

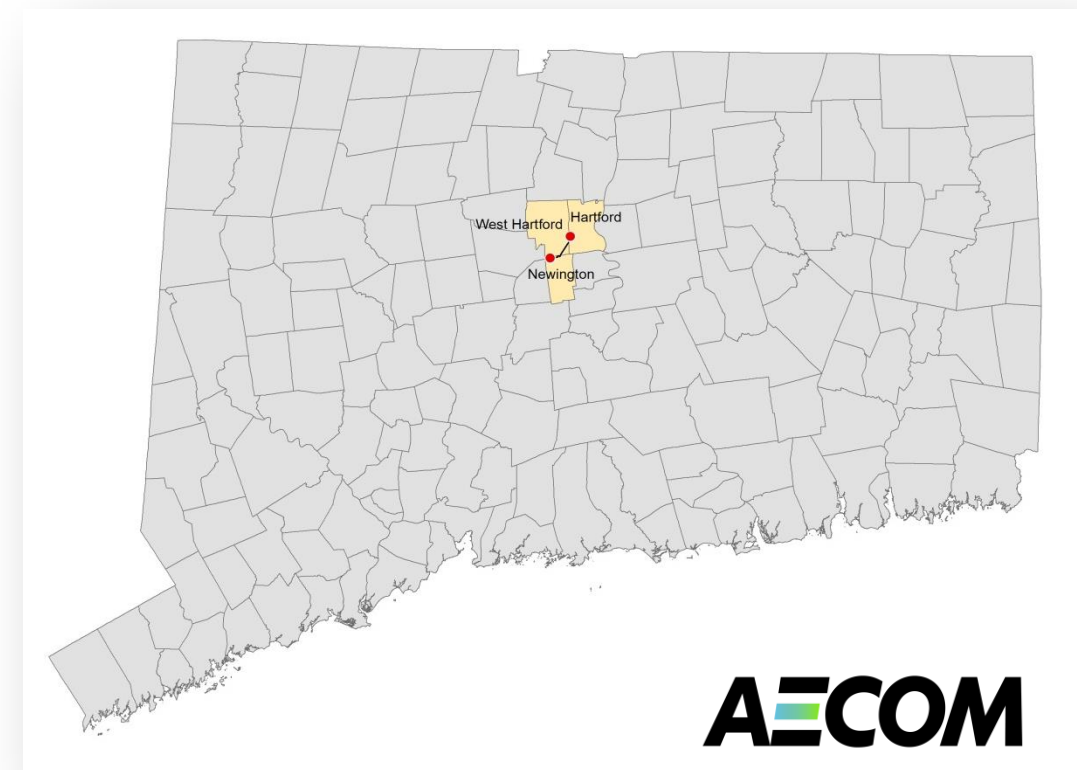


**GREATER HARTFORD-CENTRAL CONNECTICUT RELIABILITY PROJECT**

**DEVELOPMENT AND MANAGEMENT PLAN  
FOR  
MODIFICATIONS TO THE NEWINGTON AND SOUTHWEST HARTFORD SUBSTATIONS  
AND NEWINGTON TAP**

**VOLUME 1-SS/TAP  
APPENDICES**

**JULY 2018**



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**GREATER HARTFORD-CENTRAL CONNECTICUT RELIABILITY PROJECT  
DEVELOPMENT AND MANAGEMENT PLAN FOR  
MODIFICATIONS TO THE NEWINGTON AND SOUTHWEST HARTFORD  
SUBSTATIONS AND NEWINGTON TAP  
VOLUME 1-SS/TAP APPENDICES\***

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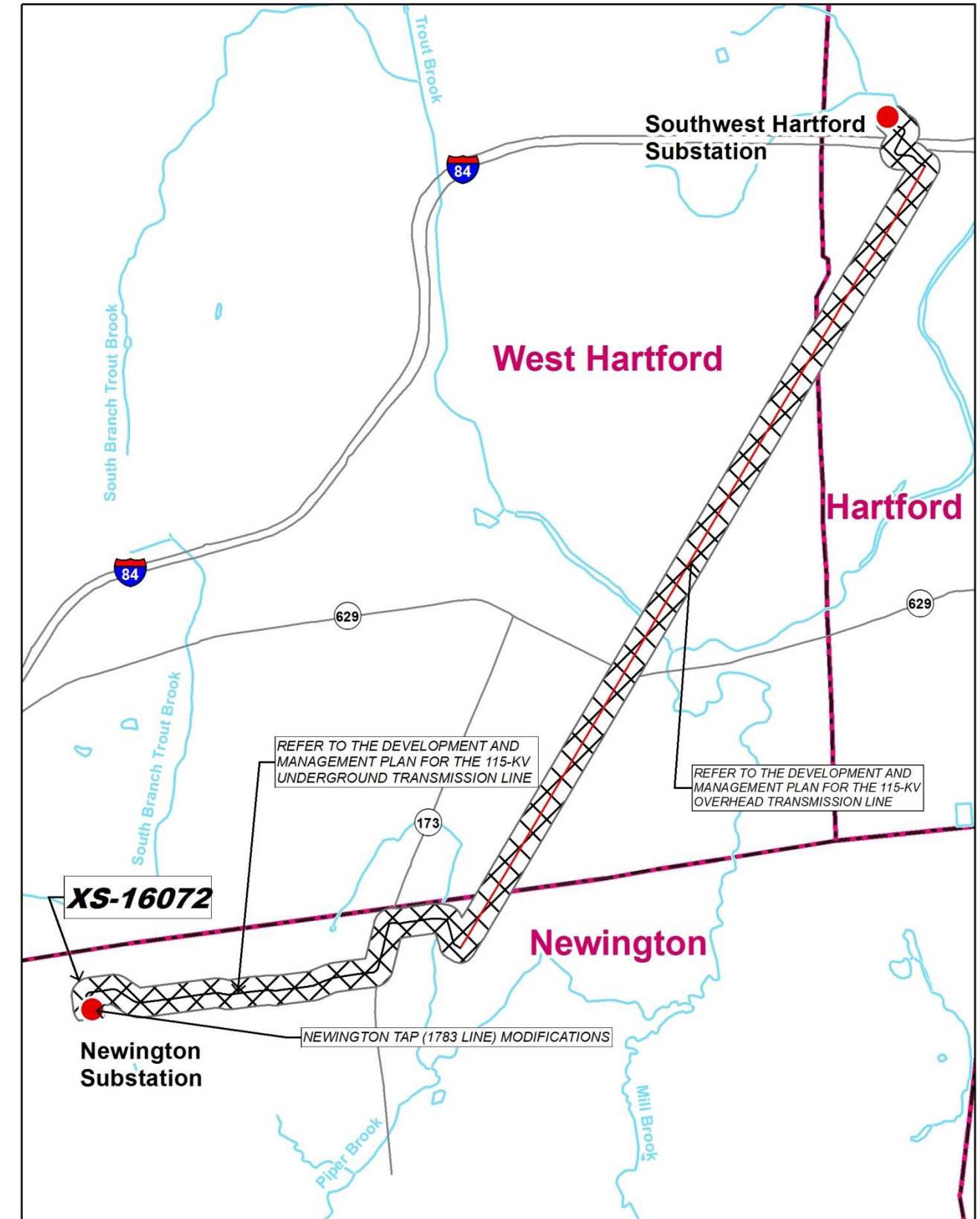
EXHIBIT B.1	USGS / MAP SHEET INDEX (1:24,000 SCALE)
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\* Eversource elected to prepare three Development and Management (D&M) Plans for the Greater Hartford-Central Connecticut Reliability Project: one for the substations and Newington Tap modifications, and two for the 115-kV transmission line (one for the overhead line segment and one for the underground line segment). This D&M Plan addresses all construction activities for the modifications at Newington and Southwest Hartford substations, as well as the modifications to Newington Tap.



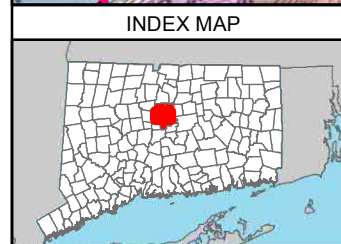
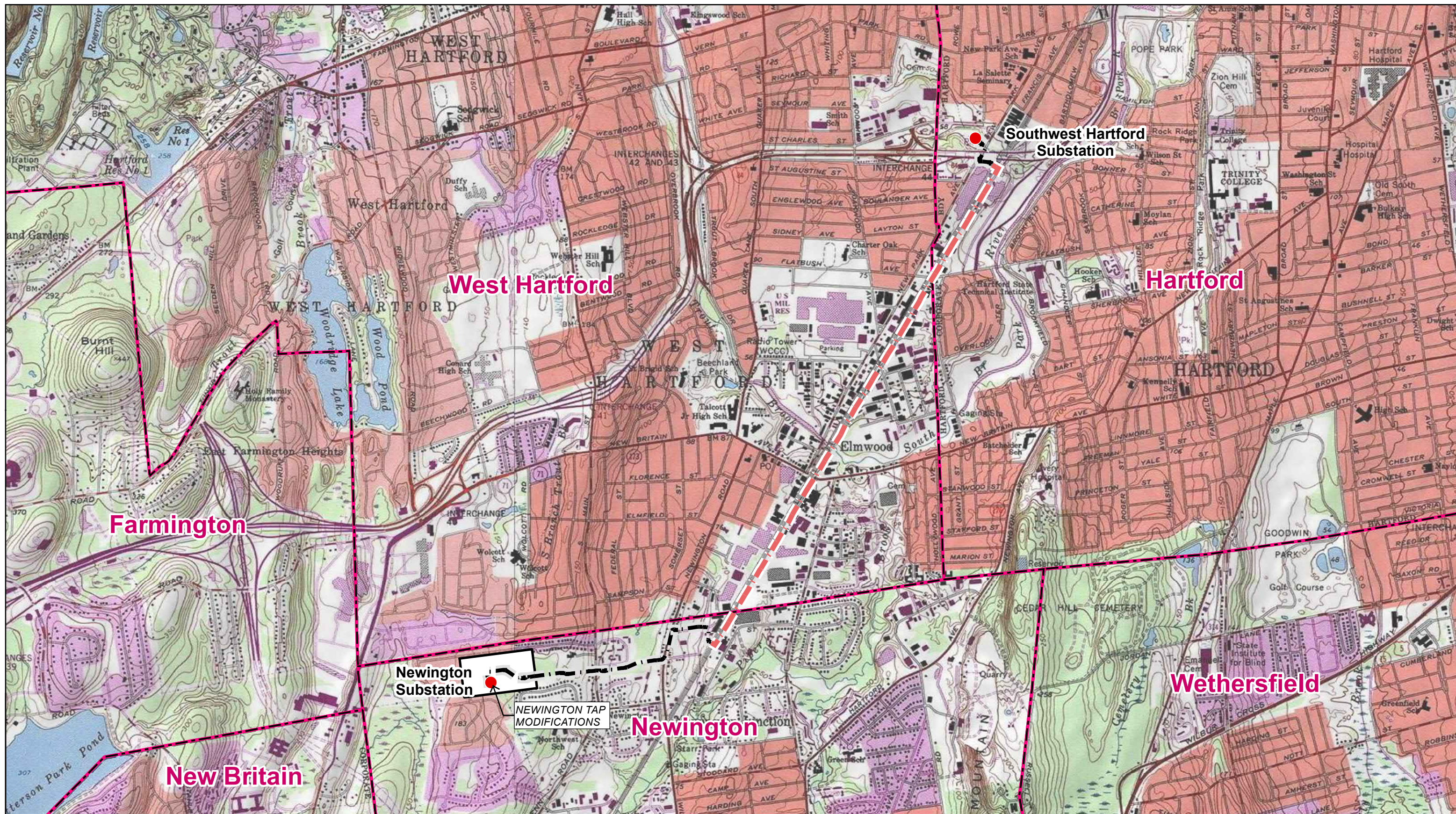
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# **APPENDIX A**

## **NEWINGTON SUBSTATION & NEWINGTON TAP**

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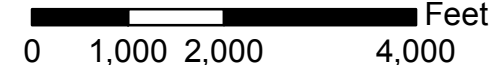
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- Legend**
- Substation
  - - - Overhead Eversource Line
  - - - Underground Eversource Line
  - Map Sheet
  - Municipal Boundary



1 inch = 2,000 feet



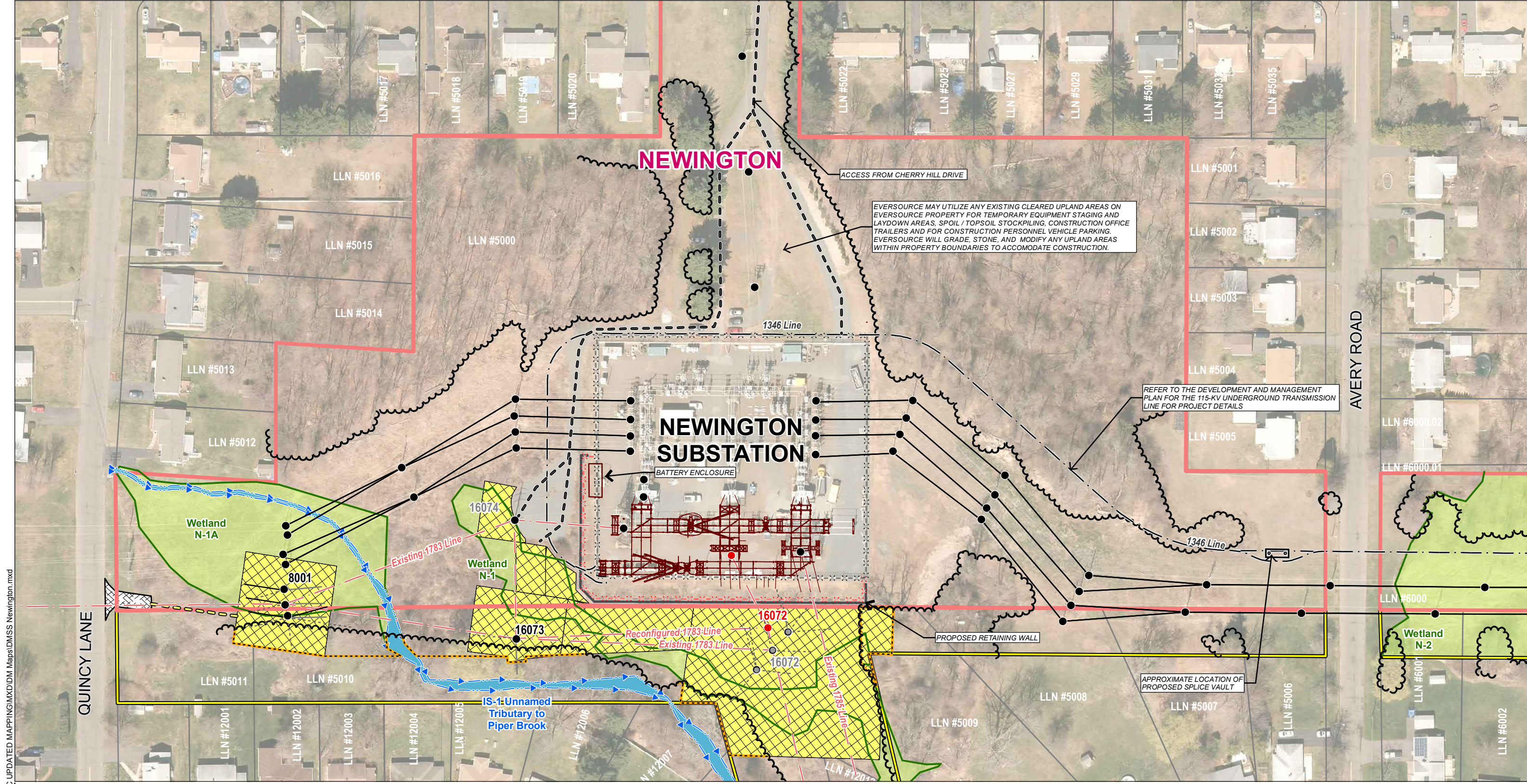
<b>EVERSOURCE</b>			
Greater Hartford-Central Connecticut Reliability Project (GHCCRP) Newington Substation & Newington Tap Newington, CT			
Exhibit A.1: USGS / Map Sheet Index		<b>AECOM</b>	
NO. DATE	REVISIONS	BY CHK APP APP	3/8/2018

Appendix A

Greater Hartford-Central Connecticut Reliability Project (GHCCRP)  
 Map sheet 1 – Owner/Direct Abutter List (Line List as of 1/10/2018)

Line List Number	Town	Site Address	Owner Name
5000	NEWINGTON	185 CHERRY HILL DRIVE	THE CONNECTICUT LIGHT & POWER COMPANY (EVERSOURCE)
5001	NEWINGTON	57 AVERY ROAD	ALISHA GIANNANTONIO
5002	NEWINGTON	51 AVERY ROAD	DONALD B & EILEEN S LU ROBERTS ET AL
5003	NEWINGTON	45 AVERY ROAD	CHRIS J & CAITLIN Q O'NEILL
5004	NEWINGTON	41 AVERY ROAD	RONALD A WHITE
5005	NEWINGTON	35 AVERY ROAD	RICHARD J CANELLO
5006	NEWINGTON	7 AVERY ROAD	KIU MAN YEUNG
5007	NEWINGTON	124 BARNARD DRIVE	SABEENA ARORA
5008	NEWINGTON	128 BARNARD DRIVE	MITCHELL R SCOTT
5009	NEWINGTON	132 BARNARD DRIVE	DANIEL LUDZINSKI
5010	NEWINGTON	156 RESERVOIR ROAD	TOWN OF NEWINGTON
5011	NEWINGTON	16 QUINCY LANE	SAMUEL WEITZ
5012	NEWINGTON	34 QUINCY LANE	ALDINA C PORTAL
5013	NEWINGTON	40 QUINCY LANE	JOHN E JR & DOROTHY D GUYAN
5014	NEWINGTON	46 QUINCY LANE	JENNIFER L CYR
5015	NEWINGTON	52 QUINCY LANE	MICHELINA BREININGER
5016	NEWINGTON	58 QUINCY LANE	JOSE E & ROSA REIS
5017	NEWINGTON	213 CHERRY HILL DRIVE	LENA J GUBKIN
5018	NEWINGTON	207 CHERRY HILL DRIVE	ERIN PIETROWICZ
5019	NEWINGTON	201 CHERRY HILL DRIVE	JASON BOURGEOIS
5020	NEWINGTON	195 CHERRY HILL DRIVE	THOMAS J BASCETTA JR
5022	NEWINGTON	171 CHERRY HILL DRIVE	ROBERT F & CARYL B & KELLY RYDER
5025	NEWINGTON	165 CHERRY HILL DRIVE	RALPH W & MARIANNE HAWKES
5027	NEWINGTON	159 CHERRY HILL DRIVE	KAMI ANTUNES
5029	NEWINGTON	153 CHERRY HILL DRIVE	REICH THECLA COVELLE
5031	NEWINGTON	147 CHERRY HILL DRIVE	DAVID R CAMERON
5033	NEWINGTON	141 CHERRY HILL DRIVE	NANCY SHORTELL
5035	NEWINGTON	135 CHERRY HILL DRIVE	JONATHAN SEILER
6000	NEWINGTON	32 AVERY ROAD	THE CONNECTICUT LIGHT & POWER COMPANY (EVERSOURCE)
6000.01	NEWINGTON	41 WEST HARTFORD ROAD	TEMPLE SINAI OF NEWINGTON INC
6000.02	NEWINGTON	36 AVERY ROAD	JUDITH A BERGSTROM
6001	NEWINGTON	8 AVERY ROAD	JOSEPH E GUZZO & KATHERINE P LU
6002	NEWINGTON	102 BARNARD DRIVE	MARIA MARTINS
12000	NEWINGTON	6 QUINCY LANE	ARNOLD E GUYETTE & M LU GERMAINE LU, GARY A GUYETTE ETAL SURV
12001	NEWINGTON	64 THORNTON DRIVE	IRVING & BETTY W SEIDMAN
12002	NEWINGTON	58 THORNTON DRIVE	JOSEPH E GAVIN
12003	NEWINGTON	54 THORNTON DRIVE	NICHOLAS J MITROU
12004	NEWINGTON	48 THORNTON DRIVE	CYNTHIA P SCALORA
12005	NEWINGTON	42 THORNTON DRIVE	ELIZABETH B DOUGHERTY ESTATE C/O RONALD W DOUGHTERY EXECUTOR
12006	NEWINGTON	38 THORNTON DRIVE	LINDA C ISARAI
12007	NEWINGTON	34 THORNTON DRIVE	STEPHEN A & JENNIFER A PROUTY SURV
12008	NEWINGTON	30 THORNTON DRIVE	SANDRA M TILLEY





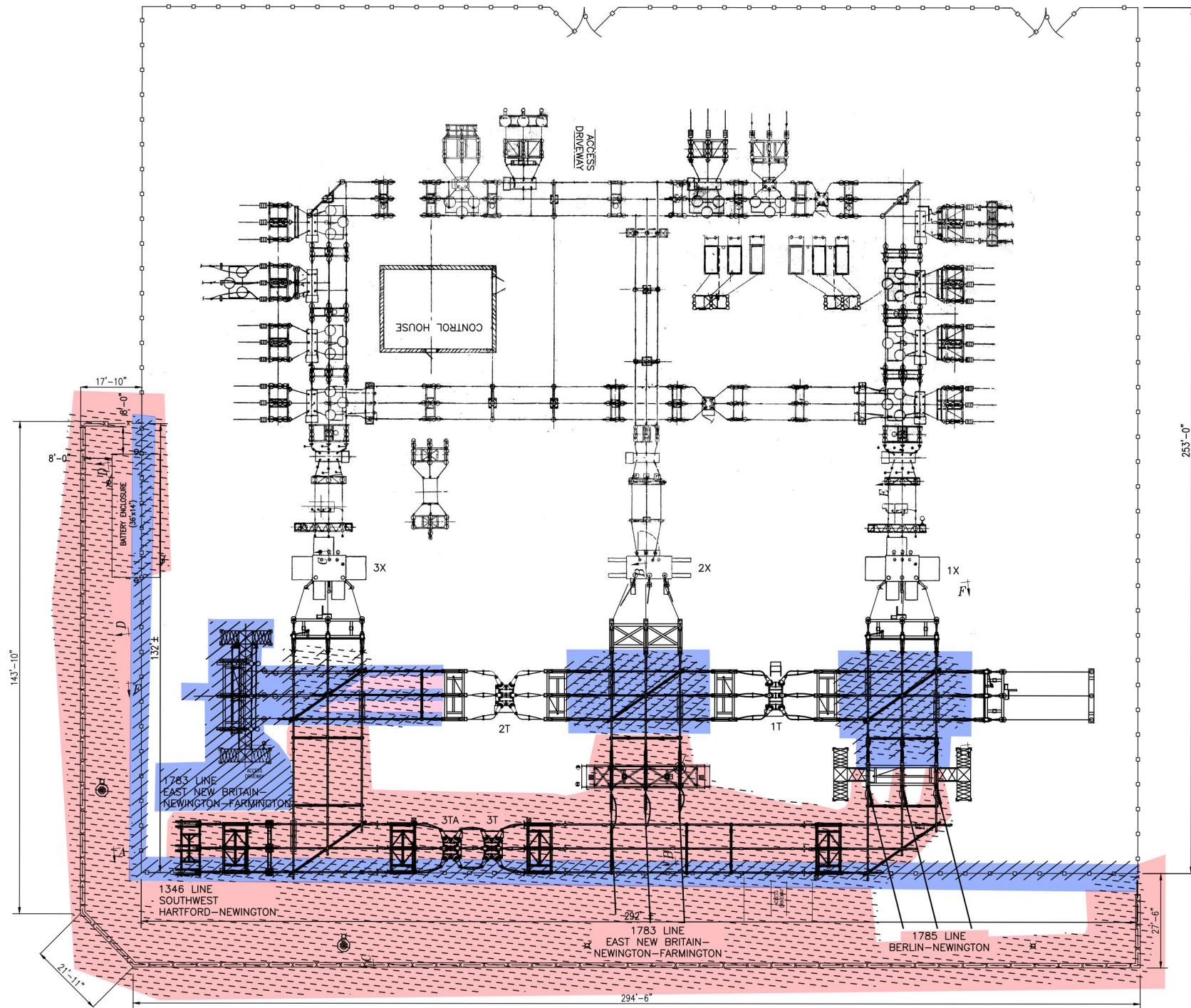
Document Path: M:\GIS\Projects\Projects\Eversource\GHCC UPDATED MAPPING\XDM Maps\DMSS Newington.mxd

**General Notes:**

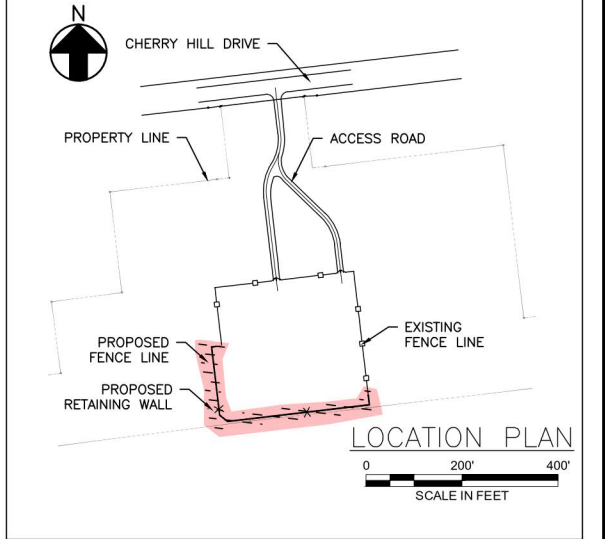
- The limits of tree clearing, as shown, define areas where vegetation removal and grubbing, grading, and excavation may occur. Minor deviations may be required in some locations. Additionally, danger or hazard tree removal may be required outside of the vegetation removal limits. Vegetation removal equipment may operate anywhere within the limits of vegetation management in uplands. In wetlands and across water resources, temporary clearing routes (consisting of construction mats or equivalent) would be used by the clearing contractor only (these are not depicted on the map sheets and will be determined based on field conditions at the time of construction). Refer to detail sheets 1 & 2 in Appendix C of Volume 1 of the D&M Plan for additional measures in wetland resource areas.
- All work will be conducted in accordance with the relevant portions of Eversource's "Best Management Practices Manual for Massachusetts and Connecticut (September 2016)" (BMP manual), unless more stringent project-specific measures apply. All work will be conducted in accordance with the requirements of siting approvals from the Council and regulatory approvals from the U.S. Army Corps of Engineers and the Connecticut Department of Energy and Environmental Protection, and with all project protocols. Refer to detail sheets 1-4 in Appendix C of Volume 1 of the D&M Plan.
- Erosion and Sedimentation Control Measures will be installed during construction, as required, to comply with the provisions (as applicable) of the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, Eversource's BMP manual, and regulatory approvals.
- Paved surfaces shall be protected during construction as necessary and any damage to such surfaces shall be repaired at the expense of the contractor.
- Spills resulting from construction activities shall be stockpiled and will be disposed of in accordance with regulatory requirements for the project. Spills shall not be spread within yards/lawns, or sensitive environmental resource areas. Stockpiling of soil and / or topsoil can occur within upland areas adjacent to the trench or within existing cleared upland areas of ROW.

	<ul style="list-style-type: none"> <li>● Existing Structure to be Removed Str Label</li> <li>● Proposed Structure Str Label</li> <li>● Existing Structure Str Label</li> <li>— Existing Eversource 1783 Line</li> <li>— Existing Eversource Distribution Line</li> <li>— Eversource Owned Property</li> <li>— Existing Right-of-Way</li> </ul>	<ul style="list-style-type: none"> <li>1346 — Underground Eversource Line</li> <li>1346 — Overhead Eversource Line</li> <li>— Proposed Fence</li> <li>— Existing Fence</li> <li>— Approximate Tree Line</li> <li>— Vegetation Limit After Construction</li> </ul>	<ul style="list-style-type: none"> <li>— Delineated Intermittent Watercourse</li> <li>— Delineated Perennial Watercourse</li> <li>— Delineated Wetland Boundary Outline</li> <li>— Field Delineated Wetland</li> <li>— Floodway</li> <li>— FEMA 100-Year Flood Zone</li> <li>LLN # — LLNs/Property Owner</li> </ul>	<ul style="list-style-type: none"> <li>— Existing Access</li> <li>— Proposed Access</li> <li>— Proposed Guy Wire</li> <li>— Existing Guy Wire</li> <li>— Existing Guy Wire to be Removed</li> <li>— Municipal Boundary</li> <li>— Parcel Boundary</li> </ul>	<ul style="list-style-type: none"> <li>— Construction Tracking Pad</li> <li>— Temporary Construction Matting</li> <li>— Temporary Workspace</li> <li>— Stone Work Pad</li> <li>— Area of Disturbance</li> </ul>	<p>1" = 100' Scale in Feet</p> <p>0 50 100</p> <p>*No Highly Erodible Soils Present in Plan View Extent</p>	<p><b>EVERSOURCE</b></p> <p>Greater Hartford-Central Connecticut Reliability Project (GHCCRP) Newington Substation &amp; Newington Tap Newington, CT</p>	<p>Exhibit A.2: Aerial Map Sheet</p> <p>4/9/2018</p>	<p><b>AECOM</b></p>
	<p>West Hartford      Hartford</p> <p>Newington</p>								

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PLAN VIEW



LEGEND

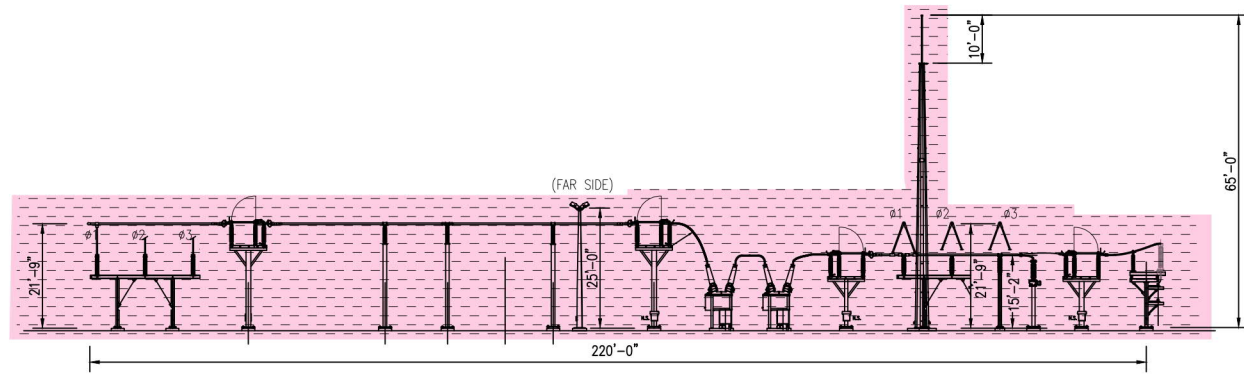
- EXISTING SUBSTATION FENCE
- EXTENDED SUBSTATION FENCE
- PROPOSED RETAINING WALL
- PROPOSED ADDITIONS
- PROPOSED REMOVALS

EXHIBIT A.3 SHEET 1  
 PROPOSED ADDITIONS  
 AND REMOVALS

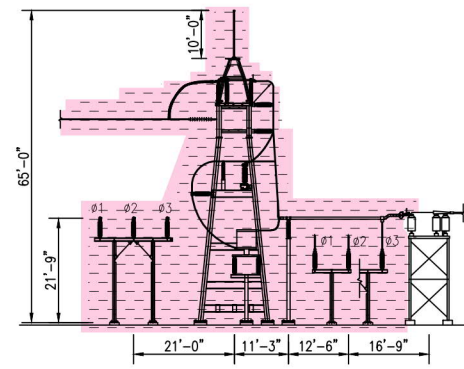


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 NEWINGTON SUBSTATION  
 YARD ARRANGEMENT - PLAN AND SECTIONS  
 CONNECTICUT SITING COUNCIL

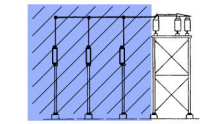
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R.E. PROJ. NUMBER	DWG NO: SK-19402-92001 PG 1		



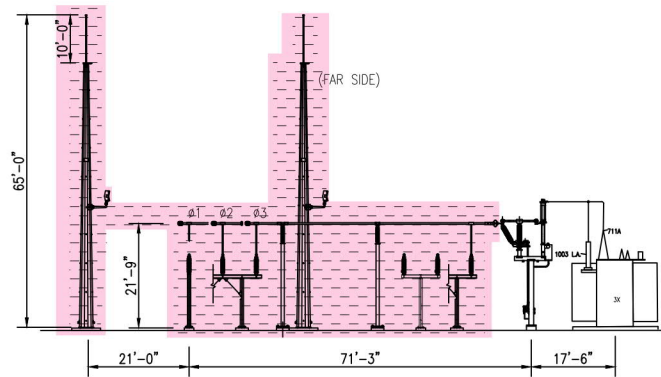
SECTION A-A  
PROPOSED ADDITIONS  
0 10' 20' 40'  
SCALE IN FEET



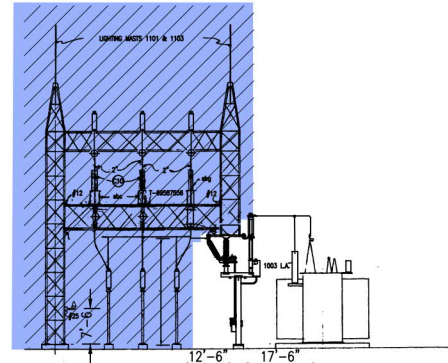
SECTION B-B  
PROPOSED ADDITIONS  
0 10' 20' 40'  
SCALE IN FEET



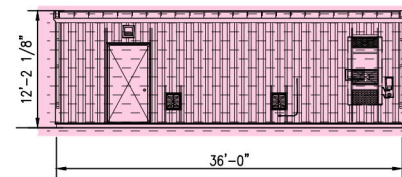
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PROPOSED REMOVALS  
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SCALE IN FEET



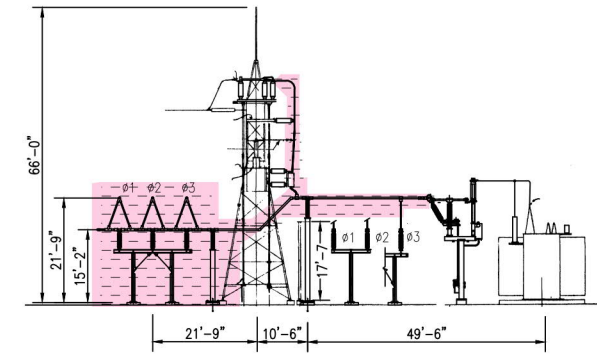
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PROPOSED ADDITIONS  
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SCALE IN FEET



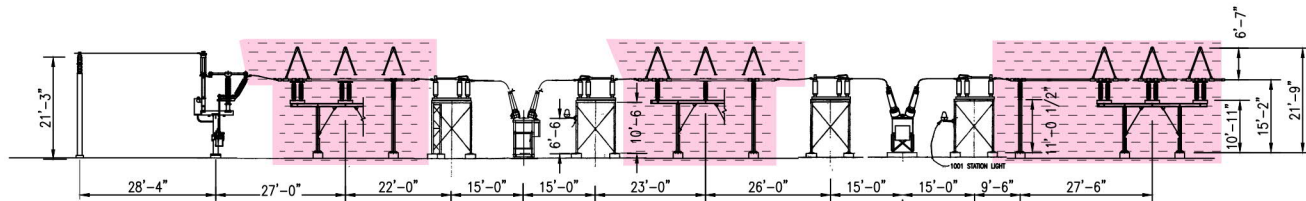
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PROPOSED REMOVALS  
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SCALE IN FEET



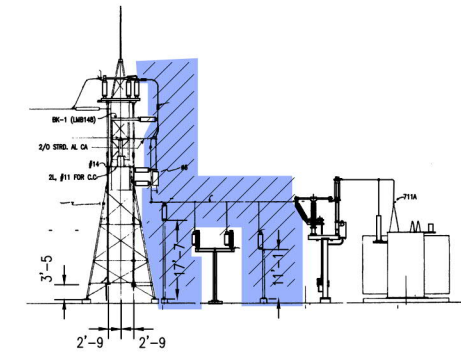
SECTION D-D  
PROPOSED ADDITIONS  
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SCALE IN FEET



SECTION E-E  
PROPOSED ADDITIONS  
0 10' 20' 40'  
SCALE IN FEET



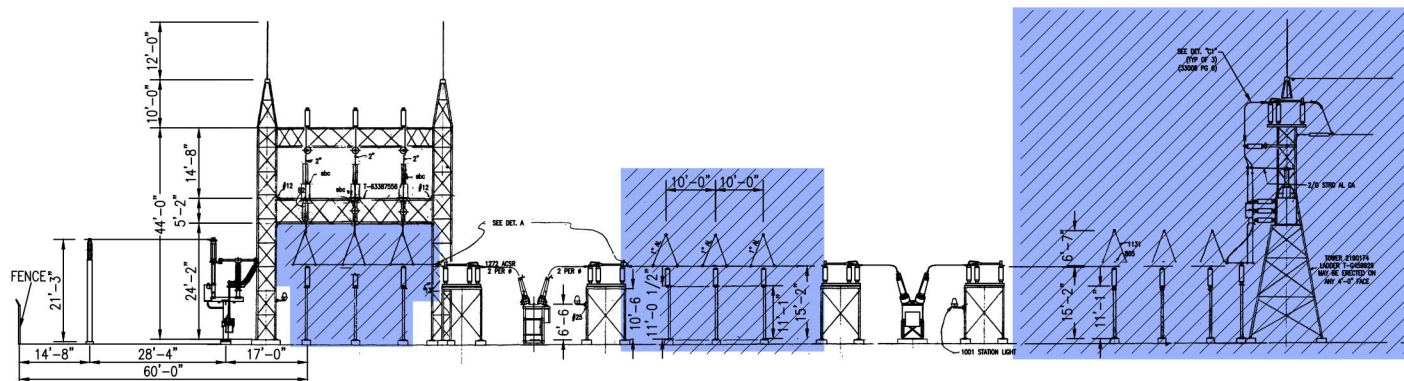
SECTION F-F  
PROPOSED ADDITIONS  
0 10' 20' 40'  
SCALE IN FEET



SECTION E-E  
PROPOSED REMOVALS  
0 10' 20' 40'  
SCALE IN FEET

LEGEND

- PROPOSED ADDITIONS
- PROPOSED REMOVALS



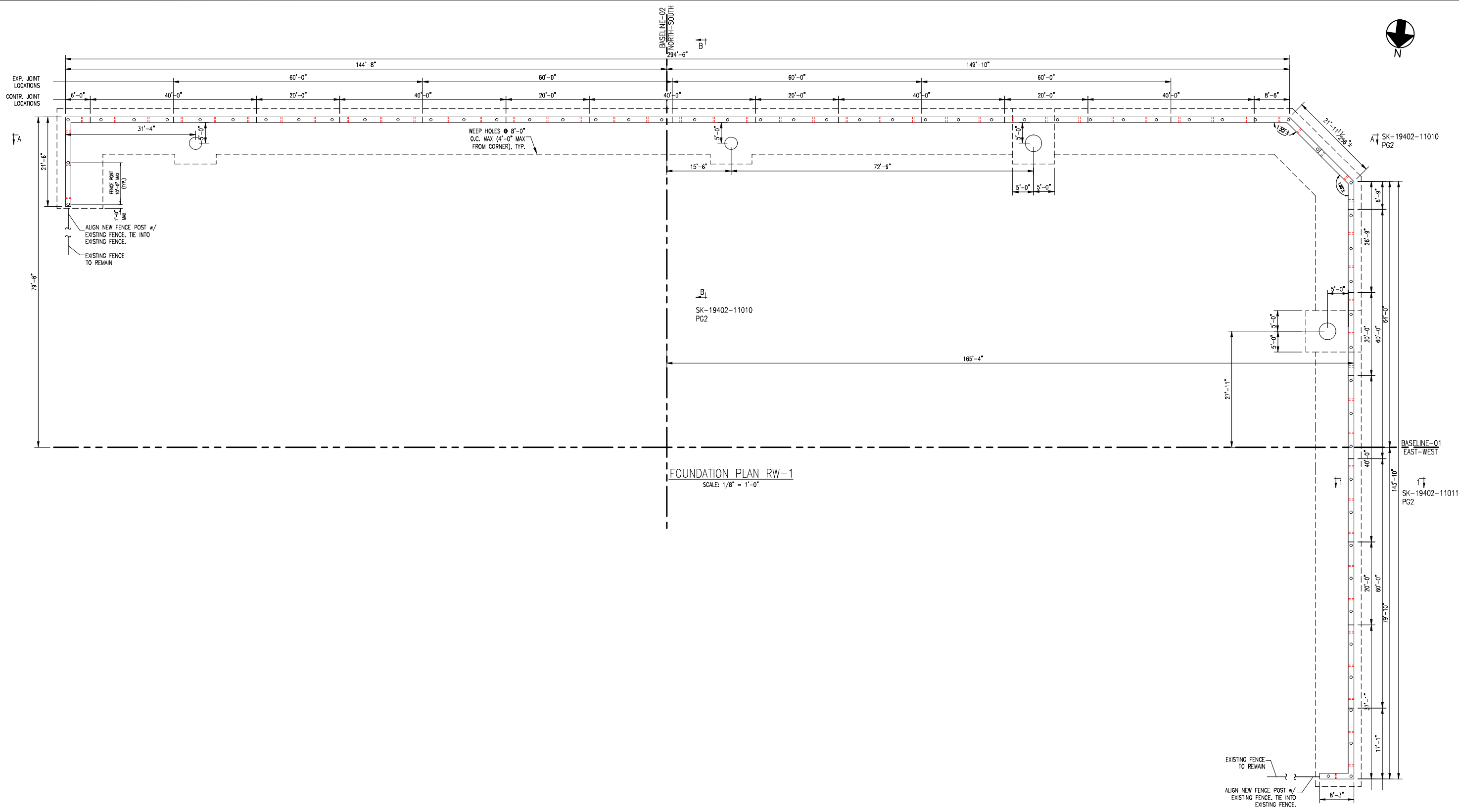
SECTION F-F  
PROPOSED REMOVALS  
0 10' 20' 40'  
SCALE IN FEET

EXHIBIT A.3 SHEET 2  
PROPOSED ADDITIONS  
AND REMOVALS



TITLE: GREATER HARTFORD-CENTRAL CONNECTICUT RELIABILITY PROJECT  
NEWINGTON SUBSTATION  
YARD ARRANGEMENT - PLAN AND SECTIONS  
CONNECTICUT SITING COUNCIL

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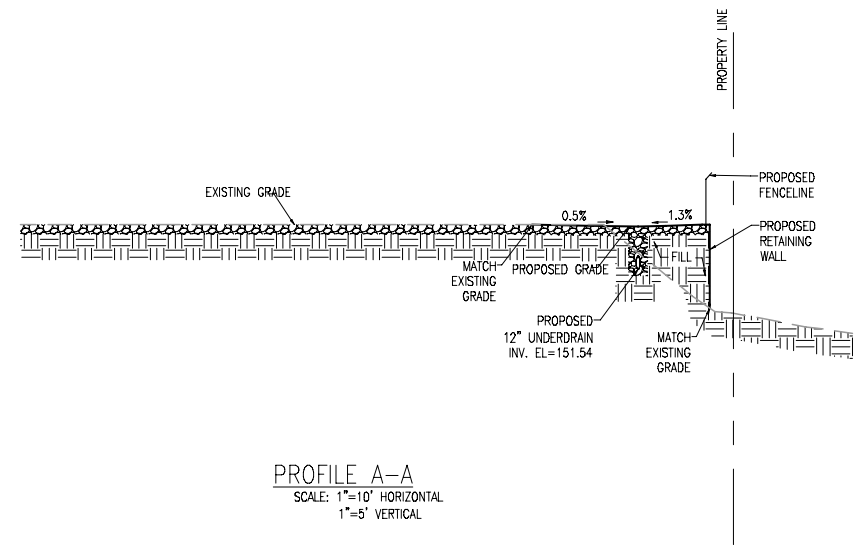


**EVERSOURCE ENERGY**

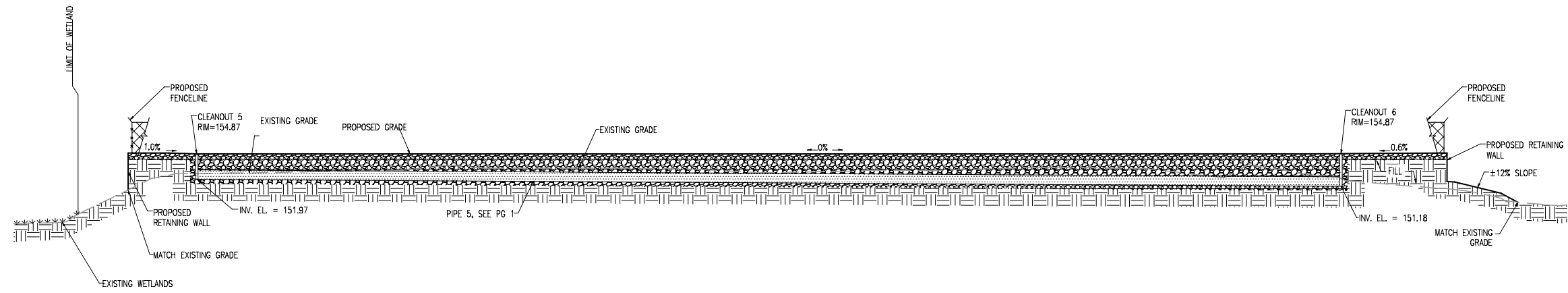
GREATER HARTFORD-CENTRAL CONNECTICUT RELIABILITY PROJECT  
 NEWINGTON SUBSTATION  
 RETAINING WALL - RW1  
 CONNECTICUT SITING COUNCIL

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V-SCALE		V.S.	
P.L. PROJ. NUMBER	DWG NO.		SK-19402-11011 PG 1

EXHIBIT A.4 SHEET 1  
 PROPOSED ADDITIONS



PROFILE A-A  
SCALE: 1"=10' HORIZONTAL  
1"=5' VERTICAL



PROFILE B-B  
SCALE: 1"=10' HORIZONTAL  
1"=5' VERTICAL

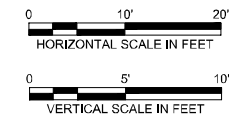
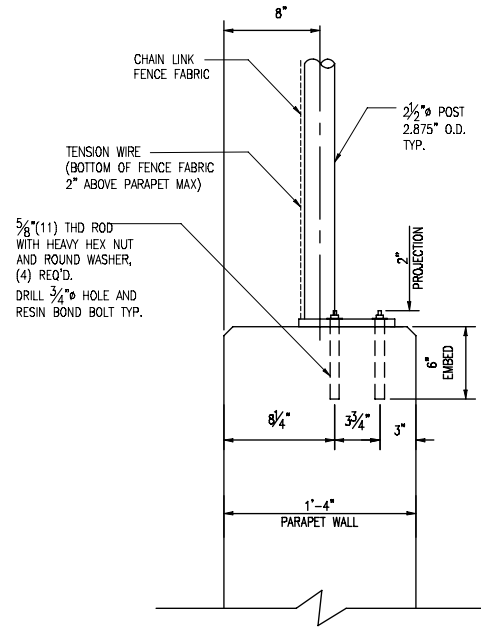


EXHIBIT A.4 SHEET 2  
PROPOSED ADDITIONS

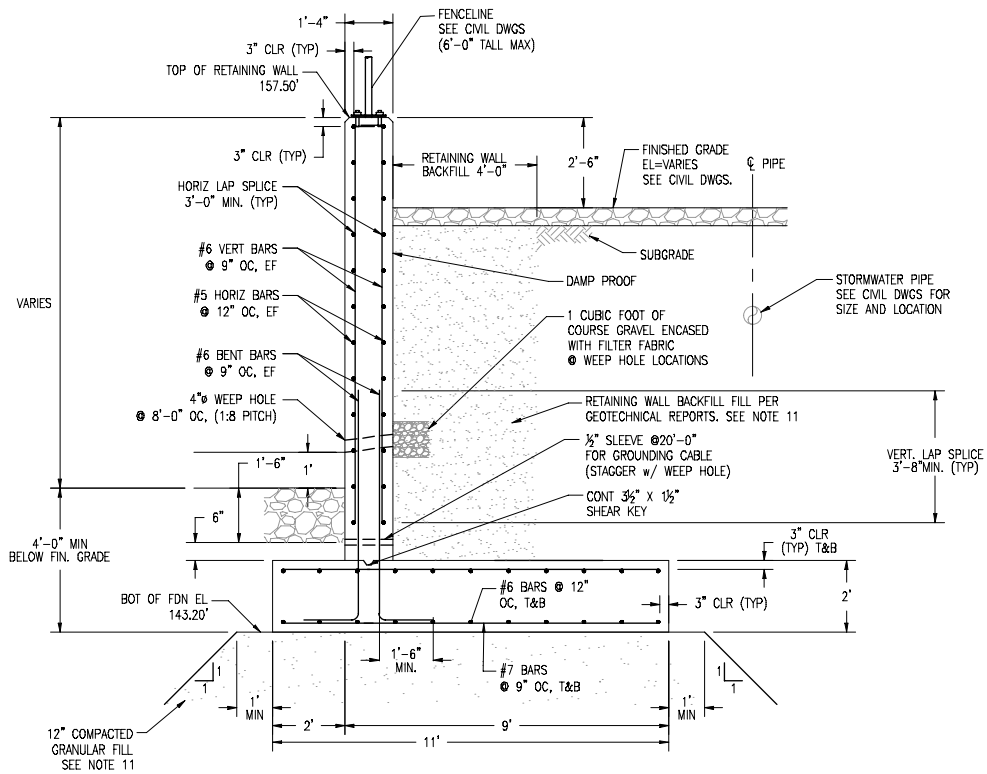


GREATER HARTFORD-CENTRAL CONNECTICUT RELIABILITY PROJECT  
NEWINGTON SUBSTATION  
YARD EXPANSION - GRADING CROSS SECTIONS  
CONNECTICUT SITING COUNCIL

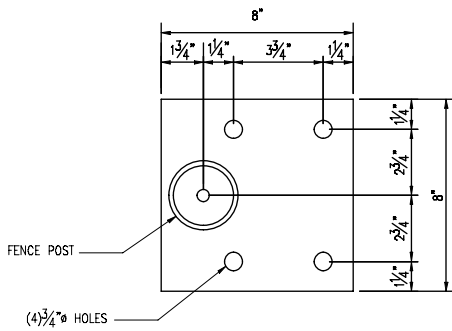
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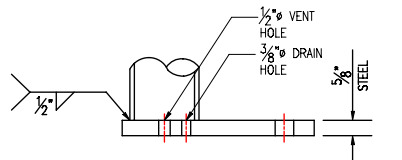
ELEVATION AT PARAPET  
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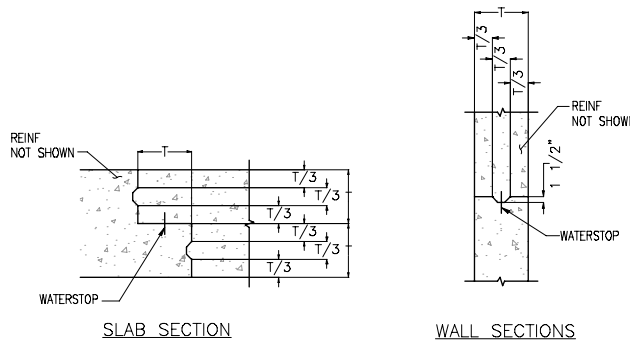
SECTION 1-1  
SCALE: 3/8" = 1'-0"



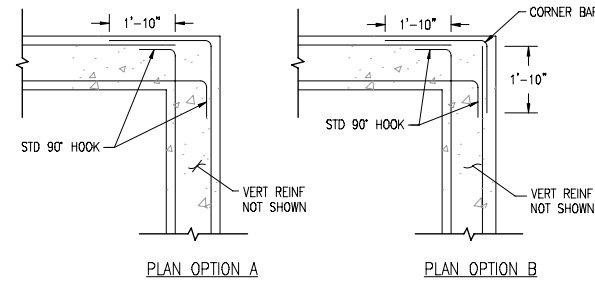
BASE PLATE TOP VIEW  
NOT TO SCALE



BASE PLATE SECTION  
NOT TO SCALE

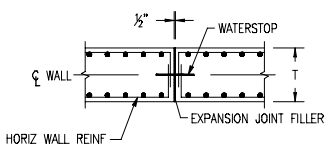


NOTE:  
REINFORCEMENT CONTINUOUS THRU CONSTRUCTION JOINT.  
TYPICAL CONSTRUCTION JOINT DETAILS AT SLAB AND RETAINING WALL  
NOT TO SCALE

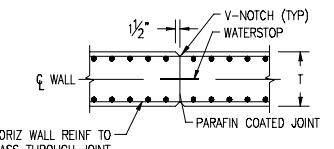


NOTES:  
1. UNLESS OTHERWISE INDICATED, THE CONTRACTOR HAS THE OPTION OF REINFORCING CORNERS IN ACCORDANCE WITH OPTION A OR OPTION B.  
2. DETAILS SHOWN ABOVE ARE TYPICAL.

HORIZONTAL REINFORCEMENT DETAILS AT CORNERS  
NOT TO SCALE



TYPICAL EXPANSION JOINT DETAILS  
NOT TO SCALE



TYPICAL VERTICAL CONTRACTION JOINT (PLAN VIEW)  
NOT TO SCALE

GENERAL NOTES:

- ALLOWABLE SOIL BEARING PRESSURE OF 3000 PSF DESIGNED FOR RETAINING WALL FDN PER GEOTECHNICAL REPORT PROJECT NO. J2165030 BY TERRACON DATED APRIL 22, 2016.
- THE SITE DEVELOPMENT CONTRACTOR SHALL CORRELATE ALL DIMENSIONS BETWEEN THE FOUNDATION PLANS, GRADING PLANS, AND ELECTRICAL GENERAL ARRANGEMENT PLANS BEFORE CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
- DEVIATIONS FROM THE DESIGN DRAWINGS SHALL NOT BE PERMITTED WITHOUT PRIOR APPROVAL FROM ENGINEER.
- THE CONCRETE COMPRESSIVE STRENGTH FOR THE RETAINING WALL AND PIERS SHALL BE MINIMUM OF 4000 PSI AT 28 DAYS AS SPECIFIED. CONCRETE SHALL HAVE 5%-7% AIR ENTRAINMENT.
- CONCRETE SHALL BE COVERED AND ALLOWED TO WET CURE.
- USE OF FLY ASH IN CONCRETE IS PROHIBITED.
- ALL EXTERIOR OR EXPOSED CONCRETE SHALL BE CONSOLIDATED BY INTERNAL VIBRATION IN ACCORDANCE WITH ACI 309R-05, "GUIDE FOR CONSOLIDATION OF CONCRETE."
- PROVIDE 1" (MAX) CHAMFER AT ALL HORIZONTAL EXPOSED EDGES ON RETAINING WALL.
- COLD WEATHER CONCRETE METHODS SHALL BE EMPLOYED PER ACI 306R WHEN THE AMBIENT OUTSIDE TEMPERATURE WILL REMAIN BELOW 40F FOR 3 CONSECUTIVE DAYS.
- HOT WEATHER CONCRETE METHODS SHALL BE EMPLOYED PER ACI 305R WHEN THE AMBIENT OUTSIDE TEMPERATURE EXCEEDS 100F OR IF THE PLACED CONCRETE TEMPERATURE EXCEEDS 90F.
- THE MATERIAL USED FOR RETAINING WALL BACKFILL SHALL CONFORM TO THE GRADATION REQUIREMENTS OF CTDOT M.02.06, GRADING B PER THE GEOTECHNICAL REPORT AND SHALL BE COMPACTED TO 92% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557. THE MATERIAL USED FOR GRANULAR BASE SHALL CONFORM TO THE GRADATION REQUIREMENTS OF CTDOT M.02.06, GRADING C PER GEOTECHNICAL REPORT AND SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
- REINFORCING STEEL SHALL BE IN NEW INTERMEDIATE GRADE BILLET STEEL DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60, LATEST REV.
- REINFORCING SHALL BE EQUALLY SPACED UNLESS SHOWN OR NOTED.
- ALL DETAILING, FABRICATION, PLACING AND SUPPORTING OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH ACI 318-05 AND CRSI.
- ALL REINFORCING SHALL BE RIGIDLY SECURED IN POSITION PRIOR TO THE PLACING OF CONCRETE.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:  
(3") CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH  
(2") CONCRETE EXPOSED TO EARTH AND WEATHER
- ALL REINFORCEMENT SHALL BE FREE OF RUST, DIRT, OIL AND MILL SCALE PRIOR TO PLACEMENT OF CONCRETE.
- ALL REINFORCING STEEL IS TO BE SUPPLIED BY THE SITE DEVELOPMENT CONTRACTOR. SITE DEVELOPMENT CONTRACTOR SHALL SECURE CAPS AT FENCE TRANSITION AREAS FROM TOP OF RETAINING WALL TO GRAVEL SURFACE TO PREVENT ACCESS.
- PIERS SHALL BE PLUMB AND LEVEL PIERS TOP SURFACE SHALL BE FINISHED BY STRAIGHT EDGE.
- CONTRACTOR IS TO PROVIDE A "MARKED UP" AS-BUILT TO ENGINEERING IDENTIFYING ALL FIELD CHANGES.
- UPPER PORTION OF DRILL SHAFT WILL BE FORMED AS FOLLOWS, UNLESS NOTED OTHERWISE:  
A) DRILLED SHAFTS WITH DIAMETER LARGER THAN 4'-0" WILL BE FORMED WITH A SLIP FORM. FORM WILL START AT THE TOP OF CONCRETE AND WILL EXTEND TO A MINIMUM OF 1'-0" BELOW GRADE.  
B)
- ALL FOUNDATIONS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE STANDARD ACI-336 3R-93.
- FOUNDATIONS CONTRACTOR SHALL CORRELATE ALL DIMENSIONS BETWEEN THE FOUNDATION PLANS, SECTIONS, AND ELECTRICAL CONDUIT PLANS BEFORE CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
- CONTRACTOR SHALL USE VAC-ALL TO EXCAVATE AT CERTAIN LOCATIONS TO DETERMINE NO UNDERGROUND OBSTRUCTIONS, SUCH AS CONDUIT AND CONDUIT BANKS, CONFLICT WITH NEW FOUNDATIONS PRIOR TO ORDERING OR FABRICATING REINFORCEMENT STEEL. NOTIFY CIVIL ENGINEER IF (EXISTING) CONDUIT IS CONFLICTING WITH CONSTRUCTION WORK.
- FOUNDATION SHALL BEAR ENTIRELY ON EITHER SOIL OR ROCK. FOUNDATION SHALL NOT BE SUPPORTED ON PARTIAL ROCK OR SOIL.

EXHIBIT A.4 SHEET 3  
PROPOSED ADDITIONS

**EVERSOURCE ENERGY**

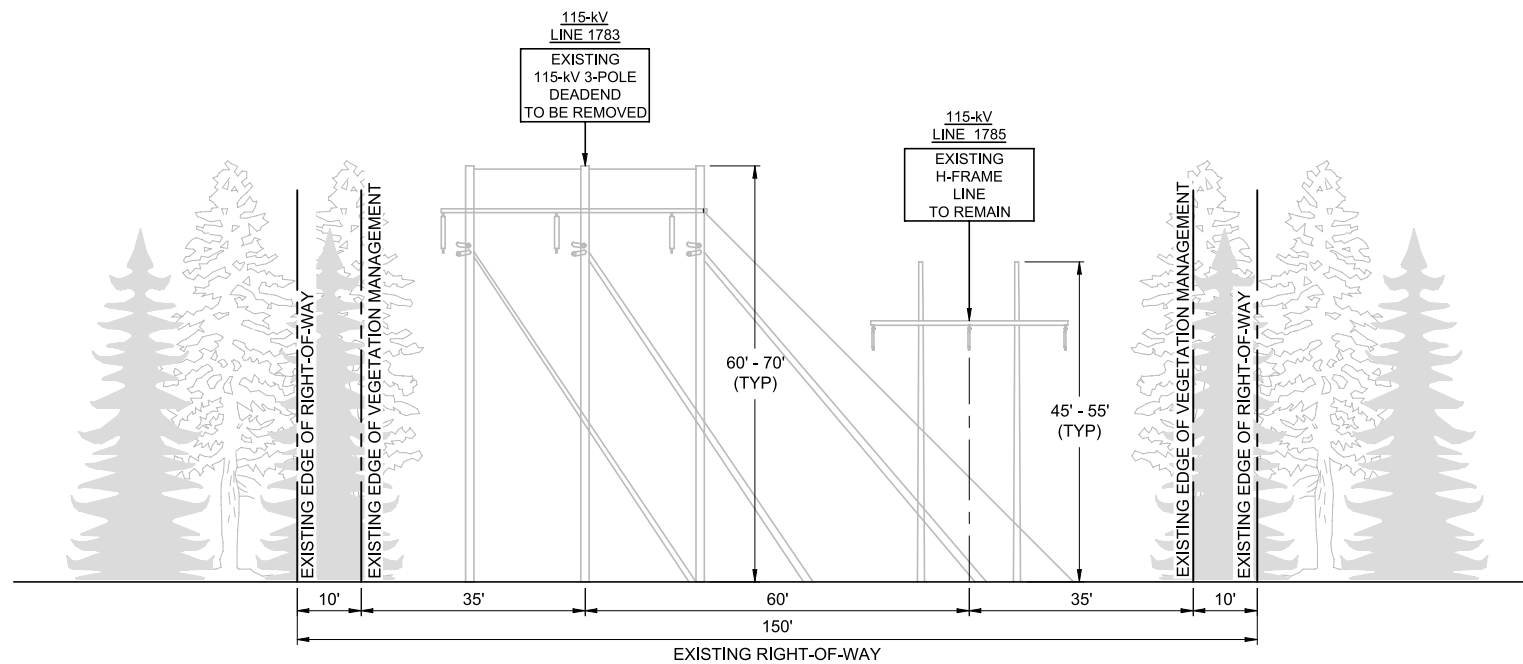
THE GREATER HARTFORD-CENTRAL CONNECTICUT RELIABILITY PROJECT  
NEWINGTON SUBSTATION  
RETAINING WALL DETAILS  
CONNECTICUT SITING COUNCIL

BY	DWG	APP	APP
DATE	DATE	DATE	DATE
H-SCALE	SIZE	FIELD BOOK & PAGES	
V-SCALE	T.S.	R.E. DWG	
REV. PROJ. NUMBER	DWG NO SK-19402-11011 PG 2		

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EXISTING

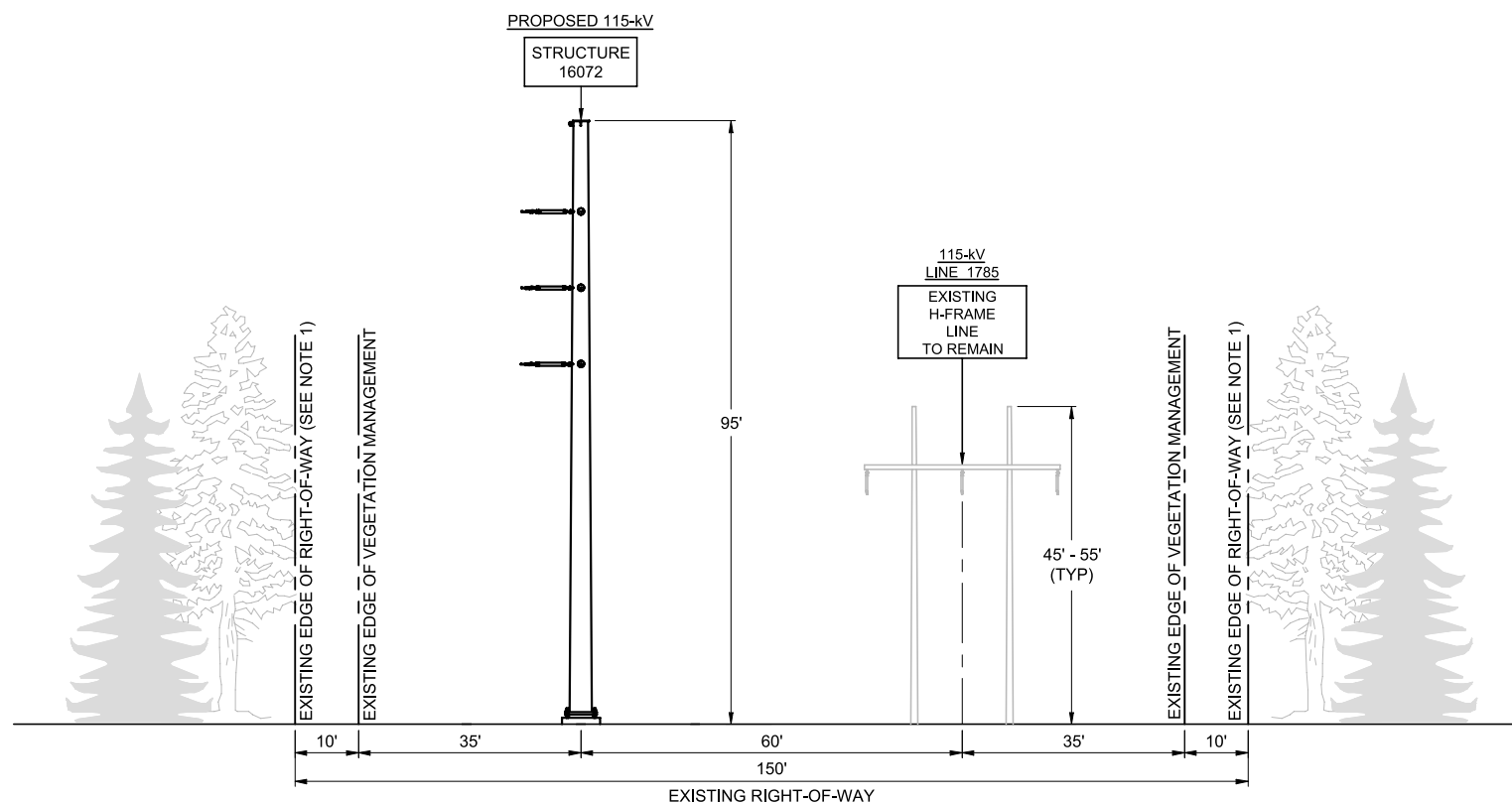


1783 MODIFICATION  
VERTICAL CONFIGURATION

NEAR NEWINGTON S/S  
STRUCTURE 16072

LOOKING  
NORTH

PROPOSED



PROPOSED STRUCTURE 16072  
95 FT TALL SELF-SUPPORTING GALVANIZED STEEL MONOPOLE  
ON DRILLED SHAFT FOUNDATION

NOTE:

- TRIMMING OR CLEARING BEYOND EXISTING EDGE OF VEGETATION MANAGEMENT TO BE PERFORMED AS NECESSARY TO INSTALL TEMPORARY CONSTRUCTION WORK PADS AS ILLUSTRATED ON THE D&M MAPSHEET. SUCH VEGETATION REMOVAL WILL NOT EXTEND BEYOND THE LIMITS OF EVERSOURCE'S ROW.

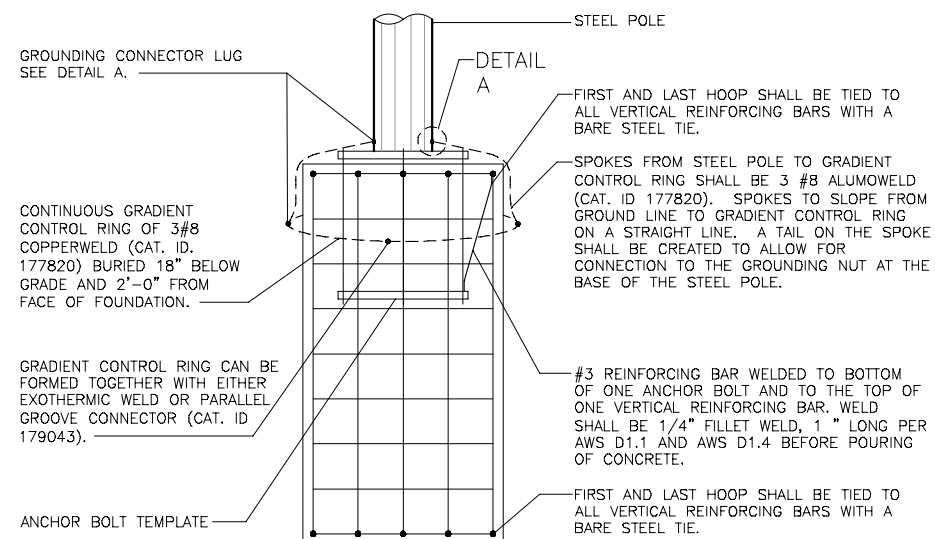
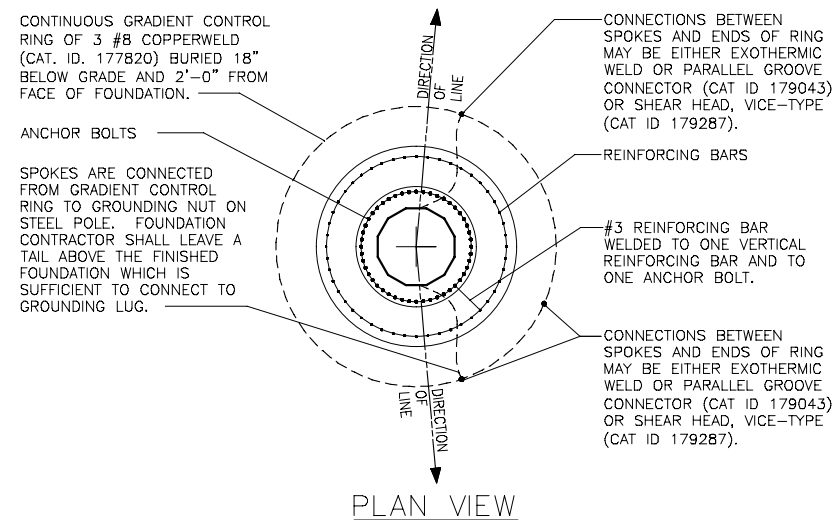
EXHIBIT A.5

**EVERSOURCE**  
ENERGY

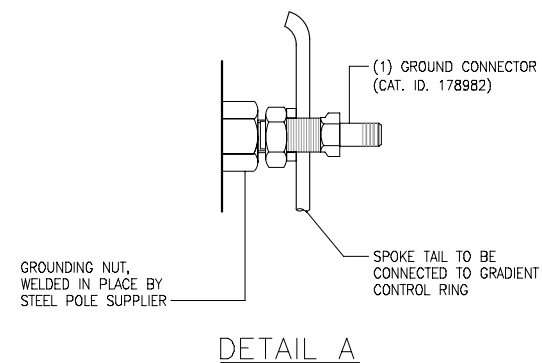
TITLE  
**GREATER HARTFORD-CENTRAL CONNECTICUT RELIABILITY PROJECT  
NEWINGTON TAP, PROPOSED MODIFICATION TO  
1783 LINE ENTRY INTO NEWINGTON SUBSTATION**

BY	M. PEPICH	CHKD	D. CAMPBELL	APP	M. HATFIELD	APP
DATE	4/3/17	DATE	4/3/17	DATE	4/3/17	DATE
SCALE	NONE	MICROFILM DATE		DWG. NO.		XS-16072
P.A. #						

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ELEVATION  
CAISSON TYPE  
FOUNDATIONS FOR  
STEEL POLES



**EXHIBIT A.6**

**EVERSOURCE ENERGY**

TITLE  
**GREATER HARTFORD-CENTRAL CONNECTICUT RELIABILITY PROJECT  
NEWINGTON TAP FOUNDATION AND  
GROUNDING DETAILS**

BY	M. PEPICH	CHKD	D. CAMPBELL	APP	APP
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P.A. #					

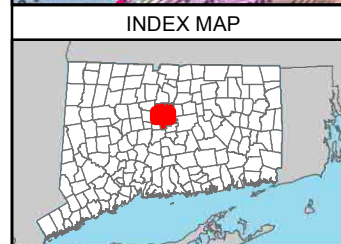
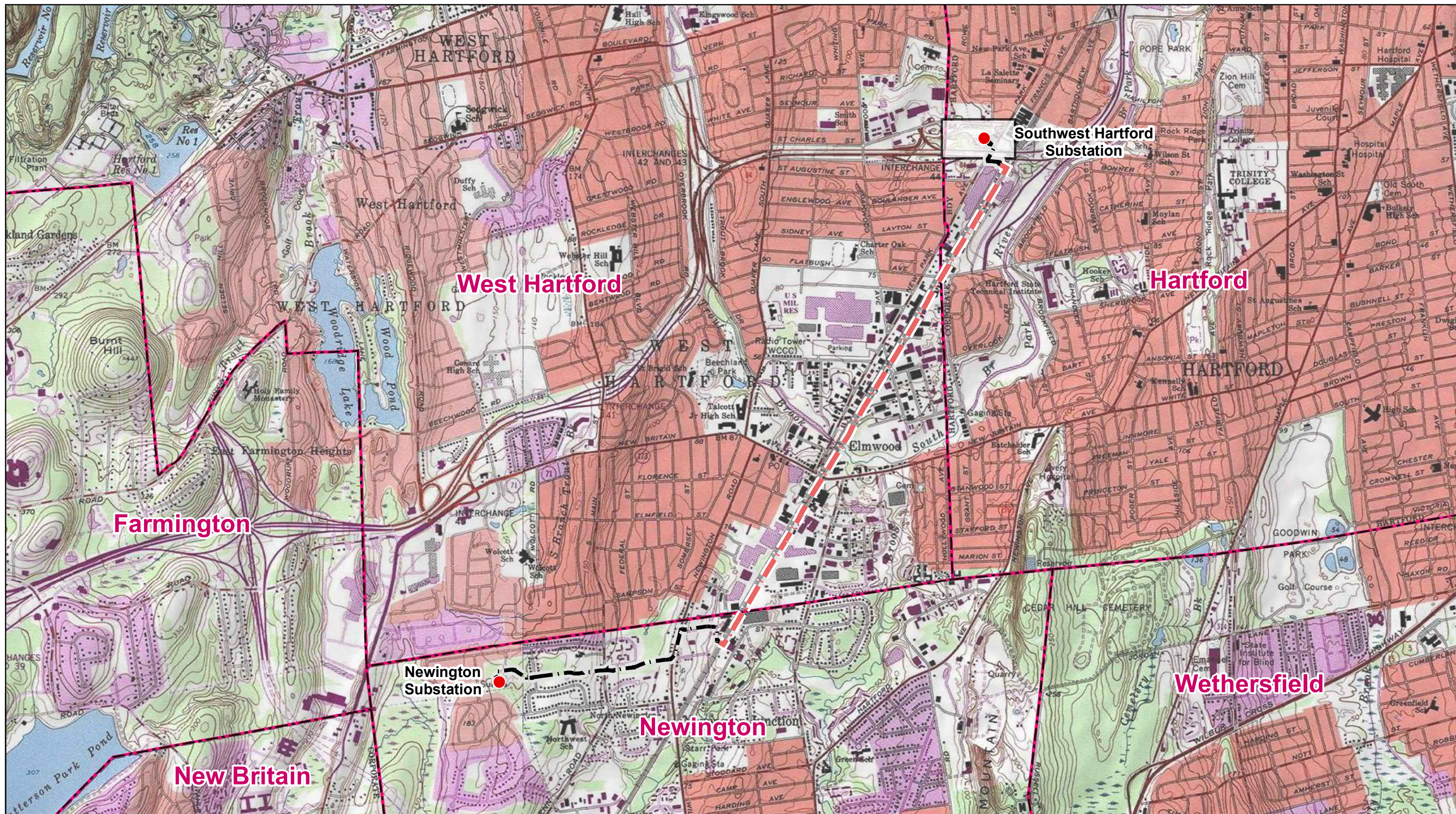
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# **APPENDIX B**

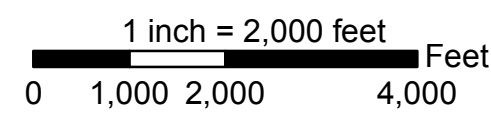
## **SOUTHWEST HARTFORD SUBSTATION**

<b>EXHIBIT B.1</b>	<b>USGS / MAP SHEET INDEX (1:24,000 Scale)</b>
<b>EXHIBIT B.2</b>	<b>AERIAL MAP SHEET (1:1,200 SCALE)</b>
<b>EXHIBIT B.3</b>	<b>GENERAL ARRANGEMENT PLANS: SOUTHWEST HARTFORD SUBSTATION (SHEETS 1-2)</b>

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- Legend**
- Substation
  - - - Overhead Eversource Line
  - - - Underground Eversource Line
  - Map Sheet
  - Municipal Boundary



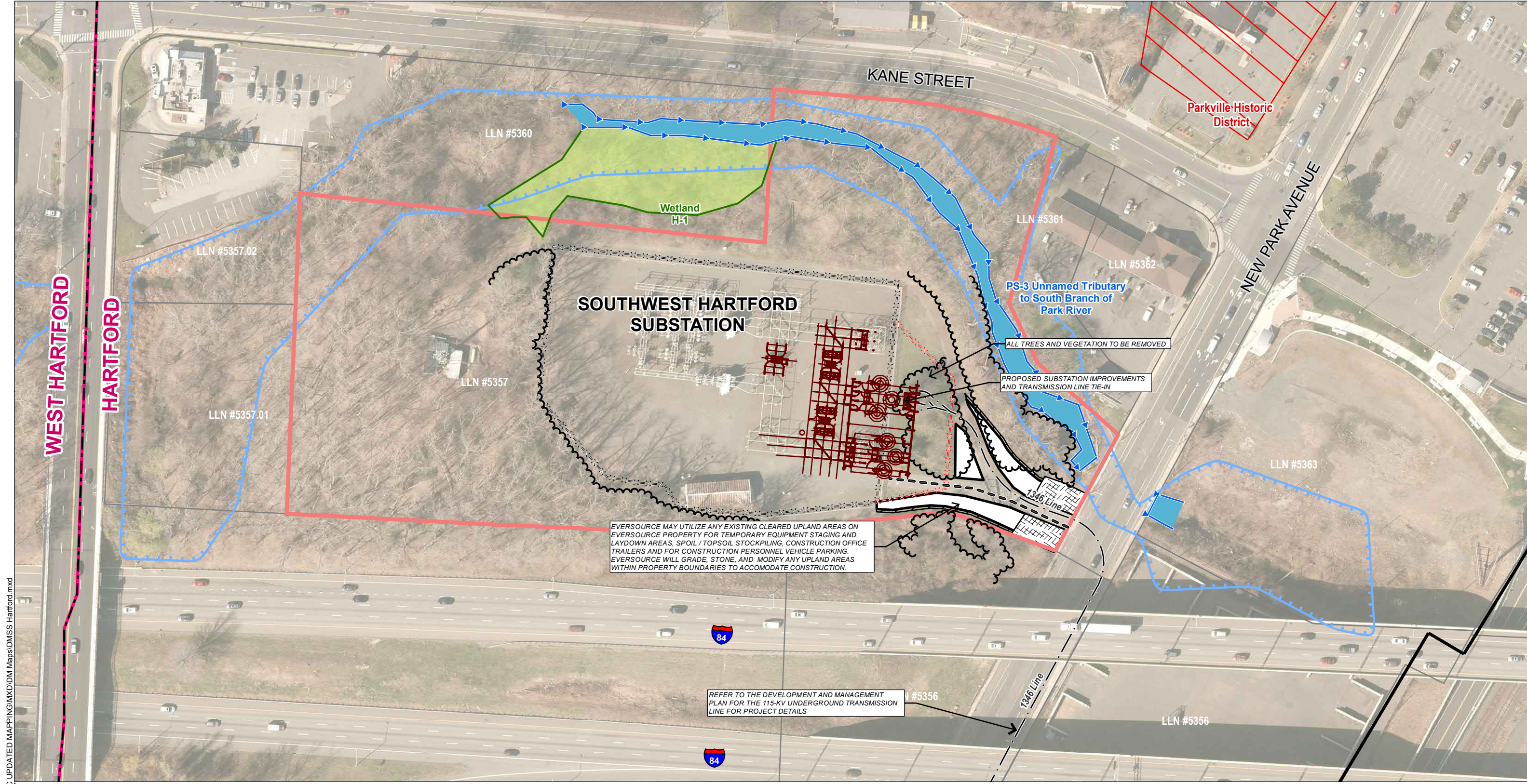
<b>EVERSOURCE</b>			
Greater Hartford-Central Connecticut Reliability Project (GHCCRP) Southwest Hartford Substation Hartford, CT			
NO. DATE	REVISIONS	BY CHK APP APP	3/8/2018
Exhibit B.1 USGS / Map Sheet Index			<b>AECOM</b>

**Appendix B**

**Greater Hartford-Central Connecticut Reliability Project (GHCCRP)  
Map sheet 1 – Owner/Direct Abutter List (Line List as of 1/10/2018)**

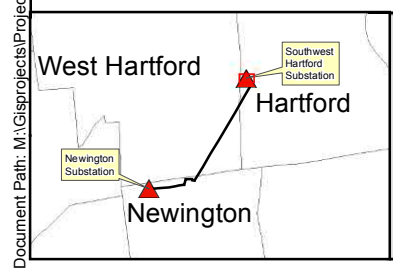
Line List Number	Town	Site Address	Owner Name
5339	HARTFORD	330 NEW PARK AVENUE	INLAND WESTERN HARTFORD NEW PARK LLC
5356	HARTFORD	152 NEW PARK AVENUE	STATE OF CONNECTICUT HIGHWAY DEPARTMENT
5357	HARTFORD	219 NEW PARK AVENUE	THE CONNECICUT LIGHT & POWER COMPANY (EVERSOURCE)
5361	HARTFORD	217 NEW PARK AVENUE	GREGORY H & PAUL FERRUOLO
5362	HARTFORD	7 KANE STREET	DRIVE CLEAN CO LLC
5363	HARTFORD	150 NEW PARK AVENUE	REHOLD HARTFORD LLC C/O AHOLD FINANCIAL SERVICE
13075	HARTFORD	AMTRAK ROW	NATIONAL RAILROAD PASSENGER CORP (AMTRAK)
13076	HARTFORD	490 FLATBUSH AVENUE	DANNY CORP





**General Notes:**

1. The limits of tree clearing, as shown, define areas where vegetation removal and grubbing, grading, and excavation may occur. Minor deviations may be required in some locations. Additionally, danger or hazard tree removal may be required outside of the vegetation removal limits. Vegetation removal equipment may operate anywhere within the limits of vegetation management in uplands. In wetlands and across water resources, temporary clearing routes (consisting of construction mats or equivalent) would be used by the clearing contractor only (these are not depicted on the map sheets and will be determined based on field conditions at the time of construction). Refer to detail sheets 1 & 2 in Appendix C of Volume 1 of the D&M Plan for additional measures in wetland resource areas.
2. All work will be conducted in accordance with the relevant portions of Eversource's "Best Management Practices Manual for Massachusetts and Connecticut (September 2016)" (BMP manual), unless more stringent project-specific measures apply. All work will be conducted in accordance with the requirements of siting approvals from the Council and regulatory approvals from the U.S. Army Corps of Engineers and the Connecticut Department of Energy and Environmental Protection, and with all project protocols. Refer to detail sheets 1-4 in Appendix C of Volume 1 of the D&M Plan.
3. Erosion and Sedimentation Control Measures will be installed during construction, as required, to comply with the provisions (as applicable) of the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, Eversource's BMP manual, and regulatory approvals.
4. Paved surfaces shall be protected during construction as necessary and any damage to such surfaces shall be repaired at the expense of the contractor.
5. Spoils resulting from construction activities shall be stockpiled and will be disposed of in accordance with regulatory requirements for the project. Spoils shall not be spread within yards/lawns, or sensitive environmental resource areas. Stockpiling of soil and / or topsoil can occur within upland areas adjacent to the trench or within existing cleared upland areas of ROW.



<ul style="list-style-type: none"> <li>○ Existing Structure Str Label</li> <li>● Proposed Structure Str Label</li> <li>● Existing Structure Str Label</li> <li>1346 - Underground Eversource Line</li> <li>1346 - Overhead Eversource Line</li> <li>Eversource Owned Property</li> <li>Existing Right-of-Way</li> </ul>	<ul style="list-style-type: none"> <li>Amtrak Right-of-Way</li> <li>Proposed Fence</li> <li>Existing Fence</li> <li>Approximate Tree Line</li> <li>Vegetation Limit After Construction</li> <li>Proposed Tree Clearing Line</li> </ul>	<ul style="list-style-type: none"> <li>Delineated Intermittent Watercourse</li> <li>Delineated Perennial Watercourse</li> <li>Delineated Wetland Boundary Outline</li> <li>Field Delineated Wetland</li> <li>Floodway</li> <li>FEMA 100-Year Flood Zone</li> </ul>	<ul style="list-style-type: none"> <li>Construction Tracking Pad</li> <li>Temporary Construction Matting</li> <li>Temporary Workspace</li> <li>Stone Work Pad</li> <li>Area of Disturbance</li> <li>LLN # LLNs/Property Owner</li> </ul>	<ul style="list-style-type: none"> <li>Existing Access</li> <li>Proposed Access (all necessary rights in place)</li> <li>Proposed Alternative Access</li> <li>Parcel Boundary</li> <li>Municipal Boundary</li> <li>*No Highly Erodible Soils Present in Plan View Extent</li> </ul>
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1" = 100'  
Scale in Feet

0 50 100

**EVERSOURCE**

Greater Hartford-Central Connecticut  
Reliability Project (GHCCRP)  
Southwest Hartford Substation  
Hartford, CT

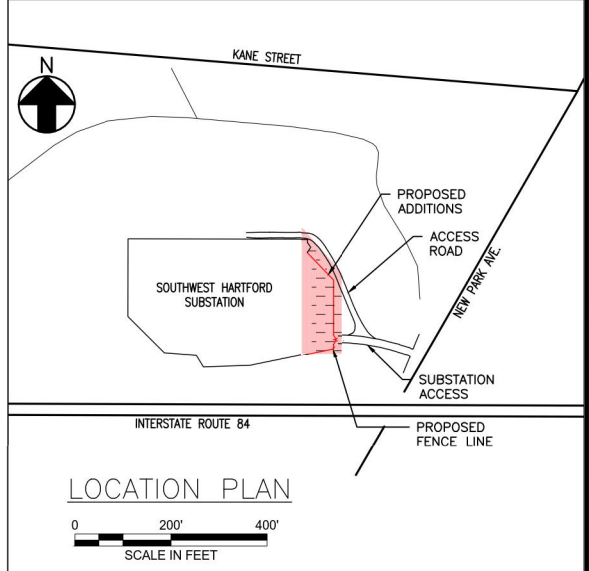
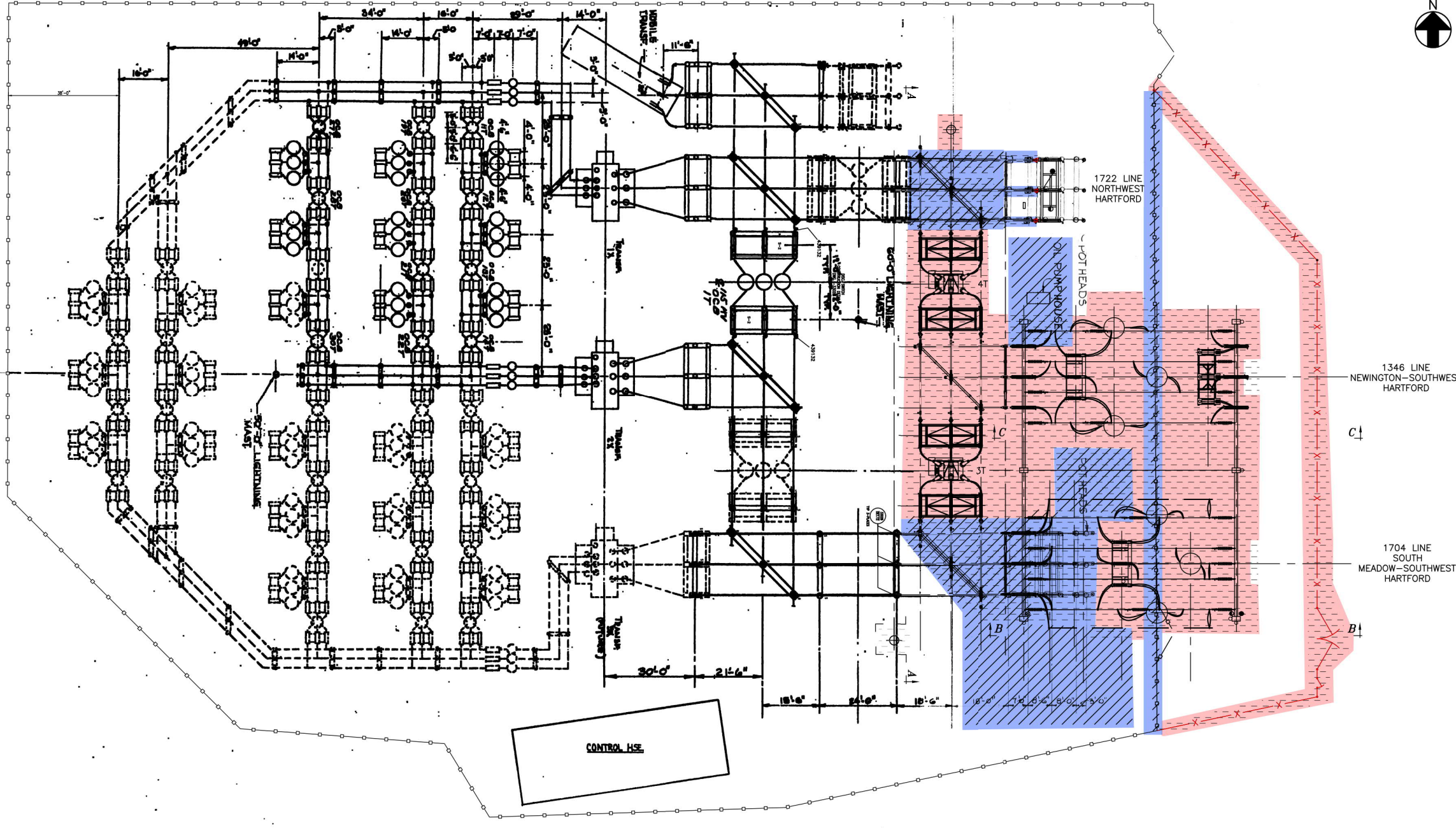
Exhibit B.2: Aerial Map Sheet

**AECOM**

3/28/2018

Document Path: M:\GIS\Projects\Projects\Eversource\GHCC UPDATED MAPPING\DXD\DM Maps\DMSS Hartford.mxd

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PLAN VIEW



- LEGEND**
- EXISTING SUBSTATION FENCE
  - EXPANDED SUBSTATION FENCE
  - PROPOSED ADDITIONS
  - PROPOSED REMOVALS

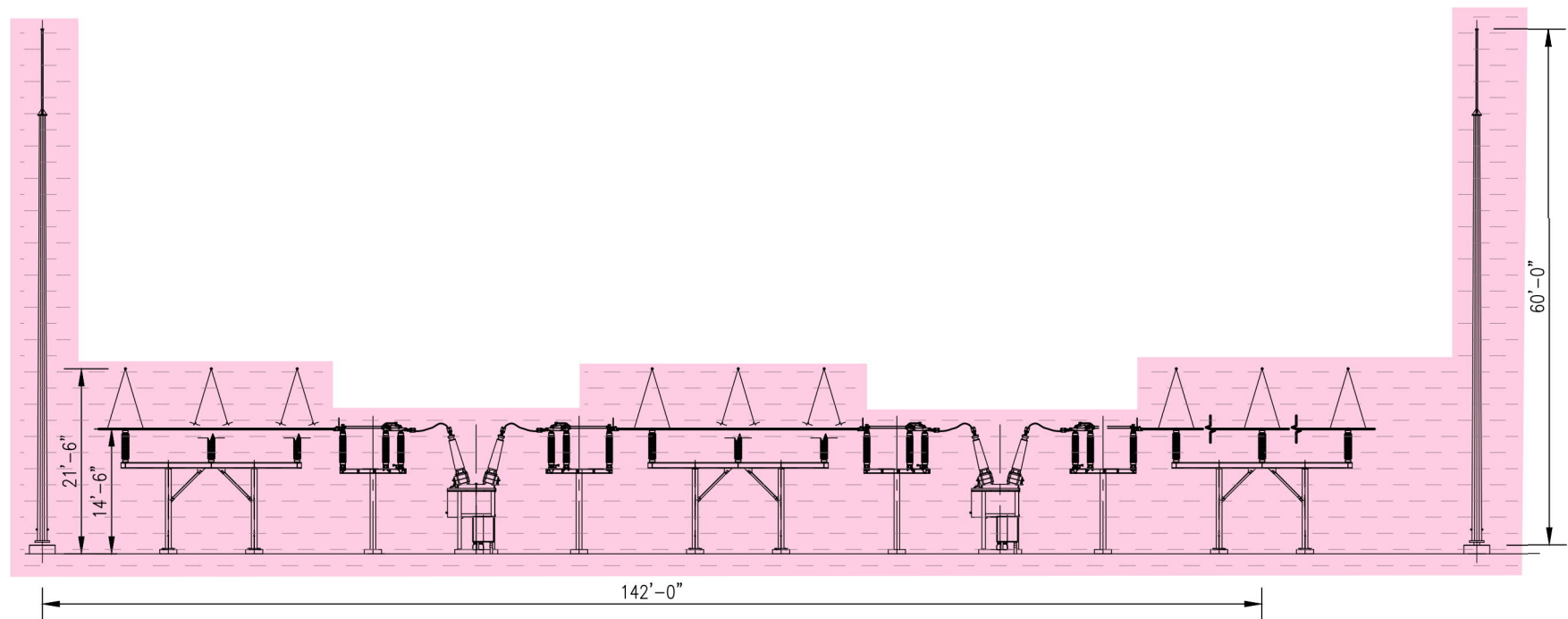
EXHIBIT B.3 SHEET 1  
PROPOSED ADDITIONS  
AND REMOVALS



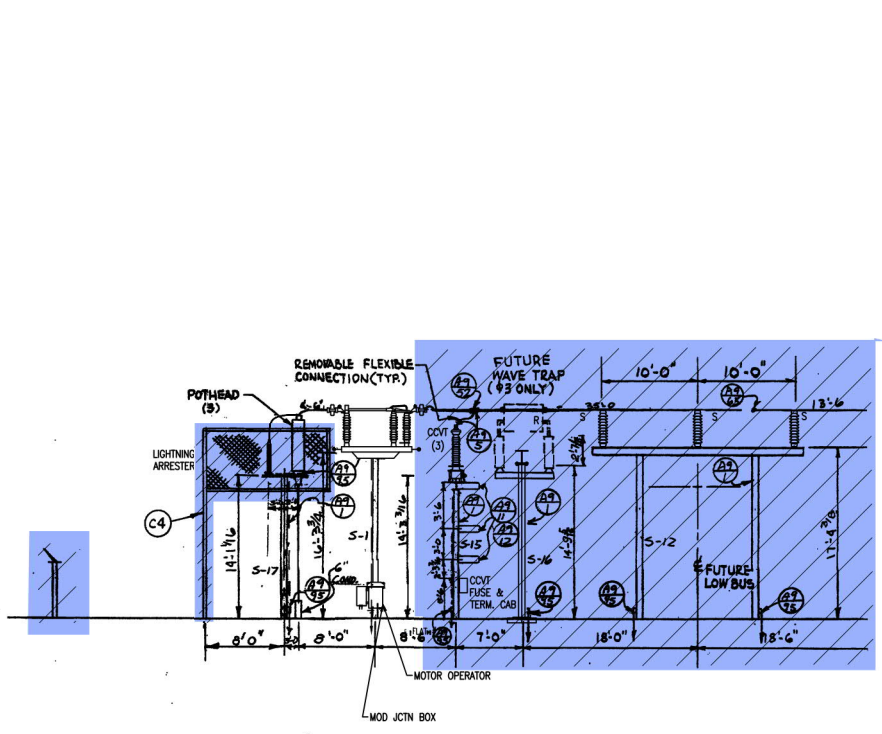
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SOUTHWEST HARTFORD SUBSTATION  
YARD ARRANGEMENT - PLAN & SECTIONS  
CONNECTICUT SITING COUNCIL

BY	DWG	APP	APP
DATE	DATE	DATE	DATE
H-SCALE	AS NOTED	SIZE	D
V-SCALE	N.T.S.	V.S.	R.E. DWG
R.E. PROJ. NUMBER	DWG. NO: SK-16425-92001 PG 1		

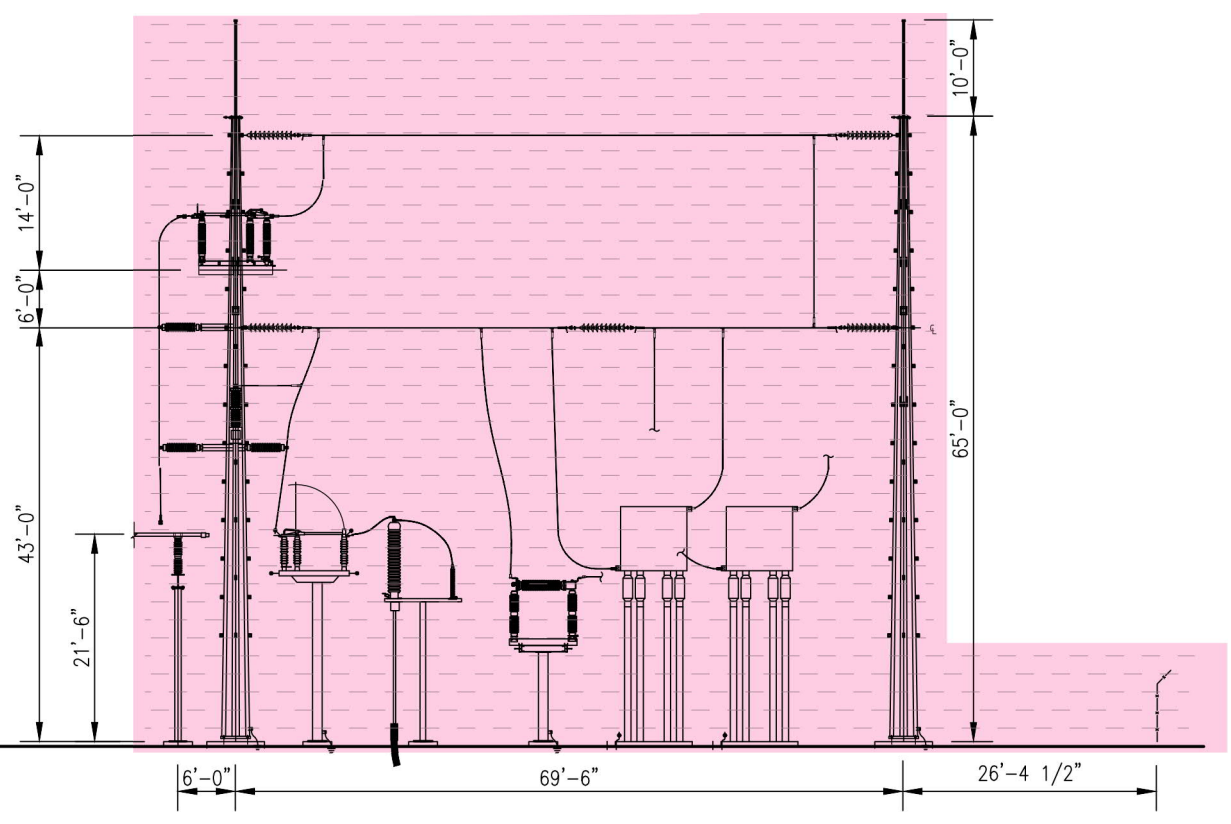
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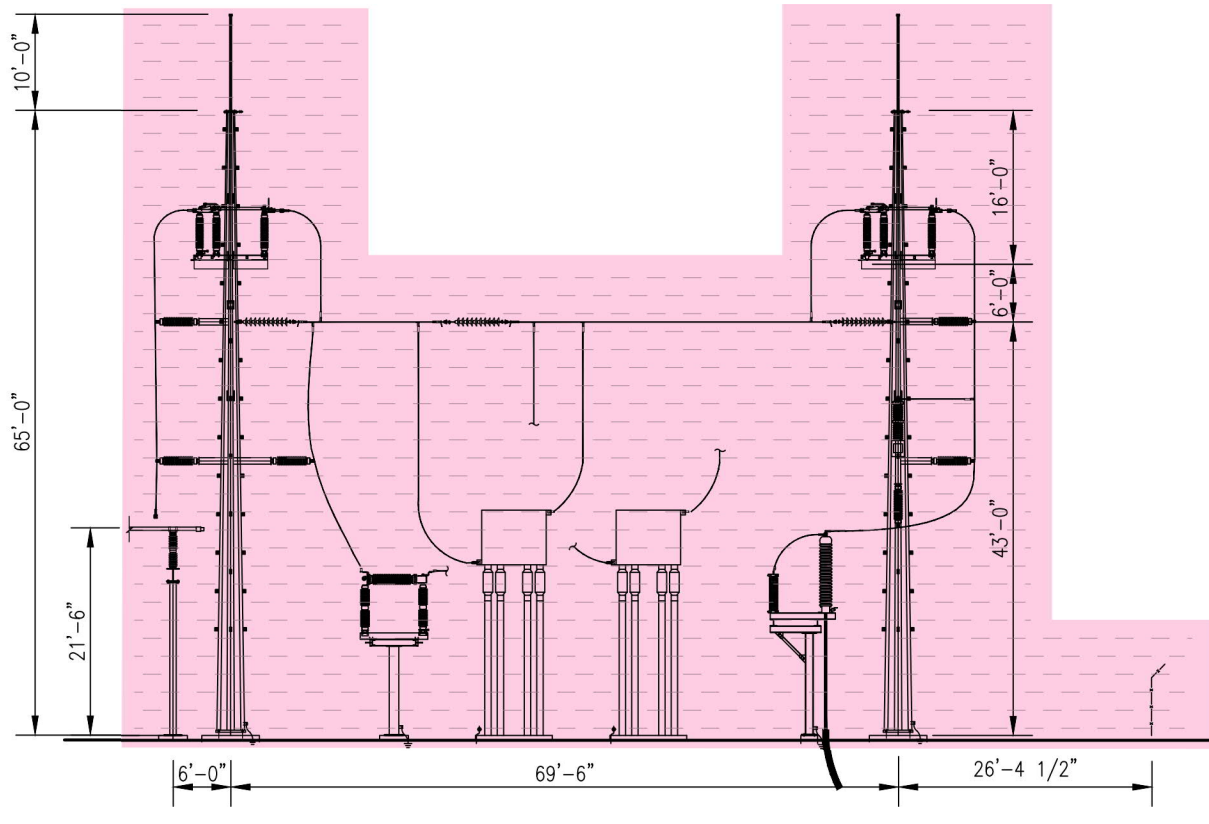
SECTION A-A  
PROPOSED ADDITIONS



SECTION B-B  
PROPOSED REMOVALS



SECTION B-B  
PROPOSED ADDITIONS



SECTION C-C  
PROPOSED ADDITIONS

**LEGEND**

- PROPOSED ADDITIONS
- PROPOSED REMOVALS

EXHIBIT B.3 SHEET 2  
PROPOSED ADDITIONS  
AND REMOVALS



THE GREATER HARTFORD-CENTRAL CONNECTICUT RELIABILITY PROJECT			
SOUTHWEST HARTFORD SUBSTATION			
YARD ARRANGEMENT - PLAN & SECTIONS			
CONNECTICUT SITING COUNCIL			
BY	CHKD	APP	APP
DATE	DATE	DATE	DATE
H-SCALE	AS NOTED	SIZE	D
V-SCALE	N.T.S.	V.S.	R.E. DWG
P.E. PROJ. NUMBER	DWG NO.		SK-16425-92001 PG 2

# **APPENDIX C**

## **DETAIL SHEETS**

- 1 WATER RESOURCE PROTOCOLS
- 2 WETLAND AND WATERCOURSE CROSSING TYPICAL DETAILS
- 3 RARE SPECIES AVOIDANCE AND MINIMIZATION MEASURES
- 4 EROSION AND SEDIMENT CONTROL PROTOCOLS
- 5 EROSION AND SEDIMENT CONTROL DETAILS

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I. WETLANDS AVOIDANCE AND MINIMIZATION MEASURES

THE FOLLOWING MEASURES WILL BE TAKEN TO AVOID OR MINIMIZE IMPACTS TO WETLANDS DURING PROJECT ACTIVITIES. ALL WORK IN OR NEAR WETLANDS WILL BE IN ACCORDANCE WITH PROJECT MAPPING, EVERSOURCE'S BEST MANAGEMENT PRACTICES MANUAL FOR MASSACHUSETTS AND CONNECTICUT (9/2016; "BMP MANUAL"), AND THE 2002 CONNECTICUT GUIDELINES FOR EROSION AND SEDIMENT CONTROL (CONNECTICUT GUIDELINES), AS APPLICABLE. NOTE THAT WETLAND AVOIDANCE AND MINIMIZATION MEASURES DO NOT PRECLUDE THE NEED FOR ADDITIONAL MEASURES FOR OVERLAPPING SENSITIVE RESOURCE AREAS SUCH AS RARE SPECIES HABITAT.

- A. COMPLY WITH THE CONDITIONS OF THE COUNCIL'S CERTIFICATE AND FEDERAL AND STATE PERMITS RELATED TO WETLANDS, INCLUDING THE IMPLEMENTATION OF WETLAND INVASIVE SPECIES CONTROL MEASURES DURING CONSTRUCTION. REFER TO WETLAND INVASIVE SPECIES CONTROL BMPS ON THIS DETAIL SHEET.
- B. USE LOW-IMPACT EQUIPMENT OR INSTALL TEMPORARY TIMBER MATS (OR EQUIVALENT) TO MINIMIZE RUTTING DURING VEGETATION REMOVAL ACTIVITIES IN WETLANDS.
- C. MINIMIZE THE REMOVAL OF STUMPS WITHIN WETLANDS. STUMPS WILL ONLY BE REMOVED IF INTACT STUMPS POSE A SAFETY CONCERN FOR THE INSTALLATION OF ACCESS ROADS, WORK PADS, OR STRUCTURES, THE MOVEMENT OF EQUIPMENT, OR THE SAFETY OF PERSONNEL. ONLY REMOVE SCRUB-SHRUB VEGETATION AS NECESSARY TO ACCOMMODATE PROJECT ACCESS AND WORK AREAS. MATTING MAY BE PLACED DIRECTLY ATOP SHRUBS, WHERE FEASIBLE, TO REDUCE VEGETATION MANAGEMENT IMPACTS AND TO DECREASE COMPACTION FROM MATTING PLACEMENT.
- D. INSTALL EROSION AND SEDIMENTATION (E&S) CONTROLS AROUND WORK SITES IN OR NEAR WETLANDS TO DEFINE THE LIMITS OF CONSTRUCTION ACTIVITY AND TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENTATION. WHERE SILT FENCING IS NOT INSTALLED AROUND TEMPORARY MATTING IN WETLANDS, THE FOOTPRINT OF THE MATTING DEFINES THE LIMIT OF DISTURBANCE. NO CONSTRUCTION ACTIVITIES WILL BE ALLOWED IN WETLANDS OUTSIDE OF THE WORK LIMITS DEFINED BY THE EROSION AND SEDIMENTATION CONTROLS OR MATTING.
- E. INSPECT AND MAINTAIN EROSION AND SEDIMENTATION CONTROLS THROUGHOUT CONSTRUCTION. SEDIMENT THAT ACCUMULATES BEHIND THESE CONTROLS WILL PERIODICALLY BE REMOVED AND PLACED IN UPLAND AREAS, IN A MANNER THAT WILL PRECLUDE THE POTENTIAL FOR SUBSEQUENT DEPOSITION INTO WATERCOURSES OR OTHER WATERS OF THE U.S., OR WILL OTHERWISE BE DISPOSED OF OFF-SITE.
- F. INSTALL TEMPORARY CONSTRUCTION MATTING FOR ACCESS ROADS ACROSS WETLANDS OR TO ESTABLISH SAFE AND STABLE CONSTRUCTION WORK PADS WITHIN WETLANDS.
- G. DURING INITIAL EXCAVATION FOR THE DUCT BANK TRENCH, CONTRACTOR WILL STRIP, SEGREGATE, AND STOCKPILE THE EXISTING WETLAND TOPSOIL LAYER FROM THE TRENCH LINE (DOWN TO A MAXIMUM OF 12-INCHES) FOR LATER RE-USE DURING TRENCH BACKFILL, AT WHICH TIME THE TOPSOIL WILL BE REPLACED AT THE SURFACE TO MATCH PRE-EXISTING GRADES AND CONTOURS.
- H. PROHIBIT STOCKPILING OF EXCESS SOIL GENERATED AS A RESULT OF TRENCH EXCAVATION WITHIN WETLANDS. EXCESS SOIL WILL BE REMOVED FROM WETLAND WORK AREAS AND STOCKPILED AT DESIGNATED UPLAND AREAS OR REMOVED FROM THE SITE FOR DISPOSAL IN ACCORDANCE WITH THE REGULATORY REQUIREMENTS.
- I. CONTRACTOR SHALL SCHEDULE CONSTRUCTION ACTIVITIES IN WETLANDS TO MINIMIZE THE AMOUNT OF TIME THAT AN OPEN TRENCH EXISTS WITHIN WETLANDS FROM INITIAL TRENCHING TO DUCT BANK INSTALLATION AND FINAL BACKFILL AND RESTORATION.
- J. IMPLEMENT PROCEDURES TO AVOID OR MINIMIZE THE POTENTIAL FOR SPILLS INTO WETLANDS (REFER TO BMPS INCLUDED IN VOLUME 2 ATTACHMENT E AND TO THE MATERIALS SUBMITTED TO CT DEEP UNDER SEPARATE COVER: DISCHARGE OF STORMWATER AND DEWATERING WASTEWATERS FROM CONSTRUCTION ACTIVITIES). NO FUEL WILL BE STORED OR EQUIPMENT REFUELED WITHIN 25 FEET OF A WETLAND EXCEPT UNDER THE FOLLOWING CIRCUMSTANCES: ONLY EQUIPMENT THAT IS NOT READILY MOBILE OR MUST REMAIN ON-SITE FOR PROLONGED PERIODS TO SAFELY COMPLETE A CONSTRUCTION TASK MAY BE REFUELED IN WETLANDS, PROVIDING PROPER TEMPORARY SPILL PREVENTION, CONTROL, AND CONTAINMENT PROCEDURES ARE FOLLOWED.
- K. PROHIBIT VEHICLES OR EQUIPMENT FROM BEING PARKED OVERNIGHT ON ACCESS ROADS OR WORK PADS IN WETLANDS, EXCEPT FOR EQUIPMENT THAT CANNOT BE PRACTICALLY MOVED.
- L. FOLLOWING THE COMPLETION OF TRANSMISSION LINE WORK, REMOVE TIMBER MATS USED FOR WORK PADS AND TEMPORARY ACCESS ROADS IN WETLANDS.
- M. AFTER TRANSMISSION LINE WORK IS COMPLETE, RESTORE WETLANDS TO PRE-CONSTRUCTION CONFIGURATIONS AND CONTOURS TO THE EXTENT PRACTICABLE, REVEGETATE WITH APPROPRIATE WETLAND SEED MIX.
- N. INSPECT AND MAINTAIN TEMPORARY EROSION AND SEDIMENTATION CONTROLS UNTIL RESTORATION HAS BEEN DETERMINED TO BE EFFECTIVE.

II. WATERBODIES AVOIDANCE AND MINIMIZATION MEASURES

THE FOLLOWING MEASURES WILL BE TAKEN TO AVOID OR MINIMIZE IMPACTS TO WATERCOURSES AND WATERBODIES DURING PROJECT ACTIVITIES. ALL WORK IN OR NEAR WATERCOURSES AND WATERBODIES WILL BE IN ACCORDANCE WITH PROJECT MAPPING, EVERSOURCE'S BMP MANUAL (2016), AND THE CONNECTICUT GUIDELINES.

- A. COMPLY WITH RELEVANT PORTIONS OF EVERSOURCE'S BMP MANUAL FOR MASSACHUSETTS AND CONNECTICUT CONSTRUCTION AND MAINTENANCE ENVIRONMENTAL REQUIREMENTS (9/2016). MANUAL CAN BE FOUND IN VOLUME 2 ATTACHMENT E.
- B. INSTALL AND MAINTAIN TEMPORARY EROSION AND SEDIMENTATION CONTROLS ALONG THE RIGHT-OF-WAY WHERE CONSTRUCTION ACTIVITIES DISTURB SOILS NEAR WATERCOURSES TO PREVENT SEDIMENTATION INTO WATER RESOURCES. SEDIMENT THAT ACCUMULATES BEHIND THESE CONTROLS WILL BE PERIODICALLY REMOVED AND PLACED IN UPLAND AREAS, IN A MANNER THAT WILL PRECLUDE THE POTENTIAL FOR SUBSEQUENT DEPOSITION INTO WATERCOURSES OR WATERS OF THE U.S., OR WILL OTHERWISE BE DISPOSED OF OFF-SITE.
- C. NO UNCONFINED IN-STREAM ACTIVITIES ARE PROPOSED OR AUTHORIZED. IN-STREAM WORK WILL NOT BE CONSTRUCTED DURING CONDITIONS OF PEAK FLOWS OR BANK-FULL CONDITIONS. CONSTRUCTION EQUIPMENT WILL BE PROHIBITED FROM FORDING STREAMS.
- D. ACCESS ACROSS WATERCOURSES WILL BE INSTALLED, WHERE PRACTICABLE, SO AS TO AVOID OR MINIMIZE DIRECT ADVERSE IMPACTS TO STREAM BANKS AND STREAM BOTTOM SEDIMENTS, AND TO PROVIDE UNOBSTRUCTED AMBIENT FLOW IN PERENNIAL STREAMS (E.G., SPAN CROSSINGS WILL PROVIDE ADEQUATE CLEARANCE ABOVE WATERCOURSES TO CONVEY FLOWS).
- E. MAT SPANS OR EQUIVALENT ACCESS ACROSS WATERCOURSES WILL BE PERIODICALLY SWEEPED, AS APPROPRIATE TO MINIMIZE THE POTENTIAL FOR SOIL DEPOSITION INTO WATERCOURSES AS A RESULT OF VEHICLE/EQUIPMENT MOVEMENTS.
- F. CONTRACTOR WILL UTILIZE A CONVENTIONAL "DRY OPEN CUT" TRENCHING METHOD TO INSTALL THE UNDERGROUND CABLE AND DUCT BANK ACROSS THESE WATERCOURSES USING COFFER DAM AND STREAM BYPASS PUMPING METHOD ("DAM-AND-PUMP") OR A COFFER DAM AND STREAM BYPASS VIA GRAVITY METHOD ("DAM-AND-FLUME").
- G. EXCEPT FOR EQUIPMENT THAT IS NOT READILY MOBILE OR MUST REMAIN ON-SITE FOR PROLONGED PERIODS TO SAFELY COMPLETE A CONSTRUCTION TASK, CONSTRUCTION VEHICLES AND EQUIPMENT WILL NOT BE REFUELED WITHIN 25 FEET OF A WATERCOURSE. FOR REFUELING THAT MUST BE PERFORMED LESS THAN 25 FEET FROM A WATERCOURSE, APPROPRIATE SPILL PREVENTION MEASURES SHALL BE IMPLEMENTED. (REFER TO BMPS INCLUDED IN VOLUME 2 ATTACHMENT E AND TO THE MATERIALS SUBMITTED TO CT DEEP UNDER SEPARATE COVER: GERNERAL PERMIT FOR DISCHARGE OF STORMWATER AND DEWATERING WASTEWATERS FROM CONSTRUCTION ACTIVITIES).
- H. NO BULK PETROLEUM PRODUCTS WILL BE STORED WITHIN 25 FEET OF WATERCOURSE.
- I. TEMPORARY MAT SPANS WILL BE REMOVED AND WATERCOURSES WILL BE RESTORED AS DETAILED IN VOLUME 2 ATTACHMENT E AND THE WETLAND AND WATERCOURSE TYPICAL DETAIL SHEET. BANKS WILL BE RESEEDED WITH APPROPRIATE UPLAND (ANNUAL RYE) OR WETLAND SEED MIX. EXCEPT OVER THE TRENCH LINE, NO GRUBBING WILL BE PERFORMED ON STREAM BANKS SO THAT WOODY ROOT SYSTEMS MAY REMAIN IN PLACE AND NATURALLY REVEGETATE FOLLOWING COMPLETION OF CONSTRUCTION. TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL BE REMOVED UPON THE STABILIZATION OF EXPOSED SOILS NEAR WATERCOURSES.
- J. DURING INITIAL EXCAVATION FOR THE DUCT BANK TRENCH, IF SUITABLE GRAVEL/COBBLE STREAMBED SUBSTRATES ARE PRESENT OVER THE TRENCH LINE, CONTRACTOR WILL STRIP, SEGREGATE, AND STOCKPILE THE EXISTING STREAMBED SUBSTRATE FROM THE TRENCH LINE (DOWN TO A MAXIMUM OF 12-INCHES) FOR LATER RE-USE DURING TRENCH BACKFILL, AT WHICH TIME THE NATIVE STREAMBED SUBSTRATES WILL BE REPLACED AT THE SURFACE TO MATCH PRE-EXISTING STREAMBED GRADES AND CONTOURS.
- K. IF SUITABLE GRAVEL/COBBLE MATERIAL IS NOT PRESENT IN THE STREAMBED, CONTRACTOR WILL BACKFILL THE UPPER 12-INCHES OF TRENCH WITHIN THE STREAM WITH CLEAN GRAVEL/COBBLE MATERIAL TO MATCH PRE-EXISTING STREAMBED GRADES AND CONTOURS.

III. WETLAND INVASIVE SPECIES BEST MANAGEMENT PRACTICES

TO CONTROL THE SPREAD OF WETLAND INVASIVE PLANT SPECIES, EVERSOURCE WILL REQUIRE CONSTRUCTION CONTRACTORS TO IMPLEMENT THE PROCEDURES DESCRIBED BELOW, AS APPROPRIATE TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED.

- A. ALL CONSTRUCTION EQUIPMENT, VEHICLES, AND MATERIALS (E.G., TIMBER MATS, OR EQUIVALENT) MUST BE CLEAN AND FREE OF EXCESS SOIL, DEBRIS, AND VEGETATION BEFORE BEING MOBILIZED TO THE PROJECT RIGHTS-OF-WAY.
- B. TIMBER MATS OR EQUIVALENT WILL BE USED TO INSTALL ACCESS ROADS AND WORK PADS IN WETLANDS SO CONSTRUCTION VEHICLES THAT FREQUENTLY TRAVEL ALONG ACCESS ROADS, SUCH AS PICKUPS CARRYING PERSONNEL OR MATERIAL DELIVERY TRUCKS, CAN AVOID DIRECT WETLAND INTERACTION.
- C. TIMBER MATS OR EQUIVALENT WILL BE USED IN WETLANDS DURING CLEARING OPERATIONS TO MINIMIZE THE SPREAD OF INVASIVE SPECIES WITHIN A WETLAND BY THE CLEARING EQUIPMENT.
- D. TO MINIMIZE THE POTENTIAL FOR SPREADING INVASIVE PLANT SPECIES FROM WETLAND-TO-WETLAND ALONG THE ROW, ANY EQUIPMENT WORKING IN A WETLAND CONTAINING INVASIVE PLANT SPECIES WILL BE CLEANED PRIOR TO RELOCATING TO A WORK SITE IN ANOTHER WETLAND. CLEANING OF VEHICLES AND OTHER EQUIPMENT THAT COME INTO CONTACT WITH WETLAND VEGETATION (INCLUDING VEHICLE TRACKS AND TIRES) WILL INVOLVE REMOVAL OF VISIBLE DIRT, DEBRIS, AND VEGETATION USING BROOMS, SHOVELS, AND, IF NEEDED, COMPRESSED AIR.
- E. TIMBER MATS (OR EQUIVALENT) USED IN WETLANDS CONTAINING INVASIVE SPECIES WILL BE CLEANED PRIOR TO RELOCATION TO OTHER WORK AREAS OR WETLANDS. MAT CLEANING WILL INVOLVE DROPPING MATS ONE ON TOP OF ANOTHER TO SHAKE LOOSE ANY SEDIMENT AND DEBRIS. WHEN USING THIS METHOD OF CLEANING MATS (AS OPPOSED TO USING A BROOM, SHOVEL, AND/OR COMPRESSED AIR), AVOID IMPACTS TO SENSITIVE RESOURCE AREAS, INCLUDING STREAM BANKS.
- F. SOILS EXCAVATED FROM WETLANDS OR RIPARIAN AREAS CONTAINING A PREDOMINANCE OF TARGET INVASIVE PLANTS WILL BE STOCKPILED SEPARATELY AND CONTAINED WITHIN STAKED BALES, SILT FENCE OR OTHER APPROVED EROSION AND SEDIMENT CONTROL DEVICE TO MINIMIZE THE POTENTIAL OF SPREADING THESE SOILS ELSEWHERE ONTO THE ROW.
- G. FINAL RESTORATION OF THE RIGHT-OF-WAY WILL BE PERFORMED IN ACCORDANCE WITH EVERSOURCE'S 2016 BMP MANUAL. IN LIEU OF "HAY BALE" EROSION CONTROLS (HAY BALES MAY CONTAIN NOXIOUS OR INVASIVE SEED STOCK OR PLANT MATTER), THE CONTRACTOR WILL BE REQUIRED TO USE ALTERNATIVE MEASURES, TO THE EXTENT PRACTICABLE AND IF LOCAL SOURCES ARE AVAILABLE, SUCH AS STRAW BALES, WATTLES, COCONUT ROLLS, WOOD CHIP BAGS OR SILT FENCE.

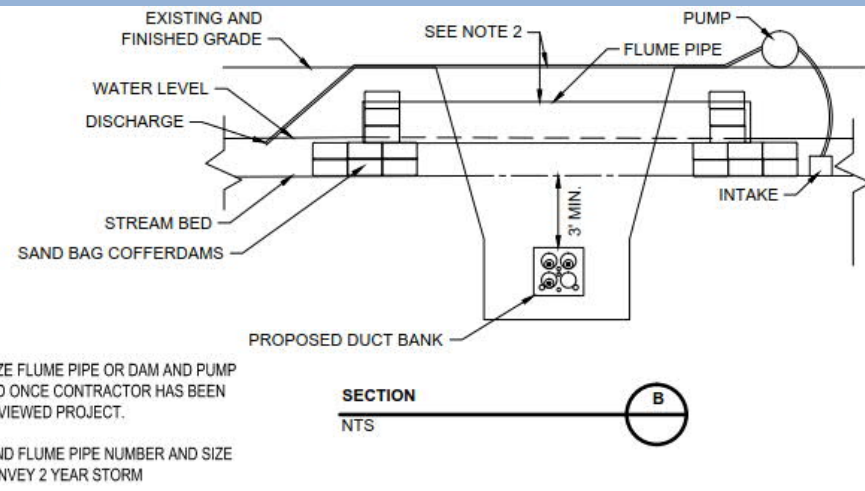
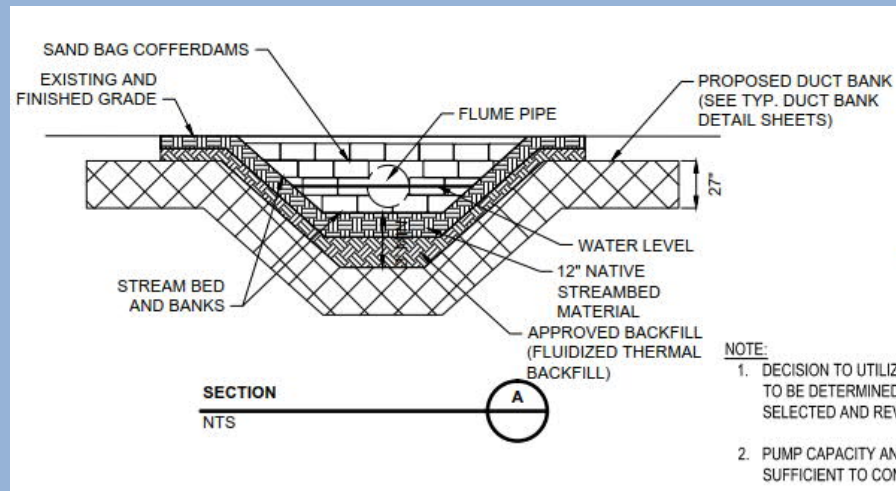
IV. WETLAND RESTORATION

- A. IF NECESSARY, WETLAND AREAS AFFECTED BY CONSTRUCTION WILL BE STABILIZED WITH ANNUAL RYE GRASS, A WETLAND SEED MIX, OR AN EQUIVALENT MIX AT THE LABEL RECOMMENDED SEEDING RATE, WHICH WILL SERVE TO PROVIDE A TEMPORARY VEGETATIVE COVER UNTIL WETLAND SPECIES BECOME REESTABLISHED.
- B. TEMPORARY EROSION AND SEDIMENT CONTROLS WILL BE LEFT IN PLACE AND MAINTAINED UNTIL FINAL STABILIZATION IS ACHIEVED. RESTORATION TYPICALLY WILL BE DEEMED SUCCESSFUL BASED ON THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER. BASED ON THE RESULTS OF INSPECTIONS OF RIGHT-OF-WAY STABILIZATION, EVERSOURCE WILL DETERMINE THE APPROPRIATE TIMEFRAME FOR REMOVING TEMPORARY EROSION CONTROLS.

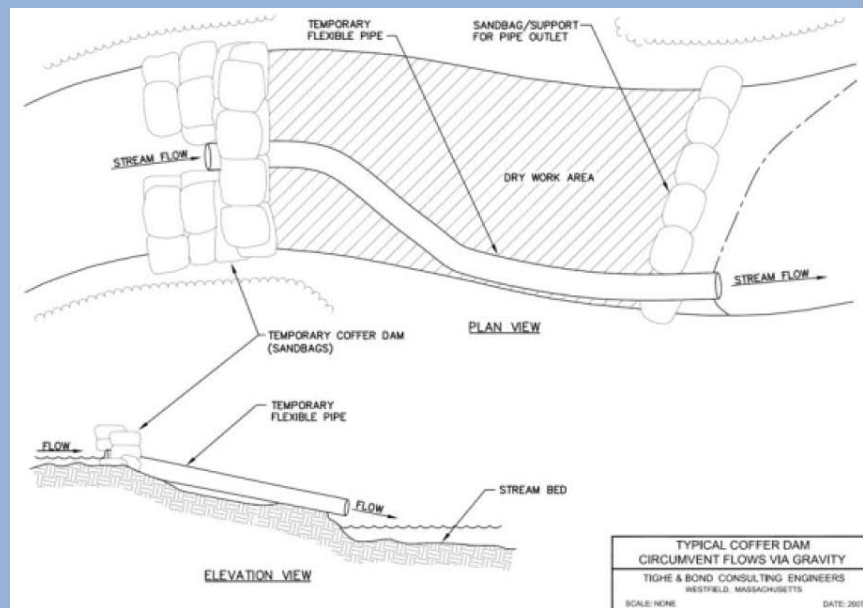
\*\*\*THE WATER RESOURCE PROTOCOLS DETAILED HERE ARE PROJECT-WIDE AND SHALL BE IMPLEMENTED AS APPLICABLE FOR THE AUTHORIZED WETLAND AND WATERCOURSE CROSSINGS AND DISTURBANCE AREAS DEPICTED ON THE AERIAL PHOTOGRAPH BASED MAPS INCLUDED IN EACH D&M PLAN.

						<b>Greater Hartford-Central Connecticut Reliability Project (GHCCRP) Substations and Newington Tap Development And Management Plan</b>	
						<b>Water Resource Protocols</b>	
						Detail Sheet 1 of 5	
NO.	DATE	REVISIONS	BY	CHK	APP	APP	7/1/2018

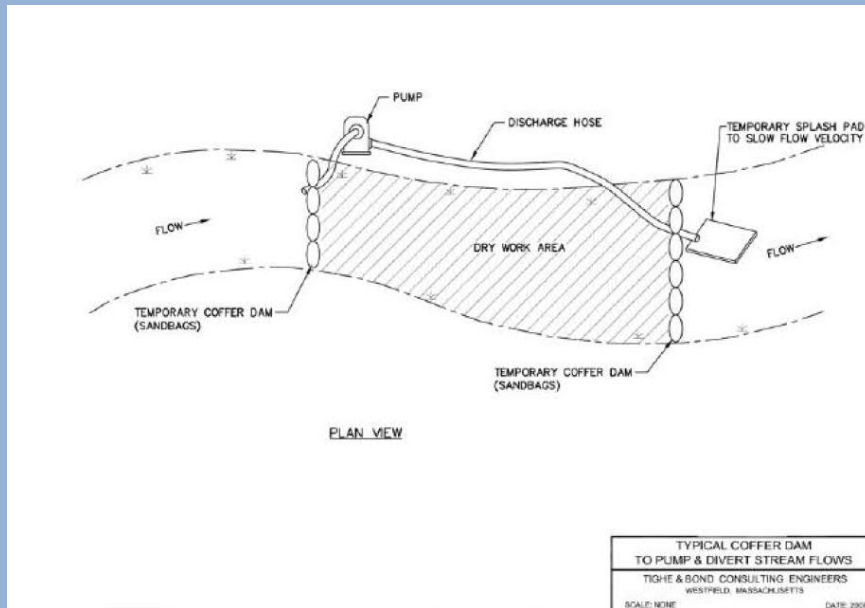
\*\*\*WETLAND WATERCOURSE CROSSING TYPICAL DETAILS SHOWN HERE ARE PROJECT-WIDE AND SHALL BE IMPLEMENTED AS APPLICABLE FOR THE AUTHORIZED WETLAND AND WATERCOURSE CROSSINGS AND DISTURBANCE AREAS DEPICTED ON THE AERIAL PHOTOGRAPH BASED MAPS INCLUDED IN EACH D&M PLAN.



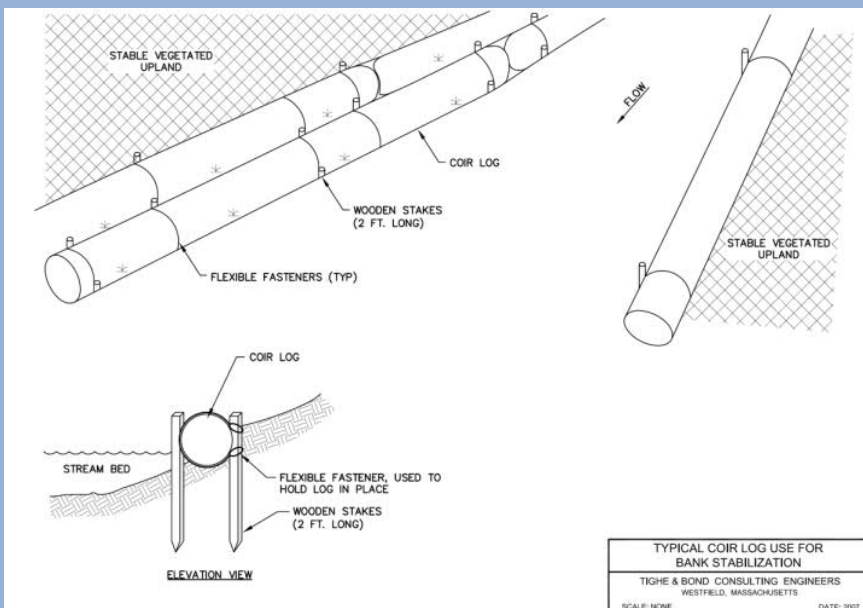
**NOTE:**  
 1. DECISION TO UTILIZE FLUME PIPE OR DAM AND PUMP TO BE DETERMINED ONCE CONTRACTOR HAS BEEN SELECTED AND REVIEWED PROJECT.  
 2. PUMP CAPACITY AND FLUME PIPE NUMBER AND SIZE SUFFICIENT TO CONVEY 2 YEAR STORM



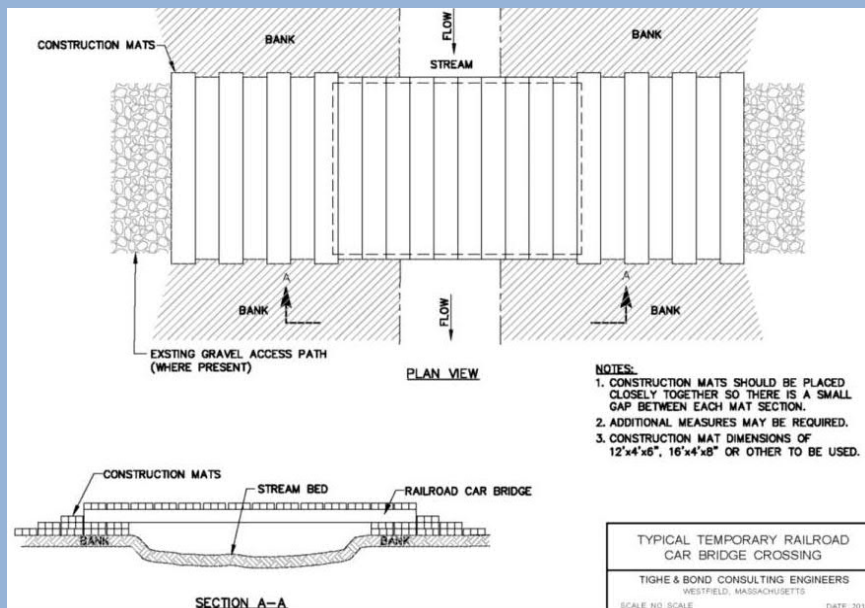
TYPICAL COFFER DAM CIRCUMVENT FLOWS VIA GRAVITY  
 TIGHE & BOND CONSULTING ENGINEERS  
 WESTFIELD, MASSACHUSETTS  
 SCALE: NONE DATE: 2007



TYPICAL COFFER DAM TO PUMP & DIVERT STREAM FLOWS  
 TIGHE & BOND CONSULTING ENGINEERS  
 WESTFIELD, MASSACHUSETTS  
 SCALE: NONE DATE: 2007

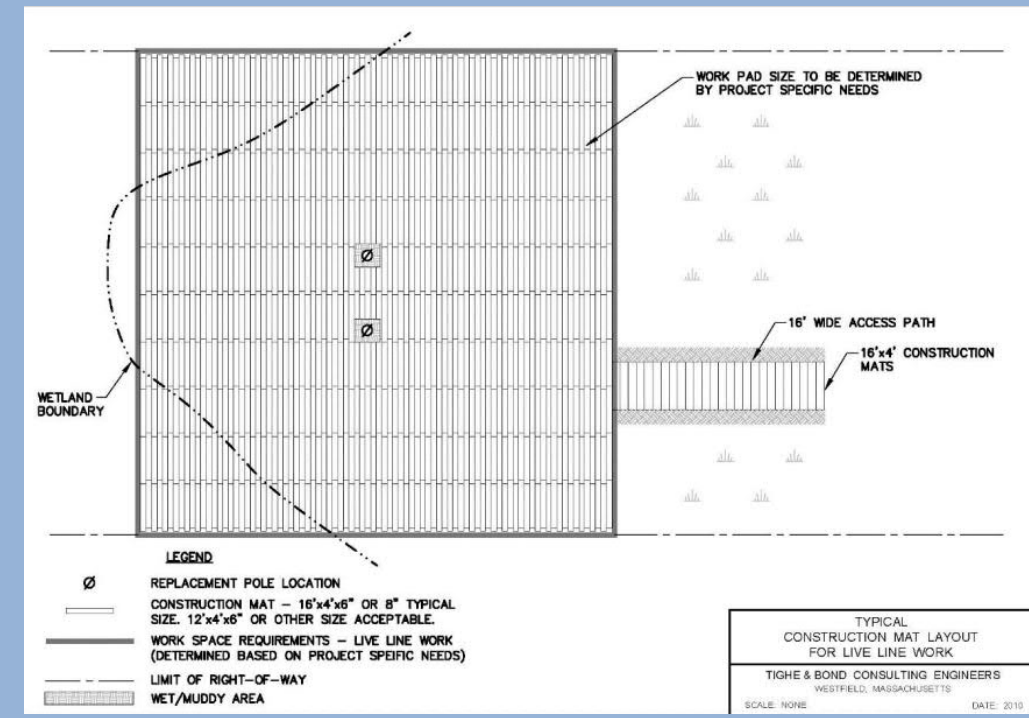


TYPICAL COIR LOG USE FOR BANK STABILIZATION  
 TIGHE & BOND CONSULTING ENGINEERS  
 WESTFIELD, MASSACHUSETTS  
 SCALE: NONE DATE: 2007

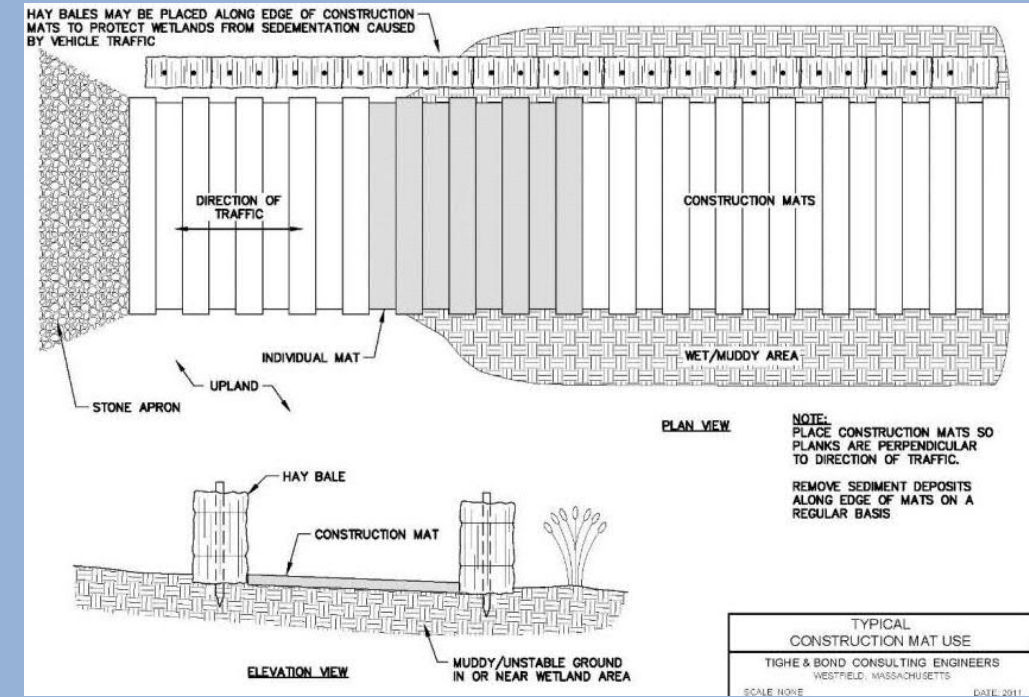


**NOTES:**  
 1. CONSTRUCTION MATS SHOULD BE PLACED CLOSELY TOGETHER SO THERE IS A SMALL GAP BETWEEN EACH MAT SECTION.  
 2. ADDITIONAL MEASURES MAY BE REQUIRED.  
 3. CONSTRUCTION MAT DIMENSIONS OF 12'x4'x6", 16'x4'x8" OR OTHER TO BE USED.

TYPICAL TEMPORARY RAILROAD CAR BRIDGE CROSSING  
 TIGHE & BOND CONSULTING ENGINEERS  
 WESTFIELD, MASSACHUSETTS  
 SCALE: NO SCALE DATE: 2010



TYPICAL CONSTRUCTION MAT LAYOUT FOR LIVE LINE WORK  
 TIGHE & BOND CONSULTING ENGINEERS  
 WESTFIELD, MASSACHUSETTS  
 SCALE: NONE DATE: 2010



TYPICAL CONSTRUCTION MAT USE  
 TIGHE & BOND CONSULTING ENGINEERS  
 WESTFIELD, MASSACHUSETTS  
 SCALE: NONE DATE: 2011

<b>EVERSOURCE</b>			
Greater Hartford-Central Connecticut Reliability Project (GHCCRP) Substations and Newington Tap Development And Management Plan			
Wetland and Watercourse Crossing Typical Details			
Detail Sheet 2 of 5			<b>AECOM</b>
NO.	DATE	REVISIONS	BY CHK APP APP
			7/1/2018

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RARE SPECIES AVOIDANCE AND MINIMIZATION MEASURES

FOR DETAILS OF PROTECTION REQUIREMENTS:  
CONTACT EVERSOURCE ENVIRONMENTAL LICENSING AND PERMITTING OR DESIGNEE.

GENERAL MITIGATION MEASURES TO BE IMPLEMENTED WITHIN PROTECTED SPECIES HABITAT:

- A. A CONTRACTOR AWARENESS PROGRAM WILL BE DEVELOPED AND IMPLEMENTED TO ENSURE THAT ALL CONSTRUCTION PERSONNEL WORKING IN THE LISTED SPECIES HABITAT ARE APPRISED OF: THE SPECIES DESCRIPTION; THE POSSIBLE PRESENCE OF LISTED SPECIES; AND INSTRUCTION ON THE PROPER RESPONSE IF A PROTECTED SPECIES IS OBSERVED IN A WORK AREA.
- B. NO HEAVY MACHINERY OR VEHICLES MAY BE PARKED OUTSIDE OF THE APPROVED WORK AREAS OR OFF OF IMPROVED SURFACES WITHOUT PRIOR NOTIFICATION TO AND APPROVAL FROM THE ON-SITE COMPLIANCE MONITOR.
- C. PRIOR TO VEGETATION CLEARING AND CONSTRUCTION OF ACCESS ROADS, LAYDOWN AREAS AND WORK PADS AND INSTALLATION OF EROSION CONTROL MEASURES, EVERSOURCE WILL PERFORM INSPECTIONS (SWEEPS) OF SUCH WORK AREAS; ANY PROTECTED SPECIES FOUND WILL BE DOCUMENTED AND REMOVED FROM WORK AREAS IN ACCORDANCE WITH PROTOCOLS APPROVED BY CT DEEP.
- D. DURING CONSTRUCTION, DAILY MORNING SWEEPS OF WORK AREAS WILL COMPLETED BY THE CONTRACTOR AND/OR THE ON-SITE COMPLIANCE MONITOR. IN TAILBOARD DISCUSSIONS PRIOR TO THE START OF THE WORK DAY, EVERSOURCE REPRESENTATIVES / CONTRACTOR SUPERVISORS WILL EMPHASIZE THE POTENTIAL FOR LISTED SPECIES TO BE PRESENT IN WORK AREAS. THROUGHOUT THE WORK DAY, THE CONTRACTOR AND COMPLIANCE MONITOR WILL REMAIN AWARE OF THE POTENTIAL FOR LOCATING PROTECTED SPECIES.
- E. IF A PROTECTED SPECIES IS FOUND, CT DEEP-APPROVED DOCUMENTATION AND PROTECTION PROTOCOLS WILL BE IMPLEMENTED. SUCH MEASURES WILL INCLUDE REMOVING THE SPECIES FROM THE WORK AREA.
- F. IF MOWING IS REQUIRED, VEGETATION SHALL BE MOWED TO NO LOWER THAN 7". FLAIL TYPE MOWERS SHALL NOT BE USED FOR MOWING IN THE ACTIVE SEASON.
- G. WHEN PERFORMING VEGETATION CLEARING ADJACENT TO STREAMS, TREES WILL BE CUT TO FALL AWAY FROM THE WATERWAY AND WILL NOT BE DRAGGED ACROSS THE WATERWAY. STUMPS WILL BE REMOVED FROM STREAM BANKS ONLY AS NEEDED FOR EXCAVATION OF THE DUCT BANK TRENCH.
- H. EXCLUSIONARY FENCING (AS NEEDED DEPENDING ON THE SEASON IN WHICH CONSTRUCTION IS PERFORMED IN HABITAT AREAS) WILL BE INSTALLED AND REGULARLY MAINTAINED (TYPICALLY, AT LEAST BI-WEEKLY AND AFTER MAJOR WEATHER EVENTS) TO SECURE ANY GAPS OR OPENINGS THAT MAY LET ANIMAL SPECIES PASS THROUGH.
- I. EXTRA FENCING SHALL BE READILY AVAILABLE FOR FENCE REPAIR OR REPLACEMENT AS NEEDED, OR IF ADDITIONAL FENCING IS REQUIRED.
- J. EXCLUSIONARY AND/OR SILT FENCING SHALL BE REMOVED AS SOON AS THE AREA IS STABLE.

THE PROTECTION MEASURES LISTED HEREIN ARE GENERAL AND EXCLUDE THE NAME OF THE LISTED SPECIES IN ORDER TO PROTECT THE INTEGRITY OF HABITAT LOCATIONS. DETAILED RARE SPECIES AVOIDANCE AND IMPACT MINIMIZATION MEASURES ARE PENDING THE APPROVAL OF CT DEEP. DURING CONSTRUCTION, EVERSOURCE WILL IMPLEMENT THE RARE SPECIES AVOIDANCE AND IMPACT MINIMIZATION MEASURES AS FINALIZED WITH AND APPROVED BY CT DEEP.

POTENTIAL HABITAT WHERE PROTECTION MEASURES APPLY:  
TOWN OF NEWINGTON: UNDEVELOPED UPLAND AND WETLAND AREAS ON EVERSOURCE FEE-OWNED PROPERTY AND ROW FROM QUINCY LANE TO WILLARD AVENUE. PROTECTION MEASURES WILL VARY, BASED ON THE TIMING OF CONSTRUCTION AND PROJECT AREA LOCATION.

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				<b>EVERSOURCE</b>			
				Greater Hartford-Central Connecticut Reliability Project (GHCCRP) Substations and Newington Tap Development And Management Plan			
				Rare Species Avoidance and Minimization Measures			
				Detail Sheet 3 of 5			
				<b>AECOM</b>			
NO.	DATE	REVISIONS	BY	CHK	APP	APP	7/1/2018

SOIL EROSION AND SEDIMENT CONTROLS

SOIL EROSION AND SEDIMENT CONTROL NOTES

EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES WILL BE INSTALLED IN CONJUNCTION WITH VEGETATION CLEARING AND/OR ACCESS/WORK AREA CONSTRUCTION AND WILL BE MAINTAINED THROUGHOUT PROJECT CONSTRUCTION TO AVOID OR MINIMIZE THE POTENTIAL FOR SURFACE WATER RUNOFF, EROSION, AND SEDIMENTATION TO OCCUR OUTSIDE OF WORK LIMITS. THESE MEASURES WILL COMPLY WITH THE 2002 CONNECTICUT GUIDELINES FOR EROSION AND SEDIMENT CONTROL ([HTTP://WWW.CT.GOV/DEEP/LIB/DEEP/WATER\\_INLAND/SESC/SECS\\_CHAPTER\\_1\\_5.PDF](http://www.ct.gov/deep/lib/deep/water_inland_sesc/secs_chapter_1_5.pdf)), WITH EVERSOURCE'S 2016 BMP MANUAL (SEE D&M PLAN VOLUME 2, ATTACHMENT E), AS WELL AS WITH CT DEEP AND USACE PERMIT CONDITIONS. THE FOLLOWING ARE OBJECTIVES OF THE E&S MEASURES:

- A. INSTALL AND MAINTAIN E&S MEASURES DURING CONSTRUCTION;
- B. PROTECT WATER RESOURCE AREAS DURING CONSTRUCTION;
- C. MINIMIZE THE QUANTITY AND DURATION OF SOIL EXPOSURE (STABILIZE EXPOSED SOILS AS REQUIRED UPON COMPLETION OF GRADING OR STOCKPILING); AND,
- D. INSPECT THE WORK AREAS AND MAINTAIN E&S CONTROLS, AS NECESSARY, UNTIL FINAL STABILIZATION IS ACHIEVED.

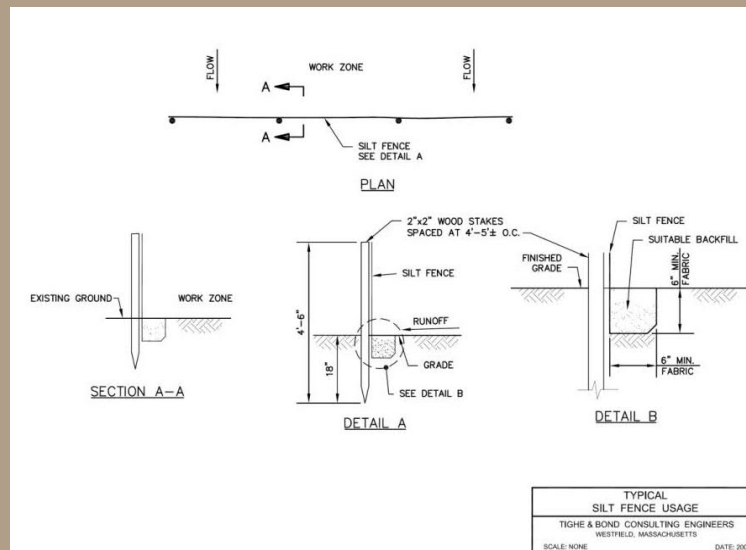
THE APPLICATION OF THE TECHNIQUES IN THE FIELD WILL BE DETERMINED BY THE PROFESSIONAL JUDGEMENT OF COMPLIANCE MONITORS AND FIELD CONSTRUCTION PERSONNEL AND WILL DEPEND ON SITE-SPECIFIC CONDITIONS. FACTORS THAT MAY BE CONSIDERED IN THE SELECTION OF THE E&S CONTROLS FOR SITE-SPECIFIC AREAS MAY INCLUDE:

- A. SIZE OF THE AREA AFFECTED;
- B. TYPE OF PLANNED CONSTRUCTION ACTIVITIES;
- C. TYPE AND TEXTURE OF SOIL (E.G., PRESENCE OF HIGHLY ERODIBLE SOILS, WHERE APPLICABLE);
- D. AMOUNT OF ROCK PRESENT;
- E. STEEPNESS AND LENGTH OF SLOPE;
- F. AMOUNT AND TYPE OF VEGETATIVE COVER;
- G. PROXIMITY AND DIRECTION TO WATERCOURSES OR WETLANDS;
- H. ANTICIPATED WEATHER CONDITIONS AND GROUND CONDITIONS.

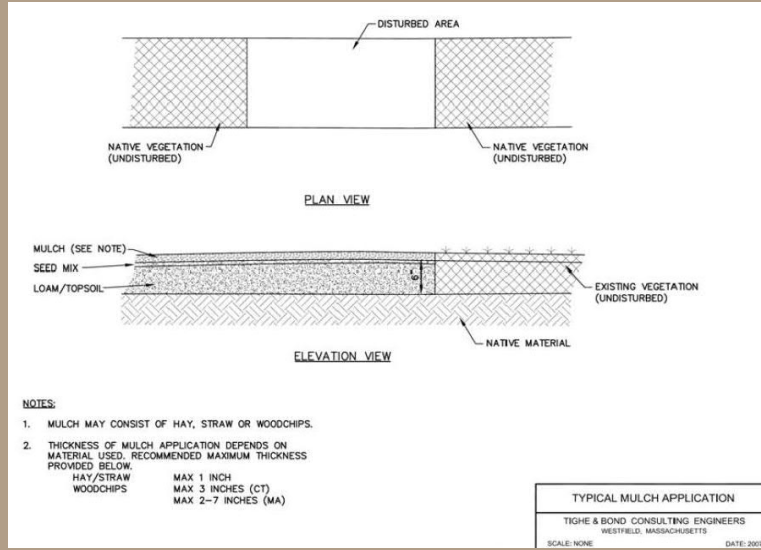
1. LAND DISTURBANCE SHALL BE KEPT TO THE MINIMUM NECESSARY FOR CONSTRUCTION, AS DEPICTED ON THE PROJECT MAPS.
2. INSTALL E&S CONTROLS AS NECESSARY, TO PREVENT SOIL EROSION AND SEDIMENT TRANSPORT TO WATER RESOURCE AREAS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ASSESS THE NEED FOR, AND INSTALL ADDITIONAL CONTROLS THAT ARE WARRANTED BY SITE CONDITIONS.
3. EROSION AND SEDIMENT CONTROLS SHALL BE INSPECTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. INSPECTIONS SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROJECT-SPECIFIC STORMWATER POLLUTION CONTROL PLAN (SWPCP) TO DETERMINE IF ALL CONTROL MEASURES ARE FUNCTIONING PROPERLY AND IF CORRECTIVE ACTIONS ARE REQUIRED. INSPECTIONS WILL CONTINUE UNTIL SITES ARE STABILIZED AND RESTORATION HAS BEEN DETERMINED TO BE EFFECTIVE AS DEFINED BY CONFORMANCE TO THE CT DEEP GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER AND DEWATERING WASTEWATERS ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
4. SEDIMENT COLLECTED BY E&S CONTROLS SHALL BE PERIODICALLY REMOVED AND PROPERLY DISPOSED OF IN AN APPROPRIATE UPLAND AREA.
5. STOCKPILE TOPSOIL IN LEVEL UPLAND AREAS AND CONTAIN USING APPROPRIATE E&S CONTROLS AROUND PERIMETER.
6. STOCKPILING OF EXCESS SOIL WITHIN WETLANDS IS PROHIBITED.
7. STABILIZATION OF BARE/UNVEGETATED SOIL SURFACES WILL BE IMPLEMENTED WITHIN 14 DAYS AFTER GRADING OR CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, UNLESS WEATHER PROHIBITS SEED GERMINATION. THIS MEASURE ALSO APPLIES TO AREAS THAT ARE TO BE PERMANENTLY STABILIZED WITH GRAVEL SURFACE.
8. WHERE NECESSARY, SUITABLE TOPSOIL, SEEDBED PREPARATION, AND WATER SHALL BE PROVIDED FOR EFFECTIVE ESTABLISHMENT OF VEGETATIVE COVER.
9. THE CONSTRUCTION CONTRACTOR SHALL KEEP ALL PAVED ROADWAYS CLEAN. CONSTRUCTION ENTRANCE TRACK PADS SHALL BE INSTALLED AT THE INGRESS/ EGRESS TO PAVED ROADWAYS EXCEPT IN WETLAND RESOURCE AREAS. TO REDUCE SEDIMENT TRACKING. TRACK PADS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION BY REPLACING OR REPLENSHING, AS NECESSARY, WITH CLEAN STONE. TRACKED SEDIMENT ON PAVED SURFACES SHALL BE SWEEPED CLEAN BY THE END OF EACH WORK DAY.
10. EROSION AND SEDIMENT CONTROLS SHALL BE INSPECTED AND MAINTAINED UNTIL REVEGETATION AND STABILIZATION HAS BEEN DETERMINED TO BE EFFECTIVE AS DEFINED BY CONFORMANCE TO THE CT DEEP GENERAL PERMIT FOR THE DISCHARGE OR STORMWATER AND DEWATERING WASTEWATERS ASSOCIATED WITH CONSTRUCTION ACTIVITIES. BASED ON THE RESULTS OF POST-CONSTRUCTION INSPECTIONS OR RIGHT-OF-WAY STABILIZATION, EVERSOURCE WILL DETERMINE THE APPROPRIATE TIMEFRAME FOR REMOVING TEMPORARY EROSION CONTROLS.

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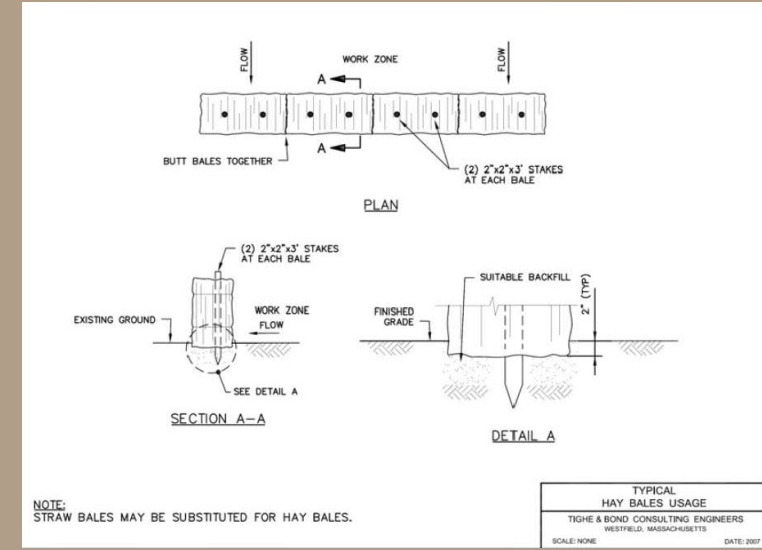
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								Erosion and Sediment Control Protocols	
								Detail Sheet 4 of 5	
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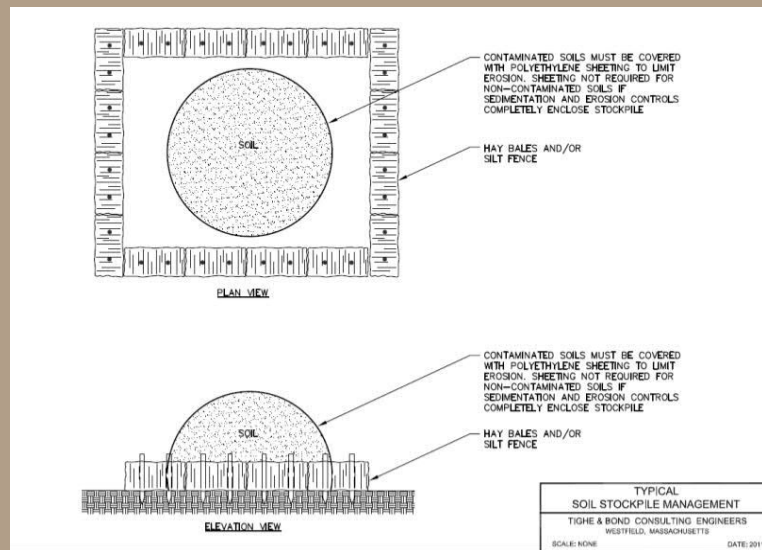
**TYPICAL SILT FENCE USAGE**  
TIGHE & BOND CONSULTING ENGINEERS  
WESTFIELD, MASSACHUSETTS  
SCALE: NONE  
DATE: 2007



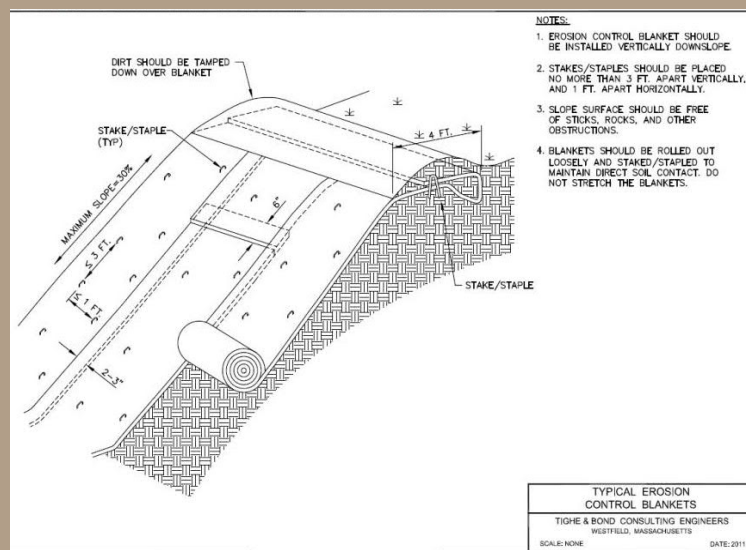
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TIGHE & BOND CONSULTING ENGINEERS  
WESTFIELD, MASSACHUSETTS  
SCALE: NONE  
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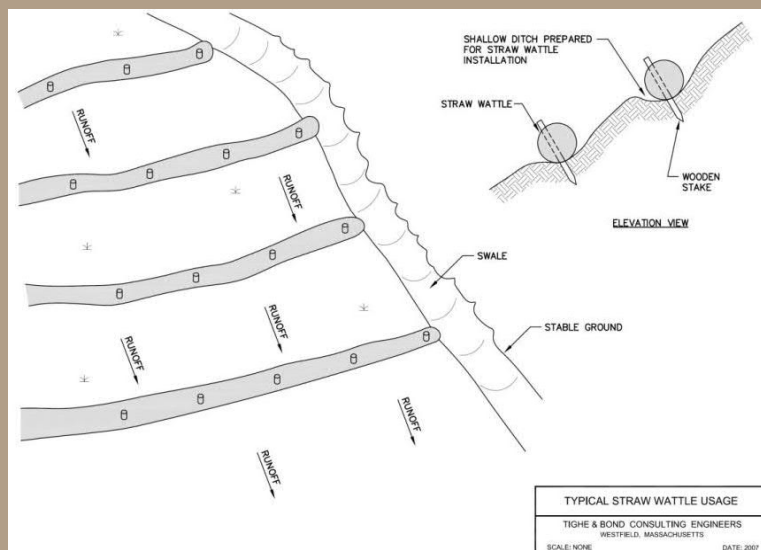
**TYPICAL HAY BALES USAGE**  
TIGHE & BOND CONSULTING ENGINEERS  
WESTFIELD, MASSACHUSETTS  
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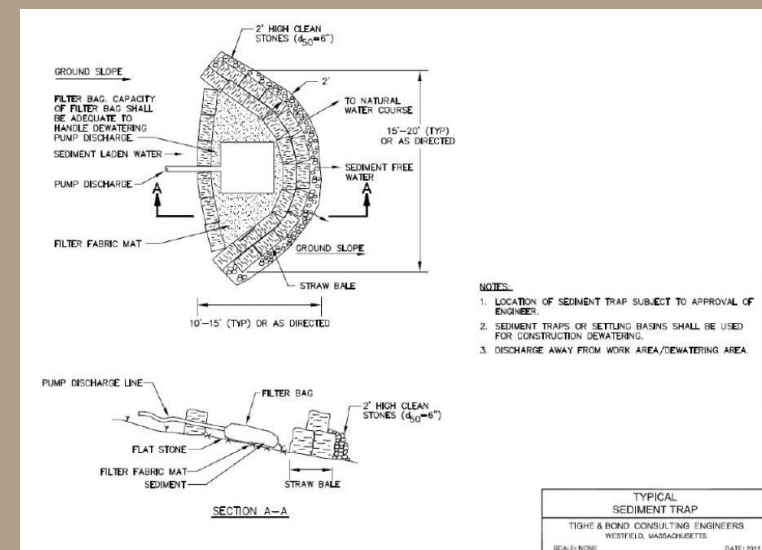
**TYPICAL SOIL STOCKPILE MANAGEMENT**  
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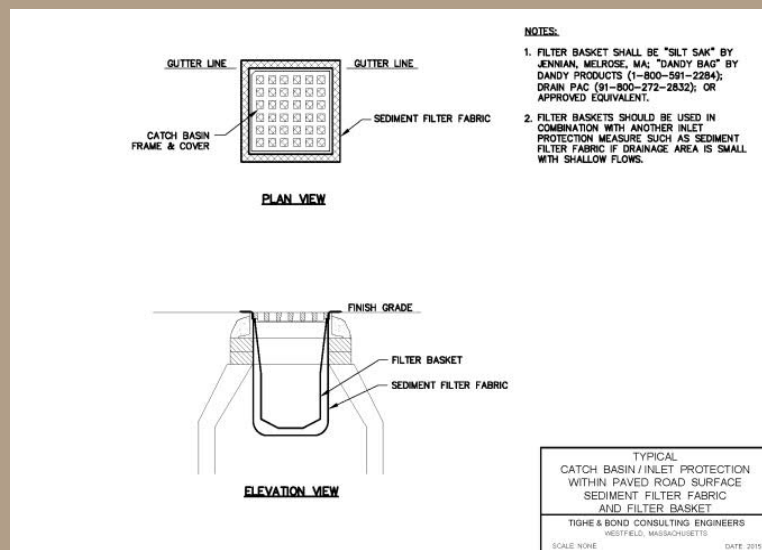
**TYPICAL EROSION CONTROL BLANKETS**  
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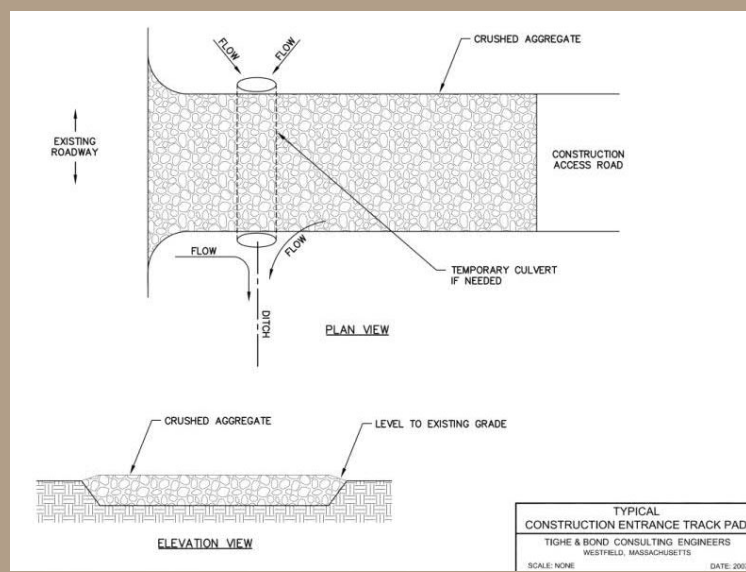
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WESTFIELD, MASSACHUSETTS  
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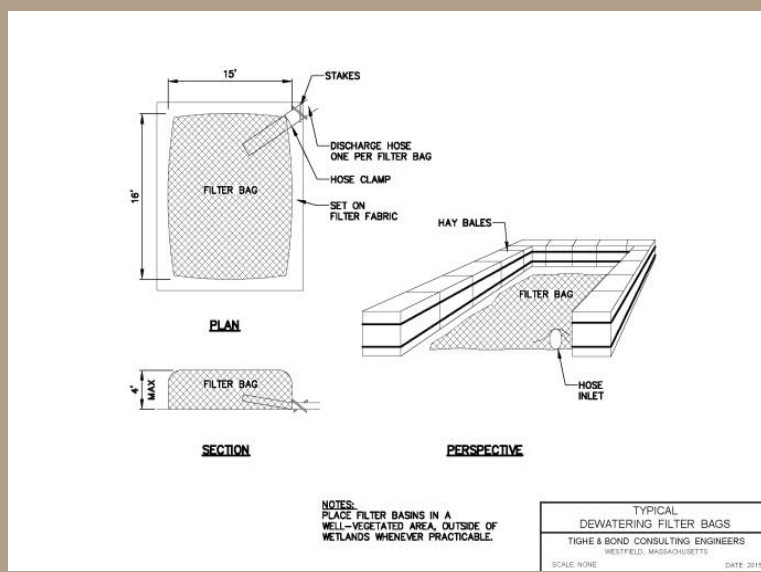
**TYPICAL SEDIMENT TRAP**  
TIGHE & BOND CONSULTING ENGINEERS  
WESTFIELD, MASSACHUSETTS  
SCALE: NONE  
DATE: 2011



**TYPICAL CATCH BASIN / INLET PROTECTION WITHIN PAVED ROAD SURFACE WITH SEDIMENT FILTER FABRIC AND FILTER BASKET**  
TIGHE & BOND CONSULTING ENGINEERS  
WESTFIELD, MASSACHUSETTS  
SCALE: NONE  
DATE: 2015



**TYPICAL CONSTRUCTION ENTRANCE TRACK PAD**  
TIGHE & BOND CONSULTING ENGINEERS  
WESTFIELD, MASSACHUSETTS  
SCALE: NONE  
DATE: 2007



**TYPICAL DEWATERING FILTER BAGS**  
TIGHE & BOND CONSULTING ENGINEERS  
WESTFIELD, MASSACHUSETTS  
SCALE: NONE  
DATE: 2014

<b>EVERSOURCE</b>			
Greater Hartford-Central Connecticut Reliability Project (GHCCRP) Substations and Newington Tap Development And Management Plan			
Erosion and Sediment Control Details			
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