PUBLIC NOTICE

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

Comment Period Begins: July 24, 2012
Comment Period Ends: August 23, 2012
File Number: NAE-2009-02330
In Reply Refer To: Dan Vasconcelos
Phone: (978) 318-8653
E-mail: daniel.b.vasconcelos@usace.army.mil

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

APPLICANT

Massachusetts Department of Transportation – Highway Division ("MassDOT"), 10 Park Plaza, Boston, Massachusetts 02116

ACTIVITY

MassDOT is proposing to discharge fill material into approximately 1.026 acres (44,692 square feet) of waters of the United States, including wetlands, associated with the I-95 (Route 128) Transportation Improvement Project. The work includes constructing an additional travel lane and shoulder in each direction, reconstructing several interchanges, constructing one new interchange and several new feeder roads, and repair/replacement of several bridges along a 3.25-mile section of I-95. A detailed description and plans of the activity are attached.

WATERWAY AND LOCATION OF THE PROPOSED WORK

This work is proposed in unnamed wetlands and waters along I-95 (Route 128) from the Route 9 interchange south for 3.3 miles to approximately 1 mile south of the Kendrick Street overpass, in Needham and Wellesley, Massachusetts. The site coordinates are:
Northern project limit: Latitude 42.319705° Longitude -71.238035°
Southern project limit: Latitude 42.281257° Longitude -71.201353°

AUTHORITY

Permits are required pursuant to:
____ Section 10 of the Rivers and Harbors Act of 1899
_X_ 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.

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.

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.

NATIONAL HISTORIC PRESERVATION ACT

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

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

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 Dan Vasconcelos at (978) 318-8653, (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.

Karen K. Adams
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. 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 work includes the discharge of fill material into approximately 1.026 acres (44,692 square feet) of waters of the United States, including wetlands, associated with the I-95 (Route 128) Transportation Improvement Project. The purpose of the work is to restore a functional breakdown lane and shoulder in each direction, relieve traffic congestion along the corridor, and reduce diversion of traffic to parallel routes. The work includes the following components:

- Construction of an additional travel lane and shoulder in each direction along a 3.25-mile section of I-95
- Reconstruction of the Highland Avenue Interchange in Needham
- Addition of Kendrick Street Interchange
- Addition of collector/distributor roadways between Highland Avenue and Kendrick Street Interchanges
- Modifications to the I-95/Route 9 Interchange and replacement of the Route 9 Bridge
- Stormwater management improvements
- Widening of Central Avenue Bridges

Section 404 impacts associated with this project include fills resulting from the lane additions, interchange/ramp modifications, and construction of collector/distributor roads, as well as modifications to an existing drainage swale and a stream relocation. Impacts are concentrated in two areas: the Kendrick Street/Highland Avenue area in Needham; and the Route 9 Interchange in Needham and Wellesley. Of the approximately 1.026 acres (44,692 square feet) of total impacts, approximately 0.82 acres (35,719 square feet) will occur in wetlands, and approximately 0.206 acres (8,973 square feet) will occur below the Ordinary High Water mark of streams/drainage swales.

The work is described on the enclosed plans entitled "APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT, INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V" on 24 sheets, and dated "March 2012".

MITIGATION

In developing plans for the I-95 (Route 128) Transportation Improvement Project, MassDOT considered ways to avoid and minimize impacts to waters of the United States, including wetlands. Steps to avoid and minimize impacts to wetlands and waterways include redesigning a segment of the project to pull work out of the median in order to avoid wetlands south of Highland Avenue, installing retaining walls in the Kendrick Street Interchange area to limit encroachment into wetlands, placing a portion of the highway on a load transfer platform supported on pilings where it passes through the wetlands south of Highland Avenue in order to limit peat displacement beyond the limit of the fill, and installing hay bale-backed silt fence between the work area and wetlands/waterways. In order to mitigate for unavoidable, permanent impacts to jurisdictional wetland areas, MassDOT also proposes to construct approximately 1.92 acres (83,635 square feet) of new wetlands, including a relocated stream. Additionally, MassDOT proposes to permanently preserve two adjacent, offsite parcels totalling 7.4-acres (322,344-square feet) to act as further mitigation. The parcels are located adjacent to the Charles River within the same watershed as the proposed impacts and contain areas of both upland and wetland. Pavement will be removed from the western portion of an existing paved access road (former bed of Great Plain Avenue) that passes between the two parcels, and the area will be converted to a gravel surface and the edges landscaped to provide additional wildlife habitat and greater connectivity between the parcels.

SECTION 404 PLAN KEY

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PROJECT LOCUS MAP	SHEET 2
KEY SHEET	SHEET 3
EXISTING & PROPOSED CONDITIONS	SHEETS 4–10
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NEEDHAM MITIGATION AREAS PLANTING PLAN	SHEET 12
WELLESLEY MITIGATION AREA GRADING PLAN	SHEET 13
WELLESLEY MITIGATION AREA PLANTING PLAN	SHEET 14
WETLAND MITIGATION AREA CROSS SECTIONS	SHEETS 15–16
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DRAINAGE DETAILS	SHEETS 20–21
TIMBER PILE PLAN	SHEET 22
TIMBER PILE DETAILS	SHEET 23
GREAT PLAIN OFF-SITE MITIGATION AREA	SHEET 24

LEGEND

	WETLAND BOUNDARY
	EXISTING CONTOUR
	PROPOSED CONTOUR
	EXISTING STREAM CENTERLINE
	PROPOSED STREAM CENTERLINE
	PROPOSED WETLAND FILL AREA
	MITIGATION AREA
	STREAM BANK STABILIZATION
	HAY BALES AND SILT FENCE
A	WETLAND ID

NOTE: THESE PLANS ARE NOT INTENDED TO SHOW ALL DETAILS OF EXISTING DRAINAGE FEATURES AND PROPOSED STORMWATER MANAGEMENT IMPROVEMENTS; FEATURES SUCH AS PROPOSED LEACHING CATCH BASINS ARE BEYOND THE DETAIL OF THESE PLANS TO INDICATE.

HORIZONTAL DATUM: NAD83
VERTICAL DATUM: NAVD88

APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT
INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V

INDEX OF SHEETS & LEGEND

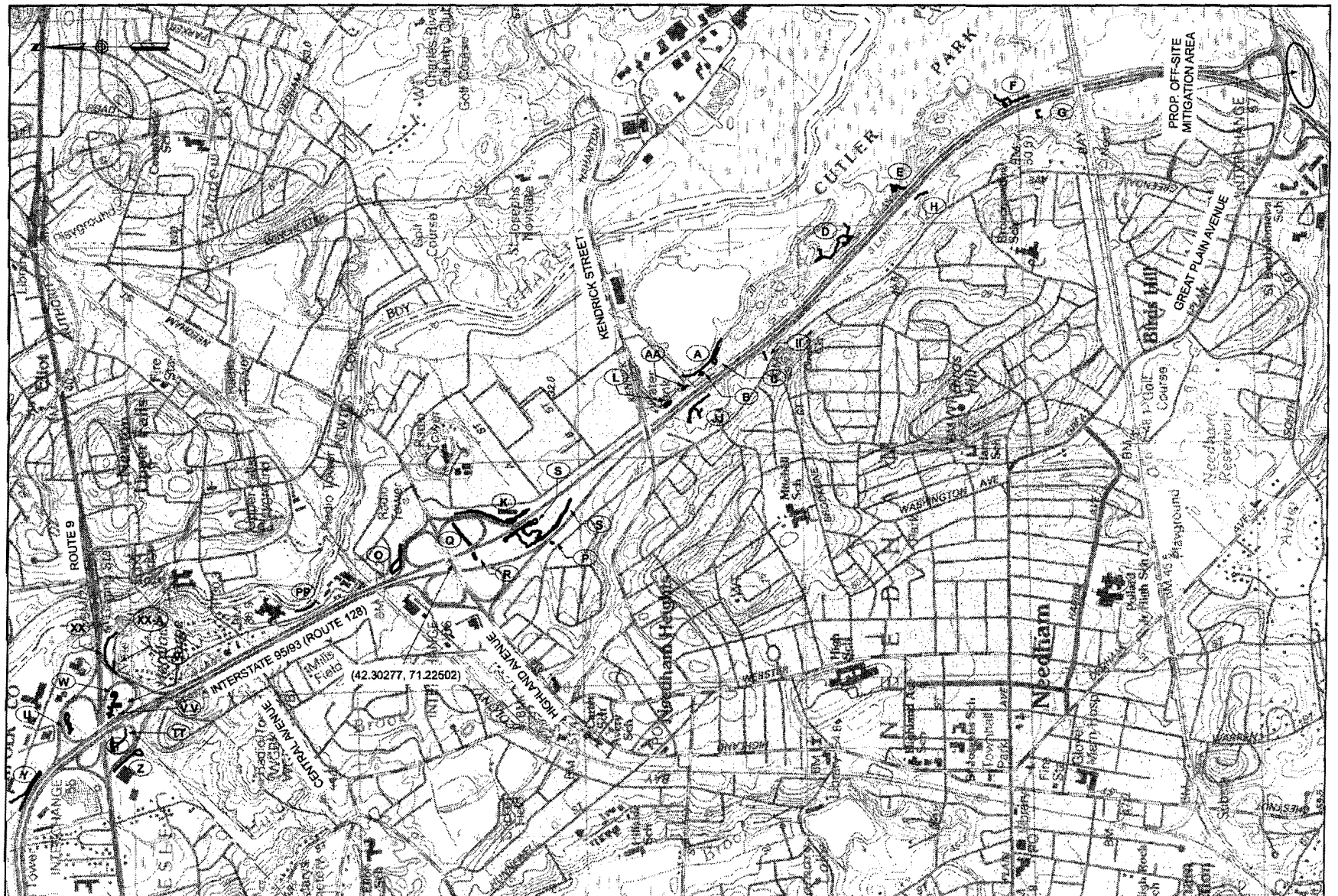
DATE: MARCH 2012

SHEET 1 OF 22

PROJECT LOCATION:
NEEDHAM AND WELLESLEY
NORFOLK COUNTY, MASSACHUSETTS

APPLICATION BY:
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

massDOT
Massachusetts Department of Transportation
Highway Division



WETLAND ID

0 2000 3000 4000

Scale in Feet

APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT
INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V

PROJECT LOCUS PLAN

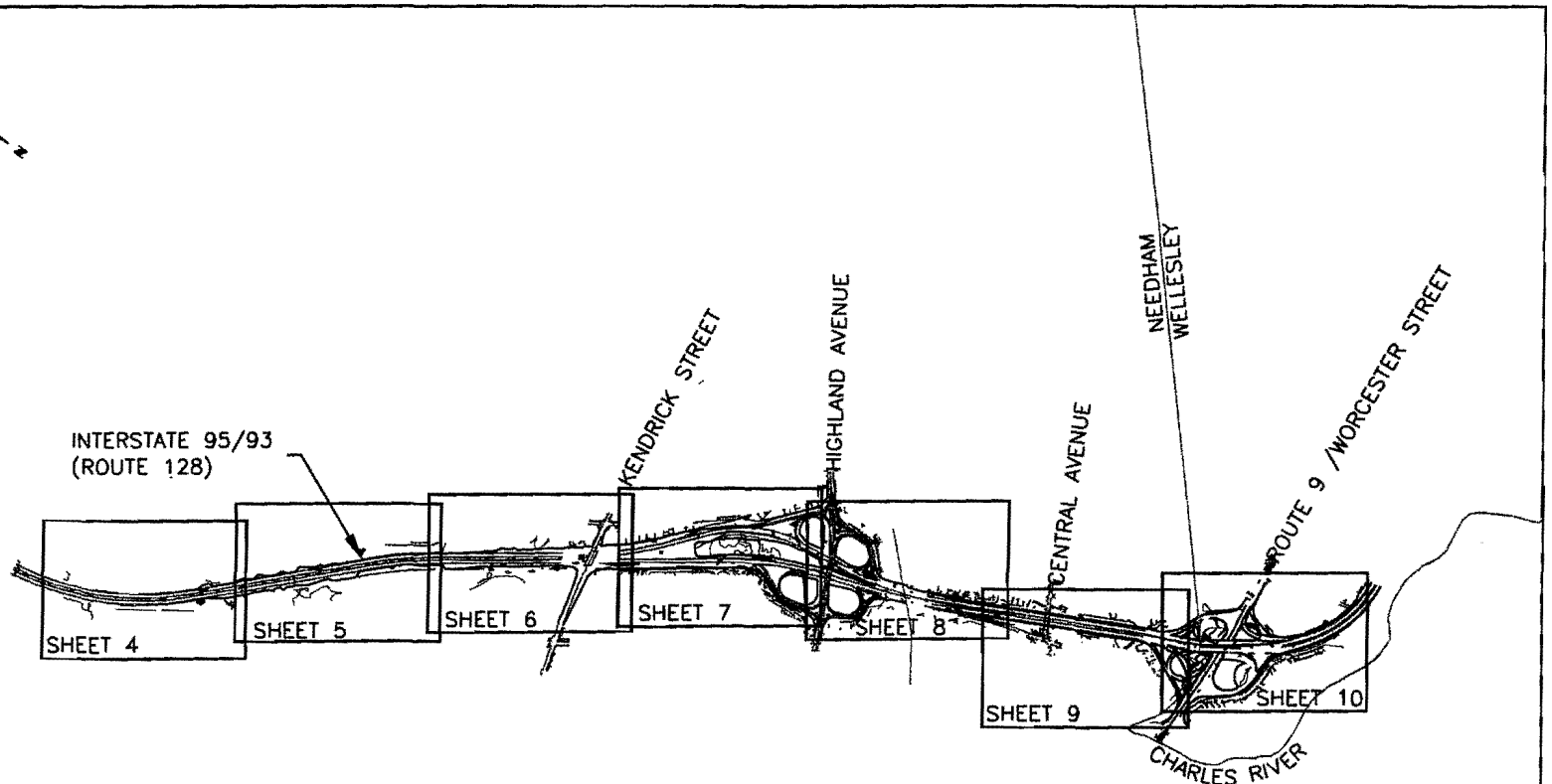
DATE: MARCH 2012

SHEET 2 OF 24

PROJECT LOCATION:
NEEDHAM AND WELLESLEY
NORFOLK COUNTY, MASSACHUSETTS

APPLICATION BY:
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

massDOT
Massachusetts Department of Transportation
Highway Division



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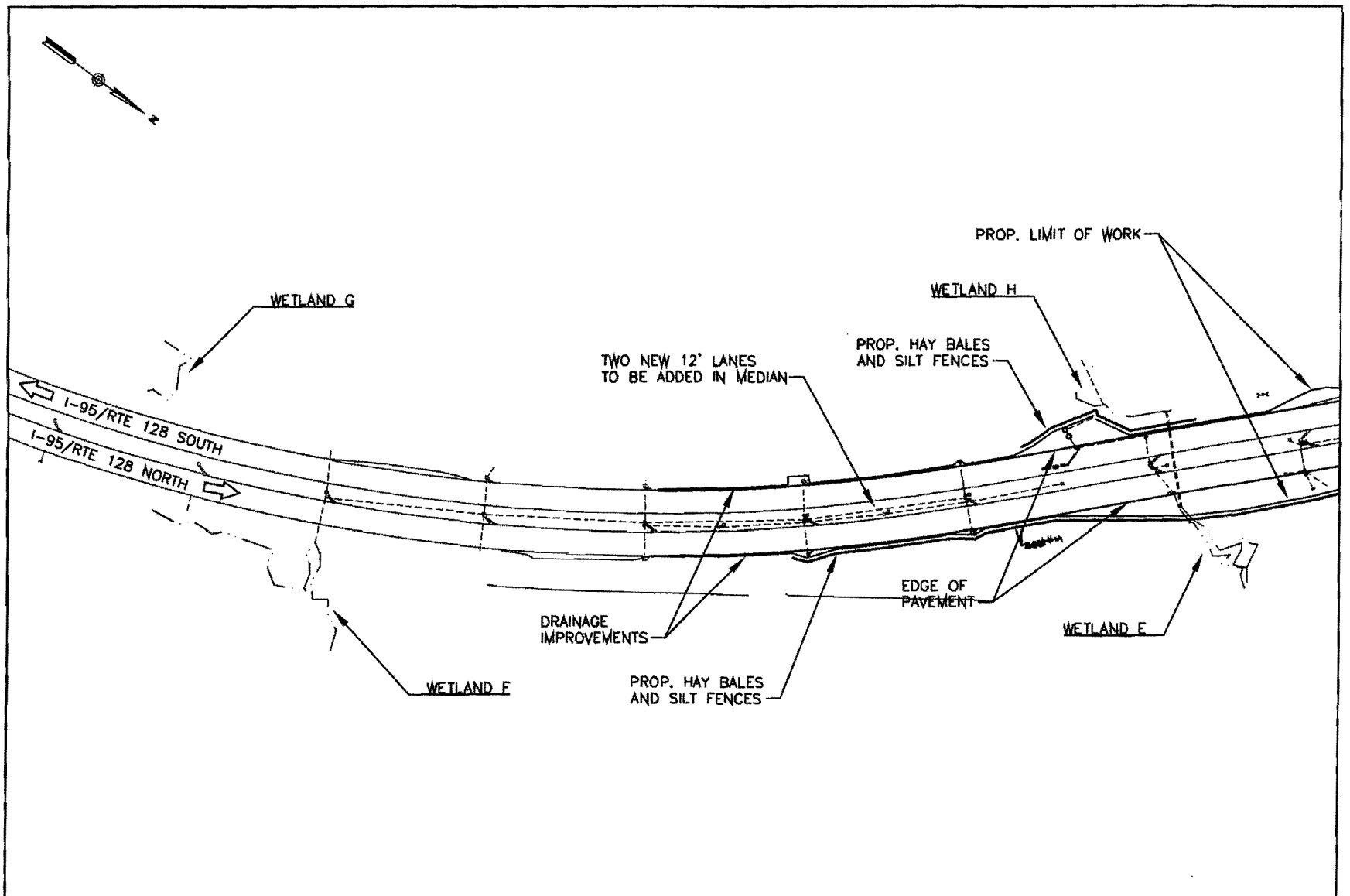
APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V KEY SHEET		DATE: MARCH 2012 SHEET 3 OF 24
PROJECT LOCATION: NEEDHAM AND WELLESLEY NORFOLK COUNTY, MASSACHUSETTS	APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION	massDOT Massachusetts Department of Transportation Highway Division



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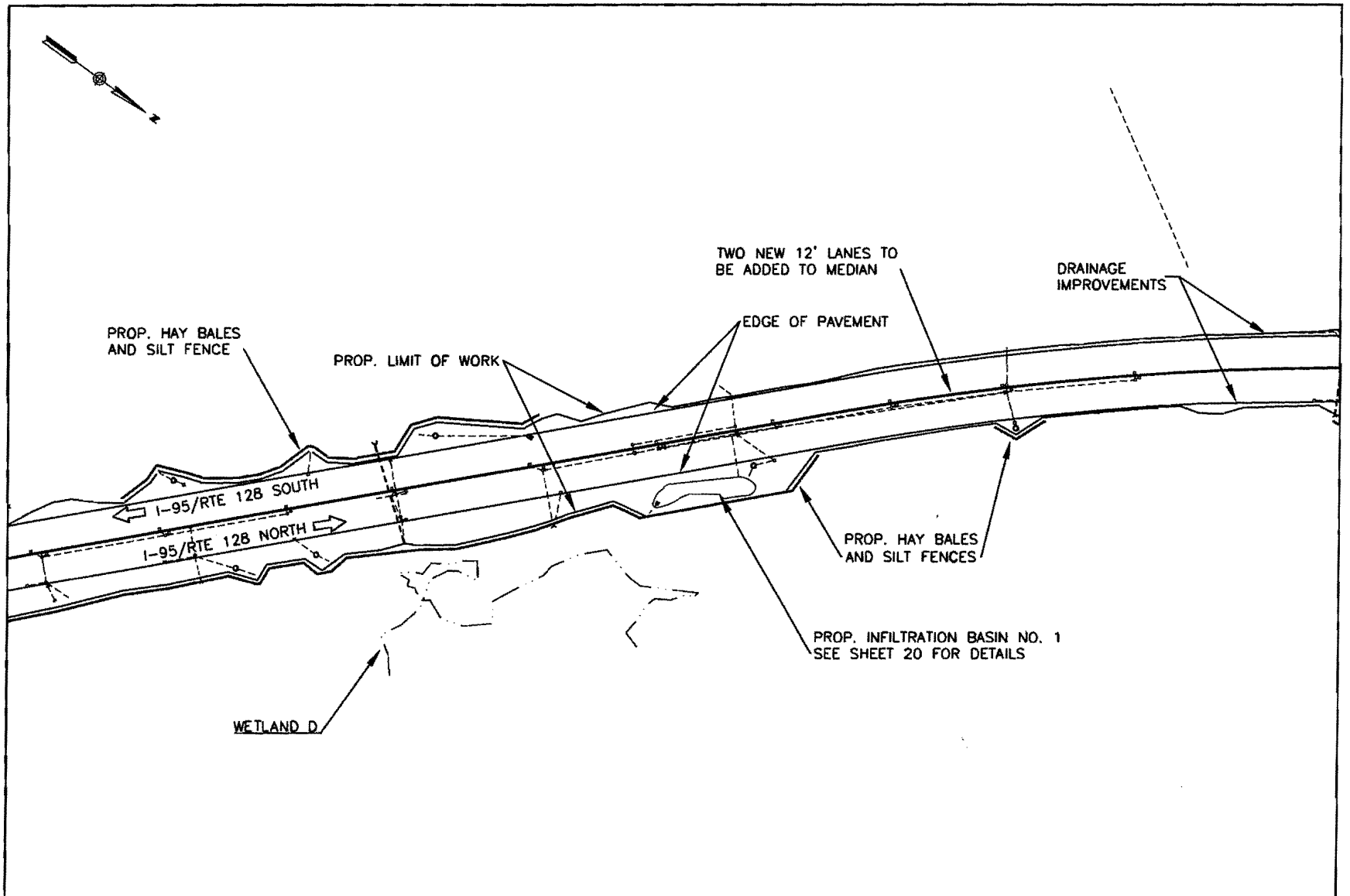
Scale in Feet

APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V EXISTING & PROPOSED CONDITIONS: SHEET 1 OF 7		DATE: MARCH 2012 SHEET 4 OF 24
PROJECT LOCATION: NEEDHAM AND WELLESLEY NORFOLK COUNTY, MASSACHUSETTS	APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION	massDOT Highway Division



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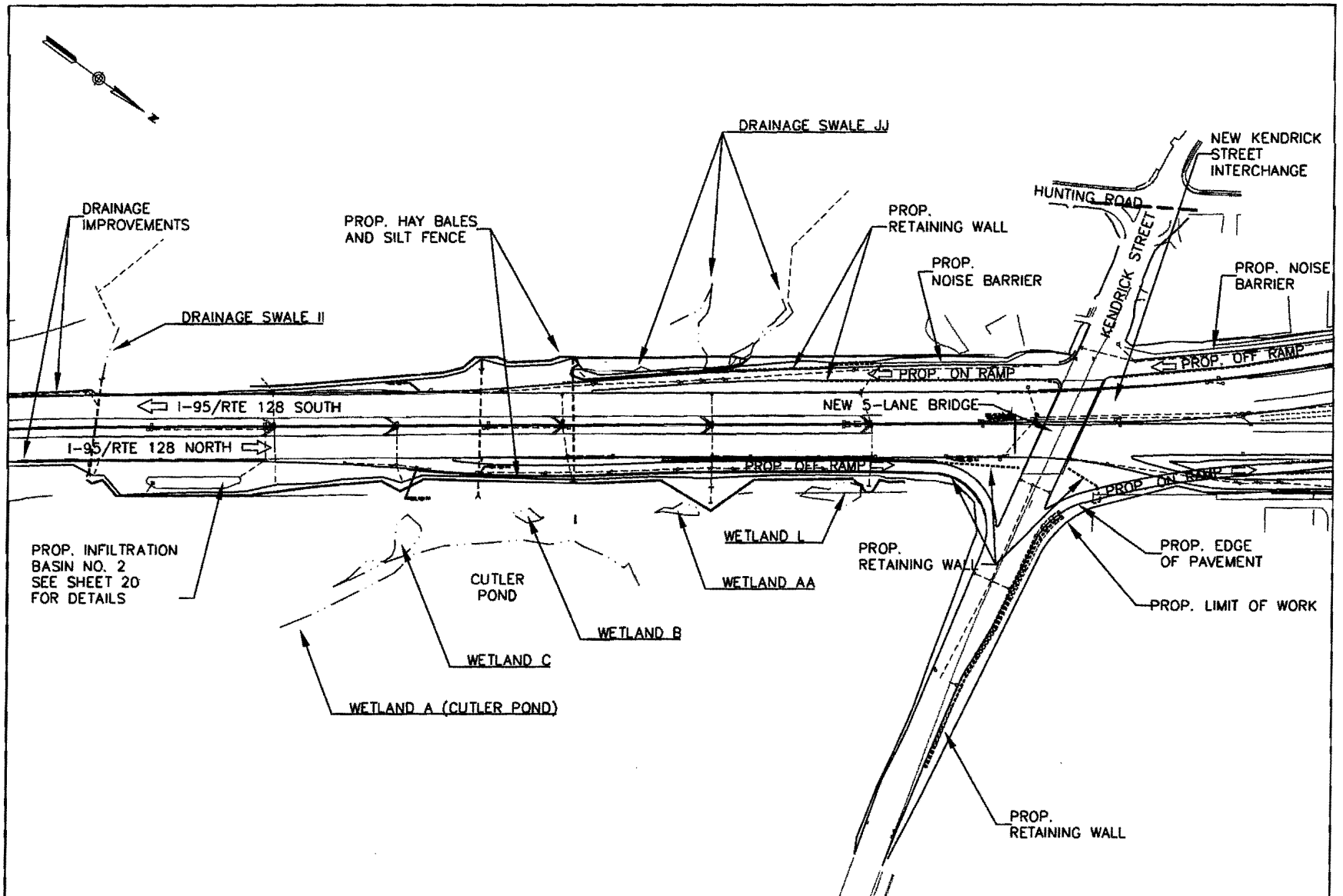
Scale in Feet

APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V EXISTING & PROPOSED CONDITIONS: SHEET 2 OF 7		DATE: MARCH 2012 SHEET 5 OF 24
PROJECT LOCATION: NEEDHAM AND WELLESLEY NORFOLK COUNTY, MASSACHUSETTS	APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION	massDOT Highway Division



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Scale in Feet

APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT
INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V

EXISTING & PROPOSED CONDITIONS: SHEET 3 OF 7

DATE: MARCH 2012

SHEET 6 OF 24

PROJECT LOCATION:
NEEDHAM AND WELLESLEY
NORFOLK COUNTY, MASSACHUSETTS

APPLICATION BY:
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

massDOT
Massachusetts Department of Transportation
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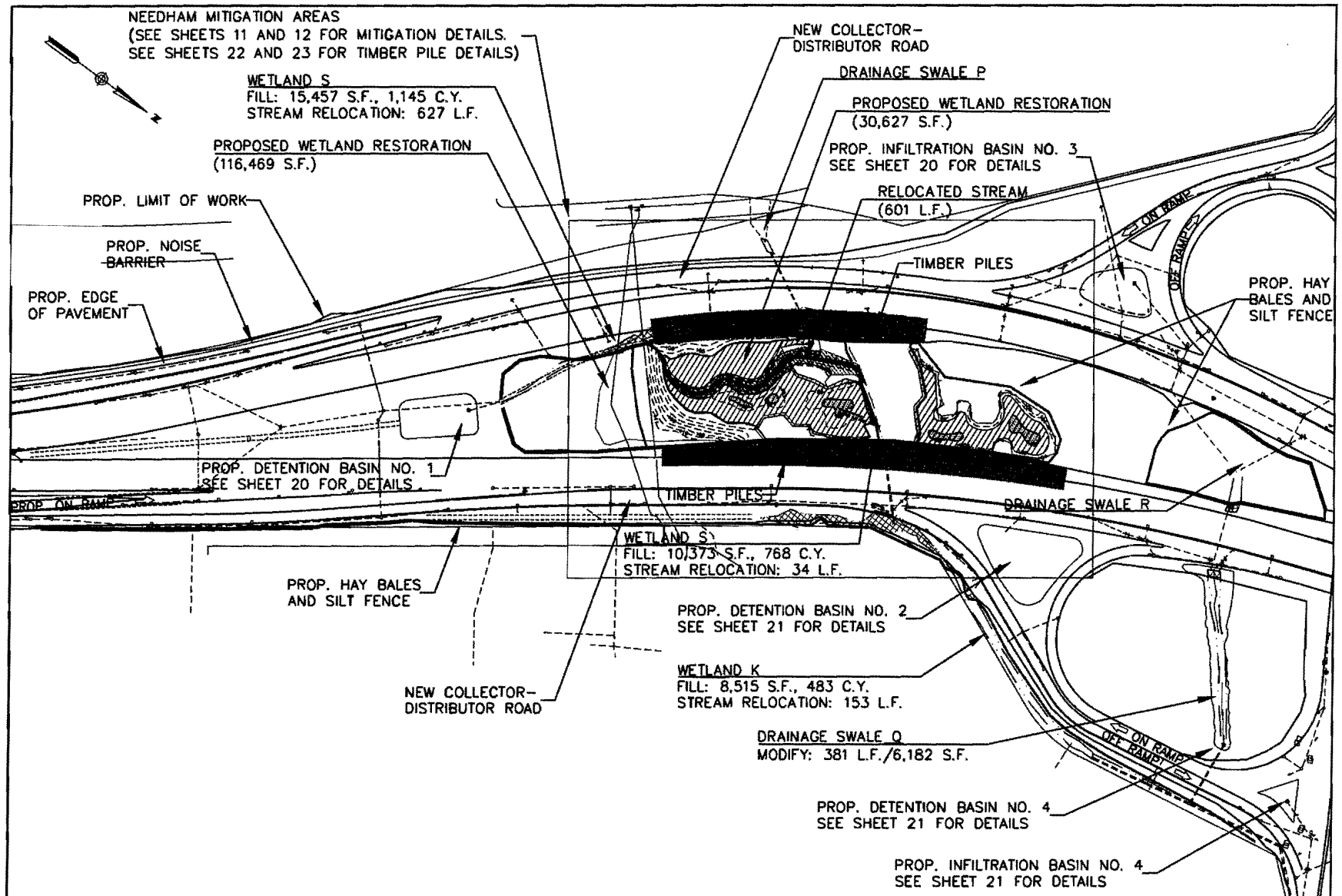


APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT
INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V

EXISTING & PROPOSED CONDITIONS: SHEET 4 OF 7

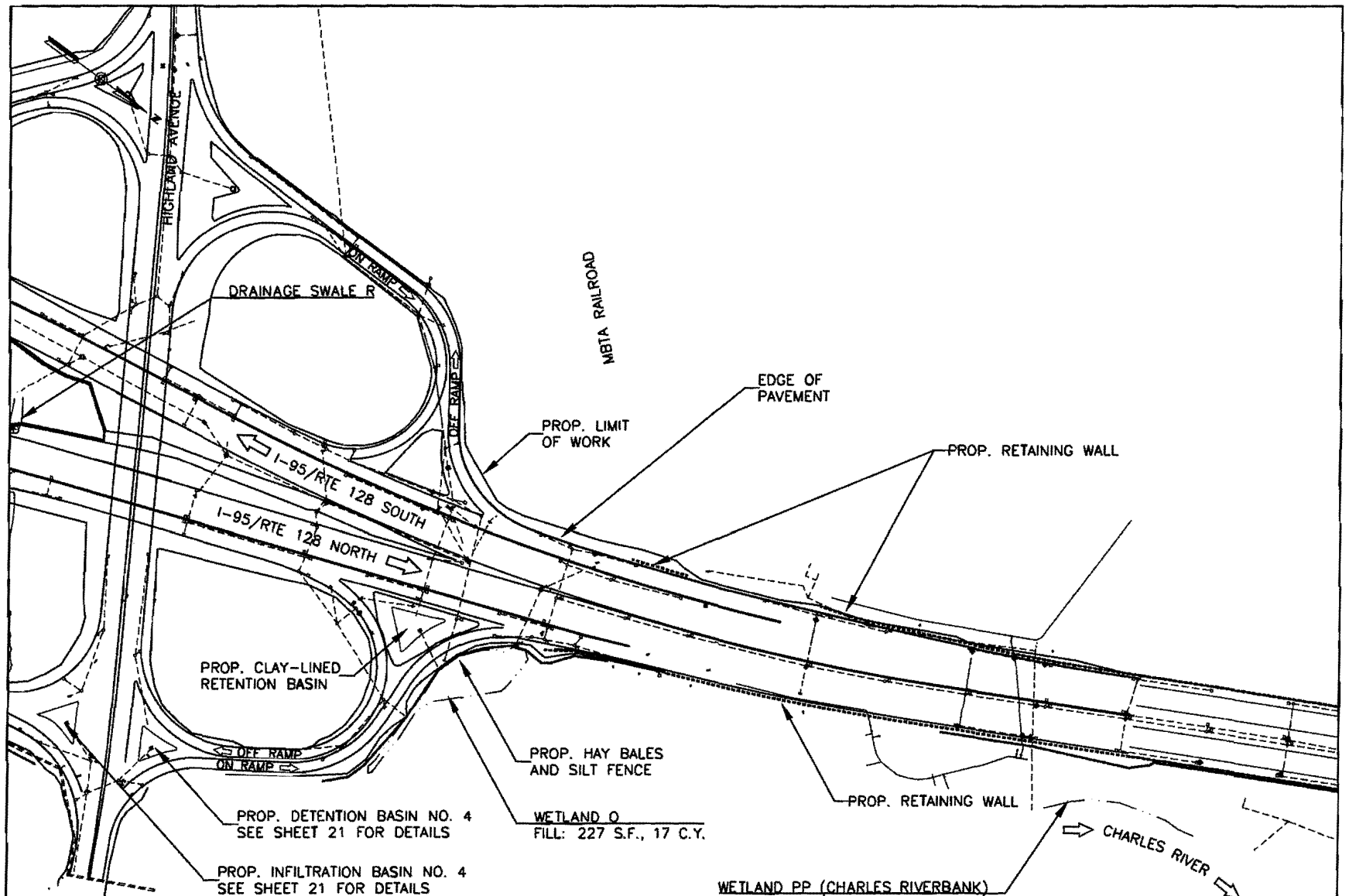
DATE: MARCH 2012

SHEET 7 OF 24

PROJECT LOCATION:
NEEDHAM AND WELLESLEY
NORFOLK COUNTY, MASSACHUSETTS

APPLICATION BY:
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

massDOT
Highway Division



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APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT
INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V

EXISTING & PROPOSED CONDITIONS: SHEET 5 OF 7

DATE: MARCH 2012

SHEET 8 OF 24

PROJECT LOCATION:
NEEDHAM AND WELLESLEY
NORFOLK COUNTY, MASSACHUSETTS

APPLICATION BY:
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

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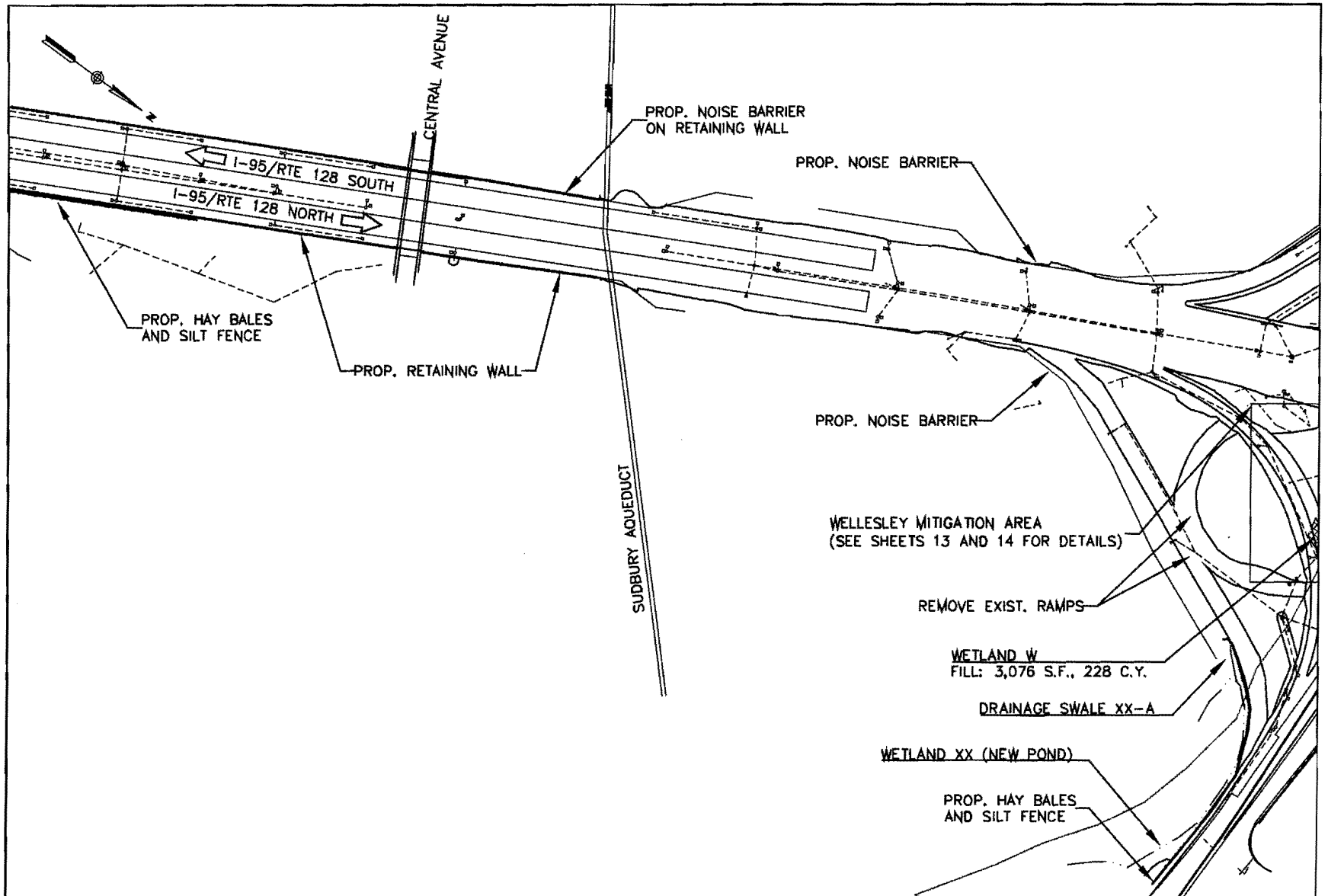

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Scale in Feet

APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT
INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V

EXISTING & PROPOSED CONDITIONS: SHEET 6 OF 7

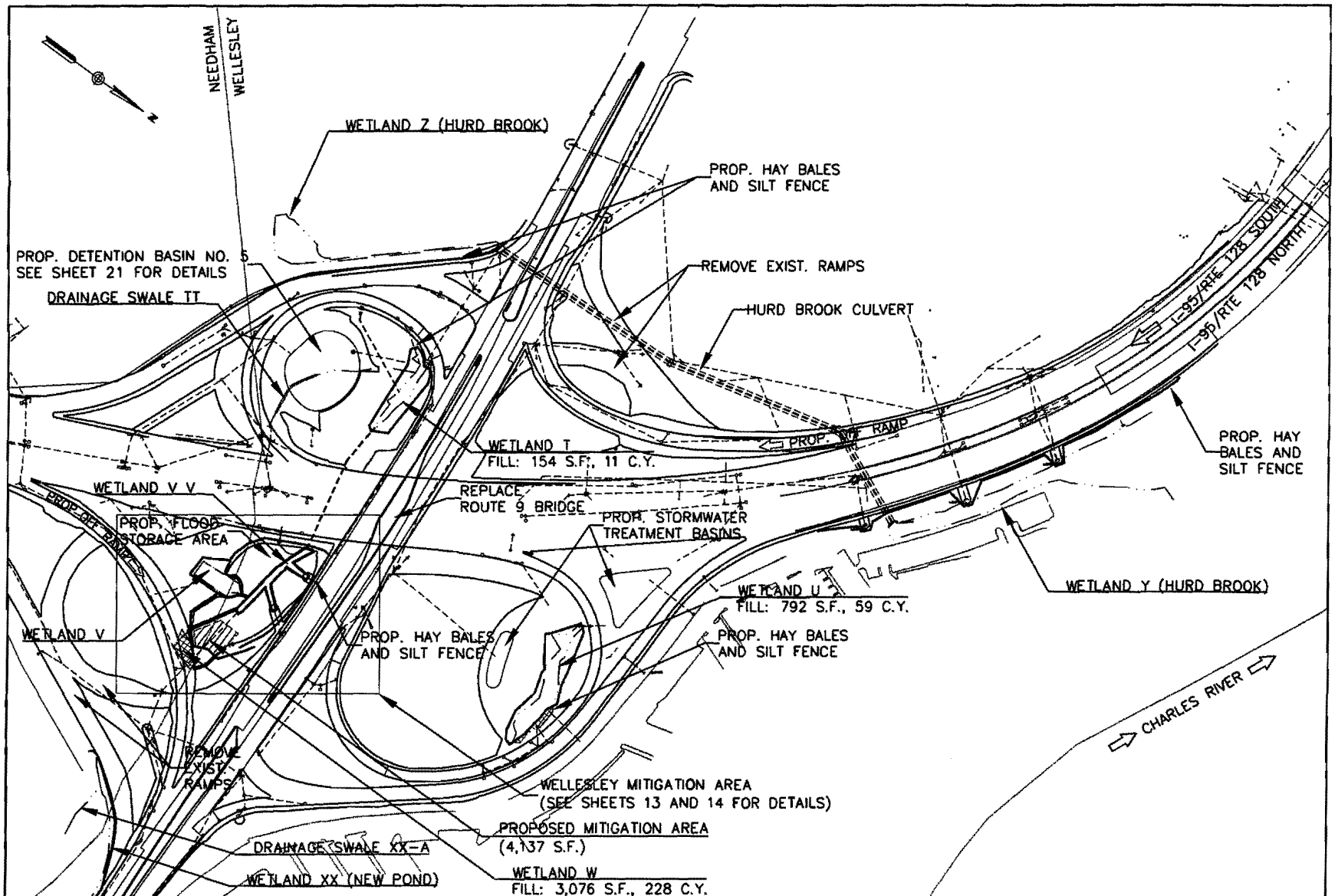
DATE: MARCH 2012

SHEET 9 OF 24

PROJECT LOCATION:
NEEDHAM AND WELLESLEY
NORFOLK COUNTY, MASSACHUSETTS

APPLICATION BY:
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

massDOT
Massachusetts Department of Transportation
Highway Division



APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT
INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V

EXISTING & PROPOSED CONDITIONS: SHEET 7 OF 7

DATE: MARCH 2012

SHEET 10 OF 24

PROJECT LOCATION:
NEEDHAM AND WELLESLEY
NORFOLK COUNTY, MASSACHUSETTS

APPLICATION BY:
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

massDOT
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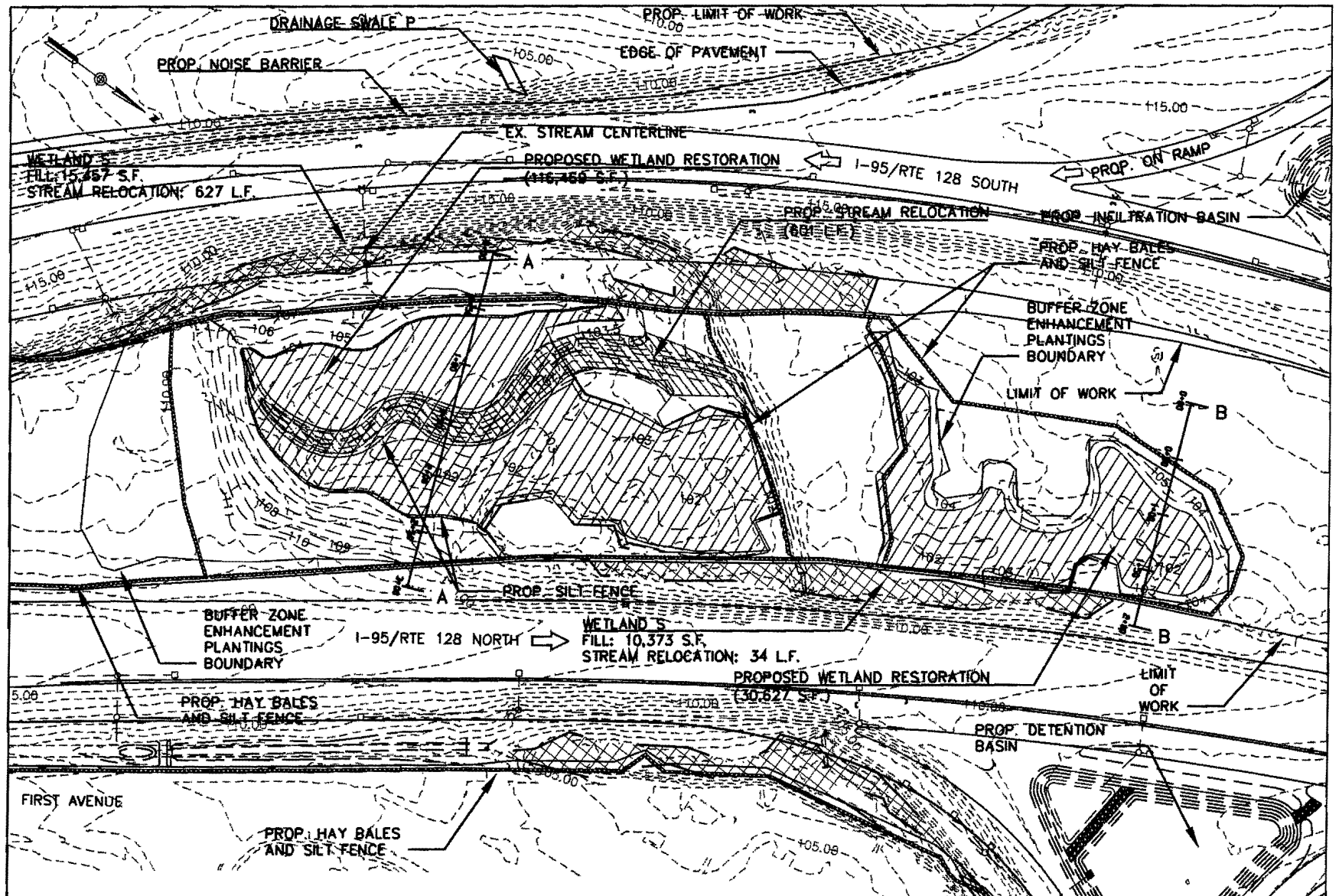
Highway Division



APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT
INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V

NEEDHAM MITIGATION AREAS GRADING PLAN

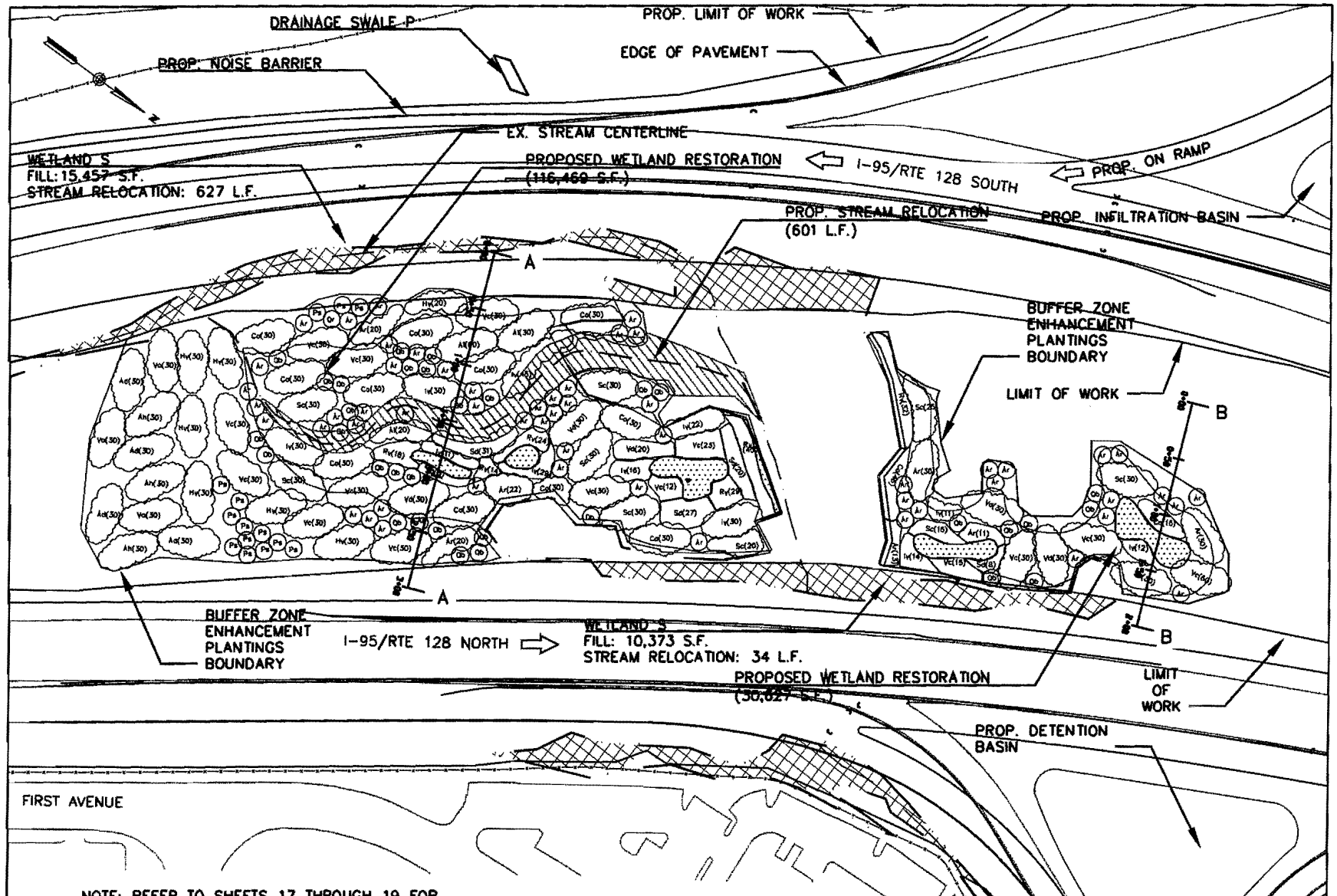
DATE: MARCH 2012

SHEET 11 OF 24

PROJECT LOCATION:
NEEDHAM AND WELLESLEY
NORFOLK COUNTY, MASSACHUSETTS

APPLICATION BY:
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

massDOT
Massachusetts Department of Transportation
Highway Division



NOTE: REFER TO SHEETS 17 THROUGH 19 FOR PLANTING NOTES AND PLANT SPECIES LEGEND

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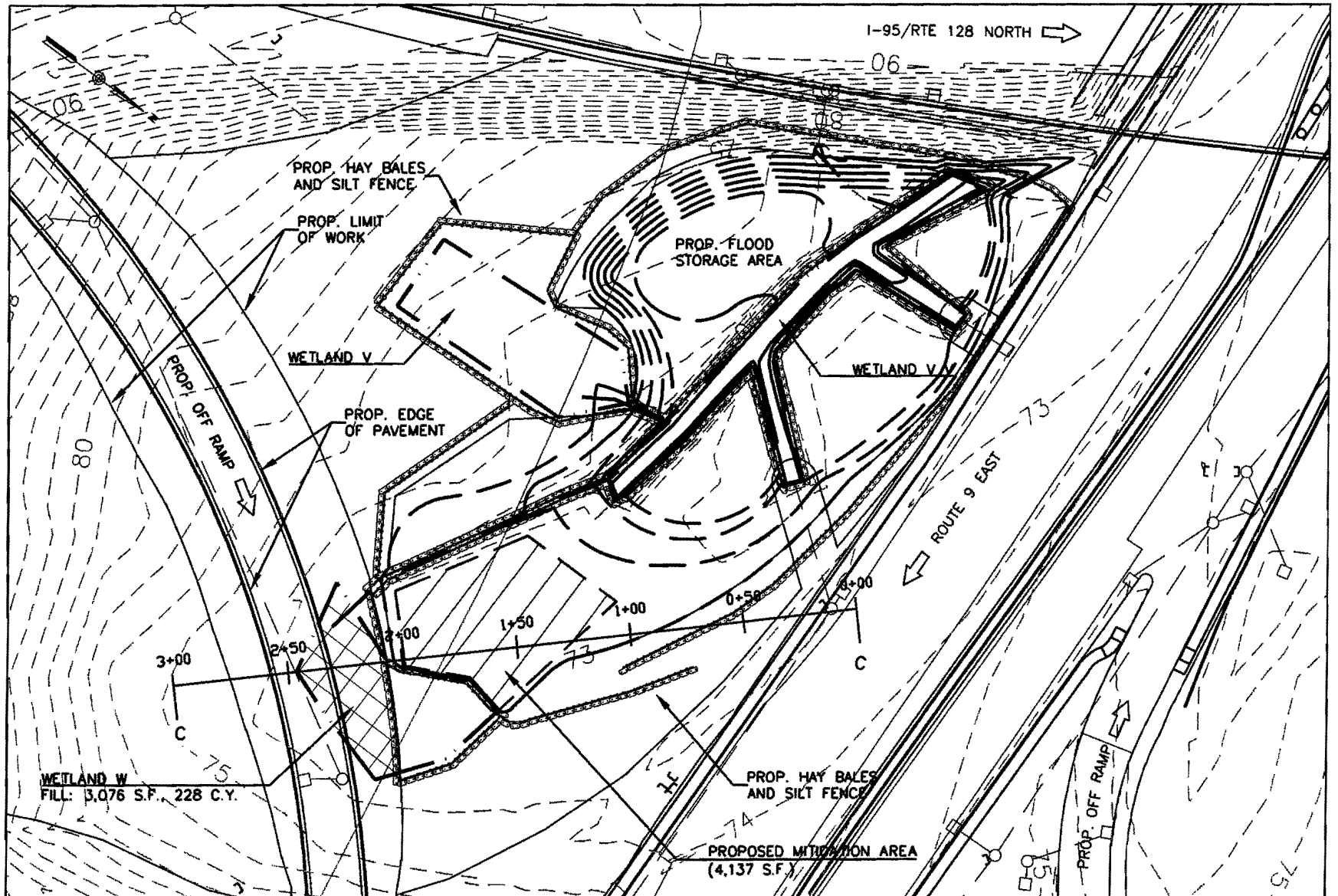
Scale in Feet

APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V NEEDHAM MITIGATION AREAS PLANTING PLAN		DATE: MARCH 2012 SHEET 12 OF 24
PROJECT LOCATION: NEEDHAM AND WELLESLEY NORFOLK COUNTY, MASSACHUSETTS	APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION	massDOT Highway Division



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APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT
INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V

WELLESLEY MITIGATION AREA GRADING PLAN

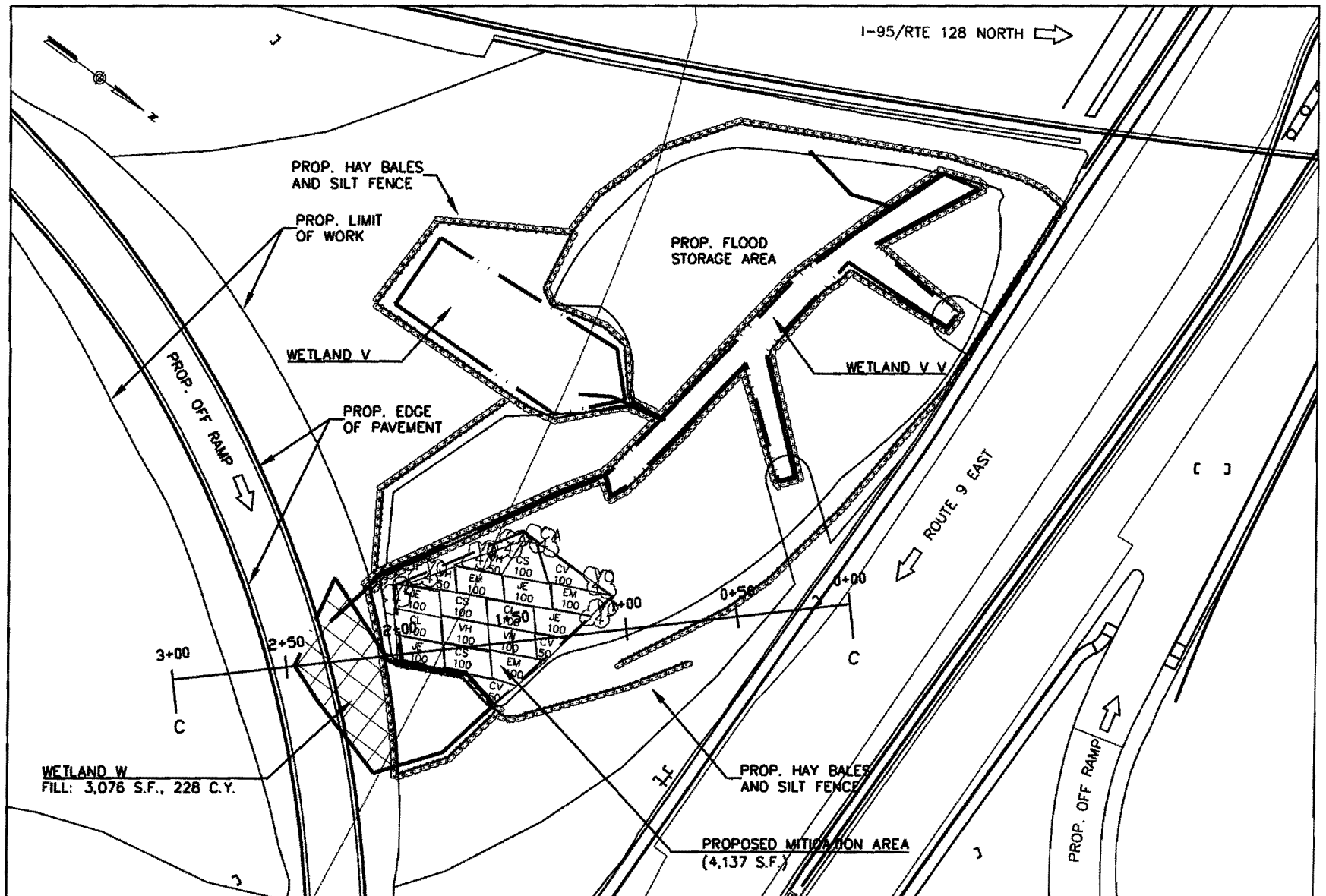
DATE: MARCH 2012

SHEET 13 OF 24

PROJECT LOCATION:
NEEDHAM AND WELLESLEY
NORFOLK COUNTY, MASSACHUSETTS

APPLICATION BY:
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

massDOT



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APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT
INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V

WELLESLEY MITIGATION AREA PLANTING PLAN

DATE: MARCH 2012

SHEET 14 OF 24

PROJECT LOCATION:
NEEDHAM AND WELLESLEY
NORFOLK COUNTY, MASSACHUSETTS

APPLICATION BY:
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

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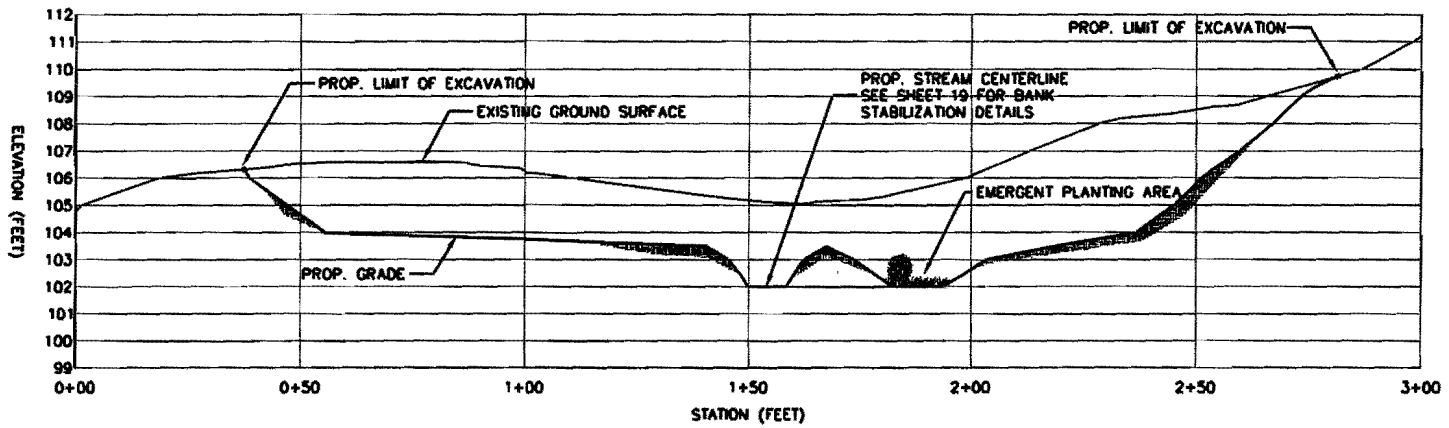
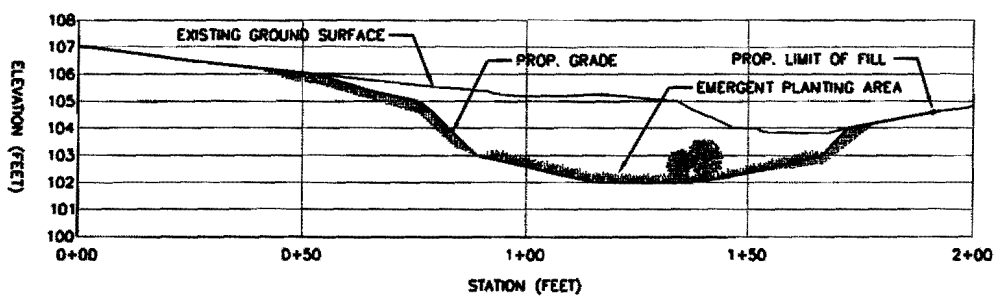
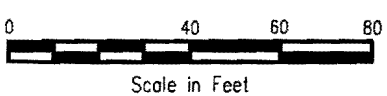


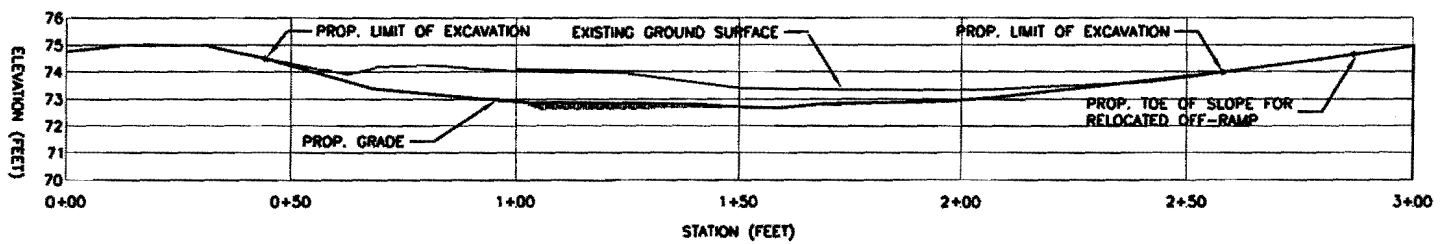
SECTION A-A
SOUTHERN NEEDHAM WETLAND MITIGATION AREA



SECTION B-B
NORTHERN NEEDHAM WETLAND MITIGATION AREA



APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT - BRIDGE V WETLAND MITIGATION AREA CROSS SECTIONS: SHEET 1 OF 2		DATE: MARCH 2012 SHEET 15 OF 24
PROJECT LOCATION: NEEDHAM AND WELLESLEY NORFOLK COUNTY, MASSACHUSETTS	APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION	massDOT Massachusetts Department of Transportation Highway Division



SECTION C-C
WELLESLEY WETLAND MITIGATION AREA

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Scale in Feet

APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V WETLAND MITIGATION AREA CROSS SECTIONS: SHEET 2 OF 2		DATE: MARCH 2012 SHEET 16 OF 24
PROJECT LOCATION: NEEDHAM AND WELLESLEY NORFOLK COUNTY, MASSACHUSETTS	APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION	massDOT Massachusetts Department of Transportation Highway Division

WETLAND PLANTING SPECIFICATIONS

THE FOLLOWING CONSTRUCTION MEASURES ARE SPECIFIED FOR THE PROPOSED WETLAND MITIGATION:

1. CONSTRUCTION OF THE WETLAND MITIGATION AREA WILL BE LIMITED TO THE WORK AREAS DEFINED ON THE APPROVED SITE PLANS. ALL ACTIVITIES WILL BE CARRIED OUT IN COMPLIANCE WITH THE WORK DESCRIBED IN THE APPROVED SITE AND ENGINEERING PLANS. ALL WORK WILL FOLLOW THE CONSTRUCTION SEQUENCE AUTHORIZED BY PERMIT APPROVALS, WHICH INCLUDES DIRECT SITE SUPERVISION BY A DESIGNATED WETLAND SCIENTIST AND FOLLOW-UP MONITORING OF THE PLANTINGS PROPOSED IN THE PLAN.

2. PRIOR TO THE START OF CONSTRUCTION, THE WETLANDS AGENT AND/OR THE COMMISSION'S DESIGNATED REPRESENTATIVE WILL BE PROVIDED IN WRITING WITH A LIST OF THE NAMES, ADDRESSES, AND TELEPHONE NUMBERS FOR THE PROJECT SUPERVISOR AND ALL OF THE INDIVIDUALS RESPONSIBLE FOR THE SUPERVISION OF THE WETLAND MITIGATION WORK AND THE LANDSCAPING AND PLANTING PROGRAM.

3. PRIOR TO THE START OF SITE PREPARATION WORK, ALL SEDIMENTATION AND EROSION CONTROL FENCING WILL BE INSTALLED BY THE CONTRACTOR AS SHOWN ON THE SITE PLANS AND APPROVED BY THE WETLAND SCIENTIST. STRAW BALES WILL BE STAKED WITH TWO WOODEN STAKED WITH TWO WOODEN STAKES PER HAY BALE AS SHOWN ON THE SITE PLAN DETAILS. THE CONSERVATION AGENT WILL BE NOTIFIED 48 HOURS IN ADVANCE OF THE WORK TO ALLOW FOR THE FIELD INSPECTIONS OF THE SEDIMENTATION AND EROSION CONTROL STRUCTURES. ADDITIONAL EROSION CONTROL FENCING OR STAKED STRAW BALES WILL BE INSTALLED AT THE DIRECTION OF THE WETLAND SCIENTIST OR AGENT TO MINIMIZE THE THREAT OF ADVERSE IMPACT DURING THE CONSTRUCTION PROCESS. AN ADEQUATE SUPPLY OF REPLACEMENT EROSION CONTROL FENCING AND HAY BALES WILL BE AVAILABLE ON-SITE FOR EMERGENCY PURPOSES. EROSION CONTROL STRUCTURES WILL BE INSPECTED ON A REGULAR BASIS AND MAINTAINED IN GOOD ORDER UNTIL ALL EXPOSED SOILS ARE VEGETATED AND STABLE.

4. THE SITE WILL BE EXCAVATED 8-12 INCHES BELOW THE PROPOSED FINAL GRADES SHOWN ON THE GRADING PLANS. GOOD QUALITY ORGANIC RICH TOPSOIL SHALL BE ADDED TO BRING THE GRADES TO THE FINAL ELEVATION SHOWN ON THE PLANS. FOLLOWING REMOVAL OF EXCAVATED EARTH MATERIAL, THE SOIL IN THE WETLAND MITIGATION AREA WILL BE GRADED WITH A LIGHT-TRACKED VEHICLE AND THE SOIL PREPARED WITH A SHALLOW RAKE PULLED OVER THE SOIL SURFACE TO BREAK-UP THE SOIL AND PREPARE THE SURFACES OF THE WETLAND MITIGATION AREA FOR THE PLANTINGS AND SEED MIXTURES.

5. IF DEWATERING IS REQUIRED DEWATERING OPERATIONS MAY BE EMPLOYED DURING THE EXCAVATION AND TOPSOIL PLACEMENT PORTIONS OF THE WETLAND MITIGATION AREA CONSTRUCTION TO FACILITATE THE WORK IN A CLEAN FASHION. DEWATERING SHALL BE DONE WITH THE USE OF PERFORATED PVC PIPES IN ROCK-LINED SUMPS (OR VIA A COMPARABLE MEANS DESIGNED TO REDUCE SEDIMENT IN THE PUMPED WATERS); WATER PUMPED FROM THE SUMPS WILL BE DIRECTED TO A SEDIMENTATION BASIN OR OTHER TEMPORARY SEDIMENT TRAP.

6. THE PLANTING PLAN PROVIDED FOR THE WETLAND MITIGATION AREA SHALL NOT BE DEVIATED FROM WITHOUT THE APPROVAL OF THE DESIGNATED WETLAND SCIENTIST. IT IS RECOGNIZED THAT NOT ALL SPECIES MAY BE AVAILABLE AT THE TIME OF PLANTING, AND THE WETLAND SCIENTIST MAY ALLOW SUBSTITUTIONS.

7. A WETLAND SEED MIX WILL BE HAND BROADCAST AT APPROPRIATE RATES THROUGHOUT THE WETLAND MITIGATION AREA TO CREATE A HERBACEOUS GROUNDCOVER LAYER. A CONSERVATION GRASS SEED MIX WILL BE DISTRIBUTED ALONG THE SIDE SLOPES OF THE MITIGATION AREA. ACCEPTABLE SEED MIXES INCLUDE NEW ENGLAND WET MIX (NEW ENGLAND WETLAND PLANTS, AMHERST, MA) AND OBLIGATE WETLAND MIX (ERNST SEEDS, MEADVILLE, PA). COMPARABLE ALTERNATIVE SOURCES MAY BE APPROVED BY THE WETLAND SCIENTIST.

8. THE WETLAND MITIGATION AREA WILL BE CONSTRUCTED BY FIRST REMOVING EXISTING TOPSOILS AND SUBSOILS FROM THE MITIGATION SITE; THESE SOILS WILL BE STOCKPILED SEPARATELY. WETLAND TOPSOILS, WITH BLOCKS OF VEGETATION AND SEVERAL INCHES OF THE ORIGINAL WETLAND SOIL SUBSTRATE FROM THE PROPOSED WETLAND FILL AREA, WETLAND W, WILL THEN BE TRANSPORTED DIRECTLY TO THE MITIGATION SITE. IF NECESSARY, STOCKPILED TOPSOIL FROM THE SITE WILL BE ADDED TO THIS WETLAND SOIL BASE AND PLACED OVER THE MITIGATION AREA TO FORM AT LEAST A 12-INCH LAYER OF ADEQUATE TOPSOILS (12% ORGANIC CARBON); SUCH MATERIAL WILL BE ADDED AS PER THE CORPS OF ENGINEERS WETLAND MITIGATION GUIDANCE DOCUMENT. ADDITIONAL ORGANIC MATTER SUCH AS WELL-DECOMPOSED CLEAN LEAF COMPOST OR OTHER SOIL AMENDMENTS (IF MORE READILY AVAILABLE THAN CLEAN LEAF COMPOST) WILL BE USED TO MEET THE REQUIREMENTS FOR THE APPROPRIATE PERCENT ORGANIC CARBON CONTENT.

9. WHEN TOPSOIL MUST BE STOCKPILED ON THE SITE, THE FOLLOWING GUIDELINES WILL BE FOLLOWED TO MAINTAIN MOISTURE IN THE SOIL: APPROVAL FOR LOCATION OF STOCKPILE MATERIAL WILL BE PROVIDED BY OWNER/ENGINEER; AVOID STOCKPILING COMPOST ORGANICS IN PILES OVER 4 FEET IN HEIGHT; PROTECT STOCKPILES FROM SURFACE WATER FLOW AND CONTAIN THEM WITH STRAW BALES AND/OR SILTFENCE; COVER STOCKPILES WITH A MATERIAL THAT PREVENTS EROSION (TARPS, EROSION CONTROL MAT, STRAW AND TEMPORARY SEED, DEPENDING ON SIZE AND DURATION OF STORAGE); INSPECT AND REPAIR PROTECTION MEASURES LISTED ABOVE REGULARLY (WEEKLY), AS WELL AS PRIOR TO (TO THE EXTENT POSSIBLE) AND AFTER STORM EVENTS; AND MAINTAIN MOISTURE IN THE SOILS DURING DROUGHTY PERIODS.

10. IN ADDITION, ALL REPLACEMENT AREAS SHALL BE SOWN WITH A MIXTURE OF WETLAND SEED MIX AND QUICK GROWTH EROSION CONTROL MIX. THE COMPOSITION OF THE WETLAND SEED MIX VARIES FROM YEAR TO YEAR, BUT GENERALLY CONSISTS OF A MIXTURE OF FACW TO OBL NATIVE SEDGES, RUSHES, AND GRASSES. THE QUICK GROWTH EROSION MIX IS GENERALLY RYEGRASS, WITH A SMALLER PERCENTAGE OF REDTOP AND FESCUES. WETLAND SEED MIX SHALL BE SOWN AT 1LB. PER 2,500 SQUARE FEET, EROSION CONTROL MIX AT 1LB. PER 1,000 SQUARE FEET.

11. THE NEW ENGLAND WETMIX (WETLAND SEED MIX) CONTAINS A WIDE VARIETY OF NATIVE SEEDS WHICH ARE SUITABLE FOR MOST WETLAND RESTORATION SITES THAT ARE NOT PERMANENTLY INUNDATED. ALL SPECIES ARE BEST SUITED TO MOIST DISTURBED GROUND AS FOUND IN MOST WET MEADOWS, SCRUB SHRUB, OR FORESTED WETLAND RESTORATION AREAS. THIS MIX IS WELL SUITED FOR DETENTION BASIN BORDERS, AND THE BOTTOM OF DETENTION BASINS NOT GENERALLY UNDER STANDING WATER. THE SEEDS WILL NOT GERMINATE UNDER INUNDATED CONDITIONS. IF PLANTED DURING THE FALL MONTHS, THE SEED MIX WILL GERMINATE THE FOLLOWING SPRING. DURING THE FIRST SEASON OF GROWTH, SEVERAL SPECIES WILL PRODUCE SEEDS, WHILE OTHER SPECIES WILL PRODUCE SEEDS AFTER THE SECOND GROWING SEASON. NOT ALL SPECIES WILL GROW IN ALL WETLAND SITUATIONS. THIS MIX IS COMPOSED OF THE WETLAND SPECIES MOST LIKELY TO GROW IN CREATED/RESTORED WETLANDS AND SHOULD PRODUCE MORE THAN 75% GROUND COVER IN TWO FULL GROWING SEASONS.

12. SEEDING: ALWAYS APPLY ON CLEAN BARE SOIL. THE MIX MAY BE APPLIED BY HYDRO-SEEDING, BY MECHANICAL SPREADER, OR ON SMALL SITES IT CAN BE SPREAD BY HAND. LIGHTLY RAKE, OR ROLL TO ENSURE PROPER SOIL-SEED CONTACT. BEST RESULTS ARE OBTAINED WITH A SPRING SEEDING. LATE SPRING AND SUMMER SEEDING WILL BENEFIT WITH A LIGHT MULCHING OF CLEAN WEED-FREE STRAW TO CONSERVE MOISTURE. IF CONDITIONS ARE DRIER THAN USUAL, WATERING MAY BE REQUIRED. LATE FALL AND WINTER DORMANT SEEDING REQUIRE AN INCREASE IN THE SEEDING RATE.SEEDING CAN TAKE PLACE ON FROZEN SOIL. AS THE FREEZING, THAWING WEATHER OF LATE FALL AND LATE WINTER WILL WORK THE SEED INTO THE SOIL. FERTILIZATION IS NOT RECOMMENDED. PREPARATION OF A CLEAN WEED FREE SOIL SURFACE IS NECESSARY FOR OPTIMAL RESULTS.

13. SEEDS WILL NOT GERMINATE UNDER INUNDATED CONDITIONS. NOT ALL SPECIES WILL GROW IN ALL WETLAND SITUATIONS.

APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT - BRIDGE V PLANTING DETAILS AND NOTES: SHEET 1 OF 3		DATE: MARCH 2012 SHEET 17 OF 24
PROJECT LOCATION: NEEDHAM AND WELLESLEY NORFOLK COUNTY, MASSACHUSETTS	APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION	massDOT Massachusetts Department of Transportation Highway Division

TABLE 1: WELLESLEY MITIGATION AREA PLANTING SCHEDULE

Community Type	Vegetation Layer	Common Name	Scientific Name	Plan Code	NWIS	Delivered As	Number of Plants
Emergent marsh (PEM)	Herbaceous	Lurid sedge	*Carex lurida*	CL	OBL	2" Plugs	200
		Soft rush	*Juncus effusus*	JE	FACW+	2" Plugs	400
		Tussock sedge	*Carex stricta*	CS	OBL	2" Plugs	300
		Blue vervain	*Verbena hastata*	VH	FACW	2" plugs	300
		Fox sedge	*Carex vulpinoidea*	CV	OBL	2" plugs	200
		Joe-pye weed	*Eupatoriadelphus maculates*	EM	FACS	2" plugs	300
						Total	**1700**

Community Type	Vegetation Layer	Common Name	Scientific Name	Plan Code	NWIS	Delivered As	Number of Plants
Scrub/shrub (PSS)	Shrub	Arrowwood	*Viburnum dentatum*	VD	FAC	18" (container)	8
		Highbush blueberry	*Vaccinium corymbosum*	VC	FACW	18" (container)	12
		Silky dogwood	*Cornus amomum*	CA	FACW	18" (container)	12
						Total	32

TABLE 2: NEEDHAM MITIGATION AREA PLANTING SCHEDULE

Cover Type	Quantity	Scientific Name	Common Name	Map Symbol	Size
Trees	56	*Acer rubrum*	Red maple	Ar	3 to 4 feet
	14	*Pinus strobus*	White pine	Ps	3 to 4 feet
	31	*Quercus bicolor*	Swamp white oak	Qb	3 to 4 feet
Total	**101**				

Cover Type	Quantity	Scientific Name	Common Name		Size
Shrubs	250	*Ilex verticillata*	Winterberry holly	Iv	18 to 24 inches
	116	*Alnus rugosa*	Speckled alder	Ar	18 to 24 inches
	270	*Sambucus canadensis*	Elderberry	Sc	18 to 24 inches
	94	*Salix discolor*	Pussy willow	Sd	18 to 24 inches
	140	*Viburnum dentatum*	Arrowwood	Vd	18 to 24 inches
	440	*Vaccinium corymbosum*	Highbush blueberry	Vc	18 to 24 inches
	391	*Cornus amomum*	Silky dogwood	Ca	18 to 24 inches
	162	*Rhododendron viscosum*	Swamp Azalea	Rv	18 to 24 inches
	120	*Cornus alternifolia*	Alternate-leaved Dogwood	Ad	18 to 24 inches
	90	*Viburnum acerifolium*	Maple Leaf Viburnum	Va	18 to 24 inches
	90	*Corylus americana*	American hazelnut	Ah	18 to 24 inches
	200	*Hamamelis virginiana*	Witch Hazel	Hv	18 to 24 inches
Total	**2,363**				

Cover Type	Quantity	Scientific Name	Common Name	Size
Herbs Emergent Plantings	600	Mix of *Onoclea sensibilis, Lobelia cardinalis, Iris versicolor, Carex stricta*	Sensitive fern, Cardinal flower, Blue-flag iris, tussock sedge	2 inch plugs 4-inches on center

Seed Mixes	New England Conservation/Wildlife Mix*
	New England Erosion Control mix for Moist sites*

* Available through New England Wetland Plants, Amherst, MA.

TABLE 3: NEW ENGLAND WETMIX (WETLAND SEED MIX)

Botanical Name	Common Name	Ind.
Alisma subcordatum	Mud Plantain	OBL
Asclepias incarnata	Swamp Milkweed	OBL
Aster puniceus	Purple Stemmed Aster	OBL
Bidens cernua	Nodding Bur Marigold	OBL
Carex comosa	Bristly/Cosmos Sedge	OBL
Carex crinita	Fringed Sedge (Nodding)	OBL
Carex lupulina	Hop Sedge	OBL
Carex lurida	Lurid Sedge (Shallow)	OBL
Carex scoparia	Blunt Broom Sedge	FACW
Carex vulpinoidea	Fox Sedge	OBL
Eupatorium maculatum	Spotted Joe Pye Weed	FACW
Eupatorium perfoliatum	Boneset	FACW
Glyceria canadensis	Rattlesnake Grass	OBL
Glyceria grandis	Fowl Mannagrass	OBL
Juncus effusus	Soft Rush	FACW+
Mimulus ringens	Square Stemmed Monkey Flower	OBL
Scirpus atrovirens	Green Bulrush	OBL
Scirpus cyperinus	Wool Grass	FACW
Scirpus validus	Soft Stem Bulrush	OBL
Verbena hastata	Blue Vervain	FACW

APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT
INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V
PLANTING DETAILS AND NOTES: SHEET 2 OF 3
PROJECT LOCATION: NEEDHAM AND WELLESLEY NORFOLK COUNTY, MASSACHUSETTS
APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION
massDOT
DATE: MARCH 2012
SHEET 18 OF 24

NOTES:

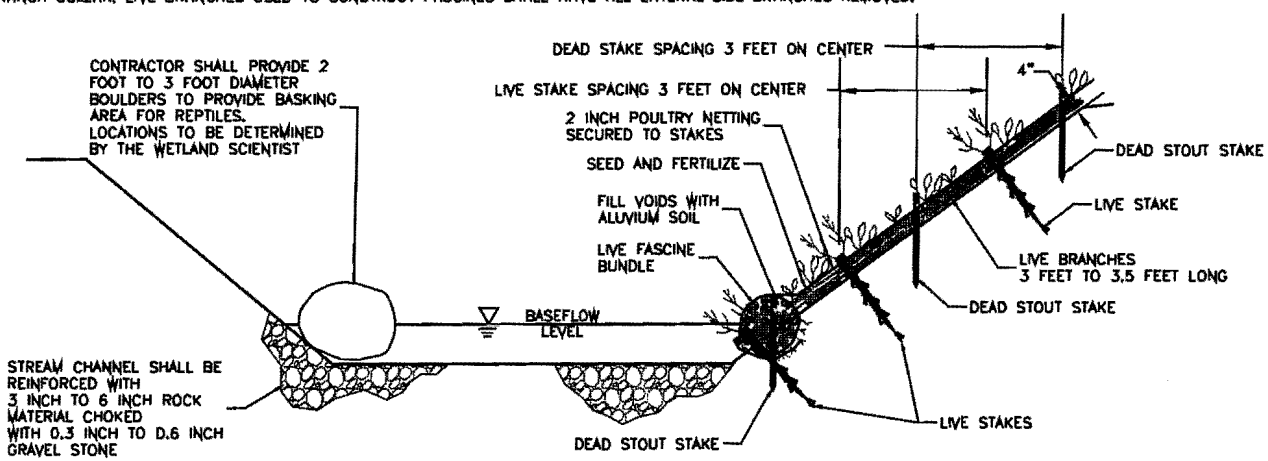
1. THE PROPOSED RELOCATED STREAM CHANNEL WILL BE REINFORCED WITH A LAYER OF SMALL COBBLE-SIZED (3-6 INCH) ROCK MATERIAL CHOKED WITH SMALLER (0.3-0.6 INCH) GRAVEL STONE. DURING CONSTRUCTION OF THE WETLAND AND STREAM MITIGATION AREA, SEVERAL (3-4) LARGE (2-3 FEET DIAMETER) BOULDERS WILL BE SET ALONG THE RELOCATED STREAM CHANNEL TO PROVIDE POTENTIAL BASKING AREAS FOR REPTILES. THE STONES WILL BE PLACED IN A NATURAL MANNER TO PROVIDE SMALL CREVICES AND CAVITIES FOR REPTILES.

2. DEAD STAKES SHALL BE HARD WOOD WITH A MINIMUM LENGTH OF 36 INCHES. STAKES SHALL HAVE A NOTCH CUT TWO INCHES FROM THE TOP OF THE STAKE. THE NOTCH MUST BE ABLE TO SUFFICIENTLY GRAB AND RETAIN WIRE AND/OR WIRE FABRIC WHEN INSTALLED. UPON REQUEST, THE DESIGNER MAY ALLOW A NAIL TO BE DRIVEN IN THE STAKE AT AN ANGLE OF APPROXIMATELY 45 DEGREES AND POINTED TOWARDS THE GROUND IN LIEU OF THE NOTCH. THE NAIL MUST BE EMBEDDED INTO THE STAKE A MINIMUM OF ONE INCH AND MUST HAVE A MINIMUM OF TWO INCHES EXTENDING OUT FROM THE STAKE. STAKES SHALL BE OF SUFFICIENT THICKNESS FOR SOIL PENETRATION WITHOUT CRACKING OR BREAKAGE.

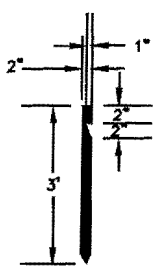
3. WIRE SHALL BE MINIMUM 14 GAUGE. WOVEN WIRE FABRIC (POULTRY NETTING) SHALL BE GALVANIZED, A MINIMUM OF 14 GAUGE, HAVE A MINIMUM WIDTH OF 32 INCHES, AND HAVE A MAXIMUM WIRE SPACING OF TWELVE INCHES. THE FABRIC SHALL BE TIED TOGETHER WITH WIRE AT ALL JOINTS.

4. LIVE BRANCHES, LIVE STAKES AND LIVE CUTTINGS SHALL BE PREPARED THE SAME DAY THEY ARE INSTALLED. LIVE BRANCHES FOR BRUSH MATTRESS SHALL CONSIST OF A MIX OF FLOOD-TOLERANT, WOODY SPECIES THAT ROOT RAPIDLY FROM VEGETATIVE CUTTINGS. LIVE BRANCHES SHALL BE 3/8 TO 2 INCHES IN DIAMETER AND 4 TO 9 FEET IN LENGTH. THE BASAL ENDS OF THE LIVE BRANCHES SHALL BE CLEANLY CUT. LARGE LATERAL BRANCHES SHALL BE REMOVED, AVOIDING DAMAGE TO THE BARK RIDGE AND BRANCH COLLAR.

5. LIVE FASCINES FOR BRUSH MATTRESS SHALL CONSIST OF A MIX OF FLOOD-TOLERANT, WOODY SPECIES THAT ROOT RAPIDLY FROM VEGETATIVE CUTTINGS. LIVE FASCINES SHALL BE 6 TO 8 INCHES IN DIAMETER. THE INDIVIDUAL BRANCHES MAKING UP THE LIVE FASCINES SHALL BE 3/8 TO 2 INCHES IN DIAMETER AND 6 TO 9 FEET IN LENGTH. THE BRANCHES SHALL BE STAGGERED THROUGHOUT THE ENTIRE FASCINE LENGTH AND WILL BE SECURED TIGHTLY WITH TWINE OR WIRE. THE BASAL ENDS OF THE LIVE BRANCHES SHALL BE CLEANLY CUT. LARGE LATERAL BRANCHES SHALL BE REMOVED, AVOIDING DAMAGE TO THE BARK RIDGE AND BRANCH COLLAR. LIVE BRANCHES USED TO CONSTRUCT FASCINES SHALL HAVE ALL LATERAL SIDE BRANCHES REMOVED.



SECTION VIEW



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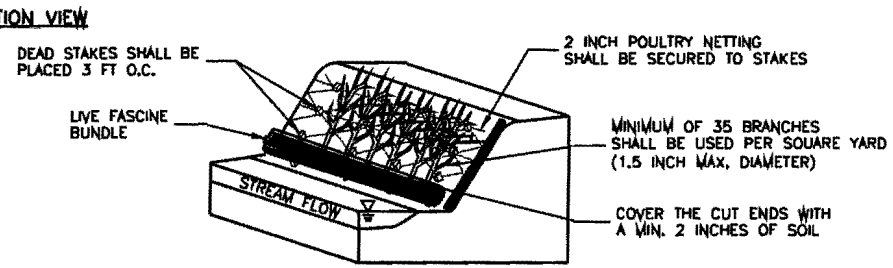
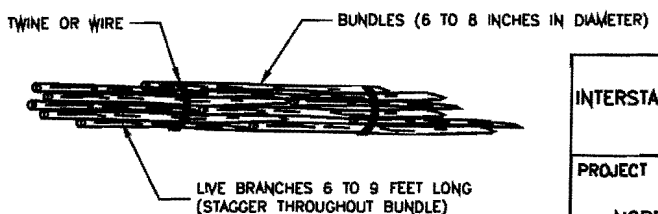
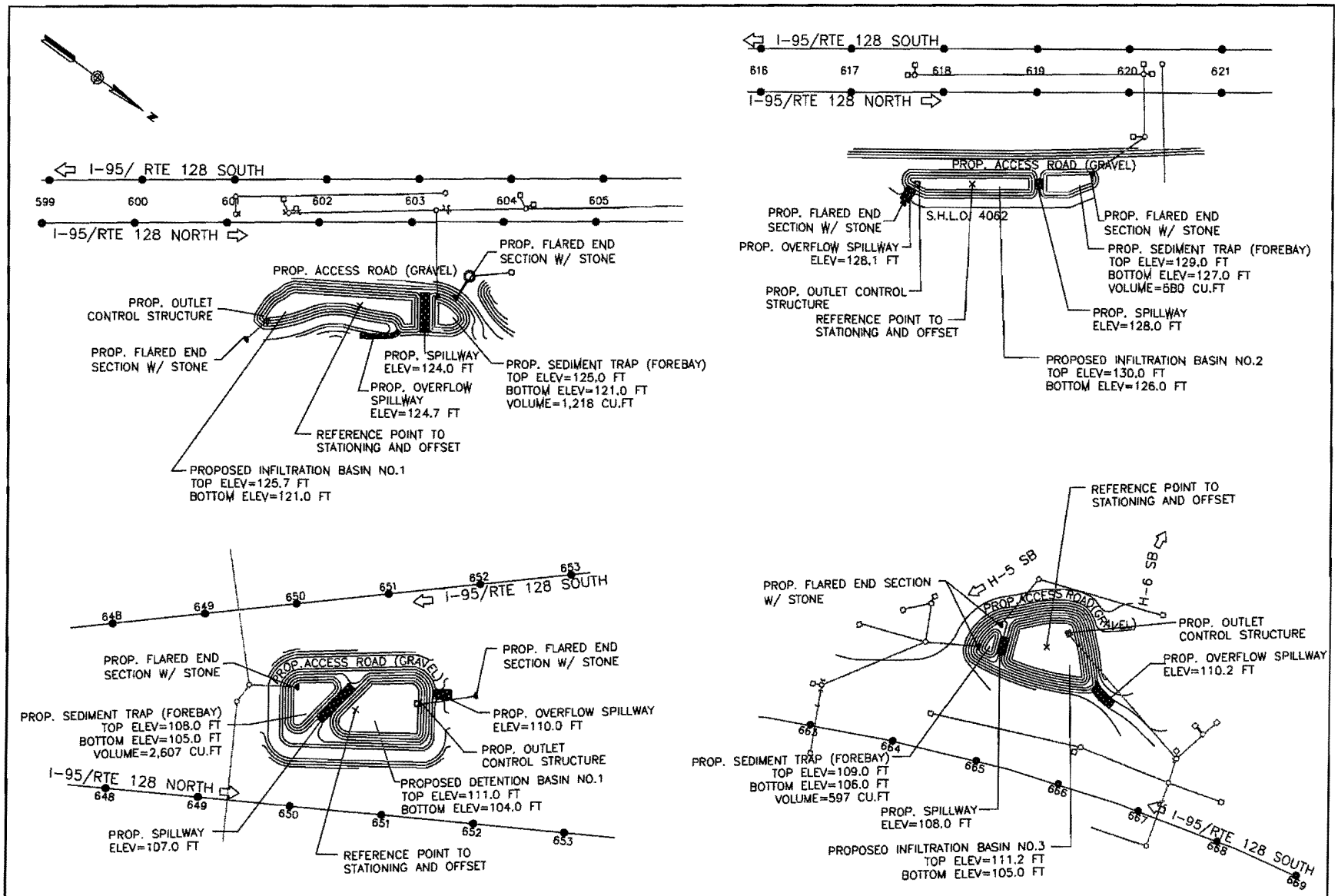
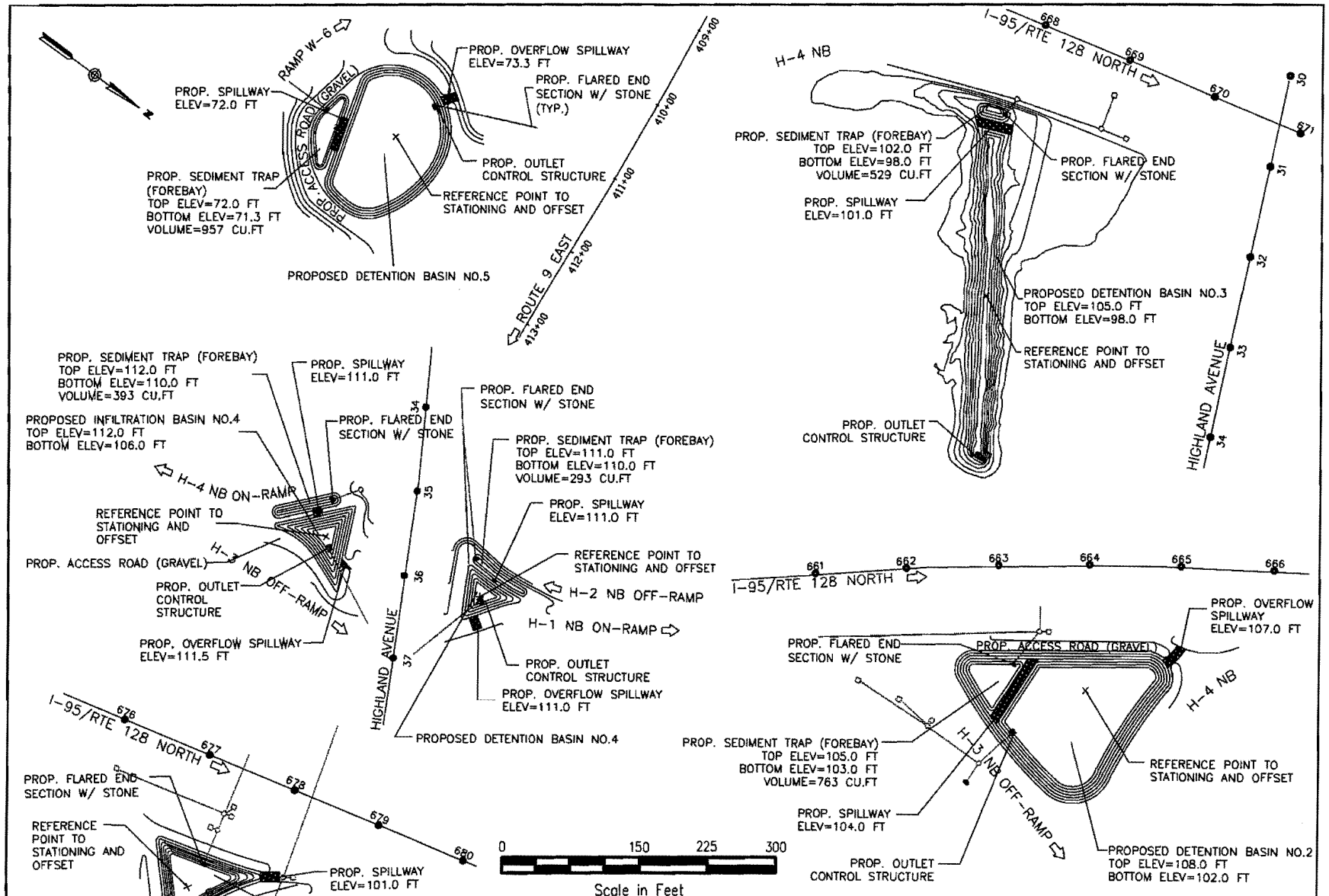




APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT - BRIDGE V PLANTING DETAILS AND NOTES: SHEET 3 OF 3	DATE: MARCH 2012 SHEET 19 OF 24
PROJECT LOCATION: NEEDHAM AND WELLESLEY NORFOLK COUNTY, MASSACHUSETTS	APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION massDOT Highway Division



APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V DRAINAGE DETAILS: SHEET 1 OF 2		DATE: MARCH 2012 SHEET 20 OF 24
PROJECT LOCATION: NEEDHAM AND WELLESLEY NORFOLK COUNTY, MASSACHUSETTS	APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION	massDOT Highway Division



APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT
INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V

DRAINAGE DETAILS: SHEET 2 OF 2

DATE: MARCH 2012

SHEET 21 OF 24

PROJECT LOCATION:
NEEDHAM AND WELLESLEY
NORFOLK COUNTY, MASSACHUSETTS

APPLICATION BY:
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

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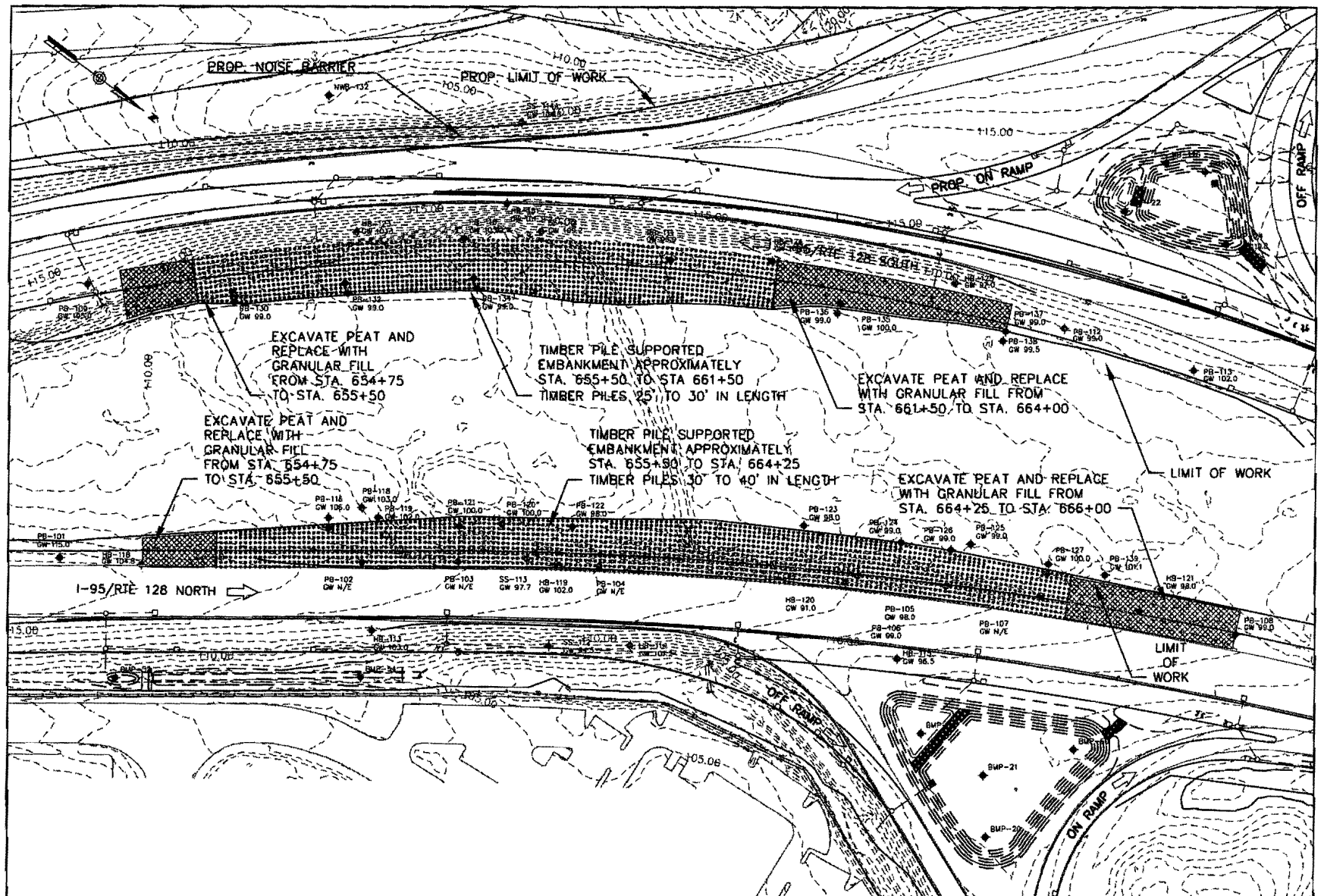
Highway Division



APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT
INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V

TIMBER PILE PLAN

DATE: MARCH 2012

SHEET 22 OF 24

PROJECT LOCATION:
NEEDHAM AND WELLESLEY
NORFOLK COUNTY, MASSACHUSETTS

APPLICATION BY:
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

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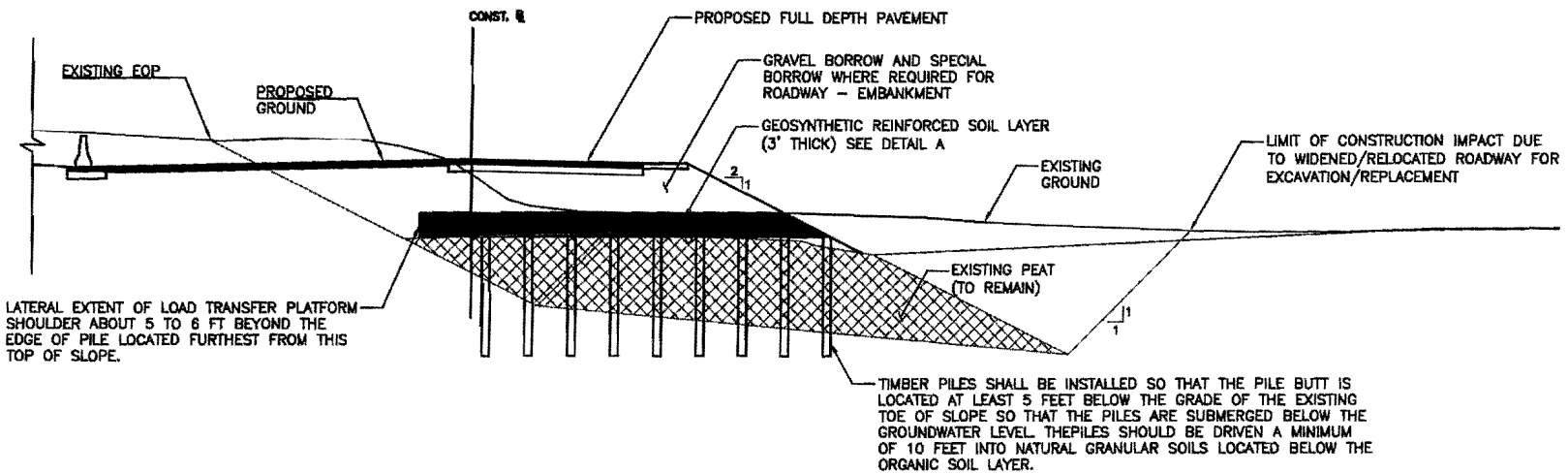
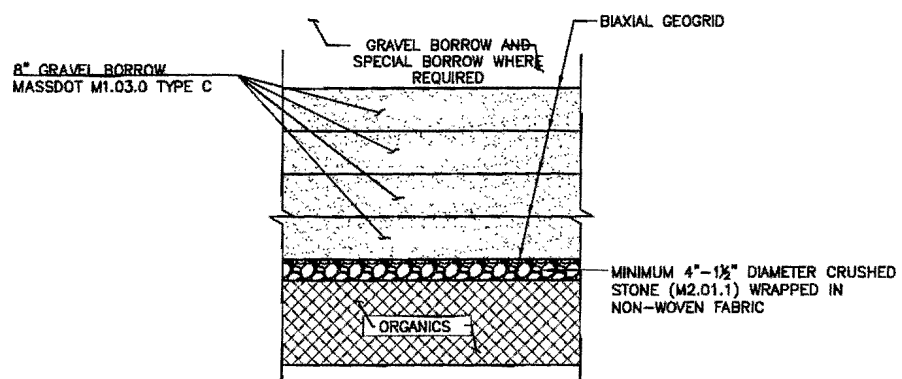
Massachusetts Department of Transportation
Highway Division



TIMBER PILE SUPPORTED EMBANKMENT DETAIL
NOT TO SCALE

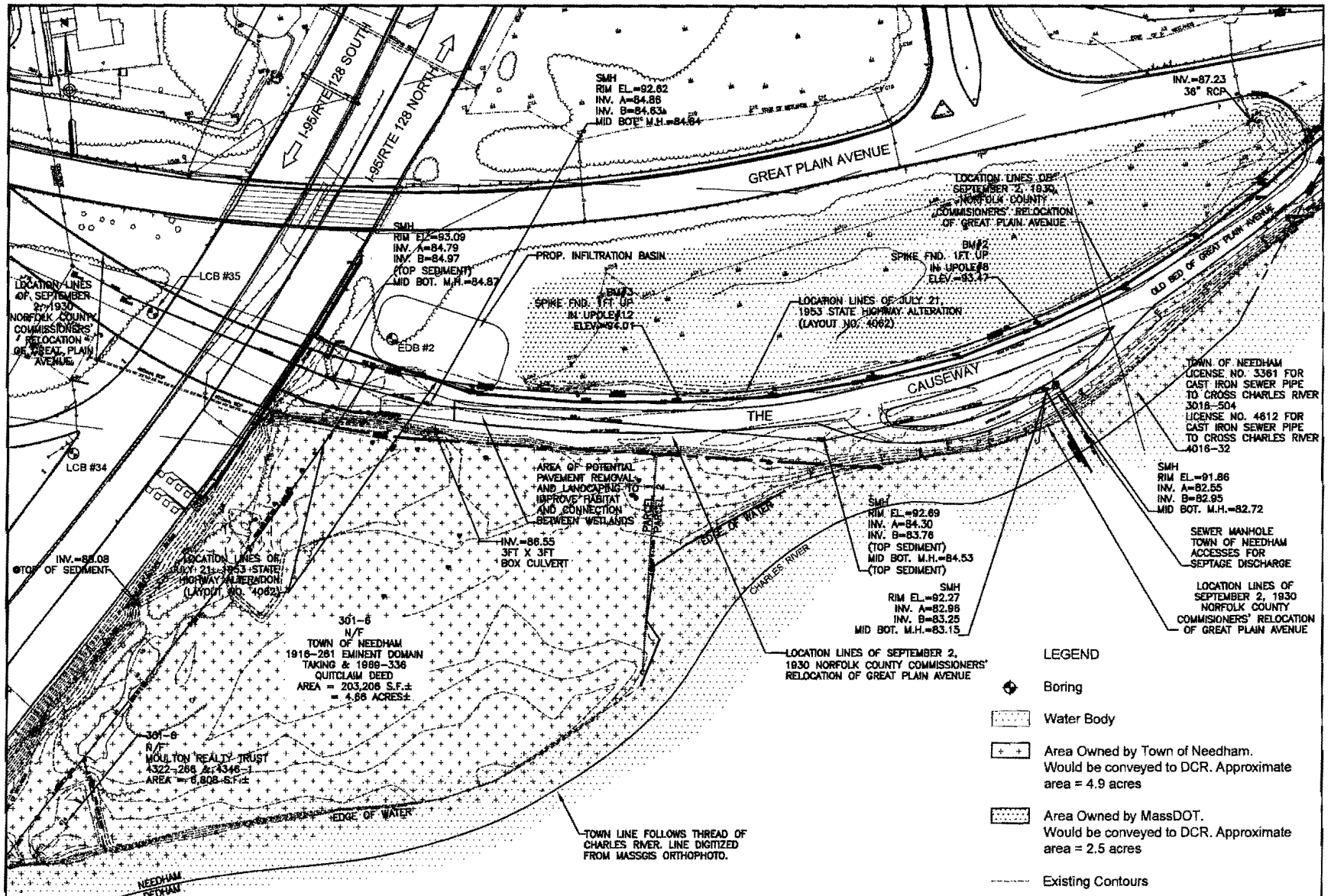
NOTES

1. LIMITS OF TIMBER PILES WILL BE DETERMINED BY THE FIELD ENGINEER.
2. TIMBER PILES SPACED APPROXIMATELY 5' ON CENTER.
3. TIMBER PILES SHALL BE INSTALLED SO THAT THE PILE BUTT IS LOCATED AT LEAST 5 FEET BELOW THE GRADE OF THE EXISTING TOE OF SLOPE SO THAT THE PILES ARE SUBMERGED BELOW THE GROUNDWATER LEVEL. THE PILES SHOULD BE DRIVEN A MINIMUM OF 10 FEET INTO NATURAL GRANULAR SOILS LOCATED BELOW THE ORGANIC SOIL LAYER.
4. PILES SHOULD BE DRIVEN (I.E., NOT VIBRATED).
5. AXIAL CAPACITY SHOULD BE VERIFIED BY DYNAMIC PILE TESTING WITH SIGNAL MATCHING ON A MINIMUM OF 6 PILES PERFORMED BY THE CONTRACTOR DURING INSTALLATION. THE LOCATION OF TEST PILES SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER.
6. THE CONTRACTOR SHALL SUBMIT A PILE SCHEDULE, PILE INSTALLATION AND PILE DRIVING/TESTING PLAN FOR REVIEW AND APPROVAL BY THE GEOTECHNICAL ENGINEER.



DETAIL A
NOT TO SCALE

APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V TIMBER PILE DETAILS	DATE: MARCH 2012 SHEET 23 OF 24
PROJECT LOCATION: NEEDHAM AND WELLESLEY NORFOLK COUNTY, MASSACHUSETTS	APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION massDOT Massachusetts Department of Transportation Highway Division



0 150 225 300

Scale in Feet

APPLICATION FOR U.S. ACOE SECTION 404 INDIVIDUAL PERMIT
INTERSTATE 95/93 (ROUTE 128) TRANSPORTATION IMPROVEMENT PROJECT – BRIDGE V

GREAT PLAIN AVENUE OFF-SITE MITIGATION AREA

DATE: MARCH 2012

SHEET 24 OF 24

PROJECT LOCATION:
NEEDHAM AND WELLESLEY
NORFOLK COUNTY, MASSACHUSETTS

APPLICATION BY:
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

massDOT
Massachusetts Department of Transportation
Highway Division