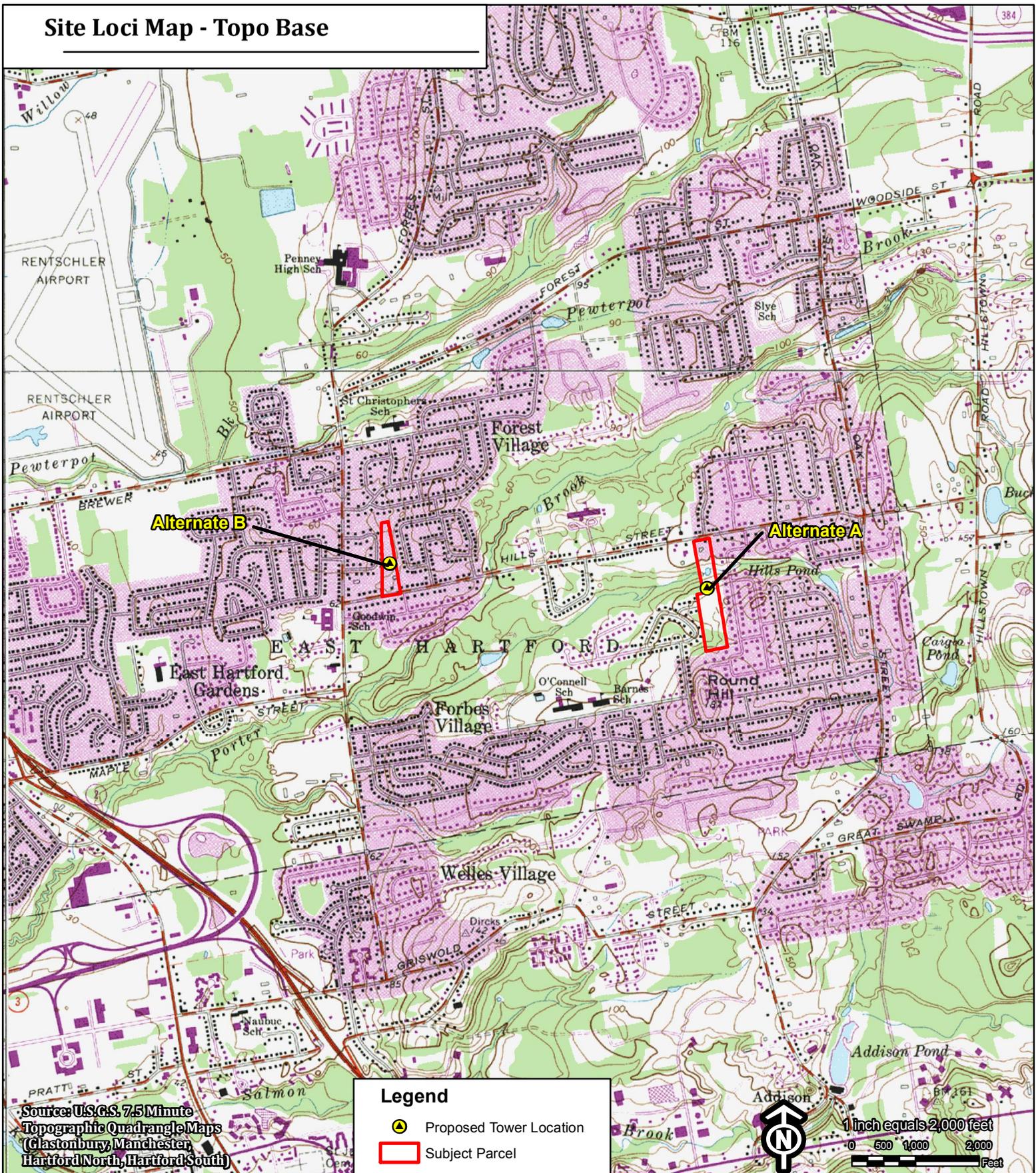


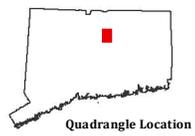
## Attachment 3



# Site Loci Map - Topo Base



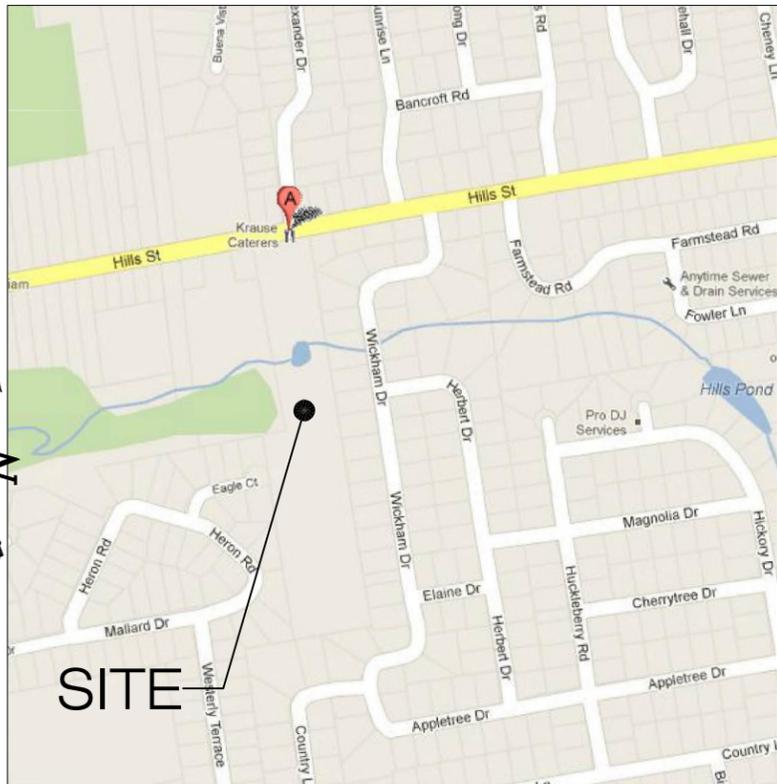
**Proposed MCM Telecommunications Facility  
465 (Alternate A) & 56 (Alternate B) Hills Street  
East Hartford, Connecticut**



**Monday, January 28, 2013**



## LOCATION MAP



SCALE: 1" = 400'

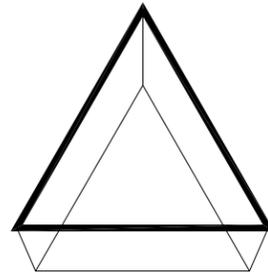
SOURCE: GOOGLE MAPS

## USGS TOPOGRAPHIC MAP



SCALE: 1" = 1000'

SOURCE: USGS 7.5 QUADRANGLE FOR GLASTONBURY



**MCM**

**MESSAGE CENTER  
MANAGEMENT**  
40 WOODLAND STREET  
HARTFORD, CT 06105  
OFFICE: (888) 973-7483

## DRAWING INDEX

- T-1 TITLE SHEET & INDEX
- A-1 ABUTTERS MAP
- 1 OF 3 PARTIAL BOUNDARY & TOPOGRAPHIC SURVEY
- 2 OF 3 PARTIAL BOUNDARY & TOPOGRAPHIC SURVEY
- 3 OF 3 PARTIAL BOUNDARY & TOPOGRAPHIC SURVEY
- SP-1 SITE PLAN
- SP-2 COMPOUND PLAN AND TOWER ELEVATION

**\*SITE INFORMATION:**

-SITE NAME:.....	EAST HARTFORD	-ZONE:.....	R-2
-SITE ID NUMBER:.....	CT-499	-LATITUDE - .....	41° 44' 26.56" N
		-LONGITUDE - .....	72° 35' 02.78" W
-SITE ADDRESS:.....	465 HILLS STREET	-ELEVATION - .....	89± AMSL
	EAST HARTFORD, CT 06118		
		-FEMA/FIRM	
-MAP:.....	63	DESIGNATION:.....	PANEL #09003C0527F - ZONE 'X'
-LOTS:.....	348	-ACREAGE:.....	11.94 Ac



3 SADDLEBROOK DRIVE  
KILLINGWORTH, CT 06419  
WWW.ALLPOINTSTECH.COM

PHONE: (860)-663-1697  
FAX: (860)-663-0935

## CONTACT PERSONNEL

**APPLICANTS:**  
MESSAGE CENTER MANAGEMENT  
40 WOODLAND STREET  
HARTFORD, CT 06105

**LANDLORD**  
THE TRUST AGREEMENT OF THE  
HENRY J. KRAUSE REVOCABLE TRUST  
TRUSTEE: HEIDI McNAMAR  
32 JAKOBS LANDING  
WESTBROOK, CT 06498

**MCM PROJECT MANAGER:**  
VIRGINIA KING (860) 727-5790

**MCM PROJECT ATTORNEY:**  
CUDDY & FEDER, LLP  
445 HAMILTON AVE., 14TH FLOOR  
WHITE PLAINS, NY 10601  
914-761-1300

**POWER PROVIDER:**  
CL&P (203) 280-2351  
DAN WALL

**TELCO PROVIDER:**  
AT&T: (800)-727-8368

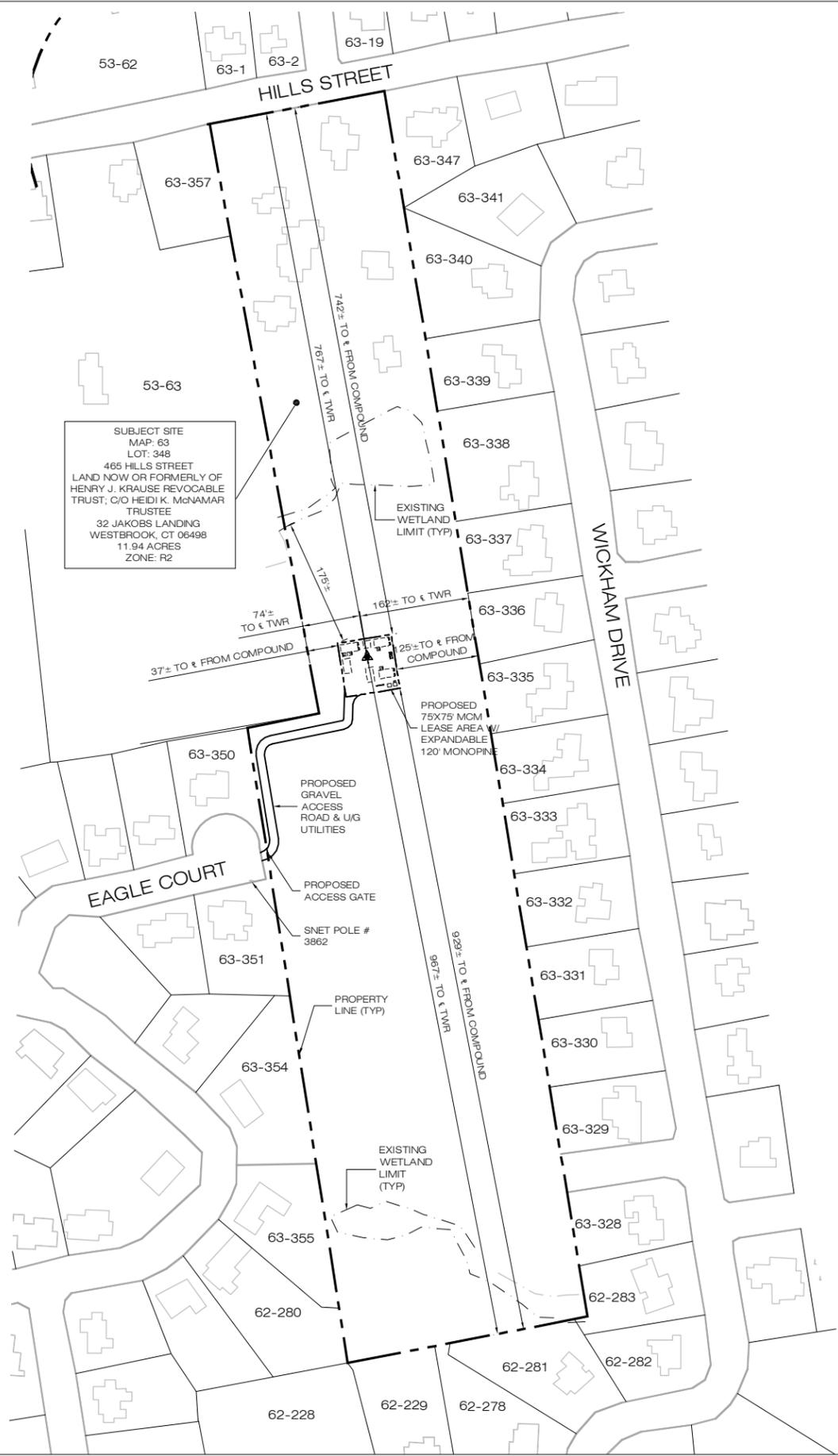
**CALL BEFORE YOU DIG:**  
(800) 922-4455

**GOVERNING CODEs:**  
2009 CONNECTICUT BUILDING CODE (2003 IBC BASIS)  
NATIONAL ELECTRIC CODE  
EIA/TIA 222F

## SITE INFORMATION

**EAST HARTFORD  
465 HILLS STREET  
EAST HARTFORD, CT 06118**

PERMITTING DOCUMENTS		TITLE SHEET AND INDEX	
EAST HARTFORD 465 HILLS STREET EAST HARTFORD, CT 06118		APT FILING NUMBER: CT-242-280	
DESIGN TYPE:		APT DRAWING NUMBER: T-1	
RAW LAND		DRAWN BY: CMS	
		CHECKED BY: SMC	
REVISIONS:		SCALE: AS NOTED	
REV.0: 10/08/12: FOR REVIEW: SMC		DATE: 09/12/12	
REV.1: 10/09/12: FOR FILING: SMC		SHEET NUMBER:	
REV.2: 02/12/13: GENERAL COMMENTS: SMC		T-1	
REV.3:		PROFESSIONAL ENGINEER	
REV.4:		No. 19728	
REV.5:		STATE OF CONNECTICUT	



SUBJECT SITE  
 MAP: 63  
 LOT: 348  
 465 HILLS STREET  
 LAND NOW OR FORMERLY OF  
 HENRY J. KRAUSE REVOCABLE  
 TRUST; C/O HEIDI K. McNAMARA  
 TRUSTEE  
 32 JAKOBS LANDING  
 WESTBROOK, CT 06498  
 11.94 ACRES  
 ZONE: R2

**ABUTTERS LIST**

MAP LOT	ACCOUNT NUMBER	OWNER	LOCATION	MAILING ADDRESS
53	62	MISSIONARY SOC OF CONN	444 HILLS ST	444 HILLS ST EAST HARTFORD, CT 06118
53	63	SMITH RICHARD F & MARY ANN	441 HILLS ST	441 HILLS ST EAST HARTFORD, CT 06118
62	228	TAYLOR RACHELLE J & JOE CLARENCE	247 COUNTRY LN	247 COUNTRY LN EAST HARTFORD, CT 06118
62	229	RICHARD SCOTT	253 COUNTRY LN	253 COUNTRY LN EAST HARTFORD, CT 06118
62	278	GERMANO FRANK & JEANINE	187 WICKHAM DR	187 WICKHAM DR EAST HARTFORD, CT 06118
62	280	WALL BRIAN T & DEBORAH L	15 HERON RD	15 HERON RD EAST HARTFORD, CT 06118
62	281	SCAVETTA CLARE M	181 WICKHAM DR	181 WICKHAM DR EAST HARTFORD, CT 06118
622	821	BJORKMAN MATTHEW C & RYAN T	165 WICKHAM DR	165 WICKHAM DR EAST HARTFORD, CT 06118
62	2831	GROTE ROBERT H JR & DEBORAH R	157 WICKHAM DR	157 WICKHAM DR EAST HARTFORD, CT 06118
63	1	BROWN GORDON R	454 HILLS ST	103 CHIMNEY SWEEP HILL GLASTONBURY, CT 06033
63	2	LETT FRANK & CINDY	458 HILLS ST	458 HILLS ST EAST HARTFORD, CT 06118
63	19	VENGRUSKAS LISA A	470 HILLS ST	470 HILLS ST EAST HARTFORD, CT 06118
63	328	DANIEWICZ DAVID J & FELICITA	149 WICKHAM DR	149 WICKHAM DR EAST HARTFORD, CT 06118
63	329	ROBERGE DONALD & MARY C	137 WICKHAM DR	137 WICKHAM DR EAST HARTFORD, CT 06118
63	330	CIRILLO SERGIO	129 WICKHAM DR	129 WICKHAM DR EAST HARTFORD, CT 06118
63	331	FOX ELIZABETH & JAMES J JR & KEVIN W	121 WICKHAM DR	121 WICKHAM DR EAST HARTFORD, CT 06118
63	332	FRAZER JENNIFER M	115 WICKHAM DR	115 WICKHAM DR EAST HARTFORD, CT 06118
63	333	STEFURAK SUSAN K	105 WICKHAM DR	105 WICKHAM DR EAST HARTFORD, CT 06118
63	334	PARIBELLO DOROTHEA S	97 WICKHAM DR	97 WICKHAM DR EAST HARTFORD, CT 06118
63	335	MORIN EUGENE J & ANNE V	89 WICKHAM DR	89 WICKHAM DR EAST HARTFORD, CT 06118
63	336	ROCHELEAU LEON J & GEORGETTE C	81 WICKHAM DR	81 WICKHAM DR EAST HARTFORD, CT 06118
63	337	CURRIER JASON M & JESSICA A	73 WICKHAM DR	73 WICKHAM DR EAST HARTFORD, CT 06118
63	338	DAYTON RONALD & KATHERINE A	63 WICKHAM DR	63 WICKHAM DR EAST HARTFORD, CT 06118
63	339	PARRY REBECCA L	53 WICKHAM DR	53 WICKHAM DR EAST HARTFORD, CT 06118
63	340	NGUYEN DU Y HM	45 WICKHAM DR	45 WICKHAM DR EAST HARTFORD, CT 06118
63	341	GANLEY JEFFREY J	41 WICKHAM DR	41 WICKHAM DR EAST HARTFORD, CT 06118
63	347	BRENNAN OLGA M TRUSTEE	473 HILLS ST	473 HILLS ST EAST HARTFORD, CT 06118
63	350	SWEENEY ROBERT & LOIS	28 EAGLE CT	28 EAGLE CT EAST HARTFORD, CT 06118
63	351	SANTOS TIAGO PAULA	27 EAGLE CT	27 EAGLE CT EAST HARTFORD, CT 06118
63	354	RILEY SHARON A & TIMOTHY R	27 HERON RD	27 HERON RD EAST HARTFORD, CT 06118
63	355	MARANDA SERGE G & KATHLEEN M	21 HERON RD	21 HERON RD EAST HARTFORD, CT 06118
63	357	SMITH RICHARD F & MARY ANN	443 HILLS ST	441 HILLS ST EAST HARTFORD, CT 06118

BASE MAPPING FROM:

- "PARTIAL TOPOGRAPHIC SURVEY, PROPERTY SITUATE 465 HILLS STREET, EAST HARTFORD, CONNECTICUT" PREPARED BY BARRETT BONAOCCHI & VAN WEELE, PC 175 A COMMERCE DRIVE HAUPPAUGE, NY DATED AUGUST 21, 2012 .
- TOWN OF EAST HARTFORD ASSESSORS MAPS #53, 62 AND 63.
- TOWN OF EAST HARTFORD GIS WEBSITE
- DIGITAL GLOBAL 2010 DIGITAL ORTHOPHOGRAPHS.

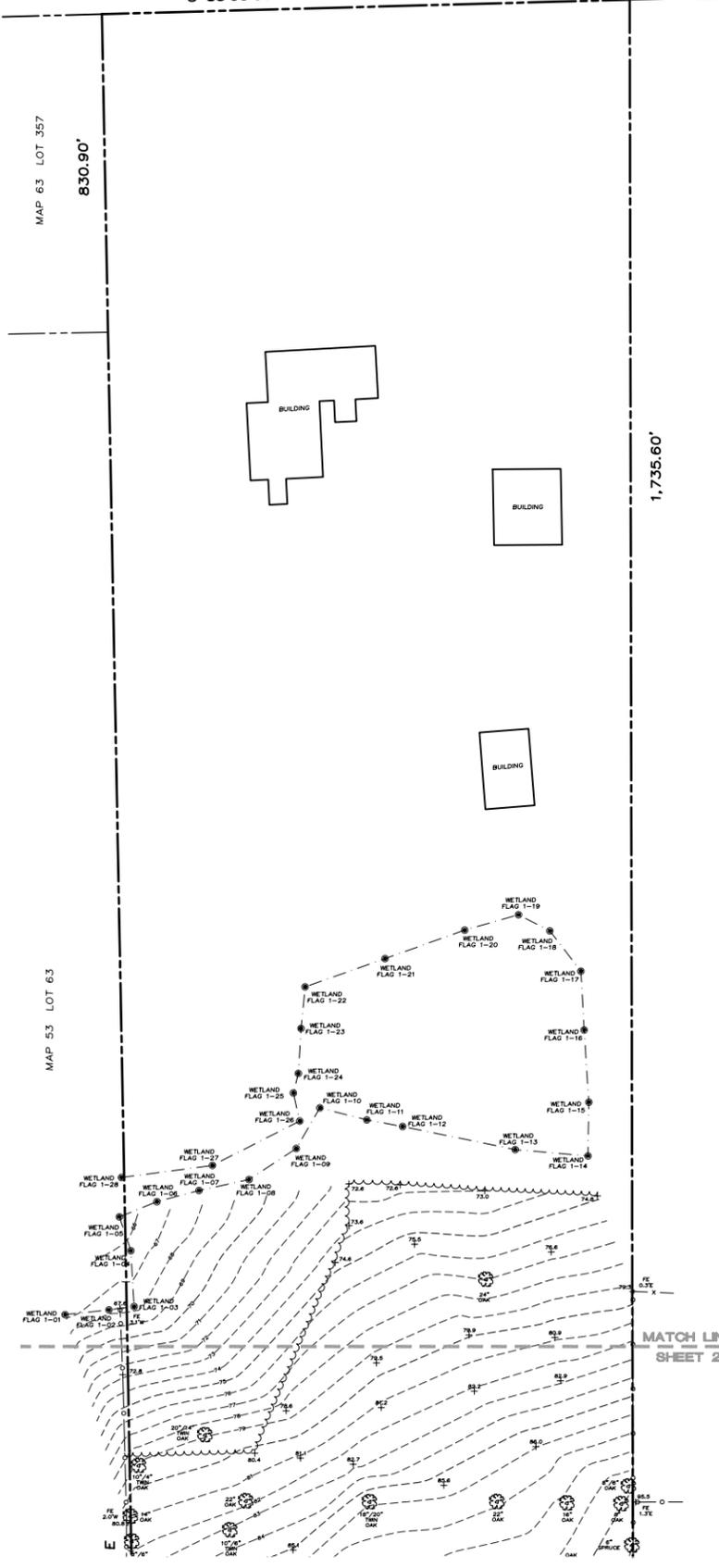


**ABUTTERS MAP**  
 SCALE : 1" = 100'-0"

PERMITTING DOCUMENTS	<b>ABUTTERS MAP</b>	
<b>EAST HARTFORD</b> 465 HILLS STREET EAST HARTFORD, CT 06118	APT FILING NUMBER: CT-242-280	
DESIGN TYPE:	APT DRAWING NUMBER: A-1	
<b>RAW LAND</b>	DRAWN BY: CMS	SCALE: AS NOTED
REVISIONS:	CHECKED BY: SMC	DATE: 09/12/12
REV.0: 10/08/12: FOR REVIEW: SMC	SHEET NUMBER:	
REV.1: 10/09/12: FOR FILING: SMC	<b>A-1</b>	
REV.2: 02/12/13: GENERAL COMMENTS: SMC		
REV.3:		
REV.4:		
REV.5:		

# HILLS STREET

S 88°00'00" E 249.50'



MAP 63 LOT 357  
830.90'

MAP 53 LOT 63  
1,735.00'

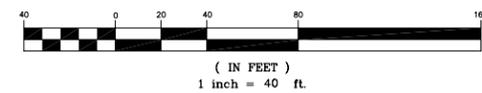
### LEGEND

- CONCRETE CURB
- DROP CURB
- EDGE OF PAVEMENT
- OH — OVERHEAD WIRES
- ⊙ STRUCTURE - SANITARY
- ⊙ UTILITY POLE
- x — CHAIN LINK FENCE
- FENCE OTHER
- ⊕ TOP/BOTTOM OF CURB
- + SPOT ELEVATION
- CONTOURS
- ▭ CONCRETE
- ~ TREE LINE
- ⊙ GUY WIRE
- ⊙ TREE

### NOTES

- THIS MAP AND SURVEY HAVE BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT," AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.  
  
THE TYPE OF SURVEY PERFORMED AND THE MAPPED FEATURES DEPICTED HEREON ARE IN ACCORDANCE WITH THE REQUIREMENTS OF A (PARTIAL) TOPOGRAPHIC SURVEY. BOUNDARY LINES ARE COMPILED FROM OTHER MAPS, DEEDS, AND A LIMITED FIELD SURVEY; THEY DO NOT REPRESENT A PROPERTY BOUNDARY OPINION AND ARE SUBJECT TO CHANGE BASED ON A COMPLETE FIELD SURVEY.
- VERTICAL ACCURACY CLASS: T-2. ELEVATIONS REFER TO NAD 1983. TOPOGRAPHIC INFORMATION IS LIMITED TO THE AREAS DEPICTED.
- BEARINGS REFER TO REFERENCE MAP 'D.'
- REFERENCE MAPS:  
(A) "SUBDIVISION PLAN COUNTRY MANOR, ADDITION 2 SHEET 3 OF 4" FILED AUGUST 17 1952.  
(B) "MAP OF WICKHAM ESTATES" FILED APRIL 11, 1962.  
(C) "MAP OF CARROLL HEIGHTS" FILED JULY 13, 1962.  
(D) DEED REFERENCE VOL 1207 PAGE 0127.
- A PORTION OF THE PROPERTY DEPICTED HEREON MAY BE SUBJECT TO:  
(1) VARIANCE ALLOWING FOR ENLARGEMENT OF STORAGE AREA RECORDED 7-2-85, BOOK/PAGE 919-323.  
(2) SEWER ASSESSMENT BY THE METROPOLITAN DISTRICT RECORDED 1-7-75, BOOK/PAGE 559-70 AND RELEASED AT 504-21.  
(3) CONDITIONS AND RESTRICTIONS SET FORTH IN PRIOR DEED 1207-130 RECORDED 4-12-89, AND IN BOOK/PAGE 215-448, RECORDED 4-5-54.
- PARCEL OWNER OF RECORD:  
MAP 63 - LOT 348: HENRY J. KRAUSE REVOCABLE TRUST  
McNAMARA, HEIDI K. - TRUSTEE  
465 HILL STREET, EAST HARTFORD, CT 06118
- SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS PART OF THIS SURVEY.
- WETLAND FLAGS SET BY ALL POINTS TECHNOLOGY CORP, DEAN GUSTAFSON, SENIOR SOILS SCIENTIST 8/20/2012.
- TREES HAVING A CALIPER OF 6" AND GREATER LOCATED ONLY ON A PORTION OF THE PROPERTY.

### GRAPHIC SCALE



Date	By	Revision
Surveyed by: PF	Drafted by: PR	Checked by: WJB

Tax Map: MAP 63 LOT 348

Date: AUGUST 21, 2012

**PROPERTY SITUATE**  
EAST HARTFORD  
HARTFORD COUNTY CONNECTICUT

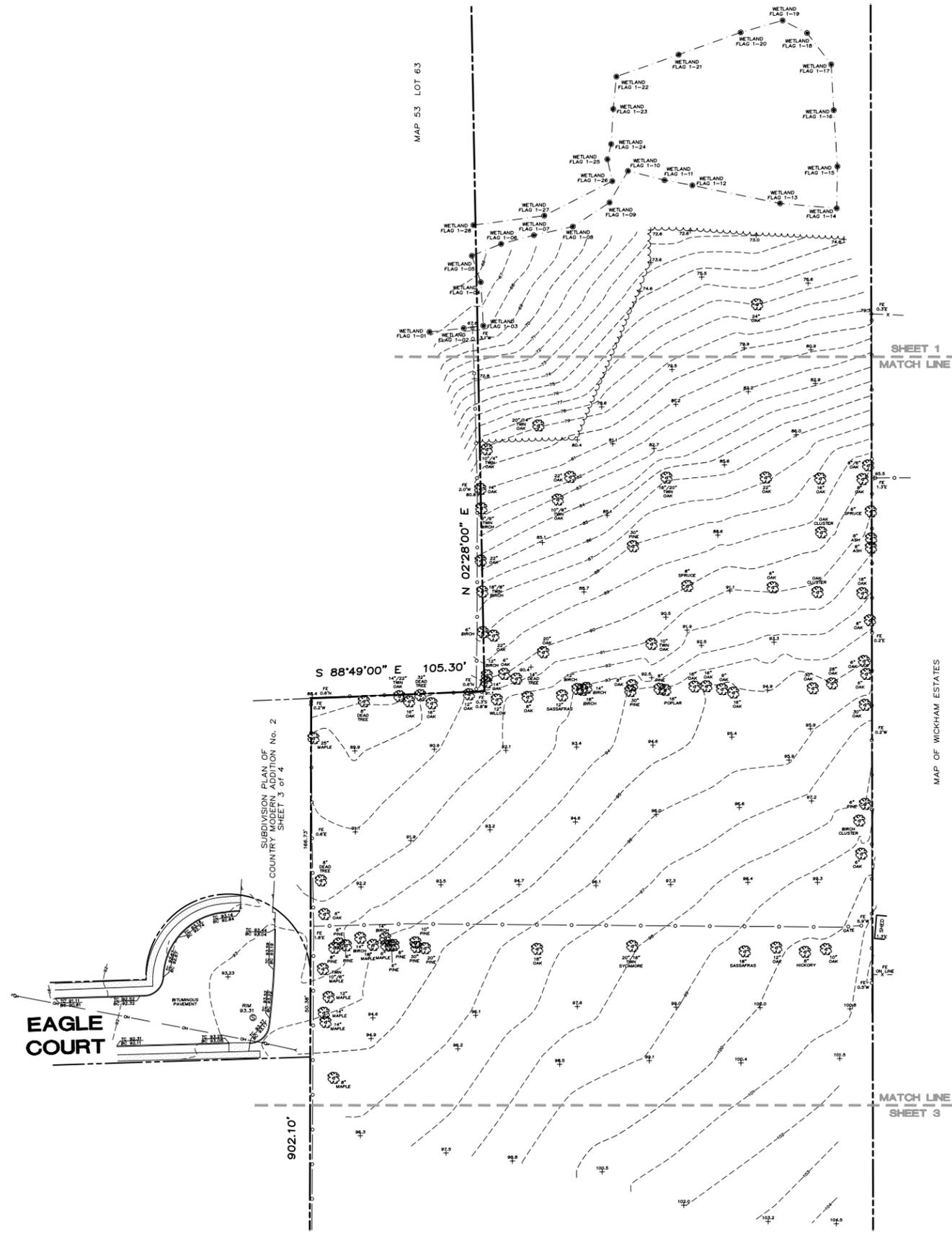
**PARTIAL BOUNDARY & TOPOGRAPHIC SURVEY**

Scale: 1" = 40'  
Project No. C120005  
Sheet No. 1 of 3

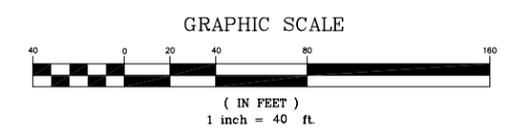
**BBV** Barrett Bonacci & Van Weele, PC  
Civil Engineers  
Surveyors  
Planners

15 Hasley Avenue  
Branford, CT 06405  
T 203.483.4322  
F 203.483.4323  
www.bbvp.com





- LEGEND**
- CONCRETE CURB
  - DROP CURB
  - EDGE OF PAVEMENT
  - OH — OVERHEAD WIRES
  - ⊙ STRUCTURE — SANITARY
  - ⊙ UTILITY POLE
  - x — CHAIN LINK FENCE
  - o — FENCE OTHER
  - ± 92.00 / ± 91.50 TOP/BOTTOM OF CURB
  - SPOT ELEVATION
  - CONTOURS
  - CONCRETE
  - TREE LINE
  - GUY WIRE
  - ⊙ TREE



Tax Map: MAP 63 LOT 348		
Date <b>AUGUST 21, 2012</b>		
<b>PROPERTY SITUATE</b>		
<b>EAST HARTFORD</b>		
HARTFORD COUNTY		CONNECTICUT
<b>PARTIAL BOUNDARY &amp; TOPOGRAPHIC SURVEY</b>		
Scale 1" = 40'		Project No. C120005
		Sheet No. <b>2 of 3</b>

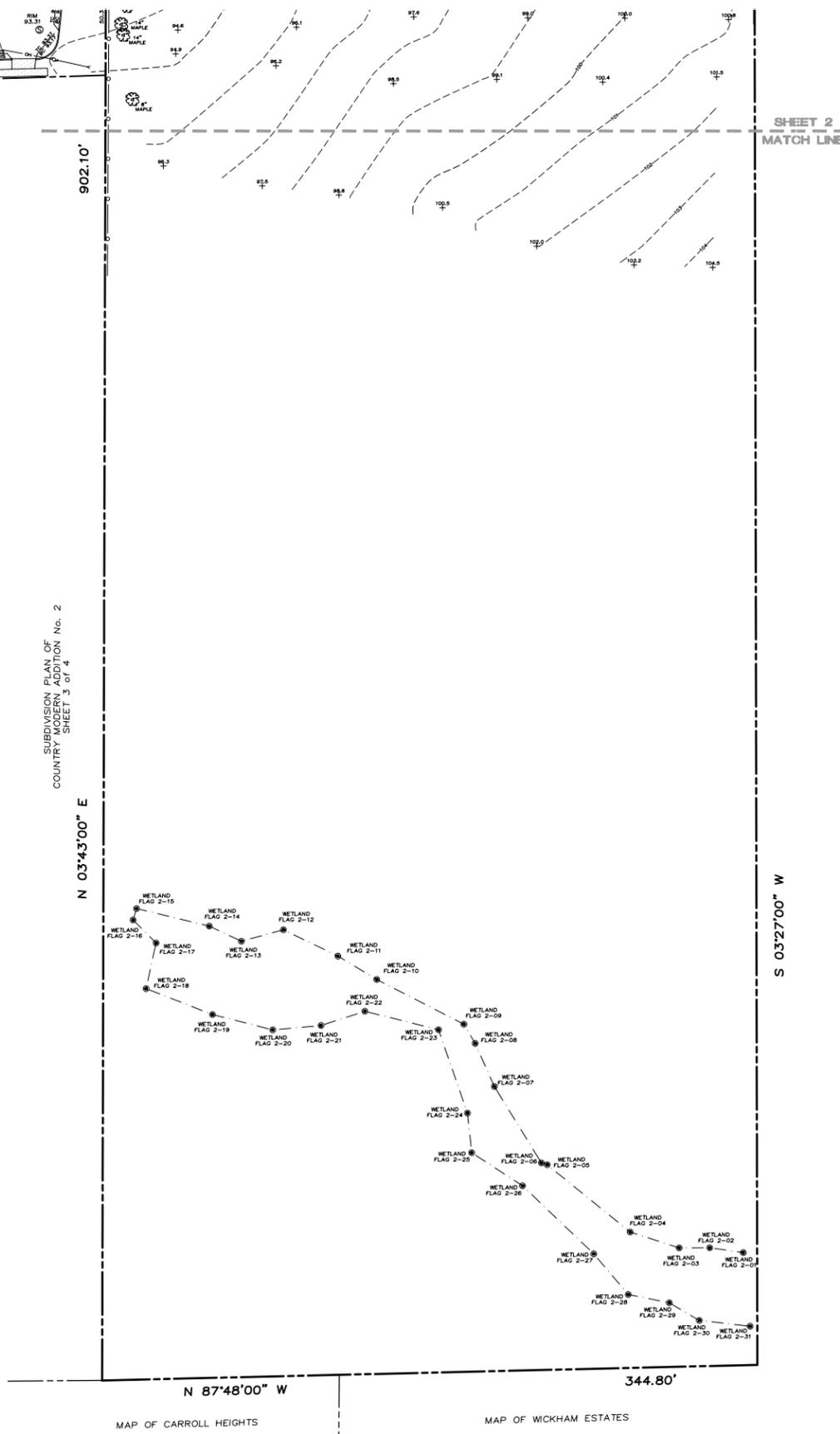
Date	By	Revision
Surveyed by: PF	Drafted by: PR	Checked by: WJB

**Barrett Bonacci & Van Weele, PC**  
Civil Engineers  
Surveyors  
Planners

15 Hasley Avenue  
Branford, CT 06405  
T 203.483.4322  
F 203.483.4323  
www.bbvp.com

EAGLE COURT

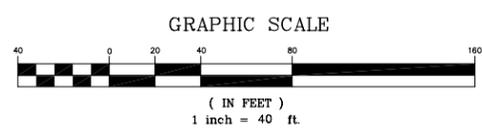


SHEET 2  
MATCH LINE



**LEGEND**

- CONCRETE CURB
- DROP CURB
- EDGE OF PAVEMENT
- OH — OVERHEAD WIRES
- ⊙ STRUCTURE — SANITARY
- ⊙ UTILITY POLE
- x — CHAIN LINK FENCE
- o — FENCE OTHER
- ± 92.00 / ± 91.50 TOP/BOTTOM OF CURB
- + 91.50 SPOT ELEVATION
- CONTOURS
- CONCRETE
- TREE LINE
- GUY WIRE
- ⊙ TREE



SUBDIVISION PLAN OF  
COUNTRY HOUSE ADDITION No. 2  
SHEET 3 of 4

N 03°43'00\"/>

S 03°27'00\"/>

N 87°48'00\"/>

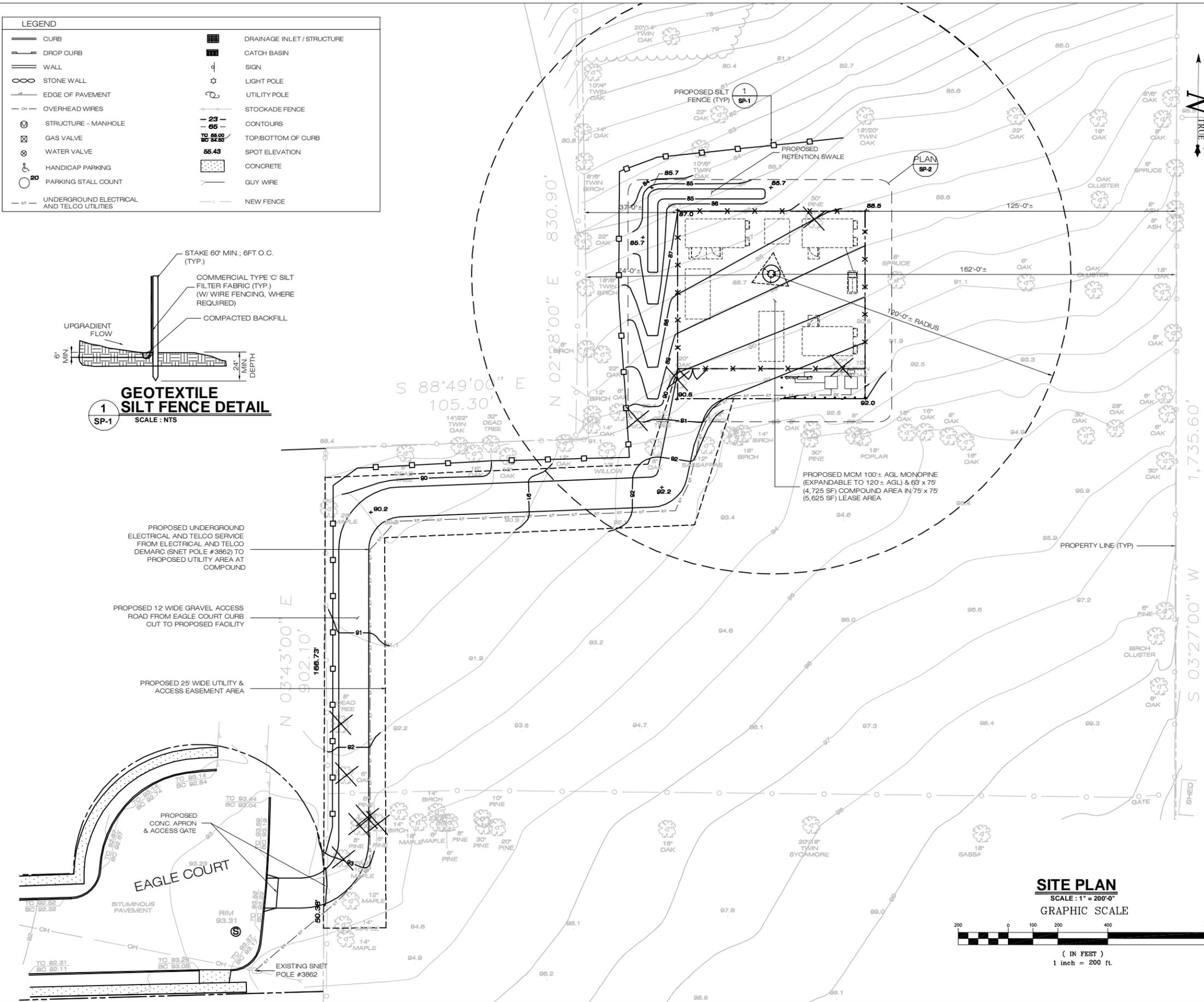
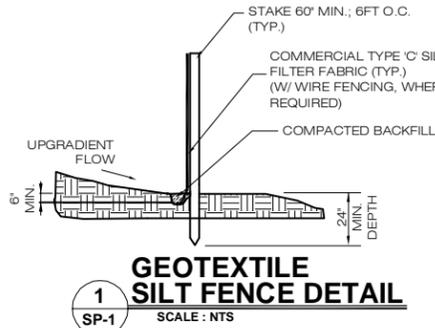
344.80'

MAP OF CARROLL HEIGHTS

MAP OF WICKHAM ESTATES

Tax Map: MAP 63 LOT 348		
Date <b>AUGUST 21, 2012</b>		
<b>PROPERTY SITUATE</b>		
<b>EAST HARTFORD</b>		
HARTFORD COUNTY		CONNECTICUT
<b>PARTIAL BOUNDARY &amp; TOPOGRAPHIC SURVEY</b>		
© 2012 BBV PC		
Date: _____ By: _____ Revision: _____ Surveyed by: PF    Drafted by: PR    Checked by: WJB	<b>Barrett Bonacci &amp; Van Weele, PC</b> Civil Engineers Surveyors Planners 15 Hasley Avenue Branford, CT 06405 T 203.483.4322 F 203.483.4323 www.bbvpc.com	
Scale 1" = 40'	Project No. C120005	Sheet No. <b>3 of 3</b>

LEGEND			
	CURB		DRAINAGE INLET / STRUCTURE
	DROP CURB		CATCH BASIN
	WALL		SIGN
	STONE WALL		LIGHT POLE
	EDGE OF PAVEMENT		UTILITY POLE
	OVERHEAD WIRES		STOCKADE FENCE
	STRUCTURE - MANHOLE		CONTOURS
	GAS VALVE		TOP/BOTTOM OF CURB
	WATER VALVE		SPOT ELEVATION
	HANDICAP PARKING		CONCRETE
	PARKING STALL COUNT		GUY WIRE
	UNDERGROUND ELECTRICAL AND TELCO UTILITIES		NEW FENCE

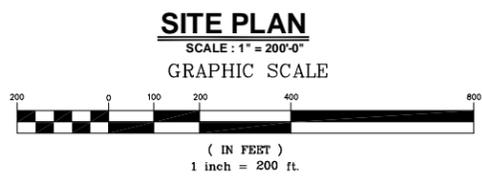


**SURVEY NOTES**

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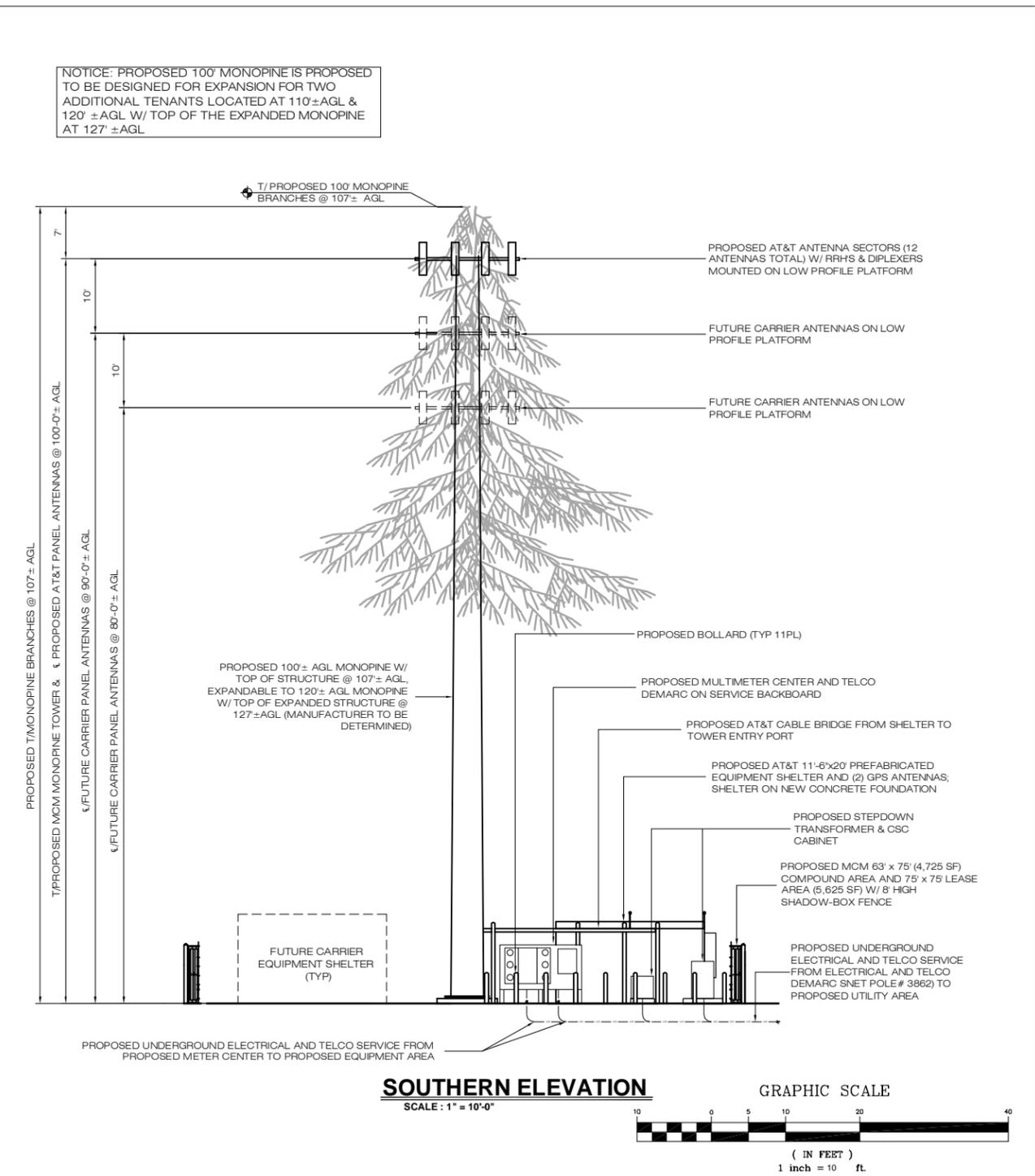
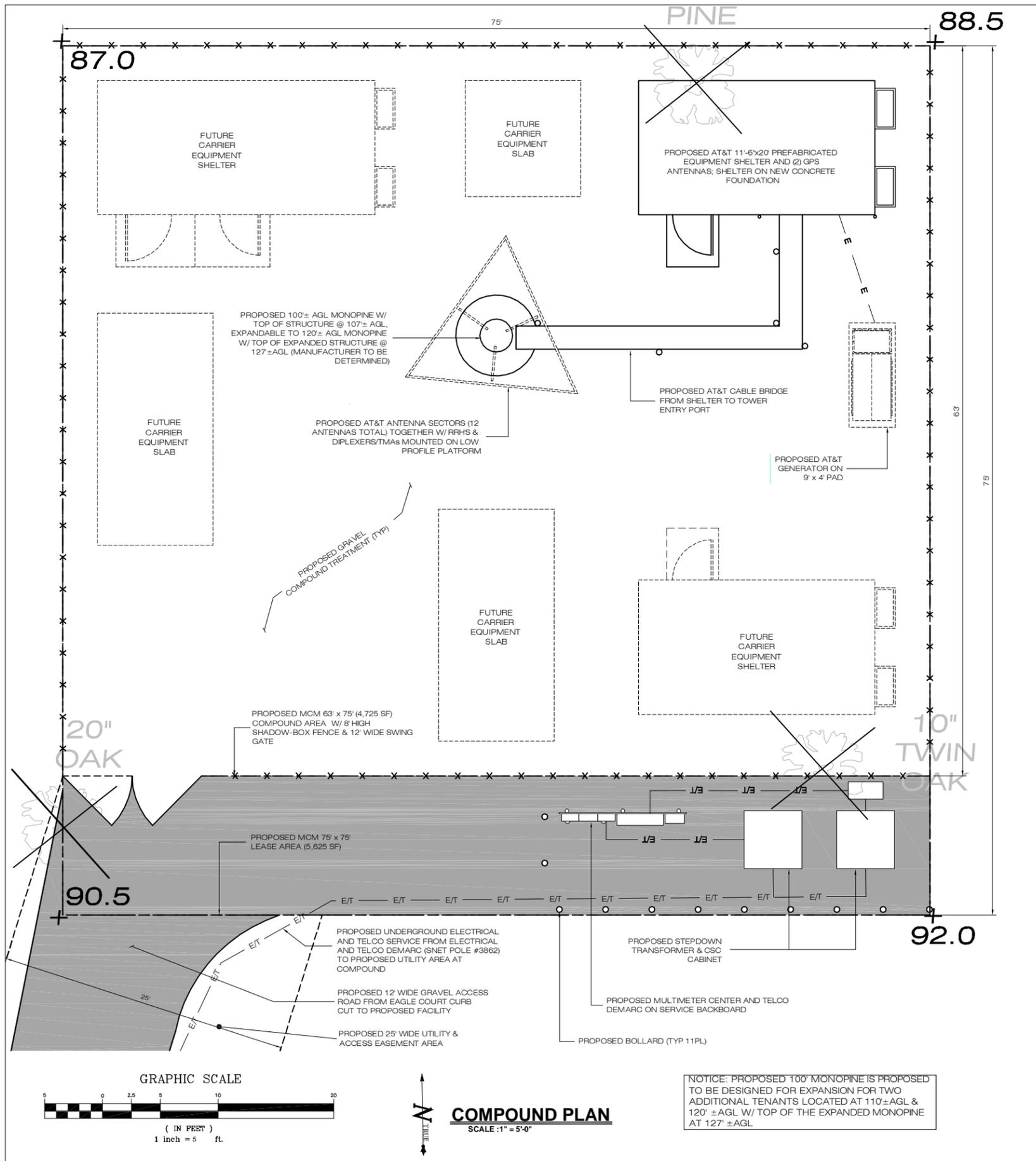
SITE AREAS & VOLUMES OF EARTHWORK	
SITEWORK SHALL ENTAIL APPROXIMATELY 325 CUBIC YARDS OF CUT (100 CY COMPOUND, 75 CY DRIVEWAY + 150 CY TRENCH EXCAVATION) AND 350 CY FILL (125 CY COMPOUND, 75 CY DRIVEWAY + 150 CY TRENCH EXCAVATION). APPROXIMATELY 180 CUBIC YARDS OF CRUSHED STONE SHALL BE IMPORTED TO CONSTRUCT THE COMPOUND AND ACCESS ROAD.	
COMPOUND AREA SLOPES:	
EXISTING -	7.0%
PROPOSED -	4.6%
TOTAL AREA OF DISTURBANCE =	17,300 ± SF
STORMWATER VELOCITY:	
PRIOR TO GROUND COVER =	4.6 FT/SEC
FOLLOWING GROUND COVER =	4.0 FT/SEC
GROUND COVER TO BE ESTABLISHED AS FOLLOWS (U.O.N.):	
- WHITE CLOVER @	0.20#/- SF
- TALL FESCUE @	0.45#/- SF
- RYEGRASS @	0.10#/- SF

NOTE: 10 TREES WILL BE REMOVED IN CONSTRUCTING THE FACILITY



PERMITTING DOCUMENTS	PARTIAL SITE & GRADING PLAN	
<b>EAST HARTFORD 465 HILLS STREET EAST HARTFORD, CT 06118</b>		
DESIGN TYPE:	APT FILING NUMBER: CT-242-280	
<b>RAW LAND</b>	APT DRAWING NUMBER:	SP-1
	DRAWN BY: CMS	SCALE: AS NOTED
	CHECKED BY: SMC	DATE: 09/12/12
REVISIONS:		
REV.0: 10/08/12: FOR REVIEW: SMC	SHEET NUMBER:	
REV.1: 10/09/12: FOR FILING: SMC	<b>SP-1</b>	
REV.2: 02/12/13: GENERAL COMMENTS: SMC	DATE: 09/12/12	
REV.3:		
REV.4:		
REV.5:		





**ENGINEERING ANALYSIS AND CERTIFICATION**

IN ACCORDANCE WITH THE 2009 CONNECTICUT STATE BUILDING CODE AND THE ELECTRONIC INDUSTRIES ASSOCIATION STANDARD EIA/ITA-222-F 'STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORT STRUCTURES' FOR HARTFORD COUNTY, THE TOWER WOULD BE DESIGNED TO WITHSTAND PRESSURES EQUIVALENT TO A MAXIMUM 80 MPH FASTEST MILE WIND SPEED. THE FOUNDATION DESIGN WOULD BE BASED ON SOIL CONDITIONS AT THE SITE.

<b>PERMITTING DOCUMENTS</b> <b>EAST HARTFORD</b> <b>465 HILLS STREET</b> <b>EAST HARTFORD, CT 06118</b>		<b>COMPOUND PLAN &amp; TOWER ELEVATION</b>	
<b>DESIGN TYPE:</b> <b>RAW LAND</b>		<b>APT FILING NUMBER:</b> CT-242-280 <b>APT DRAWING NUMBER:</b> SP-2	
<b>REVISIONS:</b>		<b>DRAWN BY:</b> CMS <b>CHECKED BY:</b> SMC	
<b>REV.0:</b> 10/08/12: FOR REVIEW: SMC <b>REV.1:</b> 10/09/12: FOR FILING: SMC <b>REV.2:</b> 02/12/13: GENERAL COMMENTS: SMC <b>REV.3:</b> <b>REV.4:</b> <b>REV.5:</b>		<b>SCALE:</b> AS NOTED <b>DATE:</b> 09/12/12	
<b>SHEET NUMBER:</b> <b>SP-2</b>			

**Site: East Hartford**  
**Site Address: 465 Hills Street**  
**East Hartford, CT 06118**

**Access distances:**

Distance of new access driveway: 400'+/-

**Distance to Nearest Wetlands**

175' north of the proposed telecommunications facility

**Distance to Property Lines:**

767' to the northern property boundary from the tower

967' to the southern property boundary from the tower

74' to the western property boundary from the tower

162' to the eastern property boundary from the tower

742' to the northern property boundary from the compound

929' to the southern property boundary from the compound

37' to the western property boundary from the compound

125' to the eastern property boundary from the compound

**Residence Information:**

There are 104 residences within 1,000' feet of the compound. The closest onsite residence is 533' from the proposed tower. The closest off site residence is 244' to the east and is located at Map 63, Lot 337 (73 Wickham Drive).

**Tree Removal Count:**

Ten trees need to be removed to construct the access road, the tower and equipment areas.

6" – 8" dbh - 3 trees

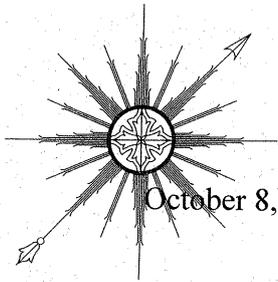
8" – 10" dbh - 4 trees (includes one dead)

10" – 14" dbh - 1 tree (dead)

14" or greater dbh - 2 trees

**Cut/Fill:** 325 CY of cut material and 350 CY of fill material

**Clearing/Grading Necessary:** Total area of disturbance = 17,300 SF



# ALL-POINTS TECHNOLOGY CORPORATION, P.C.

October 8, 2012

Cuddy & Feder, LLP  
445 Hamilton Avenue  
14<sup>th</sup> Floor  
White Plains, NY 10601

RE: Tree Inventory  
Site: East Hartford  
465 Hills Street  
East Hartford, CT 06118

Dear Mr. Laub:

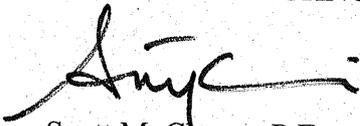
A Tree Inventory was completed at the subject site on August 21, 2012 to determine the size and quantity of existing trees that will need to be removed for the installation of the proposed facility. Access to the facility is proposed from a new curb cut access off the east end of Eagle Court cul-de-sac. The proposed 12' wide access drive and underground utilities will travel north along the western site property line, turn east at the tree line and return northward between of stand of trees to the proposed facility. Installation of the proposed access drive and compound area improvements will require the removal of trees summarized as follows:

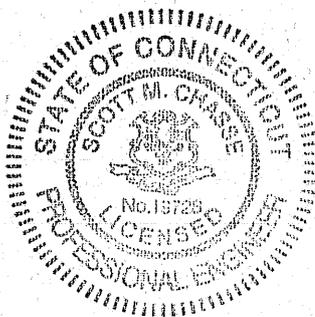
6" – 8" dbh	- 3 trees
8" – 10" dbh	- 4 trees (includes one dead)
10" – 14" dbh	- 1 tree (dead)
14" or greater dbh	- 2 trees

A tree buffer will remain on all sides of the facility.

Sincerely,

ALL-POINTS TECHNOLOGY CORPORATION, P.C.

  
Scott M. Chasse, P.E.  
Principal



Attachment 3(B)



October 23, 2012.

Ms. Susan Chandler, Historical Architect  
State Historic Preservation Office  
Connecticut Commission on Culture & Tourism  
One Constitution Plaza, 2nd Floor  
Hartford CT 06103

**NO HISTORIC  
PROPERTIES EFFECTED**

*Dominic Fournier* DEPUTY SHPO  
STATE HISTORIC PRESERVATION OFFICE  
Date 11/26/12 Project SRU

Re: Proposed Wireless Telecommunications Facility  
465 Hills Street  
Hartford, Connecticut

Dear Ms. Chandler,

On behalf of Message Center Management, Inc. (MCM), All-Points Technology Corporation, P.C. is preparing a NEPA evaluation for installation of a wireless telecommunications facility at the referenced property. As part of this evaluation, a determination from your office is required regarding potential effects of the proposed installation on historic properties or archaeological sites.

MCM intends to construct and operate a 107-foot tall monopole (to be disguised as a stealth "monopine") with the potential for the facility to be extended at a later date (should it be required for additional collocation purposes) to a maximum height of 127 feet above ground level. At this time, AT&T has committed to occupying a 100-foot centerline on the facility. The monopole would be surrounded by a 63-foot by 75-foot fence-enclosed compound. Access to the facility would be gained via proposed gravel drive that would originate off the Eagle Court cul-de-sac, which abuts the western property boundary.

The Area of Potential Effect (APE) associated with this project was determined to be 0.5 mile in radius. Based on a review of the National Register of Historic Places, we have determined that no listed historic properties or districts occur within the APE. To assist in your review, I have included a Cultural Resources Screen map and Site Plans.

We respectfully request a written opinion from your office regarding the potential effect of proposed activities on these resources. At your earliest convenience, please forward correspondence to my attention. Thank you in advance for your prompt consideration of this request.

Yours truly,

Michael Libertine  
Director of Siting and Permitting



Connecticut Department of  
**ENERGY &  
ENVIRONMENTAL  
PROTECTION**

October 26, 2012

Dean Gustafson  
All-Points Technology Corporation, P.C.  
3 Saddlebrook Drive  
Killingworth, CT 06419  
[dgustafson@allpointstech.com](mailto:dgustafson@allpointstech.com)

Project: MCM East Hartford Facility at 465 Hills Street in East Hartford, Connecticut  
Request No.: 201206529

Dear Dean,

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided for the new MCM telecommunications facility located at 465 Hills Street in East Hartford, Connecticut. According to our information we have records for State Special Concern Species *Terrapene carolina carolina* (eastern box turtle) from the vicinity of this property. Box turtles can be found in woodlands, fields, thickets, marshes and stream banks. This species has been negatively impacted by the loss of suitable habitat in the area. If the construction of this telecommunications facility will occur during their active period (April to October) the best way to avoid impacts to the turtles is to look for individuals that may have wandered into the site and move them out of the project area or construction zone. I have included a fact sheet for box turtle so you may be aware of the conservation needs of this turtle if any are found during the project. Please let me know if you have any questions.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592, or [dawn.mckay@ct.gov](mailto:dawn.mckay@ct.gov). Thank you for consulting the Natural Diversity Data Base. Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEEP for the proposed site.

Sincerely,

A handwritten signature in cursive script that reads "Dawn M. McKay".

Dawn M. McKay  
Environmental Analyst 3

# WILDLIFE IN CONNECTICUT

## STATE SPECIES OF SPECIAL CONCERN

### Eastern Box Turtle

*Terrapene carolina carolina*

#### Description

The eastern box turtle is probably the most familiar of the 8 species of turtles found in Connecticut's landscape. It is known for its high-domed carapace (top shell). The carapace has irregular yellow or orange blotches on a brown to black background that mimic sunlight dappling on the forest floor. The plastron (under shell) may be brown or black and may have an irregular pattern of cream or yellow. The length of the carapace usually ranges from 4.5 to 6.5 inches, but can measure up to 8 inches long. The shell is made up of a combination of scales and bones, and it includes the ribs and much of the backbone.

Each individual turtle has distinctive head markings. Males usually have red eyes and a concave plastron, while females have brown eyes and a flat plastron. Box turtles also have a horny beak, stout limbs, and feet that are webbed at the base. This turtle gets its name from its ability to completely withdraw into its shell, closing itself in with a hinged plastron. Box turtles are the only Connecticut turtle with this ability.

#### Range

Eastern box turtles are found throughout Connecticut, except at the highest elevations. They range from southeastern Maine to southeastern New York, west to central Illinois, and south to northern Florida.

#### Habitat and Diet

In Connecticut, this terrestrial turtle inhabits a variety of habitats, including woodlands, field edges, thickets, marshes, bogs, and stream banks. Typically, however, box turtles are found in well-drained forest bottomlands and open deciduous forests. They will use wetland areas at various times during the season. During the hottest part of a summer day, they will wander to find springs and seepages where they can burrow into the moist soil. Activity is restricted to mornings and evenings during summer, with little to no nighttime activity, except for egg-



laying females. Box turtles have a limited home range where they spend their entire life, ranging from 0.5 to 10 acres (usually less than 2 acres).

Box turtles are omnivorous and will feed on a variety of food items, including earthworms, slugs, snails, insects, frogs, toads, small snakes, carrion, leaves, grass, berries, fruits, and fungi.

#### Life History

From October to April, box turtles hibernate by burrowing into loose soil, decaying vegetation, and mud. They tend to hibernate in woodlands, on the edge of woodlands, and sometimes near closed canopy wetlands in the forest. Box turtles may return to the same place to hibernate year after year. As soon as they come out of hibernation, box turtles begin feeding and searching for mates.

The breeding season begins in April and may continue through fall. Box turtles usually do not breed until they are about 10 years old. This late maturity is a result of their long lifespan, which can range up to 50 to even over 100 years of age. The females do not have to mate every year to lay eggs as they can store sperm for up

to 4 years. In mid-May to late June, the females will travel from a few feet to more than a mile within their home range to find a location to dig a nest and lay their eggs. The 3 to 8 eggs are covered with dirt and left to be warmed by the sun. During this vulnerable time, skunks, foxes, snakes, crows, and raccoons often raid nests. Sometimes, entire nests are destroyed. If the eggs survive, they will hatch in late summer to early fall (about 2 months after being laid). If they hatch in the fall, the young turtles may spend the winter in the nest and come out the following spring.

As soon as the young turtles hatch, they are on their own and receive no care from the adults. This is a dangerous time for young box turtles because they do not develop the hinge for closing into their shell until they are about 4 to 5 years old. Until then, they cannot entirely retreat into their shells. Raccoons, skunks, foxes, dogs, and some birds will prey on young turtles.

### ***Conservation Concerns***

The eastern box turtle was once common throughout the state, mostly in the central Connecticut lowlands. However, its distribution is now spotty, although where found, turtles may be locally abundant. Because of the population decline in Connecticut, the box turtle was added to the state's List of Endangered, Threatened, and Special Concern Species when it was revised in 1998. It is currently listed as a species of special concern. The box turtle also is protected from international trade by the 1994 CITES treaty. It is of conservation concern in all the states where it occurs at its northeastern range limit, which includes southern New England and southeastern New York.

Many states have laws that protect box turtles and prohibit their collection. In Connecticut, eastern box turtles **cannot** be collected from the wild (DEP regulations 26-66-14A). Another regulation (DEP regulations 26-55-3D) "grandfathers" those who have a **box turtle collected before 1998**. This regulation limits possession to a single turtle collected before 1998. These

regulations provide some protection for the turtles, but not enough to combat some of the even bigger threats these animals face. The main threats in Connecticut (and other states) are loss and fragmentation of habitat due to deforestation and spreading suburban development; vehicle strikes on the busy roads that bisect the landscape; and indiscriminate (and now illegal) collection of individuals for pets.

Loss of habitat is probably the greatest threat to turtles. Some turtles may be killed directly by construction activities, but many more are lost when important habitat areas for shelter, feeding, hibernation, or nesting are destroyed. As remaining habitat is fragmented into smaller pieces, turtle populations can become small and isolated.

Adult box turtles are relatively free from predators due to their unique shells. The shell of a box turtle is extremely hard. However, the shell is not hard enough to survive being run over by a vehicle. Roads bisecting turtle habitat can seriously deplete the local population. Most vehicle fatalities are pregnant females searching for a nest site.

### ***How You Can Help***

- *Leave turtles in the wild. They should never be kept as pets. Whether collected singly or for the pet trade, turtles that are removed from the wild are no longer able to be a reproducing member of a population. Every turtle removed reduces the ability of the population to maintain itself.*
- *Never release a captive turtle into the wild. It probably would not survive, may not be native to the area, and could introduce diseases to wild populations.*
- *Do not disturb turtles nesting in yards or gardens.*
- *As you drive, watch out for turtles crossing the road. Turtles found crossing roads in June and July are often pregnant females and they should be helped on their way and not collected. Without creating a traffic hazard or compromising safety, drivers are encouraged to avoid running over turtles that are crossing roads. Also, still keeping safety precautions in mind, you may elect to pick up turtles from the road and move them onto the side they are headed. Never relocate a turtle to another area that is far from where you found it.*
- *Learn more about turtles and their conservation concerns. Spread the word to others on how they can help Connecticut's box turtle population.*



State of Connecticut  
Department of Environmental Protection  
Bureau of Natural Resources  
Wildlife Division  
[www.ct.gov/dep](http://www.ct.gov/dep)



The production of this Endangered and Threatened Species Fact Sheet is made possible by donations to the Connecticut Endangered Species/Wildlife Income Tax Checkoff Fund.

## FAA 2-C SURVEY CERTIFICATION

**Applicant:** Message Center Management

**Site Name:** East Hartford  
**Site Address:** 465 Hills Street, East Hartford, CT 06118

**Survey Method:** GPS Survey

**Vertical Datum:** NAVD 1988

**Structure Type:** Proposed Monopole

**Ground Elevation:** 89'

**Latitude:** N. 41° 44' 26.56"  
**Longitude:** W. 72° 35' 02.78"

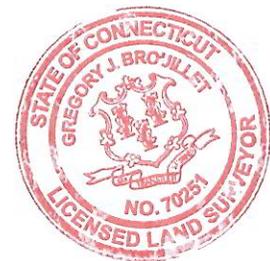
**Top of Proposed Pole Elevation:** 216' (127' pole length provided by others)

**Certification:** I certify that the above antennas are located at the stated latitude and longitude and elevation. The location coordinates are accurate to within  $\pm 50$  feet horizontal and that the site elevation above, is accurate within  $\pm 20$  foot vertically. The horizontal datum (coordinates) are in terms of the North American Datum of 1983 (NAD83) are expressed as degrees, minutes and seconds, to the nearest (tenth / hundredth) of a second. The vertical datum (height) is in the terms of the North American Vertical Datum of 1988 (NAVD) and is determined to the nearest foot.

**Company:** BARRETT, BONACCI & Van WEELE, P.C.

**Surveyor:** Gregory Brouillet  
Connecticut Licensed Surveyor (# 0070251)

**Date:** August 21, 2012



Tony Wells  
 C Squared Systems  
 920 Candia Road  
 Manchester, NH 03109  
 603-644-2800  
 Tony.Wells@csquaredsystems.com



February 5, 2013

Connecticut Siting Council

Subject: New Cingular Wireless, East Hartford, CT

Dear Connecticut Siting Council:

C Squared Systems has been retained by New Cingular Wireless to investigate the RF Power Density at the proposed site located at 465 Hills Street in East Hartford, CT.

Calculations were done in accordance with FCC OET Bulletin 65. These worst-case calculations assume that all transmitters are simultaneously operating at full power and pointing directly at the ground. The calculation point is 6 feet above ground level to model the RF power density at the head of a person standing at the base of the tower.

Location	Carrier	Antenna Centerline Height Above Ground Level (Ft.)	Operating Frequency (MHz)	Number of Trans.	Effective Radiated Power (ERP) Per Transmitter (Watts)	Power Density (mw/cm <sup>2</sup> )	Limit	% FCC MPE Limit General Public/Uncontrolled
Ground Level	AT&T UMTS	100	880	1	500	0.0204	0.5867	3.47%
	AT&T UMTS	100	1900	1	500	0.0204	1.0000	2.04%
	AT&T LTE	100	734	1	500	0.0204	0.4893	4.16%
	AT&T GSM	100	880	3	296	0.0362	0.5867	6.16%
	AT&T GSM	100	1900	1	427	0.0174	1.0000	1.74%
<b>Total</b>								<b>17.57%</b>

**Summary:** Under worst-case assumptions, the RF Power Density at the proposed site located at 465 Hills Street in East Hartford, CT will not exceed 17.57% of the FCC MPE limit for General Public/Uncontrolled Environments.

Sincerely,

Anthony Wells  
 Managing Partner

Attachment 3(C)

# Visibility Analysis

Proposed Wireless Facility  
Message Center Management, Inc.  
465 Hills Street  
East Hartford, Connecticut

*Prepared in October 2012 by:*  
All-Points Technology Corporation, P.C.  
3 Saddlebrook Drive  
Killingworth, CT 06419



# Project Introduction

Message Center Management, Inc. (“MCM”) is pursuing a Certificate of Environmental Compatibility and Public Need (“Certificate”) from the Connecticut Siting Council for the construction, maintenance and operation of a wireless communications facility (“Facility”) at 465 Hills Street in East Hartford, Connecticut (identified herein as the “Property”).

The proposed Facility would consist of a 107-foot tall stealth, “monopine” tower. New Cingular Wireless PCS, LLC (“AT&T”) would install a total of twelve (12) panel-type antennas at a center line height of 100 feet above ground level (“AGL”). An additional seven feet of faux branching will extend above the antenna centerline to simulate the conical top of a pine tree. Supporting ground equipment would be housed within a free-standing equipment shelter located near the base of the monopole. The entire Facility would be enclosed within a fenced compound measuring approximately 63 feet by 75 feet. The Facility would be located at a ground elevation of 89 feet Above Mean Sea Level (“AMSL”). Access to the Facility would extend from a new curb cut off the east end of Eagle Court cul-de-sac along the western Property boundary via an approximate 400-foot gravel road (to be developed) through a pasture. Both the tower and compound are designed to accommodate multiple carriers and municipal emergency service providers, should the need arise.

At the request of MCM, All-Points Technology Corporation, P.C. (“APT”) prepared this Visibility Analysis to evaluate potential views associated with the Facility from within a two-mile radius (“Study Area”). In addition to the Town of East Hartford, the adjoining municipalities of Manchester and Glastonbury are located in the east and south portions of the Study Area.

The 11.94-acre Property is owned by The Trust Agreement of the Henry J. Krause Revocable Trust – Trustee Heidi McNamara and identified in East Hartford land records as Map 63, Lot 348. The Property is developed with a residence, commercial business office and outbuildings. The buildings are located in the northern portion of the Property, near Hills Street; paddock and pastures and a small pond are located in the central and southern parts of the Property. The proposed Facility would be located in the central portion of the Property within an open field. Land use within the vicinity of the Property consists primarily of residential development.

# METHODOLOGY

APT used the combination of a predictive computer model and in-field analysis to evaluate the visibility associated with the proposed Facility. The predictive model provides an assessment of potential visibility throughout the entire Study Area, including private properties and other areas inaccessible for direct observations. A balloon float was also conducted to field verify results of the model, inventory visible and nonvisible locations, and to provide photographic documentation from publicly accessible areas. A description of the procedures used in the analysis is provided below.

## Preliminary Computer Modeling

Two computer modeling tools are used to calculate those areas from which at least the top of the proposed Facility is estimated to be visible: IDRISI image analysis program (developed by Clark Labs, Clark University) and ArcGIS®, developed by Environmental Systems Research Institute, Inc. Project- and Study Area-specific data were incorporated into the computer model, including the Facility's location, height, and ground elevation, as well as the surrounding topography and existing vegetation which are two primary features that might serve to prohibit direct lines of sight. Information used in the model included Connecticut LiDAR<sup>1</sup>-based digital elevation data and a digital forest (or tree canopy) layer developed specifically for the Study Area. The LiDAR-based Digital Elevation Model ("DEM") represents topographic information for the state of Connecticut that was derived through the spatial interpolation of airborne LiDAR-based data collected in the year 2000 and has a horizontal resolution of ten (10) feet. The data was edited in 2007 and made available by the University of Connecticut through its Center for Land Use Education and Research ("CLEAR"). The tree canopy layer, representing mature trees and woodland areas, was created using the Land Use / Land Cover data set (2006), also made available through CLEAR, which was updated using a combination of National Agricultural Imagery Program (USDA) aerial photography (most recent available, 2010-2011) and the current USGS topographic quadrangles (2011-2012).

Once the data layers were entered, the image processing tools were applied to achieve an estimate of locations where the Facility might be visible. First, only topography was used as a possible visual constraint; the tree canopy was omitted to evaluate potential visibility with no intervening vegetative screening. The initial omission of this data layer results in an excessive over-prediction, but provides an opportunity to identify and evaluate those areas with direct sight lines towards the Facility and gain some insight regarding potential seasonal views. Visibility varies seasonally with increased, albeit mostly obstructed, views occurring during "leaf-off" conditions. Each individual Study Area includes mature vegetation with a unique and variable composition and density of woodlands, with mast or pole timber and branching providing the majority of screening in leafless conditions. Because tree spacing, dimensions and branching patterns and the understory vary greatly, creating an accurate Study Area-specific "leaf-off" tree density data layer is not realistic. Considering that any given Study Area has its own discrete forest characteristics, modeling for seasonal variations of visibility is problematic and, in our experience, even when

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<sup>1</sup> LiDAR is an acronym for Light Detection and Ranging. It is a technology that utilized lasers to determine the distance to an object or surface. LiDAR is similar to radar, but incorporates laser pulses rather than sound waves. It measures the time delay between transmission and reflection of the laser pulse.

incorporating conservative constraints into the model, the results over-predict visibility in “leaf-off” conditions. Eliminating the tree canopy altogether, as performed in the preliminary analysis, exaggerates areas of visibility because it assumes unobstructed sight lines everywhere. However, using this technique allows us to initially identify areas where seasonal visibility may occur and is especially useful during the in-field activities (described below) to further evaluate “leaf-off” scenarios. A conservative average tree canopy height of 50 feet was then incorporated into the forest data layer and added to the DEM, thus providing a baseline assessment of intervening vegetation. These preliminary visibility maps were used during the in-field activities to compare the outcome of the initial computer modeling with direct observations of the balloon float.

Additional data layers are incorporated into the preliminary visibility map, including protected and private, state and federal open space, obtained from the State of Connecticut Department of Energy and Environmental Protection (“CTDEEP”), which depict various land and water resources such as parks and forests, recreational facilities, dedicated open space, hiking and multi-use trails, public boat launches and schools, among other categories. Lastly, based on a review of publicly-available information, no local or State-designated scenic roadways are present within the Study Area.

## **In-Field Activities**

To supplement and substantiate the results of the computer modeling efforts, APT completed in-field verification activities consisting of a balloon float, vehicular and pedestrian reconnaissance, and photo-documentation.

### **Balloon Float and Field Reconnaissance**

A balloon float was conducted on September 7, 2012. The balloon float activities consisted of raising an approximately four-foot diameter, helium-filled balloon tethered to a height of 140 feet AGL at the proposed Facility location, with flagging attached to the line at sequential 10-foot increments below the balloon. Once the balloon was secured, a Study Area reconnaissance was performed by driving along the local and State roads and locations where the balloon could be seen above/through the tree mast and canopy were inventoried. Visual observations from the reconnaissance were also used to evaluate the results of the preliminary visibility mapping and identify any discrepancies in the initial modeling. Weather conditions included sunny skies and calm winds (less than 5 mph), with a temperature of approximately 80 degrees Fahrenheit.

The tree cover within the Study Area consists of mixed deciduous hardwood species with significant stands of intermixed conifers. During the balloon float, several trees were randomly surveyed using a hand-held infrared laser range finder and Suunto clinometer to ascertain their heights. Numerous locations were selected to obtain tree canopy heights, including along roadways, wooded lots, and high- and low-lying areas to provide for the irregularities associated with different land characteristics and uses found within the Study Area. The average canopy height was developed based on measurements and comparative observations, in this case approximately 65 feet AGL. Throughout Connecticut, the tree canopy height typically varies from about 55 feet to in excess of 80 feet (where eastern white pine becomes a dominant component of the forest type, average tree heights may be even higher). This general uniformity is most likely the result of historic state-wide clear cutting of forests for charcoal production in the late 1800s and early 1900s. Approximately

69% of Connecticut's forests are characterized as mature<sup>2</sup>. In this Study Area, substantial stands of eastern white pines occur in close proximity to the proposed Facility location and neighboring land; several specimens were found to extend to heights over 90 and 100 feet tall.

Information obtained during the balloon float was subsequently incorporated into the computer model to refine the visibility map.

## Photographic Documentation

During the balloon float, a field reconnaissance was completed by driving the public roads within the Study Area and recording observations, including photo-documentation, of those areas where the balloon was and was not visible. Photographs were obtained from several vantage points to document the view towards the proposed Facility. At each photo location, the geographic coordinates of the camera's position were logged using global positioning system ("GPS") equipment technology.

Photographs were taken with a Nikon D-3000 digital camera body and Nikon 18 to 135 millimeter ("mm") zoom lens. For the majority of views the lens was set to 50mm. One photograph (#10) was taken using a 24 mm focal length in order to provide a greater depth of field for presentation in this report. Focal lengths ranging from 24 mm to 50 mm approximate views similar to that achieved by the human eye. However, two key aspects of an image can be directly affected by the specific focal length that is selected: field of view and relation of sizes between objects in the frame. In this analysis, a 24 mm focal length provides a wider field of view, representative of the extent the human eyes may see (including some peripheral vision), but the relation of sizes between objects at the edges of the photos can become minimally skewed. A 50 mm focal length has a narrower field of view than the human eye but the relation of sizes between objects is represented similar to what the human eye might perceive.

*"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."<sup>3</sup>*

When taking photographs for these analyses, APT prefers a focal length of 50 mm; however there are times when wider views (as in the case of photo #10, which required the use of the 24 mm lens setting) can better reflect "real world" viewing conditions by providing greater context to the scene. Regardless of the lens setting, the scale of subject in the photo (the Facility) remains proportional to its surroundings.

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<sup>2</sup> USDA Resource Bulletin NE-160, 2004.

<sup>3</sup> Warren, Bruce. Photography, West Publishing Company, Eagan, MN, c. 1993, (page 70).

The table below summarizes characteristics of the photographs presented in the attachment to this report including a description of each location, view orientation and the distance from where the photo was taken relative to the proposed Facility.

<b>Photo No.</b>	<b>Location</b>	<b>View Orientation</b>	<b>Distance to Facility</b>
1	Adjacent to #414 Hills Street	Southeast	±0.18-Mile
2	Adjacent to #47 Sunrise Lane	Southwest	±0.27-Mile
3	Adjacent to #15 Davis Road	Southwest	±0.29-Mile
4	Adjacent to #530 Hills Street	Southwest	±0.22-Mile
5	Adjacent to #120 Herbert Drive	West	±0.11-Mile
6	Intersection of Wickham Drive and Herbert Drive	West	±0.07-Mile
7	Adjacent to #62 Herbert Drive	Northwest	±0.18-Mile
8	Adjacent to #210 Country Lane	North	±0.32-Mile
9	Adjacent to #6 Eagle Street	Northeast	±0.12-Mile
10	Eagle Road cul-de-sac	Northeast	±0.08-Mile
11	Intersection Of Westerly Terrace and Heron Road	Northeast	±0.20-Mile
12	Our Lady Of Peace Rectory - Lower Parking Lot	Northeast	±0.32-Mile
13	Intersection Of Brandon Road and May Road	Northeast	±0.39-Mile

## **Final Visibility Mapping**

Field data and observations were incorporated into the mapping data layers, including the photo locations, areas that experienced land use changes since the 2010-11 aerial photo flights, and those places where the initial model was found to either under or over-predict visibility.

The revised average tree canopy height data layer (using 65 feet AGL) was merged with the DEM and added to the base ground elevations. As a final step, forested areas were extracted from areas of potential visibility, assuming that a person standing within a forest would not be able to view the Facility from beyond a certain distance due to the presence of intervening tree mast and/or understory. APT elected to use a distance of 500 feet for this analysis. Each location is dependent on the specific density and composition of the surrounding woodlands, and it is understood that some locations within this distance could provide visibility of at least portions of the Facility at any time of the year. In “leaf-on” conditions, this distance may be overly conservative as the deciduous vegetation would substantially hinder direct views in many cases at close range. However, even in “leaf off” conditions when views expand, tree mast can still serve to block lines of sight, even at distances less than 500 feet. For purposes of this analysis, it was reasoned that contiguous forested land beyond 500 feet of the Facility would consist of light-impenetrable trees of a uniform height. Once the supplemental data was integrated into the model, APT re-calculated the visibility of the Facility from within the Study Area to produce the final visibility map.

# Photographic Simulations

Simulations of the proposed Facility were generated for those photographs where the balloon was visible during the in-field activities and portray scaled renderings of the Facility from these locations. Using field data, site plan information and 3-dimension (3D) modeling software, spatially referenced models of the site area and Facility were generated and merged. The geographic coordinates obtained in the field for the photograph locations were incorporated into the model to produce virtual camera positions within the spatial 3D model. Photo simulations were then created using a combination of renderings generated in the 3D model and photo-rendering software programs<sup>4</sup>.

Photo-documentation and simulations are presented in the attachment at the end of this report. The photographs depict the balloon at a height of 107 feet to provide visual reference points for the location, height and proportions of the proposed Facility relative to the scene.

As stated earlier, APT elected to use a 50 mm focal length for the majority of photographs presented in this report. For presentation purposes in this report, the photographs are produced in an approximate 7" by 10.5" format. When viewing in this format size, we believe it is important to provide the largest representational image while maintaining an accurate relation of sizes between objects within the frame of the photograph. Photograph #10 was taken with a 24 mm focal length to balance preserving the integrity of the scene's setting while depicting the subject (the Facility location) in a way similar to what an observer might see, to the greatest extent possible.

## Visibility Analysis Results

Results of this analysis are graphically displayed on the visibility analysis map provided in the attachment at the end of this report. As depicted on the map, year-round views of the proposed Facility are expected to be confined primarily to locations within approximately 0.3 mile around the Property. In general, year-round views of the Facility would be limited to a modest geographic footprint by the combination of the relatively short height of the Facility and the intervening mature vegetation dominating the Study Area, which includes a significant amount of tall evergreens (the majority which are in excess of 80 feet tall). Approximately 56 residential properties within the Study Area are expected to have at least partial views of the monopine during "leaf-on" conditions from select locations on the respective parcel.

Based on the results of the analysis, we estimate that approximately 78 additional residential properties within the Study Area could have obstructed views of a portion of the monopine through the intervening trees and structures during "leaf-off" conditions. The views from the majority of these potential locations would not only be heavily obscured, but because of its design the monopine would not likely be easily differentiated from the surrounding trees.

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<sup>4</sup> As a final step, the accuracy and scale of select simulations are tested against photographs of existing Facilities with recorded camera position, focal length, photo location, and Facility location.

The table below presents an inventory of residential properties<sup>5</sup> within the Study Area that have the potential for views of the monopine.

<b>Street</b>	<b>Year-round Visibility</b>	<b>Seasonal Visibility</b>
Hills Street	20	25
Wickham Drive	26	4
Herbert Drive	1	12
Huckleberry Road	0	2
Farmstead Road	0	7
Sunrise Lane	0	3
Davis Road	0	2
Crestwood Trail	1	4
Alexander Drive	8	0
Country Lane	0	5
Eagle Street	0	4
Westerly Terrace	0	1
Heron Road	0	4
Brandon Road	0	2
May Road	0	3

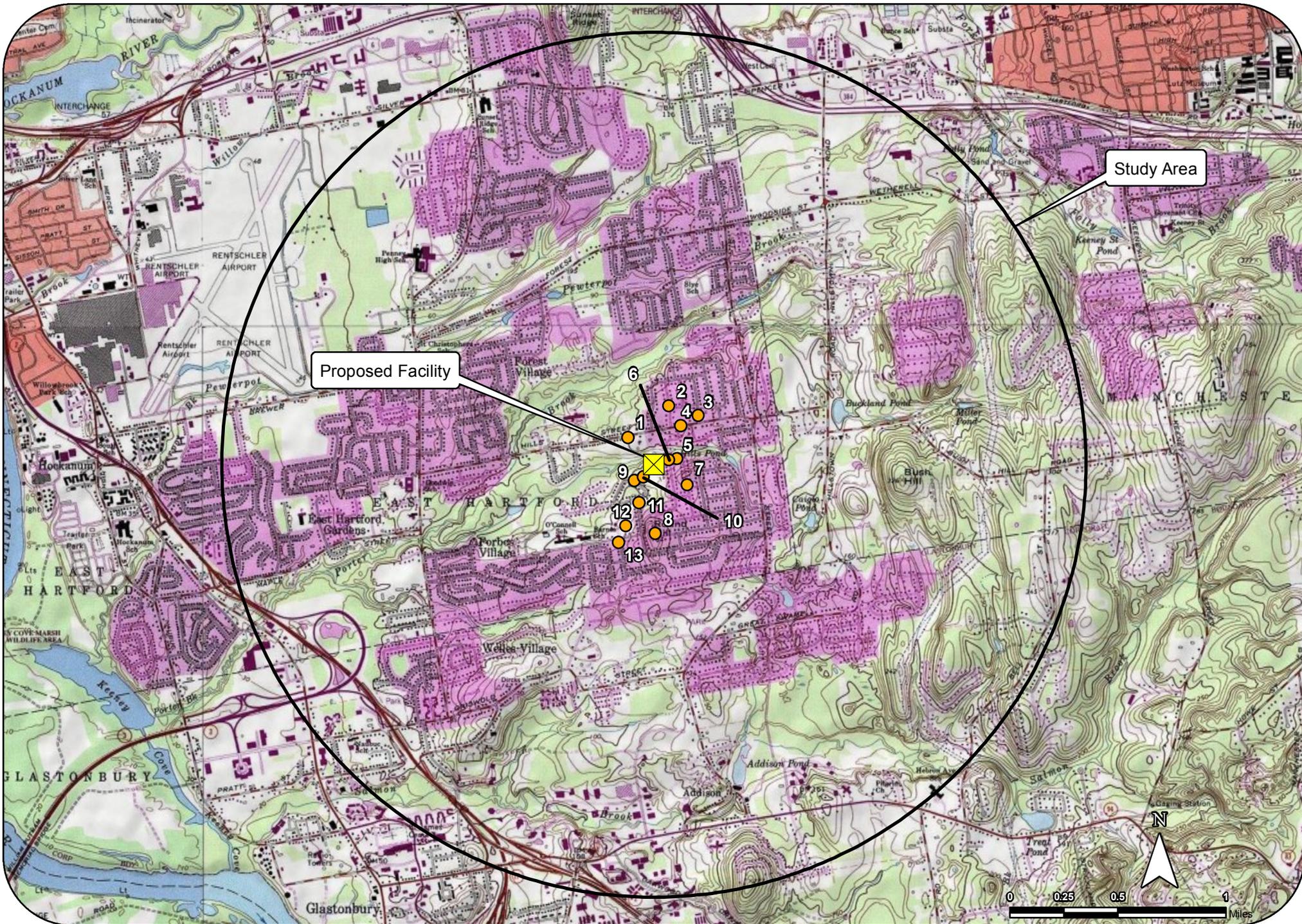
Note: Seasonal visibility denotes residential properties in addition to those with potential year-round views.

### **Proximity to Schools And Commercial Child Day Care Centers**

No schools or commercial child day care centers are located within 250 feet of the Property. The nearest school (Governor William Pitkins School) is located at 330 Hill Street, approximately 0.33 mile to the northwest. The nearest commercial child day care center is located at the East Hartford YMCA Magnet School (305 May Street), approximately 0.50 mile to the southwest. Neither of these locations would have views of the proposed Facility.

<sup>5</sup> For purposes of this analysis, the term "residential property" may, in addition to parcels occupied by homes, also include agricultural land, forested tracts with some clearing, and/or parcels with uninhabited structures. Potential visibility identified on a residential property does not necessarily mean that views would be achieved from within dwellings, or on exterior decks, porches or patios that might be associated with a parcel.

## ATTACHMENTS



Proposed Facility

Study Area



BALLOON DEPICTED AT 107'

**DOCUMENTATION**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
1	ADJACENT TO 414 HILLS STREET	SOUTHEAST	+/- 0.18 MILE	YEAR ROUND



**SIMULATION**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
1	ADJACENT TO 414 HILLS STREET	SOUTHEAST	+/- 0.18 MILE	YEAR ROUND



RED ARROW REPRESENTS LOCATION OF BALLOON AT 107 FEET. NOT VISIBLE BEHIND TREES.

**DOCUMENTATION**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
2	ADJACENT TO 47 SUNRISE LANE	SOUTHWEST	+/- 0.27 MILE	SEASONAL





RED ARROW REPRESENTS LOCATION OF BALLOON AT 107 FEET. NOT VISIBLE BEHIND TREES.

**DOCUMENTATION**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
3	ADJACENT TO 15 DAVIS ROAD	SOUTHWEST	+/- 0.29 MILE	SEASONAL





**DOCUMENTATION**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
4	ADJACENT TO 530 HILLS STREET	SOUTHWEST	+/- 0.22 MILE	YEAR ROUND



**SIMULATION**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
4	ADJACENT TO 530 HILLS STREET	SOUTHWEST	+/- 0.22 MILE	YEAR ROUND



BALLOON DEPICTED AT 107'

## DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
5	ADJACENT TO 120 HERBERT DRIVE	WEST	+/- 0.11 MILE	YEAR ROUND



**SIMULATION**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
5	ADJACENT TO 120 HERBERT DRIVE	WEST	+/- 0.11 MILE	YEAR ROUND



**DOCUMENTATION**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	INTERSECTION OF WICKHAM DRIVE AND HERBERT DRIVE	WEST	+/- 0.07 MILE	YEAR ROUND



**SIMULATION**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	INTERSECTION OF WICKHAM DRIVE AND HERBERT DRIVE	WEST	+/- 0.07 MILE	YEAR ROUND



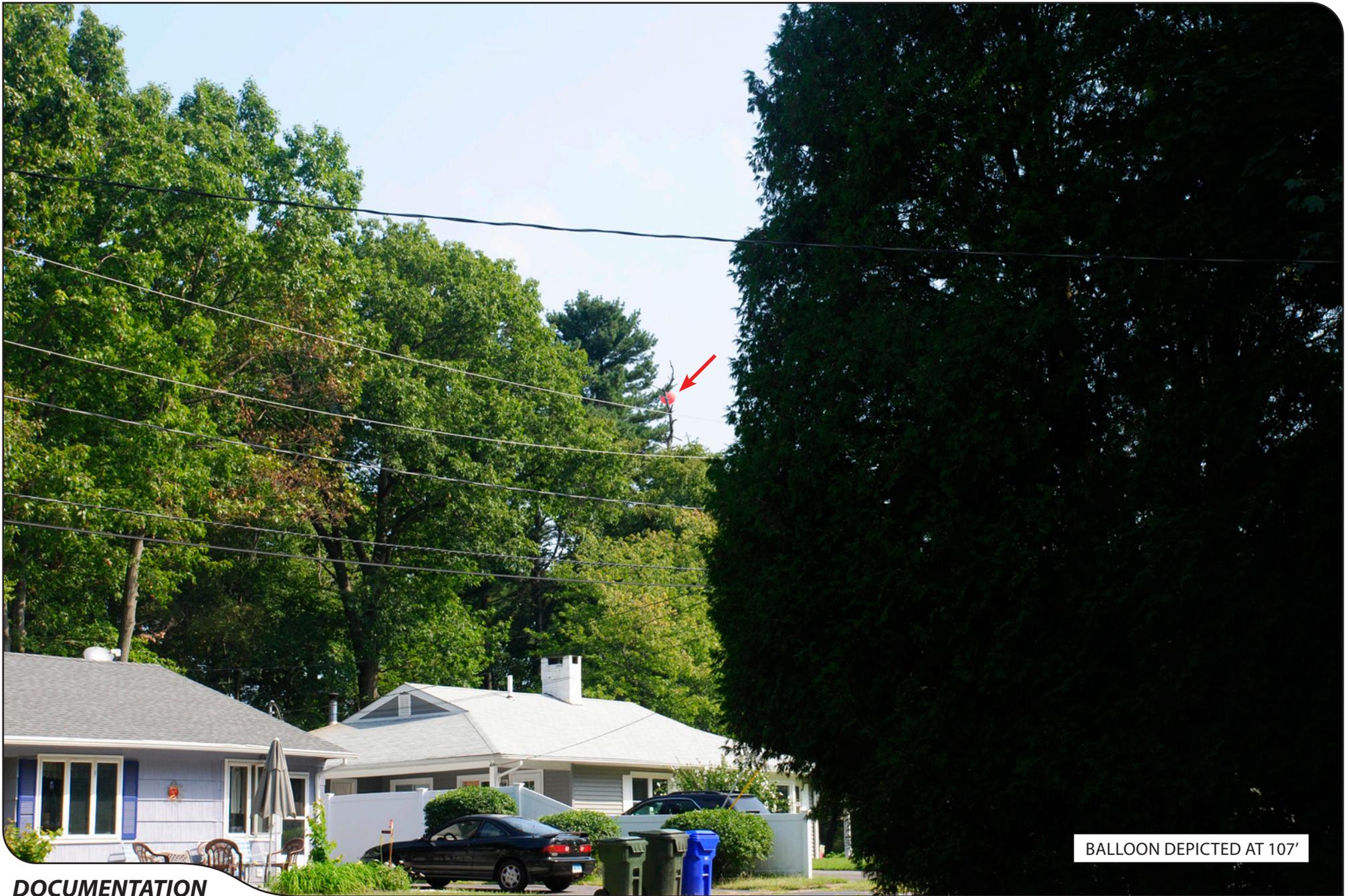
## DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
7	ADJACENT TO 62 HERBERT DRIVE	NORTHWEST	+/- 0.18 MILE	NOT VISIBLE



**DOCUMENTATION**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
8	ADJACENT TO 210 COUNTRY LANE	NORTH	+/- 0.32 MILE	NOT VISIBLE



BALLOON DEPICTED AT 107'

## DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
9	ADJACENT TO 6 EAGLE STREET	NORTHEAST	+/- 0.12 MILE	YEAR ROUND



**SIMULATION**

PHOTO

9

LOCATION

**ADJACENT TO 6 EAGLE STREET**

ORIENTATION

**NORTHEAST**

DISTANCE TO SITE

**+/- 0.12 MILE**

VISIBILITY

**YEAR ROUND**



BALLOON DEPICTED AT 107'

## DOCUMENTATION

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
10	EAGLE COURT CUL-DE-SAC (24MM FOCAL LENGTH)	NORTHEAST	+/- 0.08 MILE	YEAR ROUND



**SIMULATION**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
10	EAGLE COURT CUL-DE-SAC (24MM FOCAL LENGTH)	NORTHEAST	+/- 0.08 MILE	YEAR ROUND



RED ARROW REPRESENTS LOCATION  
OF BALLOON AT 107 FEET.  
NOT VISIBLE BEHIND TREES.

**DOCUMENTATION**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
11	INTERSECTION OF WESTERLY TERRACE & HERON ROAD	NORTHEAST	+/- 0.20 MILE	SEASONAL



RED ARROW REPRESENTS LOCATION  
OF BALLOON AT 107 FEET.  
NOT VISIBLE BEHIND TREES.

**DOCUMENTATION**

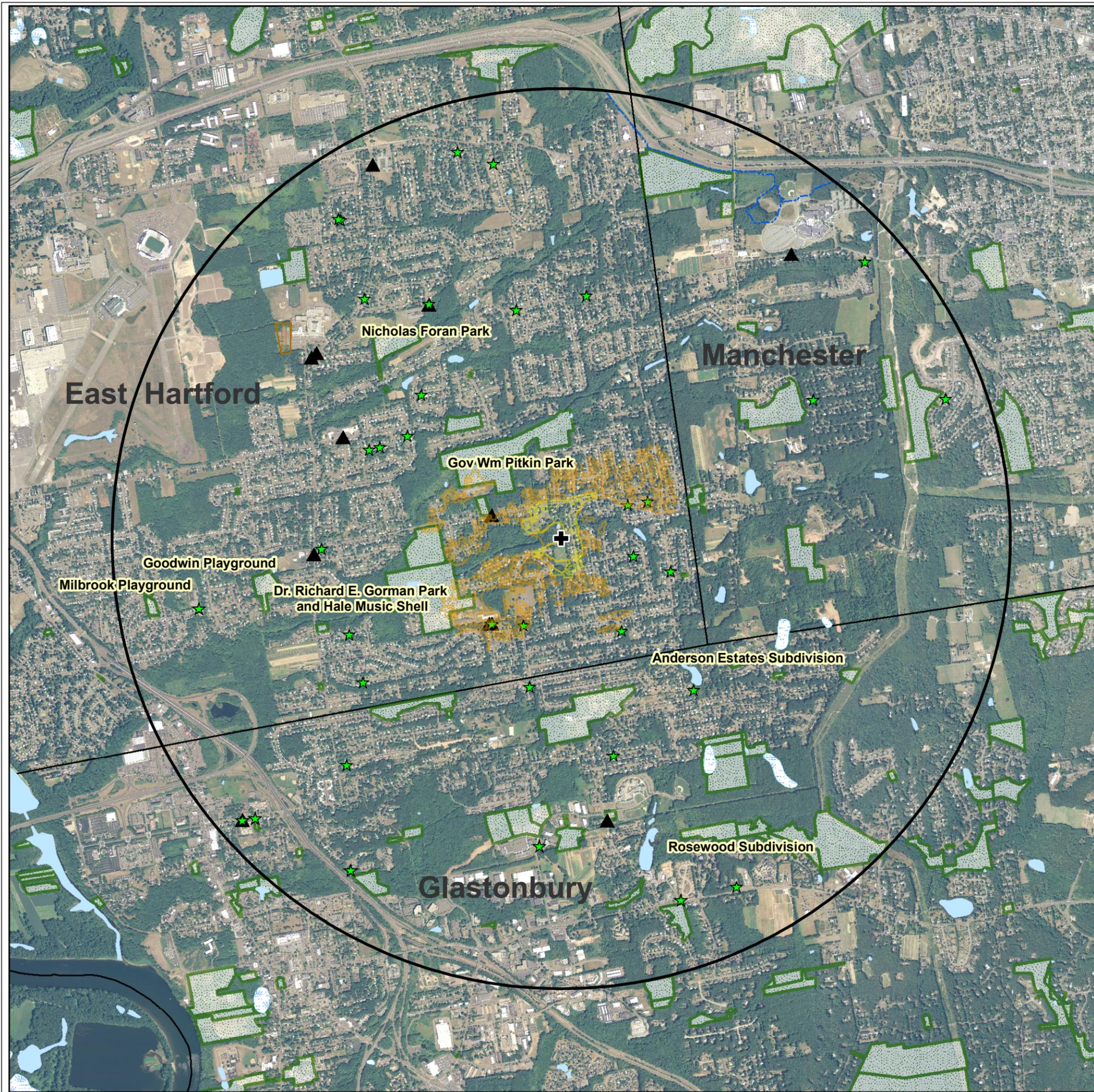
PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
12	OUR LADY OF PEACE RECTORY - LOWER PARKING LOT	NORTHEAST	+/- 0.32 MILE	SEASONAL



RED ARROW REPRESENTS LOCATION  
OF BALLOON AT 107 FEET.  
NOT VISIBLE BEHIND TREES.

**DOCUMENTATION**

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
13	INTERSECTION OF BRANDON ROAD AND MAY ROAD	NORTHEAST	+/- 0.39 MILE	SEASONAL



**VISIBILITY ANALYSIS**  
Proposed Wireless Telecommunications Facility

**465 Hills Street**  
**East Hartford, CT**

Proposed facility height is 107 feet AGL  
Tree canopy height estimated at 50 feet  
for this analysis

- Not Visible
- Seasonal Views
- Year-Round Views

Map compiled 9/25/2012

Only those resources located within the Study Area are depicted. For a complete list of data sources consulted for this analysis, please refer to the Documentation Page.

**Legend**

- ⊕ Proposed Tower
- 2-Mile Study Area
- ▨ Predicted Year-Round Visibility
- ▩ Predicted Seasonal Visibility
- ★ Commercial Child Day Care Centers
- ▲ Schools
- Open Water
- ▤ Swamp Marsh
- Trails
- ▨ Municipal Private Open Space
- ▤ Protected Open Space

**Location**

# DOCUMENTATION

## SOURCES CONSULTED FOR VISIBILITY ANALYSES

### *Physical Geography / Background Data*

Center for Land Use Education and Research, University of Connecticut (<http://clear.uconn.edu>)  
Land Use / Land Cover (2006)  
Coniferous and Deciduous Forest (2006)  
LiDAR data – topography (2007)  
National Agricultural Imagery Program (USDA)  
(<http://www.fsa.usda.gov/FSA/apfoapp?area=home&subject=prog&topic=nai>)  
Aerial photography (2010-2011)  
United States Geological Survey  
USGS topographic quadrangles (2011-2012)  
USGS National Hydrographic Data Set (2012) (<http://nhd.usgs.gov/>)

### *Cultural Resources*

Heritage Consultants LLC  
DOT Scenic Strips (based on Department of Transportation data)  
National Register (based on Office of Culture and Tourism, Division of Historic Preservation  
data, updated biweekly)  
State Scenic Highways (based on Department of Transportation data, updated monthly)  
Local Municipalities  
Scenic Roads (by phone and/or email/fax - current)

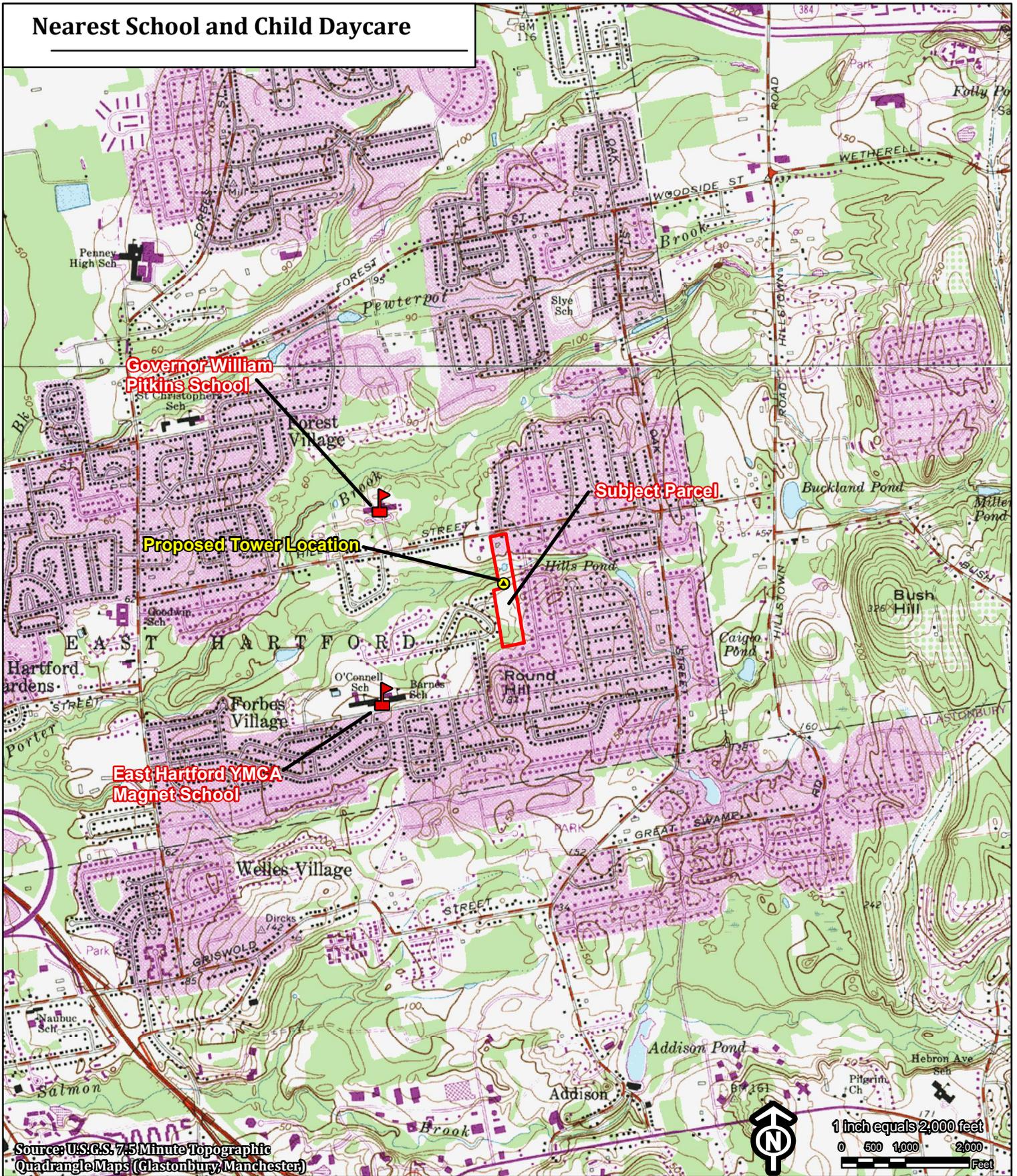
### *Dedicated Open Space & Recreation Areas*

Connecticut Department of Energy and Environmental Protection  
([http://www.ct.gov/dep/cwp/view.asp?a=2698&q=322898&depNav\\_GID=1707](http://www.ct.gov/dep/cwp/view.asp?a=2698&q=322898&depNav_GID=1707))  
DEEP Property (current)  
Federal Open Space (1997) (updated 2009 by Heritage Consultants LLC)  
Municipal and Private Open Space (1997) (corrected to POSM data)  
Protected Open Space Mapping (POSM) (2011)  
DEEP Boat Launches (2008)  
Connecticut Trails (State, Municipal, and National) (2006)  
Connecticut Forest & Parks Association  
Connecticut Walk Book East – The Guide to the Blue-Blazed Hiking Trails of Eastern Connecticut  
Connecticut Walk Book West – The Guide to the Blue-Blazed Hiking Trails of Western Connecticut

### *Other*

Connecticut State Department of Education  
Schools (current)  
Connecticut Department of Public Health  
Commercial Day Care Centers (current)  
ESRI Inc. and U.S. Census TIGER Line Files  
Roads (2011)  
Heritage Consultants LLC  
Appalachian Trail (2000)

# Nearest School and Child Daycare



Source: U.S.G.S. 7.5 Minute Topographic  
 Quadrangle Maps (Glastonbury, Manchester)



1 inch equals 2,000 feet  
 0 500 1000 2000  
 Feet

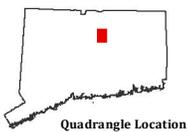
**Proposed MCM Telecommunications Facility**  
**465 Hills Street**  
**East Hartford, Connecticut**



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**Thursday, October 11, 2012**



Quadrangle Location

Attachment 3(D)



## WETLANDS DELINEATION REPORT

September 7, 2012

Message Center Management, Inc.  
40 Woodland St  
Hartford, CT 06105

APT Project No.: CT242280

Attn: Virginia King

Re: Wetlands Delineation Report  
465 Hills Street  
East Hartford, Connecticut

Dear Ms. King,

At your request, Dean Gustafson, a Connecticut registered professional soil scientist with All-Points Technology Corp., P.C. ("APT") conducted an inspection of the above-referenced property ("Site") on September 21, 2012 to determine the presence or absence of wetlands and watercourses. The delineation methodology followed was consistent with both the Connecticut Inland Wetlands and Watercourses Act (IWWA) and the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0 (January 2012).

Two wetland areas were delineated on or near the Site consisting of a narrow perennial stream with bordering forested wetlands and a small open water feature. A second forested hillside wetland seep system associated with an intermittent watercourse was delineated along the southern property boundary. Please refer to the enclosed Wetlands Delineation Map for approximate locations of the identified resource areas. Wetlands were marked with pink and blue plastic flagging tape numbered with the following sequence: WF 1-01 to 1-28 and WF 2-01 to 2-32. General weather conditions encountered during the above-referenced inspection include low 80 ° F temperatures with generally sunny skies.

### **Regulation of Wetlands:**

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

**State of Connecticut:** 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,

### **ALL-POINTS TECHNOLOGY CORPORATION, P.C.**

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

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

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.

**U.S. Army Corps of Engineers:** The U.S. Army Corps of Engineers ("Corps") 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 Corps 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."

### **Site Description:**

The subject property consists of an approximately 11.7 acre site developed with a residency and associated out-buildings including a garage and a number of barns located on the northern half, and open pasture fields and small blocks of forest located on the southern half. A perennial stream bisects the northern portion of the property flowing east to west. The property is identified as 465 Hills Street East Hartford, Connecticut. The surrounding land-use consists of dense residential development.

### **Soil Description:**

Soil types encountered throughout the site were generally consistent with digitally available soil survey information obtained from the Natural Resources Conservation Service (NRCS). Wetland soils on the property include Saco silt loam and Walpole sandy loam. The non-wetland soils were examined along the wetland boundary and more distant upland areas during the delineation. They are dominated by Manchester-Urban land complex, Hartford sandy loam, Manchester gravelly sandy loam, and Elmridge fine sandy loam. Detailed descriptions of wetland and upland soil types are provided below.

#### **Wetland Soils:**

The **Saco** series consists of very deep, very poorly drained soils formed in silty alluvial deposits. They are nearly level soils on flood plains, subject to frequent flooding. Depth to the coarse-textured substratum layers is more than 40 inches. The surface soil is very dark gray to black silt loam, underlain directly by a mottled, gray to grayish brown substratum. Some pedons have a mucky surface up to 5 inches thick. The soils formed in depressions in recent silty alluvium. In places water is ponded on the surface from late fall through early spring. These soils flood in the spring and after periods of heavy rainfall.

The **Walpole** series consists of very deep, poorly drained sandy soils formed in water-sorted glacial outwash and stratified drift. They are nearly level to gently sloping soils in low-lying positions on terraces and plains. Walpole soils have a water table within 1' of the soil surface much of the year.

### Upland Soils:

The **Hartford** series consists of very deep, somewhat excessively drained soils formed in sandy glacial outwash. They are nearly level to strongly sloping soils on plains and terraces. Slope ranges from 0 to 15 percent. Permeability is moderately rapid in the surface layer and subsoil, and rapid or very rapid in the substratum.

The **Manchester** series consists of very deep, excessively drained soils formed in sandy and gravelly outwash and stratified drift. They are nearly level to steep soils on outwash plains, terraces, kames, deltas and eskers. Slope ranges from 0 to 45 percent. Permeability is rapid in the surface layer, rapid or very rapid in the subsoil, and very rapid in the substratum.

The **Elmridge** series consists of very deep, moderately-well drained soils formed in loamy over clayey sediments. They are nearly level to moderately steep soils on glacial lacustrine and marine terraces, and on lake plains. Thickness of the solum and depth to the underlying clayey material range from 18 to 40 inches. The Elmridge soils have a seasonal high water table.

**Urban land** is a miscellaneous land type consisting mostly of buildings, paved roads and parking lots. Typically included with this unit are small, intermingled areas disturbed by cutting, filling, or grading such that the original soil profile can no longer be discerned.

### Wetlands Discussion:

#### Wetland 1 Classification Summary:

Wetland 1 <sup>1</sup> (WF 1-01 to 1-28)	Palustrine		Forested	Broad-leaved Deciduous	Intermittently Flooded	Artificial
<b>Watercourse Type</b>	Perennial <input checked="" type="checkbox"/>	Intermittent <input type="checkbox"/>	Tidal <input type="checkbox"/>	<b>Special Aquatic Habitat</b>	Vernal Pool <input type="checkbox"/>	Other <input type="checkbox"/>

#### Wetland 1 Description:

Wetland 1 is a well confined, unnamed perennial stream located in outwash material that flows from east to west across the subject property. The stream originates from a 72" corrugated metal pipe along the eastern property boundary. This stream is a tributary to Porter Brook and flows from Hills Pond, located approximately 1,800 feet upstream of the Site. A narrow incised bank along the northern edge separates the stream system from a small adjoining man-made pond. Evidence of alluvial material within test pits taken on the bank indicate regular flooding of the bank into the adjacent farm pond. The southern bank's slopes are steeply sloped and narrowly vegetated. The stream meanders to the west from this culvert and converges with the outfall of the pond at a riprap outfall before the stream drains to the west into a broader forested wetland system.

<sup>1</sup> 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>.

**Wetland 1 Dominant Vegetation:**

<b>Dominant Wetland Species</b> Common Name ( <i>Latin Name</i> )	<b>Dominant Adjacent Upland Species</b> Common Name ( <i>Latin Name</i> )
red maple ( <i>Acer rubrum</i> )	eastern white pine ( <i>Pinus strobus</i> )
black birch ( <i>Betula lenta</i> )	Indian cucumber root ( <i>Medeola virginiana</i> )
common spicebush ( <i>Lindera benzoin</i> )	autumn olive ( <i>Elaeagnus umbellata</i> )*
Japanese knotweed ( <i>Polygonum cuspidatum</i> )*	blackberry/raspberry ( <i>Rubus sp.</i> )
jewelweed ( <i>Impatiens capensis</i> )	black birch ( <i>Betula lenta</i> )
skunk cabbage ( <i>Symplocarpus foetidus</i> )	Morrow's honeysuckle ( <i>Lonicera morrowii</i> )*
multiflora rose ( <i>Rosa multiflora</i> )*	fox grape ( <i>Vitis labrusca</i> )
cinnamon fern ( <i>Osmunda cinnamomea</i> )	red maple ( <i>Acer rubrum</i> )
spinulose wood fern ( <i>Dryopteris carthusiana</i> )	winged euonymus ( <i>Euonymus alatus</i> )*
false nettle ( <i>Boehmeria cylindrica</i> )	Japanese barberry ( <i>Berberis thunbergii</i> )*
speckled alder ( <i>Alnus rugosa</i> )	musclewood/hornbeam ( <i>Carpinus caroliniana</i> )
arrowleaf tearthumb ( <i>Polygonum sagittatum</i> )	
silver maple ( <i>Acer saccharinum</i> )	
American elm ( <i>Ulmus americana</i> )	
Morrow's honeysuckle ( <i>Lonicera morrowii</i> )*	
Japanese barberry ( <i>Berberis thunbergii</i> )*	
common duckweed ( <i>Lemna minor</i> )	
winged euonymus ( <i>Euonymus alatus</i> )*	

\* denotes Connecticut Invasive Plants Council invasive species

**Wetland 2 Classification Summary:**

<b>Wetland 2<sup>2</sup></b> (WF 2-01 to 2-32)	<b>Palustrine</b>		<b>Forested</b>	<b>Broad-leaved Deciduous</b>	<b>Saturated</b>	<b>Artificial</b>
<b>Watercourse Type</b>	Perennial <input type="checkbox"/>	Intermittent <input checked="" type="checkbox"/>	Tidal <input type="checkbox"/>	<b>Special Aquatic Habitat</b>	Vernal Pool <input type="checkbox"/>	Other <input type="checkbox"/>

<sup>2</sup> 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>.

**Wetland 2 Description:**

Wetland 2 is a forested hillside wetland seep originating from a groundwater break-out behind a number of residential properties located along the southeast corner of the subject property. This forested wetland seep drains west across the subject property through a relatively narrow topographic swale associated with an intermittent watercourse before broadening as it nears Mallard Drive. Wetland 2 drains into a closed drainage system under Mallard Drive via an 18” reinforced concrete pipe.

**Wetland 2 Dominant Vegetation:**

<b>Dominant Wetland Species</b> Common Name ( <i>Latin Name</i> )	<b>Dominant Adjacent Upland Species</b> Common Name ( <i>Latin Name</i> )
red maple ( <i>Acer rubrum</i> )	eastern white pine ( <i>Pinus strobus</i> )
black birch ( <i>Betula lenta</i> )	Indian cucumber root ( <i>Medeola virginiana</i> )
common spicebush ( <i>Lindera benzoin</i> )	blackberry/raspberry ( <i>Rubus sp.</i> )
green ash ( <i>Fraxinus pennsylvanica</i> )	black birch ( <i>Betula lenta</i> )
jewelweed ( <i>Impatiens capensis</i> )	Morrow’s honeysuckle ( <i>Lonicera morrowii</i> )*
skunk cabbage ( <i>Symplocarpus foetidus</i> )	red maple ( <i>Acer rubrum</i> )
multiflora rose ( <i>Rosa multiflora</i> )*	winged euonymus ( <i>Euonymus alatus</i> )*
cinnamon fern ( <i>Osmunda cinnamomea</i> )	Japanese barberry ( <i>Berberis thunbergii</i> )*
spinulose wood fern ( <i>Dryopteris carthusiana</i> )	musclewood/hornbeam ( <i>Carpinus caroliniana</i> )
false nettle ( <i>Boehmeria cylindrica</i> )	
American elm ( <i>Ulmus americana</i> )	
Morrow’s honeysuckle ( <i>Lonicera morrowii</i> )*	
Japanese barberry ( <i>Berberis thunbergii</i> )*	
winged euonymus ( <i>Euonymus alatus</i> )*	
royal fern ( <i>Osmunda regalis</i> )	

\* denotes Connecticut Invasive Plants Council invasive species

If you have any questions regarding the above-referenced information, please feel free to contact me at (860) 984-9515.

Sincerely,

**All-Points Technology Corporation, P.C.**

Dean Gustafson

Professional Soil Scientist

Enclosure

# Wetlands Delineation Map



Base Map Source: 2006 Color Aerial Photograph with 1-foot Resolution

## Legend

- Subject Parcel
- Connecticut Parcel
- APT Delineated Wetland Boundary
- Wetland Area

**Proposed MCM Telecommunications Facility**  
**465 Hills Street**  
**East Hartford, Connecticut**

**Friday, September 07, 2012**



1 inch equals 208 feet  
0 50 100 200 Feet



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