INTERDEPARTMENTAL MESSAGE

STATE OF CONNECTICUT

To	NAME, TITLE Central Permit Processing	DATE October 20, 2014
	AGENCY, ADDRESS Department of Energy and Environmental Protection, 79 Elm Street, Hartford	
From	NAME, TITLE Mr. Kenneth E. Fargnoli, District Engineer	TELEPHONE 203-591-3540
	AGENCY, ADDRESS Department of Transportation, Bureau of Policy and Planning, Newington	

Subject: **State Project No. 34-313**
I-84 Interchanges 5 & 6 Improvements
City of Danbury

Attached is an original of the General Permit Registration Form for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities associated with the above referenced project.

Any questions pertaining to this application may be directed to Mr. Andrew H. Davis, Transportation Supervising Planner of my staff, at 860-594-2157

Attachments

Nancy P. Rolfe

bcc: Kenneth E. Fargnoli – John S. Dunham
Paul N. Corrente – Andrew Piraneo
Susan M. Libatique – Nilesh M. Patel – Ahsan K. Saghir
Ellen M. Drugan – Edward T. Burke

Connecticut Department of
Energy & Environmental Protection

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

Permit Application Transmittal Form

Please complete this transmittal form in accordance with the instructions in order to ensure the proper handling of your application(s) and the associated fee(s). Print legibly or type.

Part I: Applicant Information:

- ***If an applicant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, applicant's name shall be stated ***exactly*** as it is registered with the Secretary of State.***
- *If an applicant 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.).*

Applicant: **Connecticut Department of Transportation District 4 Construction**

Mailing Address: **359 South Main Street**

City/Town: **Thomaston** State: **CT** Zip Code: **06787**

Business Phone: **203-591-3540** ext.: Fax: **203-591-3730**

Contact Person: **Kenneth E. Fargnoli** Phone: **203-591-3540** ext.

E-Mail: **Kenneth.Fargnoli@ct.gov**

Applicant (check one): ☐ individual ☐ *business entity ☐ federal agency ☒ state agency ☐ municipality ☐ tribal
*If a business entity, list type (e.g., corporation, limited partnership, etc.):

☐ Check if any co-applicants. If so, attach additional sheet(s) with the required information as supplied above.

Please provide the following information to be used for *billing purposes only*, if different:

Company/Individual Name:

Mailing Address:

City/Town: State: Zip Code:

Contact Person: Phone: ext.

Part II: Project Information

Brief Description of Project: *(Example: Development of a 50 slip marina on Long Island Sound)*

I-84 Interchanges 5 & 6 Improvements

Location (City/Town): **Danbury, CT**

Other Project Related Permits (*not* included with this form):

Permit Description	Issuing Authority	Submittal Date	Issuance Date	Denial Date	Permit #
ACOE Category 1	ACOE				
FM	CTDEEP	10/11/12	01/31/13		FM-201207915

Part III: Individual Permit Application and Fee Information

New, Mod. or Renew	Individual Permit Applications	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
	AIR EMISSIONS				
	New Source Review	$940.00			1 + 0
	Title V Operating Permits	none			1 + 0
	Title IV	none			1 + 0
	Clean Air Interstate Rule (CAIR)	none			1 + 0
	WATER DISCHARGES				
	To Groundwater	$1300.00			1 + 1
	To Sanitary Sewer (POTW)	$1300.00			1 + 1
	To Surface Water (NPDES)	$1300.00			1 + 2
	INLAND WATER RESOURCES-multiple permits 1 + 6 total copies				
	Dam Construction	none			1 + 2
	Flood Management Certification	none			1 + 1
	Inland 401 Water Quality Certification	none			1 + 5
	Inland Wetlands and Watercourses	none			
	Stream Channel Encroachment Lines	★			
	Water Diversion	★			1 + 5
	OFFICE OF LONG ISLAND SOUND PROGRAMS				
	Certificate of Permission	$375.00			1 + 3
	Coastal 401 Water Quality Certification	none			1 + 3
	Structures and Dredging/Tidal Wetlands	$660.00			1 + 3
	WASTE MANAGEMENT				
	Aerial Pesticide Application	★			1 + 2
	Aquatic Pesticide Application	$200.00			1 + 0
	CGS Section 22a-454 Waste Facilities	★			1 + 1
	Hazardous Waste Treatment, Storage and Disposal Facilities	★			1 + 1
	Marine Terminal License	$125.00			1 + 0
	Stewardship	$4000.00			1 + 1
	Solid Waste Facilities	★			1 + 1
	Waste Transportation	★			1 + 0
		Subtotal ➡	0		
	GENERAL PERMITS and AUTHORIZATIONS Subtotals Page 3 ➡		1	$3,000.00	
	Enter subtotals from Part IV, pages 3 & 4 & 5 of this form Subtotals Page 4 ➡		0		
	Subtotals Page 5 ➡		0		
	TOTAL ➡		1	$3,000	
	☐ Indicate whether municipal discount or state waiver applies. Less Applicable Discount ➡				
	AMOUNT REMITTED ➡			$3,000.00	

Check # ➡ _____

Check or money order should be made payable to: "Department of Energy and Environmental Protection"

★ See fee schedule on individual application.

Part IV: General Permit Registrations and Requests for Other Authorizations Application and Fee Information

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
	AIR EMISSIONS				
☐	Limit Potential to Emit from Major Stationary Sources of Air Pollution	$2760.00			1 + 0
☐	Ionizing Radiation Registration	$200.00			1 + 0
☐	Emergency/Temporary Authorization	★★			★★
☐	Other, (please specify):				
	WATER DISCHARGES				
☐	Domestic Sewage	$500.00			1 + 0
☐	Food Processing Wastewater	$500.00			1 + 0
☐	Groundwater Remediation Wastewater to a Sanitary Sewer	$500.00			1 + 0
☐ ☐	Groundwater Remediation Wastewater to a Surface Water Registration Only Approval of Registration by DEP	 $625.00 $1250.00			1 + 0
☐ ☐	Hydrostatic Pressure Testing Wastewater Registration Only Approval of Registration by DEP (natural gas pipelines)	 $625.00 $1250.00			1 + 0
☐ ☐	Miscellaneous Discharges of Sewer Compatible Wastewater Flow < 5,000 gpd and fire sprinkler system testwater Flow > 5,000 gpd	 $625.00 $1250.00			1 + 1
☐	Non-Contact Cooling and Heat Pump Water (Minor)	$625.00			1 + 1
☐	Photographic Processing Wastewater (Minor)	$100.00			1 + 0
☐	Printing & Publishing Wastewater (Minor) Flow < 40 gpd	$500.00 $100.00			1 + 0
☐	Stormwater Associated with Commercial Activities	$500.00			1 + 0
☐	Stormwater Associated with Industrial Activities <500 employees–see general permit for additional requirements >500 employees–see general permit for additional requirements	 $500.00 $1000.00			1 + 0
☒ ☐	Stormwater & Dewatering Wastewaters-Construction Activities 5 – 10 acres > 10 acres	 $625.00 $1250.00	1	$3,000	1 + 0
☐	Stormwater from Small Municipal Separate Storm Sewer Systems (MS4)	$250.00			1 + 0
☐	Swimming Pool Wastewater - Public Pools and Contractors	$500.00			1 + 0
☐	Tumbling or Cleaning of Parts Wastewater (Minor)	$1000.00			1 + 1
☐ ☐	Vehicle Maintenance Wastewater Registration Only Approval of Registration by DEP	 $625.00 $1250.00			1 + 0
☐	Water Treatment Wastewater	$625.00			1 + 0
☐	Emergency/Temporary Authorization - Discharge to POTW	$1500.00			1 + 0
☐	Emergency/Temporary Authorization - Discharge to Surface Water	$1500.00			1 + 0
☐	Emergency/Temporary Authorization - Discharge to Groundwater	$1500.00			1 + 0
☐	Other, (please specify):				
	Note: Carry subtotals over to Part III, page 2 of this form. Subtotal ➡		1	$3,000	

★★ Contact the specific permit program for this information (Contact numbers are provided in the instructions).

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
	AQUIFER PROTECTION PROGRAM				
☐	Registration for Regulated Activities	$625.00			1 + 0
☐	Permit Application to Add a Regulated Activity	$1250.00			1 + 0
☐	Exemption Application from Registration	$1250.00			1 + 0
	INLAND WATER RESOURCES				
☐	Dam Safety Repair and Alteration	$1000.00			1 + 2
☐	Diversion of Water for Consumptive Use: Reauthorization Categories	$1000.00			1 + 2
☐	Diversion of Water for Consumptive Use: Authorization Required	$2500.00			1 + 5
☐	Diversion of Water for Consumptive Use: Filing Only	$1500.00			1 + 4
☐	Habitat Conservation	$1000.00			1 + 2
☐	Lake, Pond and Basin Dredging	$1000.00			1 + 2
☐	Minor Grading	$1000.00			1 + 2
☐	Minor Structures	$1000.00			1 + 2
☐	Utilities and Drainage	$1000.00			1 + 2
☐	Emergency/Temporary Authorization	★★			★★
☐	Other, (please specify):				
	OFFICE OF LONG ISLAND SOUND PROGRAMS				
☐	4/40 Docks	$700.00			1 + 1
☐	Beach Grading	$100.00			1 + 1
☐	Coastal Remedial Activities Required by Order	$700.00			1 + 1
☐	Dock Reconstruction	$300.00			1 + 1
☐	Marina and Mooring Field Reconfiguration	$700.00			1 + 1
☐	Non-harbor Moorings	$100.00			1 + 1
☐	Osprey Platforms and Perch Poles	none			1 + 1
☐	Pump-out Facilities (no fee for Clean Vessel Act grant recipients)	$100.00			1 + 1
☐	Removal of Derelict Structures	$100.00			1 + 1
☐	Residential Flood Hazard Mitigation	$100.00			1 + 1
☐	Swim Floats	$100.00			1 + 1
☐	Emergency/Temporary Authorization	★★			★★
☐	Other, (please specify):				
	Note: Carry subtotals over to Part III, page 2 of this form.	Subtotal ➡	0		

★ See fee schedule on registration/application. ★★ Contact the specific permit program for this information.

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
	WASTE MANAGEMENT				
☐	Addition of Grass Clippings at Registered Leaf Composting Facilities	$500.00			1 + 0
☐	Asbestos Disposal Authorization	$300.00			1 + 0
	Certain Recycling Facilities				
☐	Drop-site Recycling Facility	$200.00			1 + 0
☐	Limited Processing Recycling Facility	$500.00			1 + 0
☐	Recyclables Transfer Facility	$500.00			1 + 0
☐	Single Item Recycling Facility	$500.00			1 + 0
	Contaminated Soil and/or Staging Management (Staging/Transfer)				
☐	Registration Only	$250.00			1 + 0
☐	Approval of Registration by DEP	$1500.00			1 + 0
☐	Connecticut Solid Waste Demonstration Project	$1000.00			1 + 0
☐	Disassembling Used Electronics	$400.00			1 + 0
☐	Leaf Composting Facility	none			1 + 1
☐	Municipal Transfer Station	$800.00			1 + 1
☐	One Day Collection of Certain Wastes and Household Hazardous Waste	$1000.00			1 + 0
☐	Special Waste Authorization	$660.00			1 + 0
☐	Storage and Distribution of Two (2) Inch Nominal Tire Chip Aggregate	$500.00			1 + 0
☐	Storage and Processing of Asphalt Roofing Shingle Waste and/or Storage and Distribution of Ground Asphalt Aggregate	★			1 + 0
☐	Storage and Processing of Scrap Tires for Beneficial Use	$1000.00			1 + 0
☐	Emergency/Temporary Authorization	★★			★★
☐	Other, (please specify):				
	REMEDIATION				
☐	In Situ Groundwater Remediation: Enhance Aerobic Biodegradation	★			1 + 2
	Note: Carry subtotals over to Part III, page 2 of this form.	Subtotal ➡	0		

★See fee schedule on registration/application. ★★Contact the specific permit program for this information.

The Department of Energy and Environmental Protection is an affirmative action/equal opportunity employer and service provider. In conformance with the Americans with Disabilities Act, DEEP makes every effort to provide equally effective services for persons with disabilities. Individuals with disabilities who need this information in an alternative format, to allow them to benefit and/or participate in the agency's programs and services, should call 860-424-3035 or e-mail the ADA Coordinator at DEP.aaoffice@ct.gov. Persons who are hearing impaired should call the State of Connecticut relay number 711.

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

General Permit Registration Form for the Discharge of Stormwater and Dewatering

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	
☐	**Re-registration** **Existing Permit No. GSN _____**		**On or before February 1, 2014*** *Note: Failure to renew a permit by this date will require submission of new registration. Re-registrants must only complete Parts I, II, III (except Question 8), IV - Question 1, VII and submit Attachment A.	
☒	**New Registration** (Refer to Section 2 of the permit for definitions of Locally Exempt and Locally Approvable Projects)	☐ **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	
		☒ **Locally Exempt Projects** **Size of soil disturbance:8.38 acres**	☒	**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
			☐	**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]
2. Re-Registrations
   ☐ $625 (sites previously registered prior to September 1, 2012) [#1853]
   ☐ $0 (sites previously registered between September 1, 2012 and the issuance date of this permit) [#1854]

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: State of Connecticut, Department of Transportation

   State Agency ⬇

   Secretary of the State business ID #:

   Mailing Address: 359 South Main Street

   City/Town: Thomaston State: CT Zip Code: 06787

   Business Phone: 203-591-3540 ext.:

   Example:(xxx) xxx-xxxx

   Contact Person: Kenneth Fargnoli, P.E. Title: District Eng

   E-Mail: **kenneth.fargnoli@ct.gov**

   Additional Phone Number (if applicable): ext.

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

   Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext.:

   Contact Person: Title:

Part III: Registrant Information (continued)

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

Name:

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.:

Site Phone: Emergency Phone:

Contact Person: Title:

Association (e.g. developer, general or site contractor, etc.):

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:

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.:

Contact Person: Title:

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

Name:

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.:

Site Phone: Off Hours Phone:

Contact Person: 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: AECOM

Mailing Address: 500 Enterprise Drive

City/Town: Rocky Hill State: CT Zip Code: 06067

Business Phone: 860-263-5803 ext.:

Contact Person: Nancy P. Rolfe, P.E. Title: Project Engineer

Service Provided: **Engineering Services**

8. List Reviewing Qualified Professional (for locally approvable projects only):

Name: Contact Person:

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.:

Part IV: Site Information

1. Site Name: I-84 Interchanges 5 and 6 Improvements
   Street Address or Description of Location: I-84 Interchanges 5 and 6
   City/Town: Danbury State: CT Zip Code: 06810
   Brief Description of construction activity: This project consists of improvements to I-84 Interchanges 5 and 6 in the City of Danbury. The purpose of the project is to address safety and operations issues and to provide operational upgrades to I-84 at Interchanges 5 and 6.
   Project Start Date: 04 / 2015 *(month/ yr)* Anticipated Completion Date: 08 / 2017 *(month/ yr)*
   Normal working hours: **9 am** to **4 pm**

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. Provide the date the NDDB maps were reviewed: 10/06/14 (Print a copy of the NDDB map you viewed since it must be submitted with this registration as part of Attacment C.)

b. For a registrant using a limited one-year determination or safe harbor determination to register for this General Permit, provide the Department's Wildlife Divison NDDB identification number for any such determination: _____ (The number is on the determination issued by the Department's Wildlife Divison).

c. verify that I have completed Attachment C to this Registration Form. ☒ Yes

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/deep/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/deep/aquiferprotection as defined in section 22a-354h of the CT General Statutes? ☐ Yes ☒ No
(For additional guidance, please refer to Appendix C of the General Permit)

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:
Has 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 ☐ No

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

Table 1

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	
EO5-1	pipe	concrete	15"	-73.467503	41.401308	CT ECO
EO5-2	pipe	concrete	15"	-73.467238	41.401118	CT ECO
EO5-3	pipe	metal	18"	-73.463220	41.402976	CT ECO
EO5-4	pipe	other	15"	-73.460776	41.405755	CT ECO
EO5-5	pipe	other	42"	-73.46001	41.40645	CT ECO

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/waterbody" (If you select "storm sewer" proceed to Part VI of the form. If you select "wetlands/waterbody" proceed to next question)	e) For each outfall, does it discharge to any of the following towns: *Branford, Kent, Manchester, Meriden, North Branford, Norwalk, or Wilton?* (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.)
PO5-1	10/14-mm/dd-mm/dd	1864 sq feet	2941 sq feet	storm sewer	☐ Yes ☐ No	Select one:
PO5-2	10/14-mm/dd-mm/dd	23868 sq feet	28729 sq feet	storm sewer	☐ Yes ☐ No	Select one:
PO5-3	10/14-mm/dd-mm/dd	28558 sq feet	34550 sq feet	storm sewer	☐ Yes ☐ No	Select one:
PO5-4	10/14-mm/dd-mm/dd	4727 sq feet	5128 sq feet	storm sewer	☐ Yes ☐ No	Select one:
PO5-5	10/14-mm/dd-mm/dd	19029 sq feet	21748 sq feet	storm sewer	☐ Yes ☐ No	Select one:
		78046 total sq feet	**93096 total sq feet**			

Part V: Stormwater Discharge Information

Table 1

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	
EO6-1	pipe	concrete	36"	-73.45259	41.40848	CT ECO
EO6-2	pipe	concrete	36"	-73.45752	41.41282	CT ECO
EO6-3	pipe	concrete	18"	-73.45823	41.41367	CT ECO
EO6-4	pipe	metal	24"	-41.41099	73.45215	CT ECO
EO6-5	pipe	other	18"	-41.41138	73.45112	CT ECO

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/waterbody" (If you select "storm sewer" proceed to Part VI of the form. If you select "wetlands/waterbody" proceed to next question)	e) For each outfall, does it discharge to any of the following towns: *Branford, Kent, Manchester, Meriden, North Branford, Norwalk, or Wilton?* (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.)
PO6-1	10/14-mm/dd-mm/dd	150125 sq feet	5620 sq feet	wetlands/waterbody	☐ Yes ☒ No	
PO6-2	10/14-mm/dd-mm/dd	36389 sq feet	47011 sq feet	storm sewer	☐ Yes ☐ No	
PO6-3	10/14-mm/dd-mm/dd	24286 sq feet	28689 sq feet	wetlands/waterbody	☐ Yes ☒ No	
PO6-4	10/14-mm/dd-mm/dd	20035 sq feet	26814 sq feet	storm sewer	☐ Yes ☐ No	
PO6-5	10/14-mm/dd-mm/dd	2634 sq feet	5507 sq feet	wetlands/waterbody	☐ Yes ☒ No	
		233469 total sq feet	**283641 total sq feet**			

Part V: Stormwater Discharge Information

Table 1

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	
EO6-6	pipe	concrete	24"	-7_3.4_5_0_9_7	4_1.4_1_1_4_1	CT ECO
EO6-7	swale	Select One:	Select One:	-7_3.4_5_1_9_0	4_1.4_1_1_8_6	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/waterbody" (If you select "storm sewer" proceed to Part VI of the form. If you select "wetlands/waterbody" proceed to next question)	e) For each outfall, does it discharge to any of the following towns: *Branford, Kent, Manchester, Meriden, North Branford, Norwalk, or Wilton?* (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.)
PO6-6	10/14-mm/dd-mm/dd	3293 sq feet	5974 sq feet	wetlands/waterbody	☐ Yes ☒ No	
	-mm/dd-mm/dd	sq feet	sq feet	Select one:	☐ Yes ☐ No	
	-mm/dd-mm/dd	sq feet	sq feet	Select one:	☐ Yes ☐ No	Select one:
	-mm/dd-mm/dd	sq feet	sq feet	Select one:	☐ Yes ☐ No	Select one:
	-mm/dd-mm/dd	sq feet	sq feet	Select one:	☐ Yes ☐ No	Select one:
		3293 total sq feet	**5974 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?
		☐ Y ☐ N	☐ Y ☐ N
		☐ Y ☐ N	☐ Y ☐ N
		☐ Y ☐ N	☐ Y ☐ N
		☐ Y ☐ N	☐ Y ☐ N
		☐ Y ☐ N	☐ Y ☐ 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 theTMDL, ☐ 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 four 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.

- ☒ Plan is attached to this registration form
- ☐ Plan is available at the following Internet Address (URL):

☐ 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):

☒ I am registering a Locally Exempt project and do not have the capability to submit the Plan electronically. Therefore, I am submitting a paper copy with this registration as Attachment E.

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 Kenneth E. Fargnoli, District 4 Engineer for [INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW] an activity located at I-84 Interchanges 5 and 6, Danbury 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 _____ for an activity located at [INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW] _____ 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."

	10-20-14
Signature of Registrant	Date
Kenneth E. Fargnoli	**District 4 Engineer**
Name of Registrant (print or type)	Title (if applicable)
Nancy P. Rolfe	10/7/14
Signature of Preparer (if different than above)	Date
Nancy P. Rolfe, P.E.	**Project Engineer**
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 professional engineer 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]

Nancy P. Rolfe for an activity located at

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

I-84 Interchanges 5 and 6, Danbury 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."

Nancy P. Rolfe	10/7/14
Signature of Design Professional	Date
Nancy P. Rolfe, P.E.	**Project Engineer**
Name of Professional (print or type)	Title
500 Enterprise Drive Suite 1A	**Rocky Hill**
Mailing Address	City/Town
CT **06067**	**860-263-5803**
State Zip Code	Business Phone
STATE OF CONNECTICUT ★ NANCY P. ROLFE ★ No. 20933 LICENSED PROFESSIONAL ENGINEER	**20933**
	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 NOT APPLICABLE 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

_____

Name of District Professional and License Number (if applicable)

Or

☐ **Review certification by Qualified Professional**

Company: _____

Name: _____

License # : _____

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 _____

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

for an activity located at _____.

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 Date: _____

_____

Name of Reviewing Qualified Professional License No.: _____

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.

☒ **Attachment A:** Select here as verification that an 8 ½" 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 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:

a. 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

b. 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:_____

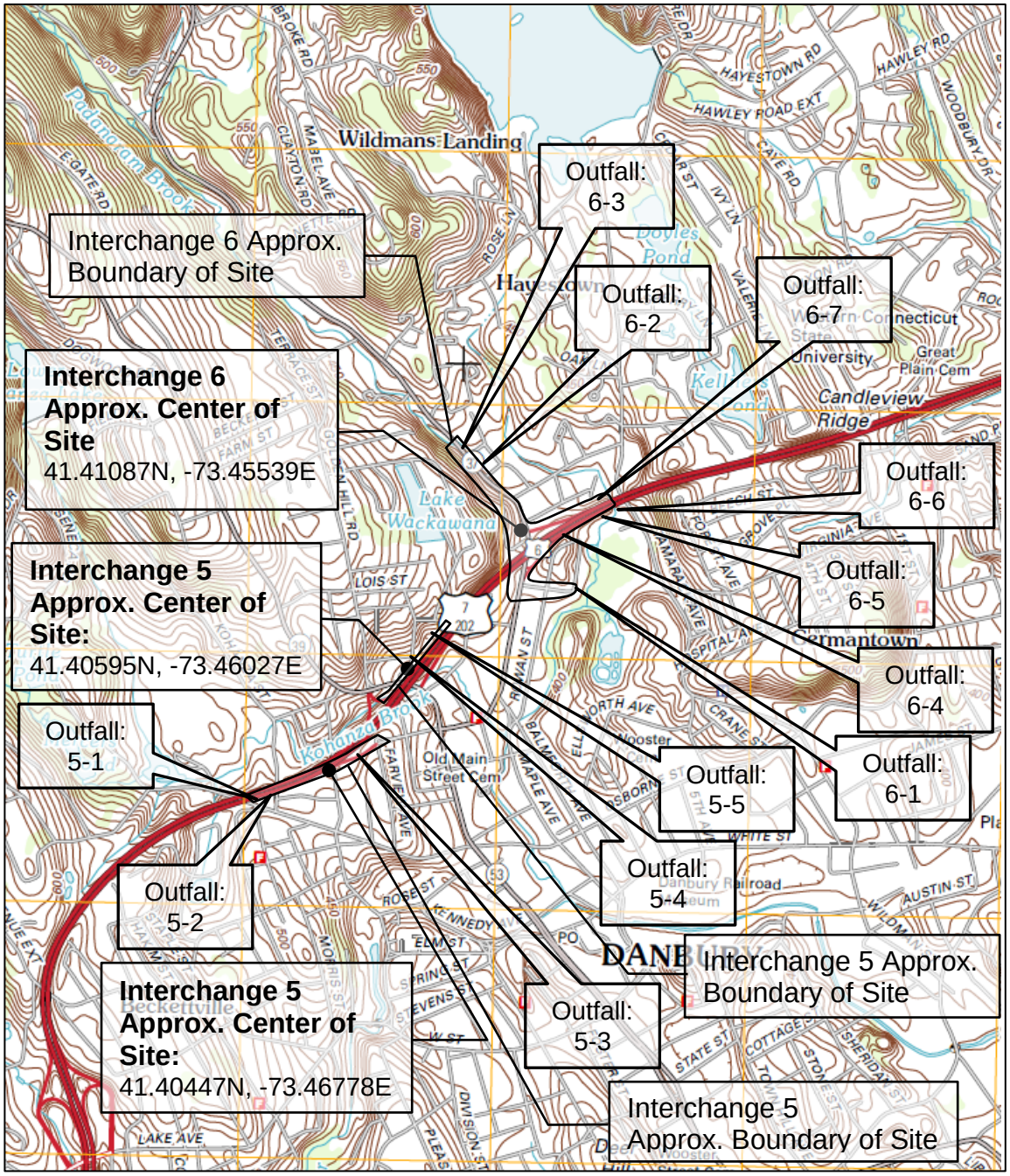
Is the Mitigation Plan yet to be implemented? ☐ Yes ☐ No

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

And summarize actions to be implemented: _____

Attachment A
USGS Quadrangle Map: Danbury
Map Scale: 1:24,000 (1”=2,000’)

State of Connecticut
Department of Transportation
State Project No. 34-313
I-84 Interchanges 5 and 6 Improvements
Danbury, CT



Attachment C – NDDB

Connecticut Department of Transportation
State Project No. 34-313, I-84 Interchanges 5 & 6 Improvements

Natural Diversity Data Base Areas

DANBURY, CT

June 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.

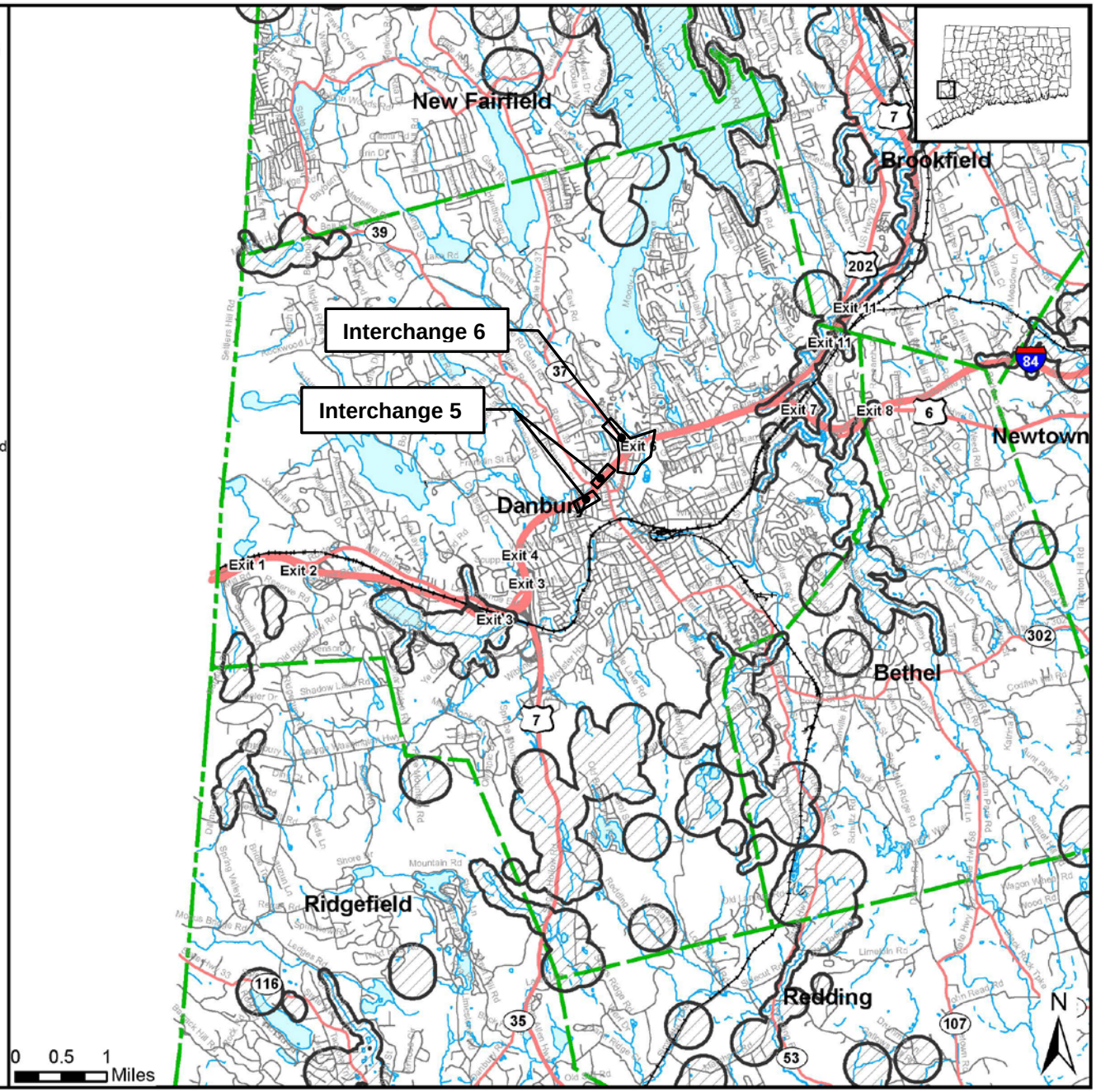
This map is intended for use as a preliminary screening tool for conducting a Natural Diversity Data Base Review Request. To use the map, locate the project boundaries and any additional affected areas. If the project is within a shaded area there may be a potential conflict with a listed species. For 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

This file has PDF Layers. Look for the Layers tab on the left. Expand the layers and use the "eye" icons to change visibility.

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



STORMWATER POLLUTION CONTROL PLAN

I-84 INTERCHANGES 5 AND 6 IMPROVEMENTS
Danbury, CT

State Project No.: 34-313

Connecticut Department of Transportation

Revision 1
SEPTEMBER 2014

Prepared by

AECOM

500 Enterprise Drive, Suite 1A
Rocky Hill, Connecticut

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Stormwater Pollution Control Plan (SWPCP) Narrative

This Stormwater Pollution Control Plan (SPCP) is prepared to comply with the requirements for the General Permit for Stormwater Discharges (GPSD) from Construction Activities. Also to be considered part of the SPCP are the proposed construction plans and the Connecticut Department of Transportation's "Standard Specifications for Roads, Bridges and Incidental Construction" (Form 816) including supplements thereto and the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control and 2004 Stormwater Quality Manual.
This Plan has also been prepared consistent with:

- The Flood Management Certification approved by Connecticut Department of Energy & Environmental Protection by letter dated January 31, 2013.
- Authorization under General Permit for Water Resource Construction Activities received from the Army Corps of Engineers on April 1, 2013.

(i) Site Description:

(a) Narrative Description of Construction Activity

Please refer to Appendix F – Plan Sheets. The narrative description of construction activity is as follows:

I-84 Interchange 5 Improvements: This project consists of interchange improvements at Interchange 5, I-84 eastbound and I-84 westbound off ramps, including the extensions of the eastbound and westbound deceleration lanes. Improvements to Interchange 5 at the I-84 eastbound off ramp include the construction of additional pavement along the south edge of the interstate and the existing off-ramp in order to provide a longer deceleration lane and to establish two lanes of storage on the ramp. The widening along the shoulder will require the placement of clean fill material at a 2H:1V slope south of this ramp. The existing ramp will also be widened to the north to establish two lanes of storage. This project involves the widening of Bridge No. 1185 (I-84 over Kohanza Street) 11'-1" on the eastbound side to accommodate the extension of the deceleration lane. The widened bridge will provide a twelve-foot left shoulder, three twelve-foot traffic lanes, a twelve-foot deceleration lane and a ten-foot right shoulder in the eastbound direction.

Improvements to Interchange 5 at the I-84 westbound off ramp include the construction of additional pavement along the north edge of the off-ramp in order to provide the necessary deceleration length to the exit ramp storage for the signalized intersection at Main Street (Route 39). The additional pavement along I-84 will require fill material along a 1.5H:1V embankment. The proposed widening will impact an existing headwall at the toe of slope. Steepened Slope Protection will be utilized on the 1:5H:1V embankment to protect the slope from erosion.

I-84 Interchange 6 Improvements: This project consists of interchange improvements at the Interchange 6, I-84 eastbound on and I-84 westbound off ramps. This project also includes intersection improvements to several intersections along Route 37 from the interchange, northerly to the North Street Shopping Center driveway.

I-84 Eastbound On-Ramp Improvements include modifications to the intersection of Route 37 to accommodate new exclusive turn lanes from Route 37 northbound and southbound onto the On-Ramp. The ramp will be realigned to form a tee-intersection with Route 37. The acceleration lane will be extended 730' to provide a total of 1,230' of acceleration distance from the vertical point of curvature on the ramp. The south side of the I-84 bridge over Tamarack Avenue (Bridge No. 1190) will need to be widened by 12' to accommodate the acceleration lane extension. In addition, steepened embankments at

1.5H:1V will be utilized to avoid encroachment onto cemetery property and expanding the Padanaram Brook triple box culvert under I-84 (Bridge No. 1189). Steepened Slope Protection will be utilized on the 1:5H:1V embankment to protect the slope from erosion.

I-84 Westbound Off-Ramp Improvements include the construction of a new off ramp in order to provide three operational lanes for the signalized intersection at Route 37. It is proposed to extend the deceleration lane 300' to provide a total length of 615' of deceleration lane length. New double right turn lanes are proposed at the intersection of Route 37.

Most of Route 37 within the project limits will be milled and paved, with areas of full-depth pavement construction at intersections and along outside edges of the existing road where it will be widened. The work includes construction of sidewalks and driveway ramps. Route 37 Intersection Improvements also include the construction of additional pavement along the eastern edge of the roadway to accommodate an auxiliary turn lane and two thru lanes through several intersections. A new retaining wall along the North Street Shopping Center property is proposed in order to limit the impact to the parking lot. New concrete sidewalks are proposed along both sides of Route 37 as requested by the City of Danbury. The drainage system along Route 37 will also be reconstructed.

(b) Estimated Disturbed Area:
The project site and disturbed areas are shown in Table 1 below:

Table 1 – Project Site and Disturbance Areas (acres)

DESCRIPTION	INTERCHANGE 5	INTERCHANGE 6	TOTAL
Project Site Area	3.58	9.73	13.31
Disturbance Area	2.40	5.98	8.38

(c) Estimated Runoff Coefficient*:*
The runoff coefficients for the site are shown in Table 2 below:

Table 2 – Project Site Runoff Coefficients from Rational Method

RUNOFF COEFFICIENT	INTERCHANGE 5	INTERCHANGE 6	TOTAL
Pre-construction	0.567	0.582	0.572
Post-construction	0.570	0.600	0.581

(d) Project Outfalls:
Refer to the General Permit Registration Form Part V, Tables 1 and 2 on pages 6, 6A, and 6B for detailed information on the twelve (12) locations of point source discharge of stormwater from the project site. The locations of the outfalls are shown on DRG-001 through DRG-010 in Appendix F – Plan Sheets.

***(e) Extent of Wetland Acreage on Site**:*
The limits of wetland areas are depicted on the Plan Sheets included in Appendix F.

For Interchange 5, project activities occur at two different wetland sites; both are associated with extension of the westbound deceleration lane, are depicted on DRG-004, and consist of the following:

- Removal, extension of pipe and construction of a new headwall and riprap pad will permanently impact 0.010 acres of wetland at I-84 Westbound Station 561+75.
- Widening of the current embankment to accommodate fill needed to support additional pavement width will permanently impact 0.016 acres of wetland at I-84 Westbound Station 562+60 to 563+45.

For Interchange 6, project activities occur at three different wetland sites, are associated with drainage improvements, and consist of the following:

- Replacement of an existing 24-inch outfall with a 36-inch pipe, construction of an endwall and a preformed riprap scour hole will permanently impact 0.008 acres of state wetlands at the Second Avenue Outlet at Padanaram Brook, Second Ave. Station 48+35, depicted on Drainage Plan DRG-010.
- Replacement of an existing 24-inch culvert end and installation of riprap outlet protection will not permanently but will temporarily impact a wetland area at I-84 Eastbound On-Ramp Station 110+62 RT, depicted on Drainage Plan DRG-0008.
- Replacement of an existing 15-inch outfall with an 18-inch pipe will not permanently but will temporarily impact a wetland area at Route 37 Station 327+27 RT, depicted on Drainage Plan DRG-007.

(ii) Construction Sequencing:

Please refer to the Appendix F - Plan Sheets “Maintenance & Protection of Traffic Plan” (MPT-001) for a detailed description of the stages and sequences of activities. The soil erosion and sediment controls are depicted on the “General Plans”, “Drainage Plans”, and “Miscellaneous Details” Plan Sheets.

An estimated timetable for construction activities can be found in Figure 1 on page 5.

The total project construction schedule is set from April 2015 through August 2017; approximately 121 weeks.

The project shall be phased to avoid disturbing from two to five acres, and over five acres in total, at any one time. If construction activities create an area of disturbance between (2) acres and (5) acres per discharge point, the Contractor must submit to the Engineer a revised SWPCP for review and approval which includes the use of temporary sediment traps (see Subsection (iv)(*a)* below for further information). If the area of disturbance has a potential to reach more than five acres per discharge point, the Contractor must submit to the Engineer a revised SWPCP for review and approval, which includes locations of the temporary sediment basin designed and installed in accordance with the 2002 Guidelines (see Subsection (iv)(*a)* below for further information).

Each phase of construction, regardless of the number of sequences it contains, requires a preconstruction meeting that should include The Connecticut Department of Transportation (CTDOT), the contractor, utility representatives, and other agents who have responsibility and authority for the implementation, operation, monitoring and maintenance of the erosion and sediment (E&S) controls. The purpose of the preconstruction meeting is to make all responsible parties aware of the project’s needs so that resources can be properly distributed and to identify limitations and restrictions. The preconstruction

meeting shall identify modifications needed to the construction sequence and application of special treatments. Included in the preconstruction meeting agenda, at a minimum, shall be a review of plans, permit conditions, the contractors' sequence and schedules for construction, site restrictions and other special needs.

The following sequence is provided as a generic roadway construction guideline applicable for each individual phase. This generic phasing shall be adjusted, by the contractor, to meet project-specific phase needs and conditions. It is also recognized that work will not proceed without delays. When work is suspended within a phase, the contractor shall deploy additional erosion and sediment controls as may be required to secure the site. Erosion and sediment controls shall be installed and maintained as dictated by the plan set and Section (iii) Control Measures of this Plan. If additional erosion and sediment controls are required due to specific site conditions, it is the contractor's responsibility to provide controls that are sufficient to prevent the removal and transportation of sediment off site to resource areas, that area also satisfactory to the Engineer.

The generic sequence of construction activities for each phase will generally occur as follows:

1. Preconstruction meeting.
2. Install Erosion and Sediment Controls.
3. Construction activities.
4. Stabilize area.
5. Remove Erosion and Sediment Controls.

(iii) Control Measures:

Control measures to be implemented include: soil erosion and sediment controls, dewatering wastewaters controls, post-construction stormwater management controls, and other controls.

The project's Erosion and Sediment Control Plans include many of the measures indicated below. However, the measures specified on the plans are the minimum requirements for erosion and sediment control at the project, and are shown in general size and location only. All contractors performing site work on the project, construction managers who may engage contractors on the project, and other contractor entities who may have authority over erosion and sedimentation control measures at the project are responsible for ensuring that all measures are configured and constructed in a manner that will minimize erosion of soils and prevent the transport of sediments and other pollutants to any resource areas. In general terms, all entities performing work on the site have a responsibility to minimize the area of exposed soil, control run-off rate and direction, and provide for rapid stabilization of exposed areas.

(a) Soil Erosion and Sediment Control Measures

The soil erosion and sediment control measures shall be consistent with the Connecticut Council on Soil & Water Conservation publication "2002 Connecticut Guidelines for Soil Erosion and Sediment Control", The Connecticut Department of Environmental Protection publication "2004 Stormwater Quality Manual", and The Connecticut Department of Transportation "Qualified Products List".

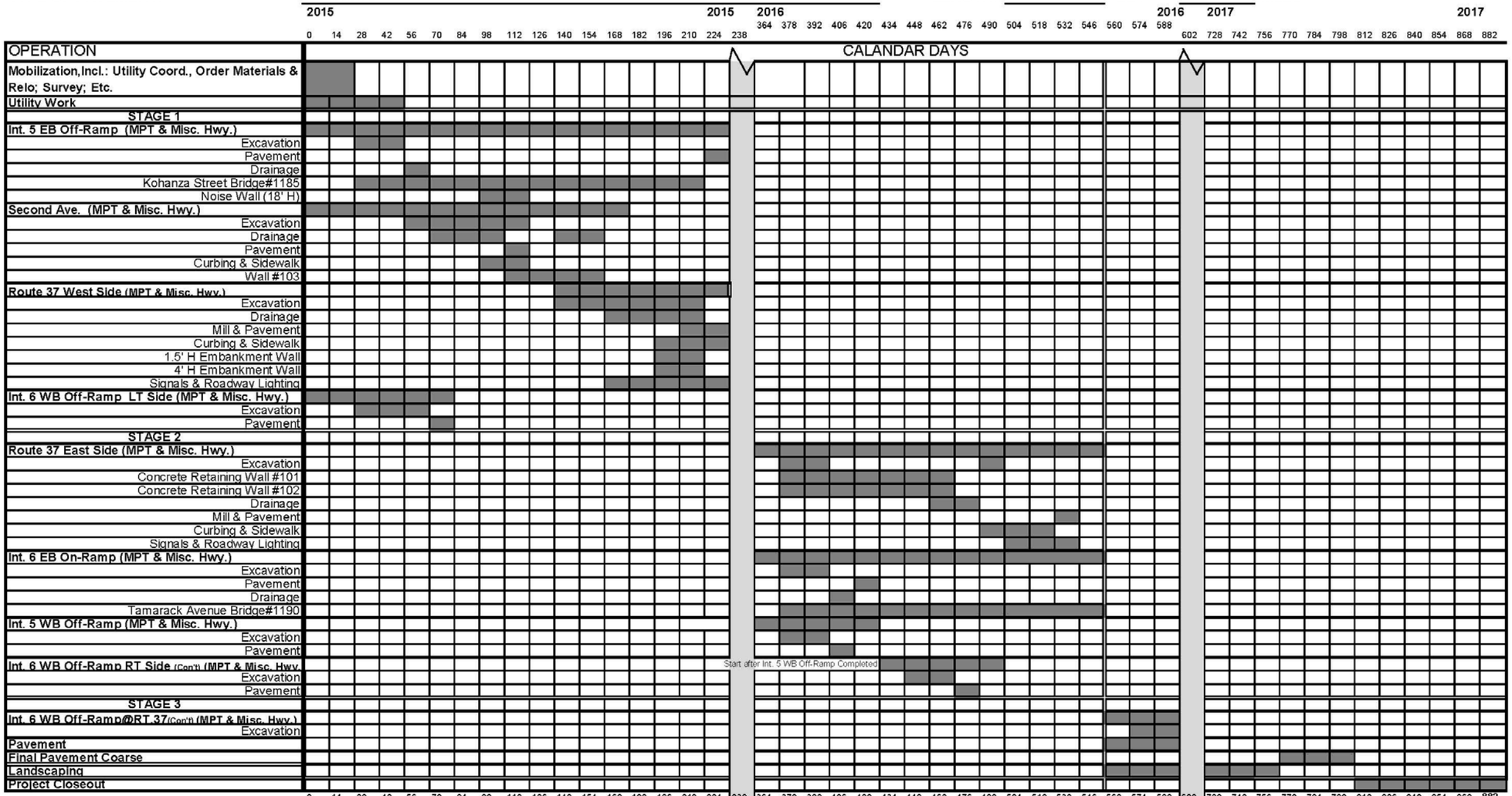
The Contractor shall stabilize disturbed areas with temporary or permanent measures as quickly as possible after the land is disturbed. Requirements for soil stabilization are detailed in Form 816 Section 1.10.03, Best Management Practices.

Locations of Sedimentation Control Systems are depicted on the "General Plans", "Drainage Plans" and "Miscellaneous Details" included in Appendix F – Plan Sheets.

FOR INFORMATION ONLY

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
CHART FOR DETERMINING NUMBER OF CONTRACT DAYS

TOWNS OF: Danbury F.H.W.A. PROJECT NO. 0841(095) TOWN: 34 PROJ. 313
KNOWN AS: I-84 Interchanges 5 & 6 Improvements
TYPE OF PAVEMENT: HMA/PMA LENGTH: FEET MILES



Notes:
1. WINTER SHUTDOWN: Dec. 1 to March 31
2. Project Start and End:
Start of Work
Wednesday, April 01, 2015
End Work
Friday, August 25, 2017

DATE OF ADV. 10/15/2014
DATE OF LETTING 11/12/2014
POSSIBLE AWARD 12/12/2014
POSSIBLE START OF JOB 4/1/2015
FINISH OF JOB 8/25/2017

CALENDAR DAYS ALLOWED 635
CALCULATED BY AECOM Technical Services, Inc. Date: 8/1/2014
APPROVED BY

Date Printed:8/1/2014

Figure 1 – Construction Barchart Schedule

If construction activities are complete or have been temporarily halted for more than 7 days, stabilization activities will be implemented within 3 days. Areas that remain disturbed but inactive for at least 30 days shall receive temporary seeding or soil protection within 7 days.

(b) Soil Stabilization and Protection

Temporary Erosion Control Barriers

Prior to any construction activity, hay bales, silt fence, or combination hay bale/silt fence barriers will be placed as perimeter controls at the limit of work where run-off potential exists, at other key locations within the site where run-off potential exists, and around stockpiles or stockpile areas. These barriers will be inspected once every seven calendar days and within 24 hours after every rainfall generating a discharge. Repair or replace damage or displaced fencing as required. Collected silt will be removed when one-half the barrier height is reached.

Temporary Seeding

Areas that will remain disturbed but inactive for at least thirty days will receive temporary seeding or soil protection within seven (7) days in accordance with the 2002 Guidelines. Areas that will remain disturbed beyond the seeding season as identified in the 2002 Guidelines, will receive long-term, non-vegetative stabilization and protection (see below) 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 2002 Guidelines.

Temporary Filter Inserts

Temporary Filter Inserts will be installed in catch basins and similar drainage structures as secondary protective measures throughout construction, Temporary Filter Inserts will be placed in each existing catch basin prior to the start of construction, and in each new catch basin during construction. These devices will be removed upon final site stabilization.

Filter inserts will be inspected once every seven (7) calendar days and within 24 hours after every rainfall of 0.1 inches or greater. Replacement of the inserts will be as often as necessary to maintain function of the drainage structure and prevent excessive ponding due to clogged fabric. Ripped or otherwise damaged inserts will be replaced immediately.

Steepened Slope Protection (Permanent)

Steepened Slope Protection will be installed for permanent slope protection along I-84 Interchange 5 Sta. 555+00 LT to Sta. 563+50 LT and Interchange 6 Sta. 114+15 RT to Sta. 115+10 RT and Sta. 116+75 RT to Sta. 118+40 RT where the embankment slope exceeds 1V:2H and reaches a maximum or 1V:1.5V. Steepened Slope Protection consists of Turf Establishment with Erosion Control Matting and Secondary Geosynthetic Reinforcement and is shown on MDS-002 in Appendix F – Plan Sheets.

Stockpile Management

The approximate location for the temporary soil Stockpile is the infield location between Exit 5 WB Off-Ramp and Exit 5 WB On Ramp and is shown on DRG-003 & PLN-003 of the plan sheets.

Geotextile silt fence or hay bale barrier will be placed around the stockpile area approximately 10 feet from the proposed toe of the slope. The side slopes of stockpiled material that is erodible shall be no steeper than 2H:1V. Stockpiles that are not to be used within 30 days need to be seeded and mulched immediately after formation of the stockpile.

Topsoil stockpiles which will be idle for at least 30 days will be stabilized with temporary seed and mulch no later than 7 days from the last use. Small stockpiles may be covered with impervious tarps or erosion control matting in lieu of seeding and mulching.

(c) Structural Measures

Structural measures shall be installed to divert surface water flow away from exposed site soils and to store stormwater or limit runoff and to minimize the discharge of pollutants from the site. Unless otherwise approved in writing by the DEEP or otherwise authorized by state or federal permit, structural measures shall be installed on upland soils.

Diversion measures for erosion and sediment control include temporary fill berms, water bars, temporary diversion and permanent diversion. These measures serve the common function of redirecting and controlling the direction of water flow. Diversions are used to direct runoff away from or around sensitive construction areas and to fragment drainage areas to reduce the need for a Temporary Sediment Basin or Temporary Sediment Trap or Portable Sediment Tank such as a Frac Tank or Weir Tank. Diversions are preferable to other types of man-made storm water conveyance systems because they more closely simulate natural flow patterns and characteristics. Flow velocities are generally kept to a minimum.

Storage measures include Temporary Sedimentation Traps, Temporary Sedimentation Basins, and Portable Sediment Tanks. If the construction activities create an area of disturbance between two (2) acres and five (5) acres per discharge point the Contractor must submit to the Engineer a revised SWPCP for review and approval. The SWPCP must include locations of the temporary sedimentation trap designed and installed in accordance with the 2002 Guidelines. The Contractor shall provide an inspection and maintenance plan for the temporary sedimentation trap as part of the amended SWPCP. If the area of disturbance has a potential to reach more than five (5) acres per discharge point, the Contractor must submit to the Engineer a revised SWPCP for review and approval. The SWPCP must include locations of the temporary sedimentation basin designed and installed in accordance with the 2002 Guidelines. The Contractor shall provide an inspection and maintenance plan for the temporary sedimentation basin as part of the amended SWPCP.

Temporary Sediment Traps might be supplemented by Portable Sediment Tanks or Tanks might be used in replacement, but should be sized the same as Temporary Sedimentation Traps. The use of portable sediment tanks requires special planning prior to implementation to insure that stormwater is intercepted, collected, and pumped into the tanks. Dewatering Measures of the plan shall also be followed for the use of Tanks.

Evolving site conditions will determine what structural measures are necessary, and the following general principles should be applied to their selection and placement:

- Prevent clean water from becoming turbid, by diverting runoff from upslope areas away from disturbed areas. Earth dikes, temporary swales, perimeter dike/swales, or diversions that outlet in stable areas can be used in this capacity.

- Remove sediment from turbid water before the water leaves the site. The method of sediment removal depends upon how the water drains from the site.
- Concentrated flow must be diverted to a trapping device so that suspended sediment can be deposited. Dikes or swales that outlet into traps or basins can accomplish this. A storm drain system may be used to convey concentrated sediment laden water only if the system empties into a trap or basin. Otherwise, all storm drain inlets must be protected so that sediment laden water cannot enter the drainage system before being treated to remove the sediment.
- Surface runoff draining in sheet flow must be controlled and treated before the water leaves the site. Straw bale dikes, silt fences, or vegetative buffer strips can be used to treat sheet flow.
- All practices designed and implemented must be properly maintained in order to remain functional. Sediment accumulated in basins and traps must be removed and disposed of in a manner that stabilizes them on the construction site.

(d) Maintenance:

Temporary Sediment Trap

Inspect temporary sediment traps at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.1 inch or greater. Check the outlet to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. The height of the stone outlet should be maintained at least 1 foot below the crest of the embankment. Also check for sediment accumulation and filtration performance. When sediments have accumulated to one half the minimum required volume of the wet storage, dewater the trap as needed, remove sediments and restore the trap to its original dimensions. Dispose of the sediment removed from the basin in a suitable area and in such a manner that it will not erode and cause sedimentation problems. The temporary sediment trap may be removed after the contributing drainage area is stabilized. If it is to be removed, refer to the project plans for how the site of the temporary sediment trap is to be graded and stabilized after removal.

Portable Sediment Tank

Inspect portable sediment tanks daily. Clean the tank of sediments when sediment accumulation exceeds one half of the wet storage capacity of the tank. Sediment levels shall be marked within the sediment storage area showing the threshold elevation for sediment cleanout. Prior to the removal of sediments, dewater the basin through pumping or other means to the expose previously submerged sediments. Use measures found under “Dewatering” herein. Do not allow accumulated sediment to flush into any stream, drainage system, or open or drainageway. Stockpile all sediment in such a manner that it will not erode from the site or into any drainage system, wetland, watercourse, or other sensitive area. Sediment removal, transportation, and disposal shall occur as shown on the plans as limited by the design criteria.

Temporary Sediment Basin

Inspect temporary sediment basins at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.1 inch or greater to determine conditions in the basin. Clean the sediment basin of sediments when sediment accumulation exceeds one half of the wet storage capacity of the basin or when the depth of available pool is reduced to 18 inches whichever is achieved first. Sediment levels shall be marked within the sediment storage area by stakes or other means showing the threshold elevation for sediment cleanout. Prior to the removal of sediments, dewater the basin through pumping or other means to the expose previously submerged sediments. Use measures found under “Dewatering” herein. Do not allow accumulated sediment to flush into any stream, drainage system, or open or drainageway. Stockpile all sediment in such a manner that it will not erode from the site or into any

drainage system, wetland, watercourse, or other sensitive area. Sediment removal, transportation, and disposal shall occur as shown on the plans as limited by the design criteria.

(iv) Dewatering Wastewaters:

Dewatering wastewaters controls include operational and structural measures as needed to control suspended solids and prevent scour and erosion.

(a) Dewatering

Dewatering may be used at the site to lower the groundwater table to allow for the construction of subsurface improvements within a dry environment. Dewatering techniques may be utilized at the contractor's discretion based on the nature of the work and may include sumps, wells, and/or well points.

Dewatering wastewaters shall be managed in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control and CT DOT Form 816. Where feasible and appropriate, dewatering wastewaters will be infiltrated into the ground. Dewatering wastewaters discharged to surface waters will be discharged in a manner that minimizes the discoloration of the receiving waters. Dewatering wastewaters shall not contain or cause visible oil sheen, floating solids, or foaming in the receiving water. Unless otherwise specifically approved in writing by the DEEP, or otherwise authorized by another state or federal permit, dewatering measures shall be installed on upland soils.

- Dewatering measures shall include the following to prevent scouring or erosion or other pollution causing issues:
- Divert surface waters away from areas needing dewatering.
- Use of well points or sumps to lower the water table, reducing the need for settling facilities.
- Pump work areas before construction activities begin each day if continuously pumping is not necessary.
- Provide filtration near pump's suction intake.
- Locate pumps, intake sumps, and other intake structures in areas which will not require relocation when possible
- Locate pump discharge discharge facilities so that there is minimum disturbances to existing wetlands and watercourses
- Provide outlet protection for pumping operations to dissipate pumping surges and prevent erosion at discharge points.

(v) Post-Construction Stormwater Management

The proposed design provides stormwater treatment using the following methods:

- Energy dissipation devices at two discharge locations and one inlet location.
- Installation of a Hydrodynamic Separator prior to the outfall into Padanaram Brook at the end of Second Avenue.

(a) Post Construction Controls

Runoff Reduction and Low Impact Development (LID) Information

Due to the limited physical space available throughout the work area, the highly developed nature of the project location, and large Areas of Environmental Concern (AOEC), determined by soil samples taken throughout the project location, runoff reduction and LID practices to provide primary Stormwater treatment of the main outlets was not feasible.

Suspended Solids and Floatables Removal

Post-construction control measures include installation of a hydrodynamic separator (HDS) located near Outfall #1 near the east end of Second Avenue. This location controls the runoff from a contributing area of 18.06 acres. For the plan showing the HDS location, see Appendix F - MDS-004. For design calculations for the HDS, see Appendix B – Sediment and Floatables Removal and Outlet/Inlet Protection Calculations. The HDS was designed to minimize the discharge of suspended solids and floatable pollutants, providing an 84 percent reduction in net annual suspended solids (see first HDS calculations sheet – Sizing Estimate, for details), and exceeding the goal of 80 percent removal of the annual sediment load from the stormwater discharge. The HDS treats a Water Quality Volume (WQV) of 0.79 acre-feet. The Project Site WQV is 0.71 acre-feet, so the HDS treats a WQV exceeding that for the project site.

Velocity Dissipation

Other post-construction control measures include velocity dissipation devices at two discharge locations, and at one inlet location. These locations include Outlet at I-84 Exit 6 Eastbound On-Ramp Sta. 110+62, Outlet at Second Avenue Sta. 48+35, and Inlet at I-84 Westbound Off-Ramp Exit 5 Sta. 561+75. See Appendix F - MDS-001, MDS-004, and MDS-008 respectively for details of these velocity dissipation devices. For documentation of the performance standards of the velocity dissipation devices at the two outlets, see Appendix B – Sediment and Floatables Removal and Outlet/Inlet Protection Calculations.

(b) Permanent Stabilization Practices

Permanent site stabilization practices are included in Appendix F – Plan Sheets and include the following:

- Hardscape – The majority of the site is hardscape. Hardscape will include reconstructed bituminous pavement roadways, driveways, concrete sidewalks and walkways, and concrete stairs/ramps. Stormwater from these areas will either 1) run-off to an adjacent pervious surface (e.g. grass or landscaping), or 2) run-off to a collection point such as catch basin or area drain, and be conveyed to the roadway stormwater system.

- Landscaping/Turf Establishment Areas – After reconstruction of the roadway, several areas of the site will be landscaped and planted or replaced with permanent turf establishment. Landscape and turf areas will provide a stabilized surface, but will allow for direct infiltration of stormwater.

(c) Maintenance of Permanent Stabilization

After construction is completed and accepted by the State, inspection and maintenance of stabilized surfaces will be the responsibility of the State thereafter.

- Landscape and Turf Areas: Inspect semi-annually for erosion or dying vegetation. Repair and stabilize any bare or eroded areas and replace vegetation as soon as possible.

- Hardscape: Inspect on a regular basis not to exceed weekly for litter and debris. Sweep at least twice a year, with the first occurring as soon as possible after snowmelt and the second not less than 90 days following the first.

- Catch Basin Sumps: Inspect semi-annually and clean when the sump is one half full of silt and/or debris.

(vi) Other Pollution Controls

(a) Waste Disposal

During construction, waste materials will be managed as follows:

- Waste Materials - All waste materials generated at the site will be collected and stored in securely lidded, metal dumpsters rented from a licensed solid waste management company. All trash and construction debris from the site will be deposited in the dumpsters. When at capacity, the dumpsters will be removed from the site and transported to a state-licensed waste transfer or waste disposal facility. No construction waste materials will be burned, buried, or otherwise disposed-of on-site.
  All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted in the office trailer and a competent person will be assigned day-to-day operation responsibilities.

- Recycling - Waste materials generated at the site that are designated for recycling will be collected and stored in securely lidded, metal dumpsters rented from a licensed solid waste management company. Materials designated for recycling will be deposited in the appropriate dumpster based on material type. When at capacity, the dumpsters will be removed from the site and transported to a statelicensed transfer or recycling facility. Asphalt that can be segregated from other waste streams will be sent off-site for recycling into new asphalt materials.

- Liquid Waste Materials - The dumping of liquid wastes in storm sewers is prohibited. All liquid waste materials generated at the site will be collected and stored in secure containers suitable for the particular type of waste if such liquid waste is not suitable for the “Washout Area” (see below). Containers storing liquid waste will be removed from the site for disposal by a state-licensed company.

- Hazardous Materials - All waste materials that are considered “hazardous” such as oils, greases, oil-based paints, solvents, etc. generated by construction will be stored and disposed of in accordance with local, state, and federal regulations. Site personnel must be instructed in the practices of handling, collecting, and storage of hazardous materials and a competent person will be assigned responsibility for insuring that these practices are followed.

- Sanitary Waste – All sanitary waste will be collected from portable units on a regular basis as required by applicable regulations.

(b) Washout Areas

A designated “Washout Area” will be established for the purposed of washing the following:

- Vehicles, containers, and equipment for concrete

- Applicators and containers for materials which have not contained any oils, greases oil-based paints, solvents, fuels, lubricants, etc.

- Latex paint equipment

The Washout Area shall be established as follows:

- Outside of any buffers and at least 50 feet from any stream, wetland or other sensitive resource; or
- In an entirely self-contained washout system.

The Washout Area shall be clearly delineated with fencing, flagging, or similar highly visible materials. Washout activities are only permitted with the Washout Area. All wash water shall be directed into a container or pit designed such that no overflows can occur during rainfall or after snowmelt. There shall be no surface discharge of washout wastewaters from the Washout Area.

Hardened concrete waste from the Washout Area will be removed and disposed-of-consistent with practices developed for the "Waste Materials" above. At least once per week, any containers or pits used for washout will be inspected to ensure structural integrity, adequate holding capacity, and to check for leaks or overflows. If there are signs of leaks, holes, or overflows in the containers or pits that could lead to a discharge, the containers will be repaired prior to future use. For concrete washout areas, all hardened concrete waste will be removed whenever the hardened concrete has accumulated to a height of one half of the container or pit or as necessary to avoid overflows.

(c) Dust Control

The generation of fugitive dust will be minimized during all aspects of the work, and measures to suppress fugitive dust will be employed when work activities are conducted which could generate dust. Construction sequencing will be organized and conducted to the extent possible to leave existing pavement or ground coverings in place until just prior to earth excavation for the purpose of minimizing the migration of dust beyond the project limits into the surrounding area. If the amount of fugitive dust and/or particulate generated during the work is deemed unacceptable or exceeds baseline project conditions, the work will be halted and corrective measures implemented which may include the following:

- Sweeping and/or applying water to the pavement surfaces
- Applying water to equipment and excavation faces; and
- Applying water during soil excavation, earthwork, loading and dumping.
- Applying calcium chloride by means of a mechanical spreader.
- Applying mulch.

During the use of water for dust suppression, the volume of water shall be minimized to prevent water runoff. There shall be no discharge of water for dust control containing a visible oil sheen, floating solids, visible discoloration, or foaming in the receiving stream.

Dust Control shall be done according to Form 816 Section 9.39 Sweeping for Dust Control and Section 9.43 Water and Dust Control.

(d) Off-Site Vehicle Tracking

Stabilized construction entrances (anti-tracking pad) will be used to help reduce the movement of sediments from the site to off-site areas by vehicles. Construction details for these facilities are contained on the plan sheets. A stabilized construction entrance will be installed at each primary site access point used by construction equipment.

Stabilized construction entrances will be maintained in a condition which will prevent tracking and washing of sediment onto paved surfaces. Each entrance will be periodically top-dressed with additional stone and/or additional length added as conditions demand.

All sediment spilled, dropped, washed or tracked onto paved surfaces will be immediately removed. Roads adjacent to the site will be left clean at the end of each day. It is also recognized that the use of stabilized construction entrances may not eliminate the need for periodic street sweeping. Therefore, adjacent paved roadways will be swept as necessary.

If the construction entrance is being properly maintained and the action of a vehicle traveling over the stone pad is not sufficient to remove the majority of the sediment, then either (1) the construction entrance will be lengthened, (2) the construction access road surface will be modified, or (3) washing racks (or similar devices) will be installed before the vehicle enters a paved surface. If a washing rack or similar device is to be used to wash sediment from tires, provisions will be employed to intercept the wash water and trap the sediment before it is carried off-site. Per the 2002 DEEP E&S Guidelines, the sediment trapping facility will be sized to hold the maximum volume of water that would be used over a 2-hour period.

(e) Material Management and Spill Prevention

The following good housekeeping practices will be followed on-site during the construction project:

- The contractor will limit storage of materials on-site to that required for this project only.
- Materials will be stored as originally shipped (e.g. contained, palleted, etc.) and will be stored in a neat and orderly manner and, if necessary, under a roof or enclosure to prevent any leachable or mobile pollutants from exposure to Stormwater.
- Original labels and material safety data sheets (MSDS) will be retained on-site for any construction related materials with potential to be accidentally released or to otherwise contaminate site run-off.
- Any dumpsters used will be kept covered and drain plugs will remain in place unless being cleaned.
- If surplus materials need to be disposed then manufacturers or local or State recommended methods for proper disposal will be followed.

The following product specific practices will be followed on-site:

- Chemical and Petroleum Product Storage: All chemical and petroleum product containers stored at the site (excluding those within vehicles and equipment) will be stored in tightly sealed containers that are clearly labeled. These containers will be stored within an impermeable containment area that will hold (without overflow) 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. All chemicals and their containers will be stored under a roofed area except for chemicals stored in containers of 100 gallon capacity or more. For those with a 100 gallon capacity or more, a roof is not a requirement, but double walled tanks should be used.
- Petroleum Products: All on-site construction vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Any asphalt substances used on-site will be applied according to the manufacturer's recommendations. Spill kits will be included with any fueling sources and maintenance activities.
- Fertilizers: Fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. Fertilizer will be not be stored on site.
- Paints: All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system or sanitary system, but will be properly disposed of according to manufacturer's instructions or State and local regulations. Spray guns will be cleaned on a removable tarp.

(f) Spill Control Practices

In addition to good housekeeping and material management practices discussed above, the following practices will be followed for spill prevention and cleanup.

- Manufacturer's 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.
- Materials and equipment necessary for spill cleanup will be kept in the designated material storage areas on-site. Equipment and materials will include, but are not limited to, brooms, dustpans, mops, rags, gloves, googles, kitty litter, sand, sawdust, Speedi-Dry, plastic, and metal containers designed for spill cleanup.
- All spills will be cleaned up immediately after discovery.
- Spills of toxic or hazardous materials will be reported to the appropriate State and/or local government agency, regardless of the size. The National Response Center number is 800-424-8802. The CT DEEP Emergency reporting number is 800-424-3333.
- The site construction superintendant will be responsible for day to day operations and act as the person responsible for spill prevention and cleanup. The names of responsible construction spill containment and cleanup personnel will be posted in the material storage area and in the construction trailer on-site.

(g) Post-Construction Cleaning

All post-construction stormwater measures will be cleaned of construction sediment and any remaining silt fence shall be removed upon stabilization of the site prior to filing notice of termination.

(vii) Inspections

(a) Inspection Guidelines

Throughout all phases of construction, the erosion control measures will be routinely inspected, cleaned, repaired, and replaced as necessary. Maintenance of erosion and sedimentation control measures is critical to their effectiveness. Maintenance will be an ongoing process during the period of construction and will continue until long-term vegetation is established. Mulching and seeding will be inspected throughout all phases of construction: at the end of each workday, if precipitation is forecast and after each rainfall. At the end of each workweek, prior to weekends, all erosion and sediment control measures will be inspected and repairs/replacements made as required.

Throughout the construction process, extra stocks of hay bales and filter fabric will be kept on-site to replace those that may become damaged and/or deteriorated.

Any erosion and sediment control measures, which upon inspection, are found to be damaged, deteriorated, or not functioning properly, will be repaired, replaced and corrected immediately after inspection.

(b) Plan Implementation Inspections

Within the first 30 days following commencement of construction activity on the site, a representative of the Permittee will inspect the site. The Permittee's representative for Plan Implementation Inspections is:

ConnDOT District 4 Construction Office
359 South Main Street
Thomaston, CT 06787

The Permittee's representative will inspect the site at least once and no more than three times during the first 90 days of commencement of the construction activity to confirm compliance with the General Permit

and proper initial implementation of all control measures designated in this SWPCP for the site for the initial phase of construction.

(c) Routine Inspections

The Permittee will routinely inspect the site for compliance with the General Permit and this SWPCP for the site until a Notice of Termination has been submitted. Inspection procedures for these Routine Inspections will be addressed and implemented in the following manner.

- The Permittee will retain a Qualified Inspector meeting the following definition: "an individual possessing either (1) a professional license or certification by a professional organization recognized by the commissioner related to agronomy, civil engineering, landscape architecture, soil science, and two years of demonstrable and focused experience in erosion and sediment control plan reading, installation, inspection and/or report writing for residential and commercial construction projects in accordance with the Guidelines; or (2) five years of demonstrable and focused experience in erosion and sediment control plan reading, installation, inspection and/or report writing for residential and commercial construction projects in accordance with the Guidelines; or (3) certification by the Connecticut Department of Transportation (DOT)"

- The Permittee will maintain a rain gauge on-site to document rainfall amounts.
- At least once a week and within 24 hours of the end of a storm that generates a discharge, the Qualified Inspector, will inspect, at a minimum, the following:
  (a) disturbed areas of the construction activity where stabilization is not complete
  (b) Installed erosion and sedimentation control measures
  (c) Structural control measures
  (d) Soil stockpile areas
  (e) Washout areas
  (f) Entrances and Exits for construction vehicles
- For storms 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 only for storms that equal or exceed 0.5 inches. For storms of less than 0.5 inches, an inspection will occur immediately upon the start of the subsequent normal working hours.
- The areas noted above will be inspected for evidence of, or the potential for, pollutants entering the drainage system and impacts to the receiving waters. Locations where vehicles enter or exit the site will also be inspected for evidence of off-site sediment tracking.
- The Qualified Inspector will evaluate the effectiveness of erosion and sediment controls, structural controls, stabilization practices, and any other controls implemented to prevent pollution and determine if it is necessary to install, maintain, or repair such controls and/or practices to improve the quality of stormwater discharge(s).

(d) Inspection Reports

Following their inspection, the Qualified Inspector will prepare a report that will summarize the following:

- The inspection scope.
- Name(s) and qualifications of inspection personnel.
- Date(s) of inspection
- Weather conditions including precipitation data.
- Major observations relating to E&S controls and the implementation of the stormwater plan
- Description of stormwater discharge(s) from the site
- Any water quality monitoring performed during inspection.

Construction Site Environmental Inspection Report (CSEIR) Form is included in Appendix D. The report will be signed by the Permittee or his authorized representative. Reports will be retained as part of the SWPCP and are included in Appendix D.

The report will include a statement that, in the judgment of the Qualified Inspector(s) conducting the Routine Inspection, the site is either in compliance or out of compliance with the terms and conditions of this SWPCP and General Permit. If the site inspection indicates that the site is out of compliance, the inspection report will include a summary of the remedial actions required to bring the site back into compliance. Non-engineered corrective actions (as identified in the 2002 Guidelines) will be implemented on site within 24 hours and incorporated into a revised SWPCP within three (3) calendar days of the date of inspection unless another schedule is specified in the 2002 Guidelines. Engineered corrective actions (as identified in the 2002 Guidelines) shall be implemented on site within seven (7) days and incorporated into a revised SWPCP within ten (10) days of the date of inspection, unless another schedule is specified in the 2002 Guidelines or is approved by DEEP. During the period in which any corrective actions are being developed and have not yet been fully implemented, interim measures will be implemented to minimize the potential for the discharge of pollutants from the site.

(viii) Monitoring Requirements

Turbidity Monitoring

Monthly turbidity monitoring is required. The Stormwater Monitoring Report (SMR) is included as Appendix D.

1. Stormwater Monitoring Procedures:
    - Sampling shall be conducted at least once every month, when there is discharge of stormwater from the site while construction activity is ongoing, until final stabilization of the drainage area associated with each outfall. If there is no stormwater discharge during a month, sampling is not required but the Stormwater Monitoring Form (SMR) still must be submitted indicating “no discharge.”

    - Monitoring is only required during the “normal working hours”, defined by the General Permit to be at a minimum Monday through Friday between the hours of 9:00 am and 4:00 pm. If sampling is discontinued due to the end of normal working hours, the General Permit specifies that sampling shall resume the following morning or the morning of the next working day following a weekend or holiday, as long as the discharge continues. Sampling may be temporarily suspended any time conditions exist that may reasonably pose a threat to the safety of the person taking the sample. Such conditions may include high winds, lightening, impinging wave or tidal activity, intense rainfall or other hazardous condition. Once the unsafe condition is no longer present, sampling shall resume.

    - All samples shall be collected from discharges resulting from a storm event that occurs at least 24 hours after any previous storm event generating discharge. Any sample containing 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 and shall be representative of the flow and characteristics of the discharge(s). The first sample shall be taken within the first hour of stormwater discharge from the site. In cases where samples are collected manually and the discharge begins outside of normal working hours, the first sample shall be taken at the start of normal working hours.

- Grab samples shall be collected by the Qualified Inspector.
- The stormwater turbidity value for each sampling point shall be determined by taking the average of the turbidity values of all samples taken at the sampling point during a given storm.
- Monitoring sampling and analysis shall be consistent with 40 CFR Part 136.

2. Sampling Locations:
   - Sampling is required of all point source discharges of stormwater from disturbed areas. Where there are two or more discharge points that discharge substantially identical runoff, based on similarities of the exposed soils, slope, and type of stormwater controls used, a sample may be taken from just one of the discharge points. In this case it must be reported that the results also apply to the substantially identical discharge point(s). No more than 10 substantially identical outfalls (since project is a linear project) may be identified for one representative discharge. If a project is planned to continue for more than one year, the SWPCP must identify rotation schedule for outfall sampling locations. The inspector shall rotate twice per year the location where samples are taken so that a different discharge point is sampled every six months.
   - In the event that point discharges are required, samples points shall be clearly designated with a visible marker. The exact locations of samples will be field marked with a construction stake and survey flagging. The outfall number will be clearly marked on the flagging.
   - The outfalls authorized by the General Permit are identified on the Erosion and Sedimentation Control Plans.

3. Stormwater Monitoring Reports:
   - Within 30 days following the end of each month, ConnDOT must enter the stormwater sampling results on the Stormwater Monitoring Report (SMR) form and submit it in accordance with the NetDMR provisions of the General Permit. Alternatively, the Commissioner may approve of submittal of SMRs in hard copy form through the use of the “opt-out” request.
   - If there is no discharge during any given monitoring period, a report indicating “no discharge” must be submitted. If monitoring is conducted more frequently than required by the General Permit, results of this monitoring must be included in the SMRs for the month in which the samples were collected. If sampling protocols are modified due to limitations of normal working hours or unsafe conditions as described in the General Permit, a description and/or reason for the modifications must be included in the SMR. If representative discharges are sampled, the names or locations of these discharge points must be included in the SMR.

(ix) Contractors

(a) General

This section shall identify all Contractors and Subcontractors who will perform on site actions which may reasonably be expected to cause or have the potential to cause pollution of the waters of the State.

(b) Certification Statement

All contractors and subcontractors must sign the attached statement. All certifications will be included in the Stormwater Pollution Control Plan.

State Project No. 34-313

I-84 Interchanges 5 & 6 Improvements
Danbury, CT

"I certify, under penalty of the 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 the General Contractor on the site, I am authorized by this general permit, and must comply with the terms and conditions of this permit, including but not limited to the requirements of the Stormwater Pollution Control Plan prepared for the site."

GENERAL CONTRACTOR

Signed:_____ Date:_____

Title:_____

Firm:_____ Telephone:_____

Address:_____

_____

_____

SUBCONTRACTOR

Signed:_____ Date:_____

Title:_____

Firm:_____ Telephone:_____

Address:_____

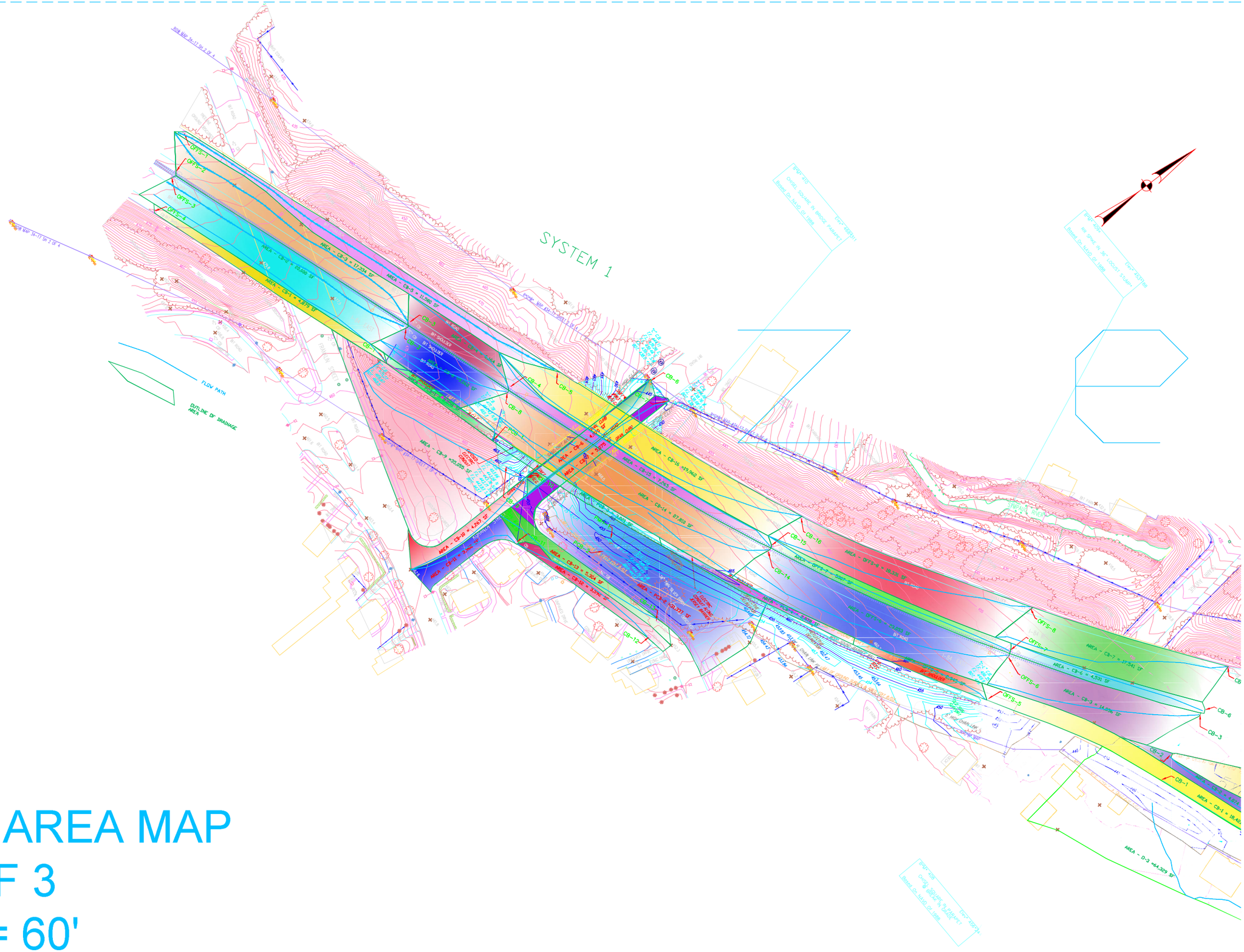
_____

_____

APPENDIX A

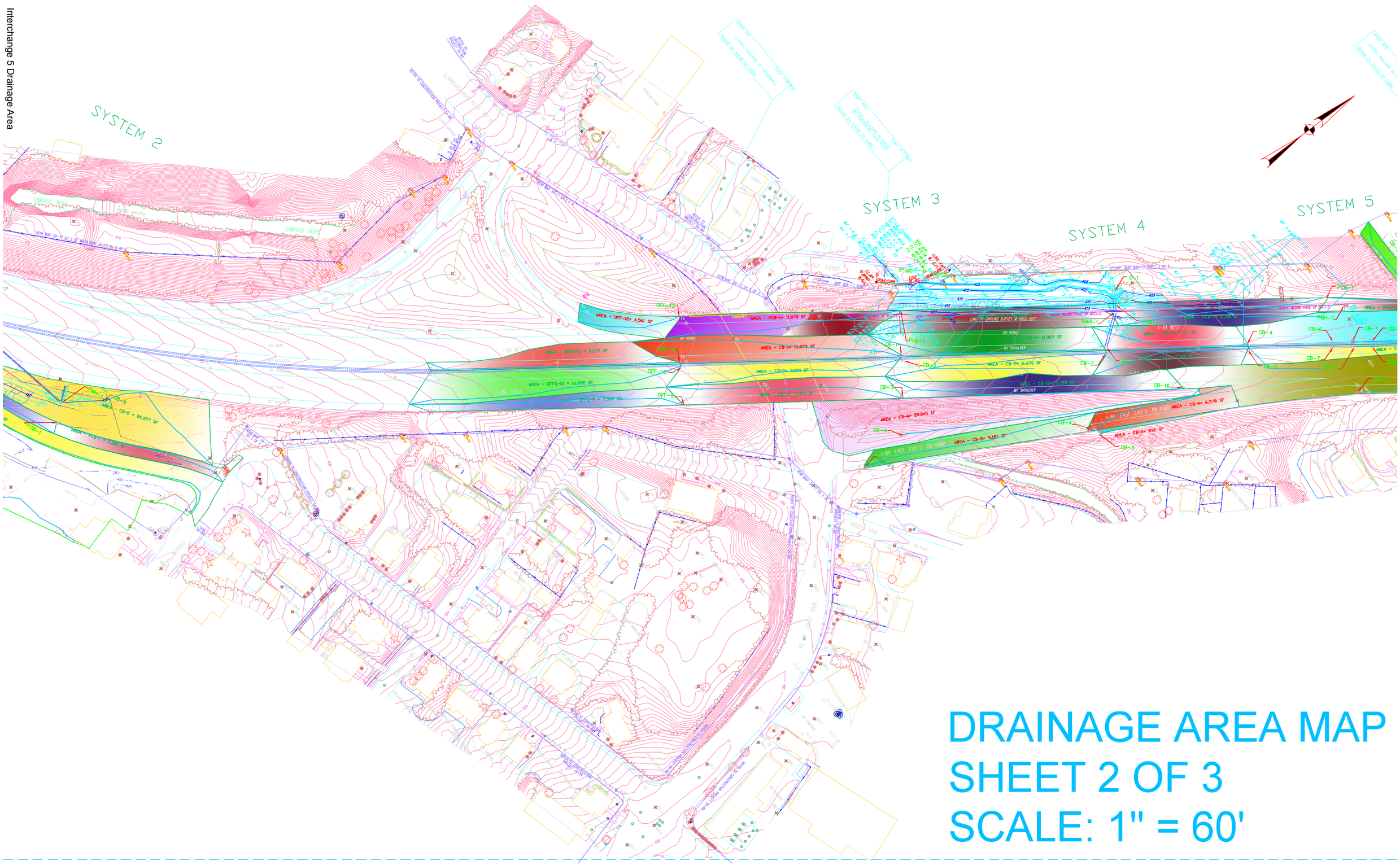
DRAINAGE AREAS

Interchange 5 Drainage Area



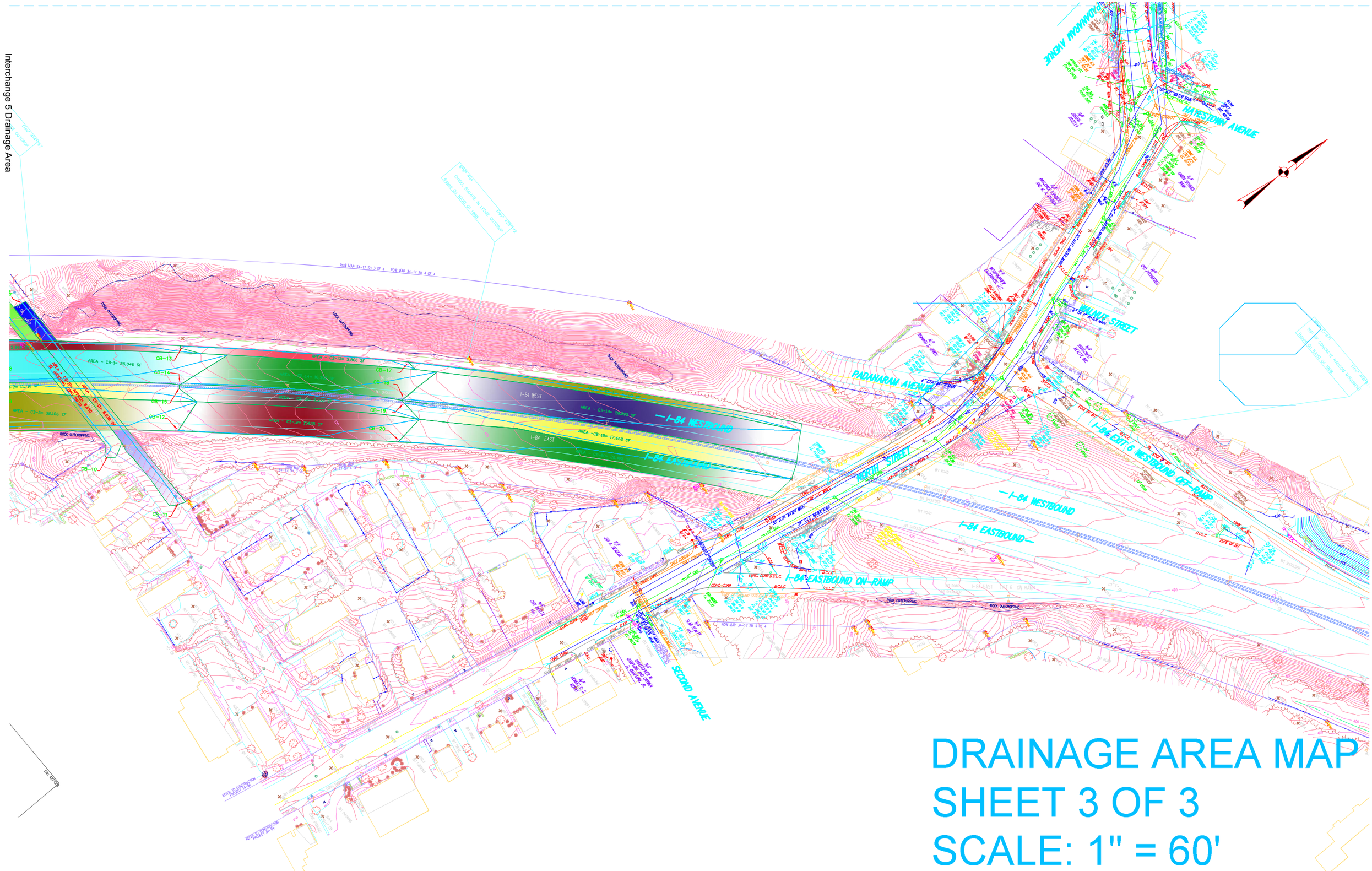
DRAINAGE AREA MAP
SHEET 1 OF 3
SCALE: 1" = 60'

Interchange 5 Drainage Area

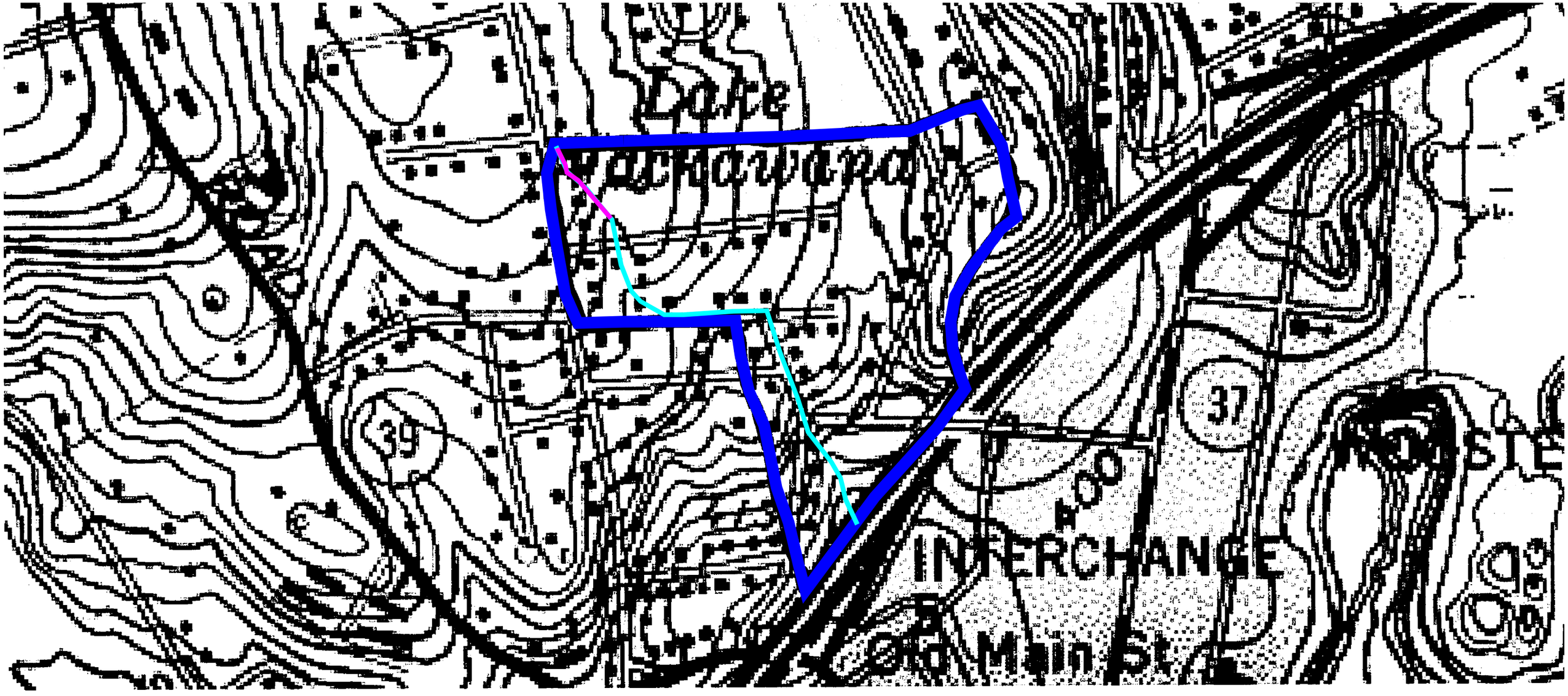


DRAINAGE AREA MAP
SHEET 2 OF 3
SCALE: 1" = 60'

Interchange 5 Drainage Area

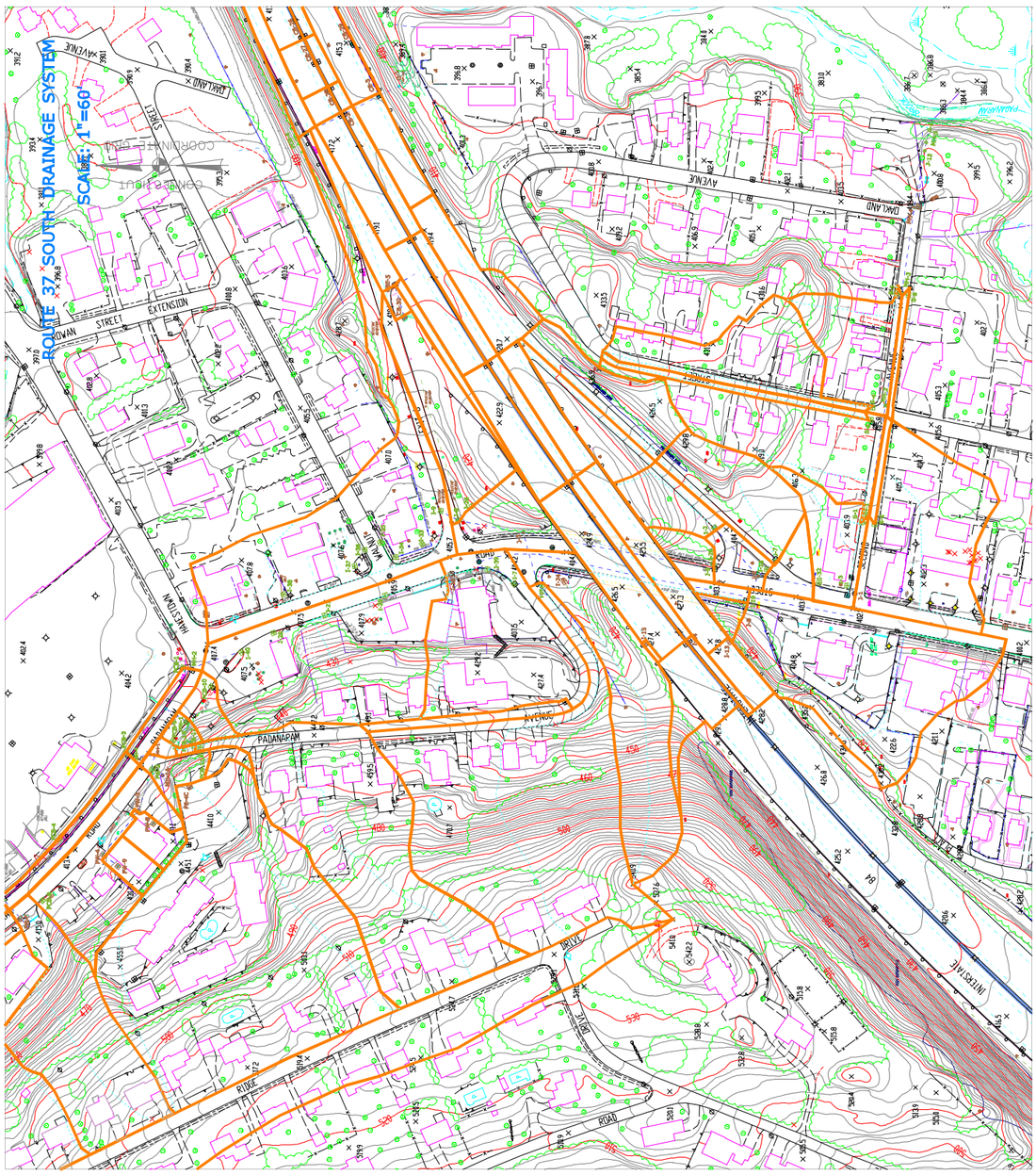


DRAINAGE AREA MAP
SHEET 3 OF 3
SCALE: 1" = 60'



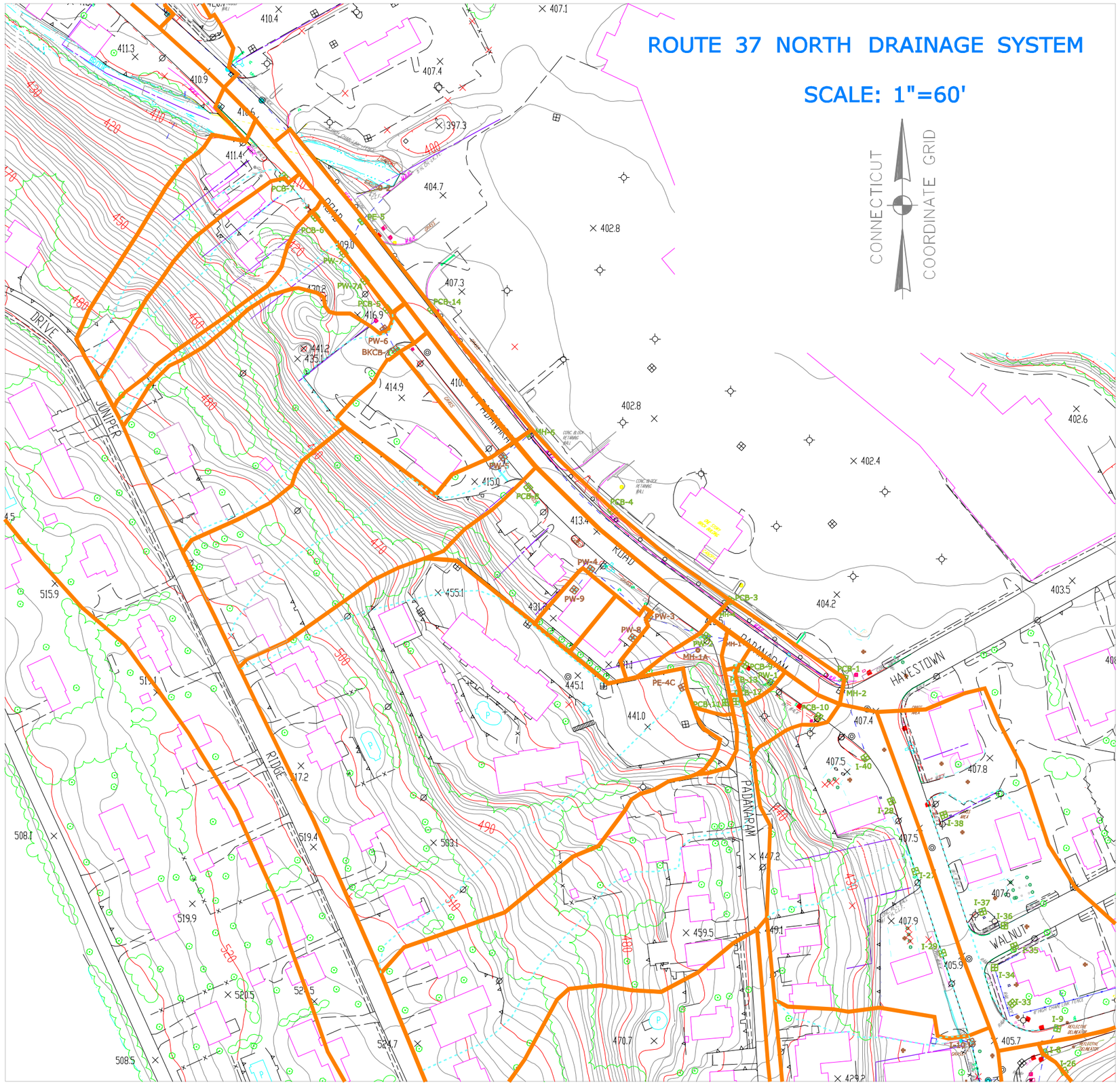
SYSTEM 4 -
AREA DELINEATION FOR CULVERT
EXTENSION DESIGN

Interchange 5 Drainage Area

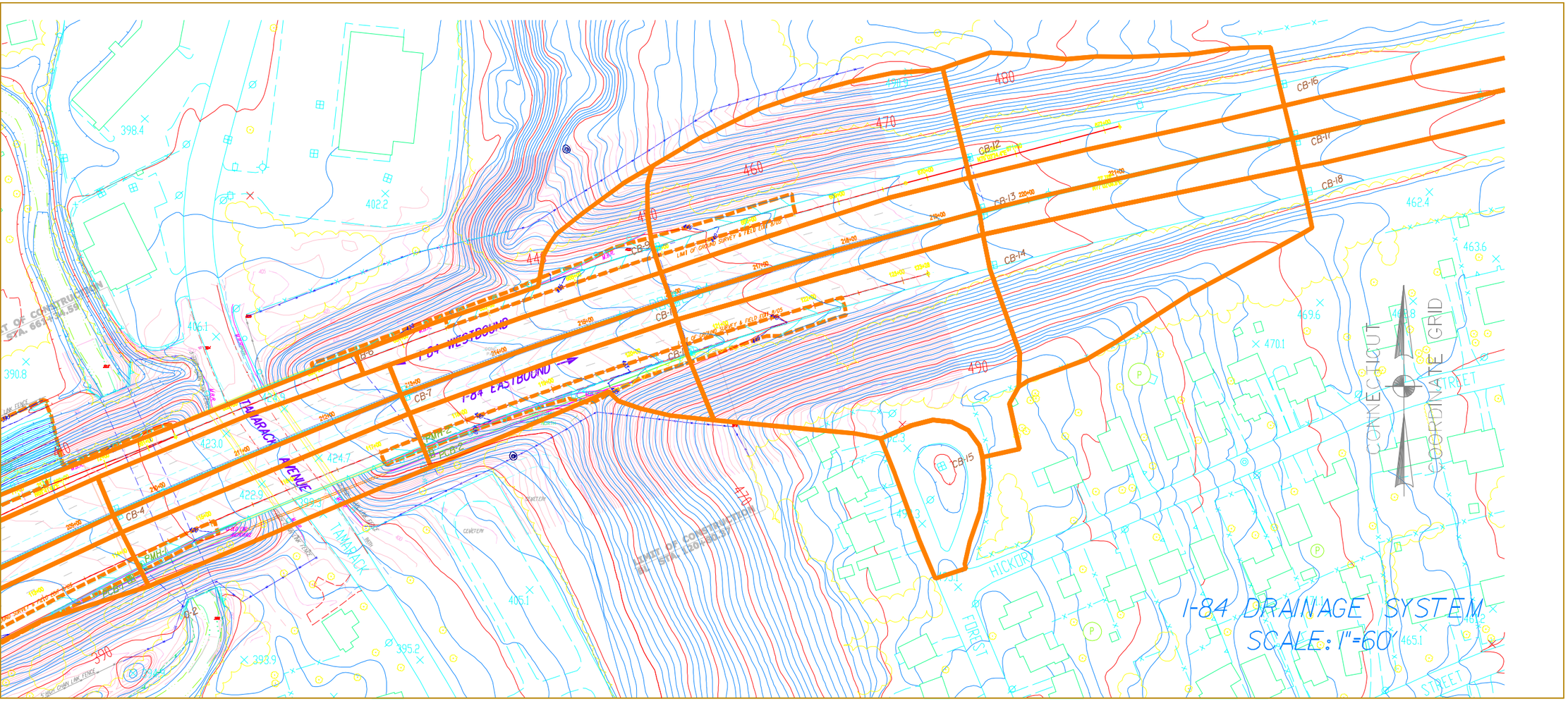


Interchange 6 Drainage Area

Interchange 6 Drainage Area



Interchange 6 Drainage Area



APPENDIX B

SEDIMENT AND FLOATABLES REMOVAL AND OUTLET/INLET PROTECTION CALCULATIONS

1. Sediment and Floatables Removal Calculations
2. Second Avenue Sta. 48+35 Outlet Protection system
3. I-84 Exit 6 Eastbound On-Ramp Outlet Protection System – Sta. 110+62
4. I-84 Exit 5 Westbound Off-Ramp Inlet Protection – Sta. 561+72

1. Sediment and Floatables Removal Calculations

Sizing Estimate

Provided by Jennifer Knowles on April 24, 2014

I-84 INTERCHANGE 6 IMPROVEMENTS
Danbury, CT
Information provided by Bradford Sabean (AE COM)

Site information:

Structure ID	Area (ac)	Runoff C	WQF- 1" Flow (cfs)	Peak 10yr Flow (cfs)
MH STA 48+12	18.06	0.614	8.09	46.24

- Presiding agency = CT DOT/DEP

Assumptions:

- Vortechs® system sized off-line to treat the WQF prior to system bypass while treating the drainage area at a net annual sediment load reduction of 80% or greater of the typical ~80 micron particle gradation.

Sizing Summary:

The CONTECH Stormwater Solutions Vortechs® stormwater treatment system is a hydrodynamic separator designed to enhance gravitational separation of floating materials and sediment from stormwater flows. Stormwater flows enter the unit tangentially to the grit chamber, which promotes a gentle swirling motion. As stormwater circles within the grit chamber, pollutants migrate toward the center of the unit where velocities are the lowest. The majority of solids are left behind as stormwater exits the swirl chamber. Stormwater flows then are directed below a baffle wall, where buoyant debris and hydrocarbons are removed.

Off-line Configuration:
The Off-line Vortechs® system is sized to treat the Water Quality Flow rate prior to system bypass and remove a minimum of 80% Total Suspended Solids net annually for the given drainage area of the **~ 80 micron** particle gradation.

Structure ID	Vortechs® WQF prior to system bypass (cfs)	Vortechs® Net Annual Solids Load Reduction	Vortechs® Model
MH STA 48+12	8.09	88%	11000

The following pages include the hydraulic and efficiency calculations along with the standard details of the systems.

Maintenance:

Like any stormwater best management practice, the Vortechs system requires regular inspection and maintenance to ensure optimal performance. Maintenance frequency will be driven by site conditions. Quarterly visual inspections are recommended, at which time the accumulation of pollutants can be determined. On average, the Vortechs system requires annual removal of accumulated pollutants.

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conteches.com
200 Enterprise Drive, Scarborough ME 04074
Toll-free: 877.907.8676 Fax: 207.885.9825

Project: **I-84 Interchange 6 ImprovementDAYTON PLACE**
Location: **Danbury, CT**
Prepared For: **Bradford Sabean, AECOM**

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	18.06	0.02822	0.614	52.33	12.0	0.200

* 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	52.33	0.521	1.0	0.521	0.7841

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	0.521	94.30

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	0.121	0.121

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	0.200	0.02822

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	0.200	0.121	550

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

$$\mathbf{WQF = (q_u)*(A)*(Q)}$$

where: WQF = water quality flow (cfs)
q_u = unit peak discharge (cfs/mi^2/inch)
A = drainage area (mi^2)
Q = runoff depth (watershed inches)

Structure Name	q_u (csm/in)	A (miles^2)	Q (in)	WQF (cfs)
1	550	0.02822	0.521	8.09

2. Second Avenue Sta. 48+35 Outlet Protection System

Appendix A – Outlet Protection Form

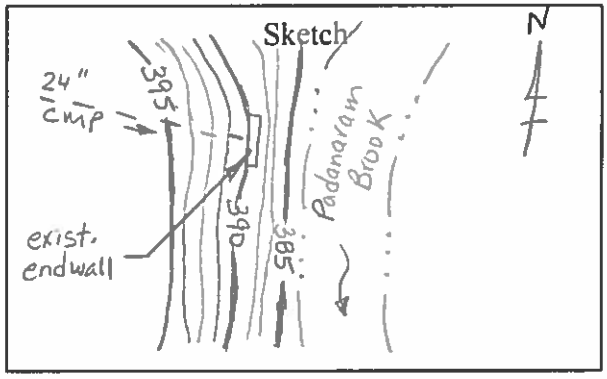
OUTLET PROTECTION

Project No.: 34-313 **Designed By:** NPR **Date:** 1/28/08 Revised 7/14/09
Town: Danbury **Checked By:** **Date:**
Route: I-84 / Route 37 **Station:** 48+50 Second Ave.

1. Assess the erosion potential at the outlet and other critical site factors

Describe the conditions at the outlet location:
Construct New Outfall at steep Bank of brook
New 36" RCP to Replace 24" CMP

☒ No well-defined channel
☐ Well-defined channel



2. Determine the tailwater (TW) conditions at the outlet

TW depth: 1.14 ft TW elevation: 384.00'
TW computational method: Flowmaster (Mannings Equation)
Channel bed elevation: 382.0 +/- Estimated velocity in channel: 4.0 fps

3. Calculate and evaluate the outlet velocity for the design discharge

Design Discharge: 46.24 cfs Design Frequency: 10 year
Outlet Pipe Size: 36" Type: RCP
Length: 16' Slope: Outlet Invert Elevation: 383.50
Outlet Velocity at design discharge: 12.26 fps
Velocity computational method: StormCAD

4. Select the type of outlet protection

☐ Riprap Apron
(See Figures 11-13 & 11-14)

Type_____(A,B,C)

Riprap type: _____
Length (L_a): _____
Width (W_1): _____
Width (W_2): _____
Width-Type C (W_3): _____

☒ Preformed Scour Hole
(See Figure 11-15)

	Type 1	Type 2
d_{50}	0.42	0.27
F	1.50	3.0
C	18	27
B	15	24
S_p	3.0	3.0

Proposed Type: Type 1
Riprap Type: Modified

Detailed Report for Pipe: P-90

Note:
The input data may have been modified since the last calculation was performed.
The calculated results may be outdated.

Scenario Summary	
Scenario	Route 37 South System & Second Ave.
Physical Properties Alternat	YMB- Design Second Ave
Catchments Alternative	Base-Catchments
System Flows Alternative	Base-System Flows
Structure Headlosses Alterr	Base-Structure Headlosses
Boundary Conditions Altern	Base-Boundary Conditions
Design Constraints Alternat	Base-Design Constraints
Capital Cost Alternative	Base-Capital Cost
User Data Alternative	Base-User Data

Pipe Characteristics					
Upstream Node	MH-5		Number of Sections	1	
Downstream Node	O-1		Section Shape	Circular	
Bend Angle	0.00	degrees	Section Size	36 inch	
Length	16.00	ft	Material	Concrete	
Constructed Slope	0.051875	ft/ft	Mannings n	0.013	

Hydraulic Summary					
Total System Flow	46.24	cfs	Full Capacity	151.90	cfs
Profile Description	S2		Energy Slope	0.011956	ft/ft
Gravity Element Headloss	1.47	ft	Velocity In	8.27	ft/s
Average Velocity	18.86	ft/s	Velocity Out	12.26	ft/s
Constructed Slope	0.051875	ft/ft	Design Capacity	151.90	cfs
Excess Full Capacity	105.67	cfs	Excess Design Capacity	105.67	cfs

Elevations/Depths

	Invert (ft)	Ground (ft)	Crown (ft)	Cover (ft)	Depth (ft)	Hydraulic Grade (ft)	EGL (ft)
Upstream	84.33	00.00	87.33	12.67	2.22	386.55	87.61
Downstre	83.50	92.00	86.50	5.50	1.58	385.08	87.42

Pipe Design Options					
Design Pipe?	true		Design Upstream Invert?	false	
Design Downstream Invert?	false		Specify Local Pipe Constrai	true	
Part Full Design?	false		Design Percent Full	N/A	%
Allow Multiple Sections?	false		Maximum Number Sections	N/A	
Limit Section Size?	false		Maximum Section Rise	N/A	in

Pipe Design Constraints					
Minimum Velocity	2.00	ft/s	Maximum Velocity	20.00	ft/s
Minimum Cover	2.50	ft	Maximum Cover	15.00	ft
Minimum Slope	0.005000	ft/ft	Maximum Slope	0.100000	ft/ft

User Data
Date Installed

Worksheet for Second Ave. 36" RCP Outlet

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.05188	ft/ft
Diameter	3.00	ft
Discharge	46.24	ft^3/s

Results

Normal Depth	1.14	ft
Flow Area	2.45	ft^2
Wetted Perimeter	3.98	ft
Top Width	2.91	ft
Critical Depth	2.22	ft
Percent Full	37.9	%
Critical Slope	0.00600	ft/ft
Velocity	18.86	ft/s
Velocity Head	5.53	ft
Specific Energy	6.66	ft
Froude Number	3.62	
Maximum Discharge	163.40	ft^3/s
Discharge Full	151.90	ft^3/s
Slope Full	0.00481	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	37.86	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s

Worksheet for Second Ave. 36" RCP Outlet

GVF Output Data

Normal Depth	1.14	ft
Critical Depth	2.22	ft
Channel Slope	0.05188	ft/ft
Critical Slope	0.00600	ft/ft

AECOM

JOB TITLE 34-313 I-84/Route 37 Danbury

JOB NO. 60003026 CALCULATION NO. ORIGINATOR NPR DATE 7/14/09

SHEET 1 OF 1 REVIEWER DATE

Outlet Protection Second Ave. to Padanaram Brook

Design Discharge = 46.24 cfs

Outlet pipe size = 36" RCP

Length = 16'

Slope = 0.05

Outlet Velocity = 12.26 fps.

TW depth = 1.14' elev. = 383.14

TW < 0.5 Rp use TW condition

Per table 11-12.1 Length Type A Riprap Apron for Q = 46.24 cfs and pipe dia. 36" must use preformed scour hole - Type 1

Preformed Scour Hole:

Depression F = 1.50'

d_{50} = median stone size for Type 1

$$= \frac{0.0125 R_p^2}{TW} \times \left(\frac{Q}{R_p^{2.5}}\right)^{1.33}$$

$$= \frac{0.0125 (3)^2}{1.14} \times \left(\frac{46.24}{(3)^{2.5}}\right)^{1.33}$$

d_{50} = 0.42 ft

Stone size = modified Riprap

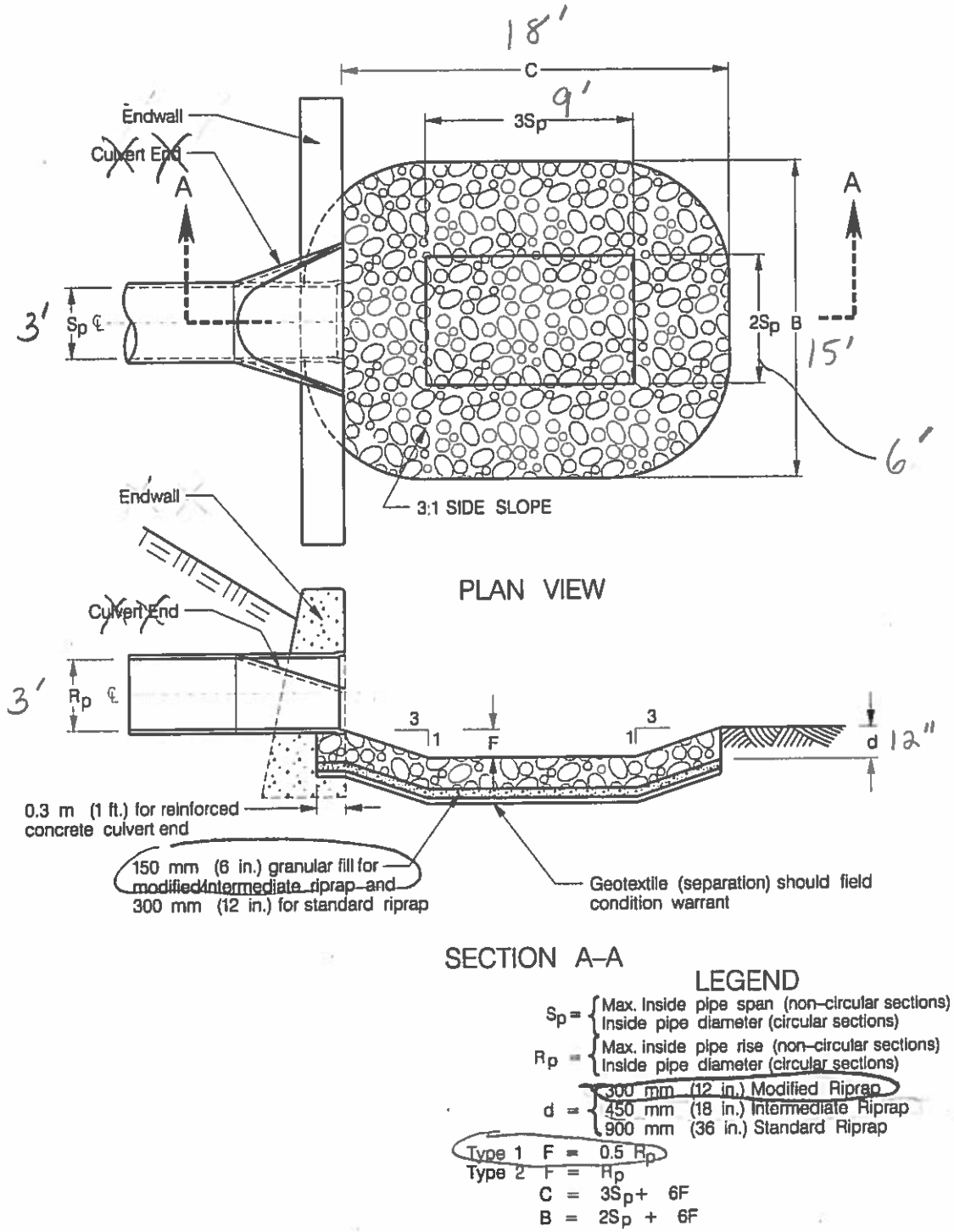


Figure 11-15 Preformed Scour Hole Type 1 and Type 2

OUTLET PROTECTION - OUTLET VELOCITY ≤ 14 feet/sec

DISCHARGE (cfs)	OUTLET PIPE DIAMETER OR SPAN (in)									
	12	15	18	24	30	36	42	48	54	60
0-5	***10***	***10***		***USE***						
6	12	11								
7		13	***12***							
8		14	13	***12***		***MINIMUM***				
9			14	13						
10			15	13						
11			16	14				***LENGTH***		
12				14						
14				16	***14***					
16				17	15	***14***			***OUTLINED***	
18				18	16	15				
20					17	15	***14***			
22		***USE***			18	16	15			
24						17	15	***14***		
26						17	16	15		
28						18	16	15		
30						19	17	16		
35						20	18	17	***16***	
40			***PREFORMED***				20	18	17	***16***
45					46.0 cfs		21	19	18	16
50							22	20	18	17
55								21	19	18
60								22	20	19
65								24	21	20
70					***SCOUR***			25	22	20
75								26	23	21
80									24	22
90									26	24
100									28	25
110										27
125							***HOLE***			29
130										30

Table 11-12.1 - Length - L_a (feet)
Type A Riprap Apron

Notes: 1. Bold face outlined boxes indicate minimum L_a to be used for a given pipe diameter or span.
2. Rounding and interpolating are acceptable.

OUTLET PROTECTION
OUTLET VELOCITY > 14 feet/sec or Length of Apron exceeds limits shown on Tables 11-12.1 and 11-13.1

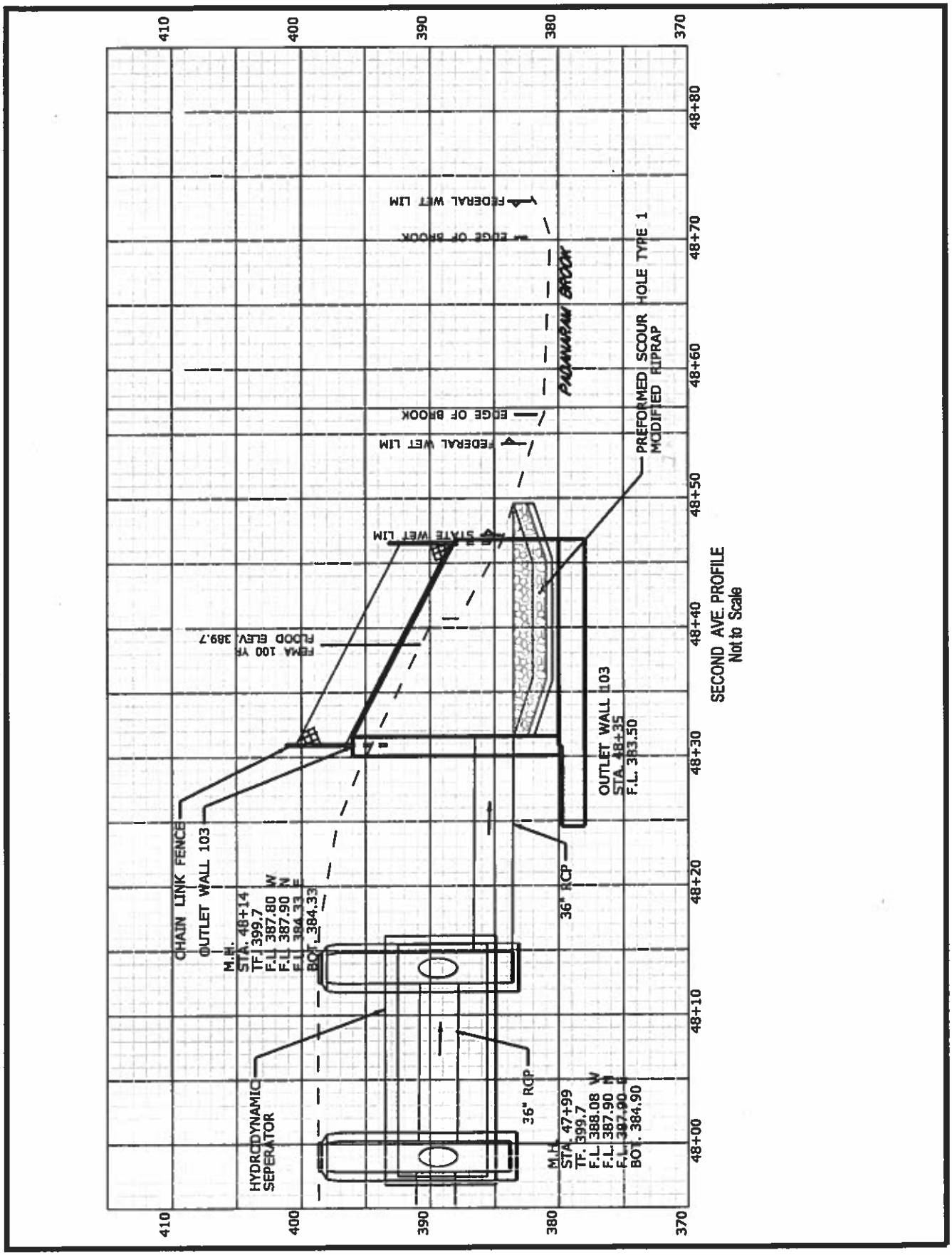
Preformed Scour Hole										
(See Figure 11-15)	PIPE DIAMETER OR SPAN (in)									
	12	15	18	24	30	36	42	48	54	60
Type 1										
B	5	6	8	10	13	15	18	20	23	25
C	6	8	9	12	15	18	21	24	27	30
d	Depends on riprap type(see Figure 11-15)									
$2S_p$	2.0	2.6	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
$3S_p$	3.0	3.9	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
$F = 0.5\ S_p$	0.5	0.625	0.75	1	1.25	1.5	1.75	2	2.25	2.5
Type 2										
B	8	10	12	16	20	24	28	32	36	40
C	9	11	14	18	23	27	32	36	41	45
d	Depends on riprap size (see Figure 11-15)									
$2S_p$	2.0	2.6	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
$3S_p$	3.0	3.9	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
$F = S_p$	1.0	1.3	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0

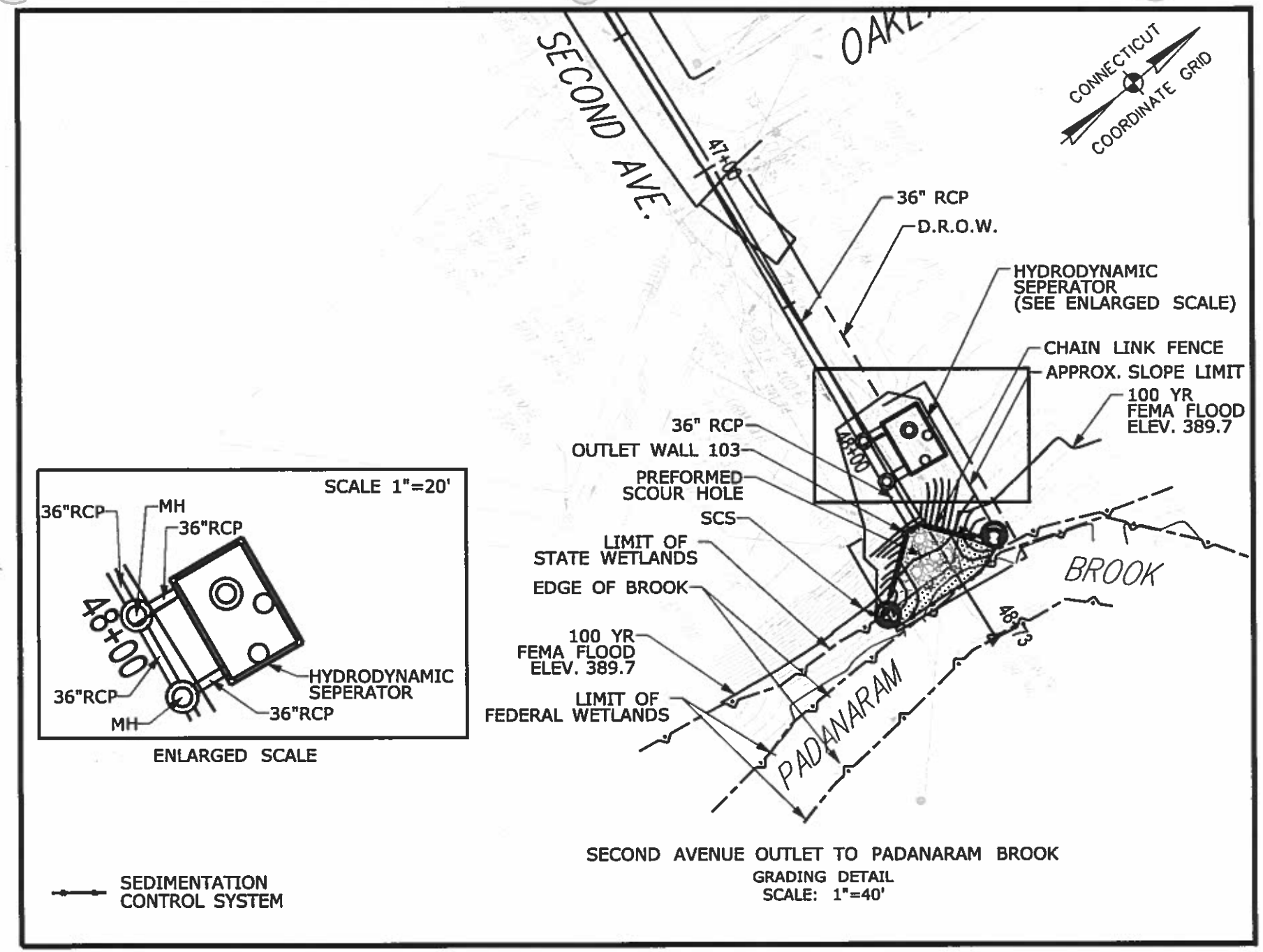
Table 11-14.1 - Dimensions of Preformed Scour Hole (Feet)

OUTLET PROTECTION
OUTLET VELOCITY > 14 feet/sec or Length of Apron exceeds limits shown on Tables 11-12.1 and 11-13.1

Preformed Scour Hole										
(See Figure 11-15)	PIPE DIAMETER OR SPAN (in)									
	12	15	18	24	30	36	42	48	54	60
Type 1										
B	5	6	8	10	13	15	18	20	23	25
C	6	8	9	12	15	18	21	24	27	30
d	Depends on riprap type(see Figure 11-15)									
$2S_p$	2.0	2.6	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
$3S_p$	3.0	3.9	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
$F = 0.5\ S_p$	0.5	0.625	0.75	1	1.25	1.5	1.75	2	2.25	2.5
Type 2										
B	8	10	12	16	20	24	28	32	36	40
C	9	11	14	18	23	27	32	36	41	45
d	Depends on riprap size (see Figure 11-15)									
$2S_p$	2.0	2.6	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
$3S_p$	3.0	3.9	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
$F = S_p$	1.0	1.3	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0

Table 11-14.1 - Dimensions of Preformed Scour Hole (Feet)


410
400
390
380
370
48+00
48+10
48+20
48+30
48+40
48+50
48+60
48+70
48+80
HYDRODYNAMIC SEPERATOR
CHAIN LINK FENCE
OUTLET WALL 103
M.H.
STA. 48+14
TF. 399.7
F.L. 387.80 W
F.L. 387.90 N
F.L. 384.33 E
BOT. 384.33
36" RCP
M.H.
STA. 47+99
TF. 399.7
F.L. 388.08 W
F.L. 387.90 N
F.L. 387.90 E
BOT. 384.90
36" RCP
OUTLET WALL 103
STA. 48+35
F.L. 383.50
PREFORMED SCOUR HOLE TYPE 1
MODIFIED RIPRAP
FEMA 100 YR
FLOOD ELEV. 389.7
STATE WET LIM
FEDERAL WET LIM
EDGE OF BROOK
PADANARAM BROOK
EDGE OF BROOK
FEDERAL WET LIM
SECOND AVE. PROFILE
Not to Scale



SECOND AVENUE OUTLET TO PADANARAM BROOK
GRADING DETAIL
SCALE: 1"=40'

3. I-84 Exit 6 Eastbound On-Ramp Outlet Protection System – Sta. 110+64 Rt.

Appendix A – Outlet Protection Form

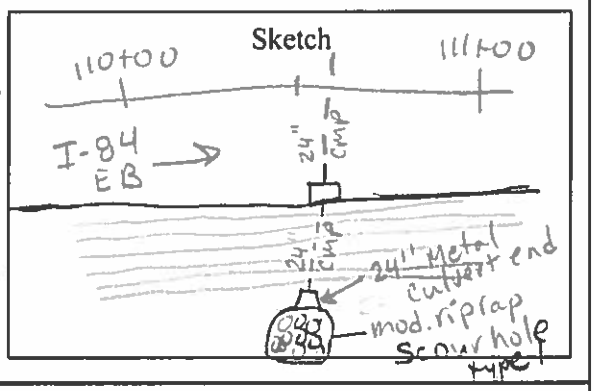
OUTLET PROTECTION

Project No.: 34-313 **Designed By:** NPR **Date:** 7/20/09
Town: Danbury **Checked By:** **Date:**
Route: I-84 / Rte 37 **Station:** 110+64 58' Rt

1. Assess the erosion potential at the outlet and other critical site factors

Describe the conditions at the outlet location:
Replace exist metal culvert end.
Install Riprap Scour hole

☒ No well-defined channel
☐ Well-defined channel



2. Determine the tailwater (TW) conditions at the outlet
TW depth: 0.73 TW elevation: 399.76
TW computational method: FlowMaster (Mannings Equation)
Channel bed elevation: 398.00 Estimated velocity in channel: 13.8

3. Calculate and evaluate the outlet velocity for the design discharge
Design Discharge: 14.83 cfs Design Frequency: 10 year
Outlet Pipe Size: 24" Type: CMP
Length: 60' Slope: 0.1488 Outlet Invert Elevation: 398.99
Outlet Velocity at design discharge: 13.31 fps
Velocity computational method: Storm CAD

4. Select the type of outlet protection

☐ Riprap Apron
(See Figures 11-13 & 11-14)

Type_____(A,B,C)

Riprap type: _____
Length (L_a): _____
Width (W_1): _____
Width (W_2): _____
Width-Type C (W_3): _____

☐ Preformed Scour Hole
(See Figure 11-15)

	Type 1	Type 2
d_{50}	0.25	0.16
F	1.0	2.0
C	12	18
B	10	16
S_p	2.0	2.0

Proposed Type: Type 1
Riprap Type: Modified

Worksheet for I-84 EB 24" CMP Outlet

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.024	
Channel Slope	0.14880	ft/ft
Diameter	2.00	ft
Discharge	13.31	ft^3/s

Results

Normal Depth	0.73	ft
Flow Area	1.03	ft^2
Wetted Perimeter	2.59	ft
Top Width	1.92	ft
Critical Depth	1.31	ft
Percent Full	36.3	%
Critical Slope	0.02004	ft/ft
Velocity	12.93	ft/s
Velocity Head	2.60	ft
Specific Energy	3.32	ft
Froude Number	3.11	
Maximum Discharge	50.84	ft^3/s
Discharge Full	47.27	ft^3/s
Slope Full	0.01180	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	36.30	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s

Detailed Report for Pipe: P-3

Scenario Summary	
Scenario	I-84 Systems
Physical Properties Alternat	Base-Physical Properties
Catchments Alternative	Base-Catchments
System Flows Alternative	Base-System Flows
Structure Headlosses Alterr	Base-Structure Headlosses
Boundary Conditions Altern	Base-Boundary Conditions
Design Constraints Alternat	Base-Design Constraints
Capital Cost Alternative	Base-Capital Cost
User Data Alternative	Base-User Data

Pipe Characteristics					
Upstream Node	CB-3		Number of Sections	1	
Downstream Node	O-1		Section Shape	Circular	
Bend Angle	0.00	degrees	Section Size	24 inch	
Length	60.00	ft	Material	CMP	
Constructed Slope	0.148833	ft/ft	Mannings n	0.024	

Hydraulic Summary					
Total System Flow	14.83	cfs	Full Capacity	47.27	cfs
Profile Description	S2		Energy Slope	0.123750	ft/ft
Gravity Element Headloss	9.55	ft	Velocity In	6.37	ft/s
Average Velocity	13.31	ft/s	Velocity Out	13.31	ft/s
Constructed Slope	0.148833	ft/ft	Design Capacity	47.27	cfs
Excess Full Capacity	32.44	cfs	Excess Design Capacity	32.44	cfs

Elevations/Depths

	Invert (ft)	Ground (ft)	Crown (ft)	Cover (ft)	Depth (ft)	Hydraulic Grade (ft)	EGL (ft)
Upstream	07.92	16.40	09.92	6.48	1.39	409.31	09.94
Downstre	98.99	00.00	00.99	-0.99	0.77	399.76	02.51

Pipe Design Options				
Design Pipe?	false	Design Upstream Invert?	false	
Design Downstream Invert?	false	Specify Local Pipe Constrai	false	
Part Full Design?	false	Design Percent Full	N/A	%
Allow Multiple Sections?	false	Maximum Number Sections	N/A	
Limit Section Size?	false	Maximum Section Rise	N/A	in

Pipe Design Constraints					
Minimum Velocity	2.00	ft/s	Maximum Velocity	15.00	ft/s
Minimum Cover	3.00	ft	Maximum Cover	15.00	ft
Minimum Slope	0.005000	ft/ft	Maximum Slope	0.100000	ft/ft

User Data
Date Installed

Message List

Time (hr)	Message
	Warning: Pipe does not meet minimum cover c

DMJM Harris | AECOM

JOB TITLE 34-313 I-84/ Route 37 Drainage

JOB NO. 60003026 CALCULATION NO. ORIGINATOR NPR DATE 7/20/09

SHEET 1 OF 1 REVIEWER DATE

Outlet Protection I-84 Sta 110+64 58' Rt.

Design Discharge = 14.83 cfs. (StormCAD)

Total System flow 0-1 = 14.83 cfs.

R_p Outlet pipe size = 24" cmp (existing)

length = 60' (existing)

slope = 0.1488 (existing)

outlet velocity = 13.31 fps.

TW depth = 0.73 ft. elev = 399.76

$TW < 0.5 R_p$ Use Minimum Tailwater Condition

although $V = 13.31 < 14$ fps use Preformed Scour hole because outlet velocity borderline

Outlet velocity > 14 fps use Preformed Scour Hole, Type-1

Preformed Scour Hole

Depression $F = 0.5 R_p = 1'$

d_{50} = median stone size for Type 1

$$= \frac{0.0125 R_p^2}{TW} \times \left(\frac{Q}{R_p^{2.5}}\right)^{1.33}$$

$$= \frac{0.0125 (2)^2}{0.73} \times \left(\frac{14.83}{(2)^{2.5}}\right)^{1.33}$$

$$= 0.25 \text{ ft}$$

Stone size = Modified Riprap since $d_{50} < 0.42$ ft

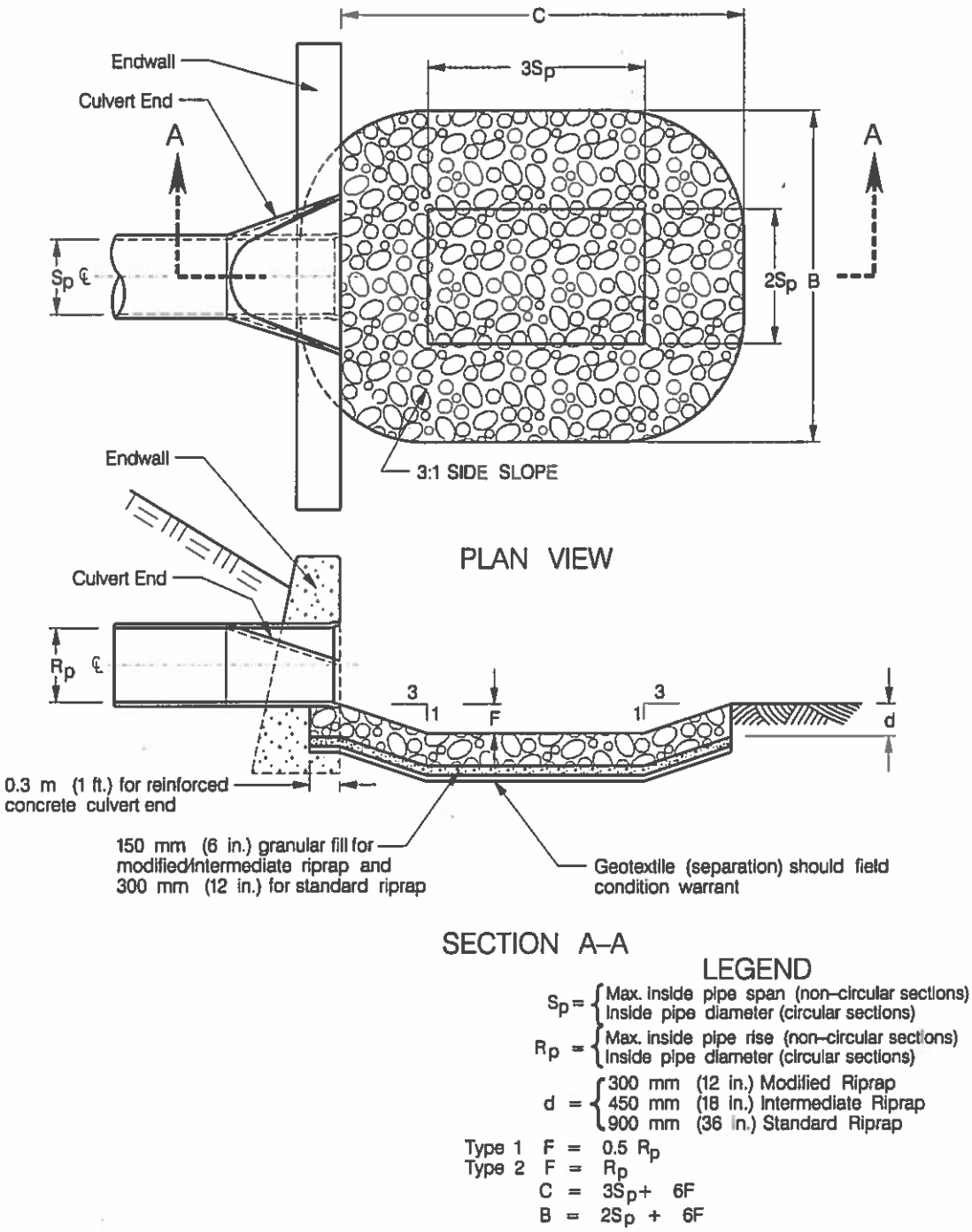
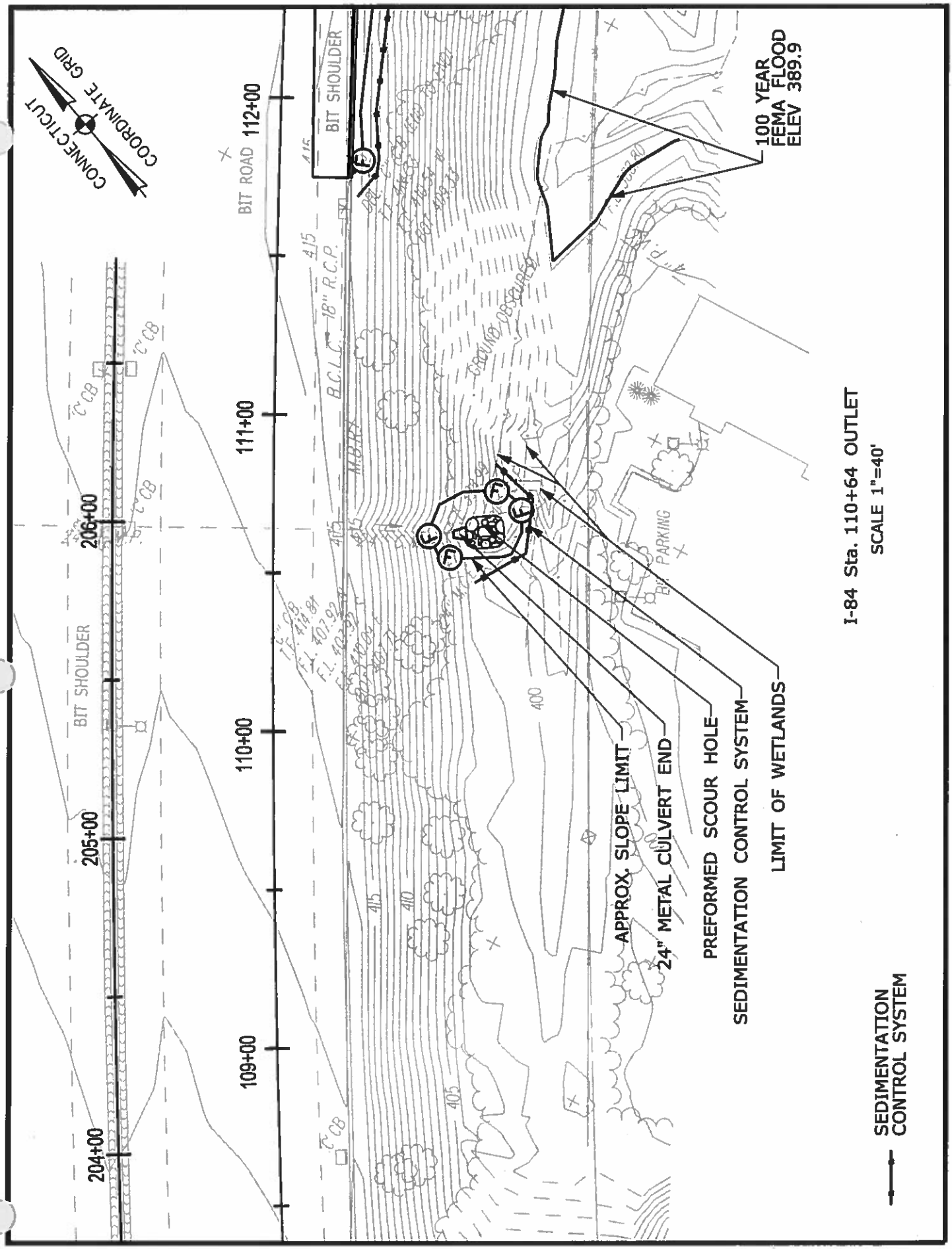


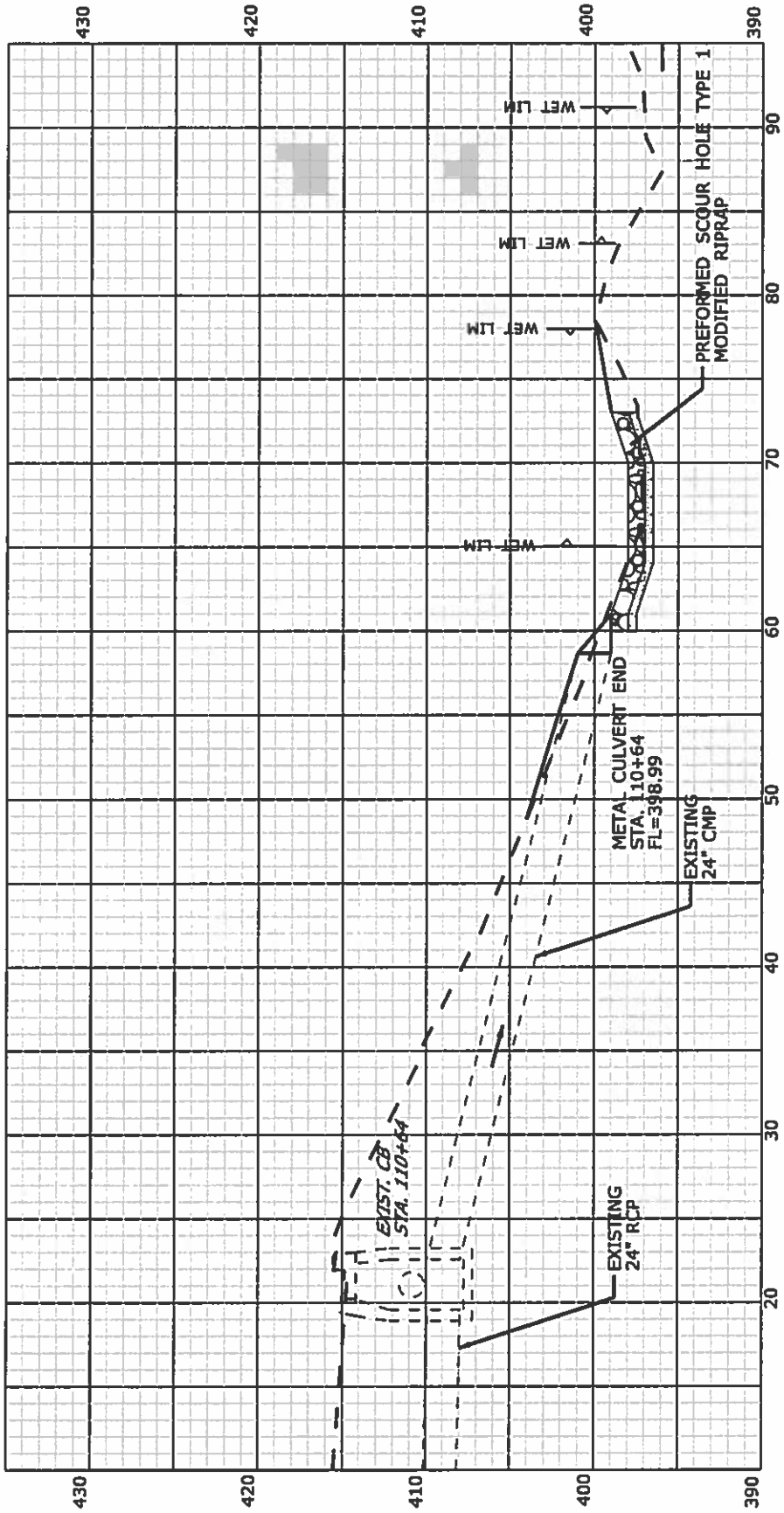
Figure 11-15 Preformed Scour Hole Type 1 and Type 2

OUTLET PROTECTION
OUTLET VELOCITY > 14 feet/sec or Length of Apron exceeds limits shown on Tables 11-12.1 and 11-13.1

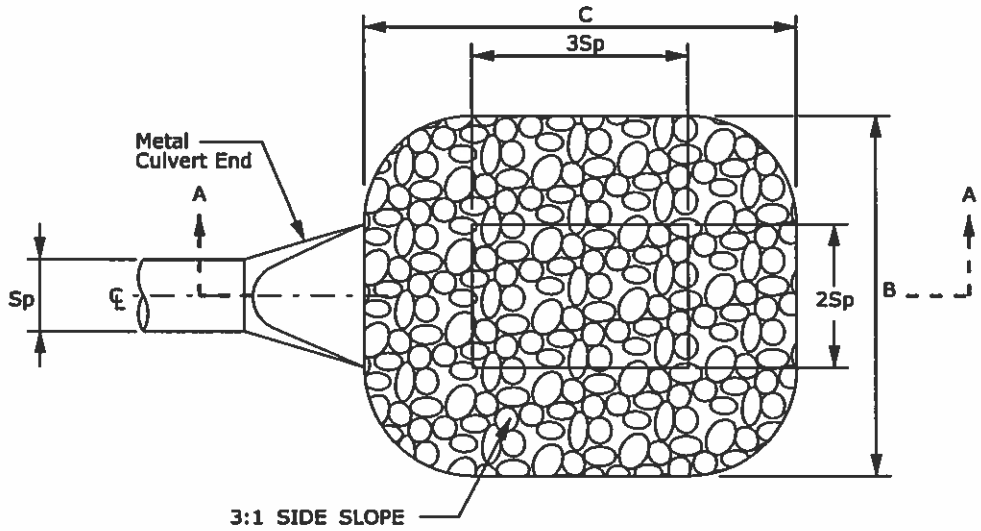
Preformed Scour Hole										
(See Figure 11-15)	PIPE DIAMETER OR SPAN (in)									
	12	15	18	24	30	36	42	48	54	60
Type 1										
B	5	6	8	10	13	15	18	20	23	25
C	6	8	9	12	15	18	21	24	27	30
d	Depends on riprap type(see Figure 11-15)									
$2S_p$	2.0	2.6	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
$3S_p$	3.0	3.9	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
$F = 0.5\ S_p$	0.5	0.625	0.75	1	1.25	1.5	1.75	2	2.25	2.5
Type 2										
B	8	10	12	16	20	24	28	32	36	40
C	9	11	14	18	23	27	32	36	41	45
d	Depends on riprap size (see Figure 11-15)									
$2S_p$	2.0	2.6	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
$3S_p$	3.0	3.9	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
$F = S_p$	1.0	1.3	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0

Table 11-14.1 - Dimensions of Preformed Scour Hole (Feet)


CONNECTICUT COORDINATE GRID
BIT SHOULDER
BIT ROAD
112+00
111+00
110+00
109+00
206+00
205+00
204+00
BIT SHOULDER
18" R.C.P.
B.C.L.
GROUND OBSCURED
BIT PARKING
100 YEAR FEMA FLOOD ELEV 389.9
APPROX. SLOPE LIMIT
24" METAL CULVERT END
PREFORMED SCOUR HOLE
SEDIMENTATION CONTROL SYSTEM
LIMIT OF WETLANDS
I-84 Sta. 110+64 OUTLET
SCALE 1"=40'
SEDIMENTATION CONTROL SYSTEM

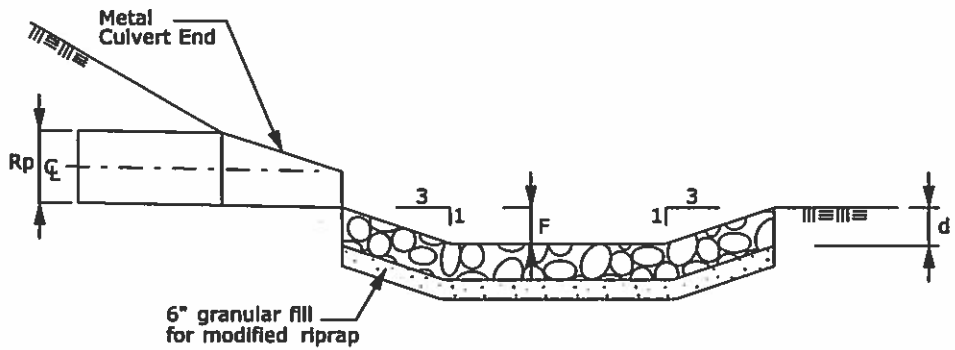


I-84 EB ON RAMP
STA. 110+64



PLAN VIEW

STATION	Rp	Sp	F	C	B	RIPRAP
110+62	2'	2'	1'	12'	10'	MODIFIED



SECTION A-A

d = 12" Modified Riprap
18" Intermediate Riprap
36" Standard Riprap

PREFORMED SCOUR HOLE TYPE 1
STA. 110+62

4. I-84 Exit 5 Westbound Off-Ramp Inlet Protection – Sta. 561+72

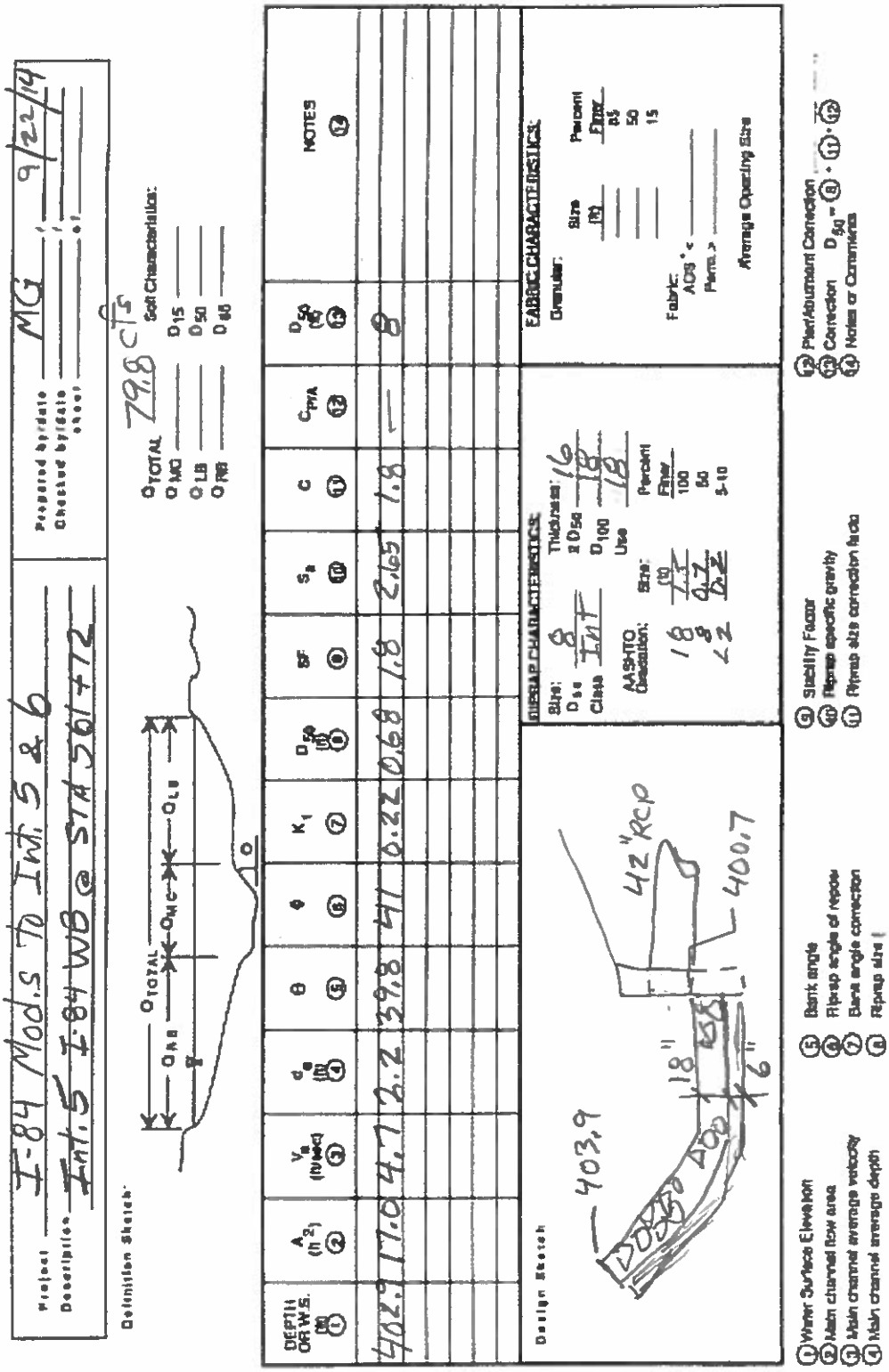


Figure 7-34.1 Riprap Size Particle Erosion – English units

AECOM

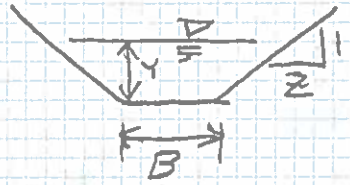
JOB TITLE: I-84 Interchange 5 & 6 Improvements
JOB NO.:
CALCULATION NO.:
ORIGINATOR: MG — DATE: 9/18/2014
REVIEWER: MR — DATE: 9/22/14
SCALE:
SHEET NO. 1 OF

Inlet Scour Protection

Structure O-1 Int. 5 I-84 WB Sta 561+22

Design discharge $Q_{10} = 79.8$ cfs

Design cross section: from MDS-008



$B = 5'$

$Y = 3'$ $\quad n = 0.04$

$Z = 1.2$

$S = 0.01$

Design average Velocity and Depth

HGL Comps.: HGL Elev = 403.29 @ Culvert inlet

Culvert invert elev. = -400.70

Depth = $\approx 2.6'$

Check using Figures 7-16 and 7-17.1

Fig. 7-16: Determine full capacity of channel

$y = 3'$: $Y/B = 3/5 = 0.6 \Rightarrow Z = 1.2 \Rightarrow 0.8$

$$0.8 = \frac{1.486(Q)0.04}{5^{8/3}\ 0.01^{1/2}} \Rightarrow Q = \frac{0.8(5^{8/3})0.01^{1/2}}{1.486(0.04)} = 98.4 \text{ cfs}$$

Too Low! Try 7-17.1

Grid: 10x10 = 1"

AECOM

JOB TITLE
JOB NO. CALCULATION NO.
ORIGINATOR DATE
REVIEWER DATE
SCALE SHEET NO. 2 OF

Fig. 7-17.1:

$d/B = 3/5 = 0.6$, $z = 1.2$, $B = 5'$, $S = 0.01$

$\Rightarrow Qn = 5.5$

$Q = 5.5/0.04 = 137.5$ cfs

Check using Manning's Formula:

$A = 3(5) + 2(1/2 \times 3 \times 3.6) = 25.8\ ft^2$

WP: $x = \sqrt{3^2 + 3.6^2} = 4.68$

$WP = 2(4.68) + 5 = 14.4'$

$R = \frac{A}{WP} = 25.8/14.4 = 1.8$

$Q = AV = A \frac{1.486}{n} R^{2/3} S^{1/2}$

$= 25.8 \times \frac{1.486}{0.04} 1.8^{2/3}\ 0.01^{1/2}$

$= 141.8$ cfs ≈ 137.5 cfs OK

Now determine average V and y in channel

Grid: 10x10 = 1"

AECOM

JOB TITLE
JOB NO. CALCULATION NO.
ORIGINATOR DATE
REVIEWER DATE
SCALE SHEET NO. 3 OF

Fig. 7-17.1

$Qn = 79.8(0.04) = 3.2$, $S = 0.01$, $B = 5$

$\Rightarrow d/B = 0.58$ $\quad d = 0.58(5)$
$= 2.9'$

Try $d = 2.6'$

$A = 5(2.6) + 2.6^2(1.2) = 21.11$ sf

$WP = 2\sqrt{2.6^2 + (2.6 \times 1.2)^2} + 5 = 13.1$

$R = 21.11/13.12 = 1.6$

$Q = AV = A\frac{1.486}{n}R^{2/3}S^{1/2} = (21.1)\frac{1.486}{0.04}1.6^{2/3}0.01^{1/2}$

$= 107.7$ cfs ✓

Checks w/ online calculator

Fig 7-17.1 Try $d = 2.2'$

$Qn = 3.2$, $d/B = 2.2/5 = 0.44 \Rightarrow Qn = 2.8 \approx 2.9$

$Q = \frac{2.8}{0.04} = 70$ cfs

$\frac{2.9}{0.04} = 72.5$

Online calculator: $d = 2.22'$ $V = 4.7$ fps

Grid: 10x10 = 1"

AECOM

JOB TITLE
JOB NO. CALCULATION NO.
ORIGINATOR DATE
REVIEWER DATE
SCALE SHEET NO. 4 OF

Determine riprap size Eq. 7.37

$$D_{50} = 0.001\, V_a^3 \left(\frac{1}{d_a^{1/2}\, K_1^{3/2}} \right)$$

$d_{avg} = 2.22'$, $V_{avg} = 4.7$ fps, K_1 ?

$$K_1 = \left(1 - \frac{\sin^2\theta}{\sin^2\Phi} \right)^{0.5}$$

C ≡ correction factor : assume C = 1.0 for sp. gr. = 2.65

θ : bank angle = $\arctan \frac{1}{1.2} = 39.8°$

Φ : angle of repose Chart 4 → $\Phi = 41°$

$$\therefore K_1 = \left(1 - \frac{(\sin^2 39.8)}{(\sin^2 41.0)} \right)^{0.5} = 0.22$$

$$\therefore D_{50} = 0.001 \left(4.7^3\right) \left(\frac{1}{\sqrt{2.22}\; 0.22^{1.5}} \right)$$

$$= 0.68' \approx 8''$$

Grid: 10x10 = 1"

AECOM

JOB TITLE
JOB NO. CALCULATION NO.
ORIGINATOR DATE
REVIEWER DATE
SCALE SHEET NO. 5 OF

Correction factor for sharp bend

Fig. 28 Assume SF = 1.8

$\Rightarrow C = 1.8$

$\therefore D_{50} = 0.68'(1.8) = 1.2'$

Use Intermediate Riprap

Thickness: not less than $2D_{50}$

$\Rightarrow t = 18''$

Length: $1.5W = 1.5(5) = 7.5'$

Vertical limit: Should be design water surface elev. + freeboard (1')

Top Elev. = $400.7 + 2.2 + 1 = 403.9'$

Grid: 10x10 = 1"

7.9.14 Rock Riprap Design Procedure

Rock riprap design procedure outlined in the following sections is comprised of three primary sections: preliminary data analysis, rock sizing and revetment detail design. The individual steps in the procedure are numbered consecutively throughout each of the sections. Figure 7-34 provides a useful format for recording data at each step of the analysis.

Preliminary Data

Step 1 Compile all necessary field data including (channel cross section surveys, soils data, aerial photographs, history of problems at site, etc.).

Drain. Comps.

Step 2 Determine design discharge.

MDS-008

Step 3 Develop design cross section(s). Note: The rock sizing procedures described in the following steps are designed to prevent riprap failure from particle erosion.

Step 4 Compute design water surface.

HGL Comps.

A. When evaluating the design water surface, Manning's n should be estimated. If a riprap lining is being designed for the entire channel perimeter, an estimate of the rock size may be required to determine the roughness coefficient.

B. If the design section is a regular trapezoidal shape, and flow can be assumed to be uniform, design procedures in Section 7.7.3 can be used.

C. If the design section is irregular or flow is not uniform, backwater procedures must be used to determine the design water surface.

D. Any backwater analysis conducted must be based on conveyance weighing of flows in the main channel, right bank and left bank.

Step 5 Determine design average velocity and depth.

A. Average velocity and depth should be determined for the design section in conjunction with the computations of step 4. In general, the average depth and velocity in the main flow channel should be used.

N/A B. If riprap is being designed to protect channel banks, abutments, or piers located in the floodplain, average floodplain depths and velocities should be used.

Step 6 N/A Compute the bank angle correction factor K_1 (Equation 7.37, Figures 7-26 and 7-27).

Rock Sizing

Step 7 Determine riprap size required to resist particle erosion (Equation 7.36, Figure 7-25).

A. Initially assume no corrections.

N/A B. Evaluate correction factor for rock riprap specific gravity and stability factor ($C = C_{sg}C_{sf}$).

N/A C. If designing riprap for piers or abutments see Chapter 9, Bridges.

Step 8 If entire channel perimeter is being stabilized, and an assumed D_{50} was used in determination of Manning's n for backwater computations, return to step 4 and repeat steps 4 through 7 with the revised D_{50}.

N/A

Step 9 If surface waves are to be evaluated:

N/A A. Determine significant wave height.

B. Use Figure 7-29 to determine rock size required to resist wave action and Table 7-7 for correction factor).

✓Step 10 Select final riprap.

Revetment Detail Design

Step 11 Determine longitudinal extent of protection required (section 7.8.8).

Step 12 Determine appropriate vertical extent of revetment (section 7.8.8).

Step 13 Design filter layer (section 7.9.12).

A. Determine appropriate filter material size, and gradation.

B. Determine layer thickness.

Step 14 Design edge details (flanks and toe) (section 7.9.13).

INTERSTATE 84 – INTERCHANGE 5

System 4 – Inlet	
System 4 – Inlet	

INTERSTATE 84 – INTERCHANGE 5

System 4 – East Channel	
System 4 – West Channel	

Computed By: YMB
Checked By: JH
Revised By: BJS

Date: 6/3/2008
Date: 6/4/2008
Date: 2/10/2009

Project No. I-84 INTERCHANGE 5 IMPROVEMENTS
Route(s). I-84
Town: Danbury

Hydraulic Grade Line Computation

Design Frequency: 10-year storm

Upstream Structure	(1) Upstream Station	(2) TW (ft)	(3) D_o (in)	(4) Q_o (cfs)	(5) L_o (ft)	(6) V_o (ft/s)	(7) $V_o^2/2g$ (ft)	(8) H_o (ft)	(9) SF_o (ft/ft)	(10) H_f (ft)	(11) K_o	(12) C_D	(13) C_d	(14) C_D	(15) C_p	(16) C_s	(17) K* (ft)	(18) $K(Vo^2/2g)$ (ft)	(19) EGL_o (ft)	(20) EGL_i (ft)	(21) HGL (ft)	(22) TOC Elev (ft)
System 4																						
CB-4		391.01	18	0.69	34	11.32	1.99	0	0.273849	9.31	1.45	1.00	0.19	1.00	1.00	1.00	0.28	0.55	393.00	402.32	402.21	406.10
CB-3		402.24	18	0.07	16	0.24	0.00	0	0.000086	0.00	0.50	1.00	1.00	1.00	1.00	1.00	0.50	0.00	402.24	402.24	402.24	406.31
CB-2		391.49	42	82.70	156	21.18	6.97	0	0.031407	4.90	0.22	1.00	0.44	1.00	1.00	1.00	0.10	0.67	398.46	403.36	401.84	414.47
CB-1		401.98	42	81.70	10	9.35	1.36	0	0.018065	0.18	0.51	1.00	0.44	1.00	1.00	1.00	0.22	0.30	403.34	403.52	402.02	414.47
PMH-1		402.36	42	80.72	60	8.84	1.21	0	0.006451	0.39	0.41	1.00	0.44	1.00	1.00	1.00	0.18	0.22	403.57	403.96	402.48	414.84
PCB-1		402.74	42	80.73	8	9.27	1.33	0	0.007555	0.06	0.25	1.00	0.44	1.00	1.00	1.00	0.11	0.15	404.08	404.14	~~402.66~~	414.20
O-1		402.82	42	79.80	20	9.17	1.31	0	0.031353	0.63	0.50	1.00	1.00	1.00	1.00	1.00	0.50	0.65	404.13	404.75	403.29	401.00
CB-5a		390.59	15	7.62	12	12.42	2.40	0	0.037341	0.45	0.45	1.00	0.45	1.00	1.00	1.00	0.20	0.49	392.98	393.43	~~392.61~~	396.00
CB-4a		394.32	15	5.49	54	22.57	7.91	0	0.244141	13.18	0.44	1.00	0.42	1.00	1.00	1.00	0.18	1.46	402.23	415.42	414.95	420.75
CB-3a		415.21	15	4.29	60	5.98	0.56	0	0.010804	0.65	0.55	1.00	0.39	1.00	1.00	1.00	0.21	0.12	415.76	416.41	416.04	420.78
CB-2a		416.12	15	3.09	10	3.19	0.16	0	0.021766	0.22	0.56	1.00	0.36	1.00	1.00	1.00	0.20	0.03	416.28	416.50	416.21	420.78
CB-1a		416.26	15	1.46	64	1.85	0.05	0	0.022301	1.43	0.50	1.00	1.00	1.00	1.00	1.00	0.50	0.03	416.32	417.75	417.57	421.00

Q_{10} Channel

HGL_{10} @ O-1

Table 11-10 Hydraulic Grade Line Computation Form

Table 11

STORM DRAIN COMPU ON SHEET - English

Computed: YMB Date: 6/2/2008 Project: I-84 INTERCHANGE 5 IMPROVEMENTS
Checked: JH Date: 6/5/2008 Route: I-84
Station:
Town: Danbury

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
STATION		Flow Time, Tc (min)			AC				PIPE								Velocity (fps)	
From	To	To Inlet	In Pipe	Accumulated	Increment	Total	Rainfall Intensity, I(in/hr)	Total System Flow CIA = Q (cfs)	Size (in.)	Type	"n"	Length (ft)	Upstream Invert (ft)	Downstream Invert (ft)	Slope (ft/ft)	Full Capacity, Qf (cfs)	Flowing Full, Vf	Design Flow, V
System 4																		
CB-1	CB-2	5.00	0.01	5.01	0.28	11.37	3.82	81.70	42	Concrete	0.013	10	399.20	399.00	0.0200	142.28	14.79	15.29
CB-2	O-2	5.00	0.11	5.11	0.26	11.63	3.82	82.70	42	Concrete	0.013	156	399.00	390.00	0.0577	241.64	25.12	5.89
CB-3	CB-4	10.00	0.18	10.18	0.02	0.02	4.80	0.07	18	Concrete	0.013	16	402.00	401.90	0.0063	8.30	4.70	22.74
CB-4	O-2	5.00	0.05	5.05	0.13	0.14	4.77	0.69	18	Concrete	0.013	34	401.90	390.90	0.3235	59.75	33.81	7.79
O-1	PCB-1	17.11	0.02	17.13	10.85	10.85	3.83	79.80	42	Concrete	0.013	20	400.50	399.85	0.0325	181.37	18.85	5.98
PCB-1	PMH-1	5.00	0.01	5.01	0.25	11.10	3.83	80.73	42	Concrete	0.013	8	399.85	399.77	0.0100	100.60	10.46	11.73
PMH-1	CB-1	5.00	0.10	5.10	-	11.10	3.83	80.72	42	Concrete	0.013	60	399.67	399.20	0.0078	89.04	9.25	22.57

Q_{10} Channel

Table 11-8 Storm Drain Computation Sheet - English units

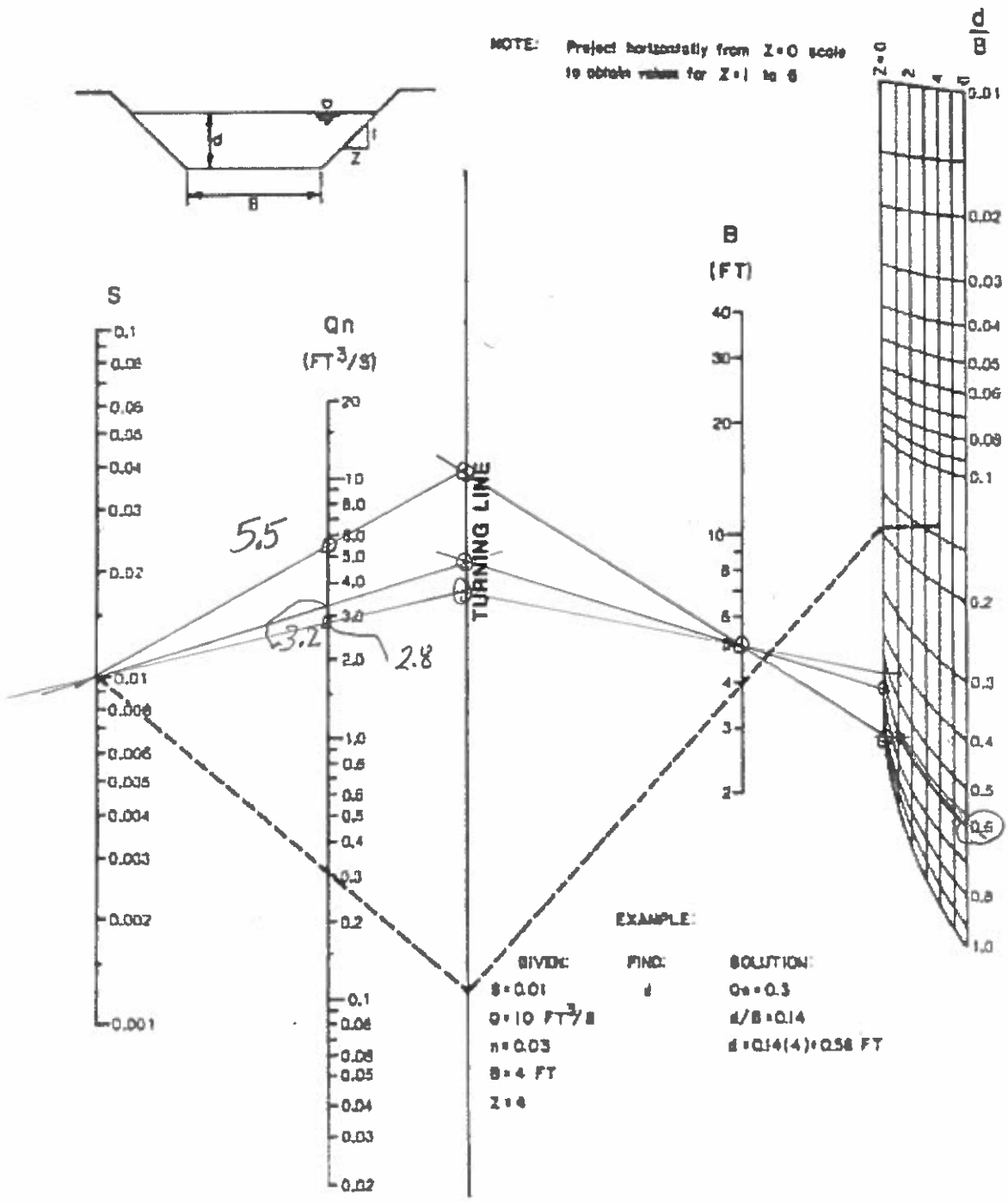


Figure 7-17.1 Nomograph For Normal Depth – English units

MODIFIED RIPRAP

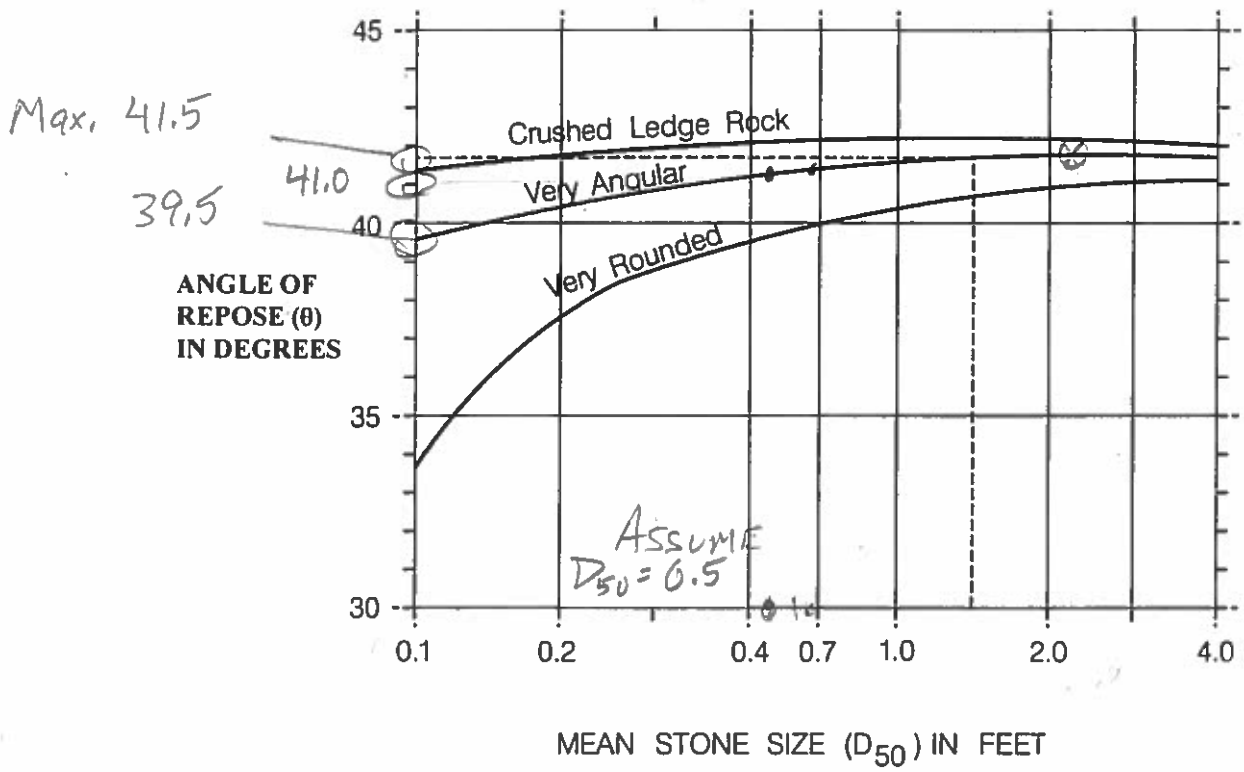


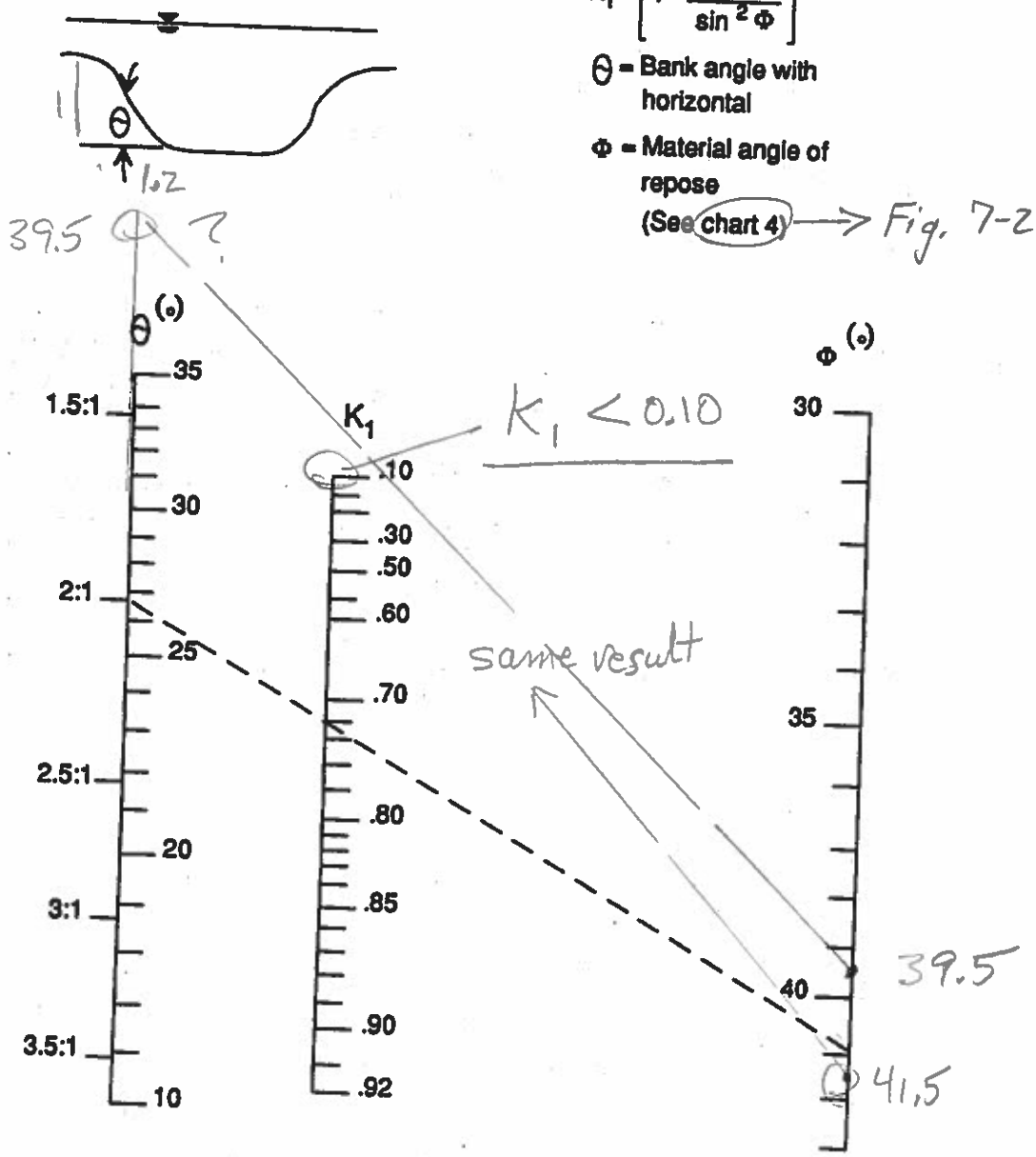
Figure 7-27.1 Angle Of Repose Of Riprap in Terms Of Mean Size and Shape Of Stone (English units)

$\tan\theta = \frac{opp}{adj} = \frac{1}{1.2}$ $\theta = \tan^{-1}(0.8333) = 39.8^\circ$

$$K_1 = \left[1 - \frac{\sin^2\theta}{\sin^2\Phi}\right]^{0.5}$$

θ = Bank angle with horizontal

Φ = Material angle of repose (See chart 4) → Fig. 7-221



Example 1.

Given:
θ = 2:1
Very Angular
Φ = 41°

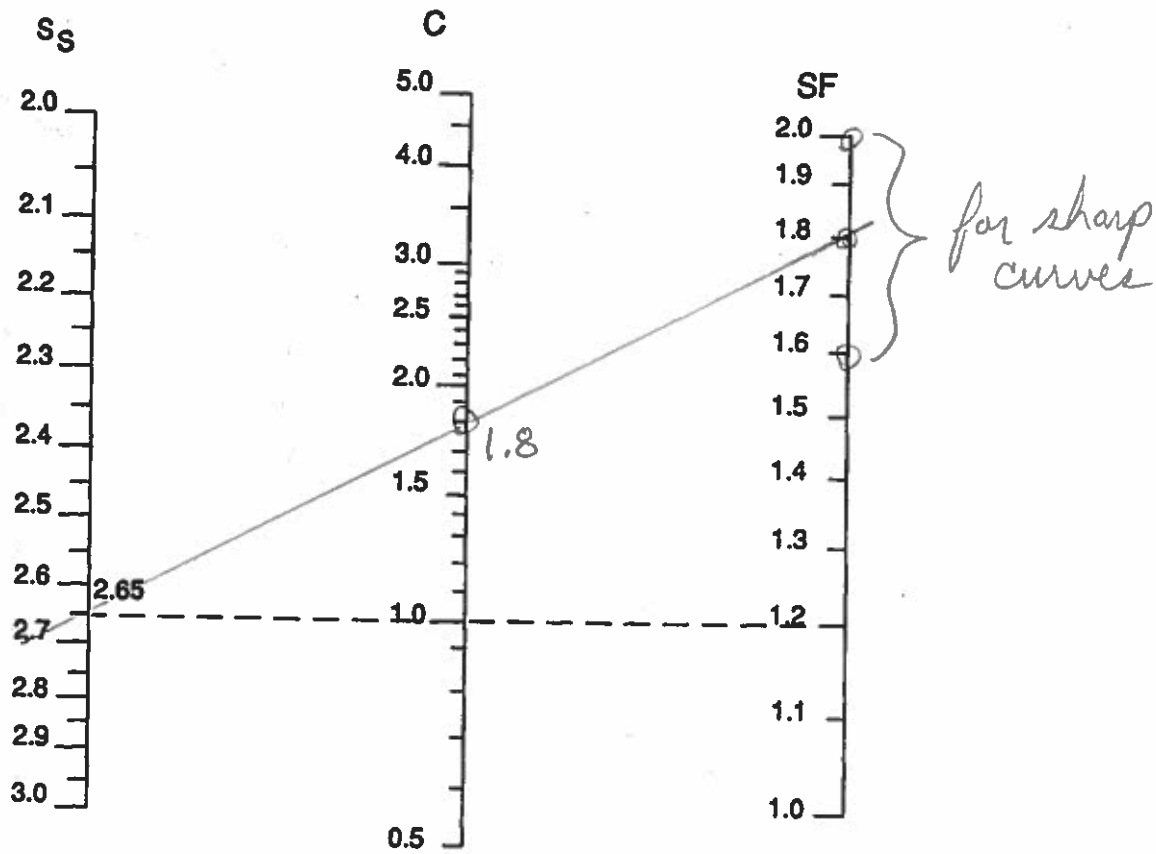
Find:
K_1

Solution:
K_1 = 0.73

Figure 26. Bank angle correction factor (K_1) nomograph (chart 4); example 1.

$C = 1.61\ SF^{1.5}/(S_S - 1)^{1.5}$

C = D_{50} CORRECTION FACTOR
SF = STABILITY FACTOR
S_S = SPECIFIC GRAVITY OF ROCK



Example:

Given:
S_S = 2.65
SF = 1.2

Solution:
C = 1.0

Figure 28. Correction factor for riprap size (chart 2); example 1.

APPENDIX C

NRCS SOIL MAPS

Custom Soil Resource Report
Soil Map

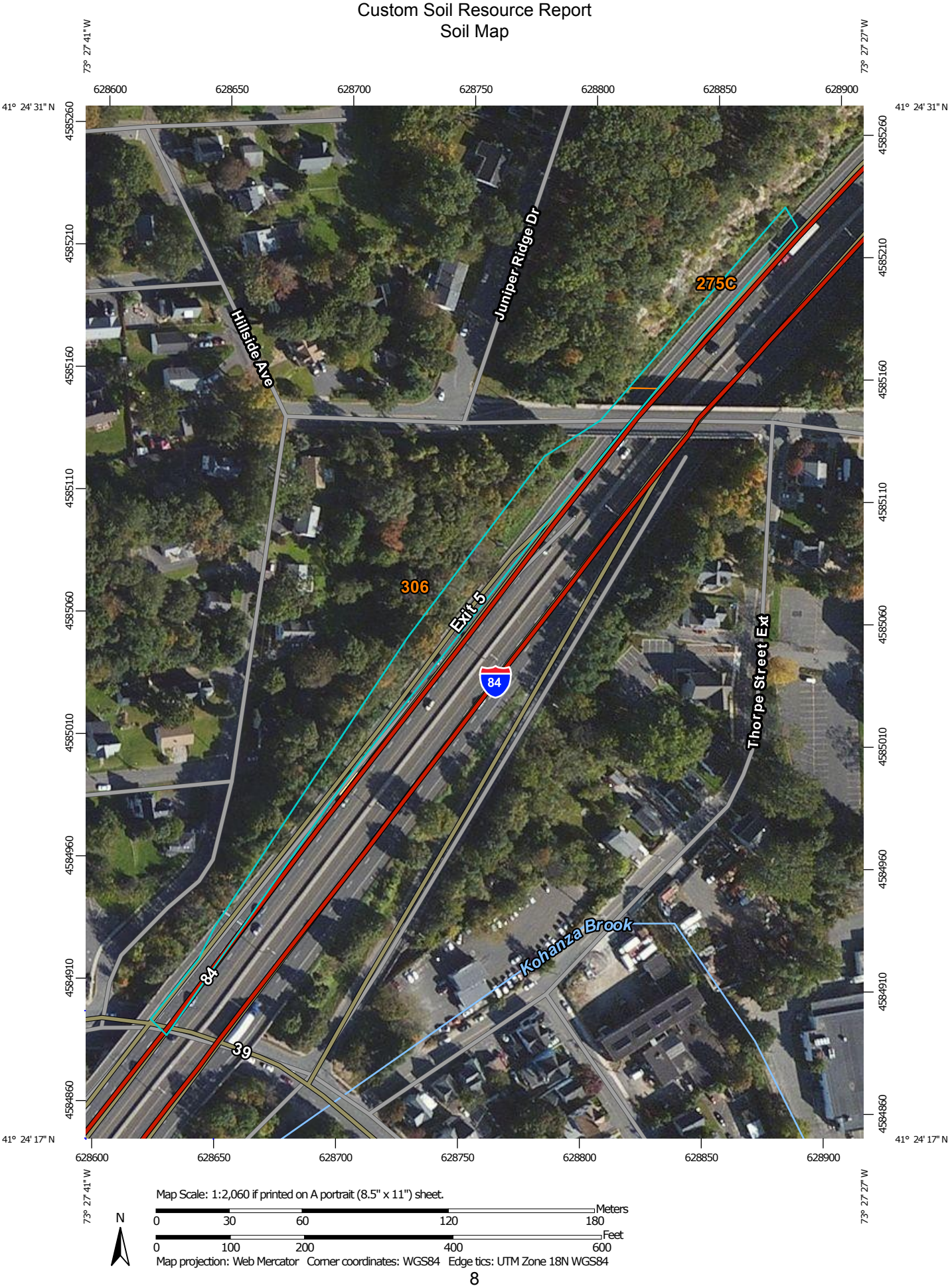
Map Scale: 1:2,560 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84


73° 27' 41" W
73° 27' 27" W
628600
628650
628700
628750
628800
628850
628900
41° 24' 31" N
41° 24' 17" N
4585260
4585210
4585160
4585110
4585060
4585010
4584960
4584910
4584860
Hillside Ave
Juniper Ridge Dr
275C
306
Exit 5
84
Thorpe Street Ext
Kohanza Brook
84
39
Map Scale: 1:2,060 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0
30
60
120
180
Feet
0
100
200
400
600
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

Map Scale: 1:5,860 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

APPENDIX D

INSPECTIONS AND MONITORING REPORT FORMS

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

DOT Environmental Inspection Report

Instructions

The following Construction Site Environmental Inspection Report (CSEIR) is to be used on all Department of Transportation (DOT) construction projects. A new form must be filled out at a minimum of once a week and within twenty four (24) hours after any storm event with precipitation greater than .10 inches. For projects that hold an Individual Inland Wetlands Permit from the Connecticut Department of Environmental Protection (DEP), a monthly submittal including all the completed CSEIRs will need to be sent to DEP. For all other DOT projects the CSEIRs must be kept in the field office as part of the Stormwater Pollution Control Plan (SWPCP).

Using the Inspection Report:

This CSEIR is designed to be customized according to the SWPCP that has been developed for each individual construction project. It will need to be adjusted to match the existing site conditions and indicate the most current Best Management Practices (BMPs) being implemented at any given date. At the beginning of construction for each project, a site plan shall be developed that identifies, by number, all potential discharge locations that will collect runoff from a disturbed area during the current phase of construction. Once the discharge locations have been identified by number, a brief description of the BMP will need to be listed in the site specific section of the CSEIR. Examples of a site specific BMPs include construction entrances, temporary sediment traps, temporary sediment basins, or localized areas of silt fence (e.g., silt fence along Main Street; silt fence along toe of slope at Wetland A, etc.). All areas that will be used for construction operations need to be included in the site specific BMPs section including Staging Areas, Waste Stockpile Areas, and Field Office locations.

To facilitate simpler inspections, the "General Information" section and "BMP and Location" section can be filled out on a blank inspection report at the beginning of construction and then copied for re-use as long as the site specific locations remain the same. Any additional BMPs or other changes that result from staged construction or corrective actions need to be included on the site plan and CSEIR within three (3) days following an inspection.

During the site inspection the inspector will need to walk the site with a copy of the site map and CSEIR. Each numbered location will need to be inspected and any deficiencies or maintenance issues identified and documented.

The "Overall Site Issues Reference Checklist" should be consulted when completing the CSEIR to help identify any locations where maintenance or additional BMPs may be required. This checklist is not submitted with the CSEIR but should be kept on file for future reference.

Overall Site Issues Reference Checklist

Below are some general site issues that should be assessed during inspections. This Check List should be consulted during the site inspection and used to determine the appropriate BMP corrective actions required in BMP Maintenance section above. ***Not required to be included with CSEIR submission or as part of certification***

BMP/activity	Completed	Maint. Required	Corrective Action by Contractor- Note completion date and action taken
Are all slopes and disturbed areas not actively being worked properly stabilized?	❑Yes ❑No	❑Yes ❑No	
Is there any evidence of erosion occurring throughout the project site?	❑Yes ❑No	❑Yes ❑No	
Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	❑Yes ❑No	❑Yes ❑No	
Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	❑Yes ❑No	❑Yes ❑No	
Are discharge points and receiving waters free of any sediment deposits?	❑Yes ❑No	❑Yes ❑No	
Are storm drain inlets properly protected?	❑Yes ❑No	❑Yes ❑No	
Is the construction exit preventing sediment from being tracked into the street?	❑Yes ❑No	❑Yes ❑No	
Is trash/litter from work areas collected and placed in covered dumpsters?	❑Yes ❑No	❑Yes ❑No	
Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	❑Yes ❑No	❑Yes ❑No	
Are vehicle and equipment fueling, cleaning, and maint. areas free of spills, leaks, or any other deleterious material?	❑Yes ❑No	❑Yes ❑No	
Are materials that are potential stormwater contaminants stored inside or under cover?	❑Yes ❑No	❑Yes ❑No	
Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	❑Yes ❑No	❑Yes ❑No	
(Other) Describe	❑Yes ❑No	❑Yes ❑No	

State of Connecticut
Department of Transportation
Construction Site Environmental Inspection Report

This Form Must Be Completed At Least Once A Week And Within Twenty Four (24) Hours* Of The End Of A Storm Event That Is 0.1 inches Or Greater
**** Next Working Day or As Directed by Engineer***

General Information

Project Number		**Date**	
Location		**Contractor**	
Permit Number(s)		**Project Engineer /Phone No**	

Type of Inspection: Check all that are applicable

☐ Weekly ☐ Pre-storm event ☐During storm event ☐ Post-storm event

Weather Information

Weather at time of this inspection? ☐ Clear ☐Cloudy ☐ Rain ☐ Sleet ☐ Fog ☐ Snowing ☐High Winds Temperature: _____

Has there been a storm event since the last inspection? ☐**Yes** ☐**No** **If yes, provide:**

Storm Start Date: _____ Time: _____Duration (hrs): _____ Type of Event: _____

Approx. Amount of Precipitation (in): _____

Additional comments

Project No. _____ **Location** _____ **Permit No.(s)** _____ **Date** _____

Site-specific BMPs - *Number the structural and non-structural BMPs on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map for reference with you during your inspections. Note- If have additional locations add rows.*

Location Reference	BMPs Installed	BMP Maint. Required	Remedial Action Required	Remedial Action* If yes, provide description and date contractor notified	Date Fixed	Photo Taken	Repeat Failure
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No			☐Yes ☐No	☐Yes ☐No

ALL REMEDIAL ACTIONS MUST BE COMPLETED WITHIN 24 HOURS

Project No. _____ **Location** _____ **Permit No.(s)** _____ **Date** _____

Are there any sediment discharges to a regulated area or potential wetland occurring or have any occurred since the last inspection? ☐**Yes** ☐**No**

If yes, contact the District Environmental Coordinator immediately and submit project incident report (include description of the discharge including location, time identified, and the approximate amount of sediment)

Incident report attached to this CSEIR? ☐**Yes** ☐**No**

Additional remarks:

CERTIFICATION STATEMENT

"I have personally examined and am familiar with the information submitted in this document and all attachments and 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."

Prepared By: _____

Name **Title**

Signature: _____ **Date:** _____

Proj. Engr/Env. Coord: _____

Name **Title**

Signature: _____ **Date:** _____

I acknowledge receipt of a copy of the CSEIR and will perform the required maintenance or remedial action indicated in the report.

Contractor: _____

Name **Title**

Signature: _____ **Date:** _____

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."

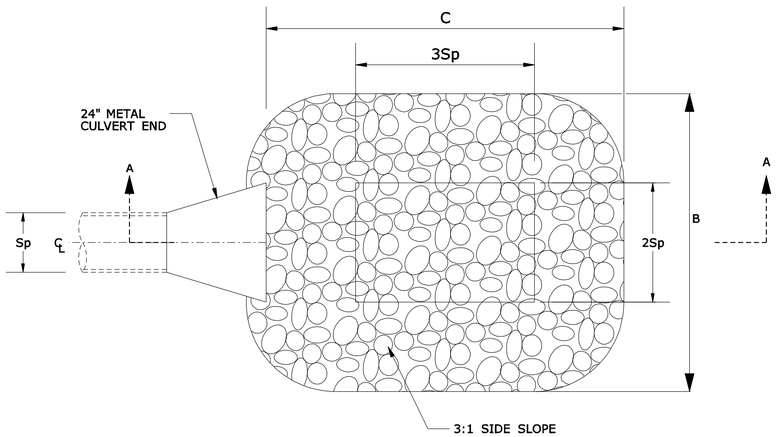
Signature of Permittee	Date
Name of Permittee (print or type)	Title (if applicable)

Note: Please submit this Notice of Termination Form to:

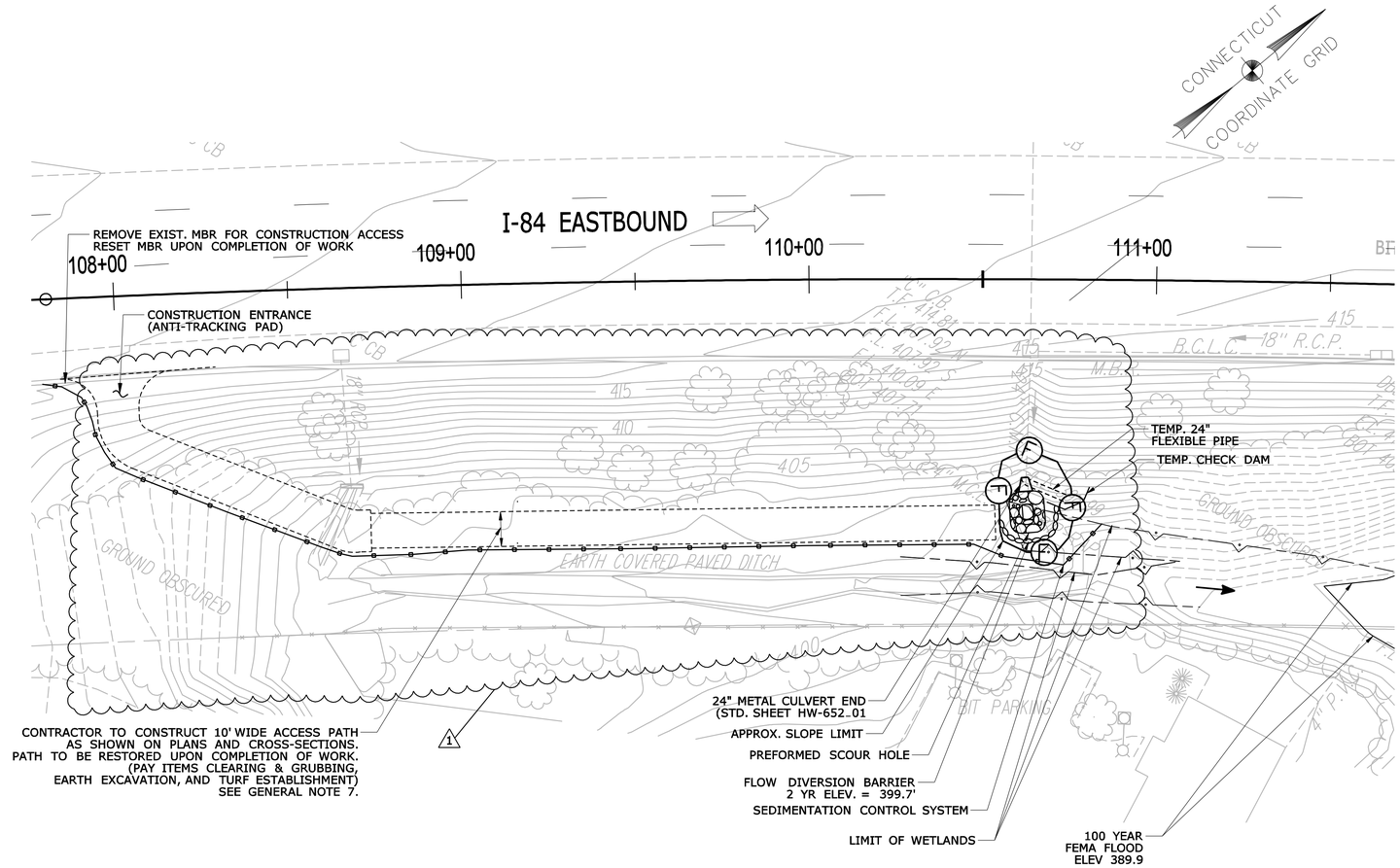
STORMWATER PERMIT COORDINATOR
BUREAU OF WATER MANAGEMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

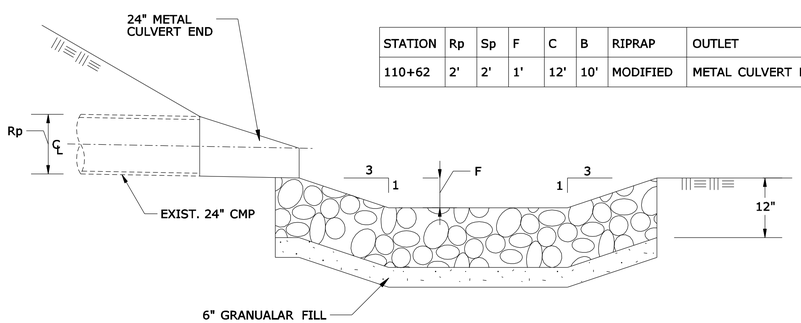
APPENDIX F

PLAN SHEETS



PLAN VIEW





SECTION A-A

STATION	Rp	Sp	F	C	B	RIPRAP	OUTLET
110+62	2'	2'	1'	12'	10'	MODIFIED	METAL CULVERT END

PREFORMED SCOUR HOLE TYPE 1
OUTLET I-84 EXIT 6 EASTBOUND ON-RAMP STA. 110+62

(NOT TO SCALE)

GENERAL NOTES:

1. REFER TO MPT-001 FOR ADDITIONAL STAGING INFORMATION.
2. REFER TO MDS-001 FOR SCOUR HOLE DETAIL.
3. REFER TO THE HANDLING WATER SPECIAL PROVISION, NOTICES TO CONTRACTOR, AND THE APPROVED PERMITS FOR ADDITIONAL REQUIREMENTS.
4. THE CONTRACTOR SHALL PROVIDE FOR DEWATERED PLAN AS APPROVED BY THE ENGINEER.
5. THE COST OF DEWATERING AND HANDLING WATER AS REQUIRED TO CONSTRUCT THE SCOUR HOLE AND GRADING AND INCIDENTAL CONSTRUCTION TO THE WORK, SHALL BE INCLUDED UNDER THE LUMP SUM PRICE FOR "HANDLING WATER (SITE NO.2)".
6. ALL WORK RELATED TO HANDLING WATER AND DEWATERING SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF SAID WORK.
7. CTDOT TO LOCATE LIMITS OF WETLAND PRIOR TO COMMENCEMENT OF CONSTRUCTION. TEMPORARY ACCESS PATH THE ASSOCIATED WORK SHALL BE LOCATED SO AS TO AVOID IMPACT TO WETLANDS.

CONSTRUCTION SEQUENCING NOTES (SUGGESTED):

1. INSTALL SEDIMENT CONTROL SYSTEM.
2. INSTALL TEMPORARY BY-PASS DRAINAGE PIPE IN ACCORDANCE WITH THE HANDLING WATER SPECIAL PROVISION. THE TEMPORARY PIPE WILL REMAIN OPERABLE DURING THE CONSTRUCTION OF THE SCOUR HOLE.
3. CONSTRUCTION OF THE SCOUR HOLE AND GRADING AS SHOWN IN THE CONTRACT DRAWINGS. ADJUST THE TEMPORARY PIPE LOCATION AS REQUIRED TO PERFORM THE WORK.
4. REMOVE TEMPORARY BY-PASS DRAINAGE PIPE AND SEDIMENT CONTROL SYSTEM WHEN WORK IS COMPLETED OR AS DIRECTED BY THE ENGINEER.

HANDLING WATER (SITE NO.2)
OUTLET I-84 EXIT 6 EASTBOUND ON-RAMP STA. 110+62

SCALE 1"=10'

ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	REVISED SURVEY, EXIST. DRAINAGE LOCATION & EXTEND CONST. ENTRANCE	

Filename: HW_MDS-001_034_0313_A1.dgn 10/6/2014 Border Version: 6/1/05

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER: **B. SABEAN**
CHECKED BY: **N. ROLFE**
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

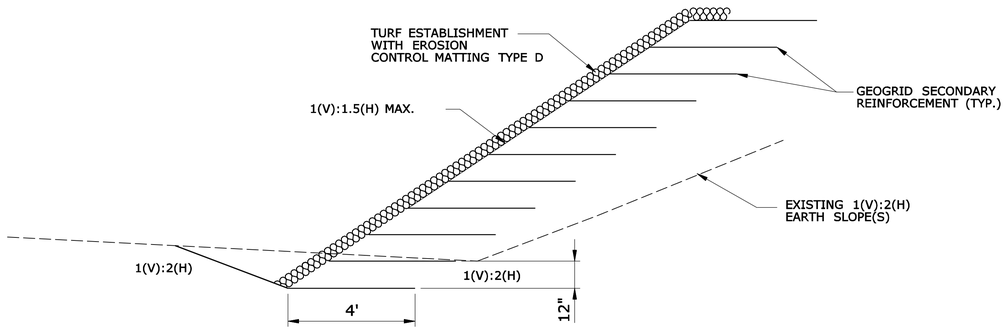
ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **MISCELLANEOUS DETAILS**

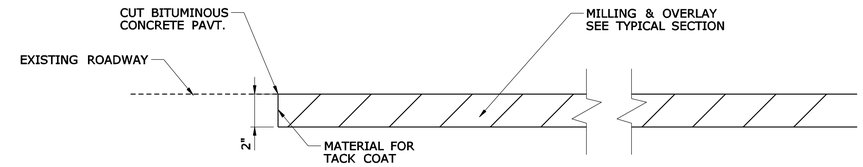
PROJECT NO. **34-313**
DRAWING NO. **MDS-001**
SHEET NO.



NOTE: PER SECTION 2.02.03-5 OF THE STANDARD SPECIFICATION FORM 816 THE EXISTING GROUND WILL BE PLOWED DEEPLY OR CUT INTO STEPS BEFORE FILLING IS BEGUN.

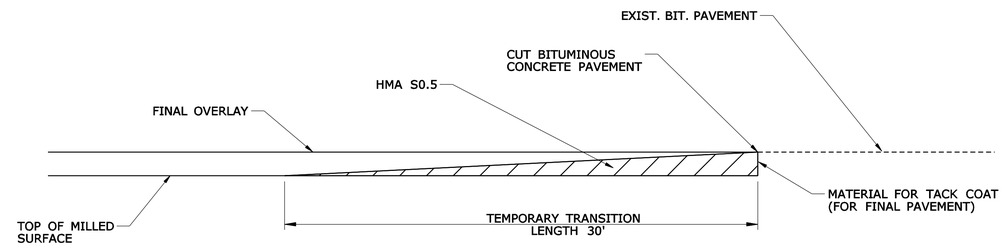
STEEPENED SLOPE PROTECTION FOR SLOPES STEEPER THAN 1(V):2(H)

(NOT TO SCALE)



PAVEMENT TRANSITION TO EXISTING ROADWAY

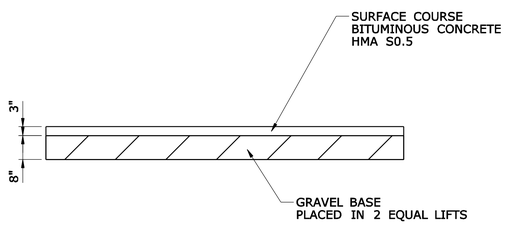
(NOT TO SCALE)



NOTES:
1. TEMPORARY TRANSITION IS TO BE REMOVED PRIOR TO OVERLAY. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE REMOVAL OF TEMPORARY TRANSITION BUT SHALL BE INCLUDED IN THE COST OF "HMA S0.5"

TEMPORARY PAVEMENT TRANSITION

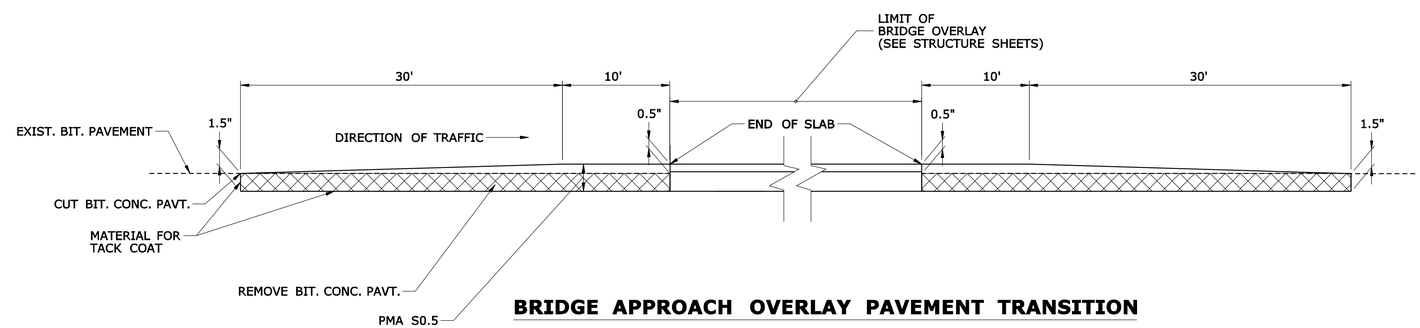
(NOT TO SCALE)



(TO BE PAID FOR AS "TEMPORARY PAVEMENT")

TEMPORARY DRIVEWAY DETAIL

(NOT TO SCALE)



BRIDGE APPROACH OVERLAY PAVEMENT TRANSITION

(NOT TO SCALE)

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Filename: HW_MDS-002_034_0313.dgn 6/6/2014 Border Version: 6/1/05

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DESIGNER/DRAFTER: **B. SABEAN**
CHECKED BY: **N. ROLFE**
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

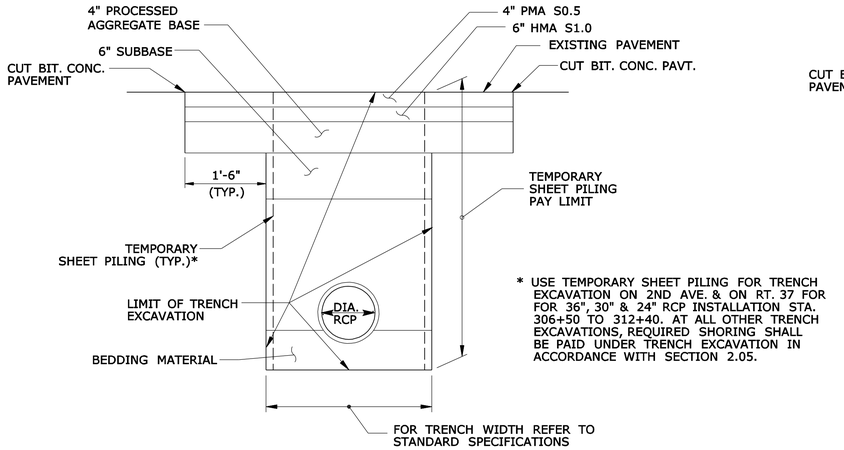
ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **MISCELLANEOUS DETAIL**

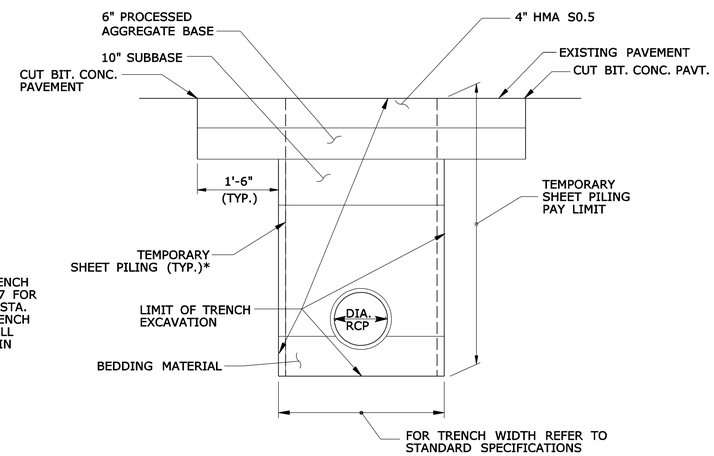
PROJECT NO. **34-313**
DRAWING NO. **MDS-002**
SHEET NO.



* USE TEMPORARY SHEET PILING FOR TRENCH EXCAVATION ON 2ND AVE. & ON RT. 37 FOR FOR 36", 30" & 24" RCP INSTALLATION STA. 306+50 TO 312+40. AT ALL OTHER TRENCH EXCAVATIONS, REQUIRED SHORING SHALL BE PAID UNDER TRENCH EXCAVATION IN ACCORDANCE WITH SECTION 2.05.

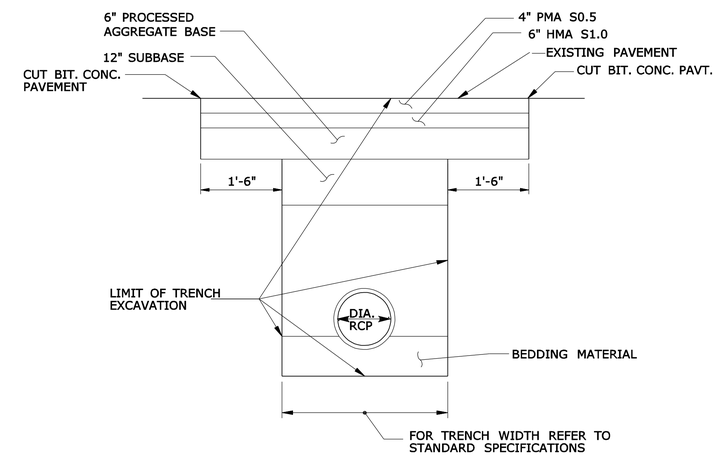
CULVERT INSTALLATION (RTE. 37)

(NOT TO SCALE)



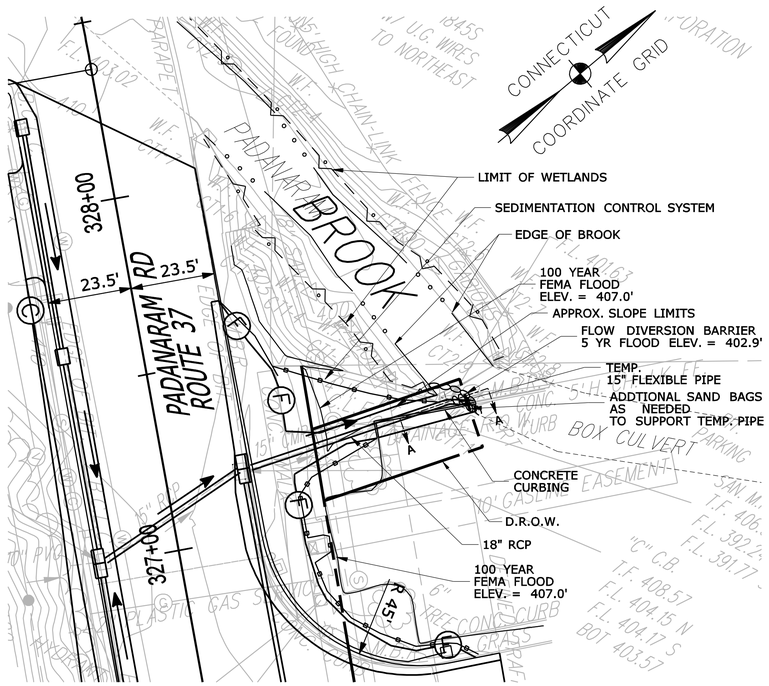
CULVERT INSTALLATION (SECOND AVE.)

(NOT TO SCALE)



CULVERT INSTALLATION (I-84)

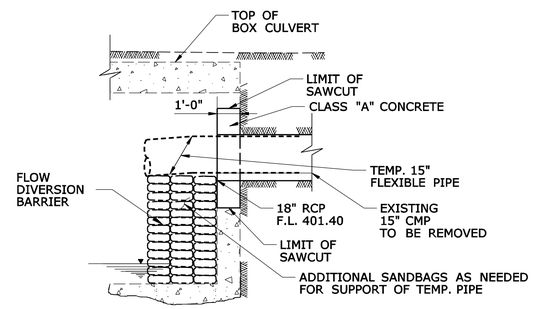
(NOT TO SCALE)



HANDLING WATER (SITE NO.3)

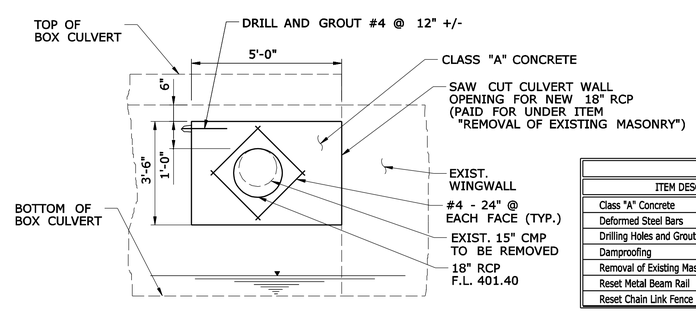
ROUTE 37 OUTLET STA. 327+27 RT

SCALE 1"=10'



SECTION A-A

(NOT TO SCALE)



OUTLET ELEVATION

(NOT TO SCALE)

QUANTITIES		
ITEM DESCRIPTION	UNIT	18" RCP OUTLET
Class "A" Concrete	C.Y.	0.6
Deformed Steel Bars	LB	6
Drilling Holes and Grouting Dowels	E.A.	8
Dampproofing	S.Y.	2
Removal of Existing Masonry	C.Y.	0.6
Reset Metal Beam Rail	L.F.	30
Reset Chain Link Fence	L.F.	20

CONSTRUCTION SEQUENCE NOTES SUGGESTED):

1. INSTALL FLOW DIVERSION BARRIER IN ACCORDANCE WITH THE HANDLING WATER (SITE NO.3) SPECIAL PROVISION AND AS APPROVED BY THE ENGINEER. THE FLOW DIVERSION BARRIER SHALL REMAIN IN PLACE UNTIL THE NEW PIPE IS INSTALLED AND CONCRETE IS SET AS APPROVED BY ENGINEER.
2. INSTALL TEMPORARY BYPASS DRAINAGE PIPE IN ACCORDANCE WITH THE HANDLING WATER (SITE NO.3) SPECIAL PROVISION AS NEEDED TO CONVEY FLOWS FROM THE EXISTING 15" PIPE AROUND THE WORK AREA.
3. CUT THE BOX CULVERT WALL AT THE LOCATION SHOWN AND SUPPORT THE EXISTING 15" CMP.
4. DRILL AND GROUT REINFORCEMENT ALONG PERIMETER OF OPENING AT CENTER OF WALL, AS NOTED IN THE ELEVATION.
5. INSTALL AND SUPPORT THE FIRST SECTION OF THE 18" RCP AND CUT AND SLEEVE THE 15" EXISTING CMP INTO THE 18" RCP.
6. INSTALL REINFORCEMENT ON EACH FACE, AS NOTED IN THE ELEVATION DETAIL.
7. FORM AND POUR CONCRETE OPENING AROUND PIPE IN CULVERT WALL.

GENERAL NOTES:

1. REFER TO THE HANDLING WATER (SITE NO.3) SPECIAL PROVISION, NOTICES TO CONTRACTOR, AND THE APPROVED PERMITS FOR ADDITIONAL REQUIREMENTS.
2. THE COST OF PROVIDING BY PASS DRAINAGE AND DEWATERING OF EXCAVATION AREA AS REQUIRED TO CONSTRUCT THE DRAINAGE PIPE CULVERT CONNECTION AND INCIDENTAL CONSTRUCTION TO THE WORK SHALL BE INCLUDED UNDER THE LUMP SUM PRICE FOR HANDLING WATER (SITE NO.3).
3. ALL WORK RELATED TO HANDLING WATER SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF THE WORK.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Filename: HW_MDS-003_034_0313.dgn 6/16/2014 Border Version: 6/1/05

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DESIGNER/DRAFTER: **B. SABEAN/P. ARZENO**
CHECKED BY: **N. ROLFE**
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

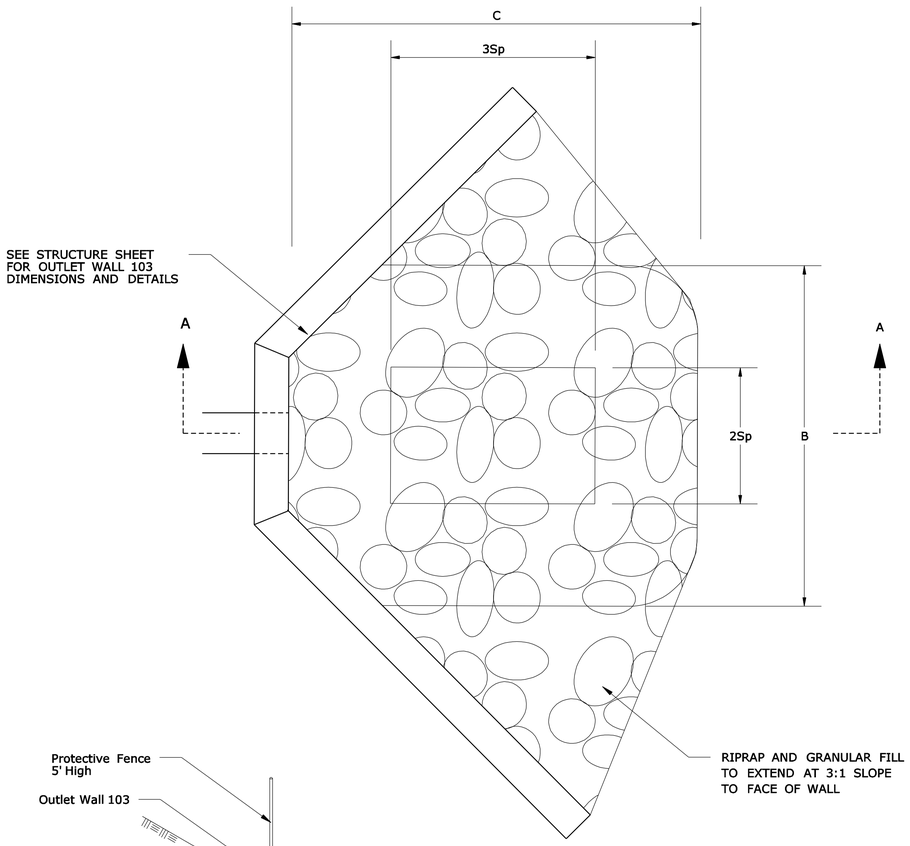
ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

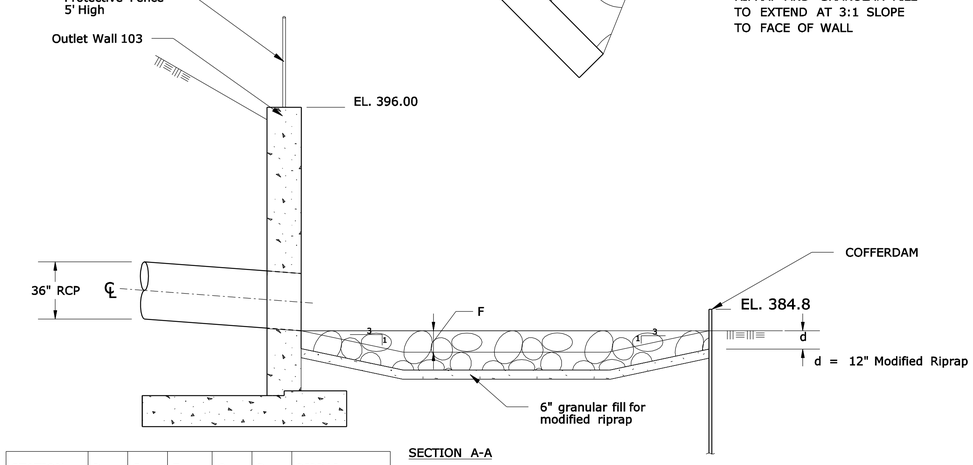
PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **MISCELLANEOUS DETAILS**

PROJECT NO. **34-313**
DRAWING NO. **MDS-003**
SHEET NO.





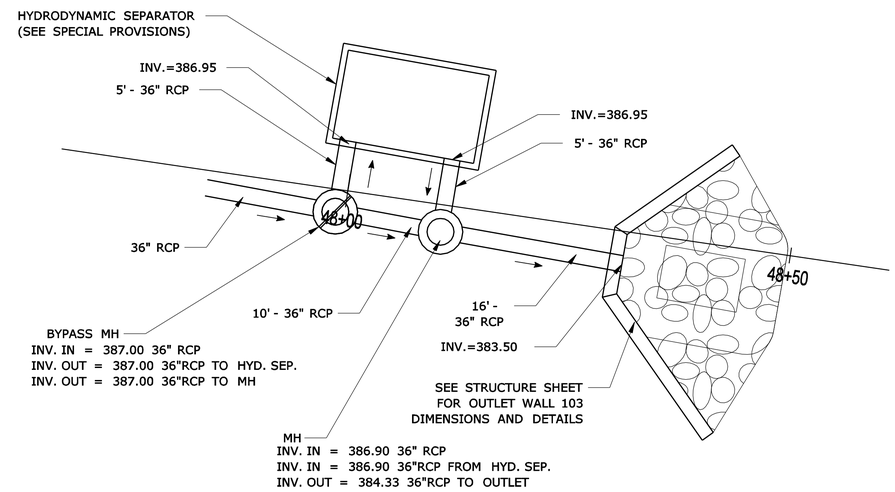
SECTION A-A

STATION	Rp	Sp	F	C	B	RIPRAP
48+35	3'	3'	1.5'	18'	15'	MODIFIED

PREFORMED SCOUR HOLE TYPE 1

OUTLET STA. 48+35

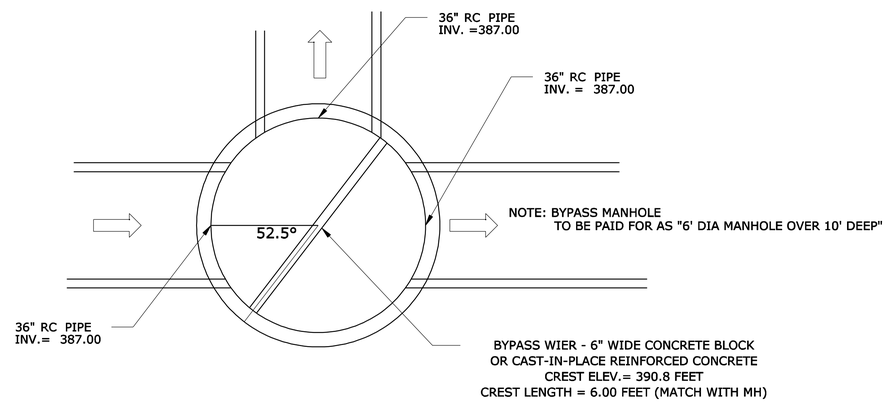
(NOT TO SCALE)



BYPASS MANHOLE & HYDRODYNAMIC SEPARATOR LAYOUT

OUTLET STA. 48+35

(NOT TO SCALE)



BYPASS MANHOLE AT HYDRODYNAMIC SEPARATOR

SECOND AVE. STA. 48+00

(NOT TO SCALE)

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Filename: HW_MDS-004_034_0313.dgn 6/6/2014 Border Version: 6/1/05

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DESIGNER/DRAFTER: **N. ROLFE**
CHECKED BY: **N. GIARDINA**
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

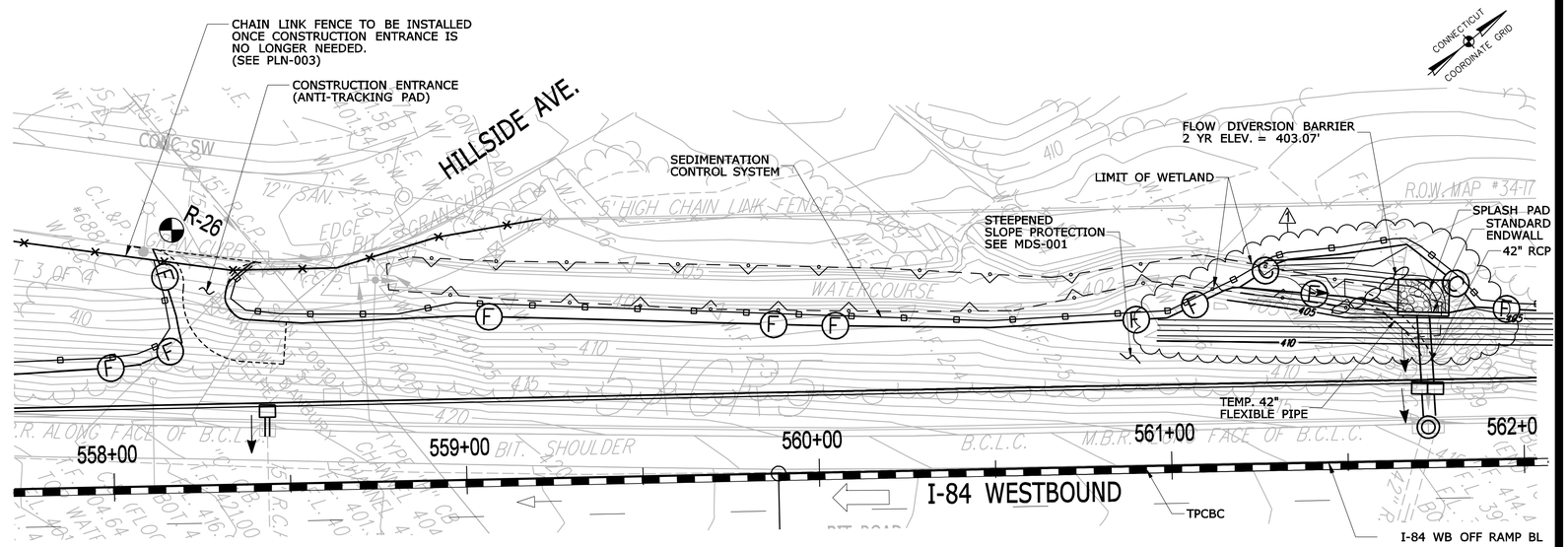
ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

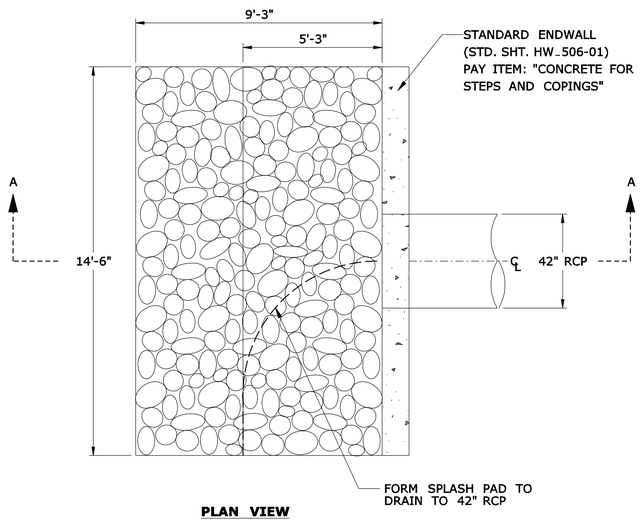
PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

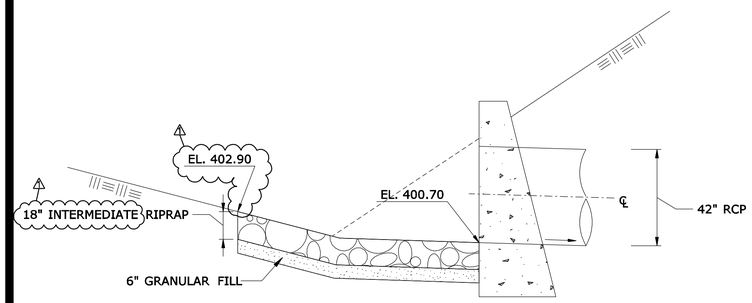
DRAWING TITLE: **MISCELLANEOUS DETAILS**

PROJECT NO. **34-313**
DRAWING NO. **MDS-004**
SHEET NO.





PLAN VIEW



SECTION A-A

42" RCP INLET
I-84 WESTBOUND OFF-RAMP EXIT 5 STA. 561+75

(NOT TO SCALE)

GENERAL NOTES:

1. REFER TO MPT-001 FOR ADDITIONAL STAGING INFORMATION.
2. REFER TO 42" RCP INLET DETAIL.
3. REFER TO THE HANDLING WATER (SITE NO.4) SPECIAL PROVISION, NOTICES TO CONTRACTOR, AND THE APPROVED PERMITS FOR ADDITIONAL REQUIREMENTS.
4. THE COST OF DEWATERING AND HANDLING WATER AS REQUIRED TO CONSTRUCT THE ENDWALL, SPLASH PAD, EMBANKMENT, GRADING AND INCIDENTAL CONSTRUCTION TO THE WORK, SHALL BE INCLUDED UNDER THE LUMP SUM PRICE FOR HANDLING WATER (SITE NO.4).
5. ALL WORK RELATED TO HANDLING WATER AND DEWATERING SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF SAID WORK.

CONSTRUCTION SEQUENCE NOTES (SUGGESTED):

1. INSTALL SEDIMENT CONTROL SYSTEM AND BYPASS DRAINAGE PIPE.
2. INSTALL FLOW DIVERSION BARRIER IN ACCORDANCE WITH THE HANDLING WATER (SITE NO.4) SPECIAL PROVISION AND AS APPROVED BY THE ENGINEER. THE FLOW DIVERSION BARRIER SHALL REMAIN IN PLACE AS REQUIRED TO COMPLETE THE NOTED CONSTRUCTION AND AS APPROVED BY ENGINEER.
3. THE TEMPORARY BY-PASS DRAINAGE PIPE ALIGNMENT SHALL BE ADJUSTED AS REQUIRED TO COMPLET THE WORK IN THE DRY.
4. CONSTRUCTION OF THE ENDWALL, PIPE, SPLASH PAD, AND GRADING AS SHOWN IN THE CONTRACT DRAWINGS. ADJUST THE TEMPORARY PIPE LOCATION AS REQUIRED TO PERFORM THE WORK.
5. REMOVE TEMPORARY BY-PASS DRAINAGE PIPE, FLOW DIVERSION BARRIER, AND SEDIMENT CONTROL SYSTEM WHEN WORK IS COMPLETED OR AS DIRECTED BY THE ENGINEER.

HANDLING WATER (SITE NO.4)
42" HEADWALL INLET

SCALE 1":10'

ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	REVISED RIPRAP, ADD ELEVATION	

Filename: HW_MDS-008_034_0308_A1.dgn 9/25/2014 Border Version: 6/1/05

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DESIGNER/DRAFTER: **B. SABEAN**
CHECKED BY: **N. ROLFE**
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

STATE OF CONNECTICUT NOEL M. PAGAN 11-14 No. 12900 PROFESSIONAL ENGINEER

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

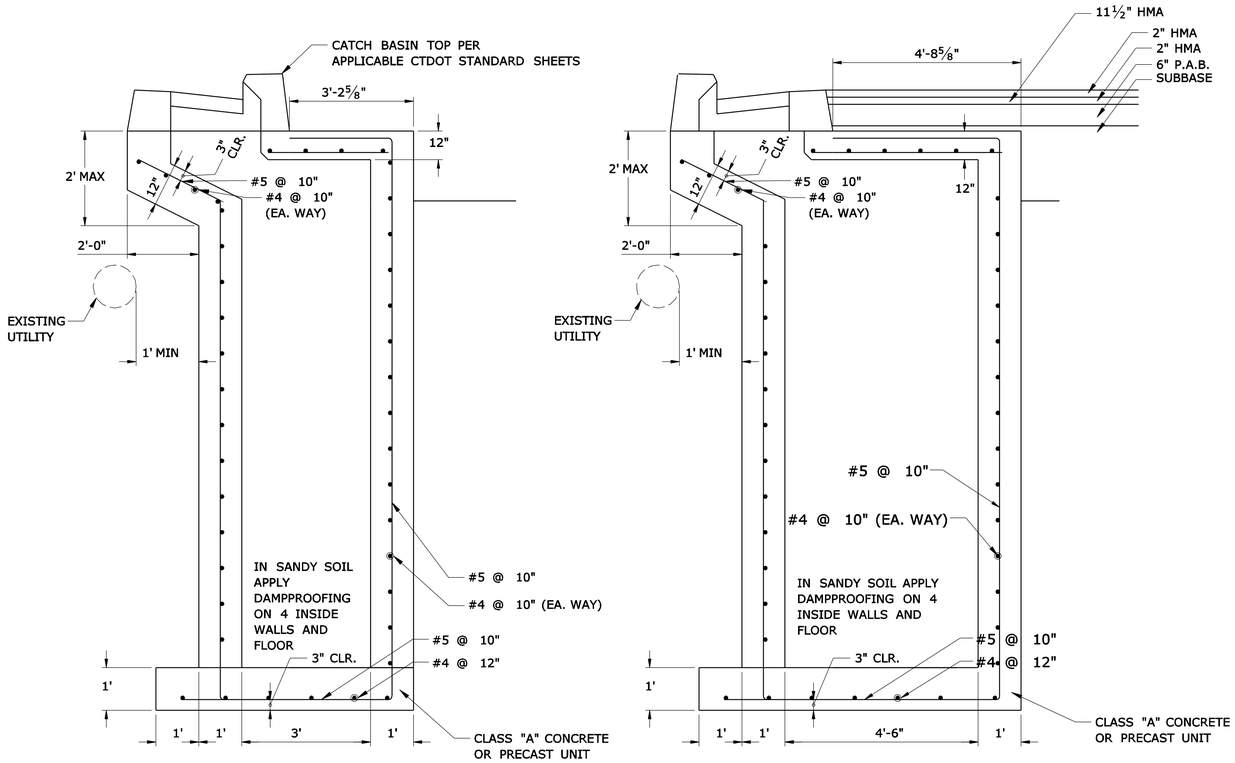
TOWN: **DANBURY**

DRAWING TITLE: **MISCELLANEOUS DETAILS**

PROJECT NO. **34-313**
DRAWING NO. **MDS-008**
SHEET NO.

NOTES FOR OFFSET STRUCTURES:

1. FOR DETAILS OF FRAME AND GRATE SEE STD. SHEET HW_507_07 AND HW_507_08.
2. THE COST OF ALL REINFORCING STEEL SHALL BE INCLUDED IN THE PRICE BID FOR "OFFSET CATCH BASIN".
3. SPECIFIED INSIDE DIMENSION SHALL REMAIN THE SAME REGARDLESS OF OFFSET.
4. REINFORCEMENT: (ASTM A615 GRADE 60) Fs = 24,000 PSI.
5. INSIDE LENGTH OF STRUCTURE = 6'-6" PER STANDARD TYPE "C" CATCH BASIN DOUBLE TYPE II HW_507_03.

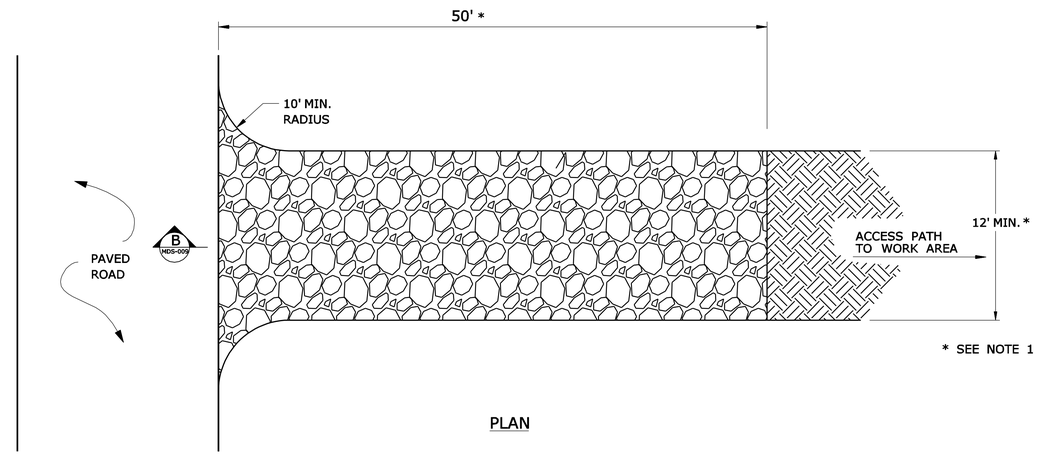


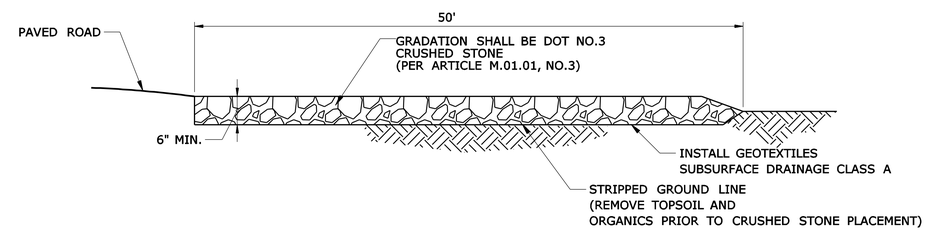
OFFSET CATCH BASIN

(NOT TO SCALE)

NOTES FOR CONSTRUCTION ENTRANCE:

1. ACTUAL ALIGNMENT AND LOCATION OF CONSTRUCTION ENTRANCE (ANTI-TRACKING PAD) TO BE AS DETERMINED IN THE FIELD BY THE ENGINEER.
2. CONSTRUCTION ENTRANCE TO BE TURF ESTABLISHED AND SEEDED AT THE COMPLETION OF THE PROJECT.
3. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
4. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY OR APRON OR PERIMETER ROAD MUST BE REMOVED IMMEDIATELY.
5. DRAINAGE - ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
6. CONSTRUCTION ENTRANCE TO BE PAID FOR AS "ANTI-TRACKING PAD".

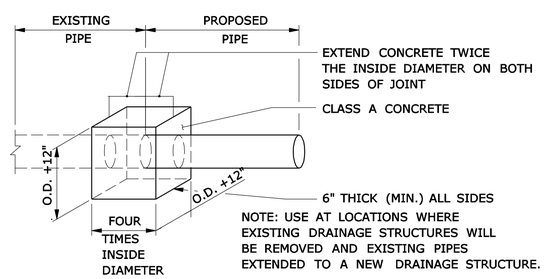




SECTION B (B / MDS-009)

CONSTRUCTION ENTRANCE

(ANTI-TRACKING PAD)
(NOT TO SCALE)



NOTE: USE AT LOCATIONS WHERE EXISTING DRAINAGE STRUCTURES WILL BE REMOVED AND EXISTING PIPES EXTENDED TO A NEW DRAINAGE STRUCTURE.

CONCRETE ENCASEMENT

(AT EXISTING PIPE EXTENSION DETAIL)
N.T.S.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Filename: HW_MDS-009_034_0308.dgn 6/6/2014 Border Version: 6/1/05

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DESIGNER/DRAFTER: B. SABEAN
CHECKED BY: N. ROLFE
SCALE AS NOTED

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

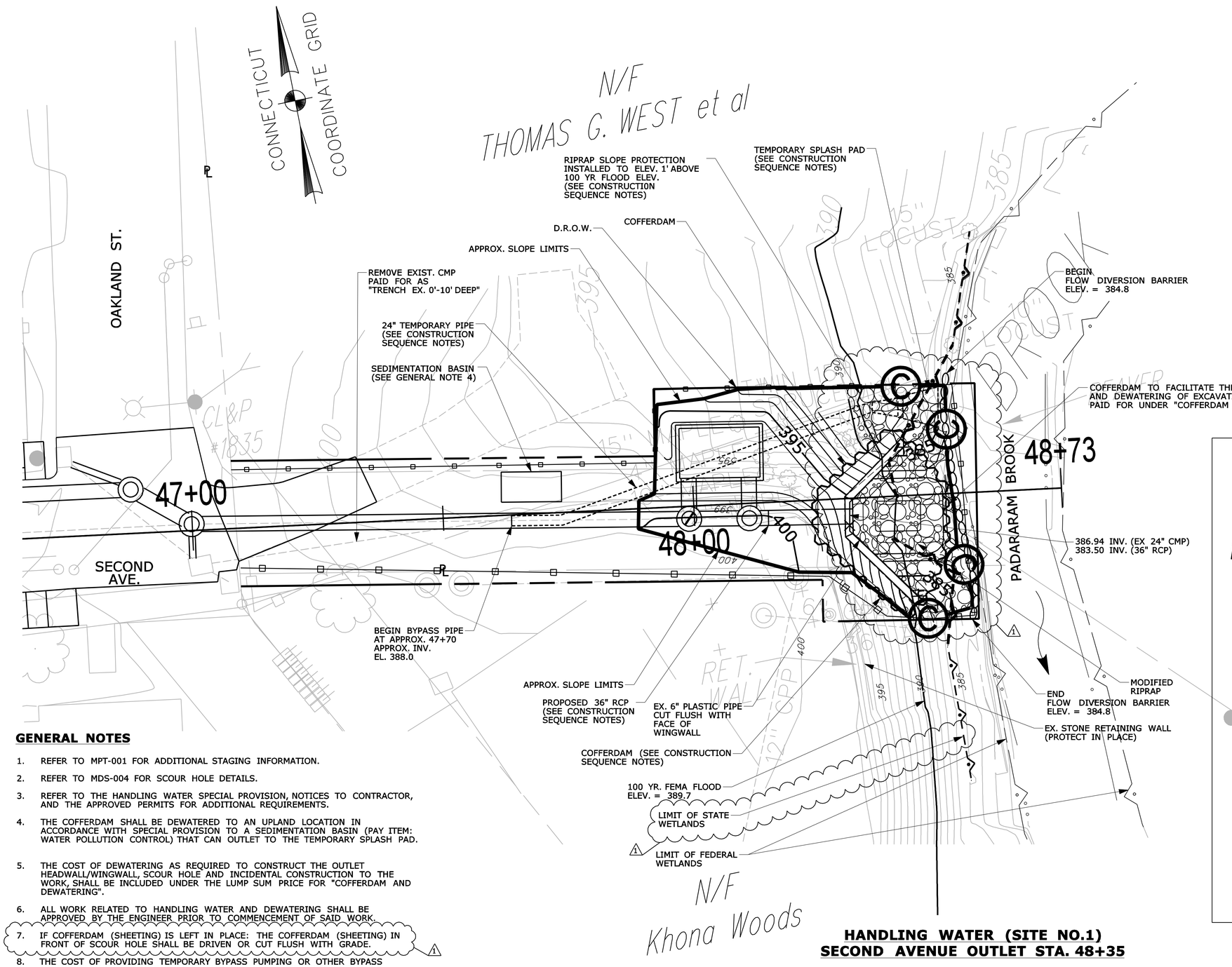
ENGINEER: AECOM Technical Services, Inc.
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

PROJECT TITLE: I-84 INTERCHANGES 5 & 6 IMPROVEMENTS

TOWN: DANBURY

DRAWING TITLE: MISCELLANEOUS DETAILS

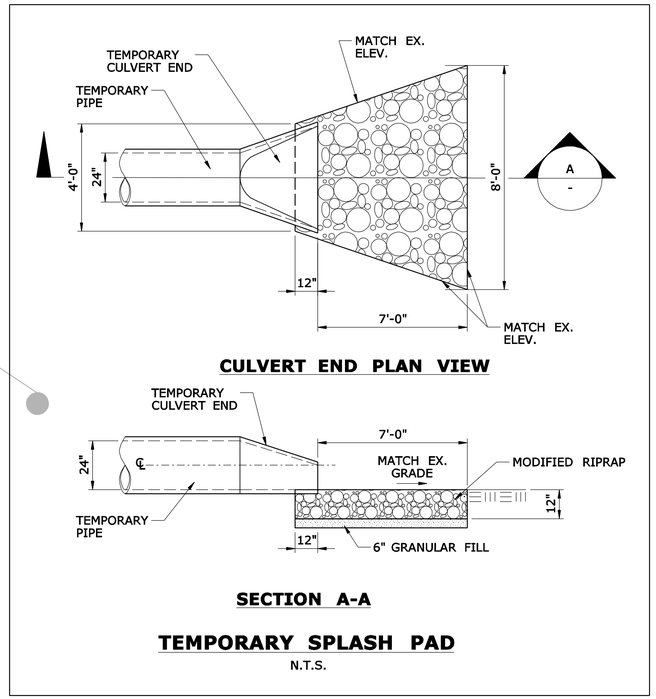
PROJECT NO. 34-313
DRAWING NO. MDS-009
SHEET NO.



HANDLING WATER (SITE NO.1)
SECOND AVENUE OUTLET STA. 48+35

CONSTRUCTION SEQUENCE NOTES (SUGGESTED):

1. INSTALL SEDIMENTATION AND PERIMETER COFFERDAM IN ACCORDANCE WITH THE COFFERDAM AND DEWATERING SPECIFICATION AND AS APPROVED BY THE ENGINEER. THE PERIMETER COFFERDAM SHALL REMAIN IN PLACE AS REQUIRED TO COMPLETE THE NOTED CONSTRUCTION AND AS APPROVED BY THE ENGINEER. 1
2. INSTALL FLOW DIVERSION BARRIER AS SHOWN.
3. INSTALL TEMPORARY BY-PASS DRAINAGE PIPE IN ACCORDANCE WITH THE HANDLING WATER (SITE NO. 1) SPECIAL PROVISION, ALONG WITH A SPLASH PAD. THE TEMPORARY PIPE WILL REMAIN OPERABLE DURING THE CONSTRUCTION OF THE OUTLET HEADWALL/WINGWALLS AND SCOUR HOLE.
4. INSTALL COFFERDAM (PAY ITEM: COFFERDAM AND DEWATERING) ALONG EXTERIOR PERIMETER OF HEADWALL AND WINGWALLS TO BE USED AS PART OF THE RESPECTIVE FOOTING FORM WORK. COFFERDAM IN FRONT OF HEADWALL, ALONG STREAM, SHALL BE SET TO A MINIMUM ELEVATION OF 384.8' AS NOTED ON MDS-004, "MISCELLANEOUS DETAILS". COFFERDAM ALONG HEADWALL/WINGWALLS FOOTINGS SHALL BE SET TO A MINIMUM HEIGHT OF 1-FOOT ABOVE ADJACENT EXISTING GRADE TO REMAIN.
5. REMOVE SOIL WITHIN COFFERDAM AS REQUIRED TO FORM SUBGRADE FOR THE CONSTRUCTION OF HEADWALL AND WING WALLS AND SCOUR HOLE.
6. CONSTRUCT HEADWALL AND WINGWALLS, AS NOTED ON "STRUCTURAL PLAN OUTLET WALL 103", ALONG WITH 16-FEET OF THE 36-INCH RCP.
7. INSTALL RIPRAP AND BEDDING MATERIALS FOR PREFORMED SCOUR HOLE AS NOTED ON MDS-004, "MISCELLANEOUS DETAILS".
8. REMOVE TEMPORARY SPLASH PAD AND INSTALL RIPRAP SLOPE PROTECTION TO 1' ABOVE 100 YEAR FLOOD ELEVATION. RELOCATE TEMPORARY BY-PASS DRAINAGE PIPE AND USE TO CONNECT TO THE EXISTING 24" CMP TO INSTALLED 36" RCP AS THE WORK PROGRESSES UP STREAM TO OAKLAND ST.
9. IF SHEETING IS USED FOR COFFERDAM, IT MAY BE LEFT IN PLACE AS SPECIFIED IN THE COFFERDAM AND DEWATERING SPECIFICATION.
10. INSTALL RIPRAP SLOPE PROTECTION TO 1' ABOVE 100 YEAR FLOOD ELEVATION.
11. INSTALL HYDRODYNAMIC SEPARATOR (HDS), MANHOLES AND 24" RCP FROM MANHOLES TO THE HDS. 1



TEMPORARY SPLASH PAD
N.T.S.

GENERAL NOTES

1. REFER TO MPT-001 FOR ADDITIONAL STAGING INFORMATION.
2. REFER TO MDS-004 FOR SCOUR HOLE DETAILS.
3. REFER TO THE HANDLING WATER SPECIAL PROVISION, NOTICES TO CONTRACTOR, AND THE APPROVED PERMITS FOR ADDITIONAL REQUIREMENTS.
4. THE COFFERDAM SHALL BE DEWATERED TO AN UPLAND LOCATION IN ACCORDANCE WITH SPECIAL PROVISION TO A SEDIMENTATION BASIN (PAY ITEM: WATER POLLUTION CONTROL) THAT CAN OUTLET TO THE TEMPORARY SPLASH PAD.
5. THE COST OF DEWATERING AS REQUIRED TO CONSTRUCT THE OUTLET HEADWALL/WINGWALL, SCOUR HOLE AND INCIDENTAL CONSTRUCTION TO THE WORK, SHALL BE INCLUDED UNDER THE LUMP SUM PRICE FOR "COFFERDAM AND DEWATERING".
6. ALL WORK RELATED TO HANDLING WATER AND DEWATERING SHALL BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF SAID WORK.
7. IF COFFERDAM (SHEETING) IS LEFT IN PLACE: THE COFFERDAM (SHEETING) IN FRONT OF SCOUR HOLE SHALL BE DRIVEN OR CUT FLUSH WITH GRADE. 1
8. THE COST OF PROVIDING TEMPORARY BYPASS PUMPING OR OTHER BYPASS FACILITIES AND METHODS TO MAINTAIN FLOW DURING INSTALLATION OF DRAINAGE WORK SHALL BE INCLUDED IN THE L.S. PRICE FOR HANDLING WATER (SITE NO.1).

ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	REVISED EXIST. WETLAND LOCATION & 100YR FLOOD ELEV, PROP. GRADING	

Filename: HW MDS-012_034_0313_A1.dgn 10/8/2014 Border Version: 6/1/05

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER: K. JOHNSON
CHECKED BY: N. PAGAN
SCALE IN FEET 0 10 20
SCALE 1"=10'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

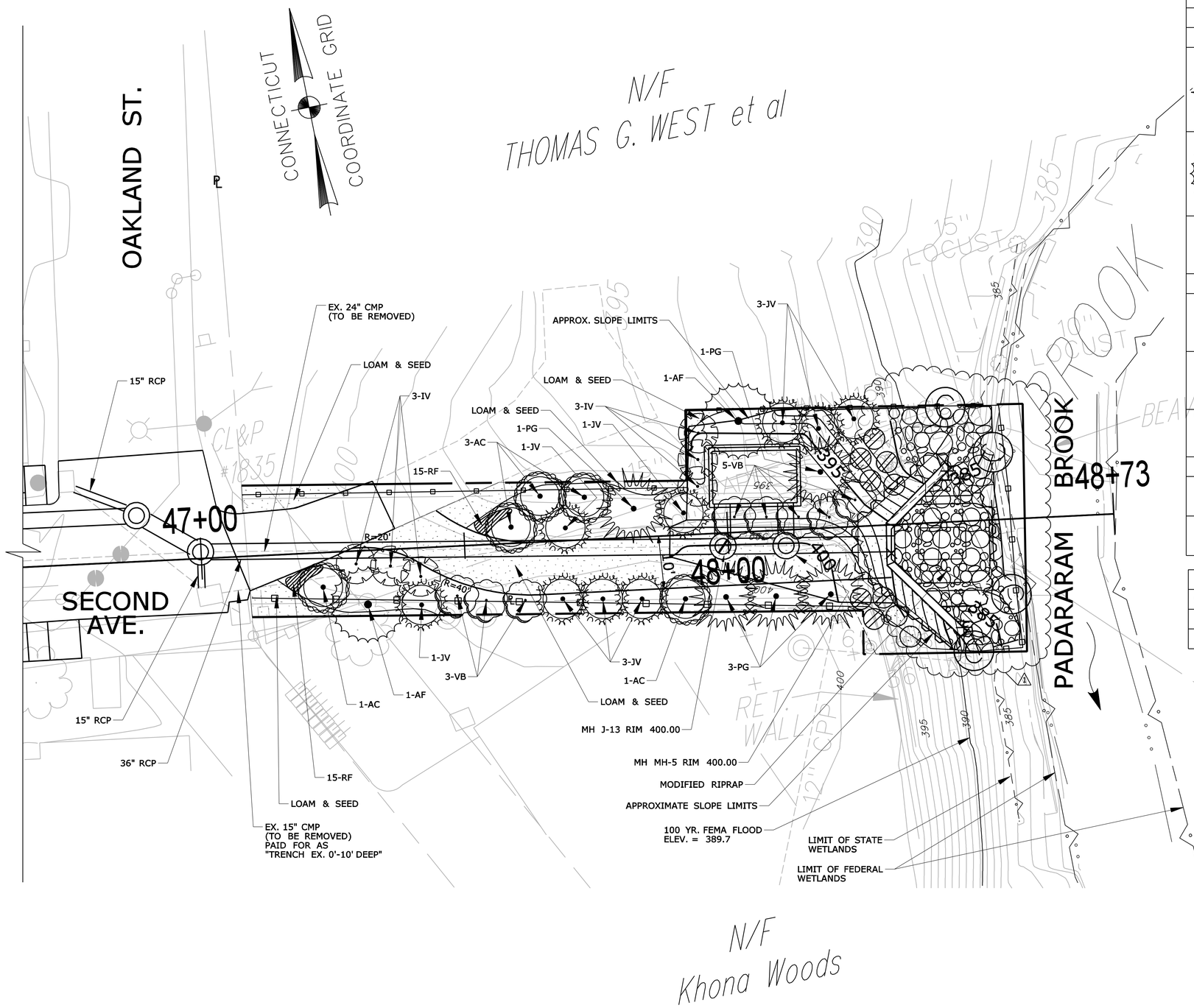
ENGINEER: AECOM Technical Services, Inc.
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

PROJECT TITLE: I-84 INTERCHANGES 5 & 6 IMPROVEMENTS

TOWN: DANBURY

DRAWING TITLE: WATER HANDLING AND DEWATERING PLAN

PROJECT NO. 34-313
DRAWING NO. MDS-012
SHEET NO.



PLANT LIST (AT PROPERTY LINE)						
SYMBOL	KEY	UNIT	QTY.	BOTANICAL NAME	COMMON NAME	SIZE
EVERGREEN TREES						
	PG	E.A.	5	PICEA GLAUCA	WHITE SPRUCE	15 FT.
	AF	E.A.	2	ABIES FRASERI	FRASER FIR	15 FT.
	JV	E.A.	9	JUNIPERUS VIRGINIANA "CANAERTII"	RED CEDAR JUNIPER	10 FT.
SHRUBS						
	VB	E.A.	8	VIBURNUM DILATATUM	VIBURNUM	8 FT.
	AC	E.A.	5	AMELANCHIER CANADENSIS	SERVICEBERRY	10 FT.
	IV	E.A.	6	ILEX VERTICILLATA "STOP LIGHT"	WINTERBERRY LINDEN	8 FT.
PERENNIALS						
	RF	E.A.	30	RUDBECKIA FULGIDA	BLACK-EYED SUSAN	#1 POT
	LOAM & SEED	S.Y.	135	TURF ESTABLISHMENT - LAWN		
		S.Y.	135	TOPSOIL (4" THICK)		

PLANT LIST (AT CULVERT OUTLET)			
SYMBOL	UNIT	QTY	DESCRIPTION
	E.A.	2	SPECKLED ALDER (ALNUS RUGOSA) 18-24"
	E.A.	8	SHADBLOW (AMELANCHRER CANADENSIS) 18-24"

NOTES:

SEE MDS-004 FOR PREFORMED SCOUR HOLE DETAIL
SEE STRUCTURE PLANS FOR OUTLET WALL DETAIL
SEE MDS-012 FOR OUTLET DETAILS

ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	WETLAND LOCATION, 100YR FLOOD ELEV, GRADING	

Filename: HW_LDS-001_034_0313_A1.dgn 9/18/2014 Border Version: 6/1/05

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DESIGNER/DRAFTER: **L. BLACK/K. JOHNSON**
CHECKED BY: **N. ROLFE**
SCALE IN FEET 0 10 20
SCALE 1"=10'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

STATE OF CONNECTICUT NOEL M. PAGAN No. 12500 LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **LANDSCAPE PLAN**

PROJECT NO. **34-313**
DRAWING NO. **LDS-001**
SHEET NO.

BEGINNING OF F.A.P. NO.0841 (095)
BEGINNING OF STATE PROJECT NO.34-313

BL STA.505+44.00

CONNECTICUT COORDINATE GRID

OUTFALL 5-1 & 5-2 DISCHARGE TO SURFACE WATER LOCATION

I-84 WB

I-84 EB

I-84 WEST

I-84 EAST

145+03 146+00 147+00 148+00 149+00 150+00 151+00 152+00 153+00 154+00 155+00

500+00 501+00 502+00 503+00 504+00 505+00 506+00 507+00 508+00 509+00 510+00

T-3

T-4

22'

FRANKLIN STREET

PRINCE STREET

MATCH MARK - SEE DWG. NO. - DRG-002

LEGEND

- SEDIMENTATION CONTROL SYSTEM
- STEEPENED SLOPE PROTECTION
- FULL DEPTH PAVEMENT
- REMOVE BITUMINOUS CONCRETE PAVEMENT
- TEST PIT LOCATION

LIMIT OF CONSTRUCTION
BL STA.503+30

OUTFALL 5-1

REMOVE CB

12' - 15" CMP

TYPE "C" CB

OUTFALL 5-2

SEDIMENTATION CONTROL SYSTEM

APPROX. SLOPE LIMIT

CONVERT CB TO MH

12' - 15" RCP

TYPE "C-L" CB W/PAVED APRON

31' - 15" RCP

TYPE "C" CB OVER 10' DEEP

247' - 15" RCP

SEDIMENTATION CONTROL SYSTEM

TYPE "C" CB

APPROX. SLOPE LIMIT

ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	SHOW OUTFALL LOCATIONS	

Filename: HW_DRG-001_034_0313_A1.dgn 9/18/2014 Border Version: 6/1/05

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DESIGNER/DRAFTER: **B. SABEAN**
CHECKED BY: **N. ROLFE**
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

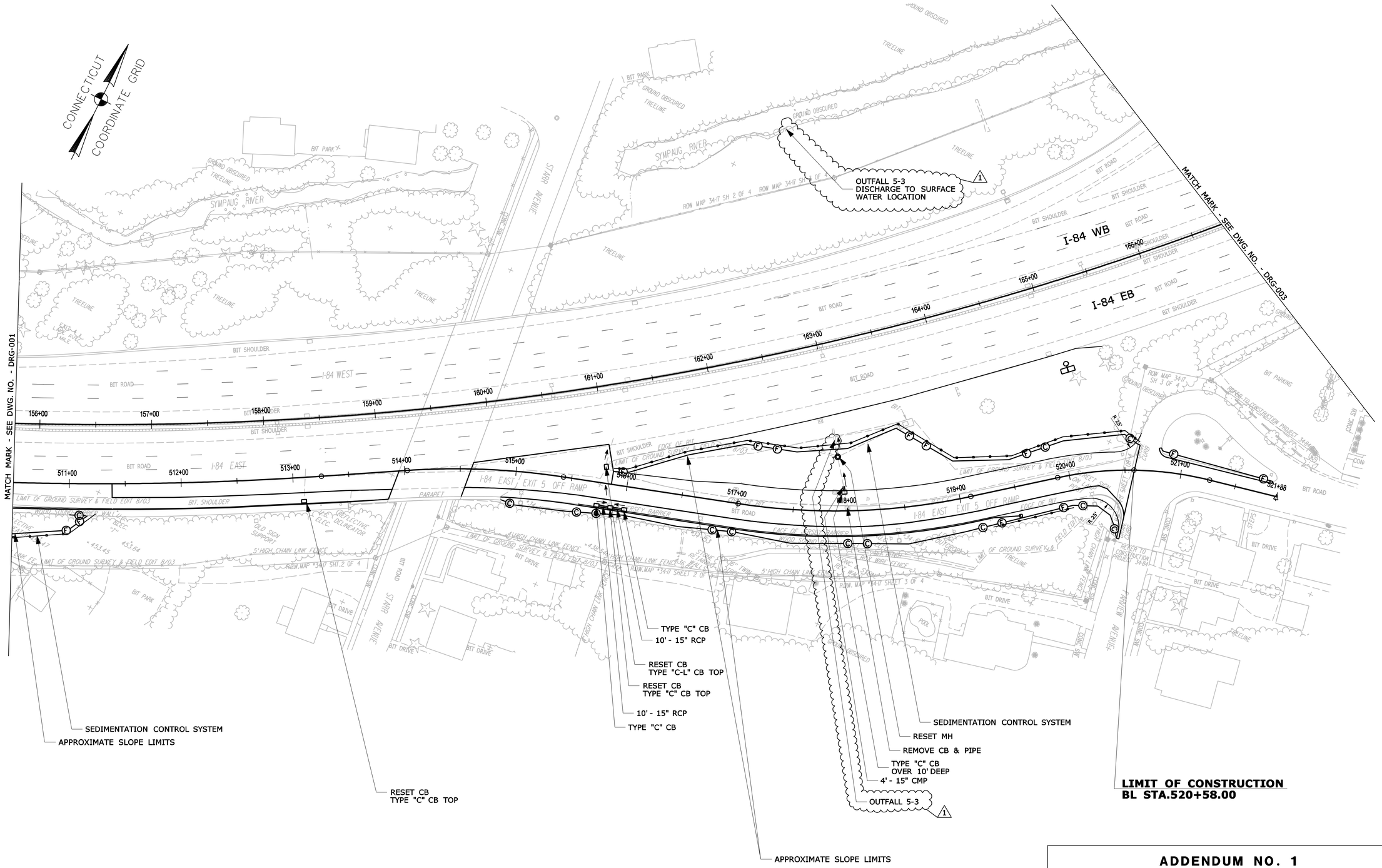
STATE OF CONNECTICUT NOEL M. PAGAN No. 12500 LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **DRAINAGE PLAN**

PROJECT NO. **34-313**
DRAWING NO. **DRG-001**
SHEET NO.



ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	SHOW OUTFALL LOCATIONS	

Filename: HW DRG-002 034 0313 A1.dgn 9/18/2014 Border Version: 9/1/05

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DESIGNER/DRAFTER: **B. SABEAN**
CHECKED BY: **N. ROLFE**
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

STATE OF CONNECTICUT NOEL M. PAGAN No. 12900 LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

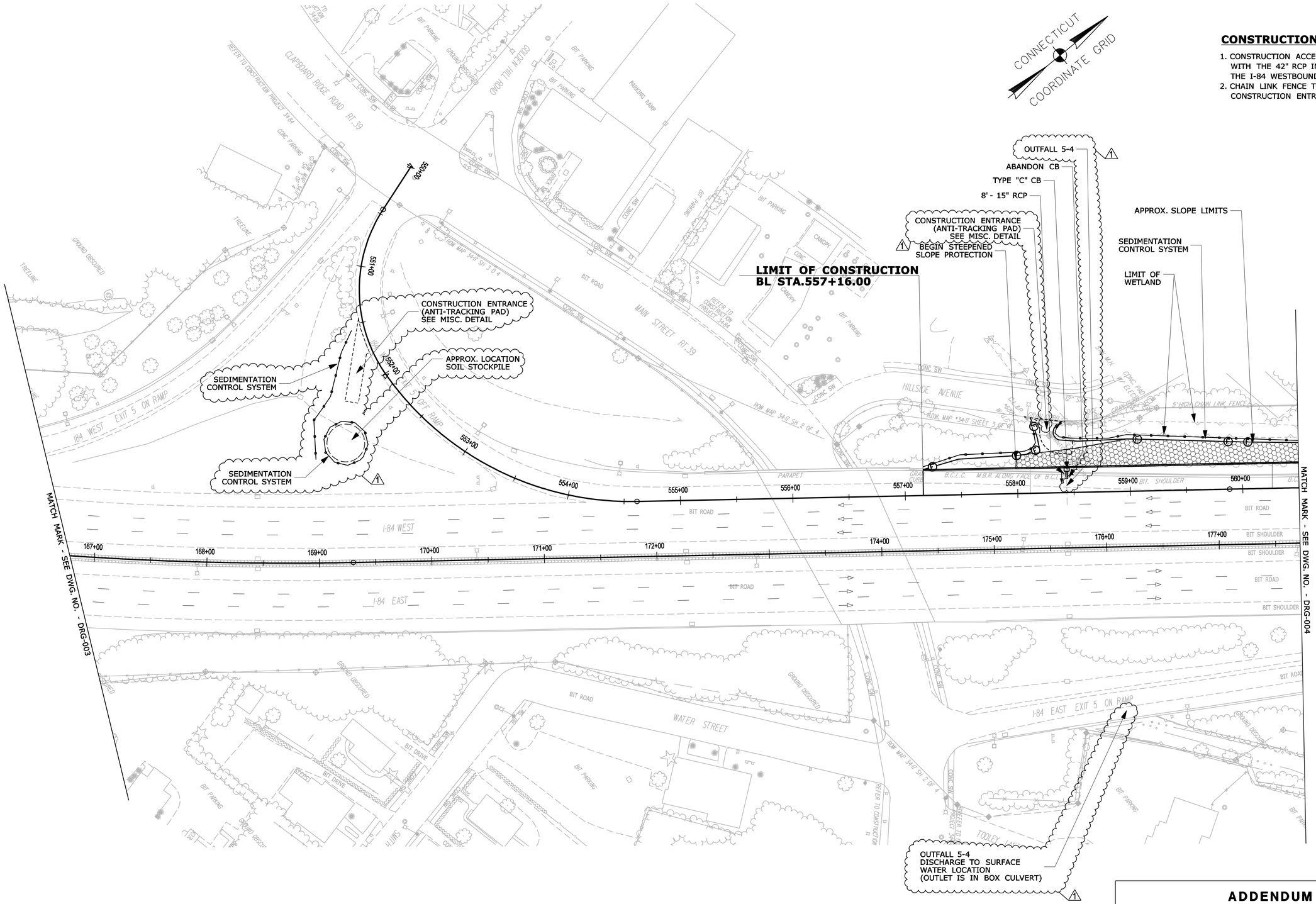
TOWN: **DANBURY**

DRAWING TITLE: **DRAINAGE PLAN**

PROJECT NO. **34-313**
DRAWING NO. **DRG-002**
SHEET NO.

CONSTRUCTION NOTES:

1. CONSTRUCTION ACCESS FOR WORK ASSOCIATED WITH THE 42" RCP INSTALLATION TO OCCUR FROM THE I-84 WESTBOUND SHOULDER.
2. CHAIN LINK FENCE TO BE INSTALLED ONCE CONSTRUCTION ENTRANCE IS NO LONGER NEEDED.



ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	SHOW OUTFALL LOCATIONS, SOIL STOCKPILE, ANTI-TRACKING PAD	

Filename: HW_DRG-003_034_0313_A1.dgn 9/18/2014 Border Version: 6/1/05

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DESIGNER/DRAFTER: **B. SABEAN**
CHECKED BY: **N. ROLFE**
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

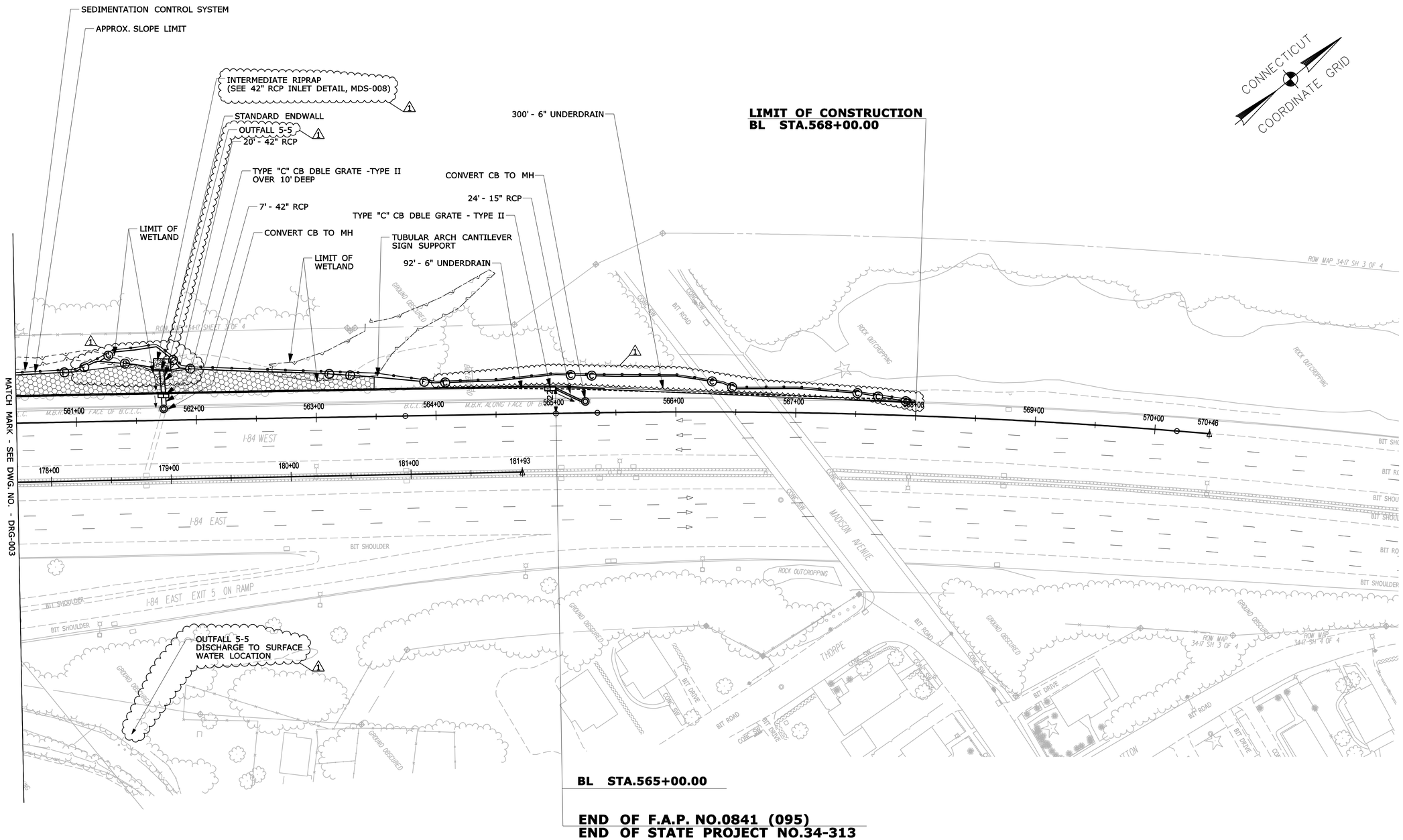
STATE OF CONNECTICUT NOEL M. PAGAN No. 12900 LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **DRAINAGE PLAN**

PROJECT NO. **34-313**
DRAWING NO. **DRG-003**
SHEET NO.



ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	REVISED SLOPE LIMIT & SCS LOCATION, SHOW OUTFALLS, RIPRAP TYPE	

Filename: HW_DRG-004_034_0313_A1.dgn 9/25/2014 Border Version: 6/1/05

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DESIGNER/DRAFTER: B. SABEAN
CHECKED BY: N. ROLFE
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: AECOM Technical Services, Inc.
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

STATE OF CONNECTICUT NOEL M. PAGAN No. 12900 PROFESSIONAL ENGINEER

PROJECT TITLE: I-84 INTERCHANGES 5 & 6 IMPROVEMENTS

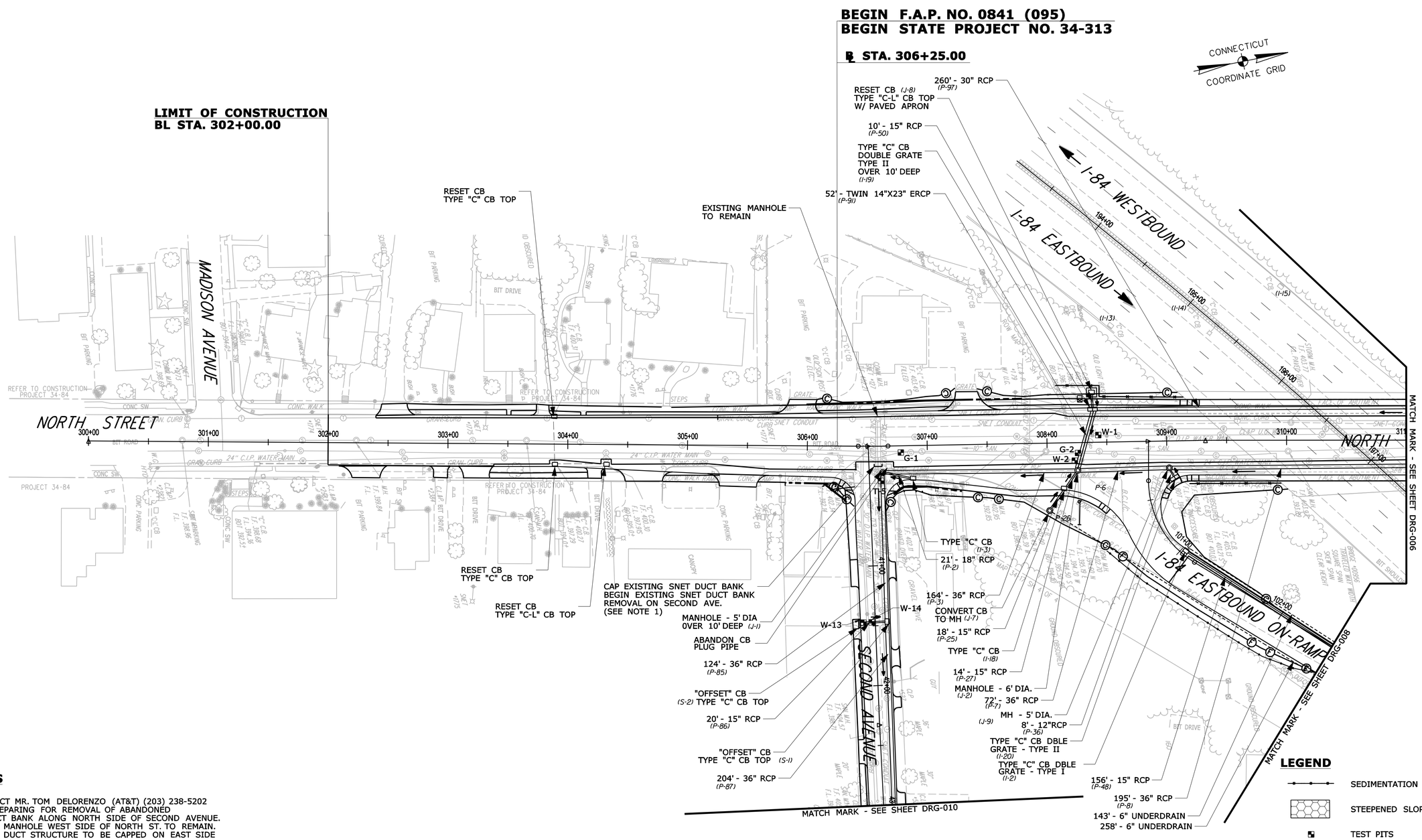
TOWN: DANBURY

DRAWING TITLE: DRAINAGE PLAN

PROJECT NO. 34-313

DRAWING NO. DRG-004

SHEET NO.



NOTES

1. CONTACT MR. TOM DELORENZO (AT&T) (203) 238-5202 WHEN PREPARING FOR REMOVAL OF ABANDONED SNET DUCT BANK ALONG NORTH SIDE OF SECOND AVENUE. EXISTING MANHOLE WEST SIDE OF NORTH ST. TO REMAIN. EXISTING DUCT STRUCTURE TO BE CAPPED ON EAST SIDE OF NORTH ST.

2. ALL MANHOLES (SANITARY SEWER), MANHOLES (WATER) AND WATERGATES WITHIN THE PROJECT LIMITS SHOWING MILLING AND OVERLAY OR FULL DEPTH RECONSTRUCTION SHALL BE RESET TO MEET FINAL GRADE.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Filename: HW DRG-005 034 0313.dgn 6/10/2014 Border Version: 6/1/05

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DESIGNER/DRAFTER: **B. SABEAN/P. ARZENO**
CHECKED BY: **N. ROLFE**
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

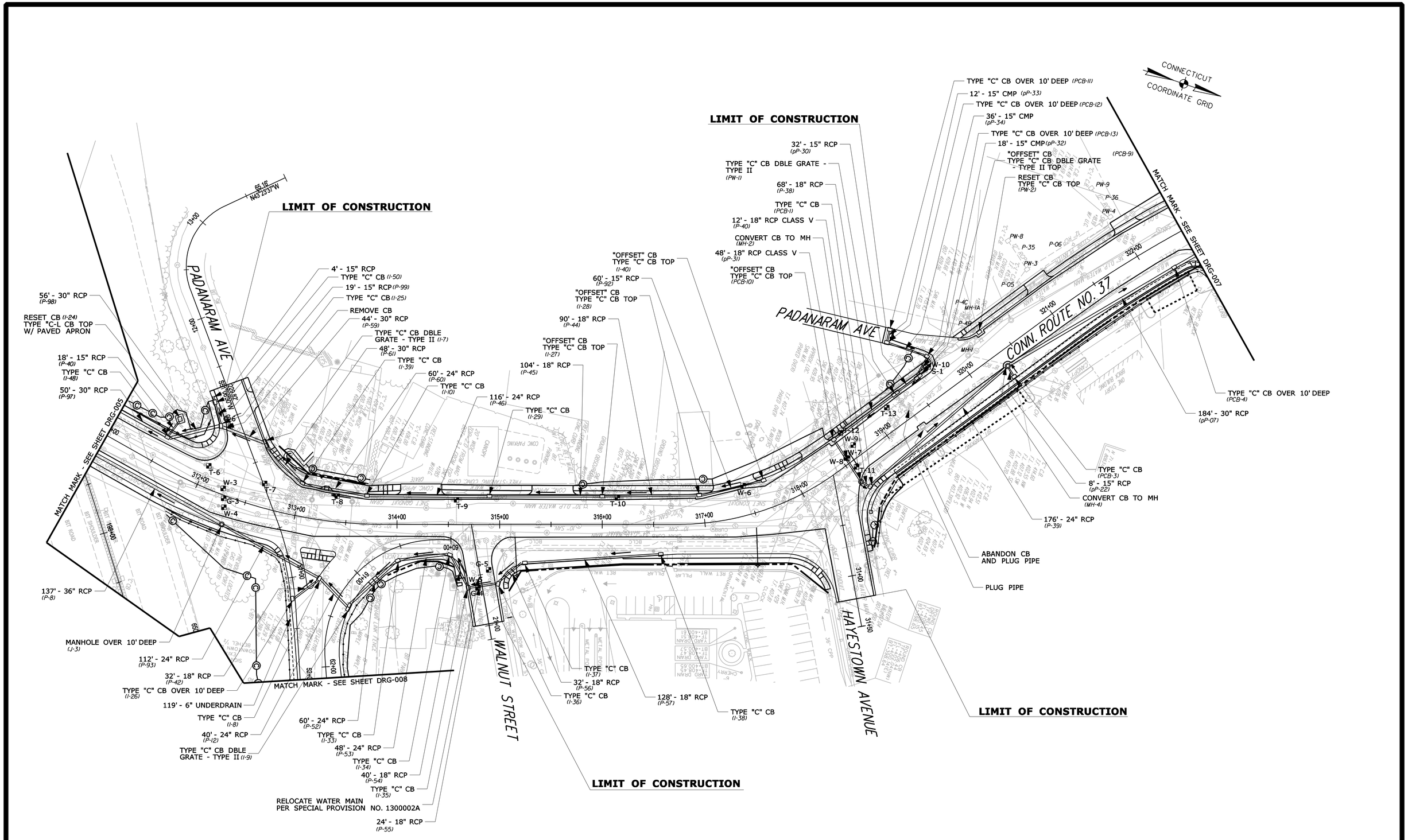
STATE OF CONNECTICUT NOEL M. PAGAN 11-11 No. 13500 LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **DRAINAGE PLAN**

PROJECT NO. **34-313**
DRAWING NO. **DRG-005**
SHEET NO.



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Filename: HW DRG-006 034 0313.dgn 6/10/2014 Border Version: 8/1/05

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DESIGNER/DRAFTER: **B. SABEAN/P. ARZENO**
CHECKED BY: **N. ROLFE**
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

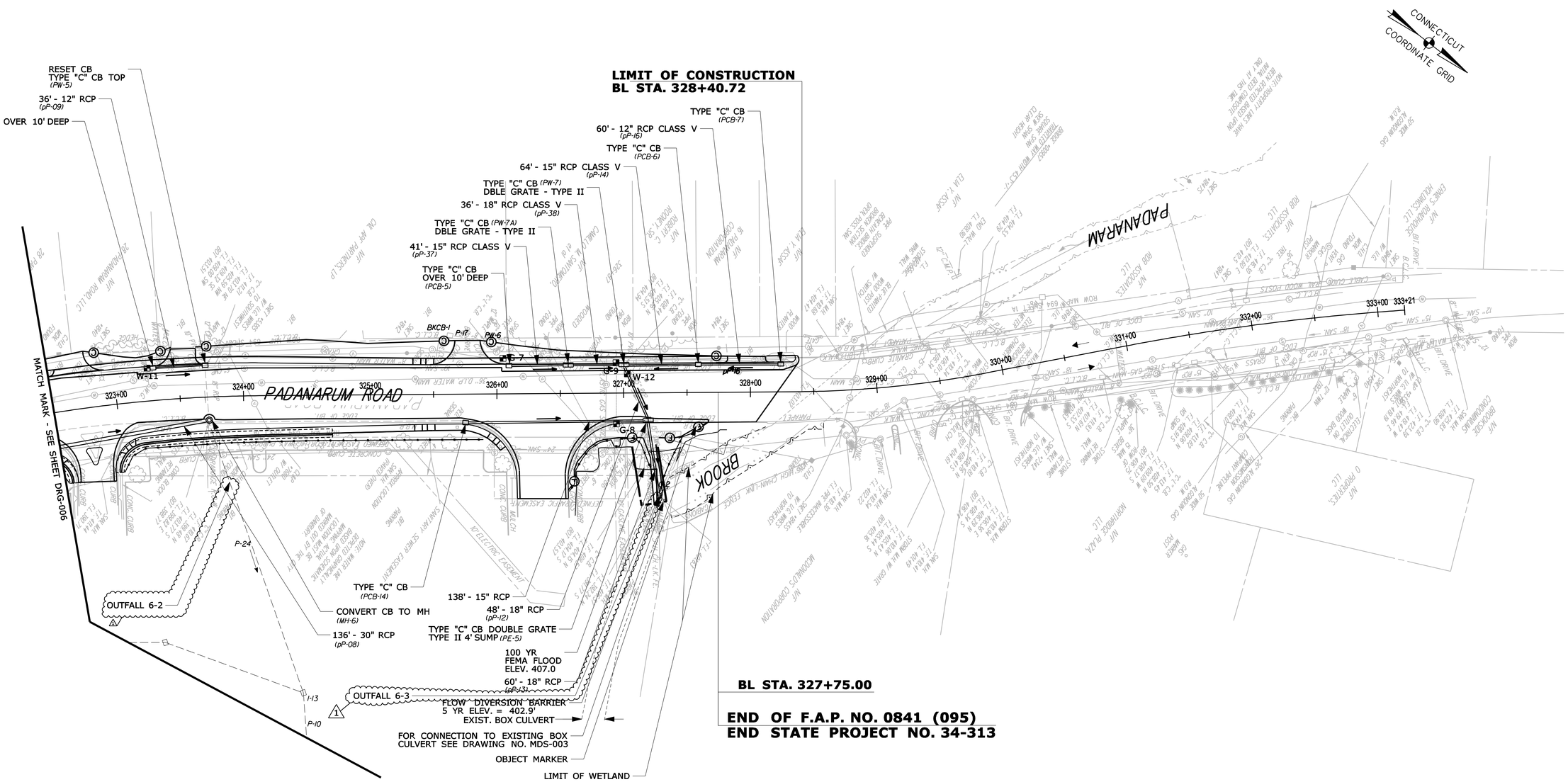
STATE OF CONNECTICUT PROFESSIONAL ENGINEER No. 12000 LICENSED

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **DRAINAGE PLAN**

PROJECT NO. **34-313**
DRAWING NO. **DRG-006**
SHEET NO.



ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	SHOW OUTFALL LOCATIONS	

Filename: HW DRG-007_034_0313_A1.dgn 9/18/2014 Border Version: 6/1/05

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DESIGNER/DRAFTER: **B. SABEAN/P. ARZENO**
CHECKED BY: **N. ROLFE**
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

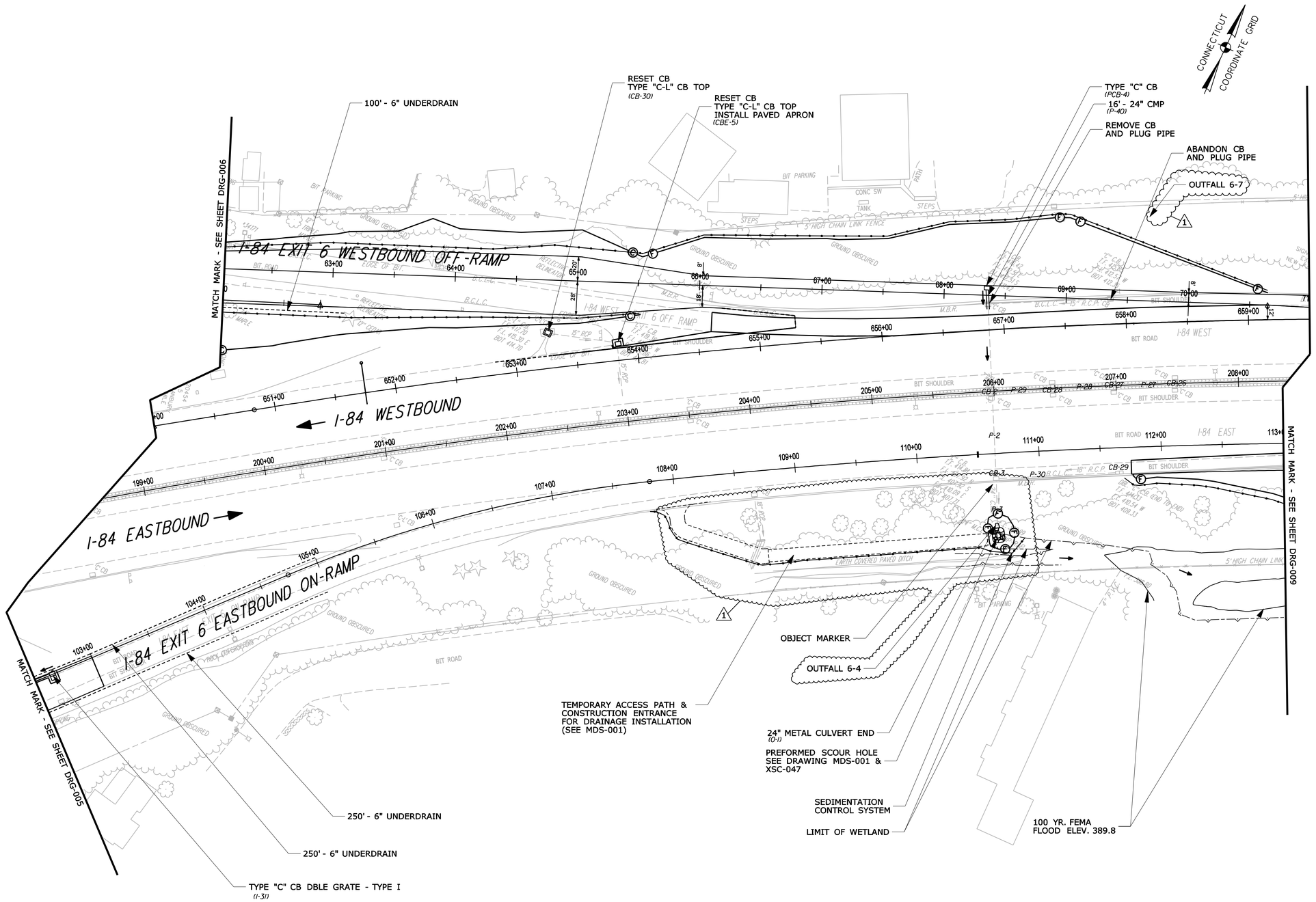
ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **DRAINAGE PLAN**

PROJECT NO. **34-313**
DRAWING NO. **DRG-007**
SHEET NO.



ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	REVISED SURVEY, EXIST. DRAINAGE, EXTEND CONST. ENT. SHOW OUTFALLS	

Filename: HW DRG-008 034 0313 A1.dgn 10/8/2014 Border Version: 6/1/05

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DESIGNER/DRAFTER: **B. SABEAN/P. ARZENO**
CHECKED BY: **N. ROLFE**
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

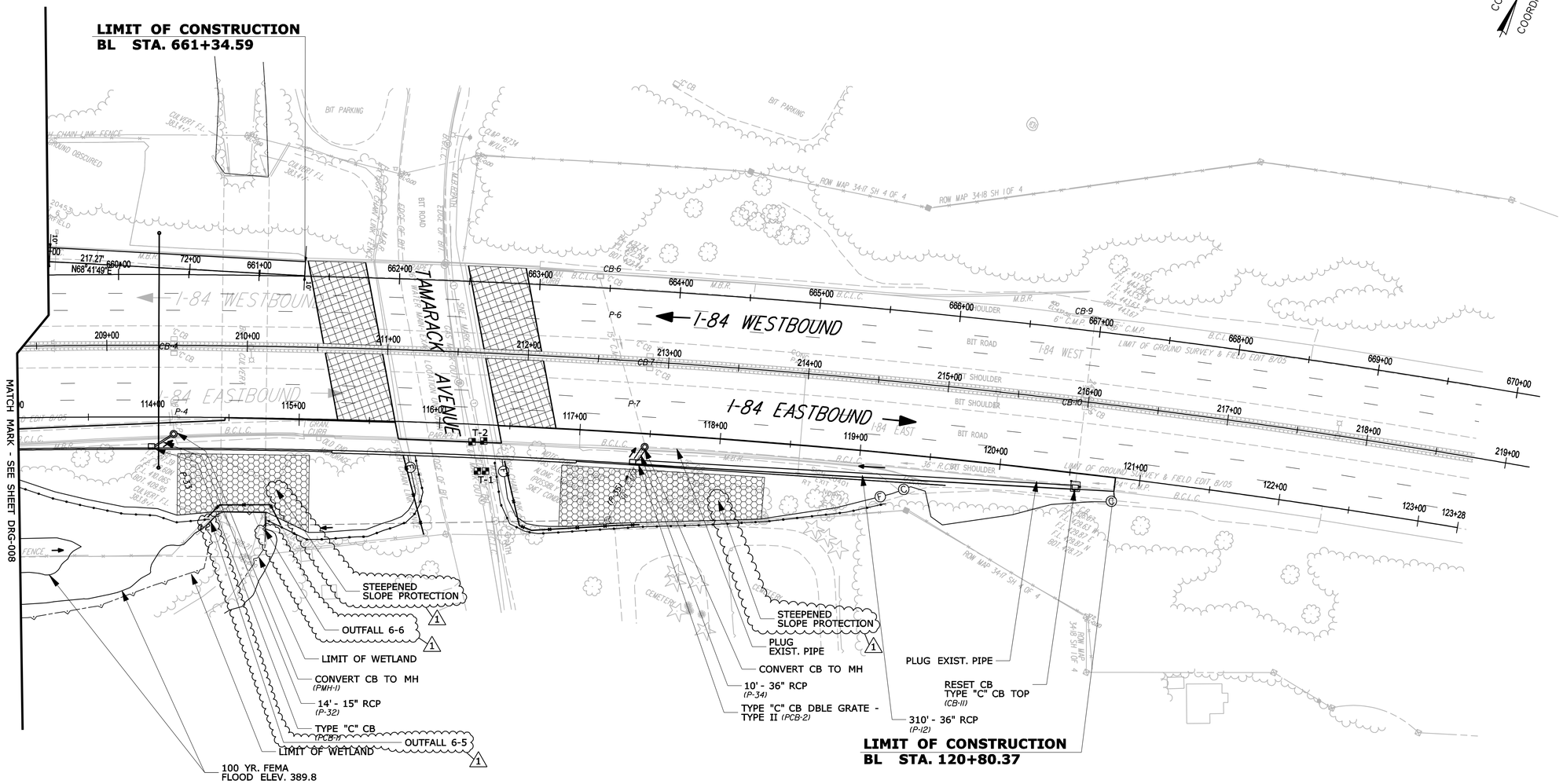
ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **DRAINAGE PLAN**

PROJECT NO. **34-313**
DRAWING NO. **DRG-008**
SHEET NO.



ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	SHOW OUTFALL LOCATIONS, STEEPENED SLOPE PROTECTION	

Filename: HW DRG-009 034-0313 A1.dgn 9/18/2014 Border Version: 6/1/05

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DESIGNER/DRAFTER: **B. SABEAN/P. ARZENO**
CHECKED BY: **N. ROLFE**
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **DRAINAGE PLAN**

PROJECT NO. **34-313**
DRAWING NO. **DRG-009**
SHEET NO.

UTILITY TEST PIT DATA

WATER (CITY OF DANBURY)

TEST PIT #	BASELINE STATION	BASELINE OFFSET	NORTHING	EASTING	GROUND ELEVATION (FT)	TOP OF STRUCTURE ELEVATION (FT)	UTILITY DESCRIPTION	RELOCATION ANTICIPATED
W-1	308+43	6' LT	710649.53	806473.60		399.34	30" Water	NO
W-2	308+23	15' RT	710626.15	806490.76		398.25	24" Water	NO
W-3	312+25	6' LT	711024.57	806540.91		397.55	30" Water	NO
W-4	312+32	11' RT	711030.95	806558.17		400.96	24" Water	NO
W-5	314+79	61' RT	711290.42	806554.11		401.75	8" Water	YES *
W-6	317+46	29' LT	711504.47	806379.06		402.87	8" Water	NO
W-7	318+55	6' LT	711591.36	806321.96		403.76	24" Water	NO
W-7	318+55	6' LT	711591.36	806321.96		404.38	Thrust block	NO
W-8	318+56	5' LT	711592.71	806321.78		405.85	3" Steel	YES - Unknown Source
W-9	318+68	12' LT	711593.92	806307.94		401.69	36" Water	NO
W-10	319+72	30' LT	711639.23	806212.61		410.40	8" Water	NO
W-11	323+26	26' LT	711868.29	805936.40		405.08	8" Water	NO
W-12	327+03	15' LT	712170.53	805707.62		403.35	36" Water	NO
W-13	41+47	10' RT	710433.78	806590.37		398.43	8" Water	NO
W-14	41+47	3' RT	710426.87	806589.30		400.30	30" Water	NO
W-15	43+43	24' LT	710431.37	806788.13		401.64	6" Water	NO
W-16	44+89	7' RT	710379.49	806928.08		401.05	4" Water abandoned	NO
W-17	44+89	5' RT	710381.47	806928.37		399.72	8" Water	NO
W-18	46+81	1' LT	710359.53	807119.21		397.25	8" Water	NO

GAS (YANKEE GAS)

TEST PIT #	BASELINE STATION	BASELINE OFFSET	NORTHING	EASTING	GROUND ELEVATION (FT)	TOP OF STRUCTURE ELEVATION (FT)	UTILITY DESCRIPTION	RELOCATION ANTICIPATED
G-1	306+78	6' RT	710485	806456		397.98		NO
G-2	308+26	9' RT	710630	806485		398.91	6" Gas	NO
G-3	312+25	3' RT	711028	806550		400.62	6" Gas	NO
G-4	314+79	62' RT	711290.73	806555.06		403.28	1" Gas	NO
G-5	211+53	9' RT	711295	806535		402.70	4" Gas	NO
G-6	10+92	10' LT	711012	806481		401.65	4" Gas	NO
G-7	326+05	28' LT	712085.52	805758.08		407.28	4" Gas	NO
G-8	326+94	24' RT	712188	805744		405.44	2" Gas	YES
G-9	326+94	24' LT	712158	805706		406.77	2" Gas	YES

TELECOMMUNICATIONS (AT&T)

TEST PIT #	BASELINE STATION	BASELINE OFFSET	NORTHING	EASTING	GROUND ELEVATION (FT)	TOP OF STRUCTURE ELEVATION (FT)	UTILITY DESCRIPTION	RELOCATION ANTICIPATED
T-5	306+61	29' RT	710463.64	806476.93		399.66	7"w x 12" Duct bank	Duct Bank to be removed
T-6	312+03	21' LT	711004.35	806524.44		404.72	19"w x 21" Duct bank	NO
T-7	312+63	23' LT	711061.36	806523.68		402.77	19"w x 21" Duct bank	NO
T-8	313+39	25' LT	711132.40	806513.16		403.09	18"w x 24" Duct bank	NO
T-9	314+58	24' LT	711243.77	806480.01		403.78	20"w x 24" Duct bank	NO
T-10	316+15	26' LT	711392	806429		402.98	21"w x 13" Duct bank	NO
T-11	318+58	7' RT	711603.67	806327.07		405.38	7"w x 11" Duct bank	YES
T-12	318+65	29' LT	711578.35	806300.51		405.70	24"w x 36" Duct bank	YES
T-13	319+16	22' LT	711613.45	806262.96		408.89	12"w x 12" Duct bank	NO
T-14	43+57	11' LT	710416.50	806799.89		402.80	21"w x 16" Duct bank	NO
T-15	45+48	6' LT	710383.79	806988.35		401.85	12"w x 13" Duct bank	NO
T-1	TAMARACK AVE.		711510.51	807850.61	398.86	395.74	1" Insulated Wire	YES
T-2	TAMARACK AVE.		711529.53	807840.59	399.31	397.40	4" Plastic Conduit	YES
T-3	KOHANZA ST.		707776.43	803225.65	452.82	451.30	4" Plastic Conduit	YES
T-4	KOHANZA ST.		707765.21	803227.08	453.29	451.52	4" Plastic Conduit	YES

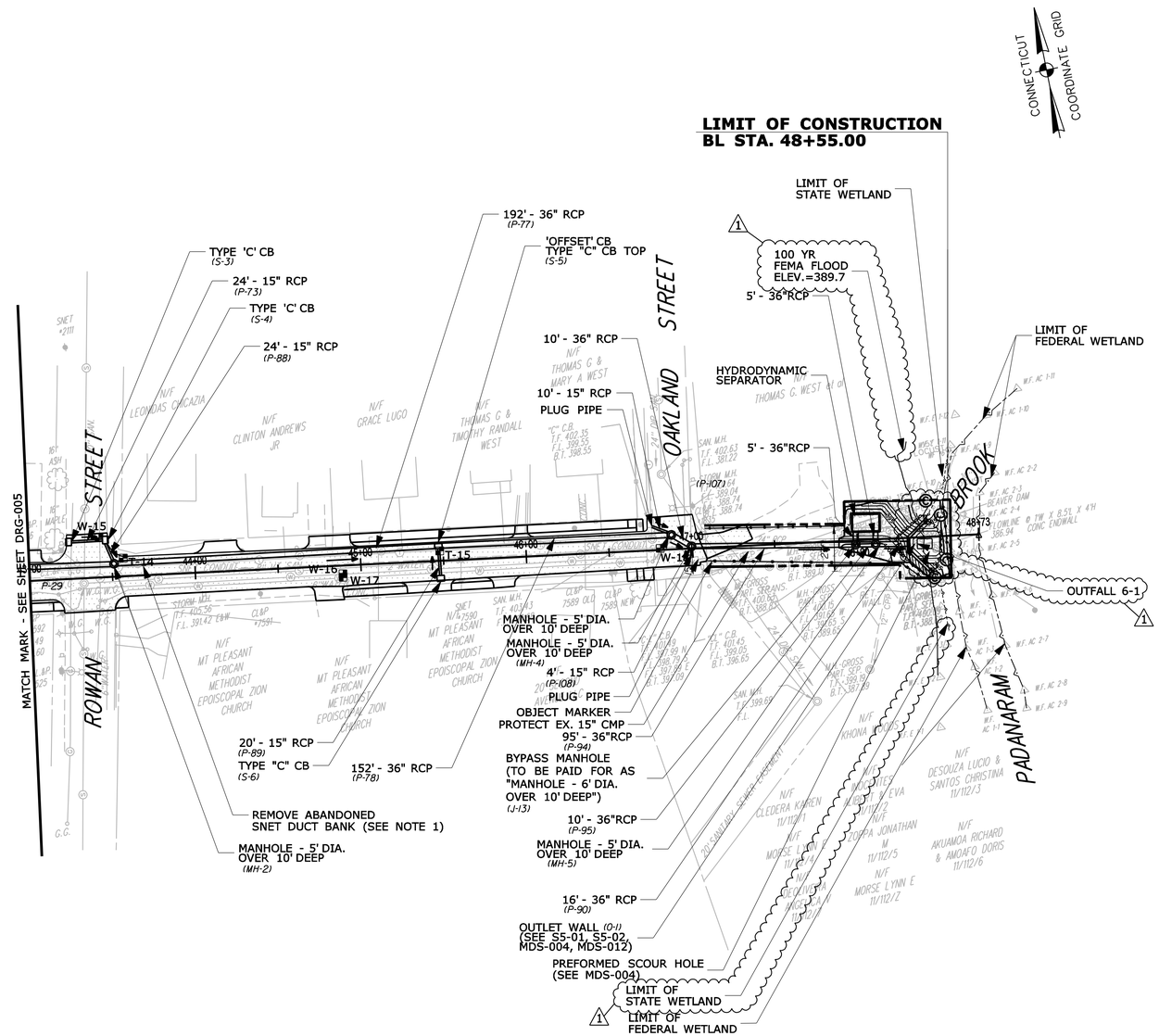
SANITARY SEWER (CITY OF DANBURY)

TEST PIT #	BASELINE STATION	BASELINE OFFSET	NORTHING	EASTING	GROUND ELEVATION (FT)	TOP OF STRUCTURE ELEVATION (FT)	UTILITY DESCRIPTION	RELOCATION ANTICIPATED
S-1	319+72	30' LT	711639.23	806212.61		413.08	6" PVC Sewer lateral	YES

* SEE SPECIAL PROVISION ITEM NO. 1300002A "RELOCATION OF WATER MAINS"

NOTES

1. CONTACT MR. TOM DELORENZO (AT&T) (203) 238-5202 WHEN PREPARING FOR REMOVAL OF ABANDONED SNET DUCT BANK ALONG NORTH SIDE OF SECOND AVENUE.



ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	REVISED EXIST. WETLAND, 100YR FLOOD ELEV, PROP. GRADING, SHOW OUTFALL	

Filename: HW_DRG-010_034_0313_A1.dgn 9/25/2014 Border Version: 6/1/05

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK, SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE CONDITIONS OF ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

DESIGNER/DRAFTER: **B. SABEAN/P. ARZENO**
CHECKED BY: **N. ROLFE**
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

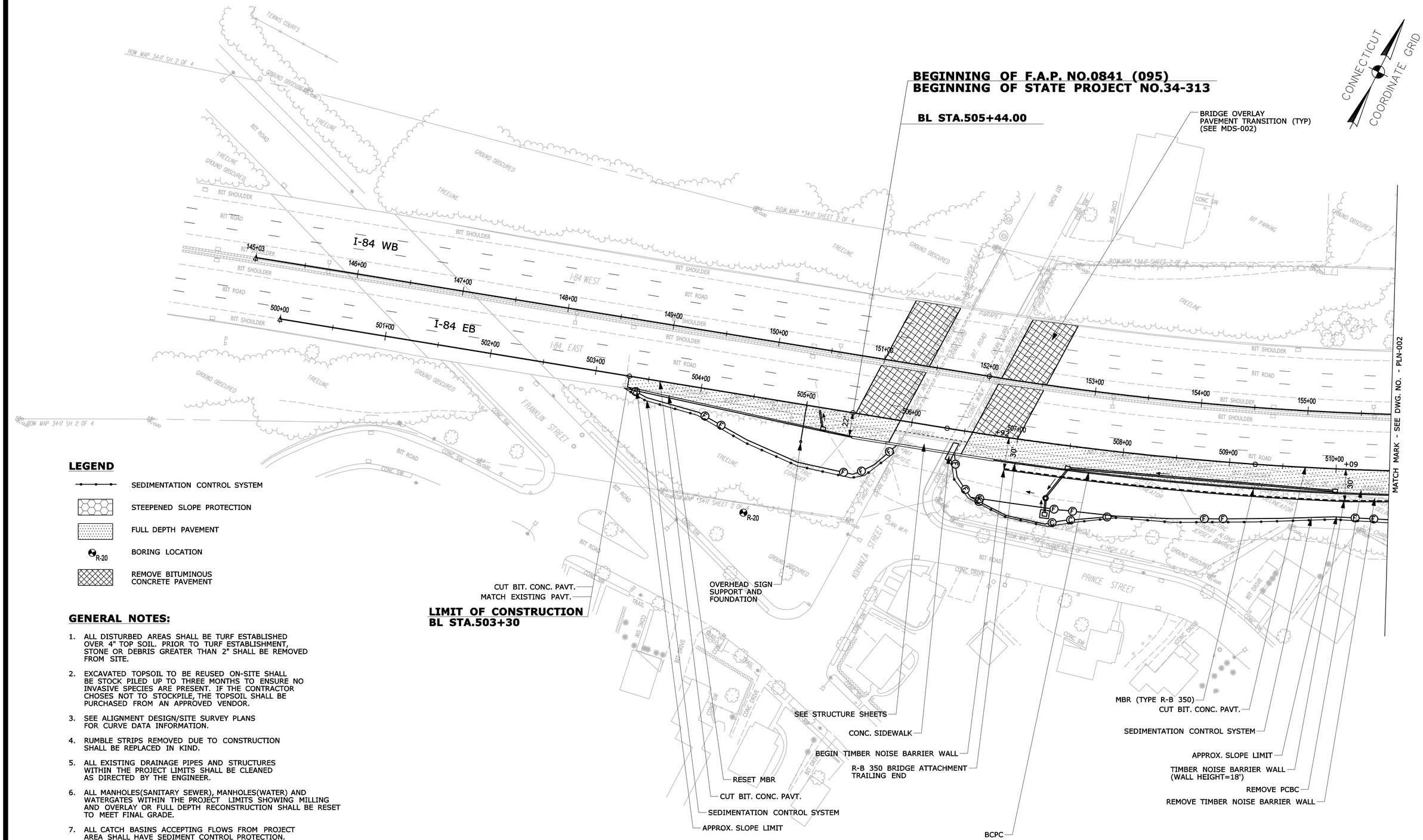
ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **DRAINAGE PLAN**

PROJECT NO. **34-313**
DRAWING NO. **DRG-010**
SHEET NO.



LEGEND

- SEDIMENTATION CONTROL SYSTEM
- STEEPENED SLOPE PROTECTION
- FULL DEPTH PAVEMENT
- R-20 BORING LOCATION
- REMOVE BITUMINOUS CONCRETE PAVEMENT

GENERAL NOTES:

1. ALL DISTURBED AREAS SHALL BE TURF ESTABLISHED OVER 4" TOP SOIL. PRIOR TO TURF ESTABLISHMENT, STONE OR DEBRIS GREATER THAN 2" SHALL BE REMOVED FROM SITE.
2. EXCAVATED TOPSOIL TO BE REUSED ON-SITE SHALL BE STOCK PILED UP TO THREE MONTHS TO ENSURE NO INVASIVE SPECIES ARE PRESENT. IF THE CONTRACTOR CHOSES NOT TO STOCKPILE, THE TOPSOIL SHALL BE PURCHASED FROM AN APPROVED VENDOR.
3. SEE ALIGNMENT DESIGN/SITE SURVEY PLANS FOR CURVE DATA INFORMATION.
4. RUMBLE STRIPS REMOVED DUE TO CONSTRUCTION SHALL BE REPLACED IN KIND.
5. ALL EXISTING DRAINAGE PIPES AND STRUCTURES WITHIN THE PROJECT LIMITS SHALL BE CLEANED AS DIRECTED BY THE ENGINEER.
6. ALL MANHOLES(SANITARY SEWER), MANHOLES(WATER) AND WATERGATES WITHIN THE PROJECT LIMITS SHOWING MILLING AND OVERLAY OR FULL DEPTH RECONSTRUCTION SHALL BE RESET TO MEET FINAL GRADE.
7. ALL CATCH BASINS ACCEPTING FLOWS FROM PROJECT AREA SHALL HAVE SEDIMENT CONTROL PROTECTION.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Filename: HW PLN-001 034 0308.dgn 7/23/2014 Border Version: 6/1/05

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CHECKED BY: N. ROLFE
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

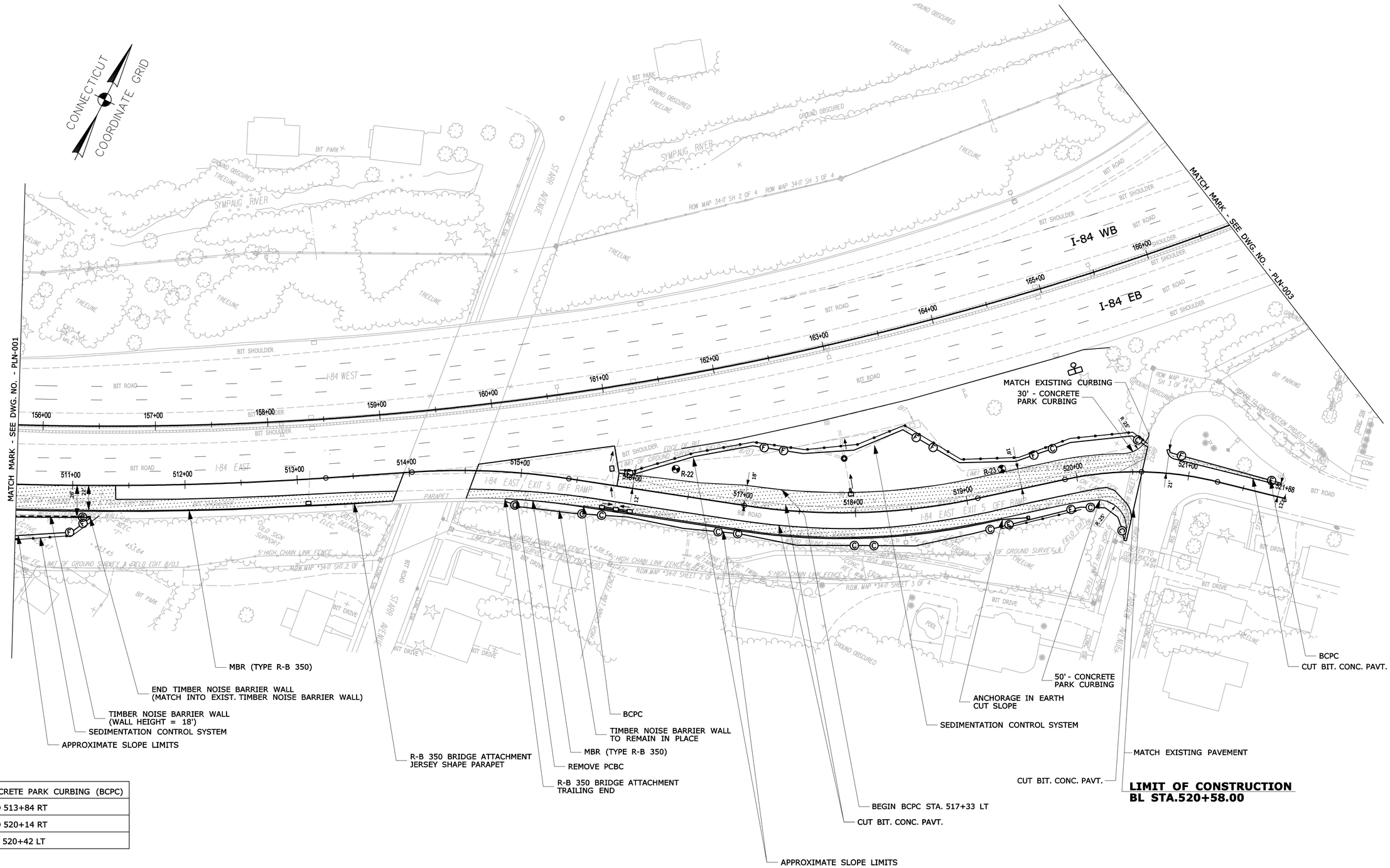
ENGINEER: AECOM Technical Services, Inc.
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

PROJECT TITLE: I-84 INTERCHANGES 5 & 6 IMPROVEMENTS

TOWN: DANBURY

DRAWING TITLE: GENERAL PLAN

PROJECT NO. 34-313
DRAWING NO. PLN-001
SHEET NO.



BITUMINOUS CONCRETE PARK CURBING (BCPC)
STA. 506+81 RT TO 513+84 RT
STA. 515+59 RT TO 520+14 RT
STA. 517+33 LT TO 520+42 LT

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Filename: HW_PLN-002_034_0308.dgn 7/23/2014 Border Version: 8/1/05

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DESIGNER/DRAFTER: **B. SABEAN**

CHECKED BY: **N. ROLFE**

SCALE IN FEET 0 40 80

SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**

APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

STATE OF CONNECTICUT NOEL M. PAGAN No. 12900 LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **GENERAL PLAN**

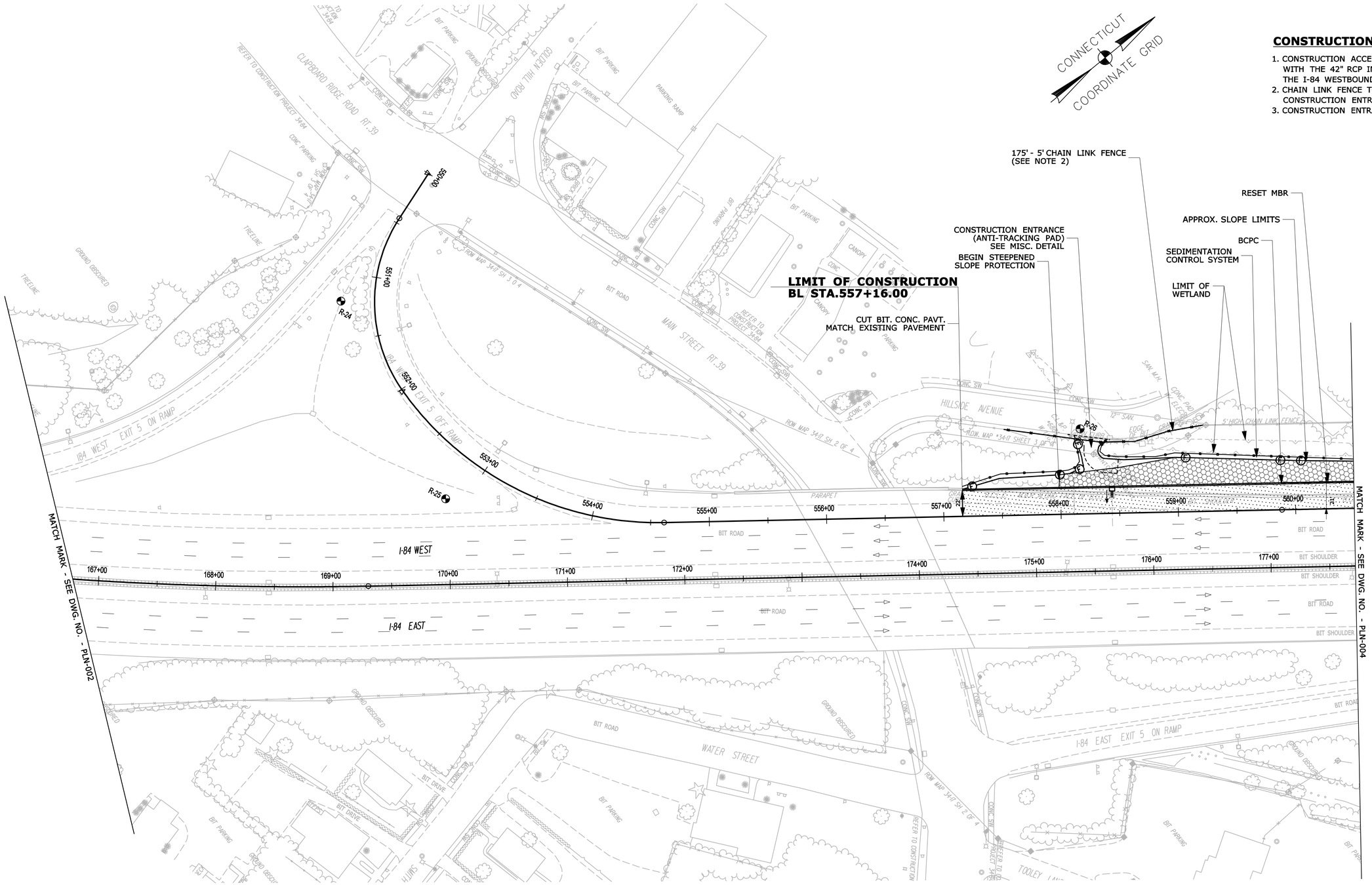
PROJECT NO. **34-313**

DRAWING NO. **PLN-002**

SHEET NO.

CONSTRUCTION NOTES:

1. CONSTRUCTION ACCESS FOR WORK ASSOCIATED WITH THE 42" RCP INSTALLATION TO OCCUR FROM THE I-84 WESTBOUND SHOULDER.
2. CHAIN LINK FENCE TO BE INSTALLED ONCE CONSTRUCTION ENTRANCE IS NO LONGER NEEDED.
3. CONSTRUCTION ENTRANCE (SEE MDS-009).



REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Filename: HW_PLN-003_034_0308.dgn 6/10/2014 Border Version: 6/1/05

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CHECKED BY: **N. ROLFE**
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

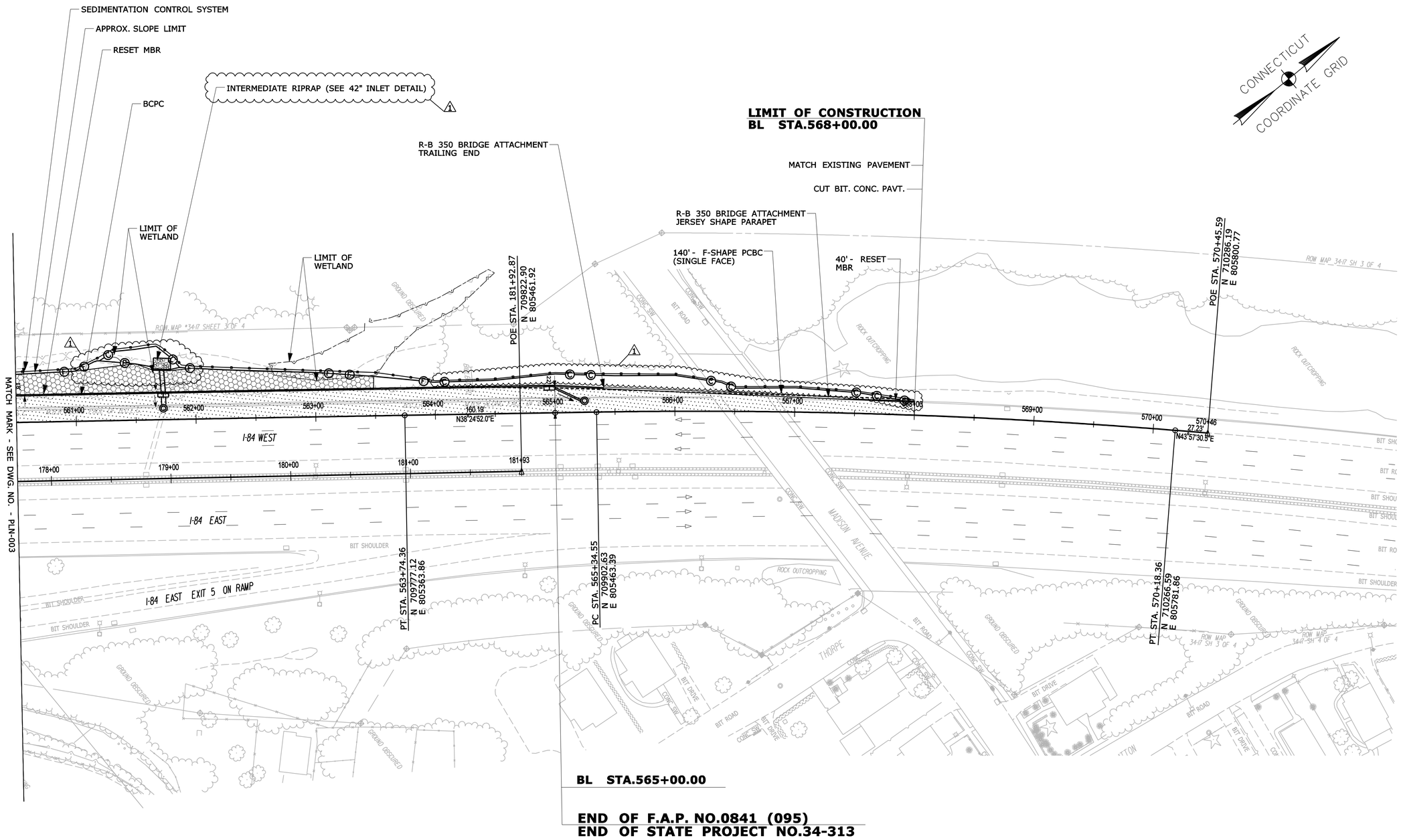
STATE OF CONNECTICUT NOEL M. PAGAN No. 12000 LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **GENERAL PLAN**

PROJECT NO. **34-313**
DRAWING NO. **PLN-003**
SHEET NO.



BL STA.565+00.00

END OF F.A.P. NO.0841 (095)
END OF STATE PROJECT NO.34-313

ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	REVISED SLOPE LIMIT, SCS LOCATION & RIPRAP TYPE	

Filename: HW PLN-004 034 0308 A1.dgn 9/25/2014 Border Version: 6/1/05

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SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

STATE OF CONNECTICUT NOEL M. PAGAN No. 12600 PROFESSIONAL ENGINEER

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

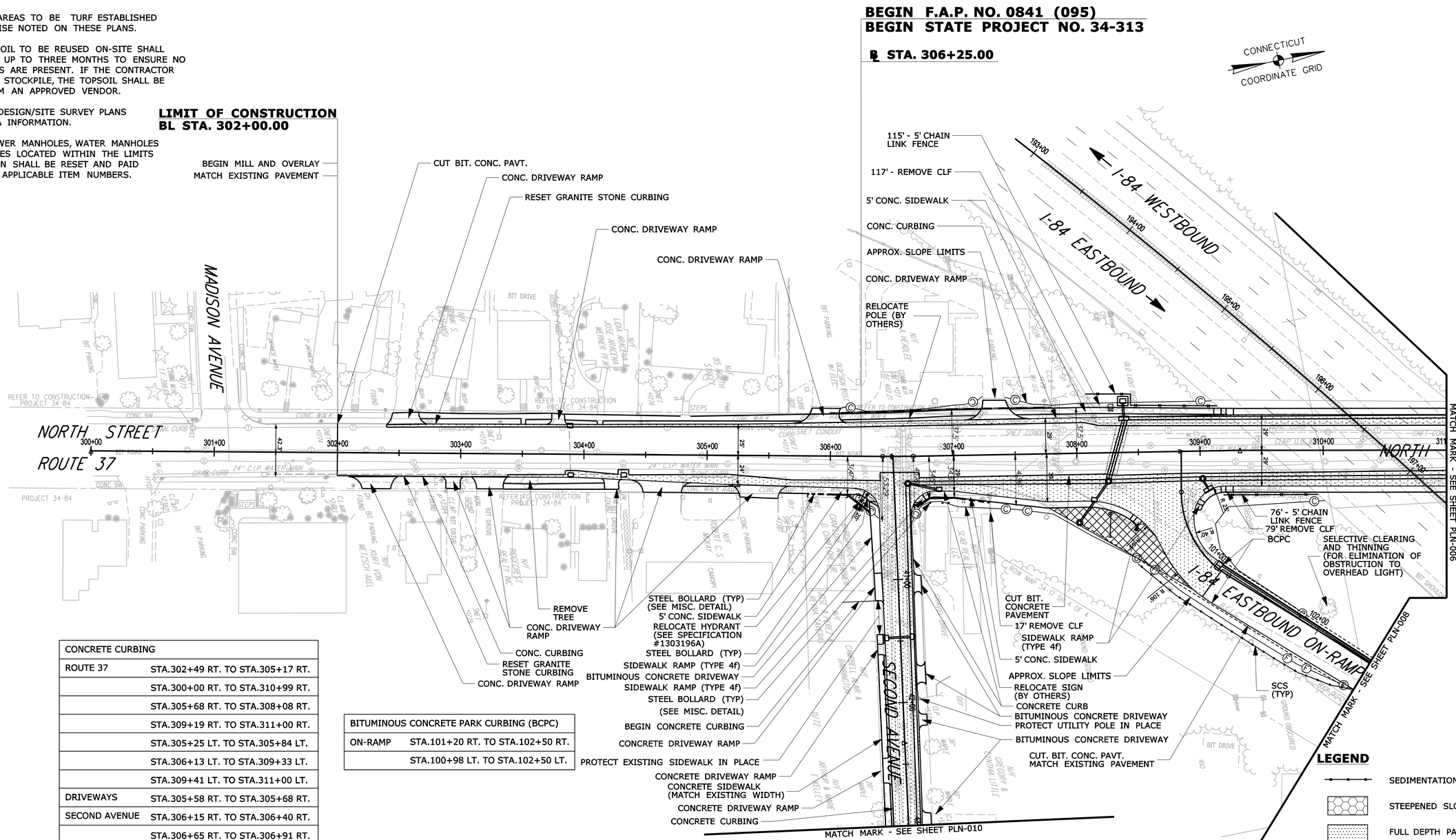
TOWN: **DANBURY**

DRAWING TITLE: **GENERAL PLAN**

PROJECT NO. **34-313**
DRAWING NO. **PLN-004**
SHEET NO.

GENERAL NOTES:

1. ALL DISTURBED AREAS TO BE TURF ESTABLISHED UNLESS OTHERWISE NOTED ON THESE PLANS.
2. EXCAVATED TOPSOIL TO BE REUSED ON-SITE SHALL BE STOCK PILED UP TO THREE MONTHS TO ENSURE NO INVASIVE SPECIES ARE PRESENT. IF THE CONTRACTOR CHOSES NOT TO STOCKPILE, THE TOPSOIL SHALL BE PURCHASED FROM AN APPROVED VENDOR.
3. SEE ALIGNMENT DESIGN/SITE SURVEY PLANS FOR CURVE DATA INFORMATION.
4. ALL SANITARY SEWER MANHOLES, WATER MANHOLES AND WATER GATES LOCATED WITHIN THE LIMITS OF CONSTRUCTION SHALL BE RESET AND PAID FOR UNDER THE APPLICABLE ITEM NUMBERS.



CONCRETE CURBING	
ROUTE 37	STA.302+49 RT. TO STA.305+17 RT.
	STA.300+00 RT. TO STA.310+99 RT.
	STA.305+68 RT. TO STA.308+08 RT.
	STA.309+19 RT. TO STA.311+00 RT.
	STA.305+25 LT. TO STA.305+84 LT.
	STA.306+13 LT. TO STA.309+33 LT.
	STA.309+41 LT. TO STA.311+00 LT.
DRIVEWAYS	STA.305+58 RT. TO STA.305+68 RT.
SECOND AVENUE	STA.306+15 RT. TO STA.306+40 RT.
	STA.306+65 RT. TO STA.306+91 RT.
	STA.40+50 RT. TO STA.43+00 RT.
	STA.41+25 LT. TO STA.41+70 LT.
	STA.41+90 LT. TO STA.43+00 LT.
ON-RAMP	STA.308+08 RT. TO STA.101+20 RT.
	STA.309+19 RT. TO STA.100+98 LT.

BITUMINOUS CONCRETE PARK CURBING (BCPC)	
ON-RAMP	STA.101+20 RT. TO STA.102+50 RT.
	STA.100+98 LT. TO STA.102+50 LT.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Filename: HW_PLN-005_034_0313.dgn 6/6/2014 Border Version: 6/1/05

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CHECKED BY: **N. ROLFE**
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

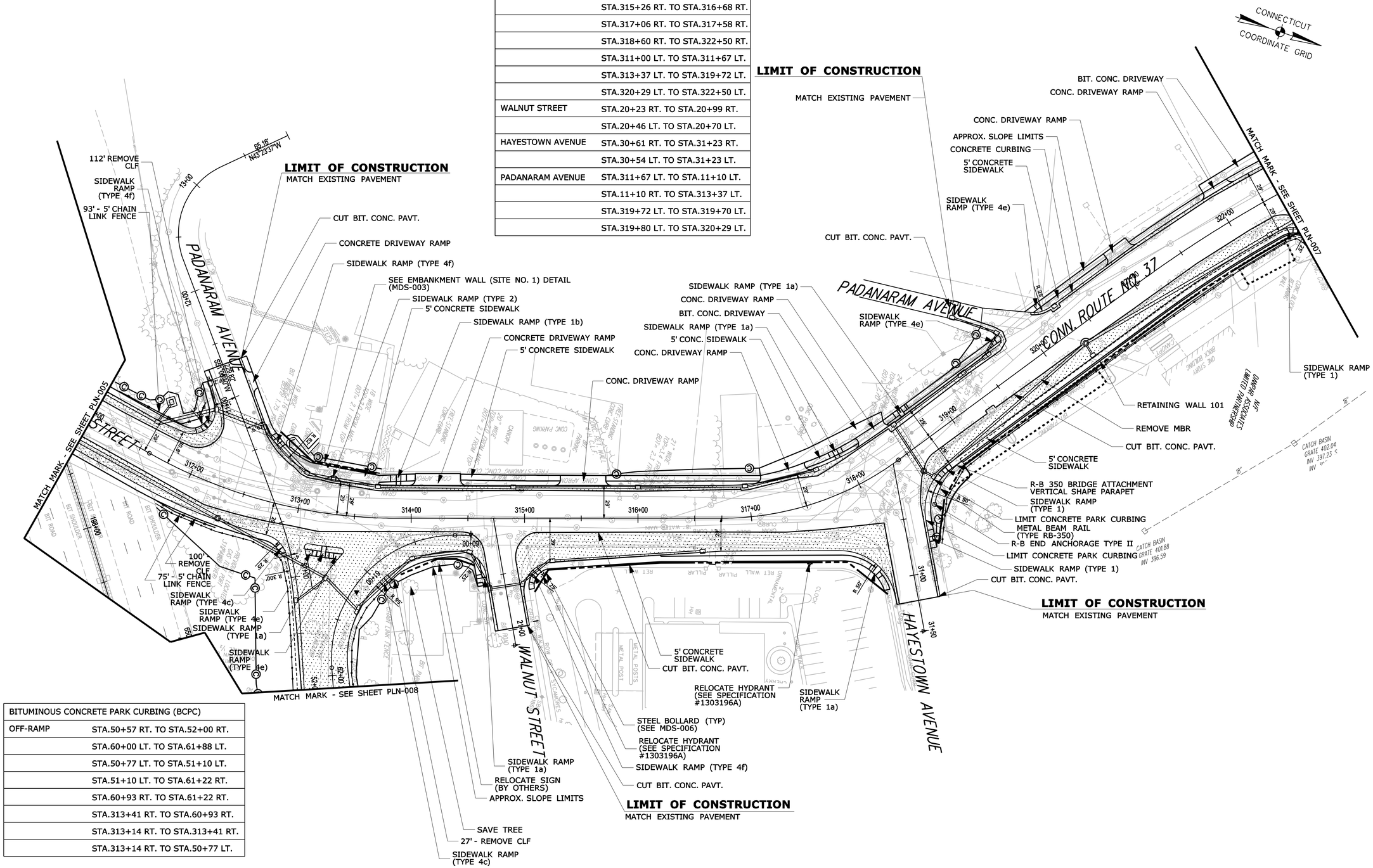
TOWN: **DANBURY**

DRAWING TITLE: **GENERAL PLAN**

PROJECT NO. **34-313**
DRAWING NO. **PLN-005**
SHEET NO.

CONCRETE PARK CURBING	
HAYESTOWN AVENUE	STA.30+54 LT. TO STA.318+60 RT.

CONCRETE CURBING	
ROUTE 37	STA.311+00 RT. TO STA.312+78 RT.
	STA.315+26 RT. TO STA.316+68 RT.
	STA.317+06 RT. TO STA.317+58 RT.
	STA.318+60 RT. TO STA.322+50 RT.
	STA.311+00 LT. TO STA.311+67 LT.
	STA.313+37 LT. TO STA.319+72 LT.
	STA.320+29 LT. TO STA.322+50 LT.
WALNUT STREET	STA.20+23 RT. TO STA.20+99 RT.
	STA.20+46 LT. TO STA.20+70 LT.
HAYESTOWN AVENUE	STA.30+61 RT. TO STA.31+23 RT.
	STA.30+54 LT. TO STA.31+23 LT.
PADANARAM AVENUE	STA.311+67 LT. TO STA.11+10 LT.
	STA.11+10 RT. TO STA.313+37 LT.
	STA.319+72 LT. TO STA.319+70 LT.
	STA.319+80 LT. TO STA.320+29 LT.



BITUMINOUS CONCRETE PARK CURBING (BCPC)	
OFF-RAMP	STA.50+57 RT. TO STA.52+00 RT.
	STA.60+00 LT. TO STA.61+88 LT.
	STA.50+77 LT. TO STA.51+10 LT.
	STA.51+10 LT. TO STA.61+22 RT.
	STA.60+93 RT. TO STA.61+22 RT.
	STA.313+41 RT. TO STA.60+93 RT.
	STA.313+14 RT. TO STA.313+41 RT.
	STA.313+14 RT. TO STA.50+77 LT.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Filename: HW_PLN-006_034_0313.dgn 6/24/2014 Bgnler Version: 6/1/05

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CHECKED BY: **N. ROLFE**
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

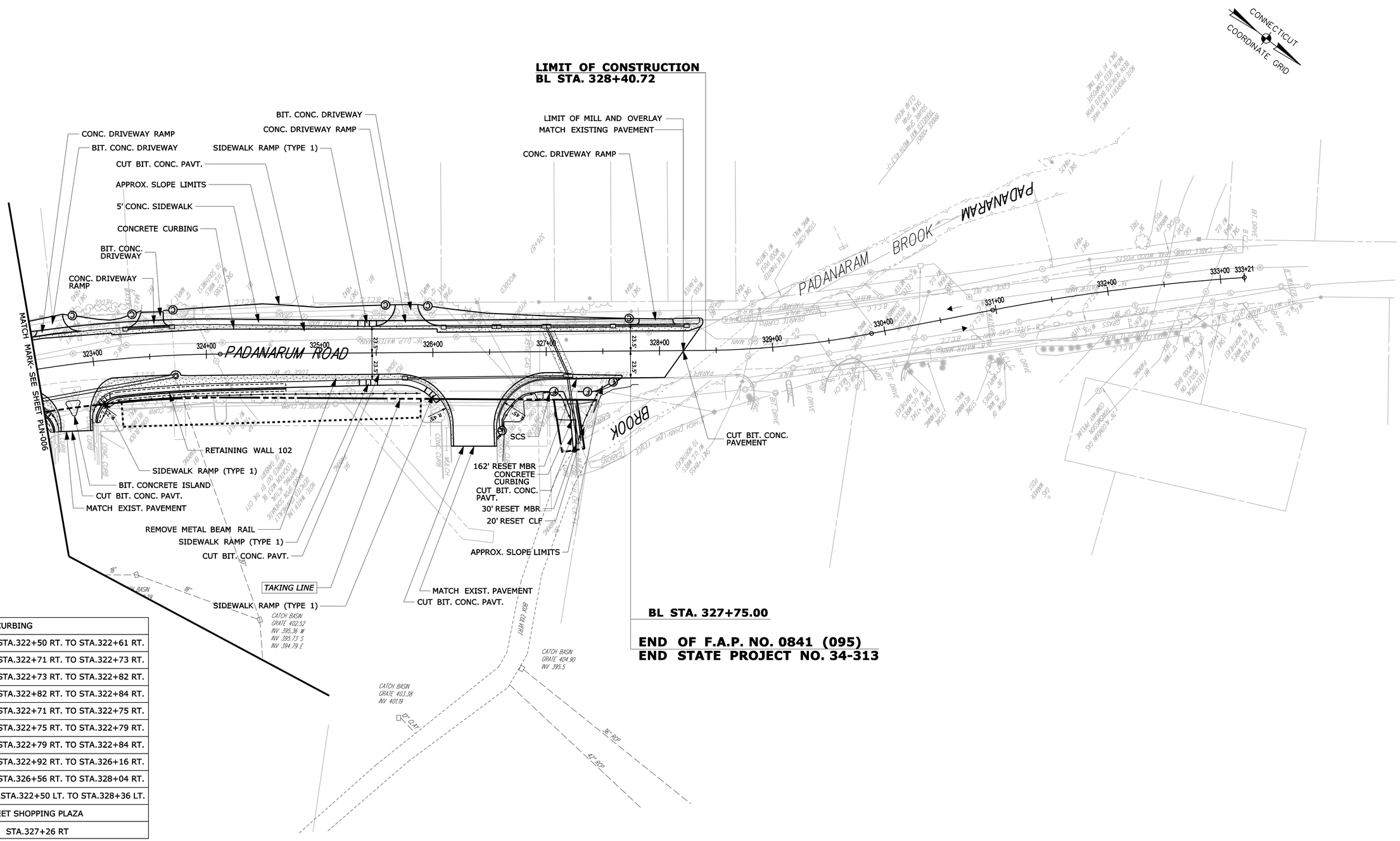
ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **GENERAL PLAN**

PROJECT NO. **34-313**
DRAWING NO. **PLN-006**
SHEET NO.



CONCRETE CURBING
ROUTE 37 STA.322+50 RT. TO STA.322+61 RT.
STA.322+71 RT. TO STA.322+73 RT.
STA.322+73 RT. TO STA.322+82 RT.
STA.322+82 RT. TO STA.322+84 RT.
STA.322+71 RT. TO STA.322+75 RT.
STA.322+75 RT. TO STA.322+79 RT.
STA.322+79 RT. TO STA.322+84 RT.
STA.322+92 RT. TO STA.326+16 RT.
STA.326+56 RT. TO STA.328+04 RT.
STA.322+50 LT. TO STA.328+36 LT.
NORTH STREET SHOPPING PLAZA
STA.327+26 RT

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
Filename:	HW PLN-007_034_0313.dgn	6/24/2014	Border Version: 8/1/05

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CHECKED BY: **N. ROLFE**
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SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

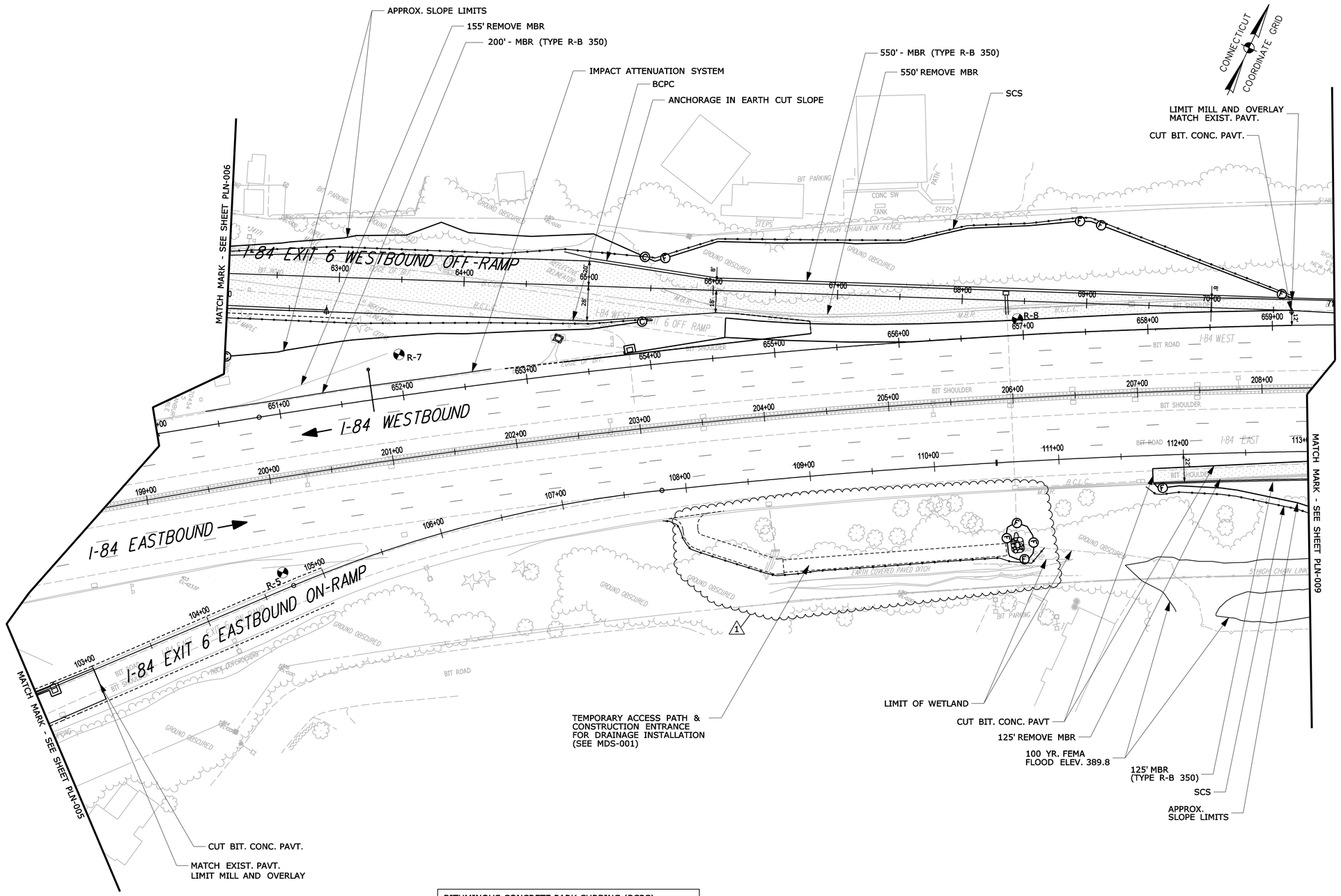
ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **GENERAL PLAN**

PROJECT NO. **34-313**
DRAWING NO. **PLN-007**
SHEET NO.



BITUMINOUS CONCRETE PARK CURBING (BCPC)	
I-84 WESTBOUND	STA.651+99 LT. TO STA.653+98 LT.
I-84 EASTBOUND	STA.611+75 RT. TO STA.613+00 RT.
OFF-RAMP	STA.62+00 RT. TO STA.65+38 RT.
	STA.62+00 LT. TO STA.70+53 LT.

ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	REVISED SURVEY, EXIST. DRAINAGE LOCACTION & EXTEND CONST. ENTRANCE	

Filename: HW PLN-008_034_0313_A1.dgn 10/8/2014 Border Version: 6/1/05

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SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

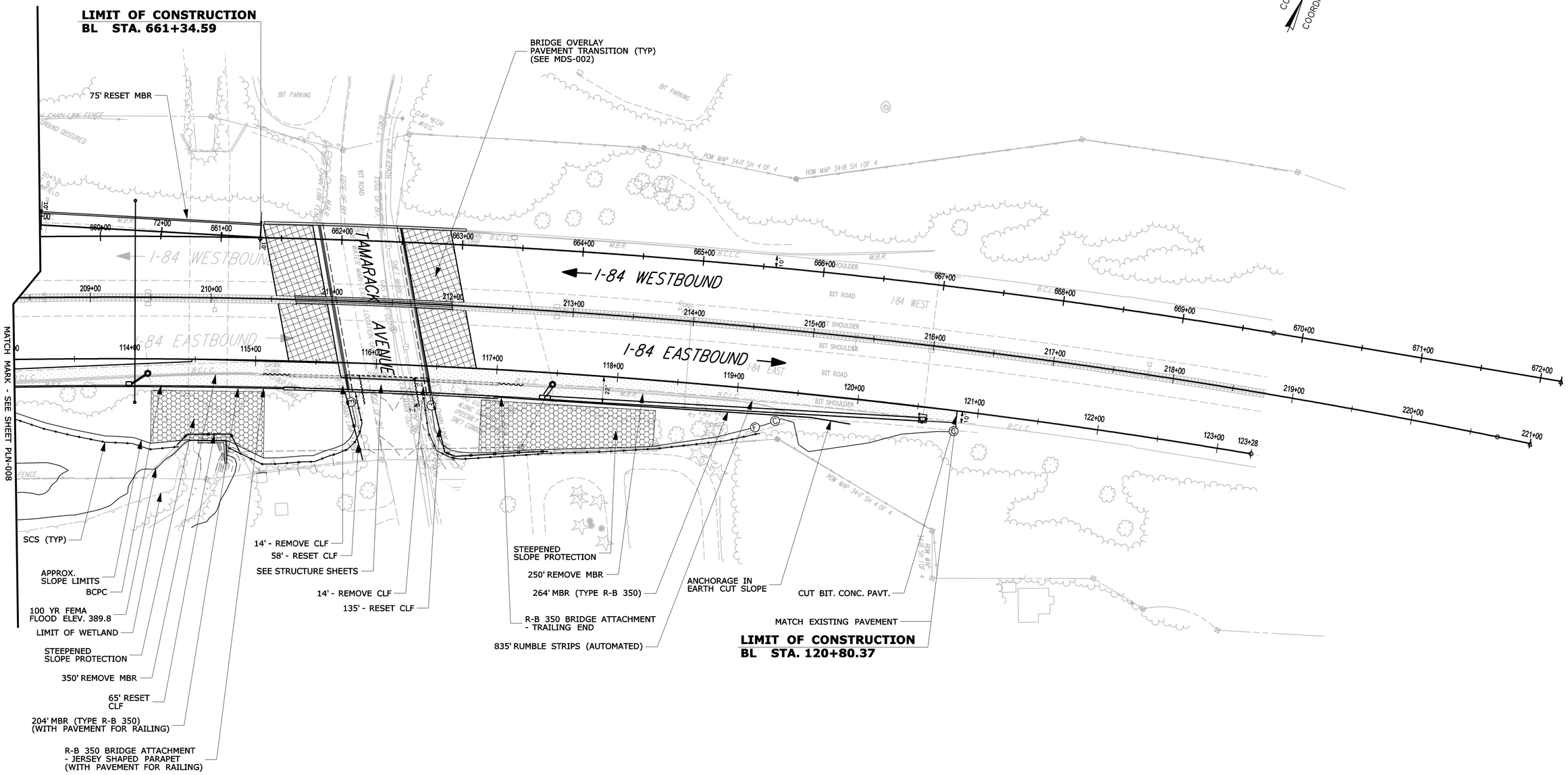
STATE OF CONNECTICUT NOEL M. PAGAN No. 12900 LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **GENERAL PLAN**

PROJECT NO. **34-313**
DRAWING NO. **PLN-008**
SHEET NO.



BITUMINOUS CONCRETE PARK CURBING (BCPC)
I-84 WESTBOUND STA.613+00 RT. TO STA.615+24 RT.
STA.616+99 RT. TO STA.620+83 RT.

REV.	DATE	REVISION DESCRIPTION	SHEET NO.

Filename: HW_PLN-009_034_0313.dgn 6/24/2014 Border Version: 6/1/05

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DESIGNER/DRAFTER: **B. SABEAN/P. ARZENO**
CHECKED BY: **N. ROLFE**
SCALE IN FEET 0 40 80
SCALE 1"=40'

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

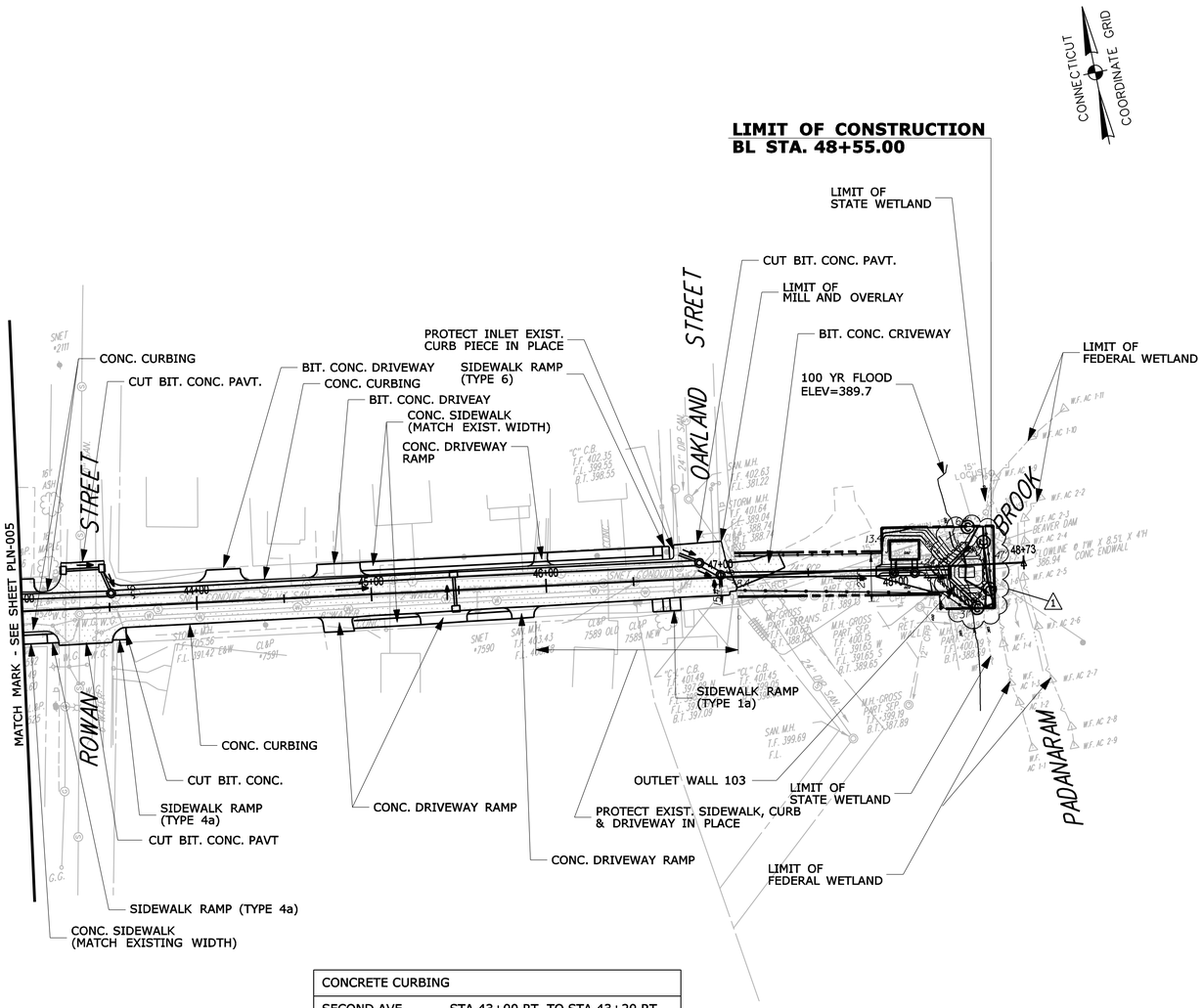
ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **GENERAL PLAN**

PROJECT NO. **34-313**
DRAWING NO. **PLN-009**
SHEET NO.



CONCRETE CURBING	
SECOND AVE.	STA.43+00 RT. TO STA.43+20 RT.
	STA.43+50 RT. TO STA.44+70 RT.
	STA.44+90 RT. TO STA.45+78 RT.
	STA.43+00 LT. TO STA.43+23 LT.
	STA.43+48 LT. TO STA.44+83 LT.
	STA.44+90 LT. TO STA.45+90 LT.
	STA.46+00 LT. TO STA.46+75 LT.
	STA.47+00 LT. TO STA.47+10 LT.

ADDENDUM NO. 1

REV.	DATE	REVISION DESCRIPTION	SHEET NO.
1	10/14/14	REVISED EXIST. WETLAND LOCATION & 100YR FLOOD ELEV, PROP. GRADING	

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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

STATE OF CONNECTICUT NOEL M. PAGAN No. 12500 LICENSED PROFESSIONAL ENGINEER

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **GENERAL PLAN**

PROJECT NO. **34-313**
DRAWING NO. **PLN-010**
SHEET NO.

GENERAL NOTES:

1. SEE SPECIAL PROVISION SECTION 1.08.04 - PROSECUTION AND PROGRESS AND ITEM #971001A - MAINTENANCE AND PROTECTION OF TRAFFIC FOR CONSTRUCTION STAGING REQUIREMENTS.
2. EXISTING CONFLICTING PAVEMENT MAKINGS SHALL BE REMOVED OR COVERED AT THOSE LOCATIONS WHERE THE EXISTING PAVEMENT MARKINGS WILL REMAIN AT THE END OF THE CONSTRUCTION, INCLUDING THOSE PAVEMENT MARKINGS OUTSIDE OF THE TRAVEL WAY. THE ITEM 6" PREFORMED BLACK LINE MASK PAVEMENT MARKING TAPE SHALL BE USED TO COVER EXISTING PAVEMENT MARKINGS, INCLUDING THOSE PAVEMENT MARKINGS OUTSIDE OF THE TRAVEL WAY. ITEM NO. 1211001 - REMOVAL OF PAVEMENT MARKINGS SHALL BE USED TO ERADICATE EXISTING CONFLICTING PAVEMENT MARKINGS AT LOCATIONS WHERE THE ROADWAY WILL BE MILLED OR RECONSTRUCTED.
3. TRAFFIC DRUMS ARE SPACED APPROXIMATELY 20' OR 40' APART. SEE PLANS FOR SPACING.
4. TPCBC = TEMPORARY PRECAST CONCRETE BARRIER CURB.
5. THE APPROPRIATE TYPE DE-7 AND TYPE DE-7A DELINEATORS SHALL BE INSTALLED ON THE "TPCBC" AS SPECIFIED ON THE STANDARD SHEET "DELINEATION, DELINEATOR AND OBJECT MARKER DETAILS". THE APPROPRIATE ATTENUATOR REFLECTOR (SIGN NO. 50-5302) SHALL BE ATTACHED TO THE LEADING BARREL.
6. EXISTING SIGNS ARE TO BE RELOCATED AS NEEDED AND AS DIRECTED BY THE ENGINEER DURING CONSTRUCTION SO THAT THEY ARE IN THE APPROPRIATE LOCATION AND VISIBLE TO MOTORISTS. SOME SIGNS MAY HAVE TO BE TEMPORARILY LOCATED WITHIN THE WORK AREA. THIS WORK WILL BE PAID FOR UNDER ITEM NO.0971001A MAINTENANCE AND PROTECTION OF TRAFFIC.
7. EXISTING SIGNS IN CONFLICT WITH TEMPORARY SIGNS SHALL BE COVERED, REMOVED OR REVISED TO MEET FIELD CONDITIONS.
8. THE LOCATIONS OF TEMPORARY SIGNS SHOWN ON THE PLANS ARE APPROXIMATE AND SHALL BE ADJUSTED BY THE CONTRACTOR TO MEET FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. ALL CONSTRUCTION SIGNS ARE TO BE INSTALLED ON BREAKAWAY POSTS PER TRAFFIC STANDARD SHEET TR-1208_01, TR-1208_02, & TR-1220_02.
9. TEMPORARY SIGNS SHALL BE MOUNTED ON POSTS WHEN FEASIBLE.
10. THE LOCATIONS OF TRAFFIC DRUMS SHOWN ON THE PLANS ARE APPROXIMATE AND SHALL BE ADJUSTED BY THE CONTRACTOR TO MEET FIELD CONDITIONS AND TO CLEARLY DEFINE INGRESS AND EGRESS FROM ALL ROADWAYS AND DRIVEWAYS, AS DIRECTED BY THE ENGINEER.
11. ALL DISTURBED AREAS, UNLESS OTHERWISE NOTED, SHALL BE TURF ESTABLISHED OVER 4" TOP SOIL. PRIOR TO TURF ESTABLISHMENT, STONE OR DEBRIS GREATER THAN 2" SHALL BE REMOVED FROM SITE.
12. EXCAVATED TOPSOIL TO BE REUSED ON-SITE SHALL BE STOCK PILED UP TO THREE MONTHS TO ENSURE NO INVASIVE SPECIES ARE PRESENT. IF THE CONTRACTOR CHOSES NOT TO STOCKPILE, THE TOPSOIL SHALL BE PURCHASED FROM AN APPROVED VENDOR.
13. SEE ALIGNMENT DESIGN/SITE SURVEY PLANS FOR CURVE DATA INFORMATION.
14. RUMBLE STRIPS REMOVED DUE TO CONSTRUCTION SHALL BE REPLACED IN KIND.
15. ALL EXISTING DRAINAGE PIPES AND STRUCTURES WITHIN THE PROJECT LIMITS SHALL BE CLEANED AS DIRECTED BY THE ENGINEER.
16. MAINTAIN ACCESS TO ALL DRIVEWAYS. CONTRACTOR TO COORDINATE WITH PROPERTY OWNER FOR TEMPORARY CLOSURES, AS DIRECTED BY THE ENGINEER.
17. SEE TEMPORARY DRIVEWAY DETAIL SHEET MDS-002.
18. ALL DRAINAGE CROSSINGS ON ROUTE 37 SHALL BE COMPLETED IN STAGE 1, DURING NIGHT SHIFT AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE REQUIRED ILLUMINATION AT HIS EXPENSE.
19. ANY SIGNING DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AT NO COST TO THE STATE.
20. BARRICADE WARNING LIGHTS - HIGH INTENSITY SHALL BE MOUNTED ON ALL DIAMOND SHAPED POST-MOUNTED CONSTRUCTION SIGNS.
21. EXISTING ILLUMINATION SHALL REMAIN OPERATIONAL AT ALL TIMES.
22. CONTRACTOR TO REMOVE ALL CONFLICTING TRAFFIC DEVICES (TPCBC, BARRICADES, TRAFFIC DRUMS, PAVEMENT MARKINGS ETC.) AND SIGNS UPON COMPLETION OF EACH STAGE AND PRIOR TO STARTING THE NEXT STAGE.
23. FOR UTILITY TEST PIT DATA SEE DRG-010.
24. ALL TRAFFIC CONTROL MEASURES AND DEVICES SHALL BE IN PLACE BEFORE BEGINNING OF CONSTRUCTION ACTIVITIES. COVER EXISTING TRAFFIC SIGNS THAT ARE NOT APPLICABLE TO THE CONSTRUCTION STAGE.
25. SIDEWALKS ADJACENT TO CONSTRUCTION ACTIVITY SHALL BE CLOSED TO PEDESTRIAN TRAFFIC AND/OR THE CONSTRUCTION AREA SHALL BE FENCED AS DIRECTED BY THE ENGINEER. PEDESTRIAN DETOURS NECESSARY FOR SIDEWALK CLOSURES MUST MEET ADA REQUIREMENTS IF EXISTING CLOSED SECTIONS MET ADA REQUIREMENTS.
26. THE COST OF ALL WORK NOTED IN THE GENERAL MPT DRAWINGS AND NOTES SHALL BE INCLUDED UNDER MAINTENANCE AND PROTECTION OF TRAFFIC SPECIAL PROVISIONS, UNLESS SPECIFICALLY COVERED UNDER A BID ITEM.
27. ALL DROP-OFFS GREATER THAN 3-INCHES SHALL BE PROTECTED WITH TPCBC.
28. REFER TO MAINTENANCE AND PROTECTION OF TRAFFIC SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS AND TRAFFIC CONTROL PLANS.
29. PRIOR TO ANY GROUND DISTRUPTION IN ANY STAGE/SEQUENCE, INSTALL SILT FENCE AS SHOWN ON CONSTRACT DRAWINGS AND.INSTALL INLET FILTERS TO PROTECT ALL INLETS WITHIN THE RESPECTIVE STAGE/SEQUENCE LIMITS AND INLETS OUTSIDE THE STAGE/SEQUENCE LIMITS WHICH RECEIVE FLOWS FROM THE RESPECTIVE STAGE/SEQUENCE. AT THE COMPLETION OF ALL WORK IN A SPECIFIED STAGE/SEQUENCE ALL EROSION CONTROL DEVICES SHALL BE REMOVED AND THE RESPETIVE PAVEMENT AREA CLEANED.
30. APPROACH WARNING SIGNS SHALL BE PLACED SO THEY REMIAN IN PLACE IN SUBSEQUENT APPLICABLE STAGES.
31. AT THE END OF THE STAGE CONSTRUCTION, REMOVE SIGNS AND/OR TRAFFIC CONTROL DEVICES THAT ARE NOT APPLICABLE TO THE SUBSEQUENT STAGE.
32. REFER TO PROSECUTION AND PROGRESS SPECIAL PROVISION FOR ADDITIONAL REQUIREMENTS.
33. CONTRACTOR TO MAINTAIN THE RAMP PRE-EMPTION ON THE EXIT 6 WB OFF-RAMP AT ALL TIMES DURING THE CONSTRUCTION. DETECTION AT OTHER LOCATIONS SHALL BE MAINTAINED AS STATED ELSEWHERE IN THE CONTRACT DOCUMENTS.
34. WORK ON SECOND AVE., INT. 6 WB OFF-RAMP & INT. 5 EB OFF-RAMP CAN BE PERFORMED AT THE SAME TIME.
35. WORK ON ROUTE 37 WEST SIDE SHALL COMMENCE AFTER SECOND AVENUE DRAINAGE IS COMPLETED AND IS OPERATIONAL.
36. THE PROJECT SHALL BE PHASED TO AVOID DISTURBING FROM TWO TO FIVE ACRES, AND OVER FIVE ACRES IN TOTAL, AT ANY ONE TIME. SEE "NOTICE TO CONTRACTOR-GENERAL PERMIT FOR STORMWATER DISCHARGE" AND GENERAL PERMIT FOR STORMWATER DISCHARGE FOR REQUIREMENTS.

STAGE 1 SEQUENCE 1 & 2 (INT. 5 EB OFF-RAMP)

A. TRAFFIC OPERATIONS
1. ERECT TEMPORARY CONSTRUCTION SIGNS AND PLACE TRAFFIC CONTROL DEVICES AS SHOWN ON THE PLANS AT THE BEGINNING AND THE END OF WORK ZONE AND MAINTAIN TRAFFIC ON THE RAMP AS SHOWN ON DRAWINGS MPT-002, 003 AND 004. MAINTAIN EXISTING NUMBER OF TRAVEL LANES ON I-84, BUT DECREASE LANE WIDTHS ON I-84 TO 11-FEET WITH TEMPORARY LANE MARKING.
2. INSTALL TPCBC ON I-84 ALONG SHOULDER AND ON THE RAMP.

B. EROSION AND SEDIMENT CONTROL
1. INSTALL TEMPORARY ACCESS ROAD & ASSOCIATED EROSION CONTROL AND ANTI-TRACKING PAD.

C. CONSTRUCTION
1. SEQUENCE 1, WITHIN LIMITS OF DECELERATION LANE, CONSTRUCT KOHANZA STREET BRIDGE, EMBANKMENT, DRAINAGE, FULL DEPTH PAVEMENT, NOISE WALL AND RESET EXISTING METAL BEAM GUIDERAIL.
2. DURING SEQUENCE 1 WORK ON THE EXIT 5 EB OFF-RAMP, THE CONTRACTOR WILL BE ALLOWED TO REDUCE THE EXISTING NUMBER OF LANES ON THE OFF-RAMP FROM TWO TO ONE, AS SHOWN ON DWG NO. MPT-003, FOR A PERIOD OF TIME NOT TO EXCEED ONE WEEKEND. THIS WORK SHALL NOT BE PERMITED DURING A HOLIDAY WEEK. SEE THE PROSECTUTION AND PROGRESS SPECIAL PROVISION FOR THE ALLOWABLE HOURS. DURING THIS WEEKEND PERIOD, THE CONTRACTOR SHALL BE REQUIRED TO CONSTRUCT THE NORTH SIDE OF THE RAMP, EMBANKMENT DRAINAGE, AND INSTALL FULL DEPTH PAVEMENT. AT THE END OF THE WEEKEND PERIOD, THE CONTRACTOR SHALL HAVE THE OFF-RAMP RETURNED TO TWO LANES OF TRAFFIC AS SHOWN ON DWG. NO. MPT-004. THE CONTRACTOR SHALL PROVIDE THE REQUIRED NUMBER OF CREWS AND ALL NECESSARY EQUIPMENT TO COMPLETE THIS WORK DURING THE ALLOWABLE PERIOD. THE CONTRACTOR SHALL PROVIDE A DETAILED WORK SCHEDULE TO THE ENGINEER FOR APPROVAL AT LEAST TWO WEEKS BEFORE THE WORK IS PROPOSED TO BEGIN.
3. SEQUENCE 2, AT FARVIEW AVENUE CONSTRUCT SOUTH SIDE OF THE RAMP EMBANKMENT DRAINAGE AND FULL DEPTH PAVEMENT.
4. CONSTRUCT CANTILEVER SIGN STRUCTURE.

STAGE 1 SEQUENCE 1 (SECOND AVE.)

A. TRAFFIC OPERATIONS
1. ERECT TEMPORARY CONSTRUCTION SIGNS AND PLACE TRAFFIC CONTROL DEVICES AT THE BEGINNING AND THE END OF WORK ZONE AS SHOWN ON THE DRAWINGS MPT-005 AND 010.
2. SECOND AVENUE DETOUR TO BE UTILIZED (SEE DTR-001). REFER TO DETOUR NOTES AND MAINTENANCE & PROTECTION OF TRAFFIC SPECIAL PROVISION.

B. EROSION AND SEDIMENT CONTROL
1. PROVIDE HANDLING WATER PLAN FOR WORK WITHIN PADANARAM BROOK AND REMOVAL OF EXISTING OUTLET PIPE AND INSTALLATION OF NEW OUTLET PIPE.

C. CONSTRUCTION
1. INSTALL DRAINAGE TRUNK LINE AND STRUCTURES UPSTREAM OF OAKLAND STREET ON SECOND AVENUE.
2. INSTALL COFFERDAM FORMWORK FOR HEADWALL FOOTING.
3. INSTALL FORMWORK FOR HEADWALL AND WINGWALLS AND REMOVE EXISTING OUTLET PIPE AND CONNECT NEW OUTLET PIPE TO TRUNK LINE
4. INSTALL DRAINAGE TRUNK LINE FROM HEADWALL TO OAKLAND STREET AND REMOVE EXISTING TRUNK LINE AS REQUIRED TO INSTALL NEW PIPE, PROVIDE TEMPORARY DRAINAGE BETWEEN EXISTING TRUNKLINE AND NEW PIPE AND FROM OUTLET PIPE AT HEADWALL TO BROOK.
5. INSTALL HYDRODYNAMIC SEPARATOR.
6. CONSTRUCT OUTLET HEADWALL, SCOUR HOLE AND RIPRAP.
7. CONSTRUCT CURB AND SIDEWALK.
8. CONSTRUCT FULL DEPTH PAVEMENT AND MILL AND RESURFACE PAVEMENT TRANSITIONS TO EXISTING PAVEMENT TO REMAIN.

STAGE 1 SEQUENCE 2 ROUTE 37 (WEST SIDE)

A. TRAFFIC OPERATIONS
1. MAINTAIN NUMBER OF TRAVEL AND TURNING LANES ON ROUTE 37 AS SHOWN ON DRAWINGS MPT-005, 006 AND 007.
2. INSTALL TEMPORARY PAVEMENT MARKINGS AND TRAFFIC DRUMS.
3. CONSTRUCT TEMPORARY 4' WIDE BITUMINOUS CONCRETE SIDEWALK ON THE EAST SIDE OF ROUTE 37 BETWEEN HAYESTOWN AVENUE AND THE NORTH STREET SHOPPING CENTER MAIN ENTRANCE.
4. RELOCATE PEDESTRIAN SIGNS BLOCK BY BLOCK AS CONSTRUCTION PROGRESSES NORTHERLY.

B. EROSION AND SEDIMENT CONTROL
1. INSTALL EROSION AND SEDIMENT CONTROL AS SHOWN ON THE RESPECTIVE STAGING SHEET.

C. CONSTRUCTION
1. INSTALL DRAINAGE SYSTEM ALONG WEST SIDE OF ROUTE 37 AND ALL NOTED CROSS CONNECTIONS, COMMENCING AT SECOND AVENUE AND PROCEEDING NORTHERLY TO JUST NORTH OF THE NORTH STREET SHOPPING CENTER.
2. INSTALL CURBS, SIDEWALKS AND RAMPS.
3. CONSTRUCT FULL DEPTH PAVEMENT WITHIN WIDENED ROADWAY AND ALL DRAINAGE TRENCES TO WITHIN 2-INCHES OF FINISHED GRADE, MATCH ELEVATION OF EXISTING ADJACENT PAVEMENTS.
4. MILL LEFT SIDE OF ROUTE 37 TO MATCH FULL DEPTH WIDENED PAVEMENT SURFACE.
5. INSTALL TEMPORARY TRAFFIC SIGNAL AT INTERCHANGE 6 WESTBOUND OFF-RAMP AND ROUTE 37 (ADJUST AS NEEDED FOR SUBSEQUENT STAGES).

STAGE 1 SEQUENCE 1 (INT. 6 WB OFF-RAMP LEFT SIDE)

A. TRAFFIC OPERATIONS
1. MAINTAIN TRAFFIC ON THE RAMP AS SHOWN ON DRAWINGS MPT-006, 008 AND 009. I-84 MAINLINE TRAFFIC OPERATIONS WILL NOT BE IMPACTED.
2. INSTALL TPCBC ON I-84 ALONG SHOULDER AND ON THE RAMP.

B. EROSION AND SEDIMENT CONTROL
1. INSTALL EROSION AND SEDIMENT CONTROL AS SHOWN ON THE RESPECTIVE STAGING SHEET.

C. CONSTRUCTION
1. CONSTRUCTION EMBANKMENT, DRAINAGE, FULL DEPTH WIDENING UP TO FIRST LAYER FROM APPROXIMATE STATION 65+25 TO 70+00, AND DRAINAGE.
2. CONSTRUCT TEMPORAY PAVEMENT AS NOTED ON THE DRAWINGS.
3. INSTALL NEW METAL BEAM GUIDE RAIL AND RESET EXISTING METAL BEAM GUIDERAIL AS NOTED ON THE PLANS.

STAGE 2 & STAGE 2A ROUTE 37 (EAST SIDE)

A. TRAFFIC OPERATIONS
1. MAINTAIN NUMBER OF TRAVEL AND TURNING LANES ON ROUTE 37 AS SHOWN ON DRAWINGS MPT-013, 014 AND 015.
2. INSTALL TEMPORARY PAVEMENT MARKINGS AND TRAFFIC DRUMS.
3. RELOCATE PEDESTRIAN SIGNS BLOCK BY BLOCK AS CONSTRUCTION PROGRESSES NORTHERLY.

B. EROSION AND SEDIMENT CONTROL
1. INSTALL EROSION AND SEDIMENT CONTROL AS SHOWN ON THE RESPECTIVE STAGING SHEET.

C. CONSTRUCTION
1. INSTALL DRAINAGE SYSTEM ALONG EAST SIDE OF ROUTE 37 AND ALL NOTED CROSS CONNECTIONS, COMMENCING AT SECOND AVENUE AND PROCEEDING NORTHERLY TO JUST NORTH OF THE NORTH STREET SHOPPING CENTER.
2. REMOVE ISLAND FROM DRIVEWAY AT STATION 322+80 (NORTH ST. S.C.) AND RECONSTRUCT WITH FULL DEPTH PAVEMENT.
3. CONSTRUCT RETAINING WALLS ALONG NORTH STREET SHOPPING CENTER PROPERTY LINE.
4. INSTALL CURBS, SIDEWALKS AND RAMPS.
5. CONSTRUCT FULL DEPTH PAVEMENT WITHIN WIDENED ROADWAY AND ALL DRAINAGE TRENCHES TO WITHIN 2-INCHES OF FINISHED GRADE, MATCH ELEVATION OF EXISTING ADJACENT PAVEMENTS.
6. MILL RIGHT SIDE OF ROUTE 37 TO MATCH FULL DEPTH WIDENED PAVEMENT SURFACE.
7. CONSTRUCT PROPOSED ISLAND AT DRIVEWAY AT STATION 322+80 (NORTH STREET SHOPPING CENTER).
8. RECONSTRUCT TRAFFIC SIGNALS ON ROUTE 37 AT BALMFORTH AVENUE, MADISON AVENUE, INT. 6 EB ON-RAMP, INT. 6 WB OFF-RAMP, HAYESTOWN AVENUE, AND NORTH STREET SHOPPING CENTER.

STAGE 2 (INT. 6 EB ON-RAMP)

A. TRAFFIC OPERATIONS
1. MAINTAIN TRAFFIC ON THE RAMP AS SHOWN ON DRAWINGS MPT-013, 016 AND 017. I-84 TRAFFIC OPERATIONS WILL NOT BE IMPACTED.
2. INSTALL TPCBC ON I-84 ALONG SHOULDER AND ON THE RAMP.

B. EROSION AND SEDIMENT CONTROL
1. INSTALL EROSION AND SEDIMENT CONTROL AS SHOWN ON THE RESPECTIVE STAGING SHEET.

C. CONSTRUCTION
1. CONSTRUCT EMBANKMENT.
2. PLACE PERMANENT PAVEMENT.
3. CONSTRUCT TAMARACK AVE. BRIDGE.

STAGE 2 (INT. 5 WB OFF-RAMP)

A. TRAFFIC OPERATIONS
1. MAINTAIN TRAFFIC ON THE RAMP AS SHOWN ON DRAWINGS MPT-011 AND 012. MAINTAIN EXISTING NUMBER OF TRAVEL LANES ON I-84, BUT DECREASE LANE WIDTHS ON I-84 TO 11-FEET WITH TEMPORARY LANE MARKINGS.
2. INSTALL TPCBC ON I-84 ALONG SHOULDER AND ON THE RAMP.

B. EROSION AND SEDIMENT CONTROL
1. INSTALL ANTI-TRACKING PAD AT ACCESS ROADWAY AND EROSION & SEDIMENT CONTROL AS SHOWN ON THE PLANS.

C. CONSTRUCTION
1. CONSTRUCT ACCESS ROADWAY FOR WORK ASSOCIATED WITH 42-INCH RCP (STATION 561+75) INSTALLATION TO OCCUR FROM THE I-84 WESTBOUND SHOULDER.
2. CONSTRUCT EMBANKMENT, DRAINAGE, FULL DEPTH PAVEMENT, AND INSTALL METAL BEAM GUIDERAIL.
3. INSTALL CHAIN LINK FENCE AT CONCLUSION OF UTILIZATION OF THE ACCESS ROADWAY
4. CONSTRUCT EMBANKMENT.
5. INSTALL GUIDERAIL
6. CONSTRUCT ROADWAY SECTION AND FINISHED PAVEMENT SURFACE.

STAGE 2 (INT. 6 WB OFF-RAMP RIGHT SIDE)

A. TRAFFIC OPERATIONS
1. MAINTAIN TRAFFIC ON THE RAMP AS SHOWN ON DRAWINGS MPT-014, 016 AND 017. I-84 TRAFFIC OPERATIONS WILL NOT BE IMPACTED.
2. INSTALL TPCBC ON I-84 ALONG SHOULDER AND ON THE RAMP.

B. EROSION AND SEDIMENT CONTROL
1. INSTALL EROSION AND SEDIMENT CONTROL AS SHOWN ON THE RESPECTIVE STAGING SHEET.

C. CONSTRUCTION
1. COMMENCE WORK AFTER INTERCHANGE 5 WB OFF-RAMP COMPLETED.
2. CONSTRUCT EMBANKMENT.
3. PLACE PERMANENT PAVEMENT.

STAGE 3 (INT. 6 WB OFF-RAMP RIGHT SIDE AT ROUTE 37)

A. TRAFFIC OPERATIONS
1. MAINTAIN TRAFFIC ON THE RAMP AS SHOWN ON DRAWINGS MPT-018, 019. AND 020, I-84 MAINLINE TRAFFIC OPERATIONS WILL NOT BE IMPACTED.

B. EROSION AND SEDIMENT CONTROL
1. INSTALL EROSION AND SEDIMENT CONTROL AS SHOWN ON THE RESPECTIVE STAGING SHEET.

C. CONSTRUCTION
1. CONSTRUCT EMBANKMENT.
2. PLACE PERMANENT PAVEMENT.

STAGE 3 ROUTE 37 (MILLING AND FINAL LIFT)

A. TRAFFIC OPERATIONS
1. WORK TO BE PERFORMED AT NIGHT TIME DURING THE ALLOWABLE HOURS USING APPLICABLE TRAFFIC CONTROL DEVICES AND SIGNAGE AS SHOWN IN THE TRAFFIC CONTROL PLANS CONTAINED IN THE MAINTENANCE AND PROTECTION OF TRAFFIC SPECIAL PROVISIONS.

B. EROSION AND SEDIMENT CONTROL
1. INSTALL EROSION AND SEDIMENT CONTROL AS SHOWN ON THE RESPECTIVE STAGING SHEET.

C. CONSTRUCTION
1. FINAL COURSE OF HMA SHALL BE PLACED AT THE COMPLETION OF ALL 3 STAGES. CATCH BASINS, MANHOLES AND OTHER UTILITY VAULTS SHALL BE SET FLUSHED WITH MILLED SURFACE UNTIL FINAL LIFT IS PLACED. WHEN THE FINAL LIFT IS PLACED CATCH BASIN, MANHOLES AND OTHER UTILITY VAULTS SHAL BE RESET TO FINAL GRADE.
2. AT THE COMPLETION OF ALL WORK, EROSION CONTROL DEVICES SHALL BE REMOVED. THE ROADWAYS SHALL BE CLEANED ALONG WITH ALL EXISTING DRAINAGE PIPES AND NEW PIPES WITHIN THE LIMITS OF CONSTRUCTION AND TO ALL CATCH BASINS THAT ACCEPT DRAINAGE FROM WITHIN THE PROJECT LIMITS.
3. AT THE COMPLETION OF ALL WORK, STORM DRAINAGE CATCH BASINS AND MANHOLES SHALL BE CLEANED AS DIRECTED BY THE ENGINEER.

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DEPARTMENT OF TRANSPORTATION

ENGINEER: **AECOM Technical Services, Inc.**
APPROVED BY: Noel M. Pagan, P.E. DATE: 06/11/2014

PROJECT TITLE: **I-84 INTERCHANGES 5 & 6 IMPROVEMENTS**

TOWN: **DANBURY**

DRAWING TITLE: **MAINTENANCE & PROTECTION OF TRAFFIC PLAN**

PROJECT NO. **34-313**
DRAWING NO. **MPT-001**
SHEET NO.