



SENT VIA E-Mail

May 25, 2017

Robert Stein
Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: **Petition No. 1189**
Mix Avenue Substation Project
Landscaping Plan and Stormwater Pollution Control Plan

Dear Chairman Stein:

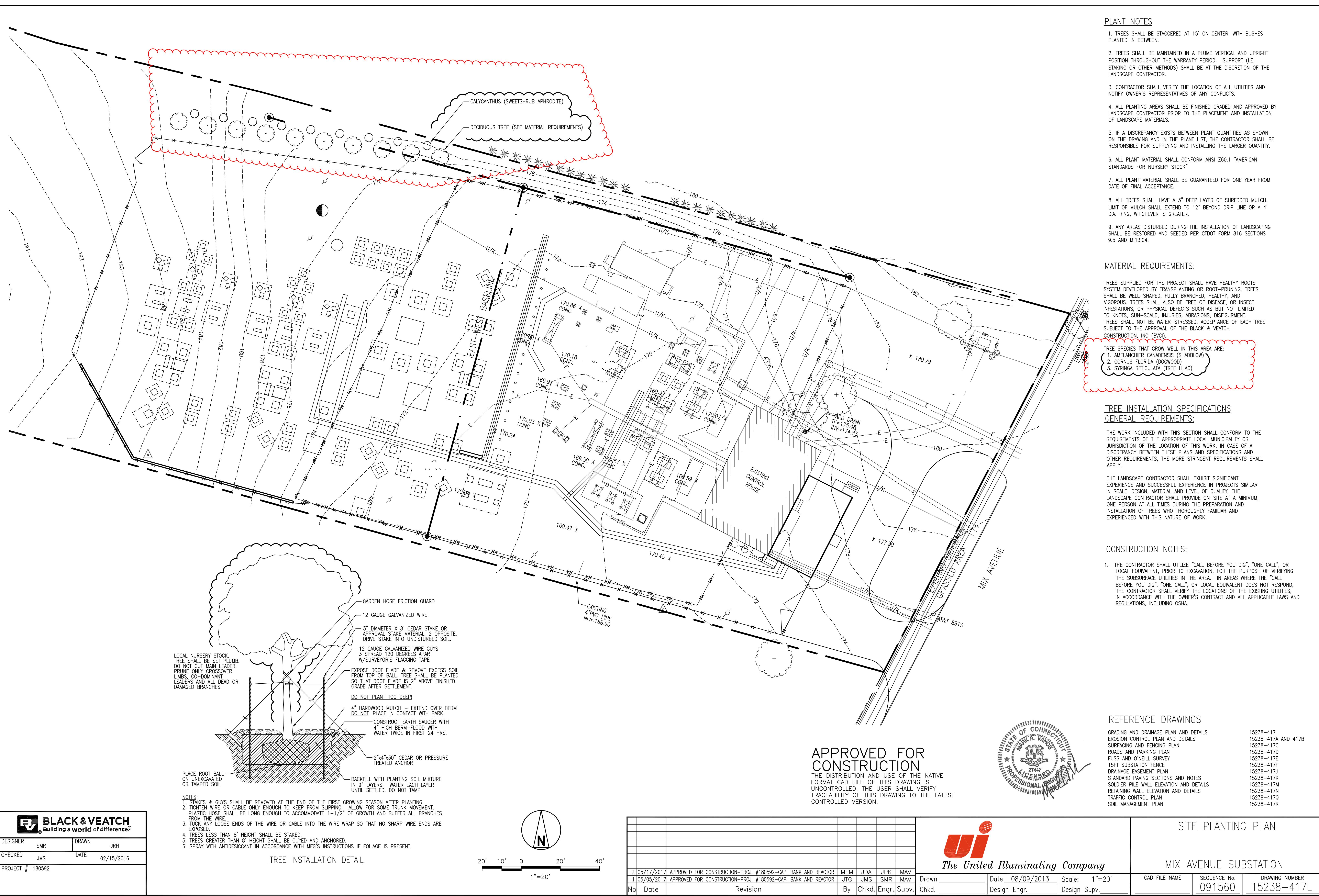
On November 12, 2015, the Connecticut Siting Council (“Council”) determined by declaratory ruling that a Certificate of Environmental Compatibility and Public Need is not be required for the work proposed in Petition No. 1189 (the “Project”), subject to certain conditions. As a condition of the ruling, the Council required the submittal of the final Stormwater Management and Landscaping Plans (“Plans”). In compliance with this condition, UI submits the attached Plans.

Sincerely,

Amy Hicks
Analyst – Permitting & Public Outreach

Enclosures

LANDSCAPING PLAN



STORMWATER POLLUTION CONTROL PLAN

Stormwater Pollution Control Plan

Mix Avenue Substation Project

The United Illuminating Company

November 2015



56 Quarry Road
Trumbull, Connecticut 06611

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Stormwater Pollution Control Plan Mix Avenue Substation Project

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Figures

End of Report

- 1 Flood Insurance Rate Map (FIRM)
- 2 Drainage Basin Map

Appendices

End of Report

- A CT DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities Registration Form and General Permit
- B Identification of Contractor and Certification Statements
- C Construction Drawings
- D Water Quality Volume Calculation Spreadsheet
- E Notice of Termination Form
- F Sedimentation and Erosion Control Inspection Report Form
- G Stormwater Monitoring Report Form (Turbidity Sampling Data)

1 Introduction

This Stormwater Pollution Control Plan is required as part of the registration process under the *General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities* (General Permit), dated August 21, 2013.

The Mix Avenue Substation Project is considered a construction activity in accordance with the Connecticut Department of Energy and Environmental Protection (CT DEEP) General Permit. The purpose of this plan is to specify parameters to follow to minimize pollution caused by use of the project sites during and after construction is completed. Erosion and sediment control requirements are also shown on the plans. A location map of the project site along Mix Avenue in Hamden, Connecticut can be found in *Attachment A* of the General Permit Registration Form, under *Appendix A* of this plan.

During construction, the contractor(s) shall be responsible for implementing all elements of the erosion and sedimentation control measures as defined on the drawings and in this plan. Major construction activities will be phased to minimize areas of disturbance throughout construction. Erosion and sedimentation controls will be implemented and adjusted as needed throughout construction to minimize soil erosion.

Throughout the construction process, the Permittee or Permittee's agent shall periodically inspect all erosion control measures. A monitoring program will be put in place to observe potential off-site impacts due to erosion. After construction, the Permittee shall be responsible for maintaining these erosion and sedimentation control measures. The Mix Avenue Substation Project will not be considered complete until all disturbed areas have been satisfactorily stabilized for at least three months, all erosion has been repaired, and all temporary erosion control measures have been removed as called for on the plans.

The general contractor(s) and subcontractor(s) will be required to sign the certification statement located in *Appendix B* of this plan.

2 Site Description

The United Illuminating Company (UI) will be conducting construction activities at the Substation located at 690 Mix Avenue in Hamden, Connecticut. The work at the Mix Avenue Substation involves clearing for the substation expansion, expansion of the control house building, installing substation towers, construction of two retaining walls, installing storm drainage piping, trench drain, catch basins, stormwater treatment unit and underground detention basin, adding fencing, paving, and laying a crushed rock base within the substation limits. The Substation expansion area is located to the north and west of the two proposed retaining walls as seen on the Erosion Control – Site Plan sheet found in *Appendix C*.

2.1 Scope of Construction Activities

The proposed construction activities at the Mix Avenue Substation include the following:

- Establishing erosion and sedimentation controls
- Conducting limited clearing
- Expanding control house building
- Installing substation towers
- Building retaining walls
- Installing storm drainage system, treatment unit, and underground detention basin
- Expanding fencing
- Laying Pavement and crushed rock
- Restoring work site

2.2 Area of Disturbance

The total disturbed area for the Mix Avenue substation project will be approximately 2.5 acres.

2.3 Stormwater Discharge Information

The Mix Avenue Substation project limits consists of crushed rock, pavement, and grass areas.

The stormwater runoff generated at the western expansion of the site will sheet flow down the grassed slope and infiltrate directly through the proposed crushed rock. The site is graded to promote sheet flow from the west to east and north to south with stormwater infiltrating though the crushed rock and also collected into a trench drain or collected in one of the proposed catch basins on site. The eastern side of the site slopes north to south and east to west, also infiltrating stormwater through the crushed rock and into proposed catch basin. Once in the on-site storm drainage system, flows are conveyed to a stormwater treatment unit and then to an underground detention structure proposed at the southeast corner of the site. From the detention chamber the flows will be conveyed southwesterly to the existing storm drainage network located on the property to the south. The proposed construction will alter the runoff coefficient of the project site due to the decrease in undeveloped grass and wooded areas when compared to existing conditions. The substation expansion will not promote any new channeled or areas of concentrated runoff. Existing drainage patterns will not change from pre- to post- construction activities.

A portion of the relevant Flood Insurance Rate Map for the area of work can be found as *Figure 1* of this plan.

2.4 Receiving Waters

The Mix Avenue Substation project site is located within the Southwest Eastern Regional Complex of the Southwest Coast Major Basin, as indicated within the *Public Water Supply Sources & Drainage Basins of Connecticut* mapping provided in *Figure 2* of this plan. No directly channeled or concentrated flow is anticipated from the project site expansion to the receiving waters.

2.5 Wetlands on Site

There are no known wetlands on this site.

3 Construction Sequencing

The Contractor shall be aware that grubbing, stripping, and associated earthwork operations all have significant potential to cause erosion and sedimentation until complete stabilization of the site has occurred.

Pre-Construction activities include obtaining required permits, authorizations, and approvals from State authorities, as well as private entities including the Permittee having jurisdiction over the Project. In addition, notifications to regulatory authorities will be made and copies of such permits, authorizations, approvals, and notifications will be provided to the Engineer.

The general Construction Sequencing for construction activities shall proceed as follows:

- Install construction entrance, silt fencing and other erosion & sediment controls as shown on the Erosion Control - Site Plan and detail sheets. *Note: Erosion and sedimentation controls shall be modified with changing grades to enable protection of areas adjacent to the site.*
- Clear expansion area.
- Construct control house building addition.
- Install substation towers in expanded area.
- Install storm drainage system, including trench drains, catch basins, stormwater treatment unit, underground detention basin, and piping.
- Perform final site work including, construction of retaining walls, fence expansion, paving and crushed rock placement, stabilization of disturbed soil surfaces.
- Establish vegetation on lawn areas to stabilize final grades.

4 Control Measures

The following paragraphs address the controls and measures to be implemented on the work site both during and after construction to minimize stormwater pollution to the waters of the State of Connecticut. Control measures during construction activities are shown on the Erosion Control – Site Plan sheet within the Construction Drawings included as *Appendix C*.

4.1 Erosion and Sediment Controls

The goal of this plan is to control erosion on the site and to control and minimize the movement of sediment into adjacent wetlands, watercourses or storm sewer systems. Note that erosion and sediment controls shall conform to the requirements of the *Connecticut Guidelines for Soil Erosion and Sediment Control*, dated May 2002, which will hereafter be referred to as the “Guidelines”, and the *2004 Connecticut Stormwater Quality Manual*, which will hereafter be referred to as the “Standards”. To meet these goals, stabilization, structural and maintenance practices shall be implemented by the Contractor as outlined below.

4.1.1 Stabilization Practices and Protection

Both temporary and permanent stabilization practices shall be implemented throughout the project to minimize erosion of soil from the disturbed site. Temporary and permanent stabilization measures are proposed to provide protection against erosion both during and after construction. Existing vegetation shall be preserved to the maximum extent practicable.

The contractor shall maintain compost filter socks and haybales until seeding/stabilization. When construction activities have permanently ceased or when final grades are reached on any portion of the sites, stabilization and protection practices shall be implemented within seven days. Areas that will remain disturbed but inactive for at least 30 days shall receive temporary seeding or soil protection in accordance with the Guidelines. Areas that will remain disturbed beyond the seeding season shall receive long term non-vegetative stabilization and protection measures sufficient to protect the site through the winter. In all cases, stabilization and protection measures shall be implemented as soon as possible in accordance with the Guidelines.

The stabilization practices to be implemented during the construction of the proposed project are as follows:

Temporary Vegetative Cover: Exposed areas that will be inactive for more than seven days, or immediately (as schedules allow) for stockpiles not to be used for 30 days, and areas that have not yet reached finished grades shall receive a temporary vegetative cover during the planting season of March 15 to July 1 and August 1 to October 15. This temporary vegetative cover shall consist of perennial rye grass. The rye grass shall be planted at a rate of 2 lbs./1,000 sq. ft. at a depth of $\frac{1}{2}$ inch. Limestone (equivalent to be 50% calcium plus magnesium oxide) shall be applied as seedbed prepared at a rate of 90 lbs./1,000 sq. ft. Where grass predominates, fertilize according to a soil test at a minimum application rate of 1 lb. of nitrogen per ton, areas to be left bare before finish grading and seeding outside of

planting seasons shall receive an air-dried woodchip mulch, free of coarse matter, treated with 12 lbs. of nitrogen per ton, applied at a rate of 185—275 lbs./1,000 sq. ft.

Permanent Vegetative Cover: Once the planting season begins, temporary stabilization measures shall be removed and slopes shall be prepared and seeded. Seeding shall be in accordance with the technical specifications for the project. Seeding shall only occur between April 1 and June 1 and August 15 and October 15.

4.1.2 Structural Measures

Structural practices shall be implemented to control the movement of sediment and minimize any discharge of pollutants from the site, divert flows away from exposed soils, store flows, and limit runoff. The structural practices to be implemented during construction are as follows:

- **Geotextile Sediment Filter Fence:** To minimize the transport of sediment from the disturbed areas, geotextile sediment filter fence has been shown on the plans at select areas around the site to filter runoff from the disturbed areas. Geotextile sediment filter fence details and locations are provided on the drawings. A row of geotextile sediment filter fence shall be placed around stockpiles during stockpiling operations. Geotextile sediment filter fence shall be removed only when the entire site has been permanently stabilized.
- **Compost Filter Sock:** To minimize the transport of sediment from the disturbed areas to receiving properties, compost filter socks have been shown on the plans at select areas around the site to filter runoff from the disturbed areas. Compost filter sock details and locations are provided on the Erosion Control – Site Erosion Control Details sheets. Compost filter socks shall be removed only when the entire site has been permanently stabilized. Alternatively, the sock may be left in place and vegetated with the stakes removed once the site has been permanently stabilized.
- **Haybale Barriers:** To reduce velocity of stormwater traveling across the site, haybale barriers may be installed across the direction of high runoff flows. Haybale barriers shall remain as temporary measures during construction to protect downgradient disturbed surfaces during establishment. Stacked haybales shall be placed around stockpiles during stockpiling operations.
- **Construction Entrance:** To prevent soil or sediment from being carried off site by construction equipment, a construction entrance will be installed before construction traffic into and out of the project area. The width of the construction entrance shall not be less than the width of the ingress or egress. Adjacent roadways shall be swept daily to remove material that may be tracked onto pavement.

4.1.3 Maintenance

The erosion and sediment controls must be maintained in a condition that will protect waters of the State from pollution during site construction. The Contractor shall conduct the following maintenance to promote the proper performance of erosion and sediment control measures.



- **Temporary and Permanent Vegetation:** At any eroded areas, repair by filling to finished grades, replace vegetative support material and seed, fertilize and lime, as specified for temporary and permanent stabilization. Add additional mulch as required.
- **Pavement Sweeping:** Sweep surfaces adjacent to the construction entrances, the soil management areas, and designated haul routes daily. Properly dispose of sediment or debris collected during sweeping.
- **Compost Filter Socks, Silt Fence, and Haybales:** Inspect compost filter socks, silt fence, and haybales immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs should be made immediately. Should the barrier decompose or become ineffective while the barrier is still needed, the barrier shall be replaced promptly. Sediment deposits should be removed when they reach approximately one-half the height of the barrier. Sediment shall be disposed of on-site as non-structural fill. Sediment deposits remaining in place after the compost filter socks, silt fence, and haybales are no longer required shall be removed and placed in a stockpile surrounded by silt fence in a location suitable to the Permittee.

4.2 Dewatering Wastewaters

Dewatering wastewaters from the construction activity is not anticipated. Should dewatering be necessary water will be discharged into dewatering pumping settling basins. There will be no discharge directly into watercourses or storm sewer structures.

Proper methods and devices shall be utilized to the extent permitted by law, such as pumping water into a temporary pumping settling basin, providing surge protection at the inlet and outlet of pumps, floating the intake of the pump, or other methods to minimize and retain the suspended solids. If a pumping operation causes turbidity problems beyond the control of these measures, the operation shall cease until feasible means of controlling turbidity (e.g., discharge to the sanitary sewer) are determined and implemented.

All dewatering activities will be in compliance with both state and federal guidance/regulations.

Where treatment is not required for dewatering, wastewater from dewatering pumps will be infiltrated into the ground where possible. Where this is impracticable, proper methods and devices shall be utilized to the extent permitted by law, such as pumping water into a temporary sedimentation depression, providing surge protection at the inlet and outlet of pumps, floating the intake of the pump, or other methods to minimize and retain the suspended soils. These wastewaters will not be discharged directly without treatment. If a pumping operation causes turbidity problems beyond the control of these measures, the operation shall cease until feasible means of controlling turbidity (e.g. discharge to the sanitary sewer) are determined and implemented.

4.3 Post-Construction Stormwater Management

4.3.1 Standards

Detailed erosion and sedimentation controls in accordance with the Guidelines have been proposed for this site. This system will protect the wetlands during and after construction until the site is stabilized. The water quality of runoff from the stabilized, developed site will be improved using widely accepted Best Management Practices (BMPs).

4.3.2 Control Measures

At the end of construction, areas disturbed by construction activities shall be stabilized. As a result, the potential for erosion at this site after construction is minimal. Crushed rock areas will also serve as a filter to remove sediment from runoff if permanently stabilized areas are properly maintained. Perimeter controls (i.e., compost filter sock) will be actively maintained until final stabilization of those portions of the site up-gradient of the perimeter control. Temporary perimeter controls will be removed after final stabilization.

The substation expansion will not promote any new channeled or areas of concentrated runoff. Existing drainage patterns will not change from pre- to post- construction activities. The water quality rain event will infiltrate through the crushed rock, thus providing removal of the total suspended solids (TSS) from stormwater runoff.

The contractor shall be responsible for cleaning all post-construction stormwater structures and removal of remaining silt fence before filing a termination notice, a copy of which is included as *Appendix E*. After filing the termination, maintenance and cleaning of the unit shall become the responsibility of the Permittee.

The design will meet the requirements of the Connecticut Stormwater Quality Manual, the Connecticut Guidelines for Soil Erosion and Sediment Control, and federal stormwater regulations.

4.3.3 Redevelopment Project Performance Standards

The Mix Avenue Substation site surfacing consists of crushed rock, bituminous pavement, and concrete areas for the bases of the additional towers, and grassed areas. The proposed conditions will increase impervious cover when compared to existing conditions, due to the decrease in undeveloped/pervious areas for the expansion. For this condition of existing imperviousness below 40%, the project should be designed to retain the entire water quality volume from the proposed development (see *Appendix D*).

The site is being designed to retain runoff volume to the maximum extent achievable by using crushed rock as the proposed surfacing for the majority of the site. Based on the geotechnical investigation of the project site, a rock layer is present. The rock layer will hinder or prevent infiltration via a subsurface infiltration system. In addition, soils on site are contaminated; therefore, an infiltration system is not

recommended. An underground detention basin is proposed to attenuate post flow rates and volumes leaving the site.

4.4 Other Controls

Good housekeeping will be maintained to minimize impacts of protected areas by pollutants, soil, and fugitive sediment.

4.4.1 Waste Disposal

The following BMPs shall be implemented to minimize the discharge of litter, debris, construction materials, hardened concrete waste, or similar materials to waters of the State.

- Construction waste will be removed from the site and disposed of legally.
- Waste will be removed from the site as soon as practical.
- Containers will be appropriate for the material stored.
- Where necessary, containers will be sealed/covered to prevent waste from escaping the container.
- Containers will only be located where approved by the engineer or regulatory agency.
- Waste storage areas shall be located, designed, and operated to prevent polluted runoff from leaving the waste storage area.
- Fences or covers shall be provided to prevent waste from blowing out of the waste storage area.

4.4.2 Construction Materials

Construction materials needed for this project will be properly stored in a neat and orderly manner until used. Construction materials shall not be stored outside of any buffers and at least 50 feet from any stream, wetland or other sensitive resource.

4.4.3 Washout Areas

Washout of applicators, containers, vehicles, and equipment for concrete, paint, and other materials shall be conducted in a designed washout area. There shall be no surface discharge of washout wastewaters from this area. To eliminate overflows during rainfall or after snowmelt all washwater shall be directed into a pit. This area shall be outside of any buffers and at least 50 feet from any stream, wetland, or other sensitive resource. The area shall be completely self-contained and clearly marked.

In addition, dumping of liquid wastes in storm sewers is prohibited. All wastes including hardened concrete waste from washouts shall be disposed of legally at an off-site location. At least once per week, all containers or pits used for washout should be inspected for structural integrity, adequate holding capacity, and to check for leaks or overflows. If any deficiencies are discovered, corrective action shall be taken immediately. Washout areas shall be emptied when levels reach $\frac{1}{2}$ the height of the container or pit.

4.4.4 Vehicle Tracking and Dust Control

As shown on the plans, a construction entrance shall be installed and maintained to prevent vehicles from tracking sediments onto City roads. The Contractor shall be responsible for performing dust suppression techniques during construction, including but not limited to:

- Spraying water or calcium chloride as necessary to control dust from construction activities. The volume of water sprayed for controlling dust shall be minimized so as to prevent runoff of water. No discharge of dust control water shall contain or cause a visible oil sheen, floating solids, visible discoloration, or foaming. Calcium chloride may also be used to control dust.
- Sweeping surfaces adjacent to the construction entrances and the soil management areas daily. The designated haul routes will be swept as required.

If at any time fugitive dust is observed to be generated from the construction site, the Contractor shall be responsible for employing additional dust suppression techniques to remedy the situation.

4.4.5 Chemical and Petroleum Products

All chemical and petroleum product containers stored on the site (excluding those contained within vehicles and equipment) shall be provided with impermeable containment which will hold at least 110% of the volume of the largest container, or 10% of the total volume of all containers in the area, whichever is larger, without overflow from the containment area. All chemicals and their containers shall be stored under a roofed area. Containers of 100 gallon capacity or more may be stored without a roof only if stored in a double-walled tank.

On-site vehicles shall be monitored for leaks and receive maintenance as needed.

4.4.6 Fertilizers

Fertilizers, if used in conjunction with the seeding operation, will be applied only in the amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered area. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

4.4.7 Spill Control Practices

The following practices shall be implemented during construction activities to mitigate spills of material and prevent their release to the waters of the State.

- Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.

- Materials and equipment necessary for spill cleanup will be kept in the material storage area on-site. Equipment and materials will include but not be limited to brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- Spills will be cleaned up immediately after discovery.
- Spills of toxic or hazardous material will be reported to the appropriate State and local government agency, regardless of size.

5 Runoff Reduction and Low Impact Development (LID) Information

Runoff reduction practices have been utilized for the Mix Ave Substation expansion project. A detailed erosion control site plan has been prepared for the site. During construction, measures will be taken to reduce erosion and manage sedimentation from disturbed surfaces. This includes the use of compost filter socks, silt fence, and haybales which will be installed at the down-gradient areas of disturbed surfaces within the project limits.

6 Inspections

6.1 Plan Implementation Inspections

Within the first 30 days following commencement of the construction activity on the sites, the permittee shall contact Fuss & O'Neill, who have been selected as the qualified soil erosion and sediment control professionals to inspect the sites. The sites shall be inspected at least once and no more than three times during the first 90 days to confirm compliance with the General Permit and proper initial implementation of all controls measures designated in the Plan for the sites for the initial phase of construction.

6.2 Routine Inspections

The Permittee shall routinely inspect the site for compliance with the General Permit and the Plan until a Notice of Termination has been submitted. Inspection procedures for these routine inspections shall be addressed and implemented in the following manner: The Permittee shall maintain a rain gauge on-site to document rainfall amounts. The Permittee shall engage a qualified inspector (Fuss & O'Neill), to inspect the site at least once a week and within 24 hours of the end of a storm that generates a discharge. For storms that equal or exceed 0.5 inches that end on a weekend, holiday or other time after which normal working hours will not commence within 24 hours, an inspection is required within 24 hours. For storms of less than 0.5 inches, an inspection shall occur immediately upon the start of the subsequent normal working hours. Where sites have been temporarily or finally stabilized, an inspection shall be conducted at least once every month for three months to confirm compliance with the General Permit.



The items to be inspected shall include, at a minimum, the following:

- Disturbed areas of the construction activity that have not been permanently stabilized
- All erosion and sediment control measures
- All structural control measures
- Stockpile areas
- Washout areas
- Drainage control facilities including diversion and perimeter drainage ditches
- Locations where vehicles enter or exit the site

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants leaving the work site. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be visually inspected to ascertain whether erosion control measures are effective in preventing significant impacts, such as turbidity to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking.

Based on the results of the inspection, the description of potential sources and pollution prevention measures identified in the plan shall be revised as appropriate by the Permittee or his agent as soon as practicable after such inspection.

A report shall be prepared for every inspection and retained as part of the plan. The report shall, at a minimum, summarizing the following;

- The scope of the inspection
- Name(s) and qualifications of personnel making the inspection
- Date(s) of the inspection
- Weather conditions including precipitation information
- Major observations relating to the implementation of the storm water pollution control plan
- Descriptions of the stormwater discharge(s) from the site
- Any water quality monitoring performed during the inspection
- Statement that, in the judgment of the qualified inspector(s), the site is either in compliance or out of compliance with the terms and conditions of the Plan and General Permit.

The report shall be signed by both the qualified inspector and the permittee or his/her authorized representative in accordance with the General Permit. A blank copy of the inspection report is provided in *Appendix F*.

If the site inspection indicates that the site is out of compliance, the inspection report shall include a summary of the remedial actions required to bring the site back into compliance. During the period in which any corrective actions are being developed and have not yet been fully implemented, interim measures shall be implemented to minimize the potential for the discharge of pollutants to the site.

6.3 Corrective Actions

If at any time an inspection determines that the site is out of compliance with the terms and conditions of this Plan and the General Permit, corrective actions shall be taken. Non-engineered corrective actions (as identified in the Guidelines) shall be implemented on site within 24 hours and incorporated into a revised Plan within three calendar days of the date of inspection unless another schedule is specified in the Guidelines. Engineered corrective actions (as identified in the Guidelines) shall be implemented on site within seven days and incorporated into a revised Plan within ten calendar days of the date of inspection unless another schedule is specified in the Guidelines.

7 Monitoring

Stormwater sampling is required for monitoring turbidity. Sampling shall occur on a monthly basis, during storm events that generate a discharge of stormwater from the site while construction activity is ongoing, until final stabilization of the drainage areas associated with each outfall is achieved. Sampling shall continue on a monthly basis until final stabilization of the drainage area associated with each outfall is achieved.

Sampling is only required during normal working hours, as defined by the General Permit. For this project, normal working hours will be Monday through Friday, 7am to 5 pm. If sampling is discontinued due to the end of normal working hours, it shall be resumed the next working day as long as the discharge continues. Sampling may be temporarily suspended if at any time conditions exist that may reasonable pose a threat to the safety of the person taking the sample (e.g. high winds, lighting, flooding, intense rainfall etc.). Sampling shall resume once the unsafe conditions are no longer present. If there is no stormwater discharge during a month, sampling is not required.

7.1 Monitoring Requirements

All samples shall be collected from discharges resulting from a storm event that occurs at least 24 hours after any previous storm event that generated a discharge. Sampling of snow or ice melt in the absence of a storm event is not a valid sample.

Samples shall be grab samples taken at least three separate times during a storm event. The samples shall be representative of the flow and characteristics of the discharge. The first sample shall be taken within the first hour of stormwater discharge from the site. In cases where discharges begin outside of normal working hours, the first sample shall be taken at the start of normal working hours.

Sampling is required of areas of concentrated runoff of stormwater from disturbed areas. Sampling shall be done in accordance with 40 CFR Part 136/ASTM D1889-00. Sampling locations are shown on the Erosion Control – Site Plan of *Appendix C* and shall be identified in the field with a flag, stake, or other visible marker.

7.2 Monitoring Reports

The stormwater turbidity value for each sampling point shall be determined by taking the average of the turbidity values of all samples at that sampling point during a given storm. Any samples containing snow or ice melt must be noted. A blank copy of the stormwater monitoring report for submitting turbidity sampling data is provided in *Appendix G*.

Monitoring reports shall be submitted to CT DEEP in accordance with the provisions outlined in the General Permit.

7.3 Sampling Points

The plan showing the proposed sampling point is provided in *Appendix G*. The site has two sampling points described below:

Sampling Point 1 (SP-001) is located at the stormwater treatment unit to the west of the underground detention basin located in the south eastern corner of the site. The drainage area includes the northeastern area of the site along the proposed access road where runoff is conveyed to this sampling point from sheet flow entering the drainage structure just north of the detention chamber via a 15" RCP. Stormwater from the western expansion area of the site is collected in the trench drain located centrally within the site and is pipe to the sampling point via an 18" RCP to the detention chamber. Stormwater is collected in the underground detention basin before outletting into an existing storm drainage network located on the property to the south of the site. Sampling for SP-001 shall occur in the stormwater treatment unit. The proposed substation expansion work does not create new outfalls and will not promote channeled or concentrated flow. The monitor will review the worksite and take a sample if concentrated runoff is observed leaving the work area.

Sampling Point 2 (SP-002) is located at a low point located at elevation 168.6 along the southern access road (southwest of the control house). The proposed site grading slopes from west to east at a 4% slope along the southern end of the site on the crushed rock surface. Sheet flow from the southern access road along may collect at this low point. Sampling for SP-002 shall occur at the low point where stormwater could promote runoff off the site.

8 Contractors

8.1 General

All contractors and subcontractors who will perform actions on site that may reasonably be expected to cause or have the potential to cause pollution of the waters of the State will be identified in *Appendix B*.

8.2 Certification Statement

All contractors and subcontractors must sign the certification included in *Appendix B*. All certifications will be included in the Stormwater Pollution Control Plan.



9 Additional Requirements

9.1 Endangered and Threatened Species

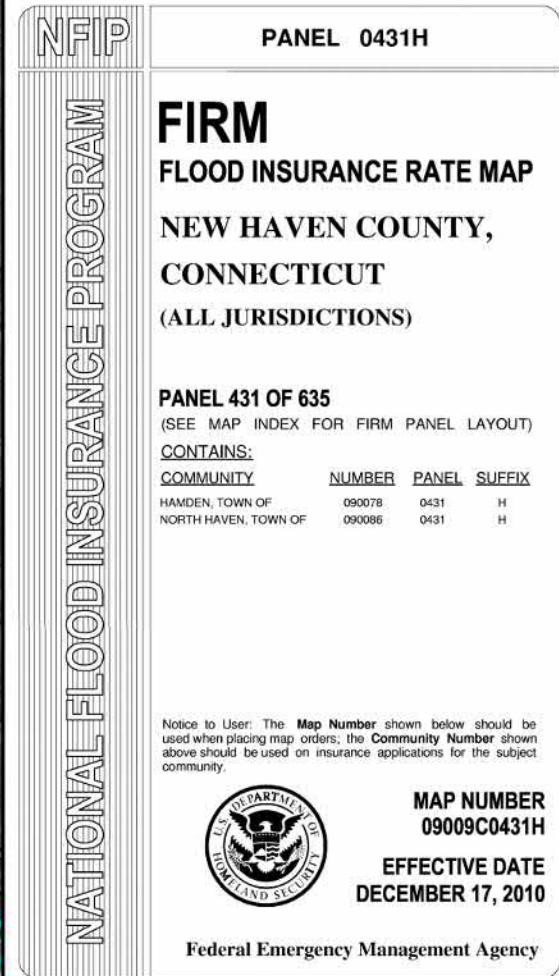
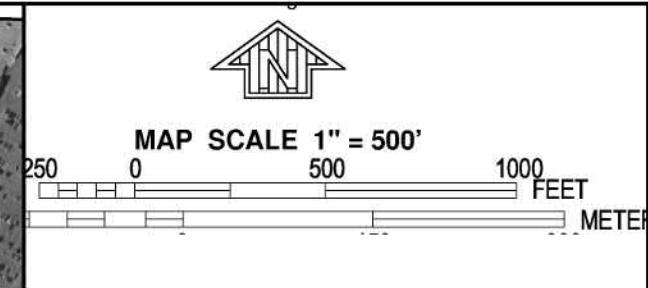
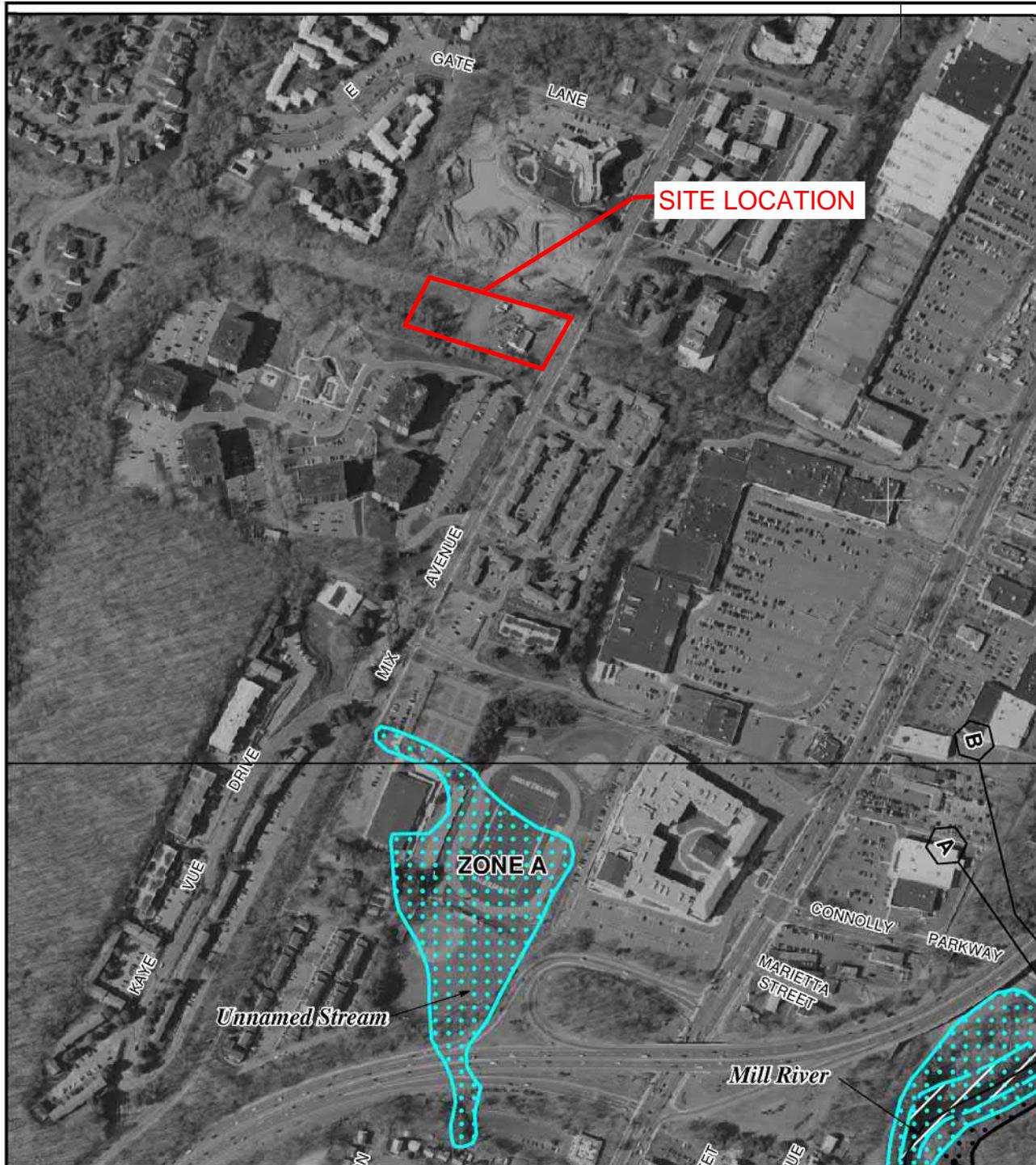
Preliminary review of the maps titled Natural Diversity Data Base (NDDB) Areas in Hamden, CT dated July 2015 published by the Connecticut Department of Energy and Environmental Protection, verified that the project site is not located within or in close proximity to areas known to contain State and Federal Listed Species and Significant Natural Communities.

10 Termination

Once the site has been stabilized and all final inspections have occurred, the registrant shall file a termination notice. Prior to filing for termination, all temporary erosion and sediment control measure shall be removed. A blank copy of the Notice of Termination Form is provided in *Appendix E*.

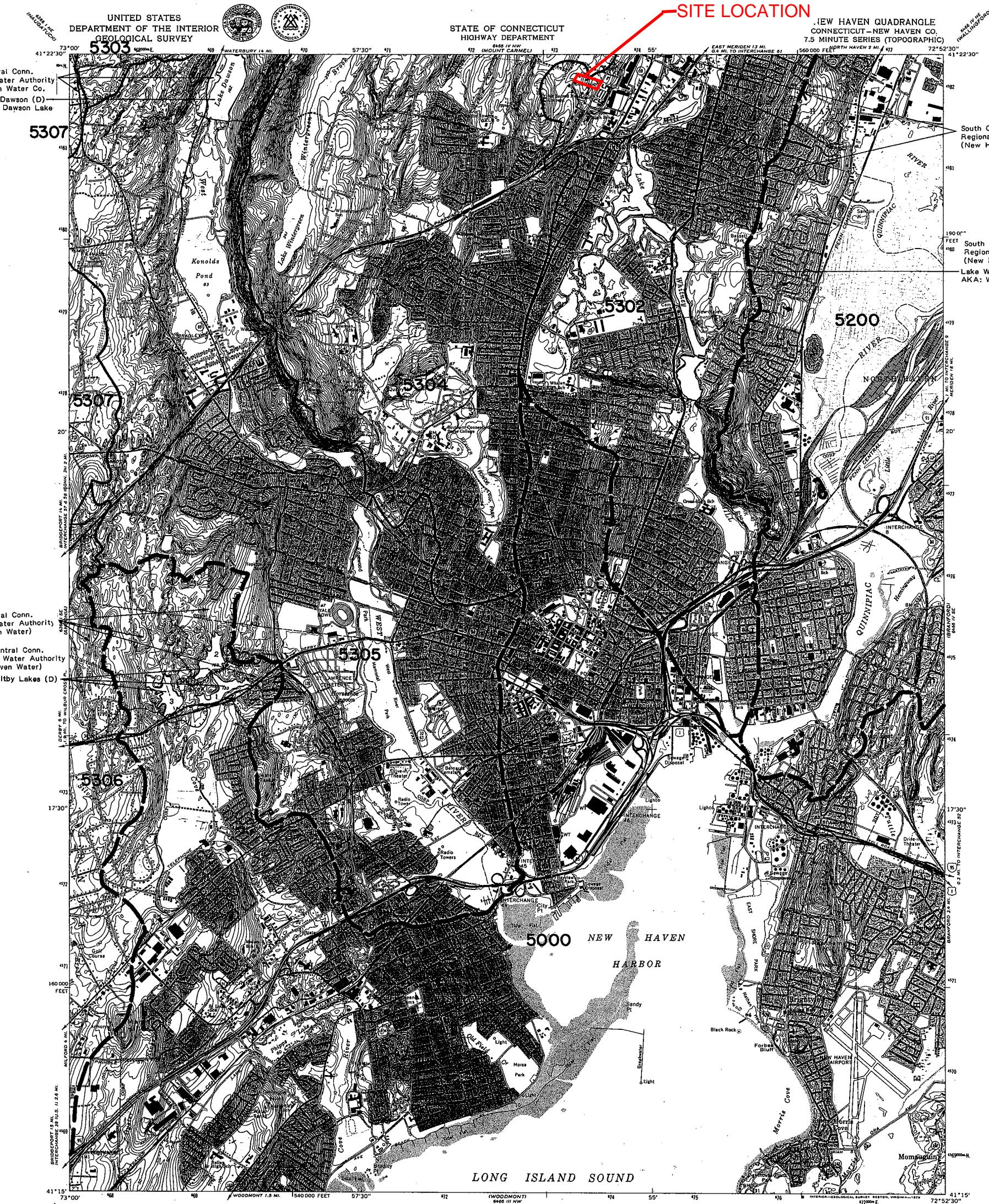
Figures





This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msfc.fema.gov

FIGURE 1



Mapped, edited, and published by the Geological Survey
Control by USGS, USC&GS, and Connecticut Geological Survey

Topography by photogrammetric methods from aerial photographs
taken 1949. Field checked 1954. Revised from aerial
photographs taken 1966. Field checked 1967.

Selected hydrographic data compiled from USGS Chart 218 (1964).
This information is not intended for navigational purposes.

Polyconic projection. 1927 North American datum.
10,000-foot grid based on Connecticut coordinate system
1000-meter Universal Transverse Mercator grid ticks,
zone 18, shown in blue.

Red tint indicates areas in which only landmark
buildings are shown.

UTM GRID AND 1972 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

1 1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 1 0 1 1 1 1 1 1 1 MILE
1 33 1 1 21 1 24 1 24 MILES

SCALE
1 1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 1 0 1 1 1 1 1 1 1 MILE
1 33 1 1 21 1 24 1 24 MILES

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS APPROXIMATELY 42 FEET



ROAD CLASSIFICATION
Primary highway, all weather, light-duty road, all weather,
hard surface Improved surface
Secondary highway, all weather, unimproved road, fair or dry
hard surface
Interstate Route U.S. Route State Route

NEW HAVEN, CONN.—95
N4115—W7252.5/7.5

1967
PHOTOREVISED 1972
AMS 8466 IV SW—SERIES V816

FIGURE 2

Appendix A

CTDEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities Registration Form and General Permit





General Permit Registration Form for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, effective 10/1/13 (non-electronic form)

Prior to completing this form, you **must** read the instructions for the subject general permit available at [DEEP-WPED-INST-015](#).

This form must be filled out electronically before being printed.

You must submit the registration fee along with this form.

The [status of your registration](#) can be checked on the DEEP's ezFile Portal. Please note that DEEP will no longer mail certificates of registration.

CPPU USE ONLY	
App #:	_____
Doc #:	_____
Check #:	_____
Program:	Stormwater

Part I: Registration Type

Select the appropriate boxes identifying the registration type and registration deadline.

Registration Type		Registration Timeline	
<input checked="" type="checkbox"/> New Registration <input checked="" type="checkbox"/> (Refer to Section 2 of the permit for definitions of Locally Exempt and Locally Approvable Projects)	<input type="checkbox"/> Locally Approvable Projects Size of soil disturbance:	New registration - Sixty (60) days prior to the initiation of the construction activity for: Sites with a total soil disturbance area of 5 or more acres	
	<input checked="" type="checkbox"/> Locally Exempt Projects Size of soil disturbance:	<input checked="" type="checkbox"/> New registration - Sixty (60) days prior to the initiation of the construction activity for: Sites with a total disturbance area of one (1) to twenty (20) acres except those with discharges to impaired waters or tidal wetlands	
	2.5 Acres	<input type="checkbox"/> New registration - Ninety (90) days prior to the initiation of the construction activity for: (i) Sites with a total soil disturbance area greater than twenty (20) acres, or (ii) Sites discharging to a tidal wetland (that is not fresh-tidal and is located within 500 feet), or (iii) Sites discharging to an impaired water listed in the "Impaired Waters Table for Construction Stormwater Discharges"	

Part II: Fee Information

1. New Registrations
 - a. Locally approvable projects (registration only):
 \$625 [#1855]
 - b. Locally exempt projects (registration and Plan):
 \$3,000 total soil disturbance area ≥ one (1) and < twenty (20) acres. [#1856]
 \$4,000 total soil disturbance ≥ twenty (20) acres and < fifty (50) acres. [#1857]
 \$5,000 total soil disturbance ≥ fifty (50) acres. [#1858]

The fees for municipalities shall be half of those indicated in subsections 1.a., 1.b., and 2 above pursuant to section 22a-6(b) of the Connecticut General Statutes. State and Federal agencies shall pay the full fees specified in this subsection. The registration will not be processed without the fee. The fee shall be non-refundable and shall be paid by certified check or money order payable to the Department of Energy and Environmental Protection.

Part III: Registrant Information

- If a registrant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of the State. If applicable, the registrant's name shall be stated **exactly** as it is registered with the Secretary of the State. This information can be accessed at [CONCORD](#).
- If a registrant is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).

1. Registrant /Client Name: The United Illuminating Company

Registrant Type  **Registration Type:** Business Entity **Business Type:** Corporation

Secretary of the State business ID #: 0159106

Mailing Address: 180 Marsh Hill Road

City/Town: State: CT

State: CT

Zip Code: 06477

Business Phone: (203) 926-4500

Example: (xxx) xxx-xxxx

Contact Person: Richard J. Reed, PMP Title: Vice President - Engineering and Project Excellence

E-Mail:

Additional Phone Number (if applicable): _____ ext. _____

2. List billing contact, if different than the registrant:

Name: UIL Holding Corporation

Mailing Address: 180 Marsh Hill Road

City/Town: State: CT

Zip Code: 06477

Business Phone: (203) 926-4595

ext. 2

Contact Person: Shawn C. Crosbie Title: Environmental Analyst

(shawn.crosbie@uinet.com)

Part III: Registrant Information (continued)

3. List primary contact for departmental correspondence and inquiries, if different than the registrant:

Name: **UIL Holding Corporation**

Mailing Address: **180 Marsh Hill Road**

City/Town: **Orange**

State: **CT**

Zip Code: **06477**

Business Phone: **(203) 926-4595**

ext.:

Site Phone:

Emergency Phone:

Contact Person: **Shawn C. Crosbie**

Title: **Environmental Analyst**

(shawn.crosbie@uinet.com)

Association (e.g. developer, general or site contractor, etc.): **Employee / Contact for Registrant**

4. List owner of the property on which the activity will take place, if different from registrant:

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.:

Contact Person:

5. List developer, if different from registrant or primary contact:

Name: **Black & Veatch**

Mailing Address: **11401 Lamar Avenue**

City/Town: **Overland Park**

State: **KS**

Zip Code: **66211**

Business Phone: **913-458-7328**

ext.:

Contact Person: **John Rector**

Title:

6. List general contractor, if different from registrant or primary contact:

Name: **Black & Veatch**

Mailing Address: **11401 Lamar Avenue**

City/Town: **Overland Park**

State: **KS**

Zip Code: **66211**

Business Phone: **913-458-7328**

ext.:

Site Phone:

Off Hours Phone:

Contact Person: **John Rector**

Title:

7. List any engineer(s) or other consultant(s) employed or retained to assist in preparing the registration and/or Stormwater Pollution Control Plan. Please select if additional sheets are necessary, and label and attach them to this sheet.

Name: **Fuss & O'Neill, Inc.**

Mailing Address: **56 Quarry Road**

City/Town: **Trumbull**

State: **CT**

Zip Code: **06611**

Business Phone: **(203) 374-3748**

ext.: **3509**

Contact Person: **Joseph E. Lenahan III**

Title: **Senior Project Manager**

PE, LEED AP

Service Provided: **Consultant and Registration** Email: **jlenahan@fando.com**
Form/ Plan Preparation

8. List Reviewing Qualified Professional (for locally approvable projects only). This information must match the information provided in Part IX of this registration.

Name: _____ Contact Person: _____

Mailing Address: _____

Email: _____

City/Town: _____

State: _____

Zip Code: _____

Business Phone: _____

ext.:

Part IV: Site Information

1. Site Name: Mix Avenue Substation

Street Address or Description of Location: 612 Mix Avenue
(if linear, project location should be the project begining point)

City/Town: Hamden

State: CT

Zip Code: 06514

(use only one zip code)

Longitude: - 72.92314 Latitude: 41.37227

Brief Description of construction activity: Utility tower upgrades throughout the railroad

Project Start Date (must be on or after the authorization date of this registration) : 3/2016

Anticipated Completion Date: 12/2016

(month/yr)

(month/yr)

Normal working hours: 7:00AM to 5:00PM

2. MINING: Is the activity on the site in question part of mining operations (i.e. sand and gravel)? Yes No

If yes, mining is not authorized by this general permit. You must submit the Registration Form for the General Permit for the Discharge of Stormwater Associated with Industrial Activity.

3. COMBINED OR SANITARY SEWER: Does all of the stormwater from the proposed activity discharge to a combined or sanitary sewer (i.e. a sewage treatment plant)? Yes No

If yes, this activity is not regulated by this permit. Contact the Water Permitting & Enforcement Division at 860-424-3018.

4. INDIAN LANDS: Is or will the facility be located on federally recognized Indian lands Yes No

5. COASTAL BOUNDARY: Is the activity which is the subject of this registration located within the coastal boundary as delineated on DEEP approved coastal boundary maps Yes No

The coastal boundaries fall within the following towns: Branford, Bridgeport, Chester, Clinton, Darien, Deep River, East Haven, East Lyme, Essex, Fairfield, Greenwich, Groton (City and Town), Old Lyme, Guilford, Hamden, Ledyard, Lyme, Madison, Milford, Montville, New London, New Haven, North Haven, Norwalk, Norwich, Old Saybrook, Orange, Preston, Shelton, Stamford, Stonington (Borough and Town), Stratford, Waterford, West Haven, Westbrook and Westport.

If "yes", and this registration is for a new authorization or a modification of an existing authorization where the physical footprint of the subject activity is modified, you must provide documentation the DEEP Office of Long Island Sound Programs or the local governing authority has issued a coastal site plan approval or determined the project is exempt from coastal site plan review. Provide this documentation with your registration as Attachment B. See guidance in Appendix D of the general permit. Information on the coastal boundary is available at the local town hall or at www.cteco.uconn.edu/map_catalog.asp. Additional DEEP Maps and Publications are available by contacting DEEP staff at 860-424-3555.

Part IV: Site Information (continued)

6. ENDANGERED OR THREATENED SPECIES:

In order to be eligible to register for this General Permit, each registrant must perform a self-assessment, obtain a limited one-year determination, or obtain a safe-harbor determination regarding threatened and endangered species. This may include the need to develop and implement a mitigation plan. While each alternative has different limitations, the alternatives are not mutually exclusive; a registrant may register for this General Permit using more than one alternative. See Appendix A of the General Permit. Each registrant must complete this section AND Attachment C to this Registration form and a registrant who does not or cannot do so is not eligible to register under this General Permit.

Each registrant must perform a review of the Department's Natural Diversity Database maps to determine if the site of the construction activity is located within or in proximity (within ¼ mile) to a shaded area.

- a. Verify that I have completed Attachment C to this Registration Form. Yes
- b. Provide the date the NDDB maps were reviewed: 7/16/2015 Date of map should be **one** year or less than the submittal date of this application. Print a copy of the NDDB map you viewed since it must be submitted with this registration as part of Attachment C.
- c. For a registrant using a limited one-year determination or safe harbor determination to register for this General Permit, provide the Department's Wildlife Division NDDB identification number for any such determination: _____
(The number is on the determination issued by the Department's Wildlife Division).

For more information on threatened and endangered species requirements, refer to Appendix A and Section 3(b)(2) of this General Permit, visit the DEEP website at www.ct.gov/dep/nddbrequest or call the NDDB at 860-424-3011.

- 7. WILD AND SCENIC RIVERS: Is the proposed project within the watershed of a designated Wild and Scenic River? (See Appendix H for guidance) Yes No
- 8. AQUIFER PROTECTION AREAS: Is the site located within a mapped aquifer protection area www.ct.gov/dep/aquiferprotection as defined in section 22a-354h of the CT General Statutes? (For additional guidance, please refer to Appendix C of the General Permit) Yes No
- 9. CT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL: Is the activity in accordance with CT Guidelines for Erosion and Sediment Control and local erosion & sediment control ordinances, where applicable? Yes No
- 10. HISTORIC AND/OR ARCHAEOLOGICAL RESOURCES:
Verify that the site of the proposed activity been reviewed (using the process outlined in Appendix G of this permit) for historic and/or archaeological resources: Yes
 - a. The review indicates the proposed site does not have the potential for historic/ archaeological resources, OR Yes No
 - b. The review indicated historic and/ or archaeological resource potential exists and the proposed activity is being or has been reviewed by the Offices of Culture and Tourism, OR Yes No
 - c. The proposed activity has been reviewed and authorized under an Army Corps of Engineers Section 404 wetland permit. Yes No
- 11. CONSERVATION OR PRESERVATION RESTRICTION:
Is the property subject to a conservation or preservation restriction? Yes No
If Yes, proof of written notice of this registration to the holder of such restriction or a letter from the holder of such restriction verifying that this registration is in compliance with the terms of the restriction, must be submitted as Attachment D.

Part V: Stormwater Discharge Information

Outfall #	a) Type	b) Pipe Material	c) Pipe Size	d) Note: To find lat/long, go to: CT ECO . A decimal format is required here. Directions on how to use CT ECO to find lat./long. and conversions can be found in Part V, Section d of the DEEP-WPED-INST-015 .		e) What method was used to obtain your latitude/longitude information?
				Longitude	Latitude	
1	Pipe	Concrete	18"	-72.92431	41.37198	Select One: CT ECO
2	other	not applicable	not applicable	-72.92388	41.37224	Select One: CT ECO
	Select One:	Select One:	Select One:			Select One:
	Select One:	Select One:	Select One:			Select One:
	Select One:	Select One:	Select One:			Select One:

Table 2						
Outfall #	a) For temporary and permanent outfalls, provide a start date. For temporary discharges, also provide a date the discharge will cease.	b) For the drainage area associated with each outfall: Effective Impervious Area Before Construction	c) For the drainage area associated with each outfall: Effective Impervious Area After Construction	d) To what system or receiving water does your stormwater runoff discharge? either "storm sewer or wetlands" or "waterbody" (If you select "storm sewer or wetland" proceed to Part VI of the form. If you select "waterbody" proceed to next question)	e) For each outfall, does it discharge to any of the following towns: <i>Branford, Kent, Manchester, Meriden, North Branford, Norwalk, or Wilton?</i> (If no, proceed to Part VI of the form. If yes, proceed to next question.)	f) For each outfall, does it discharge to a "freshwater" or "salt water"? (If you select "freshwater" proceed to Table 3. If you selected "salt water", proceed to Part VI of the form.)
1	03/07	10,605sq feet	21,837sq feet	Storm Sewer	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Select one:
2	03/07	0 sq feet	900 sq feet	Storm Sewer	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Select one:
	- mm/dd-mm/dd	sq feet	sq feet	Select one:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Select one:
	- mm/dd-mm/dd	sq feet	sq feet	Select one:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Select one:
	- mm/dd-mm/dd	sq feet	sq feet	Select one:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Select one:
		10,605 total sq feet	22,737 total sq feet			

Part V: Stormwater Discharge Information (continued)

Table 3 Provide the following information about the receiving water(s)/wetland(s) that receive stormwater runoff from your site:

Outfall #	a) What is your 305b ID # (water body ID #)? (Section 3.b. of the DEEP-WPED-INST-015 , explains how to find this information)	b) Is your receiving water identified as a impaired water in the " Impaired Waters Table for Construction Stormwater Discharges "? If yes, proceed to next question. If no, proceed to Part VI: Pollution Control Plan.	c) Has any Total Maximum Daily Load (TMDL) been approved for the impaired water?
[Redacted]	[Redacted]	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
[Redacted]	[Redacted]	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
[Redacted]	[Redacted]	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
[Redacted]	[Redacted]	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
[Redacted]	[Redacted]	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N

Part V: Stormwater Discharge Information (continued)

Impaired waters: If you answered “yes” to Table 3, question b., **verify** that the project’s Pollution Control Plan (Plan) addresses the control measures below in Question 1 or 2, as appropriate.

1. If the impaired water does not have a TMDL, confirm compliance by selecting 1.a. or 1.b. below:

a. No more than 3 acres is disturbed at any time; Yes

OR

b. Stormwater runoff from a 2 yr, 24 rain event is **retained**. Yes

2. If the impaired water has a TMDL, confirm compliance by selecting 2.a. and 2.b. below and either question 2.c.1. or 2.c.2. below:

a. The Plan documents there is sufficient remaining Waste Load Allocations (WLA) in the TMDL for the proposed discharge, Yes

AND

b. Control measures shall be implemented to assure the WLA will not be exceeded, Yes

AND

c. 1. Stormwater discharges will be monitored for the indicator pollutant identified in the TMDL, Yes

OR

2. The Plan documents specific requirements for stormwater discharges specified in the TMDL. Yes

Part VI: Pollution Control Plan (select one of the following three categories)

I am registering a Locally Exempt project and submitting the required electronic Plan (in Adobe™ PDF or similar publically available format) pursuant to Section 3(c)(2)(E) of this permit. (If you do not have the capability to submit the Plan electronically please call 860-418-5982).

Plan is attached to this registration form
 Plan is available at the following Internet Address (URL): [REDACTED]

I am registering a Locally Approvable project and have chosen not to submit the Plan with this registration pursuant to Section 3(c)(1) of this permit.

I am registering a Locally Approvable project and have chosen to make my Plan electronically available pursuant to Section 4(c)(2)(N) of this permit.

Plan is attached to this registration form
 Plan is available at the following Internet Address (URL): [REDACTED]

Part VII: Registrant Certification

The registrant and the individual(s) responsible for actually preparing the registration must sign this part. A registration will be considered incomplete unless all required signatures are provided.

For New Registrants:

"I hereby certify that I am making this certification in connection with a registration under such general permit,
[INSERT NAME OF REGISTRANT BELOW]

submitted to the commissioner by **The United Illuminating Company** for
[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

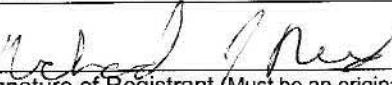
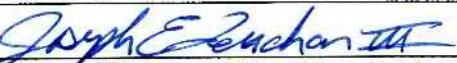
an activity located at **Mix Avenue Substation, Hamden, CT** and that all terms and conditions of the general permit are being met for all discharges which have been initiated and such activity is eligible for authorization under such permit. I further certify that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that the registration filed pursuant to this general permit is on complete and accurate forms as prescribed by the commissioner without alteration of their text. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(b)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify that I have made an affirmative determination in accordance with Section 3(b)(8)(B) of this general permit. I understand that the registration filed in connection with such general permit is submitted in accordance with and shall comply with the requirements of Section 22a-430b of Connecticut General Statutes. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under Section 53a-157b of the Connecticut General Statutes and any other applicable law."

For Re-registrants:

"I hereby certify that I am making this certification in connection with a registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, submitted to the commissioner
[INSERT NAME OF REGISTRANT BELOW]

by **[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]** for an activity located at

and that all terms and conditions of the general permit are being met for all discharges which have been initiated and such activity is eligible for authorization under such permit. I further certify that all designs and plans for such activity meet the current terms and conditions of the general permit in accordance with Section 5(b)(5)(C) of such general permit and that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that the registration filed pursuant to this general permit is on complete and accurate forms as prescribed by the commissioner without alteration of their text. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(b)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under Section 53a-157b of the Connecticut General Statutes and any other applicable law."

	11/2/15
Signature of Registrant (Must be an original signature, not a copy or fax)	Date
Richard J. Reed, PMP	Vice President - Engineering and Project Excellence The United Illuminating Company
Name of Registrant (print or type)	Title (if applicable)
	11/2/2015
Signature of Preparer (if different than above) (Must be an original signature, not a copy or fax)	Date
Joseph E. Lenahan III, PE, LEED AP	Senior Project Manager - Fuss & O'Neill
Name of Preparer (print or type)	Title (if applicable)

**Part VIII: Professional Engineer (or Landscape Architect, where appropriate) Design Certification
(for publically approvable and exempt projects)**

The following certification must be signed by a Professional Engineer or Landscape Architect where appropriate.

"I hereby certify that I am a choose qualification licensed in the State of Connecticut. I am making this certification in connection with a registration under such general permit, submitted to the commissioner by [INSERT NAME OF REGISTRANT BELOW]

The United Illuminating Company

for an activity located at

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

Mix Avenue Substation, Hamden, CT

I certify that I have thoroughly and completely reviewed the Stormwater Pollution Control Plan for the project or activity covered by this certification. I further certify, based on such review and on the standard of care for such projects, that the Stormwater Pollution Control Plan has been prepared in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, the Stormwater Quality Manual, as amended, and the conditions of the general permit, and that the controls required for such Plan are appropriate for the site. I further certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate, and complete to the best of my knowledge and belief. I also understand that knowingly making any false statement in this certification may subject me to sanction by the Department and/or be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

	11/2/2015
Signature of Design Professional (Must be an original signature, not a copy or fax)	Date
Joseph E. Lenahan III, PE, LEED AP	Senior Project Manager - Fuss & O'Neill
Name of Professional (print or type)	Title
56 Quarry Road	Trumbull
Mailing Address	City/Town
CT 06611	(203) 374-3748 ext 3509
State Zip Code	Business Phone
#24034	
License #	
Affix P.E/L.A Stamp Here	

Part IX: Reviewing Qualified Professional Certification

The following certification must be signed by a) a Conservation District reviewer OR, b) a qualified soil erosion and sediment control and/or professional engineer

Review certification by Conservation District:

- 1.) District: list of districts

Date of Affirmative Determination:

" I am making this certification in connection with a registration under General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, submitted to the commissioner

[INSERT NAME OF REGISTRANT BELOW]

by

for an activity located at

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

I have personally examined and am familiar with the information that provides the basis for this certification, and I affirm, based on the review described in Section 3(b)(11)(C) of this general permit and on the standard of care for such projects, that the Stormwater Pollution Control Plan is adequate to assure that the activity authorized under this general permit will comply with the terms and conditions of such general permit and that all stormwater management systems: (i) have been designed to control pollution to the maximum extent achievable using measures that are technologically available and economically practicable and that conform to those in the Guidelines and the Stormwater Quality Manual; (ii) will function properly as designed; (iii) are adequate to ensure compliance with the terms and conditions of this general permit; and (iv) will protect the waters of the state from pollution."

Signature of District Professional and Date (Must be an original signature, not a copy or fax)

Name of District Professional and License Number (if applicable)

Or

Review certification by Qualified Professional

Company: Fuss & O'Neill, Inc.

Name: __ Craig M. Lapinski, PE

License # : 23625

Level of independency of professional:

Required for all projects disturbing over 1 acre:

1. I verify I am not an employee of the registrant. Yes
2. I verify I have no ownership interest of any kind in the project for which the registration is being submitted. Yes

Required for projects with 15 or more acres of site disturbance (in addition to questions 1&2):

3. I verify I did not engage in any activities associated with the preparation, planning, designing or engineering of the soil erosion and sediment control plan or stormwater management systems plan for this registrant. Yes
4. I verify I am not under the same employ as any person associated with the preparation, planning, designing or engineering of the soil erosion and sediment control plan or stormwater management systems plan for this registrant. Yes

Part IX: Reviewing Qualified Professional Certification (continued)

"I hereby certify that I am a qualified professional engineer or qualified soil erosion and sediment control professional, or both, as defined in the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and as further specified in Sections 3(b)(11)(A) and (B) of such general permit. I am making this certification in connection with a registration under such general permit,

[INSERT NAME OF REGISTRANT BELOW]

submitted to the commissioner by The United Illuminating Company

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

for an activity located at **Mix Avenue Substation, Hamden, CT**

I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(b)(11)(C) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I further certify that I have made the affirmative determination in accordance with Sections 3(b)(11)(D)(i) and (ii) of this general permit. I understand that this certification is part of a registration submitted in accordance with Section 22a-430b of Connecticut General Statutes and is subject to the requirements and responsibilities for a qualified professional in such statute. I also understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under Section 53a-157b of the Connecticut General Statutes and any other applicable law."



Signature of Reviewing Qualified Professional
(Must be an original signature, not a copy or fax)

Date: 11-6-15

11-6-15

Craig M. Lapinski, P.E.

Name of Reviewing Qualified Professional

License No.: 23625

23625

Affix P.E./L.A. Stamp Here



Part X: Supporting Documents

Select the applicable box below for each attachment being submitted with this registration form. When submitting any supporting documents, please label the documents as indicated below (e.g., Attachment A, etc.) and be sure to include the registrant's name as indicated on this certification form.

Note: See Appendix A of the Stormwater Pollution Control Plan for all attachments.

- Attachment A:** Select here as verification that an 8 1/2" X 11" copy of the relevant portion of a USGS Quadrangle Map with a scale of 1:24,000, showing the exact location of the facility has been submitted with this registration. Indicate the quadrangle name on the map, and be sure to include the registrant's name. (To obtain a copy of the relevant USGS Quadrangle Map, call your town hall or DEEP Maps and Publications Sales at 860-424-3555)
- Attachment B:** Documentation related to *Coastal Consistency Review*, if applicable.
- Attachment C:** Threatened and Endangered Species Form and any additional information (such as a copy of a NDDB map)
- Attachment D:** Conservation or Preservation Restriction Information, if applicable.
- Attachment E:** Where applicable, non-electronic Pollution Control Plan.

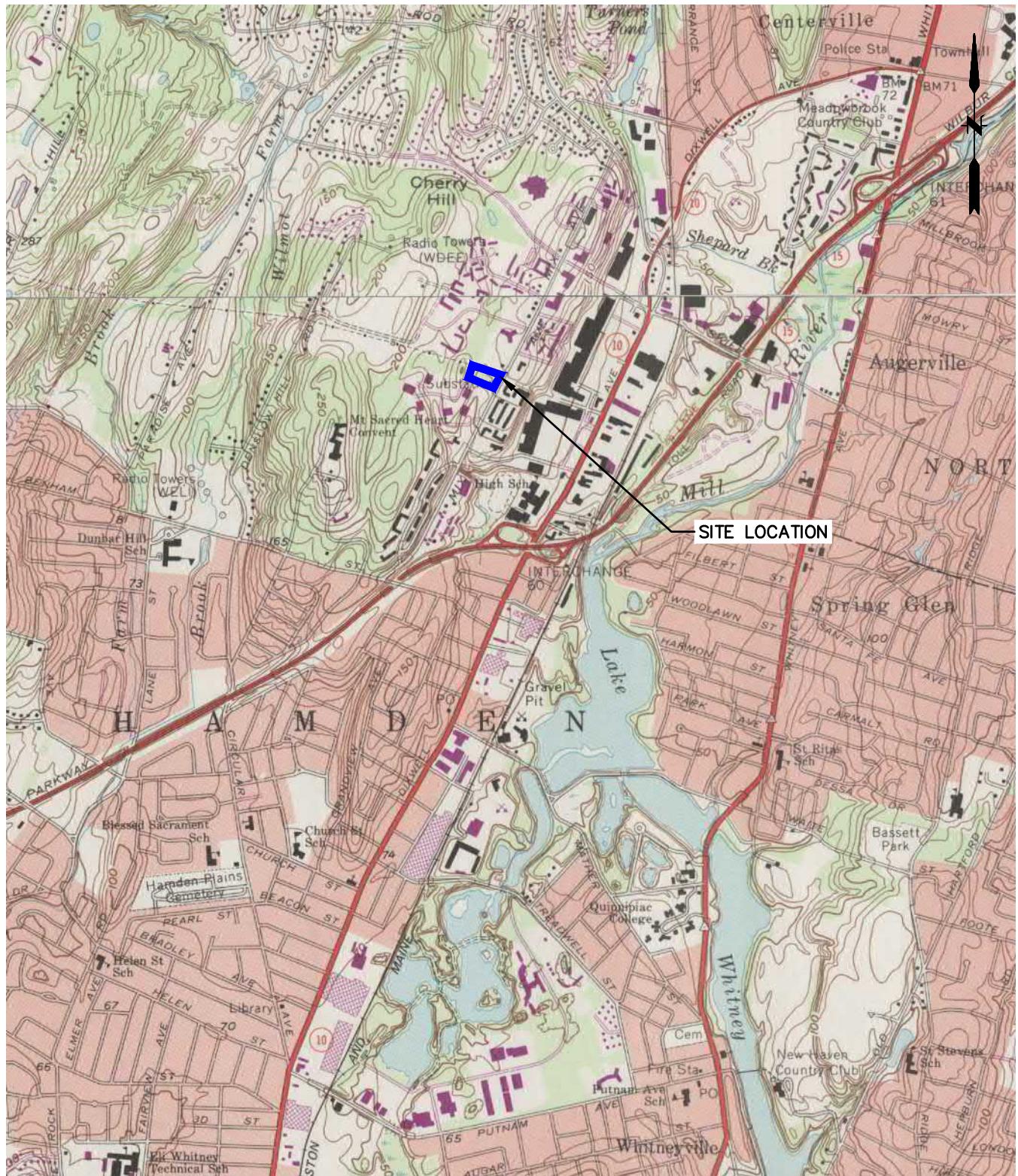
Note: Please submit the fee along with a completed, printed and signed Registration Form and all additional supporting documents to:

**CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127**

Attachment A

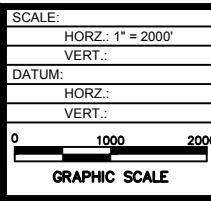
Site Location Map





MAP REFERENCE

THIS MAP WAS PREPARED FROM THE FOLLOWING 7.5
MINUTE SERIES TOPOGRAPHIC MAPS:
NEW HAVEN, CONNECTICUT, 1968 PHOTOREVISED 1984
MOUNT CARMEL, CONNECTICUT 1967 PHOTOREVISED 1984



FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

THE UNITED ILLUMINATING COMPANY

SITE LOCATION MAP

MIX AVENUE

HAMDEN

CONNECTICUT

PROJ. No.: 20150138.A20
DATE: SEPTEMBER 2015

ATTACHMENT A

Attachment C

Threatened and Endangered Species Form / NDDB Determination



Natural Diversity Data Base Areas HAMDEN, CT

December 2014

State and Federal Listed Species & Significant Natural Communities

Town Boundary

NOTE: This map shows general locations of State and Federal Listed Species and Significant Natural Communities. Information on listed species is collected and compiled by the Natural Diversity Data Base (NDDB) from a number of data sources. Exact locations of species have been buffered to produce the general locations. Exact locations of species and communities occur somewhere in the shaded areas, not necessarily in the center. A new mapping format is being employed that more accurately models important riparian and aquatic areas and eliminates the need for the upstream/downstream searches required in previous versions.

This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a shaded area there may be a potential conflict with a listed species. For more information, complete a Request for Natural Diversity Data Base State Listed Species Review form (DEP-APP-007), and submit it to the NDDB along with the required maps and information. More detailed instructions are provided with the request form on our website.

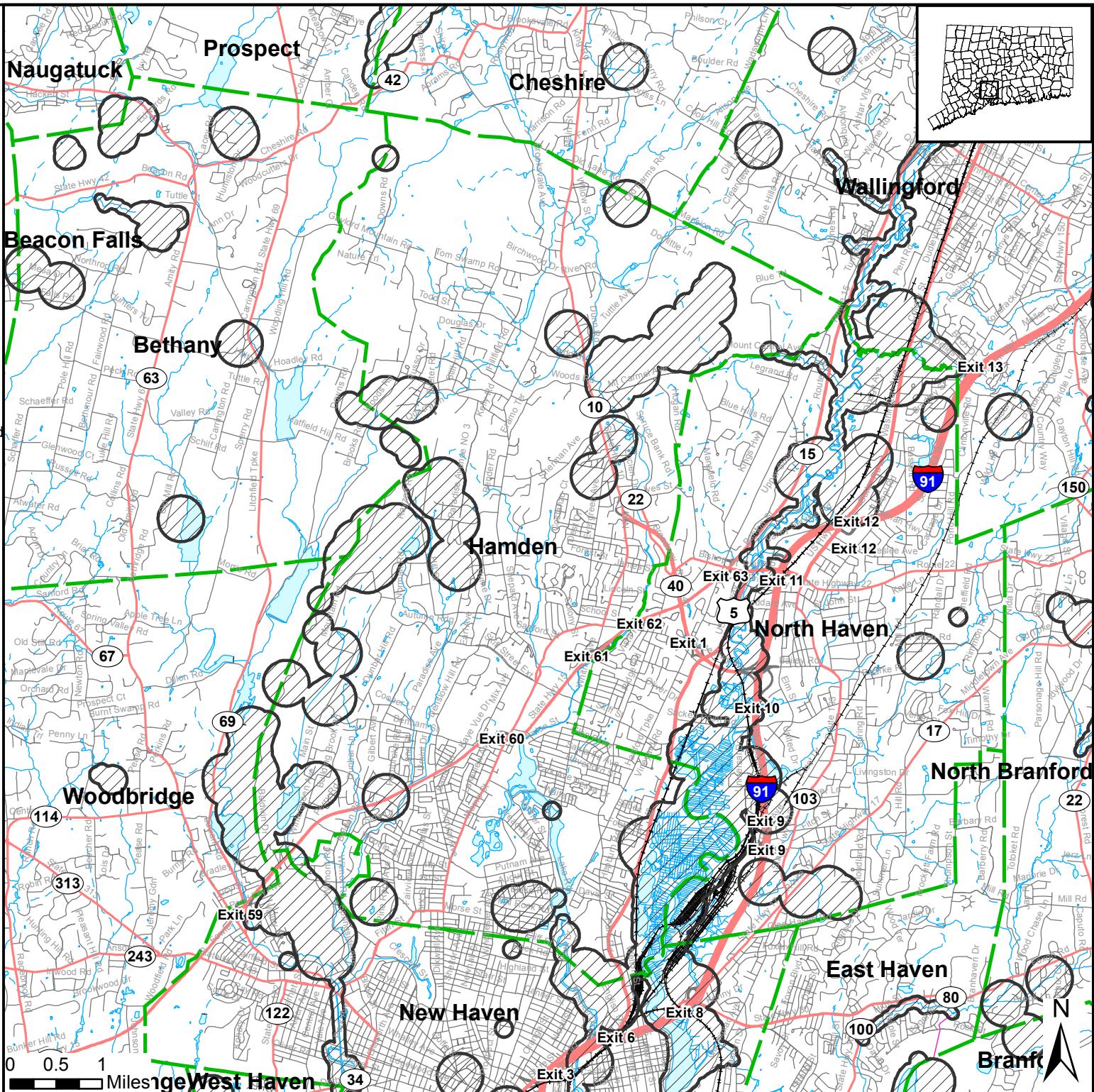
www.ct.gov/deep/nddbrequest

Use the CTECO Interactive Map Viewers at www.cteco.uconn.edu to more precisely search for and locate a site and to view aerial imagery with NDDB Areas.

QUESTIONS: Department of Energy and
Environmental Protection (DEEP)
79 Elm St., Hartford CT 06106
Phone (860) 424-3011



**Connecticut Department of
Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division**



ATTACHMENT C: THREATENED AND ENDANGERED SPECIES

Information about compliance with the requirements of Section 3(b)(2) of this general permit, regarding threatened and endangered species, is in Appendix A of the general permit. Choose one or more (if applicable) of the following in order to be eligible to register for this General Permit. A registrant who does not or cannot do so is not eligible to register under this General Permit.

Self Assessment using the NDDB maps – Select this only if:

- a. The site of the construction activity is not entirely, partially or within a ¼ mile of a shaded area depicted on the Department's Natural Diversity Database maps and this determination was made not more than six months before the date of submitting this registration;

AND

- b. The entity registering for this General Permit has no reasonably available verifiable scientific, or other credible information that the construction activity could reasonably be expected to have an adverse impact upon a federal or state species listed as threatened or endangered.

Attach a copy of the NDDB map used to conduct the self assessment used to register for this general permit.

Note: Both a and b as used in this section, must be true in order for a Registrant to register for this General Permit using the self-assessment option. If neither is true, a Registrant cannot use the self-assessment option to comply with Section 3(b)(2) and Appendix A of the General Permit.

Limited One-Year Determination – Select this only if:

- a. The entity registering for this General Permit has obtained a limited one-year determination from the Department's Wildlife Division regarding threatened and endangered species: i) within a year of the date of submitting this registration; or ii) more than 1 year before submitting this registration, but such determination has been extended by the Department within one year of the date of submitting this registration;

AND

- b. The Registrant has provided to the Department's Wildlife Division any reasonably available verifiable scientific, or other credible information that the construction activity could reasonably be expected to have an adverse impact upon a federal or state species listed as threatened or endangered.

Provide the date the limited one-year determination was issued by the Department's Wildlife Division

_____;

or

Provide the date that the most recent extension to a limited one year determination was issued by the Department's Wildlife Division _____.

Note: Both a and b as used in this section, must be true in order for a Registrant to register for this General Permit using the Limited One-Year Determination option. If a Limited One-Year Determination or extension to any such determination was issued by the Department's Wildlife Division more than one year before the submission of this registration, a Registrant cannot use any such determination or extension to comply with Section 3(b)(2) and Appendix A of the General Permit.

ATTACHMENT C: THREATENED AND ENDANGERED SPECIES (continued)

Select here if the Limited One-Year Determination issued by the Department includes a Mitigation Plan.

Provide the date the Mitigation Plan was approved: _____

Governmental Entity Approving the Plan: _____

As of the date this Registration is submitted,

Has the Mitigation Plan been fully implemented? Yes No

Date commenced: _____ Date completed: _____

Is the Mitigation Plan partially implemented? Yes No

If yes, what actions have been taken? _____

And which actions are yet to be implemented and what is the timeframe for completion of such actions: _____

Is the Mitigation Plan yet to be implemented? Yes No

If yes, specify the timeframe for implementation: _____ to _____

And summarize actions to be implemented: _____

Safe Harbor Determination - Select this only if:

- The entity registering for this General Permit has obtained a Safe Harbor Determination from the Department's Wildlife Division regarding threatened and endangered species: i) within 3 years of the date of submitting this registration; or ii) more than 3 years before submitting this registration, but within one-year of a one-year extension issued by the Department's Wildlife Division to a safe harbor determination;

AND

- The entity registering for this General Permit has provided to the Department's Wildlife Division any reasonably available verifiable scientific, or other credible information that the construction activity could reasonably be expected to have an adverse impact upon a federal or state species listed as threatened or endangered.

Provide the date the Department's Wildlife Division issued a Safe Harbor Determination: _____

If applicable, provide the date that any one-year extension to a Safe Harbor Determination was issued by the Department's Wildlife Division: _____.

Note: Both a and b as used in this section, must be true in order for a Registrant to register for this General Permit using the Safe Harbor Determination option. If a Safe Harbor Determination was issued by the Department's Wildlife Division more than three years before the submission of this registration, and has not been extended, a Registrant cannot use any such safe harbor to comply with section 3(b)(2) and Appendix A of this General Permit. If a Safe Harbor Determination was granted and extended for one-year, more than four years before the submission of this registration, a Registrant cannot use any such Safe Harbor Determination to comply with Section 3(b)(2) and Appendix A of the general permit.

ATTACHMENT C: THREATENED AND ENDANGERED SPECIES (continued)

Select here if the safe harbor noted above includes a Mitigation Plan.

Provide the date the Mitigation Plan was approved: _____

Governmental Entity Approving the Plan: _____

As of the date this Registration is submitted,

Has the Mitigation Plan been fully implemented? Yes No

Date commenced: _____ Date completed: _____

Is the Mitigation Plan partially implemented? Yes No

If yes, what actions have been taken? _____

And which actions are yet to be implemented and what is the timeframe for completion of such actions: _____

Is the Mitigation Plan yet to be implemented? Yes No

If yes, specify the timeframe for implementation: _____ to _____

And summarize actions to be implemented: _____

Attachment E

Stormwater Pollution Control Plan (as submitted)



Appendix B

Identification of Contractor and Certification Statements



THE UNITED ILLUMINATING COMPANY
MIX AVENUE

General Contractor	Point of Contact	Phone

Subcontractors	Point of Contact	Phone

**THE UNITED ILLUMINATING COMPANY
MIX AVENUE**

GENERAL CONTRACTOR

“I certify under penalty of law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that as a contractor at the site, I am authorized by this general permit, and must comply with the terms and conditions of this general permit, including, but not limited to, the requirements of the Stormwater Pollution Control Plan prepared for the site.”

Signed: _____

Date: _____

Printed Name: _____

Telephone: _____

Title: _____

Firm: _____

Address: _____

**THE UNITED ILLUMINATING COMPANY
MIX AVENUE**

SUBCONTRACTOR

“I certify under penalty of law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that as a subcontractor at the site, I am authorized by this general permit, and must comply with the terms and conditions of this general permit, including, but not limited to, the requirements of the Stormwater Pollution Control Plan prepared for the site.”

Signed: _____

Date: _____

Printed Name: _____

Telephone: _____

Title: _____

Firm: _____

Address: _____

Appendix C

Construction Drawings



Appendix D

Water Quality Volume Calculation Spreadsheet



Project: **Mix Avenue Substation**
Location: **New Haven, CT**
Prepared For: **United Illuminating**

Purpose: To calculate the first flush runoff flow rate (WQF) over a given site area. In this situation the WQV to be analyzed is the runoff produced by the first 1" of rainfall.

Reference: United States Department of Agriculture Natural Resources Conservation Service TR-55 Manual

Given:	Structure Name	A (acres)	A (miles ²)	Runoff Coefficient	Percent Imp. (%) [*]	t _c (min)	t _c (hr)
	1	2.51	0.00392	0.72	70.00	6.0	0.100

* Assumes runoff coefficient of 0.3 for pervious areas and 0.9 for impervious areas.

Procedure: The Water Quality Flow (WQF) is calculated using the Water Quality Volume (WQV). This WQV, converted to watershed inches, is substituted for the runoff depth (Q) in the Natural Resources Conservation Service (formerly Soil Conservation Service), TR-55 Graphical Peak Discharge Method.

1. Compute WQV in watershed inches using the following equation:

$$WQV = P * R$$

where: WQV = water quality volume (watershed inches)

P = design precipitation (inches) = (1" for water quality storm)

R = volumetric runoff coefficient = 0.05 + 0.009(I)

I = percent impervious cover

Structure Name	Percent Imp. (%)	R	P (in)	WQV (in)	WQV (ac-ft)
1	70.00	0.680	1.0	0.680	0.1422

2. Compute the NRCS Runoff Curve Number (CN) using the following equation, or graphically using Figure 2-1 from TR-55 (USDA, 1986):

$$CN = 1000 / [10+5P+10Q-10(Q^2+1.25QP)^{1/2}]$$

where: CN = Runoff Curve Number

P = design precipitation (inches) = (1" for water quality storm)

Q = runoff depth (watershed inches)

Structure Name	Q (in)	CN
1	0.680	96.67

3. Using computed CN, read initial abstraction (I_a) from Table 4-1 in Chapter 4 of TR-55; compute I_a/P, interpolating when appropriate.

Structure Name	I _a (in)	I _a /P
1	0.069	0.069

4. Compute the time of concentration (t_c) in hours and the drainage area in square miles.

Structure Name	t_c (hr)	A (miles ²)
1	0.100	0.00392

5. Read the unit peak discharge (q_u) from Exhibit 4-III in Chapter 4 of TR-55 for appropriate t_c for type III rainfall distribution.

Structure Name	t_c (hr)	I_a/P	q_u (csm/in)
1	0.100	0.069	650

6. Substituting WQV (watershed inches) for runoff depth (Q), compute the water quality flow (WQF) from the following equation:

$$WQF = (q_u) * (A) * (Q)$$

where: WQF = water quality flow (cfs)
 q_u = unit peak discharge (cfs/mi²/inch)
 A = drainage area (mi²)
 Q = runoff depth (watershed inches)

Structure Name	q_u (csm/in)	A (miles ²)	Q (in)	WQF (cfs)
1	650	0.00392	0.680	1.73

**CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
MIX AVENUE SUBSTATION - HAMDEN
NEW HAVEN, CT**



Area **2.51** acres
 Weighted C **0.72**
 Tc **6** minutes
 CDS Model **2020** (select from pulldown)
 Diameter

34

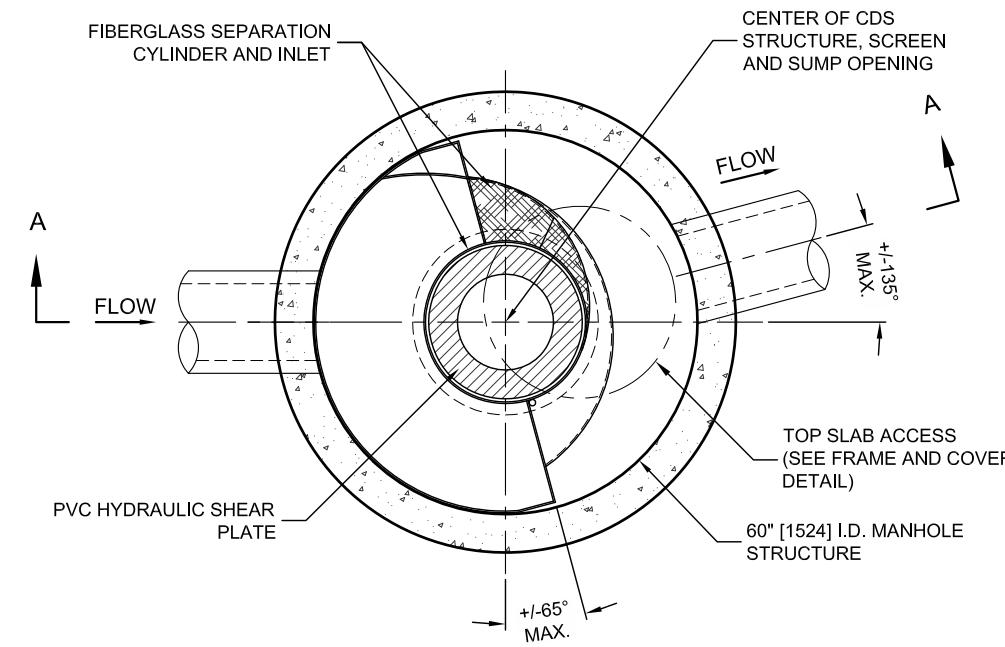
<u>Rainfall Intensity¹ (in/hr)</u>	<u>Percent Rainfall Volume¹</u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate (cfs)</u>	<u>Operating Rate (%)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
0.02	9.7%	9.7%	0.04	3.29	99.5	9.7
0.04	9.7%	19.4%	0.07	6.57	98.4	9.5
0.06	9.8%	29.2%	0.11	9.86	97.3	9.5
0.08	7.7%	36.9%	0.14	13.14	96.2	7.4
0.10	8.0%	44.9%	0.18	16.43	95.1	7.6
0.12	5.4%	50.3%	0.22	19.71	94.0	5.1
0.14	4.7%	55.0%	0.25	23.00	92.9	4.3
0.16	5.5%	60.5%	0.29	26.29	91.8	5.0
0.18	3.5%	63.9%	0.33	29.57	90.6	3.1
0.20	4.1%	68.0%	0.36	32.86	89.5	3.7
0.25	6.5%	74.5%	0.45	41.07	86.8	5.6
0.30	5.5%	80.0%	0.54	49.29	84.0	4.6
0.35	4.0%	84.0%	0.63	57.50	81.2	3.3
0.40	2.0%	86.0%	0.72	65.72	78.5	1.6
0.45	2.1%	88.1%	0.81	73.93	75.7	1.6
0.50	2.0%	90.2%	0.90	82.15	72.9	1.5
0.75	5.1%	95.3%	1.36	100.00	66.9	2.8
1.00	2.5%	97.8%	1.81	100.00	66.9	1.0
1.50	1.8%	99.5%	2.71	100.00	66.9	0.5
2.00	0.5%	100.0%	3.61	100.00	66.9	0.1
						87.5

Removal Efficiency Adjustment² = **6.5%**

Predicted % Annual Rainfall Treated = **90.2%**

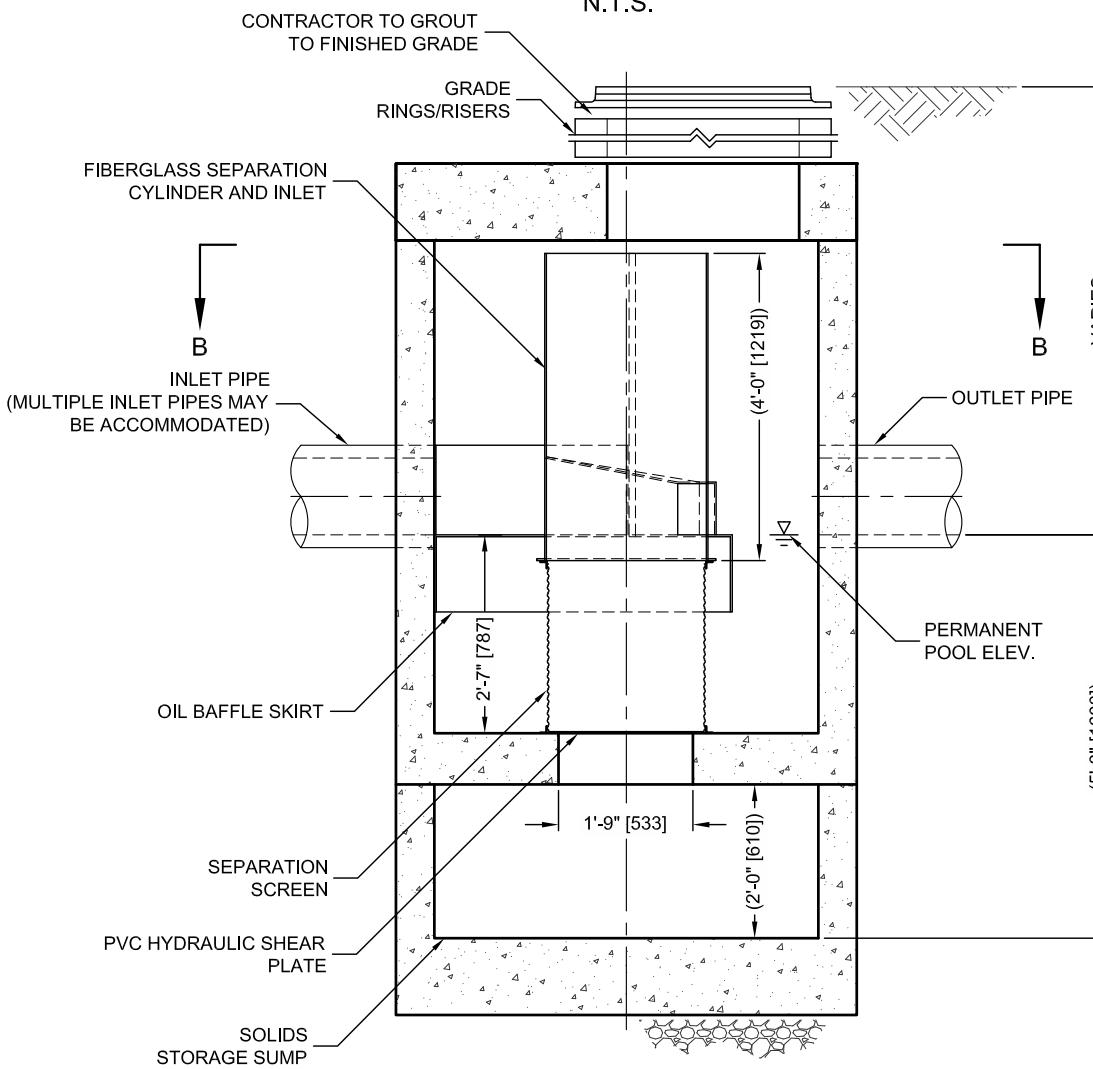
Predicted Net Annual Load Removal Efficiency = 81.1%

1 - Based on 10 years of hourly precipitation data from NCDC station 806, Bridgeport WSO ARPT, Fairfield County, CT
 2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.



PLAN VIEW B-B

N.T.S.



ELEVATION A-A

N.T.S.



THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,786,846; 6,641,202; 6,511,595; 6,561,782 RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

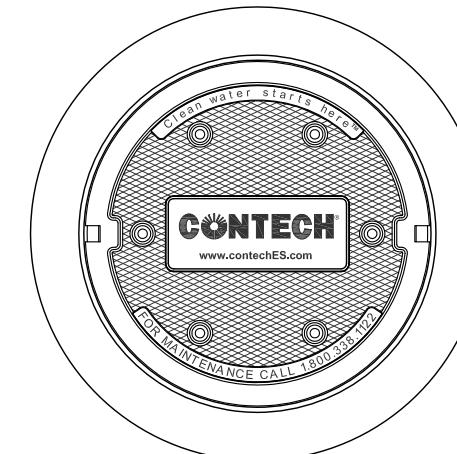
CDS2020-5-C DESIGN NOTES

CDS2020-5-C RATED TREATMENT CAPACITY IS 2.1 CFS [59.4 L/s] PER LOCAL REGULATIONS. MAXIMUM HYDRAULIC INTERNAL BYPASS CAPACITY IS 14.0 CFS [396 L/s]. IF THE SITE CONDITIONS EXCEED 14.0 CFS [396 L/s], AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

THE STANDARD CDS2020-5-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION

- GRATED INLET ONLY (NO INLET PIPE)
- GRATED INLET WITH INLET PIPE OR PIPES
- CURB INLET ONLY (NO INLET PIPE)
- CURB INLET WITH INLET PIPE OR PIPES
- SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
- SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS

FRAME AND COVER
(DIAMETER VARIES)
N.T.S.SITE SPECIFIC
DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (CFS OR L/s)	*		
PEAK FLOW RATE (CFS OR L/s)	*		
RETURN PERIOD OF PEAK FLOW (YRS)	*		
SCREEN APERTURE (2400 OR 4700)	*		
PIPE DATA: I.E.	MATERIAL	DIAMETER	
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION	*		
ANTI-FLOTATION BALLAST	WIDTH	HEIGHT	
NOTES/SPECIAL REQUIREMENTS:			

* PER ENGINEER OF RECORD

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES

- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
- C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
- D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
- E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH[®]
ENGINEERED SOLUTIONS LLC
www.contechES.com

9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2020-5-C
INLINE CDS
STANDARD DETAIL



BLACK & VEATCH
Building a world of difference.

CALCULATION RECORD

Client Name United Illuminating Company Page 1 of 8
 Project Name Mix Avenue Substation Project No. 180592
 Calculation Title Stormwater Pre-Post Verification
 Calculation No./File No. 51.1210.001
 Verification Method: Check and Review Alternate Calculations

Objective: To develop Pre and Post development stormwater discharge rates, confirm detention vault sizing, and to determine trench drain and culvert pipe sizing.

Unverified Assumptions Requiring Subsequent Verification			
No.	Assumption	Verified By	Date

Refer to Page _____ of this calculation for additional assumptions.

This Section Used for Software-Generated Calculations

Program Name/Number Bentley® PondPack® Version V8i
Bentley® FlowMaster® V8i

Standard B&V Application Used? Yes No

If no, list approved deviation permit number below and attach approved deviation permit.

Review and Approval						
Rev	Prepared By	Date	Verified By	Date	Approved By	Date
0	D. Fennell <i>D. Fennell</i>	12/17/2015 <i>12/17/2015</i>	Jerry Dyck <i>Jerry Dyck</i>	12/17/2015 <i>12-17-15</i>	STEPHEN M REITZ <i>Stephen M Reitz</i>	01/05/16 <i>01-05-16</i>

CONFIDENTIAL AND PROPRIETARY BUSINESS INFORMATION OF B&V.

P-GN-100G (Referenced by Energy-Std-2-03880-00140) Effective 25/DEC/11

*Remainder of Stormwater Pre-Post Verification on disc.

Appendix E

Notice of Termination Form





General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

Notice of Termination Form

Please complete and submit this form in accordance with the general permit (DEP-PED-GP-015) in order to ensure the proper handling of your termination. Print or type unless otherwise noted.

Note: Ensure that for commercial and industrial facilities, registrations under the *General Permit for the Discharge of Stormwater Associated with Industrial Activity* (DEP-PED-GP-014) or the *General Permit for the Discharge of Stormwater from Commercial Activities* (DEP-PED-GP-004) have been filed where applicable. For questions about the applicability of these general permits, please call the Department at 860-424-3018.

Part I: Registrant Information

1. Permit number: **GSN**
2. Fill in the name of the registrant(s) as indicated on the registration certificate:

Registrant:

3. Site Address:

City/Town:

State:

Zip Code:

4. Date all storm drainage structures were cleaned of construction sediment:

Date of Completion of Construction:

Date of Last Inspection (must be at least three months after final stabilization pursuant to Section 6(b)(6)(D) of the general permit):

5. Check the post-construction activities at the site (check all that apply):

Industrial Residential Commercial Capped Landfill
 Other (describe):

Part II: Certification

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

Signature of Permittee

Date

Name of Permittee (print or type)

Title (if applicable)

Note: Please submit this Notice of Termination Form to:

STORMWATER PERMIT COORDINATOR
BUREAU OF WATER MANAGEMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Appendix F

Sedimentation and Erosion Control Inspection Report Form



SEDIMENTATION AND EROSION CONTROL INSPECTION REPORT
THE UNITED ILLUMINATING COMPANY
MIX AVENUE

INSPECTION INFORMATION

DATE: _____
QUALIFIED INSPECTOR:
 RAIN EVENT
 WEEKLY
 SPECIAL

WEATHER INFORMATION

CURRENT
 FORCAST:
 DATE OF LAST
 RAIN EVENT:
 AMOUNT OF LAST
 RAIN EVENT:

GENERAL PROJECT COMPLIANCE

APPROXIMATE CURRENT ACRES DISTURBED:		DUST CONTROL MEASURES ESTABLISHED:	Y / N
CONSTRUCTION ENTRANCE INSTALLED:	Y / N	SILT FENCE INSTALLED & FUNCTIONAL:	Y / N
WASHOUT AREA ESTABLISHED:	Y / N	INLET PROTECTION INSTALLED & FUNCTIONAL:	Y / N
WASTE DISPOSAL AREA ESTABLISHED:	Y / N	ALL OTHER E&S CONTROLS INSTALLED & FUNCTIONAL:	Y / N
IN-ACTIVE AREAS STABILIZED:	Y / N	STORMWATER DISCHARGE OBSERVED:	Y / N
DESCRIPTION OF STORMWATER DISCHARGE:			

DISTRIBUTION:

In my judgment the site is in / out of compliance with the terms and conditions of the Stormwater Pollution Control Plan and permit.

 Signature of Qualified Inspector

 Date

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with section 22a-6 of the Connecticut General Statutes, pursuant to section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

 Signature of Permittee/Authorized Representative

 Date

ITEMS NOTED IN THIS INSPECTION:

List specific items relating to erosion & sediment controls, implementation of the plan, description of stormwater discharges, and any water quality monitoring performed during the inspection.

ITEM #	ITEM NOTED	DESCRIPTION OF DEFICIENCY	REMEDIAL ACTIONS REQUIRED	IN COMPLIANCE	DATE NOTED	CURRENT STATUS

ITEMS NOTED IN THIS INSPECTION:

**Note: The item numbers listed above correspond to the circled numbering on the attached reference map.

ADDITIONAL COMMENTS OR NOTES:

- Additional Comments

Appendix G

Stormwater Monitoring Report Form (Turbidity Sampling Data)





**Connecticut Department of
Energy & Environmental Protection**
Bureau of Materials Management & Compliance Assurance
Water Permitting & Enforcement Division

**General Permit for the Discharge of Stormwater and Dewatering Wastewaters from
Construction Activities, issued 8/21/13, effective 10/1/13
Stormwater Monitoring Report**

SITE INFORMATION

Permittee:			
Mailing Address:			
Business Phone:	ext.:	Fax:	
Contact Person:	Title:		
Site Name:			
Site Address:			
Receiving Water (name, basin):			
Stormwater Permit No. GSN			

SAMPLING INFORMATION (Submit a separate form for each outfall)

Outfall Designation:	Date/Time Collected:
Outfall Location(s) (lat/lon or map link):	
Person Collecting Sample:	
Storm Magnitude (inches):	Storm Duration (hours):
Size of Disturbed Area at any time:	

MONITORING RESULTS

Sample #	Parameter	Method	Results (units)	Laboratory (if applicable)
1	Turbidity			
2	Turbidity			
3	Turbidity			
4	Turbidity			

(provide an attachment if more than 4 samples were taken for this outfall)

Avg =

STATEMENT OF ACKNOWLEDGMENT

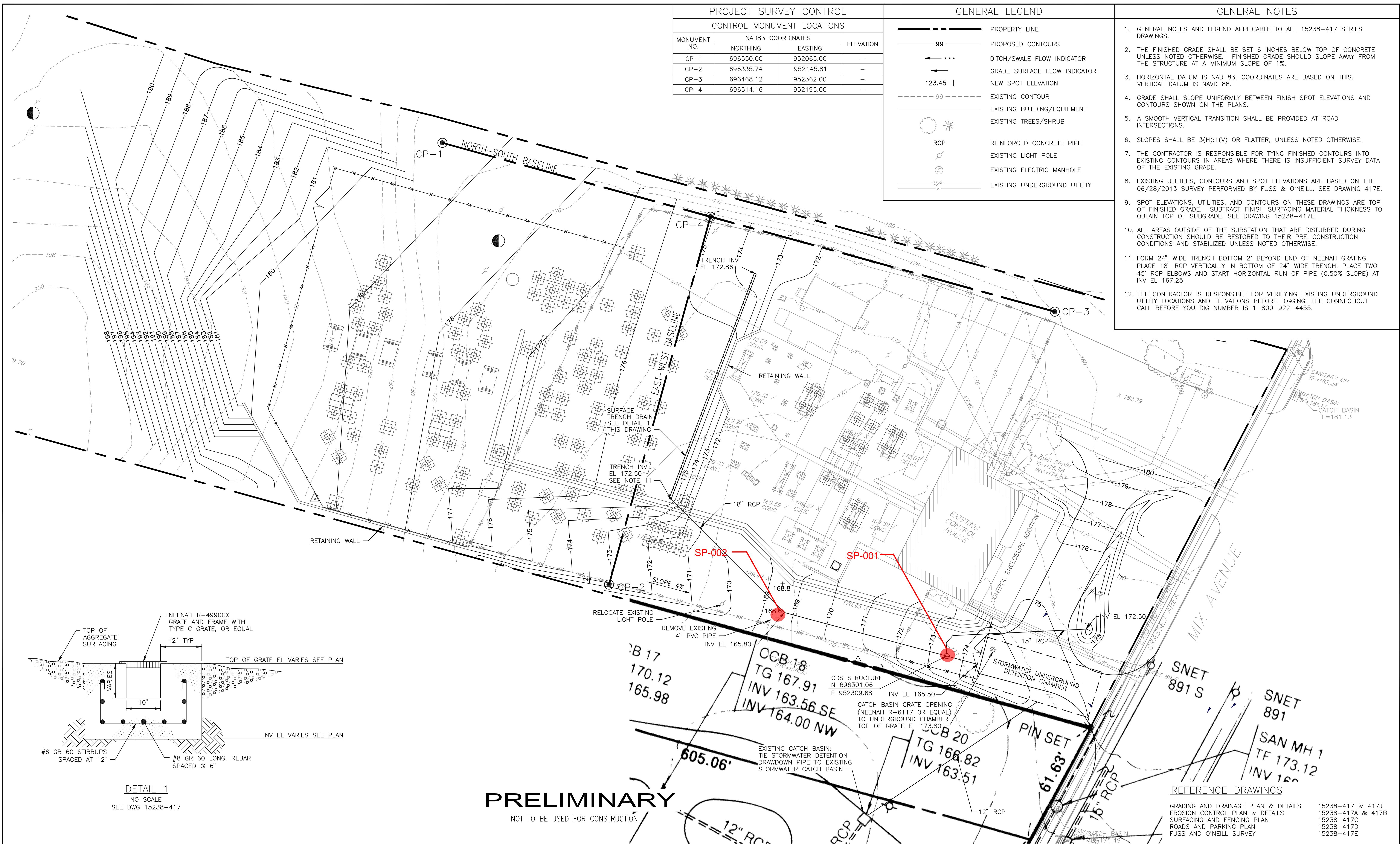
I certify that the data reported on this document were prepared under my direction or supervision in accordance with the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official:

Signature: Date:

Please send completed form to:

DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
79 ELM STREET
HARTFORD, CT 06106-5127
ATTN: NEAL WILLIAMS

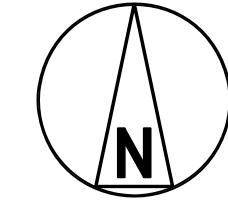


PRELIMINARY

NOT TO BE USED FOR CONSTRUCTION

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 BLACK & VEATCH Building a world of difference®								
DESIGNER								
SMR			DRAWN	JRH				
CHECKED			DATE	—				
PROJECT # 180592								
			F	11/05/2015	ISSUED FOR SWPCP PERMITTING—PROJECT 180592—CAP BANK AND REACTOR	RRH	—	SMR MAV
			E	10/28/2015	ISSUED FOR SWPCP PERMITTING—PROJECT 180592—CAP BANK AND REACTOR	JDL	—	SMR MAV
			D	10/26/2015	ISSUED FOR PERMITTING — PROJECT 180592 — CAP BANK AND REACTOR	JDL	—	SMR MAV
			C	07/09/2015	ISSUED FOR BID — PROJECT 180592 — CAP BANK AND REACTOR	MEM	—	JJD MAV
			B	05/20/2015	ISSUED FOR UI 30% REVIEW — PROJECT 180592 — CAP BANK AND REACTOR	MEM	—	JJD —
			A	08/09/2013	ISSUED FOR UI 30% REVIEW	JRH	—	SMR —
			NO	DATE	REVISION	DRN	CHKD	DESN SUPR



STORMWATER POLLUTION CONTROL PLAN - APPENDIX C

Appendix C

Construction Drawings





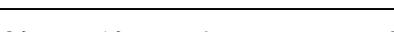
MAP REFERENCE

"EROSION CONTROL - SITE PLAN - MIX AVENUE SUBSTATION" DRAWING NO. 15238-417A PREPARED BY BLACK & VEATCH; LAST REVISED ON 11/5/2015

LEGEND

The diagram illustrates the proposed construction site layout. It features a 'PROPOSED CONSTRUCTION ENTRANCE' at the top, indicated by a pattern of large, irregular shapes. Below it is a 'PROPOSED HAY BALE BARRIER', represented by a horizontal line with small circular holes. A 'PROPOSED SILT FENCE' is shown as a horizontal line with the letters 'SF' in the center. At the bottom, a 'PROPOSED TREE CLEARING LIMIT' is marked by a line with a series of stylized, rounded shapes.



SCALE:	HORZ.: 1" = 20'
	VERT.:
DATUM:	HORZ.:
	VERT.:
20 10 0 20 	
GRAPHIC SCALE	



FUSS & O'NEILL

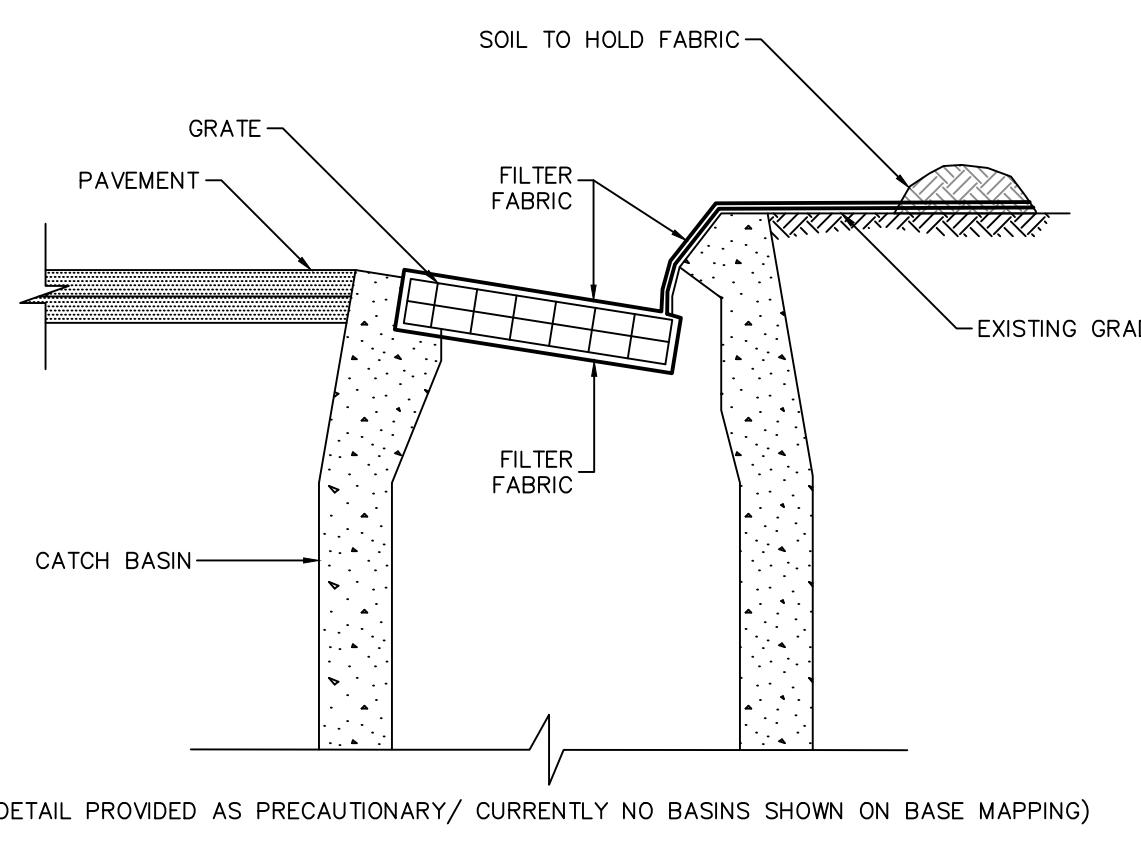
THE UNITED ILLUMINATING COMPANY

EROSION & SEDIMENTATION CONTROL PLAN

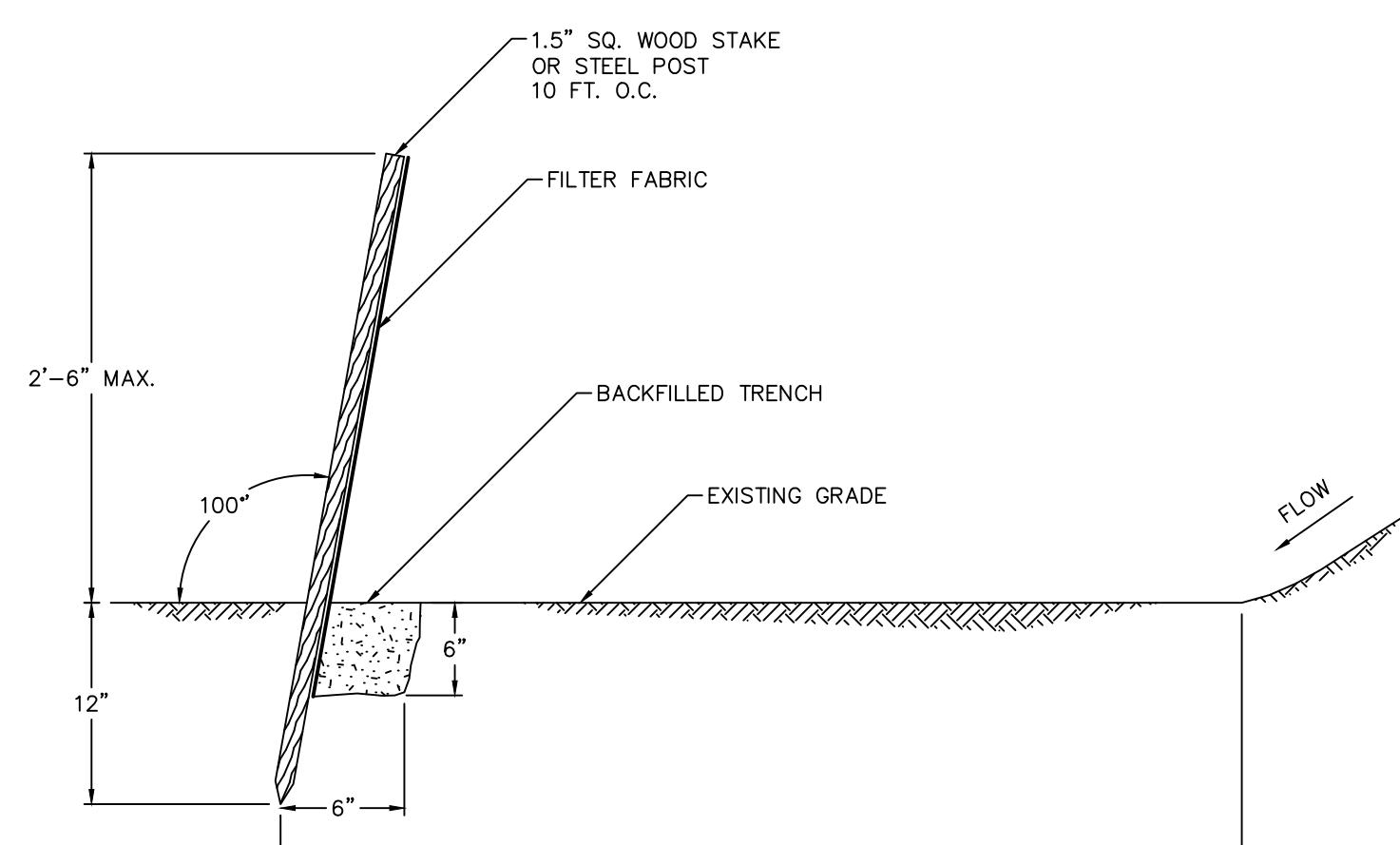
MIX AVENUE SUBSTATION

ROJ. No.: 20150138.A20
ATE: 11/6/2015

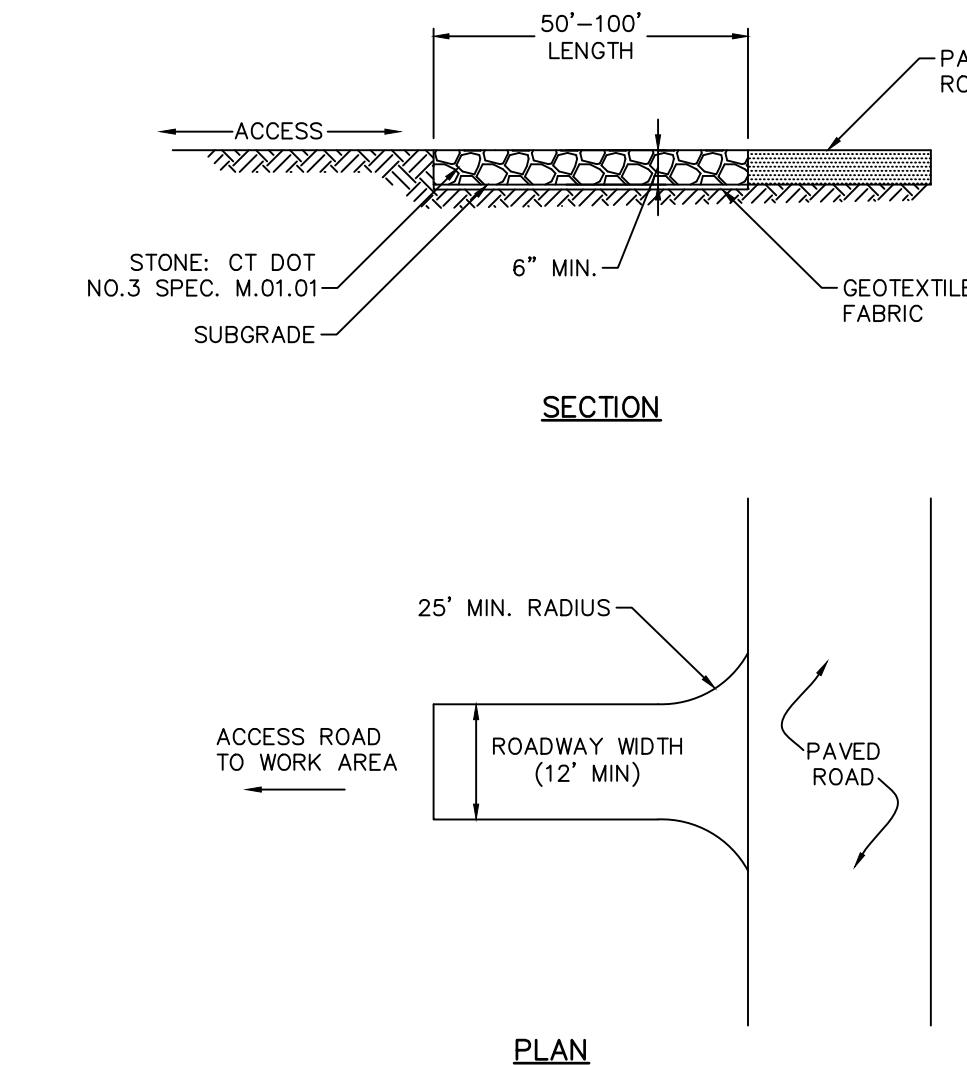
CE-101



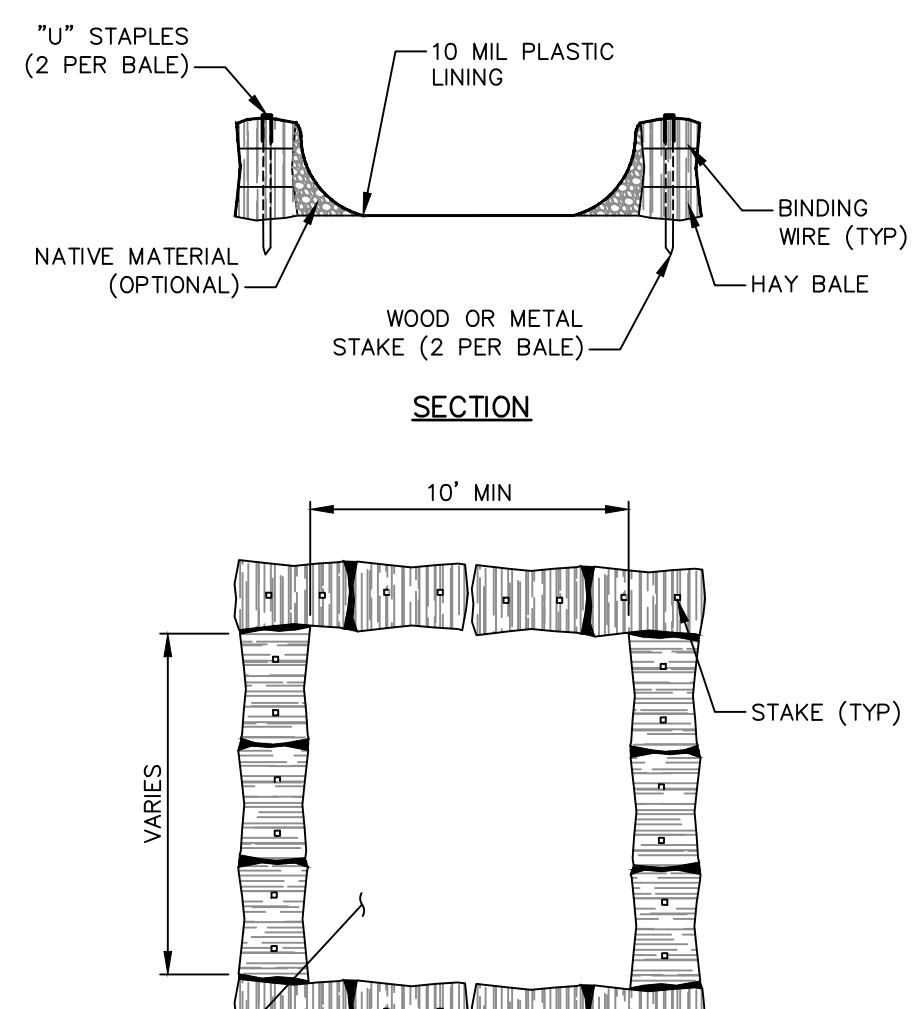
SEDIMENT CONTROL AT CATCH BASIN
NOT TO SCALE



SILT FENCE
NOT TO SCALE

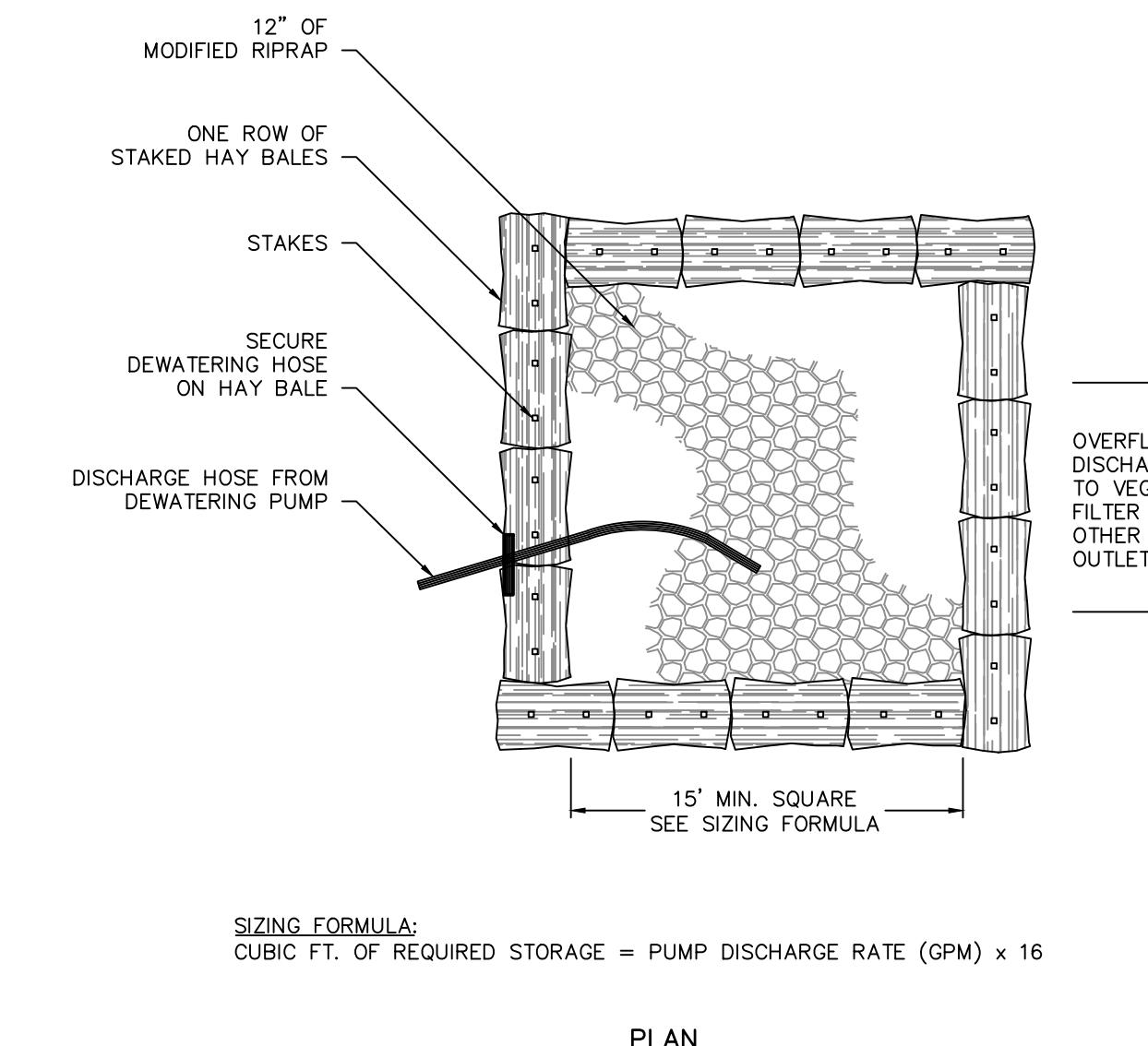


ANTI TRACKING PAD/ CONSTRUCTION ENTRANCE
NOT TO SCALE

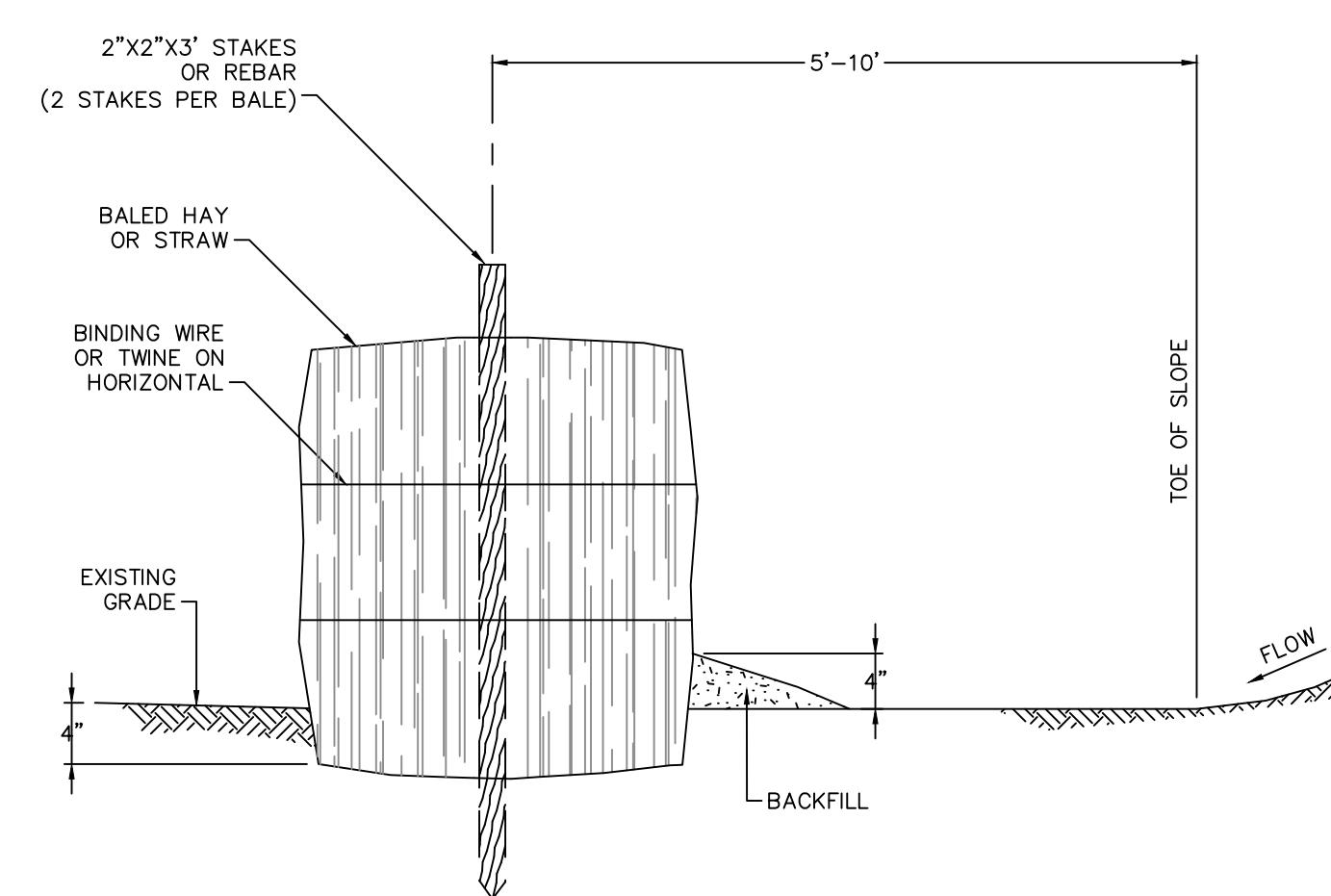


NOTES:
1. REMOVE HARDEN CONCRETE WHEN WITHIN 4" FROM TOP OF STRUCTURE.
2. CONSTRUCT NEW FACILITIES ONCE CURRENT FACILITIES ARE TWO-THIRDS FULL.
3. LINERS, HAYBALES, ETC. SHALL BE INSPECTED FOR DAMAGE ANY DAMAGE SHALL BE REPAIR PROMPTLY.

ABOVE GROUND TEMPORARY CONCRETE WASHOUT FACILITY
NOT TO SCALE



DEWATERING PUMPING SETTLING BASIN TYPE I
NOT TO SCALE



TOE OF SLOPE HAY BALE BARRIER
NOT TO SCALE

EROSION & SEDIMENT CONTROL NOTES

1. CONSTRUCTION STANDARDS – CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE MOST RECENT EDITION OF THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" (CT DEP BULLETIN 34). ALL MEASURES SHALL BE MAINTAINED AND UPGRADED TO ACHIEVE PROPER SEDIMENT CONTROL DURING CONSTRUCTION.

2. PLAN IMPLEMENTATION – IMPLEMENT THIS EROSION AND SEDIMENT CONTROL PLAN. THIS IMPLEMENTATION INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES UNTIL PERMANENT STABILIZATION IS ACHIEVED. NOTIFY THE STATE ACTORS OF THE REQUIREMENTS OF THE PLAN AND NOTIFY THE PROPER MUNICIPAL AGENTS OF ANY TRANSFER OF THIS RESPONSIBILITY. THE OWNER SHALL BE RESPONSIBLE FOR CONVEYING A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN TO THE NEW OWNER IF THE TITLE OF THE LAND IS TRANSFERRED PRIOR TO ACHIEVING PERMANENT STABILIZATION.

3. INSTALLATION SCHEDULE – INSTALL THE CONSTRUCTION ENTRANCE BEFORE CONSTRUCTION TRAFFIC INTO AND OUT OF THE PROJECT AREA BEGINS. INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO STUMP REMOVAL AND CONSTRUCTION. INSTALL ADDITIONAL CONTROL MEASURES DURING THE CONSTRUCTION PERIOD, IF DEEMED NECESSARY BY THE OWNER, HIS AGENTS OR AGENTS OF THE

4. FUGITIVE DUST – CONTROL FUGITIVE DUST USING WATER SPRAYS OR CALCIUM CHLORIDE ON SOIL SURFACES, SWEEPING PAVED AREAS, TEMPORARY WINDBREAKS OR NON-ASPHALTIC SOIL TACKIFIERS.

5. HAY BALE LIFE SPAN – INSTALL HAY BALES WHERE PROTECTION AND EFFECTIVENESS IS REQUIRED FOR LESS THAN 90 DAYS. OTHERWISE, INSTALL SILT FENCE.

6. CATCH BASINS – PROTECT CATCH BASINS WITH PROPER CONTROLS THROUGHOUT THE CONSTRUCTION PERIOD UNTIL ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED.

7. STOCKPILES – ENCIRCLE STOCKPILES OF ERODIBLE SOIL WITH A HAY BALE OR SILT FENCE BARRIER. THE SIDE SLOPES OF ERODIBLE STOCKPILED MATERIAL SHALL BE NO STEEPER THAN 2:1. STOCKPILES THAT ARE NOT TO BE USED WITHIN 30 DAYS SHALL BE SEDED AND MULCHED IMMEDIATELY AFTER THEY ARE FORMED.

8. TOE OF SLOPE – ESTABLISH AN EROSION CONTROL BARRIER (SILT FENCE OR HAY BALE BARRIER) APPROXIMATELY 5 TO 10 FEET FROM THE PROPOSED TOE OF THE CUT OR FILL AREA PRIOR TO BEGINNING WORK.

9. SEDIMENT REMOVAL – SEDIMENT REACHING 1/2 THE HEIGHT OF THE EROSION CONTROL BARRIER SHALL BE REMOVED. REMOVE AND DISPOSE OF SEDIMENT IN A MANNER CONSISTENT WITH THE INTENT OF THE PLAN.

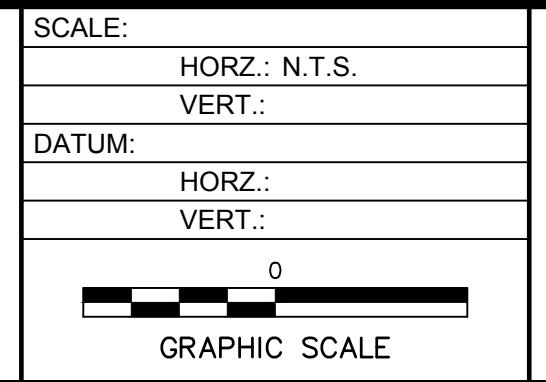
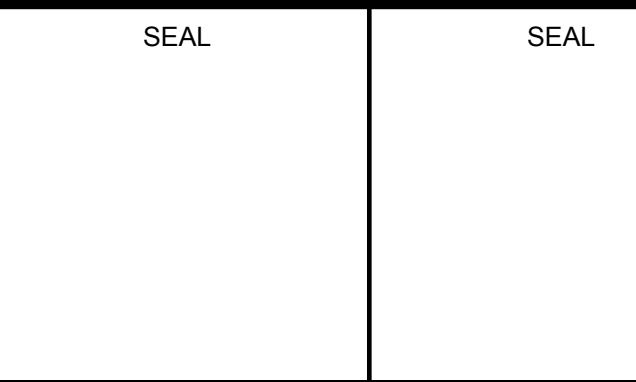
10. SOIL STABILIZATION SCHEDULE – APPLY PERMANENT SOIL STABILIZATION MEASURES TO ALL GRADED AREAS WITHIN 7 DAYS OF ESTABLISHING FINAL GRADE. APPLY TEMPORARY SOIL STABILIZATION MEASURES IF FINAL GRADING IS TO BE DELAYED MORE THAN 30 DAYS.

11. TEMPORARY SEEDING – TEMPORARILY SEED ERODIBLE SOILS THAT WILL BE EXPOSED GREATER THAN 1 BUT LESS THAN 12 MONTHS WITHIN THE FIRST 7 DAYS OF SUSPENDING GRADING OPERATIONS. APPLY LIME AT A RATE OF 90 LBS/1000 SQ. FT. APPLY 10-10-10 FERTILIZER AT A RATE OF 7 1/2 LBS/1000 SQ. FT. APPLY PERENNIAL RYE GRASS AT A RATE OF 2 LBS/1000 SQ. FT. TO A DEPTH OF 1/2 INCH. OPTIMUM SOWING DATES ARE MARCH 15, JUNE 1, AND AUGUST 15 TO OCTOBER 15. MULCH FOR SEED APPLIED WITHIN 12 MONTHS OF SOWING DATE SHALL BE APPLIED EVENLY SUCH THAT IT PROVIDES 80%-90% SOIL COVERAGE. MULCH FOR SEED APPLIED OUTSIDE OF THE OPTIMUM SOWING DATES SHALL BE APPLIED EVENLY SUCH THAT IT PROVIDES 95%-100% COVERAGE.

12. PERMANENT SEEDING – SEED PERMANENT LAWN AREAS IN ACCORDANCE WITH THE SPECIFICATIONS.

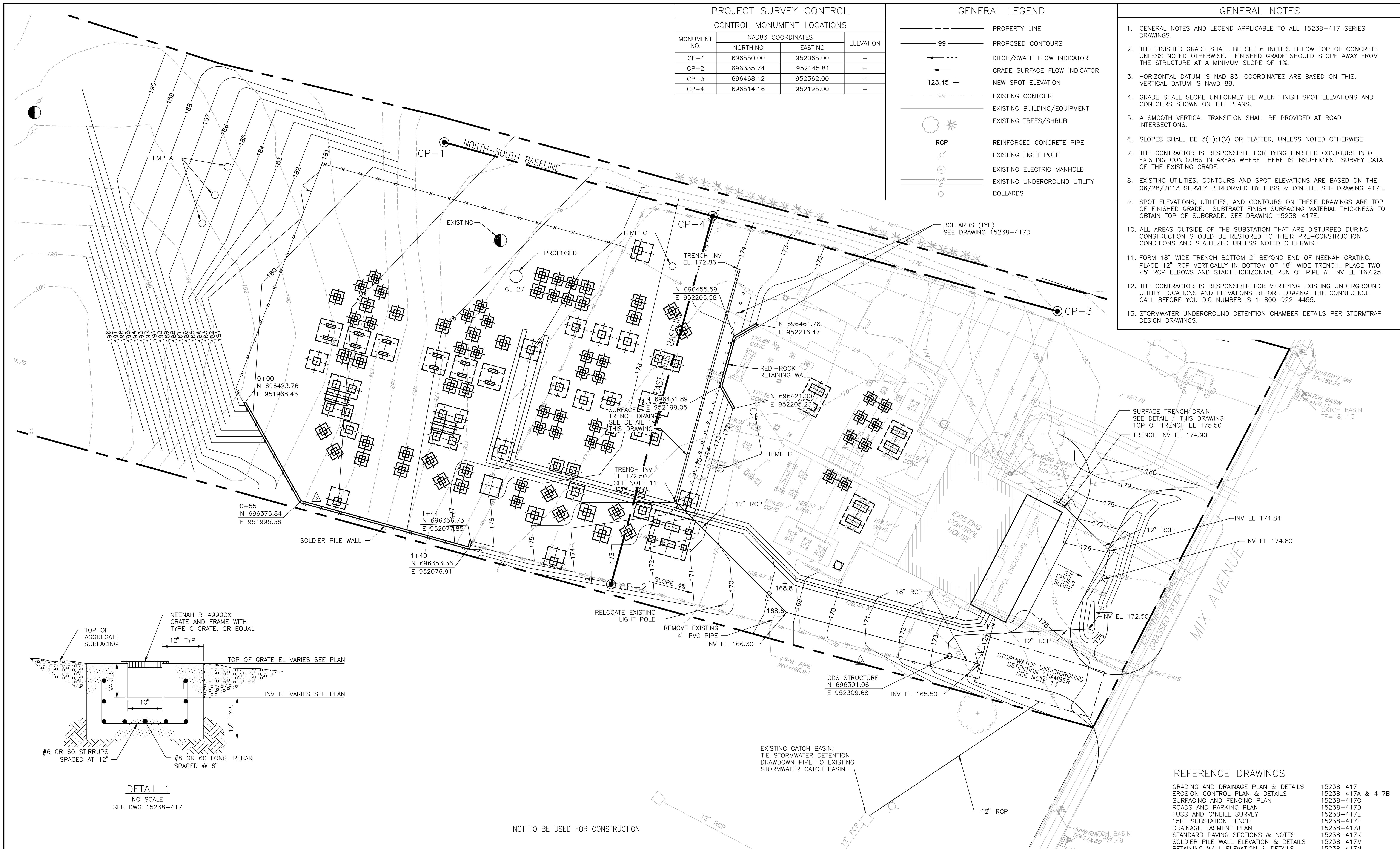
13. INSPECTION – THE OWNER SHALL SECURE THE SERVICES OF A SOIL SCIENTIST OR PROFESSIONAL ENGINEER TO VERIFY IN THE FIELD THAT THE CONTROLS REQUIRED BY THIS PLAN ARE PROPERLY INSTALLED AND MAINTAINED. THESE INSPECTIONS SHALL NOT BE LESS FREQUENTLY THAN WEEKLY AND WITHIN 24 HOURS OF THE END OF A STORM HAVING A RAINFALL AMOUNT OF 0.1 INCH OR GREATER. FOLLOWING THESE INSPECTIONS, A WRITTEN REPORT SHALL BE PREPARED, NOTIFYING THE OWNER OR HIS AGENT NOT LESS FREQUENTLY THAN WEEKLY AND THE MUNICIPALITY NO LESS FREQUENTLY THAN MONTHLY OF OBSERVATIONS, MAINTENANCE, AND CORRECTIVE ACTIVITIES UNDERTAKEN.

1.	DATE	DESCRIPTION	DESIGNER	REVIEWER

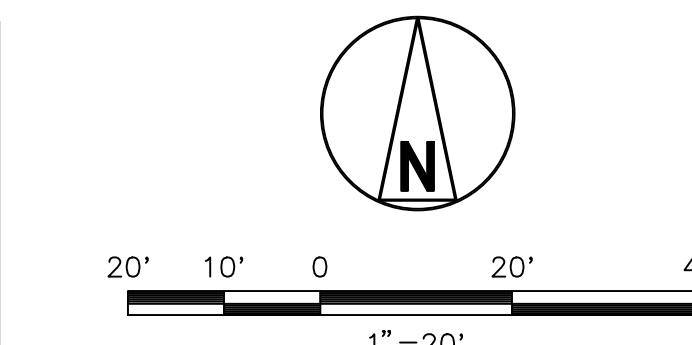


THE UNITED ILLUMINATING COMPANY
EROSION & SEDIMENTATION CONTROL
NOTES & DETAILS
MIX AVENUE SUBSTATION
HAMDEN
CONNECTICUT

PROJ. No.: 20150138.A.20
DATE: 11/6/2015
CE-501



BLACK & VEATCH Building a world of difference®			
DESIGNER	SMR	DRAWN	JRH
CHECKED	-	DATE	-
PROJECT #	180592		
NO	DATE	REVISION	DRN CHKD DESN SUPR.



NOT TO BE USED FOR CONSTRUCTION

GRADING AND DRAINAGE – SITE PLAN			
MIX AVENUE SUBSTATION			
Drawn	JRH	Date	08/09/2013
Chkd.	-	Design Engr.	SMR

ui
The United Illuminating Company

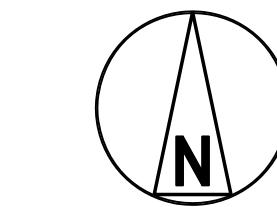
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15238-417
15238-417A & 417B
15238-417C
15238-417D
15238-417E
15238-417F
15238-417G
15238-417H
15238-417I
15238-417J
15238-417K
15238-417L
15238-417M
15238-417N



IGNER IDLU DRAWN CMB

 BLACK & VEATCH Building a world of difference.®										
DESIGNER	JRH	DRAWN	SMR							
CHECKED	—	DATE	—	E	11/05/2015	ISSUED FOR SWPCP PERMITTING—PROJECT 180592—CAP BANK AND REACTOR	RRH	—	SMR	M
PROJECT # 180592				D	10/28/2015	ISSUED FOR SWPCP PERMITTING—PROJECT 180592—CAP BANK AND REACTOR	JDL	—	SMR	M
				C	10/26/2015	ISSUED FOR PERMITTING – PROJECT 180592 – CAP BANK AND REACTOR	JDL	—	SMR	M
				B	07/09/2015	ISSUED FOR BID – PROJECT 180592 – CAP BANK AND REACTOR	MEM	—	JJD	M
				A	08/09/2013	ISSUED FOR UI 30% REVIEW	JRH	—	SMR	
NO		DATE	REVISION				DRN	CHKD	DESN	S



NOT TO BE USED FOR CONSTRUCTION

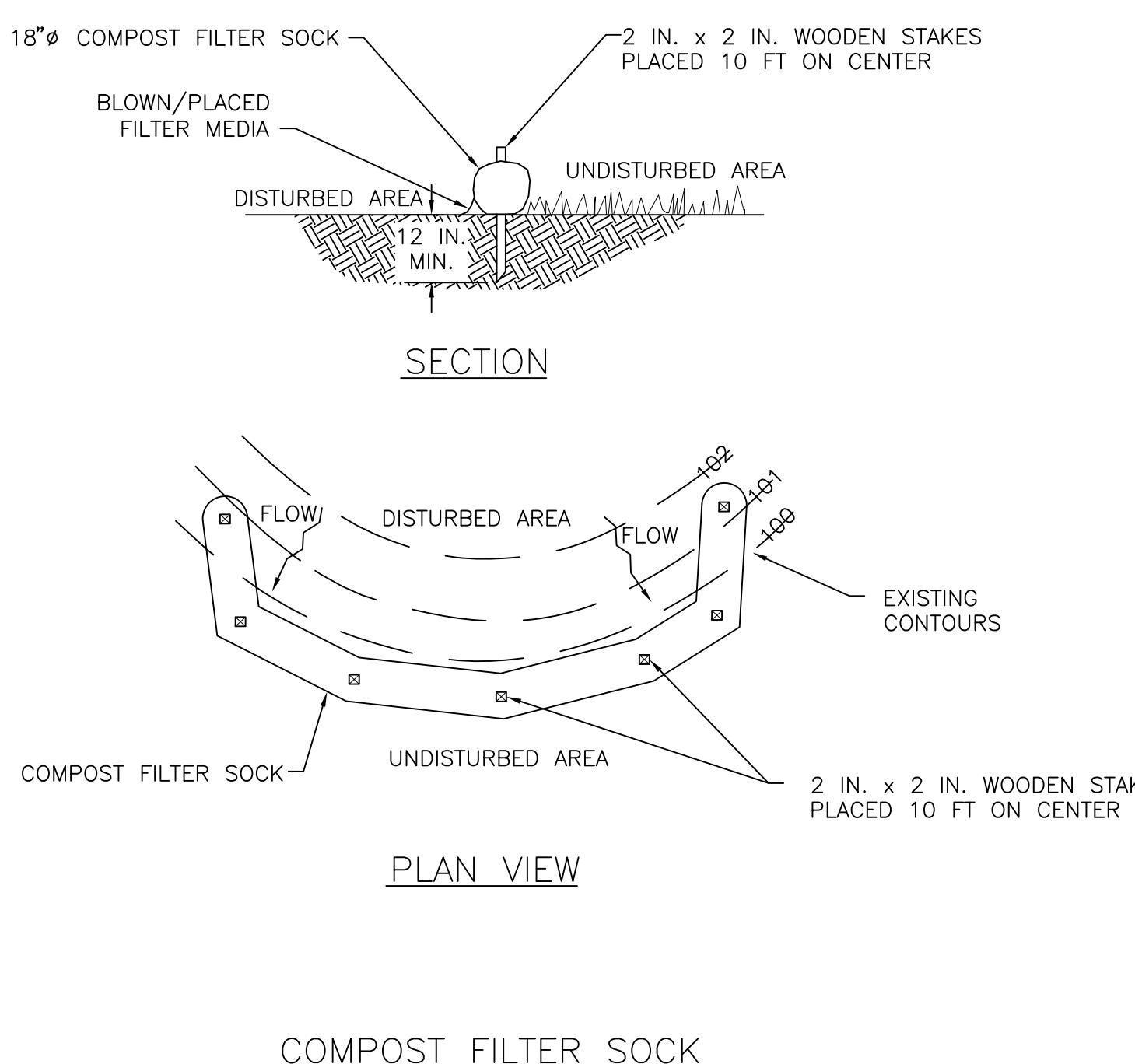


The logo of the University of Illinois at Urbana-Champaign, featuring a stylized red 'U' and 'I' with a blue circle containing white horizontal lines.

The United Illuminating Company

EROSION CONTROL – SITE PLAN MIX AVENUE SUBSTATION

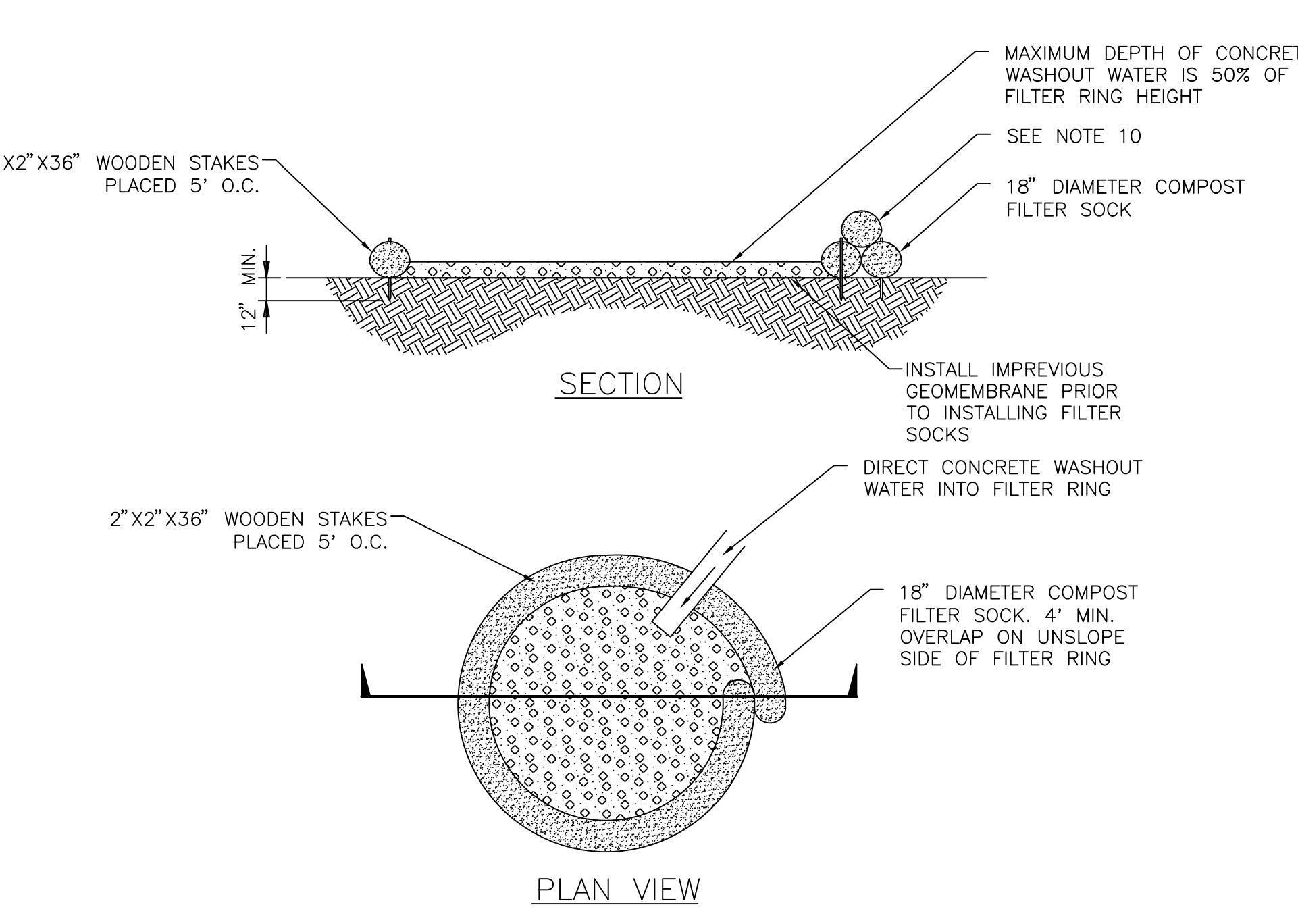
						 <i>The United Illuminating Company</i>				EROSION CONTROL – SITE PLAN MIX AVENUE SUBSTATION		
						Drawn <u>JRH</u> Date <u>08/09/2013</u> Scale: <u>1":20'</u> Chkd. <u>-</u> Design Engr. <u>SMR</u> Design Supv. <u>-</u>				CAD FILE NAME	SEQUENCE No.	DRAWING NUMBER
No	Date	Revision		By	Chkd.	Engr.	Supv.		—	—	15238-417A	



COMPOST FILTER SOCK

NOT TO SCALE

NOT TO SCALE
SEE NOTES 6-9

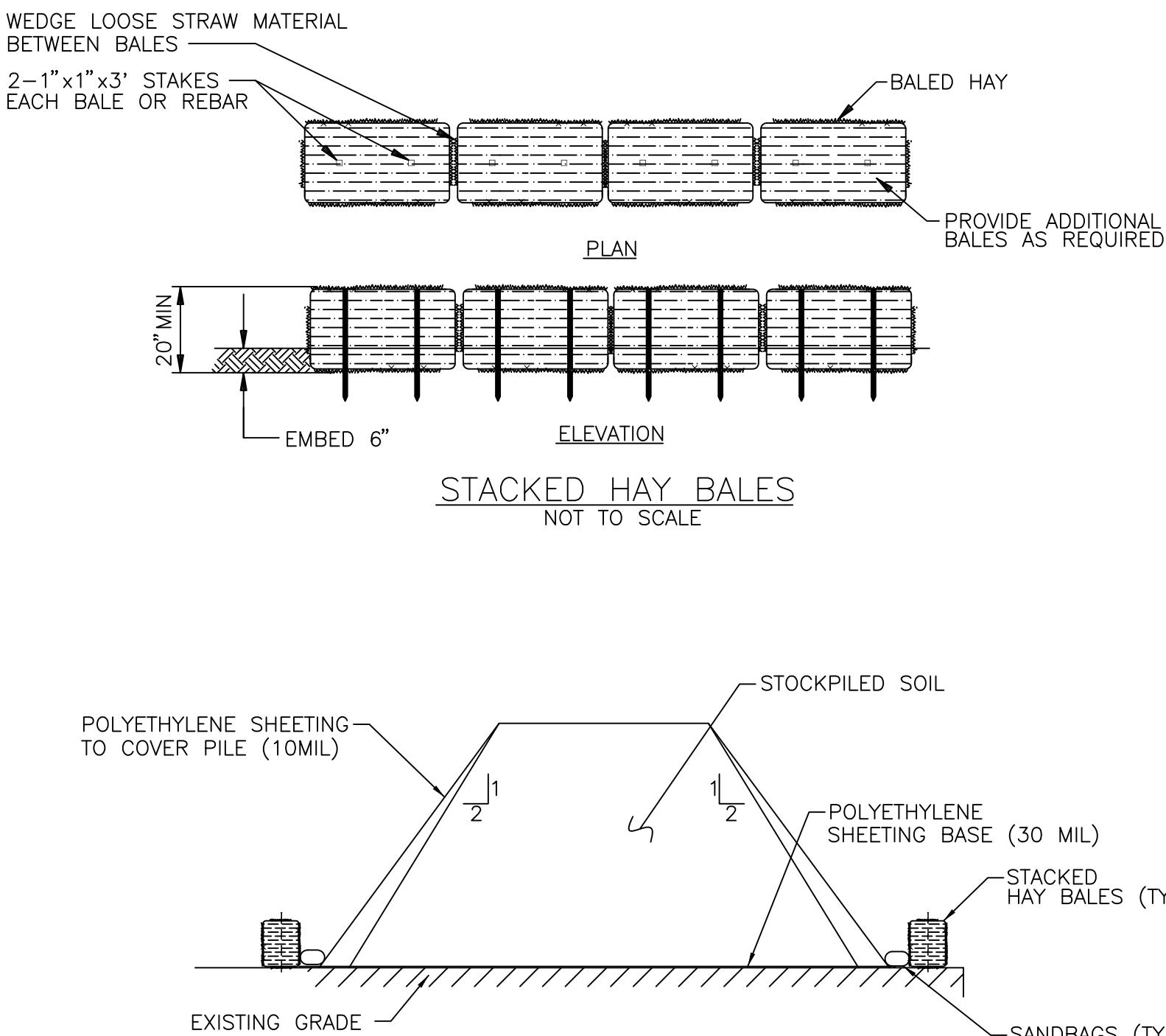


TYPICAL COMPOST SOCK WASHOUT INSTALLATION

NOT TO SCALE

NOTES

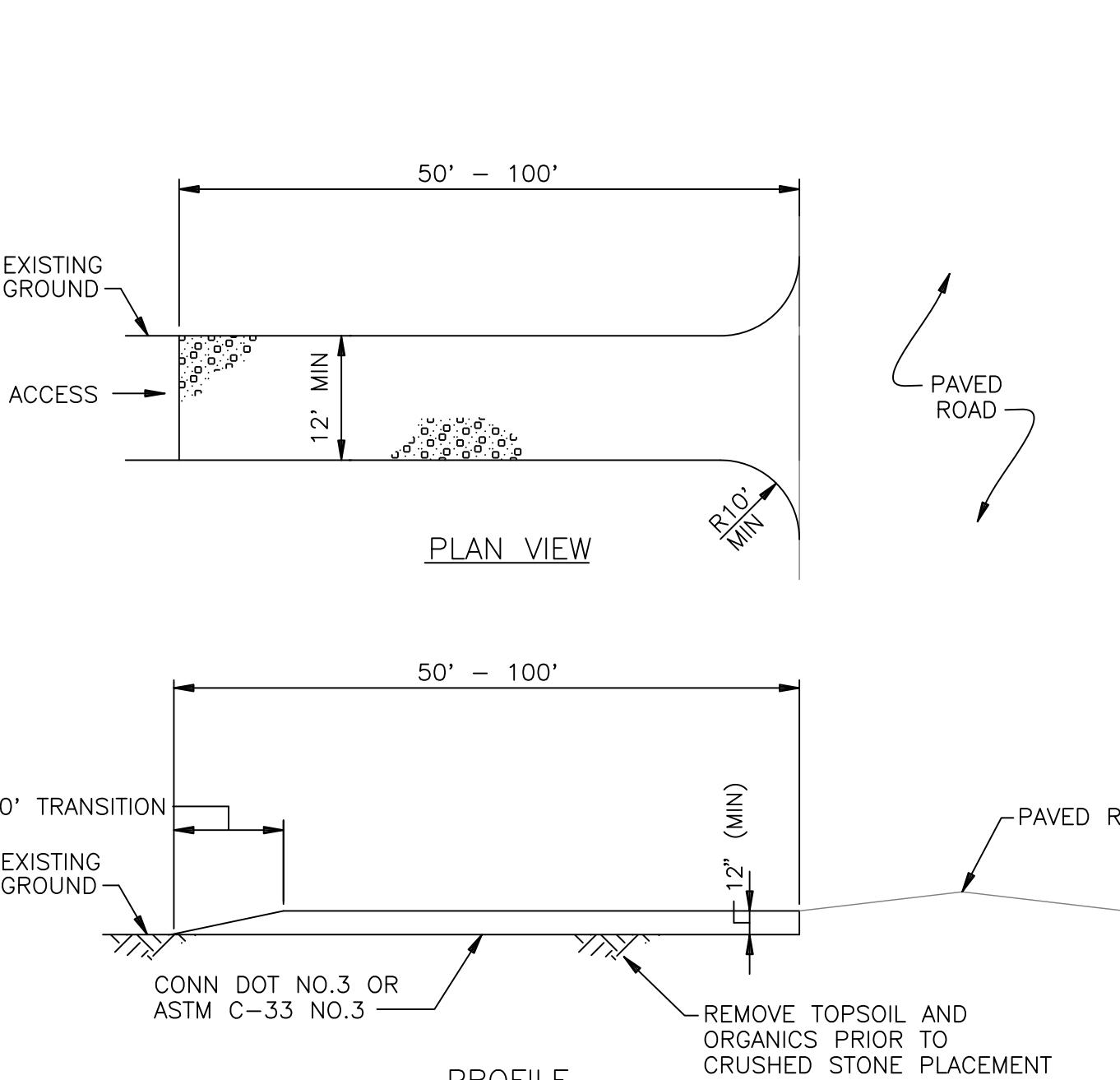
1. SEE DWG 15238-417 FOR GENERAL NOTES AND LEGEND.
2. SEE DWG 15238-417A FOR EROSION CONTROL PLAN INFORMATION.
3. CONSTRUCTION ENTRANCE SHALL BE INSTALLED PRIOR TO ANY TRAFFIC LEAVING SITE. CONSTRUCTION ENTRANCE SHALL BE FULL WIDTH OF ROAD OR EGRESS POINT. A MINIMUM 12" THICK PAD SHALL BE MAINTAINED.
4. DESIGN CRITERIA FOR CONSTRUCTION ENTRANCE.
 - A. WIDTH – NOT LESS THAN FULL WIDTH OF POINTS OF INGRESS OR EGRESS.
 - B. LENGTH – 50 FEET MINIMUM WHERE THE SOILS ARE SANDS OR GRAVEL OR 100 FEET MINIMUM WHERE SOILS ARE CLAYS OR SILTS, EXCEPT WHERE THE TRAVELED LENGTH IS LESS THAN 50 OR 100 FEET RESPECTIVELY. THESE LENGTHS MAY BE INCREASED WHERE FIELD CONDITIONS DICTATE.
 - C. FILTER CLOTH – WILL BE PLACED OVER ENTIRE AREA PRIOR TO PLACING OF STONE AND SHALL BE MIRAFI 500X OR EQUIVALENT.
 - D. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ON TO PUBLIC RIGHT-OF-WAY THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.
5. ALL SOILS REMOVED SHALL BE EITHER PUT DIRECTLY INTO TRUCKS AND SHIPPED OFF SITE OR STORED WITHIN A CONSTRUCTED SOIL STOCKPILE AREA (SSA) AS INDICATED ON THIS PLAN. SSA'S SHALL BE KEPT COVERED AT ALL TIMES EXCEPT WHEN SOIL IS BEING ADDED OR REMOVED. THE TOP LINER SHALL PREVENT PRECIPITATION FROM CONTACTING CONTAINED SOILS AND SHALL BE SECURED TO PREVENT IT FROM BEING DISLODGED BY WIND. SOILS POTENTIALLY TO BE REUSED AS BACKFILL AFTER CHARACTERIZATION TESTING SHALL BE STORED IN SEPARATE SSA'S. CONTRACTOR SHALL PLACE LESS THAN 1,000 CY IN SSA DURING CONSTRUCTION.
6. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT.
7. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
8. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.
9. 18" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.
10. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.



CROSS SECTION–SOIL STOCKPILE AREA

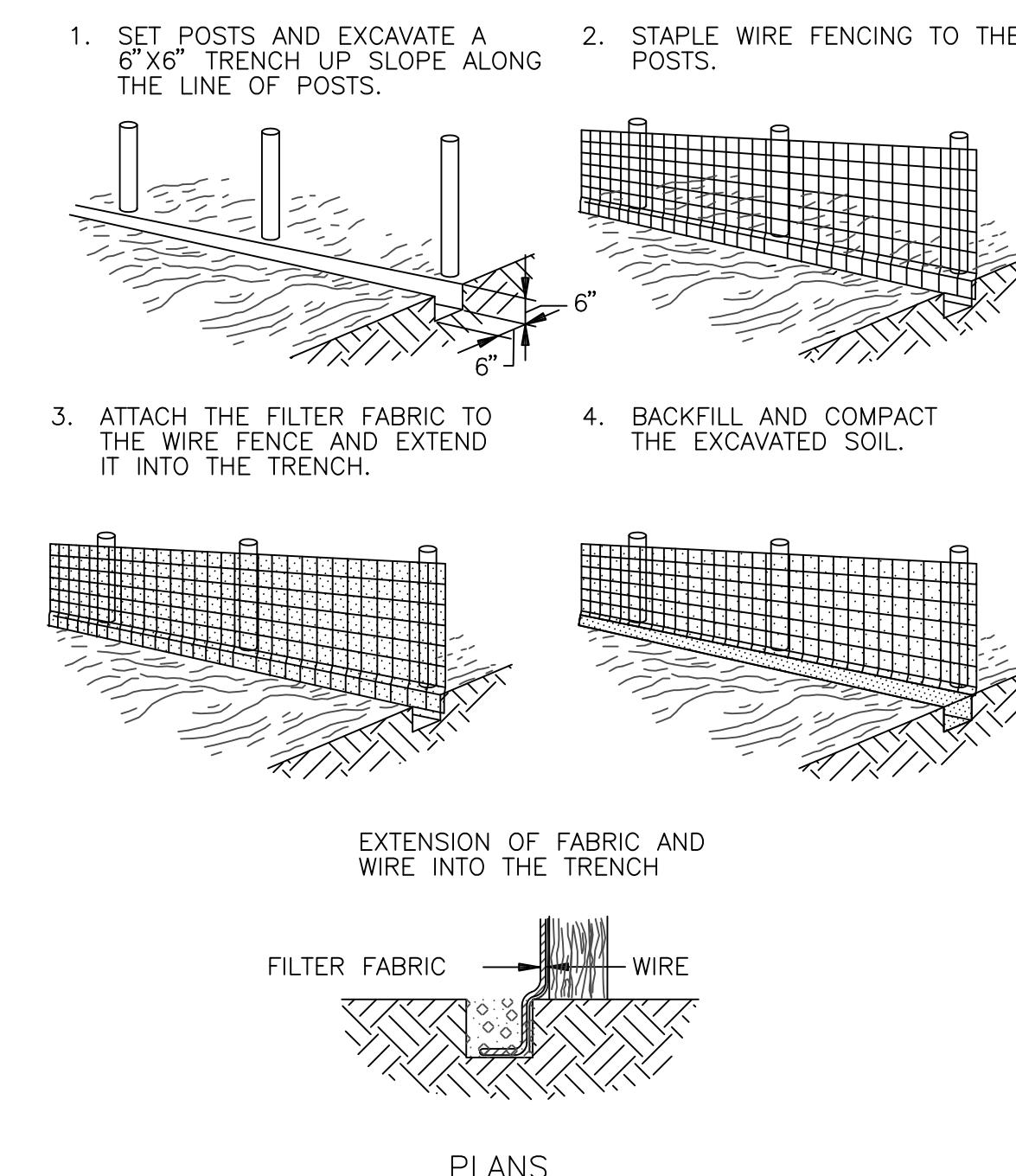
NOT TO SCALE
SEE NOTE 5

SEE NOTE 5



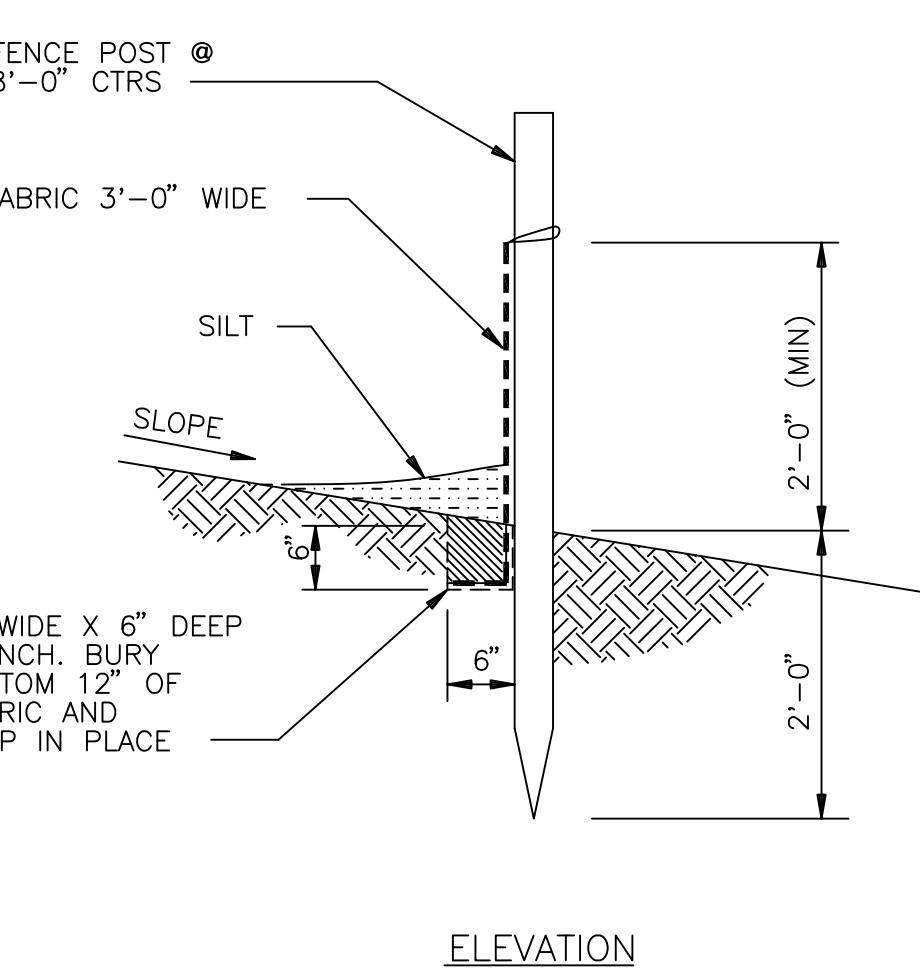
CONSTRUCTION ENTRANCE

NOT TO SCALE
SEE NOTES 3 & 4



SILT FENCE DETAIL
NO SCALE

SILT FENCE L
NO SCALE



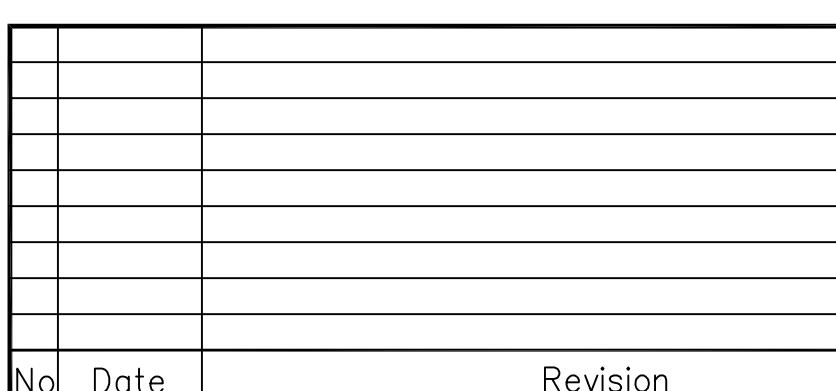
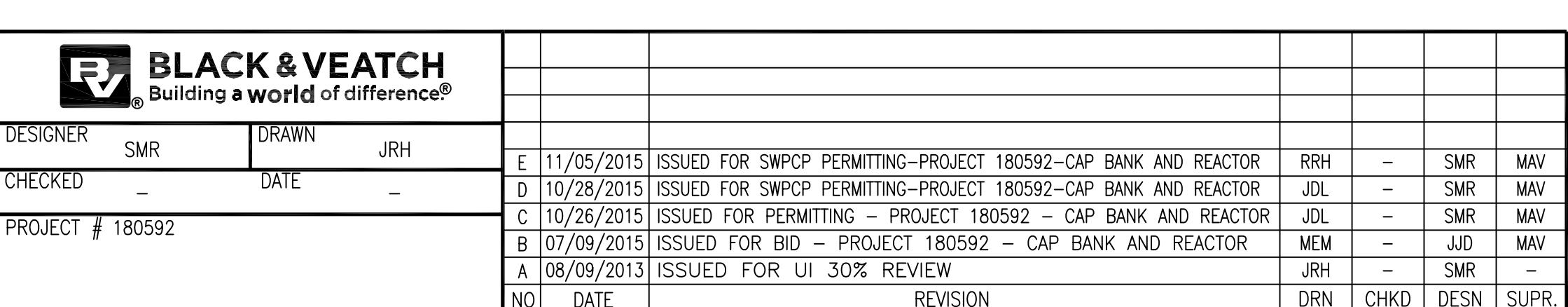
ELEVATION

REFERENCE DRAWINGS

GRADING AND DRAINAGE PLAN
EROSION CONTROL PLAN & DETAILS
SURFACING AND FENCING PLAN
ROADS AND PARKING PLAN
FUSS AND O'NEILL SURVY

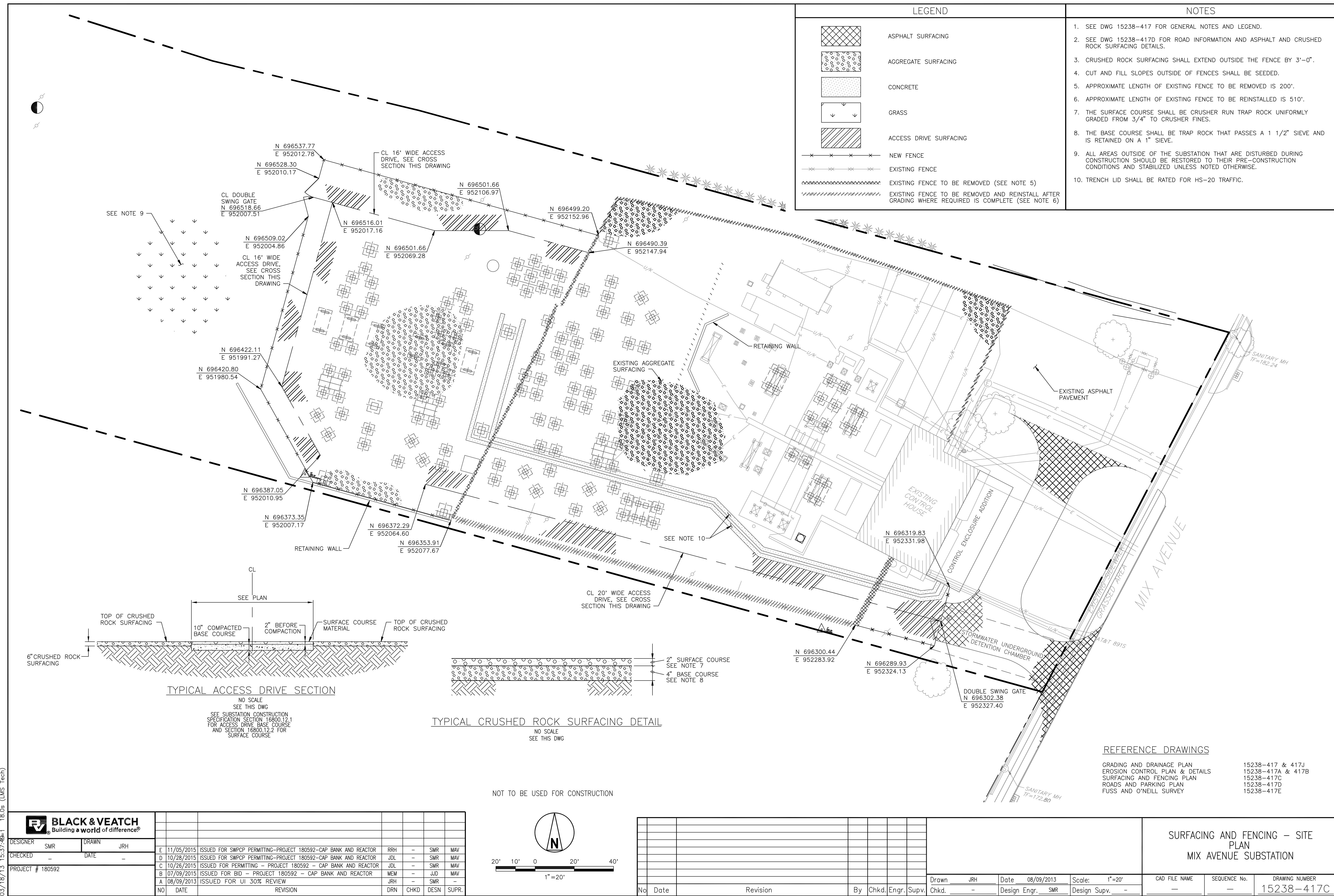
15238-417 & 417J
15238-417A & 417B
15238-417C
15238-417D
15238-417E

NOT TO BE USED FOR CONSTRUCTION



EROSION CONTROL – SITE EROSION CONTROL DETAILS MIX AVENUE SUBSTATION

NAME	SEQUENCE No.	DRAWING NUMBER
-	-	15238-417B





STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

May 1, 2017

Amy Hicks
Analyst, Permitting & Public Outreach
The United Illuminating Company
180 Marsh Hill Road, 1st Floor, Mail Stop AD-1C
Orange, CT 06477

RE: **PETITION NO. 1189** – The United Illuminating Company declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed modifications to the existing Mix Avenue Substation located at 690 Mix Avenue, Hamden, Connecticut and related improvements to existing electric transmission line circuits from Mix Avenue Substation to Glen Lake Junction and from June Street Substation to Pease Road.

Dear Ms. Hicks:

The Connecticut Siting (Council) is in receipt of a construction completion letter dated April 6, 2017, for the above-referenced project. Thank you for providing this information.

Please note, however, that the decision letter contained site-specific conditions that require written confirmation to the Council certifying that the conditions have been met.

To date, the Council is not in receipt of the final stormwater and landscaping plans pursuant to Condition No. 1 of the Council's November 17, 2015 decision on this matter. Attached please find the Council's decision letter for your convenience.

The Council hereby requests submission of the stormwater and landscaping plans no later than June 1, 2017. If additional time is needed to gather the requested information, please notify the Council in writing.

If you have any questions or concerns, please call the Council office at 860-827-2935.

Thank you for your attention to this matter.

Sincerely,

Melanie Bachman
Executive Director

MB/MP/laf

Enclosure

c: Richard J. Reed, PMP, The United Illuminating Company



April 6, 2017

Mr. Robert Stein
Chairman
The Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: PETITION NO. 1189 – The United Illuminating Company petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed modifications to the existing Mix Avenue Substation located at 690 Mix Avenue, Hamden, Connecticut and related improvements to existing electric transmission line circuits from Mix Avenue Substation to Glen Lake Junction and from June Street Substation to Pease Road – Notification of Completion

Dear Chairman Stein:

The United Illuminating Company ("UI") received acknowledgement from the Connecticut Siting Council ("Council") on November 12, 2015 that the UI proposed modifications to the existing Mix Avenue Substation would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes Section 16-50k, would not require a Certificate of Environmental Compatibility and Public Need. UI regrets that it failed to provide the completion date in a timely manner in accordance with the Council's conditions, and hereby submits this letter to provide notice that construction was completed on December 16, 2016.

Thank you for your attention to this matter. If you have any questions or comments, please call me at (203) 499-2586

Sincerely,

Amy Hicks, Analyst
The United Illuminating Company

www.uinet.com

An equal opportunity employer





STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

CERTIFIED MAIL RETURN RECEIPT REQUESTED

November 17, 2015

Richard J. Reed, PMP
Vice President-Engineering and Project Excellence
The United Illuminating Company
180 Marsh Hill Road
Orange, CT 06477

RE: **PETITION NO. 1189** – The United Illuminating Company petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed modifications to the existing Mix Avenue Substation located at 690 Mix Avenue, Hamden, Connecticut and related improvements to existing electric transmission line circuits from Mix Avenue Substation to Glen Lake Junction and from June Street Substation to Pease Road.

Dear Mr. Reed:

At a public meeting held on November 12, 2015, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need, with the following conditions:

- The final stormwater management plans stamped by a Professional Engineer and landscaping plans (i.e. upgrades to existing tree buffer) be submitted to the Council;
- Utilize consistent fence design;
- Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council's decision, this decision shall be void, and the facility owner/operator shall dismantle the facility and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable;
- Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, and the Town of Hamden;
- Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The facility owner/operator shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v;

- This Declaratory Ruling may be transferred, provided the facility owner/operator/transferor is current with payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v and the transferee provides written confirmation that the transferee agrees to comply with the terms, limitations and conditions contained in the Declaratory Ruling, including timely payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v; and
- If the facility owner/operator is a wholly owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the facility within 30 days of the sale and/or transfer.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated September 4, 2015 and additional information received on October 13, 2015.

Enclosed for your information is a copy of the staff report on this project.

Very truly yours,



Robert Stein
Chairman

RS/MP/lm

Enclosure: Staff Report dated November 12, 2015

c: The Honorable Curt B. Leng, Mayor, Town of Hamden
Leslie Creane, Town Planner, Town of Hamden
Amy Hicks, Analyst-Public Outreach and Permitting, UI
James R. Morrissey, Esq., Attorney, UI



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Petition No. 1189

The United Illuminating Company

Mix Avenue Substation

Mix Avenue, Hamden

Staff Report

November 12, 2015

On September 4, 2015, The United Illuminating Company (UI) submitted a petition (Petition) to the Connecticut Siting Council (Council) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed modifications to the existing Mix Avenue Substation and related improvements to existing electric transmission line circuits from Mix Avenue Substation to Glen Lake Junction and from June Street Substation to Pease Road. This petition was field reviewed on October 5, 2015 by Michael Perrone of the Council staff. James Morrissey, Esq., Attorney, UI; Syed Rahman, Project Engineer, UI; Yan Lachowicz, Project Manager, UI; Shawn Crosbie, Environmental Analyst, UI; Tony Buccheri, Director of Project Management; Racpa Anderson, Manager – Transmission and Substation Engineering; Samantha Marone, Permitting and Public Outreach, UI; and Holly Masi, Zoning Enforcement Officer, Town of Hamden also attended the field review.

The ISO New England Inc. (ISO-NE) Southwest Connecticut Transmission Needs Assessment Study identified that, under certain contingency scenarios, low voltages can occur in the Mix Avenue – Sackett Substation electric transmission corridor. This study also revealed a need to restrict the flow of power between the Mix Avenue and Sackett Substations in order to maintain the thermal ratings of the transmission corridor. In order to mitigate the low voltages that can occur at the Mix Avenue Substation and restrict the flow of power between the Mix Avenue and Sackett Substations, UI proposes upgrades to the Mix Avenue Substation. These upgrades will further defer the need to upgrade transmission lines between Mix Avenue Substation and Glen Lake Junction and between Mix Avenue Substation and Sackett Substation.

The Mix Avenue Substation site is located in a residential (R-3) zone on a 2.8-acre parcel directly west of Mix Avenue with frontage along Mix Avenue. The surrounding area is residential in nature. Condominiums are located to the north and south of the site. Other residential structures are located to the east, on the opposite side of Mix Avenue. Directly west of the site is existing transmission line right of way (ROW) and existing trees that abut the ROW.

Specifically, UI proposes to install two 115 kilovolt (kV), 20 megavolt-ampere (MVA) capacitor banks and one 7.5 Ohm series reactor at the Mix Avenue Substation. In order to accommodate the installation of such equipment, the proposed project would require the expansion of the existing substation yard to include the installation of one new 115-kV gas circuit breaker, three 115 kV circuit switchers, buswork, seven new lightning masts, foundations, stormwater drainage system, and expansion of the existing control enclosure or “control house.” Other modifications include but are not limited to installation of a second battery bank to eliminate a single source point of failure, upgrade to AC station service to accommodate additional relay panels, replacement of transformer motor operated disconnect switches and associated support structures, upgrade miscellaneous structural components to meet current codes, addition/replacement of potential transformers and current capacitance transformers as needed; and installation of additional substation yard fence, video cameras, motion monitors, and public address system as part of UI’s security initiative. The heights of new equipment would be comparable to that of existing equipment. The tallest components inside the substation would remain as the existing and proposed lightning masts (approximately 55 feet high) for lightning safety.

UI proposes to install a new prefabricated control enclosure approximately 60 feet by 19 feet in front of the existing control house. UI would utilize an architectural design such that the control house would continue to look like a house with a sloped roof, similar to the existing control house. This approach is expected to maintain and/or improve aesthetics as viewed by residences across the street. The existing paved access/turnaround area adjacent to Mix Avenue and next to control house would be upgraded.

The existing fenced substation would be expanded to the west. The incremental substation footprint would have maximum dimensions of roughly 145 feet measured in an east-west direction and about 160 feet measured in the north-south direction. The existing chain link fence has 2-inch mesh and is 14 feet tall topped with barbed wire. The expanded fence design is proposed to match the existing fence design for uniformity.

In addition, the replacement and relocation of two #1610 line transmission structures directly to the west of the site, but still on the subject property, would also be required. Existing structure GL 26 is located about 284 feet to the west of the existing substation fence line. Existing structure GL 27 is located about 54 feet to the west of the existing substation fence line. Temporary structures would be needed in the interim until the permanent connections are complete. The structure work would be completed in the following order:

- a) UI would first install new dead-end structure GL 26 (a 65.5-foot wood, 3-pole structure with steel cross-arms and wood braces) and remove existing structure GL 26.
- b) UI would install temporary wood structures A and B.
- c) UI would transfer conductors to new GL 26, temporary structure A, temporary structure B, and Mix Avenue substation.
- d) UI would install new structure GL 27 (a 65-foot steel monopole structure) and remove existing structure GL 27.
- e) UI would install temporary structure C.
- f) UI would transfer conductors to new GL 27 and temporary structure C.
- g) UI would remove temporary structure A.
- h) UI would complete other electrical work.
- i) UI would, lastly, remove temporary structures B and C.

The visual impact of the structure replacements is not expected to be significant because the final configuration includes structure replacements rather than additions, and the new structures are comparable in height to the existing structures. In addition, there is an existing vegetative buffer on both sides of the ROW.

In order to integrate the communications, protection and control requirements of the new equipment with the existing transmission system, the existing shield wire along the #1610 line circuit would be replaced with new optical fiber ground wire (OPGW). Specifically, the new OPGW would be required for two separate sections of the #1610 line circuit. The first span would run along the approximately 2.86 mile #1610 circuit from Mix Avenue Substation west to Glen Lake Junction. The second span would run along the #1610 line from June Street Substation to a location approximately 0.75 miles west to Pease Road. The visual impact is not expected to be significant because the existing phase conductors are more readily visible than the OPGW to replace the existing shield wire on tops of the structures. UI provided prospective routes and pull sites within the ROW. UI will evaluate and implement least environmental disturbance during installation of the OPGW.

The stormwater drainage system would likely require connection to existing drainage facilities located within the property boundaries of the adjacent abutter located directly to the south. UI is in the process of negotiating an easement for such purpose or alternatively stormwater would be pumped out to Mix Avenue.

UI plans to register with the Department of Energy and Environmental Protection (DEEP) under the General Permit for the Discharge of Stormwater and Remediation Wastewaters from Construction Activities and Stormwater Pollution Control Plan. Further, erosion and sediment controls would be established and monitored consistent with the *Connecticut Guidelines for Soil Erosion and Sediment Control*, (as amended).

The project would comply with DEEP Noise Control Standards and the equivalent local Town of Hamden noise control standards.

The worst-case increase in magnetic field levels (MF) under peak load conditions would be at the southern edge of the expanded substation perimeter. Such MF would increase from 3.4 milliGauss (mG) to 21.4 mG post-project. This is far below the International Commission on Non-ionizing Radiation Protection acceptable exposure level of 2,000 mG for general public as recognized in the Council's "Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines in Connecticut."

The site is not located within a $\frac{1}{4}$ mile of the shaded area of the DEEP's Natural Diversity Database. The closest wetland is 580 feet to the west of the existing substation. Construction would occur no closer than about 349 feet from this wetland. No adverse impacts are anticipated due to the distance. Approximately 15 trees with a diameter of six inches or greater would be removed to construct the proposed substation expansion. However, such tree removal is largely to the west of the existing substation and is not expected to materially affect the buffer between the substation and residential properties to north and south of the site. Furthermore, UI plans to plant about 15 additional trees on the north side of the substation to supplement the existing tree buffer.

UI conducted a cultural resource review and submitted it to the State Historic Preservation Office (SHPO) for review. SHPO responded and indicated that, "No historic properties will be affected by this project. No further review is requested."

If approved, construction is expected to commence in March 2016 with project completion by year-end 2016. Normal work hours for construction will be between 7:00 a.m. and 5:00 p.m. Work would proceed on Monday through Friday, excluding some holidays. The proposed work hours may include evening and weekend work hours on a temporary and case-by-case basis in order to complete critical work.

A letter from Mayor Jackson (dated April 14, 2015) is in the Petition filling expressing that safe and reliable electric service is in the best interest of all parties. On May 26, 2015, UI held an "Open House" to present the project and answer questions. Abutting property owners and Mayor Pascarella were invited.

Notice of the project was provided to the Town of Hamden, abutting property owners, and required state officials on or about September 4, 2015. By email dated September 15, 2015, abutter Malcolm and Amy Friedman inquired about the positive and negative aspects of this project. UI subsequently reached out to the Friedmans to discuss the project.

UI contends that this project would not have a substantial adverse environmental effect.

If approved, staff recommends that the final stormwater management plans stamped by a Professional Engineer and landscaping plans (i.e. upgrades to existing tree buffer) be submitted to the Council.