



**US Army Corps  
of Engineers®**  
New England District  
**696 Virginia Road  
Concord, MA 01742-2751**

# PUBLIC NOTICE

**Comment Period Begins: 12/20/2011**  
**Comment Period Ends: 01/20/2012**  
**File Number: NAE-2008-953**  
**In Reply Refer To: Susan K. Lee**  
**Phone: (978) 318-8494**  
**E-mail: susan.k.lee@usace.army.mil**

The District Engineer has received a permit application from the applicant below to conduct work in waters of the United States as described below.

**APPLICANT** Connecticut Department of Transportation (CTDOT), 2800 Berlin Turnpike, PO BOX 317546, Newington, Connecticut 06131-7546

**ACTIVITY** Work is proposed in inland wetlands/waters in association with construction of the New Britain-Hartford Busway (State Project 171-305), a dedicated Bus Rapid Transit facility along a 9.4-mile corridor. In addition to the Busway, work will include the construction of eleven stations, a new Amtrak access road and a multi-use trail in portions of the project area. The proposed work will permanently impact approximately 2.1 acres of inland wetlands and 7,108 linear feet of intermittent watercourses. The proposed work will result in temporary impact at approximately 0.50 acres of inland wetlands. The proposed project includes approximately 4.80 acres of wetland creation and 3.90 acres of wetland restoration as mitigation for the project's wetland impacts. A detailed description and plans of the activity are attached.

## **WATERWAY AND LOCATION OF THE PROPOSED WORK**

This work is proposed in a 9.4-mile long corridor in New Britain, Newington, West Hartford and Hartford, Connecticut. The wetland impacts occur at fifty locations along the project corridor. The project begins at UTM coordinates 4615068 N and 684701 E and extends northeast to UTM coordinates 4626574 N and 692886 E on the USGS Hartford North, Hartford South and New Britain CT quadrangle sheets.

## **AUTHORITY**

Permits are required pursuant to:

- Section 10 of the Rivers and Harbors Act of 1899  
 Section 404 of the Clean Water Act  
 Section 103 of the Marine Protection, Research and Sanctuaries Act).

The decision whether to issue a permit will be based on an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which may reasonably accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are: conservation, economics, aesthetics, general environmental concerns, wetlands, cultural value, fish and wildlife values, flood hazards, flood plain value, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.

**CENAE-R**  
**FILE NO. NAE-2008-953**

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

An approved Environmental Impact Statement (EIS) Study has been prepared by the Federal Transit Administration/CTDOT for this project pursuant to the National Environmental Policy Act. Documentation regarding consultation under Section 106 of the National Historic Preservation Act of 1966, Section 4(f) of the DOT Act, and Endangered Species is included in this EIS Study.

Where the activity involves the discharge of dredged or fill material into waters of the United States or the transportation of dredged material for the purpose of disposing it in ocean waters, the evaluation of the impact of the activity in the public interest will also include application of the guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act, and/or Section 103 of the Marine Protection Research and Sanctuaries Act of 1972 as amended.

**SECTION 106 COORDINATION**

Based on his initial review, the District Engineer has determined that the proposed work may impact properties listed in, or eligible for listing in, the National Register of Historic Places. Additional review and consultation to fulfil requirements under Section 106 of the National Historic Preservation Act of 1966, as amended, will be ongoing as part of the permit review process.

**ENDANGERED SPECIES CONSULTATION**

The New England District, Army Corps of Engineers has reviewed the list of species protected under the Endangered Species Act of 1973, as amended, which might occur at the project site. It is our preliminary determination that the proposed activity for which authorization is being sought is designed, situated or will be operated/used in such a manner that it is not likely to adversely affect any Federally listed endangered or threatened species or their designated critical habitat. By this Public Notice, we are requesting that the appropriate Federal Agency concur with our determination.

The States of Connecticut, Maine, Massachusetts, New Hampshire and Rhode Island have approved **Coastal Zone Management Programs**. Where applicable the applicant states that any proposed activity will comply with and will be conducted in a manner that is consistent with the approved Coastal Zone Management Program. By this Public Notice, we are requesting the State concurrence or objection to the applicant's consistency statement.

The following authorizations have been applied for, or have been, or will be obtained:

- Permit, License or Assent from State.
- Permit from Local Wetland Agency or Conservation Commission.
- Water Quality Certification in accordance with Section 401 of the Clean Water Act.

**CENAE-R**  
**FILE NO. NAE-2008-953**

In order to properly evaluate the proposal, we are seeking public comment. Anyone wishing to comment is encouraged to do so. **Comments should be submitted in writing by the above date.** If you have any questions, please contact Susan Lee at (978) 318-8494, (800) 343-4789 or (800) 362-4367, if calling from within Massachusetts.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for a public hearing shall specifically state the reasons for holding a public hearing. The Corps holds public hearings for the purpose of obtaining public comments when that is the best means for understanding a wide variety of concerns from a diverse segment of the public.

The initial determinations made herein will be reviewed in light of facts submitted in response to this notice. All comments will be considered a matter of public record. Copies of letters of objection will be forwarded to the applicant who will normally be requested to contact objectors directly in an effort to reach an understanding.

**THIS NOTICE IS NOT AN AUTHORIZATION TO DO ANY WORK.**



**Robert J. DeSista**  
**Chief, Permits and Enforcement Branch**  
**Regulatory Division**

If you would prefer not to continue receiving Public Notices, please contact Ms. Tina Chaisson at (978) 318-8058 or e-mail her at [bettina.m.chaisson@usace.army.mil](mailto:bettina.m.chaisson@usace.army.mil). You may also check here ( ) and return this portion of the Public Notice to: Bettina Chaisson, Regulatory Division, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751.

NAME: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

## **PROPOSED WORK AND PURPOSE**

The Connecticut Department of Transportation (CTDOT) is proposing to construct the New Britain – Hartford Busway (Busway), State Project No. 171-305, consisting of a dedicated Bus Rapid Transit (BRT) facility along a 9.4-mile long corridor between downtown New Britain and downtown Hartford. The project is located within the towns of New Britain, Newington, West Hartford and Hartford. From downtown New Britain to approximately Newington Junction in Newington, the Busway will be located within the abandoned Conrail right-of-way (ROW). From Newington Junction north, the Busway will be located within the active Amtrak railroad ROW. In the abandoned rail section, a multi-use trail for bicycle and pedestrian use will be constructed parallel to the Busway.

The dedicated roadway (Busway) will be reserved exclusively for buses, and will be two lanes wide, with one 12-foot lane in each direction. Additional lanes will be provided at station areas to allow non-stop buses to bypass stopped buses, and on and off ramps will be constructed to connect the Busway to the stations. Eleven (11) stations will be constructed to serve Busway passengers. In addition, a new Amtrak Access Road (AAR) will be constructed along the east side of Amtrak's active rail line from Newington to Hartford. The 4.45 mile long AAR is necessary because the Busway will be constructed on the west side of Amtrak's active rail line, which Amtrak currently uses for track maintenance access.

There will be four culvert replacements associated with the project, two for perennial streams and two for intermittent streams. This project also includes modifications to the existing track drainage system to promote positive drainage in the strip of ballast between the active Amtrak rail and the Busway. The drainage from this existing track area will be conveyed to six of the proposed Busway and AAR stormwater discharge points. The track drainage will be treated by hydrodynamic separators where runoff quantities warrant and terrain allows.

Permanent impacts to wetlands will occur from the following activities:

- The cut, fill, and footprint for the Busway
- Installation of access ramps and driveways
- Cut and fill for the proposed Amtrak Access road
- Development of a multi-use trail
- Construction of retaining walls and concrete barriers
- Structures to convey surface water and drainage (including grass-lined ditches, water quality channels, reinforced concrete piping, and new and replacement culverts)

Temporary impacts to wetlands will result from grading activities, installation (and removal) of sheeting during construction of retaining walls, staging areas, water handling, and pipe-jacking activities to install culverts and reinforced concrete piping.

The purpose of the project is to provide a dedicated BRT facility between downtown New Britain and downtown Hartford to encourage mass transit ridership and therefore reduce vehicular traffic and highway congestion. The need for this project is demonstrated through the increasing congestion levels on I-84 and parallel roadways during the peak hour and the lack of sufficient interregional transit options and alternative modes of transportation.

The work is described and shown on the enclosed plans entitled "NEW BRITAIN – HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES", dated "February 2011".

## MITIGATION

The primary design principle to avoid impacts along the Busway was to minimize the change in grade between the existing ROW elevation and the proposed Busway. Designing the Busway to rest at or near existing grades minimized the amount of excavation or fill required to construct the new roadway. Horizontal and vertical adjustments were used to avoid and minimize wetland impacts. The same principle was applied to the AAR; however, Amtrak dictated the requirements of the roadway elevation relative to the existing rail bed for safety of rail operations.

Design elements have been incorporated into the project design to avoid and minimize wetland impacts. These are:

- Minimization of horizontal realignment along the Railroad ROW
- Minimization of vertical grade adjustments on the Railroad ROW
- Use of steeper 1.5:1 riprap slopes (“special riprap slope protection”) instead of standard 2:1 slopes to reduce fill in regulated areas (e.g., at pipe-jacking Sites 4 and 5)
- Construction of retaining walls instead of fill slopes in some locations to minimize fill in wetlands, Stream Channel Encroachment Lines, and/or floodplains
- Designing construction access and methodology so as to avoid the need for construction equipment/disturbance in regulated areas.

Other strategies were the following:

- Design storm drainage systems for the 10-year storm event
- Separate Busway drainage as much as possible from municipal or private systems
- Eliminate curbing and closed drainage systems as much as possible
- Maximize sheet flow and vegetated swales for water quality treatment

Project impacts result from three main factors: 1) the existing railroad ROW crosses perennial and intermittent watercourses; 2) wetlands have formed in linear ditches along the existing ROW due to the lack of positive drainage (very level terrain); and 3) the rail alignment was originally located through large wetland systems which still persist at the toe of slope in some areas along the corridor. These conditions make some impacts to wetlands and watercourses unavoidable.

CTDOT has developed a Compensatory Mitigation Plan to compensate for the wetland acreage and functions impacted by the project. Mitigation types, and the area of each, have been determined based on the U. S. Army Corps of Engineers (USACE) New England District Compensatory Mitigation Guidance. The proposed mitigation site is located in Hartford between the South Branch Park River and the I-84 WB off-ramp at Flatbush Avenue. The proposed mitigation site is shown on the attached concept plan entitled “NEW BRITAIN – HARTFORD BUSWAY WETLAND MITIGATION CONTRACT”, dated “AUGUST 25, 2011”.

The project includes wetland creation. This will include grading, wetland soil addition and planting. The proposed creation will include 2.61 acres of forested wetland, 0.5 acres of shrub-scrub wetland and 1.65 acres of emergent wetland.

A total of 3.90 acres of wetland enhancement are proposed. The wetland enhancement focuses on the removal of dominant invasive plants common reed (*Phragmites australis*) and purple loosestrife

**CENAE-R**  
**FILE NO. NAE-2008-953**

(*Lythrum salicaria*). Invasive plant removal includes mowing, repetitive herbicidal treatments and removal of rhizomes. Phragmites on the site is currently being treated under the CTDEP WHAMM program.

Mitigation for impacted intermittent watercourses in the project area will be achieved by the use of grass-lined swales, ditches and channels (as proposed in the design plans) and treatment of the Phragmites infested swale adjacent to the wetland mitigation site (west of the I-84 WB off-ramp). A total of 7,108 linear feet of intermittent watercourses will be impacted as a result of the proposed project. Approximately 11,132 linear feet of new grass-lined swales, ditches and channels are proposed throughout the project area.

Temporary impacts to wetlands include the installation of access roads, retaining wall construction, jacking pits, and areas for water handling, where required. The total area of temporary wetland area impact to be reestablished is approximately 0.50 acres. Restoration efforts will include the removal of temporary access roads, re-grading, and re-establishment of wetland areas. Soil erosion and sedimentation controls will not be removed until vegetation is established. As shown on construction plans, restoration will include re-grading of the soil surface and establishing native non-invasive wetland species as specified, corresponding to the wetland type disturbed. The risk posed by invasive species at the temporary impact area will be assessed and additional measures to remove invasive species prior to replanting will be taken as needed. Seed mixtures to be used will be those specified and approved by CTDOT prior to use.

## KEY OF IMPORTANT FEATURES

	FLAGGED INLAND WETLAND LIMIT
	FLAGGED INTERMITTENT WATER COURSE CENTERLINE
	LIMIT OF CUT SLOPE GRADING
	LIMIT OF FILL SLOPE GRADING
	LIMIT OF PERMANENT WETLAND IMPACT
	LIMIT OF TEMPORARY WETLAND IMPACT
	LIMIT OF PERMANENT IWC IMPACT
	PROPOSED SWALE/CHANNEL/DITCH
	PROPOSED TRACK DRAINAGE DITCH
	100 YEAR FLOOD LIMIT ELEVATION
	STREAM CHANNEL ENCROACHMENT LINE
	PROPOSED CONCRETE BARRIER
	ORDINARY HIGH WATER LINE
	FLOODWAY LIMITS
	SEDIMENTATION CONTROL SYSTEM (SCS)
	PROPOSED CATCH BASIN
	PROPOSED STORM MANHOLE
EOR	EDGE OF ROAD

## GENERAL NOTES:

1. THE CONTRACTOR SHALL BE LIMITED TO WORKING WITHIN THE TEMPORARY WORK AREAS AS INDICATED ON THE PLANS WHEN WORKING WITHIN A DELINEATED WETLAND BOUNDARY. THE TEMPORARY WORK AREAS WILL BE LOCATED AND STAKED IN THE FIELD BY THE CONTRACTOR PRIOR TO CLEARING AND GRUBBING OR THE COMMENCEMENT OF ANY OTHER CONSTRUCTION ACTIVITY. WORK OUTSIDE THE DELINEATED IMPACT AREAS IS NOT PERMITTED. IF ANY MEANS AND METHODS CHOSEN BY THE CONTRACTOR REQUIRE ADDITIONAL WETLAND IMPACT, EITHER PERMANENT OR TEMPORARY, THE CONTRACTOR SHALL NOTIFY CTDOT IMMEDIATELY, AS THIS WILL REQUIRE ADDITIONAL REVIEW BY THE CTDOT OFFICE OF ENVIRONMENTAL PLANNING AND CTDEP AT THE CONTRACTOR'S EXPENSE.

2. ALL WETLAND AREAS TEMPORARILY IMPACTED FOR THE PURPOSES OF CONSTRUCTION, STAGING OR ACCESS SHALL BE RESTORED BY THE CONTRACTOR IMMEDIATELY FOLLOWING THE USE OF THESE AREAS. THE CONTRACTOR SHALL REMOVE TEMPORARY STONE STAGING AREAS, WHERE USED, DECOMPACT THE AREA BY APPROVED METHODS, RETURN AREA TO EXISTING GRADE WITH "WETLAND CREATION" MATERIAL AND STABILIZE THE AREA WITH WETLAND GRASS ESTABLISHMENT SEEDING. WETLAND GRASS WILL BE ESTABLISHED TO THE SATISFACTION OF CTDOT OFFICE OF ENVIRONMENTAL PLANNING PRIOR TO THE INSTALLATION OF SHRUB AND TREE PLANTINGS (WHERE CALLED FOR). SEE SPECIAL PROVISIONS FOR INFORMATION ON WETLAND CREATION MATERIAL REQUIREMENTS. UPLAND AREAS SHALL BE STABILIZED WITH CTDOT CONSERVATION FOR SLOPES SEED MIX.

STATE PROJECT NO.: 171-305



STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



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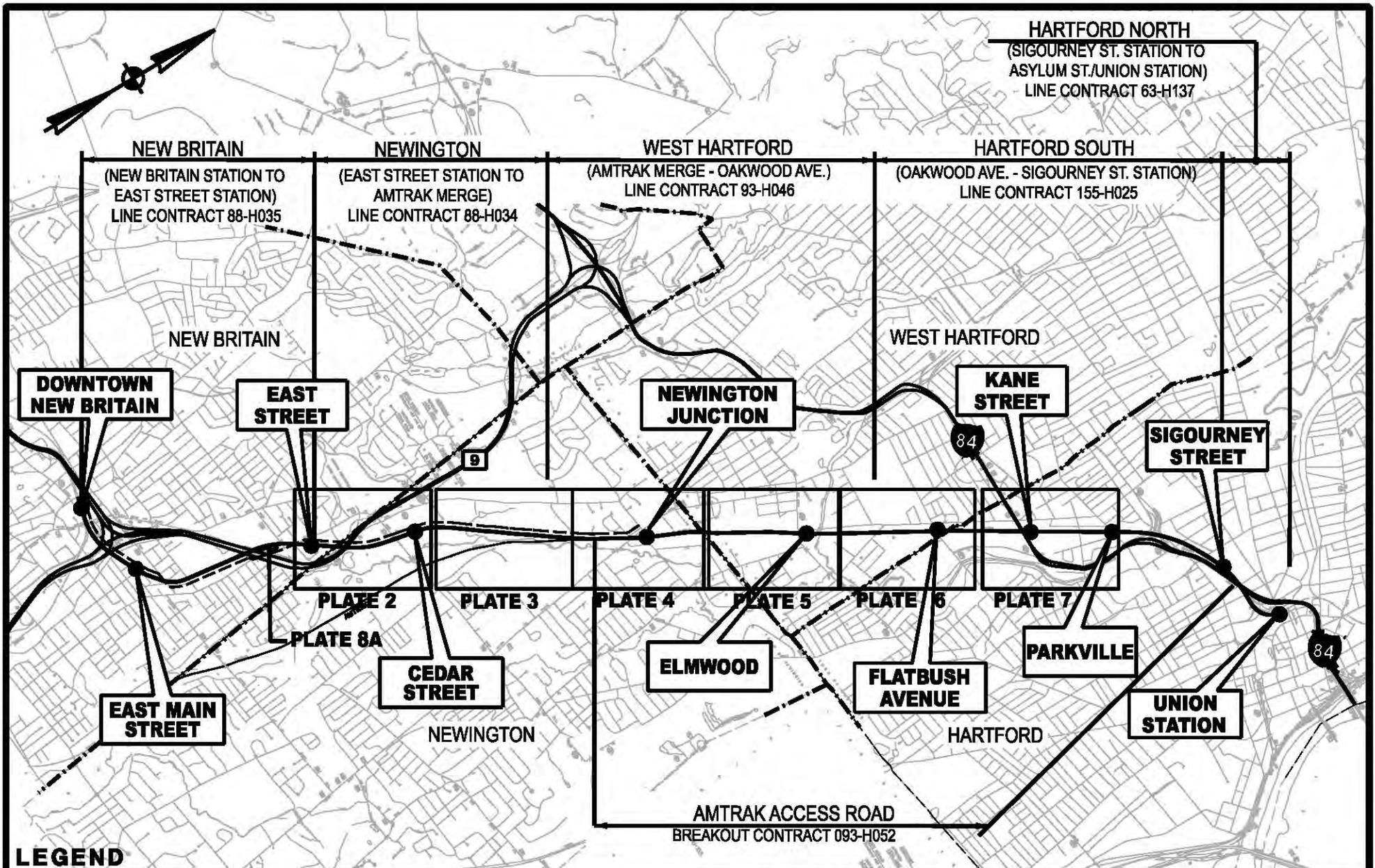
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NOT TO SCALE

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

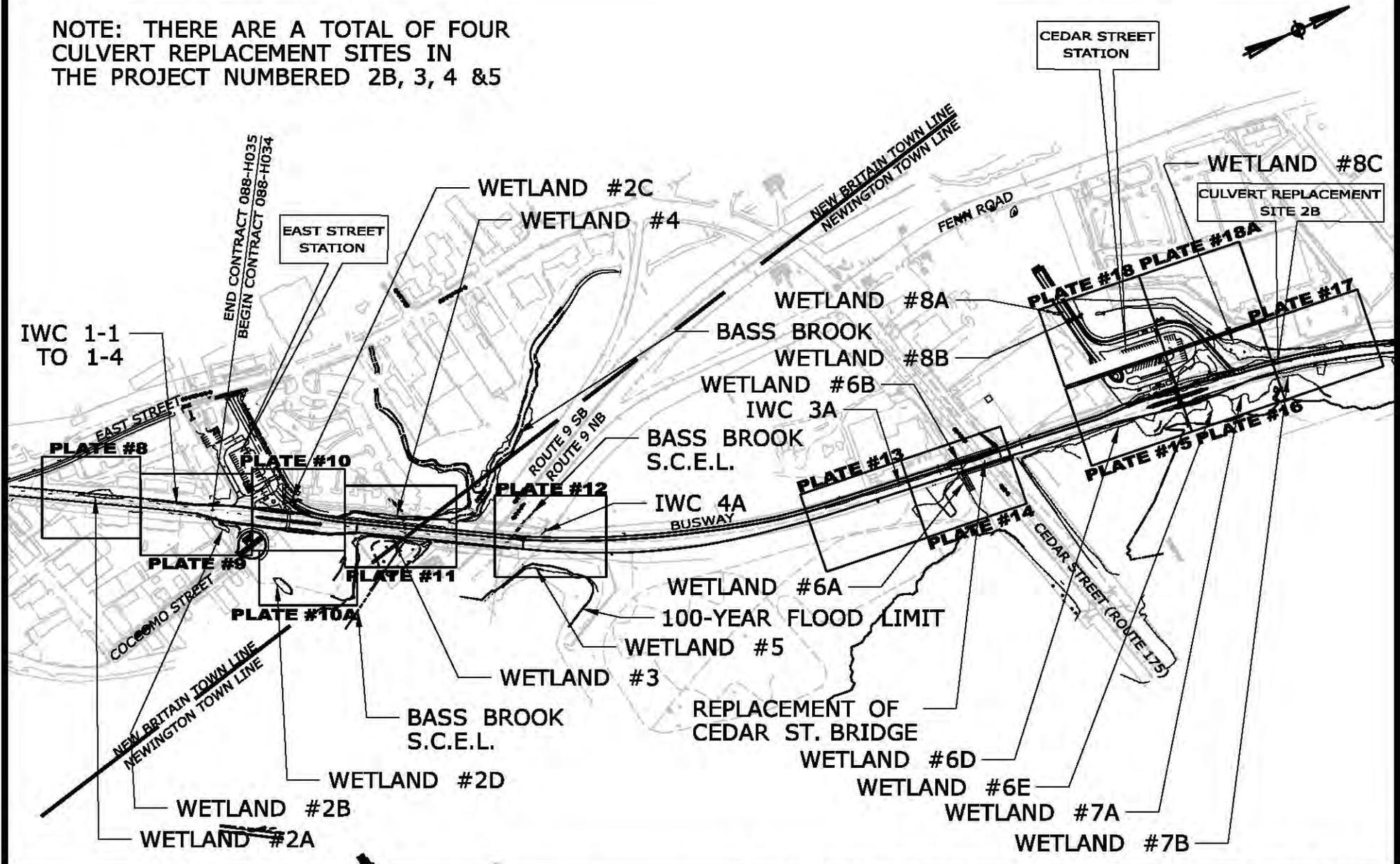
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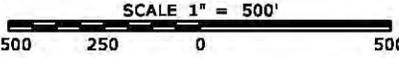
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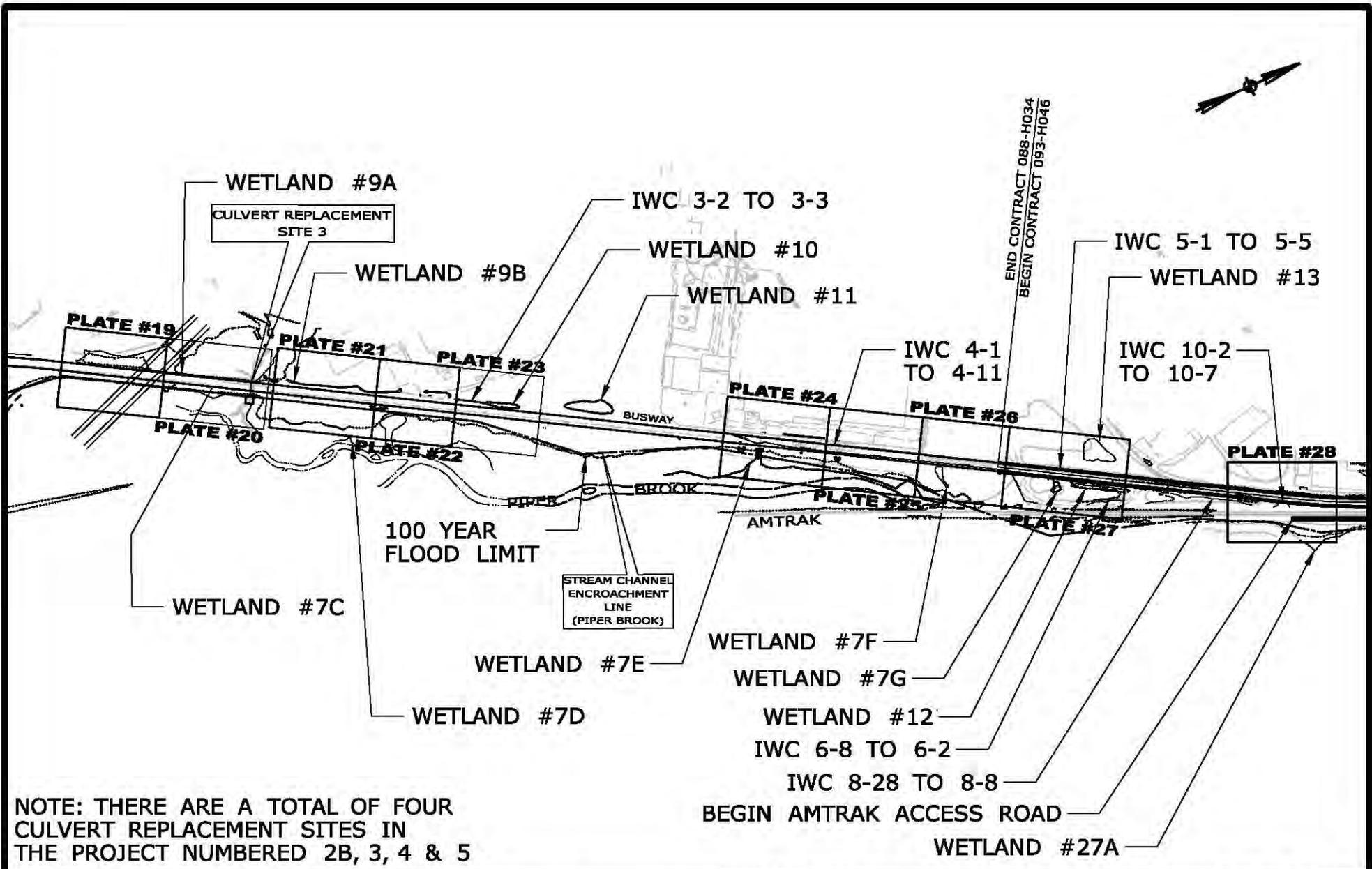


<p>● STATION</p> <p>— BUSWAY</p> <p>--- MULTI-USE TRAIL</p>	STATE PROJECT NO.: 171-305	 <p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	 <p>OFFICE OF ENGINEERING</p>	DATE: FEBRUARY 2011
	SCALE : NOT TO SCALE			<p>NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES VICINITY AND LOCATION MAP</p>

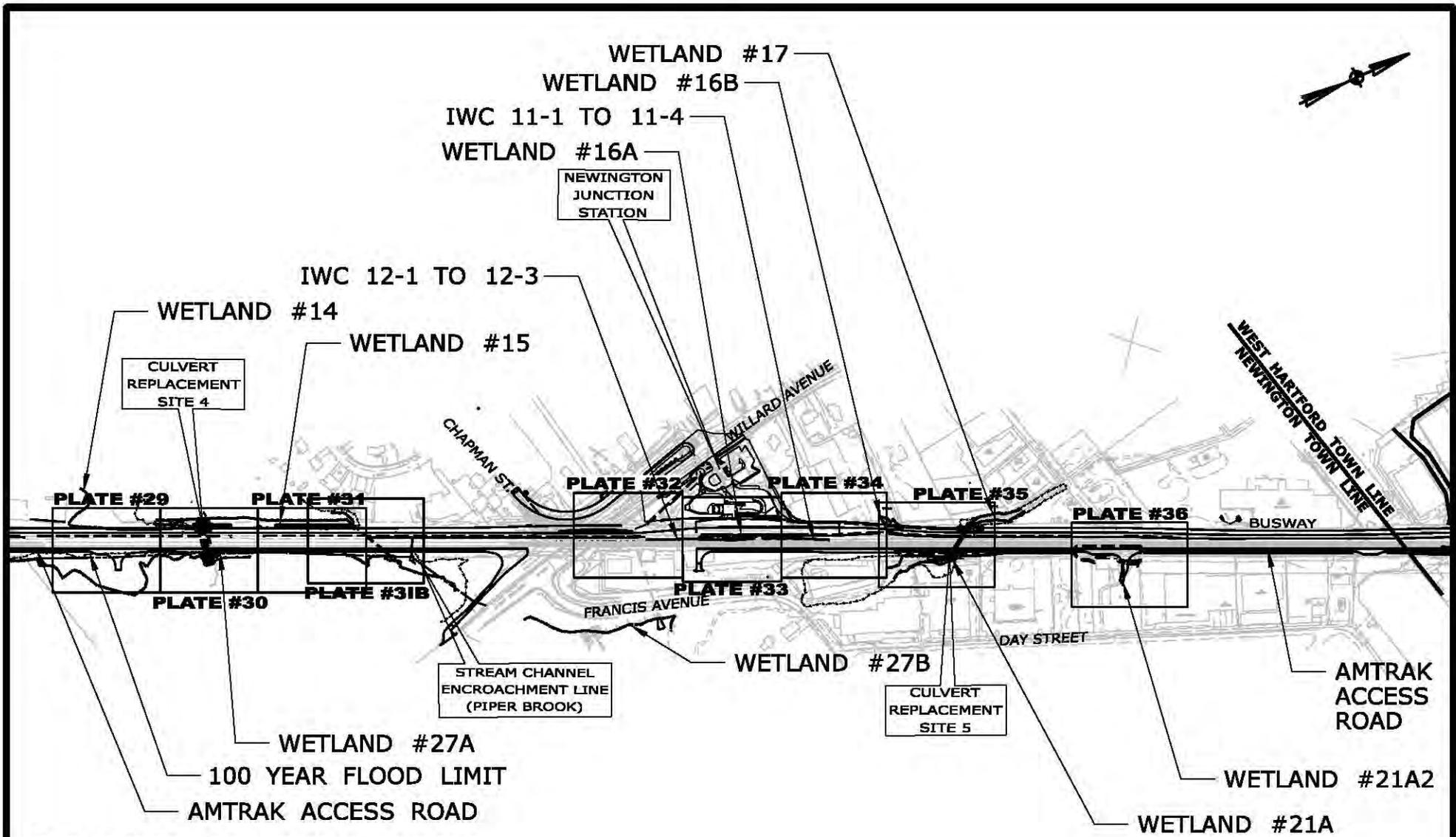
NOTE: THERE ARE A TOTAL OF FOUR  
CULVERT REPLACEMENT SITES IN  
THE PROJECT NUMBERED 2B, 3, 4 & 5



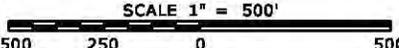
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	 SCALE 1" = 500' 500 250 0 500	NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES KEY PLAN 1 OF 6	MICHAEL BAKER ENGINEERING	PLATE NO. <b>2</b>

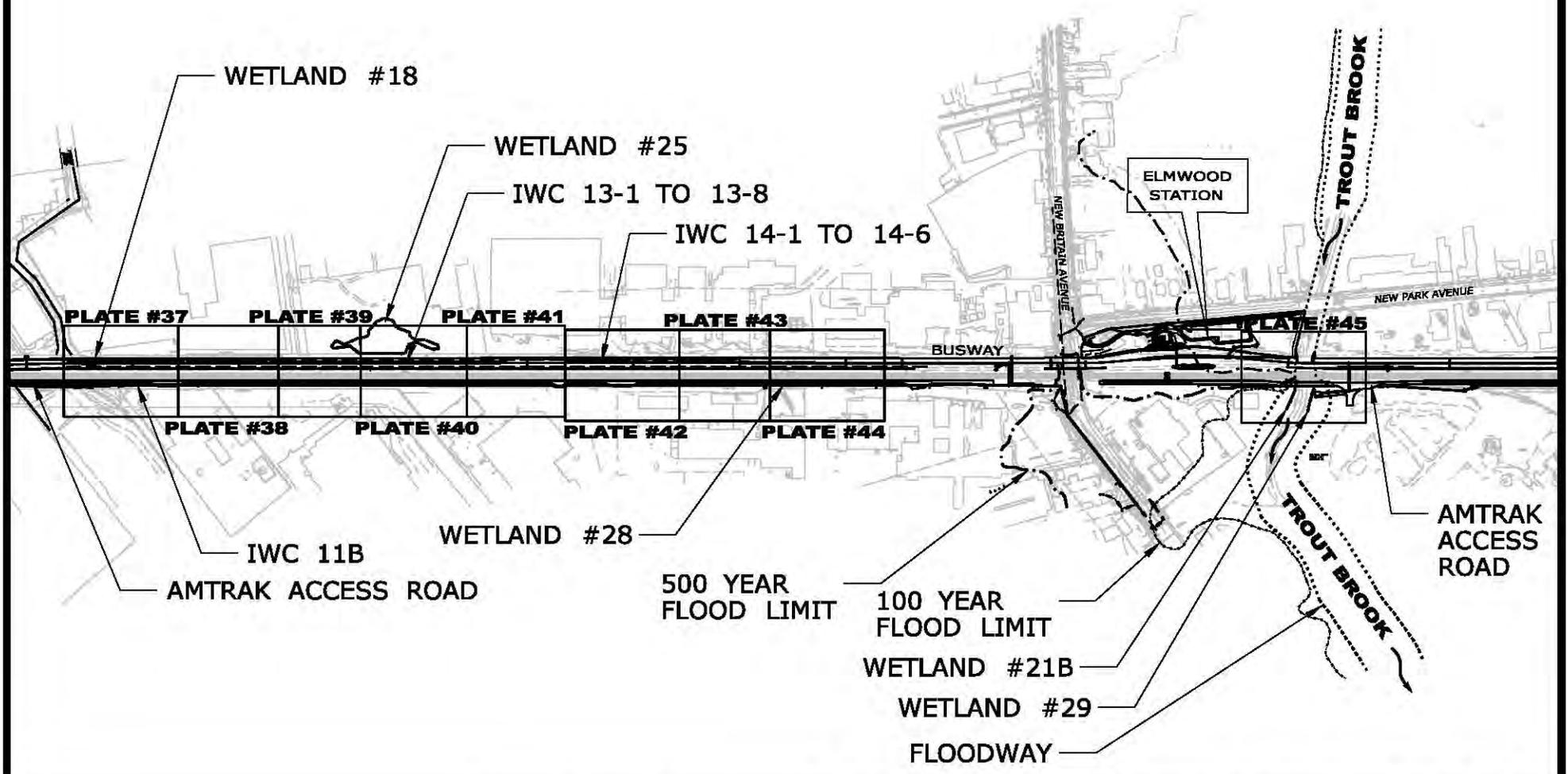


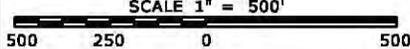
	STATE PROJECT NO.: 171-305	 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION 	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
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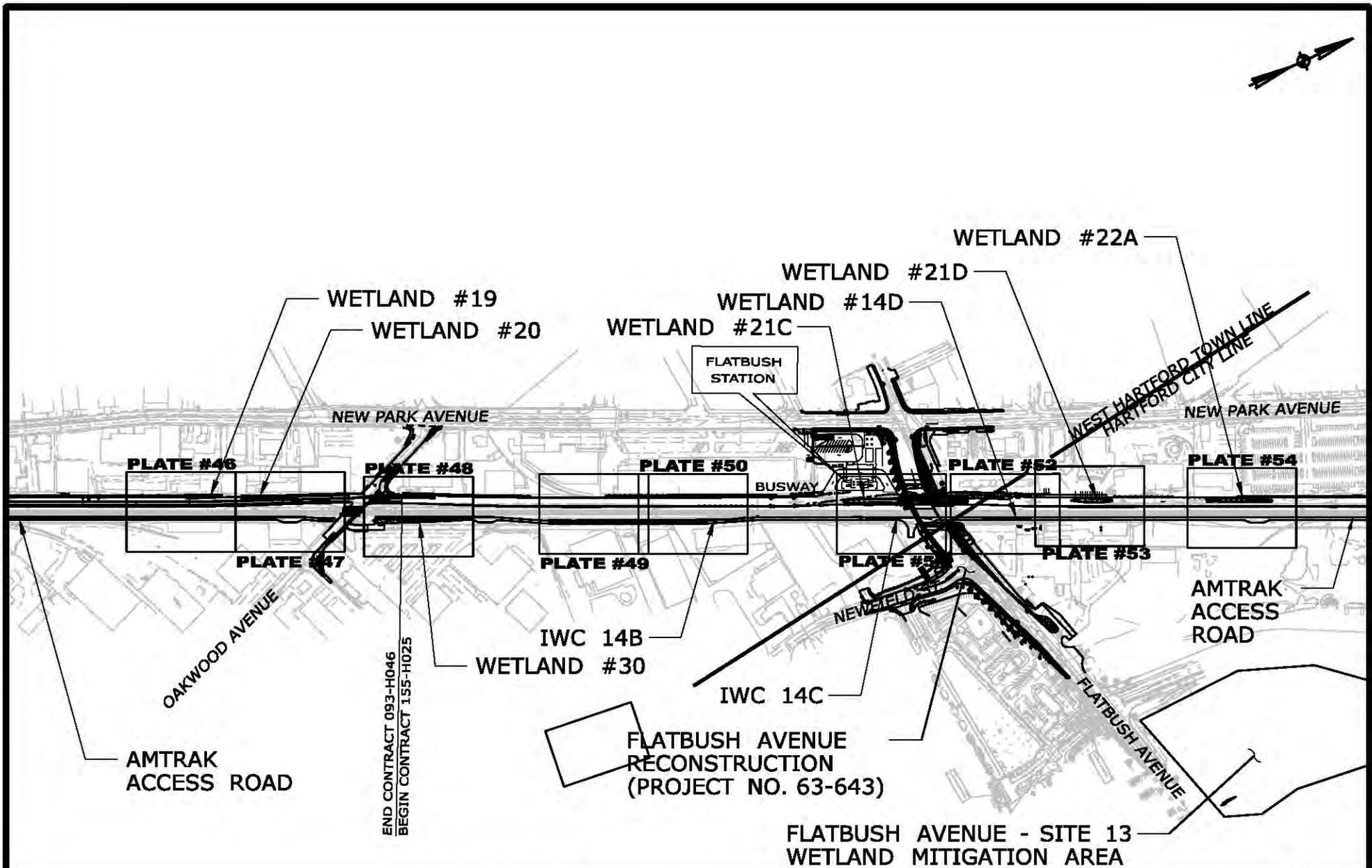


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	STATE PROJECT NO.: 171-305	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	 OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
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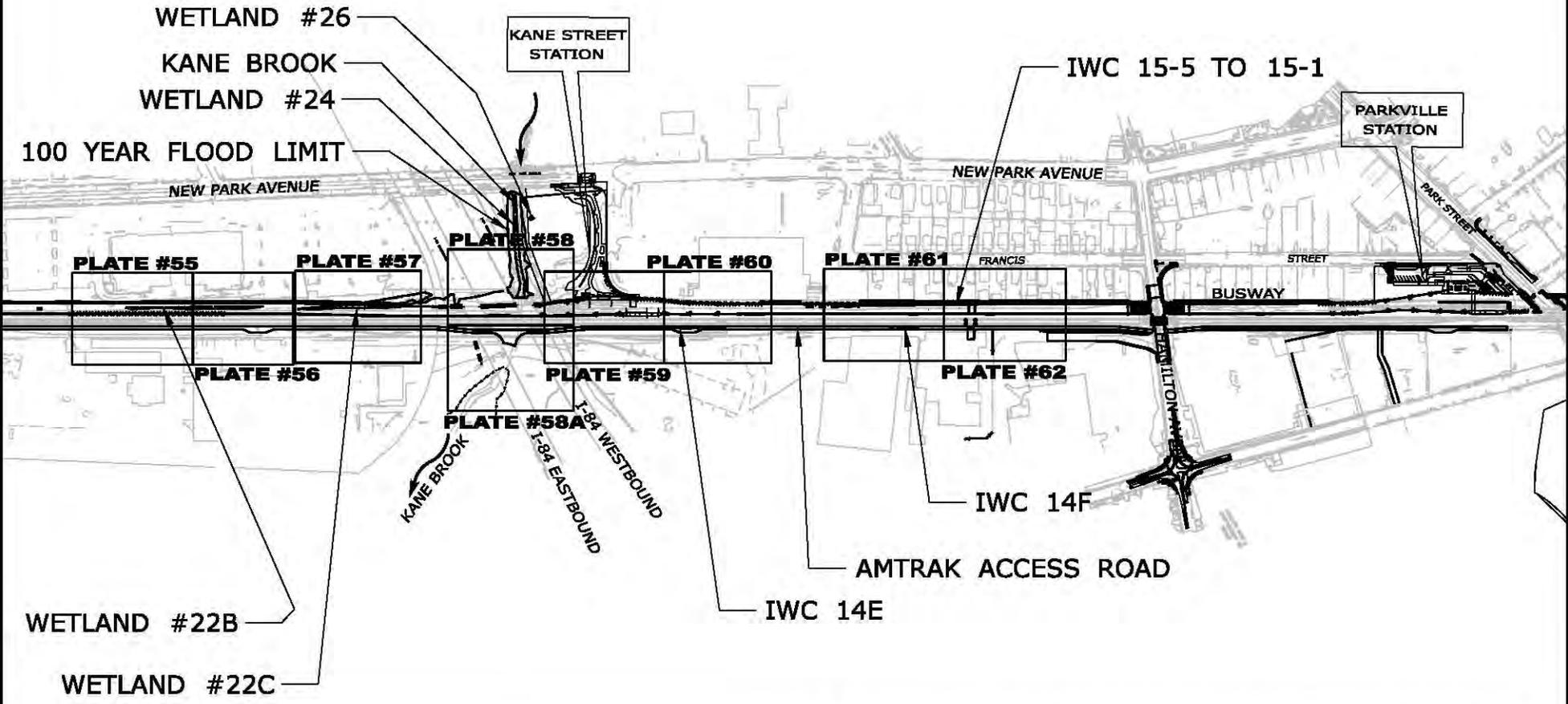


	STATE PROJECT NO.: 171-305	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION 	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
	SCALE 1" = 500' 	NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES KEY PLAN 4 OF 6	MICHAEL BAKER ENGINEERING	PLATE NO. <b>5</b>



**FLATBUSH AVENUE - SITE 13  
WETLAND MITIGATION AREA**

	STATE PROJECT NO.: 171-305	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	DATE: FEBRUARY 2011
	<p>SCALE 1" = 500'</p>	NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES KEY PLAN 5 OF 6	PLATE NO. <b>6</b>



STATE PROJECT NO.: 171-305

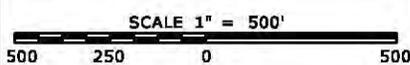


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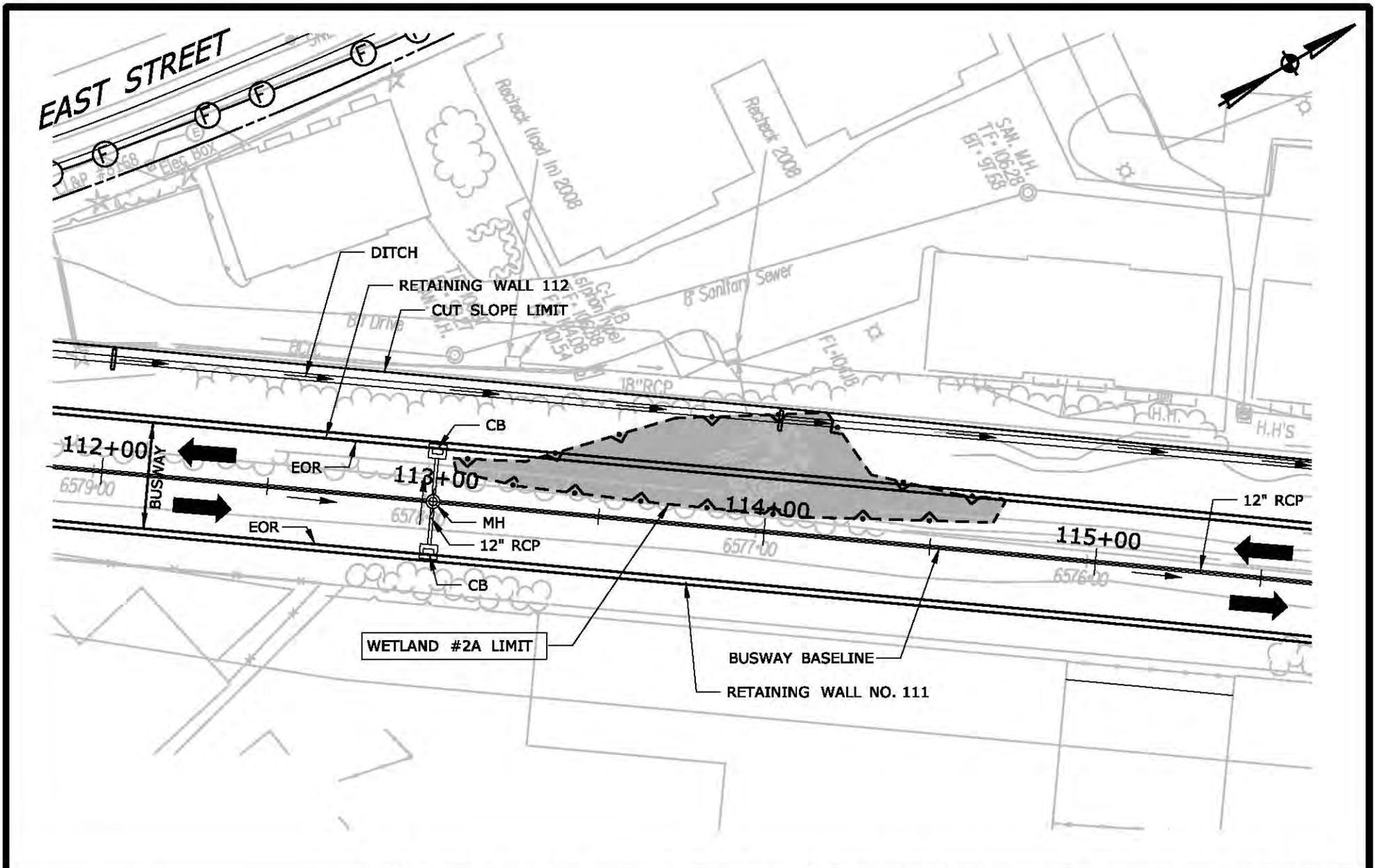
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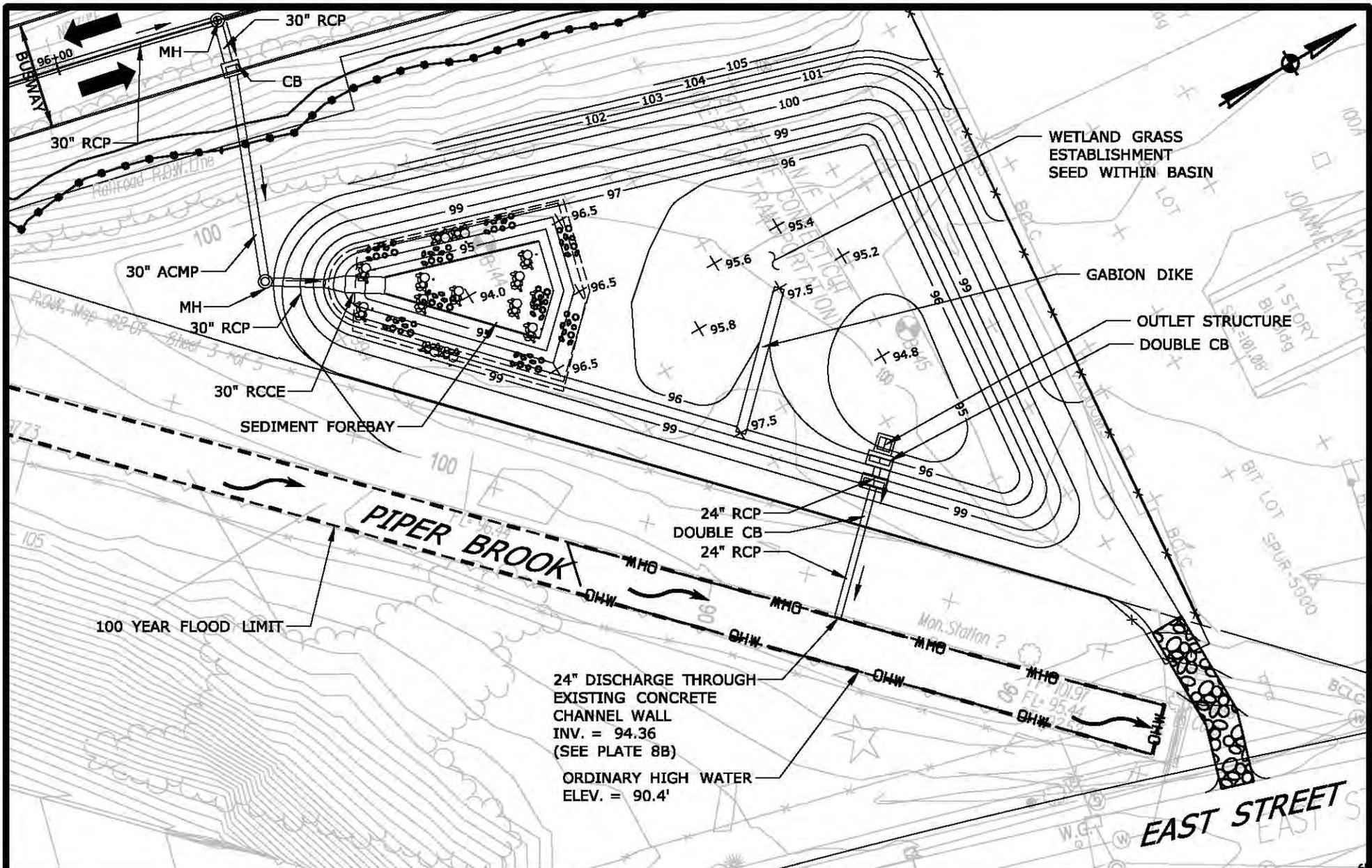
NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES  
KEY PLAN 6 OF 6

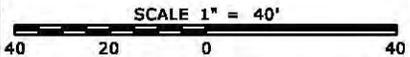
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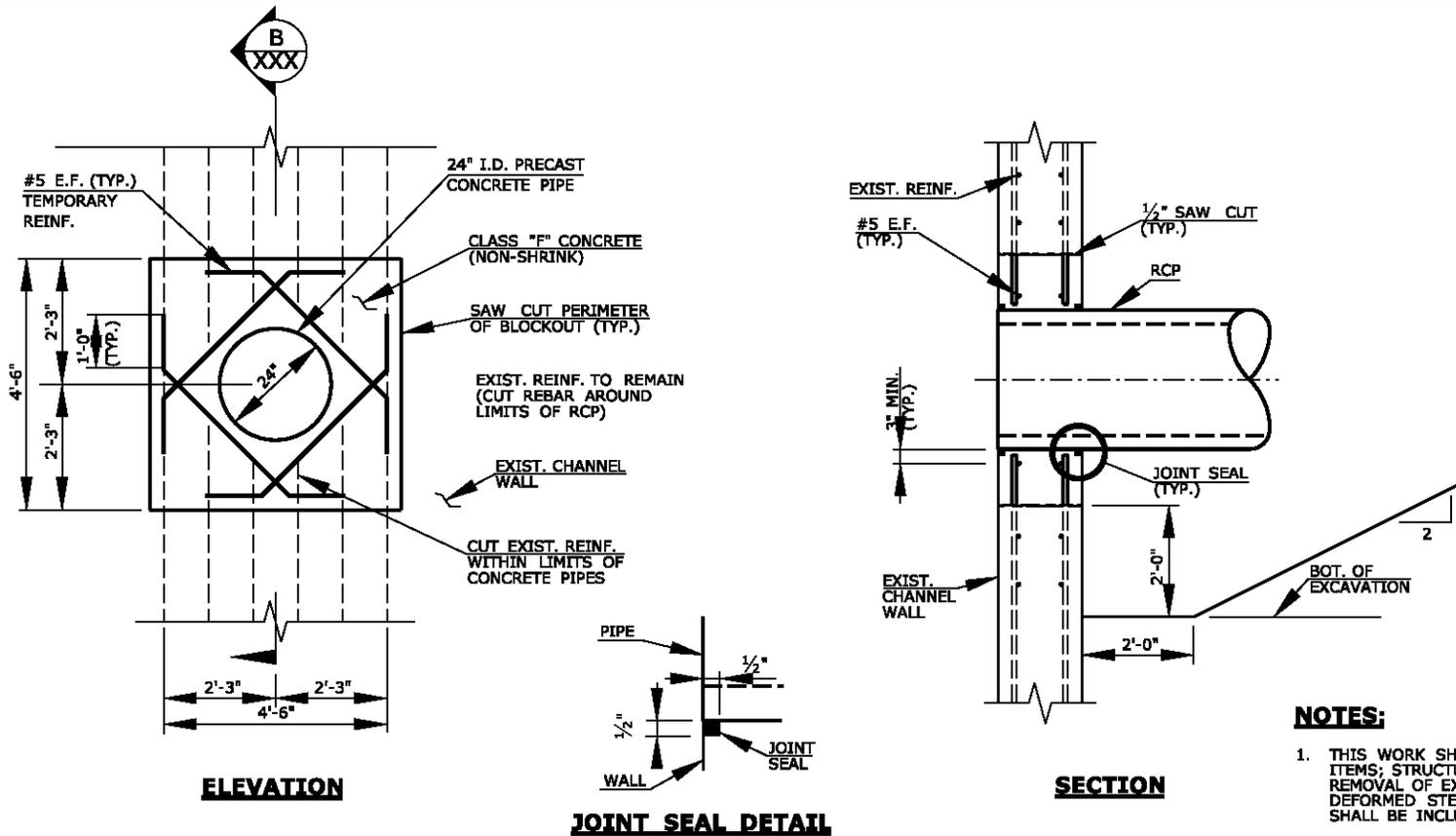
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<b>IMPACT SUMMARY</b>	<b>TOTAL IMPACT AREA</b>	STATE PROJECT NO.: 171-305 NEW BRITAIN SECTION CONTRACT NO. 88-H035	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION 	OFFICE OF ENGINEERING	DATE:
	PERMANENT WETLAND #2A IMPACT				2,888 S.F.
		SCALE 1" = 40' 	<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES	MICHAEL BAKER ENGINEERING	PLATE NO.
					8



<b>IMPACT SUMMARY</b>	<b>TOTAL IMPACT AREA</b>	STATE PROJECT NO.: 171-305 NEW BRITAIN SECTION CONTRACT NO. 88-H035	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION 	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
<b>NO WETLAND IMPACTS</b>			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES	MICHAEL BAKER ENGINEERING	PLATE NO. 8A



**NOTES:**

1. THIS WORK SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS; STRUCTURE EXCAVATION EARTH (COMPLETE), REMOVAL OF EXISTING MASONRY LIMITED METHODS, DEFORMED STEEL BARS, CLASS "F" CONCRETE. JOINT SEAL SHALL BE INCLUDED IN THE COST OF CLASS "F" CONCRETE.
2. IN THE EVENT THAT EXISTING REINFORCEMENT IS INADVERTENTLY CUT, DRILL AND GROUT REPLACEMENT BAR ADJACENT TO CUT REBAR.
3. CONTRACTOR SHALL FURNISH, INSTALL, AND REMOVE A TEMPORARY SUPPORT SYSTEM REQUIRED TO PERFORM THIS WORK. THE SUPPORT SYSTEM SHALL INCLUDE PROVISIONS TO CONTAIN DEBRIS FROM THE SAWCUTTING AND REMOVAL OF THE EXISTING CONCRETE.
4. COST OF TEMPORARY SUPPORT SYSTEM INCLUDED IN COST OF CLASS "F" CONCRETE.
5. TEMPORARY SUPPORT SYSTEM SHALL NOT EXTEND BELOW THE ELEVATION OF ORDINARY HIGH WATER (OHW).
6. SAWCUTTING ON THE CHANNEL FACE OF THE WALL SHALL BE PERFORMED DRY WITHOUT USE OF WATER TO LUBRICATE THE SAW BLADE.

**CONSTRUCTION SEQUENCE:**

1. SAWCUT (1/2" MAX. DEPTH) PERIMETER OF PIPE BLOCKOUT ON EACH FACE OF WALL.
2. REMOVE EXISTING MASONRY AND MAINTAIN EXISTING REINFORCEMENT.
3. PARTIALLY CUT REINFORCEMENT THAT OBSTRUCTS PIPE OPENING.
4. INSTALL TEMPORARY REINFORCEMENT AS SHOWN. FORM AND POUR CONCRETE.
5. REMOVE FORM AFTER CONCRETE HAS SET AND APPLY JOINT SEAL.

**DRAINAGE OUTLET AT PIPER BROOK CHANNEL**

STATE PROJECT NO.: 171-305  
 NEW BRITAIN SECTION  
 CONTRACT NO. 88-H035



STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION



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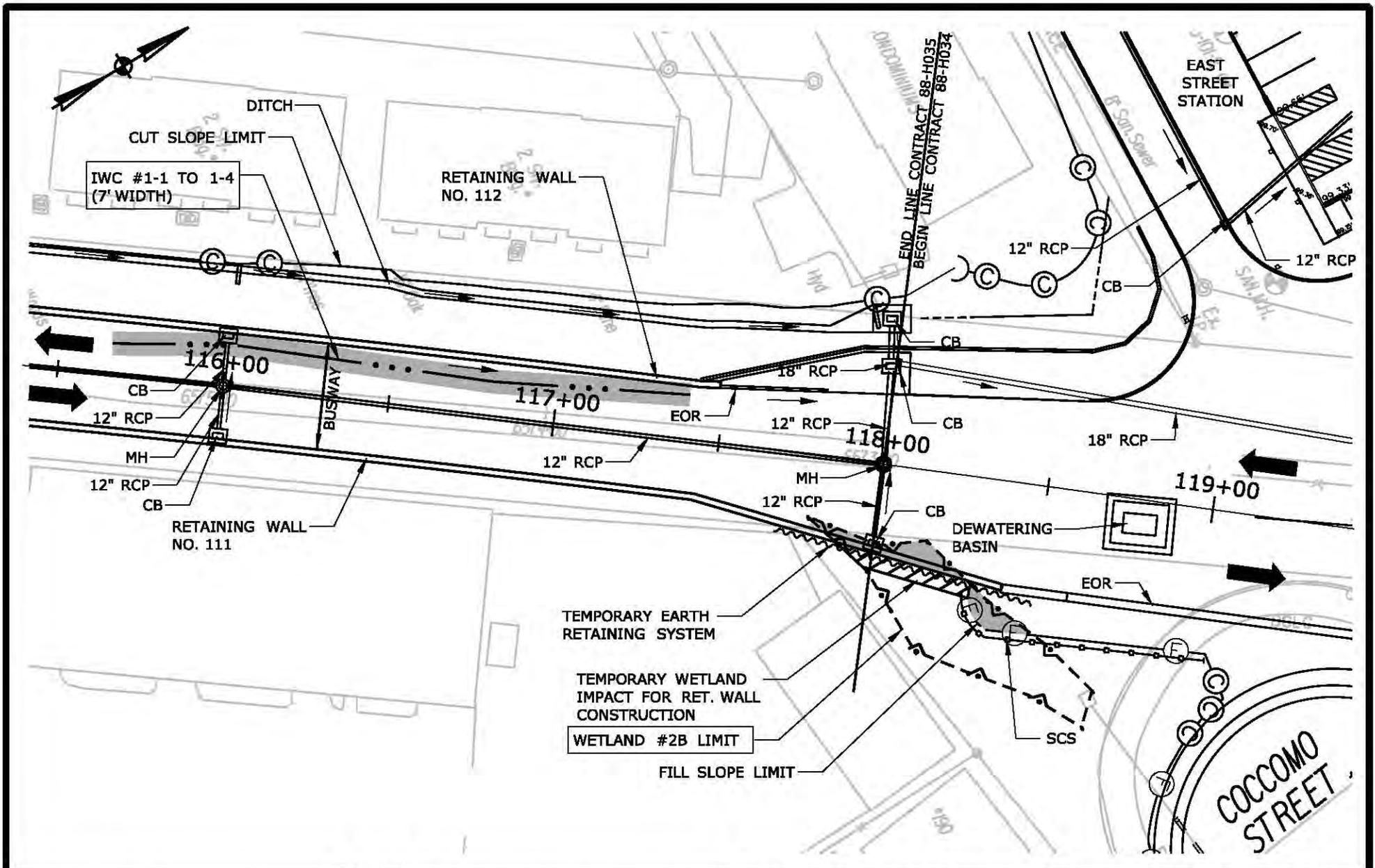
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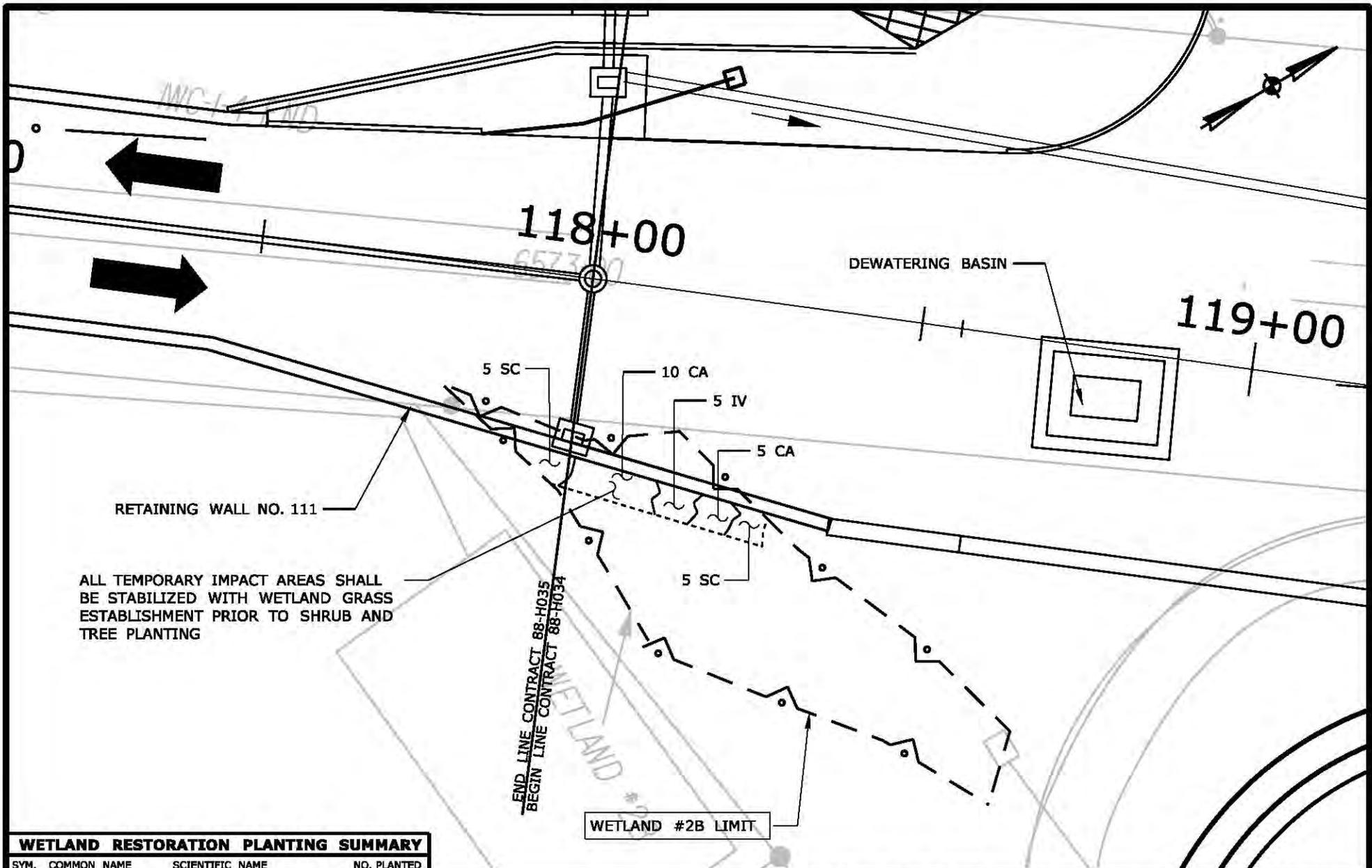
NEW BRITAIN - HARTFORD BUSWAY  
 ENVIRONMENTAL IMPACT PLATES

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PLATE NO.  
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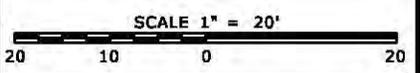
<b>IMPACT SUMMARY</b>		<b>TOTAL IMPACT AREA</b>	STATE PROJECT NO.: 171-305 CONTRACT NO.: H035/H034	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION 	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011		
	PERMANENT WETLAND #2B IMPACT	302 S.F.			SCALE 1" = 40' 	<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES	MICHAEL BAKER ENGINEERING	PLATE NO. 9
	TEMPORARY WETLAND #2B IMPACT	188 S.F.	 PERMANENT IWC #1 IMPACT	174 L.F.				



**WETLAND RESTORATION PLANTING SUMMARY**

SYM.	COMMON NAME	SCIENTIFIC NAME	NO. PLANTED
SC	ELDERBERRY	SAMBUCUS CANADENSIS	10
CA	SILKY DOGWOOD	CORNUS AMOMUM	15
IV	WINTERBERRY	ILEX VERTICILLATA	5
TOTAL PLANTINGS			30

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H035/H034



STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION



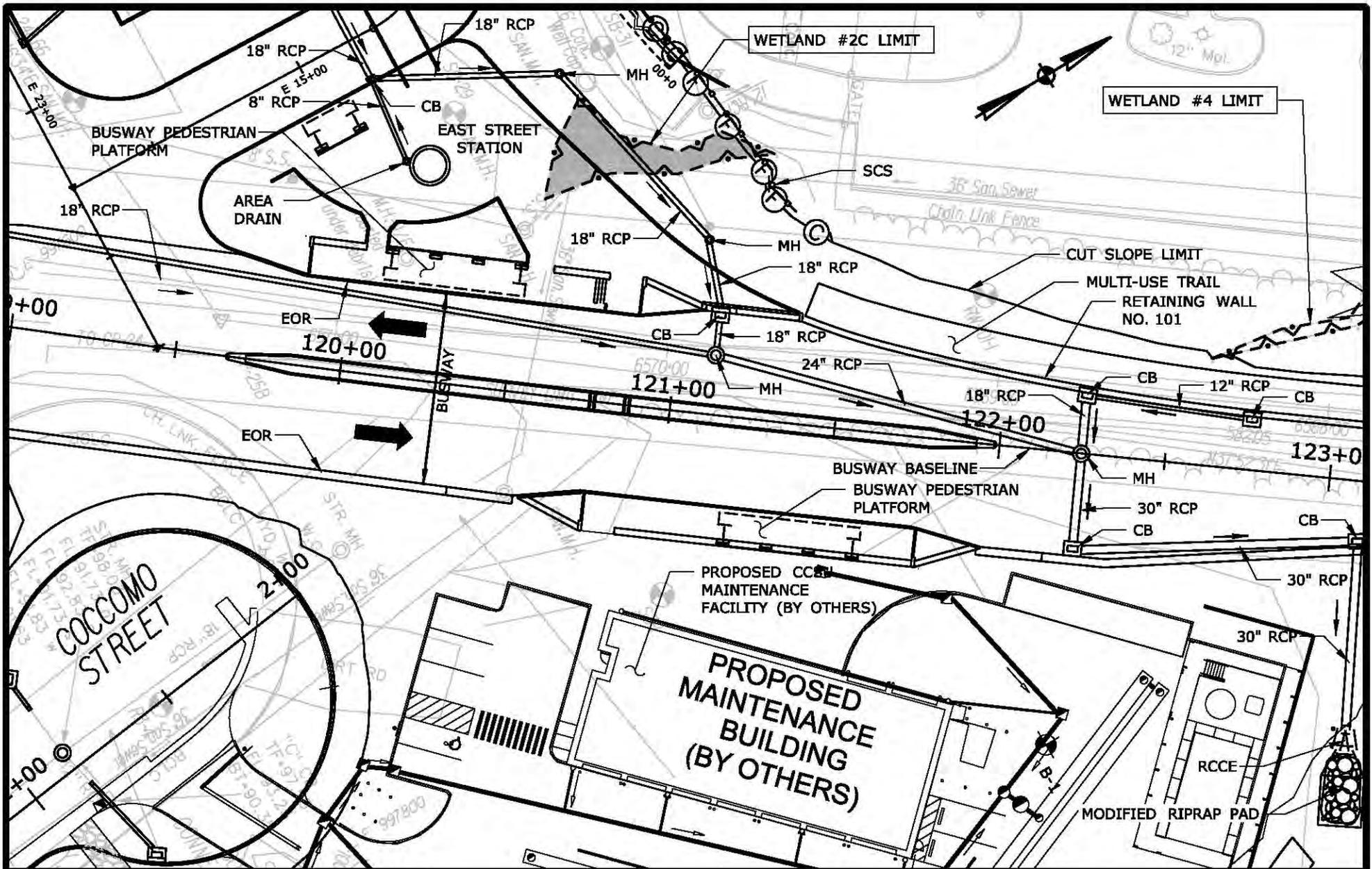
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 ENGINEERING

DATE:  
 FEBRUARY  
 2011

NEW BRITAIN - HARTFORD BUSWAY  
 ENVIRONMENTAL IMPACT PLATES

MICHAEL  
 BAKER  
 ENGINEERING

PLATE NO.  
 9A



<b>IMPACT SUMMARY</b>	
 PERMANENT WETLAND #2C IMPACT	728 S.F.

<b>TOTAL IMPACT AREA</b>	STATE PROJECT NO.: 171-305 CONTRACT NO.: H034
	SCALE 1" = 40' 

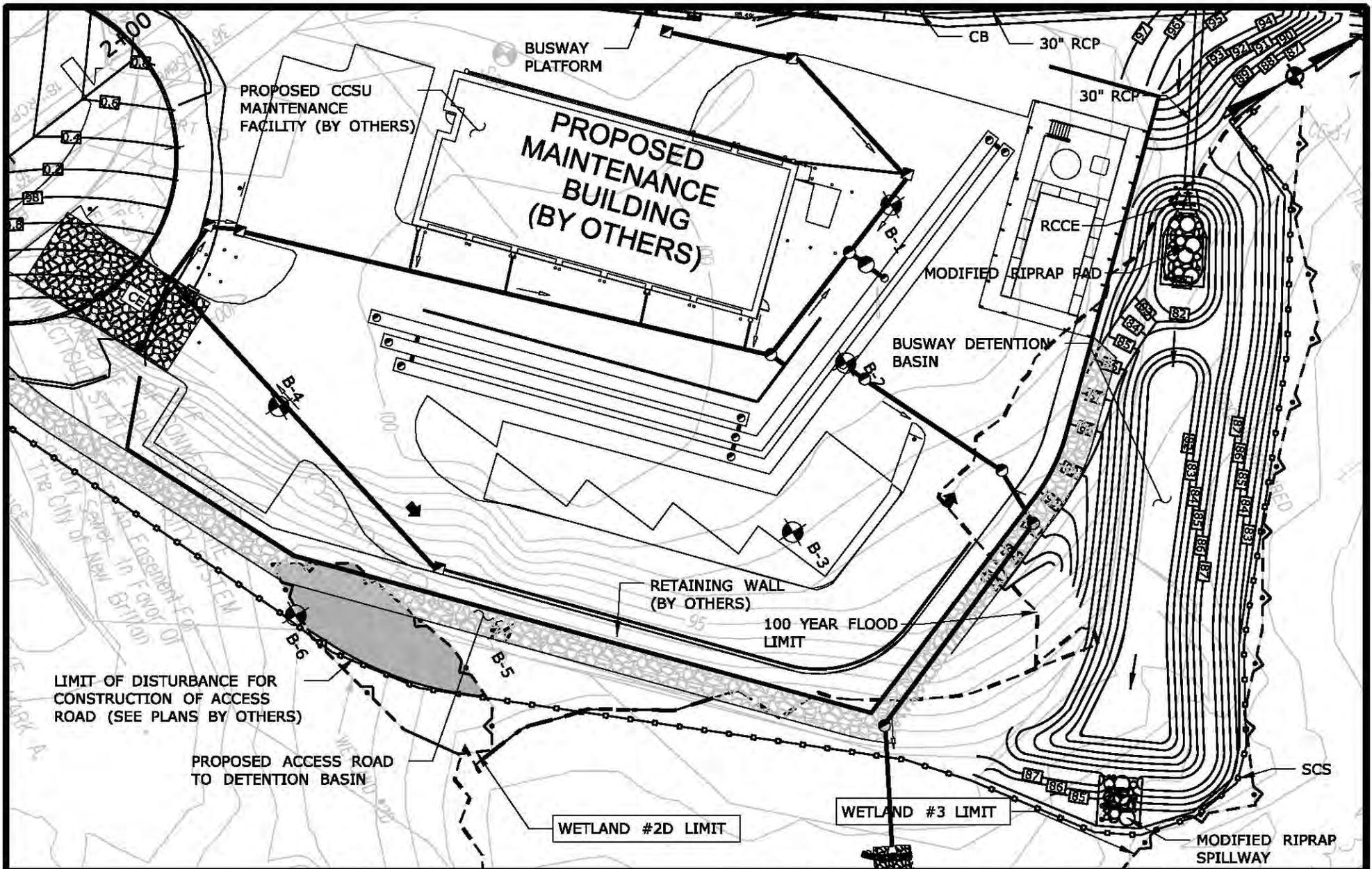


**STATE OF CONNECTICUT**  
DEPARTMENT OF TRANSPORTATION

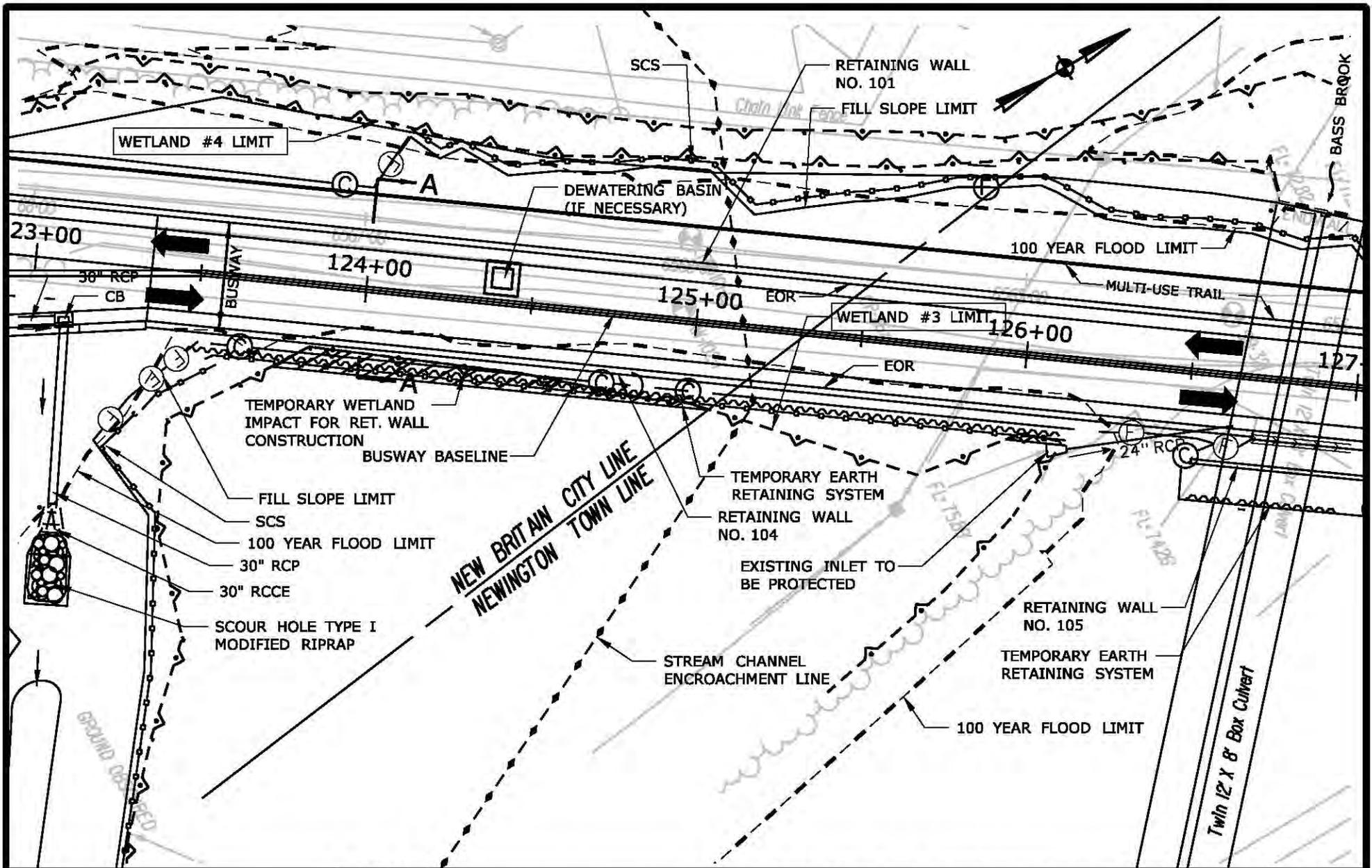


**NEW BRITAIN - HARTFORD BUSWAY**  
ENVIRONMENTAL IMPACT PLATES

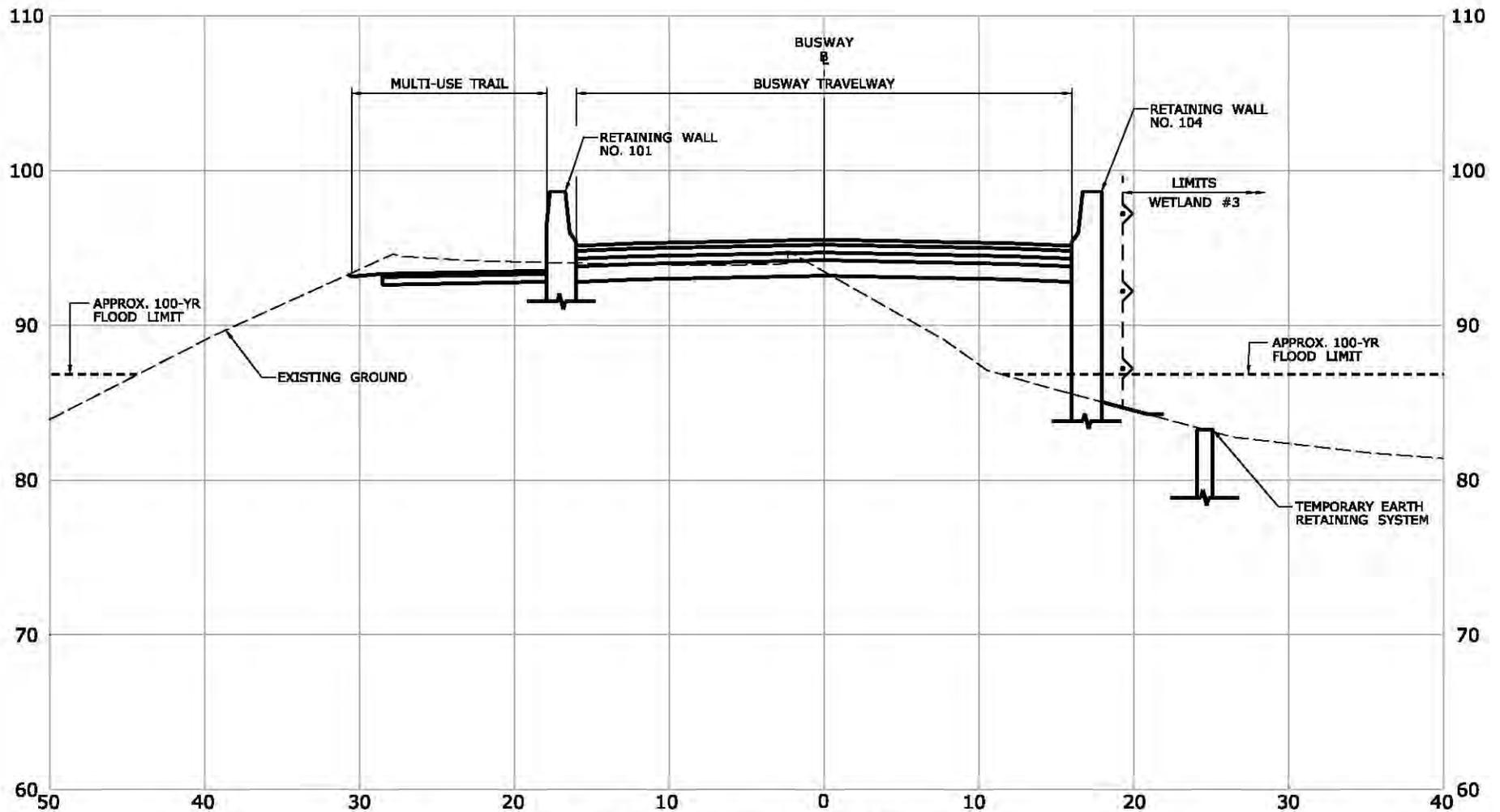
OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
MICHAEL BAKER ENGINEERING	PLATE NO. 10



<b>IMPACT SUMMARY</b>  PERMANENT WETLAND #2D IMPACT	<b>TOTAL IMPACT AREA</b> 1,160 S.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H034	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	 <b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
		SCALE 1" = 40' 			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES



<b>IMPACT SUMMARY</b> TEMPORARY WETLAND #3 IMPACT	<b>TOTAL IMPACT AREA</b> 634 S.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H034	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
		SCALE 1" = 40' 			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES



**SECTION A-A (ON PLATE 11)**

**TYPICAL SECTION WHERE  
RETAINING WALL IS USED  
TO MINIMIZE WETLAND IMPACT**

STATE PROJECT NO.: 171-305



**STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION**



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ENGINEERING

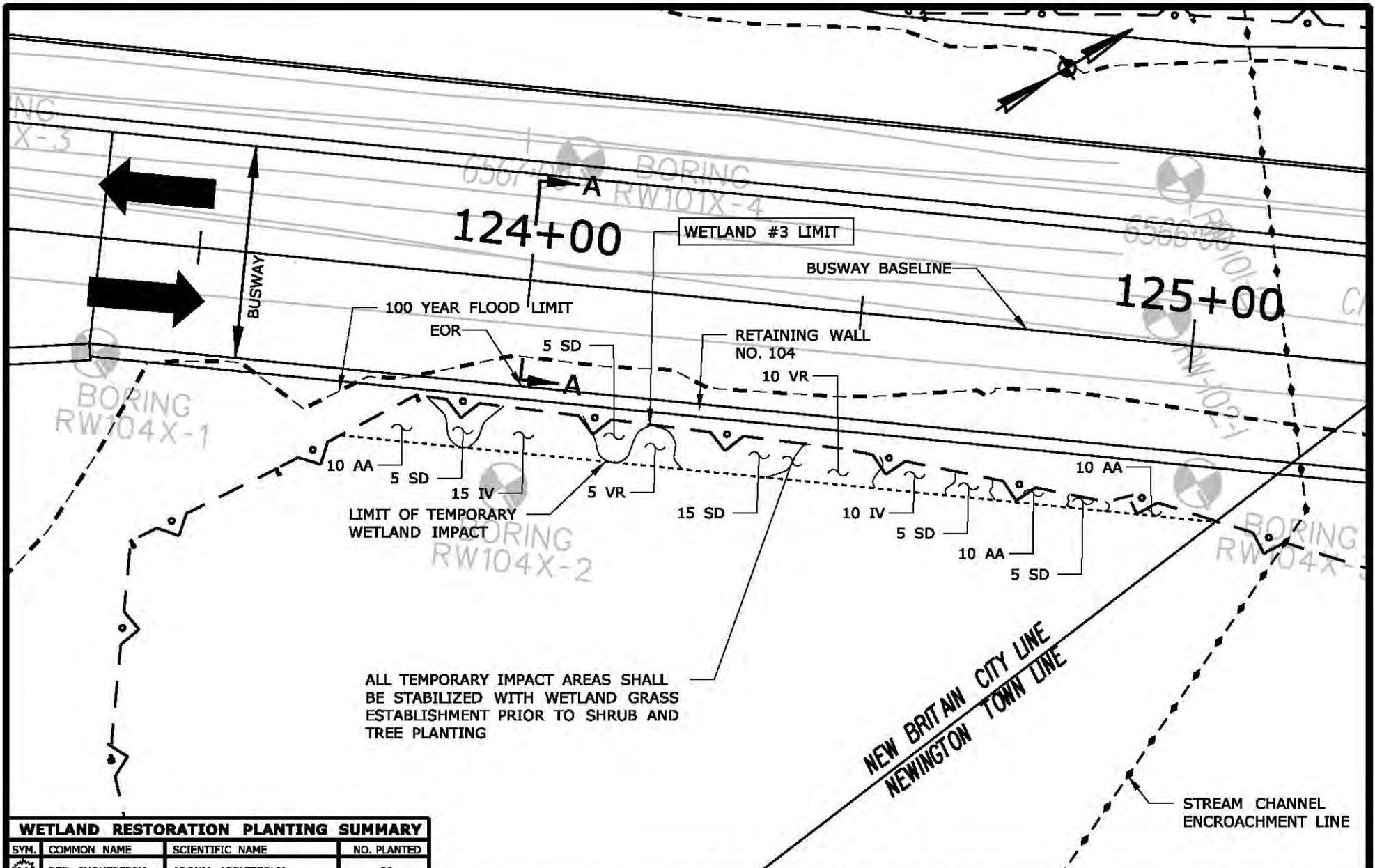
DATE:  
FEBRUARY  
2011

SCALE: 1"=10'

**NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES**

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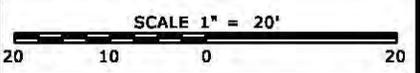
PLATE NO.  
**11A**



**WETLAND RESTORATION PLANTING SUMMARY**

SYM.	COMMON NAME	SCIENTIFIC NAME	NO. PLANTED
AA	RED CHOKEBERRY	ARONIA ARBUTIFOLIA	30
SD	PUSSY WILLOW	SALIX DISCOLOR	35
IV	WINTERBERRY	ILEX VERTICILLATA	25
VR	NORTHERN ARROWWOOD	VIBURNUM RECOGNITUM	15
TOTAL PLANTINGS			105

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H034



STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION



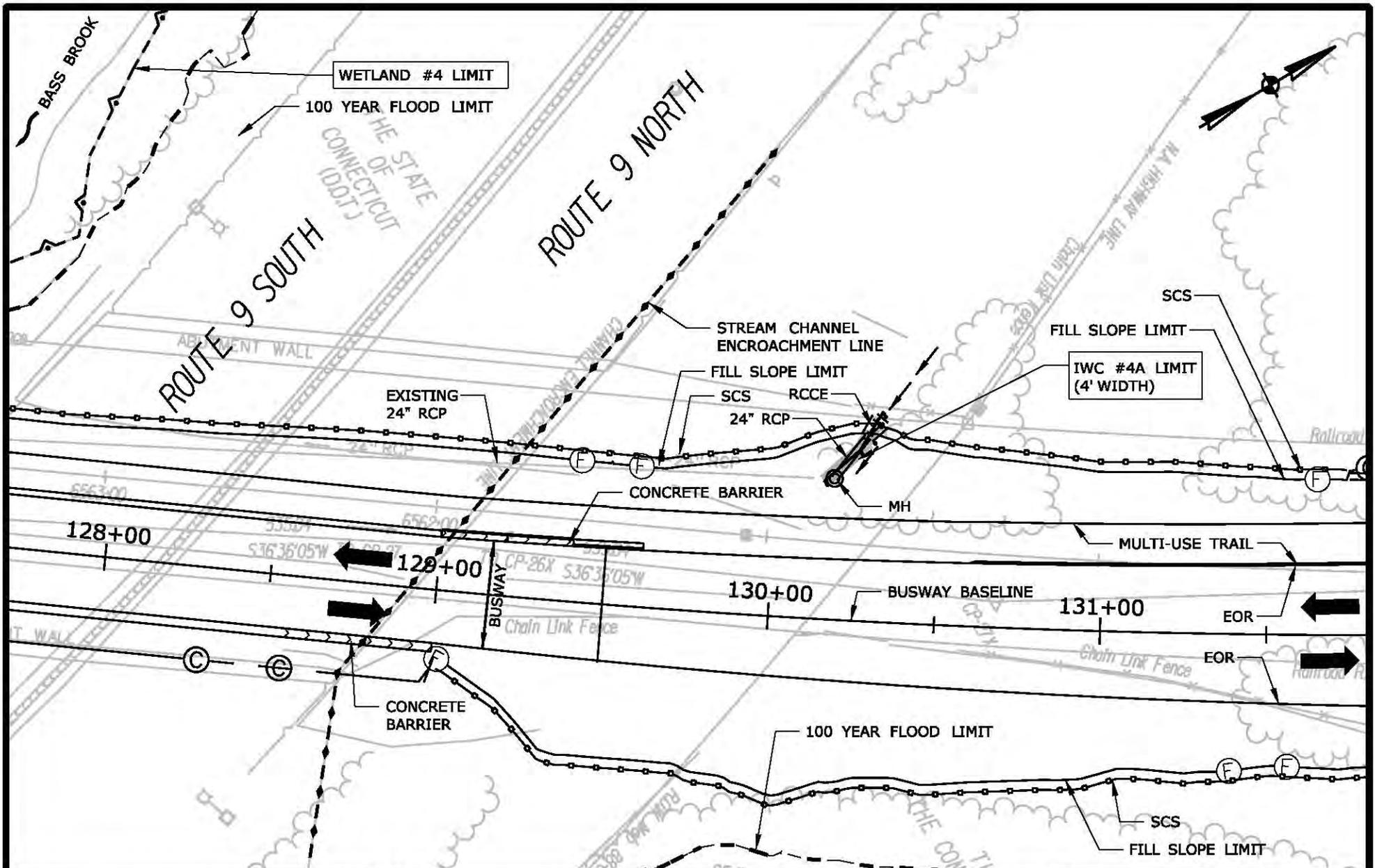
OFFICE OF  
 ENGINEERING

DATE:  
 FEBRUARY  
 2011

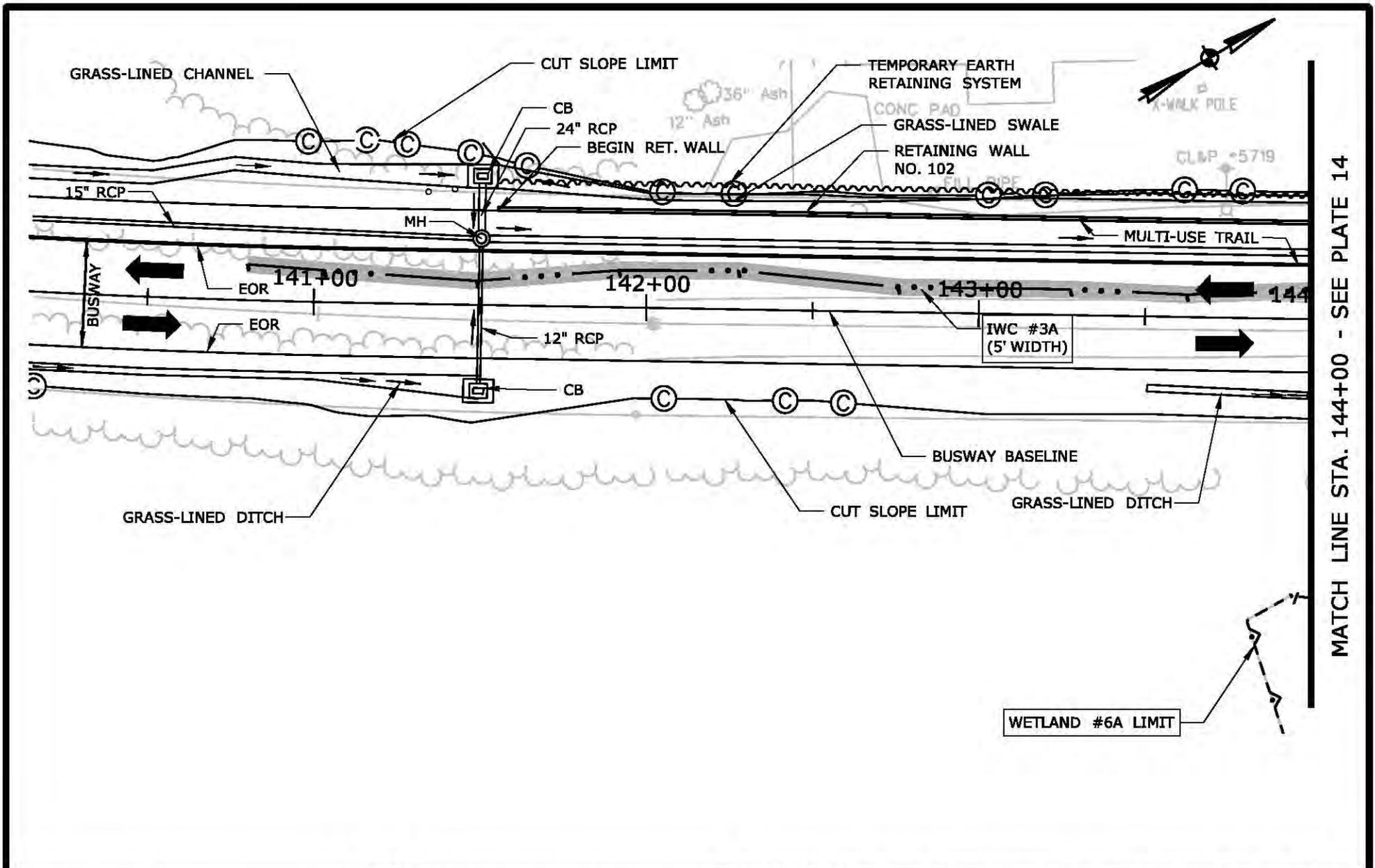
NEW BRITAIN - HARTFORD BUSWAY  
 ENVIRONMENTAL IMPACT PLATES

MICHAEL  
 BAKER  
 ENGINEERING

PLATE NO.  
 11B



<b>IMPACT SUMMARY</b> PERMANENT IWC #4A IMPACT	<b>TOTAL IMPACT AREA</b> 21 L.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H034	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	<b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
		SCALE 1" = 40' 			<b>NEW BRITAIN - HARTFORD BUSWAY</b> <b>ENVIRONMENTAL IMPACT PLATES</b>

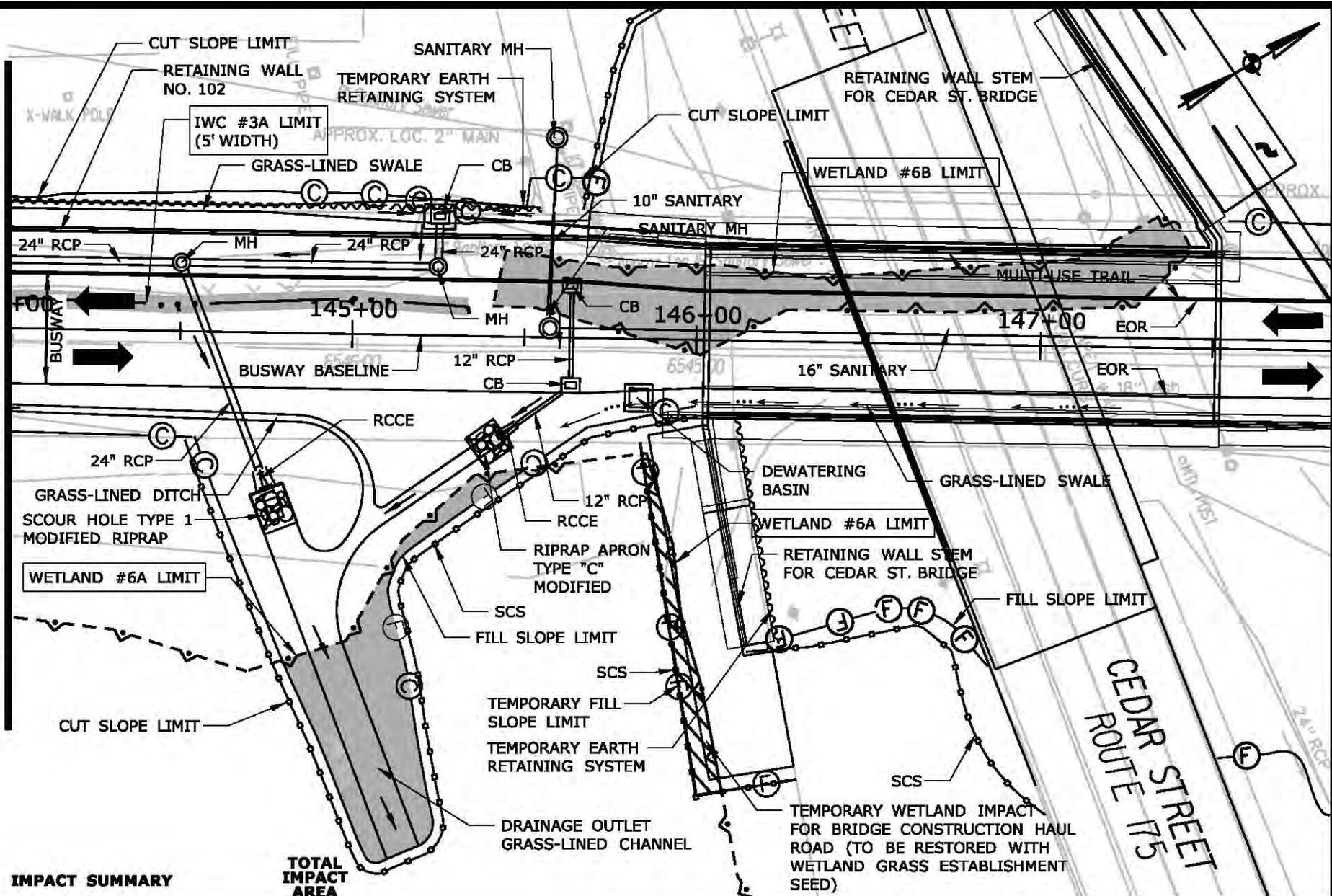


MATCH LINE STA. 144+00 - SEE PLATE 14

WETLAND #6A LIMIT

<b>IMPACT SUMMARY</b> PERMANENT IWC #3A IMPACT	<b>TOTAL IMPACT AREA</b> 454 L.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H034	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
		SCALE 1" = 40' 40 20 0 40			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES

MATCH LINE STA. 144+00 - SEE PLATE 13



**IMPACT SUMMARY**

**TOTAL IMPACT AREA**

	PERMANENT WETLAND #6A IMPACT	2,080 S.F.
	PERMANENT WETLAND #6B IMPACT	3,152 S.F.
	TEMPORARY WETLAND #6A IMPACT	515 S.F.
	PERMANENT IWC #3A IMPACT	454 L.F.

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H034/93-166

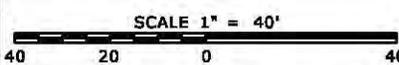


STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION



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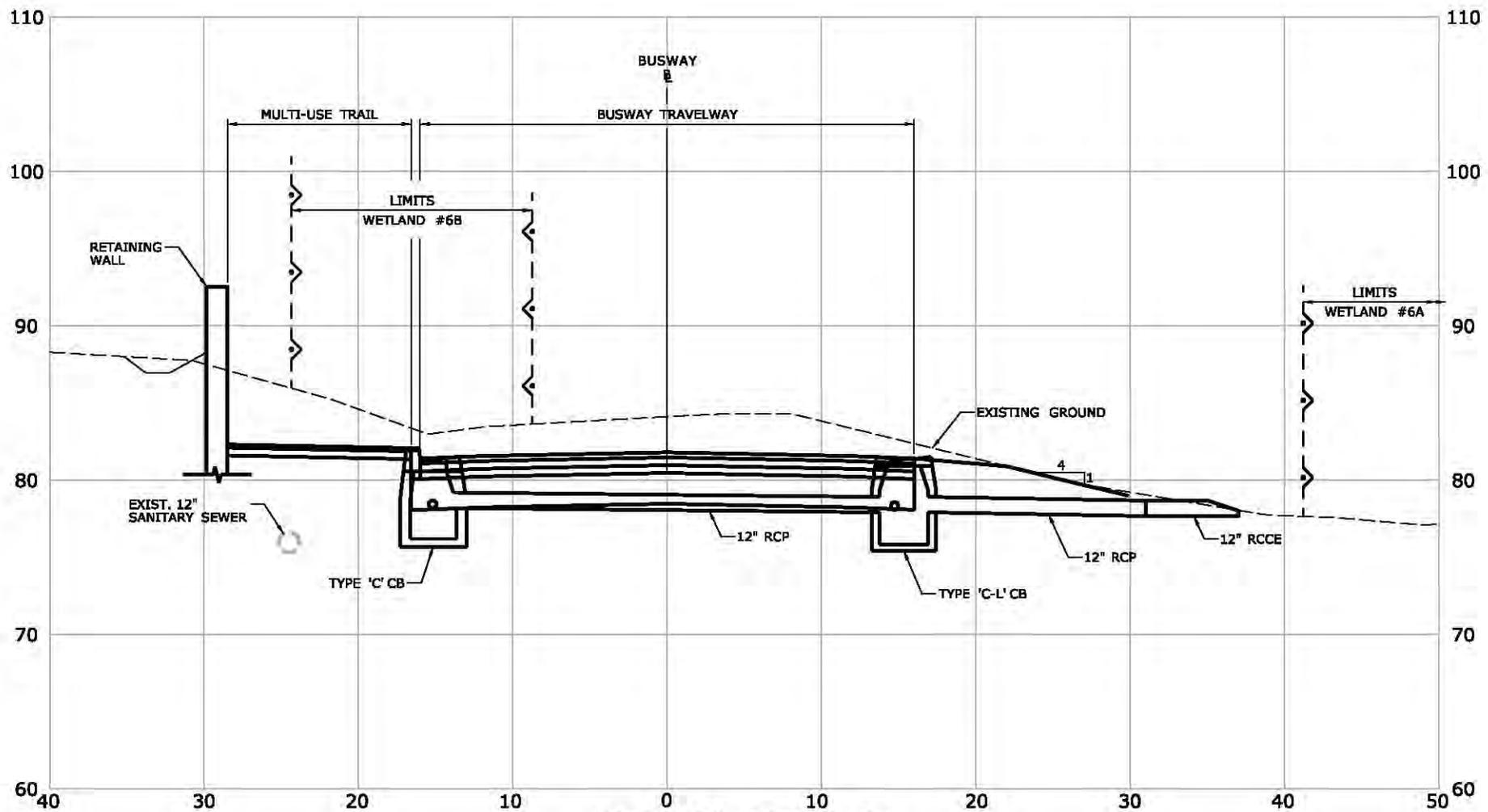
DATE:  
 FEBRUARY  
 2011



NEW BRITAIN - HARTFORD BUSWAY  
 ENVIRONMENTAL IMPACT PLATES

MICHAEL  
 BAKER  
 ENGINEERING

PLATE NO.  
 14



**TYPICAL SECTION  
(SEE PLATE 14)**

**TYPICAL SECTION WHERE  
CUT WITHIN WETLAND  
IS REQUIRED FOR CONSTRUCTION**

STATE PROJECT NO.: 171-305

SCALE: 1"=10'



**STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION**



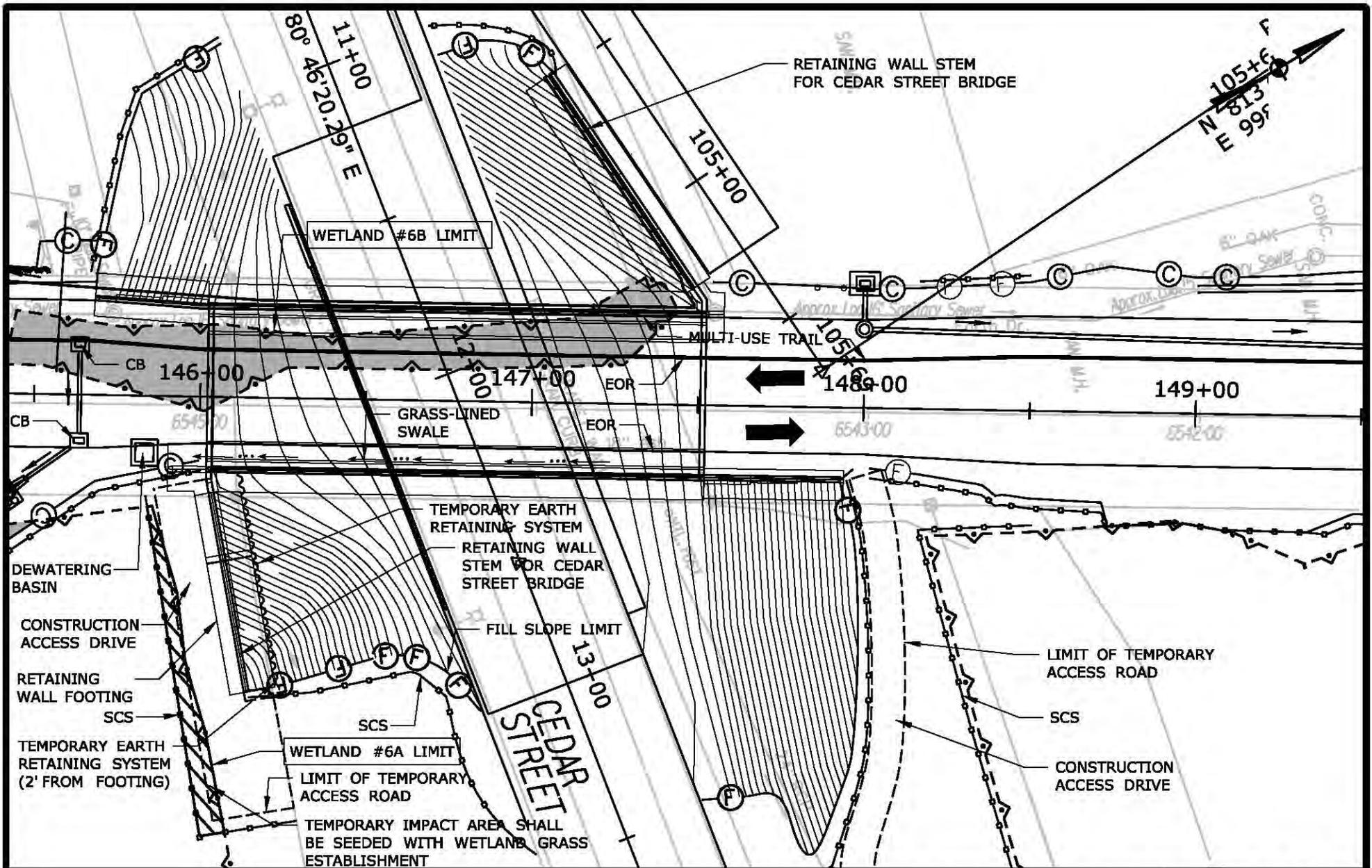
OFFICE OF  
ENGINEERING

DATE:  
FEBRUARY  
2011

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL  
BAKER  
ENGINEERING

PLATE NO.  
**14A**



**CEDAR STREET BRIDGE  
ABUTMENT GRADING PLAN**

STATE PROJECT NO.: 171-305  
CONTRACT NO.: H034/93-166

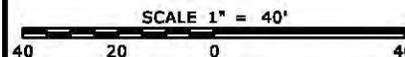


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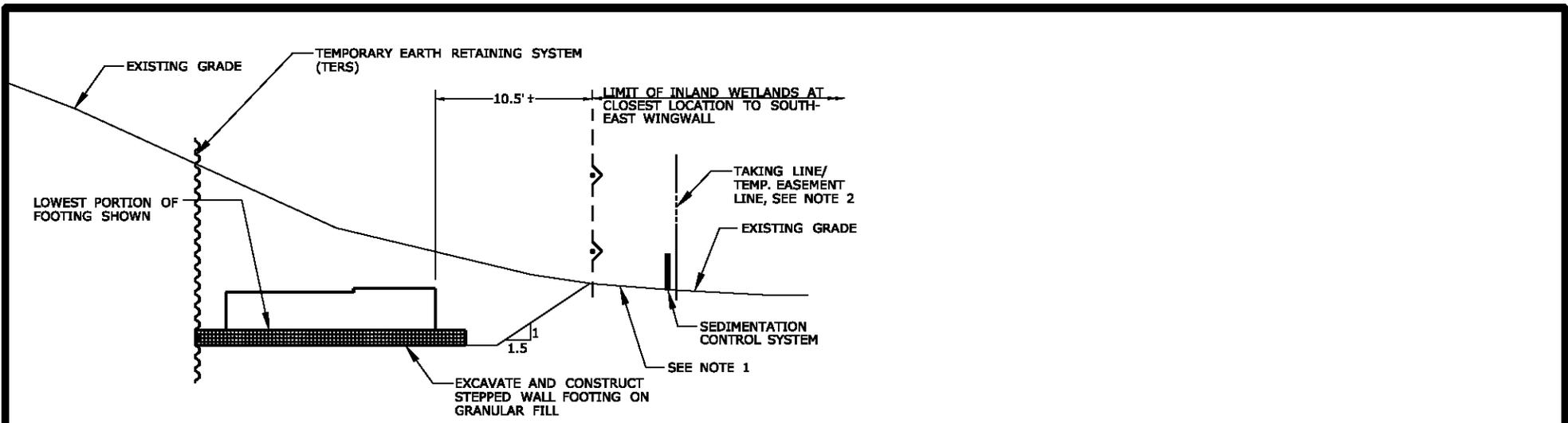
DATE:  
FEBRUARY  
2011



NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL  
BAKER  
ENGINEERING

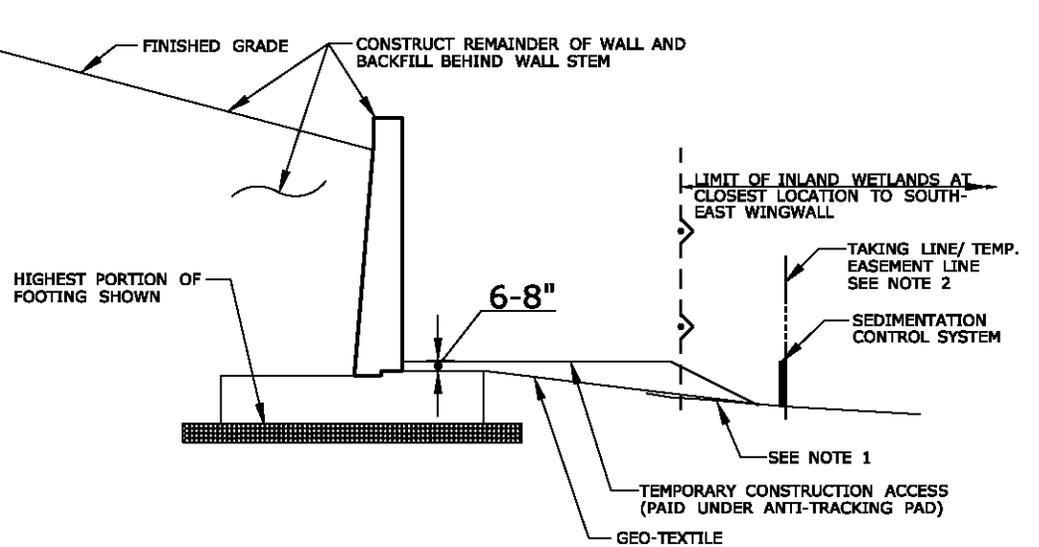
PLATE NO.  
14B



**SECTION AT SOUTH EAST WINGWALL (EXCAVATION FOR FOOTING)**

**NOTES:**

- 1: ALL DISTURBED AREAS SHALL BE RESTORED AND GRADED BACK TO ITS ORIGINAL CONDITION. UPLAND DISTURBED AREAS SHALL RECEIVE TURF ESTABLISHMENT AND DISTURBED WETLAND AREAS SHALL RECEIVE WETLAND GRASS FOR PERMANENT STABILIZATION.
- 2: CONTRACTOR IS NOT TO ENCROACH BEYOND THE TAKING LINE/TEMPORARY WORK AREA AS SHOWN ON PLATE 14 AND THE GENERAL PLAN.



**SECTION AT SOUTH EAST WINGWALL (TEMPORARY CONSTRUCTION ACCESS)**

**CEDAR STREET BRIDGE  
TYPICAL SECTION  
AT WETLAND IMPACT**

STATE PROJECT NO.: 171-305

SCALE: N.T.S.



**STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION**



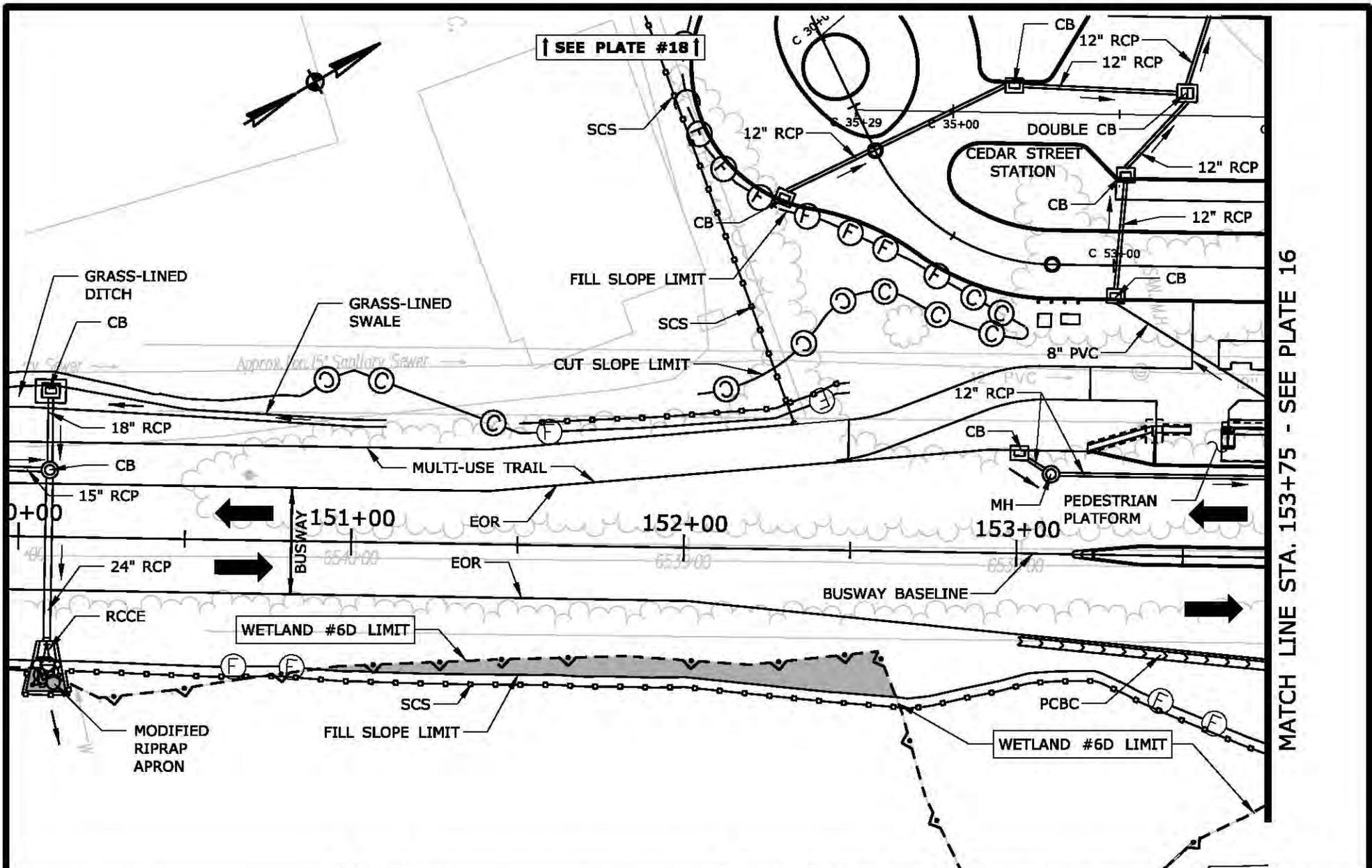
OFFICE OF  
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DATE:  
FEBRUARY  
2011

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

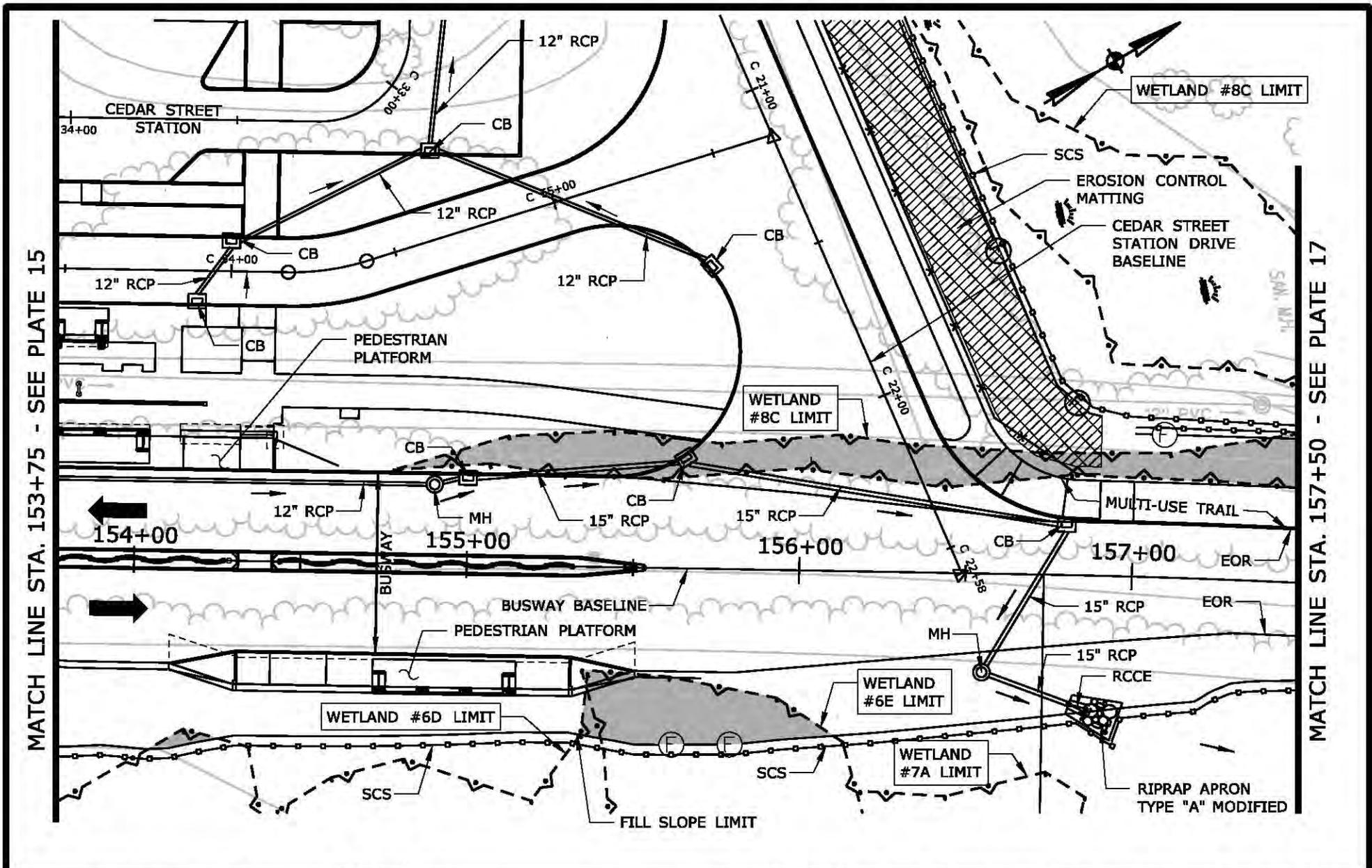
MICHAEL  
BAKER  
ENGINEERING

PLATE NO.  
**14C**



MATCH LINE STA. 153+75 - SEE PLATE 16

<b>IMPACT SUMMARY</b>	<b>TOTAL IMPACT AREA</b>	STATE PROJECT NO.: 171-305 CONTRACT NO.: H034/H039	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	 <b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
		 PERMANENT WETLAND #6D IMPACT			1,102 S.F.



MATCH LINE STA. 153+75 - SEE PLATE 15

MATCH LINE STA. 157+50 - SEE PLATE 17

IMPACT SUMMARY	TOTAL IMPACT AREA
PERMANENT WETLAND #8C IMPACT	12,001 S.F.
PERMANENT WETLAND #6D IMPACT	1,102 S.F.
PERMANENT WETLAND #6E IMPACT	1,126 S.F.

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H034/H039

SCALE 1" = 40'

**STATE OF CONNECTICUT**  
 DEPARTMENT OF TRANSPORTATION

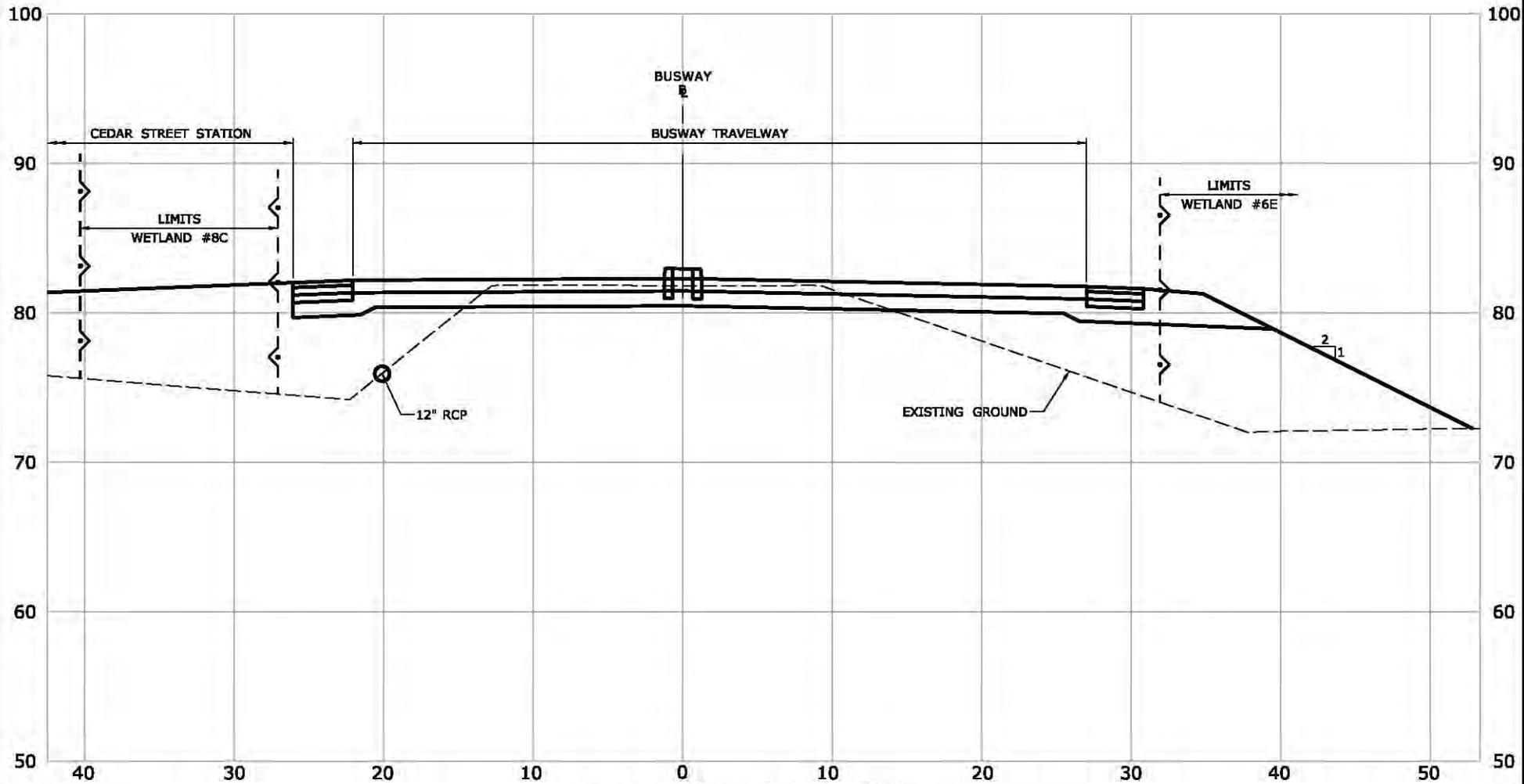
**NEW BRITAIN - HARTFORD BUSWAY**  
 ENVIRONMENTAL IMPACT PLATES

OFFICE OF ENGINEERING

DATE: FEBRUARY 2011

MICHAEL BAKER ENGINEERING

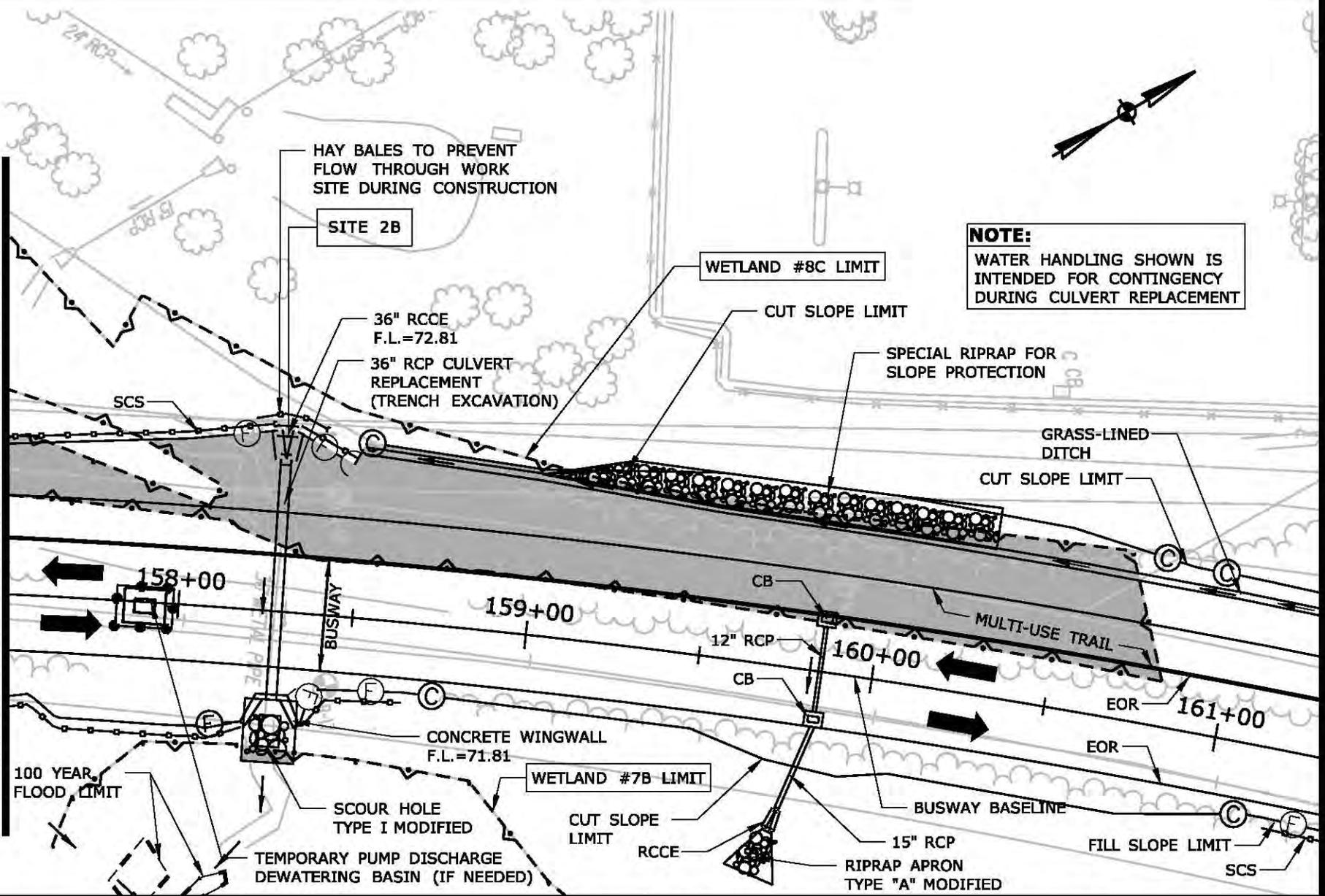
PLATE NO. 16



**TYPICAL SECTION  
(SEE PLATE 16)**

<p>TYPICAL SECTION WHERE CUT WITHIN WETLAND IS REQUIRED FOR CONSTRUCTION</p>	<p>STATE PROJECT NO.: 171-305</p>	 <p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>  <p>OFFICE OF ENGINEERING</p>	<p>DATE: FEBRUARY 2011</p>
	<p>SCALE: 1"=10'</p>		<p>NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES</p>

MATCH LINE STA. 157+50 - SEE PLATE 16



**NOTE:**  
 WATER HANDLING SHOWN IS INTENDED FOR CONTINGENCY DURING CULVERT REPLACEMENT

IMPACT SUMMARY	
	PERMANENT WETLAND #8C IMPACT
	PERMANENT WETLAND #7B IMPACT

TOTAL IMPACT AREA
12,022 S.F.
59 S.F.

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H034/H039

SCALE 1" = 40'

**STATE OF CONNECTICUT**  
 DEPARTMENT OF TRANSPORTATION

**OFFICE OF ENGINEERING**

**NEW BRITAIN - HARTFORD BUSWAY**  
 ENVIRONMENTAL IMPACT PLATES

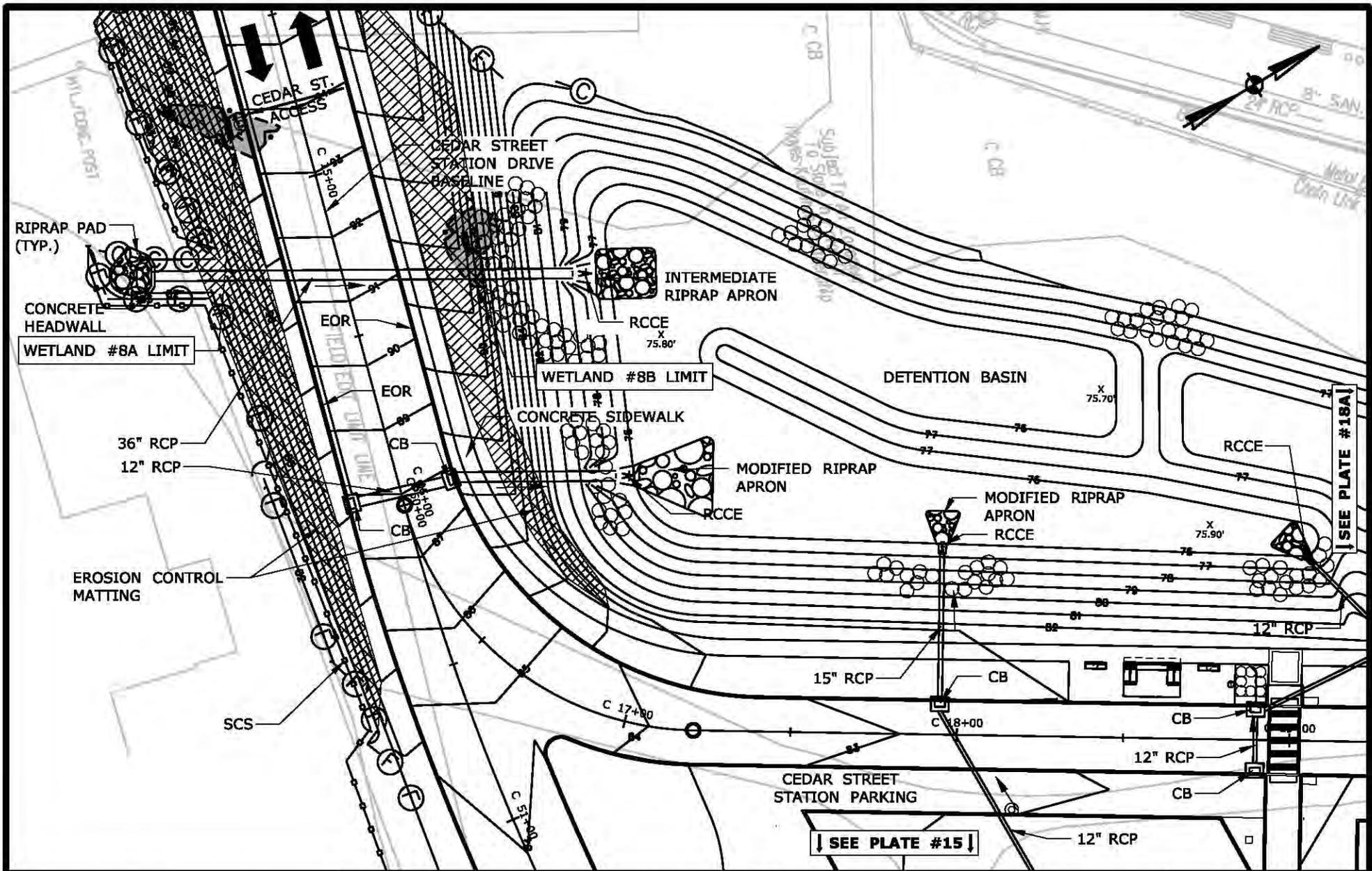
**DATE:**  
 FEBRUARY 2011

**OFFICE OF ENGINEERING**

**DATE:**  
 FEBRUARY 2011

**PLATE NO.**  
 17

**MICHAEL BAKER ENGINEERING**



IMPACT SUMMARY	
	PERMANENT WETLAND #8A IMPACT
	PERMANENT WETLAND #8B IMPACT

TOTAL IMPACT AREA
285 S.F.
241 S.F.

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H034/H039

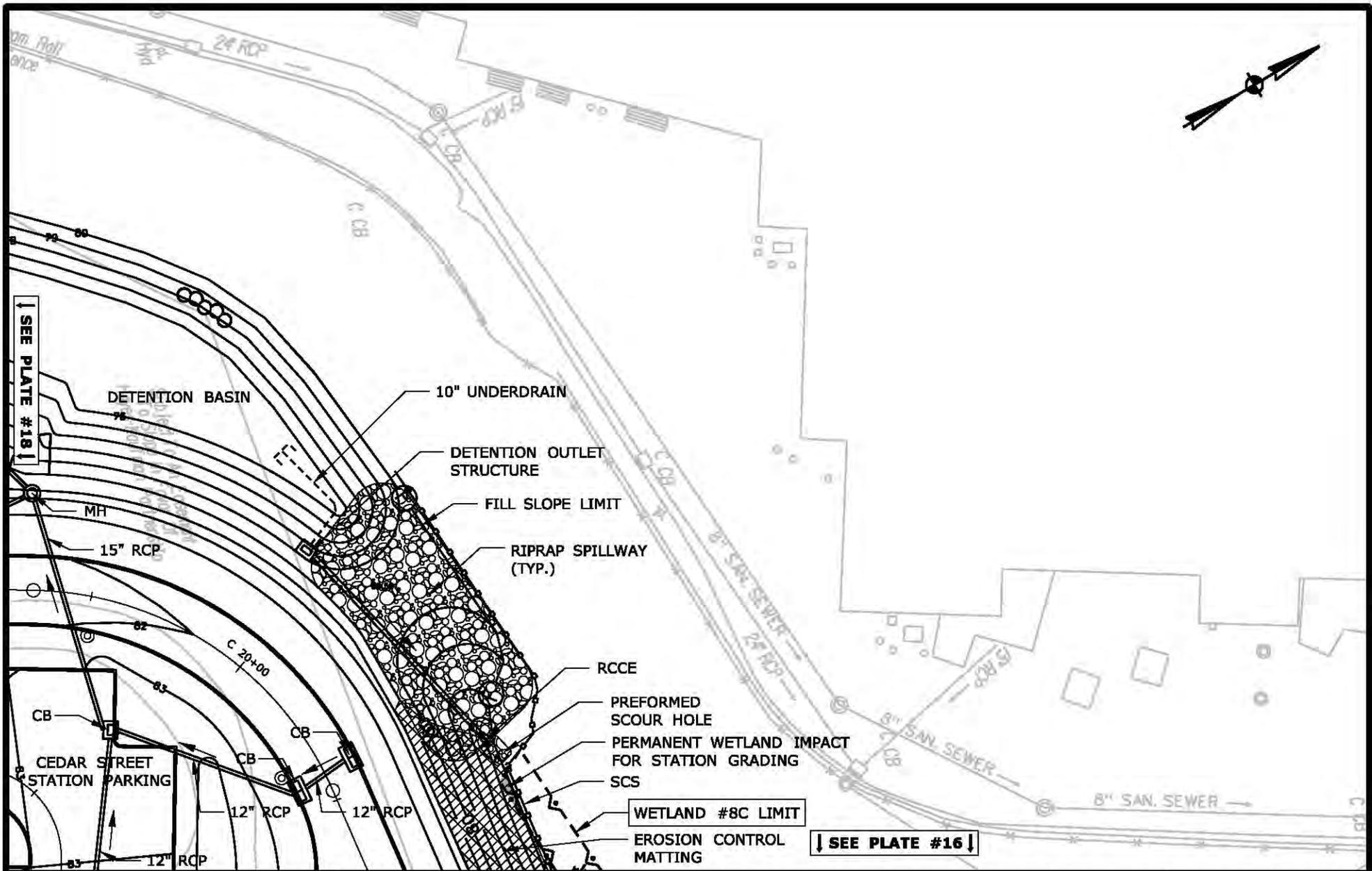
SCALE 1" = 40'

STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION

OFFICE OF ENGINEERING

NEW BRITAIN - HARTFORD BUSWAY  
 ENVIRONMENTAL IMPACT PLATES

DATE: FEBRUARY 2011	PLATE NO. 18
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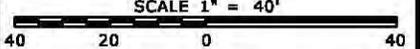


IMPACT SUMMARY	
	PERMANENT WETLAND #8C IMPACT

TOTAL IMPACT AREA
12,022 S.F.

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H034/H039

SCALE 1" = 40'

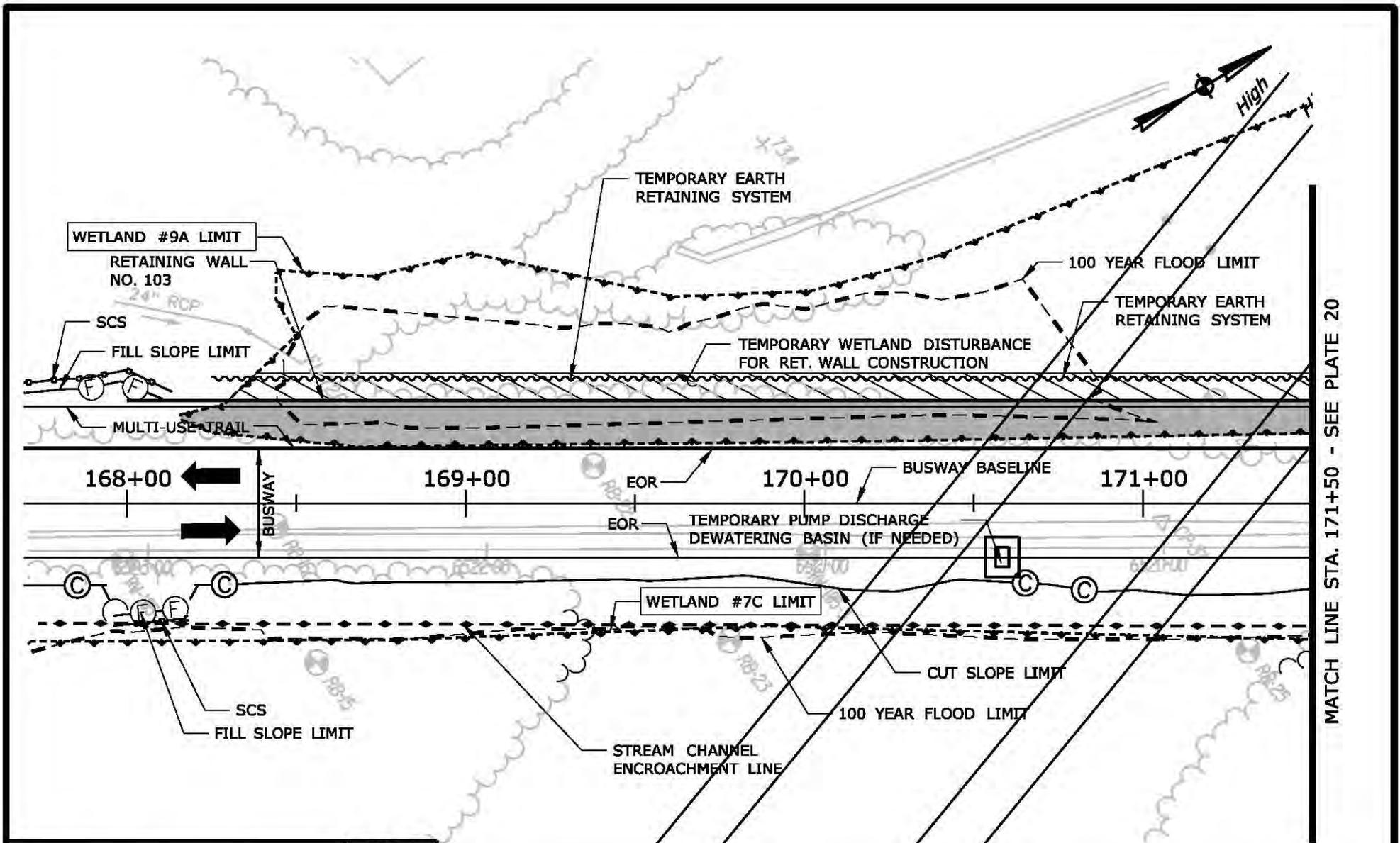


 STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION

 OFFICE OF ENGINEERING

NEW BRITAIN - HARTFORD BUSWAY  
 ENVIRONMENTAL IMPACT PLATES

DATE: FEBRUARY 2011	PLATE NO. 18A
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IMPACT SUMMARY	TOTAL IMPACT AREA
PERMANENT WETLAND #9A IMPACT	7,230 S.F.
TEMPORARY WETLAND #9A IMPACT	5,449 S.F.

STATE PROJECT NO.: 171-305  
CONTRACT NO.: H034

SCALE 1" = 40'



STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



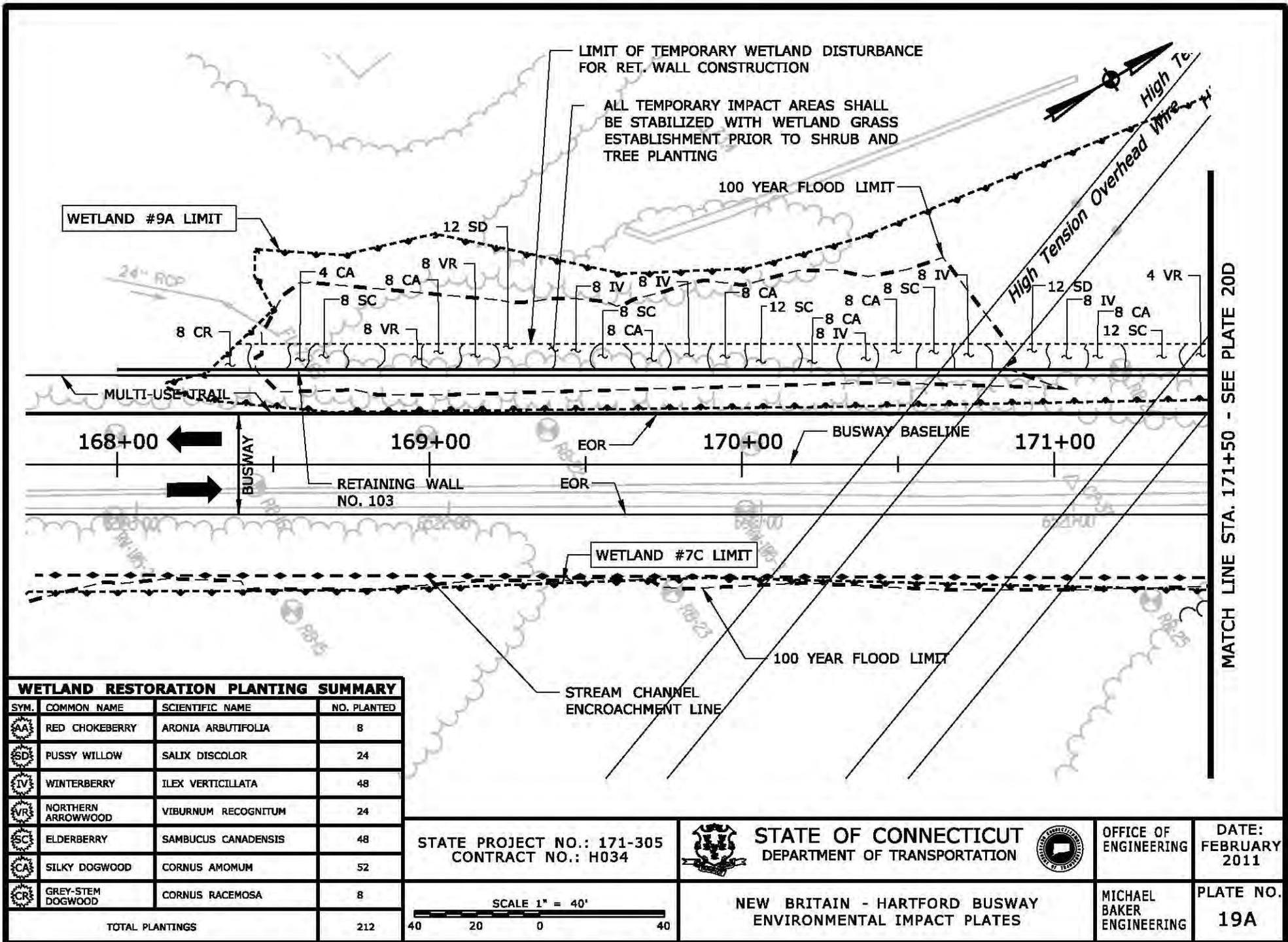
OFFICE OF  
ENGINEERING

DATE:  
FEBRUARY  
2011

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL  
BAKER  
ENGINEERING

PLATE NO.  
19



WETLAND #9A LIMIT

LIMIT OF TEMPORARY WETLAND DISTURBANCE FOR RET. WALL CONSTRUCTION

ALL TEMPORARY IMPACT AREAS SHALL BE STABILIZED WITH WETLAND GRASS ESTABLISHMENT PRIOR TO SHRUB AND TREE PLANTING

100 YEAR FLOOD LIMIT

High Tension Overhead Wire

168+00

169+00

170+00

171+00

BUSWAY

RETAINING WALL NO. 103

EOR

BUSWAY BASELINE

WETLAND #7C LIMIT

100 YEAR FLOOD LIMIT

STREAM CHANNEL ENCROACHMENT LINE

MATCH LINE STA. 171+50 - SEE PLATE 20D

**WETLAND RESTORATION PLANTING SUMMARY**

SYM.	COMMON NAME	SCIENTIFIC NAME	NO. PLANTED
AA	RED CHOKEBERRY	ARONIA ARBUTIFOLIA	8
SD	PUSSY WILLOW	SALIX DISCOLOR	24
IV	WINTERBERRY	ILEX VERTICILLATA	48
VR	NORTHERN ARROWWOOD	VIBURNUM RECOGNITUM	24
SC	ELDERBERRY	SAMBUCUS CANADENSIS	48
CA	SILKY DOGWOOD	CORNUS AMOMUM	52
CR	GREY-STEM DOGWOOD	CORNUS RACEMOSA	8
TOTAL PLANTINGS			212

STATE PROJECT NO.: 171-305  
CONTRACT NO.: H034

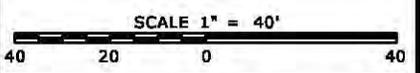


STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



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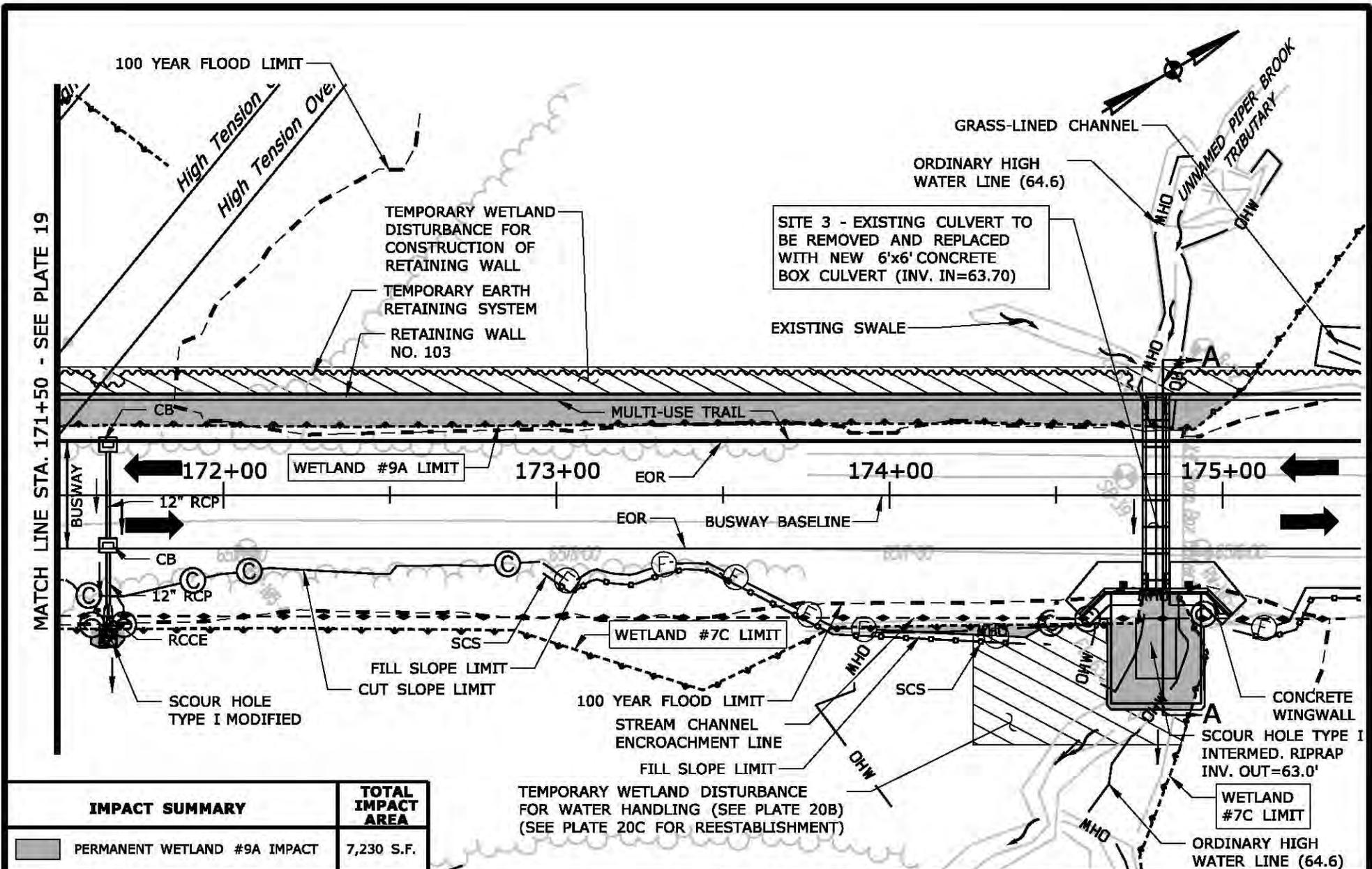
DATE: FEBRUARY 2011



NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL BAKER ENGINEERING

PLATE NO. 19A



IMPACT SUMMARY		TOTAL IMPACT AREA
	PERMANENT WETLAND #9A IMPACT	7,230 S.F.
	PERMANENT WETLAND #7C IMPACT	1,023 S.F.
	TEMPORARY WETLAND #9A IMPACT	5,449 S.F.
	TEMPORARY WETLAND #7C IMPACT	1,640 S.F.

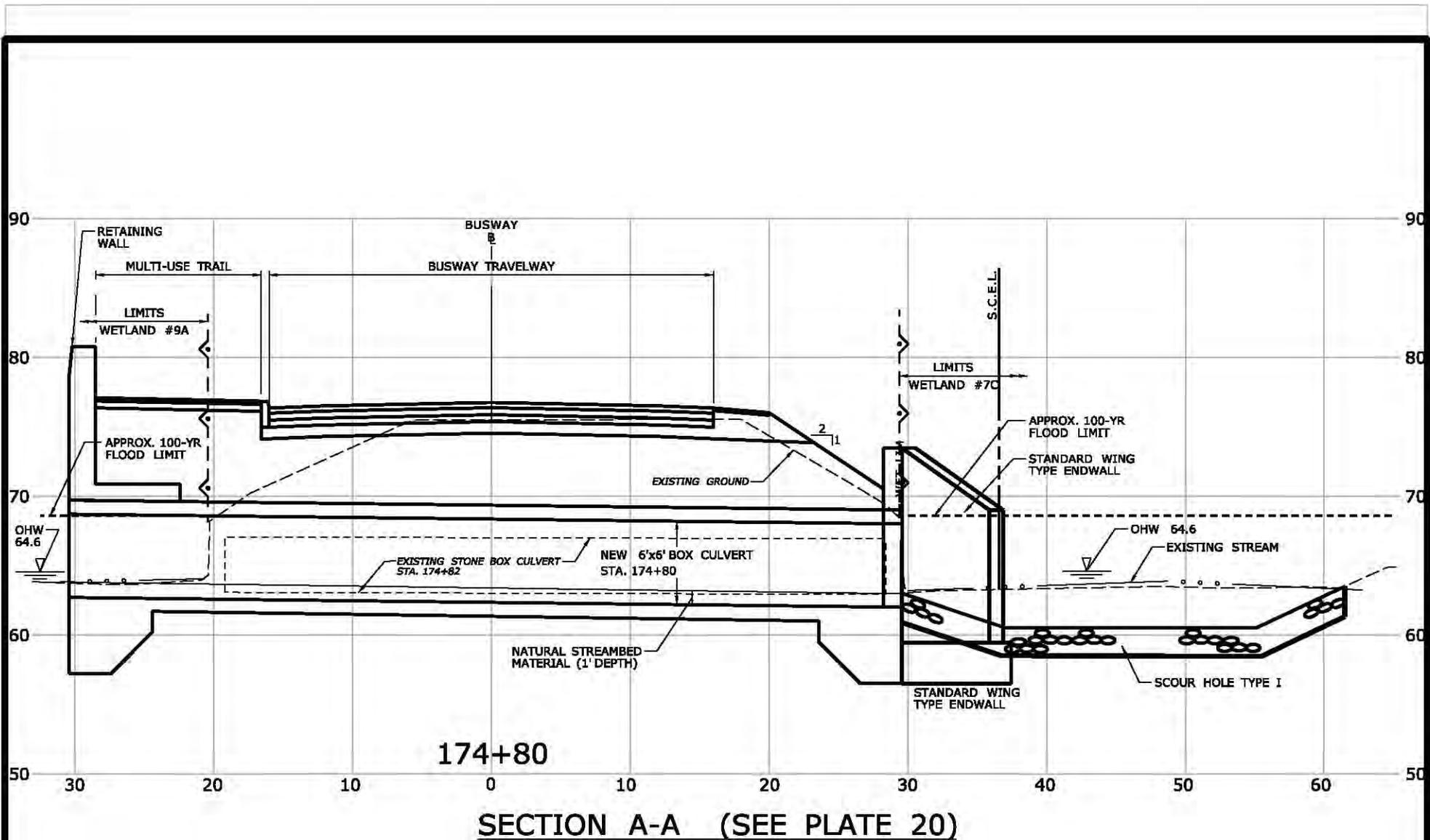
STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H034

SCALE 1" = 40'

40 20 0 40

<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
		MICHAEL BAKER ENGINEERING

NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES



**TYPICAL SECTION OF  
WETLAND IMPACTS AT  
SITE 3 CULVERT  
REPLACEMENT**

STATE PROJECT NO.: 171-305



**STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION**



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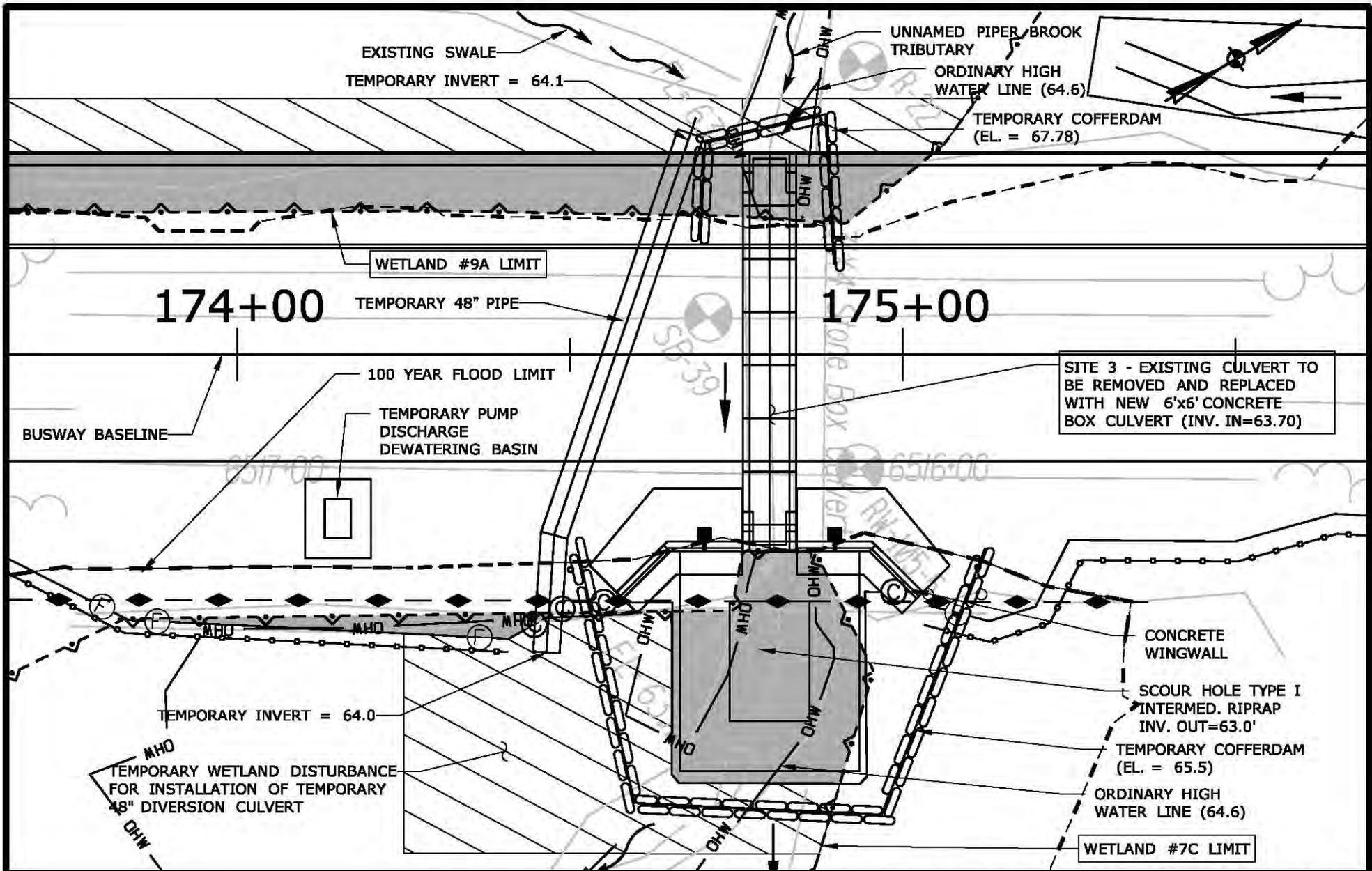
DATE:  
FEBRUARY  
2011

SCALE: 1"=10'

**NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES**

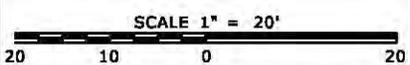
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PLATE NO.  
**20A**



**SITE 3  
WATER HANDLING PLAN**

STATE PROJECT NO.: 171-305  
CONTRACT NO.: H034



**STATE OF CONNECTICUT**  
DEPARTMENT OF TRANSPORTATION



OFFICE OF  
ENGINEERING

DATE:  
FEBRUARY  
2011

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL  
BAKER  
ENGINEERING

PLATE NO.  
**20B**

**GENERAL NOTES:**

1. THE CONTRACTOR SHALL MAINTAIN WATER THROUGH THE TEMPORARY BYPASS PIPE AS SHOWN DURING CONSTRUCTION OF THE NEW CULVERT.
2. ALL WORK ASSOCIATED WITH THE TEMPORARY WATER DIVERSION, INCLUDING THE TEMPORARY BYPASS PIPE SHALL BE INCLUDED UNDER "HANDLING WATER".
3. A PUMP DISCHARGE AREA SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS, USING THE MODIFIED RIPRAP FILTERING SYSTEM SHOWN. THE LOCATION AND SIZE OF THE DEWATERING BASIN SHOWN IS APPROXIMATE. THE EXACT LOCATION MAY VARY BASED ON THE SIZE OF BASIN REQUIRED TO PROVIDE A STORAGE VOLUME CAPABLE OF RETAINING THE FIRST TWO HOURS OF PUMP DISCHARGE.
4. SEE PERMIT PLATES FOR ADDITIONAL DETAILS AND NOTES.

**CONSTRUCTION SEQUENCE:**

THE FOLLOWING SEQUENCE SHALL BE FOLLOWED FOR THE CONSTRUCTION OF THE NEW BOX CULVERT AND RETAINING WALL NO. 103 UNLESS OTHERWISE APPROVED:

1. CONSTRUCT THE TEMPORARY BYPASS PIPE AS SHOWN AND IN ACCORDANCE WITH THE "HANDLING WATER" SPECIAL PROVISION AND THE PERMIT DOCUMENTS.
2. CONSTRUCT THE COFFERDAM AS SHOWN.
3. DIVERT THE BROOK THROUGH THE BYPASS PIPE USING SANDBAGS OR SIMILAR MEANS TO DEFINE THE CHANNEL.
4. REMOVE THE EXISTING CULVERT.
5. CONSTRUCT THE BOX CULVERT, WINGWALLS AND THE PORTION OF RETAINING WALL NO.103 INSIDE THE COFFERDAM. DEWATERING SHALL BE ACCOMPLISHED BY PUMPING.
6. ONCE THE CULVERT IS IN PLACE, COMPLETE THE CHANNEL IMPROVEMENTS AND REMOVE THE COFFERDAM.
7. DIVERT THE BROOK THROUGH THE CULVERT USING SANDBAGS OR SIMILAR MEANS.
8. REMOVE THE TEMPORARY BYPASS PIPE.
9. CONSTRUCT THE RETAINING WALL AS SHOWN ON THE RETAINING WALL PLANS.
10. REMOVE THE TEMPORARY PUMP DISCHARGE BASIN.
11. CONSTRUCT THE ROADWAY AND STABILIZE SLOPES AS SHOWN ON THE PLANS.
12. ONCE ALL DISTURBED AREAS HAVE BEEN STABILIZED, REMOVE THE SEDIMENTATION CONTROL SYSTEMS.

**CONSTRUCTION METHODS:**

1. INSTALL SEDIMENTATION CONTROL SYSTEM AS SHOWN ON THE PLANS PRIOR TO CONSTRUCTION. THE EROSION PROTECTION SHALL REMAIN IN PLACE UNTIL ALL OF THE DISTURBED AREAS ARE STABILIZED.
2. BEST MANAGEMENT PRACTICES SHALL BE FOLLOWED DURING CONSTRUCTION AS DESCRIBED IN THE SPECIFICATIONS.
3. TURF ESTABLISH ALL DISTURBED AREAS ONCE FINAL SLOPES ARE ESTABLISHED.

**NATIVE STREAMBED MATERIAL NOTES:**

1. NATIVE STREAMBED MATERIAL EXCAVATED DURING THE CULVERT INSTALLATION SHALL BE STOCKPILED AND THEN REPLACED WITHIN THE CULVERT TO THE DEPTH SHOWN ON THE PLANS, AND AS DIRECTED BY THE ENGINEER.
2. THE STOCKPILE SHALL BE LOCATED OUTSIDE THE WETLAND LIMITS AND PROTECTED WITH SEDIMENTATION CONTROL SYSTEM.
2. THE COST OF STOCKPIPING AND REPLACING THE STREAMBED MATERIAL WITHIN THE CULVERT SHALL BE INCLUDED IN THE COST OF THE ITEM "STRUCTURE EXCAVATION EARTH (EXCLUDING COFFERDAM AND DEWATERING)".

**TEMPORARY HYDRAULIC DATA**

AVERAGE DAILY FLOW	0.6 cfs
AVERAGE SPRING FLOW	1.15 cfs
2-YEAR FREQUENCY DISCHARGE	63.0 cfs
TEMPORARY DESIGN DISCHARGE	63.0 cfs
TEMPORARY DESIGN FREQUENCY	2 YEAR
TEMPORARY WATER SURFACE ELEVATION UPSTREAM	67.78'
TEMPORARY WATER SURFACE ELEVATION DOWNSTREAM	65.5'

STATE PROJECT NO.: 171-305



STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



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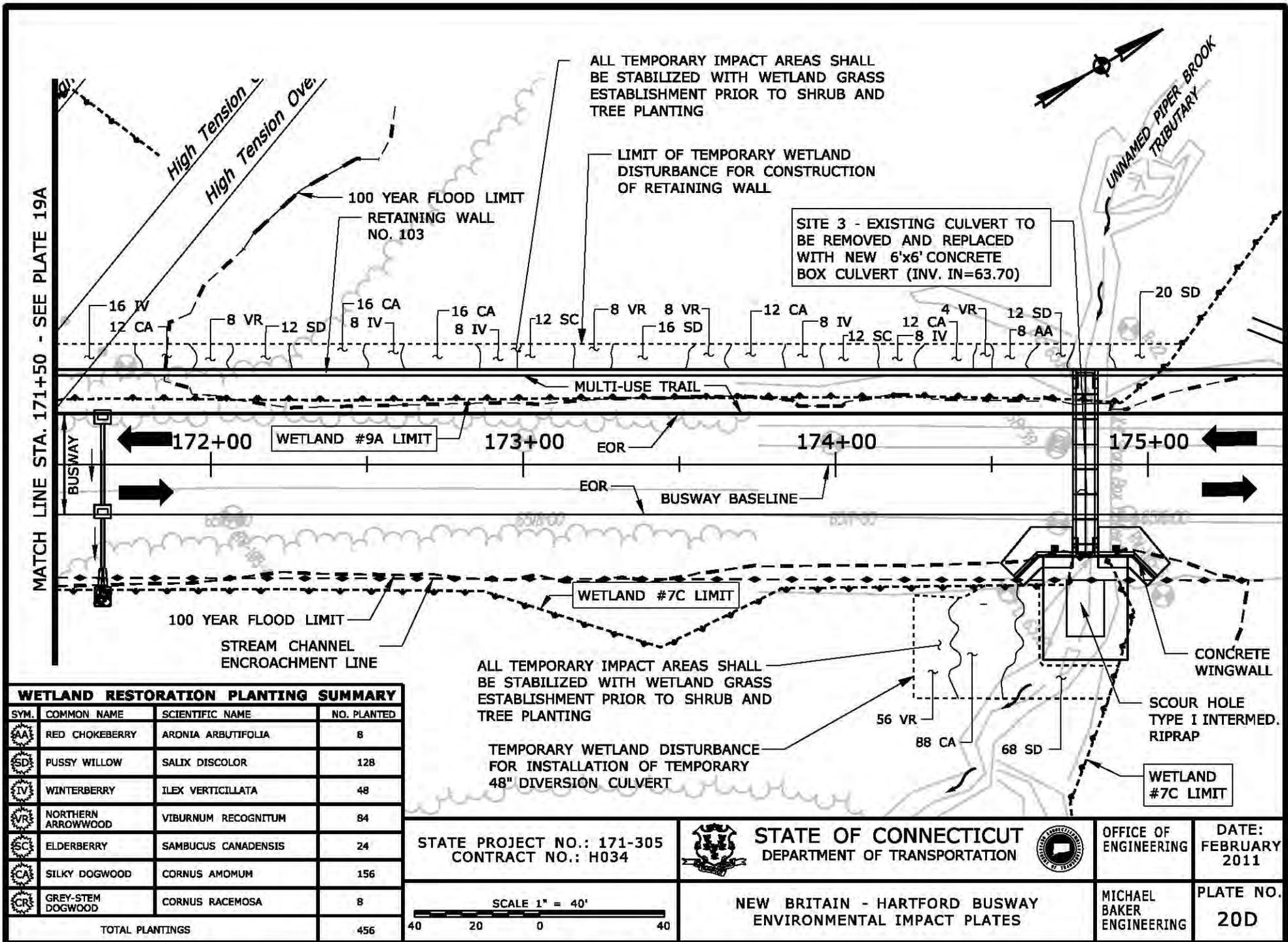
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2011

NOT TO SCALE

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL  
BAKER  
ENGINEERING

PLATE NO.  
20C



**WETLAND RESTORATION PLANTING SUMMARY**

SYM.	COMMON NAME	SCIENTIFIC NAME	NO. PLANTED
AA	RED CHOKEBERRY	ARONIA ARBUTIFOLIA	8
SD	PUSSY WILLOW	SALIX DISCOLOR	128
IV	WINTERBERRY	ILEX VERTICILLATA	48
VR	NORTHERN ARROWWOOD	VIBURNUM RECOGNITUM	84
SC	ELDERBERRY	SAMBUCUS CANADENSIS	24
CA	SILKY DOGWOOD	CORNUS AMOMUM	156
CR	GREY-STEM DOGWOOD	CORNUS RACEMOSA	8
TOTAL PLANTINGS			456

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H034



STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION



OFFICE OF  
 ENGINEERING

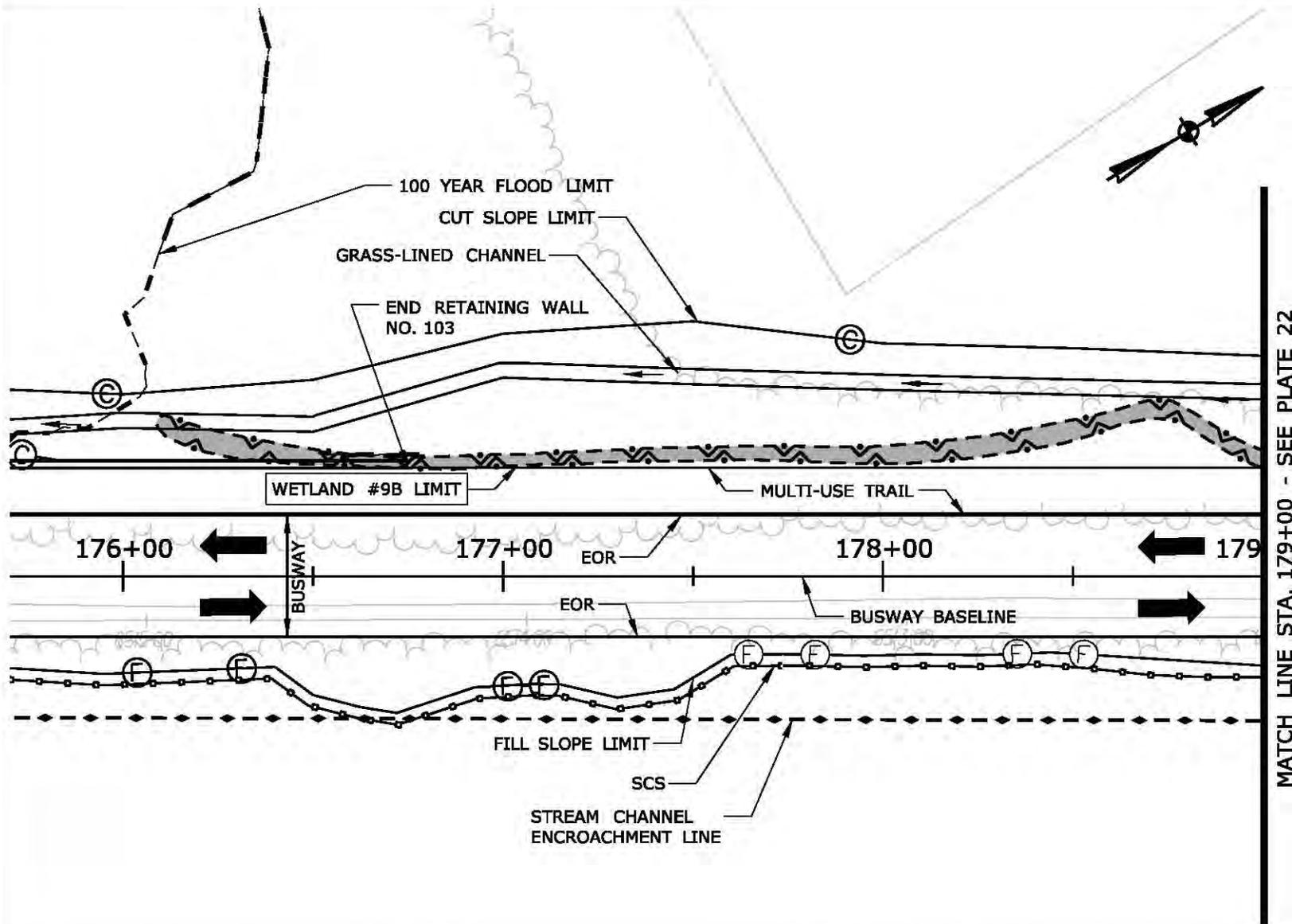
DATE:  
 FEBRUARY  
 2011



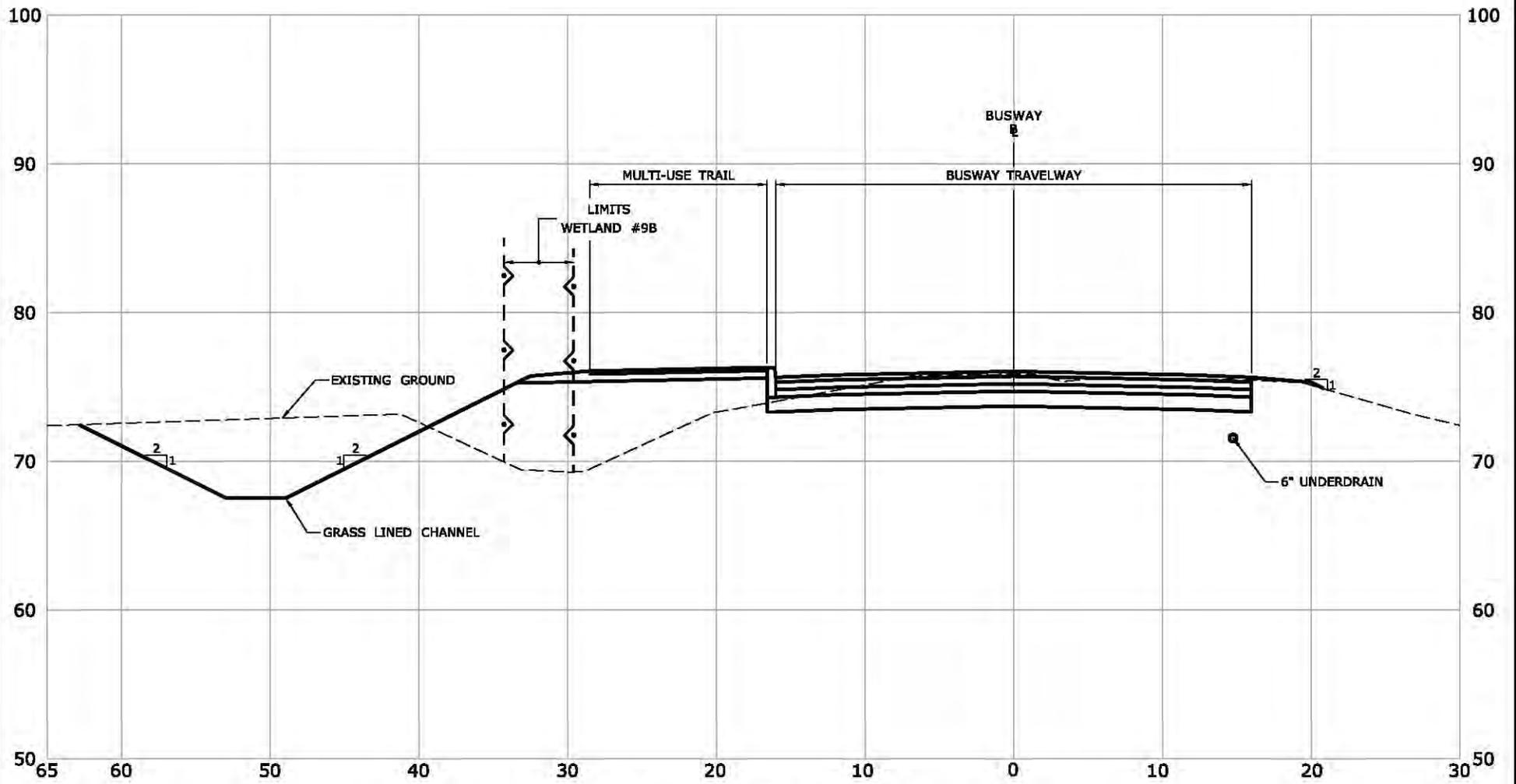
NEW BRITAIN - HARTFORD BUSWAY  
 ENVIRONMENTAL IMPACT PLATES

MICHAEL  
 BAKER  
 ENGINEERING

PLATE NO.  
 20D



<b>IMPACT SUMMARY</b>  PERMANENT WETLAND #9B IMPACT	<b>TOTAL IMPACT AREA</b> 1,987 S.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H034	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	 OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
					NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES



**TYPICAL SECTION  
(SEE PLATE 21)**

**TYPICAL SECTION OF  
COMPLETE WETLAND FILL**

**AND CONSTRUCTION OF  
NEW GRASS-LINED DITCH**

STATE PROJECT NO.: 171-305

SCALE: 1"=10'



**STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION**



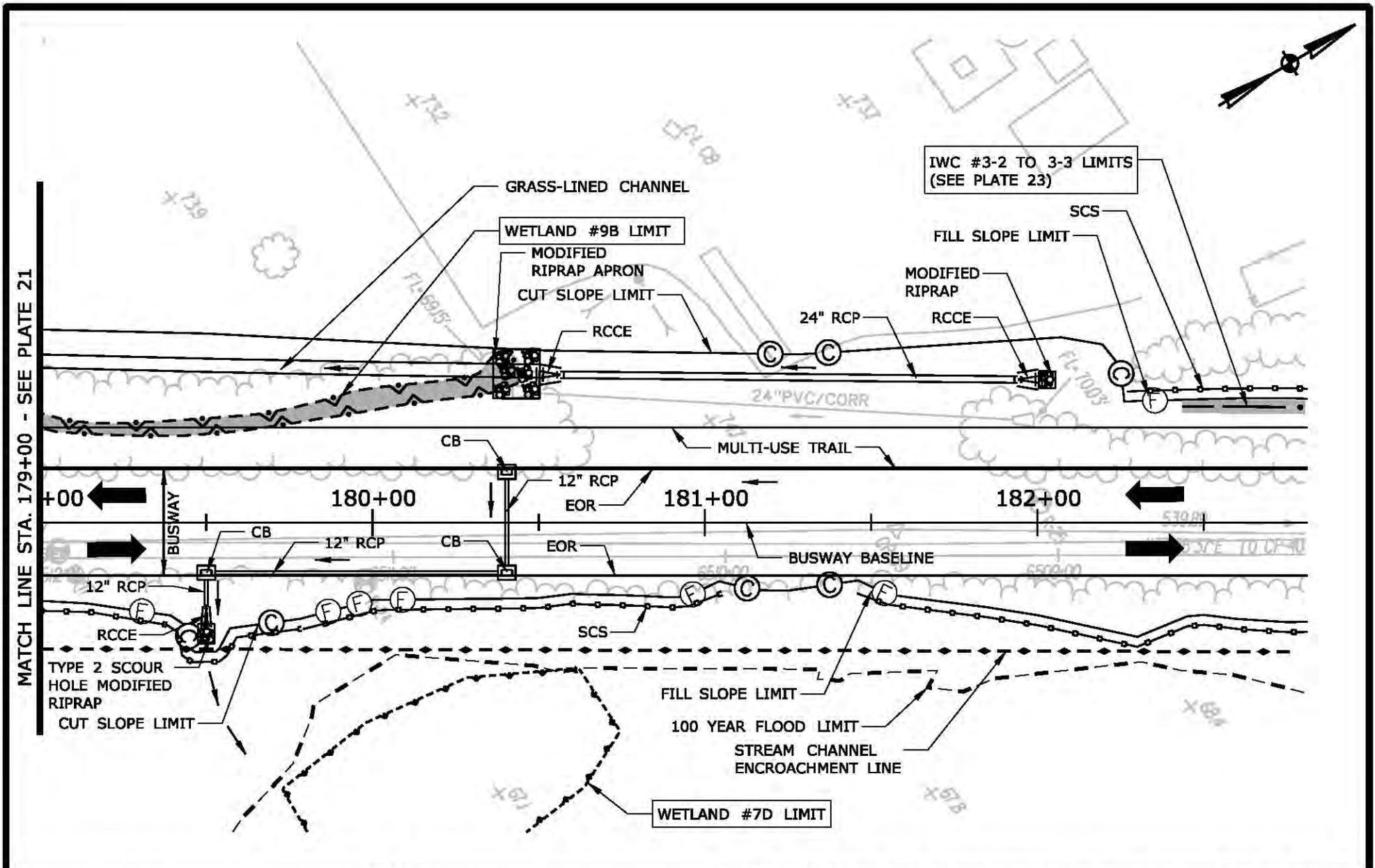
OFFICE OF  
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MICHAEL  
BAKER  
ENGINEERING

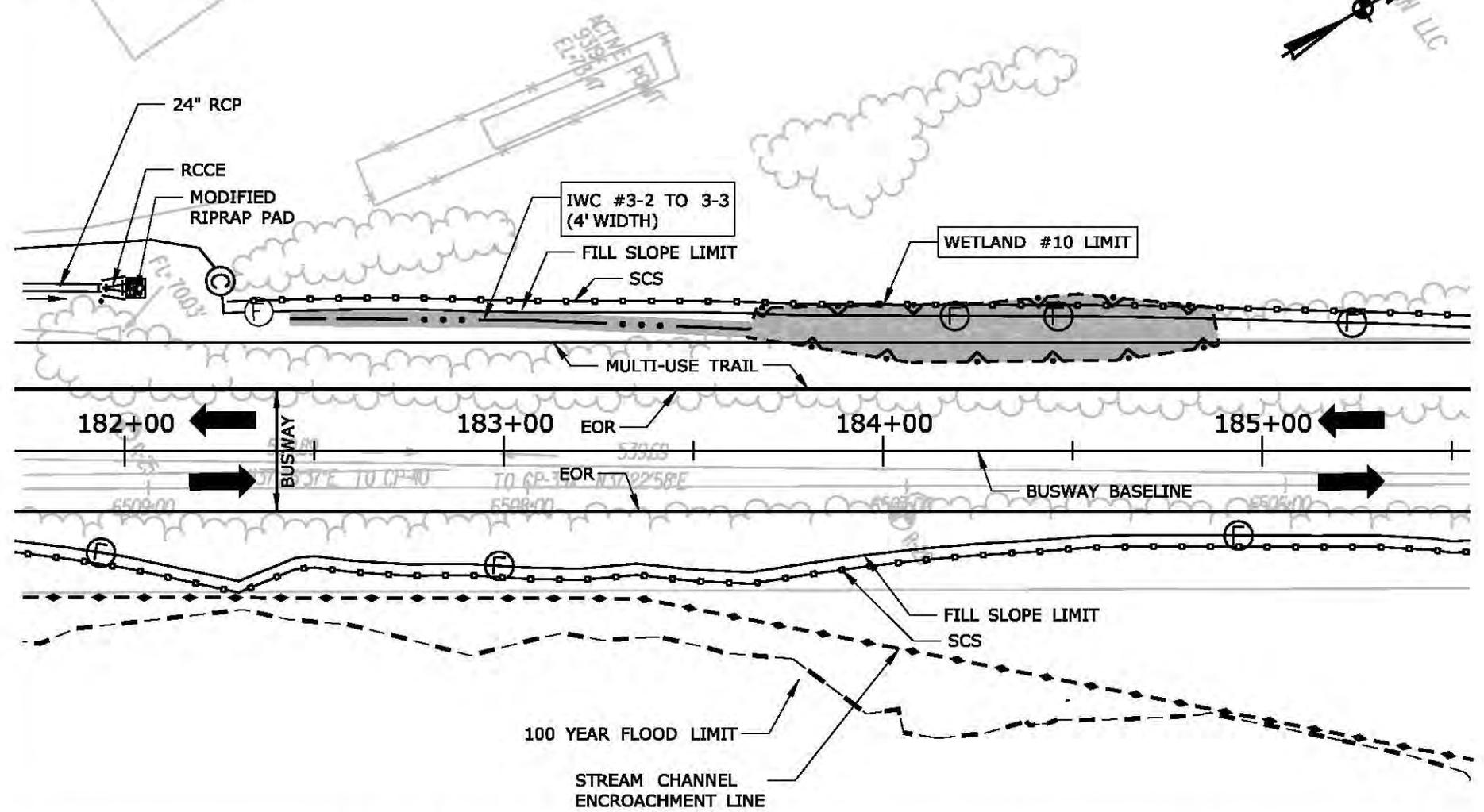
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FEBRUARY  
2011

PLATE NO.  
**21A**

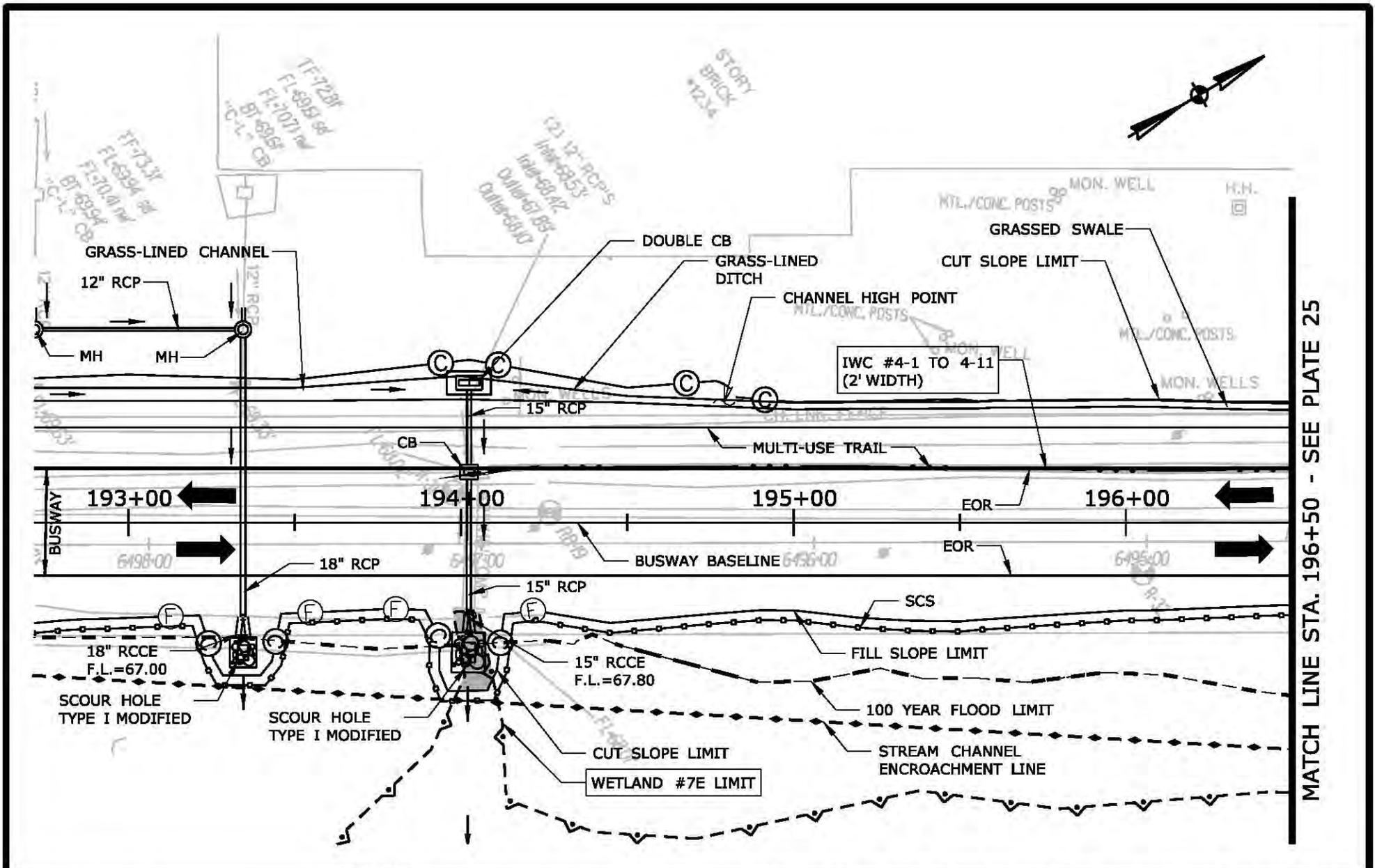
NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES



<b>IMPACT SUMMARY</b> PERMANENT WETLAND #9B IMPACT PERMANENT IWC #3-2 TO 3-3 IMPACT	<b>TOTAL IMPACT AREA</b> 1,987 S.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H034	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	<b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
	121 L.F.	SCALE 1" = 40' 			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES

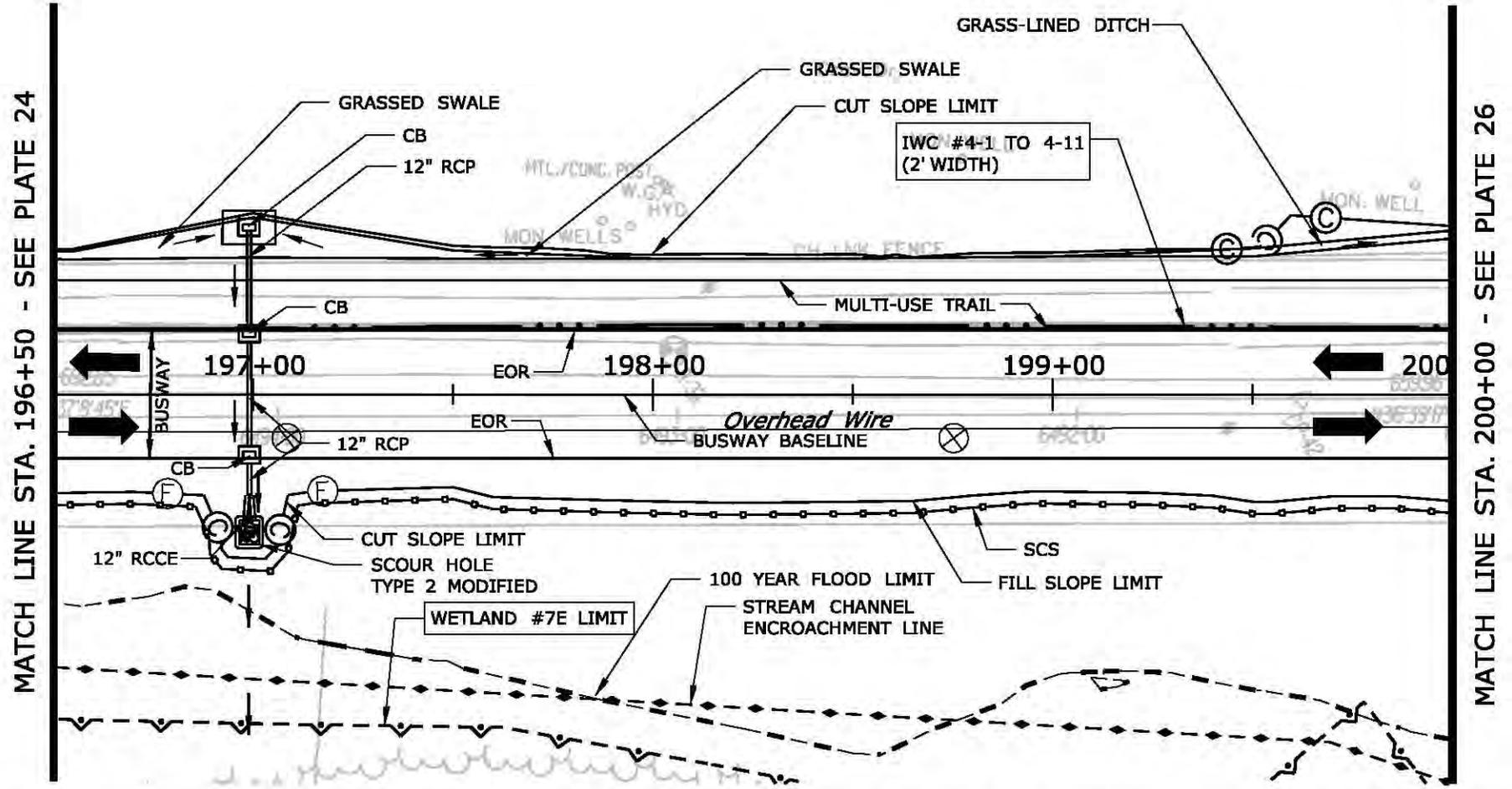


<b>IMPACT SUMMARY</b> PERMANENT WETLAND #10 IMPACT PERMANENT IWC #3-2 TO 3-3 IMPACT	<b>TOTAL IMPACT AREA</b> 1,710 S.F. 121 L.F.	STATE PROJECT NO.: 171-305 CONTRACT NO. H034	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
		SCALE 1" = 40' 			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES



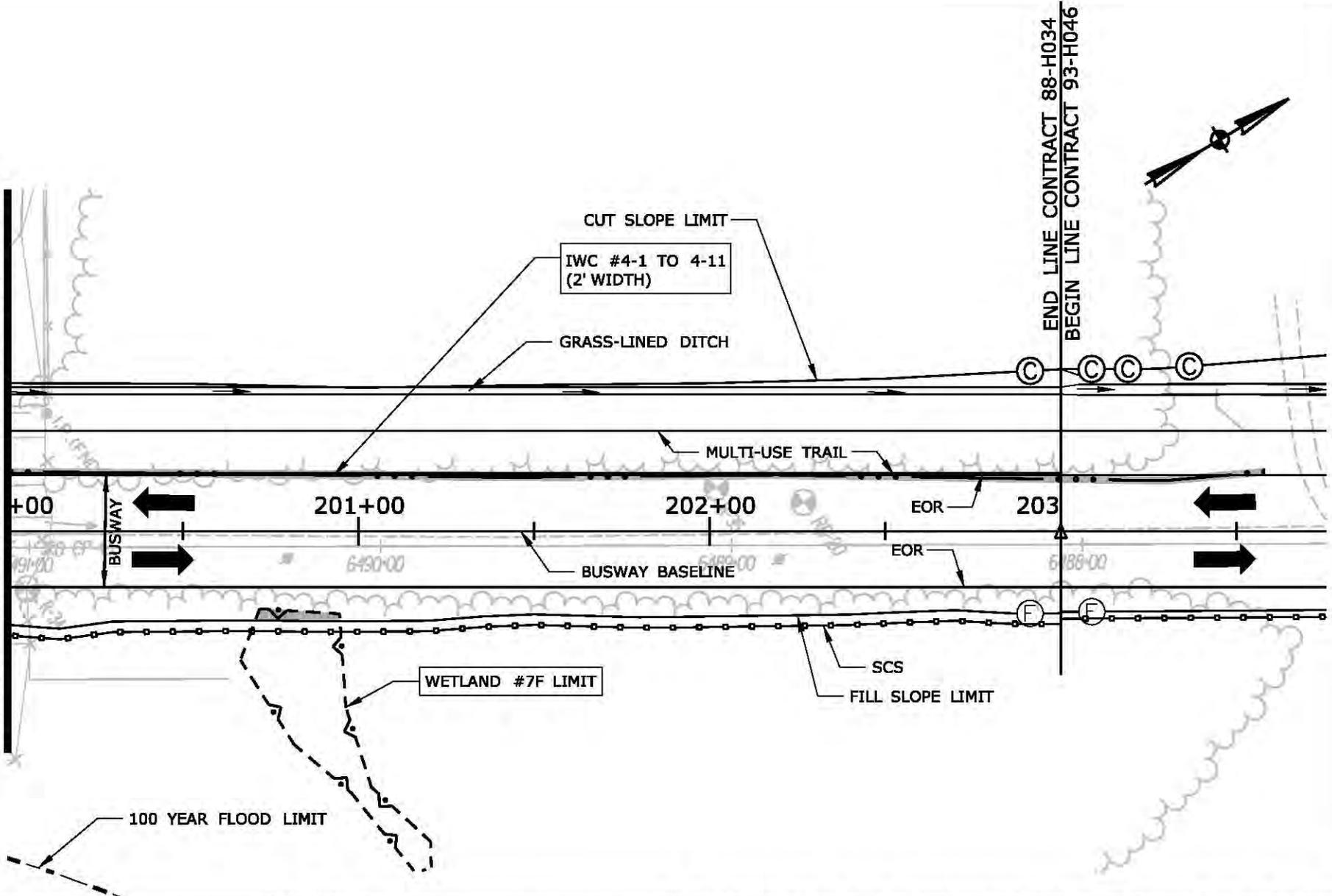
MATCH LINE STA. 196+50 - SEE PLATE 25

<b>IMPACT SUMMARY</b> PERMANENT WETLAND #7E IMPACT PERMANENT IWC #4 IMPACT	<b>TOTAL IMPACT AREA</b> 192 S.F. 950 L.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H034	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
					NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES

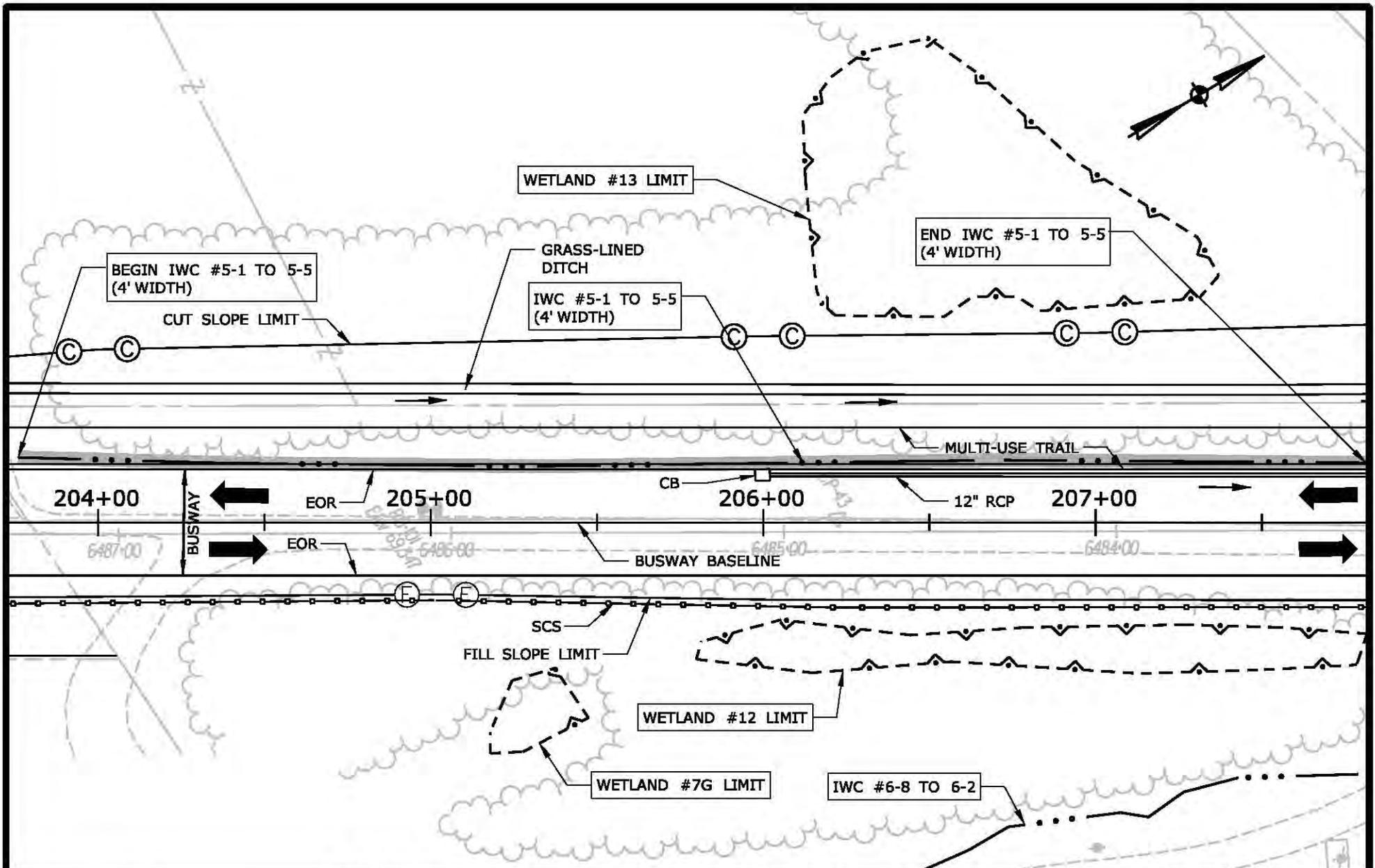


<b>IMPACT SUMMARY</b> PERMANENT WETLAND #7E IMPACT PERMANENT IWC #4 IMPACT	<b>TOTAL IMPACT AREA</b> 192 S.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H034	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	<b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
	950 L.F.	SCALE 1" = 40' 			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES

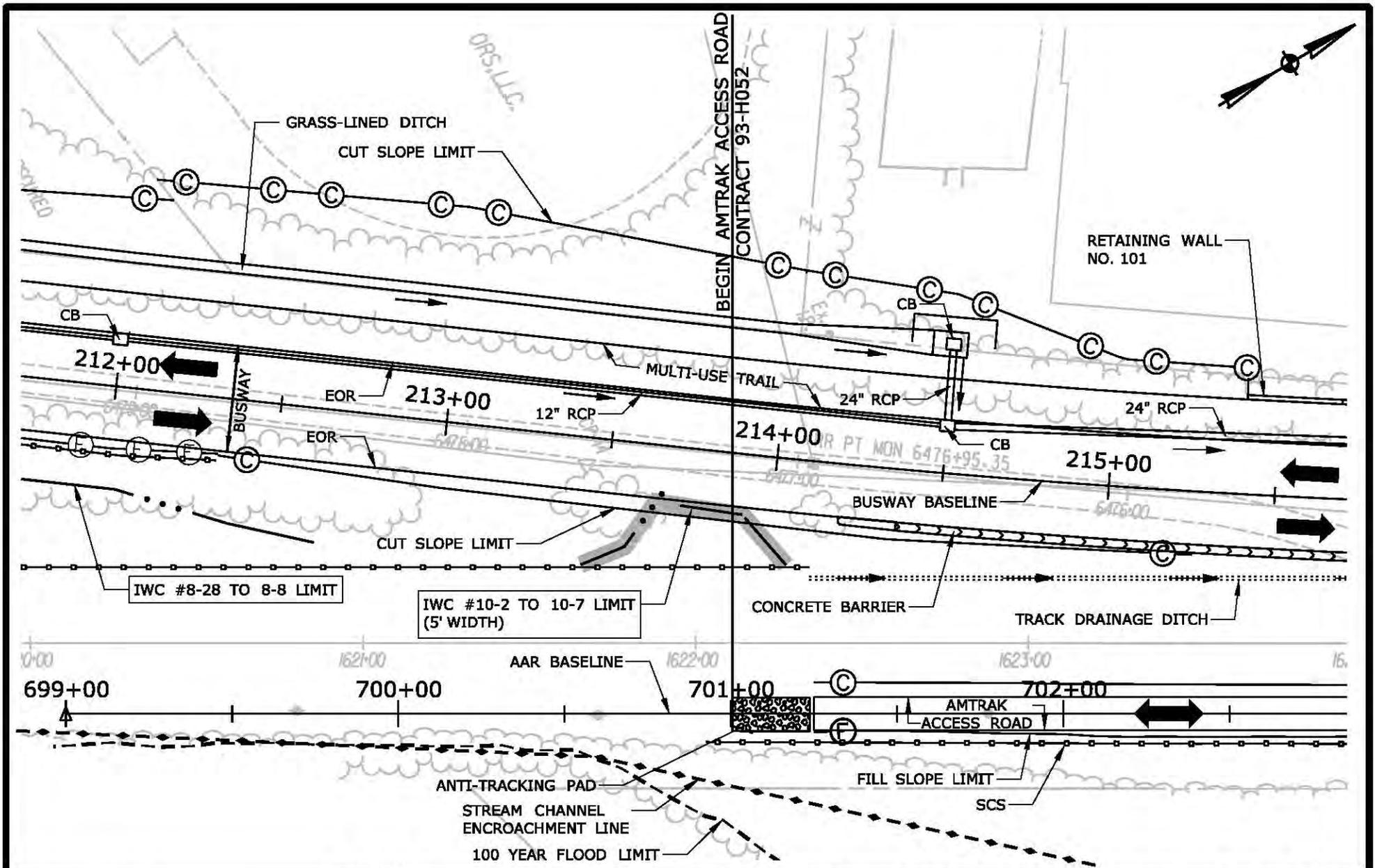
MATCH LINE STA. 200+00 - SEE PLATE 25



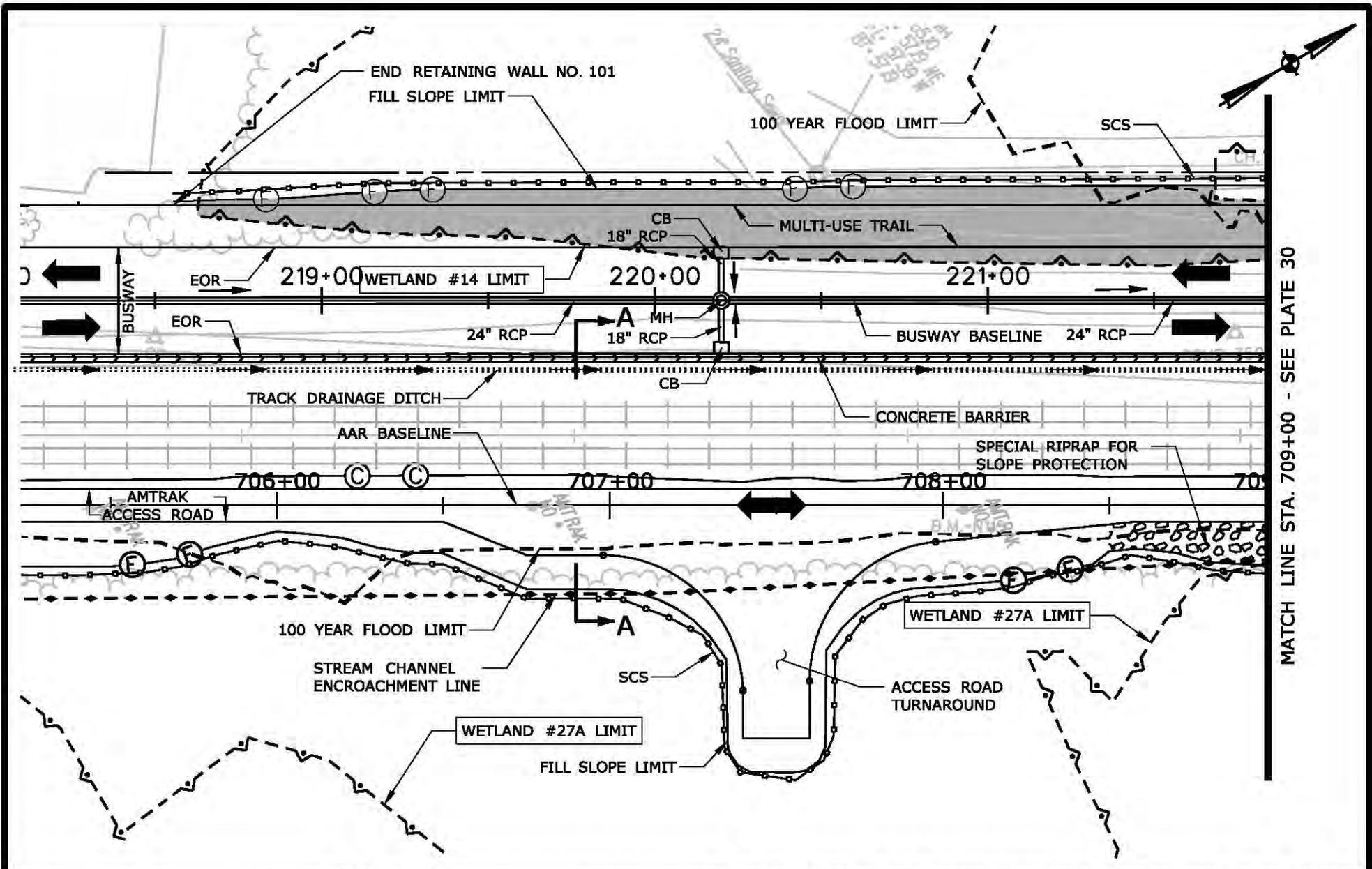
<b>IMPACT SUMMARY</b>		<b>TOTAL IMPACT AREA</b>	STATE PROJECT NO.: 171-305 CONTRACT NO.: H034/H046	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	 OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
 PERMANENT WETLAND #7F IMPACT	66 S.F.	SCALE 1" = 40' 				NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES
 PERMANENT IWC #4 IMPACT	950 L.F.					



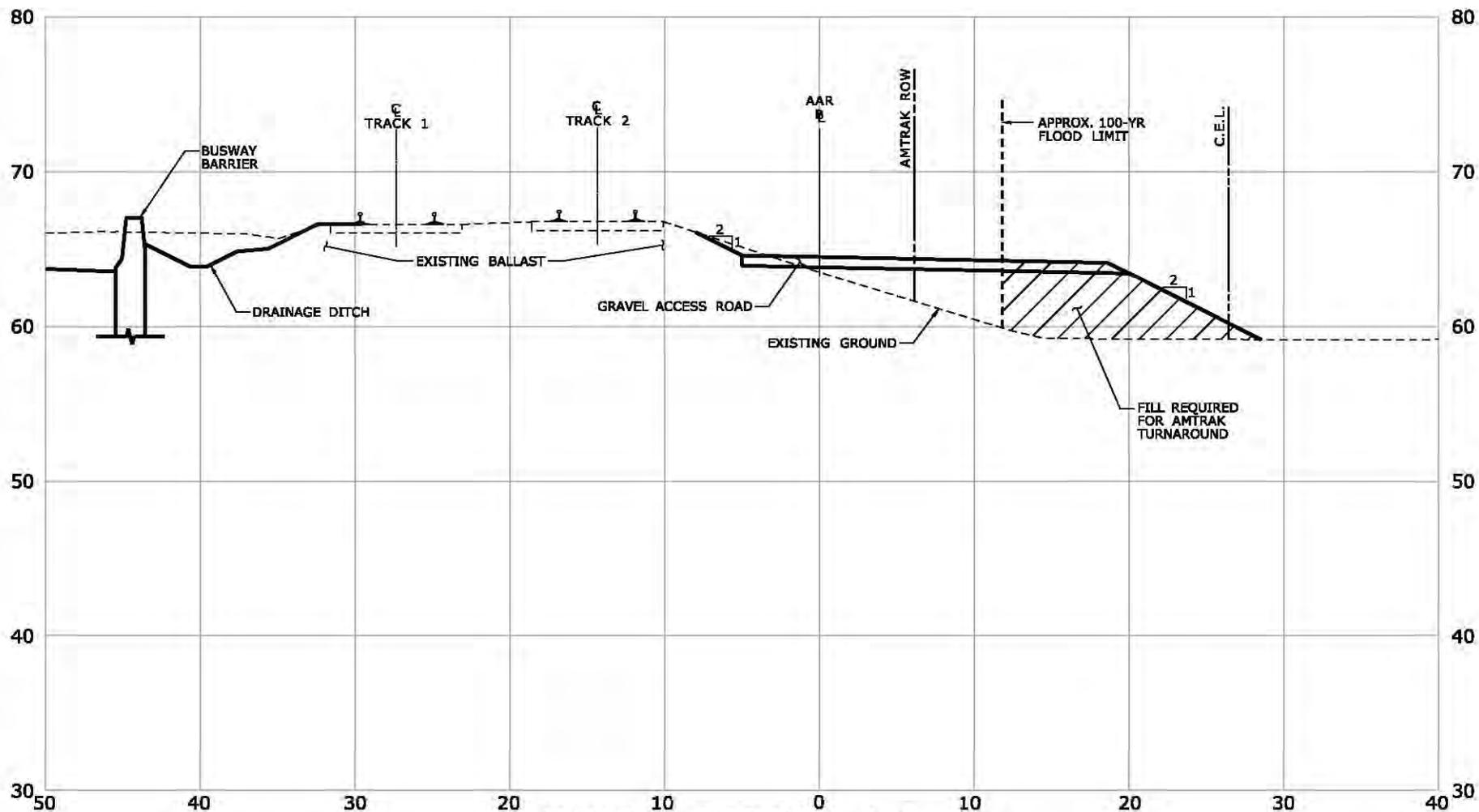
<b>IMPACT SUMMARY</b> PERMANENT IWC #5 IMPACT	<b>TOTAL IMPACT AREA</b> 405 L.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H046	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	<b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
		SCALE 1" = 40' 40 20 0 40			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES



<b>IMPACT SUMMARY</b> PERMANENT IWC #10 IMPACT	<b>TOTAL IMPACT AREA</b> 77 LF.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
		SCALE 1" = 40' 40 20 0 40			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES



<b>IMPACT SUMMARY</b> PERMANENT WETLAND #14 IMPACT PERMANENT WETLAND #27A IMPACT	<b>TOTAL IMPACT AREA</b> 8,887 S.F. 9,587 S.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
		NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES			MICHAEL BAKER ENGINEERING



**TYPICAL SECTION A-A**  
 (SEE PLATE 29)

TYPICAL SECTION OF FILL  
 WITHIN 100-YEAR FLOOD LIMIT  
 AND STREAM CHANNEL  
 ENCROACHMENT LINE

STATE PROJECT NO.: 171-305

SCALE: 1"=10'



STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION



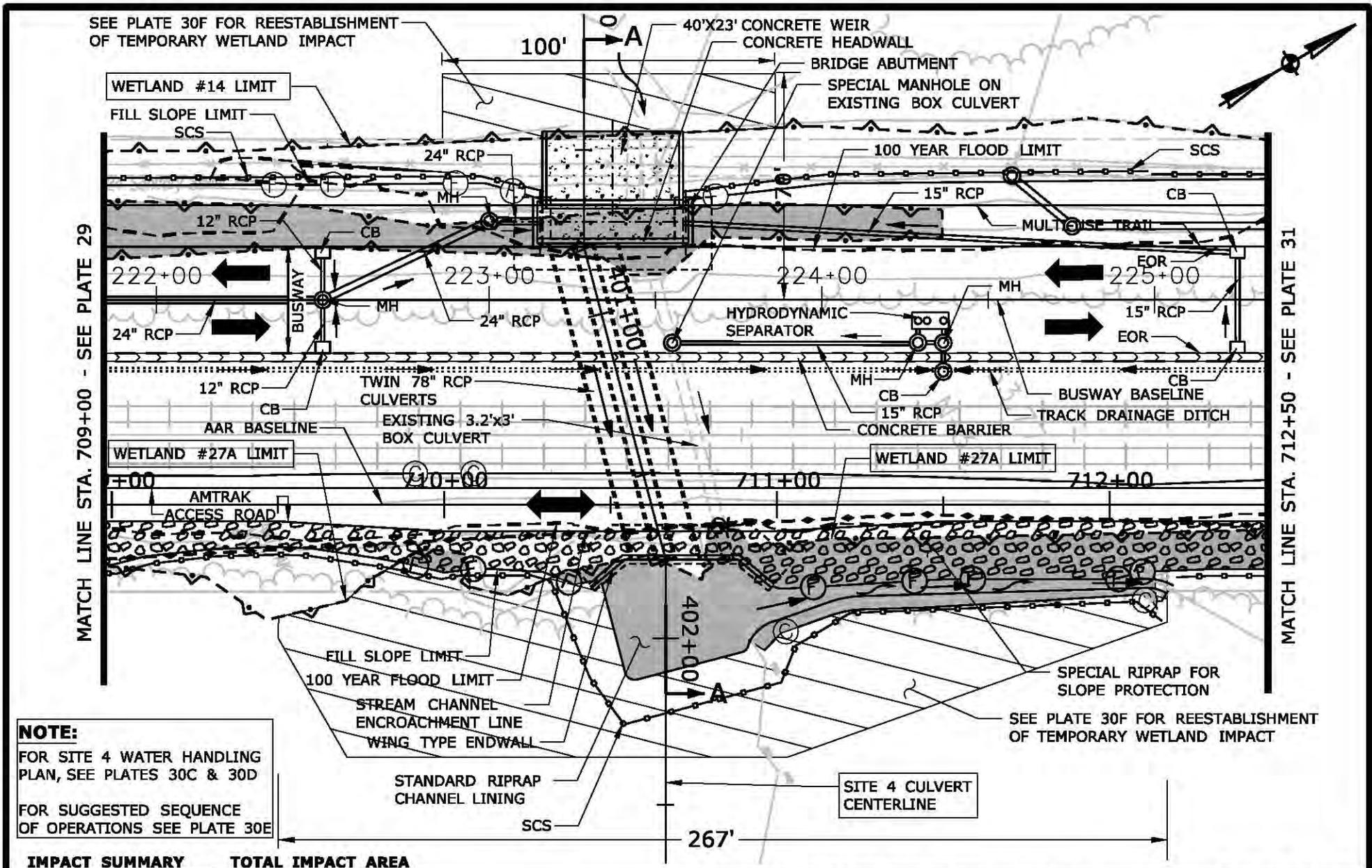
NEW BRITAIN - HARTFORD BUSWAY  
 ENVIRONMENTAL IMPACT PLATES

OFFICE OF  
 ENGINEERING

MICHAEL  
 BAKER  
 ENGINEERING

DATE:  
 FEBRUARY  
 2011

PLATE NO.  
 29A



**NOTE:**  
 FOR SITE 4 WATER HANDLING PLAN, SEE PLATES 30C & 30D  
 FOR SUGGESTED SEQUENCE OF OPERATIONS SEE PLATE 30E

**IMPACT SUMMARY TOTAL IMPACT AREA**

	PERMANENT WETLAND #14 IMPACT
	PERMANENT WETLAND #27A IMPACT
	TEMPORARY WETLAND #14 IMPACT
	TEMPORARY WETLAND #27A IMPACT

8,887 S.F.
9,587 S.F.
2,025 S.F.
9,256 S.F.

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H046/H052

SCALE 1" = 40'

**STATE OF CONNECTICUT**  
 DEPARTMENT OF TRANSPORTATION

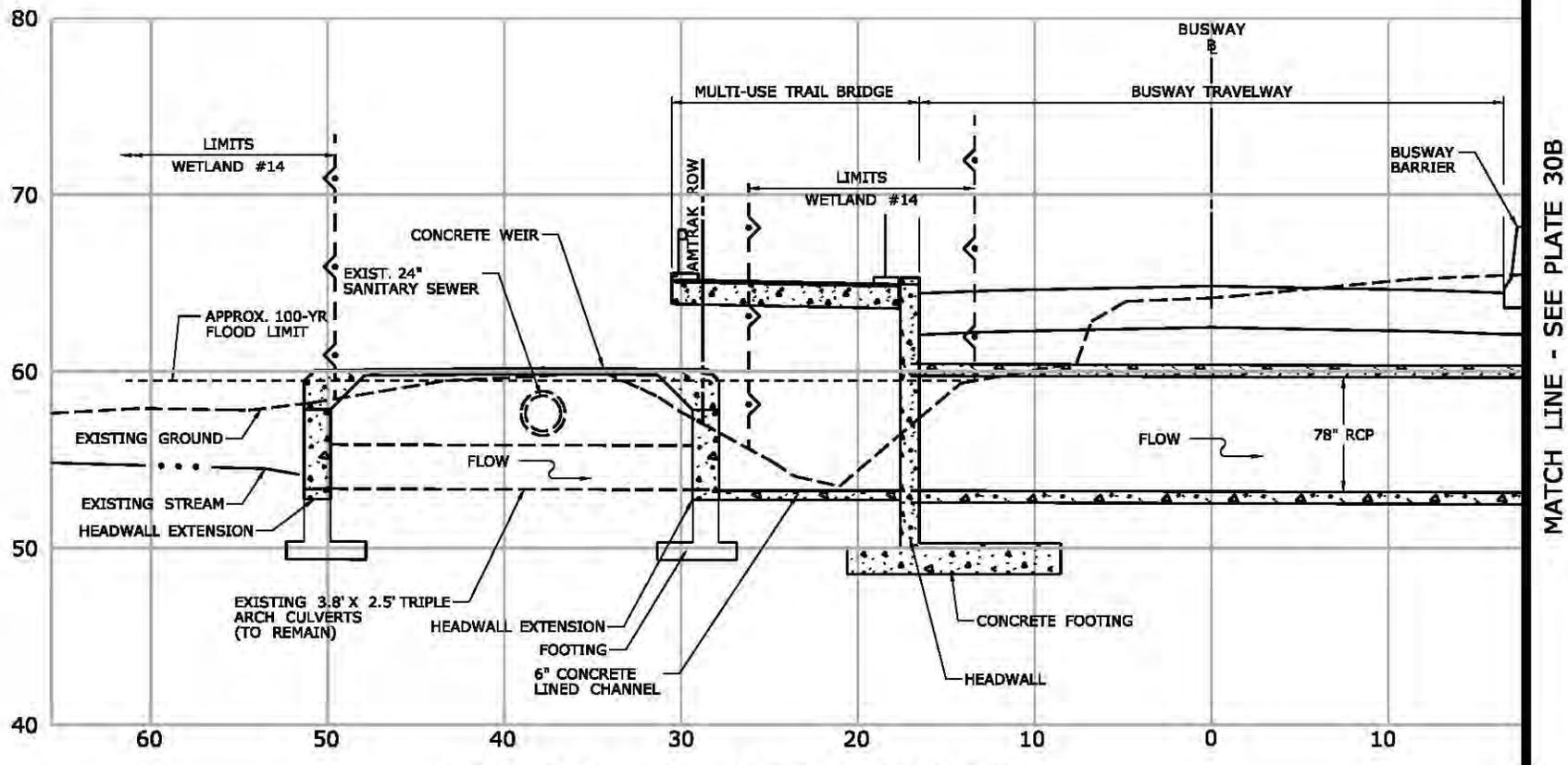
**NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES**

OFFICE OF ENGINEERING

DATE: FEBRUARY 2011

MICHAEL BAKER ENGINEERING

PLATE NO. 30



SECTION A-A (SEE PLATE 30)

SITE 4 CULVERT REPLACEMENT

STATE PROJECT NO.: 171-305

SCALE: 1"=10'



STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



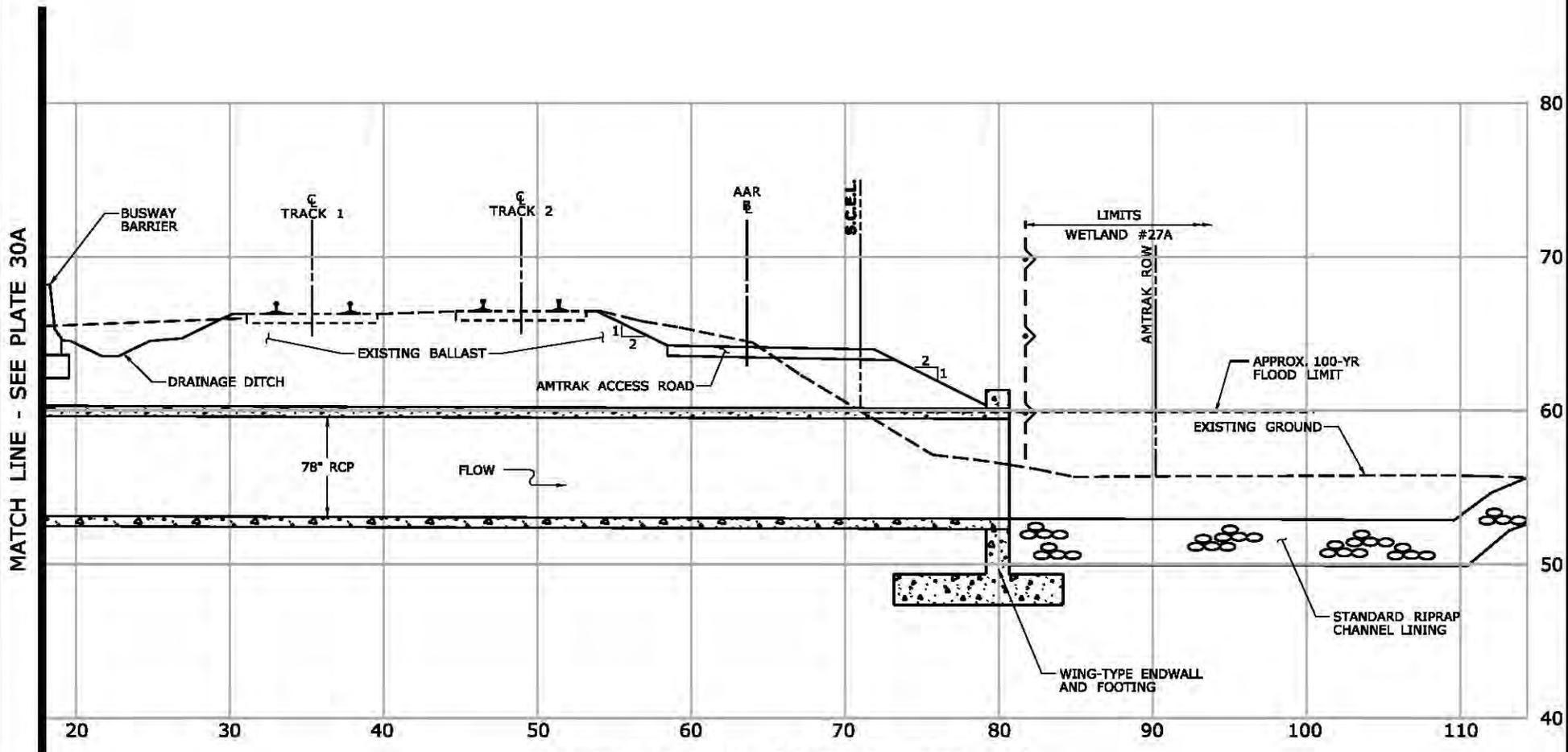
OFFICE OF  
ENGINEERING

MICHAEL  
BAKER  
ENGINEERING

DATE:  
FEBRUARY  
2011

PLATE NO.  
30A

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES



SECTION A-A (SEE PLATE 30)

SITE 4 CULVERT REPLACEMENT

STATE PROJECT NO.: 171-305



STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



OFFICE OF  
ENGINEERING

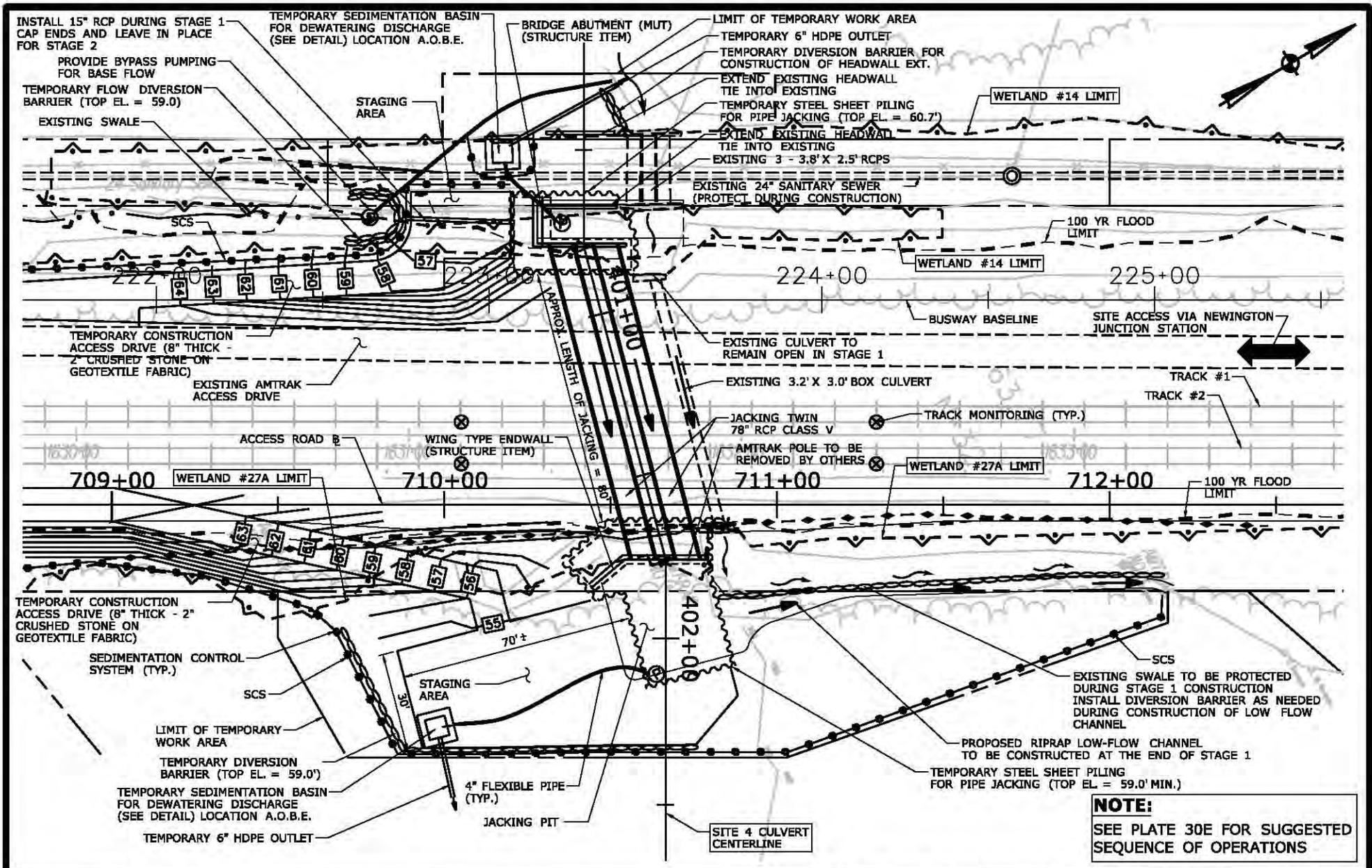
DATE:  
FEBRUARY  
2011

SCALE: 1"=10'

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL  
BAKER  
ENGINEERING

PLATE NO.  
30B



**CONSTRUCTION STAGING AND WATER HANDLING PLAN FOR SITE 4 CULVERT REPLACEMENT**

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H046/H052



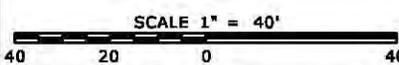
**STATE OF CONNECTICUT**  
 DEPARTMENT OF TRANSPORTATION



OFFICE OF ENGINEERING

DATE: FEBRUARY 2011

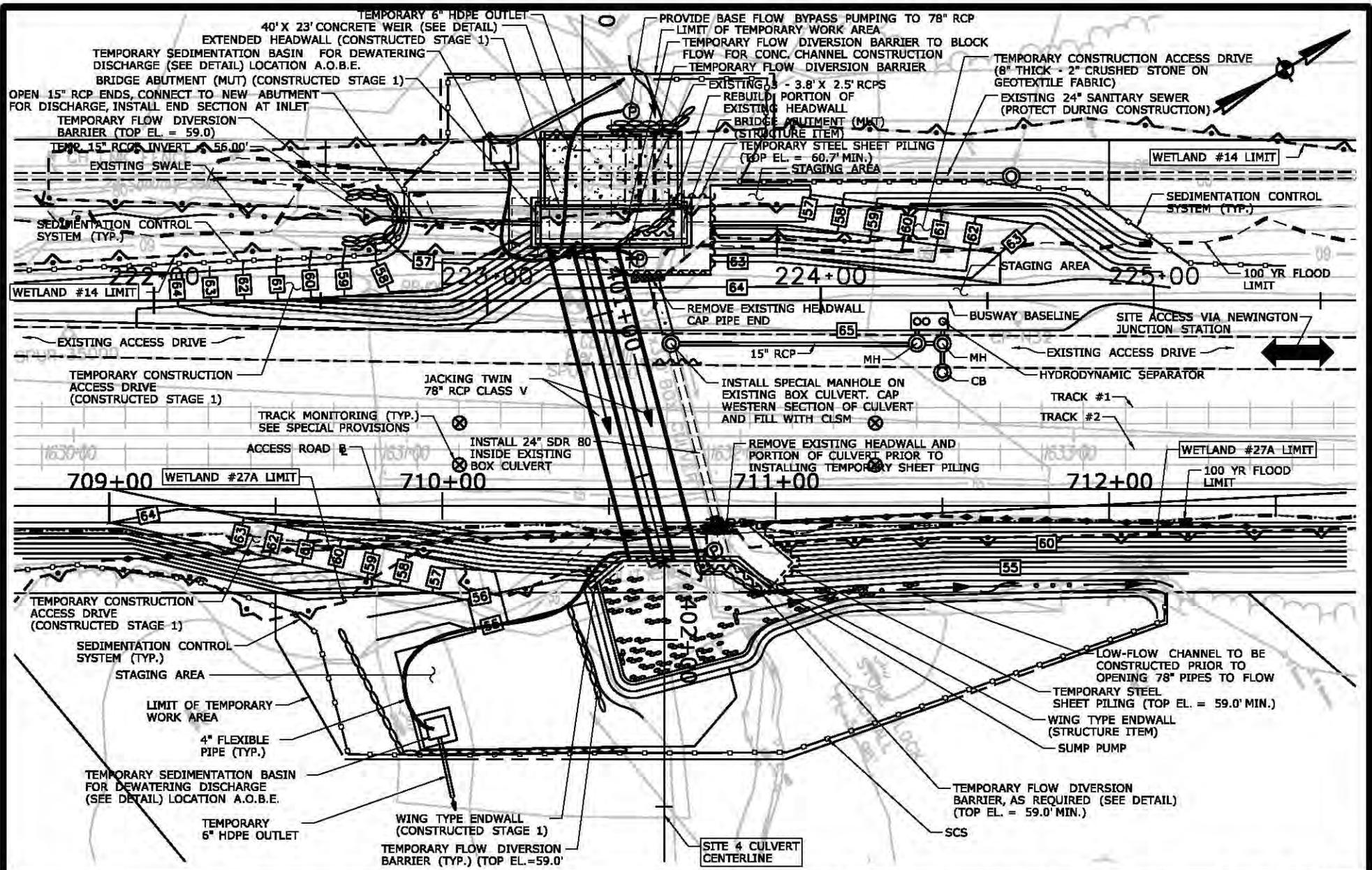
**STAGE 1**



**NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES**

MICHAEL BAKER ENGINEERING

PLATE NO. 30C



**CONSTRUCTION STAGING AND  
WATER HANDLING PLAN  
FOR SITE 4 CULVERT REPLACEMENT**

STATE PROJECT NO.: 171-305  
CONTRACT NO.: H046/H052



**STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION**



OFFICE OF  
ENGINEERING

DATE:  
FEBRUARY  
2011

**STAGE 2**

**NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES**

MICHAEL  
BAKER  
ENGINEERING

PLATE NO.  
**30D**

**GENERAL NOTES:**

1. THE CONTRACTOR SHALL BE LIMITED TO WORKING WITHIN THE TEMPORARY WORK AREAS AS INDICATED ON THE PLANS WHEN WORKING WITHIN A DELINEATED WETLAND BOUNDARY. THE TEMPORARY WORK AREAS WILL BE LOCATED AND STAKED IN THE FIELD BY THE CONTRACTOR PRIOR TO CLEARING AND GRUBBING OR THE COMMENCEMENT OF ANY OTHER CONSTRUCTION ACTIVITY. WORK OUTSIDE THE DELINEATED IMPACT AREAS IS NOT PERMITTED. IF ANY MEANS AND METHODS CHOSEN BY THE CONTRACTOR REQUIRE ADDITIONAL WETLAND IMPACT, EITHER PERMANENT OR TEMPORARY, THE CONTRACTOR SHALL NOTIFY CTDOT IMMEDIATELY, AS THIS WILL REQUIRE ADDITIONAL REVIEW BY THE CTDOT OFFICE OF ENVIRONMENTAL PLANNING AND CDEP AT THE CONTRACTOR'S EXPENSE.

2. ALL WETLAND AREAS TEMPORARILY IMPACTED FOR THE PURPOSES OF CONSTRUCTION, STAGING OR ACCESS SHALL BE REESTABLISHED BY THE CONTRACTOR IMMEDIATELY FOLLOWING THE USE OF THESE AREAS. SEE SPECIAL PROVISIONS FOR METHOD OF REESTABLISHMENT AND MATERIAL REQUIREMENTS. SEE PLATE 30F FOR PLANTING PLAN. REESTABLISHED WETLAND AREAS SHALL BE SEEDED WITH "WETLAND GRASS ESTABLISHMENT" SEED MIX. UPLAND AREAS SHALL BE STABILIZED WITH "CONSERVATION FOR SLOPES" SEED MIX.

3. ALL WORK ASSOCIATED WITH THE TEMPORARY WATER DIVERSION, INCLUDING THE TEMPORARY BYPASS PIPE SHALL BE INCLUDED UNDER "HANDLING WATER".

4. A PUMP DISCHARGE AREA SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS, USING THE MODIFIED RIPRAP FILTERING SYSTEM SHOWN. THE LOCATION AND SIZE OF THE DEWATERING BASIN SHOWN IS APPROXIMATE. THE EXACT LOCATION MAY VARY BASED ON THE SIZE OF BASIN REQUIRED TO PROVIDE A STORAGE VOLUME CAPABLE OF RETAINING THE FIRST TWO HOURS OF PUMP DISCHARGE.

5. SEE PERMIT APPLICATION NARRATIVE FOR ADDITIONAL INFORMATION.

6. SEQUENCE OF OPERATIONS AND STAGING IS FOR DEMONSTRATION PURPOSES ONLY. THE CONTRACTOR SHALL SUBMIT A MEANS AND METHODS PROCEDURE PRIOR TO THE START OF CONSTRUCTION.

**TABLE 3-3**

AVERAGE DAILY FLOW (CFS)	1
AVERAGE SPRING FLOW (CFS)	2
2-YEAR FREQUENNCY DISCHARGE * (CFS)	88
TEMPORARY DESIGN DISCHARGE (CFS)	88
TEMPORARY DESIGN FREQUENCY YEAR	2
TEMPORARY WATER SURFACE ELEV. UPSTREAM (FT)	AMTRAK CULVERT =60.7
TEMPORARY WATER SURFACE ELEV. DOWNSTREAM (FT)	NONE FOR 2-YR STORM

\* ESTIMATED

**SUGGESTED CONSTRUCTION SEQUENCE:**

STAGE 1:

1. INSTALL TEMPORARY GRADE CROSSING.
2. INSTALL EROSION AND SEDIMENTATION CONTROLS AS INDICATED.
3. CONSTRUCT TEMPORARY CONSTRUCTION ACCESS DRIVES AND STAGING AREAS.
4. INSTALL TEMPORARY FLOW DIVERSION BARRIERS AROUND DOWNSTREAM STAGING AREA AS INDICATED.
5. INSTALL TEMPORARY BYPASS PUMP AND CHECK DAM TO COLLECT AND PUMP BASE FLOW AS INDICATED - SEE SPECIAL PROVISIONS.
6. REMOVE SECTION OF EXISTING ENDWALL ON DOWNSTREAM SIDE PRIOR TO INSTALLATION OF TEMPORARY STEEL SHEET PILING.
7. INSTALL TEMPORARY STEEL SHEET PILING WITH OPENING FOR PIPE JACKING AND CONSTRUCT JACKING AND RECEIVING PITS (DESIGN TO BE PROVIDED BY CONTRACTOR).
8. MONITOR TRACKS PER AMTRAK REQUIREMENTS AND PROVIDE MONITORING DURING JACKING PROCEDURE.
9. JACK APPROXIMATELY 80 FEET OF TWIN 78" RCP CLASS V UNDER RAILROAD EMBANKMENT - SEE SPECIAL PROVISIONS.
10. CONSTRUCT FOOTINGS FOR SOUTHERN SECTION OF WALLS ON EITHER END OF PIPE JACKING WITH KEY-IN FOR HEADWALLS AND SUPPORT SECTION FOR TWIN 78" RCP END SECTIONS.
11. BACKFILL FOOTING HEELS WITH CRUSHED STONE AND INSTALL FINAL SECTIONS OF TWIN 78" RCP CLASS V.
12. INSTALL TEMPORARY DIVERSION BARRIERS ON UPSTREAM SIDE OF EXISTING TRIPLE ARCH PIPES AS SHOWN.
13. CONSTRUCT HEADWALL EXTENSIONS ON BOTH SIDES OF EXISTING SANITARY SEWER FOR SUPPORT OF CONCRETE WEIR.
14. CONSTRUCT SOUTH PORTIONS OF WING TYPE ENDWALL AND BRIDGE ABUTMENTS IN PLACE AROUND TWIN 78" RCP CLASS V.
15. INSTALL TEMPORARY 15" RCP THROUGH NEW ABUTMENT AND REMOVE BYPASS PUMP.
16. REMOVE JACKING AND RECEIVING PITS AND TEMPORARY STEEL SHEET PILING NOT NECESSARY FOR FLOW DIVERSION.

STAGE 2:

1. MAINTAIN OR REMOVE STAGE 1 EROSION CONTROL MEASURES AS REQUIRED. INSTALL ADDITIONAL EROSION & SEDIMENTATION CONTROLS AS INDICATED.
2. MAINTAIN AND REPAIR EXISTING ACCESS DRIVES AND STAGING AREAS FROM STAGE 1. CONSTRUCT ADDITIONAL TEMPORARY CONSTRUCTION ACCESS DRIVES AND STAGING AREAS AS INDICATED ON PLAN.
3. CONSTRUCT LOW-FLOW RIPRAP CHANNEL PARALLEL WITH EXISTING GRASSED SWALE ON DOWNSTREAM SIDE. PROVIDE ADDITIONAL FLOW DIVERSION BARRIERS, IF NECESSARY (NOT SHOWN), DURING EXCAVATION OF NEW CHANNEL.
4. INSTALL STANDARD RIPRAP CHANNEL LINING DOWNSTREAM PRIOR TO OPENING TWIN 78" RCP FOR USE.
5. INSTALL STAGE 2 TEMPORARY FLOW DIVERSION BARRIERS AS INDICATED AND REMOVE REMAINING STAGE 1 TEMPORARY STEEL SHEET PILING AND FLOW DIVERSION BARRIERS.
6. DIVERT UPSTREAM FLOWS TO NEW TWIN 78" RC PIPES.
7. REMOVE EXISTING UPSTREAM CULVERT HEADWALL, REMOVE PORTION OF CULVERT IF NECESSARY AND CAP EXISTING CULVERT END.
8. INSTALL SPECIAL MANHOLE ON EXISTING BOX CULVERT AS SHOWN, CAP WESTERN SECTION FROM MANHOLE WALL TO UPSTREAM END OF CULVERT AND FILL SECTION WITH CLSM.
9. REMOVE DOWNSTREAM HEADWALL AND INSTALL 24" SDR 80 PIPE IN EASTERN SECTION OF EXISTING BOX CULVERT FROM NEW HEADWALL TO SPECIAL MANHOLE.
10. INSTALL TEMPORARY STEEL SHEET PILING AS INDICATED.
11. CONSTRUCT REMAINING PORTION OF WALL FOOTINGS, WING TYPE ENDWALL, BRIDGE ABUTMENT AND SUPERSTRUCTURE.
12. CONSTRUCT CONCRETE WEIR ACROSS SANITARY SEWER BERM FROM HEADWALL TO HEADWALL.
13. RELOCATE FLOW DIVERSION BARRIER ON UPSTREAM END OF EXISTING TRIPLE ARCH PIPES TO BLOCK FLOW AND PROVIDE BYPASS PUMP FOR BASE FLOW TO NEW 78" RCP. POUR 6" CONCRETE LINED CHANNEL AND REMOVE DIVERSION BARRIER AND PUMP WHEN CURED.
14. REMOVE TEMPORARY STEEL SHEET PILING AND DIVERSION BARRIERS, BACKFILL WALLS AND ABUTMENTS.
15. LEAVE TEMPORARY 15" RCP AND RCCE IN PLACE UNTIL CONSTRUCTION OF BUSWAY AND MUT BEGINS.
16. REMOVE TEMPORARY ACCESS ROAD AND STAGING AREA WHEN DIRECTED BY THE ENGINEER (SEE GENERAL NOTE 2).
17. REMOVE EROSION CONTROL MEASURES.
18. REESTABLISH WETLAND AREA PER SPECIAL PROVISIONS, SEED WITH APPROPRIATE MIX (PLANTINGS TO BE INSTALLED AFTER ESTABLISHMENT OF WETLAND GRASS).
19. REMOVE TEMPORARY GRADE CROSSING.

STATE PROJECT NO.: 171-305



STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



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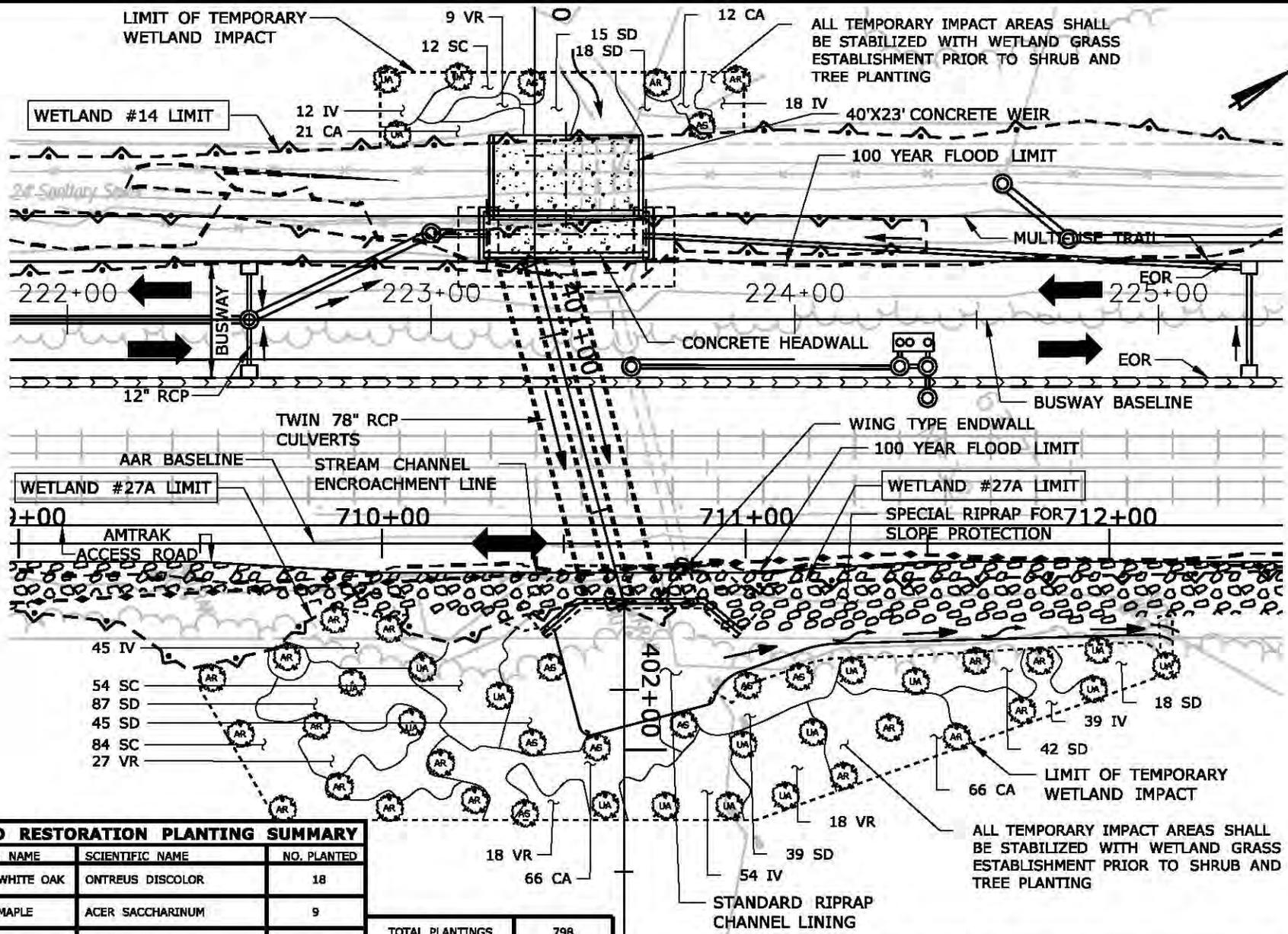
DATE:  
FEBRUARY  
2011

NOT TO SCALE

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL  
BAKER  
ENGINEERING

PLATE NO.  
30E

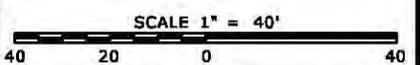


**WETLAND RESTORATION PLANTING SUMMARY**

SYM.	COMMON NAME	SCIENTIFIC NAME	NO. PLANTED
UA	SWAMP WHITE OAK	ONTREUS DISCOLOR	18
AS	SILVER MAPLE	ACER SACCHARINUM	9
AR	RED MAPLE	ACER RUBRUM	18
SD	PUSSY WILLOW	SALIX DISCOLOR	273
IV	WINTERBERRY	ILEX VERTICILLATA	168
VR	NORTHERN ARROWWOOD	VIBURNUM RECOGNITUM	111
SC	ELDERBERRY	SAMBUCUS CANADENSIS	150
CA	SILKY DOGWOOD	CORNUS AMOMUM	51

TOTAL PLANTINGS 798

STATE PROJECT NO.: 171-305  
CONTRACT NO.: H046/H052



STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



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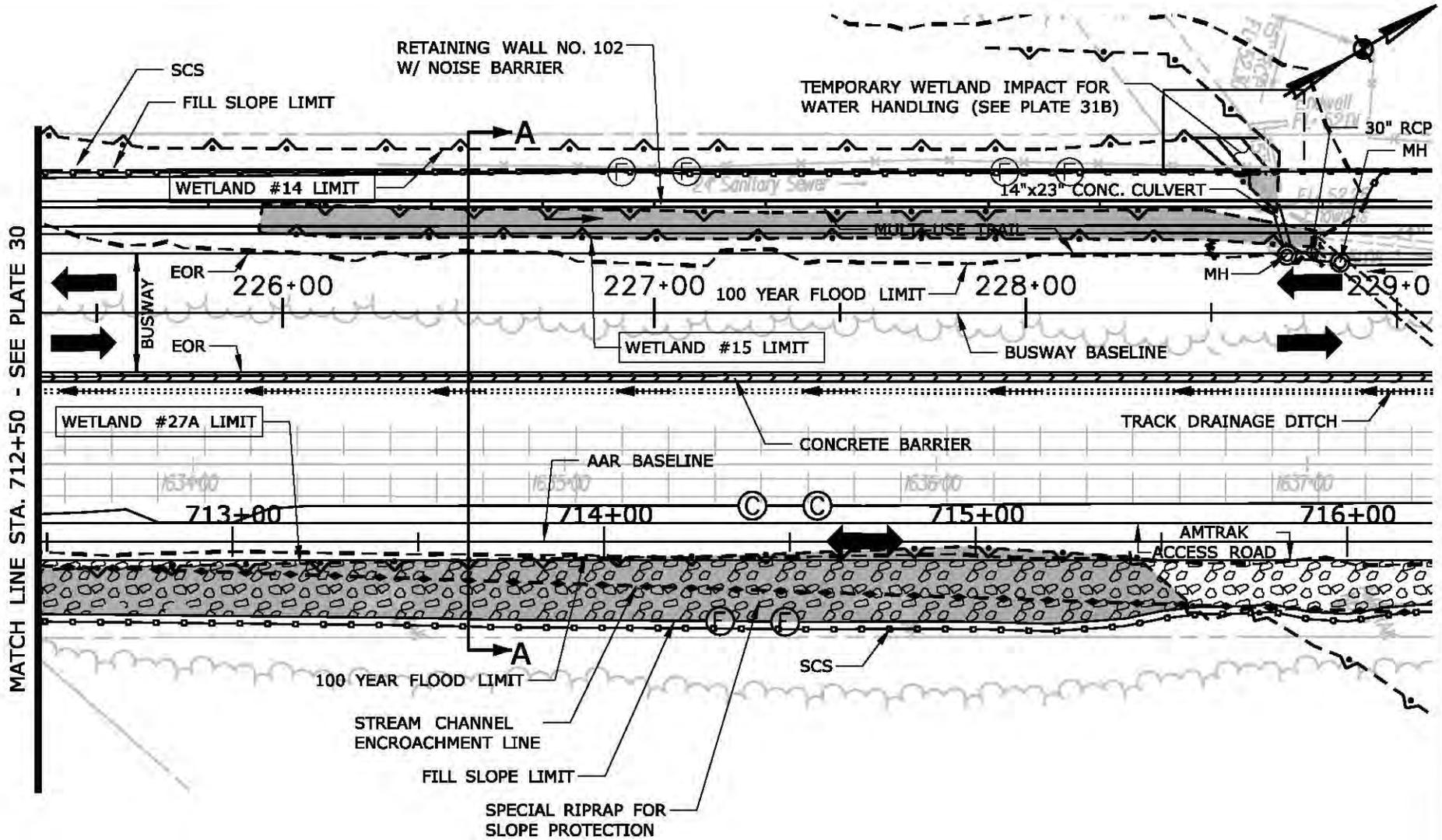
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FEBRUARY  
2011

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL  
BAKER  
ENGINEERING

PLATE NO.  
30F

ALL TEMPORARY IMPACT AREAS SHALL BE STABILIZED WITH WETLAND GRASS ESTABLISHMENT PRIOR TO SHRUB AND TREE PLANTING



**IMPACT SUMMARY**

**TOTAL  
IMPACT  
AREA**

	PERMANENT WETLAND #14 IMPACT	8,887 S.F.
	PERMANENT WETLAND #15 IMPACT	2,111 S.F.
	PERMANENT WETLAND #27A IMPACT	9,587 S.F.
	TEMPORARY WETLAND #14 IMPACT	2,025 S.F.

STATE PROJECT NO.: 171-305  
CONTRACT NO.: H046/H052

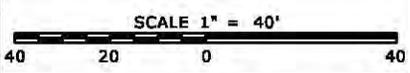


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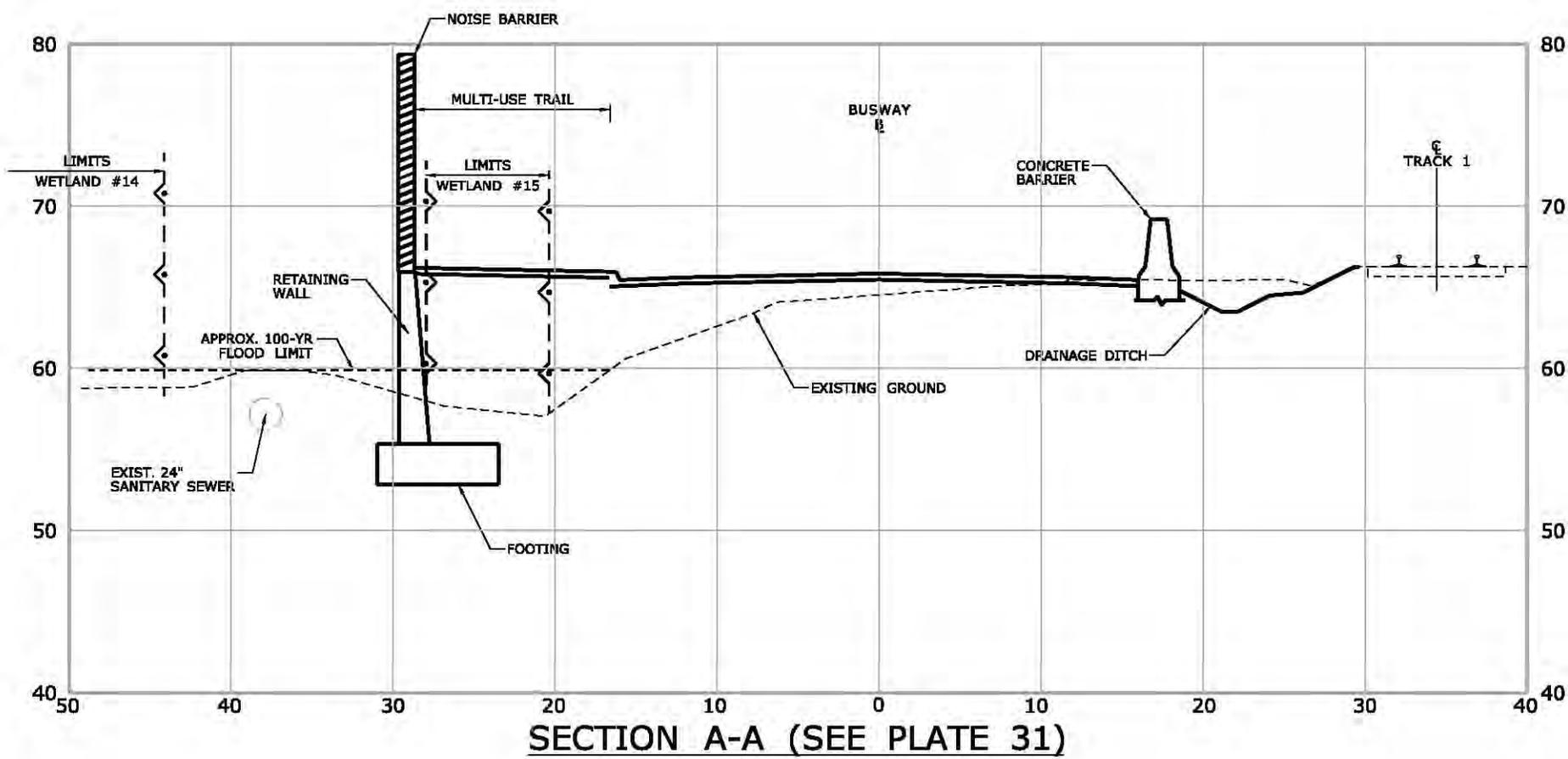
DATE:  
FEBRUARY  
2011



NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL  
BAKER  
ENGINEERING

PLATE NO.  
31



**TYPICAL SECTION OF FILL  
FOR CONSTRUCTION OF  
MULTI-USE TRAIL**

STATE PROJECT NO.: 171-305

SCALE: 1"=10'



**STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION**



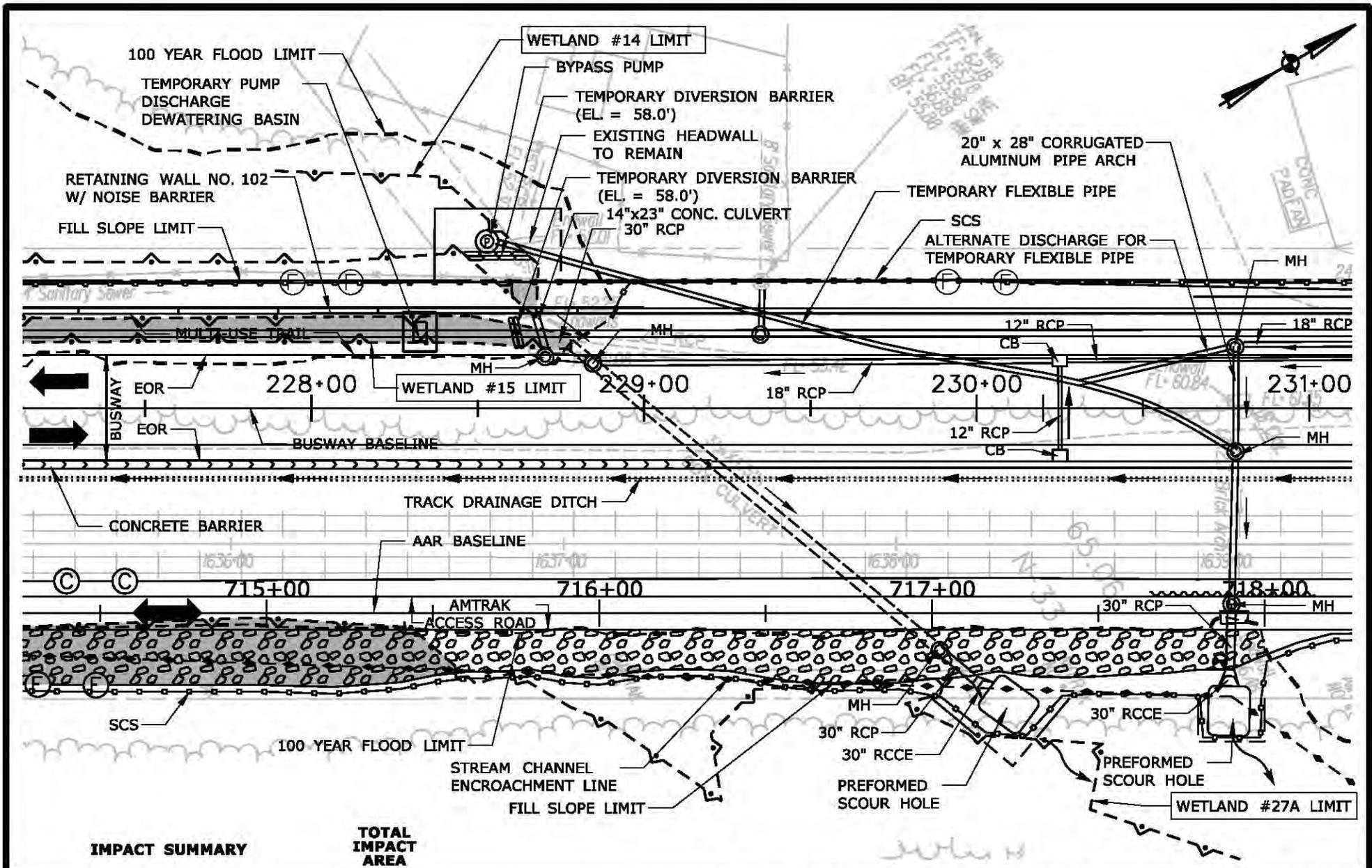
**NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES**

OFFICE OF  
ENGINEERING

MICHAEL  
BAKER  
ENGINEERING

DATE:  
FEBRUARY  
2011

PLATE NO.  
**31A**



**IMPACT SUMMARY**

**TOTAL IMPACT AREA**

	TEMPORARY WETLAND #14 IMPACT	2,025 S.F.
	PERMANENT WETLAND #14 IMPACT	8,887 S.F.
	PERMANENT WETLAND #15 IMPACT	2,111 S.F.
	PERMANENT WETLAND #27A IMPACT	9,587 S.F.

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H046/H052

SCALE 1" = 40'

**STATE OF CONNECTICUT**  
 DEPARTMENT OF TRANSPORTATION

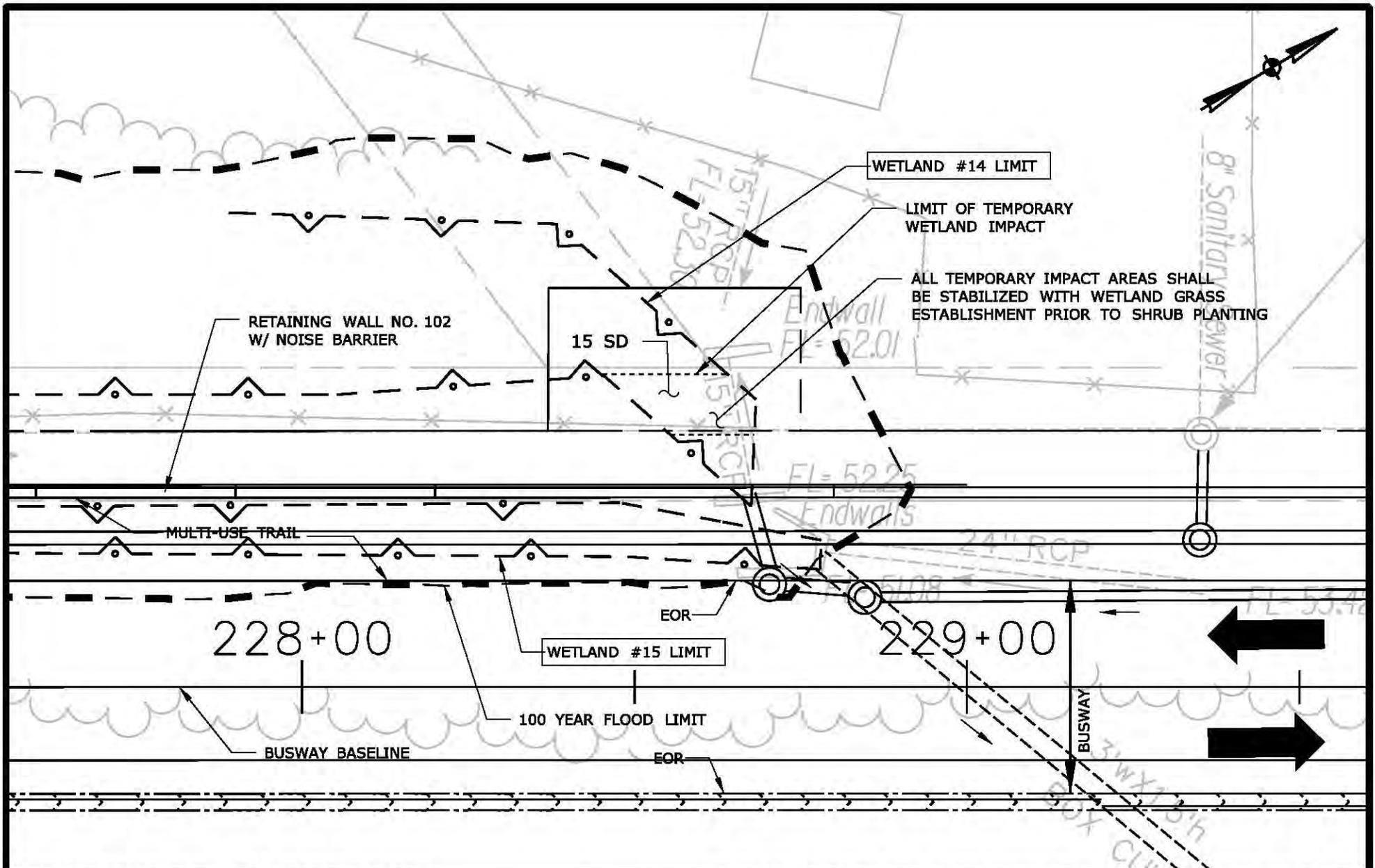
**OFFICE OF ENGINEERING**

**NEW BRITAIN - HARTFORD BUSWAY**  
 ENVIRONMENTAL IMPACT PLATES

**DATE:**  
 FEBRUARY 2011

**PLATE NO.:**  
 31B

**MICHAEL BAKER ENGINEERING**



WETLAND RESTORATION PLANTING SUMMARY			
SYM.	COMMON NAME	SCIENTIFIC NAME	NO. PLANTED
SD	PUSSY WILLOW	SALIX DISCOLOR	15
TOTAL PLANTINGS			15

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H046/H052

SCALE 1" = 10'

STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION

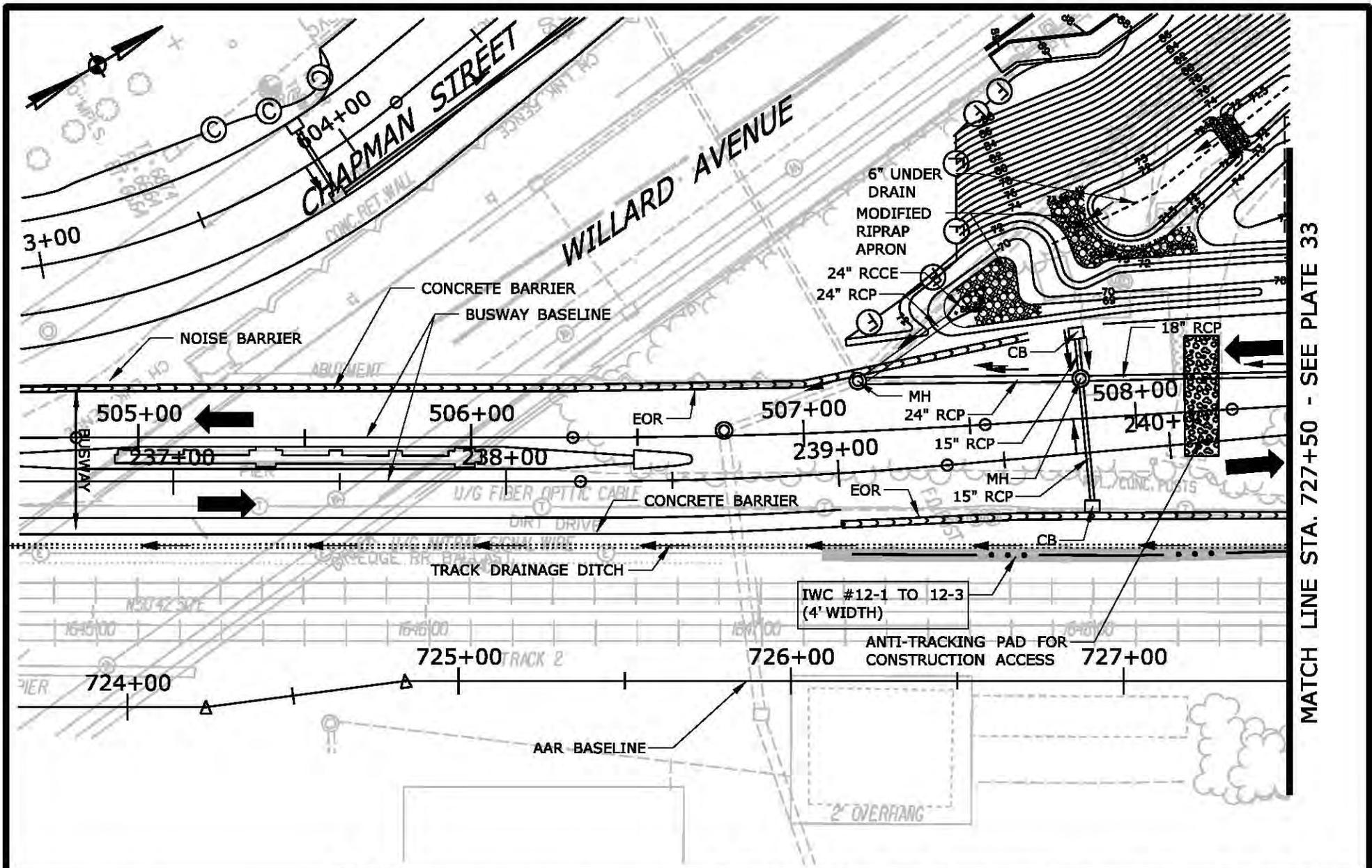
OFFICE OF ENGINEERING

NEW BRITAIN - HARTFORD BUSWAY  
 ENVIRONMENTAL IMPACT PLATES

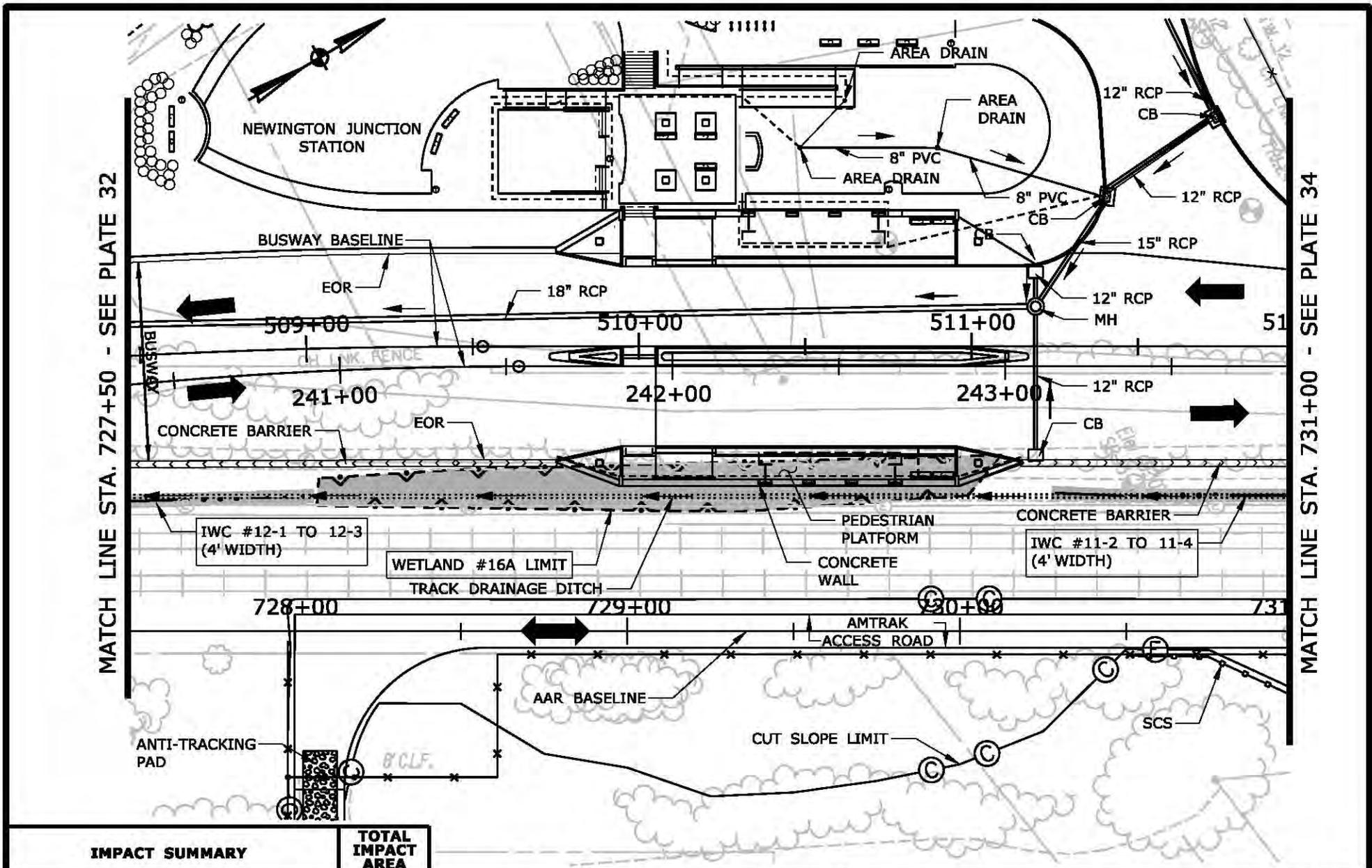
DATE:  
 FEBRUARY  
 2011

MICHAEL  
 BAKER  
 ENGINEERING

PLATE NO.  
 31C



<b>IMPACT SUMMARY</b> PERMANENT IWC #12 IMPACT	<b>TOTAL IMPACT AREA</b> 196 L.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
		SCALE 1" = 40' 40 20 0 40			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES



MATCH LINE STA. 727+50 - SEE PLATE 32

MATCH LINE STA. 731+00 - SEE PLATE 34

IMPACT SUMMARY	TOTAL IMPACT AREA
PERMANENT WETLAND #16A IMPACT	2,523 S.F.
PERMANENT IWC #12 IMPACT	196 L.F.
PERMANENT IWC #11 IMPACT	241 L.F.

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H046/H052

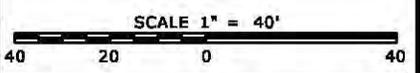


STATE OF CONNECTICUT  
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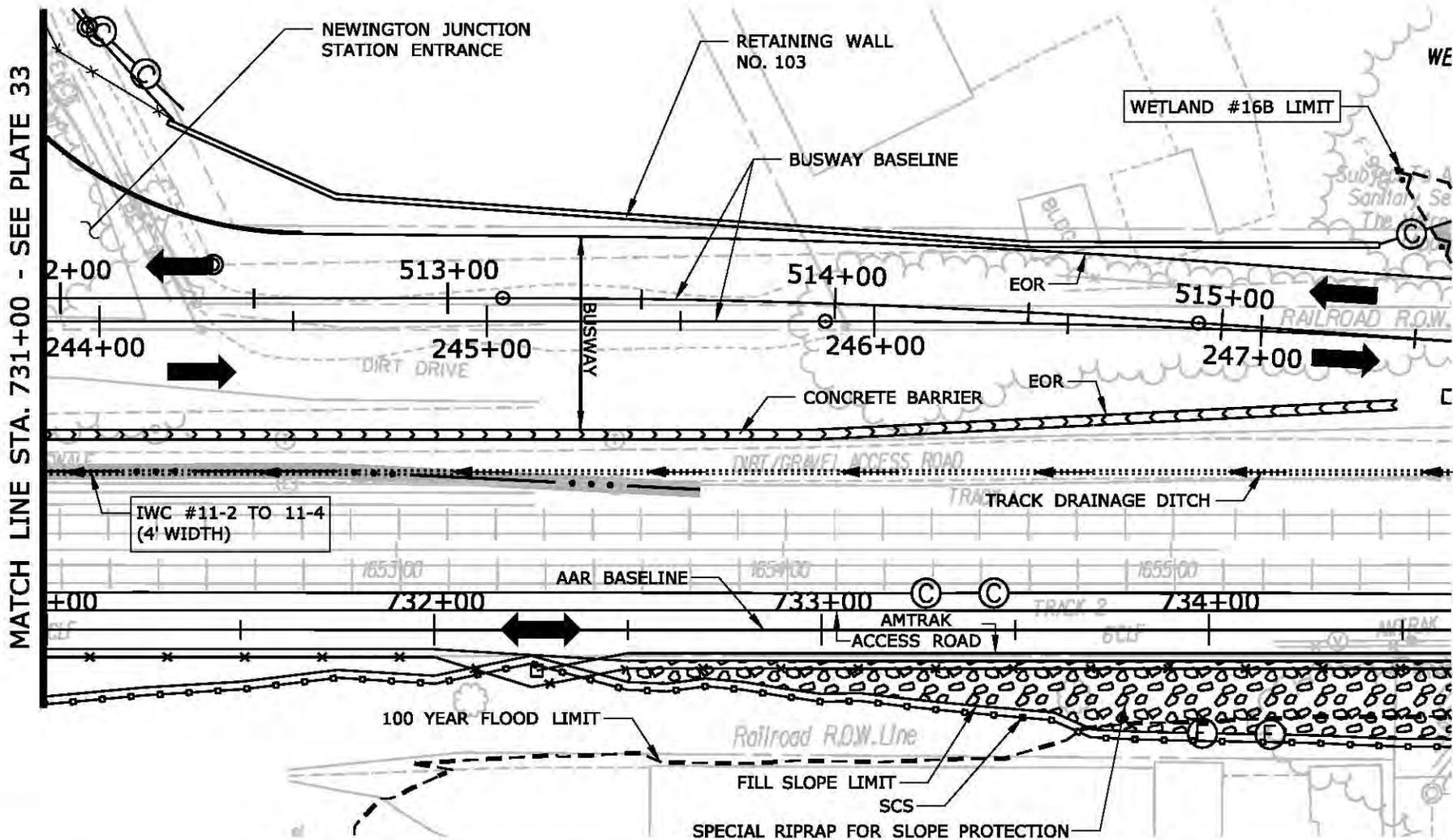
DATE:  
 FEBRUARY  
 2011



NEW BRITAIN - HARTFORD BUSWAY  
 ENVIRONMENTAL IMPACT PLATES

MICHAEL  
 BAKER  
 ENGINEERING

PLATE NO.  
 33

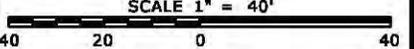


IMPACT SUMMARY	
 PERMANENT IWC #11 IMPACT	241 L.F.
 PERMANENT WETLAND #16B IMPACT	1,698 S.F.

TOTAL IMPACT AREA
241 L.F.
1,698 S.F.

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H046/H052

SCALE 1" = 40'

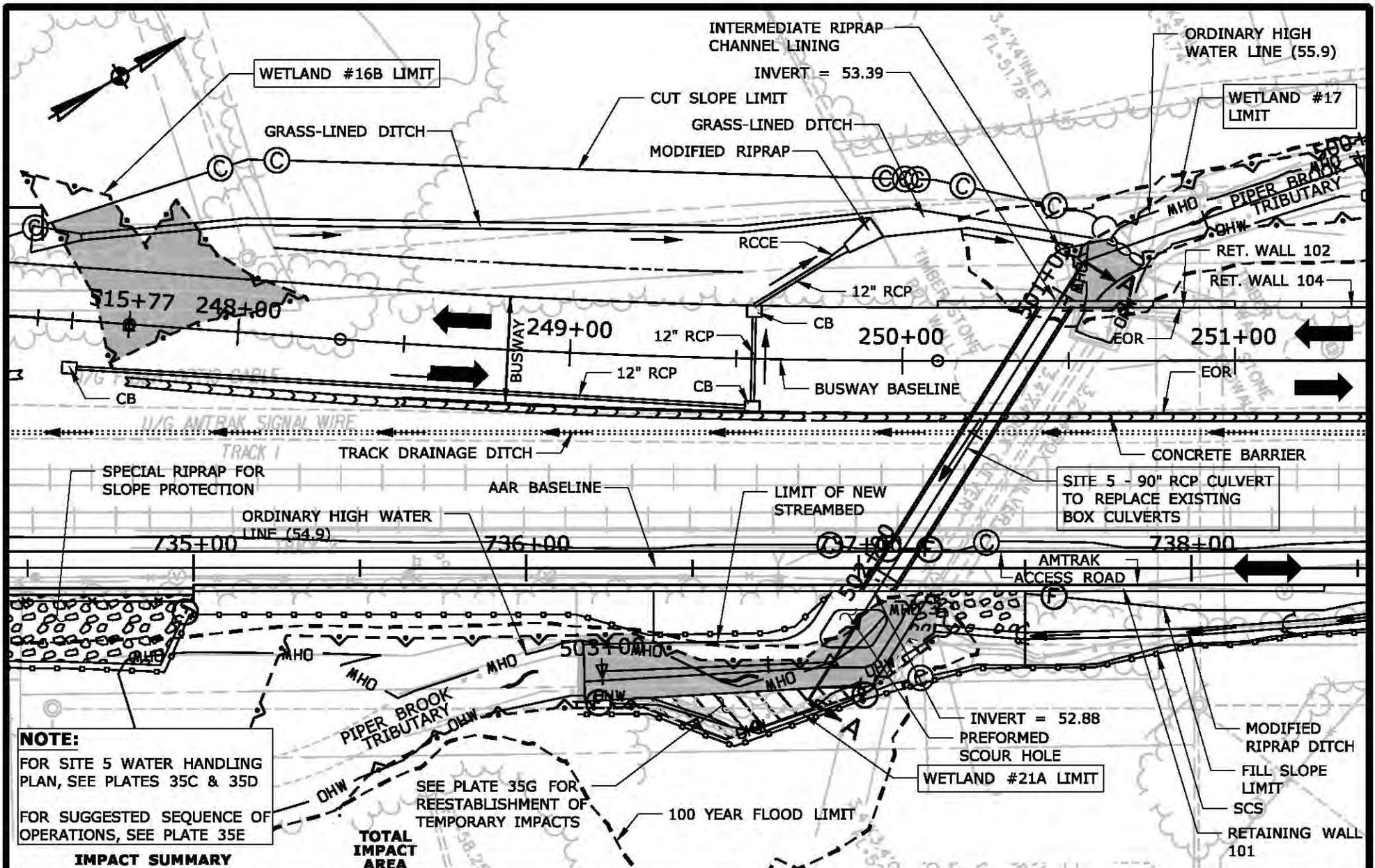



**STATE OF CONNECTICUT**  
 DEPARTMENT OF TRANSPORTATION



**NEW BRITAIN - HARTFORD BUSWAY**  
 ENVIRONMENTAL IMPACT PLATES

OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
MICHAEL BAKER ENGINEERING	PLATE NO. 34



**NOTE:**  
 FOR SITE 5 WATER HANDLING PLAN, SEE PLATES 35C & 35D  
 FOR SUGGESTED SEQUENCE OF OPERATIONS, SEE PLATE 35E

**IMPACT SUMMARY**

**TOTAL IMPACT AREA**

	PERMANENT WETLAND #16B IMPACT	1,698 S.F.
	PERMANENT WETLAND #17 IMPACT	351 S.F.
	PERMANENT WETLAND #21A IMPACT	1,527 S.F.
	TEMPORARY WETLAND #21A IMPACT	680 S.F.

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H046/H052

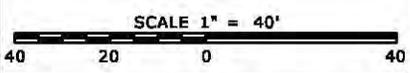


STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION



OFFICE OF ENGINEERING

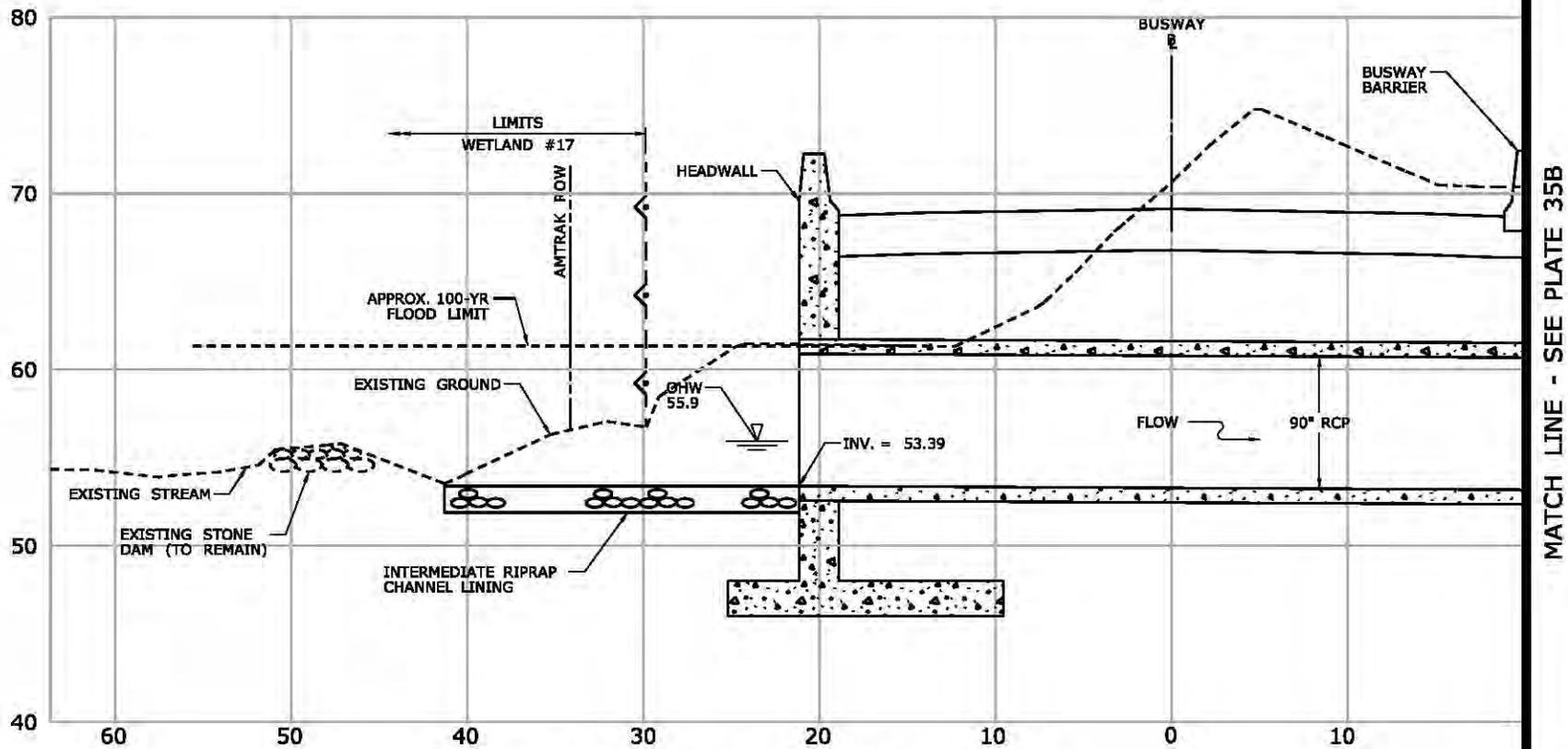
DATE:  
 FEBRUARY 2011



NEW BRITAIN - HARTFORD BUSWAY  
 ENVIRONMENTAL IMPACT PLATES

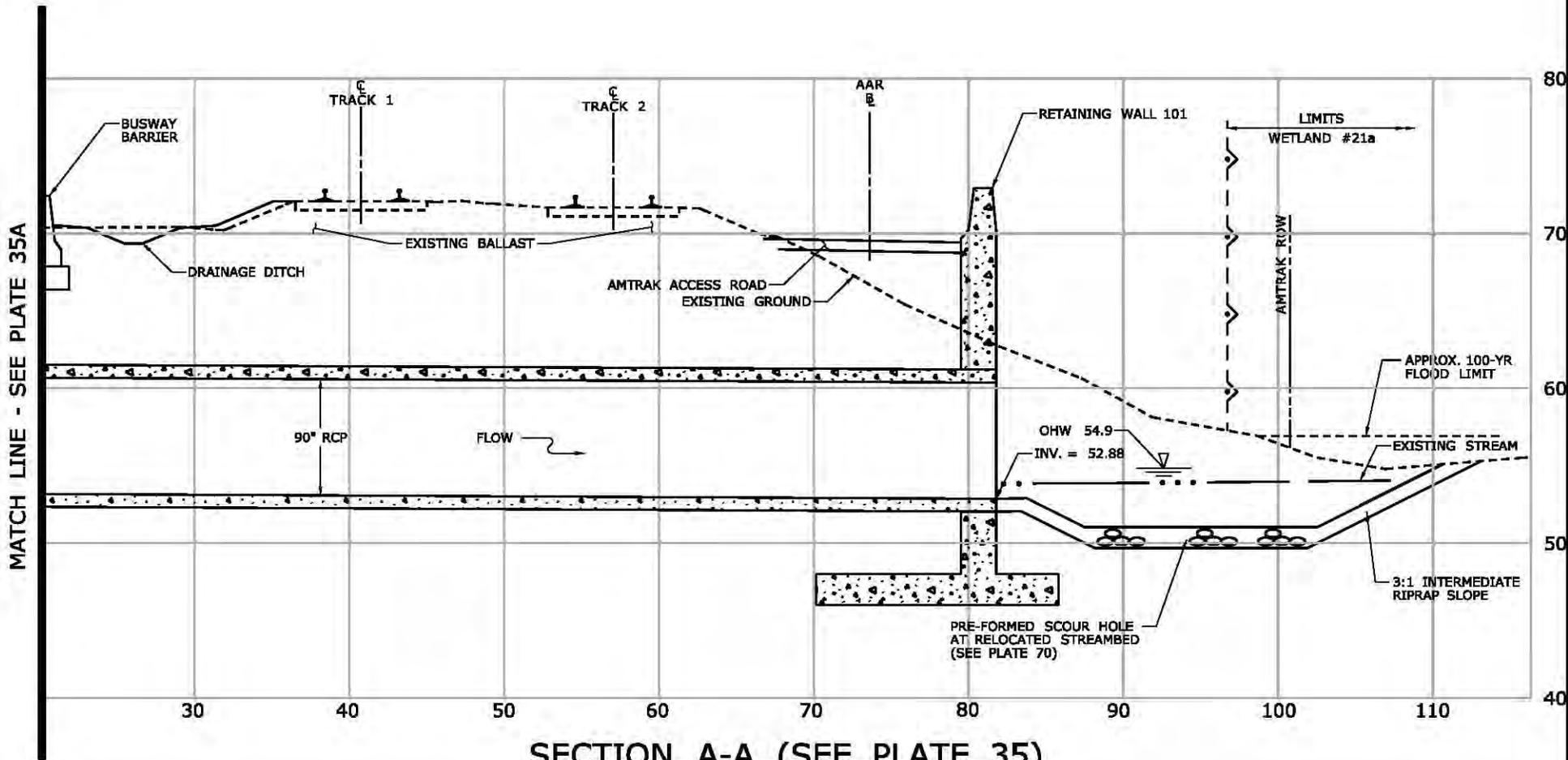
MICHAEL BAKER ENGINEERING

PLATE NO.  
 35



SECTION A-A (SEE PLATE 35)

SITE 5 CULVERT REPLACEMENT	STATE PROJECT NO.: 171-305	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	 OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
	SCALE: 1"=10'			NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES



SITE 5 CULVERT REPLACEMENT

STATE PROJECT NO.: 171-305

SCALE: 1"=10'



STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



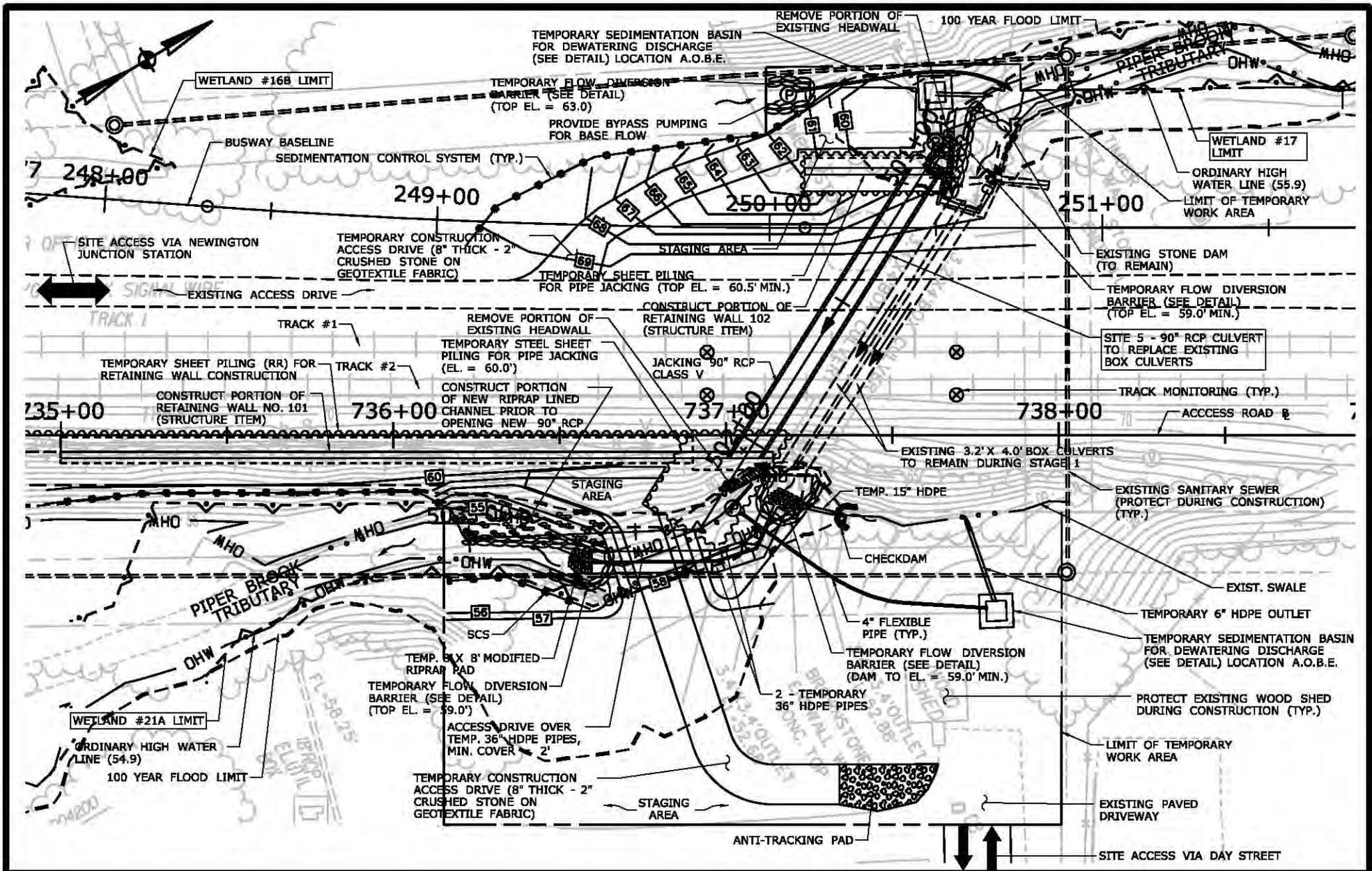
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MICHAEL  
BAKER  
ENGINEERING

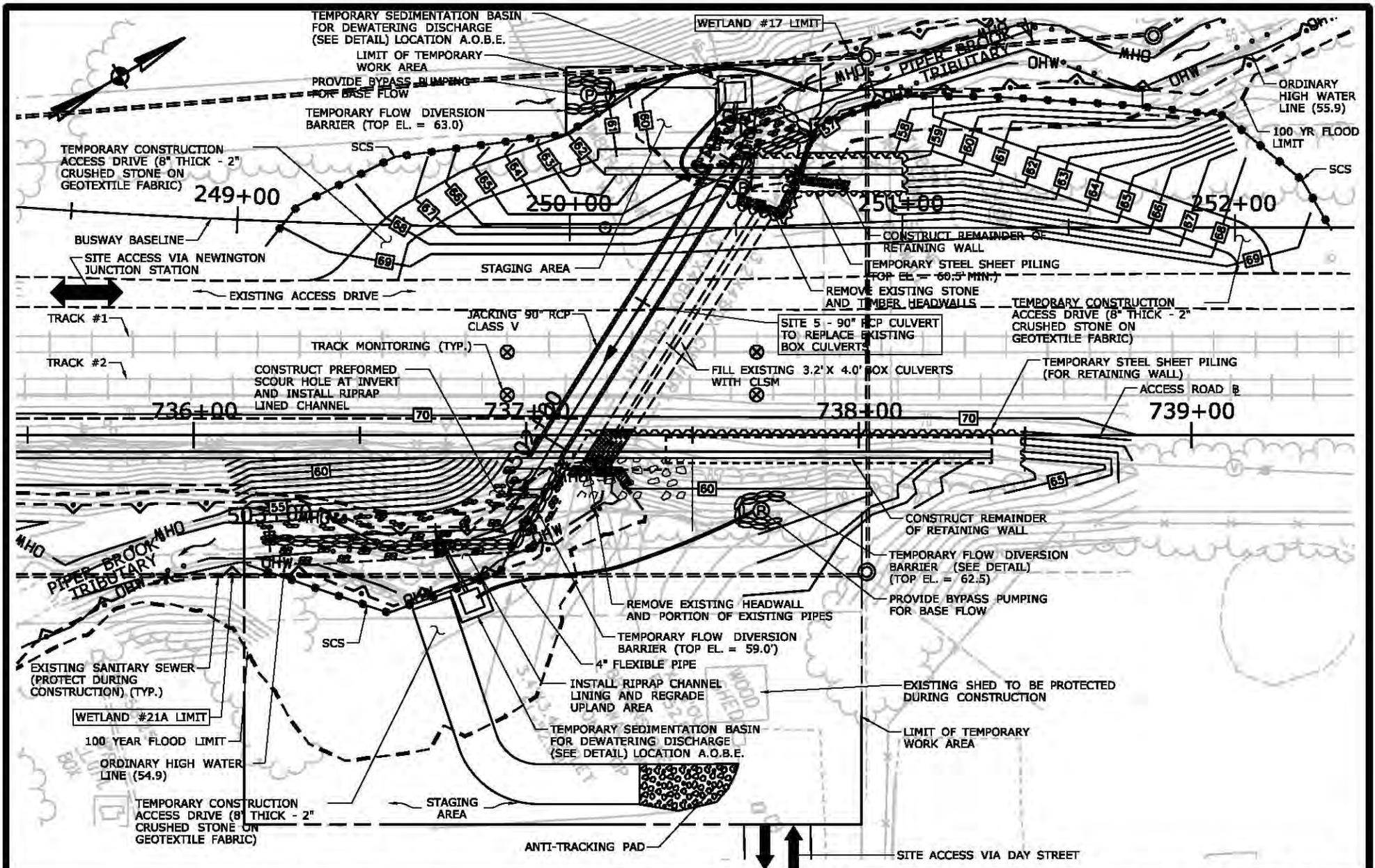
DATE:  
FEBRUARY  
2011

PLATE NO.  
35B

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES



<p><b>CONSTRUCTION STAGING AND WATER HANDLING PLAN FOR SITE 5 CULVERT REPLACEMENT</b></p>	<p>STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H052</p>	<p><b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION</p>	<p>OFFICE OF ENGINEERING</p>	<p>DATE: FEBRUARY 2011</p>
<p><b>STAGE 1</b></p>	<p>SCALE 1" = 40'</p>	<p>NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES</p>	<p>MICHAEL BAKER ENGINEERING</p>	<p>PLATE NO. 35C</p>



**CONSTRUCTION STAGING AND WATER HANDLING PLAN FOR SITE 5 CULVERT REPLACEMENT**

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H046/H052



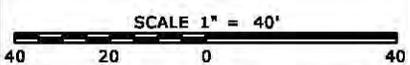
**STATE OF CONNECTICUT**  
 DEPARTMENT OF TRANSPORTATION



OFFICE OF ENGINEERING

DATE: FEBRUARY 2011

**STAGE 2**



**NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES**

MICHAEL BAKER ENGINEERING

PLATE NO. 35D

**GENERAL NOTES:**

1. THE CONTRACTOR SHALL BE LIMITED TO WORKING WITHIN THE TEMPORARY WORK AREAS AS INDICATED ON THE PLANS WHEN WORKING WITHIN A DELINEATED WETLAND BOUNDARY. THE TEMPORARY WORK AREAS WILL BE LOCATED AND STAKED IN THE FIELD BY THE CONTRACTOR PRIOR TO CLEARING AND GRUBBING OR THE COMMENCEMENT OF ANY OTHER CONSTRUCTION ACTIVITY. WORK OUTSIDE THE DELINEATED IMPACT AREAS IS NOT PERMITTED. IF ANY MEANS AND METHODS CHOSEN BY THE CONTRACTOR REQUIRE ADDITIONAL WETLAND IMPACT, EITHER PERMANENT OR TEMPORARY, THE CONTRACTOR SHALL NOTIFY CTDOT IMMEDIATELY, AS THIS WILL REQUIRE ADDITIONAL REVIEW BY THE CTDOT OFFICE OF ENVIRONMENTAL PLANNING AND CTDEP AT THE CONTRACTOR'S EXPENSE.

2. ALL WETLAND AREAS TEMPORARILY IMPACTED FOR THE PURPOSES OF CONSTRUCTION, STAGING OR ACCESS SHALL BE REESTABLISHED BY THE CONTRACTOR IMMEDIATELY FOLLOWING THE USE OF THESE AREAS. SEE SPECIAL PROVISIONS FOR METHOD OF REESTABLISHMENT AND MATERIAL REQUIREMENTS. SEE PLATE 30F FOR PLANTING PLAN. REESTABLISHED WETLAND AREAS SHALL BE SEEDED WITH "WETLAND GRASS ESTABLISHMENT" SEED MIX. UPLAND AREAS SHALL BE STABILIZED WITH "CONSERVATION FOR SLOPES" SEED MIX.

3. ALL WORK ASSOCIATED WITH THE TEMPORARY WATER DIVERSION, INCLUDING THE TEMPORARY BYPASS PIPE SHALL BE INCLUDED UNDER "HANDLING WATER".

4. A PUMP DISCHARGE AREA SHALL BE ESTABLISHED OUTSIDE OF THE WETLAND LIMITS, USING THE MODIFIED RIPRAP FILTERING SYSTEM SHOWN. THE LOCATION AND SIZE OF THE DEWATERING BASIN SHOWN IS APPROXIMATE. THE EXACT LOCATION MAY VARY BASED ON THE SIZE OF BASIN REQUIRED TO PROVIDE A STORAGE VOLUME CAPABLE OF RETAINING THE FIRST TWO HOURS OF PUMP DISCHARGE.

5. SEE PERMIT APPLICATION NARRATIVE FOR ADDITIONAL INFORMATION.

6. SEQUENCE OF OPERATIONS AND STAGING IS FOR DEMONSTRATION PURPOSES ONLY. THE CONTRACTOR SHALL SUBMIT A MEANS AND METHODS PROCEDURE PRIOR TO THE START OF CONSTRUCTION.

**SUGGESTED CONSTRUCTION SEQUENCE:**

STAGE 1:

1. INSTALL EROSION AND SEDIMENTATION CONTROLS AS INDICATED.
2. TEMPORARILY DIVERT DOWNSTREAM FLOW, UTILIZING FLOW DIVERSION BARRIERS AS REQUIRED, AND INSTALL TEMPORARY 36" HDPE PIPES, DAMS AND RIPRAP PADS.
3. CONSTRUCT TEMPORARY CONSTRUCTION ACCESS DRIVES AND STAGING AREAS.
4. INSTALL TEMPORARY FLOW DIVERSION BARRIERS AS INDICATED.
5. BYPASS PUMP BASE FLOW AS INDICATED - SEE SPECIAL PROVISIONS.
6. CONSTRUCT ACCESS DRIVE OVER TEMPORARY 36" PIPES.
7. REMOVE PORTION OF EXISTING UPSTREAM AND DOWNSTREAM WINGWALLS.
8. INSTALL TEMPORARY STEEL SHEET PILING AND CONSTRUCT JACKING PITS.
9. JACK 90" RCP CLASS V - SEE SPECIAL PROVISIONS.
10. CONSTRUCT FOOTINGS FOR SOUTHERN SECTION OF WALLS ON EITHER END OF PIPE JACKING WITH KEY-IN FOR HEADWALLS AND SUPPORT SECTION FOR 90" RCP END SECTIONS.
11. REMOVE TEMPORARY STEEL SHEET PILING AROUND JACKING AND RECEIVING PITS AND INSTALL TEMPORARY SHEET PILING (RAILROAD) FOR RETAINING WALL CONSTRUCTION.
12. CONSTRUCT SOUTHERN PORTION OF RETAINING WALL NO. 101 (SEE STRUCTURE DWGS).
13. CONDUCT FINAL GRADING AT BASE OF RETAINING WALL AND STABILIZE WITH SPECIAL RIPRAP SLOPE PROTECTION.
14. CONSTRUCT PORTION OF NEW RIPRAP CHANNEL LINING IN RELOCATED STREAMBED AT BASE OF SPECIAL RIPRAP SLOPE PROTECTION.

STAGE 2:

1. MAINTAIN OR REMOVE STAGE 1 EROSION CONTROL MEASURES AS REQUIRED. INSTALL ADDITIONAL EROSION & SEDIMENTATION CONTROLS AS INDICATED.
2. MAINTAIN AND REPAIR EXISTING ACCESS DRIVES AND STAGING AREAS FROM STAGE 1. CONSTRUCT ADDITIONAL TEMPORARY CONSTRUCTION ACCESS DRIVES AND STAGING AREAS AS INDICATED ON PLAN.
3. INSTALL PRE-FORMED SCOUR HOLE AND REMAINDER OF WESTERN PORTION OF RIPRAP CHANNEL LINING IN RELOCATED STREAMBED.
4. RELOCATE TEMPORARY FLOW DIVERSION BARRIERS AS INDICATED AND REMOVE STAGE 1 TEMPORARY STEEL SHEET PILING AND ANY UNNECESSARY FLOW DIVERSION BARRIERS.
5. DIVERT STREAM FLOWS TO NEW 90" RC PIPE AND REMOVE TEMPORARY 36" HDPE PIPES, DAMS AND UNNECESSARY DIVERSION BARRIERS.
6. FOLLOWING THE OPENING OF THE 90" RC PIPE TO FLOWS, PUMP ANY STANDING WATER IN THE DOWNSTREAM EASTERN PORTION OF RELOCATED STREAMBED INTO DEWATERING BASIN AND CONSTRUCT EASTERN PORTION OF THE RIPRAP CHANNEL LINING.
7. REMOVE REMAINDER OF EXISTING UPSTREAM AND DOWNSTREAM CULVERT HEADWALLS, FILL EXISTING 3.2'x4.0' BOX CULVERTS WITH CLSM, CAP EXISTING CULVERT ENDS AND BACKFILL.
8. INSTALL REMAINDER OF NEW RIPRAP CHANNEL LINING IN EASTERN PORTION OF UPSTREAM END.
9. INSTALL TEMPORARY SHEET PILING (RAILROAD) AS INDICATED FOR RETAINING WALL CONSTRUCTION.
10. CONSTRUCT REMAINING PORTION OF WALL FOOTINGS AND NORTHERN PORTION OF RETAINING WALLS.
11. REMOVE TEMPORARY ACCESS ROAD AND STAGING AREA WHEN DIRECTED BY THE ENGINEER (SEE NOTE 2).
12. REMOVE EROSION CONTROL MEASURES.
13. REESTABLISH WETLAND AREA PER SPECIAL PROVISIONS, SEED WITH APPROPRIATE MIX (PLANTINGS TO BE INSTALLED AFTER ESTABLISHMENT OF WETLAND GRASS).

**TABLE 3-3**

AVERAGE DAILY FLOW (CFS)	1.5
AVERAGE SPRING FLOW (CFS)	3
2-YEAR FREQUENNCY DISCHARGE (CFS)	153
TEMPORARY DESIGN DISCHARGE (CFS)	124
TEMPORARY DESIGN FREQUENCY YEAR	1
TEMPORARY WATER SURFACE ELEV. UPSTREAM (FT)	59
TEMPORARY WATER SURFACE ELEV. DOWNSTREAM (FT)	58

STATE PROJECT NO.: 171-305



STATE OF CONNECTICUT  
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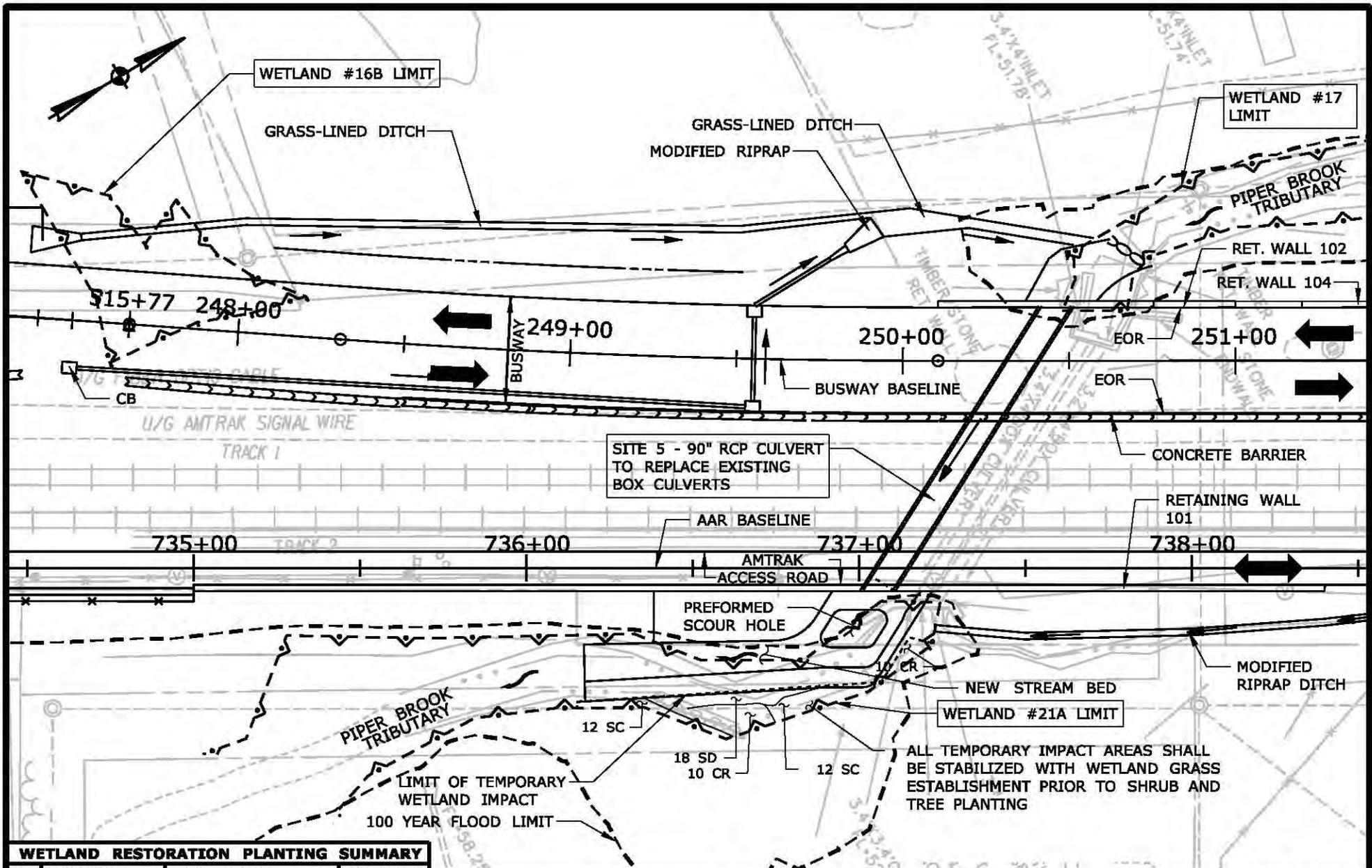
DATE:  
FEBRUARY  
2011

NOT TO SCALE

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL  
BAKER  
ENGINEERING

PLATE NO.  
35E



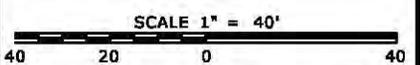
SITE 5 - 90" RCP CULVERT TO REPLACE EXISTING BOX CULVERTS

ALL TEMPORARY IMPACT AREAS SHALL BE STABILIZED WITH WETLAND GRASS ESTABLISHMENT PRIOR TO SHRUB AND TREE PLANTING

**WETLAND RESTORATION PLANTING SUMMARY**

SYM.	COMMON NAME	SCIENTIFIC NAME	NO. PLANTED
SD	PUSSY WILLOW	SALIX DISCOLOR	18
CR	GREY-STEM DOGWOOD	CORNUS RACEMOSA	18
EC	ELDERBERRY	SAMBUCUS CANADENSIS	18
TOTAL PLANTINGS			62

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H046/H052



STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION



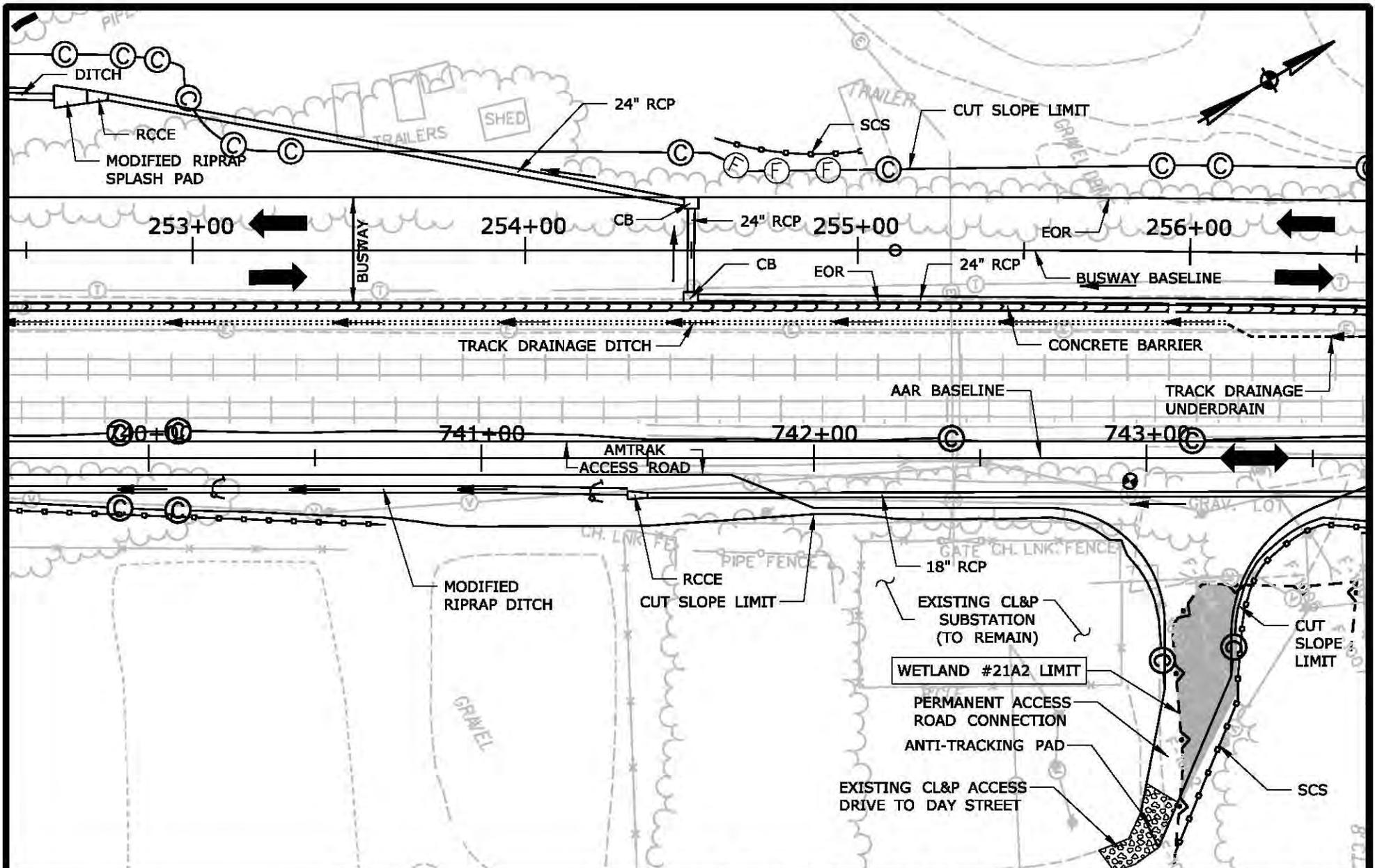
OFFICE OF ENGINEERING

DATE:  
 FEBRUARY 2011

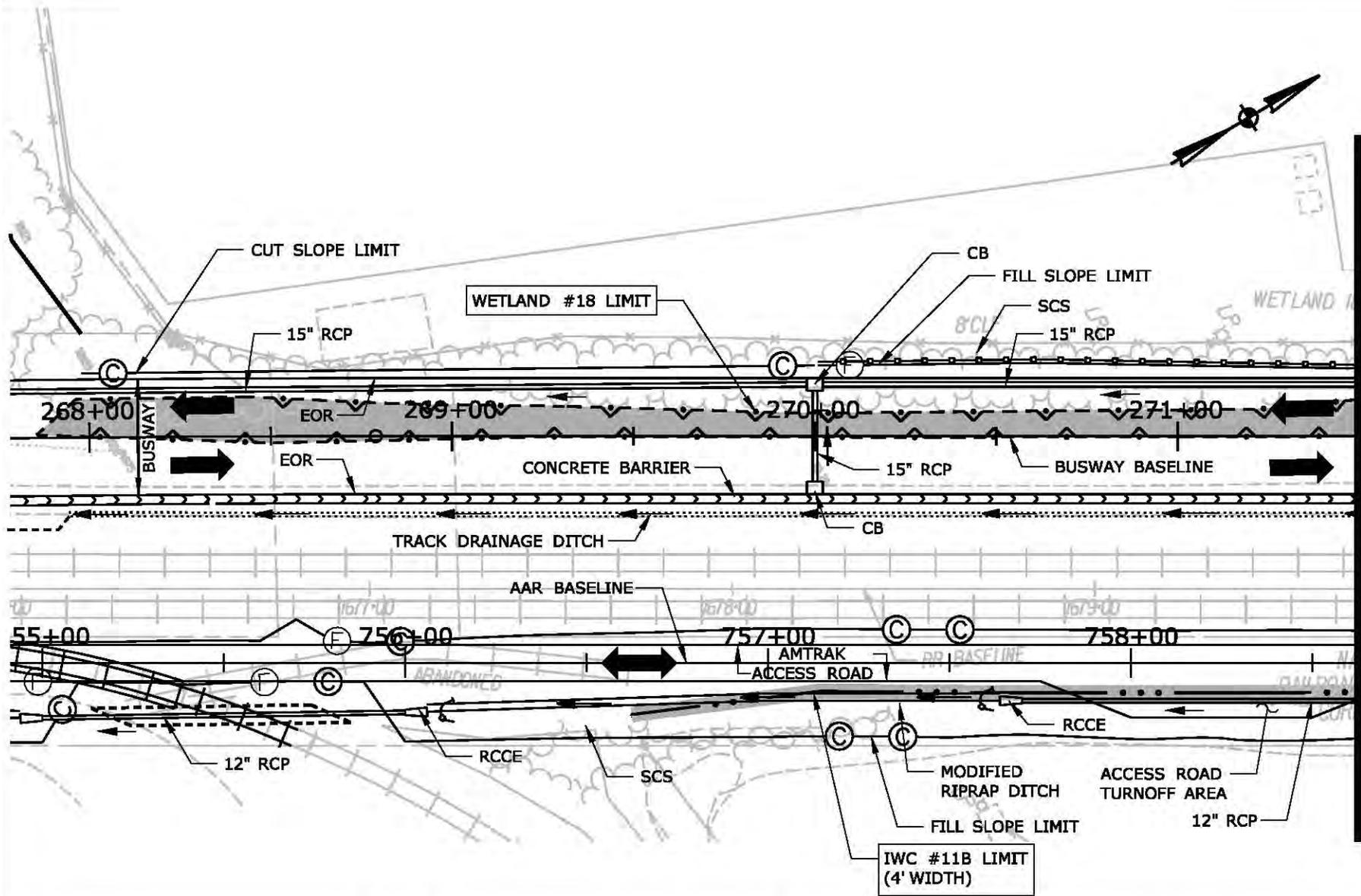
NEW BRITAIN - HARTFORD BUSWAY  
 ENVIRONMENTAL IMPACT PLATES

MICHAEL BAKER ENGINEERING

PLATE NO.  
 35G

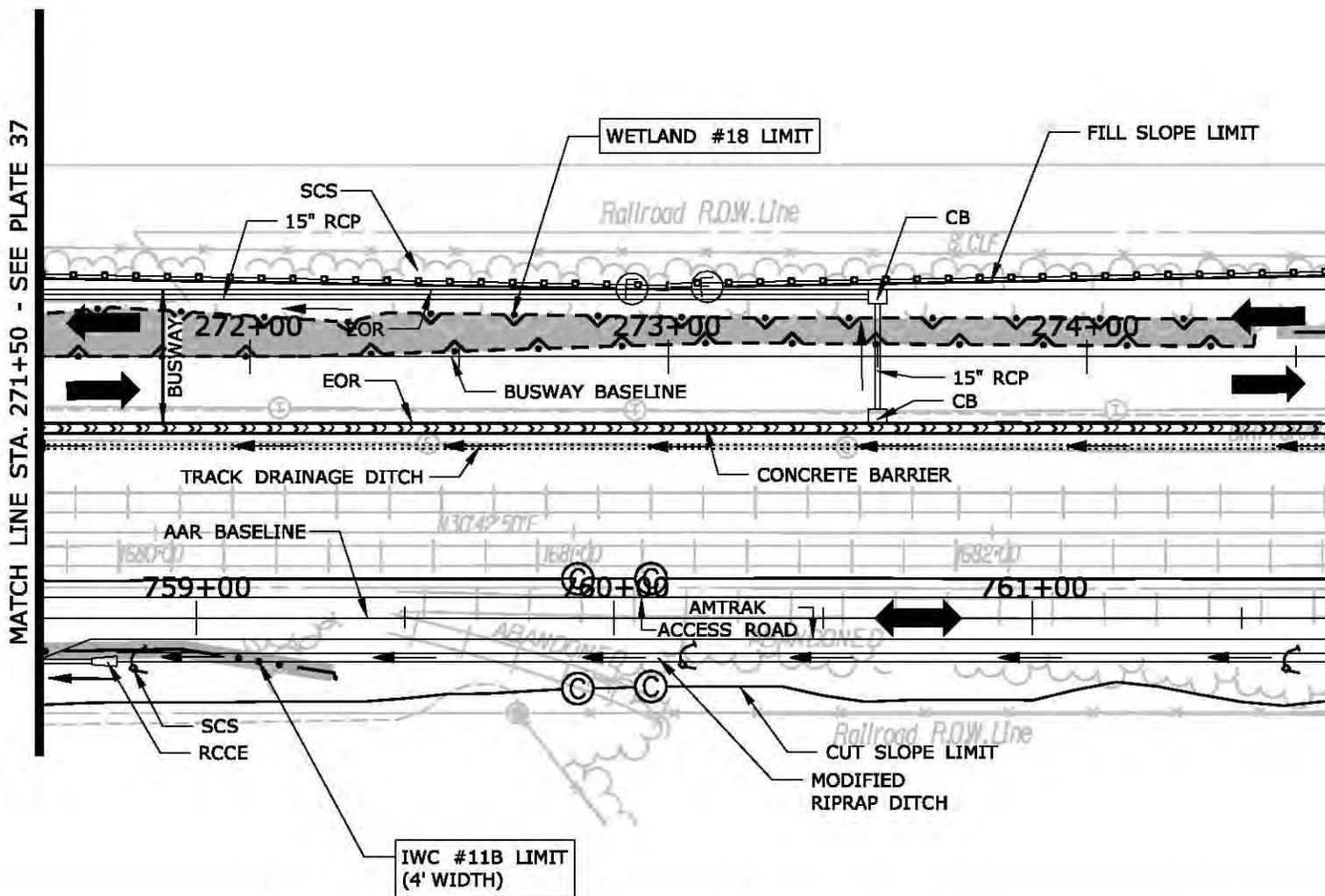


<b>IMPACT SUMMARY</b>	<b>TOTAL IMPACT AREA</b>	STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H052	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION 	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
	 PERMANENT WETLAND #21A2 IMPACT	847 S.F.			 SCALE 1" = 40' 40 20 0 40

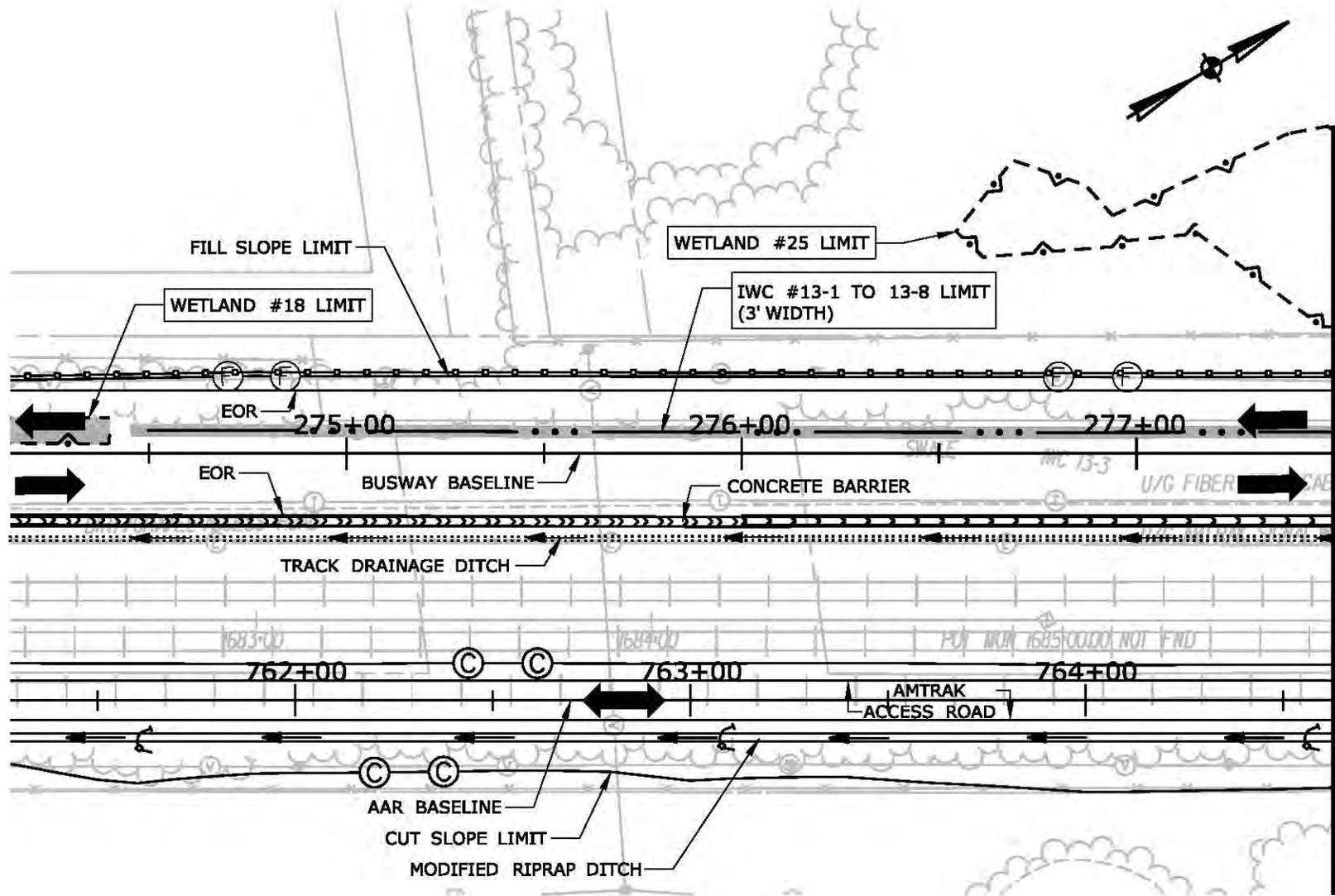


MATCH LINE STA. 271+50 - SEE PLATE 38

<b>IMPACT SUMMARY</b> PERMANENT WETLAND #18 IMPACT PERMANENT IWC #11B IMPACT	<b>TOTAL IMPACT AREA</b> 5,415 S.F.	STATE PROJECT NO.: 171-305 CONTRACT NO: H046/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	<b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
	271 L.F.	SCALE 1" = 40' 40 20 0 40			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES

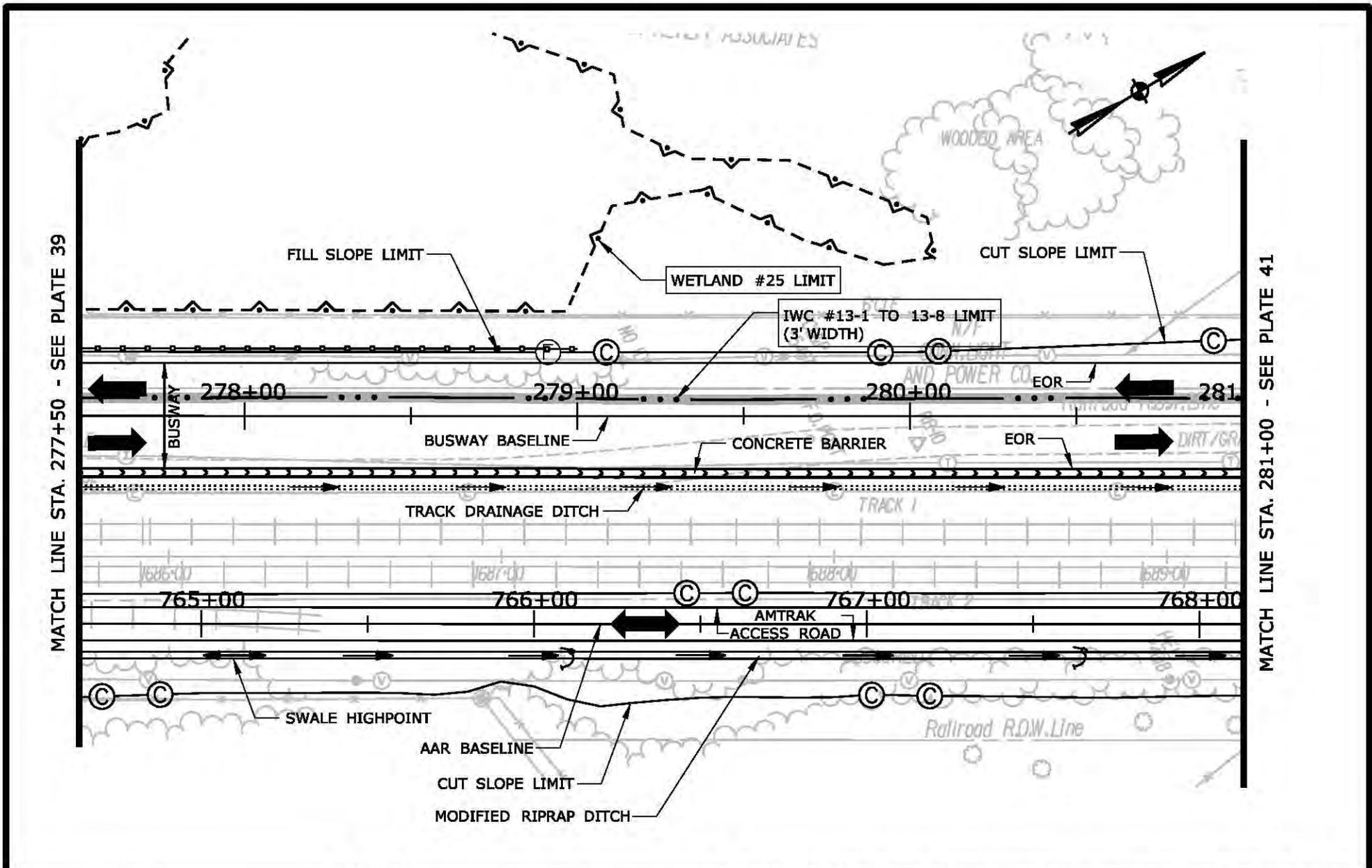


<b>IMPACT SUMMARY</b>		<b>TOTAL IMPACT AREA</b>	STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H052	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION 	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
	PERMANENT WETLAND #18 IMPACT	5,415 S.F.	SCALE 1" = 40' 		NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES	MICHAEL BAKER ENGINEERING
	PERMANENT IWC #11B IMPACT	271 L.F.				



MATCH LINE STA. 277+50 - SEE PLATE 40

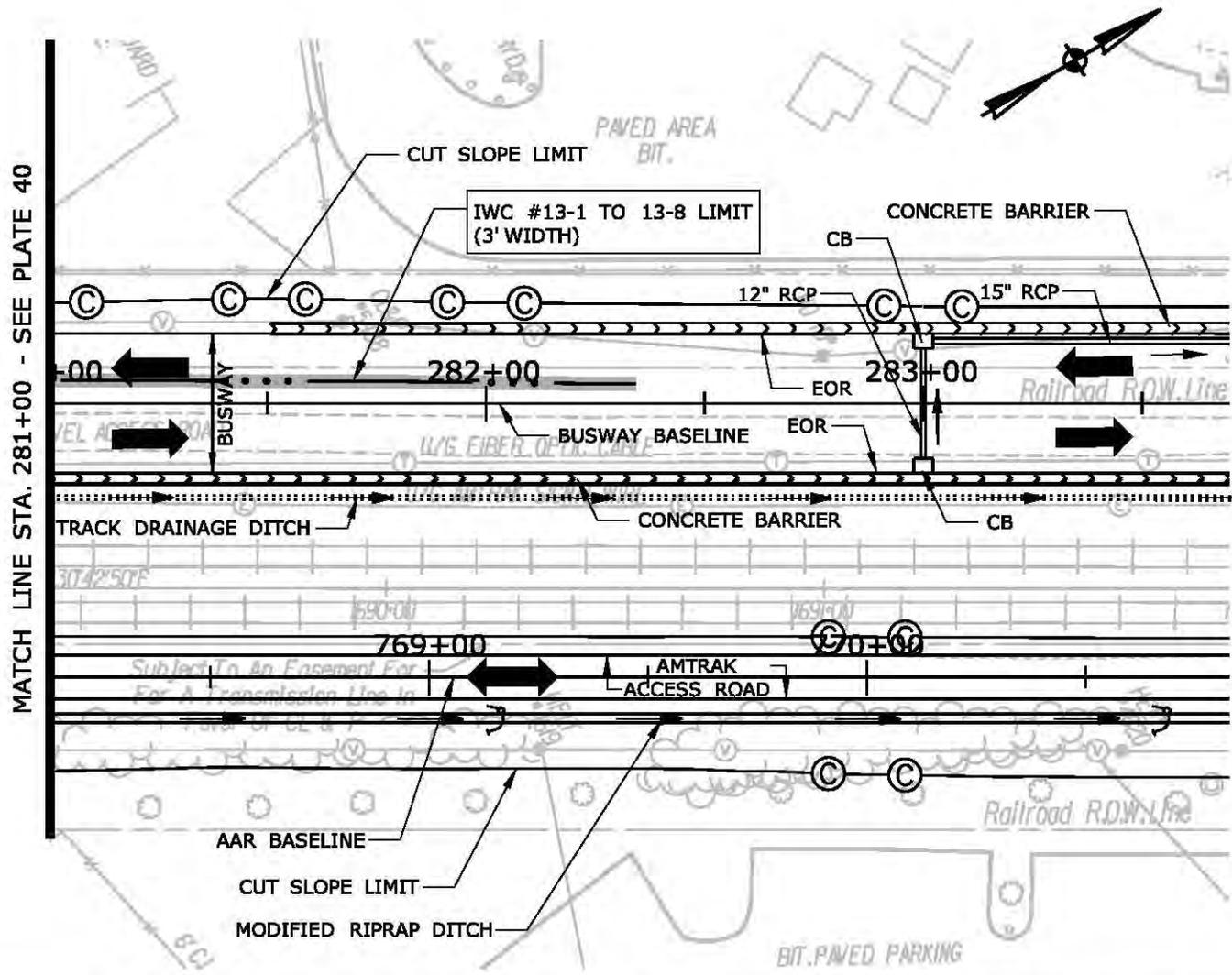
<b>IMPACT SUMMARY</b> PERMANENT IWC #13 IMPACT	<b>TOTAL IMPACT AREA</b> 789 L.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	<b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
		SCALE 1" = 40' 40 20 0 40			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES



MATCH LINE STA. 277+50 - SEE PLATE 39

MATCH LINE STA. 281+00 - SEE PLATE 41

<p><b>IMPACT SUMMARY</b></p>	<p><b>TOTAL IMPACT AREA</b></p>	<p>STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H052</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	<p>OFFICE OF ENGINEERING</p>	<p>DATE: FEBRUARY 2011</p>
<p>PERMANENT IWC #13 IMPACT</p>	<p>789 L.F.</p>	<p>SCALE 1" = 40'</p>	<p>NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES</p>	<p>MICHAEL BAKER ENGINEERING</p>	<p>PLATE NO. 40</p>



MATCH LINE STA. 281+00 - SEE PLATE 40

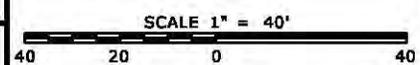
**IMPACT SUMMARY**

PERMANENT IWC #13 IMPACT

**TOTAL IMPACT AREA**

789 L.F.

STATE PROJECT NO.: 171-305  
 CONTRACT NO.: H046/H052



**STATE OF CONNECTICUT**  
 DEPARTMENT OF TRANSPORTATION



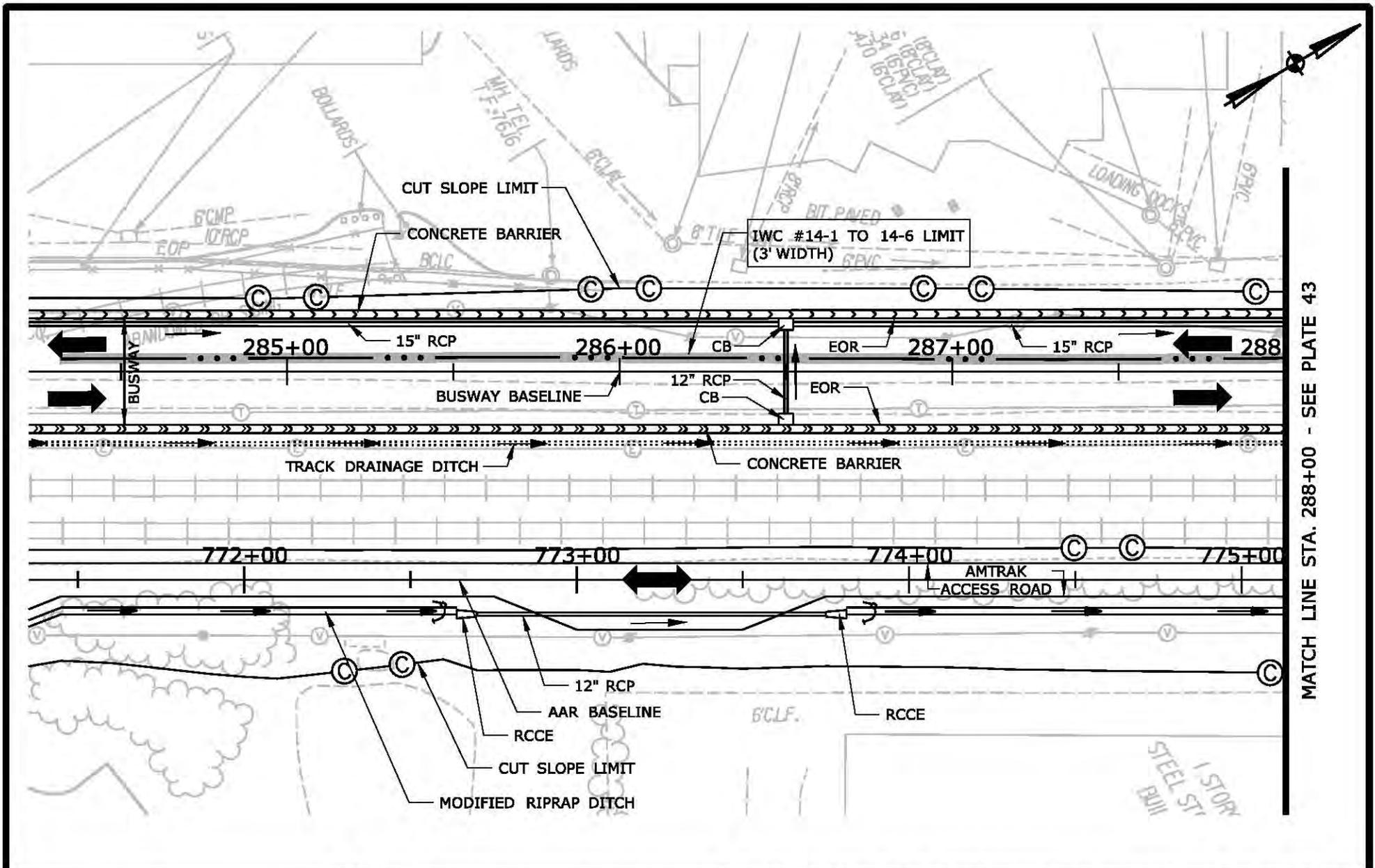
OFFICE OF ENGINEERING

DATE:  
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NEW BRITAIN - HARTFORD BUSWAY  
 ENVIRONMENTAL IMPACT PLATES

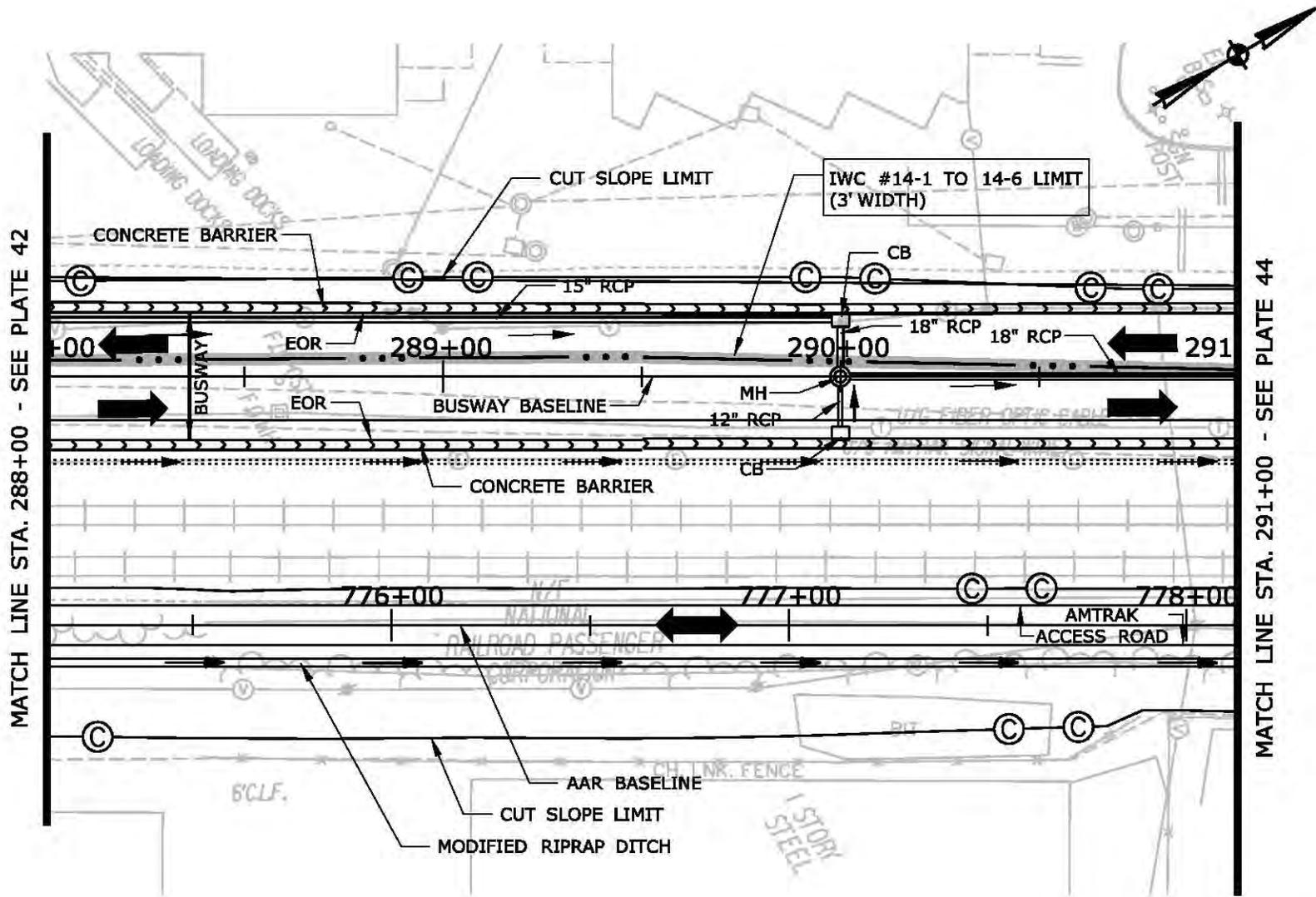
MICHAEL BAKER ENGINEERING

PLATE NO.  
 41

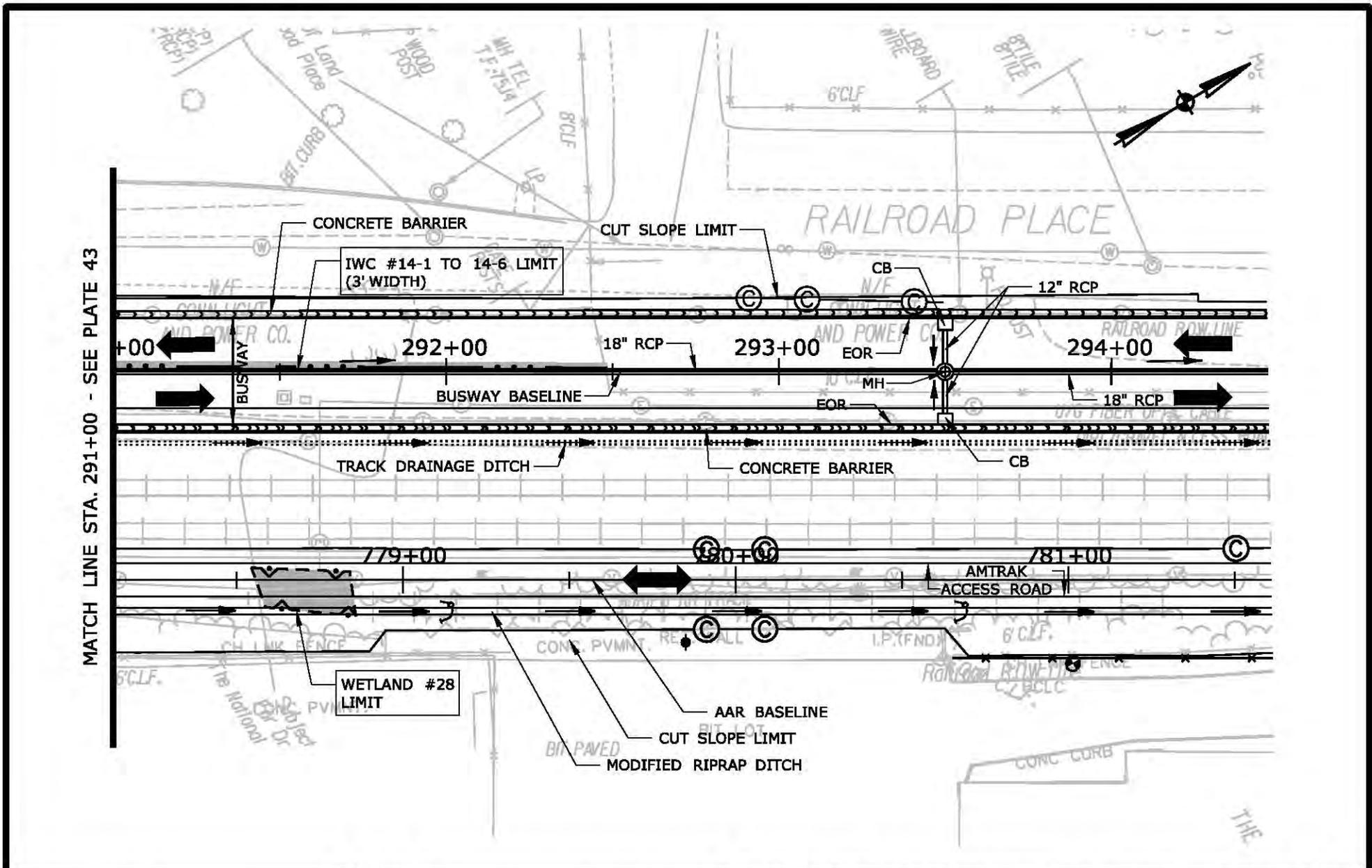


MATCH LINE STA. 288+00 - SEE PLATE 43

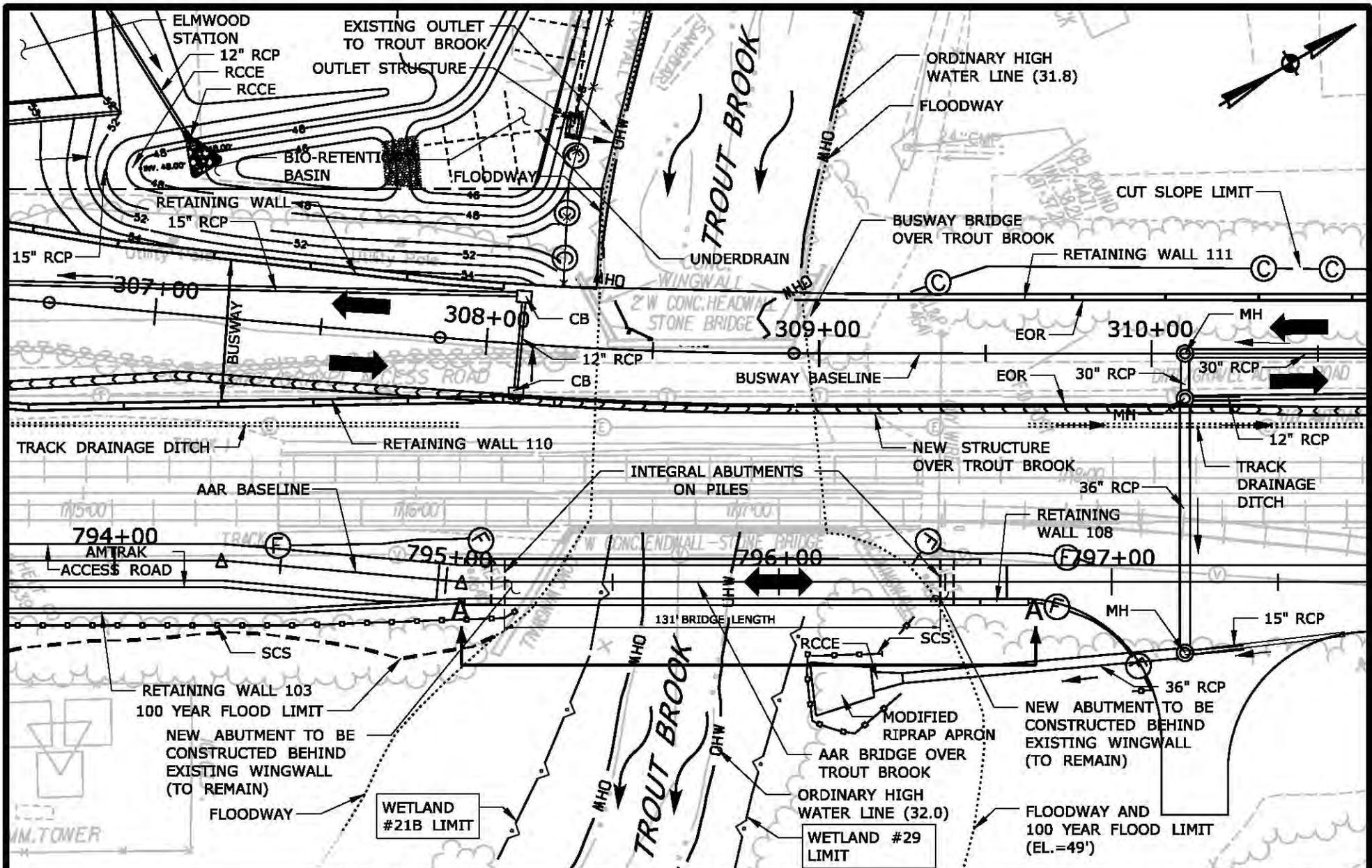
<b>IMPACT SUMMARY</b> PERMANENT IWC #14 IMPACT	<b>TOTAL IMPACT AREA</b> 817 L.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
		SCALE 1" = 40' 40 20 0 40			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES



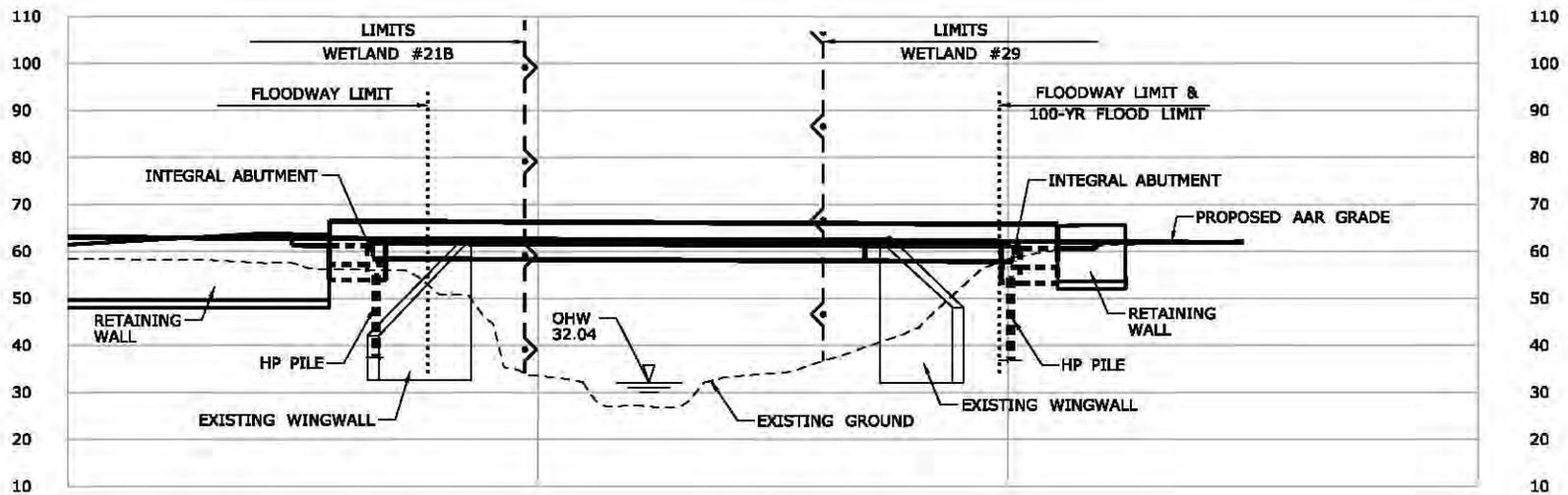
<p><b>IMPACT SUMMARY</b></p>	<p><b>TOTAL IMPACT AREA</b></p>	<p>STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H052</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	<p>OFFICE OF ENGINEERING</p>	<p>DATE: FEBRUARY 2011</p>
<p>PERMANENT IWC #14 IMPACT</p>	<p>817 L.F.</p>	<p>SCALE 1" = 40'</p>	<p>NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES</p>	<p>MICHAEL BAKER ENGINEERING</p>	<p>PLATE NO. 43</p>



<b>IMPACT SUMMARY</b>		<b>TOTAL IMPACT AREA</b>	STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	<b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
PERMANENT IWC #14 IMPACT	817 L.F.	SCALE 1" = 40' 40 20 0 40	<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES			<b>MICHAEL BAKER ENGINEERING</b>
PERMANENT WETLAND #28 IMPACT	352 S.F.					



<p><b>IMPACT SUMMARY</b></p>	<p><b>TOTAL IMPACT AREA</b></p>	<p>STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H052</p>	<p> <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION</p>	<p> OFFICE OF ENGINEERING</p>	<p>DATE: FEBRUARY 2011</p>
<p><b>NO WETLAND IMPACTS</b></p>		<p>SCALE 1" = 40'</p> 	<p><b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES</p>	<p>MICHAEL BAKER ENGINEERING</p>	<p>PLATE NO. <b>45</b></p>



**SECTION A-A (SEE PLATE 45)**

**ELEVATION AT AAR BRIDGE  
OVER TROUT BROOK  
LOOKING UPSTREAM (WEST)**

STATE PROJECT NO.: 171-305

SCALE: 1"=10'



**STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION**



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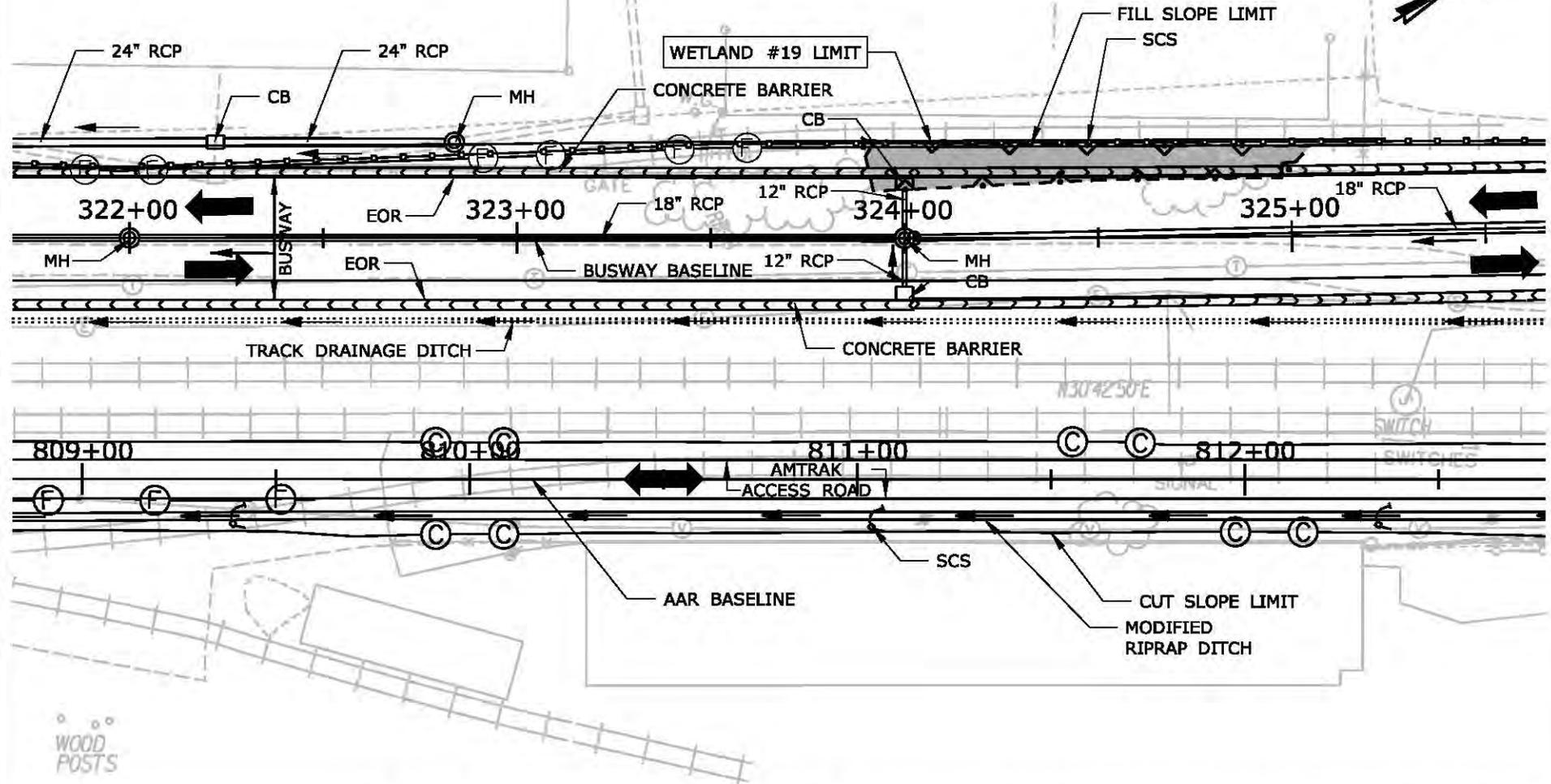
MICHAEL  
BAKER  
ENGINEERING

DATE:  
FEBRUARY  
2011

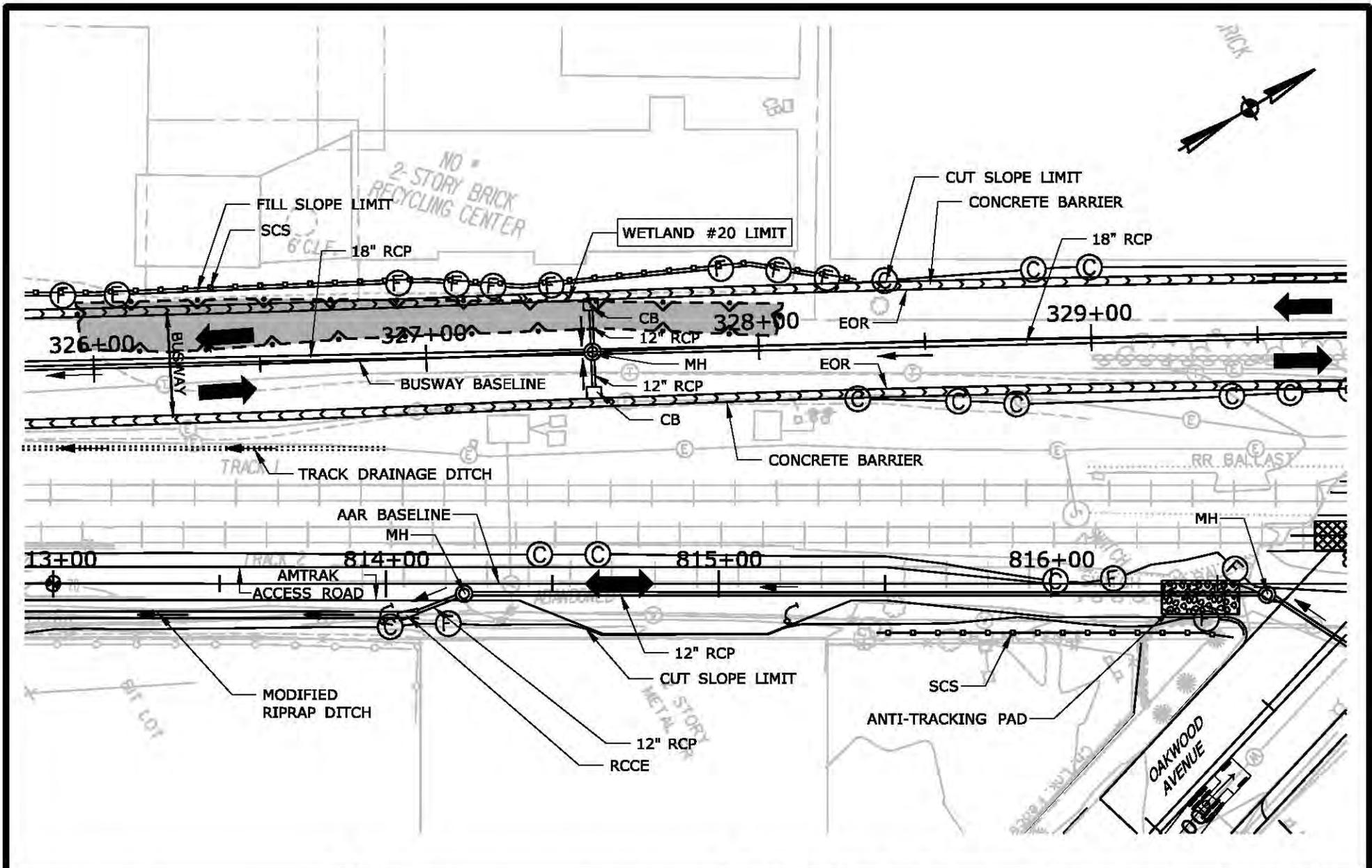
PLATE NO.  
**45A**

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

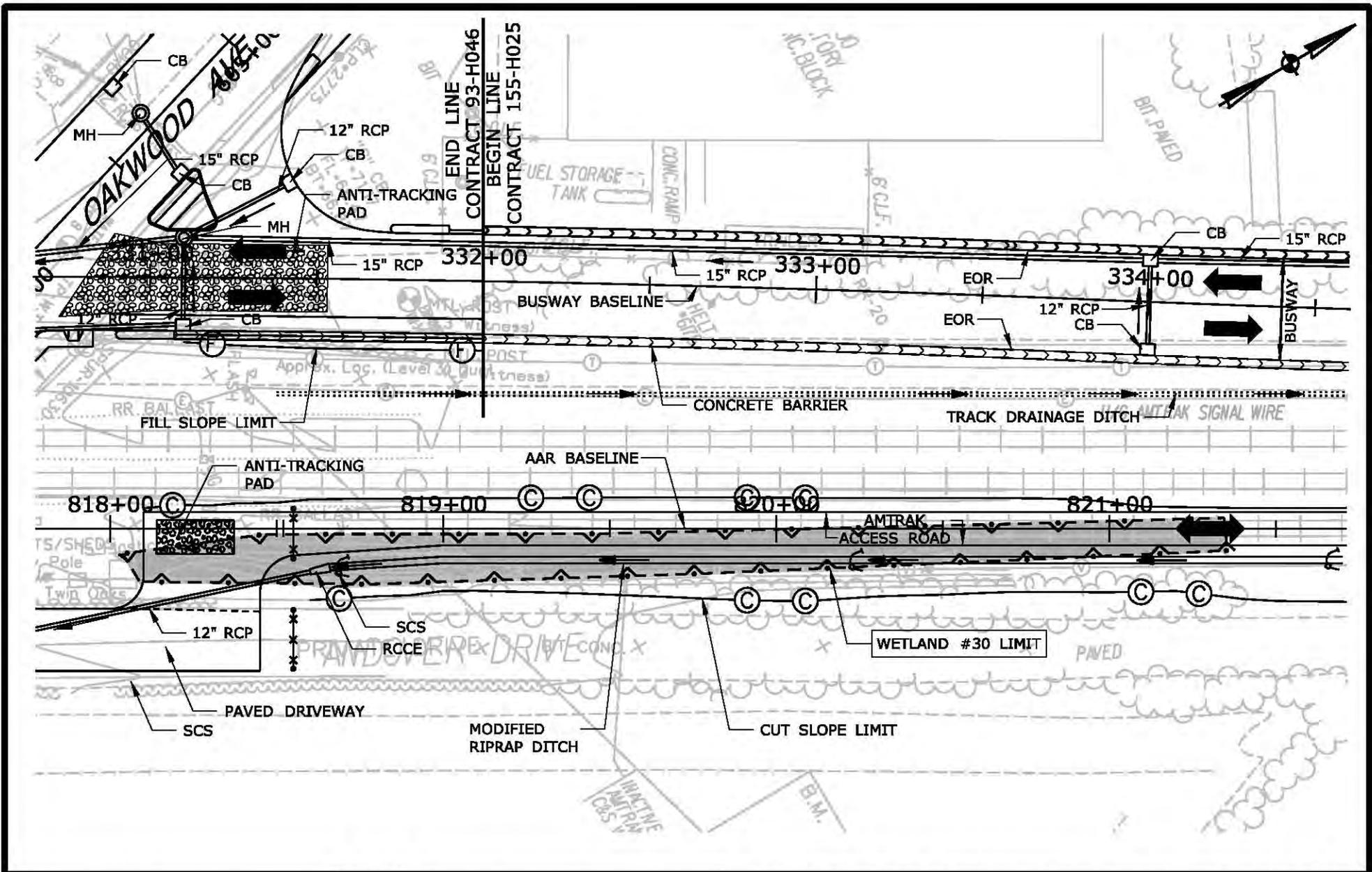
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In Favor Of Her



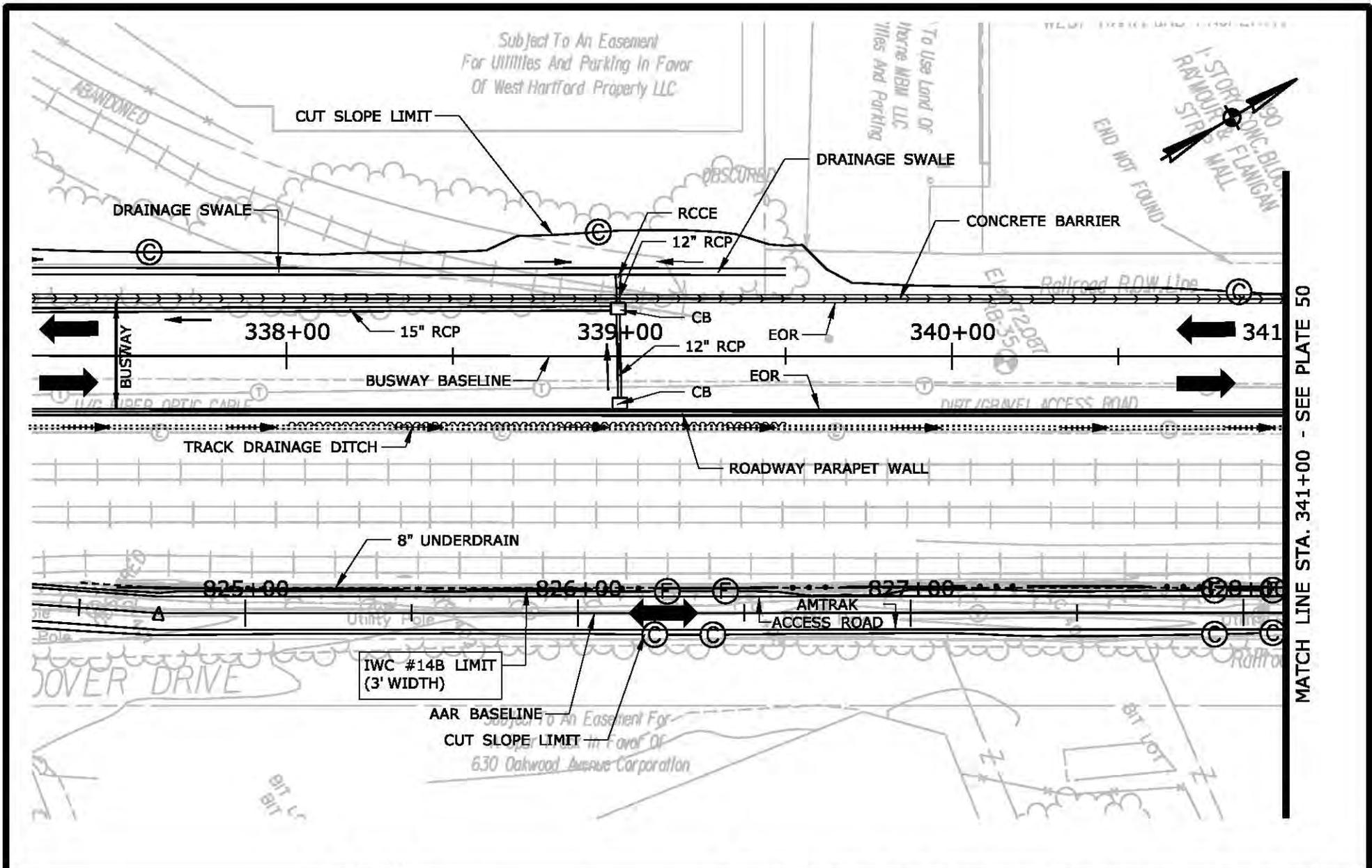
<b>IMPACT SUMMARY</b>	<b>TOTAL IMPACT AREA</b>	STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H052	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION 	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
	 PERMANENT WETLAND #19 IMPACT	1,077 S.F.			MICHAEL BAKER ENGINEERING



<b>IMPACT SUMMARY</b>	<b>TOTAL IMPACT AREA</b>	STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H052	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	 <b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
	 PERMANENT WETLAND #20 IMPACT	2,381 S.F.			 SCALE 1" = 40' 40 20 0 40

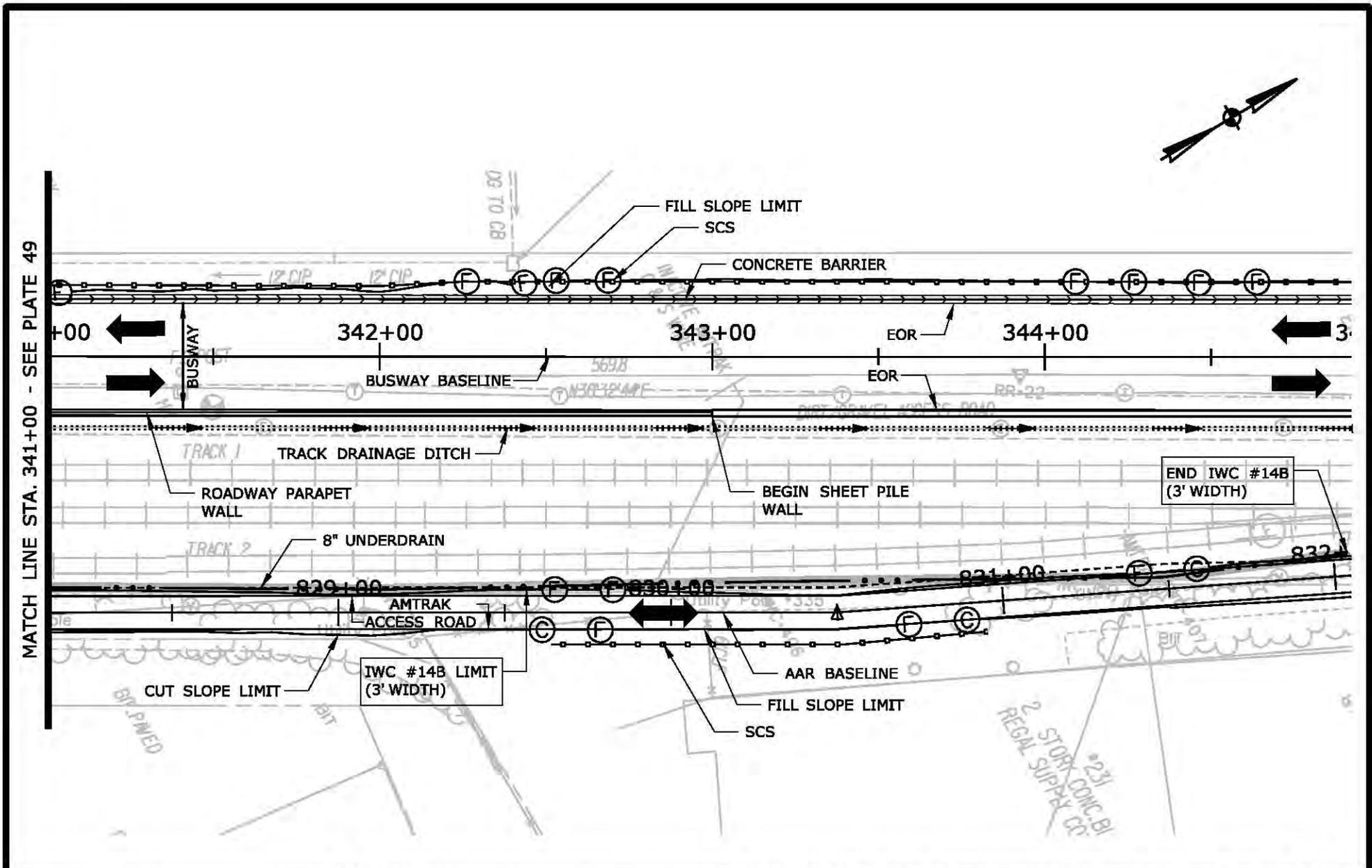


<b>IMPACT SUMMARY</b>  PERMANENT WETLAND #30 IMPACT	<b>TOTAL IMPACT AREA</b> 4,068 S.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H046/H025/H052	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	 <b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
					<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES

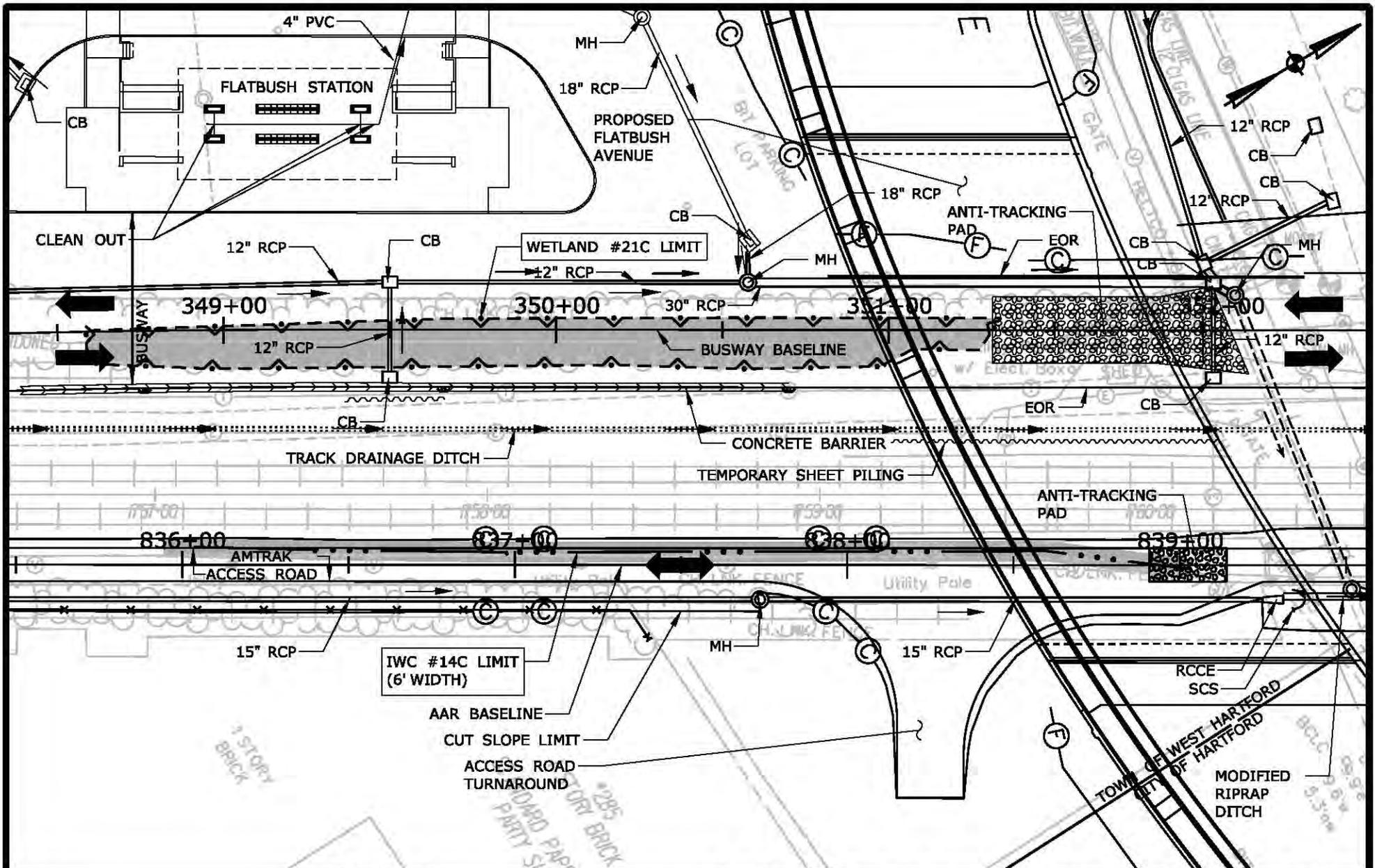


MATCH LINE STA. 341+00 - SEE PLATE 50

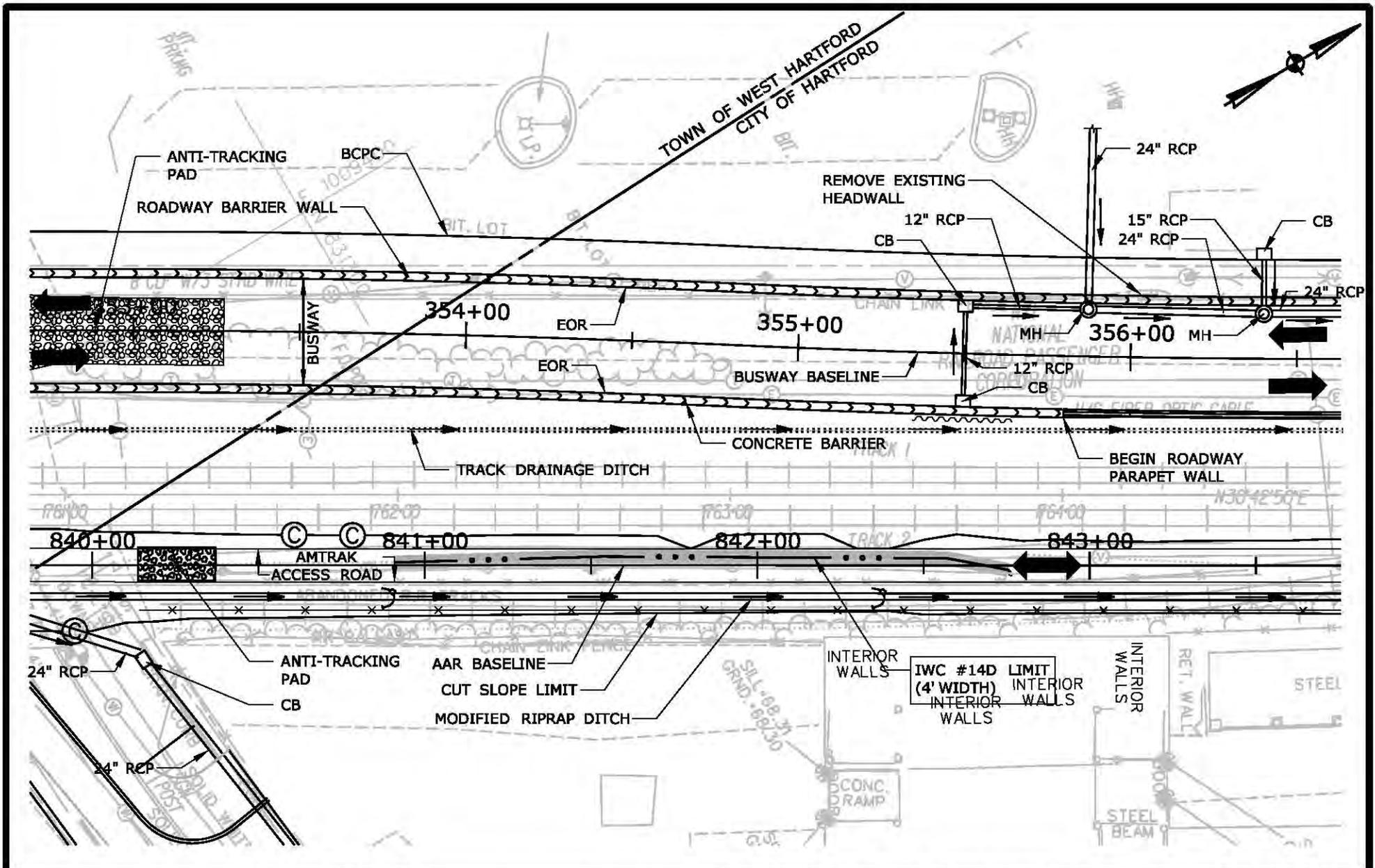
<b>LEGEND</b>	<b>TOTAL IMPACT AREA</b>	STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	<b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
	PERMANENT IWC #14B IMPACT	742 L.F.			 SCALE 1" = 40' 40 20 0 40



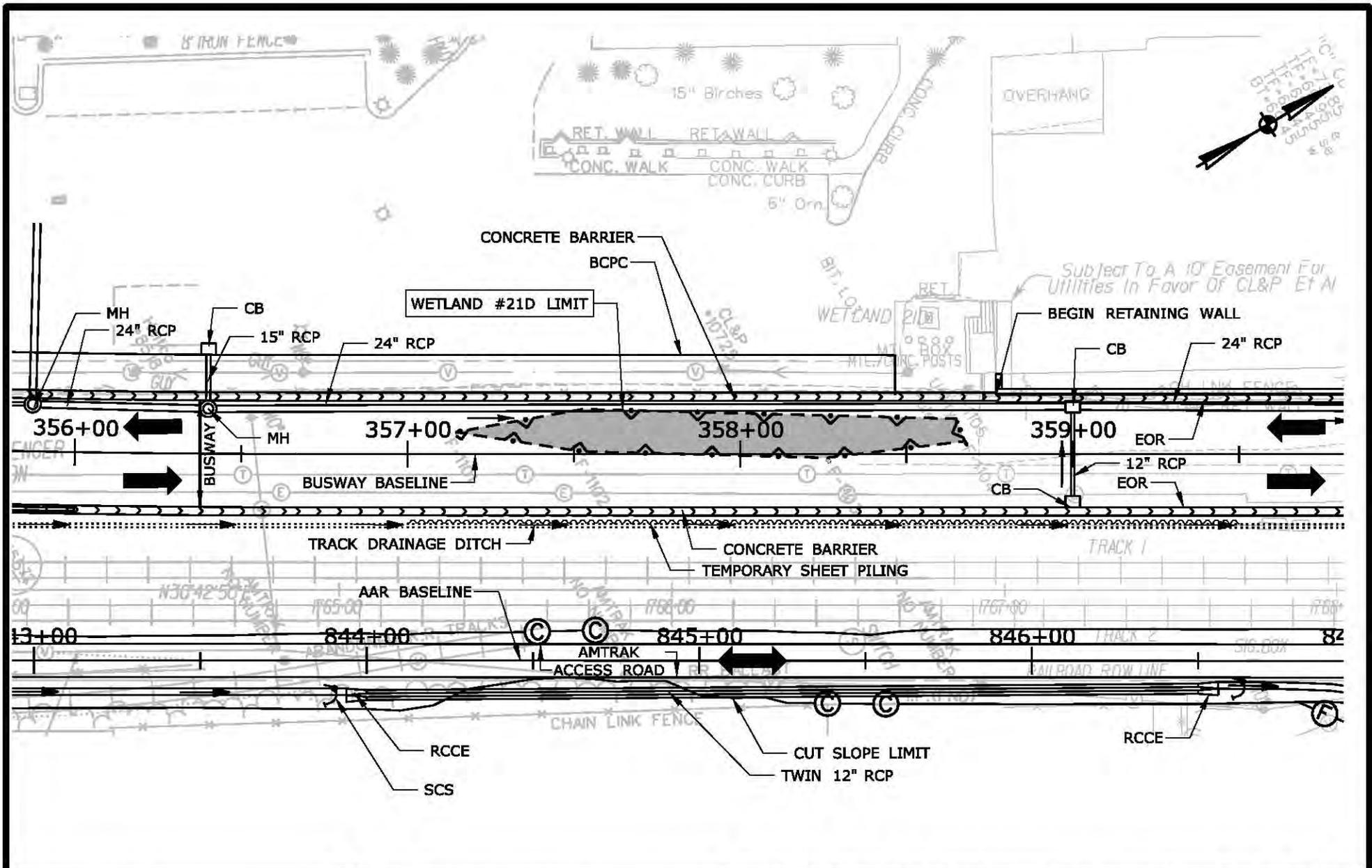
<b>IMPACT SUMMARY</b> PERMANENT IWC #14B IMPACT	<b>TOTAL IMPACT AREA</b> 742 L.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
		SCALE 1" = 40' 			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES



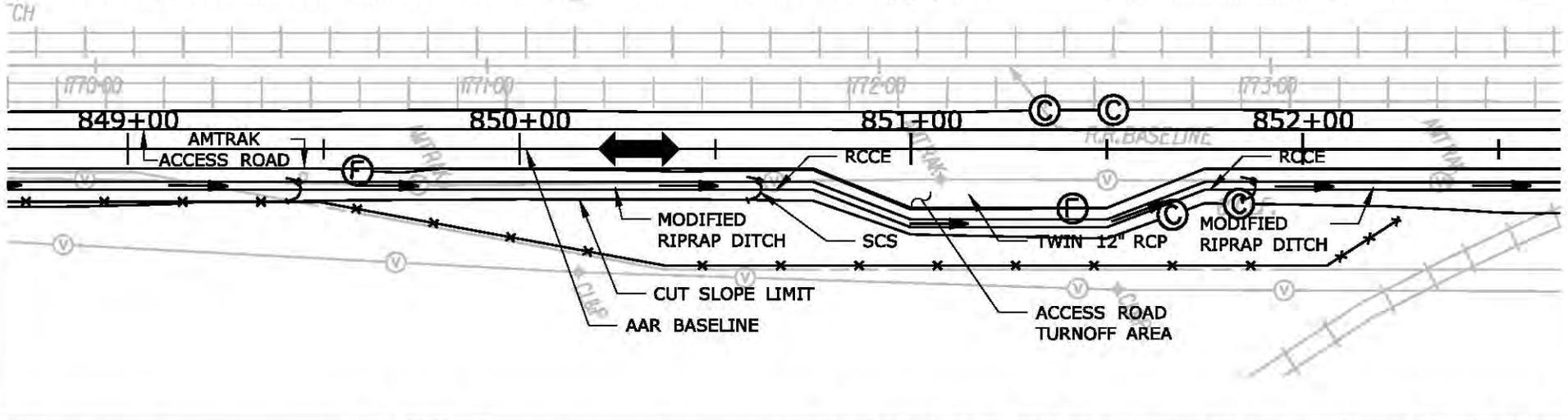
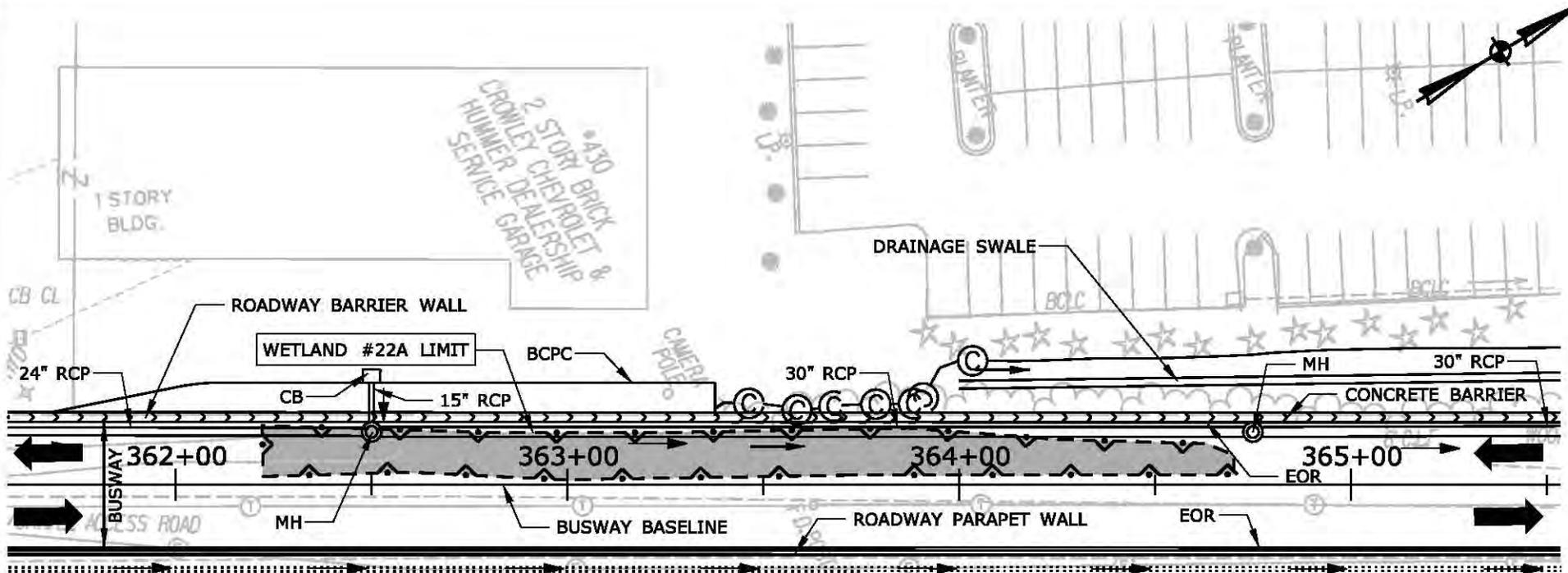
<b>LEGEND</b>	<b>TOTAL IMPACT AREA</b>	STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H052	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	 <b>OFFICE OF ENGINEERING</b>	<b>DATE:</b> FEBRUARY 2011
	 PERMANENT WETLAND #21C IMPACT				
 PERMANENT IWC #14C IMPACT	309 L.F.				



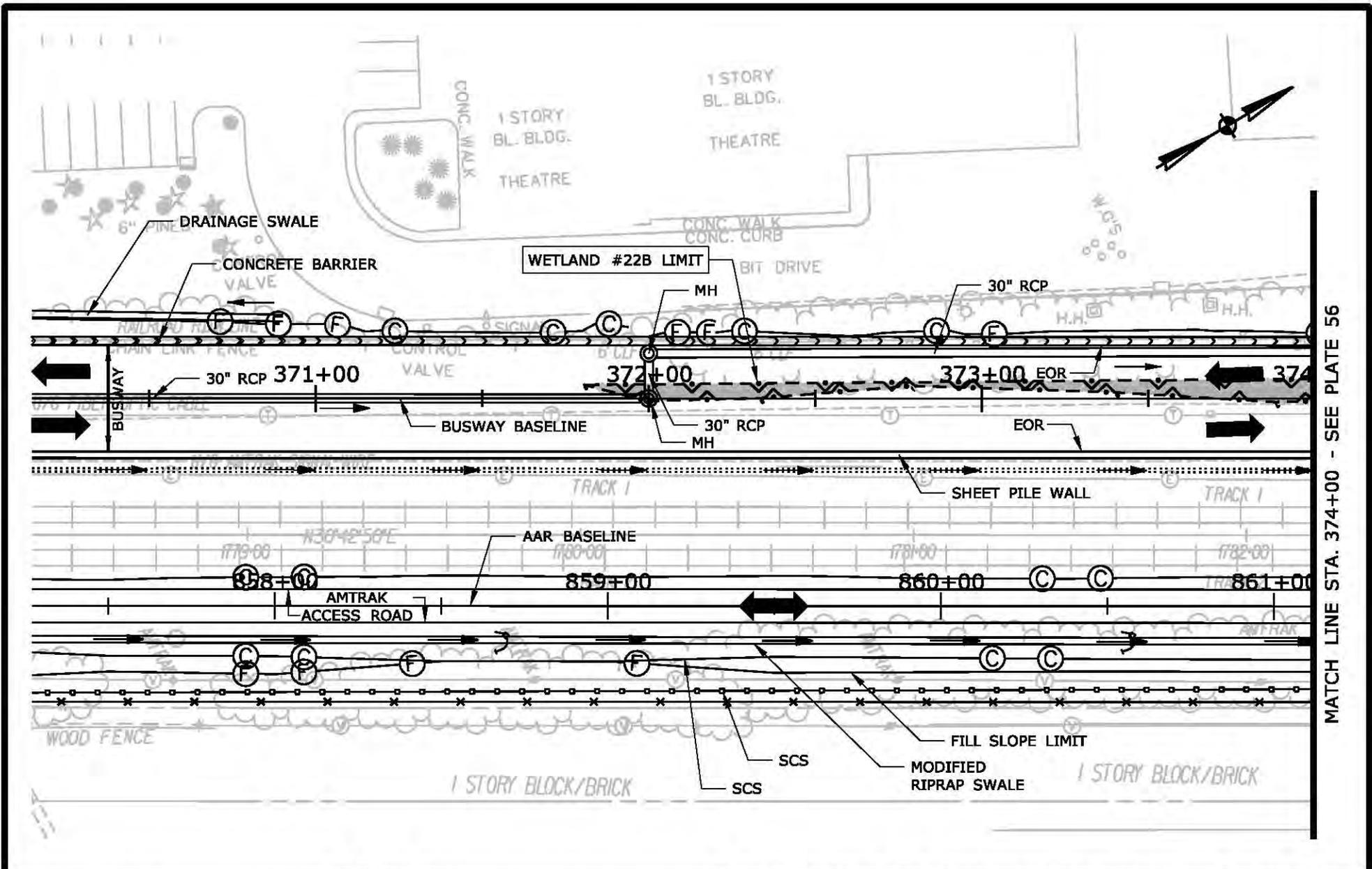
<b>IMPACT SUMMARY</b> PERMANENT IWC #14D IMPACT	<b>TOTAL IMPACT AREA</b> 185 L.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	<b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
		SCALE 1" = 40' 			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES



<b>IMPACT SUMMARY</b> PERMANENT WETLAND #21D IMPACT	<b>TOTAL IMPACT AREA</b> 1,570 S.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
		SCALE 1" = 40' 			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES

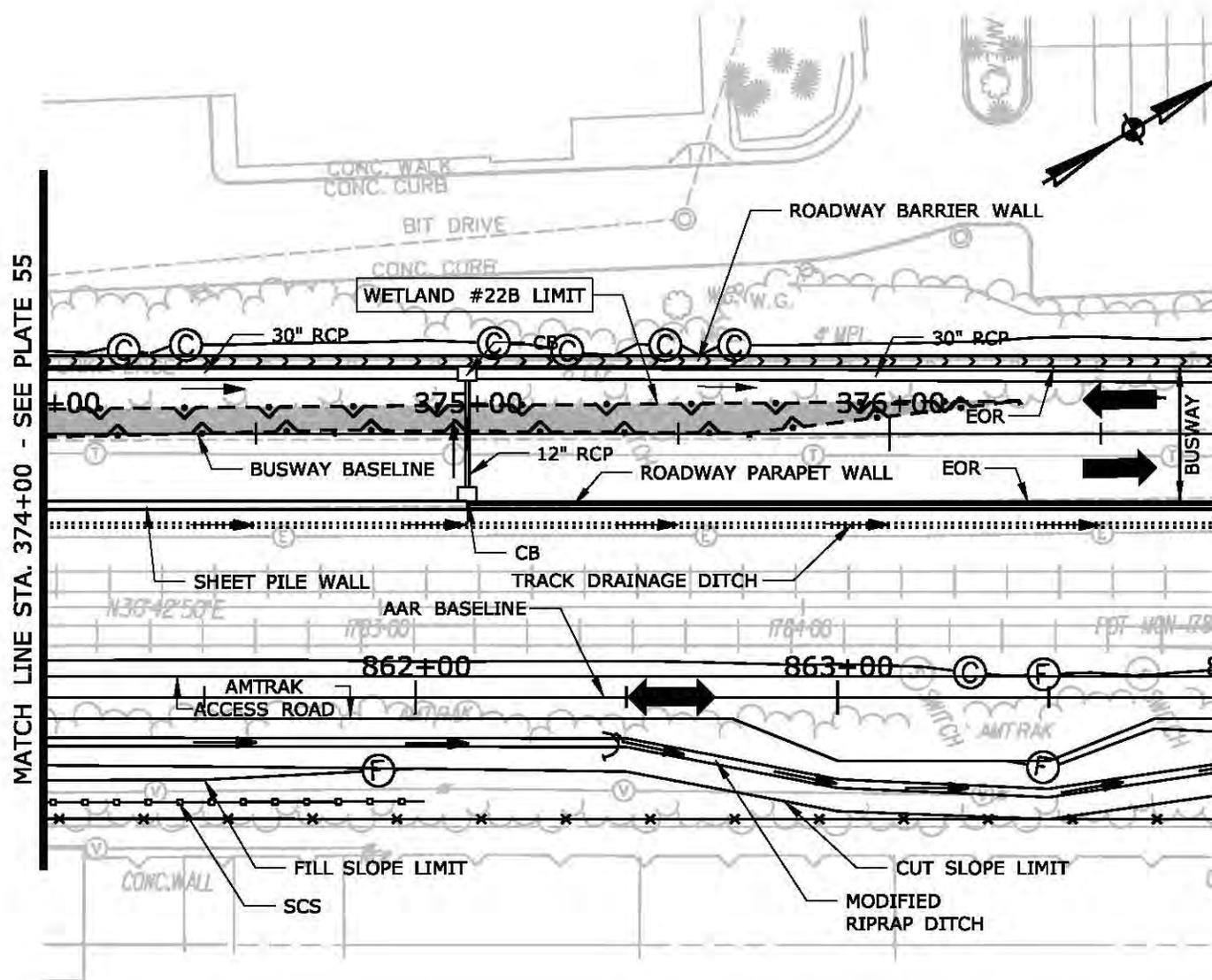


<b>IMPACT SUMMARY</b> PERMANENT WETLAND #22A IMPACT	<b>TOTAL IMPACT AREA</b> 2,691 S.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
		SCALE 1" = 40'			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES

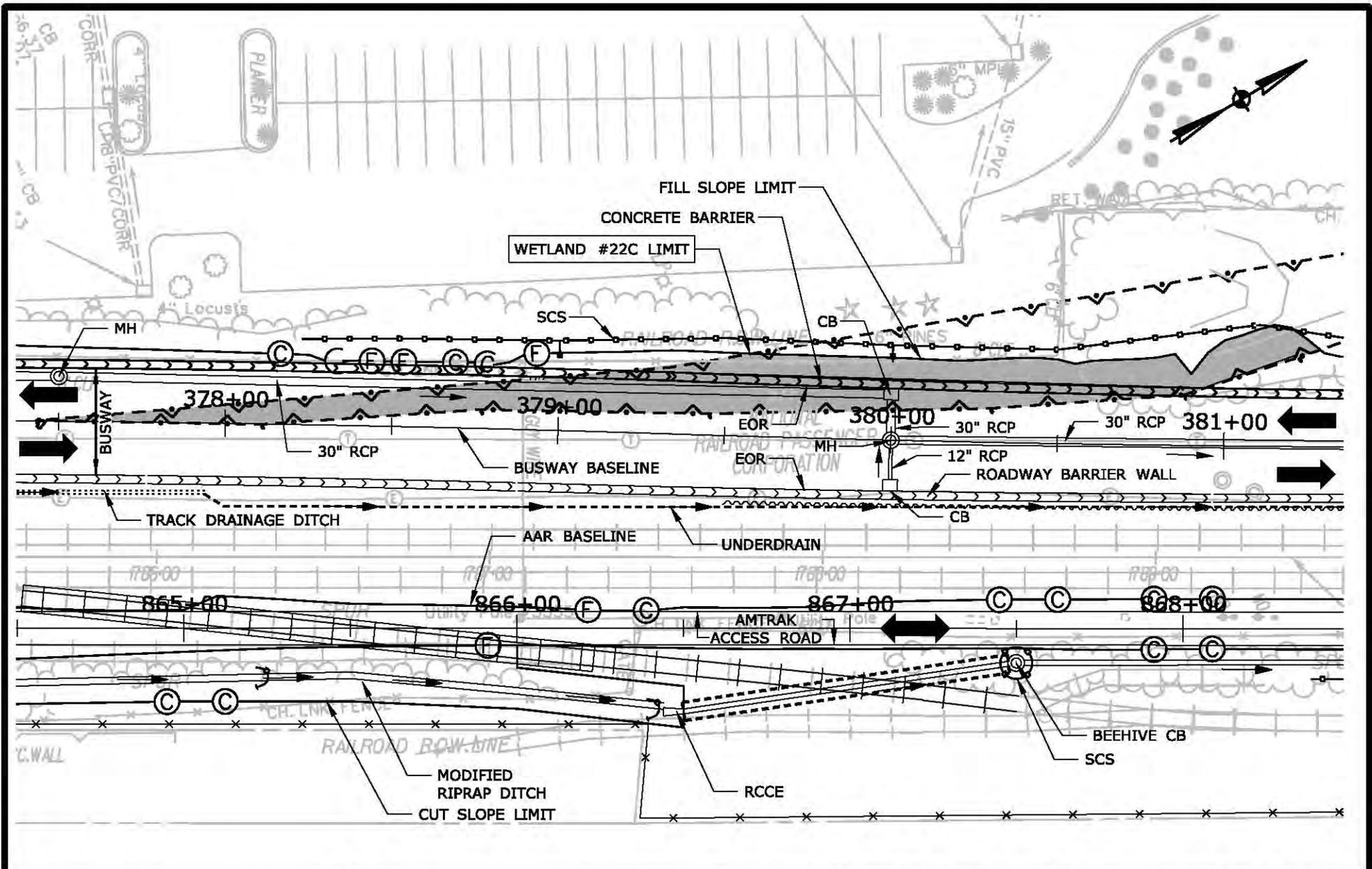


MATCH LINE STA. 374+00 - SEE PLATE 56

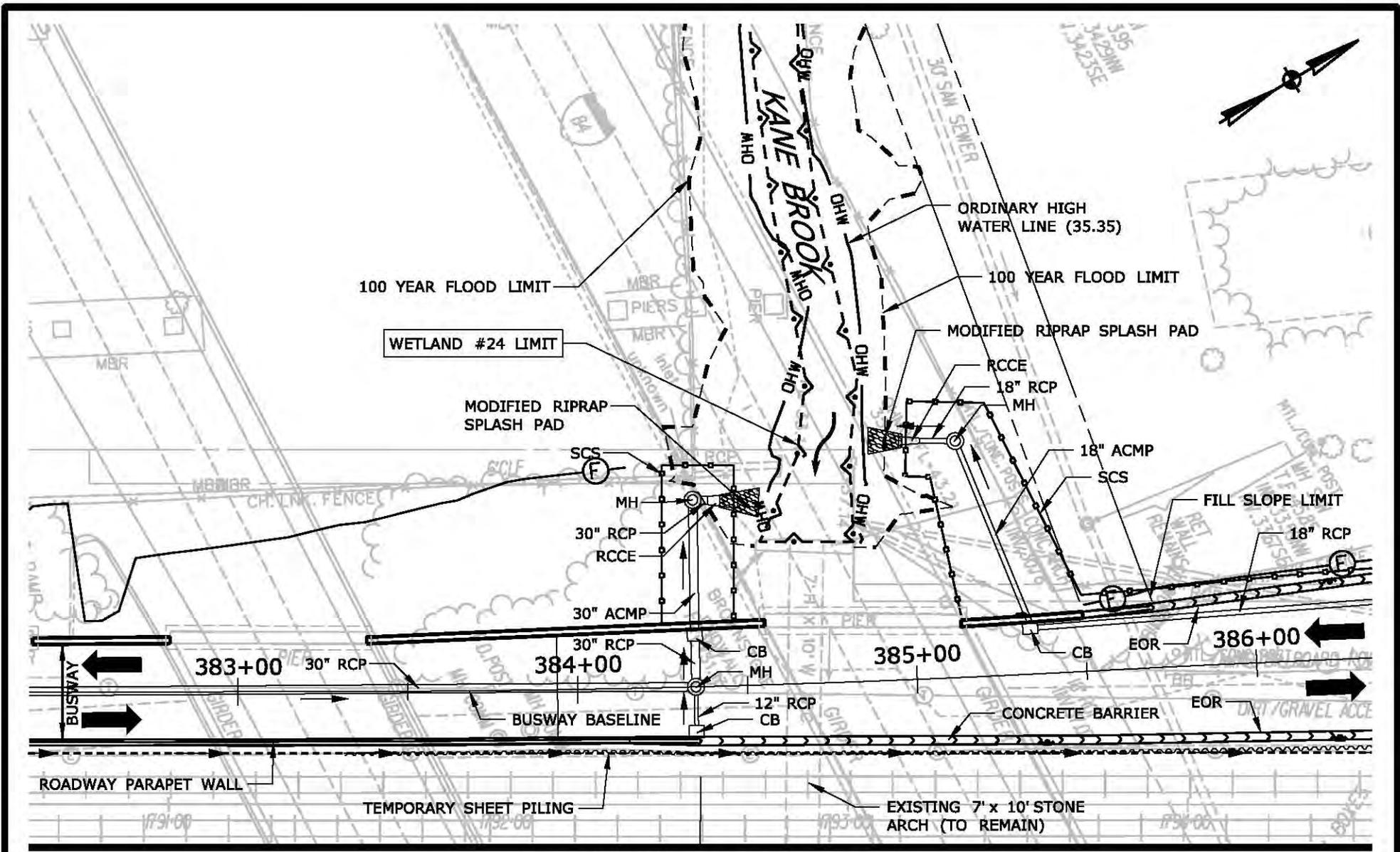
<b>IMPACT SUMMARY</b> PERMANENT WETLAND #22B IMPACT	<b>TOTAL IMPACT AREA</b> 2,080 S.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	<b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
					<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES



<b>IMPACT SUMMARY</b>	<b>TOTAL IMPACT AREA</b>	STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H052	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION 	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
	 PERMANENT WETLAND #22B IMPACT	2,080 S.F.			NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES



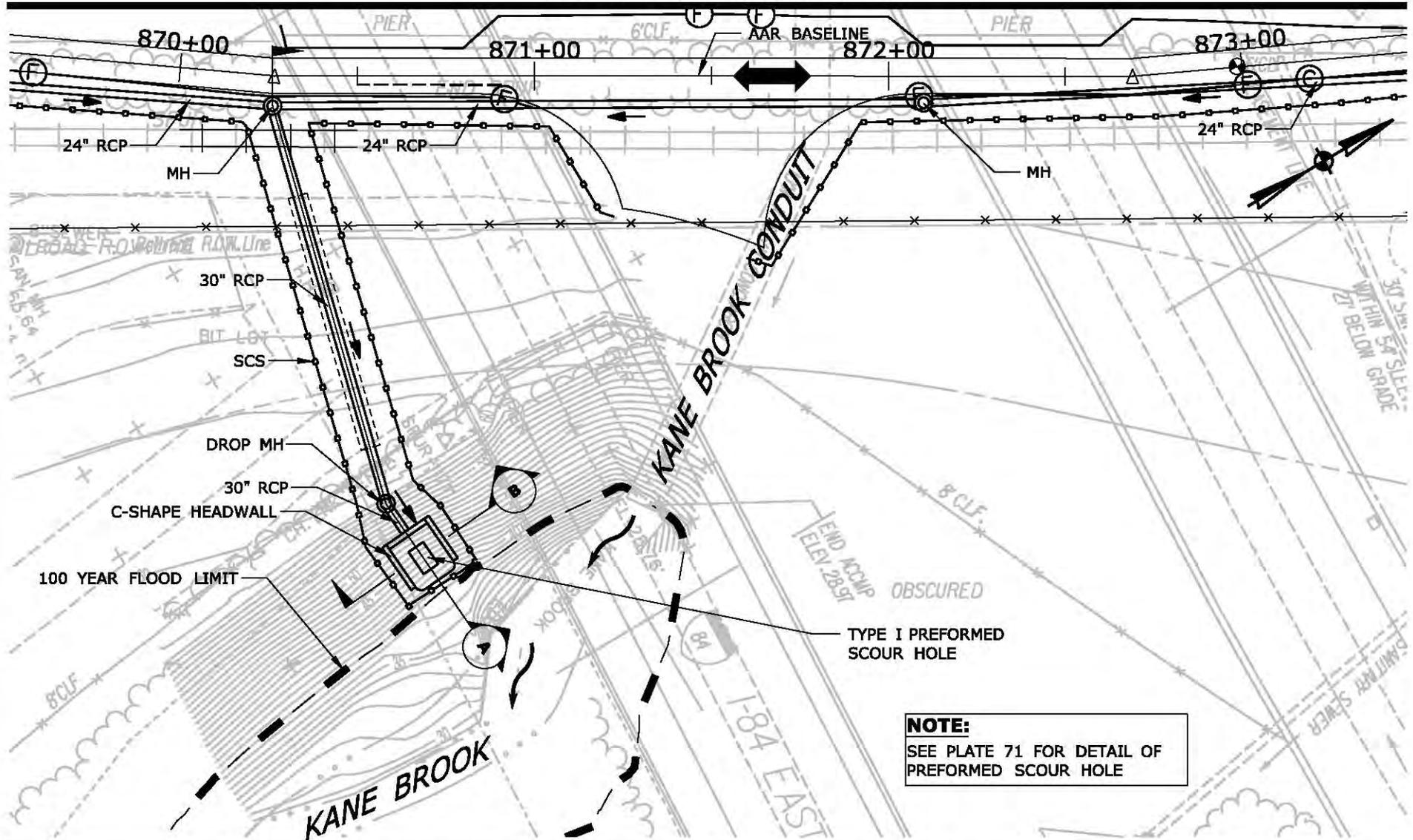
<b>IMPACT SUMMARY</b> PERMANENT WETLAND #22C IMPACT	<b>TOTAL IMPACT AREA</b> 4,013 S.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	<b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
		SCALE 1" = 40' 40 20 0 40			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES



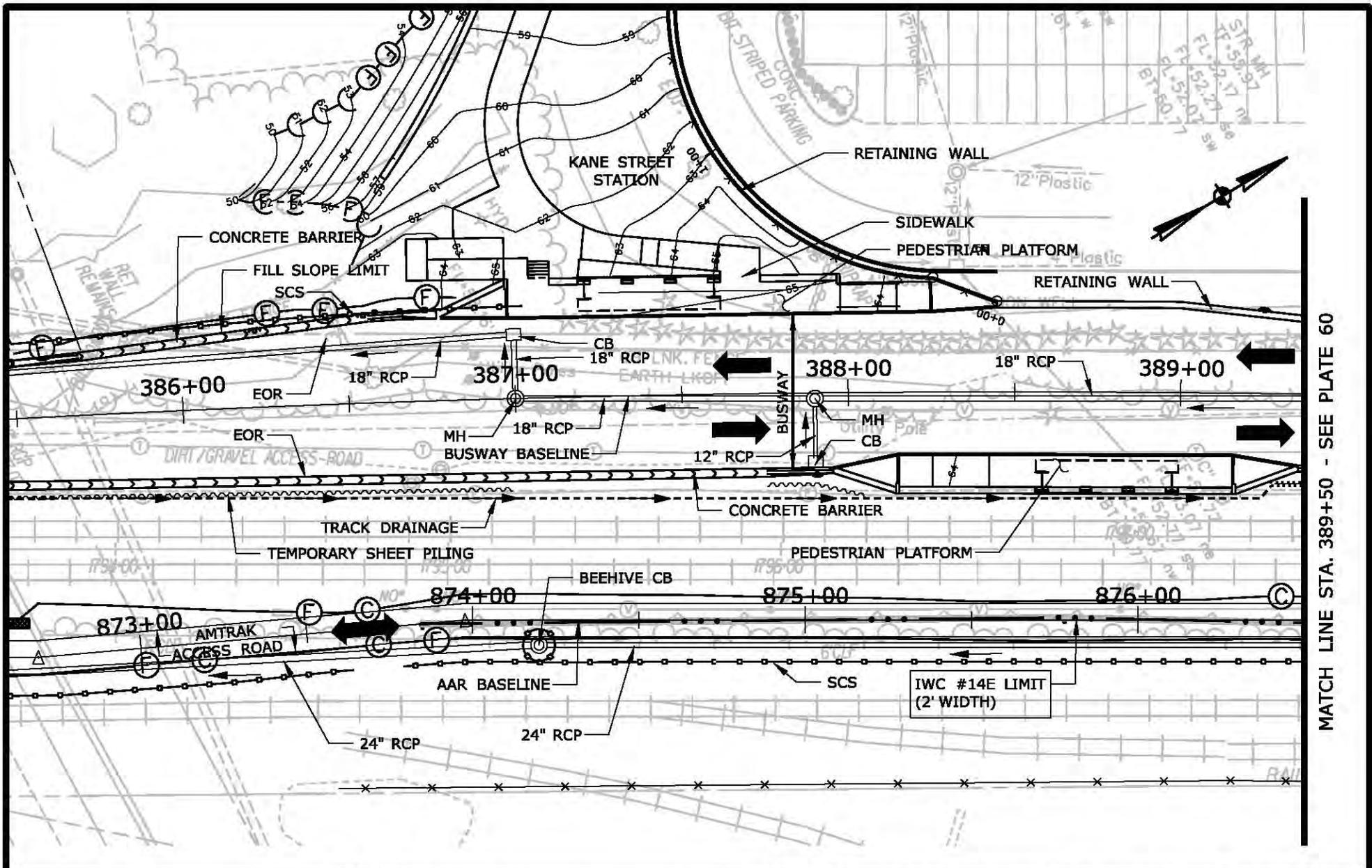
MATCH LINE - SEE PLATE 58A

<p><b>IMPACT SUMMARY</b></p>	<p><b>TOTAL IMPACT AREA</b></p>	<p>STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H052</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</p>	<p>OFFICE OF ENGINEERING</p>	<p>DATE: FEBRUARY 2011</p>
<p><b>NO WETLAND IMPACTS</b></p>		<p>SCALE 1" = 40'</p>	<p>NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES</p>	<p>MICHAEL BAKER ENGINEERING</p>	<p>PLATE NO. 58</p>

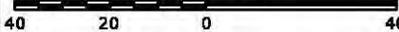
MATCH LINE - SEE PLATE 58

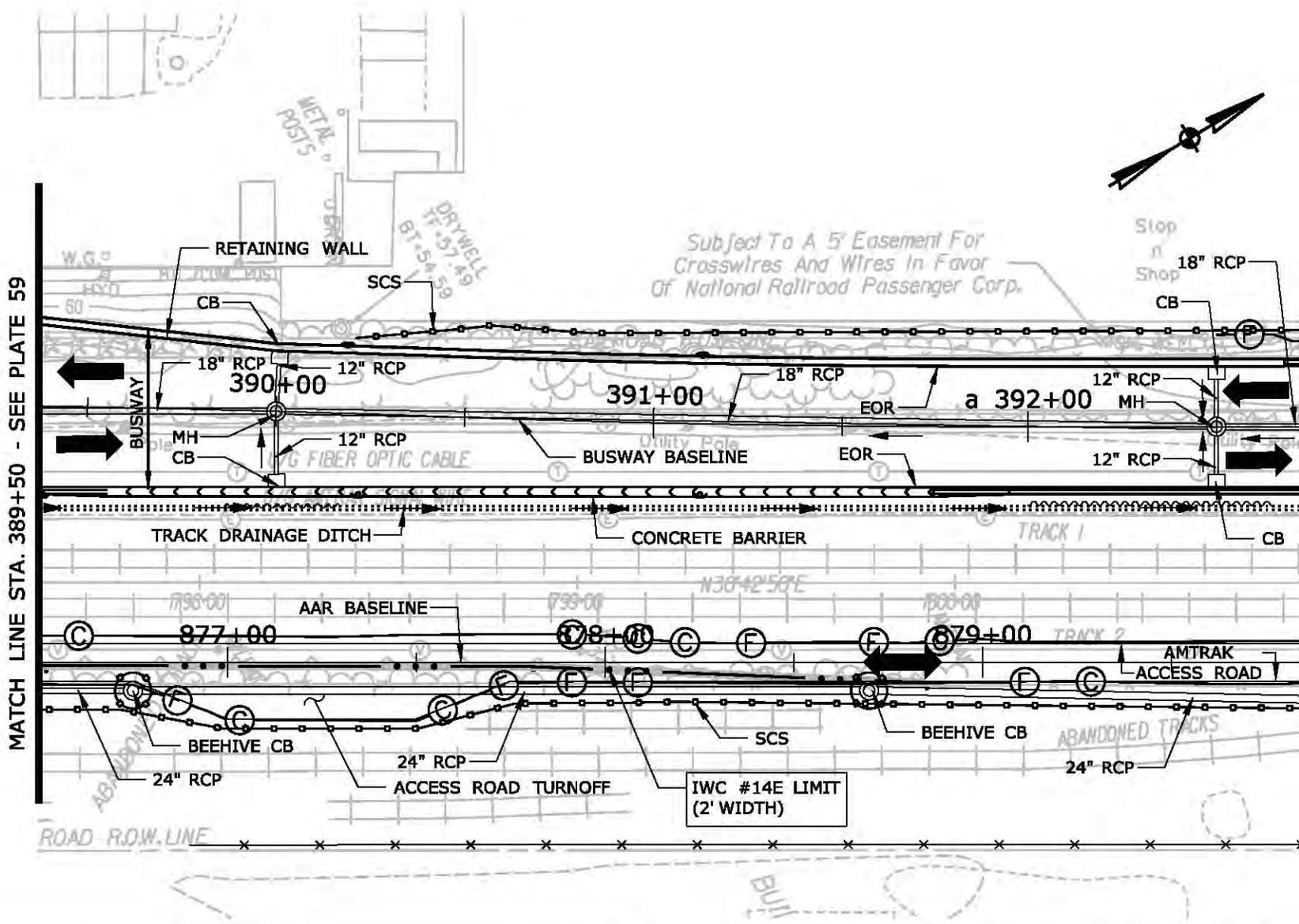


<p><b>IMPACT SUMMARY</b></p>	<p><b>TOTAL IMPACT AREA</b></p>	<p>STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H052</p>	<p> <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION</p>	<p> OFFICE OF ENGINEERING</p>	<p>DATE: FEBRUARY 2011</p>
<p><b>NO WETLAND IMPACTS</b></p>		<p>SCALE 1" = 40'</p> 	<p><b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES</p>	<p>MICHAEL BAKER ENGINEERING</p>	<p>PLATE NO. <b>58A</b></p>



MATCH LINE STA. 389+50 - SEE PLATE 60

<p><b>IMPACT SUMMARY</b></p>	<p><b>TOTAL IMPACT AREA</b></p>	<p>STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H039/H052</p>	<p> <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION</p>	<p>OFFICE OF ENGINEERING</p>	<p>DATE: FEBRUARY 2011</p>
<p> PERMANENT IWC #14E IMPACT</p>	<p>501 L.F.</p>	<p>SCALE 1" = 40'</p> 	<p><b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES</p>	<p>MICHAEL BAKER ENGINEERING</p>	<p>PLATE NO. <b>59</b></p>

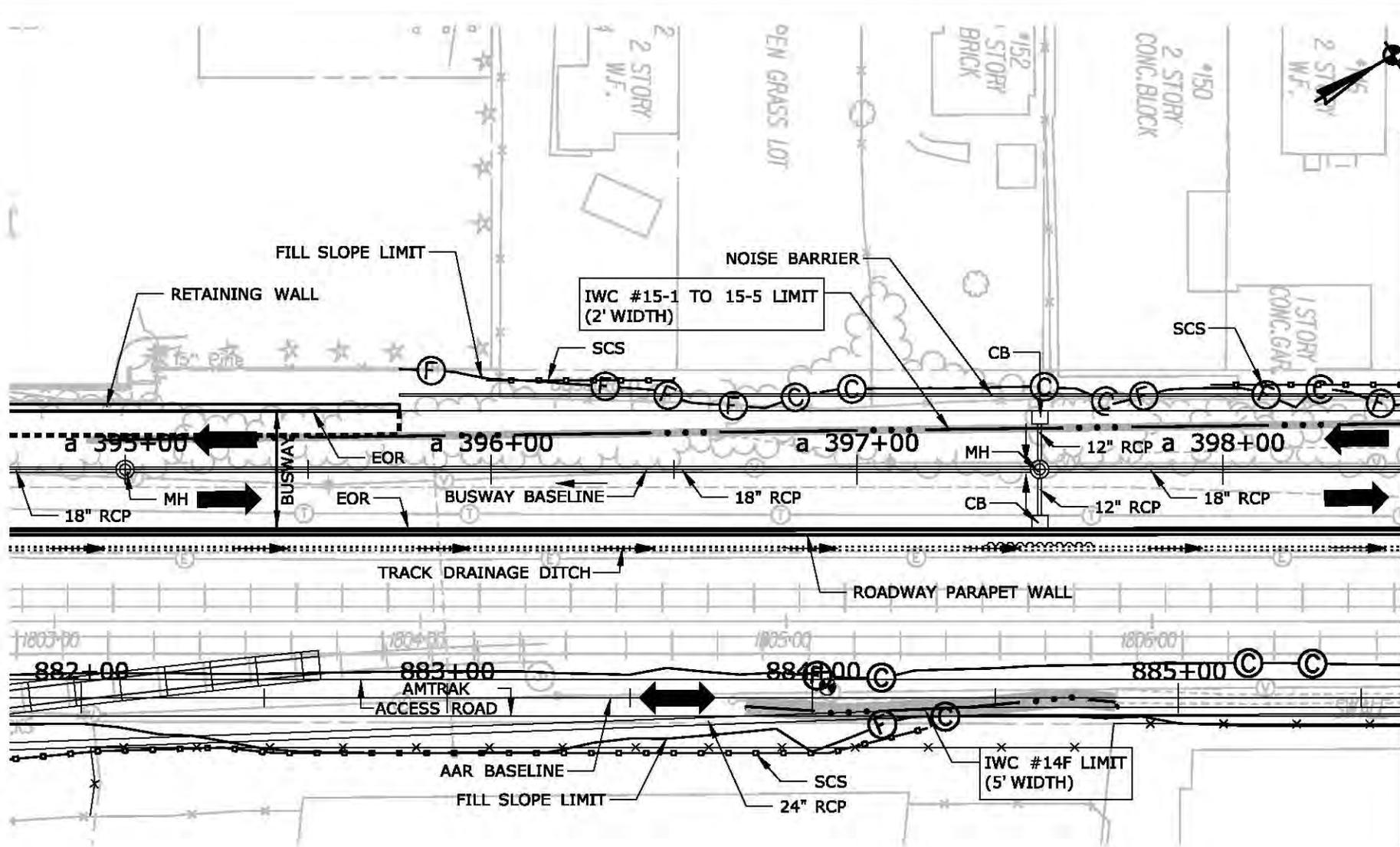


MATCH LINE STA. 389+50 - SEE PLATE 59

*Subject To A 5' Easement For  
Crosswires And Wires In Favor  
Of National Railroad Passenger Corp.*

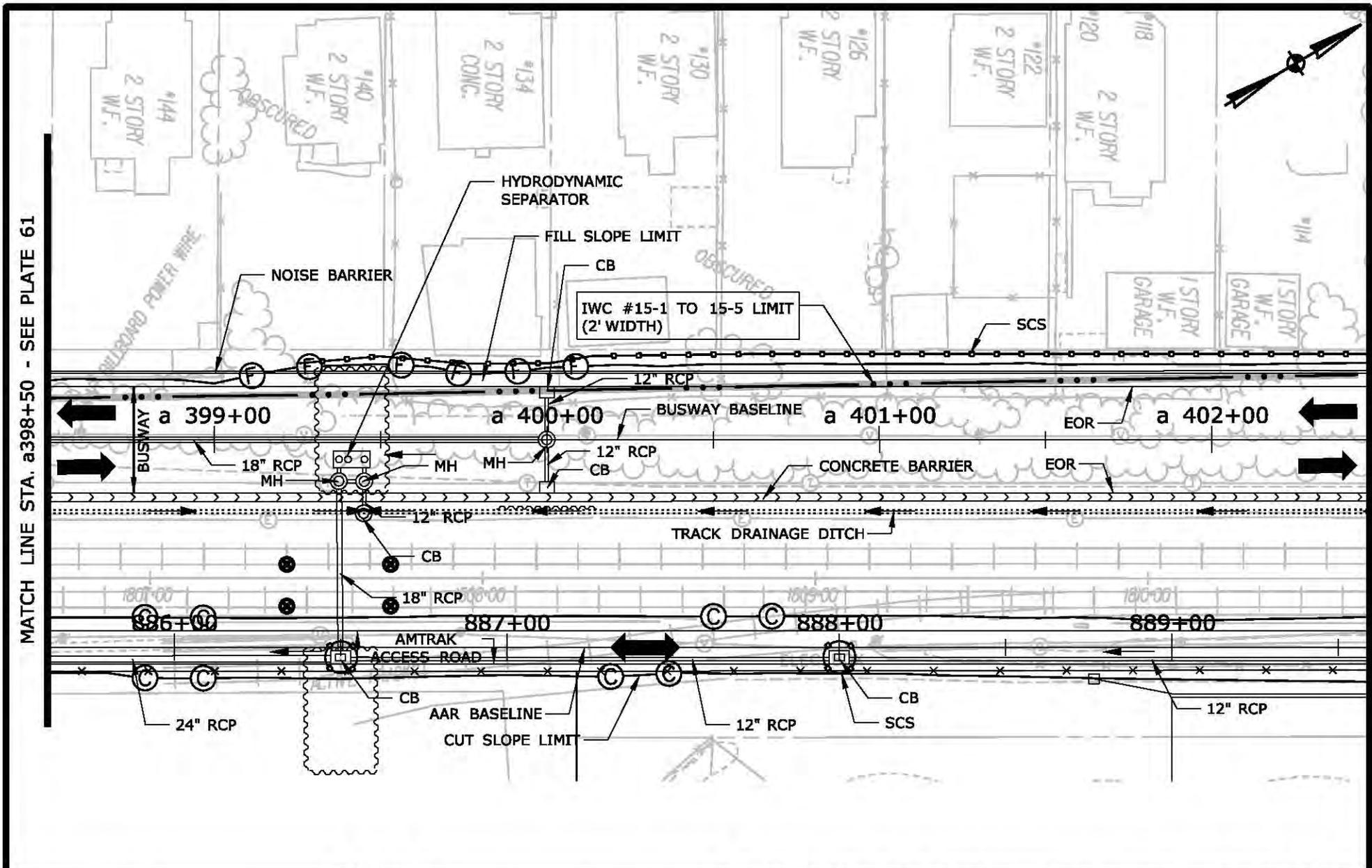
IWC #14E LIMIT  
(2' WIDTH)

<b>IMPACT SUMMARY</b> PERMANENT IWC #14E IMPACT	<b>TOTAL IMPACT AREA</b> 501 L.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H039/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	<b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
		SCALE 1" = 40' 40 20 0 40			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES

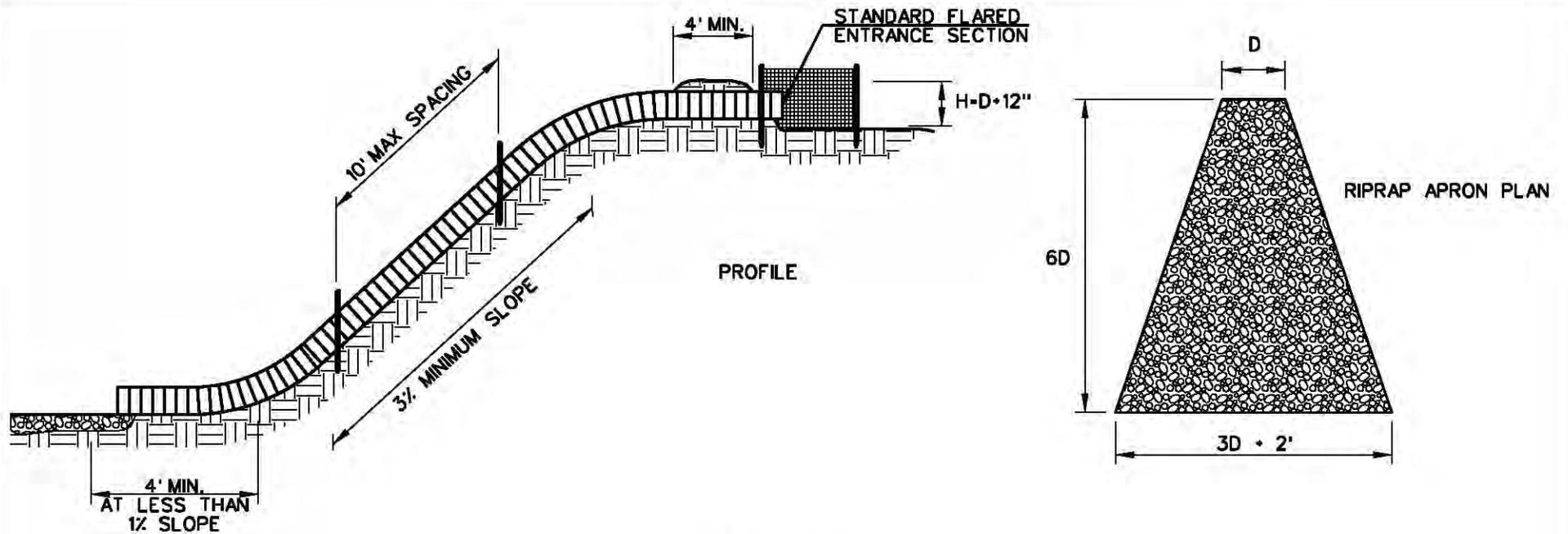


MATCH LINE STA. a398+50 - SEE PLATE 62

<b>IMPACT SUMMARY</b> PERMANENT IWC #15 IMPACT PERMANENT IWC #14F IMPACT	<b>TOTAL IMPACT AREA</b> 754 L.F. 101 L.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
		SCALE 1" = 40' 			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES



<b>IMPACT SUMMARY</b> PERMANENT IWC #15 IMPACT	<b>TOTAL IMPACT AREA</b> 754 L.F.	STATE PROJECT NO.: 171-305 CONTRACT NO.: H025/H052	<b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	<b>OFFICE OF ENGINEERING</b>	DATE: FEBRUARY 2011
		SCALE 1" = 40' 40 20 0 40			<b>NEW BRITAIN - HARTFORD BUSWAY</b> ENVIRONMENTAL IMPACT PLATES



## SLOPE DRAIN

1. THE PIPE SLOPE DRAIN SHALL HAVE A SLOPE OF 3% OR STEEPER.
2. TOP OF THE EARTH DIKE OVER THE INLET PIPE AND ALL DIKES CARRYING WATER TO THE PIPE SHALL BE AT LEAST 1 FOOT HIGHER THAN THE TOP OF THE PIPE.
3. ADD 0.3 FOOT TO DIKE HEIGHT FOR SETTLEMENT.
4. SOIL AROUND AND UNDER THE SLOPE PIPE SHALL BE HAND TEMPERED IN 4-INCH LIFTS.
5. THE PIPE SHALL BE PLASTIC OR CORRUGATED METAL PIPE WITH WATERTIGHT 12-INCH WIDE CONNECTING BANDS OR FLANGE CONNECTIONS.
6. PIPE ANCHORS TO BE PLACED AT 10-FOOT MAXIMUM SPACING.
7. RIPRAP TO BE 6 INCHES IN A LAYER AT LEAST 12 INCHES AND PRESSED INTO THE SOIL.
8. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

STATE PROJECT NO.: 171-305



STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



OFFICE OF  
ENGINEERING

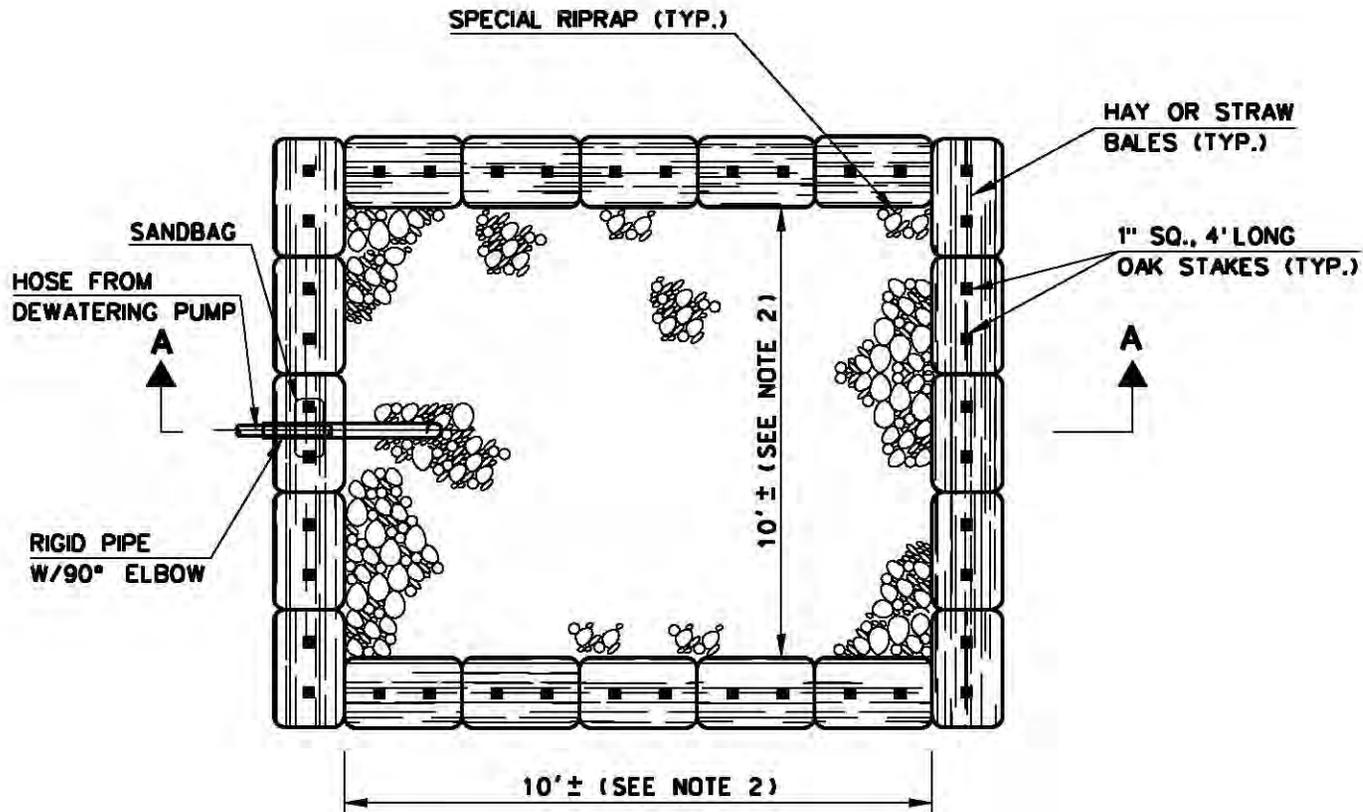
DATE:  
FEBRUARY  
2011

NOT TO SCALE

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL  
BAKER  
ENGINEERING

PLATE NO.  
63



**PLAN**  
**TEMPORARY SEDIMENT BASIN FOR**  
**DEWATERING DISCHARGE**

**BASIN NOTES:**

SEE PLATE 65 FOR NOTES

STATE PROJECT NO.: 171-305



STATE OF CONNECTICUT  
 DEPARTMENT OF TRANSPORTATION



OFFICE OF  
 ENGINEERING

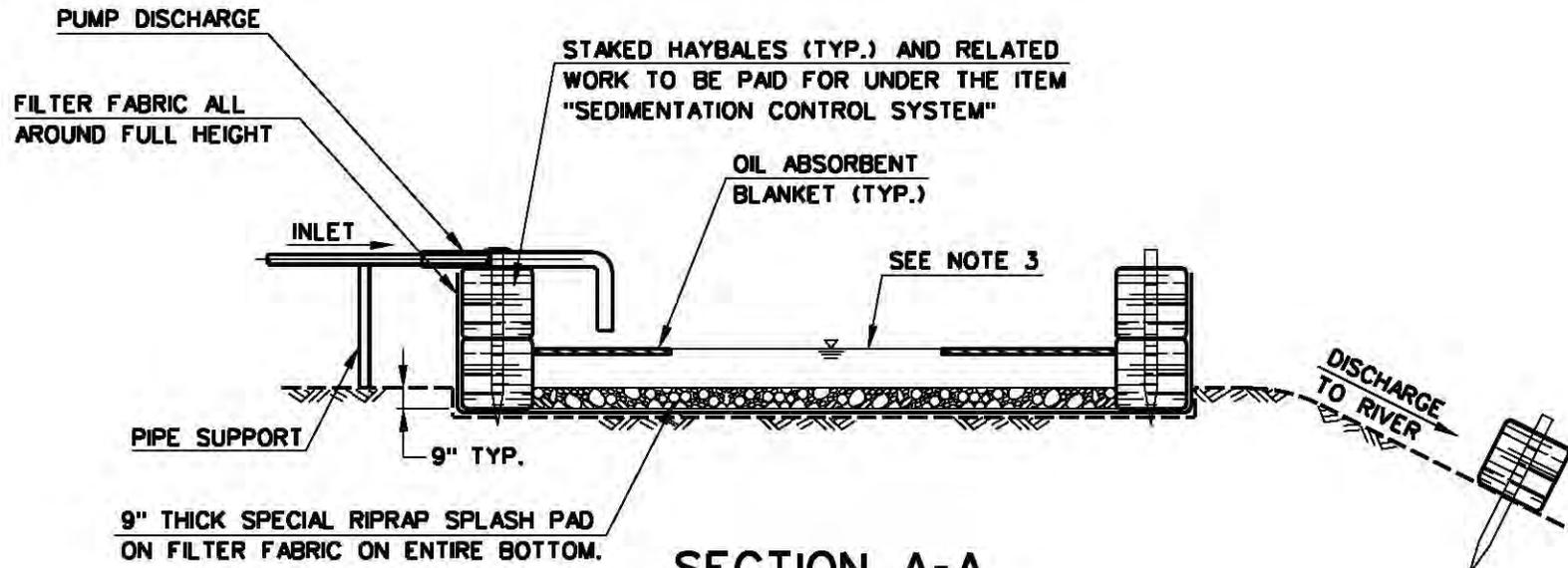
DATE:  
 FEBRUARY  
 2011

NOT TO SCALE

NEW BRITAIN - HARTFORD BUSWAY  
 ENVIRONMENTAL IMPACT PLATES

MICHAEL  
 BAKER  
 ENGINEERING

PLATE NO.  
 64



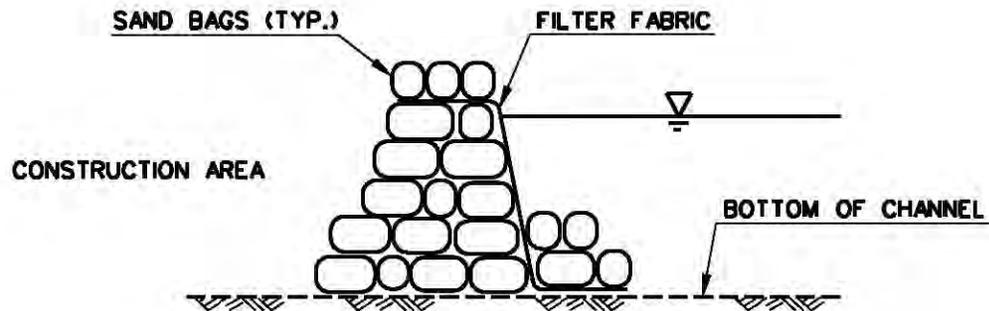
**SECTION A-A**

**TEMPORARY SEDIMENT BASIN FOR DEWATERING DISCHARGE**

**BASIN NOTES:**

1. CONTRACTOR TO BRACE HAY BALES AS REQUIRED FOR STABILITY.
2. DIMENSIONS TO VARY DEPENDENT UPON DE-WATERING RATE.
3. VOLUME OF BASIN IS EQUAL TO THE MAXIMUM VOLUME OF WATER CAPABLE OF BEING PUMPED OVER ONE HOUR. THIS VOLUME CAN BE DETERMINED BY PUMP MANUFACTURER'S SPECIFICATIONS. IF PUMPING VOLUME EXCEEDS BASIN CAPACITY, BASIN MAY BE USED IN TANDEM OR IN TIERS.
4. SPECIAL RIPRAP STONE SHALL CONFORM TO NO. 3 STONE AS SHOWN IN SECTION M.01.01 OF CONNDOT FORM 816.
5. AT THE COMPLETION OF THE WORK, THE BASIN AND ALL RELATED MATERIALS SHALL BE REMOVED FROM THE SITE, AND THE AREA SHALL BE RETURNED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER. THE COST OF THIS WORK WILL BE INCLUDED UNDER EACH ITEM, EXCEPT THE CLEAN-UP WHICH WILL NOT BE MEASURED FOR PAYMENT BUT INCLUDED IN THE GENERAL COST OF THE WORK.
6. THE TEMPORARY SEDIMENT BASIN SHALL BE DESIGNED IN ACCORDANCE WITH 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL

	STATE PROJECT NO.: 171-305	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION	 OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
	NOT TO SCALE	NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES	MICHAEL BAKER ENGINEERING	PLATE NO. 65



NOTE: THE COST OF THIS WORK SHALL BE INCLUDED UNDER THE ITEM "HANDLING WATER". SEE SPECIAL PROVISIONS.

**SUGGESTED FLOW DIVERSION BARRIER DETAIL**

STATE PROJECT NO.: 171-305



STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



OFFICE OF  
ENGINEERING

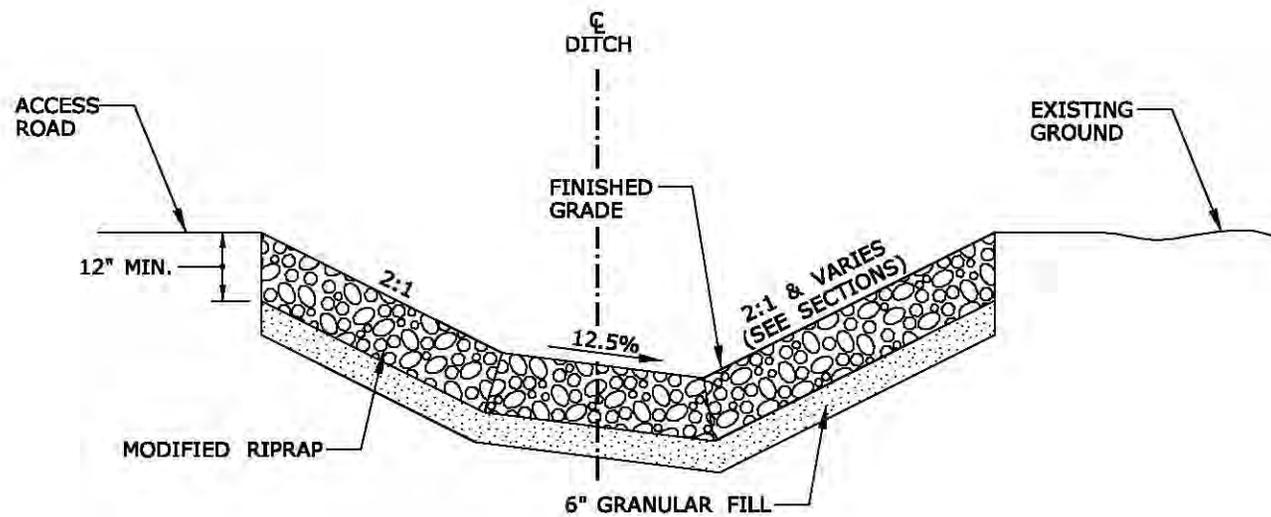
DATE:  
FEBRUARY  
2011

NOT TO SCALE

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL  
BAKER  
ENGINEERING

PLATE NO.  
66



**MODIFIED RIPRAP DITCH  
FOR AMTRAK ACCESS ROAD**

STATE PROJECT NO.: 171-305  
CONTRACT NO: H052



STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



OFFICE OF  
ENGINEERING

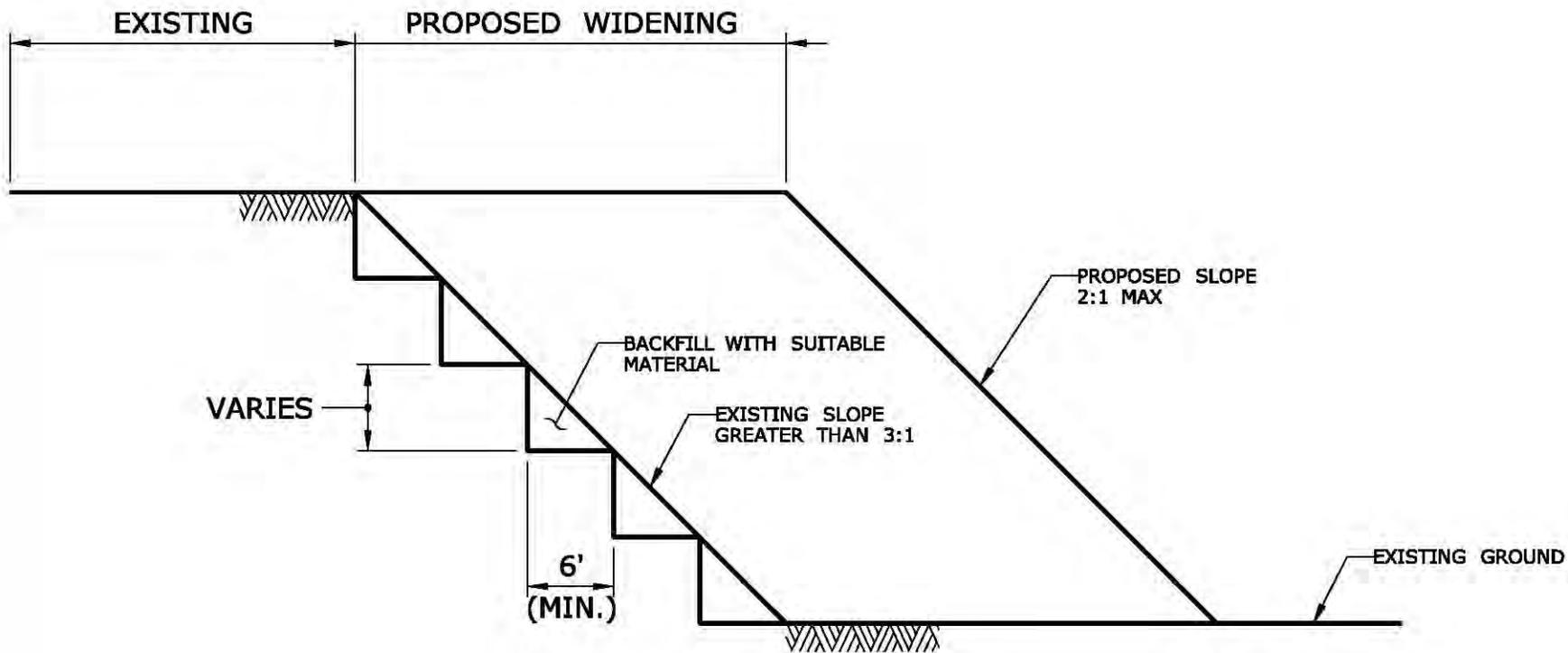
DATE:  
FEBRUARY  
2011

NOT TO SCALE

NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL  
BAKER  
ENGINEERING

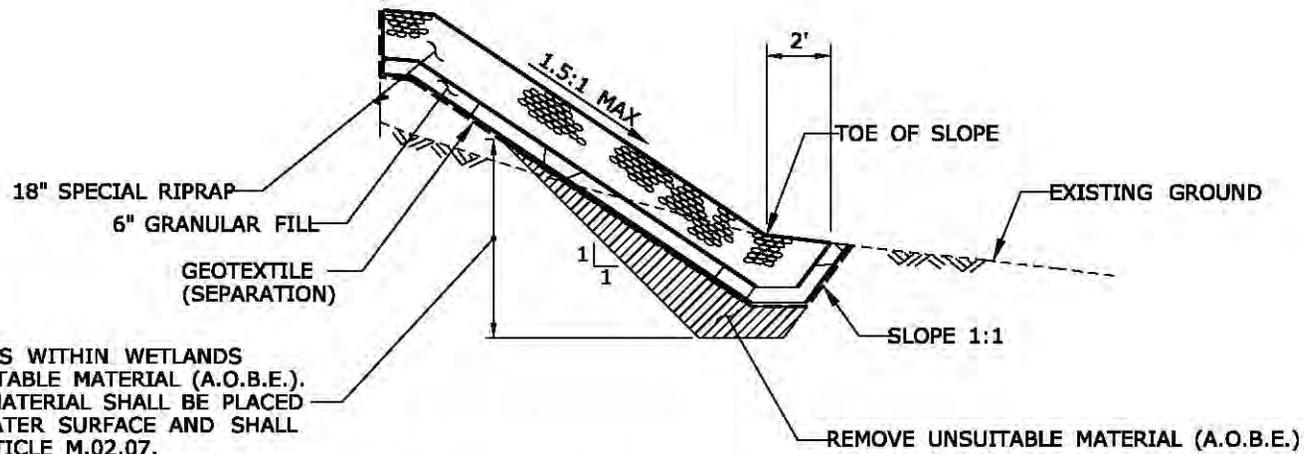
PLATE NO.  
67



**BENCHING DETAIL**

	STATE PROJECT NO.: 171-305	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION 	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
	NOT TO SCALE	NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES	MICHAEL BAKER ENGINEERING	PLATE NO. 68

**PROPOSED CONSTRUCTION**



FOR EMBANKMENTS WITHIN WETLANDS OR OTHER UNSUITABLE MATERIAL (A.O.B.E.), FREE DRAINING MATERIAL SHALL BE PLACED 3' ABOVE FREE WATER SURFACE AND SHALL CONFORM TO ARTICLE M.02.07.

**SPECIAL RIPRAP FOR SLOPE PROTECTION DETAIL**  
**FOR AMTRAK ACCESS ROAD**

STATE PROJECT NO.: 171-305



STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION



OFFICE OF  
ENGINEERING

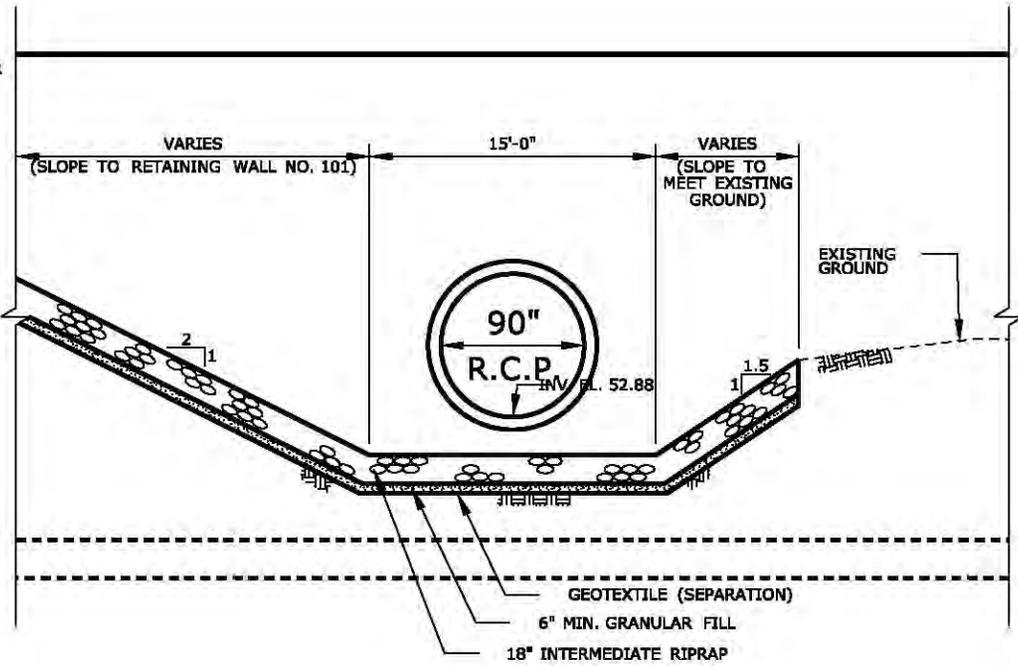
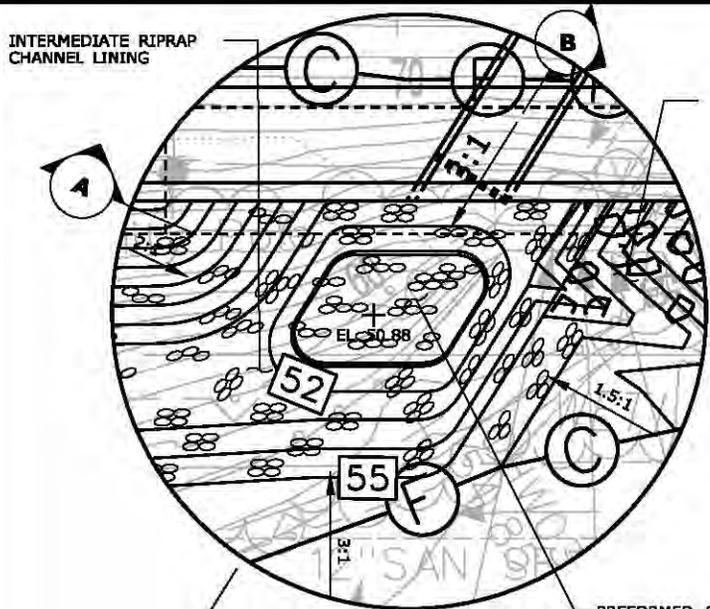
DATE:  
FEBRUARY  
2011

NOT TO SCALE

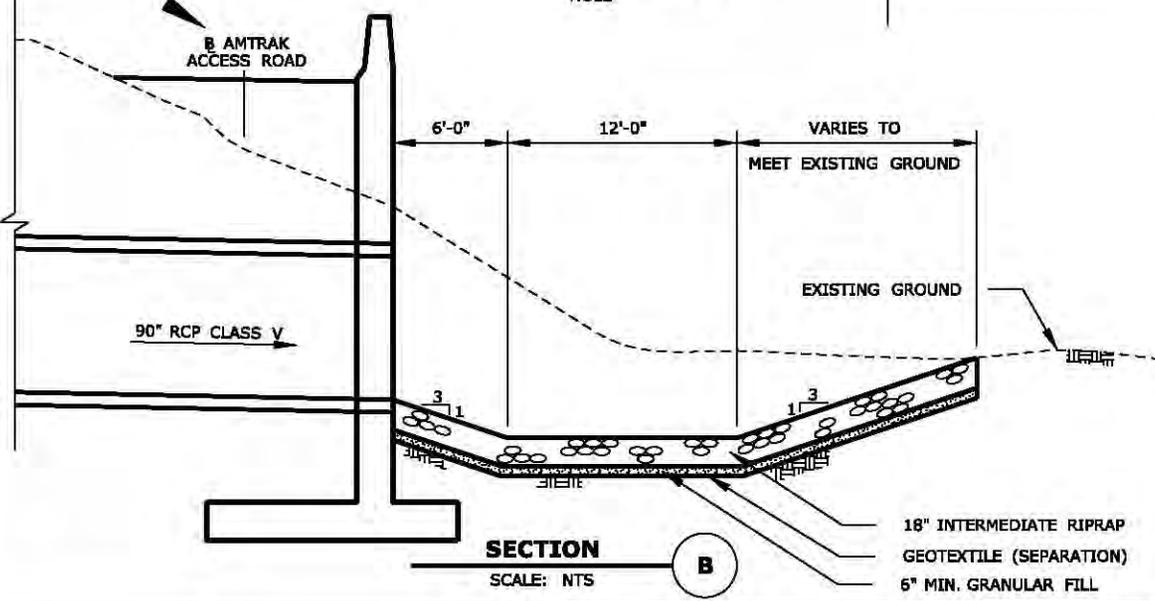
NEW BRITAIN - HARTFORD BUSWAY  
ENVIRONMENTAL IMPACT PLATES

MICHAEL  
BAKER  
ENGINEERING

PLATE NO.  
69



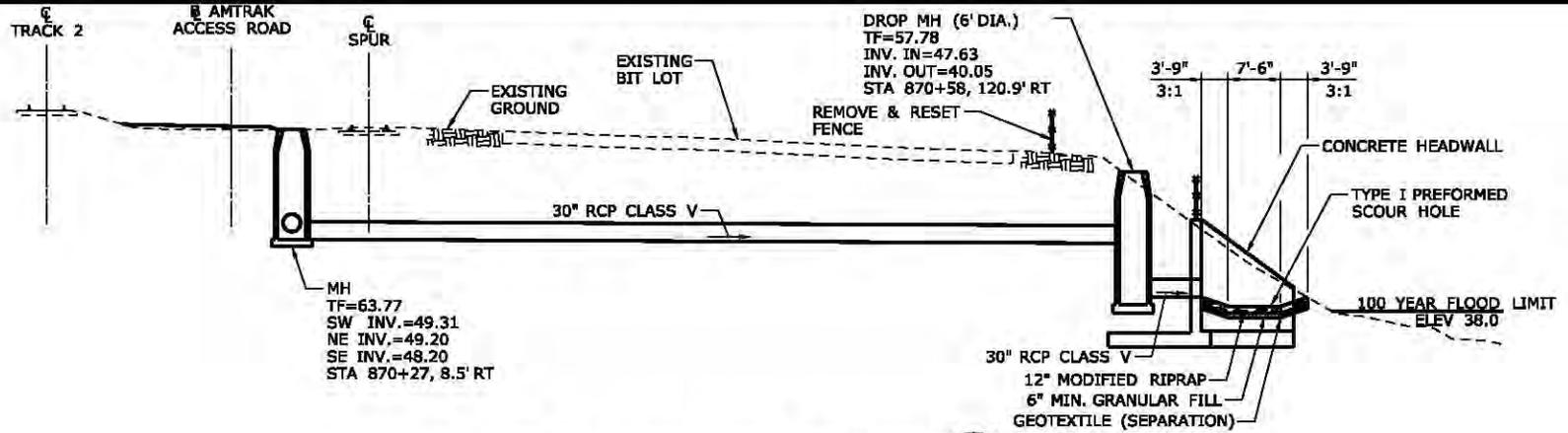
**SECTION A**  
SCALE: NTS



**SECTION B**  
SCALE: NTS

**TYPE I PREFORMED SCOUR HOLE FOR SITE 5 HYDRAULIC CROSSING**

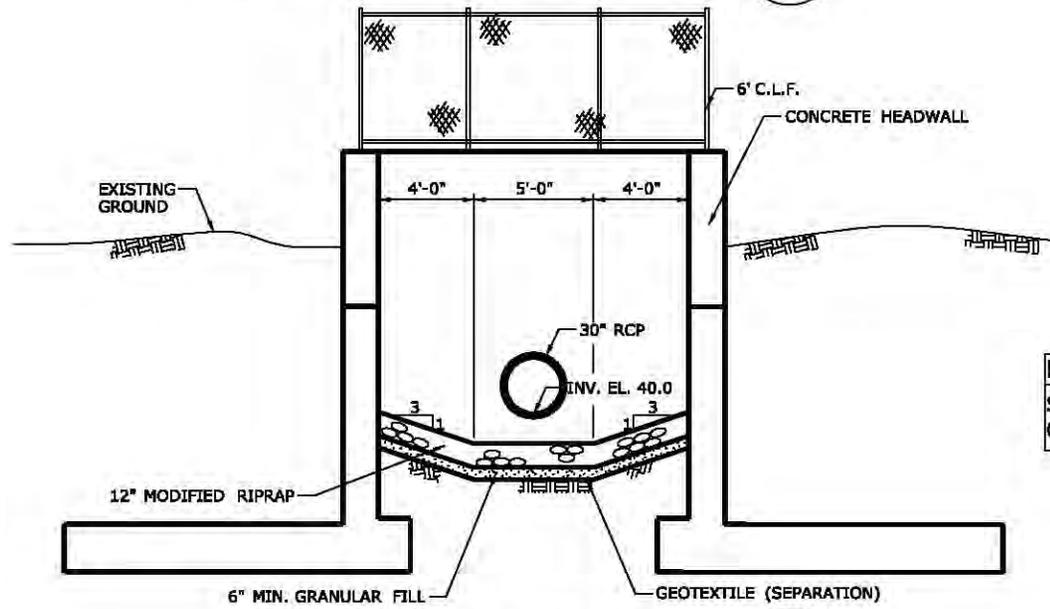
STATE PROJECT NO.: 171-305	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION		OFFICE OF ENGINEERING DATE: FEBRUARY 2011
NOT TO SCALE	NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES	MICHAEL BAKER ENGINEERING	PLATE NO. 70



**OUTFALL TO KANE BROOK SECTION**

SCALE: NTS

**A**



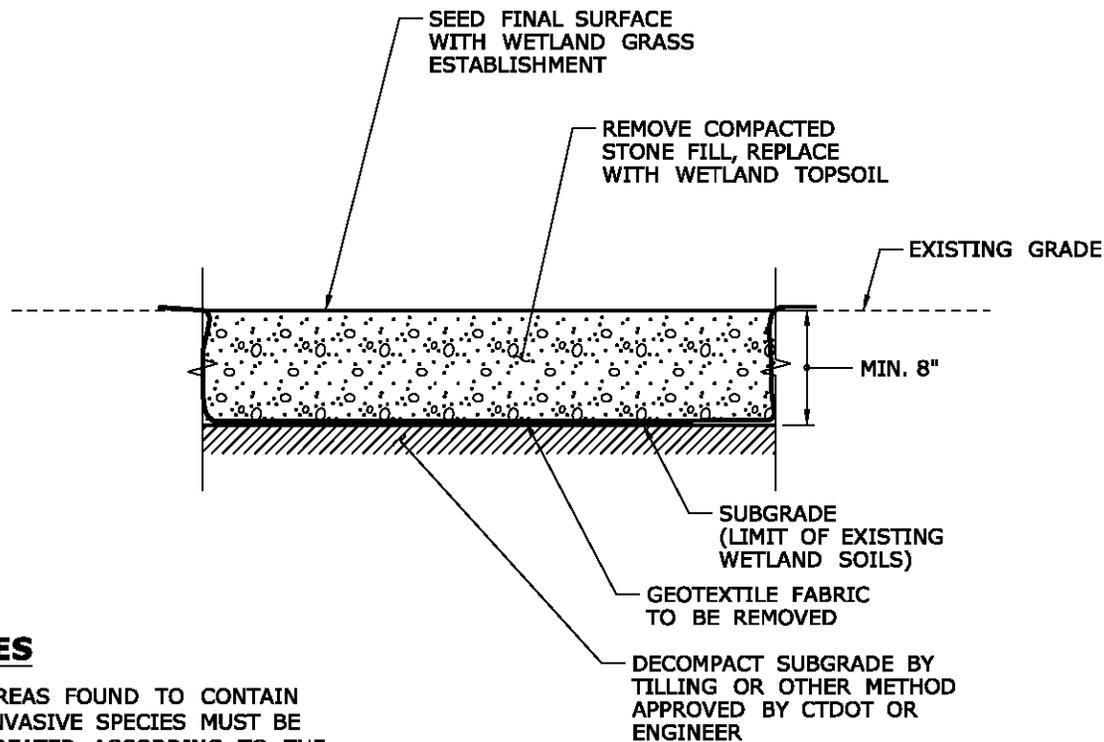
**OUTFALL TO KANE BROOK SECTION**

SCALE: NTS

**B**

**NOTE:**  
SEE PLATE 58A FOR LOCATION  
OF SECTIONS

	STATE PROJECT NO.: 171-305	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION 	OFFICE OF ENGINEERING	DATE: FEBRUARY 2011
	NOT TO SCALE	NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES	MICHAEL BAKER ENGINEERING	PLATE NO. 71



**NOTES**

1. AREAS FOUND TO CONTAIN INVASIVE SPECIES MUST BE TREATED ACCORDING TO THE SPECIAL PROVISIONS AT THE DIRECTION OF CTDOT OFFICE OF ENVIRONMENTAL PLANNING.

**SEQUENCE OF OPERATIONS**

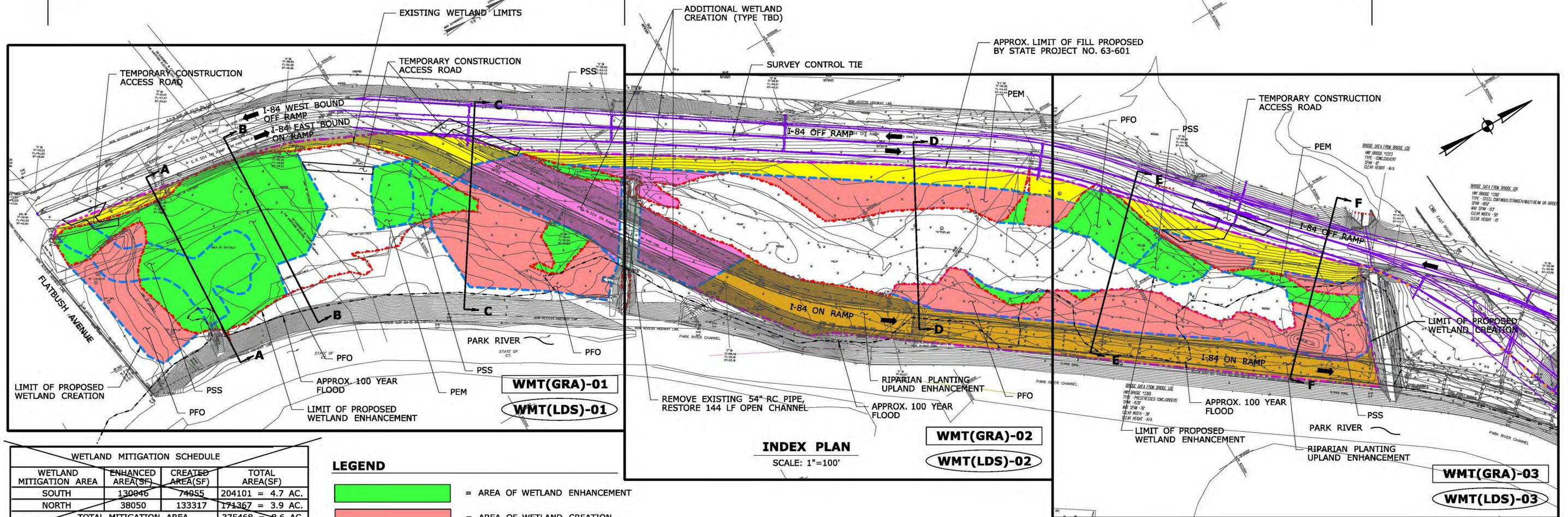
1. REMOVE STONE / GRAVEL USED FOR STAGING AREAS / ACCESS ROADS.
2. DECOMPACT SUBGRADE.
3. PLACE "WETLAND TOPSOIL" FILL MATERIAL PER SPECIAL PROVISION.
4. SEED FINISHED GRADE WITH WETLAND GRASS ESTABLISHMENT MIX.
5. ONCE SEEDING AREA HAS BEEN STABILIZED AND A STAND OF GRASS HAS BEEN ESTABLISHED, THE CONTRACTOR MAY PLANT SHRUB AND TREE SPECIES AT THE DIRECTION OF CTDOT OFFICE OF ENVIRONMENTAL PLANNING.

**TYPICAL WETLAND RESTORATION DETAIL**

	STATE PROJECT NO.: 171-305	 <b>STATE OF CONNECTICUT</b> DEPARTMENT OF TRANSPORTATION 	OFFICE OF ENGINEERING	DATE: APRIL 2011
	NOT TO SCALE	NEW BRITAIN - HARTFORD BUSWAY ENVIRONMENTAL IMPACT PLATES	MICHAEL BAKER ENGINEERING	PLATE NO. 71A

SOUTH MITIGATION AREA

NORTH MITIGATION AREA



INDEX PLAN  
SCALE: 1"=100'

WETLAND MITIGATION SCHEDULE			
WETLAND MITIGATION AREA	ENHANCED AREA(SF)	CREATED AREA(SF)	TOTAL AREA(SF)
SOUTH	130046	74955	204101 = 4.7 AC.
NORTH	38050	133317	171367 = 3.9 AC.
<b>TOTAL MITIGATION AREA</b>			<b>375468 = 8.6 AC.</b>

**LEGEND**

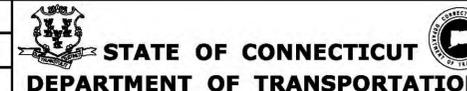
- = AREA OF WETLAND ENHANCEMENT
- = AREA OF WETLAND CREATION
- = AREA OF ADDITIONAL WETLAND CREATION
- = AREA OF UPLAND BUFFER PLANTING
- = AREA OF RIPARIAN UPLAND PLANTING
- = LIMIT OF EXISTING WETLAND
- = LIMIT OF PROPOSED WETLAND MITIGATION
- = LIMIT OF UPLAND BUFFER PLANTINGS

- NOTES:**
- PLACE SERIES 16 CONSTRUCTION SIGNS AND PUBLIC INFORMATION SIGN, AS DIRECTED BY OEP.
  - LOCATION OF WETLAND MITIGATION AREAS CAN BE FOUND ON THE PLANTING PLANS.
  - STORAGE, STAGING AND STOCKPILING OF MATERIAL IS NOT ALLOWED WITHIN THE 100 YEAR FLOOD LIMIT OR FLOODWAY. ALL AREAS WILL BE REVIEWED AND APPROVED BY OEP.

REVISED WETLAND MITIGATION SCHEDULE			
WETLAND MITIGATION AREA	ENHANCED AREA(SF)	CREATED AREA(SF)	TOTAL AREA(SF)
SOUTH	130046	102681	232727 = 5.3 AC.
NORTH	38050	126740	164790 = 3.8 AC.
<b>TOTAL</b>	<b>168096</b>	<b>229421</b>	<b>397517 = 9.1 AC.</b>

UPLAND BUFFER PLANTING AREA	80917 = 1.8 AC.
RIPARIAN UPLAND BUFFER PLANTING AREA	95864 = 2.2 AC.
<b>TOTAL UPLAND BUFFER AREAS</b>	<b>176781 = 4.0 AC.</b>

**AUGUST 25, 2011- THIS CONCEPTUAL MITIGATION PLAN SUPERCEDES PLATES #72 THROUGH #85 DATED FEBRUARY, 2011**

<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> <th>SHEET NO.</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	REV.	DATE	REVISION DESCRIPTION	SHEET NO.																																									<p>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.</p>	<p>DESIGNER/DRAFTER: <b>FHI/PMB</b></p> <p>CHECKED BY: <b>ALM</b></p> <p>SCALE IN FEET 0 100 200 SCALE 1"=100'</p> <p>Filename: \$FILEAS</p>	 <p><b>STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION</b></p>	<p>SIGNATURE/ BLOCK: <b>MICHAEL BAKER ENGINEERING, INC.</b></p> <p>APPROVED BY: _____ DATE: _____</p>	<p>PROJECT TITLE: <b>NEW BRITAIN - HARTFORD BUSWAY WETLAND MITIGATION CONTRACT</b></p>	<p>TOWN: <b>NEWINGTON, WEST HARTFORD &amp; HARTFORD</b></p> <p>DRAWING TITLE: <b>WETLAND MITIGATION INDEX PLAN</b></p>	<p>PROJECT NO. <b>171-305</b></p> <p>DRAWING NO. <b>WMT(INX)-01</b></p> <p>SHEET NO. <b>6</b></p>
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