



**MUNICIPAL CONSULTATION FILING**

**GREATER HARTFORD - CENTRAL CONNECTICUT RELIABILITY PROJECT**

**BY**

**THE CONNECTICUT LIGHT AND POWER COMPANY**

**DOING BUSINESS AS EVERSOURCE ENERGY**

**VOLUME 3: PROJECT MAPPING AND DRAWINGS**

**December 2015**

## **VOLUME 3: INDEX TO PROJECT MAPPING AND DRAWINGS**

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EXHIBIT C.1: 400- AND 100-SCALE MAPS: PROPOSED BERLIN SUBSTATION MODIFICATIONS

EXHIBIT C.2: DRAWING: PROPOSED BERLIN SUBSTATION MODIFICATIONS

# INTRODUCTION

This volume includes maps and drawings that identify the Greater Hartford Central Connecticut Reliability Project (GHCCRP, Project) area and Project facilities, as proposed by The Connecticut Light and Power Company doing business as Eversource Energy (Eversource). The proposed GHCCRP includes the following components:

- A new approximately 3.8-mile 115-kilovolt (kV) underground cable system that would extend, beneath road rights-of-way (ROWs) or parking lots, between Eversource's existing Newington and Southwest Hartford substations, crossing portions of the Town of Newington (0.7 mile), Town of West Hartford (2.6 miles), and City of Hartford (0.5 mile);
- Modifications to the existing Newington, Southwest Hartford, and Berlin substations, located in the Town of Newington, City of Hartford, and Town of Berlin, respectively; and
- Modification of a 0.01-mile section of existing overhead 115-kV transmission line (referred to as the Newington Tap) that connects to Newington Substation.

The U.S. Geological Survey (USGS) topographic maps included in Exhibit A illustrate the general location of the proposed Project facilities with respect to the surrounding Hartford County region. A USGS Topographic Map Symbols legend is included in Exhibit A. In addition, USGS topographic map-based Key Maps are included in Exhibits B and C. These figures depict the corresponding mapsheet arrangement of the Volume 3 figures. Exhibit A also contains a key to municipal zoning district designations used in the Volume 3 figures.

Exhibit B presents maps of the Proposed Route of the new Newington Substation – Southwest Hartford underground 115-kV cable system and route variations to the Proposed Route, as well as drawings of the proposed modifications to the Newington Substation, Newington Tap, and Southwest Hartford Substation. Exhibit C presents maps and drawings of the proposed modifications to the Berlin Substation.

The aerial photography-based maps<sup>1</sup> in Exhibits B and C (at scales of 1" = 400' and 1" = 100') depict the Proposed Route for the new underground cable system between Newington and Southwest Hartford substations, as well as the locations of the proposed substation modifications. These maps illustrate municipal and individual property boundaries, Eversource-owned properties, land use features, environmental resources, designated cultural and recreational resources, community facilities, zoning, and the existing transportation infrastructure.

In addition, the Exhibit B 400-scale maps illustrate the locations of nine potential variations to portions of the Proposed Route<sup>2</sup>. These route variations, which are discussed in Volume 1 (Section 11), represent potentially feasible alignments for the new 115-kV transmission line between Newington and Southwest Hartford substations. However, Eversource's analyses revealed that each route variation, although constructable, includes features that are less preferable than the portion of the Proposed Route that each would replace (refer to Volume 1, Section 11 for further discussion). The Exhibit B figures also depict the location of the CTfastrak/Amtrak railroad corridor. Eversource conducted initial evaluations to assess the feasibility of collocating the new 115-kV transmission line within portions of this bus / rail transportation corridor. Additional detail regarding the potential CTfastrak/Amtrak Route Alternative is provided in Volume 1, Section 11.6.

Exhibit B also presents photographs of the existing and potential visual environment along Eversource's existing distribution line ROW that extends east from Newington Substation. This ROW is part of one of the route variations (i.e., the East ROW Variation) that Eversource considered for the new 115-kV transmission line. As part of the East ROW Route Variation, Eversource contemplated the installation of the proposed new 115-kV line in an overhead configuration along a 0.7-mile portion of this distribution line ROW. Exhibit B includes photographs of existing representative views along this ROW, as well as visual simulations of the appearance of the ROW if the new 115-kV line is installed overhead along it.

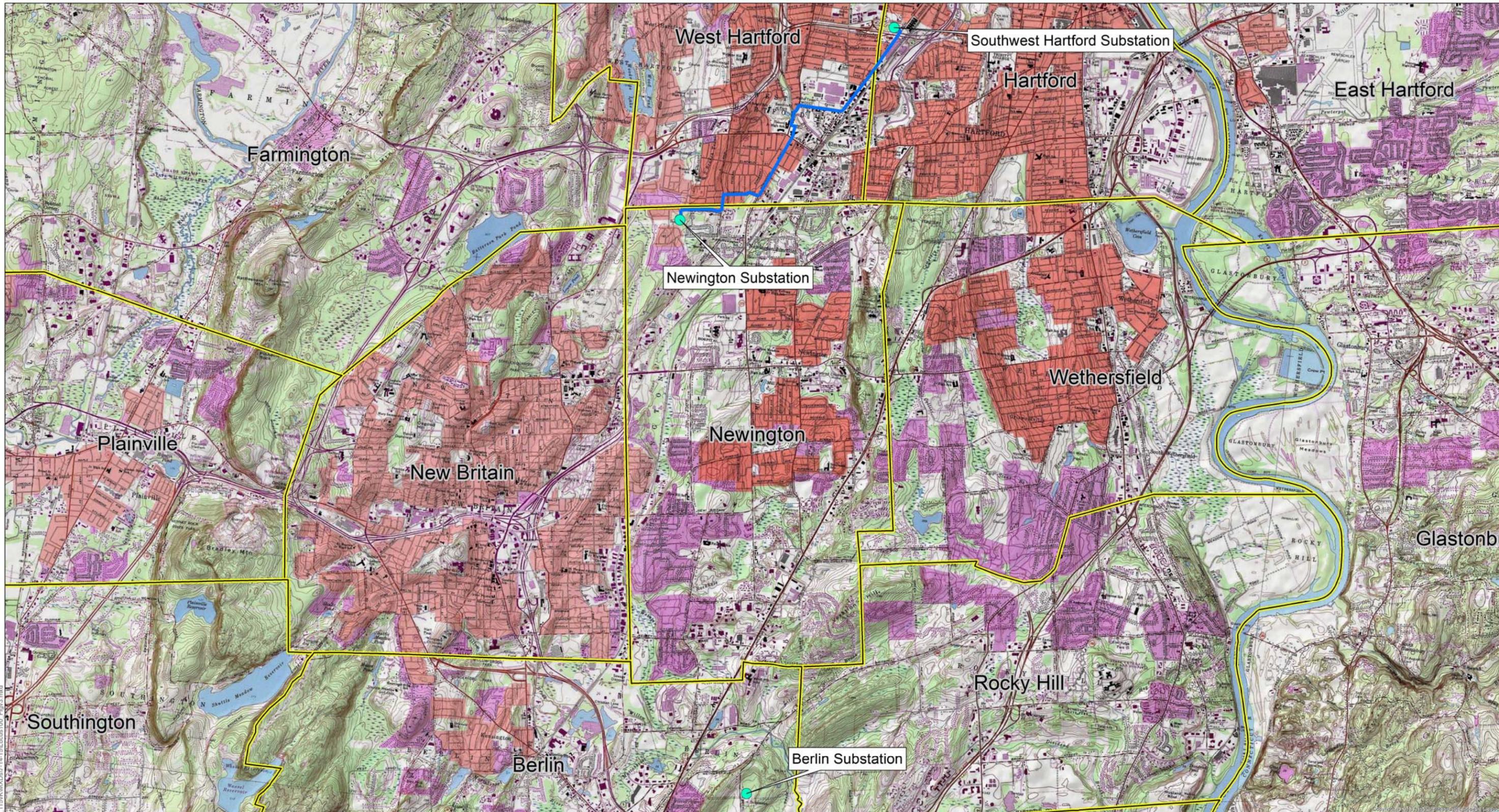
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<sup>1</sup> Aerial photographs were derived from 2012 aerial imagery; environmental and land use features are mapped based on 2010 Geographical Information System data obtained from federal and state agencies such as the Connecticut Department of Energy and Environmental Protection (CT DEEP) and the Federal Emergency Management Agency (FEMA), as well as the results of environmental and engineering field surveys and ROW / transmission lines locational information from Eversource.

<sup>2</sup> Eight different routes variations are illustrated on the Exhibit B maps. One of these routes (i.e., the East ROW Variation) includes both an overhead / underground variation and an all-underground option along the same alignment. Thus, while identified on the maps only as the East ROW Variation, these configuration options (overhead / underground) are discussed as separate route variations in Volume 1, Section 11.

**EXHIBIT A:**

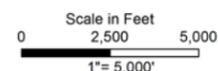
**USGS TOPOGRAPHIC MAPS, USGS SYMBOL KEY AND  
MUNICIPAL ZONING DESIGNATIONS**



- Legend**
- Existing Substations Proposed for Modification
  - Proposed Route
  - Municipal Boundary

USGS Project Location Maps  
**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)  
 NEWINGTON, WEST HARTFORD, HARTFORD & BERLIN, CT**

Coordinate System:  
 NAD 1983 StatePlane Connecticut FIPS 0600 Feet  
 Projection: Lambert Conformal Conic  
 Datum: North American 1983  
 False Easting: 1,000,000.0000  
 False Northing: 500,000.0000  
 Central Meridian: -72.7500  
 Standard Parallel 1: 41.2000  
 Standard Parallel 2: 41.8667  
 Latitude Of Origin: 40.8333  
 Linear Units: Foot US



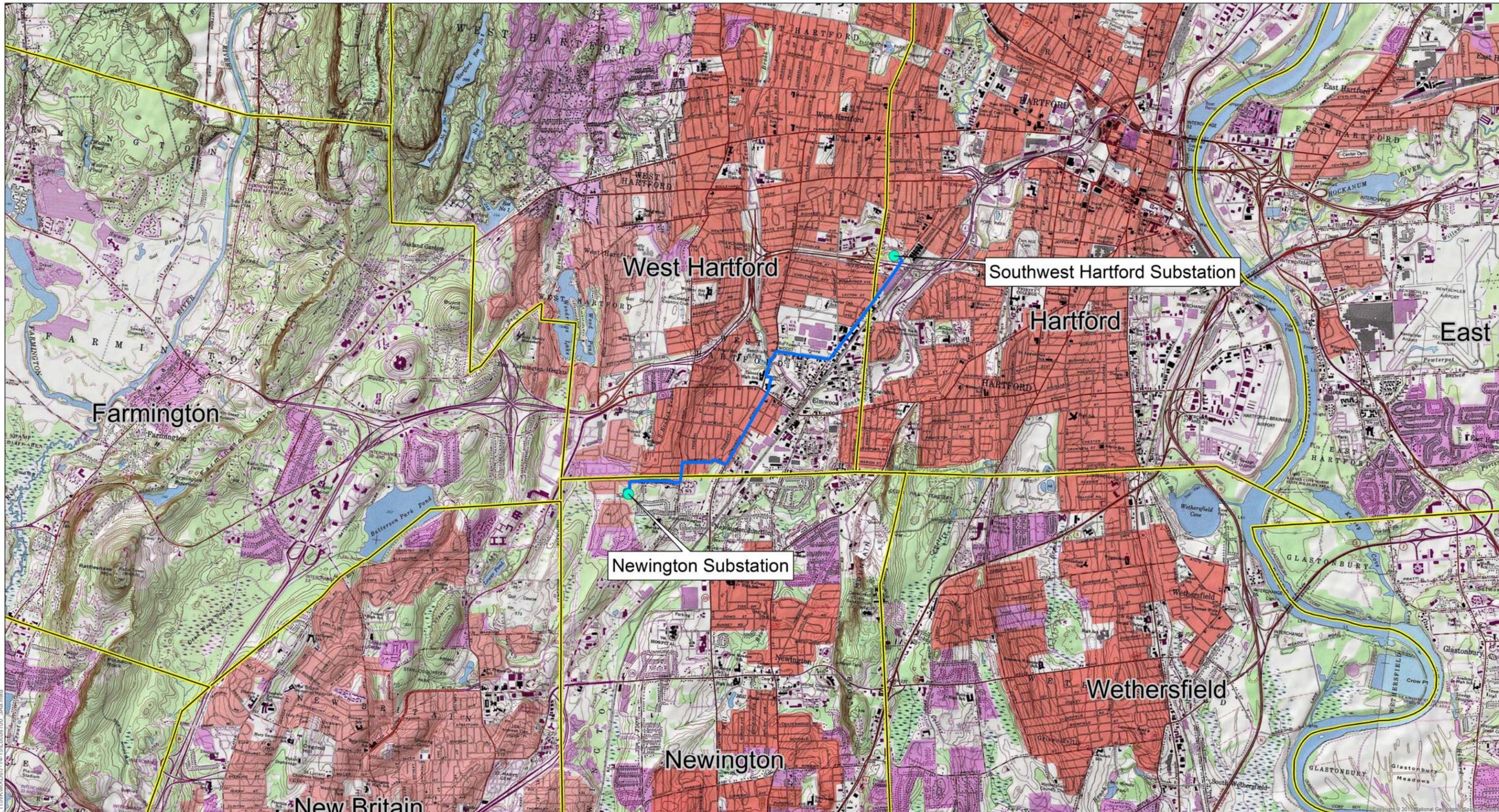
Revised: 12/3/2015

**EVERSOURCE**

**AECOM**

Sheet 1 of 3

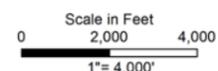
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- Legend**
- Existing Substations Proposed for Modification
  - Proposed Route
  - Municipal Boundary

**USGS Project Location Maps  
GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)  
NEWINGTON, WEST HARTFORD & HARTFORD, CT**

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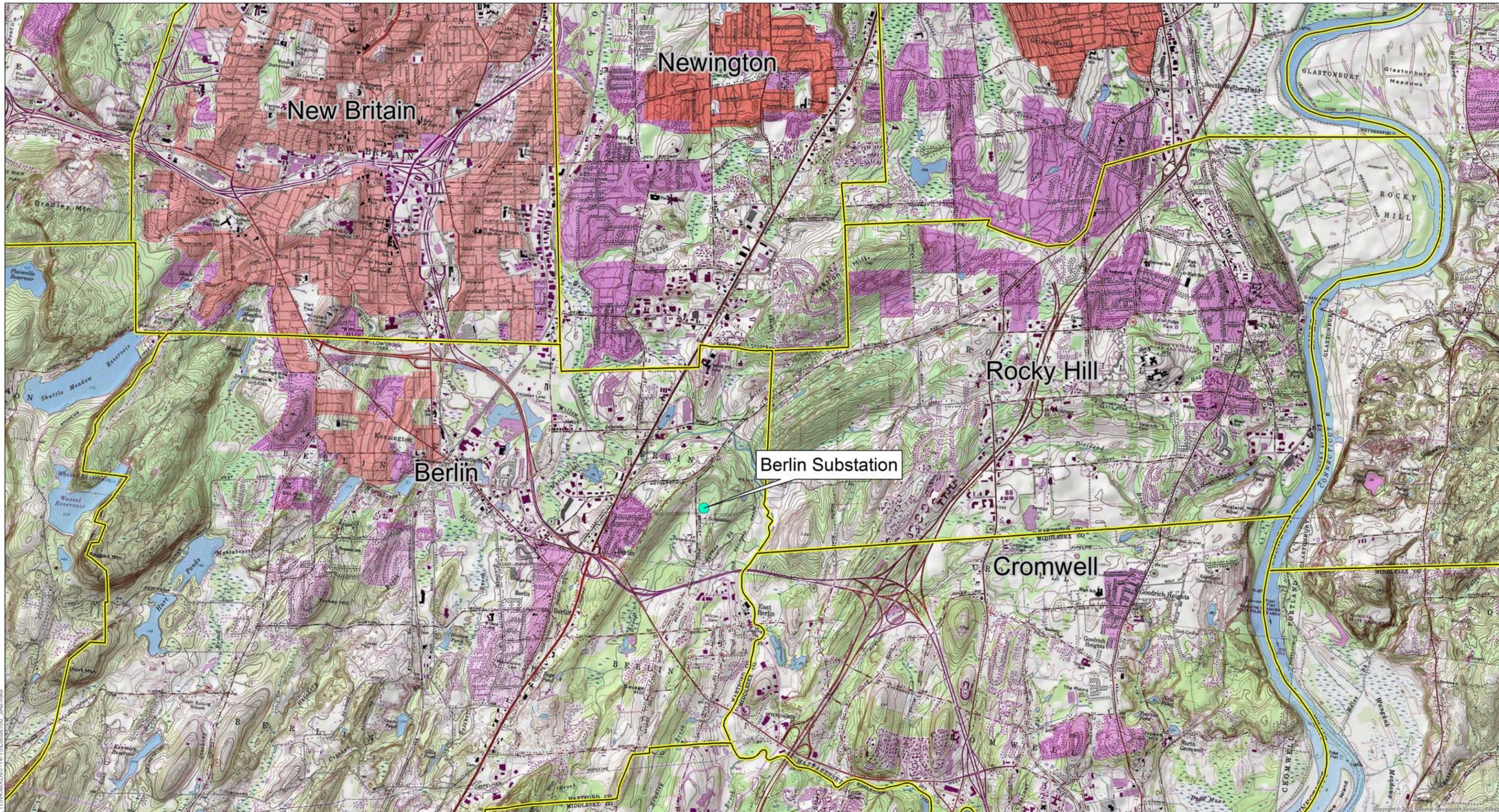
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Sheet 2 of 3

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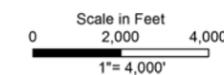


**Legend**

- Existing Substations Proposed for Modification
- Municipal Boundary

**USGS Project Location Maps  
GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)  
BERLIN, CT**

Coordinate System:  
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Projection: Lambert Conformal Conic  
Datum: North American 1983  
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False Northing: 500,000.0000  
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Standard Parallel 1: 41.2000  
Standard Parallel 2: 41.8667  
Latitude Of Origin: 40.8333  
Linear Units: Foot US



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**AECOM**

Sheet 3 of 3

# United States Geological Survey Topographic Map Symbols

BATHYMETRIC FEATURES	
Area exposed at mean low tide; sounding datum line***	
Channel***	
Sunken rock***	
BOUNDARIES	
National	
State or territorial	
County or equivalent	
Civil township or equivalent	
Incorporated city or equivalent	
Federally administered park, reservation, or monument (external)	
Federally administered park, reservation, or monument (internal)	
State forest, park, reservation, or monument and large county park	
Forest Service administrative area*	
Forest Service ranger district*	
National Forest System land status, Forest Service lands*	
National Forest System land status, non-Forest Service lands*	
Small park (county or city)	
BUILDINGS AND RELATED FEATURES	
Building	
School; house of worship	
Athletic field	
Built-up area	
Forest headquarters*	
Ranger district office*	
Guard station or work center*	
Racetrack or raceway	
Airport, paved landing strip, runway, taxiway, or apron	
Unpaved landing strip	
Well (other than water), windmill or wind generator	
Tanks	
Covered reservoir	
Gaging station	
Located or landmark object (feature as labeled)	
Boat ramp or boat access*	
Roadside park or rest area	
Picnic area	
Campground	
Winter recreation area*	
Cemetery	

COASTAL FEATURES	
Foreshore flat	
Coral or rock reef	
Rock, bare or awash; dangerous to navigation	
Group of rocks, bare or awash	
Exposed wreck	
Depth curve; sounding	
Breakwater, pier, jetty, or wharf	
Seawall	
Oil or gas well; platform	
CONTOURS	
Topographic	
Index	
Approximate or indefinite	
Intermediate	
Approximate or indefinite	
Supplementary	
Depression	
Cut	
Fill	
Bathymetric	
Index***	
Intermediate***	
Index primary***	
Primary***	
Supplementary***	
CONTROL DATA AND MONUMENTS	
Principal point**	
U.S. mineral or location monument	
River mileage marker	
Boundary monument	
Third-order or better elevation, with tablet	
Third-order or better elevation, recoverable mark, no tablet	
With number and elevation	
Horizontal control	
Third-order or better, permanent mark	
With third-order or better elevation	
With checked spot elevation	
Coincident with found section corner	
Unmonumented**	

CONTROL DATA AND MONUMENTS – continued	
Vertical control	
Third-order or better elevation, with tablet	
Third-order or better elevation, recoverable mark, no tablet	
Bench mark coincident with found section corner	
Spot elevation	
GLACIERS AND PERMANENT SNOWFIELDS	
Contours and limits	
Formlines	
Glacial advance	
Glacial retreat	
LAND SURVEYS	
Public land survey system	
Range or Township line	
Location approximate	
Location doubtful	
Protracted	
Protracted (AK 1:63,360-scale)	
Range or Township labels	
Section line	
Location approximate	
Location doubtful	
Protracted	
Protracted (AK 1:63,360-scale)	
Section numbers	
Found section corner	
Found closing corner	
Witness corner	
Meander corner	
Weak corner*	
Other land surveys	
Range or Township line	
Section line	
Land grant, mining claim, donation land claim, or tract	
Land grant, homestead, mineral, or other special survey monument	
Fence or field lines	
MARINE SHORELINES	
Shoreline	
Apparent (edge of vegetation)***	
Indefinite or unsurveyed	
MINES AND CAVES	
Quarry or open pit mine	
Gravel, sand, clay, or borrow pit	
Mine tunnel or cave entrance	
Mine shaft	
Prospect	
Tailings	
Mine dump	
Former disposal site or mine	

PROJECTION AND GRIDS	
Neatline	
Graticule tick	
Graticule intersection	
Datum shift tick	
State plane coordinate systems	
Primary zone tick	
Secondary zone tick	
Tertiary zone tick	
Quaternary zone tick	
Quintary zone tick	
Universal transverse mercator grid	
UTM grid (full grid)	
UTM grid ticks*	
RAILROADS AND RELATED FEATURES	
Standard gauge railroad, single track	
Standard gauge railroad, multiple track	
Narrow gauge railroad, single track	
Narrow gauge railroad, multiple track	
Railroad siding	
Railroad in highway	
Railroad in road	
Railroad in light duty road*	
Railroad underpass; overpass	
Railroad bridge; drawbridge	
Railroad tunnel	
Railroad yard	
Railroad turntable; roundhouse	
RIVERS, LAKES, AND CANALS	
Perennial stream	
Perennial river	
Intermittent stream	
Intermittent river	
Disappearing stream	
Falls, small	
Falls, large	
Rapids, small	
Rapids, large	
Masonry dam	
Dam with lock	
Dam carrying road	

## United States Geological Survey Topographic Map Symbols (continued)

RIVERS, LAKES, AND CANALS – <i>continued</i>	SUBMERGED AREAS AND BOGS
Perennial lake/pond	Marsh or swamp
Intermittent lake/pond	Submerged marsh or swamp
Dry lake/pond	Wooded marsh or swamp
Narrow wash	Submerged wooded marsh or swamp
Wide wash	Land subject to inundation
Canal, flume, or aqueduct with lock	
Elevated aqueduct, flume, or conduit	
Aqueduct tunnel	
Water well, geyser, fumarole, or mud pot	
Spring or seep	
<b>ROADS AND RELATED FEATURES</b>	<b>SURFACE FEATURES</b>
Please note: Roads on Provisional-edition maps are not classified as primary, secondary, or light duty. These roads are all classified as improved roads and are symbolized the same as light duty roads.	Levee
Primary highway	Sand or mud
Secondary highway	Disturbed surface
Light duty road	Gravel beach or glacial moraine
Light duty road, paved*	Tailings pond
Light duty road, gravel*	<b>TRANSMISSION LINES AND PIPELINES</b>
Light duty road, dirt*	Power transmission line; pole; tower
Light duty road, unspecified*	Telephone line
Unimproved road	Aboveground pipeline
Unimproved road*	Underground pipeline
4WD road	<b>VEGETATION</b>
4WD road*	Woodland
Trail	Shrubland
Highway or road with median strip	Orchard
Highway or road under construction	Vineyard
Highway or road underpass; overpass	Mangrove
Highway or road bridge; drawbridge	
Highway or road tunnel	
Road block, berm, or barrier*	
Gate on road*	
Trailhead*	
<p>* USGS-USDA Forest Service Single-Edition Quadrangle maps only. In August 1993, the U.S. Geological Survey and the U.S. Department of Agriculture's Forest Service signed an Interagency Agreement to begin a single-edition joint mapping program. This agreement established the coordination for producing and maintaining single-edition primary series topographic maps for quadrangles containing National Forest System lands. The joint mapping program eliminates duplication of effort by the agencies and results in a more frequent revision cycle for quadrangles containing National Forests. Maps are revised on the basis of jointly developed standards and contain normal features mapped by the USGS, as well as additional features required for efficient management of National Forest System lands. Single-edition maps look slightly different but meet the content, accuracy, and quality criteria of other USGS products.</p>	<p>** Provisional-Edition maps only. Provisional-edition maps were established to expedite completion of the remaining large-scale topographic quadrangles of the conterminous United States. They contain essentially the same level of information as the standard series maps. This series can be easily recognized by the title "Provisional Edition" in the lower right-hand corner.</p> <p>*** Topographic Bathymetric maps only.</p> <p><b>Topographic Map Information</b> For more information about topographic maps produced by the USGS, please call: 1-888-ASK-USGS or visit us at <a href="http://ask.usgs.gov/">http://ask.usgs.gov/</a></p>

Municipal Zoning District Designations

Zoning District Key for use with GHCCRP Exhibits B.2 and C.1 (100 SCALE MAPS)

Town	Municipal Zoning Designation	Municipal Zoning District <sup>1</sup>
<b>Berlin</b>	PI	Planned Industry
	R-21	Single Family Residential
	R-43	Single Family Residential
<b>Hartford</b>	B-3	Business District (general-linear business)
	B-4	Business District (neighborhood business)
	C-1	Commercial District
	I-1	Industrial District
	I-2	Industrial District
	P	Public Property and Cemetery District
	R-2	Residence District (high density, 100 PPA)
	R-3	Residence District (medium density, 75 PPA)
<b>Newington</b>	R-12	Residential
	ROW	Right of Way
	RP	Residential Planned
	WADD	Willard Ave. Development District
<b>West Hartford<sup>2</sup></b>	BC	Central Business District
	BG	General Business District
	BN	Neighborhood Business District
	IE	Exclusive Industrial District
	IG	General Industrial District
	IR	Restricted Industrial District
	R-10	Residence District
	R-20	Residence District
	R-6	Residence District
	RM-1	Multifamily Residence District
	RM-2	Multifamily Residence District
	RM-3	Multifamily Residence District
	RM-3R	Multifamily Restricted Residential District
	RO	Residence-Office District
RP	Residence-Parking	

<sup>1</sup> – Please see the respective municipal zoning regulations for additional detail regarding Zoning Districts

<sup>2</sup> - Please see the Town of West Hartford Zoning Map and Regulations for additional detail regarding:

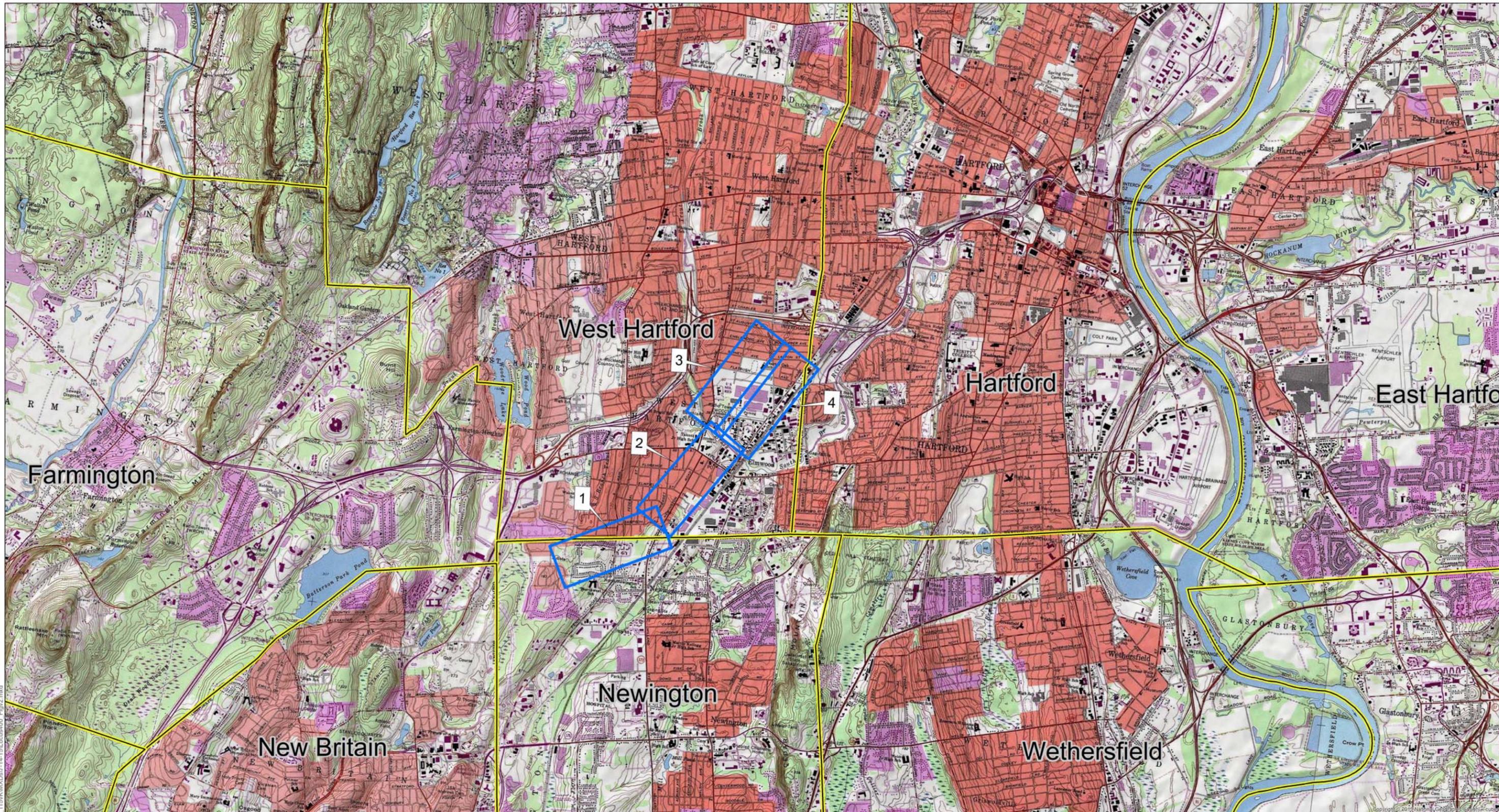
- Traditional Neighborhood Design District Overlay
- Special Development District Overlay

**EXHIBIT B:**

**PROPOSED NEWINGTON – SOUTHWEST HARTFORD**  
**UNDERGROUND 115-KV CABLE, ROUTE VARIATIONS, AND**  
**MODIFICATIONS TO THE NEWINGTON SUBSTATION,**  
**NEWINGTON TAP, AND SOUTHWEST HARTFORD**  
**SUBSTATION**

**EXHIBIT B.1**

**400 SCALE MAPS: 115-KV UNDERGROUND CABLE  
PROPOSED ROUTE, ROUTE VARIATIONS, SUBSTATION  
MODIFICATIONS, AND NEWINGTON TAP MODIFICATIONS**

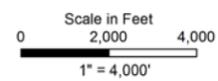


**Legend**

- Mapsheet
- Municipal Boundary

**KEY MAP: 400' SCALE MAPSHEETS  
GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)  
NEWINGTON, WEST HARTFORD & HARTFORD, CT**

Coordinate System:  
NAD 1983 StatePlane Connecticut FIPS 0600 Feet  
Projection: Lambert Conformal Conic  
Datum: North American 1983  
False Easting: 1,000,000.0000  
False Northing: 500,000.0000  
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Standard Parallel 1: 41.2000  
Standard Parallel 2: 41.8667  
Latitude Of Origin: 40.8333  
Linear Units: Foot US



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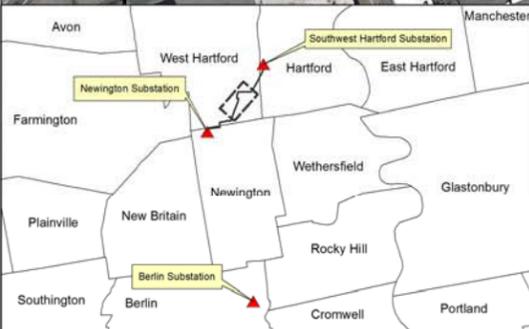
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Proposed Route	Existing Transmission Line Structure	FEMA 100-Year Flood Zone
Chelton Ave. Variation	Proposed Transmission Line Structure	FEMA 500-Year Flood Zone
East ROW Variation	Community Facilities	Flow Direction
Flatbush Variation	National Register Listed Historic Site	CT DEEP Hydrography Line
Grove St. Variation	National Register Listed Historic Place	Delineated Wetland Boundary
Grove Street Connection Variation	Substation Expansion	Delineated Wetland Area (ex. N-1)
New Park Ave. Variation	Substation Fence Line	CTDEEP Inland Wetland Soils
Northern Variation	Eversource Owned Property	Open Space/ Recreation Area
South Quaker Lane Connection Variation	Town Boundary	
CTfastrak / Amtrak RR		

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)**  
**NEWINGTON, WEST HARTFORD & HARTFORD, CT**

Coordinate System:  
 NAD 1983 StatePlane Connecticut FIPS 0600 Feet  
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 False Easting: 1,000,000.0000  
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 Standard Parallel 1: 41.2000  
 Standard Parallel 2: 41.8667  
 Latitude Of Origin: 40.8333  
 Linear Units: Foot US  
 2006 UCONN CLEAR LULC DATA, Reclassified by AECOM

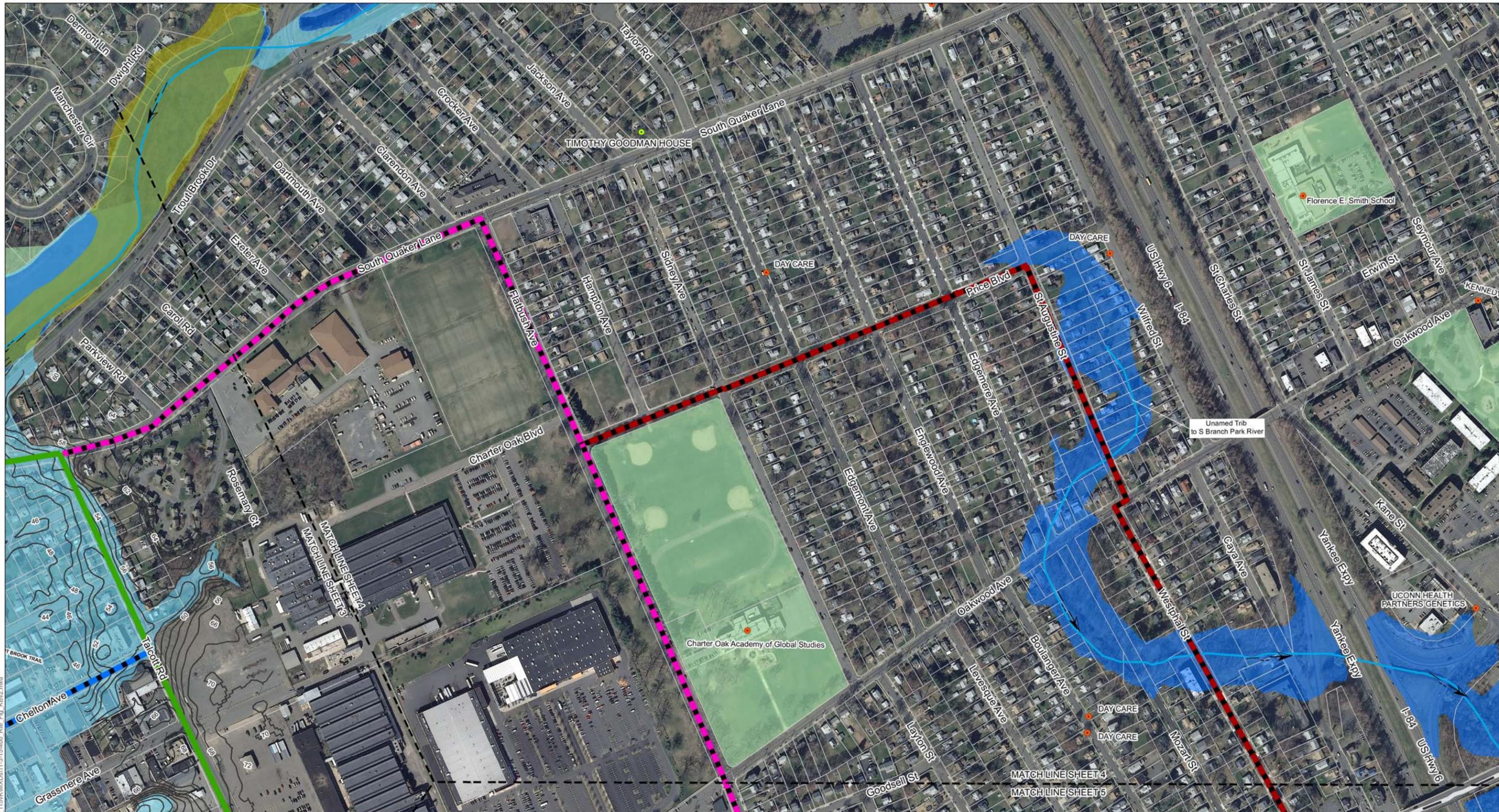
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 1" = 400'

Revised: 12/11/2015

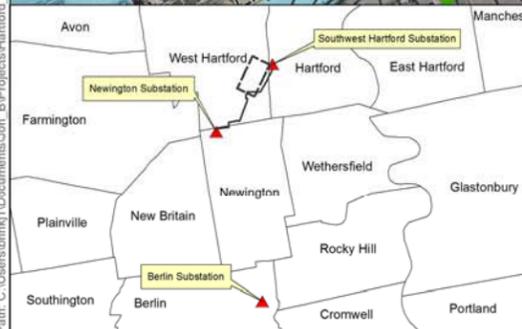
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Sheet 3 of 5



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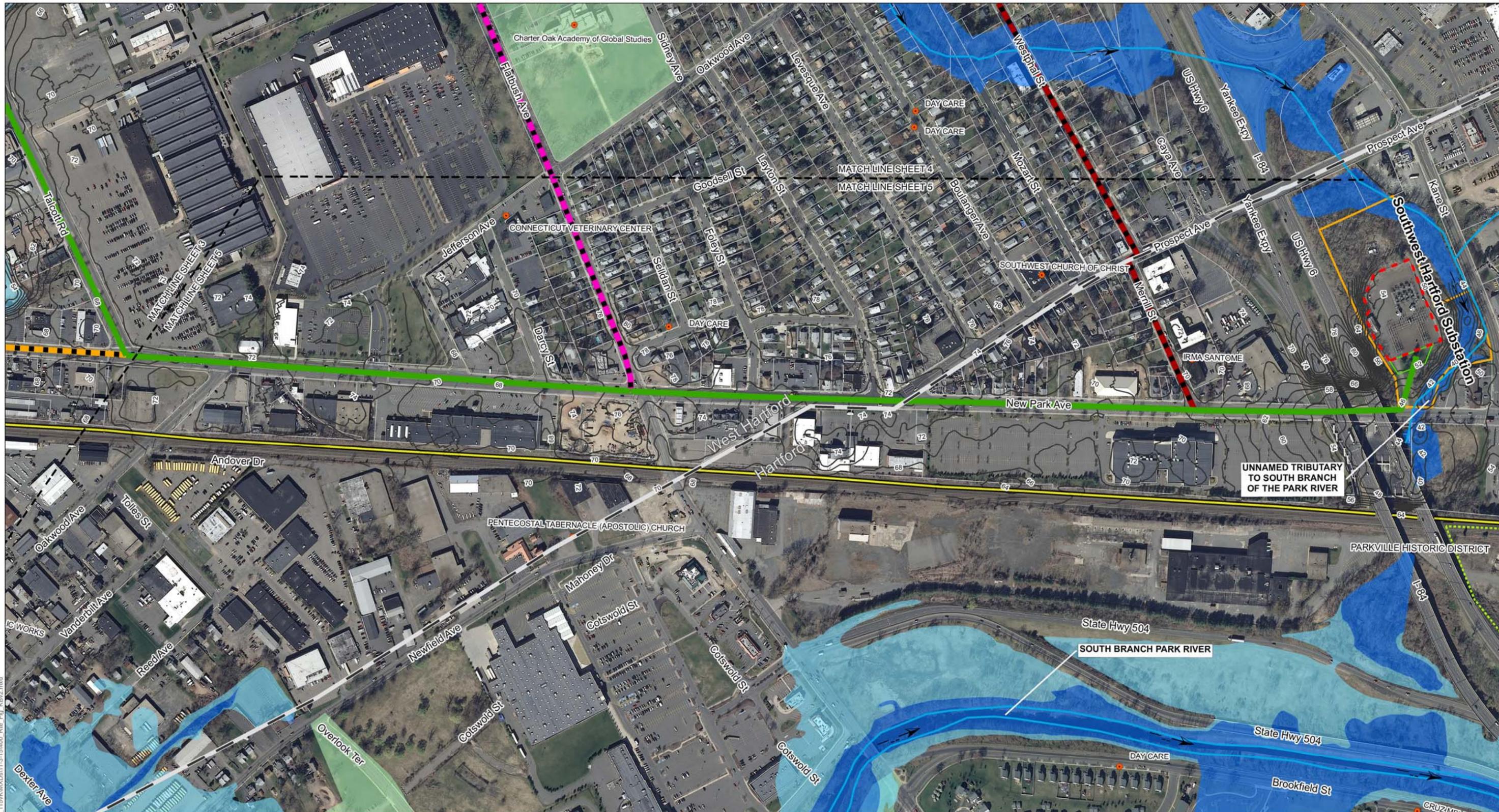
- |   |   |   |
|---|---|---|
| <ul style="list-style-type: none"> <li><span style="color: green;">—</span> Proposed Route</li> <li><span style="color: blue;">—</span> Chelton Ave. Variation</li> <li><span style="color: green;">—</span> East ROW Variation</li> <li><span style="color: magenta;">—</span> Flatbush Variation</li> <li><span style="color: red;">—</span> Grove St. Variation</li> <li><span style="color: red;">—</span> Grove Street Connection Variation</li> <li><span style="color: orange;">—</span> New Park Ave. Variation</li> <li><span style="color: red;">—</span> Northern Variation</li> <li><span style="color: yellow;">—</span> South Quaker Lane Connection Variation</li> <li><span style="color: black;">—</span> CTfastrak / Amtrak RR</li> </ul> | <ul style="list-style-type: none"> <li><span style="color: orange;">■</span> Existing Transmission Line Structure</li> <li><span style="color: blue;">■</span> Proposed Transmission Line Structure</li> <li><span style="color: orange;">●</span> Community Facilities</li> <li><span style="color: green;">●</span> National Register Listed Historic Site</li> <li><span style="color: green;">■</span> National Register Listed Historic Place</li> <li><span style="color: red;">—</span> Substation Expansion</li> <li><span style="color: red;">—</span> Substation Fence Line</li> <li><span style="color: orange;">—</span> Eversource Owned Property</li> <li><span style="color: black;">—</span> Town Boundary</li> </ul> | <ul style="list-style-type: none"> <li><span style="color: blue;">■</span> FEMA 100-Year Flood Zone</li> <li><span style="color: lightblue;">■</span> FEMA 500-Year Flood Zone</li> <li><span style="color: blue;">→</span> Flow Direction</li> <li><span style="color: blue;">—</span> CT DEEP Hydrography Line</li> <li><span style="color: green;">—</span> Delineated Wetland Boundary</li> <li><span style="color: green;">—</span> Delineated Wetland Area (ex. N-1)</li> <li><span style="color: yellow;">—</span> CTDEEP Inland Wetland Soils</li> <li><span style="color: lightgreen;">—</span> Open Space/ Recreation Area</li> </ul> |
|---|---|---|

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)**  
**NEWINGTON, WEST HARTFORD & HARTFORD, CT**

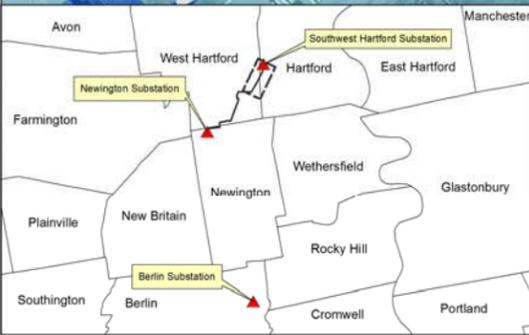
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 2006 UCONN CLEAR LULC DATA, Reclassified by AECOM

Sheet 4 of 5

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Proposed Route	Existing Transmission Line Structure	FEMA 100-Year Flood Zone
Chelton Ave. Variation	Proposed Transmission Line Structure	FEMA 500-Year Flood Zone
East ROW Variation	Community Facilities	Flow Direction
Flatbush Variation	National Register Listed Historic Site	CT DEEP Hydrography Line
Grove St. Variation	National Register Listed Historic Place	Delineated Wetland Boundary
Grove Street Connection Variation	Substation Expansion	Delineated Wetland Area (ex. N-1)
New Park Ave. Variation	Substation Fence Line	CTDEEP Inland Wetland Soils
Northern Variation	Eversource Owned Property	Open Space/ Recreation Area
South Quaker Lane Connection Variation	Town Boundary	
CTfastrak / Amtrak RR		

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)**  
**NEWINGTON, WEST HARTFORD & HARTFORD, CT**

Coordinate System:  
 NAD 1983 StatePlane Connecticut FIPS 0600 Feet  
 Projection: Lambert Conformal Conic  
 Datum: North American 1983  
 False Easting: 1,000,000.0000  
 False Northing: 500,000.0000  
 Central Meridian: -72.7500  
 Standard Parallel 1: 41.2000  
 Standard Parallel 2: 41.8667  
 Latitude Of Origin: 40.8333  
 Linear Units: Foot US  
 2006 UCONN CLEAR LULC DATA, Reclassified by AECOM

Scale in Feet  
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 1" = 400'

Revised: 12/11/2015

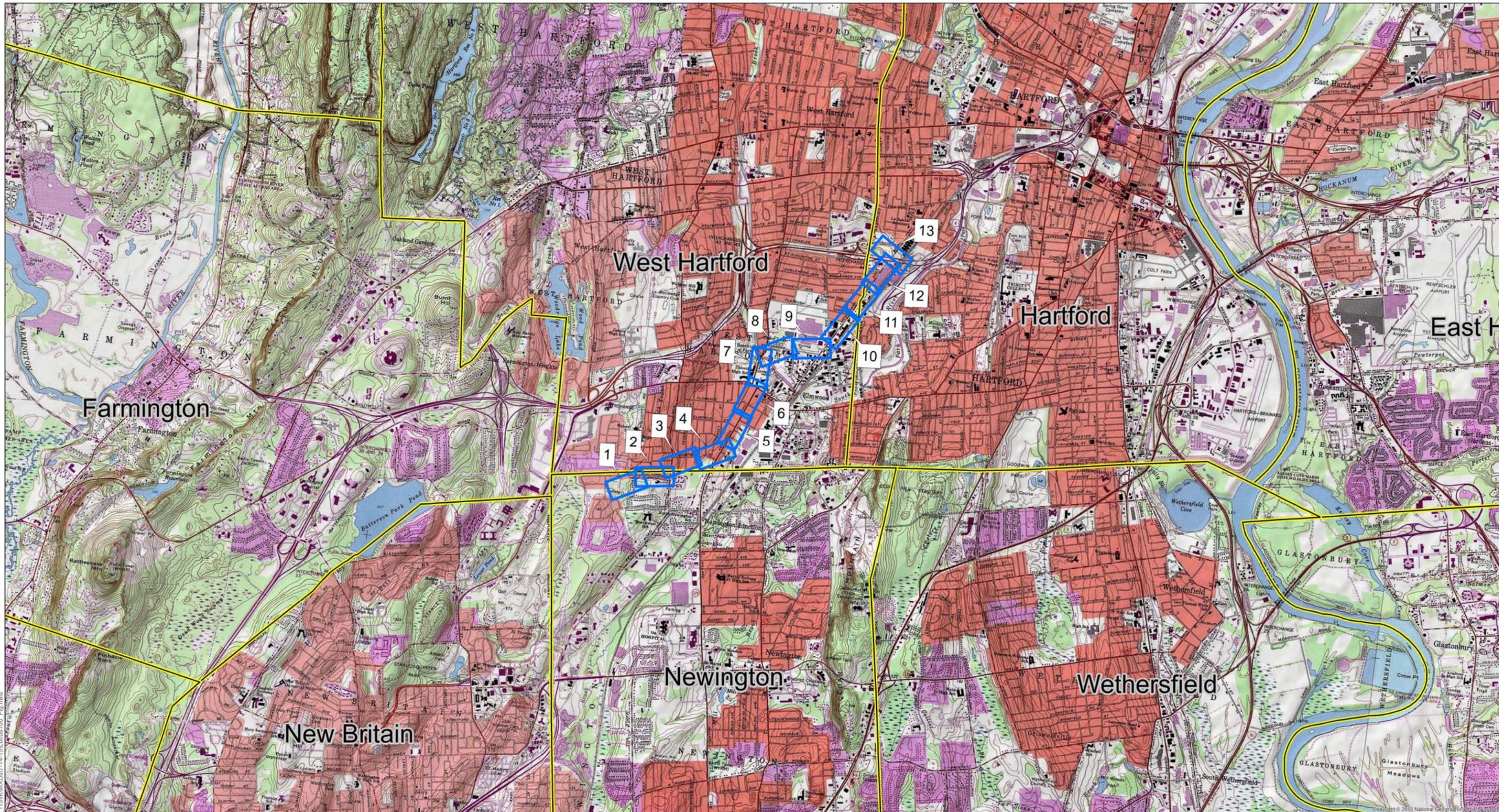
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**AECOM**

Sheet 5 of 5

**EXHIBIT B.2**

**100 SCALE MAPS: 115-KV UNDERGROUND CABLE  
PROPOSED ROUTE, SUBSTATION MODIFICATIONS, AND  
NEWINGTON TAP MODIFICATIONS**

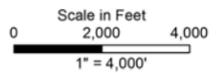


**Legend**

- Mapsheet
- Municipal Boundary

**KEY MAP: 100' SCALE MAPSHEETS  
GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)  
NEWINGTON, WEST HARTFORD & HARTFORD, CT**

Coordinate System:  
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Projection: Lambert Conformal Conic  
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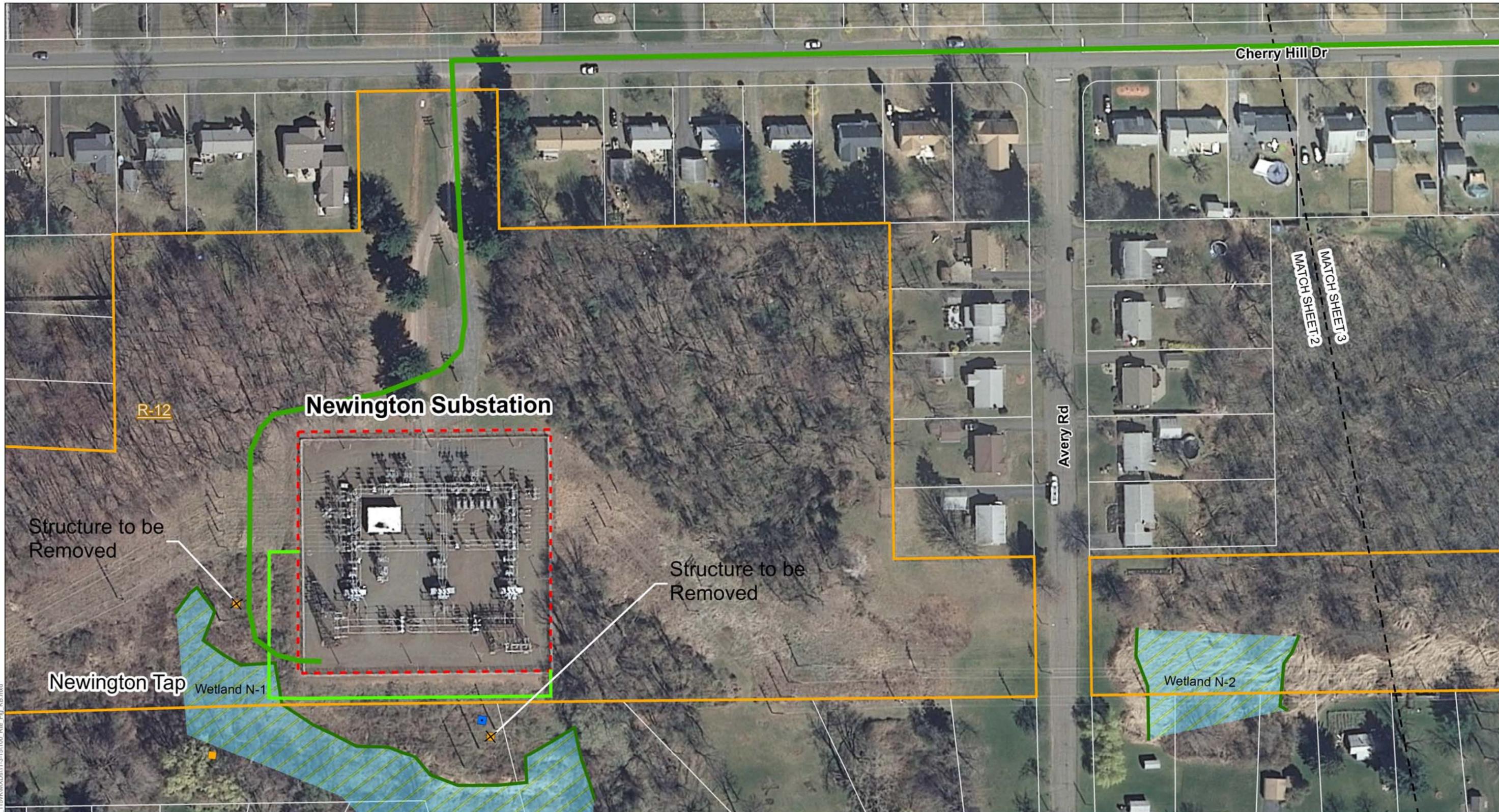
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Revised: 12/2/2015

Sheet 1 of 14

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Existing Transmission Structure	Substation Expansion	FEMA 100-Year Flood Zone
Proposed Transmission Structure	Substation Fence Line	FEMA 500-Year Flood Zone
Community Facilities	Eversource Owned Property	CTDEEP Inland Wetland Soils
Proposed Route	Parcel Boundary	Flow Direction
CTfastrak / Amtrak RR	Town Boundary	Delineated Watercourse
	Open Space/ Recreation Area	Delineated Wetland Boundary
	Zoning Designation (See Exhibit A for zoning key)	Delineated Wetland Area (ex. N-1)

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)  
NEWINGTON, WEST HARTFORD, HARTFORD BERLIN, CT**

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 Latitude Of Origin: 40.8333  
 Linear Units: Foot US

Scale in Feet  
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Revised: 12/11/2015

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Sheet 2 of 14



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Community Facilities	Substation Expansion	FEMA 100-Year Flood Zone
Proposed Route	Substation Fence Line	FEMA 500-Year Flood Zone
CTfastrak / Amtrak RR	Eversource Owned Property	CTDEEP Inland Wetland Soils
	Parcel Boundary	Flow Direction
	Town Boundary	Delineated Watercourse
	Open Space\ Recreation Area	Delineated Wetland Boundary
Zoning Designation (See Exhibit A for zoning key)		Delineated Wetland Area (ex. N-1)

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)**  
**NEWINGTON, WEST HARTFORD, HARTFORD BERLIN, CT**

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 Latitude Of Origin: 40.8333  
 Linear Units: Foot US

**EVERSOURCE**

**AECOM**

Scale in Feet  
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 1" = 100'

Revised: 12/11/2015

Sheet 3 of 14



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Community Facilities	Substation Expansion	FEMA 100-Year Flood Zone
Proposed Route	Substation Fence Line	FEMA 500-Year Flood Zone
CTfastrak / Amtrak RR	Eversource Owned Property	CTDEEP Inland Wetland Soils
	Parcel Boundary	Flow Direction
	Town Boundary	Delineated Watercourse
	Open Space/ Recreation Area	Delineated Wetland Boundary
	Zoning Designation (See Exhibit A for zoning key)	Delineated Wetland Area (ex. N-1)

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)  
NEWINGTON, WEST HARTFORD, HARTFORD BERLIN, CT**

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 Latitude Of Origin: 40.8333  
 Linear Units: Foot US

Scale in Feet  
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 1" = 100'

Revised: 12/11/2015

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Sheet 4 of 14



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Community Facilities	Substation Expansion	FEMA 100-Year Flood Zone
Proposed Route	Substation Fence Line	FEMA 500-Year Flood Zone
CTfastrak / Amtrak RR	Eversource Owned Property	CTDEEP Inland Wetland Soils
	Parcel Boundary	Flow Direction
	Town Boundary	CT DEEP Watercourse
	Open Space\ Recreation Area	Delineated Wetland Boundary
Zoning Designation (See Exhibit A for zoning key)		Delineated Wetland Area (ex. N-1)

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)**  
**NEWINGTON, WEST HARTFORD, HARTFORD BERLIN, CT**

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 NAD 1983 StatePlane Connecticut FIPS 0600 Feet  
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 Linear Units: Foot US

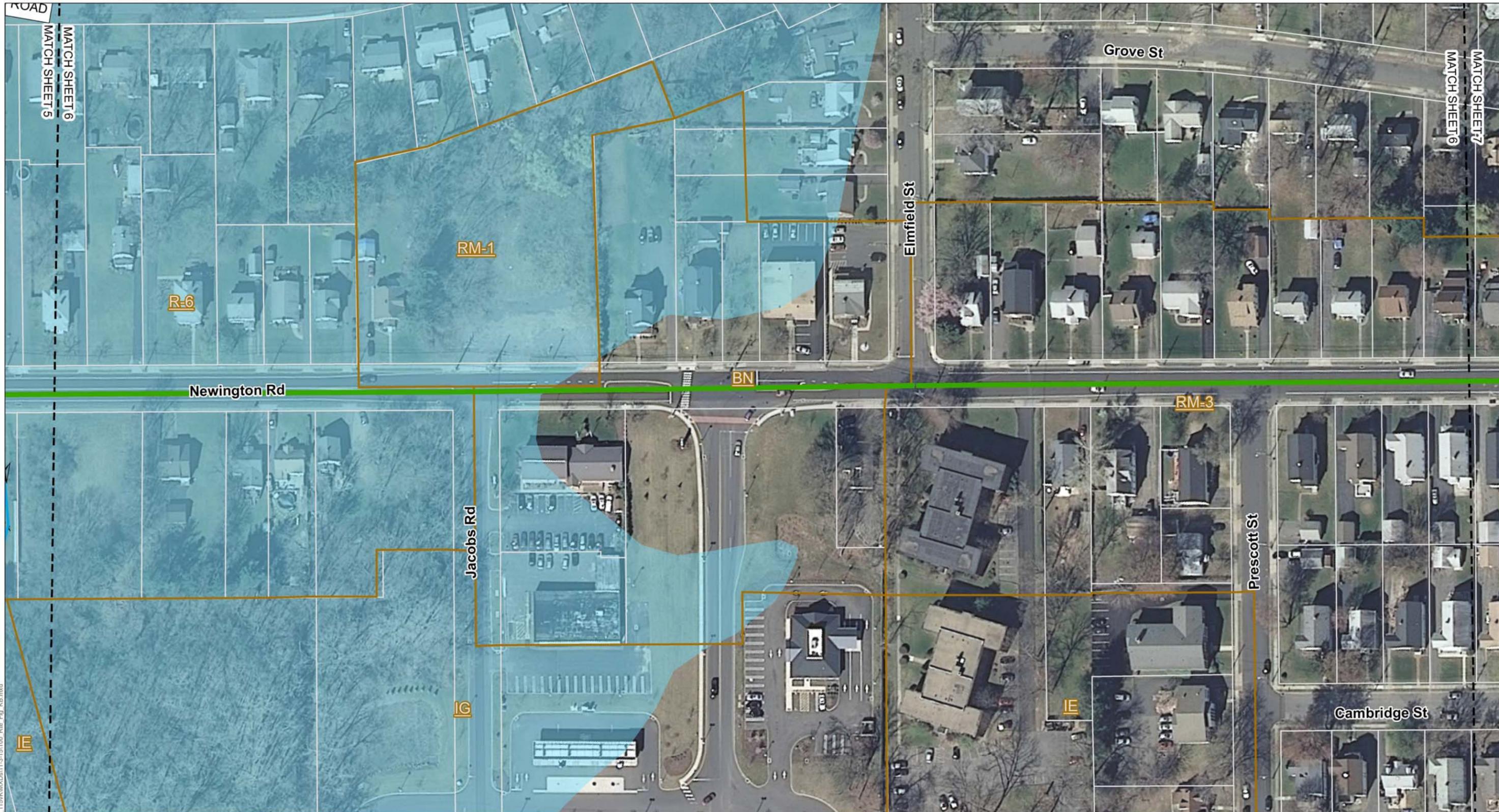
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Revised: 12/11/2015

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Sheet 5 of 14



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Community Facilities	Substation Expansion	FEMA 100-Year Flood Zone
Proposed Route	Substation Fence Line	FEMA 500-Year Flood Zone
CTfastrak / Amtrak RR	Eversource Owned Property	CTDEEP Inland Wetland Soils
	Parcel Boundary	Flow Direction
	Town Boundary	Delineated Watercourse
	Open Space\ Recreation Area	Delineated Wetland Boundary
Zoning Designation (See Exhibit A for zoning key)	Delineated Wetland Area (ex. N-1)	

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)**  
**NEWINGTON, WEST HARTFORD, HARTFORD BERLIN, CT**

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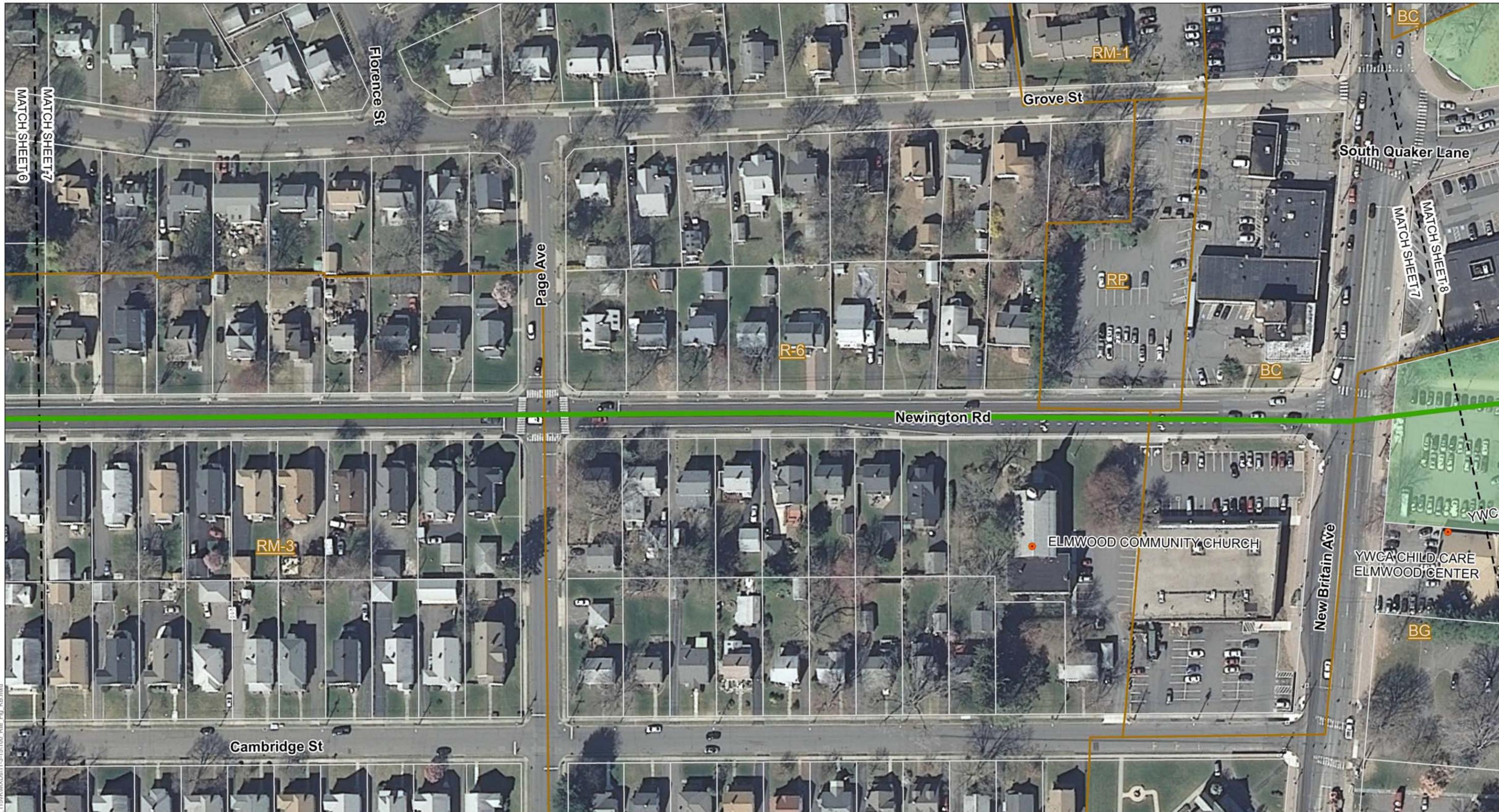
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Scale in Feet  
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Revised: 12/11/2015

Sheet 6 of 14



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- |   |                             |                                   |
|---|-----------------------------|-----------------------------------|
| Community Facilities                              | Substation Expansion        | FEMA 100-Year Flood Zone          |
| Proposed Route                                    | Substation Fence Line       | FEMA 500-Year Flood Zone          |
| CTfastrak / Amtrak RR                             | Eversource Owned Property   | CTDEEP Inland Wetland Soils       |
|   | Parcel Boundary             | Flow Direction                    |
|   | Town Boundary               | Delineated Watercourse            |
|   | Open Space/ Recreation Area | Delineated Wetland Boundary       |
| Zoning Designation (See Exhibit A for zoning key) |                             | Delineated Wetland Area (ex. N-1) |

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)**  
**NEWINGTON, WEST HARTFORD, HARTFORD BERLIN, CT**

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 NAD 1983 StatePlane Connecticut FIPS 0600 Feet  
 Projection: Lambert Conformal Conic  
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 Latitude Of Origin: 40.8333  
 Linear Units: Foot US

Scale in Feet  
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Revised: 12/11/2015

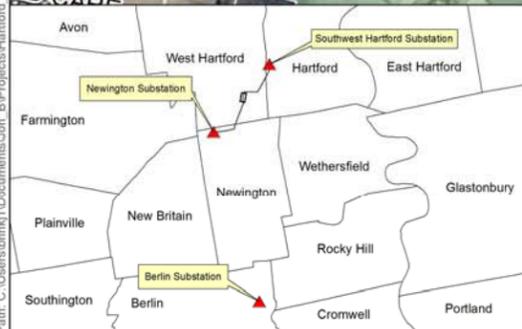
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Sheet 7 of 14



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Community Facilities	Substation Expansion	FEMA 100-Year Flood Zone
Proposed Route	Substation Fence Line	FEMA 500-Year Flood Zone
CTfastrak / Amtrak	Eversource Owned Property	CTDEEP Inland Wetland Soils
	Parcel Boundary	Flow Direction
	Town Boundary	Delineated Watercourse
	Open Space\ Recreation	Delineated Wetland Boundary
Zoning Designation (See Exhibit A for zoning key)		Delineated Wetland Area (ex. N-

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)**  
 NEWINGTON, WEST HARTFORD, HARTFORD BERLIN, CT

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 NAD 1983 StatePlane Connecticut FIPS 0600 Feet  
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 Latitude Of Origin: 40.8333  
 Linear Units: Foot US

Scale in Feet  
 0 50 100  
 1" = 100'

Revised: 12/14/2015

**EVERSOURCE**

**AECOM**

Sheet 8 of 14



MATCH SHEET 9  
MATCH SHEET 10

- |   |                                   |                             |
|---|-----------------------------------|-----------------------------|
| Community Facilities                              | Substation Expansion              | FEMA 100-Year Flood Zone    |
| Proposed Route                                    | Substation Fence Line             | FEMA 500-Year Flood Zone    |
| CTfastrak / Amtrak RR                             | Eversource Owned Property         | CTDEEP Inland Wetland Soils |
| Parcel Boundary                                   | Town Boundary                     | Flow Direction              |
| Open Space / Recreation Area                      | Delineated Wetland Boundary       | Delineated Watercourse      |
| Zoning Designation (See Exhibit A for zoning key) | Delineated Wetland Area (ex. N-1) |                             |

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)**  
**NEWINGTON, WEST HARTFORD, HARTFORD BERLIN, CT**

Coordinate System:  
 NAD 1983 StatePlane Connecticut FIPS 0600 Feet  
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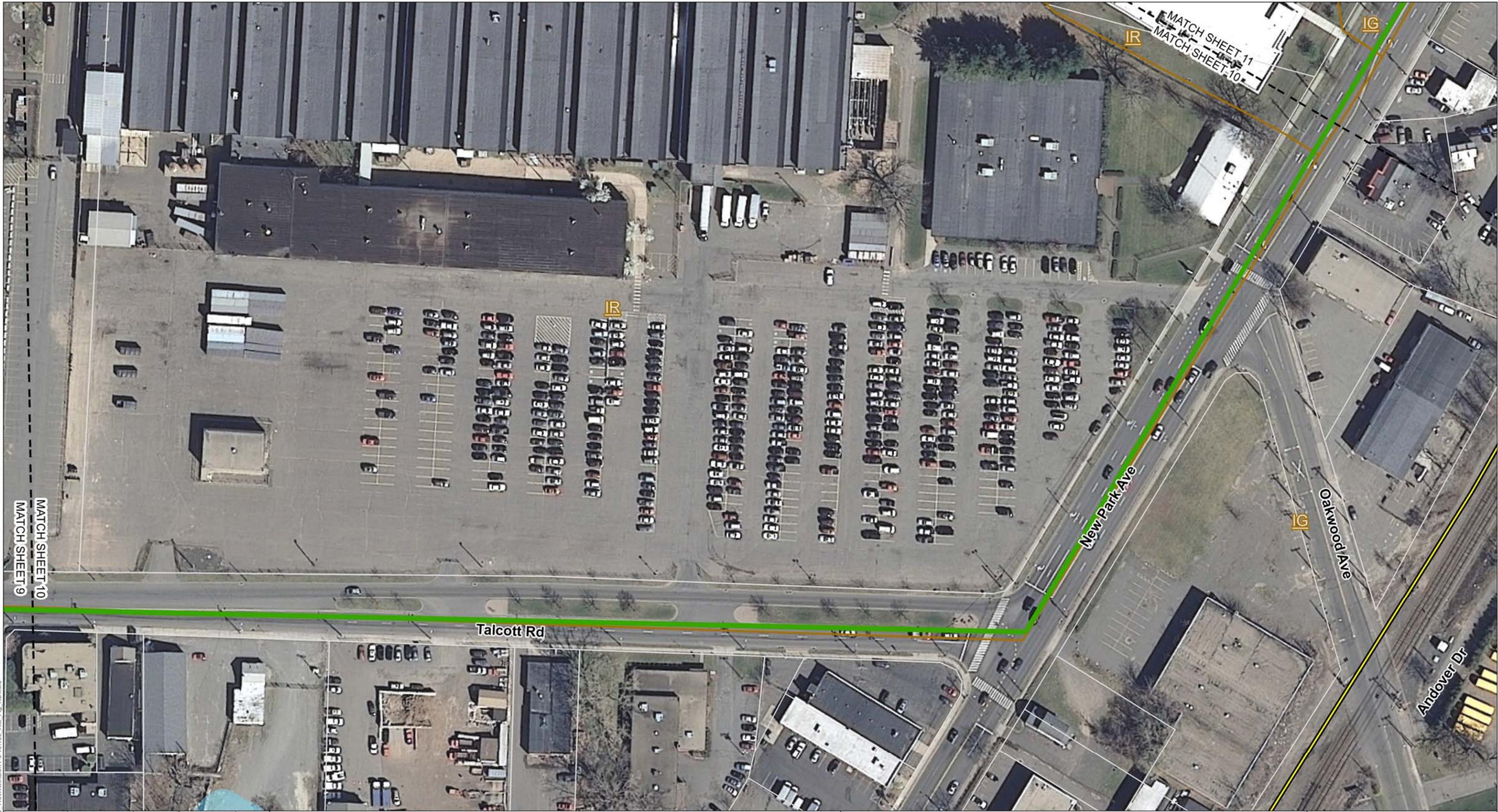
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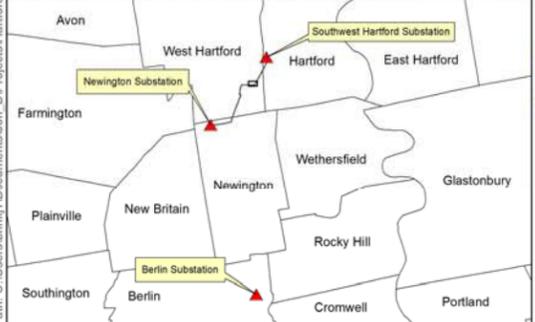
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Community Facilities	Substation Expansion	FEMA 100-Year Flood Zone
Proposed Route	Substation Fence Line	FEMA 500-Year Flood Zone
CTfastrak / Amtrak RR	Eversource Owned Property	CTDEEP Inland Wetland Soils
	Parcel Boundary	Flow Direction
	Town Boundary	Delineated Watercourse
	Open Space\ Recreation Area	Delineated Wetland Boundary
Zoning Designation (See Exhibit A for zoning key)		Delineated Wetland Area (ex. N-1)

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)**  
**NEWINGTON, WEST HARTFORD, HARTFORD BERLIN, CT**

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 NAD 1983 StatePlane Connecticut FIPS 0600 Feet  
 Projection: Lambert Conformal Conic  
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 Linear Units: Foot US

Scale in Feet  
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 1" = 100'

Revised: 12/11/2015

**EVERSOURCE**

**AECOM**

Sheet 10 of 14



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Community Facilities	Substation Expansion	FEMA 100-Year Flood Zone
Proposed Route	Substation Fence Line	FEMA 500-Year Flood Zone
CTfastrak / Amtrak RR	Eversource Owned Property	CTDEEP Inland Wetland Soils
	Parcel Boundary	Flow Direction
	Town Boundary	Delineated Watercourse
	Open Space\ Recreation Area	Delineated Wetland Boundary
	Zoning Designation (See Exhibit A for zoning key)	Delineated Wetland Area (ex. N-1)

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)**  
**NEWINGTON, WEST HARTFORD, HARTFORD BERLIN, CT**

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Scale in Feet  
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Sheet 11 of 14



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Community Facilities	Substation Expansion	FEMA 100-Year Flood Zone
Proposed Route	Substation Fence Line	FEMA 500-Year Flood Zone
CTfastrak / Amtrak RR	Eversource Owned Property	CTDEEP Inland Wetland Soils
	Parcel Boundary	Flow Direction
	Town Boundary	Delineated Watercourse
	Open Space/ Recreation Area	Delineated Wetland Boundary
	Zoning Designation (See Exhibit A for zoning key)	Delineated Wetland Area (ex. N-1)

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)**  
 NEWINGTON, WEST HARTFORD, HARTFORD BERLIN, CT

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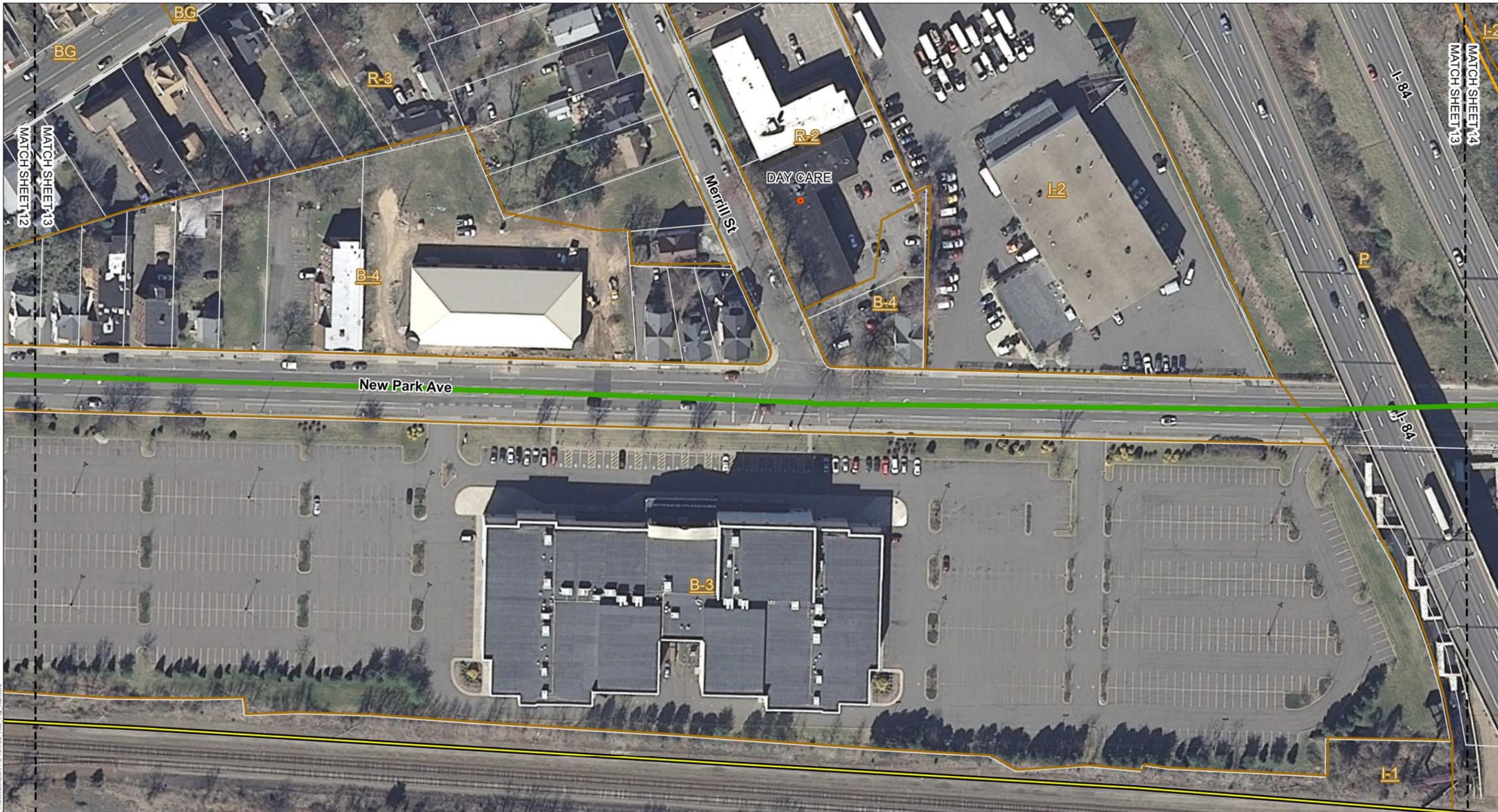
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Revised: 12/11/2015

**EVERSOURCE**

**AECOM**

Sheet 12 of 14



Community Facilities	Substation Expansion	FEMA 100-Year Flood Zone
Proposed Route	Substation Fence Line	FEMA 500-Year Flood Zone
CTfastrak / Amtrak RR	Eversource Owned Property	CTDEEP Inland Wetland Soils
	Parcel Boundary	Flow Direction
	Town Boundary	Delineated Watercourse
	Open Space/ Recreation Area	Delineated Wetland Boundary
Zoning Designation (See Exhibit A for zoning key)		Delineated Wetland Area (ex. N-1)

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)**  
**NEWINGTON, WEST HARTFORD, HARTFORD BERLIN, CT**

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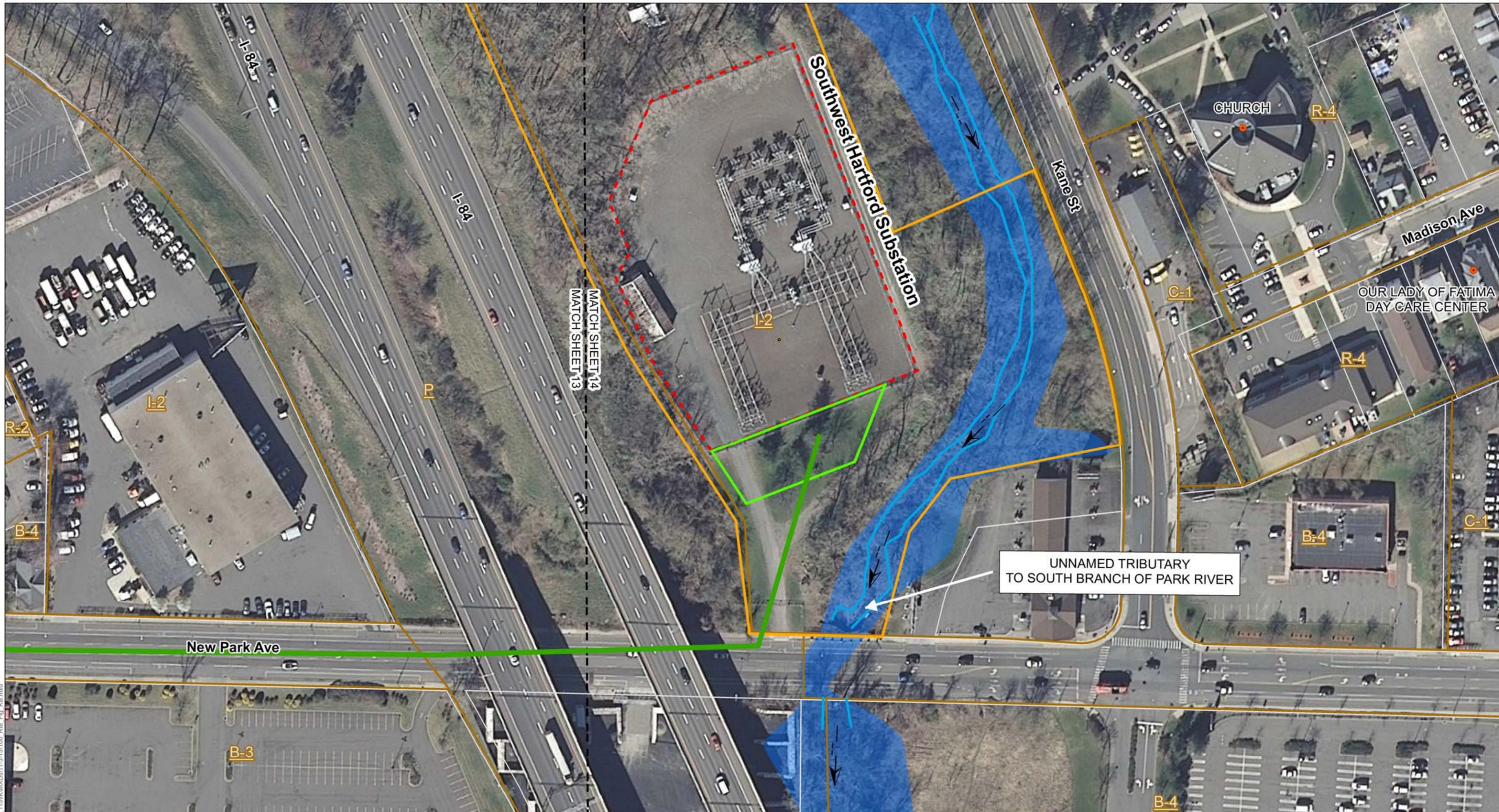
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Community Facilities	Substation Expansion	FEMA 100-Year Flood Zone
Proposed Route	Substation Fence Line	FEMA 500-Year Flood Zone
CTfastrak / Amtrak RR	Eversource Owned Property	CTDEEP Inland Wetland Soils
	Parcel Boundary	Flow Direction
	Town Boundary	Delineated Watercourse
	Open Space\ Recreation Area	Delineated Wetland Boundary
Zoning Designation (See Exhibit A for zoning key)		Delineated Wetland Area (ex. N-1)

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)**  
**NEWINGTON, WEST HARTFORD, HARTFORD BERLIN, CT**

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 Linear Units: Foot US

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Revised: 12/11/2015

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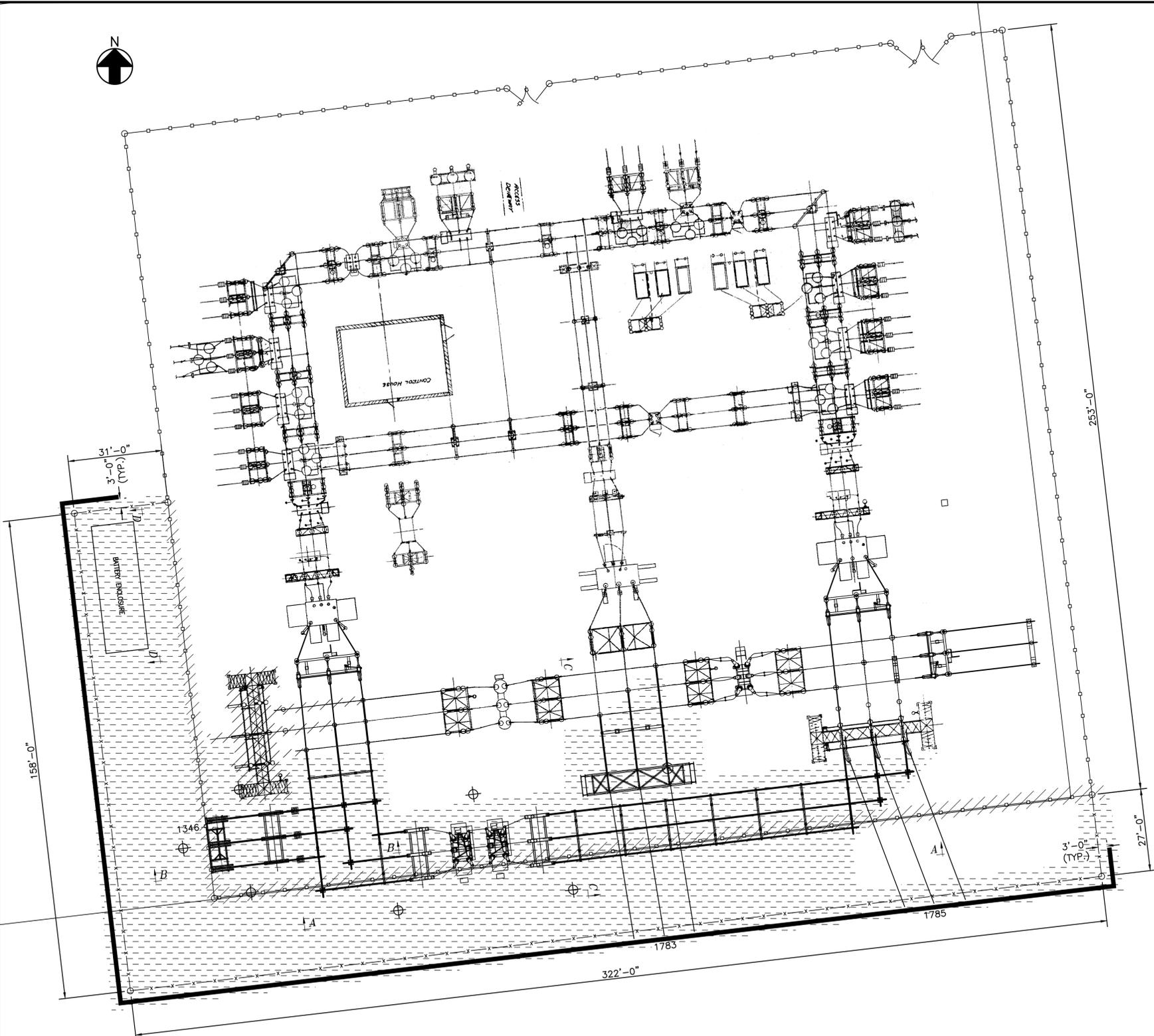
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Sheet 14 of 14

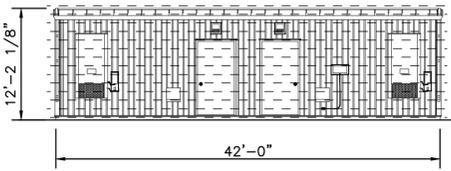
**EXHIBIT B.3**

**DRAWINGS: NEWINGTON SUBSTATION, SOUTHWEST  
HARTFORD, AND NEWINGTON TAP MODIFICATION**

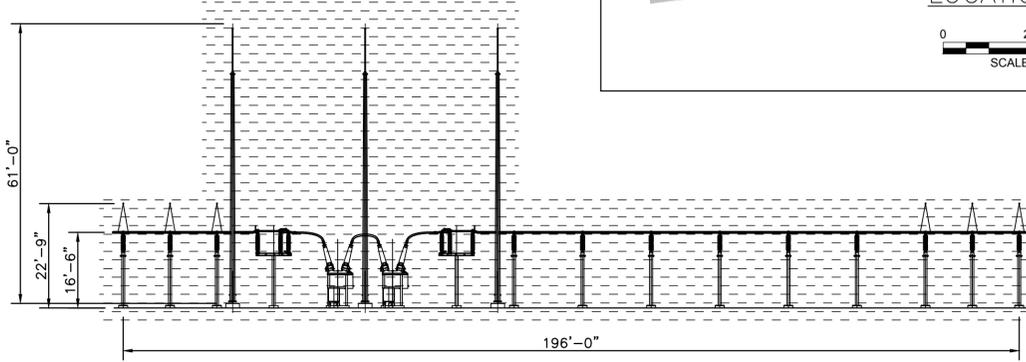
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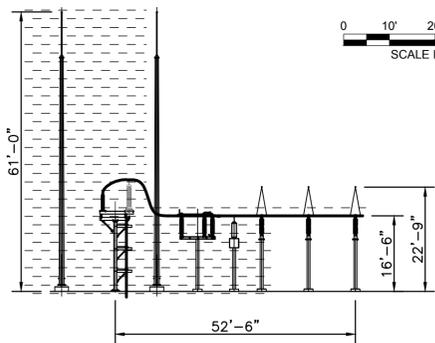
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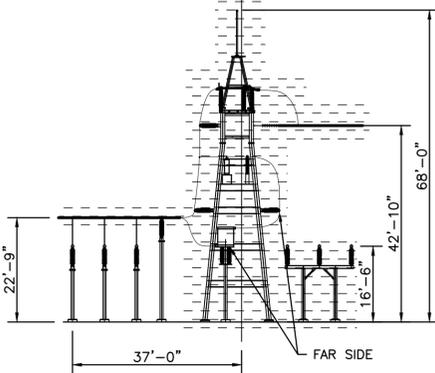
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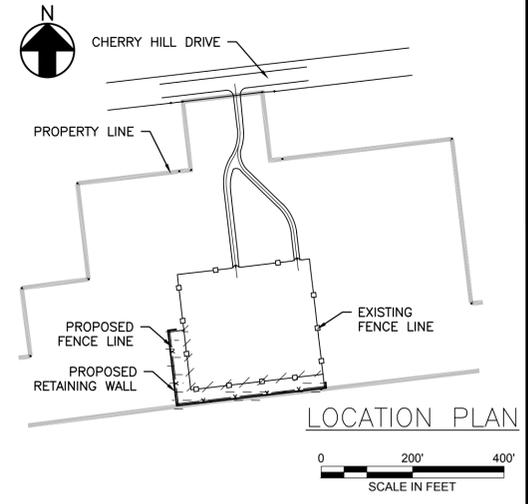
SECTION A-A



SECTION B-B



SECTION C-C



- LEGEND**
- EXISTING SUBSTATION FENCE
  - EXPANDED SUBSTATION FENCE
  - PROPOSED RETAINING WALL
  - PROPOSED ADDITION
  - TO BE REMOVED

REV. 4 - 12/15/15  
SUBSTATION ADDITION

REVISIONS DURING CONSTRUCTION			
NO.	DATE	DESCRIPTION	BY

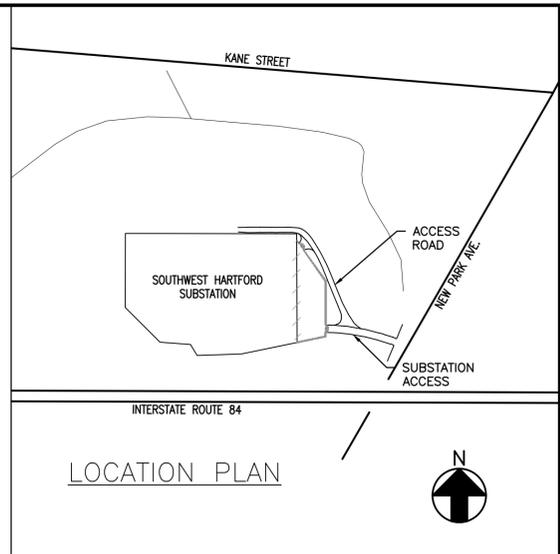
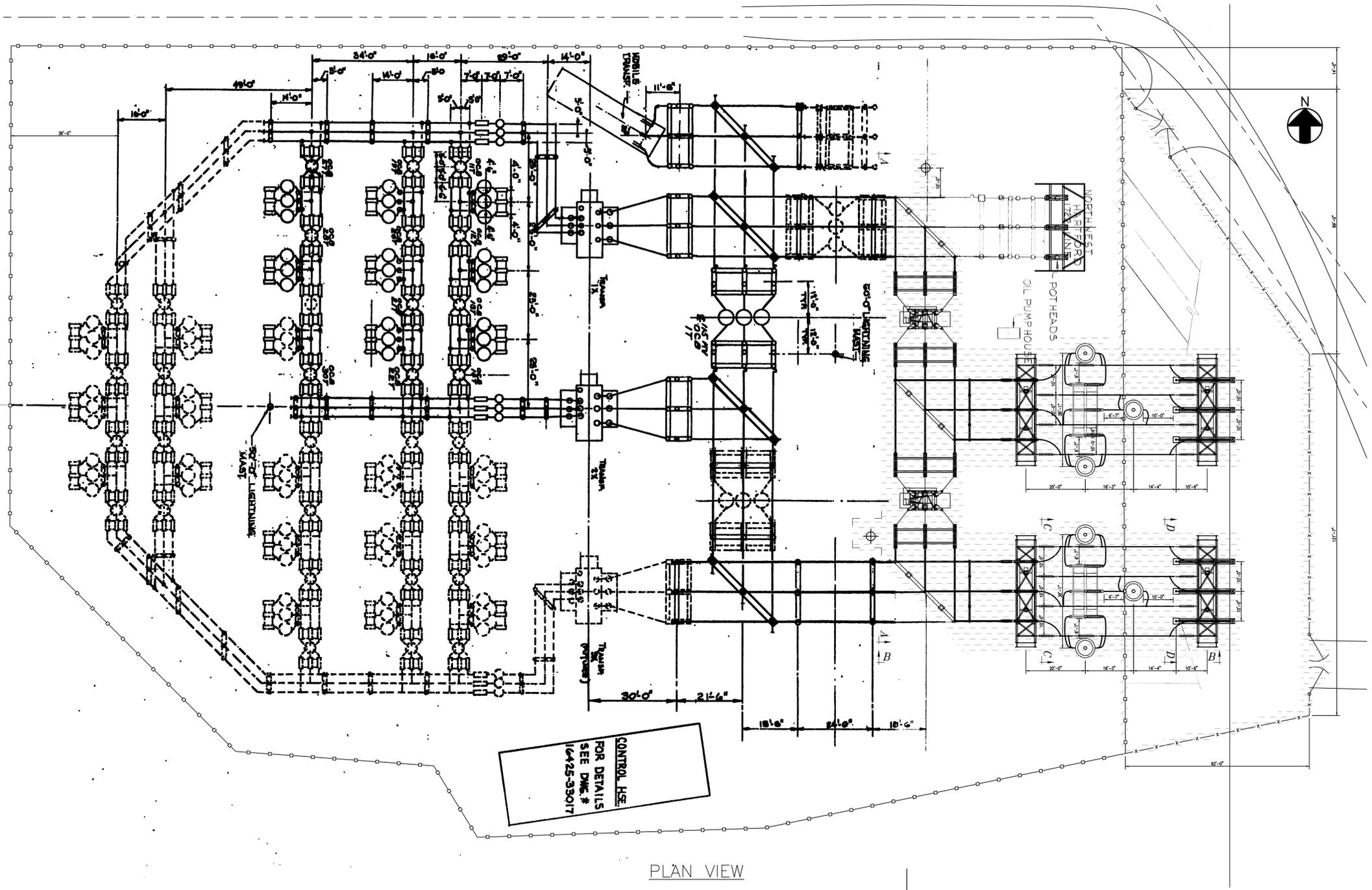
**EVERSOURCE ENERGY**

NEWINGTON SUBSTATION  
YARD ARRANGEMENT - PLAN & SECTIONS

NEWINGTON, CT

BY	VAF	CRD	CR	APP	APP
DATE	11/10	DATE	11/10	DATE	DATE
H-SCALE	AS NOTED	SIZE	D	FIELD BOOK & PAGES	
V-SCALE	N/A	T.S.		S.E. DWG	
S.E. PROJ. NUMBER					19402-92001

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- LEGEND**
- EXISTING SUBSTATION FENCE
  - x—x— EXPANDED SUBSTATION FENCE
  - MDC EASEMENT
  - PROPOSED ADDITION
  - /// TO BE REMOVED
  - FUTURE SUBSTATION EXPANSION

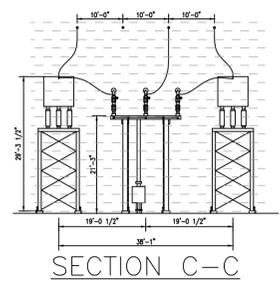
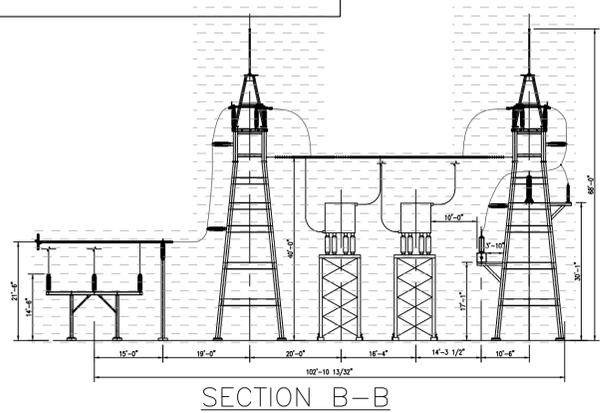
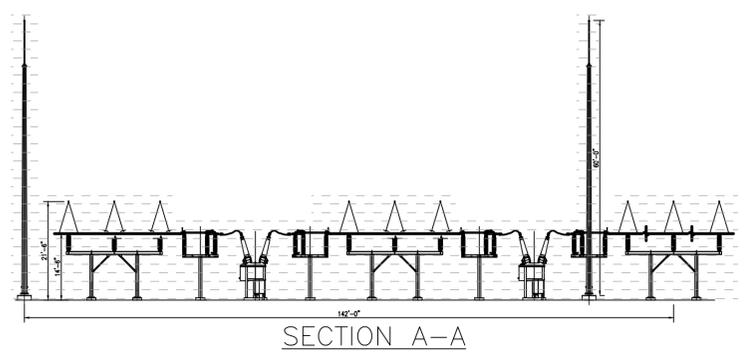
REV. 4 - 12/15/15  
SUBSTATION ADDITION

REVISIONS DURING CONSTRUCTION			
NO.	DATE	DESCRIPTION	BY



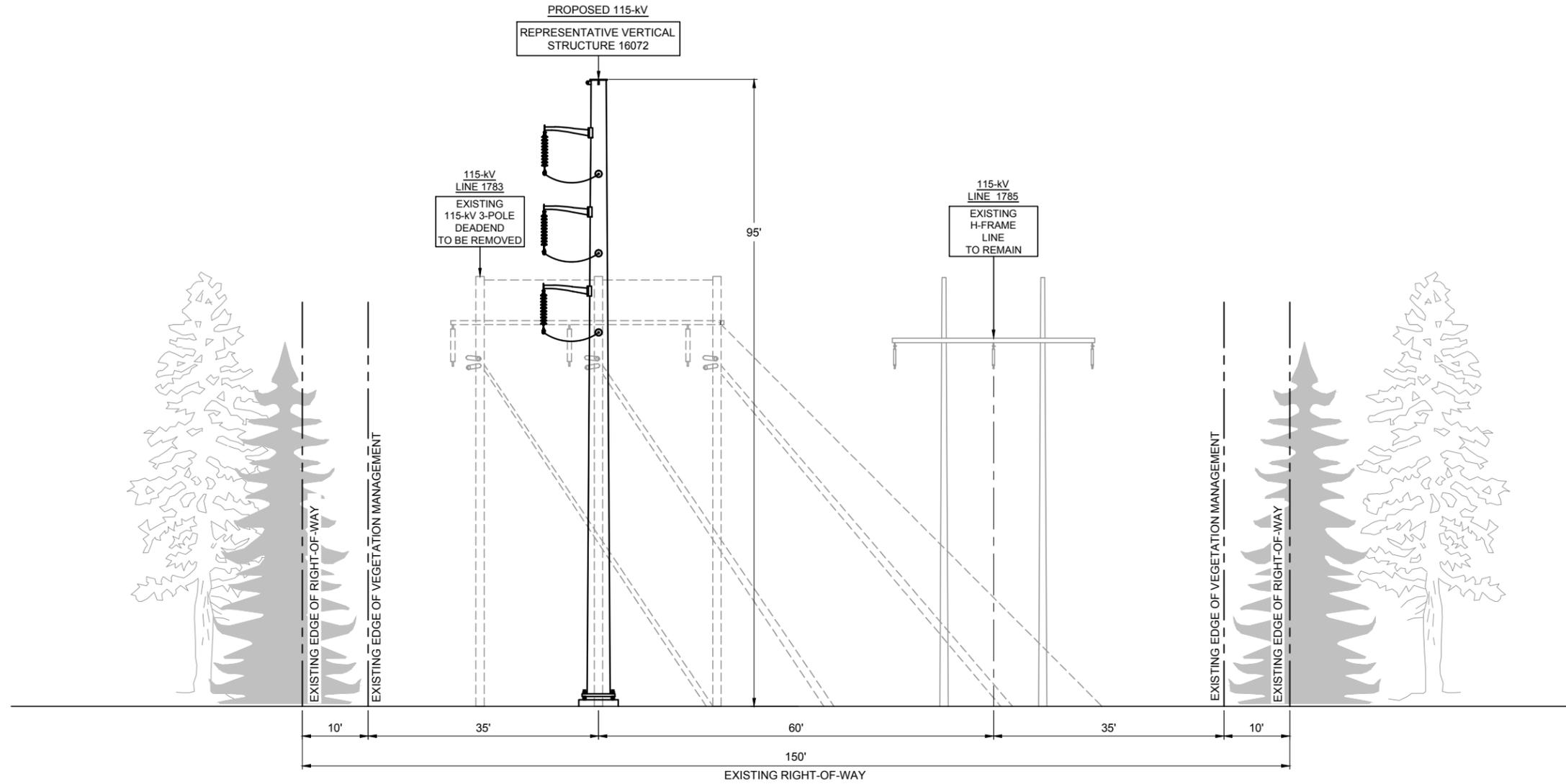
TITLE: **SOUTHWEST HARTFORD SUBSTATION**  
YARD ARRANGEMENT PLAN & SECTIONS  
DWGTYPE  
HARTFORD, CT

BY	CHKD	APP	DATE	DATE	DATE
AJD (RM:CD)	MAD (GMR:CD)	DEB (GMR:CD)/C	5/27/15		
H-SCALE		SIZE	FIELD BOOK & PAGES		
V-SCALE		V.S.	R.E. DWG		
R.E. PROJ. NUMBER		DWGNO. 16425-92001			



REV# REV DATE

1783 MODIFICATION



1783 MODIFICATION  
VERTICAL DESIGN

NEAR NEWINGTON S/S  
STRUCTURE 16072

LOOKING  
NORTH

PRELIMINARY  
DESIGN

- NOTES:
- STRUCTURE 16072 WILL EITHER BE A GUYED STRUCTURE OR A SELF SUPPORTED STEEL MONOPOLE ON AN ENGINEERED CONCRETE FOUNDATION.
  - STRUCTURE 16072 WILL BE LOCATED ON EVERSOURCE PROPERTY.

TITLE			
<b>EVSOURCE ENERGY</b>			
<b>NEWINGTON TAP, PROPOSED MODIFICATION TO</b>			
<b>1783 LINE ENTRY INTO NEWINGTON SUBSTATION</b>			
BY	D. LAURSEN	CHKD V. MONTEMURRO	APP P. WILLIAMS
DATE	11/05/15	DATE	11/05/15
SCALE	NONE	MICROFILM DATE	DWG. NO.
P.A. #			<b>XS-16072</b>

**EXHIBIT B.4**

**VISUAL SIMULATIONS:**

**OVERHEAD PORTION OF EAST ROW VARIATION**

Greater Hartford Central Connecticut Reliability Project (GHCCRP)  
East Right-of-Way Variation  
Avery Road – Town of Newington  
Transmission Rights-of-Way  
Typical Cross Section XS-E2 / Photo Location PS-1

Two existing distribution lines on wood pole structures will remain, two existing existing distribution lines on wood pole structures will be removed and one new vertically-configured 115-kV line with two distribution lines underbuilt will be installed.

(Existing Transmission Right-of-Way – Leaf-off Condition)

(Simulation of the Transmission Right-of-Way  
After Construction – Leaf-off Condition)



Existing electric distribution line structures looking east from Avery Road in Newington.

Preliminary design of electric transmission line and distribution line structures looking east from Avery Road in Newington.

*NOTE: See Drawing XS-E2 for a representation of the typical transmission structures, typical heights of the structures, and ROW width for this cross section.*

Greater Hartford Central Connecticut Reliability Project (GHCCRP)  
East Right-of-Way Variation  
Avery Road – Town of Newington  
Transmission Rights-of-Way  
Typical Cross Section XS-E2 / Photo Location PS-1

Two existing distribution lines on wood pole structures will remain, two existing existing distribution lines on wood pole structures will be removed and one new vertically-configured 115-kV line with two distribution lines underbuilt will be installed.

(Existing Transmission Right-of-Way – Leaf-on Condition)



Existing electric distribution line structures looking east from Avery Road in Newington.

(Simulation of the Transmission Right-of-Way  
After Construction – Leaf-on Condition)



Preliminary design of electric transmission line and distribution line structures looking east from Avery Road in Newington.

*NOTE: See Drawing XS-E2 for a representation of the typical transmission structures, typical heights of the structures, and ROW width for this cross section.*

Greater Hartford Central Connecticut Reliability Project (GHCCRP)  
East Right-of-Way Variation  
Hartford Road – Town of Newington  
Transmission Rights-of-Way  
Typical Cross Section XS-E2 / Photo Location PS-2

Two existing distribution lines on wood pole structures will remain, two existing existing distribution lines on wood pole structures will be removed and one new vertically-configured 115-kV line with two distribution lines underbuilt will be installed.

(Existing Transmission Right-of-Way – Leaf-off Condition)



Existing electric distribution line structures looking west from Hartford Road in Newington.

(Simulation of the Transmission Right-of-Way  
After Construction – Leaf-off Condition)



Preliminary design of electric transmission line and distribution line structures looking west from Hartford Road in Newington.

*NOTE: See Drawing XS-E2 for a representation of the typical transmission structures, typical heights of the structures, and ROW width for this cross section.*

Greater Hartford Central Connecticut Reliability Project (GHCCRP)  
East Right-of-Way Variation  
Hartford Road – Town of Newington  
Transmission Rights-of-Way  
Typical Cross Section XS-E2 / Photo Location PS-2

Two existing distribution lines on wood pole structures will remain, two existing existing distribution lines on wood pole structures will be removed and one new vertically-configured 115-kV line with two distribution lines underbuilt will be installed.

(Existing Transmission Right-of-Way – Leaf-on Condition)

(Simulation of the Transmission Right-of-Way  
After Construction – Leaf-on Condition)



Existing electric distribution line structures looking west from Hartford Road in Newington.

Preliminary design of electric transmission line and distribution line structures looking west from Hartford Road in Newington.

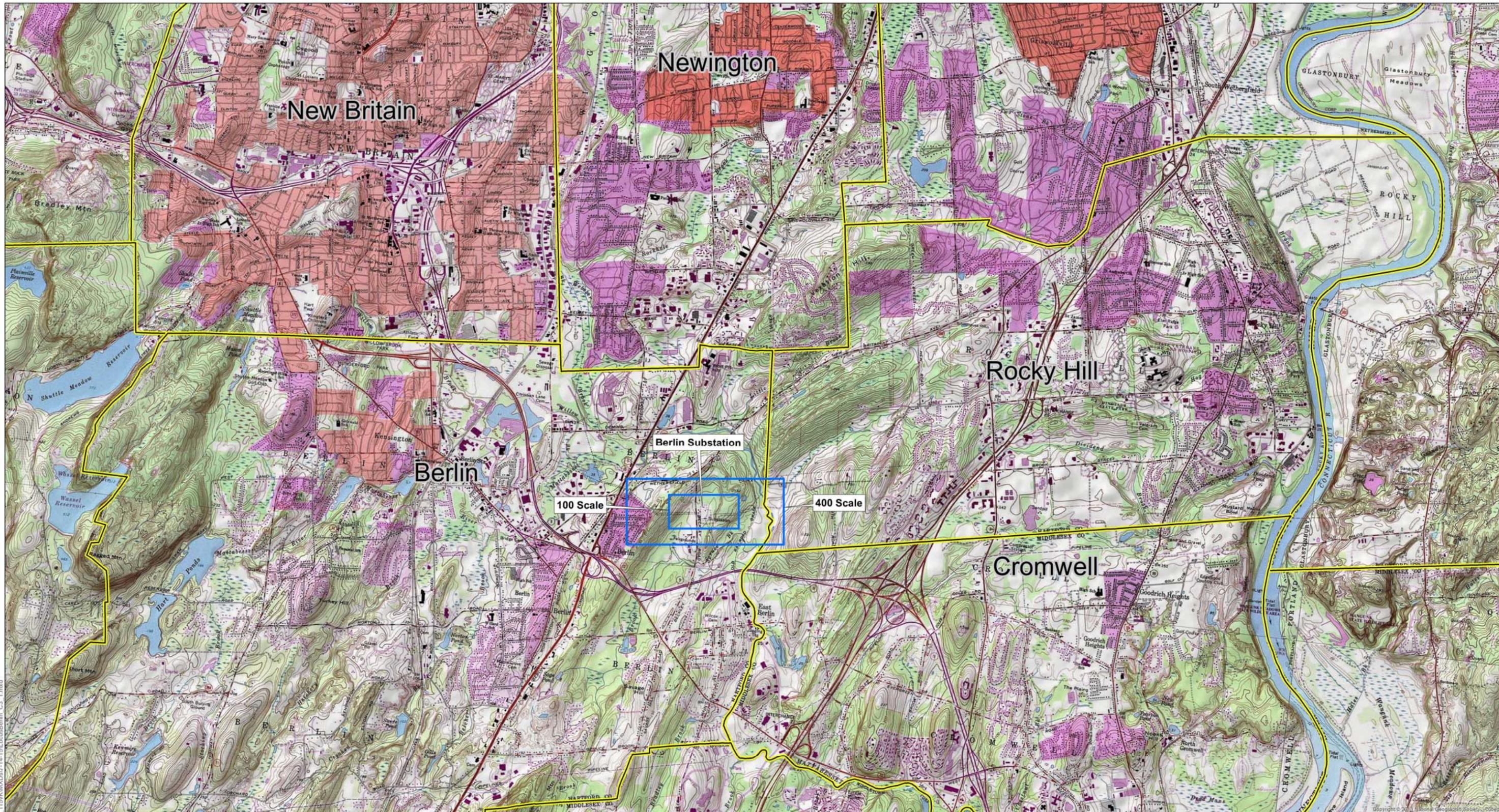
*NOTE: See Drawing XS-E2 for a representation of the typical transmission structures, typical heights of the structures, and ROW width for this cross section.*

**EXHIBIT C:**

**PROPOSED BERLIN SUBSTATION MODIFICATIONS**

**EXHIBIT C.1**

**400- and 100-SCALE MAPS: PROPOSED BERLIN  
SUBSTATION MODIFICATIONS**

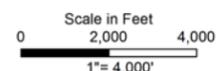


**Legend**

- Mapsheet
- Municipal Boundary

**KEY MAP: 100' AND 400' SCALE MAPSHEETS  
GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)  
BERLIN, CT**

Coordinate System:  
NAD 1983 StatePlane Connecticut FIPS 0600 Feet  
Projection: Lambert Conformal Conic  
Datum: North American 1983  
False Easting: 1,000,000.0000  
False Northing: 500,000.0000  
Central Meridian: -72.7500  
Standard Parallel 1: 41.2000  
Standard Parallel 2: 41.8667  
Latitude Of Origin: 40.8333  
Linear Units: Foot US



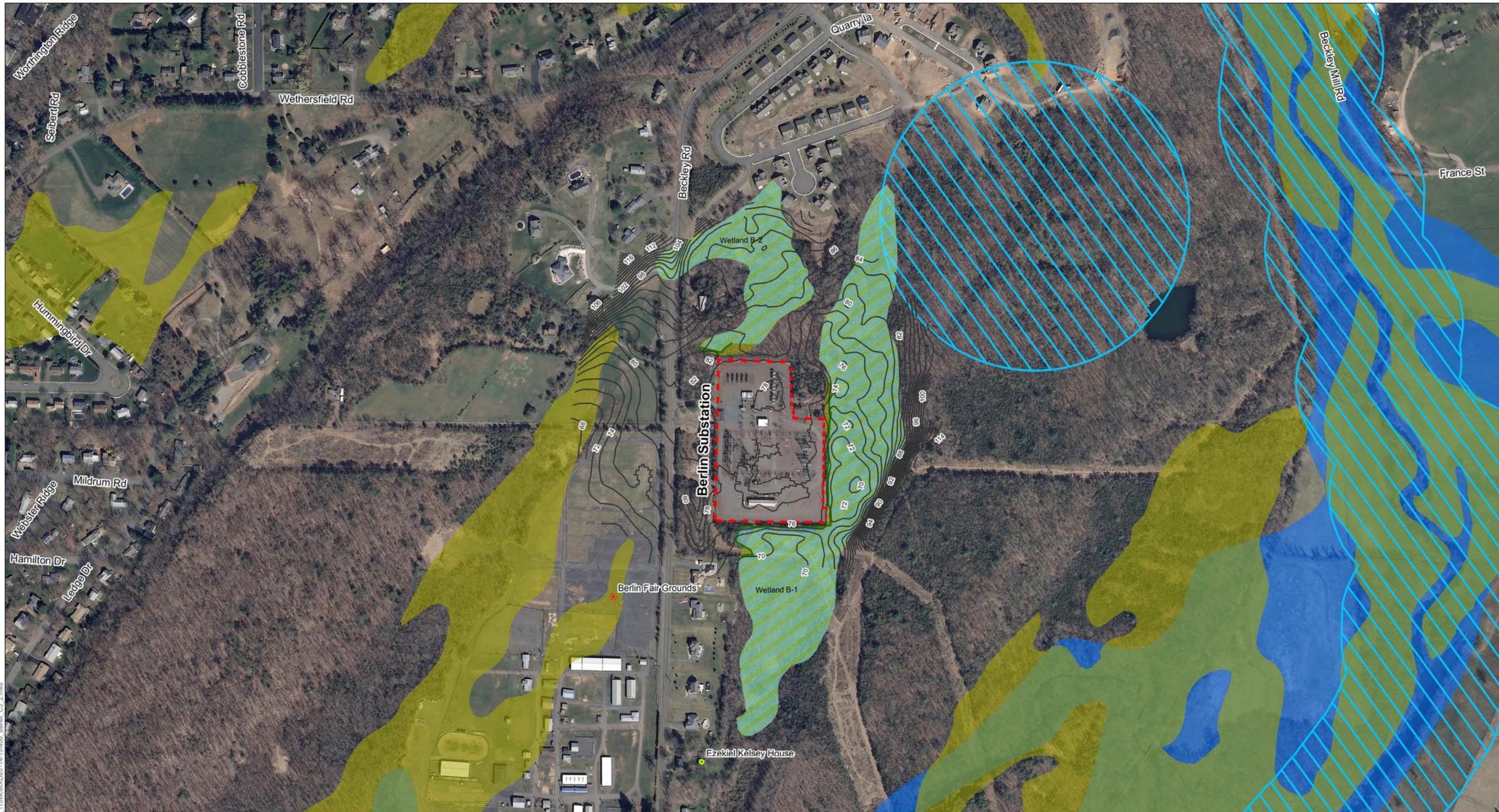
Revised: 12/2/2015

**EVERSOURCE**

**AECOM**

Sheet 1 of 3

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Path: C:\Users\brink\1\Documents\Job\_8\Projects\Hartford\_115\KMD\DC\14-15\1001\_Berlin\_C3\_2.mxd



Community Facilities	FEMA 100-Year Flood Zone
National Register Listed Historic Site	FEMA 500-Year Flood Zone
National Register Listed Historic Place	Delineated Watercourse
Substation Expansion	Delineated Wetland Boundary
Substation Fence Line	Delineated Wetland Area (ex. B-1)
Eversource Owned Property	CTDEEP Inland Wetland Soils

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)  
BERLIN, CT**

**Coordinate System:**  
 NAD 1983 StatePlane Connecticut FIPS 0600 Feet  
 Projection: Lambert Conformal Conic  
 Datum: North American 1983  
 False Easting: 1,000,000.0000  
 False Northing: 500,000.0000  
 Central Meridian: -72.7500  
 Standard Parallel 1: 41.2000  
 Standard Parallel 2: 41.8667  
 Latitude Of Origin: 40.8333  
 Linear Units: Foot US  
 2006 UCONN CLEAR LULC DATA, Reclassified by AECOM

Scale in Feet  
 0 200 400  
 1" = 400'

Revised: 12/3/2015

**EVERSOURCE**

**AECOM**

Sheet 2 of 3



Path: C:\Users\brink1\Documents\Sub\_B\Projects\Hartford\_115\AKM\XDC\7-14-15\100\_Berlin.mxd



Community Facilities	FEMA 100-Year Flood Zone
Substation Expansion	FEMA 500-Year Flood Zone
Substation Fence Line	CTDEEP Inland Wetland Soils
Eversource Owned Property	Delineated Watercourse
Zoning Designation (See Exhibit A for zoning key)	Delineated Wetland Boundary
Town Boundary	Delineated Wetland Area (ex. B-1)

**GREATER HARTFORD CENTRAL CONNECTICUT RELIABILITY PROJECT (GHCCRP)  
BERLIN, CT**

**Coordinate System:**  
 NAD 1983 StatePlane Connecticut FIPS 0600 Feet  
 Projection: Lambert Conformal Conic  
 Datum: North American 1983  
 False Easting: 1,000,000.0000  
 False Northing: 500,000.0000  
 Central Meridian: -72.7500  
 Standard Parallel 1: 41.2000  
 Standard Parallel 2: 41.8667  
 Latitude Of Origin: 40.8333  
 Linear Units: Foot US

Scale in Feet  
 0 50 100 W E  
 1" = 100'

Revised: 12/11/2015

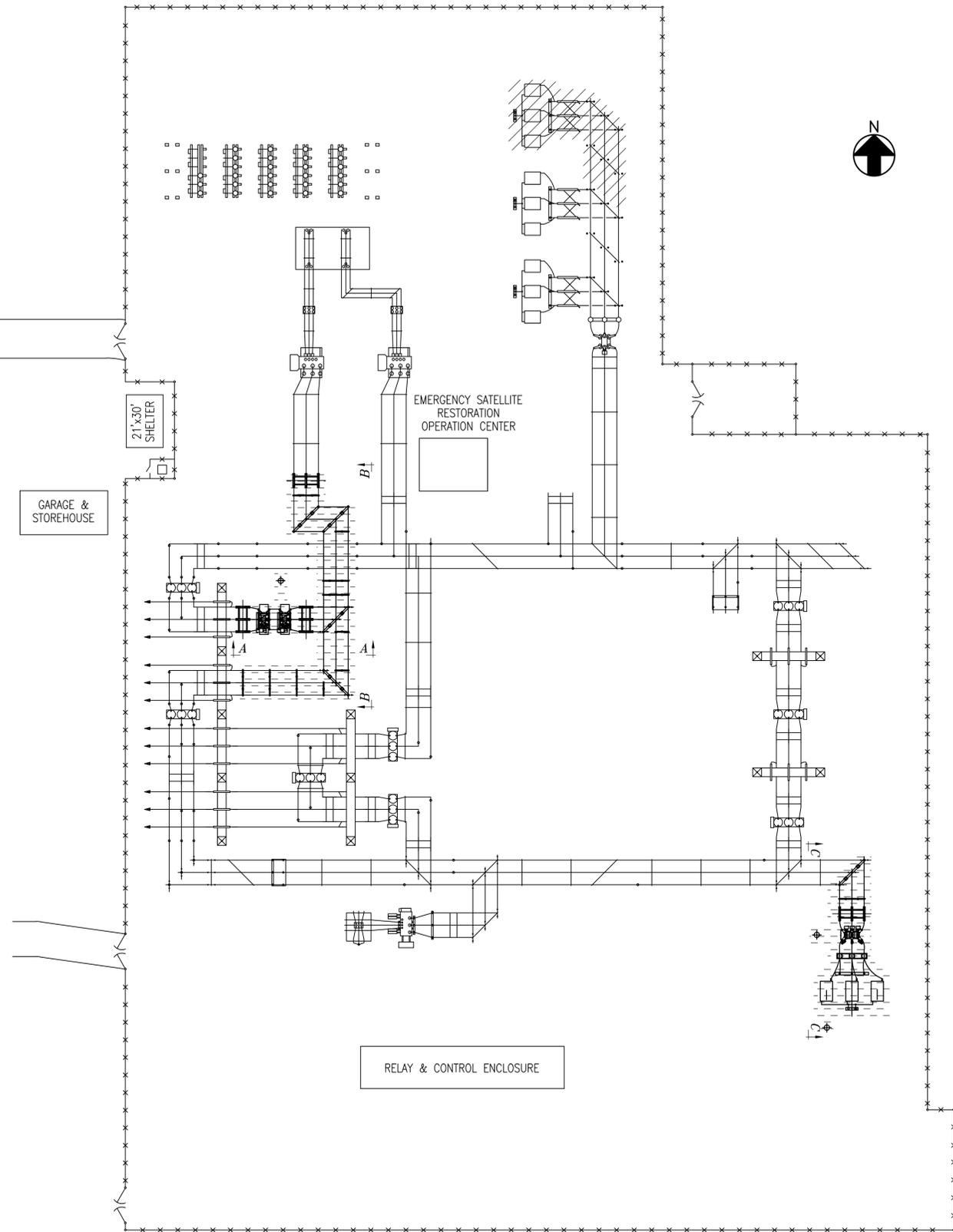
**EVERSOURCE**

**AECOM**

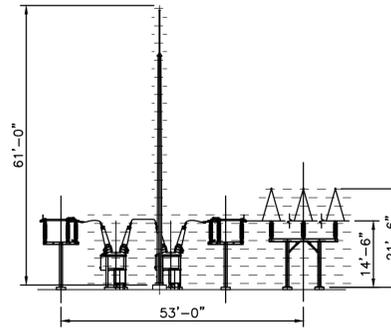
Sheet 3 of 3

**EXHIBIT C.2**

**DRAWING: PROPOSED BERLIN SUBSTATION  
MODIFICATIONS**

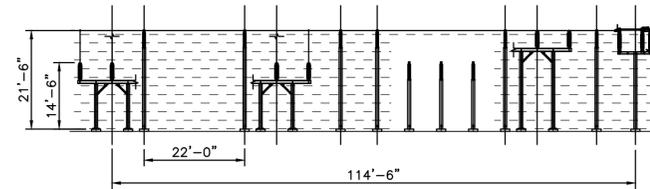


PLAN VIEW  
 0 20' 40' 80'  
 SCALE IN FEET



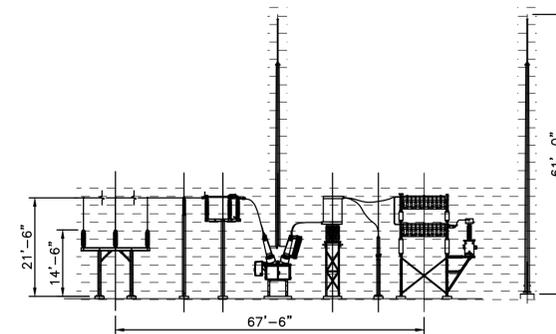
SECTION A-A

0 10' 20' 40'  
 SCALE IN FEET



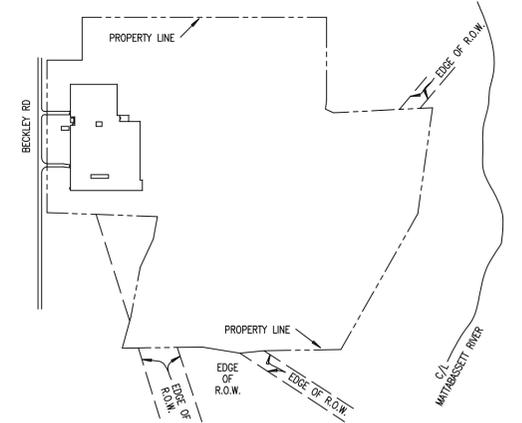
SECTION B-B

0 10' 20' 40'  
 SCALE IN FEET



SECTION C-C

0 10' 20' 40'  
 SCALE IN FEET



LOCATION PLAN

0 600' 1200'  
 SCALE IN FEET

LEGEND

- PROPOSED ADDITION
- TO BE REMOVED

REV. 3 - 12/15/15  
 SUBSTATION ADDITION

REVISIONS DURING CONSTRUCTION			
NO.	DESCRIPTION	DATE	BY

**EVERSOURCE**  
 ENERGY

TITLE			
BERLIN SUBSTATION YARD ARRANGEMENT - PLAN & SECTIONS			
BERLIN, CT			
BY	DWG	APP	APP
AJM (BMcD)	MAC (BMcD)	DPK (BMcD)	JWM (BMcD)
DATE	DATE	DATE	DATE
7/8/15			
H-SCALE	SIZE	FIELD BOOK & PAGES	
AS NOTED	D		
V-SCALE	V.S.	R.E. DWG	
N/A			
R.E. PROJ. NUMBER	NUSCO		
	10706-92001		