STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
A PETITION OF CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS FOR A DECLARATORY RULING ON THE NEED TO OBTAIN A SITING COUNCIL CERTIFICATE FOR THE REPLACEMENT OF AN EXISTING TELECOMMUNICATIONS TOWER AT 353 PUMPKIN HILL ROAD, ASHFORD, CONNECTICUT	:	PETITION NO. ____
	:	NOVEMBER 25, 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 300-foot guyed-lattice tower and with a 240-foot self-supporting lattice tower on an approximately ten (10) acre parcel at 353 Pumpkin Hill Road in Ashford, Connecticut (the "Property"). For the purposes of this Petition, Cellco identifies this facility as its "Ashford" cell site.

II. Factual Background

On June 18, 1984, the Council approved Docket No. 43, an application of Tele-Media Company, to construct a 300-foot guyed lattice tower on the Property. The Docket No. 43 Certificate was transferred from Charter Communications, a successor to Tele-Media Company, to Cellco on October 27, 2013. The existing tower is currently shared by Cellco, with antennas at

the 240-foot level and AT&T, with antennas at the 197.5-foot level. The Tolland County Mutual Aid Fire Service, Inc. ("TCMA") also maintains antennas at the 224.5-foot and 227-foot levels on the existing tower. Several small equipment shelters, generators and fuel tanks are currently located within a fenced compound area. Access to the existing tower compound extends from Pumpkin Hill Road, along an existing gravel access driveway, a distance of approximately 950 feet to the tower site. (*See* Project Plans included in Attachment 1).

A. Proposed Facility Modifications

Cellco currently maintains antennas at the 240-foot level on the existing 300-foot Pumpkin Hill Road tower. The Ashford cell site provides wireless service in Cellco's 700 MHz and 850 MHz frequency ranges along portions of Pumpkin Hill Road, Routes 198 and 89 and local roads in the area, and interacts with the Ashford North, Eastford and Ashford West cell sites. Coverage plots showing Cellco's existing wireless service in the area, including service from the existing Ashford site are included in Attachment 2.[1]

In an effort to improve wireless service in the area, Cellco intends to make certain modifications to its existing Ashford facility. These modifications will involve the replacement of certain antennas, the installation of remote radio heads (RRHs) and fiber optic cables. The existing guyed-lattice tower, however, is not structurally capable of supporting Cellco's proposed facility modifications. Structural reinforcement of the existing tower was explored but was determined to be more costly than simply replacing the existing tower altogether. Cellco has, therefore, decided that it will remove the 300-foot guyed lattice tower and replace it with a new 240-foot self-supporting lattice tower. The new tower would be located within the existing

[1] The "Proposed" coverage maps also included in Attachment 2 are identical to the existing maps but depict the coverage footprint for the Ashford replacement tower in a lighter shade of purple.

facility compound, approximately 88 feet to the southwest of the existing tower. The new tower will be designed to accommodate all existing carriers sharing the tower, as well as Cellco's proposed equipment upgrades. The new tower will also be designed with excess structural capacity so that new facilities, or further modifications to existing facilities, can be accommodated. Cellco will continue to own the replacement tower. After the new tower is constructed and all existing equipment is relocated onto the new structure, the existing guyed-lattice tower will be removed.

If the replacement tower is approved, Cellco will install twelve (12) antennas and six (6) remote radio heads (RRHs) at the 240-foot level on the new lattice tower. Specifications for Cellco's new antennas and RRHs are included in Attachment 3. Cellco also plans to remove the existing Charter Communications shelter and install a new 12' x 30' shelter to the east of the new tower to house its radio equipment and a diesel-fueled back-up generator. Once the new shelter is in place and the new cell site is operational, Cellco will remove its existing shelter and pad-mounted generator. AT&T and TCMA antennas will be relocated onto the replacement tower at the same antenna height that they maintain today.

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 construction of a 240-foot self-supporting lattice tower, the installation of new equipment shelters, the removal of certain shelters, generators and equipment and the removal of the existing 300-foot guyed-lattice tower will not involve a significant alteration in the physical or environmental characteristics of the Property or the surrounding area. With the exception of guy anchors, all construction activity associated with the proposed facility modifications will remain within the limits of the existing fenced and gravel compound area. (*See* Attachment 2, Plan Sheet C-1A). Vehicular access and utility service to the modified facility compound will not change.

2. Wetlands Investigation

Dean Gustafson, a Professional Soil Scientist with All Points Technology Corporation ("APT") has completed an evaluation of the Property and has determined that there will be no direct wetland impacts resulting from construction activity occurring within the existing fenced compound on the Property. (*See* Wetlands Investigation included in Attachment 4). Further, Cellco has committed, as a part of the Ashford tower replacement project, to complete certain wetlands restoration work in wetland area #1, in the area around the existing tower's western guy anchor. Details of the wetland restoration work to be completed are included on Plan Sheet C-1.2 – Attachment 1. As such, APT concludes that the proposed tower replacement project described herein will not have an adverse impact on wetland resources.

3. Avian Study and Evaluation

According to an Avian Resources Evaluation prepared by APT, the Ashford cell site is not proximate to an Important Bird Area or any other significant Avian Resource areas and

would generally comply with the USFWS guidelines for minimizing the potential to adversely impact migratory birds. The Avian Resources Evaluation is included in Attachment 5.

4. 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 prepare a Visibility Analysis to assess the overall visual impact of the existing 300-foot guyed-lattice tower and the new 240-foot self-supporting lattice replacement tower described in this Petition. A copy of the APT Visibility Analysis is included in Attachment 6.

The APT report concludes that the viewshed area of the replacement tower would be slightly smaller than that of the existing 300-foot tall tower. The reduction in tower height of 60 feet will also result in a substantial (favorable) change to the character of many existing views and would not result in any new views of the structure. Due to their height, both the existing tower and the replacement tower will need to be lit in accordance with FAA requirements.

5. 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 General Power Density table confirming that the RF emissions from Cellco's modified installation will fall well below the FCC standard.

6. FAA Summary Report

Included in Attachment 8 of this Petition is a Federal Airways & Airspace Summary Report for the 240-foot replacement tower at the Property. Because the height of the new tower exceeds 200 feet, information regarding the new 240-foot replacement tower will need to be filed

with the FAA and will be marked lit in accordance with FAA guidelines.

B. Notice to the First Selectman, Property Owner and Abutting Landowners

On November 25, 2014, copies of this Petition were sent to Ashford's First Selectman, Michael J. Zambo, Easton's First Selectman Adam Dunsby and Irene D. Bunte, the Property owner. The Pumpkin Hill Road tower site is located within 2500 feet of the Ashford/Easton town line. Included in Attachment 9 are copies of the letters sent to Mr. Zambo and Mr. Dunsby and Ms. Bunte.

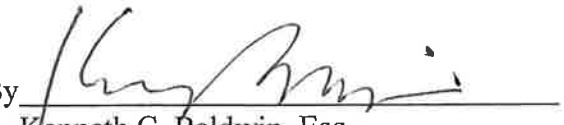
Notice of Cellco's intent to file this Petition together with a copy of the project plans was also sent to property owners whose land abuts the Property. A sample abutter's notice letter with attachments, and the list of those abutting landowners who were sent notice of the filing of the Petition is included in Attachment 10.

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 installation of the replacement tower at the Property and the removal of the existing 300-foot guyed-lattice tower, 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

Cellco Partnership

d.b.a. verizon wireless

WIRELESS COMMUNICATIONS FACILITY

ASHFORD REPLACEMENT TOWER

353 PUMPKIN HILL ROAD

ASHFORD, CT 06278

SITE DIRECTIONS

FROM: 99 EAST RIVER DRIVE, EAST HARTFORD, CONNECTICUT **TO:** 353 PUMPKIN HILL ROAD, ASHFORD, CONNECTICUT

1.	HEAD EAST ON E RIVER DR	253 FT.
2.	TURN LEFT ONTO THE CT-2 E RAMP TO NORWICH	0.2 MI.
3.	MERGE ONTO I-84 E	20.7 MI.
4.	TAKE EXIT 69 FOR CONNECTICUT 74 TOWARDS U.S. 44/WILLINGTON/PUTNAM	0.3 MI.
5.	TURN RIGHT ONTO CT-74 E	7.5 MI.
6.	TURN LEFT ONTO US-44 E	3.1 MI.
7.	TURN RIGHT ONTO PUMPKIN HILL DRIVE, DESTINATION WILL BE ON THE LEFT	1.7 MI.

GENERAL NOTES

1. PROPOSED ANTENNA LOCATIONS AND HEIGHTS PROVIDED BY CELLCO PARTNERSHIP.

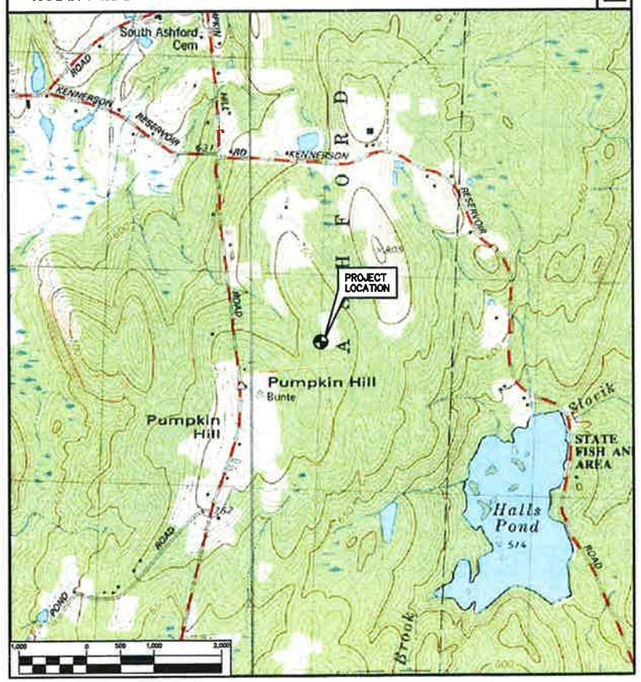
SITE INFORMATION

THE SCOPE OF WORK SHALL INCLUDE:

1. THE INSTALLATION OF A PROPOSED ±240' TALL SELF-SUPPORTING LATTICE TOWER TO REPLACE AN EXISTING ±300' TALL GUYED TOWER TO BE REMOVED.
2. A TOTAL OF (12) DIRECTIONAL PANEL ANTENNAS ARE PROPOSED TO BE MOUNTED AT A CENTERLINE ELEVATION OF 240'-0"± A.G.L.
3. SITE ACCESS IS VIA AN EXISTING 1,000'± GRAVEL ACCESS DRIVE OFF OF PUMPKIN ROAD.
4. ELECTRIC AND TELCO UTILITIES SHALL BE ROUTED UNDERGROUND TO THE PROPOSED EQUIPMENT SHELTER FROM EXISTING DEMARCS LOCATED WITHIN OR ADJACENT TO THE FENCED COMPOUND. FINAL ROUTING TO BE DETERMINED AT THE CONSTRUCTION DOCUMENT PHASE OF THE PROJECT.
5. THE PROPOSED WIRELESS FACILITY INSTALLATION WILL BE DESIGNED IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2009 CONNECTICUT SUPPLEMENT.
6. PARCEL WITHIN 2500' OF ASHFORD-EASTFORD TOWN BOUNDARY.

VICINITY MAP

SCALE: 1" = 1000'



PROJECT SUMMARY

SITE NAME:	ASHFORD, CT
SITE ADDRESS:	353 PUMPKIN HILL ROAD ASHFORD, CT 06278
PROPERTY OWNER:	IRENE D. BUNTE 353 PUMPKIN HILL ROAD ASHFORD, CT 06278
LESSEE/TENANT:	CELLCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
CONTACT PERSON:	SANDY CARTER CELLCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
TOWER COORDINATES:	LATITUDE 41°-50'-52.375" LONGITUDE 72°-07'-17.816" PROPOSED GROUND ELEVATION: 761.2'± A.M.S.L. COORDINATES AND GROUND ELEVATION BASED ON FAA 1-A SURVEY CERTIFICATION AS PREPARED FOR VERIZON WIRELESS, BY MARTINEZ COUCH AND ASSOCIATES DATED SEPTEMBER 05, 2014, REVISED SEPTEMBER 30, 2014.

SHEET INDEX

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C-4	SHELTER FOUNDATION PLAN, DETAILS AND NOTES	1

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	11/26/14	HAR	DMD	ISSUED FOR CSC
0	11/13/14	HAR	DMD	ISSUED FOR CSC - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

Cellco Partnership d.b.a. verizonwireless

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WIRELESS COMMUNICATIONS FACILITY
ASHFORD, CT
353 PUMPKIN HILL ROAD
ASHFORD, CT 06278

DATE: 10/30/14
SCALE: AS NOTED
JOB NO. 14124.000

TITLE SHEET

T-1

Sheet No. 1 of 7

N/F
GREGORY B. & TAMMY D. GOODWIN
20 SNOW LANE
VOL. 141 P. 671
MAP 41 BLOCK D LOT 1

N/F
LAURIE A. BROWN
350 PUMPKIN HILL ROAD
VOL. 149 P. 836
MAP 46 BLOCK A LOT 1

N/F
AUDREY B. CONRAD
PUMPKIN HILL ROAD
VOL. 147 P. 985
MAP 46 BLOCK A LOT 1.1

N/F
SANDRA COLBETH
373 PUMPKIN HILL ROAD
VOL. 075 P. 472
MAP 46 BLOCK B LOT 2

N/F
PAUL ZLOTNICK
430 PUMPKIN HILL ROAD
VOL. 098 P. 129
MAP 46 BLOCK A LOT 2

N/F
IRENE D. BUNTE
365 PUMPKIN HILL ROAD
VOL. 105 P. 517
MAP 46 BLOCK B LOT 3

N/F
TIMOTHY J. BUNTE
VOL. 105 P. 961
MAP 46 BLOCK B LOT 3.1

N/F
TIMOTHY J. BUNTE
VOL. 75 P. 902
MAP 46 BLOCK B LOT 4

SUBJECT PARCEL:
N/F
IRENE D. BUNTE
353 PUMPKIN HILL ROAD
VOL. 118 P. 924
MAP 46 BLOCK B LOT 1

N/F
GREGORY B. & TAMMY D. GOODWIN
20 SNOW LANE
VOL. 141 P. 671
MAP 41 BLOCK D LOT 1

PUMPKIN HILL ROAD

EXISTING ACCESS DRIVE.

EXISTING PROPERTY LINE, TYP.

CT WETLAND BOUNDARY.

EXISTING GUY WIRE AND ANCHOR TO BE REMOVED, TYP.

EXISTING GUYED TOWER TO BE REMOVED.

PROPOSED CELLCO PARTNERSHIP REPLACEMENT LATTICE TOWER.

WF# 1-01
WF# 1-02
WF# 1-03
WF# 1-04
WF# 1-05
WF# 1-06
WF# 1-07
WF# 1-08
WF# 1-09
WF# 1-10
WF# 1-20
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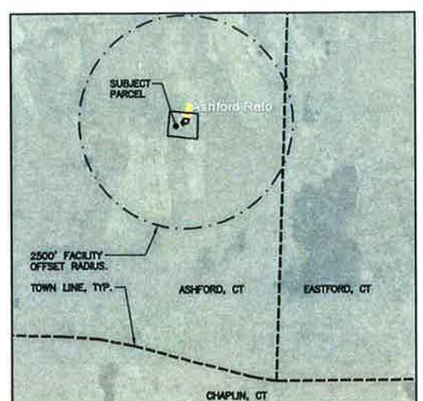
WF# 1-30
WF# 1-31
WF# 1-32
WF# 1-33
WF# 1-34
WF# 1-35
WF# 1-36
WF# 1-37
WF# 1-38
WF# 1-39
WF# 1-40

DISTANCE TO NEAREST OFFSITE RESIDENCE
760'±

TRUE NORTH
0°25'00"
14°30'
NAD 83
GRID
MAG. JULY 2014

1 C-1.0 ABUTTERS MAP
SCALE: 1" = 60'

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.



MUNICIPALITY NOTIFICATION LIMIT MAP
APPROXIMATE NORTH

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	11/24/14	HAIR	DMD	ISSUED FOR CSC
0	11/12/14	HAIR	DMD	ISSUED FOR CSC - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

Cellco Partnership d/b/a Verizon Wireless

WIRELESS COMMUNICATIONS FACILITY

ASHFORD, CT

353 PUMPKIN HILL ROAD
ASHFORD, CT 06278

DATE: 10/30/14
SCALE: AS NOTED
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ABUTTERS MAP

C-1.0

Sheet No. 2 of 7

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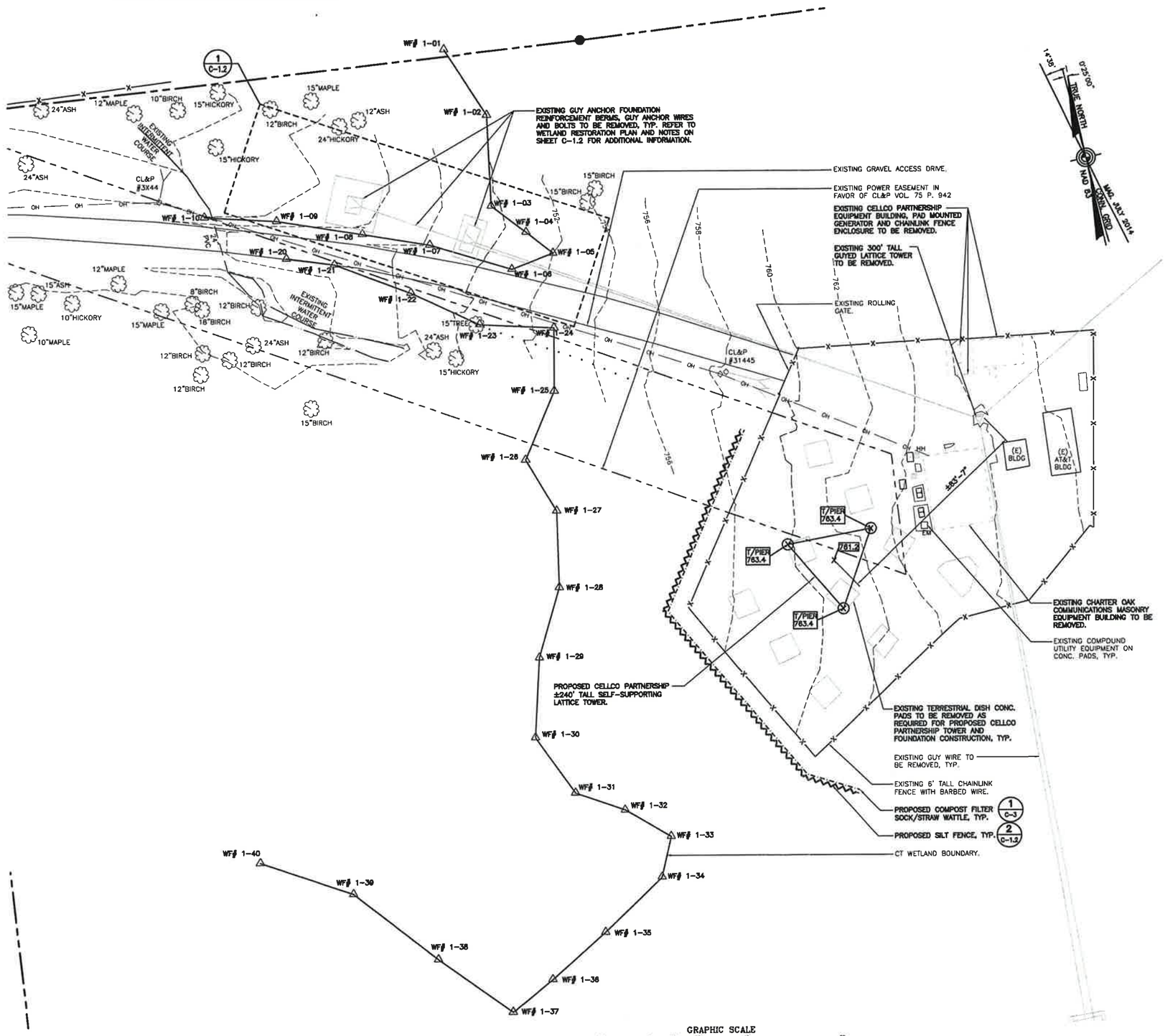

1 C-1.1 **PARTIAL SITE PLAN - PROPOSED**
SCALE: 1"=20'

SYMBOLS LEGEND

- EXISTING PROPERTY LINE
- EXISTING EASEMENT
- EXISTING ACCESS DRIVE
- 650 CONTOUR LINE
- 650 GRADING LINE
- UTILITY POLE
- EXISTING DECIDUOUS TREE
- SILTATION FENCE
- COMPOST FILTER SOCK/STRAW WATTLE
- EXISTING FENCE LINE
- SPOT ELEVATION (PROPOSED)

MISCELLANEOUS SITE INFORMATION

DISTANCE TO NEAREST OFF SITE RESIDENCE*	=	760'±
DISTANCE TO NEAREST MUNICIPALITY (EASTFORD)*	=	2,311'±
ACCESS LENGTH OFF PUMPKIN HILL ROAD	=	1,000'±
NUMBER OF RESIDENTIAL STRUCTURES WITHIN 1000' OF TOWER	=	2
TOTAL NUMBER OF TREES TO BE REMOVED	=	0
DISTANCE TO NEAREST PROPERTY LINE*	=	226'±

* 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. THE LIMITED TOPOGRAPHIC SURVEY PORTION OF THIS PLAN CONFORMS TO A VERTICAL ACCURACY OF CLASS T-2 AND IS INTENDED TO BE USED TO DEPICT A PROPOSED TELECOMMUNICATION SITE.

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

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

ELEVATIONS BASED ON NGVD 1929 DATUM.

PARCEL OWNER OF RECORD: IRENE D. BUNTE

PARCELS KNOWN AS 353 PUMPKIN HILL ROAD

PARCEL AREA= 10.0 ACRES

PARCEL IS IN THE RESIDENTIAL/AGRICULTURAL ZONING DISTRICT.

MAP 48, BLOCK B, LOT NO. 1, ASHFORD ASSESSORS MAP.

PARCEL IS NOT IN A FLOOD ZONE BASED ON THE FLOOD INSURANCE RATE MAP, WINDHAM COUNTY, CONNECTICUT, ALL JURISDICTIONS, PANEL 24 OF 25, COMMUNITY MAP NUMBER 0901850024C, MAP EFFECTIVE DATE DECEMBER 1, 1981, BY FEDERAL EMERGENCY MANAGEMENT AGENCY.

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

ALL IMPROVEMENTS ARE NOT SHOWN.

MAP REFERENCE

1) PROPERTY OF JOHN J. AND IRENE D. BUNTE, PUMPKIN HILL ROAD, ASHFORD, CONN., SCALE 1"=100', DATED JULY 1956, BY STEPHEN A. FILIP.

2) CL&P EASEMENT ACROSS LAND OF JOHN J. BUNTE TO BE LEASED TO TELE-MEDIA COMPANY, ASHFORD, CONNECTICUT, SCALE 1"=40', DATED 8-3-84, BY CONNECTICUT LIGHT & POWER COMPANY.

3) PARCEL TO BE LEASED BY WYNDCELL CORPORATION FROM TELE-MEDIA COMPANY OF NORTHEASTERN CONNECTICUT, 353 PUMPKIN HILL ROAD, ASHFORD, CONNECTICUT, SCALE 1"=40', DATED AUGUST 1991, BY GREINER, INC.

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

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE AND SEAL

A. RAFAEL MARTINEZ LLS #18833 DATE

REV.	DATE	DRAWN BY	CH'K'D BY	DESCRIPTION
1	11/24/14	HAIR	DMD	ISSUED FOR CSC
0	11/12/14	HAIR	DMD	ISSUED FOR CSC - CLIENT REVIEW

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SCALE: AS NOTED
JOB NO. 14124.000

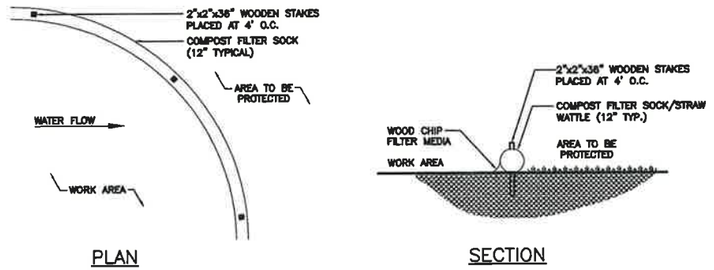
PARTIAL SITE PLAN

C-1.1
Sheet No. 3 of 7

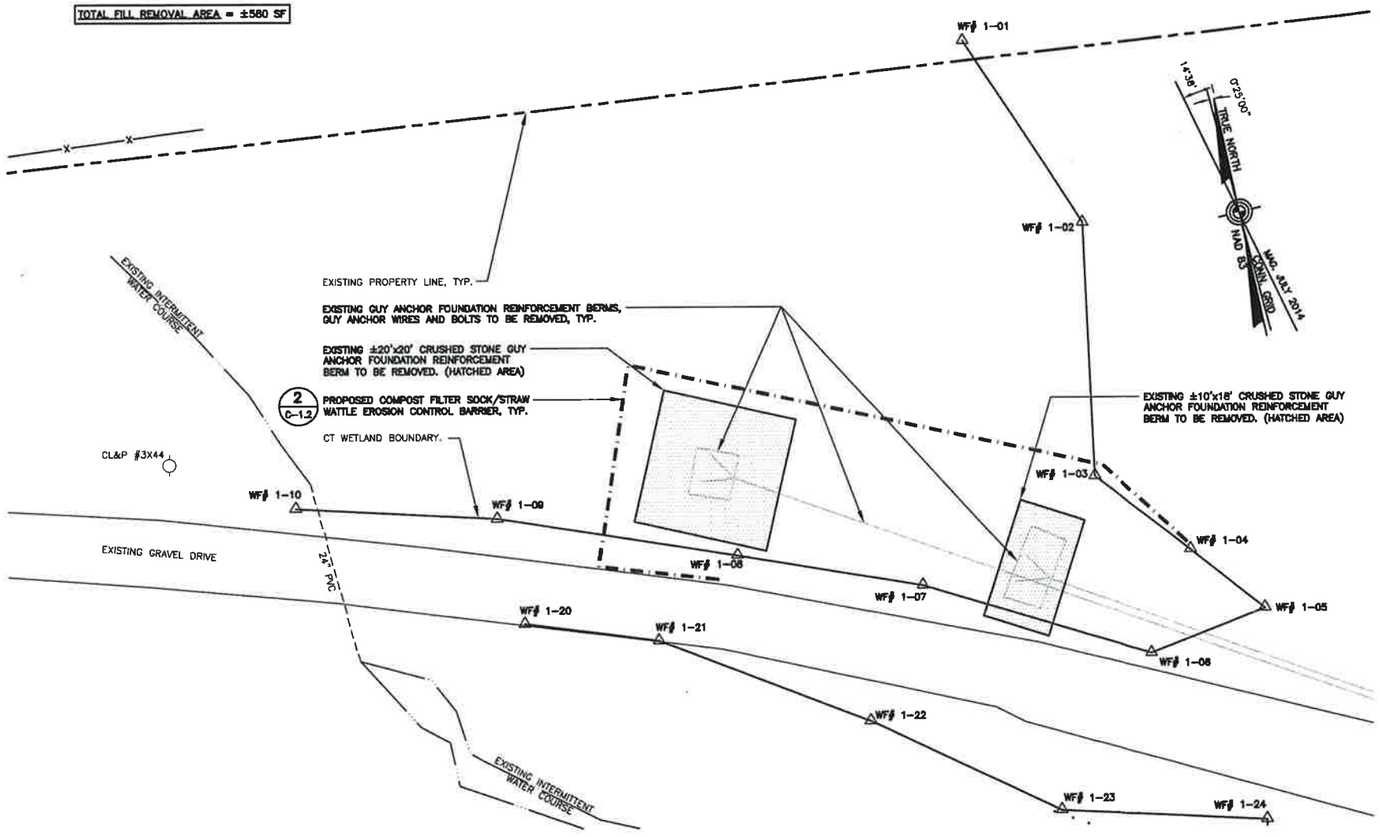
WETLAND RESTORATION PLANTING SCHEDULE				
QUANTITY	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING
TREES				
5	ACER RUBRUM	RED MAPLE	4–6'	10' O.C.
SHRUBS				
5	CORNUS AMOMUM	SILKY DOGWOOD	3–4'	5' O.C.
5	VIBURNUM DENTATUM	NORTHERN ARROWWOOD	3–4'	5' O.C.
5	SALIX DISCOLOR	PUSSYWILLOW	3–4'	5' O.C.
5	SAMBUCUS CANADENSIS	COMMON ELDERBERRY	3–4'	5' O.C.

NOTES:
1. WETLAND RESTORATION AREA WILL BE SOWN WITH A NATIVE NEW ENGLAND WETLAND SEED MIX (NEW ENGLAND WETLAND PLANTS, INC., OR EQUIVALENT). THIS SEED MIX PROVIDES A PERMANENT COVER OF GRASSES, FORBS AND WILDFLOWERS TO PROVIDE BOTH GOOD EROSION CONTROL AND WILDLIFE HABITAT VALUE.
2. PLANTINGS TO BE PLACED IN HATCHED AREAS SHOWN BELOW FOLLOWING REMOVAL OF EXISTING GUY ANCHOR FOUNDATION REINFORCEMENT BERMS, GUY ANCHOR WIRES AND BOLTS.

TOTAL FILL REMOVAL AREA = ±580 SF



2 / C-1.2 TYP. COMPOST FILTER SOCK/ STRAW WATTLE DETAIL
NOT TO SCALE



1 / C-1.2 WETLAND RESTORATION PLAN
SCALE: 1"=10'

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.

WETLAND RESTORATION AREA NOTES

THE WETLAND RESTORATION AREA WILL RESTORE 580± SQUARE FEET OF PREVIOUSLY FILLED WETLAND WITH REMOVAL OF TWO CRUSHED STONE GUY ANCHOR FOUNDATION REINFORCEMENT BERMS FROM BOTH THE INNER AND OUTER GUY ANCHORS FROM GUY ANCHOR BLOCK A. WETLAND RESTORATION WORK WILL BE PERFORMED DURING DEMOLITION OF THE EXISTING 300–FOOT GUYED LATTICE TOWER. THIS WETLAND AREA WILL BE RESTORED PER THE FOLLOWING:

1) AN APT WETLAND SCIENTIST WILL OBSERVE ALL PHASES OF THE WETLAND RESTORATION PROJECT INCLUDING REMOVAL OF FILL MATERIAL, EXPOSURE OF UNDERLYING NATIVE WETLAND TOPSOIL, GRADING AND PLANTING TO MONITOR AND OVERSEE IMPLEMENTATION OF THE WETLAND RESTORATION PLAN. THE CONTRACTOR WILL NOTIFY APT A MINIMUM OF SEVEN (7) BUSINESS DAYS PRIOR TO THE START OF WETLAND RESTORATION ACTIVITIES TO SCHEDULE A PRE–CONSTRUCTION MEETING ON SITE AND FOR ANY SUBSEQUENT PHASES OF THE WETLAND RESTORATION PLAN.
2) PRIOR TO ANY EARTHWORK, A STRAW WATTLE EROSION CONTROL BARRIER WILL BE INSTALLED ALONG THE NORTH, EAST AND WEST SIDES OF THE PROPOSED WETLAND RESTORATION AREA TO PROTECT NEARBY WETLANDS.
3) CONSTRUCTION OF THE WETLAND RESTORATION AREA WILL ONLY OCCUR FROM THE SOUTH SIDE (EXISTING GRAVEL ACCESS DRIVE) TO MINIMIZE DISTURBANCE TO ADJOINING WETLAND AREAS.
4) THE CONTRACTOR WILL USE SWAMP MATS/TIMBER MATS AS NECESSARY TO PROVIDE A STABLE WORK SURFACE DURING REMOVAL OF GRAVEL FILL MATERIAL THAT OVERLIES BURIED WETLAND TOPSOIL.
5) AS THE WETLAND RESTORATION AREA CONSISTS OF FILL MATERIAL OVERLYING ORIGINAL WETLAND SOILS, EXCAVATION WILL CONSIST OF REMOVAL OF FILL MATERIAL UNTIL THE UNDERLYING NATIVE WETLAND SOIL IS EXPOSED. MINOR MODIFICATIONS TO THIS GRADING PLAN MAY BE MADE IN THE FIELD BY THE WETLAND SCIENTIST IN RESPONSE TO ACTUAL SOIL CONDITIONS. THE SUPERVISING WETLAND SCIENTIST WILL INSPECT THE SUB–GRADE OF THE WETLAND RESTORATION AREA TO ENSURE THAT THE PROPER HYDROLOGY HAS BEEN ESTABLISHED.
6) IF ADDITIONAL WETLAND TOPSOIL IS NEEDED TO SUPPLEMENT THE UNDERLYING NATIVE WETLAND TOPSOIL, IT SHALL CONSIST OF PREPARED WEED–FREE TOPSOIL MADE UP OF A 1:1 MIXTURE (OR EQUAL VOLUMES) OF ORGANIC AND MINERAL MATERIALS THAT CONTAINS AT LEAST 12 PERCENT ORGANIC CARBON CONTENT BY WEIGHT. CLEAN COMPOSTED LEAF MOLD OR COMMERCIALLY AVAILABLE COMPOST FREE OF WEEDS OR INVASIVE SPECIES IS THE PREFERRED AMENDMENT TO ACHIEVE THIS STANDARD, THOUGH OTHER MATERIALS MAY BE USED IF APPROVED BY THE WETLAND SCIENTIST.
7) GUY ANCHOR RODS WILL BE REMOVED BY EXCAVATING A MINIMUM OF ONE (1) FOOT BELOW GROUND SURFACE AROUND THE ANCHOR ROD AND CUTTING OFF THE ROD. GUY ANCHOR FOUNDATIONS WILL REMAIN IN PLACE.
8) THESE SOILS WILL THEN BE GRADED TO ACHIEVE A SLIGHT HUMMOCK/HOLLOW MICROTOPOGRAPHY, SIMILAR TO THAT OF A NATURAL WETLAND SUBSTRATE. THE CONTRACTOR SHALL ENSURE THAT PROPER SOIL COMPACTION LEVELS (LOOSE TO FRIABLE) ARE MAINTAINED AND APPROPRIATE CORRECTION MEASURES (E.G. ROTOTILLING) MAY BE NECESSARY.
9) WETLAND RESTORATION AREA PLANTINGS SHALL TAKE PLACE ONCE THE ABOVE LISTED TASKS HAVE BEEN COMPLETED. THE WETLAND RESTORATION AREA WILL BE PLANTED WITH NATIVE TREES, SHRUBS AND HERBACEOUS SPECIES AS NOTED IN THE PLANTING SCHEDULE AND UNDER SOWN WITH A NATIVE NEW ENGLAND WETLAND SEED MIX (NEW ENGLAND WETLAND PLANTS, INC., OR EQUIVALENT) AFTER THE GRADING IS COMPLETED AT THE MANUFACTURER'S RECOMMENDED SEEDING RATE. SOIL CONDITIONING ACTIVITIES, INCLUDING RAKING, WILL BE COMBINED WITH THE SEED APPLICATION PROCESS.
10) THE SUPERVISING WETLAND SCIENTIST SHALL INSPECT THE PLANTING STOCK SPECIMENS FOR HEALTH, PEST, AND SUITABLE FOR USE WITHIN THE WETLAND RESTORATION AREA. UNSUITABLE SPECIMENS WILL BE REJECTED AND REPLACED WITH SUITABLE SPECIMENS. ANY PLANTING SUBSTITUTIONS MUST BE APPROVED BY THE WETLAND SCIENTIST. ALL WOODY PLANT STOCK SHALL BE CONTAINER–GROWN OR BURLAP BALLED. PLANTING WITHIN THE WETLAND RESTORATION AREA WILL CONFORM TO THESE PLANS OR WILL BE COMPLETED IN ACCORDANCE WITH DIRECTIONS PROVIDED IN THE FIELD BY THE SUPERVISING WETLAND SCIENTIST. ONLY PLANT MATERIALS NATIVE AND INDIGENOUS TO CONNECTICUT SHALL BE USED. INVASIVE PLANT SPECIES WILL NOT BE USED IN THE WETLAND RESTORATION AREA.
11) ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN. ALL PLANT MATERIALS SHALL BE GUARANTEED BY THE CONTRACTOR FOR ONE YEAR FOLLOWING DATE OF PLANTING. NO CULTIVARS OF THE NATIVE PLANTS IDENTIFIED IN THE PLANTING SCHEDULE SHALL BE USED.
12) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CAREFUL INSTALLATION, MAINTENANCE (INCLUDING WATERING), AND ESTABLISHMENT OF THE PLANT MATERIAL IN THE WETLAND RESTORATION AREA. A MAINTENANCE SCHEDULE FOR IRRIGATION AND PRUNING (AS NECESSARY) WILL BE ESTABLISHED BY THE CONTRACTOR.
13) ALL PLANTINGS TO BE SPACED GENERALLY AS NOTED ON THE PLANTING SCHEDULE WITH ASSISTANCE FROM THE WETLAND SCIENTIST TO SIMULATE NATURAL GROWTH PATTERNS.
14) AN ISOLATED PATCH OF COMMON REED (PHRAGMITES AUSTRALIS), AN AGGRESSIVE INVASIVE PLANT SPECIES, IS LOCATED ADJACENT TO THE WETLAND RESTORATION AREA. THIS AREA WILL BE TREATED AS FOLLOWS: IN LATE JUNE, COMMON REED WILL BE CUT TO THE GROUND; IN SEPTEMBER, COMMON REED WILL BE TREATED WITH GLYPHOSATE HERBICIDE RODEO®, OR APPROVED EQUIVALENT, USING AN HERBICIDE DIPPED GLOVE SWIPING TECHNIQUE TO AVOID IMPACT TO NATIVE PLANTS.
15) HERBICIDE APPLICATION WILL ADHERE TO THE FOLLOWING: ALL FEDERAL, STATE AND LOCAL REGULATIONS REGARDING HERBICIDE USE, APPLICATOR PERMIT AND POSTING REQUIREMENTS SHALL BE FOLLOWED; ALL HERBICIDE APPLICATION SHALL BE PERFORMED BY A STATE LICENSED INDIVIDUAL; CERTIFICATIONS, LICENSES AND PERMITS SHALL BE PROVIDED TO THE SUPERVISING WETLAND SCIENTIST PRIOR TO THE START OF WORK; ALL HERBICIDES SHALL BE MIXED WITH A DYE APPROVED BY U.S. EPA FOR USE AS AN HERBICIDE ADJUVANTS, SUCH AS TURFMARK® DYE OR EQUIVALENT; ONLY NONIONIC SURFACTANTS SHALL BE ADDED TO THE SPECIFIED HERBICIDE.
16) FALLEN LOGS, BRANCHES, STUMPS AND OTHER NATURAL DEBRIS, EXCLUDING INVASIVE PLANTS, WILL BE RELOCATED TO THE ENHANCEMENT AREA TO PROVIDE BENEFICIAL HABITAT FEATURES FOR WILDLIFE. THIS WILL INCLUDE DOWNED AND UNCOVERED MATERIAL THAT IS ACQUIRED DURING GRADING ACTIVITIES AND WILL BE DISTRIBUTED TO COVER NO MORE THAN 5 PERCENT OF THE WETLAND RESTORATION AREA'S SURFACE. THE NATURAL DEBRIS SHOULD BE OF VARYING SIZES AND IN VARYING DEGREES OF DECOMPOSITION.
17) THE EROSION CONTROL BARRIERS WILL BE DISASSEMBLED AND PROPERLY DISPOSED OF NO LATER THAN 30 DAYS FOLLOWING PERMANENT STABILIZATION OF EXPOSED SOILS BY THE PLANTED MATERIALS. SEDIMENT COLLECTED BY THESE DEVICES WILL BE REMOVED AND DISPOSED OF IN A MANNER THAT PREVENTS EROSION AND TRANSPORT TO A WATERWAY OR WETLAND. IF MINOR GRADING IS REQUIRED IN THIS ZONE TO PROVIDE SURFACE HYDROLOGIC CONNECTION BETWEEN THE AREAS, IT WILL BE DONE BY HAND AND STABILIZED WITH MULCH.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	11/24/14	HAR	DMD	ISSUED FOR CSC
0	11/12/14	HAR	DMD	ISSUED FOR CSC – CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

Cellco Partnership d/b/a Verizon Wireless

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Centered on Solutions
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
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www.CentekEng.com

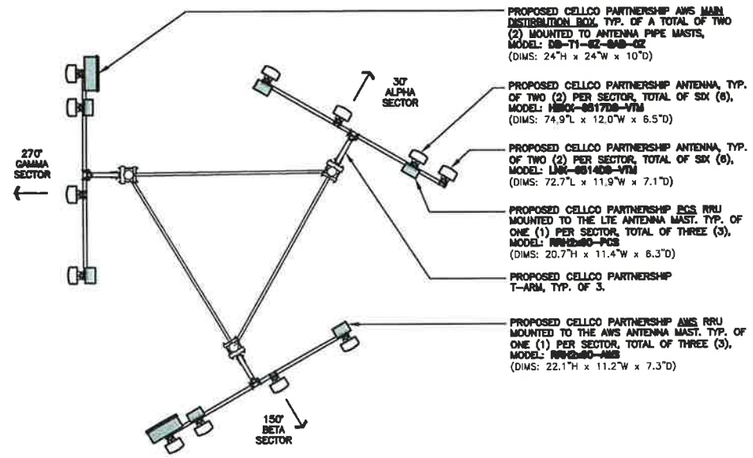
Cellco Partnership d/b/a Verizon Wireless
WIRELESS COMMUNICATIONS FACILITY
ASHFORD, CT
353 PUMPKIN HILL ROAD
ASHFORD, CT 06278

DATE: 10/30/14
SCALE: AS NOTED
JOB NO. 14124.000

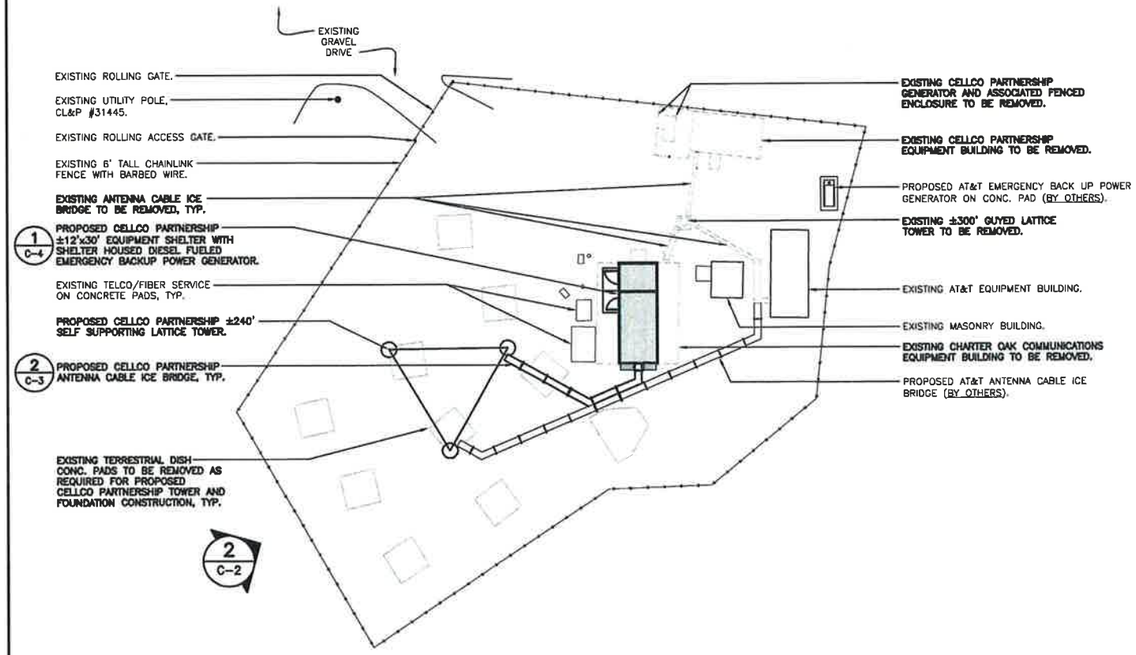
WETLAND RESTORATION PLAN, DETAILS AND NOTES

C-1.2

Sheet No. 4 of 7

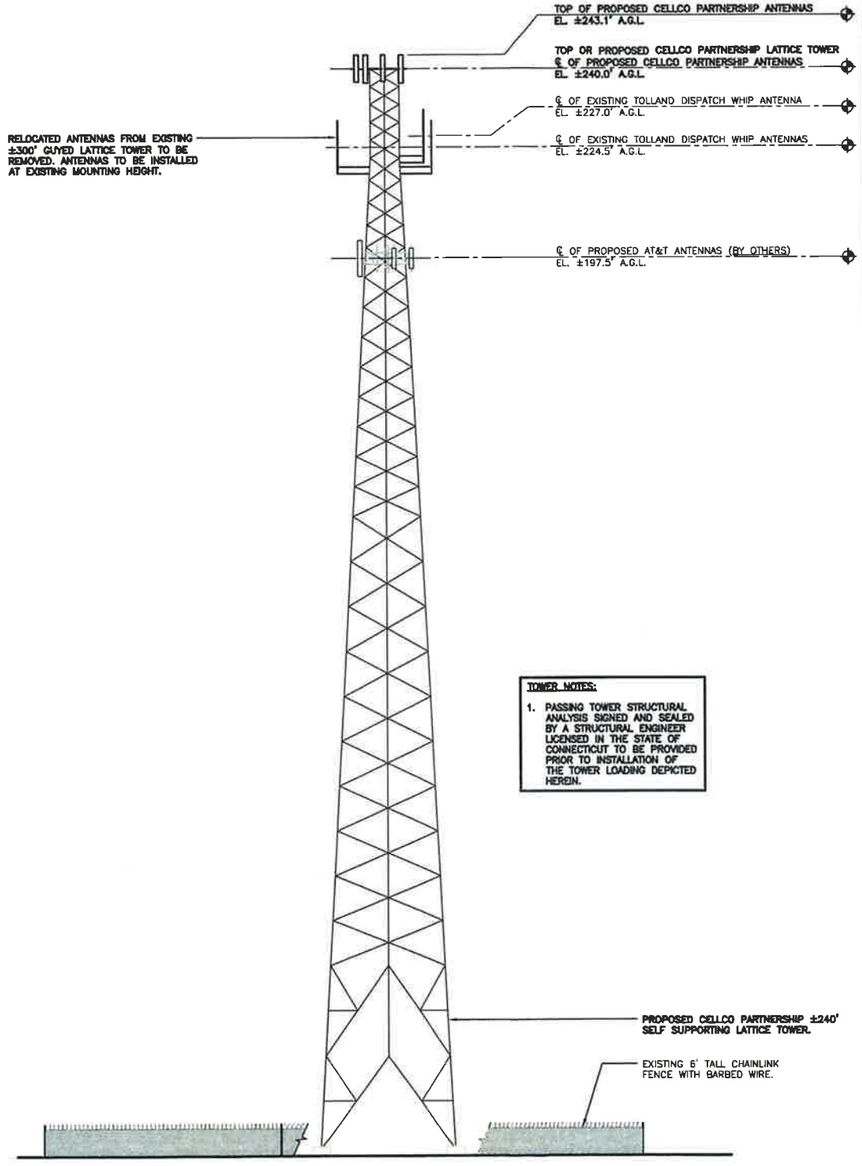


3 / C-2 **CELLCO PARTNERSHIP ANTENNA MOUNTING CONFIGURATION**
SCALE: 1/4" = 1'-0"



1 / C-2 **COMPOUND PLAN**
SCALE: 1" = 10'

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.



2 / C-2 **SOUTH-WEST TOWER ELEVATION-PROPOSED**
SCALE: 1" = 15'

GRAPHIC SCALE
(IN FEET)
1 inch = 15 ft.

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Cellco Partnership d.b.a. Verizon wireless

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63-2 North Branford Road
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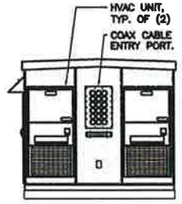
Cellco Partnership d/b/a Verizon Wireless
WIRELESS COMMUNICATIONS FACILITY
ASHFORD, CT
353 PUMPKIN HILL ROAD
ASHFORD, CT 06278

DATE: 10/30/14
SCALE: AS NOTED
JOB NO. 14124.000

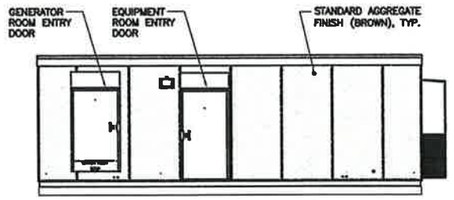
COMPOUND PLAN, ELEVATION AND ANTENNA MOUNTING CONFIGURATION

C-2

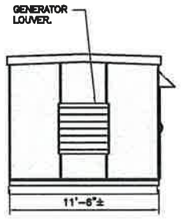
Sheet No. 5 of 7



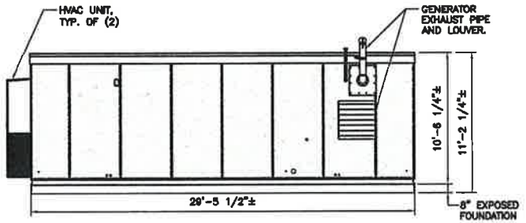
8 C-3 **SOUTHERN SHELTER ELEVATION**
SCALE: 3/16" = 1'-0"



7 C-3 **WESTERN SHELTER ELEVATION**
SCALE: 3/16" = 1'-0"



6 C-3 **NORTHERN SHELTER ELEVATION**
SCALE: 3/16" = 1'-0"



5 C-3 **EASTERN SHELTER ELEVATION**
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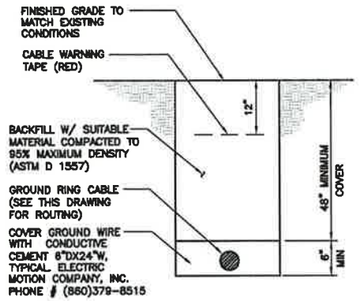
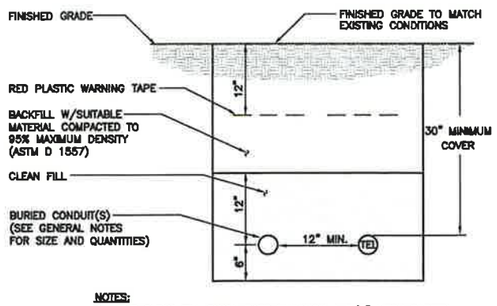


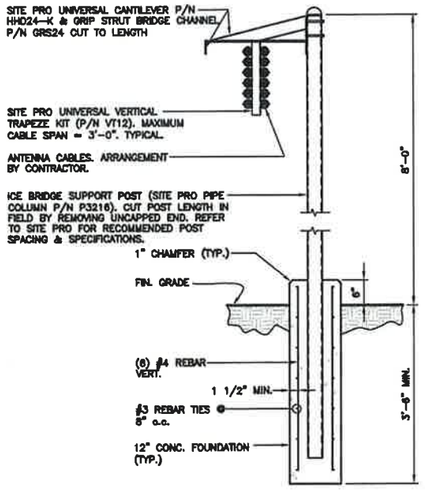
NOTES:
1. BACK FILL SHALL NOT CONTAIN ASHES, CINDERS, SHELLS, FROZEN MATERIAL, LOOSE DEBRIS OR STONES LARGER THAN 2" IN MAXIMUM DIMENSION.
2. WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED, CONTRACTOR SHALL HAND DIG AND PROTECT EXISTING UTILITIES.

4 C-3 **TYPICAL BURIAL GROUND CABLE DETAIL**
NOT TO SCALE

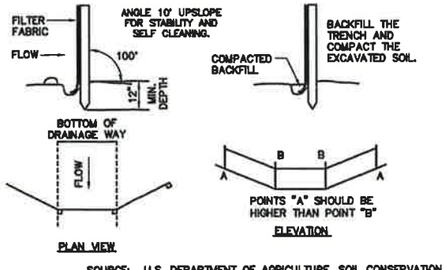


NOTES:
1. THE CLEAN FILL SHALL PASS THROUGH A 3/8" MESH SCREEN AND SHALL NOT CONTAIN SHARP STONES. OTHER BACKFILL SHALL NOT CONTAIN ASHES, CINDERS, SHELLS, FROZEN MATERIAL, LOOSE DEBRIS OR STONES LARGER THAN 2" IN MAXIMUM DIMENSION.
2. WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED, CONTRACTOR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

3 C-3 **TYPICAL ELECTRICAL/TEL TRENCH DETAIL**
NOT TO SCALE



2 C-3 **ICE BRIDGE DETAIL**
NOT TO SCALE



SOURCE: U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, STORRS, CONNECTICUT

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

GENERAL CONSTRUCTION / PRE-CONSTRUCTION NOTES

1. PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES, A MANDITORY 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.

GENERAL CONSTRUCTION SEQUENCE

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

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

SOIL EROSION AND SEDIMENT CONTROL SEQUENCE

1. 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.
2. 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.
3. LAND DISTURBANCE WILL BE KEPT TO A MINIMUM AND RESTABILIZATIONS WILL BE SCHEDULED AS SOON AS PRACTICAL.
4. 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.
5. 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.
6. 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.
7. 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.
8. SWALE DISCHARGE AREA WILL BE PROTECTED WITH RIP RAP SPLASH PAD/ ENERGY DISSIPATER.
9. ALL FILL AREAS SHALL BE COMPACTED SUFFICIENTLY FOR THEIR INTENDED PURPOSE AND AS REQUIRED TO REDUCE SLIPPING, EROSION OR EXCESS SATURATION.
10. 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.
11. 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

1. THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.
2. THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
3. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES.
4. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MID-SECTION AND BOTTOM.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED.
6. 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.
7. MAINTENANCE SHALL BE PERFORMED AS NEEDED TO PREVENT BUILD UP IN THE SILT FENCE DUE TO DEPOSITION OF SEDIMENT.

MAINTENANCE - SILT FENCE

1. 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.
2. 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.
3. SEDIMENT SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACHED APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
4. 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.

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1	11/24/14	HAR	DMD	ISSUED FOR CSC
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PROFESSIONAL ENGINEER SEAL

Celico Partnership d/b/a Verizon Wireless
WIRELESS COMMUNICATIONS FACILITY
ASHFORD, CT
353 PUMPKIN HILL ROAD
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(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
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www.CentekEng.com

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SITE CONSTRUCTION, S&E CONTROL NOTES & DETAILS

C-3

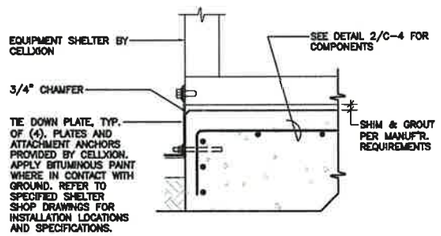
Sheet No. 6 of 7

SLAB ON GRADE FOUNDATION DESIGN CONFORMS TO THE REQUIREMENTS OF THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2005 CONNECTICUT STATE BUILDING CODE SUPPLEMENT SECTION 1805.2.1 'FROST PROTECTION' AND SEI/ASCE STANDARD 32-01 SECTION 7.1 'SLAB ON GRADE CONSTRUCTION'.

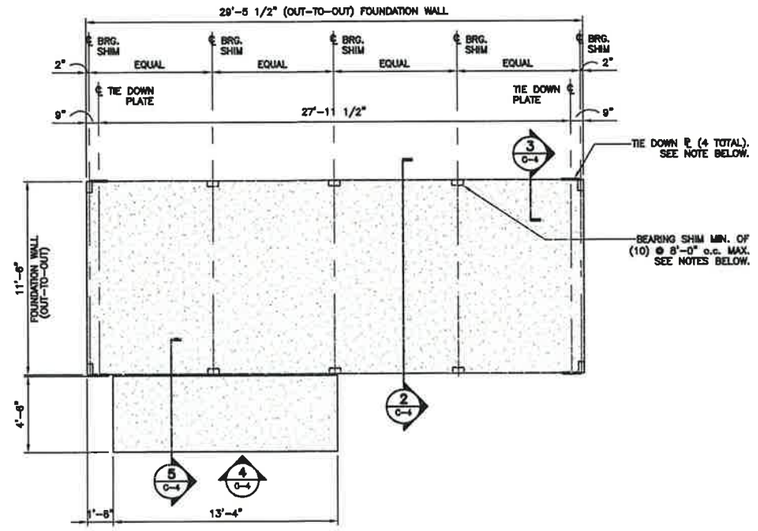
EQUIPMENT SHELTER BY CELLXION. VERIFY ALL SHELTER DIMENSIONS, EQUIPMENT DIMENSIONS, EQUIPMENT LOCATIONS AND UTILITY OPENINGS WITH BUILDING SHOP DRAWINGS PRIOR TO COMMENCEMENT OF WORK.

NOTES:

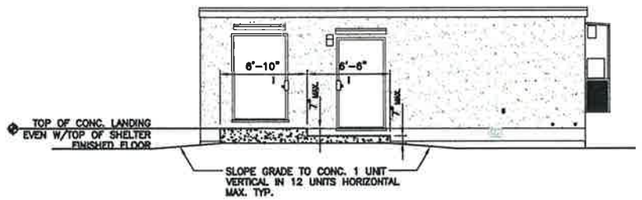
1. BEARING SHIMS, TIE-DOWN PLATES AND ASSOCIATED INSTALLATION ANCHORS PROVIDED BY CELLXION. CONTRACTOR SHALL VERIFY ALL SHIM & TIE-DOWN QUANTITIES AND LOCATIONS WITH CELLXION PRIOR TO PERFORMING FOUNDATION WORK.
2. SLAB/ TOP OF WALL TOLERANCE IS 1/4"±
3. TOP 8" OF FOUNDATION SIDES MUST BE FORMED FLAT TO ACCEPT TIE-DOWN PLATES.



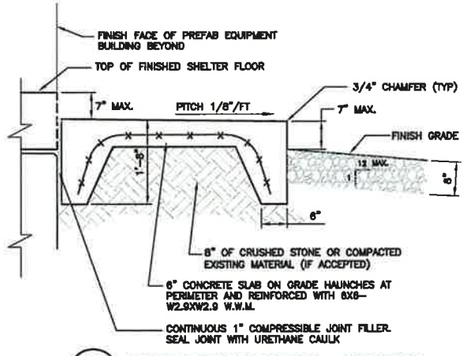
3 / C-4 **BUILDING TIE DOWN**
SCALE: 1"=1'-0"



1 / C-4 **FOUNDATION PLAN**
SCALE: 1/4"=1'-0"
APPROX. GRID NORTH



4 / C-4 **ENTRY STOOP DETAIL - ELEVATION**
SCALE: 3/16"=1'-0"



5 / C-4 **ENTRY STOOP DETAIL - SECTION**
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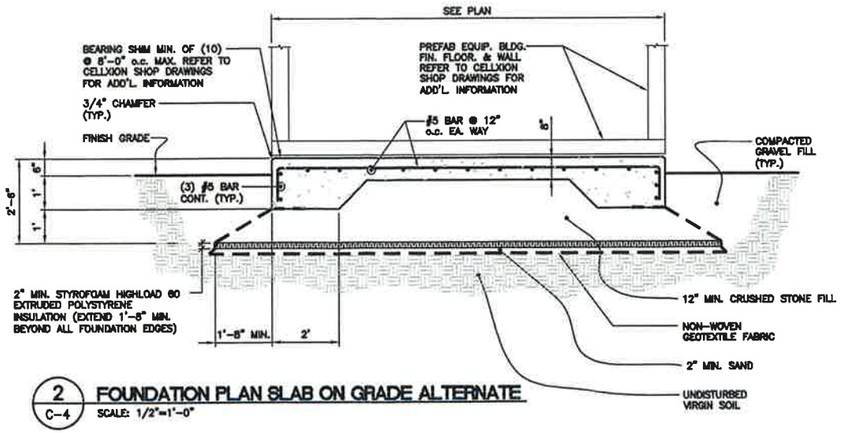


2 / C-4 **FOUNDATION PLAN SLAB ON GRADE ALTERNATE**
SCALE: 1/2"=1'-0"

FOUNDATION NOTES:

1. IF ANY FIELD CONDITIONS EXIST WHICH PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
2. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST THE PRE MANUFACTURED EQUIPMENT BUILDING SHOP DRAWINGS.
3. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.

SITE NOTES:

1. THE CONTRACTOR SHALL CALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.
2. ACTIVE EXISTING UTILITIES, WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY, PRIOR TO PROCEEDING, SHOULD ANY UNCOVERED EXISTING UTILITY PRECLUDE COMPLETION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. ALL RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED OFF SITE AND BE LEGALLY DISPOSED, AT NO ADDITIONAL COST.
4. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE EQUIPMENT AND TOWER AREAS.
5. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
6. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
7. THE AREAS OF THE COMPOUND DISTURBED BY THE WORK SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
8. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
9. IF ANY FIELD CONDITIONS EXIST WHICH PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL PROCEED WITH AFFECTED WORK AFTER CONFLICT IS SATISFACTORILY RESOLVED.
10. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST THE PRE MANUFACTURED EQUIPMENT BUILDING SHOP DRAWINGS.
11. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.

COMPACTED GRAVEL FILL:

1. COMPACTED GRAVEL FILL SHALL BE FURNISHED AND PLACED AS A FOUNDATION FOR STRUCTURES, WHERE SHOWN ON THE CONTRACT DRAWINGS OR DIRECTED BY THE ENGINEER.
2. GRAVEL SHALL CONFORM TO THE REQUIREMENTS OF ARTICLE M.02.02 OF THE CONNECTICUT D.O.T. STANDARD SPECIFICATIONS. ADMIXTURES AND SURFACE PROTECTIVE MATERIALS USED TO PREVENT THE GRAVEL FROM FREEZING MUST MEET THE APPROVAL OF THE ENGINEER. THE LARGEST STONE SIZE SHALL BE 3-1/2 INCHES.
3. SAMPLES OF THE MATERIAL TO BE USED SHALL BE DELIVERED TO THE JOB SITE 5 DAYS PRIOR TO ITS INTENDED USE SO IT MAY BE TESTED FOR APPROVAL.
4. AFTER ALL EXCAVATION HAS BEEN COMPLETED, GRAVEL SHALL BE DEPOSITED IN LAYERS NOT EXCEEDING EIGHT (8) INCHES IN DEPTH OVER THE AREAS. IN EXCEPTIONAL CASES, THE ENGINEER MAY PERMIT THE FIRST LAYER TO BE THICKER THAN EIGHT (8) INCHES. EACH LAYER SHALL BE LEVELED OFF BY SUITABLE EQUIPMENT. THE ENTIRE AREA OF EACH LAYER SHALL BE COMPACTED BY USE OF APPROVED VIBRATORY, PNEUMATIC-TIRED OR TREAD-TYPE COMPACTION EQUIPMENT. COMPACTION SHALL BE CONTINUED UNTIL THE DRY DENSITY OVER THE ENTIRE AREA OF EACH LAYER IS NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY ACHIEVED BY AASHTO T-99 METHOD C. THE MOISTURE CONTENT OF THE GRAVEL SHALL NOT VARY BY MORE THAN 3 %+ FROM ITS OPTIMUM MOISTURE CONTENT. NO SUBSEQUENT LAYER SHALL BE DEPOSITED UNTIL THE SPECIFIED COMPACTION IS ACHIEVED FOR THE PREVIOUS LAYER. IF NECESSARY TO OBTAIN THE REQUIRED COMPACTION, WATER SHALL BE ADDED AND GENTLE PUDDLING PERFORMED IF AUTHORIZED. COMPACTED GRAVEL FILL SHALL BE PREVENTED FROM FREEZING BY USE OF APPROVED ADMIXTURES OR BY USE OF APPROVED PROTECTIVE MATERIALS ON THE SURFACE, OR BOTH.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318.
2. ALL CONCRETE SHALL BE NORMAL WEIGHT, 6% AIR ENTRAINED WITH A MAXIMUM SLUMP OF 4", AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED BARS. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD UNLESS OTHERWISE INDICATED.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS OTHERWISE NOTED ON THE DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3 IN.

   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER.....2 IN.
   #5 AND SMALLER & WWF.....1 1/2 IN.

   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL.....3/4 IN.
   BEAMS AND COLUMNS.....1 1/2 IN.
5. ALL EXPOSED EDGES OF CONCRETE TO RECEIVE A 3/4" CHAMFER IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. CONCRETE EQUIPMENT PAD TO RECEIVE A BRUSHED FINISH.
7. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT DURING DRILLING WITHOUT PRIOR REVIEW BY THE ENGINEER.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	11/24/14	HAR	DMD	ISSUED FOR CSC
0	11/12/14	HAR	DMD	ISSUED FOR CSC - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

Cellco Partnership d/b/a Verizon Wireless

CENTEK engineering
Centered on Solutions℠
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

Cellco Partnership d/b/a Verizon Wireless
WIRELESS COMMUNICATIONS FACILITY
ASHFORD, CT
353 PUMPKIN HILL ROAD
ASHFORD, CT 06278

DATE: 10/30/14
SCALE: AS NOTED
JOB NO. 14124.000

SHELTER FOUND. PLAND, DETAILS AND NOTES

C-4

Sheet No. 7 of 7

ATTACHMENT 2

Existing Verizon Wireless 700 MHz Coverage
Ashford, Connecticut and Surrounding Area
(*Map Scale is 1:40,000)

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss

UNION
STAFFORD
TOLLAND
WILLINGTON
ASHFORD
EASTFORD
WOODSTOCK
THOMPSON
PUTNAM
POMFRET
KILLINGLY
CHAPLIN
HAMPTON
BROOKLYN
MANSFIELD
PLAINFIELD

WESTFORD CT
WOODSTOCK CT RELO
EASTFORD CT
ASHFORD NORTH CT
ASHFORD WEST CT
ASHFORD CT
ASHFORD WEST 2 CT
MANSFIELD NE CT
CHAPLIN SOUTH CT
BROOKLYN WEST CT
HAMPTON CT

Legend

- Existing Verizon Wireless Facilities
- Proposed Verizon Wireless Facility
- Existing Surrounding Wireless 700 MHz Coverage
- Major Route
- Municipal and Private Open Space
- School
- State Forest/Park
- Open Water
- Town Line

ALL POINTS TECHNOLOGY CORPORATION

verizon

N W E S

0 1 2 Miles

Map Notes.
This map was prepared at a map scale of 1:40,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale.
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: CTECO Hillshade (2004)

Proposed Verizon Wireless 700 MHz Coverage
Ashford, Connecticut and Surrounding Area
(*Map Scale is 1:40,000)

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss

UNION
STAFFORD
WESTFORD CT
WOODSTOCK
WOODSTOCK CT RELO
THOMPSON
TOLLAND
WILLINGTON
EASTFORD
PUTNAM
ASHFORD
ASHFORD NORTH CT
ASHFORD WEST CT
EASTFORD CT
POMFRET
ASHFORD CT
ASHFORD WEST 2 CT
KILLINGLY
CHAPLIN
MANSFIELD
MANSFIELD NE CT
CHAPLIN SOUTH CT
HAMPTON
BROOKLYN WEST CT
HAMPTON CT
BROOKLYN
PLAINFIELD

Legend

- Existing Verizon Wireless Facilities
- Proposed Verizon Wireless Facility
- Existing Surrounding Wireless 700 MHz Coverage
- Proposed Facility Wireless 700 MHz Coverage
- Major Route
- Municipal and Private Open Space
- School
- State Forest/Park
- Open Water
- Town Line

ALL-POINTS TECHNOLOGY CORPORATION

verizon

0 1 2 Miles

Map Notes:
This map was prepared at a map scale of 1:40,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas
Base map: CTECO Hillshade (2000)

Existing Verizon Wireless 850 MHz Coverage
Ashford, Connecticut and Surrounding Area
(*Map Scale is 1:40,000)

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

UNION
STAFFORD
WESTFORD CT
WOODSTOCK
WOODSTOCK CT RELO
THOMPSON
TOLLAND
WILLINGTON
EASTFORD
PUTNAM
ASHFORD
ASHFORD NORTH CT
ASHFORD WEST CT
EASTFORD CT
POMFRET
KILLINGLY
ASHFORD CT
ASHFORD WEST 2 CT
CHAPLIN
HAMPTON
MANSFIELD
MANSFIELD NE CT
CHAPLIN SOUTH CT
BROOKLYN WEST CT
BROOKLYN
HAMPTON CT
PLAINFIELD

Legend

- Existing Verizon Wireless Facilities
- Proposed Verizon Wireless Facility
- Existing Surrounding Wireless 850 MHz Coverage
- Major Routes
- Municipal and Private Open Space
- School
- State Forest/Park
- Open Water
- Town Line

ALL-POINTS TECHNOLOGY CORPORATION

verizon

N W E S

0 1 2 Miles

Map Notes
This map was prepared at a map scale of 1:40,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: CTECO Hillshade (2000)

Proposed Verizon Wireless 850 MHz Coverage
Ashford, Connecticut and Surrounding Area
(*Map Scale is 1:40,000)

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss

UNION
STAFFORD
WESTFORD CT
WOODSTOCK
WOODSTOCK CT RELO
THOMPSON
TOLLAND
WILLINGTON
EASTFORD
EASTFORD CT
PUTNAM
ASHFORD
ASHFORD NORTH CT
ASHFORD WEST CT
ASHFORD CT
ASHFORD WEST 2 CT
POMFRET
KILLINGLY
CHAPLIN
MANSFIELD
MANSFIELD NE CT
CHAPLIN SOUTH CT
HAMPTON
HAMPTON CT
BROOKLYN
BROOKLYN WEST CT
PLAINFIELD

Legend

- Existing Verizon Wireless Facilities
- Proposed Verizon Wireless Facility
- Existing Surrounding Wireless 850 MHz Coverage
- Proposed Facility Wireless 850 MHz Coverage
- Major Route
- Municipal and Private Open Space
- School
- State Forest/Park
- Open Water
- Town Line

ALL POINTS TECHNOLOGY CORPORATION

verizon

N W E S

0 1 2 Miles

Map Notes.
This map was prepared at a map scale of 1:40,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale
Open Space, Schools and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas
Base map: CTECO Hillshade (2000)

ATTACHMENT 3

Product Specifications

COMMSCOPE®

LNX-6514DS-VTM

Andrew® Antenna, 698–896 MHz, 65° horizontal beamwidth, RET compatible

POWERED BY ANDREW.

Electrical Specifications

Frequency Band, MHz	698–806	806–896
Gain, dBi	15.7	16.3
Beamwidth, Horizontal, degrees	65	65
Beamwidth, Horizontal Tolerance, degrees	±3	±3
Beamwidth, Vertical, degrees	12.5	11.2
Beam Tilt, degrees	0–10	0–10
USLS, typical, dB	17	18
Front-to-Back Ratio at 180°, dB	32	30
CPR at Boresight, dB	20	20
CPR at Sector, dB	10	10
Isolation, dB	30	30
VSWR | Return Loss, dB	1.4 | 15.6	1.4 | 15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153
Input Power per Port, maximum, watts	400	400
Polarization	±45°	±45°

Mechanical Specifications

Color | Radome Material	Light gray | Fiberglass, UV resistant
Connector Interface | Location | Quantity	7-16 DIN Female | Bottom | 2
Wind Loading, maximum	617.7 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Speed, maximum	241.0 km/h | 149.8 mph
Antenna Dimensions, L x W x D	1847.0 mm x 301.0 mm x 181.0 mm | 72.7 in x 11.9 in x 7.1 in
Net Weight	17.6 kg | 38.8 lb
Model with factory installed AISG 2.0 RET	LNX-6514DS-A1M

Product Specifications

COMMSCOPE®

HBXX-6517DS-VTM

Andrew® Quad Port Teletilt® Antenna, 1710–2180 MHz, 65° horizontal beamwidth, RET compatible

POWERED BY ANDREW.

Electrical Specifications

Frequency Band, MHz	1710–1880	1850–1990	1920–2180
Gain by all Beam Tilts, average, dBi	18.5	18.6	18.8
Gain by all Beam Tilts Tolerance, dB	±0.4	±0.3	±0.4
Gain by Beam Tilt, average, dBi	0 ° | 18.4 3 ° | 18.7 6 ° | 18.4	0 ° | 18.4 3 ° | 18.7 6 ° | 18.5	0 ° | 18.7 3 ° | 18.9 6 ° | 18.6
Beamwidth, Horizontal, degrees	67	66	65
Beamwidth, Horizontal Tolerance, degrees	±2.4	±1.7	±2.9
Beamwidth, Vertical, degrees	5.0	4.7	4.4
Beamwidth, Vertical Tolerance, degrees	±0.3	±0.3	±0.3
Beam Tilt, degrees	0–6	0–6	0–6
USLS, dB	18	19	19
Front-to-Back Total Power at 180° ± 30°, dB	25	26	26
CPR at Boresight, dB	22	23	22
CPR at Sector, dB	10	10	9
Isolation, dB	30	30	30
VSWR | Return Loss, dB	1.4 | 15.6	1.4 | 15.6	1.4 | 15.6
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350
Polarization	±45°	±45°	±45°

**Values calculated using NGMN Alliance N-P-BASTA v9.6*

Mechanical Specifications

Color | Radome Material	Light gray | PVC, UV resistant
Connector Interface | Location | Quantity	7-16 DIN Female | Bottom | 4
Wind Loading, maximum	668.0 N @ 150 km/h 150.2 lbf @ 150 km/h
Wind Speed, maximum	241.0 km/h | 149.8 mph
Antenna Dimensions, L x W x D	1903.0 mm x 305.0 mm x 166.0 mm | 74.9 in x 12.0 in x 6.5 in
Net Weight	19.5 kg | 43.0 lb
Model with factory installed AISG 2.0 RET	HBXX-6517DS-A2M

PCS RF MODULES

RRH1900 2X60 - HW CHARACTERISTICS

LA6.0.1/13.3

		RRH2x60
RF Output Power		2x60W
Instantaneous Bandwidth		20MHz
Transmitter		2 TX
Receiver	1900 HW version	2 Branch RX – LA6.0.1
	1900A HW version	4 Branch RX – LR13.3
Features		AISG 2.0 for RET/TMA
		Internal Smart Bias-T
Power		-48VDC
CPRI Ports		2 CPRI Rate 3 Ports
External Alarms		4 External User Alarms
Monitor Ports		TX
Environmental		GR487 Compliance
RF Connectors		7/16 DIN (top mounted)

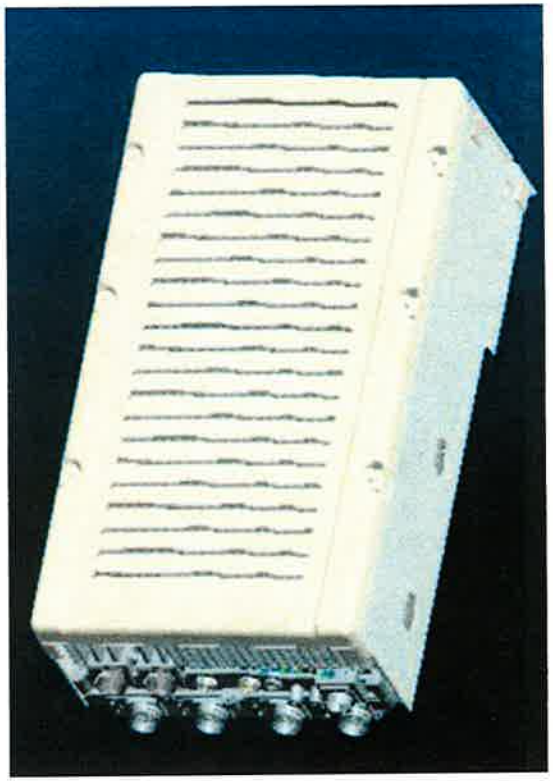
** Not a Verizon Wireless deployed product

Alcatel·Lucent

NEW PCS RF MODULES FOR VZW
RRH2X60 - HW CHARACTERISTICS

LR14.3

	RRH2x60
RF Output Power	2x60W (4x30W HW Ready)
Instantaneous Bandwidth	60MHz
Target Reliability (Annual Return Rate)	<2%
Receiver	4 Branch Rx
Features	AISG 2.0 for RET/TMA
Power	-48VDC
	Internal Smart Bias-T
CPRI Ports	2 CPRI Rate 5 Ports
External Alarms	4 External User Alarms
Monitor Ports	TX, RX
Environmental	GR487 Compliance
RF Connectors	7/16 DIN (downward facing)
Dimensions	22"(h) x 12"(w)x 9.4" (d)**
Weight	55lb**



**- Includes solar shield but not mounting brackets (8 lbs.)

Alcatel·Lucent

ALCATEL-LUCENT
WIRELESS PRODUCT DATASHEET
RRH2X60-AWS FOR BAND 4 APPLICATIONS

The Alcatel-Lucent RRH2x60-AWS is a high power, small form factor Remote Radio Head operating in the AWS frequency band (3GPP Band 4) for LTE technology. It is designed with an eco-efficient approach, providing operators with the means to achieve high quality and high capacity coverage with minimum site requirements and efficient operation.

A distributed Node B expands the 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 a Node B to be installed separately, within the same site or several kilometers apart.

The Alcatel-Lucent RRH2x60-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.

SUPERIOR RF PERFORMANCE

The Alcatel-Lucent RRH2x60-AWS integrates all the latest technologies. This allows to offer best-in-class characteristics.

It delivers an outstanding 120 watts of total RF power thanks to its two transmit RF paths of 60 W each.

It is ideally suited to support multiple-input multiple-output (MIMO) 2x2 operation.

It includes four RF receivers to natively support 4-way uplink reception diversity. This improves the radio uplink coverage and this can be used to extend the cell radius commensurate with 2x2MIMO 2x60 W for the downlink.

It supports multiple discontinuous LTE carriers within an instantaneous bandwidth of 45 MHz corresponding to the entire AWS B4 spectrum.

The latest generation power amplifiers (PA) used in this product achieve high efficiency (>40%), resulting in improved power consumption figures.

OPTIMIZED TCO

The Alcatel-Lucent RRH2x60-AWS is designed to make available all the benefits of a distributed Node B, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX).

The Alcatel-Lucent RRH2x60-AWS is a very cost-effective solution to deploy LTE MIMO.

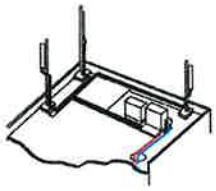
EASY INSTALLATION

The RRH2x60-AWS includes a reversible mounting bracket which allows for ease of installation behind an antenna, or on a rooftop knee wall while providing easy access to the mid body RF connectors.

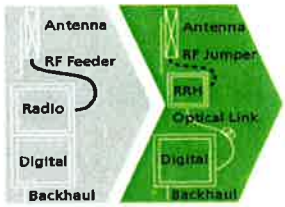
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

The Alcatel-Lucent RRH2x60-AWS is a zero-footprint solution and is convection cooled without fans for silent operation, simplifying negotiations with site property owners and minimizing environmental impacts.

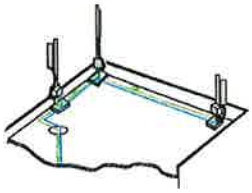
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



Macro



RRH for space-constrained cell sites



Distributed

FEATURES

- RRH2x60-AWS integrates two power amplifiers of 60W rating (at each antenna connector)
- Support multiple carriers over the entire 3GPP band 4
- RRH2x60-AWS is optimized for LTE operation
- RRH2x60-AWS is a very compact and lightweight product
- Advanced power management techniques are embedded to provide power savings, such as PA bias control

BENEFITS

- MIMO LTE operation with only one single unit per sector
- Improved uplink coverage with built-in 4-way receive diversity capability
- RRH can be mounted close to the antenna, eliminating nearly all losses in RF cables and thus reducing power consumption by 50% compared to conventional solutions
- Distributed configurations provide easily deployable and cost-effective solutions, near zero footprint and silent solutions, with minimum impact on the neighborhood, which ease the deployment
- RETA and TMA support without additional hardware thanks to the AISG v2.0 port and the integrated Bias-Tees. Bias-Tees support AISG DC supply and signaling.

TECHNICAL SPECIFICATIONS

Specifications listed are hardware capabilities. Some capabilities depend on support in a specific software release or future release.

Dimensions and weights

- HxWxD : 510x285x186mm (27 l with solar shield)
- Weight : 20 kg (44 lbs)

Electrical Data

- Power Supply : -48V DC (-40.5 to -57V)
- Power Consumption (ETSI average traffic load reference) : 250W @2x60W

RF Characteristics

- Frequency band: 1710-1755, UL / 2110-2155 MHz, DL (3GPP band 4)
- Output power: 2x60W at antenna connectors
- Technology supported: LTE
- Instantaneous bandwidth: 45 MHz
- Rx diversity: 2-way and 4-way uplink reception
- Typical sensitivity without Rx diversity: -105 dBm for LTE

Connectivity

- Two CPRI optical ports for daisychaining and up to six RRHs per fiber
- Type of optical fiber: Single-Mode (SM) and Multi-Mode (MM) SFPs
- Optical fiber length: up to 500m using MM fiber, up to 20km using SM fiber
- TMA/RETA : AISG 2.0 (RS485 connector and internal Bias-Tee)
- Six external alarms
- Surge protection for all external ports (DC and RF)

Environmental specifications

- Operating temperature: -40°C to 55°C including solar load
- Operating relative humidity: 8% to 100%
- Environmental Conditions : ETS 300 019-1-4 class 4.1E
- Ingress Protection : IEC 60529 IP65
- Acoustic Noise : Noiseless (natural convection cooling)

Safety and Regulatory Data

- EMC : 3GPP 25113, EN 301 489-1, EN 301 489-23, GR 1089, GR 3108, OET-65
- Safety : IEC60950-1, EN 60825-1, UL, ANSI/NFPA 70, CAN/CSA-C22.2
- Regulatory : FCC Part 15 Class B, CE Mark – European Directive : 2002/95/EC (ROHS); 2002/96/EC (WEEE); 1999/5/EC (R&TTE)
- Health : EN 50385

Alcatel·Lucent

AT THE SPEED OF IDEAS™

Product Data Sheet HB158-1-08U8-S8J18

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 CELLFLEX⁹ accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

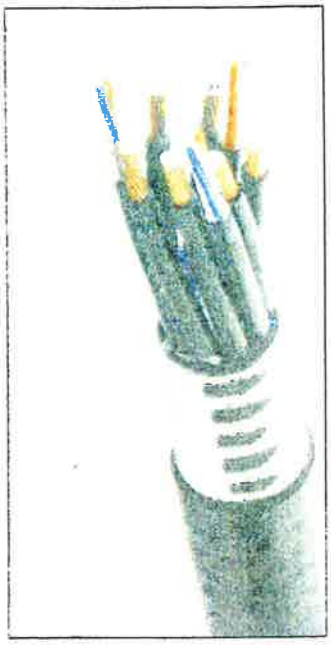


Figure 1: HYBRIFLEX Series

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

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, 8.4mm²/8AWG)		[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)			UL94-V0, UL1666 RoHS Compliant
Size (Power)		[mm² (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm² (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), IEEE1202/FT4 RoHS Compliant
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to149)

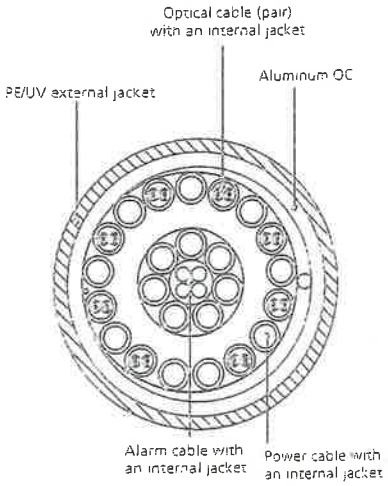


Figure 2: Construction Detail

* This data is provisional and subject to change

ATTACHMENT 4

ALL-POINTS TECHNOLOGY CORPORATION

WETLAND INVESTIGATION

November 20, 2014

Verizon Wireless
99 East River Drive
East Hartford, CT 06108

APT Project No.: CT1411580

Attn: Alexandria Carter

Re: Proposed Ashford CT Relo Facility
353 Pumpkin Hill Road
Ashford, Connecticut
Lat.: 41° 50' 52.375"
Long.: 72° 07' 17.816"
EnSite Project No.: 21205

Dear Ms. Carter,

All-Points Technology Corporation, P.C. ("APT") understands that Cellco Partnership and its controlled affiliates doing business as Verizon Wireless ("Verizon Wireless") is proposing to build a 240-foot tall self-supporting lattice communications tower ("Facility") to replace an existing 300-foot tall guyed lattice tower at 353 Pumpkin Hill Road in Ashford, Connecticut ("Subject Property"). At your request, Dean Gustafson, a Connecticut registered Professional Soil Scientist with APT conducted an inspection of the Subject Property on June 23, 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). The results of this wetland investigation are provided below.

Site and Project Description:

The Subject Property consists of an approximately 10-acre developed parcel. The area proposed for the wireless communications Facility is located within the western portion of an existing fenced compound that houses a 300-foot tall guyed lattice tower, equipment buildings and several concrete pads that formerly supported communication dishes. Access to the Facility is proposed to be gained via an existing gravel drive from Pumpkin Hill Road. The Study Area is dominated by the existing communications facility, mature upland hardwood forests and a forested hillside seep wetland. The surrounding land use generally consists of undeveloped forested tracts, agricultural fields and scattered residential development.

One wetland area was delineated within the Study Area consisting of a hillside seep forested wetland system associated with intermittent watercourses that generally flow to the north, bisected by the existing gravel access drive. Please refer to the enclosed Wetland Delineation Map for the approximate location of the identified wetland resource area. Wetlands were marked with pink and blue plastic flagging tape numbered with the following sequence: WF 1-01 to 1-10 and WF 1-20 to 1-40. General weather conditions encountered during the June inspection included low 70° 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 Ashford: The Town of Ashford regulates activities within wetlands and watercourses and within 100 feet of wetlands and 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 U.S. Army Corps of Engineers 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 Ridgebury, Leicester, and Whitman 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 Woodbridge fine sandy loam and Paxton and Montauk fine sandy loams. Detailed descriptions of wetland and upland soil types are provided below.

Wetland Soils:

The **Leicester** series consists of very deep, poorly drained loamy soils formed in friable till. They are nearly level or gently sloping soils in drainageways and low-lying positions on hills. Depth to bedrock is commonly more than 6 feet. Rock fragments range from 5 to 35 percent by volume to a depth of 40 inches and up to 50 percent below 40 inches. Leicester soils have a water table at or near the surface much of the year.

The **Ridgebury** series consists of very deep, somewhat poorly and poorly drained soils formed in glacial till derived mainly from granite, gneiss and schist. They are nearly level to gently sloping soils in low areas in uplands. This series includes phases that are poorly drained and the wetter part of somewhat poorly drained. A perched, fluctuating water table above the dense till saturates the solum to or near the surface for 7 to 9 months of the year.

The **Whitman** series consists of very deep, very poorly drained soils formed in glacial till derived mainly from granite, gneiss, and schist. They are nearly level or gently sloping soils in depressions and drainageways on uplands. Depth to dense till is 12 to 30 inches. Some pedons have organic horizons overlying the A horizon. They are fibric hemic or sapric material, and are up to 5 inches thick. Whitman soils are found on nearly level and gently sloping soils in depressions and in drainage ways of glacial uplands. Slopes are typically 0 to 2 percent but range up to 8 percent where wetness is due to seepage water. This soil is very poorly drained. A perched water table, or excess seepage water, is at or near the surface for about 9 months of the year.

Upland Soils:

The **Paxton** and **Montauk** series consists very deep, well drained loamy soils formed in subglacial till derived primarily from granitic materials. The soils formed in thick moderately coarse or medium textured glacial till mantles underlain by firm to dense sandy till (known locally as hardpan). They are nearly level to steep soils on till plains, hills, and drumlins. The depth to the densic contact and material is commonly 20 to 40 inches but the range includes 18 to 40 inches. Depth to bedrock is commonly more than 6 feet. Permeability is moderate or moderately rapid in the solum and slow or moderately slow in the substratum.

The **Woodbridge** series consists of moderately well drained loamy soils formed in compact, subglacial till. They are very deep to bedrock. They are nearly level to moderately steep soils on till plains, hills, and drumlins. Depth to the compact layer (hardpan) is 18 to 40 inches. Depth to bedrock is commonly more than 6 feet. Woodbridge soils have a seasonal high water table on top of the compact layer (18-40") from fall through late spring.

[1] NRCS Web Soil Survey, http://websoilsurvey.nrcs.usda.gov/app/, accessed on June 20, 2014.

Wetlands Discussion:

Wetland 1 Classification Summary:

Wetland 1[2] (WF 1-01 to 1-10 & WF 1-20 to 1-40)	System: Palustrine	Subsystem	Class: Forested	Subclass: Broad-leaved Deciduous	Water Regime: Seasonally Flooded	Special Modifier
Watercourse Type	Perennial ☐	Intermittent ☒	Tidal ☐	**Special Aquatic Habitat** (None)	Vernal Pool ☐	Other ☐

Wetland 1 Description:

Wetland 1 is a hillside seep wetland system formed in dense glacial till located west of the existing communications facility and bisected by the existing gravel access drive. A seasonal intermittent watercourse with a ±2-foot wide channel that is generally less than 6 inches deep during bank-full flows conveys flows south to north through the interior of this wetland. A 24-inch reinforced concrete pipe is associated with the intermittent watercourse channel under the existing gravel access drive.

Structural modifications recently installed at this facility included guy anchor foundation reinforcement crushed stone berms placed over all six of the existing guy anchor foundations. The two western guy anchor foundations are located in Wetland 1 located just north of the existing gravel drive. This activity resulted in filling approximately 580 square feet of wetlands. The contractor who performed the work was unaware that the area was regulated as wetlands and Verizon Wireless has committed to restoring this wetland area as part of the proposed development activities, as discussed in more detail in the Summary section of this report.

Wetland 1 Dominant Vegetation:

Dominant Wetland Species Common Name (Latin Name)	Dominant Adjacent Upland Species Common Name (Latin Name)
Red Maple (Acer rubrum)	Northern Red Oak (Quercus rubra)
Green Ash (Fraxinus pennsylvanica)	White Oak (Quercus alba)
Spicebush (Lindera benzoin)	Black Oak (Quercus velutina)
Japanese Barberry* (Berberis thunbergii)	Sugar Maple (Acer saccharum)
Skunk Cabbage (Symplocarpus foetidus)	Japanese Barberry* (Berberis thunbergii)
Cinnamon Fern (Osmunda cinnamomea)	Multiflora Rose* (Rosa multiflora)
Sensitive Fern (Onoclea sensibilis)	Hayscented Fern (Dennstaedtia punctilobula)
Yellow Birch (Betula alleghaniensis)	Black Birch (Betula lenta)
Japanese Barberry* (Berberis thunbergii)	Asiatic Bittersweet* (Celastrus orbiculatus)
Multiflora Rose* (Rosa multiflora)	Pignut Hickory (Carya glabra)
Meadowsweet (Spiraea latifolia)	Shagbark Hickory (Carya ovata)

* 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.

Summary:

Based on a review of the Partial Site Plan prepared by Centek Engineering (Sheet No. C-1.1, latest revision date 11/12/14), no direct impact to wetlands is associated with the proposed Verizon Wireless development. Construction activities will be contained within the existing fenced compound with the closest work to wetlands consisting of the northwest pier of the proposed self-supporting lattice tower being 90± feet from wetland flag WF 1-28. No temporary impacts associated with construction activities are anticipated with the sedimentation and erosion controls being proposed (as noted on Sheet No. C-1.1), which are generally consistent with the *2002 Connecticut Guidelines For Soil Erosion and Sediment Control.* Long term secondary impacts to wetland resources possibly associated with the operation of this Facility are minimized by the fact the development will occur within the existing developed footprint of the existing fenced compound, the Facility is unmanned, and minimal traffic is generated.

As previously introduced, unauthorized fill was placed in wetlands by others. Verizon Wireless has committed to implementing a wetland restoration plan that will restore 580± square feet of previously filled wetland with removal of two crushed stone guy anchor foundation reinforcement berms from both the inner and outer guy anchors from western guy anchor. Wetland restoration work will be performed during demolition of the existing 300-foot guyed lattice tower. Complete details of the wetland restoration plan are provided Sheet C-1.2 of Centek Engineering's plan set. As the wetland restoration area consists of fill material overlying original wetland soils, excavation will include removal of fill material until the underlying native wetland soil is exposed. The wetland restoration area will be planted with native trees, shrubs and herbaceous species as noted in the Planting Schedule and under sown with a native New England wetland seed mix after the grading is completed. An isolated patch of common reed (*Phragmites australis*), an aggressive invasive plant species, is located adjacent to the wetland restoration area. This area will enhance through treatment as follows: in late June, common reed will be cut to the ground; in September, common reed will be treated with glyphosate herbicide Rodeo®, or approved equivalent, using an herbicide dipped glove swiping technique to avoid impact to native plants.

Therefore, it is APT's opinion that the proposed Verizon Wireless tower relocation project, including the wetland restoration area, will not result in a likely adverse impact to wetland resources.

If you have any questions regarding the above-referenced information, please feel free to contact me by telephone at (860) 663-1697 ext. 201 or via email at dgustafson@allpointstech.com.

Sincerely,

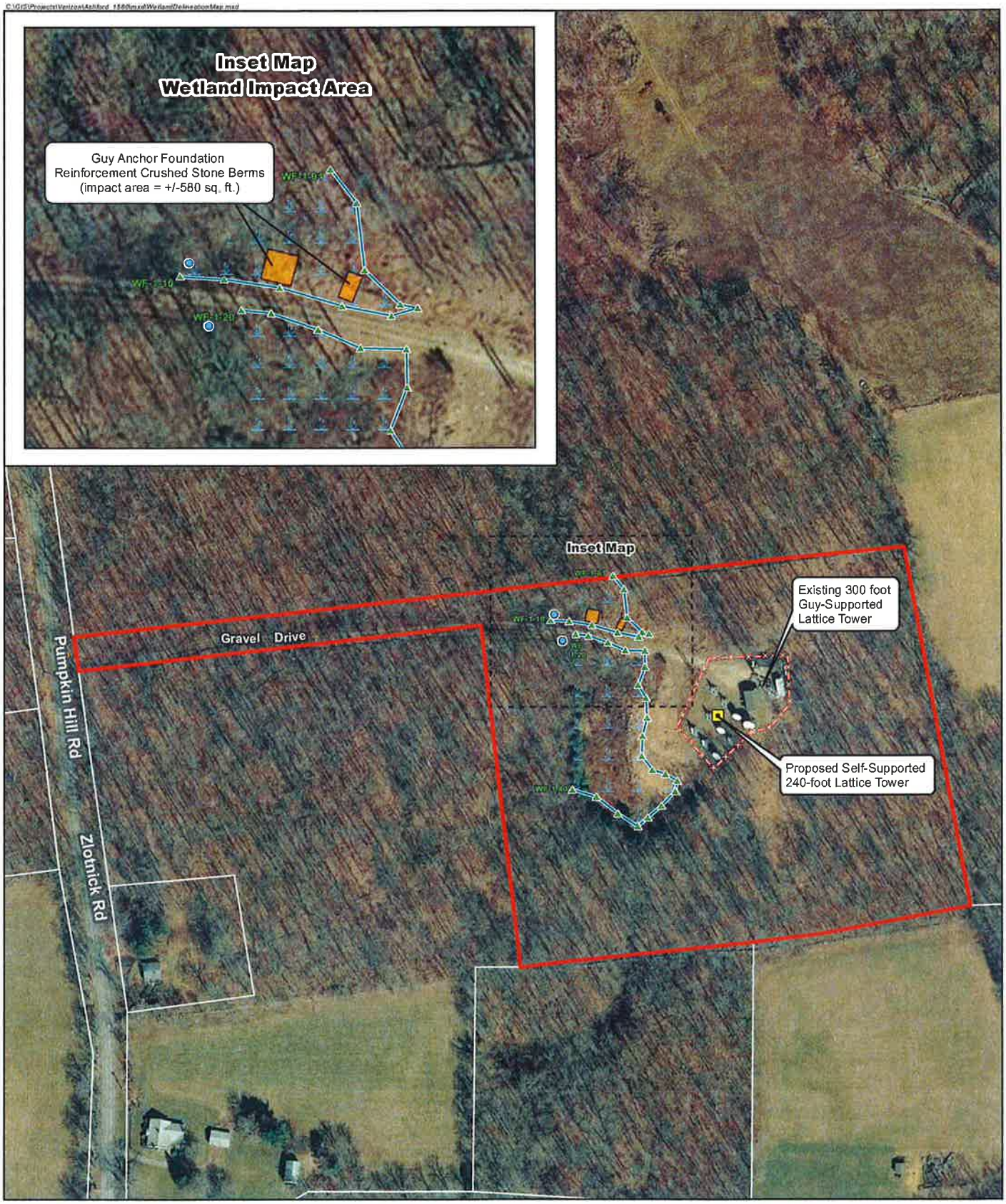
All-Points Technology Corporation, P.C.

Dean Gustafson

Professional Soil Scientist

Enclosure

Wetland Delineation Map



Legend

- Proposed Self-Supported Lattice Tower
- Wetland Flag
- Culvert
- Distribution Pole
- Delineated Wetland Boundary
- Wetland Area
- Inset Map
- Existing Fenced Compound
- Limit of Fill Area (wetland area = +/-580 sq. ft.)
- Approximate Subject Parcel Boundary
- Approximate Parcel Boundary (CTDEEP)

Base Map Source: 2012 Aerial Photograph (CTECO)
Map Date: November 2014

200 100 0 200 Feet

Wetland Delineation Map

Proposed Wireless
Telecommunications Relo Facility
Ashford CT
353 Pumpkin Hill Road
Ashford, Connecticut

verizonwireless

ALL-POINTS TECHNOLOGY CORPORATION

ATTACHMENT 5

ALL-POINTS TECHNOLOGY CORPORATION

AVIAN RESOURCES EVALUATION

Date: November 21, 2014

Ms. Alexandria Carter
Verizon Wireless
99 East River Drive
East Hartford CT 06108

APT Project No.: CT1411580

Re: Proposed Ashford Facility
353 Pumpkin Hill Road
Ashford, Connecticut

Cellco Partnership d/b/a Verizon Wireless ("Verizon") proposes to construct a new wireless telecommunications Facility ("Facility") at 353 Pumpkin Hill Road in Ashford, Connecticut (the "host Property"). Verizon's proposed lease area consists of 9.268 acres and includes a 50' wide CL&P easement (collectively, the "site") extending onto the host Property from Pumpkin Hill Road. The host Property is currently a complex of upland and wetland forested, open field, and scrub/shrub areas with an existing interior telecommunications facility. Verizon proposes to install a 240-foot tall unguyed lattice tower (total Facility height of 243.1 ft. A.G.L.) and ground equipment enclosure within the existing gravel compound area surrounded with an 8-foot tall chain link fence. The existing 300-foot tall guyed lattice tower is to be removed as part of the proposed project. The replacement tower is to be located directly adjacent to the southwest of the existing guyed tower, an area currently composed of remnant terrestrial dishes with concrete footings. Access to the Facility will be over an existing 12-foot wide gravel drive.

The purpose of this evaluation is to document the proposed Facility's proximity to avian resource areas and its compliance with recommended guidelines of the United States Fish and Wildlife Service for minimizing the potential for telecommunications towers to impact migratory bird species.

All-Points Technology Corporation, P.C. ("APT") reviewed several publicly-available sources of avian data for the state of Connecticut to provide the following information with respect to potential impacts on migratory birds associated with the proposed development. This desktop analysis and attached graphics identify avian resources and their proximities to the host Property. Information within an approximate 2-mile radius of the host Property is graphically depicted on the attached Avian Resources Map. Some of the avian data referenced herein are not located in proximity to the project area and are therefore not visible on the referenced map due to its scale. However, in those cases the distances separating the host Property from the resources are identified in the discussions below.

Proximity to Important Bird Areas

The National Audubon Society has identified 27 Important Bird Areas ("IBAs") in the state of Connecticut. IBAs are sites that provide essential habitat for breeding, wintering, and/or migrating birds. To achieve this designation, an IBA must support species of conservation concern, restricted-range species, species vulnerable due to concentration in one general habitat type or biome, or species vulnerable due to their occurrence at high densities as a result of their congregatory behavior[1]. The closest IBA to the host Property is the Bafflin Sanctuary Complex in Pomfret located approximately 7.4 miles to the east. Bafflin Sanctuary provides a variety of habitats that support numerous species of birds, including breeding grounds for several species of high conservation priority. Endangered Pied-billed Grebes and American Black Ducks (high conservation priority) have been known to nest in the wetlands here. These areas are also a migratory stopover for American Bittern in the fall. The combination of the reduced height of the free-standing replacement tower, removal of existing guy wires, and its distance from this IBA, no adverse impacts would result from the proposed development.

Supporting Migratory Bird Data

Beyond Audubon's IBAs, the following analysis and attached graphics also identify several additional avian resources and their proximities to the host Property. Although these data sources may not represent habitat indicative of important bird areas, they may indicate possible bird concentrations[2] or migratory pathways.

Critical Habitat

Connecticut Critical Habitats depict the classification and distribution of 25 rare and specialized wildlife habitats in the state. It represents a compilation of ecological information collected over many years by state agencies, conservation organizations and individuals. Critical habitats range in size from areas less than one acre to areas that are tens of acres in extent. The Connecticut Critical Habitats information can serve to highlight ecologically significant areas and to target areas of species diversity for land conservation and protection but may not necessarily be indicative of habitat for bird species. The nearest Critical Habitat to the proposed Facility is a palustrine forested acidic Atlantic white cedar swamp area, denoted as the Pheonixville Acidic Atlantic White Cedar Swamp located approximately 3.4 miles to the northeast. Based on the distance separating this resource from the proposed Facility, no adverse impacts are anticipated.

[1] http://web4.audubon.org/bird/iba/iba_intro.html

[2] "bird concentrations" is related to the USFWS *Interim Guidance on the Siting, Construction, Operation and Decommissioning of Communications Towers* (September 14, 2000) analysis provided at the end of this document

Avian Survey Routes and Points

Breeding Bird Survey Route

The North American Breeding Bird Survey is a cooperative effort between various agencies and volunteer groups to monitor the status and trends of North American bird populations. Routes are randomly located to sample habitats that are representative of an entire region. Each year during the height of the avian breeding season (June for most of the United States) participants skilled in avian identification collect bird population data along roadside survey routes. Each survey route is approximately 24.5 miles long and contains 50 stops located at 0.5-mile intervals. At each stop, a three-minute count is conducted. During each count, every bird seen or heard within a 0.25-mile radius is recorded. The resulting data is used by conservation managers, scientists, and the general public to estimate population trends and relative abundances and to assess bird conservation priorities. The nearest survey route to the host Property is the Woodstock Breeding Bird Survey Route (Route #18005) located approximately 3.4 miles to the east. This ±24-mile long bird survey route begins in Hampton and generally winds its way north through the southeastern part of Eastford, and western portions of Pomfret and Woodstock, before terminating in the northern section of Eastford. Since bird survey routes represent randomly selected data collection areas, they do not necessarily represent a potential restriction to development projects, including the proposed Facility.

Hawk Watch Site

The Hawk Migration Association of North America ("HMANA") is a membership-based organization committed to the conservation of raptors through the scientific study, enjoyment and appreciation of raptor migration. HMANA collects hawk count data from almost 200 affiliated raptor monitoring sites throughout the United States, Canada and Mexico, identified as "Hawk Watch Sites." In Connecticut, Hawk Watch Sites are typically situated on prominent hills and mountains that tend to concentrate migrating raptors and may be an indicator of secondary migratory routes that connect to the Atlantic Flyway. The nearest Hawk Watch Site, Beelzebub Street, is located in South Windsor, approximately 20.5 miles to the west of the proposed Facility.

Most hawks migrate during the day (diurnal) to take advantage of two theorized benefits: (1) diurnal migration allows for the use of updrafts or rising columns of air called thermals to gain lift without flapping thereby reducing energy loss; and, (2) day migrants can search for prey and forage as they migrate. Therefore, no adverse impacts to migrating hawks are anticipated with development of the Facility, based on its reduced height, lack of guy wires and the 20.5± mile separation distance to a migrating raptor concentration (Beelzebub Street, is located in South Windsor) and hawk migration behavior occurring during the daytime under favorable weather conditions when thermals form.

Bald Eagle Survey Route

Bald Eagle survey routes consist of locations of midwinter Bald Eagle counts from 1986 to 2005 with an update provided in 2008 along major river systems and water bodies in Connecticut. This survey

was initiated in 1979 by the National Wildlife Federation. This database includes information on statewide, regional and national trends. Survey routes are included in the database only if they were surveyed consistently in at least four years and where at least four eagles were counted in a single year. A Bald Eagle survey route begins in the City of Norwich along the Thames River approximately 22 miles south of the host Property.

Bald Eagle migration patterns are complex, dependent on age of the individual, climate (particularly during the winter) and availability of food.[3] Adult birds typically migrate alone and generally as needed when food becomes unavailable, although concentrations of migrants can occur at communal feeding and roost sites. Migration typically occurs during the middle of day (10:30–17:00) as thermals provide for opportunities to soar up with limited energetic expense; Bald Eagle migration altitudes are estimated to average 1,500–3,050 m by ground observers. [4] Four adults tracked by fixed-wing aircraft in Montana averaged 98 km/d during spring migration and migrated at 200–600 m above ground (McClelland et al. 1996).[5]

Therefore, no adverse impacts to migrating Bald Eagle are anticipated with development of the Facility, based on the relatively short (240-foot) height of the Facility and eagle migration patterns during the daytime under favorable weather conditions when thermals form.

Flyways

The project area is located in Windham County, approximately 35 miles north of Long Island Sound. The Connecticut coast lies within the Atlantic Flyway, one of four generally recognized regional primary migratory bird flyways (Mississippi, Central and Pacific being the others). This regional flyway is used by migratory birds travelling to and from summering and wintering grounds. The Atlantic Flyway is particularly important for many species of migratory waterfowl and shorebirds, and Connecticut's coast serves as vital stopover habitat. Migratory land birds also stop along coastal habitats before making their way inland. Smaller inland migratory flyways ("secondary flyways") are often concentrated along major riparian areas as birds use these valuable stopover habitats to rest and refuel as they make their way further inland to their preferred breeding habitats. The Connecticut Migratory Bird Stopover Habitat Project (Stokowski, 2002)[6] identified potential flyways along the Housatonic, Naugatuck, Thames, and Connecticut Rivers. This study paralleled a similar earlier study conducted by the Silvio O. Conte

[3] Buehler, David A. 2000. Bald Eagle (*Haliaeetus leucocephalus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/506 [Accessed 09/09/13].
[4] Harmata, A. R. 1984. Bald Eagles of the San Luis valley, Colorado: their winter ecology and spring migration. Ph.D. Thesis. Montana State Univ. Bozeman.
[5] Mcclelland, B. R., P. T. McClelland, R. E. Yates, E. L. Caton, and M. E. McFadden. 1996. Fledging and migration of juvenile Bald Eagles from Glacier National Park, Montana. J. Raptor Res. 30:79-89.
[6] Stokowski, J.T. 2002. Migratory Bird Stopover Habitat Project Finishes First Year. Connecticut Wildlife, November/December 2002. P.4.

National Fish & Wildlife Refuge (Neotropical Migrant Bird Stopover Habitat Survey[7]), which consisted of collection of migratory bird data along the Connecticut River and the following major Connecticut River tributaries: Farmington, Hockanum, Scantic, Park, Mattabesset, Salmon, and Eight Mile Rivers. Of these potential flyways, the nearest to the host Property is the Hockanum River, located approximately 18 miles to the west. Although the Natchaug River is not identified as a potential flyway, it potentially forms a secondary flyway as birds disperse from the Shetucket River corridor (which ties into the Thames River corridor) during the spring migration. The Natchaug River riparian corridor is located 1.3 miles east of the host Property. These major riparian corridors may provide secondary flyways as they likely offer more food and protection than more exposed upland sites, particularly during the spring migration[8].

Siting of tower structures within flyways can be a concern, particularly for tall towers and even more particularly for tall towers with guy wires and lighting. The majority of studies on bird mortality due to towers focuses on very tall towers (greater than 1000 feet), illuminated with non-flashing lights, and guyed. These types of towers, particularly if sited in major migratory pathways, do result in significant bird mortality (Manville, 2005)[9]. While the proposed Facility is this type of tower, being an lit, unguyed lattice structure of 240 feet in height. More recent studies of short communication towers (<300 feet) reveal that they rarely kill migratory birds[10]. Studies of mean flight altitude of migrating birds reveal flight altitudes of 410 meters (1350 feet), with flight altitudes on nights with bad weather between 200 and 300 meters above ground level (656 to 984 feet)[11].

No adverse impacts to migrating bird species are anticipated with the Project, based on the significant distance separating the host Property from both the Hockanum and Natchaug River potential flyway corridors and the nature of the proposed Facility being a tower replacement. The existing tower consists of a 300-foot tall, guyed, and lit lattice structure. The proposed replacement tower will be an improvement as it will be 60 feet shorter in height and free-standing, without any guy wires. Current plans propose that existing lighting will remain consistent (albeit at lower heights) on the proposed Facility. Verizon Wireless will request a "lighting deviation" from the FAA to replace the proposed steady-burning side-marker red lights (e.g., L-810 lights) with flashing lights (e.g., L-864 or L-865 lights) to achieve bird-friendly benefits[12].

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[7] The Silvio O. Conte National Fish & Wildlife Refuge Neotropical Migrant Bird Stopover Habitat Survey http://www.science.smith.edu/stopoverbirds/index.html

[8] The Silvio O. Conte National Fish & Wildlife Refuge Neotropical Migrant Bird Stopover Habitat Survey. http://www.science.smith.edu/stopoverbirds/Chapter5_Conclusions&Recommendations.html

[9] Manville, A.M. II. 2005. Bird strikes and electrocutions at power lines, communications towers, and wind turbines: state of the art and state of the science - next steps toward mitigation. Bird Conservation Implementation in the Americas: Proceedings 3rd International Partners in Flight Conference 2002. C.J. Ralph and T.D. Rich, editors. USDA Forest Service General Technical Report PSW-GTR-191. Pacific Southwest Research Station, Albany CA. pp. 1-51-1064.

[10] Kerlinger, P. 2000. Avian Mortality at Communication Towers: A Review of Recent Literature, Research, and Methodology. Prepared for U.S. Fish and Wildlife Service Office of Migratory Bird Management.

[11] Mabee, T.J., B.A. Cooper, J.H. Plissner, D.P. Young. 2006. Nocturnal bird migration over an Appalachian ridge at a proposed wind power project. Wildlife Society Bulletin 34:682-690.

[12] Federal Communications Commission. May 19, 2014. Opportunities to Reduce Bird Collisions with Communications Towers While Reducing Tower Lighting Costs.

Waterfowl Focus Areas

The Atlantic Coast Joint Venture ("ACJV") is an affiliation of federal, state, regional and local partners working together to address bird conservation planning along the Atlantic Flyway. The ACJV has identified waterfowl focus areas recognizing the most important habitats for waterfowl along the Atlantic Flyway. Connecticut contains several of these waterfowl focus areas. The nearest waterfowl focus area to the host Property is the Lower Thames River System area, located approximately 20.5 miles to the southeast. Please refer to the attached Connecticut Waterfowl Focus Areas Map. Based on the distance of these resources to the site, no direct impacts would occur from development of the proposed Facility.

CTDEEP Migratory Waterfowl Data

The Connecticut Department of Energy and Environmental Protection ("CTDEEP") created a Geographic Information System ("GIS") data layer in 1999 identifying concentration areas of migratory waterfowl at specific locations in Connecticut. The intent of this data layer is to assist in the identification of migratory waterfowl resource areas in the event of an oil spill or other condition that might be a threat to waterfowl species. This data layer identifies conditions at a particular point in time and has not been updated since 1999.

No migratory waterfowl areas are located within the Town of Ashford. The nearest migratory waterfowl area (Hockanum River marsh habitat in Ellington, CT) is located approximately 18 miles to the west of the proposed Facility. The associated species are identified as American black duck, mallard, green wing teal, and wood duck. Based on its distance to the site, no impacts to migratory waterfowl habitat are anticipated to result from development of the proposed Facility.

CTDEEP Natural Diversity Data Base

CTDEEP's Natural Diversity Data Base ("NDDB") program performs hundreds of environmental reviews each year to determine the impact of proposed development projects on state listed species and to help landowners conserve the state's biodiversity. State agencies are required to ensure that any activity authorized, funded or performed by a state agency does not threaten the continued existence of endangered or threatened species. Maps have been developed to serve as a pre-screening tool to help applicants determine if there is a potential impact to state listed species.

The NDDB maps represent approximate locations of endangered, threatened and special concern species and significant natural communities in Connecticut. The locations of species and natural communities depicted on the maps are based on data collected over the years by CTDEEP staff, scientists, conservation groups, and landowners. In some cases an occurrence represents a location derived from literature, museum records and/or specimens. These data are compiled and maintained in the NDDB. The general locations of species and communities are symbolized as shaded areas on the maps. Exact locations have been masked to protect sensitive species from collection and disturbance and to protect landowner's rights whenever species occur on private property.

According to the available NDDB maps, the proposed Project is not located within or proximate to any shaded NDDB areas. APT submitted a review request to the CTDEEP NDDB in November 2014 with respect to this project to confirm that no known populations of Federal or State Endangered, Threatened or Special Concern Species occur on or near the site. The CTDEEP is currently reviewing this request and has not responded at the time this report was published. Information provided by CTDEEP will be forwarded upon receipt and evaluation of the project's potential for impact to listed species will be updated, as necessary.

USFWS Communications Towers Compliance

In 2013, the U.S Fish and Wildlife Service ("USFWS") prepared its *Revised Voluntary Guidelines for communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning*[13] which recommends the 13 voluntary guidelines below. These voluntary guidelines are designed to assist tower companies in developing their communication systems in a way which minimizes the risk to migratory birds and threatened and endangered species. APT offers the following responses to each of the USFWS recommendations which are abridged from the original document.

1. *Collocation of the communications equipment on an existing communication tower or other structure (e.g., billboard, water and transmission tower, distribution pole, or building mount) is strongly recommended. Depending on tower load factors and communication needs, from 6 to 10 providers should collocate on an existing tower or structure.*

   The existing tower is not structurally capable of holding Verizon's proposed equipment. Collocation opportunities on other existing towers, buildings or non-tower structures are not available in the area while achieving the required radio frequency ("RF") coverage objectives of Verizon. The proposed facility would be capable of multiple service provider collocations.

2. *If collocation is not feasible and a new tower or towers are to be constructed, it is strongly recommended that the new tower(s) should be not more than 199 feet above ground level ("AGL"), and that construction techniques should not require wires. Such towers should be unlighted if Federal Administration ("FAA") regulations and lighting standards permit. If lighting is required, no red-steady lights should be used. USFWS considers towers that are unlit, unguyed, monopole or lattice, and less than 200 feet AGL to be the environmentally preferred "gold standard".*

   The proposed Facility would consist of a 240-foot self-supporting lattice structure which does not require guy wires, but does require lighting per FAA. While not entirely consistent with USFWS' environmentally preferred "gold standard", is the replacement tower would provide an improvement in conditions relative to the existing tower. For towers within the height range of 200'-350' AGL, the FAA requires Style E (L-864/L-865/L-810) lighting, including: at least one (1) medium intensity dual red/white strobe light (L-864/L-864) at the top of the tower and a minimum of two (2) steady burning

[13] Manville, A.M., Ph.D., C.W.B. Suggestions Based on Previous USFWS Recommendations to FCC Regarding WT Docket No. 03-187, FCC 06-164, Notice of Proposed Rulemaking, "Effects of Communication Towers on Migratory Birds" (2007), Docket No. 08-61, FCC's Antenna Structure Registration Program (2011), Service 2012 Wind Energy Guidelines, and Service 2013 Eagle Conservation Plan Guidance. September 27, 2013.

red lights (L-810s) at an intermediate level. The white strobe is used during day time hours and the red strobe is activated at night. Both strobes are required to flash 30 times per minute. The lights may be a combination of LED, Xenon, and incandescent (red only) technologies. The existing tower's intermediate red lights are steady-burning red lights (non-flashing). Verizon Wireless will request a "lighting deviation" from the FAA to replace the proposed steady-burning side-marker red lights (e.g., L-810 lights) with flashing lights (e.g., L-864 or L-865 lights) to achieve bird-friendly benefits in accordance with USFWS' recommendations and FCC's guidance.

3. *If constructing multiple towers, the cumulative impacts of all the towers to migratory birds – especially to Birds of Conservation Concern[14] and threatened and endangered species, as well as the impacts of each individual tower, should be considered during development of a project.*

   Multiple towers are not proposed as part of this project.

4. *The topography of the proposed tower site and surrounding habitat should be clearly noted, especially in regard to surrounding hills, mountains, mountain passes, ridge lines, rivers, lakes, wetlands, and other habitat types used by raptors, Birds of Conservation Concern, and state and federally listed species, and other birds of concern. Active raptor nests, especially those of Bald Eagles, should be noted, including known or suspected distances from proposed tower sites to nest locations.*

   The topography of the proposed tower site and surrounding habitat is provided in the attached Avian Resources Map. No Bald Eagle nests, foraging areas or roost sites are known to be located within 660 feet of the proposed tower site.[15] A Bald Eagle survey route associated with the Thames River, which would provide foraging and roosting habitat and potential nesting habitat, is located approximately 22 miles south of the proposed Facility.

5. *If at all possible, new towers should be sited within existing "antenna farms" (i.e., clusters of towers), in degraded areas (e.g., strip mines or other heavily industrialized areas), in commercial agricultural lands, in Superfund sites, or other areas where bird habitat is poor or marginal. Towers should not be sited in or near wetlands, or other known bird concentration areas (e.g., state or Federal refuges, staging areas, rookeries, and Important Bird Areas), in known migratory or daily movement flyways, areas of breeding concentration, in habitat of threatened or endangered species, or key habitats for Birds of Conservation Concern. Additionally, towers should not be sited in areas with a high incidence of fog, mist, and low ceilings.*

   There are no existing "antenna farms", degraded or commercial areas in the vicinity of the proposed tower site that would satisfy the RF coverage objectives. The proposed Facility will not be located within wetlands, known bird concentration area, migratory or daily movement flyway, habitat of threatened/endangered species or key habitats for Birds of Conservation Concern. The proposed self-supporting lattice tower will be located within the existing fenced compound. According to the available NDDB maps, the proposed Project is not located within or proximate to any shaded NDDB

[14] U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, VA. 85 pp. http://www.fws.gov/migratorybirds/>

[15] U.S. Fish and Wildlife Service. 2007. National Bald Eagle Management Guidelines. United States Department of Interior, Fish and Wildlife Service, 23 pp. http://www.fws.gov/southdakotafieldoffice/NationalBaldEagleManagementGuidelines.pdf

areas. APT submitted a review request to the CTDEEP NDDB in November 2014 with respect to this project to confirm that no known populations of Federal or State Endangered, Threatened or Special Concern Species occur on this property. The CTDEEP is currently pending reviewing this request of this letter and has not as of this time responded at the time this report was published. Information provided by CTDEEP will be forwarded upon receipt and evaluation of the project's potential for impact to listed species will be updated, as necessary. No Federally-listed species are know to occur in the vicinity of the project.[16]

In Connecticut, seasonal atmospheric conditions can occasionally produce fog, mist and/or low ceilings. However, high incidences of these meteorological conditions, relative to the region, are not known to exist in the vicinity of the host Property.

6. *If taller (>199 feet AGL) towers requiring lights for aviation safety must be constructed, the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA should be used. The use of solid (non-flashing) warning lights at night should be avoided to minimize bird fatalities.*

   The proposed Facility height (240 feet AGL) requires aviation safety lighting. Verizon will comply with FAA requirements. As indicated in the response to recommendation 2 above, Verizon intends to petition the FCC for a change of variance to use the strobe lights at the intermediary level.

7. *Tower designs using guy wires for support, which are proposed to be located in known raptor or waterbird concentration areas, daily movement routes, major diurnal migratory bird movement routes, staging areas, or stopover sites, should have daytime visual markers or bird deterrent devices installed on the wires to prevent collisions by these diurnally moving species.*

   The proposed Facility would be free-standing and would not require guy wires, visual marking or other bird deterrent devices.

8. *Towers and appendant facilities should be sited, designed and constructed so as to avoid or minimize habitat loss within and adjacent to the tower "footprint." However, a larger tower footprint is preferable to the use of guy wires in construction. Road access and fencing should be minimized to reduce or prevent habitat fragmentation, disturbance, and the creation of barriers, and to reduce above ground obstacles to birds in flight.*

   The proposed Facility is sited, designed, and would be constructed to accommodate proposed equipment and to allow for future collocations within the smallest footprint possible. The Facility would be constructed within an existing fenced compound and use of an existing access drive will be maintained. Therefore the proposed development will not result in habitat fragmentation.

9. *If, prior to tower design, siting and construction, it has been determined that a significant number of breeding, feeding, or roosting birds, especially of Birds of Conservation Concern, state or federally-listed bird species, and eagles are known to habitually use the proposed tower construction area,*

[16] U.S. Fish & Wildlife Service Information, Planning, and Conservation System ("IPaC") review performed on 11/20/14. www.ecos.fws.gov/ipac

relocation to an alternate site is highly recommended. If this is not an option, seasonal; restrictions on construction may be advisable in order to avoid disturbance, site and nest abandonment, especially during breeding, rearing and other periods of high bird activity.

Significant numbers of breeding, feeding, or roosting Birds of Conservation Concern, state or federally-listed bird species, or eagles are not known to habitually use the proposed tower construction areas at the host Property.

10. *Security lighting for on-ground facilities, equipment and infrastructure should be motion- or heat-sensitive, down-shielded, and of a minimum intensity to reduce nighttime bird attraction and eliminate constant nighttime illumination, but still allow for safe nighttime access to the site.*[17][18]

    Security lighting for on-ground facilities would be down-shielded using Dark Sky compliant fixtures set on motion sensor with timer to eliminate constant nighttime illumination.

11. *Representatives from the USFWS or researchers from the Research Subcommittee of the Communication Tower Working Group ("CTWG") should be allowed access to the site to evaluate bird use; conduct dead-bird searches; place above ground net catchments below the towers; and to perform studies using radar, Global Positioning System, infrared, thermal imagery, and acoustical monitoring equipment, as necessary to assess and verify bird movements and to gain information on the impacts of various tower sizes, configurations, and lighting systems.*

    With prior written notification to and approval by Verizon, USFWS or CTWG research personnel would be allowed access to the proposed Facility to conduct evaluations.

12. *Towers no longer in use, not re-licensed by the FCC for use, or determined to be obsolete should be removed within 12 months of cessation of use.*

    If the proposed Facility was no longer in use, not re-licenses by the FCC for use, or determined to be obsolete, it would be removed within 12 months of cessation of use.

13. *In order to obtain information on the usefulness of these guidelines in preventing bird strikes and better understanding impacts from habitat fragmentation, please advise USFWS personnel of the final location and specifications of the proposed tower, and which measures recommended in these guidelines were implemented.*

    The final location and specification of the proposed tower have been provided in this report and accompanying maps. A detailed review of implemented measures recommended in the *Revised Voluntary Guidance for Communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning* (September 27, 2013) are provided herein. The proposed Facility is not proximate to an Important Bird Area and would generally comply with the USFWS guidelines for

[17] Manville, A.M., II. 2011. Comments of the U.S. Fish and Wildlife Service's Division of Migratory Bird Management Filed Electronically on WT Docket No. 08-61 and WT Docket No. 03-187, Regarding the Environmental Effects of the Federal Communication's Antenna Structure Registration Program. January 14, 2011. 12 pp.

[18] U.S. Fish and Wildlife Service. 2012. U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines. March, 82 pp.

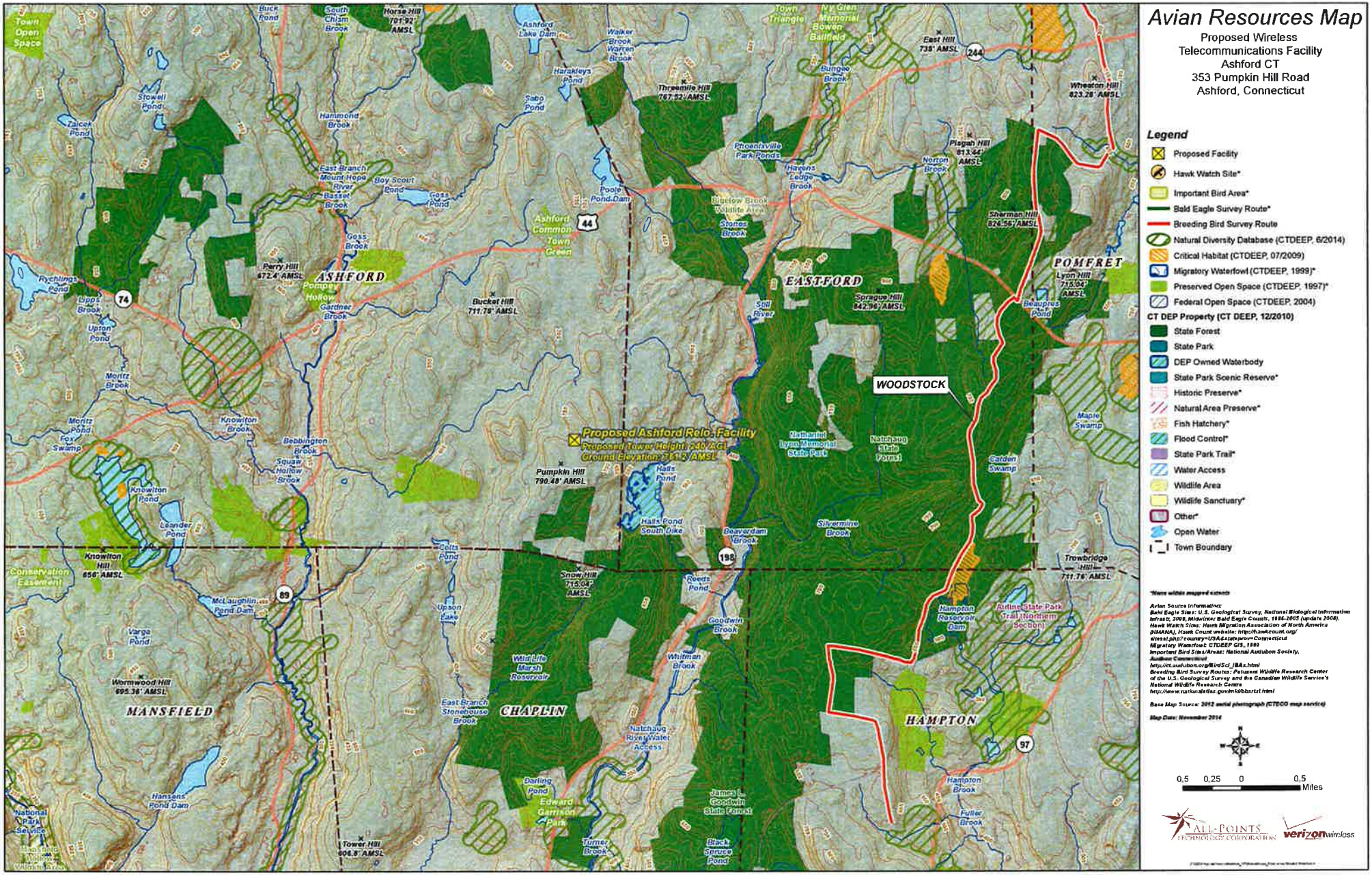
minimizing the potential impacts to birds to the maximum extent feasible. APT recommends that a copy of this report be submitted to USFWS if the proposed Facility is constructed.

Summary and Conclusions

Based on the results of this desk-top evaluation, the proposed Facility would not be proximate to an Important Bird Area or other significant avian resource area and would generally comply with the USFWS guidelines for minimizing the potential to adversely impact migratory bird species.

Figures

- Avian Resources Map
- Connecticut Waterfowl Focus Areas Map



Avian Resources Map

Proposed Wireless
Telecommunications Facility
Ashford CT
353 Pumpkin Hill Road
Ashford, Connecticut

Legend

- Proposed Facility
- Hawk Watch Site*
- Important Bird Area*
- Bald Eagle Survey Route*
- Breeding Bird Survey Route
- Natural Diversity Database (CTDEEP, 6/2014)
- Critical Habitat (CTDEEP, 07/2009)
- Migratory Waterfowl (CTDEEP, 1999)*
- Preserved Open Space (CTDEEP, 1997)*
- Federal Open Space (CTDEEP, 2004)

CT DEP Property (CT DEEP, 12/2010)

- State Forest
- State Park
- DEP Owned Waterbody
- State Park Scenic Reserve*
- Historic Preserve*
- Natural Area Preserve*
- Fish Hatchery*
- Flood Control*
- State Park Trail*
- Water Access
- Wildlife Area
- Wildlife Sanctuary*
- Other*
- Open Water
- Town Boundary

*Name within mapped extents

Avian Source Information:
Bald Eagle Sites: U.S. Geological Survey, National Biological Information Infrastr, 2008, Midwinter Bald Eagle Counts, 1986-2005 (update 2008).
Hawk Watch Sites: Hawk Migration Association of North America (HMANA), Hawk Count website: http://hawkcount.org/sitesst.php?country=USA&stateprov=Connecticut
Migratory Waterfowl: CTDEEP GIS, 1999
Important Bird Sites/Areas: National Audubon Society, Audubon Connecticut
http://ct.audubon.org/BirdSci_IBAs.html
Breeding Bird Survey Routes: Patuxent Wildlife Research Center of the U.S. Geological Survey and the Canadian Wildlife Service's National Wildlife Research Centre
http://www.mbr-pwrc.usgs.gov/bbs/bbs1.html

Base Map Source: 2012 aerial photograph (CTECO map service)

Map Date: November 2014

0.5 0.25 0 0.5 Miles

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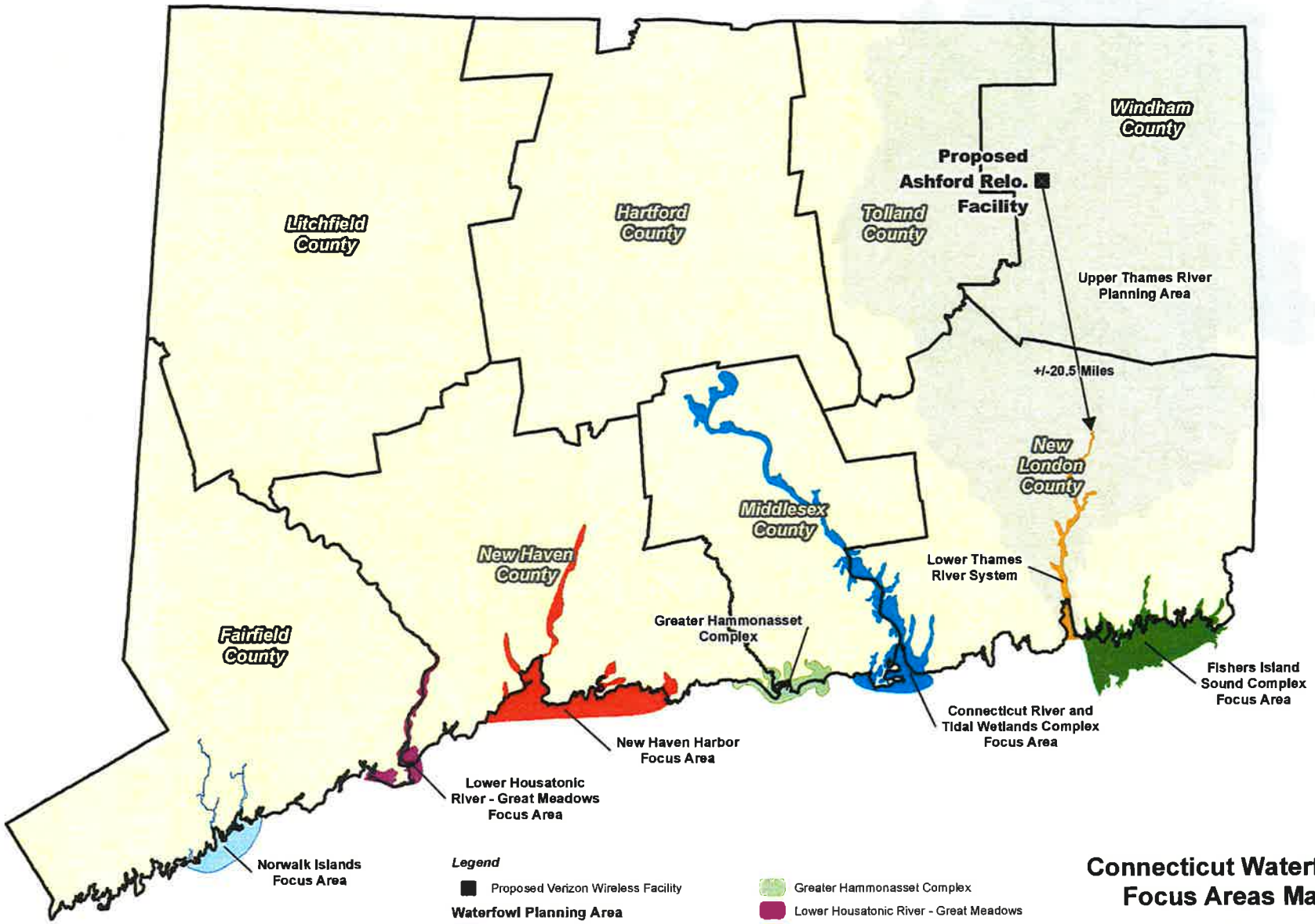
C:\GIS\Projects\Verizon\Ashford_1580\mxd\Waterfowl Focus Areas Map.mxd



Connecticut Waterfowl Focus Areas Map

Proposed Wireless Telecommunications Facility
Ashford CT
353 Pumpkin Hill Road
Ashford, Connecticut

Waterfowl Data Source: Atlantic Coast Joint Venture Partnership
Map Date: November 2014

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ATTACHMENT 6

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VISIBILITY ANALYSIS

ASHFORD, CT
353 PUMPKIN HILL ROAD
ASHFORD, CT

Prepared for:

Verizon Wireless
99 East River Drive
East Hartford CT 06108

Prepared by:

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

NOVEMBER 2014

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 at 353 Pumpkin Hill Road in Ashford, Connecticut (the "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 Property lies on the east side of Pumpkin Hill Road in a rural area, centrally located between three major state roads: Route 44 to the north; Route 89 to the west; and, Route 198 to the east and south. A 300-foot tall, guyed lattice tower currently occupies an area in the northern portion of an existing fence-enclosed compound. The existing tower is not structurally capable of supporting new equipment. Verizon Wireless proposed to construct a Replacement Facility (consisting of a self-supporting, steel lattice tower) approximately 88 feet to the southwest of the existing tower. The Replacement Facility tower would rise to a total height of 240 feet above ground level to accommodate Verizon Wireless's new antenna array. Antennas owned and operated by others on the existing tower would be swapped over to the Replacement Facility

Land use within the immediate vicinity is primarily agricultural with large tracts of undeveloped forest.

Field Reconnaissance

APT completed an in-field analysis on October 17, 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 from 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 seven (7) 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 programs.

For presentation purposes in this report, the photographs are produced in an approximate 7" by 10.5" format and presented in the attachment at the end of this report. 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, ultimately preserving the integrity of the scene's setting while depicting the modified Facility in a way similar to what an observer might see.

Where visible in the existing conditions photos, the balloon provides visual reference points for the approximate height and location of the tower relative to the scene. The photo-simulations are intended to provide the reader with a general understanding of the different views that might be achieved of the Replacement Facility. Note that the existing tower is visible in all of the photographs presented herein; the existing tower has been removed from the corresponding photo-simulations of the Replacement Facility to provide a representation of proposed conditions once the project is complete.

It is important to consider that the publicly-accessible locations selected are typically representative of a "worst case" scenario. They were chosen to present unobstructed view lines (wherever possible), are static in nature and do not necessarily fairly characterize the prevailing views from all locations within a given area. In several cases, a view of the tower may be limited to the immediate area of the specific photo location. For instance, moving a few feet in one direction or another often results in a more obscured view or no view at all.

---

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

The simulations provide a representation of the Replacement Facility under similar settings as those encountered during the balloon float and reconnaissance. Views of the tower can change substantially throughout the season and are dependent on environmental conditions, including (but not necessarily limited to) weather, light conditions, seasons, time of day, and the viewer 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, and the distance from where the photo was taken relative to the Facility location.

Photo No.	Photo Location	View Orientation	Distance to Facility
1	Kennerson Road	Southwest	±0.62 Mile
2	Snow Lane	South	±0.47 Mile
3	Kennerson Reservoir Road	Southeast	±0.88 Mile
4	Bebbington Road	Southeast	±1.06 Miles
5	Bebbington Road	East	±1.44 Miles
6	Pumpkin Hill Road	Northeast	±0.26 Mile
7	Kennerson Road	Northwest	±0.85 Mile

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 shrink slightly compared to that of the existing tower. More importantly, the proposed activity would result in a substantial change to the character of many existing views because of the reduction in tower height of 60 feet. Near-range views (within approximately 0.5 mile) would experience a modest alteration of the proposed Replacement Facility's profile because it is wider than the existing tower (photos 2 and 6, for example). However, at distances approaching one mile and beyond this becomes less noticeable (see photos 3 and 5).

The rural nature of the area substantially minimizes the amount of residential receptors. Halls Pond off Kennerson Road represents the largest congregation of residences in the vicinity. The existing tower can be seen rising significantly above the tree line from portions along the eastern shore of this water body, at distances of approximately one mile away. The Replacement Facility would not create any new views of the tower.

The existing tower is currently lit for compliance with Federal Aviation Administration requirements. The Replacement Tower would also be similarly lit.

ATTACHMENTS

PHOTO LOG

Legend

⊙ Proposed Site ◎ Photo Location

1,250 625 0 1,250 Feet

1 inch = 1,250 feet

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EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
1	**KENNERSON ROAD**	**SOUTHWEST**	**+/- 0.62 MILE**

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PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
1	**KENNERSON ROAD**	**SOUTHWEST**	**+/- 0.62 MILE**

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EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
2	**SNOW LANE**	**SOUTH**	**+/- 0.47 MILE**

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PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
2	**SNOW LANE**	**SOUTH**	**+/- 0.47 MILE**

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EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
3	**KENNERSON RESERVOIR ROAD**	**SOUTHEAST**	**+/- 0.88 MILE**

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PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
3	**KENNERSON RESERVOIR ROAD**	**SOUTHEAST**	**+/- 0.88 MILE**

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EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
4	**BEBBINGTON ROAD**	**SOUTHEAST**	**+/- 1.06 MILES**

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PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
4	**BEBBINGTON ROAD**	**SOUTHEAST**	**+/- 1.06 MILES**

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EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
5	**BEBBINGTON ROAD**	**EAST**	**+/- 1.44 MILE**

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PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
5	**BEBBINGTON ROAD**	**EAST**	**+/- 1.44 MILE**

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EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
6	**PUMPKIN HILL ROAD**	**NORTHEAST**	**+/- 0.26 MILE**

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PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
6	**PUMPKIN HILL ROAD**	**NORTHEAST**	**+/- 0.26 MILE**

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EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
7	**KENNERSON ROAD**	**NORTHWEST**	**+/- 0.85 MILE**

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PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
7	**KENNERSON ROAD**	**NORTHWEST**	**+/- 0.85 MILE**

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ATTACHMENT 7

General Power Density

Site Name: Ashford, CT
Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW PCS	1970	11	331	3636.743	240	0.0227	1.0	2.27%
VZW Cellular	869	9	338	3039.572	240	0.0190	0.579333333	3.28%
VZW AWS	2145	1	1750	1750	240	0.0109	1.0	1.09%
VZW 700	746	1	1050	1050	240	0.0066	0.497333333	1.32%

Total Percentage of Maximum Permissible Exposure 7.96%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Absolute worst case maximum values used.

ATTACHMENT 8

```
**************************************************
*            Federal Airways & Airspace          *
*         Summary Report: New Construction       *
*                Antenna Structure               *
**************************************************

Airspace User: Mark Brauer

File: ASHFORD_CT

Location:  Stafford Springs, CT
Distance:  12.1 Statute Miles
Direction: 307° (true bearing)

Latitude:  41°-50'-52.29"          Longitude: 72°-7'-17.82"

SITE ELEVATION AMSL..... 766 ft.
STRUCTURE HEIGHT........ 243 ft.
OVERALL HEIGHT AMSL.....1009 ft.

NOTICE CRITERIA
  FAR 77.9(a): NR  (Exceeds 200 ft AGL)
  FAR 77.9(b): NNR (DNE Notice Slope)
  FAR 77.9(c): NNR (Not a Traverse Way)
  FAR 77.9:    NNR FAR 77.9 IFR Straight-In Notice Criteria for IJD
  FAR 77.9:    NNR FAR 77.9 IFR Straight-In Notice Criteria for C44
  FAR 77.9(d): NNR (Off Airport Construction)

  NR  = Notice Required
  NNR = Notice Not Required
  PNR = Possible Notice Required (depends upon actual IFR procedure)
        For new construction review Air Navigation Facilities at bottom
        of this report.

  Notice to the FAA is required because height exceeds 200 feet AGL.

OBSTRUCTION STANDARDS
  FAR 77.17(a)(1): DNE 499 ft AGL
  FAR 77.17(a)(2): DNE - Airport Surface
  FAR 77.19(a): DNE - Horizontal Surface
  FAR 77.19(b): DNE - Conical Surface
  FAR 77.19(c): DNE - Primary Surface
  FAR 77.19(d): DNE - Approach Surface
  FAR 77.19(e): DNE - Transitional Surface

VFR TRAFFIC PATTERN AIRSPACE FOR: IJD: WINDHAM
Type: A   RD: 39209.13   RE: 239.7
  FAR 77.17(a)(1):         DNE
  FAR 77.17(a)(2):         DNE - Greater Than 5.99 NM.
  VFR Horizontal Surface: DNE
  VFR Conical Surface:    DNE
  VFR Approach Slope:     DNE
  VFR Transitional Slope: DNE

VFR TRAFFIC PATTERN AIRSPACE FOR: C44: TOUTANT
Type: A   RD: 42855.68   RE: 756.1
  FAR 77.17(a)(1):         DNE
  FAR 77.17(a)(2):         Does Not Apply.
  VFR Horizontal Surface: DNE
  VFR Conical Surface:    DNE
  VFR Approach Slope:     DNE
  VFR Transitional Slope: DNE
```

TERPS DEPARTURE PROCEDURE (FAA Order 8260.3, Volume 4)
FAR 77.17(a)(3) Departure Surface Criteria (40:1)
DNE Departure Surface

MINIMUM OBSTACLE CLEARANCE ALTITUDE (MOCA)
FAR 77.17(a)(4) MOCA Altitude Enroute Criteria
The Maximum Height Permitted is 1800 ft AMSL

PRIVATE LANDING FACILITIES

FACIL IDENT	TYP	NAME	BEARING To FACIL	RANGE IN NM	DELTA ARP ELEVATION	FAA IFR
5CT6	AIR	BUELL FARM	1.96	4.3	+339	

Possible Impact to Private Landing Facility
Exceeds 330 ft VFR Transitional Surface (N/A Private Airport).

AIR NAVIGATION ELECTRONIC FACILITIES

FAC IDNT	TYPE	ST AT	FREQ	VECTOR	DIST (ft)	DELTA ELEVA	ST	LOCATION	GRND APCH ANGLE	BEAR
PUT	VOR/DME	R	117.4	62.48	85122	+357	CT	PUTNAM	.24	
ORW	VOR/DME	I	110.0	162.59	111334	+699	CT	NORWICH	.36	
HFD	VOR/DME	R	114.9	236.9	138495	+160	CT	HARTFORD	.07	
PVD	RADAR	Y	2735.	108.15	150028	+433	RI	THEODORE FRANCIS	.17	
BDL	RADAR	ON		282.4	156245	+773	CT	BRADLEY INTL	.28	
BDL	VORTAC	D	109.0	282.59	158050	+849	CT	BRADLEY	.31	
CEF	VORTAC	R	114.0	319.34	168312	+768	MA	WESTOVER	.26	
ORH	RADAR WXL	Y		23.68	168812	+6	MA	WORCESTER	0.00	
GON	VOR/DME	R	110.8	174.25	189516	+1000	CT	GROTON	.30	
PVD	VORTAC	R	115.6	103.64	194026	+960	RI	PROVIDENCE	.28	
BAF	VORTAC	R	113.0	305.51	198034	+742	MA	BARNES	.21	

CFR Title 47, §1.30000-§1.30004
AM STUDY NOT REQUIRED: Structure is not near a FCC licensed AM station.
Movement Method Proof as specified in §73.151(c) is not required.
Please review 'AM Station Report' for details.

Nearest AM Station: WILI @ 15789 meters.

Airspace® Summary Version 14.9.372

08-25-2014
11:35:09

ATTACHMENT 9

Robinson+Cole

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

November 25, 2014

Via Certified Mail, Return Receipt Requested

Michael J. Zambo, First Selectman
Town of Ashford
5 Town Hall Road
Ashford, CT 06278

Re: **Telecommunications Facility at 353 Pumpkin Hill Road, Ashford, Connecticut**

Dear Mr. Zambo:

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 for modifications to the existing telecommunications facility at 353 Pumpkin Hill Road in Ashford (the "Property").

As described in the Petition, Cellco proposes to replace the existing 300-foot tall guyed-lattice tower with a new 240-foot self-supporting lattice tower within the limits of the existing fenced compound. The tower would continue to be shared by Cellco and AT&T. Equipment associated with the Cellco and AT&T antennas will be maintained in shelters located near the base of the tower.

A copy of Cellco's Petition is attached for your review. Landowners whose property abuts the Property were notified of the filing of the Petition and were sent copies of the Petition's project plans.

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

Sincerely,

Kenneth C. Baldwin

KCB/kmd
Attachment
Copy to:
Sandy M. Carter

Robinson + Cole

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

November 25, 2014

Via Certified Mail, Return Receipt Requested

Adam W. Dunsby, First Selectman
Town of Easton
225 Center Road
P.O. Box 61
Easton, CT 06612-1398

Re: **Telecommunications Facility at 353 Pumpkin Hill Road, Ashford, Connecticut**

Dear Mr. Dunsby:

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 for modifications to the existing telecommunications facility at 353 Pumpkin Hill Road in Ashford (the "Property").

As described in the Petition, Cellco proposes to replace the existing 300-foot tall guyed-lattice tower with a new 240-foot self-supporting lattice tower within the limits of the existing fenced compound. The tower would continue to be shared by Cellco and AT&T. Equipment associated with the Cellco and AT&T antennas will be maintained in shelters located near the base of the tower.

A copy of Cellco's Petition is attached for your review. Landowners whose property abuts the Property were notified of the filing of the Petition and were sent copies of the Petition's project plans.

Robinson+Cole

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

Sincerely,

Kenneth C. Baldwin

KCB/kmd
Attachment
Copy to:
Sandy M. Carter

Robinson+Cole

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

November 25, 2014

Via Certified Mail, Return Receipt Requested

Irene D. Bunte
385 Pumpkin Hill Road
Ashford, CT 06278

Re: **Telecommunications Facility at 353 Pumpkin Hill Road, Ashford, Connecticut**

Dear Ms. Bunte:

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 for modifications to the existing telecommunications facility at 353 Pumpkin Hill Road in Ashford (the "Property").

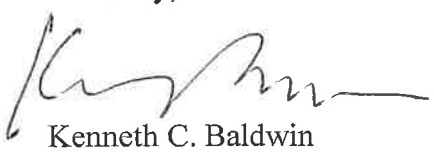
As described in the Petition, Cellco proposes to replace the existing 300-foot tall guyed-lattice tower with a new 240-foot self-supporting lattice tower within the limits of the existing fenced compound. The tower would continue to be shared by Cellco and AT&T. Equipment associated with the Cellco and AT&T antennas will be maintained in shelters located near the base of the tower.

A copy of Cellco's Petition is attached for your review. Landowners whose property abuts the Property were also notified of the filing of the Petition and were sent copies of the Petition's project plans.

Robinson+Cole

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

Sincerely,



Kenneth C. Baldwin

KCB/kmd
Attachment
Copy to:
Sandy M. Carter

ATTACHMENT 10

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

November 25, 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 Telecommunications Facility at 353 Pumpkin Hill Road, Ashford, 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 telecommunications facility at 353 Pumpkin Hill Road in Ashford (the "Property").

As described in the Petition, Cellco proposes to replace the existing 300-foot tall guyed-lattice tower with a new 240-foot self-supporting lattice tower. The replacement tower would be constructed within the limits of the existing fenced compound. The new tower would continue to be shared by Cellco and AT&T. Equipment associated with the Cellco and AT&T antennas will be maintained in shelters located near the base of the tower. (See attached project plans).

You are receiving this notice because you are listed as an owner of land that abuts the Property. If you have any questions regarding the Petition, the Council's process for reviewing the proposed petition 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.

Sincerely,

Kenneth C. Baldwin

Attachment
Copy to:
Sandy M. Carter

Cellco Partnership

d.b.a. verizon wireless

WIRELESS COMMUNICATIONS FACILITY
ASHFORD REPLACEMENT TOWER
353 PUMPKIN HILL ROAD
ASHFORD, CT 06278

SITE DIRECTIONS

FROM: 99 EAST RIVER DRIVE, EAST HARTFORD, CONNECTICUT **TO:** 353 PUMPKIN HILL ROAD, ASHFORD, CONNECTICUT

1.	HEAD EAST ON E RIVER DR	263 FT.
2.	TURN LEFT ONTO THE CT-2 E RAMP TO NORWICH	0.2 MI.
3.	MERGE ONTO I-84 E	20.7 MI.
4.	TAKE EXIT 69 FOR CONNECTICUT 74 TOWARDS U.S. 44/WILLINGTON/PUTNAM	0.3 MI.
5.	TURN RIGHT ONTO CT-74 E	7.5 MI.
6.	TURN LEFT ONTO US-44 E	3.1 MI.
7.	TURN RIGHT ONTO PUMPKIN HILL DRIVE, DESTINATION WILL BE ON THE LEFT	1.7 MI.

GENERAL NOTES

1. PROPOSED ANTENNA LOCATIONS AND HEIGHTS PROVIDED BY CELLCO PARTNERSHIP.

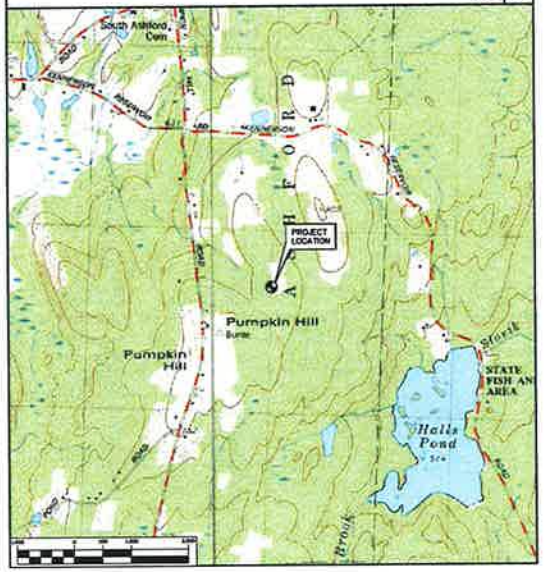
SITE INFORMATION

THE SCOPE OF WORK SHALL INCLUDE:

1. THE INSTALLATION OF A PROPOSED ±240' TALL SELF-SUPPORTING LATTICE TOWER TO REPLACE AN EXISTING ±300' TALL GUYED TOWER TO BE REMOVED.
2. A TOTAL OF (12) DIRECTIONAL PANEL ANTENNAS ARE PROPOSED TO BE MOUNTED AT A CENTERLINE ELEVATION OF 240'-0"± A.G.L.
3. SITE ACCESS IS VIA AN EXISTING 1,000'± GRAVEL ACCESS DRIVE OFF OF PUMPKIN ROAD.
4. ELECTRIC AND TELCO UTILITIES SHALL BE ROUTED UNDERGROUND TO THE PROPOSED EQUIPMENT SHELTER FROM EXISTING DEMARCS LOCATED WITHIN OR ADJACENT TO THE FENCED COMPOUND. FINAL ROUTING TO BE DETERMINED AT THE CONSTRUCTION DOCUMENT PHASE OF THE PROJECT.
5. THE PROPOSED WIRELESS FACILITY INSTALLATION WILL BE DESIGNED IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2009 CONNECTICUT SUPPLEMENT.
6. PARCEL WITHIN 2500' OF ASHFORD-EASTFORD TOWN BOUNDARY.

VICINITY MAP

SCALE: 1" = 1000'



PROJECT SUMMARY

SITE NAME:	ASHFORD, CT
SITE ADDRESS:	353 PUMPKIN HILL ROAD ASHFORD, CT 06278
PROPERTY OWNER:	IRENE D. BUNTE 353 PUMPKIN HILL ROAD ASHFORD, CT 06278
LESSEE/TENANT:	CELLCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
CONTACT PERSON:	SANDY CARTER CELLCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
TOWER COORDINATES:	LATITUDE 41°-50'-52.375" LONGITUDE 72°-07'-17.816" PROPOSED GROUND ELEVATION: 761.2'± A.M.S.L. COORDINATES AND GROUND ELEVATION BASED ON FAA 1-A SURVEY CERTIFICATION AS PREPARED FOR VERIZON WIRELESS, BY MARTINEZ COUCH AND ASSOCIATES DATED SEPTEMBER 05, 2014, REVISED SEPTEMBER 30, 2014.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	1
C-1.0	ABUTTERS MAP	1
C-1.1	PARTIAL SITE PLAN	1
C-1.2	WETLAND RESTORATION PLAN, DETAILS AND NOTES	1
C-2	COMPOUND PLAN, ELEVATION AND ANTENNA MOUNTING CONFIGURATION	1
C-3	SITE CONSTRUCTION, S&E CONTROL NOTES & DETAILS	1
C-4	SHELTER FOUNDATION PLAN, DETAILS AND NOTES	1

REV.	DATE	DRAWN BY	CHK'D BY	ISSUED FOR
1	11/24/14	MAR	DAD	ISSUED FOR CSC
0	11/12/14	MAR	DAD	ISSUED FOR REVIEW

PROFESSIONAL ENGINEER SEAL

Cellco Partnership d.b.a. Verizon Wireless

CENTEK engineering
Centered on Solutions
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

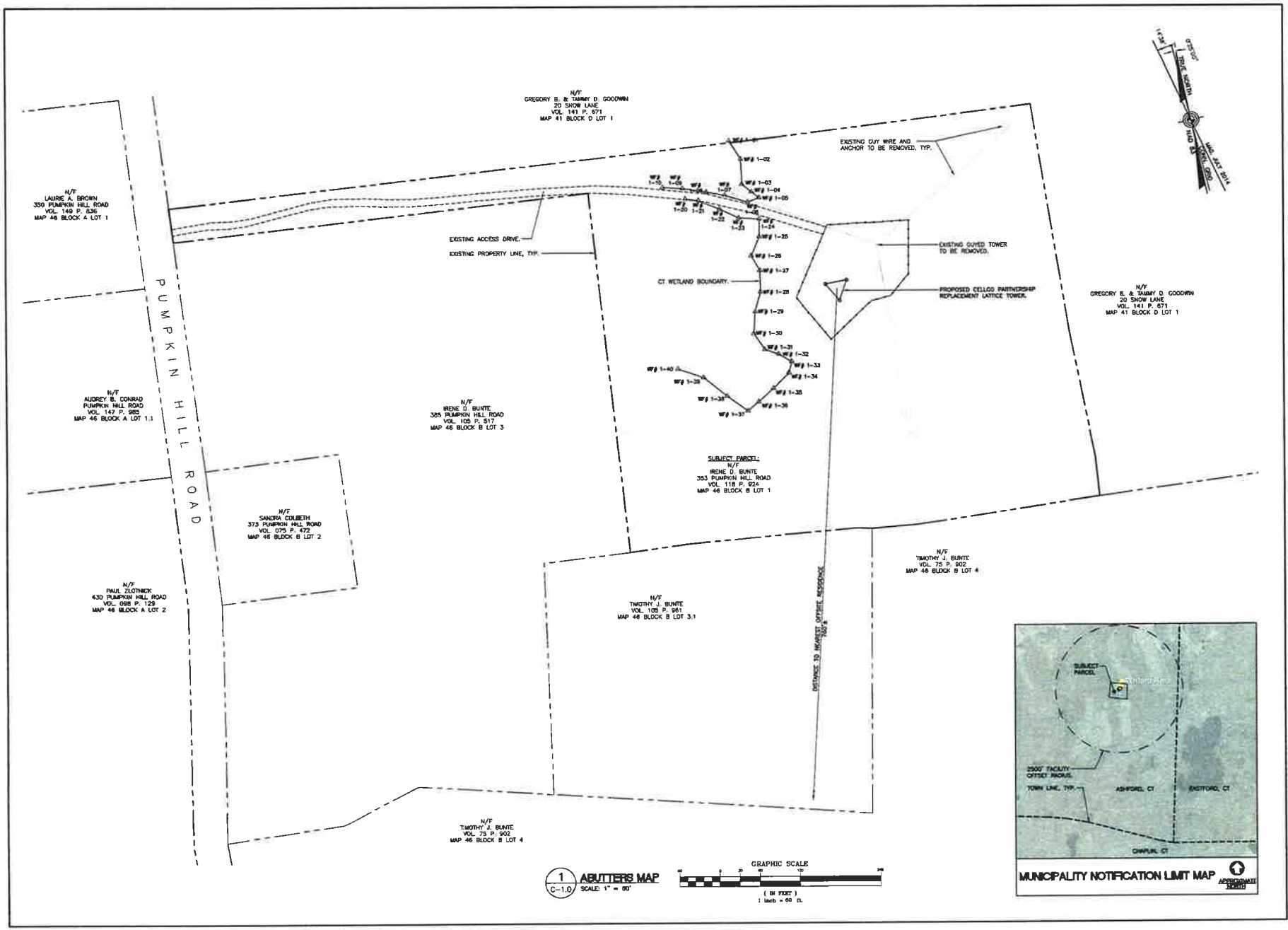
Cellco Partnership d/b/a Verizon Wireless
WIRELESS COMMUNICATIONS FACILITY
ASHFORD, CT
353 PUMPKIN HILL ROAD
ASHFORD, CT 06278

DATE: 10/30/14
SCALE: AS NOTED
JOB NO. 14124.000

TITLE SHEET

T-1

Sheet No. 1 of 1



1 / C-1.0 ABUTTERS MAP
SCALE: 1" = 80'

GRAPHIC SCALE
(IN FEET)
1 inch = 80 ft.

REV.	DATE	DRAWN BY	CHK'D BY	ISSUED FOR
1	11/04/14	HMK	DMD	ISSUED FOR CSC
0	11/12/14	HMK	DMD	ISSUED FOR CSC - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

Cellco Partnership d/b/a Verizon Wireless

CENTEK engineering
Centered on Solutions
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
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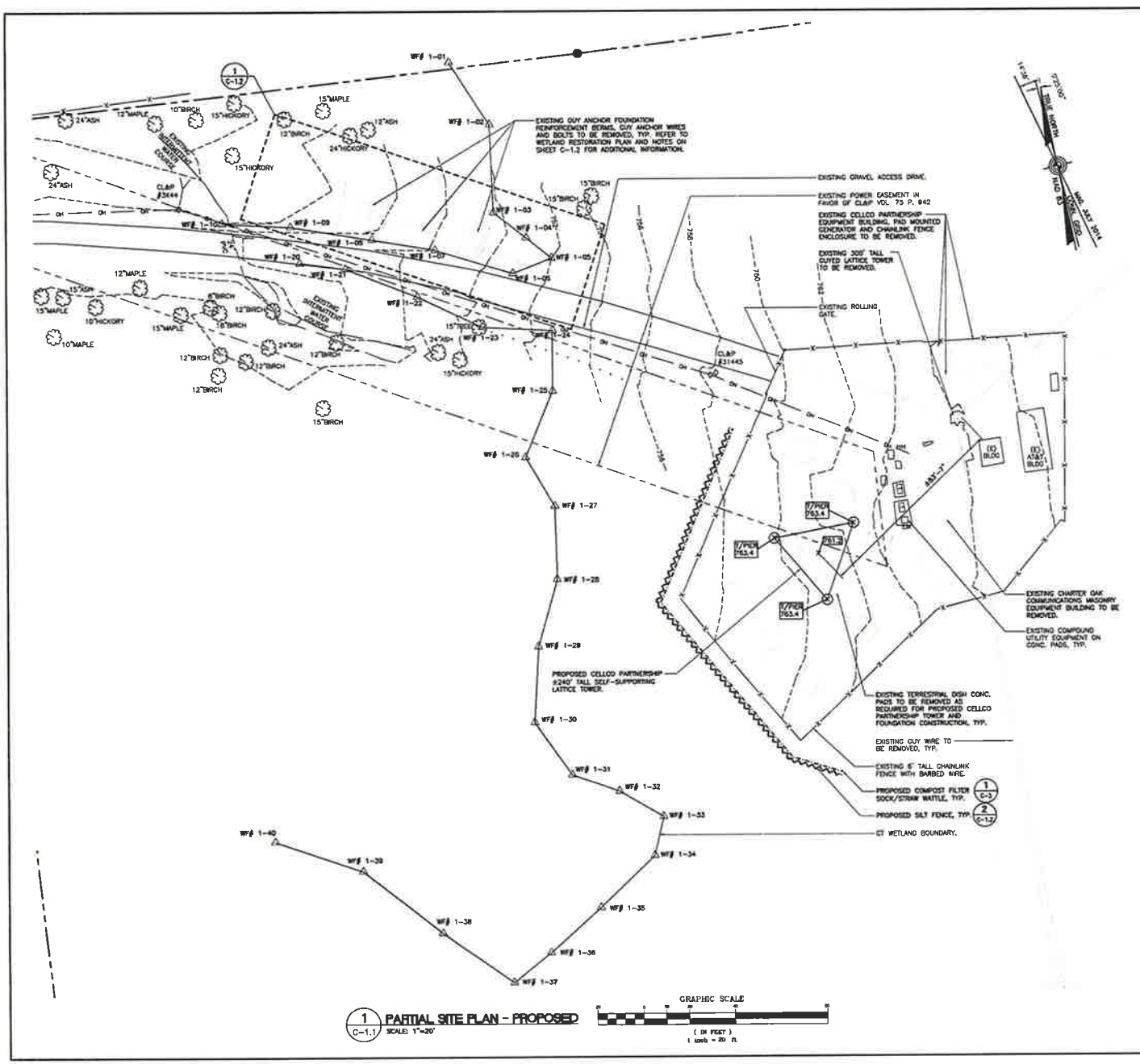
Cellco Partnership d/b/a Verizon Wireless
WIRELESS COMMUNICATIONS FACILITY
ASHFORD, CT
353 PUMPKIN HILL ROAD
ASHFORD, CT 06278

DATE: 10/30/14
SCALE: AS NOTED
JOB NO. 14124.000

ABUTTERS MAP

C-1.0
Sheet No. 2 of 7



1 C-1.1 **PARTIAL SITE PLAN - PROPOSED**
SCALE: 1"=20'

SYMBOLS LEGEND

	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING ACCESS DRIVE
650	CONTOUR LINE
650	GRADING LINE
	UTILITY POLE
	EXISTING DECIDUOUS TREE
	SILTATION FENCE
	COMPOST FILTER SOCK/STRAW WATTLE
	EXISTING FENCE LINE
×	SPOT ELEVATION (PROPOSED)

MISCELLANEOUS SITE INFORMATION

DISTANCE TO NEAREST OFF SITE RESIDENCE*	=	780'±
DISTANCE TO NEAREST MUNICIPALITY (EASTFORD)*	=	2,311'±
ACCESS LENGTH OFF PUMPKIN HILL ROAD	=	1,000'±
NUMBER OF RESIDENTIAL STRUCTURES WITHIN 1000' OF TOWER	=	2
TOTAL NUMBER OF TREES TO BE REMOVED	=	0
DISTANCE TO NEAREST PROPERTY LINE*	=	226'±

* 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. THE LIMITED TOPOGRAPHIC SURVEY PORTION OF THIS PLAN CONFORMS TO A VERTICAL ACCURACY OF CLASS T-2 AND IS INTENDED TO BE USED TO DEPICT A PROPOSED TELECOMMUNICATION SITE.

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

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

ELEVATIONS BASED ON NGVD 1929 DATUM.

PARCEL OWNER OF RECORD: IRENE D. BUNTE

PARCELS KNOWN AS 353 PUMPKIN HILL ROAD

PARCEL AREA= 10.0 ACRES

PARCEL IS IN THE RESIDENTIAL/AGRICULTURAL ZONING DISTRICT.

MAP 46, BLOCK B, LOT NO. 1, ASHFORD ASSESSORS MAP.

PARCEL IS NOT IN A FLOOD ZONE BASED ON THE FLOOD INSURANCE RATE MAP, WINDHAM COUNTY, CONNECTICUT, ALL JURISDICTIONS, PANEL 24 OF 25, COMMUNITY MAP NUMBER 0901850024C, MAP EFFECTIVE DATE DECEMBER 1, 1981, BY FEDERAL EMERGENCY MANAGEMENT AGENCY.

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

ALL IMPROVEMENTS ARE NOT SHOWN.

MAP REFERENCE

1) PROPERTY OF JOHN J. AND IRENE D. BUNTE, PUMPKIN HILL ROAD, ASHFORD, CONN., SCALE 1"=100', DATED JULY 1988, BY STEPHEN A. FILIP.

2) CL&P EASEMENT ACROSS LAND OF JOHN J. BUNTE TO BE LEASED TO TELE-MEDIA COMPANY, ASHFORD, CONNECTICUT, SCALE 1"=40', DATED 8-3-84, BY CONNECTICUT LIGHT & POWER COMPANY.

3) PARCEL TO BE LEASED BY WYNDCELL CORPORATION FROM TELE-MEDIA COMPANY OF NORTHEASTERN CONNECTICUT, 353 PUMPKIN HILL ROAD, ASHFORD, CONNECTICUT, SCALE 1"=40', DATED AUGUST 1991, BY GREINER, INC.

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

THIS MAP IS NOT VALID WITHOUT A LIVE SIGNATURE AND SEAL

A. RAFAEL MARTINEZ LLS #18833 DATE

REV.	DATE	DRAWN BY	CHKD BY	ISSUED FOR
1	11/25/15	MAP	TMD	ISSUED FOR CSC
0	11/12/14	MAP	TMD	ISSUED FOR CSC - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

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WIRELESS COMMUNICATIONS FACILITY
ASHFORD, CT
353 PUMPKIN HILL ROAD
ASHFORD, CT 06278

DATE: 10/30/14
SCALE: AS NOTED
JOB NO. 14124.000

PARTIAL SITE PLAN

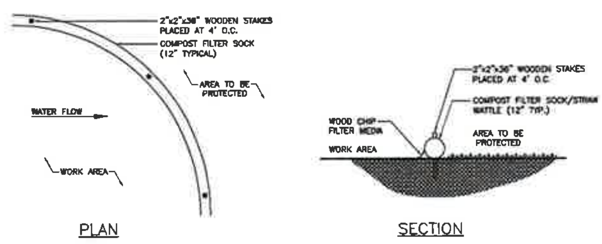
C-1.1
Sheet No. 3 of 7

WETLAND RESTORATION PLANTING SCHEDULE				
QUANTITY	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING
TREES				
5	ACER RUBRUM	RED MAPLE	4–6'	10' O.C.
SHRUBS				
5	CORNUS AMOMUM	SILKY DOGWOOD	3–4'	5' O.C.
5	VIBURNUM DENTATUM	NORTHERN ARROWWOOD	3–4'	5' O.C.
5	SALIX DISCOLOR	PUSSYWILLOW	3–4'	5' O.C.
5	SAMBUCUS CANADENSIS	COMMON ELDERBERRY	3–4'	5' O.C.

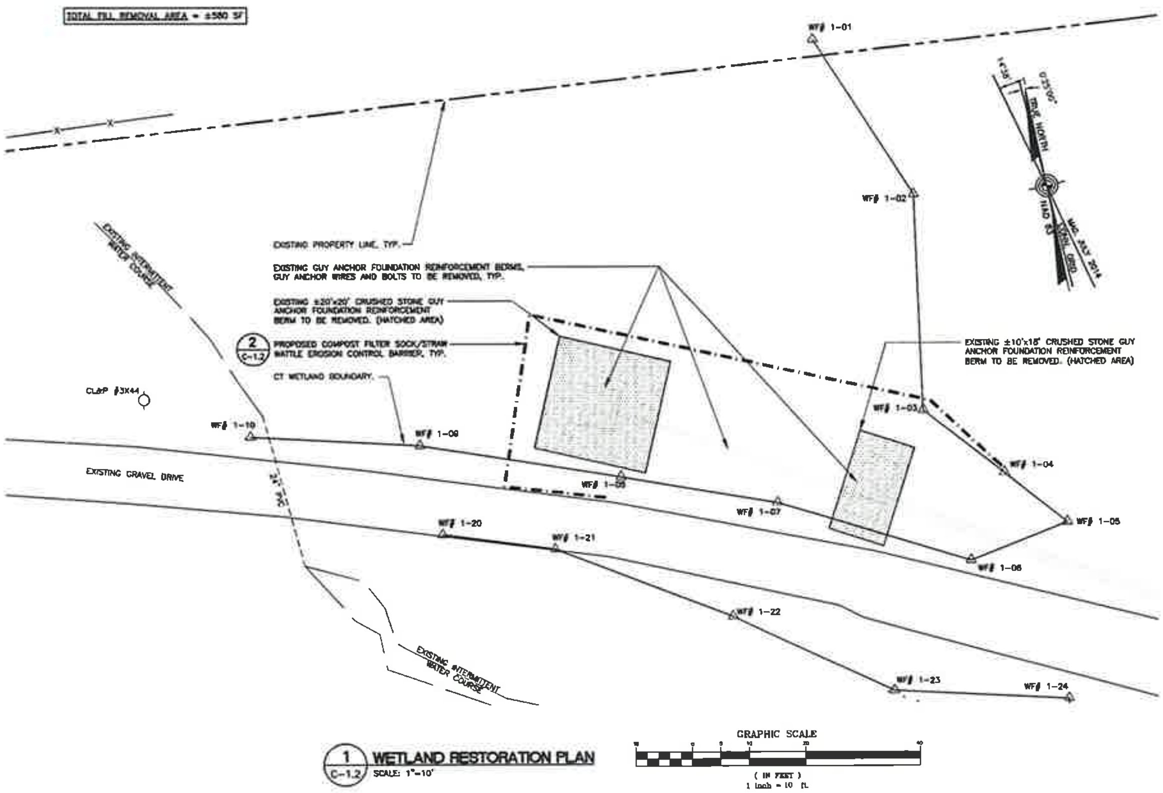
NOTES:

1. WETLAND RESTORATION AREA WILL BE SOWN WITH A NATIVE NEW ENGLAND WETLAND SEED MIX (NEW ENGLAND WETLAND PLANTS, INC., OR EQUIVALENT). THIS SEED MIX PROVIDES A PERMANENT COVER OF GRASSES, FORBS AND WILDFLOWERS TO PROVIDE BOTH GOOD EROSION CONTROL AND WILDLIFE HABITAT VALUE.
2. PLANTINGS TO BE PLACED IN HATCHED AREAS SHOWN BELOW FOLLOWING REMOVAL OF EXISTING GUY ANCHOR FOUNDATION REINFORCEMENT BERMS, GUY ANCHOR WIRES AND BOLTS.

TOTAL FILL REMOVAL AREA = ±580 SF



2 (C-1.2) TYP. COMPOST FILTER SOCK/ STRAW WATTLE DETAIL
NOT TO SCALE



1 (C-1.2) WETLAND RESTORATION PLAN
SCALE: 1"=10'

WETLAND RESTORATION AREA NOTES

THE WETLAND RESTORATION AREA WILL RESTORE 580± SQUARE FEET OF PREVIOUSLY FILLED WETLAND WITH REMOVAL OF TWO CRUSHED STONE GUY ANCHOR FOUNDATION REINFORCEMENT BERMS FROM BOTH THE INNER AND OUTER GUY ANCHORS FROM GUY ANCHOR BLOCK A. WETLAND RESTORATION WORK WILL BE PERFORMED DURING DEMOLITION OF THE EXISTING 300-FOOT GUYED LATTICE TOWER. THIS WETLAND AREA WILL BE RESTORED PER THE FOLLOWING:

1) AN APT WETLAND SCIENTIST WILL OBSERVE ALL PHASES OF THE WETLAND RESTORATION PROJECT INCLUDING REMOVAL OF FILL MATERIAL, EXPOSURE OF UNDERLYING NATIVE WETLAND TOPSOIL, GRADING AND PLANTING TO MONITOR AND OVERSEE IMPLEMENTATION OF THE WETLAND RESTORATION PLAN. THE CONTRACTOR WILL NOTIFY APT A MINIMUM OF SEVEN (7) BUSINESS DAYS PRIOR TO THE START OF WETLAND RESTORATION ACTIVITIES TO SCHEDULE A PRE-CONSTRUCTION MEETING ON SITE AND FOR ANY SUBSEQUENT PHASES OF THE WETLAND RESTORATION PLAN.

2) PRIOR TO ANY EARTHWORK, A STRAW WATTLE EROSION CONTROL BARRIER WILL BE INSTALLED ALONG THE NORTH, EAST AND WEST SIDES OF THE PROPOSED WETLAND RESTORATION AREA TO PROTECT NEARBY WETLANDS.

3) CONSTRUCTION OF THE WETLAND RESTORATION AREA WILL ONLY OCCUR FROM THE SOUTH SIDE (EXISTING GRAVEL ACCESS DRIVE) TO MINIMIZE DISTURBANCE TO ADJOINING WETLAND AREAS.

4) THE CONTRACTOR WILL USE SWAMP MATS/TIMBER MATS AS NECESSARY TO PROVIDE A STABLE WORK SURFACE DURING REMOVAL OF GRAVEL FILL MATERIAL THAT OVERLIES BURIED WETLAND TOPSOIL.

5) AS THE WETLAND RESTORATION AREA CONSISTS OF FILL MATERIAL OVERLYING ORIGINAL WETLAND SOILS, EXCAVATION WILL CONSIST OF REMOVAL OF FILL MATERIAL UNTIL THE UNDERLYING NATIVE WETLAND SOIL IS EXPOSED. MINOR MODIFICATIONS TO THIS GRADING PLAN MAY BE MADE IN THE FIELD BY THE WETLAND SCIENTIST IN RESPONSE TO ACTUAL SOIL CONDITIONS. THE SUPERVISING WETLAND SCIENTIST WILL INSPECT THE SUB-GRADE OF THE WETLAND RESTORATION AREA TO ENSURE THAT THE PROPER HYDROLOGY HAS BEEN ESTABLISHED.

6) IF ADDITIONAL WETLAND TOPSOIL IS NEEDED TO SUPPLEMENT THE UNDERLYING NATIVE WETLAND TOPSOIL, IT SHALL CONSIST OF PREPARED WEED-FREE TOPSOIL MADE UP OF A 1:1 MIXTURE (OR EQUAL VOLUMES) OF ORGANIC AND MINERAL MATERIALS THAT CONTAINS AT LEAST 12 PERCENT ORGANIC CARBON CONTENT BY WEIGHT. CLEAN COMPOSTED LEAF MOLD OR COMMERCIALLY AVAILABLE COMPOST FREE OF WEEDS OR INVASIVE SPECIES IS THE PREFERRED AMENDMENT TO ACHIEVE THIS STANDARD, THOUGH OTHER MATERIALS MAY BE USED IF APPROVED BY THE WETLAND SCIENTIST.

7) GUY ANCHOR RODS WILL BE REMOVED BY EXCAVATING A MINIMUM OF ONE (1) FOOT BELOW GROUND SURFACE AROUND THE ANCHOR ROD AND CUTTING OFF THE ROD. GUY ANCHOR FOUNDATIONS WILL REMAIN IN PLACE.

8) THESE SOILS WILL THEN BE GRADED TO ACHIEVE A SLIGHT HUMMOCK/HOLLOW MICROTOPOGRAPHY, SIMILAR TO THAT OF A NATURAL WETLAND SUBSTRATE. THE CONTRACTOR SHALL ENSURE THAT PROPER SOIL COMPACTION LEVELS (LOOSE TO FRIABLE) ARE MAINTAINED AND APPROPRIATE CORRECTION MEASURES (E.G. ROTOTILLING) MAY BE NECESSARY.

9) WETLAND RESTORATION AREA PLANTINGS SHALL TAKE PLACE ONCE THE ABOVE LISTED TASKS HAVE BEEN COMPLETED. THE WETLAND RESTORATION AREA WILL BE PLANTED WITH NATIVE TREES, SHRUBS AND HERBACEOUS SPECIES AS NOTED IN THE PLANTING SCHEDULE AND UNDER SOWN WITH A NATIVE NEW ENGLAND WETLAND SEED MIX (NEW ENGLAND WETLAND PLANTS, INC., OR EQUIVALENT) AFTER THE GRADING IS COMPLETED AT THE MANUFACTURER'S RECOMMENDED SEEDING RATE. SOIL CONDITIONING ACTIVITIES, INCLUDING RAKING, WILL BE COMBINED WITH THE SEED APPLICATION PROCESS.

10) THE SUPERVISING WETLAND SCIENTIST SHALL INSPECT THE PLANTING STOCK SPECIMENS FOR HEALTH, PEST, AND SUITABLE FOR USE WITHIN THE WETLAND RESTORATION AREA. UNSUITABLE SPECIMENS WILL BE REJECTED AND REPLACED WITH SUITABLE SPECIMENS. ANY PLANTING SUBSTITUTIONS MUST BE APPROVED BY THE WETLAND SCIENTIST. ALL WOODY PLANT STOCK SHALL BE CONTAINER-GROWN OR BURLAP BALLED. PLANTING WITHIN THE WETLAND RESTORATION AREA WILL CONFORM TO THESE PLANS OR WILL BE COMPLETED IN ACCORDANCE WITH DIRECTIONS PROVIDED IN THE FIELD BY THE SUPERVISING WETLAND SCIENTIST. ONLY PLANT MATERIALS NATIVE AND INDIGENOUS TO CONNECTICUT SHALL BE USED. INVASIVE PLANT SPECIES WILL NOT BE USED IN THE WETLAND RESTORATION AREA.

11) ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE "AMERICAN STANDARDS FOR NURSERY STOCK" BY THE AMERICAN ASSOCIATION OF NURSERYMEN. ALL PLANT MATERIALS SHALL BE GUARANTEED BY THE CONTRACTOR FOR ONE YEAR FOLLOWING DATE OF PLANTING. NO CULTIVARS OF THE NATIVE PLANTS IDENTIFIED IN THE PLANTING SCHEDULE SHALL BE USED.

12) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CAREFUL INSTALLATION, MAINTENANCE (INCLUDING WATERING), AND ESTABLISHMENT OF THE PLANT MATERIAL IN THE WETLAND RESTORATION AREA. A MAINTENANCE SCHEDULE FOR IRRIGATION AND PRUNING (AS NECESSARY) WILL BE ESTABLISHED BY THE CONTRACTOR.

13) ALL PLANTINGS TO BE SPACED GENERALLY AS NOTED ON THE PLANTING SCHEDULE WITH ASSISTANCE FROM THE WETLAND SCIENTIST TO SIMULATE NATURAL GROWTH PATTERNS.

14) AN ISOLATED PATCH OF COMMON REED (PHRAGMITES AUSTRALIS), AN AGGRESSIVE INVASIVE PLANT SPECIES, IS LOCATED ADJACENT TO THE WETLAND RESTORATION AREA. THIS AREA WILL BE TREATED AS FOLLOWS: IN LATE JUNE, COMMON REED WILL BE CUT TO THE GROUND; IN SEPTEMBER, COMMON REED WILL BE TREATED WITH GLYPHOSATE HERBICIDE RODEO®, OR APPROVED EQUIVALENT, USING AN HERBICIDE DIPPED GLOVE SWIPING TECHNIQUE TO AVOID IMPACT TO NATIVE PLANTS.

15) HERBICIDE APPLICATION WILL ADHERE TO THE FOLLOWING: ALL FEDERAL, STATE AND LOCAL REGULATIONS REGARDING HERBICIDE USE, APPLICATOR PERMIT AND POSTING REQUIREMENTS SHALL BE FOLLOWED; ALL HERBICIDE APPLICATION SHALL BE PERFORMED BY A STATE LICENSED INDIVIDUAL; CERTIFICATIONS, LICENSES AND PERMITS SHALL BE PROVIDED TO THE SUPERVISING WETLAND SCIENTIST PRIOR TO THE START OF WORK; ALL HERBICIDES SHALL BE MIXED WITH A DYE APPROVED BY U.S. EPA FOR USE AS AN HERBICIDE ADJUVANTS, SUCH AS TURFMARK® DYE OR EQUIVALENT; ONLY NONIONIC SURFACTANTS SHALL BE ADDED TO THE SPECIFIED HERBICIDE.

16) FALLEN LOGS, BRANCHES, STUMPS AND OTHER NATURAL DEBRIS, EXCLUDING INVASIVE PLANTS, WILL BE RELOCATED TO THE ENHANCEMENT AREA TO PROVIDE BENEFICIAL HABITAT FEATURES FOR WILDLIFE. THIS WILL INCLUDE DOWNED AND UNCOVERED MATERIAL THAT IS ACQUIRED DURING GRADING ACTIVITIES AND WILL BE DISTRIBUTED TO COVER NO MORE THAN 5 PERCENT OF THE WETLAND RESTORATION AREA'S SURFACE. THE NATURAL DEBRIS SHOULD BE OF VARYING SIZES AND IN VARYING DEGREES OF DECOMPOSITION.

17) THE EROSION CONTROL BARRIERS WILL BE DISASSEMBLED AND PROPERLY DISPOSED OF NO LATER THAN 30 DAYS FOLLOWING PERMANENT STABILIZATION OF EXPOSED SOILS BY THE PLANTED MATERIALS. SEDIMENT COLLECTED BY THESE DEVICES WILL BE REMOVED AND DISPOSED OF IN A MANNER THAT PREVENTS EROSION AND TRANSPORT TO A WATERWAY OR WETLAND. IF MINOR GRADING IS REQUIRED IN THIS ZONE TO PROVIDE SURFACE HYDROLOGIC CONNECTION BETWEEN THE AREAS, IT WILL BE DONE BY HAND AND STABILIZED WITH MULCH.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	11/13/14	HMB	DMD	ISSUED FOR CSC
1	11/24/14	HMB	DMD	ISSUED FOR CSC – CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

Cellco Partnership d.b.a. Verizon Wireless

CENTEK engineering
Centered on Solutions
www.CentekEng.com

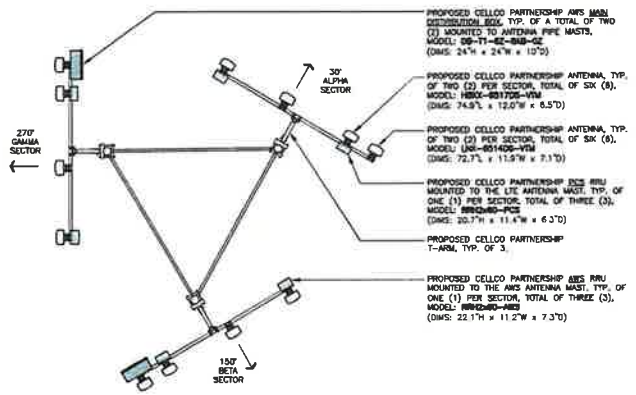
Cellco Partnership d/b/a Verizon Wireless
WIRELESS COMMUNICATIONS FACILITY
ASHFORD, CT
353 PUMPKIN HILL ROAD
ASHFORD, CT 06278

DATE: 10/30/14
SCALE: AS NOTED
JOB NO. 14124.000

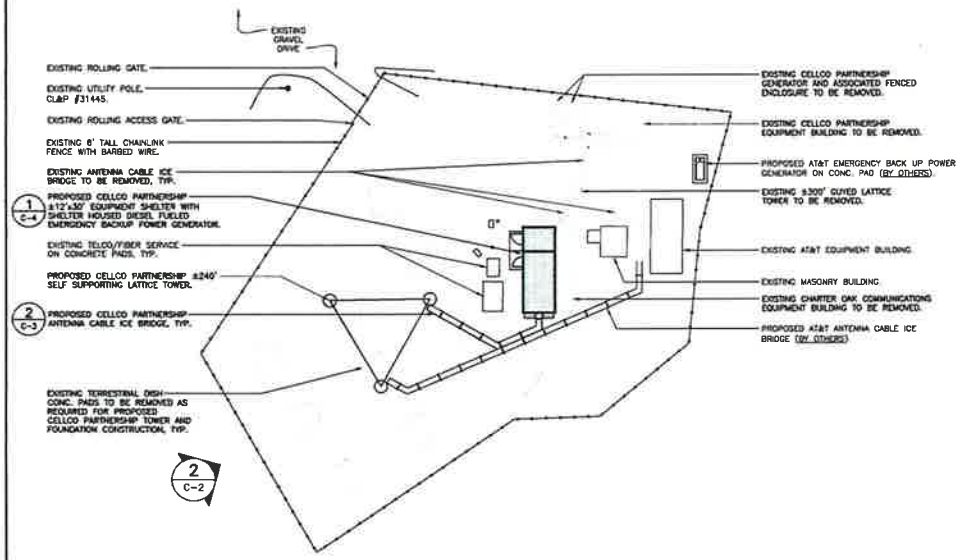
WETLAND RESTORATION PLAN, DETAILS AND NOTES

C-1.2

Sheet No. 4 of 7

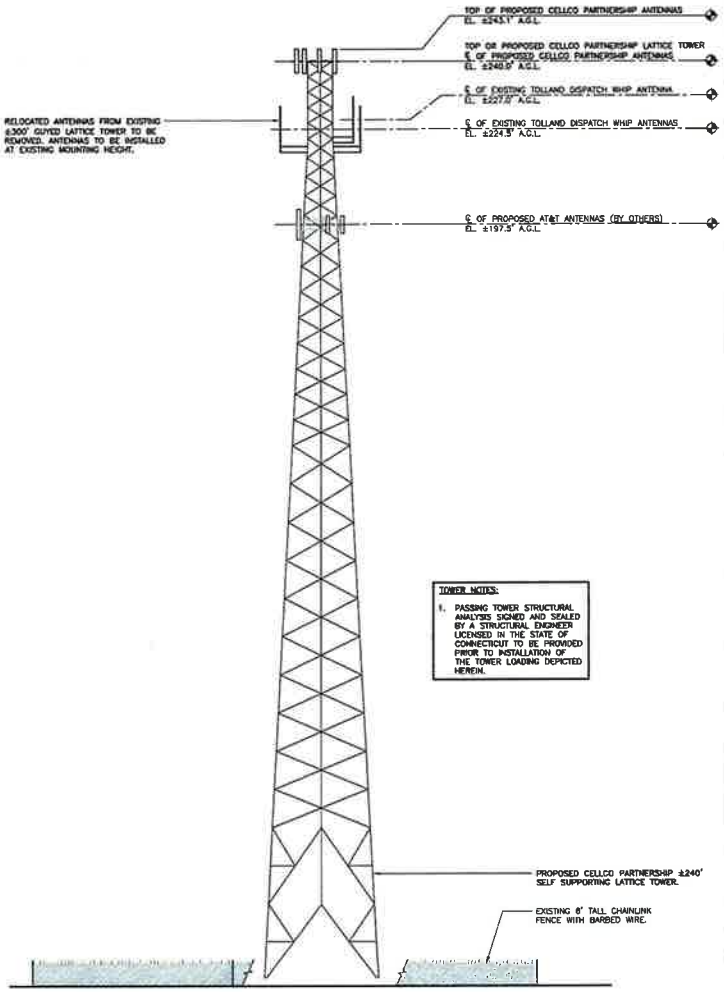


3 C-2 **CELLCO PARTNERSHIP ANTENNA MOUNTING CONFIGURATION**
SCALE: 1/4" = 1'-0"



1 C-2 **COMPOUND PLAN**
SCALE: 1" = 10'

GRAPHIC SCALE
(IN FEET)
1 inch = 10 ft.



2 C-2 **SOUTHWEST TOWER ELEVATION-PROPOSED**
SCALE: 1" = 15'

GRAPHIC SCALE
(IN FEET)
1 inch = 15 ft.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	11/24/14	MAR	DMG	REVISED PER CSC
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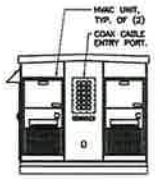
ASHFORD, CT 06278

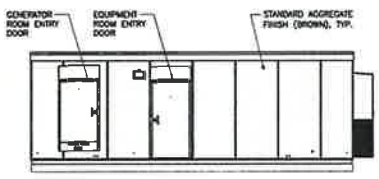
DATE: 10/30/14
SCALE: AS NOTED
JOB NO. 14124.000

COMPOUND PLAN, ELEVATION AND ANTENNA MOUNTING CONFIGURATION

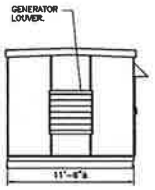
C-2
Sheet No. 5 of 7



8 C-3 **SOUTHERN SHELTER ELEVATION**
SCALE: 3/16" = 1'-0"



7 C-3 **WESTERN SHELTER ELEVATION**
SCALE: 3/16" = 1'-0"



6 C-3 **NORTHERN SHELTER ELEVATION**
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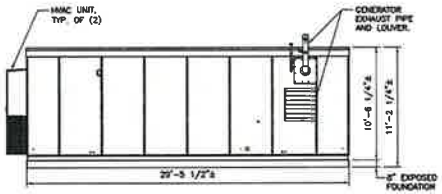

5 C-3 **EASTERN SHELTER ELEVATION**
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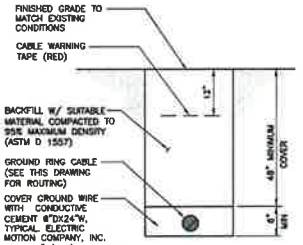
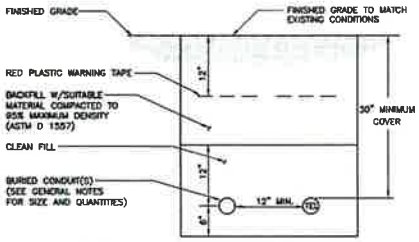


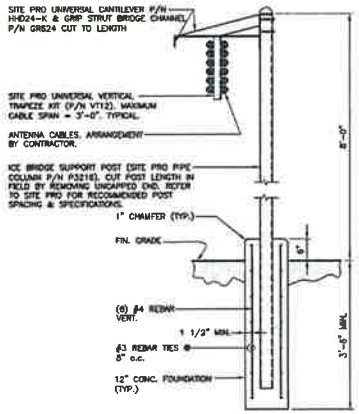
NOTES:
1. BACK FILL SHALL NOT CONTAIN ASHES, CINDERS, SHELLS, FROZEN MATERIAL, LOOSE DEBRIS OR STONES LARGER THAN 2" IN MAXIMUM DIMENSION.
2. WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED, CONTRACTOR SHALL HAND DIG AND PROTECT EXISTING UTILITIES.

4 C-3 **TYPICAL BURIAL GROUND CABLE DETAIL**
NOT TO SCALE

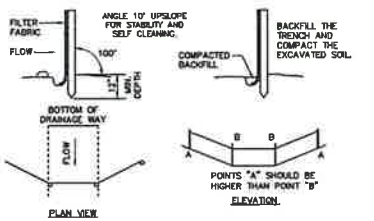


NOTES:
1. THE CLEAN FILL SHALL PASS THROUGH A 3/8" MESH SCREEN AND SHALL NOT CONTAIN SHARP STONES. OTHER BACKFILL SHALL NOT CONTAIN ASHES, CINDERS, SHELLS, FROZEN MATERIAL, LOOSE DEBRIS OR STONES LARGER THAN 2" IN MAXIMUM DIMENSION.
2. WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED, CONTRACTOR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

3 C-3 **TYPICAL ELECTRICAL/TEL TRENCH DETAIL**
NOT TO SCALE



2 C-3 **ICE BRIDGE DETAIL**
NOT TO SCALE



SOURCE: U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, STORRS, CONNECTICUT

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

GENERAL CONSTRUCTION / PRE-CONSTRUCTION NOTES

1. PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES, A MANDITORY 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.

GENERAL CONSTRUCTION SEQUENCE

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

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

SOIL EROSION AND SEDIMENT CONTROL SEQUENCE

1. 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.
2. 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.
3. LAND DISTURBANCE WILL BE KEPT TO A MINIMUM AND RESTABILIZATIONS WILL BE SCHEDULED AS SOON AS PRACTICAL.
4. 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.
5. 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.
6. 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.
7. 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.
8. SWALE DISCHARGE AREA WILL BE PROTECTED WITH RIP RAP SPLASH PAD/ ENERGY DISSIPATER.
9. ALL FILL AREAS SHALL BE COMPACTED SUFFICIENTLY FOR THEIR INTENDED PURPOSE AND AS REQUIRED TO REDUCE SLIPPING, EROSION OR EXCESS SATURATION.
10. 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.
11. 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

1. THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.
2. THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 8 INCHES INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
3. WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES.
4. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MID-SECTION AND BOTTOM.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED.
6. FENCE POSTS SHALL BE A MINIMUM OF 36 INCHES LONG AND DRIVEN A MINIMUM OF 18 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.
7. MAINTENANCE SHALL BE PERFORMED AS NEEDED TO PREVENT BUILD UP IN THE SILT FENCE DUE TO DEPOSITION OF SEDIMENT.

MAINTENANCE - SILT FENCE

1. 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.
2. 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.
3. SEDIMENT SHOULD BE INSPECTED AFTER EVERY STORM EVENT. THE DEPOSITS SHOULD BE REMOVED WHEN THEY REACHED APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
4. 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.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	11/26/14	HAR	DMD	ISSUED FOR DSC
2	11/12/14	HAR	DMD	REVISED FOR DSC - CLIENT REVIEW

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WIRELESS COMMUNICATIONS FACILITY
ASHFORD, CT
353 PUMPION HILL ROAD
ASHFORD, CT 06278

DATE: 10/30/14
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SITE CONSTRUCTION, S&E CONTROL NOTES & DETAILS

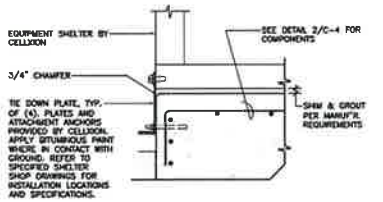
C-3
Sheet No. 6 of 7

SLAB ON GRADE FOUNDATION DESIGN CONFORMS TO THE REQUIREMENTS OF THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2005 CONNECTICUT STATE BUILDING CODE SUPPLEMENT SECTION 1805.2.1 'FROST PROTECTION' AND SEI/ASCE STANDARD 32-01 SECTION 7.1 'SLAB ON GRADE CONSTRUCTION'.

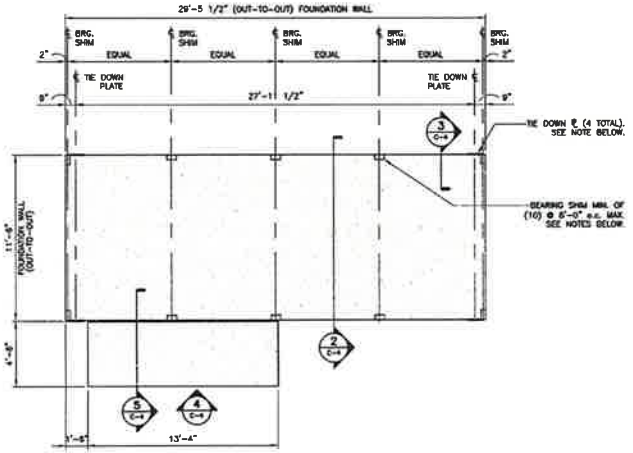
EQUIPMENT SHELTER BY CELLXION. VERIFY ALL SHELTER DIMENSIONS, EQUIPMENT DIMENSIONS, EQUIPMENT LOCATIONS AND UTILITY OPENINGS WITH BUILDING SHOP DRAWINGS PRIOR TO COMMENCEMENT OF WORK.

NOTES:

1. BEARING SHIMS, TIE-DOWN PLATES AND ASSOCIATED INSTALLATION ANCHORS PROVIDED BY CELLXION. CONTRACTOR SHALL VERIFY ALL SHIM & TIE-DOWN QUANTITIES AND LOCATIONS WITH CELLXION PRIOR TO PERFORMING FOUNDATION WORK.
2. SLAB/ TOP OF WALL TOLERANCE IS 1/4"±
3. TOP 8" OF FOUNDATION SIDES MUST BE FORMED FLAT TO ACCEPT TIE-DOWN PLATES.

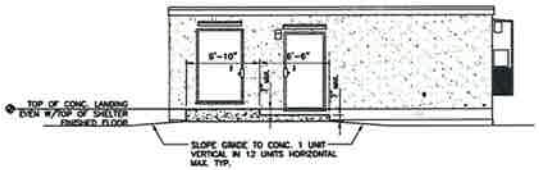


3 / C-4 **BUILDING TIE DOWN**
SCALE: 1"=1'-0"

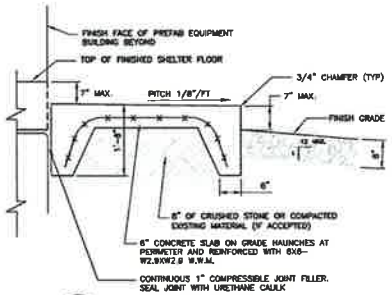


1 / C-4 **FOUNDATION PLAN**
SCALE: 1/4"=1'-0"

APPROX. GRID NORTH



4 / C-4 **ENTRY STOOP DETAIL - ELEVATION**
SCALE: 3/16"=1'-0"



5 / C-4 **ENTRY STOOP DETAIL - SECTION**
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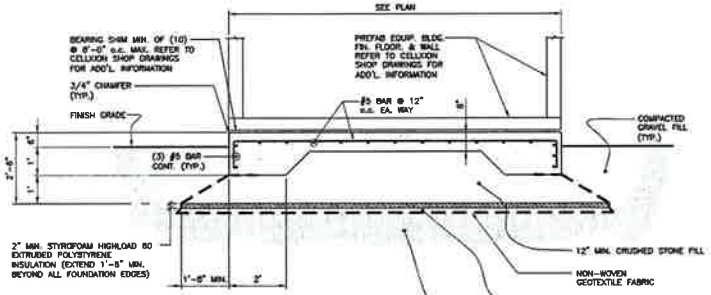

2 / C-4 **FOUNDATION PLAN SLAB ON GRADE ALTERNATE**
SCALE: 1/2"=1'-0"

FOUNDATION NOTES:

1. IF ANY FIELD CONDITIONS EXIST WHICH PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
2. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST THE PRE MANUFACTURED EQUIPMENT BUILDING SHOP DRAWINGS.
3. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.

SITE NOTES:

1. THE CONTRACTOR SHALL CALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.
2. ACTIVE EXISTING UTILITIES, WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY, PRIOR TO PROCEEDING, SHOULD ANY UNCOVERED EXISTING UTILITY PRECLUDE COMPLETION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. ALL RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED OFF SITE AND BE LEGALLY DISPOSED, AT NO ADDITIONAL COST.
4. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE EQUIPMENT AND TOWER AREAS.
5. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
6. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
7. THE AREAS OF THE COMPOUND DISTURBED BY THE WORK SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
8. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
9. IF ANY FIELD CONDITIONS EXIST WHICH PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL PROCEED WITH AFFECTED WORK AFTER CONFLICT IS SATISFACTORILY RESOLVED.
10. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST THE PRE MANUFACTURED EQUIPMENT BUILDING SHOP DRAWINGS.
11. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.

COMPACTED GRAVEL FILL:

1. COMPACTED GRAVEL FILL SHALL BE FURNISHED AND PLACED AS A FOUNDATION FOR STRUCTURES, WHERE SHOWN ON THE CONTRACT DRAWINGS OR DIRECTED BY THE ENGINEER.
2. GRAVEL SHALL CONFORM TO THE REQUIREMENTS OF ARTICLE M.02.02 OF THE CONNECTICUT D.O.T. STANDARD SPECIFICATIONS. ADMIXTURES AND SURFACE PROTECTIVE MATERIALS USED TO PREVENT THE GRAVEL FROM FREEZING MUST MEET THE APPROVAL OF THE ENGINEER. THE LARGEST STONE SIZE SHALL BE 3-1/2 INCHES.
3. SAMPLES OF THE MATERIAL TO BE USED SHALL BE DELIVERED TO THE JOB SITE 5 DAYS PRIOR TO ITS INTENDED USE SO IT MAY BE TESTED FOR APPROVAL.
4. AFTER ALL EXCAVATION HAS BEEN COMPLETED, GRAVEL SHALL BE DEPOSITED IN LAYERS NOT EXCEEDING EIGHT (8) INCHES IN DEPTH OVER THE AREAS. IN EXCEPTIONAL CASES, THE ENGINEER MAY PERMIT THE FIRST LAYER TO BE THICKER THAN EIGHT (8) INCHES. EACH LAYER SHALL BE LEVELED OFF BY SUITABLE EQUIPMENT. THE ENTIRE AREA OF EACH LAYER SHALL BE COMPACTED BY USE OF APPROVED VIBRATORY, PNEUMATIC-TIRED OR TREAD-TYPE COMPACTION EQUIPMENT. COMPACTION SHALL BE CONTINUED UNTIL THE DRY DENSITY OVER THE ENTIRE AREA OF EACH LAYER IS NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY ACHIEVED BY AASHTO T-99 METHOD C. THE MOISTURE CONTENT OF THE GRAVEL SHALL NOT VARY BY MORE THAN 3 %+ FROM ITS OPTIMUM MOISTURE CONTENT. NO SUBSEQUENT LAYER SHALL BE DEPOSITED UNTIL THE SPECIFIED COMPACTION IS ACHIEVED FOR THE PREVIOUS LAYER. IF NECESSARY TO OBTAIN THE REQUIRED COMPACTION, WATER SHALL BE ADDED AND GENTLE PUDDLING PERFORMED IF AUTHORIZED. COMPACTED GRAVEL FILL SHALL BE PREVENTED FROM FREEZING BY USE OF APPROVED ADMIXTURES OR BY USE OF APPROVED PROTECTIVE MATERIALS ON THE SURFACE, OR BOTH.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318.
2. ALL CONCRETE SHALL BE NORMAL WEIGHT, 6% AIR ENTRAINED WITH A MAXIMUM SLUMP OF 4", AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED BARS. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD UNLESS OTHERWISE INDICATED.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS OTHERWISE NOTED ON THE DRAWINGS:

   CONCRETE CAST AGAINST EARTH ..... 3 IN.

   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER ..... 2 IN.
   #5 AND SMALLER & WWF ..... 1 1/2 IN.

   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL ..... 3/4 IN.
   BEAMS AND COLUMNS ..... 1 1/2 IN.
5. ALL EXPOSED EDGES OF CONCRETE TO RECEIVE A 3/4" CHAMFER IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. CONCRETE EQUIPMENT PAD TO RECEIVE A BRUSHED FINISH.
7. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT DURING DRILLING WITHOUT PRIOR REVIEW BY THE ENGINEER.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	11/24/14	MJR	DJD	REVISED FOR CSC
0	11/13/14	MJR	DJD	ISSUED FOR CSC - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

Cellco Partnership d/b/a Verizon Wireless

CENTEK engineering
Centered on Solutions
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

Cellco Partnership
d.b.a. Verizon Wireless

WIRELESS COMMUNICATIONS FACILITY

ASHFORD, CT

385 PUMPIN HILL ROAD
ASHFORD, CT 06278

DATE: 10/30/14
SCALE: AS NOTED
JOB NO.: 14124.000

SHELTER FOUND. PLAND, DETAILS AND NOTES

C-4

Sheet No. 7 of 7

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

353 PUMPKIN HILL ROAD
ASHFORD, CONNECTICUT

ABUTTERS' LIST

	Map/Lot	Property Address	Owner and Mailing Address
1.	41/D/1	20 Snow Lane	Gregory B. and Tammy P. Goodwin 27 Hartford Turnpike Eastford, CT 06242
2.	46/B/4	393 Pumpkin Hill Road	Timothy J. Bunte 393 Pumpkin Hill Road Ashford, CT 06278
3.	46/B/3-1	Pumpkin Hill Road	Timothy J. Bunte 393 Pumpkin Hill Road Ashford, CT 06278
4.	46/B/3	385 Pumpkin Hill Road	Irene D. Bunte 385 Pumpkin Hill Road Ashford, CT 06278
5.	46/A/1	350 Pumpkin Hill Road	Laurie A. Brown 350 Pumpkin Hill Road Ashford, CT 06278
6.	46/A/1.1	Pumpkin Hill Road	Audrey B. Conrad 443 Pumpkin Hill Road Ashford, CT 06278
7.	46/B/2	373 Pumpkin Hill Road	Sandra Colbeth 373 Pumpkin Hill Road Ashford, CT 06278
8.	46/A/2	430 Pumpkin Hill Road	Paul Zlotnick 430 Pumpkin Hill Road Ashford, CT 06278