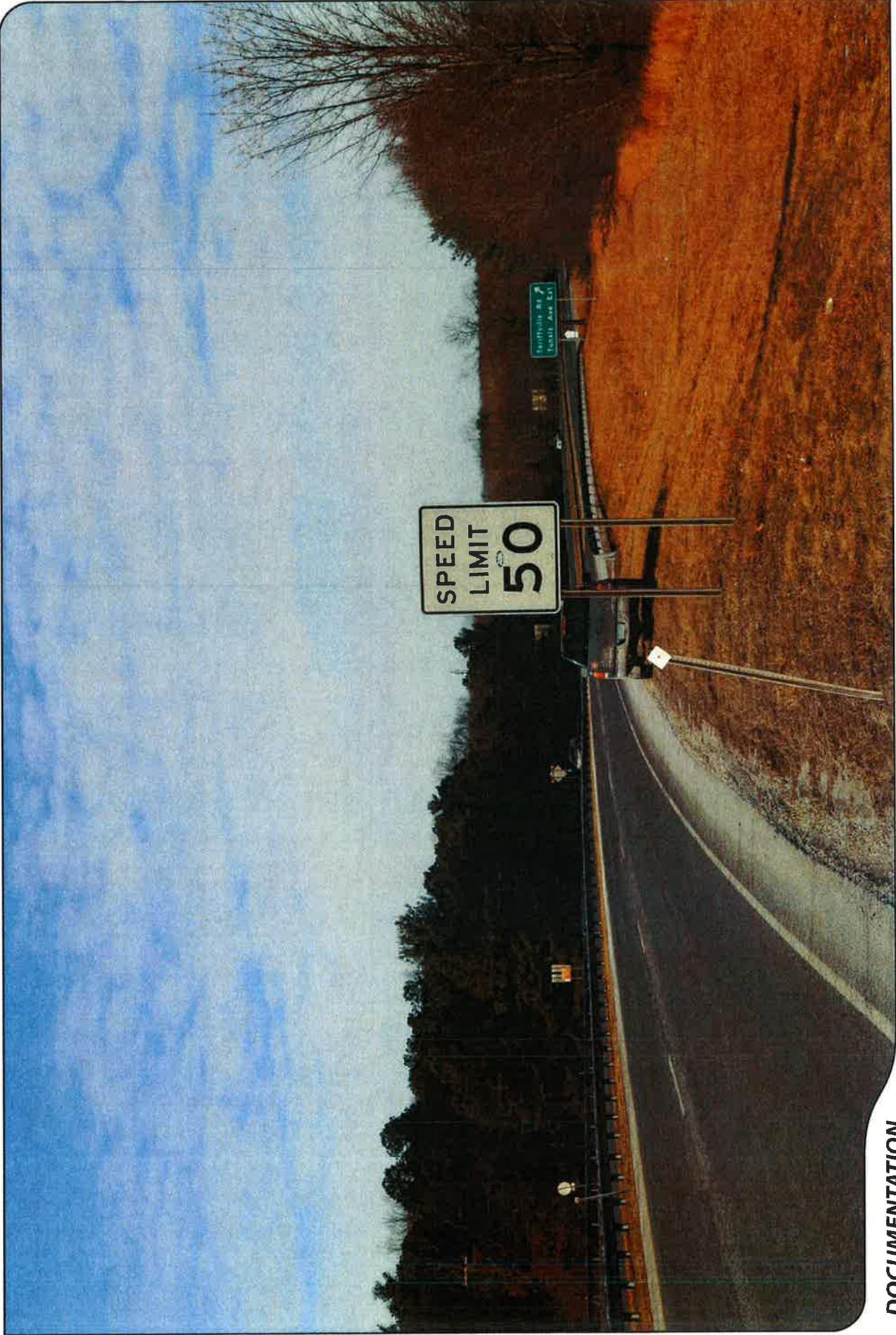
LOCATION
BEAUDRY LANE

ORIENTATION
NORTHWEST

DISTANCE TO SITE
+/- 1.32 MILES

VISIBILITY
SEASONAL





DOCUMENTATION

PHOTO

16

LOCATION

ROUTE 187

ORIENTATION

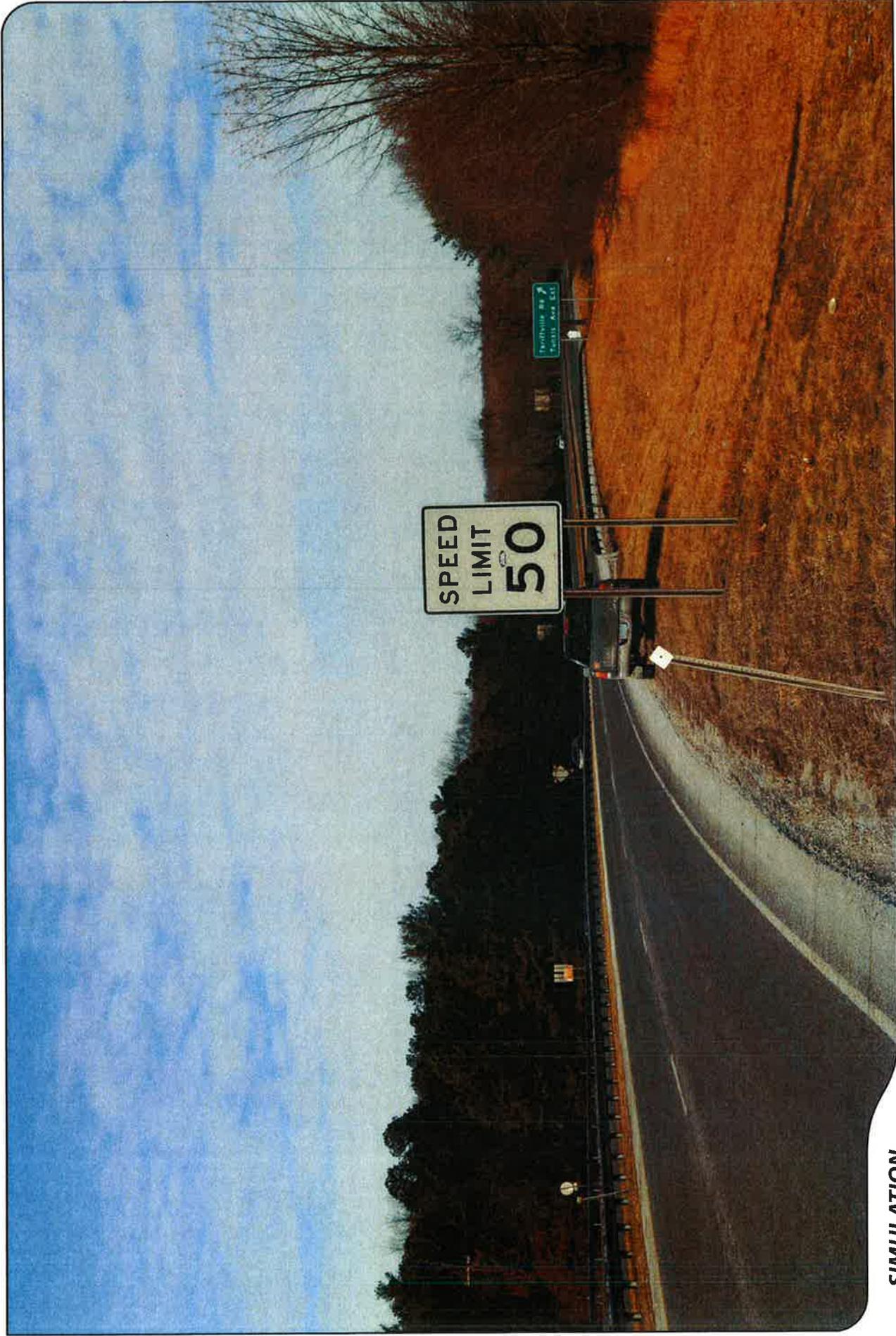
NORTHWEST

DISTANCE TO SITE

+/- 1.30 MILES

VISIBILITY

YEAR ROUND



SIMULATION

PHOTO

16

LOCATION

ROUTE 187

ORIENTATION

NORTHWEST

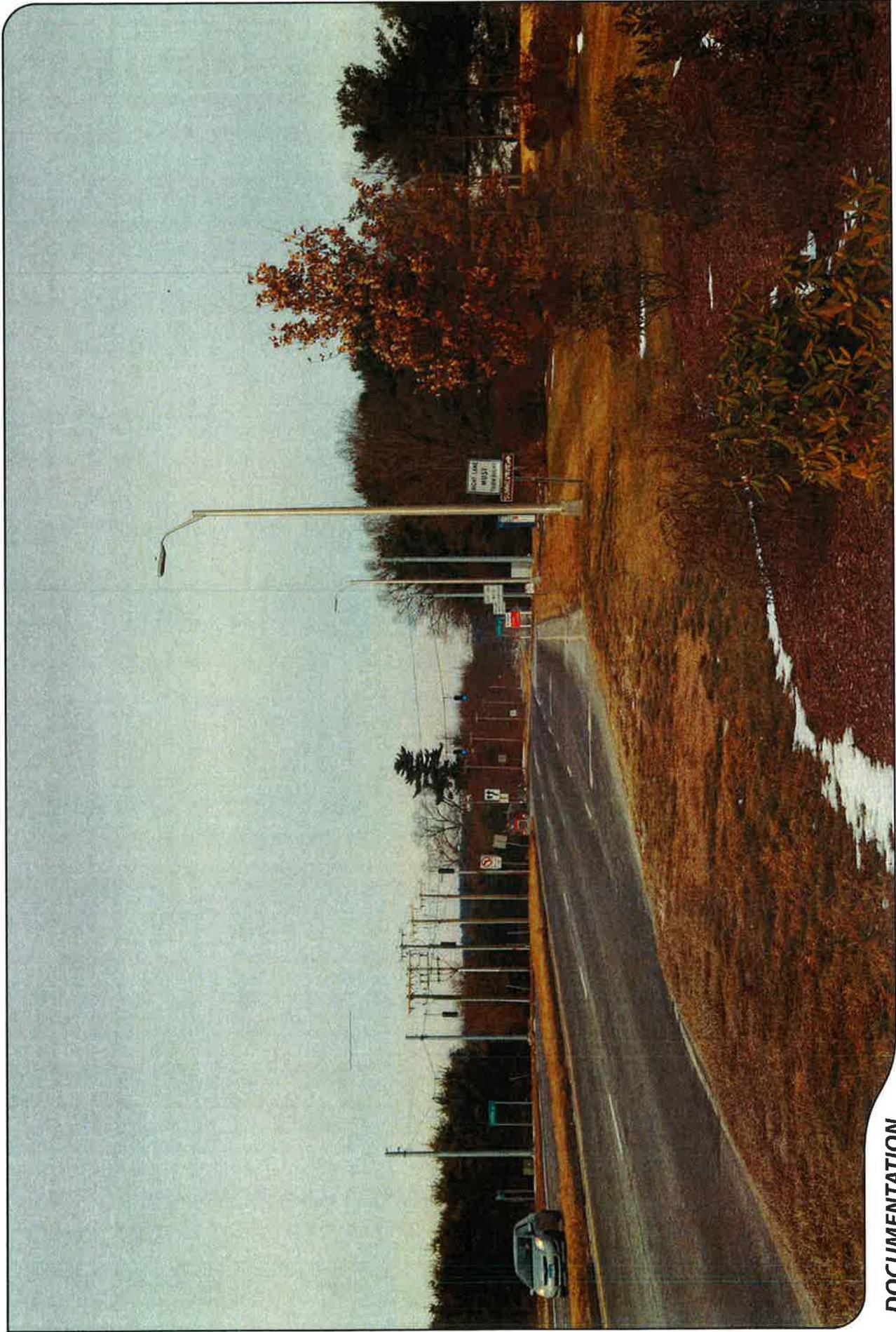
DISTANCE TO SITE

+/- 1.30 MILES

VISIBILITY

YEAR ROUND





DOCUMENTATION

PHOTO

17

LOCATION

ROUTE 187

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 2.10 MILES

VISIBILITY

YEAR ROUND



ATTACHMENT 7

Site Name: Tariffville Relo (Bloomfield)		General		Power		Density							
Tower Height: 180'													
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	PERMISS. EXP.	FRACTION MPE	Total					
*Cingular UMTS	1	500	155	0.0075	880	0.5867	1.28%						
*Cingular GSM	1	296	155	0.0044	880	0.5867	0.76%						
*Cingular GSM	1	427	155	0.0064	1900	1.0000	0.64%						
Verizon	11	404	155	0.0665	1970	1.0000	6.65%						
Verizon	9	383	155	0.0516	869	0.5793	8.91%						
Verizon	1	1750	155	0.0262	2145	1.0000	2.62%						
Verizon	1	1050	155	0.0157	698	0.4973	3.16%						
								24.0%					
* Source: Siting Council records reflect RF Emissions values for AT&T and T-Mobile at the antenna heights on the existing 180 foot tower													

ATTACHMENT 8



Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 2601 Meacham Boulevard
 Fort Worth, TX 76137

Aeronautical Study No.
 2013-ANE-745-OE
 Prior Study No.
 2005-ANE-356-OE

Issued Date: 09/26/2013

Telecom Manager
 Northeast Utilities Service Company
 PO Box 270
 Hartford, CT 06141-0270

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Antenna Tower Talcott Mountain Tower
 Location: Bloomfield, CT
 Latitude: 41-53-34.23N NAD 83
 Longitude: 72-45-55.80W
 Heights: 413 feet site elevation (SE)
 202 feet above ground level (AGL)
 615 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is marked/lighted in accordance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, paint/red lights - Chapters 3(Marked),4,5(Red),&12.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part I)
- Within 5 days after the construction reaches its greatest height (7460-2, Part II)

See attachment for additional condition(s) or information.

Any height exceeding 202 feet above ground level (615 feet above mean sea level), will result in a substantial adverse effect and would warrant a Determination of Hazard to Air Navigation.

This determination expires on 03/26/2015 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.

- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before October 26, 2013. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted in triplicate to the Manager, Airspace Regulations & ATC Procedures Group, Federal Aviation Administration, Airspace Regulations & ATC Procedures Group, 800 Independence Ave, SW, Room 423, Washington, DC 20591.

This determination becomes final on November 05, 2013 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. For any questions regarding your petition, please contact Airspace Regulations & ATC Procedures Group via telephone -- 202-267-8783 - or facsimile 202-267-9328.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

A copy of this determination will be forwarded to the Federal Communications Commission (FCC) because the structure is subject to their licensing authority.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact Cindy Whitten, at (816) 329-2528. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2013-ANE-745-OE.

Signature Control No: 191715402-198930174

(DNH)

John Page

Manager, Obstruction Evaluation Group

Attachment(s)

Additional Information

Frequency Data

Map(s)

cc: FCC

Additional information for ASN 2013-ANE-745-OE

The proposal was circularized on July 23, 2013, to all known aviation interests and to non-aeronautical interests that may be affected by the proposal. No objections were received.

Aeronautical study disclosed that the proposed structure alteration to add a ten (10) foot Top Mount to an existing Antenna Tower would have no effect on existing or proposed arrival, departure, or en route instrument flight rule (IFR) operations or procedures.

The proposed structure alteration would have no effect on any existing or proposed IFR minimum flight altitudes or minimum vectoring altitudes.

The proposed structure alteration would not penetrate those altitudes normally considered available to airmen for VFR en route flight. The proposed structure alteration would be located within the VFR Conical traffic pattern airspace. But, it will not conflict with airspace required to conduct normal VFR traffic pattern and/or visual approach operations at 4B9 or any other known public use or military airports.

The proposed structure alteration will be appropriately obstruction marked and/or lighted to make it more conspicuous to airmen flying in VFR weather conditions at night.

The cumulative impact of the proposed structure alteration, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposal affect the capacity of any known existing or planned public-use or military airport.

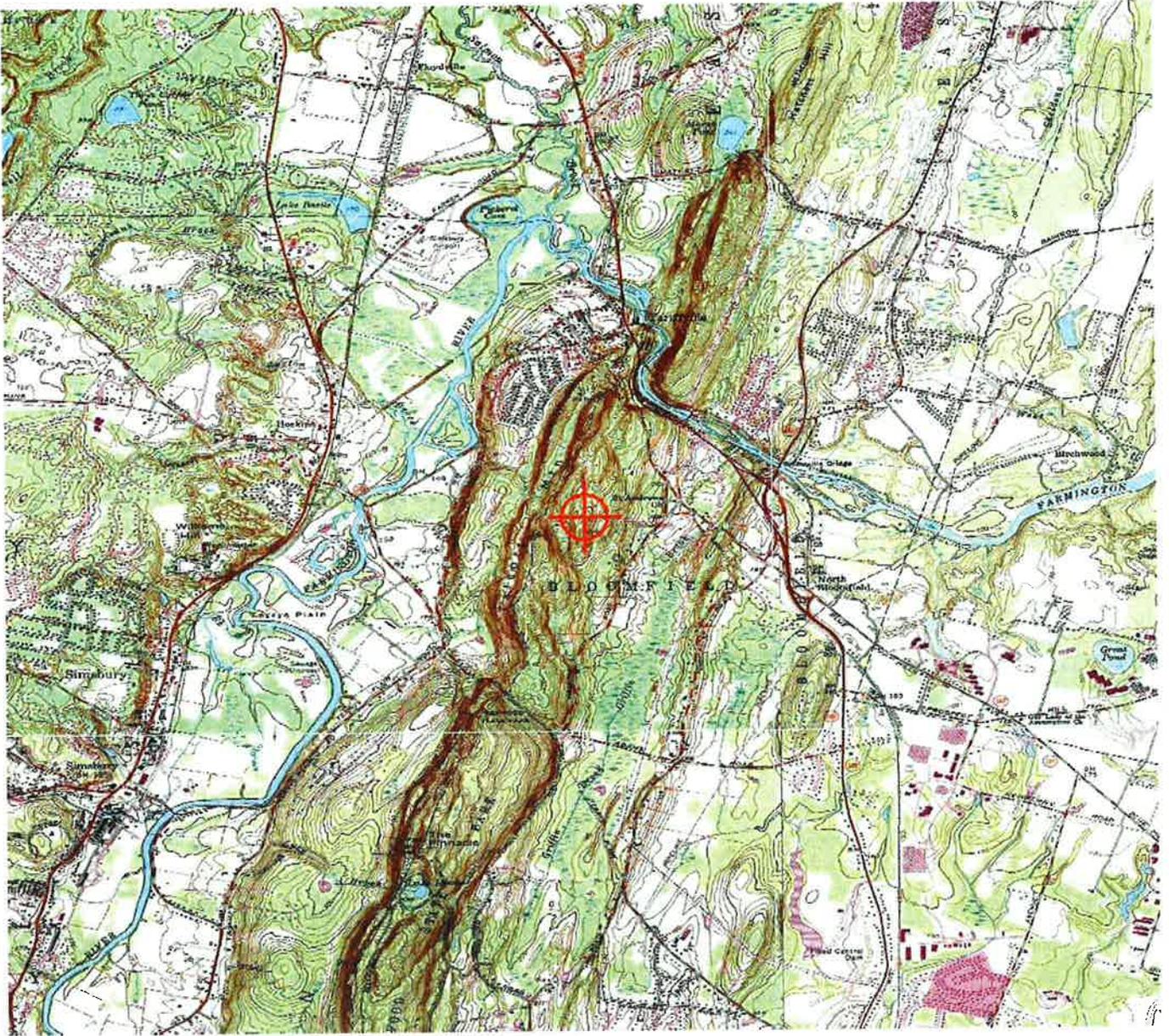
Therefore, it is determined that the proposed structure alteration would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation providing the conditions set forth in this determination are met.

The structure alteration does exceed 77.19(b) Conical Surface and VFR Surface by 120 feet as applied to the 4B9 airport.

Frequency Data for ASN 2013-ANE-745-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
154.4638	154.4638	MHz	990	W
173.3	173.3	MHz	120	W
173.325	173.325	MHz	120	W
6286.19	6286.19	MHz	61.7	dBm
6595	6595	MHz	65.6	dBm
6625	6625	MHz	65.9	dBm
6645	6645	MHz	66.8	dBm
6655	6655	MHz	66.3	dBm
6705	6705	MHz	54.4	dBm
11235	11235	MHz	54.4	dBm

TOPO Map for ASN 2013-ANE-745-OE



ATTACHMENT 9

July 28, 2014

Via Certified Mail, Return Receipt Requested

Sydney T. Schulman, Mayor
Town of Bloomfield
800 Bloomfield Avenue
P.O. Box 337
Bloomfield, CT 06002

**Re: Proposed Modifications to the Existing Connecticut Light and Power Company
Telecommunications Facility at St. Andrews Road, Bloomfield, Connecticut**

Dear Mr. Schulman:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to make certain modifications to the existing Connecticut Light and Power Company (“CL&P”) telecommunications facility off St. Andrews Road in Bloomfield. The existing tower is owned by CL&P and shared by CL&P, the Connecticut State Police, the Bloomfield Police Department, Cellco and AT&T.

Cellco intends to upgrade its existing wireless equipment at this site. To do so, however, Cellco will need to replace the existing 180-foot tower with a new 185-foot tower. The new tower will be located approximately 75 feet to the southwest of the existing tower, at a ground elevation that is five (5) feet lower than the existing tower site. The additional five (5) feet in tower height will allow all existing antennas to remain at their current height, above mean sea level (AMSL).

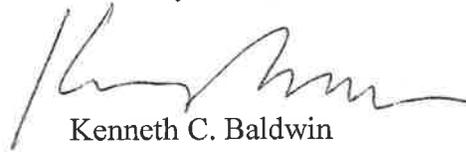
A copy of Cellco’s Petition is attached for your review. Landowners whose property abuts the CL&P parcel were also sent notice of this filing along with a copy of the Petition’s project plans.

Robinson+Cole

Sydney T. Schulman
July 28, 2014
Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,



Kenneth C. Baldwin

KCB/kmd
Attachment
Copy to:
Sandy M. Carter

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts

July 28, 2014

Via Certified Mail, Return Receipt Requested

Philip K. Schenck, Jr.
Town Manager
Town of Bloomfield
800 Bloomfield Avenue
P.O. Box 337
Bloomfield, CT 06002

**Re: Proposed Modifications to the Existing Connecticut Light and Power Company
Telecommunications Facility at St. Andrews Road, Bloomfield, Connecticut**

Dear Mr. Schenck:

This firm represents Cellco Partnership d/b/a Verizon Wireless ("Cellco"). Today, Cellco filed a Petition for Declaratory Ruling ("Petition") with the Connecticut Siting Council ("Council") seeking approval to make certain modifications to the existing Connecticut Light and Power Company ("CL&P") telecommunications facility off St. Andrews Road in Bloomfield. The existing tower is owned by CL&P and shared by CL&P, the Connecticut State Police, the Bloomfield Police Department, Cellco and AT&T.

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A copy of Cellco's Petition is attached for your review. Landowners whose property abuts the CL&P parcel were also sent notice of this filing along with a copy of the Petition's project plans.

12700432-v1

Robinson+Cole

Philip K. Schenck, Jr.
July 28, 2014
Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,



Kenneth C. Baldwin

KCB/kmd
Attachment
Copy to:
Sandy M. Carter

July 28, 2014

Via Certified Mail, Return Receipt Requested

Mary Glassman
First Selectman
Town of Simsbury
933 Hopmeadow Street
Simsbury, CT 06070

Re: **Proposed Modifications to the Existing Connecticut Light and Power Company
Telecommunications Facility at St. Andrews Road, Bloomfield, Connecticut**

Dear Ms. Glassman:

This firm represents Cellco Partnership d/b/a Verizon Wireless ("Cellco"). Today, Cellco filed a Petition for Declaratory Ruling ("Petition") with the Connecticut Siting Council ("Council") seeking approval to make certain modifications to the existing Connecticut Light and Power Company ("CL&P") telecommunications facility off St. Andrews Road in Bloomfield. The existing tower is owned by CL&P and shared by CL&P, the Connecticut State Police, the Bloomfield Police Department, Cellco and AT&T.

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A copy of Cellco's Petition is attached for your review. Landowners whose property abuts the CL&P parcel were also sent notice of this filing along with a copy of the Petition's project plans. You are receiving this notice because the property where the facility is located is within 2,500 feet of the Simsbury town line.

Robinson+Cole

Mary Glassman
July 28, 2014
Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kenneth C. Baldwin', written over a light blue horizontal line.

Kenneth C. Baldwin

KCB/kmd
Attachment
Copy to:
Sandy M. Carter

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts

July 28, 2014

Via Certified Mail, Return Receipt Requested

«Name_and_Address»

Re: **Notice Of Intent To File A Petition for Declaratory Ruling With The Connecticut Siting Council For Modifications To The Existing Connecticut Light and Power Company Telecommunications Facility At St. Andrews Road, Bloomfield, Connecticut**

Dear «Salutation»:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to modify the existing Connecticut Light and Power Company (“CL&P”) telecommunications facility off St. Andrews Road in Bloomfield. To accommodate upgrades to its existing wireless facility, Cellco plans to replace the existing 180-foot tower with a new 185-foot tower. The new tower will be located approximately 75 feet southwest of the existing tower at a ground elevation five (5) feet lower than the existing tower site. The additional five (5) feet in tower height will allow all existing antennas to remain at their current height, above mean sea level.

This notice is being sent to you because you are listed as an owner of land that abuts the CL&P parcel. If you have any questions regarding the Petition, the Council’s process for reviewing the proposed modifications or the details of the filing itself, please feel free to contact me at the number listed above. You may also contact the Council directly at 860-827-2935.

July 28, 2014
Page 2

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

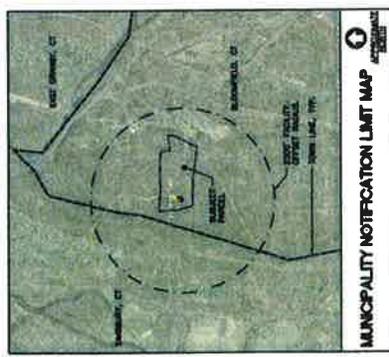
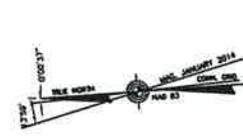
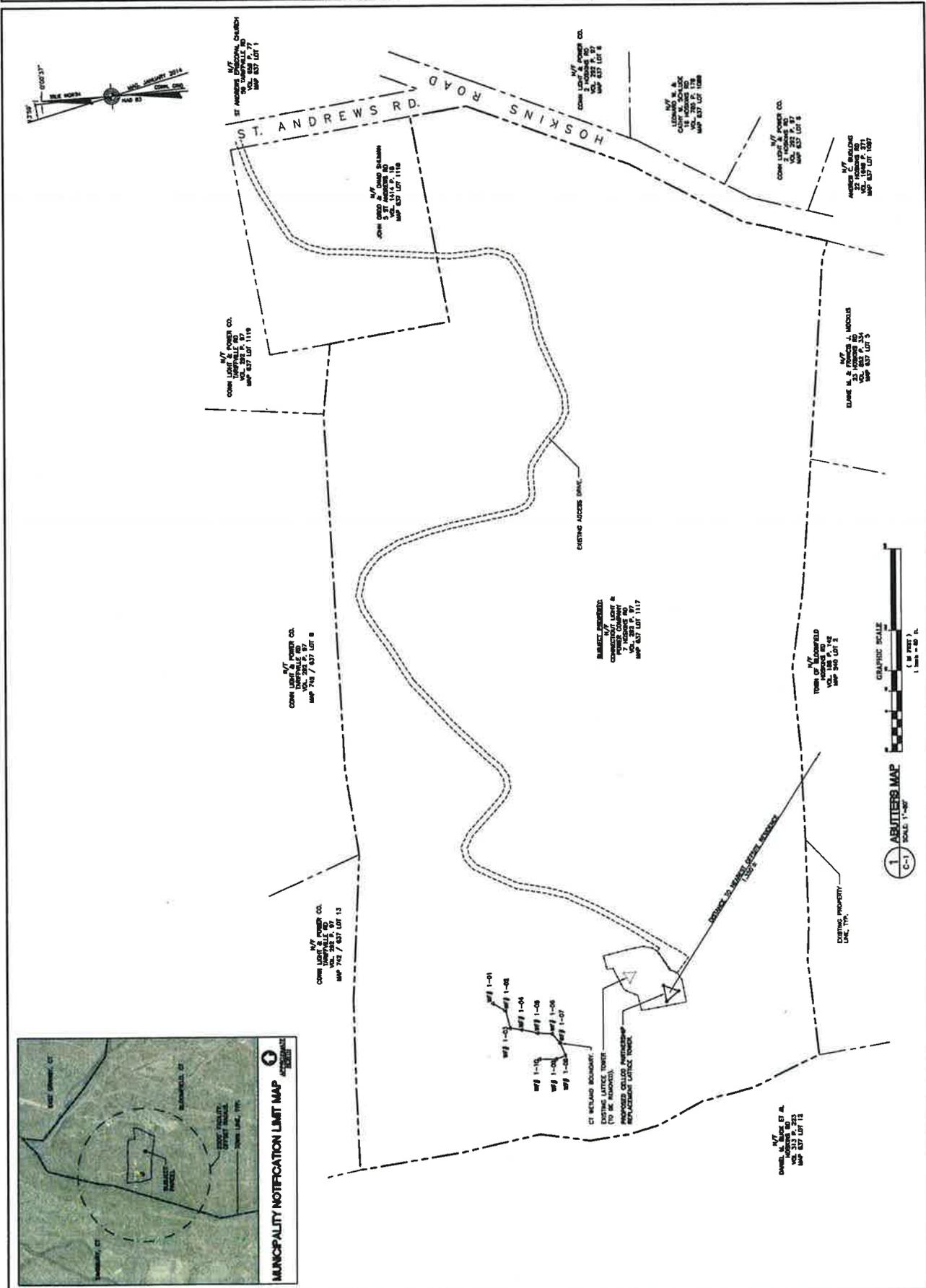
Kenneth C. Baldwin

Attachment

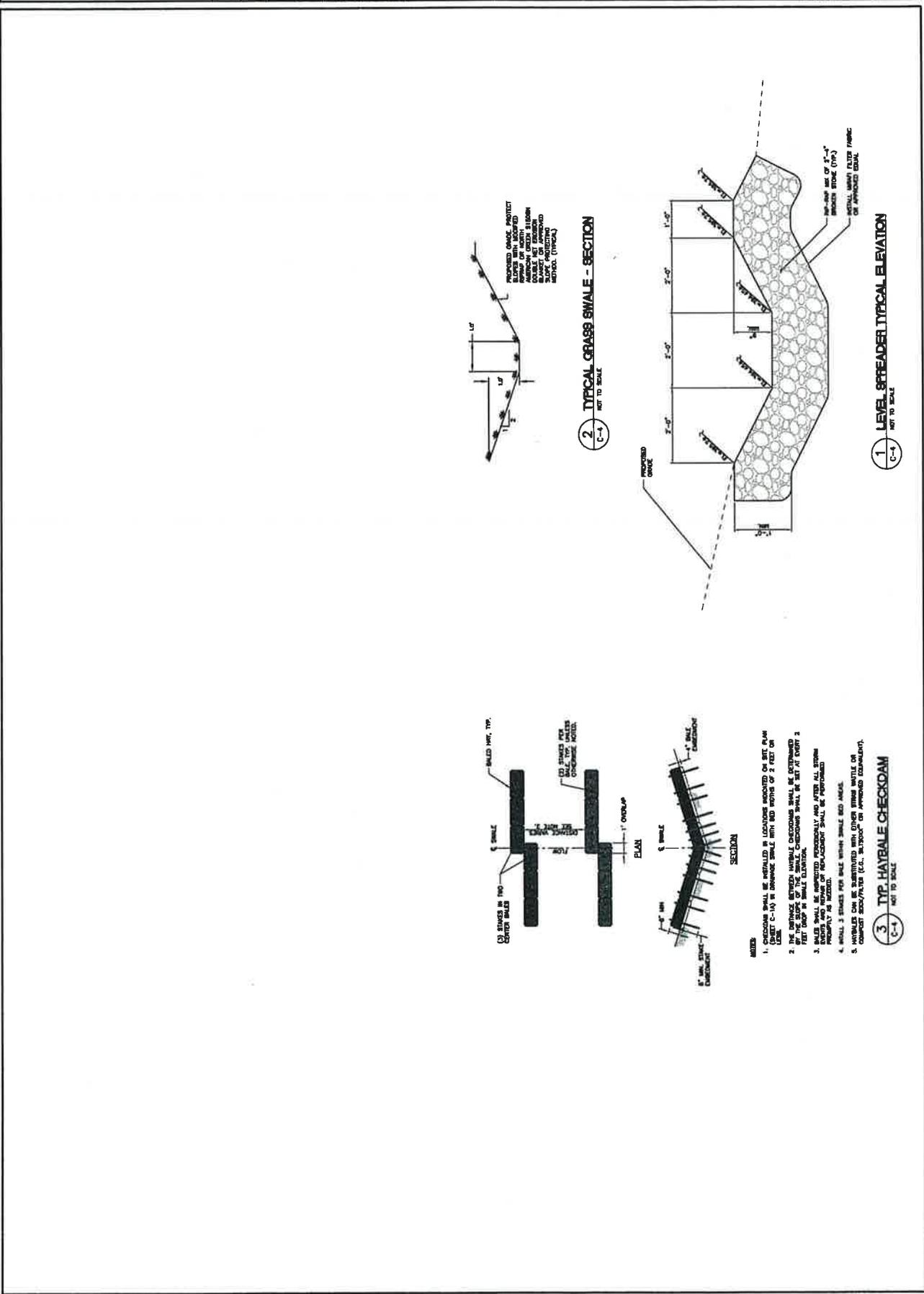
Copy to:

Sandy M. Carter

Colco Partnership d/b/a Verizon Wireless TARIFFVILLE FLD. ST. ANDREWS ROAD BLOOMFIELD, CT 06002		www.verizon.com 800-942-6229 860-254-8800 860-254-8800 860-254-8800	Cable Partnership d/b/a Verizon Wireless
DATE: 02/27/14 SCALE: AS SHOWN JOB NO.: 13030000	ABUTTERS MAP C-1 SHEET NO. 2 OF 2	REVISIONS	
NO. DATE BY DESCRIPTION 1 02/27/14 JMS/MSD REVISION FOR CAC-CADIT REVIEW 2 02/27/14 JMS/MSD REVISION FOR CAC - STREET MARKS ADDED	PARTITION DEDUCTED BY	CADD FILE:	



CELCOO PARTNERSHIP d/b/a Verizon Wireless ST. ANDREWS ROAD BLOOMFIELD, CT 06002 TARTRVILLE REL. WIRELESS COMMUNICATIONS FACILITY		www.Celcoo.com 860.484.4000 524 North Park Road Bloomfield, CT 06002 Celcoo Partnership d/b/a Verizon Wireless
DATE: 07/27/14 SCALE: AS SHOWN JOB NO.: 1303200	DRAWING NO.: C-4 SHEET NO.: 1 OF 1	PROJECT: 1303200 SHEET: C-4 DATE: 07/27/14 DRAWN BY: JAC CHECKED BY: JAC APPROVED BY: JAC



NOT TO SCALE

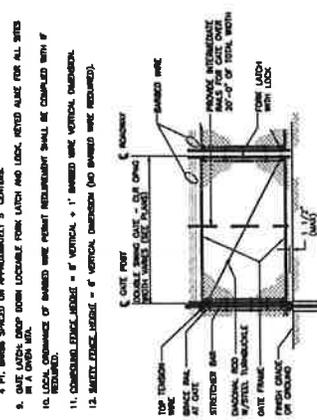
NOT TO SCALE

NOT TO SCALE

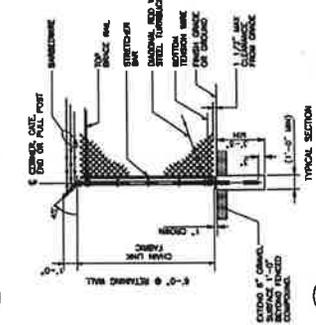
NO.	DATE	REVISION
1	02/20/14	ISSUED FOR CONSTRUCTION
2	02/20/14	ISSUED FOR CONSTRUCTION
3	02/20/14	ISSUED FOR CONSTRUCTION
4	02/20/14	ISSUED FOR CONSTRUCTION
5	02/20/14	ISSUED FOR CONSTRUCTION
6	02/20/14	ISSUED FOR CONSTRUCTION
7	02/20/14	ISSUED FOR CONSTRUCTION
8	02/20/14	ISSUED FOR CONSTRUCTION
9	02/20/14	ISSUED FOR CONSTRUCTION
10	02/20/14	ISSUED FOR CONSTRUCTION
11	02/20/14	ISSUED FOR CONSTRUCTION
12	02/20/14	ISSUED FOR CONSTRUCTION
13	02/20/14	ISSUED FOR CONSTRUCTION
14	02/20/14	ISSUED FOR CONSTRUCTION
15	02/20/14	ISSUED FOR CONSTRUCTION
16	02/20/14	ISSUED FOR CONSTRUCTION
17	02/20/14	ISSUED FOR CONSTRUCTION
18	02/20/14	ISSUED FOR CONSTRUCTION
19	02/20/14	ISSUED FOR CONSTRUCTION
20	02/20/14	ISSUED FOR CONSTRUCTION

WOMEN WIRE FENCE NOTES

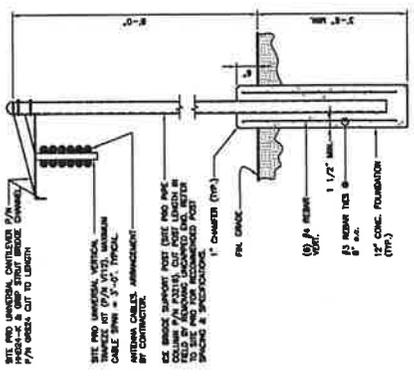
1. TOP RAIL & BRACE RAIL: 1 1/2" x 1/2" SCHEDULE 40 PIPE PER ASTM-F1554.
2. GATE FRAME: 2" x 4" SCHEDULE 40 PIPE PER ASTM-F1554.
3. GATE POST: 4" DIA. CONCRETE SET IN 12" DIA. HOLES, CONFORMING TO ASTM-A36.
4. TOP RAIL: 1 1/2" x 1/2" SCHEDULE 40 PIPE PER ASTM-F1554.
5. BRACE RAIL: 1 1/2" x 1/2" SCHEDULE 40 PIPE PER ASTM-F1554.
6. WIRE: MINIMUM 11 GA. GALVANIZED STEEL AT POSTS AND SMALL SWAY OF POSTS. THE END AT TENSION SIDE OF POST MUST BE SPACED 24" MINIMUM.
7. TENSION WIRE: 7 GA. GALVANIZED STEEL.
8. WIRE: WIRE DOUBLE STRUNG 15"-17" O.C. BETWEEN POSTS.
9. GATE LATCH: MUST BE LOCKABLE FROM LATCH AND LOCK. RETED GATE FOR ALL SIZES IN A GIVEN SET.
10. LOCAL CONTRACTOR OF WIRED WIRE POINT REQUIREMENT SHALL BE COMPLIANT WITH IF REQUIRED.
11. CONCRETE: CONCRETE: 4" VERTICAL x 1" HORIZONTAL (NO SWAYED WIRE REQUIRED).
12. BRACE: BRACE: 4" VERTICAL x 1" HORIZONTAL (NO SWAYED WIRE REQUIRED).



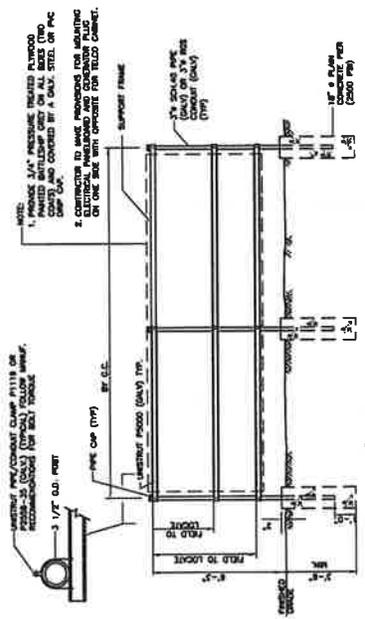
1A WOMEN WIRE SWING GATE-DOUBLE
C-5 NOT TO SCALE



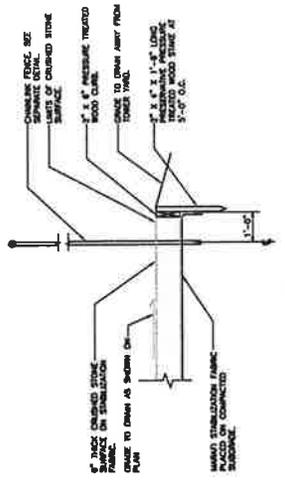
1 WOMEN WIRE FENCE DETAIL
C-5 NOT TO SCALE



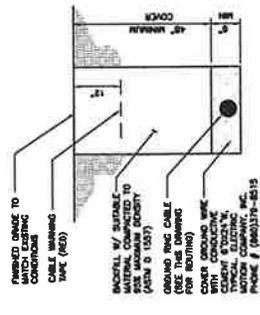
3 ICE BRIDGE DETAIL
C-5 NOT TO SCALE



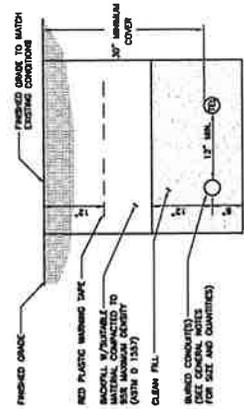
2 UTILITY SUPPORT FRAME (UTF)
C-5 NOT TO SCALE



6 COMPOUND SURFACING DETAIL
C-5 NOT TO SCALE



5 TYPICAL BURIAL GROUND CABLE DETAIL
C-5 NOT TO SCALE



4 TYPICAL ELECTRICAL UTE TRENCH DETAIL
C-5 NOT TO SCALE

NOTES:

1. THE CLEAN FILL SHALL PASS THROUGH A 3/8" MESH SCREEN AND BE COMPACTED TO 95% RELATIVE DENSITY. ALL LOCAL SOILS AND OTHER MATERIALS SHALL BE PROVED TO BE AT LEAST 95% RELATIVE DENSITY. LOCAL SOILS OR STONES LARGER THAN 2" IN MAXIMUM DIMENSION.
2. WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED, CONTRACTOR SHALL MAKE DE AND PROTECT EXISTING UTILITIES.

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

ABUTTERS' LIST

**ST. ANDREWS ROAD
BLOOMFIELD, CONNECTICUT**

	<u>Map/Lot</u>	<u>Owner and Mailing Address</u>	<u>Property Address</u>
1.	742/637 13	Connecticut Light & Power Co. P.O. Box 2370 Hartford, CT 06101	Tariffville Road
2.	742/637 8	Connecticut Light & Power Co. P.O. Box 2370 Hartford, CT 06101	Tariffville Road
3.	637/1119	Connecticut Light & Power Co. P.O. Box 2370 Hartford, CT 06101	St. Andrews Road
4.	742/9-10	State of Connecticut Dept. of Transportation 2800 Berlin Turnpike Newington, CT 06131	Tariffville Road
5.	25/9	Charles R. and Marion C. McComb 75 Tariffville Road Bloomfield, CT 06002	75 Tariffville Road
6.	742/7	Cristian and Karina Gonzales 74 Tariffville Road Bloomfield, CT 06002	74 Tariffville Road
7.	637/1	St. Andrews Episcopal Church c/o Cowles 59 Tariffville Road Bloomfield, CT 06002	59 Tariffville Road
8.	637/1118	John Groo and David Shuman 5 St. Andrews Road Bloomfield, CT 06002	5 St. Andrews Road
9.	637/6	Connecticut Light & Power Co. P.O. Box 2370 Hartford, CT 06101	2 Hoskins Road
10.	637/1089	Leonard W. and Cathy M. Schlude 16 Hoskins Road Bloomfield, CT 06002	16 Hoskins Road

	<u>Map/Lot</u>	<u>Owner and Mailing Address</u>	<u>Property Address</u>
11.	637/1087	Andrew C. Budlong 22 Hoskins Road Bloomfield, CT 06002	22 Hoskins Road
12.	637/5	Francis J. and Elaine M. Mocklis 23 Hoskins Road Bloomfield, CT 06002	23 Hoskins Road
13.	540/2	Town of Bloomfield 800 Bloomfield Avenue Bloomfield, CT 06002	Hoskins Road
14.	637/12	Daniel M. Buck, Et Al. 18 Shoddy Mill Road Glastonbury, CT 06033-3515	Hoskins Road