



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

PUBLIC NOTICE

Comment Period Begins: July 22, 2014
Comment Period Ends: August 21, 2014
File Number: NAE-2014-00987
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 from the Massachusetts Department of Transportation – Highway Division (MassDOT), 10 Park Plaza, Boston, Massachusetts 02116. This work is proposed in Amethyst Brook at Meetinghouse Road, Pelham, Massachusetts. The site coordinates are: Latitude 42.379913°, Longitude -72.449841°.

Although this project may have only minimal impacts and may be eligible for authorization under the current Massachusetts General Permit, the work is not expected to begin until after the General Permit expires on January 20, 2015. The applicant is seeking an individual permit to allow for a full five years in which to complete the work.

The work involves the temporary discharge of 380 square feet of fill material into Amethyst Brook associated with the replacement of the bridge (No. P-04-006) conveying Meetinghouse Road over Amethyst Brook in Pelham, Massachusetts. The purpose of the work is to replace the deteriorated superstructure and substructure of the bridge with a new bridge structure. The proposed work would replace the existing single-span structure with a new single-span structure, and also includes limited approach work. The new concrete abutments would be constructed behind the existing dry laid fieldstone abutments. The existing abutments will be retained but cut down slightly to provide adequate clearance for the new bridge. The remaining portions of the existing abutments will be repaired by pointing and grouting. Section 404 impacts are limited to the installation of two temporary sandbag cofferdams to allow repairs to the existing abutments to occur under dry conditions. No other work is proposed within the river and flow will be maintained throughout construction.

The work is shown on the attached plans entitled “PROPOSED BRIDGE, PELHAM, MEETINGHOUSE ROAD OVER AMETHYST BROOK” on 9 sheets, and dated “July 9, 2014”.

In developing plans for replacing the Meetinghouse Road Bridge, 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 installing compost filter tubes to control sediment, conducting repair work within a sandbag cofferdam to reduce turbidity, and installation of shielding to prevent debris from entering the river. No compensatory mitigation is proposed because the impacts are minimal and temporary.

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.

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

Based on his initial review, the District Engineer has determined that little likelihood exists for the proposed work to impinge upon properties with cultural or Native American significance, or listed in, or eligible for listing in, the National Register of Historic Places. Therefore, no further consideration of the requirements of Section 106 of the National Historic Preservation Act of 1966, as amended, is necessary. This determination is based upon one or more of the following:

- a. The permit area has been extensively modified by previous work.
- b. The permit area has been recently created.
- c. The proposed activity is of limited nature and scope.
- d. Review of the latest published version of the National Register shows that no presence of registered properties listed as being eligible for inclusion therein are in the permit area or general vicinity.
- e. Coordination with the State Historic Preservation Officer and/or Tribal Historic Preservation Officer(s)

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:

- 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.

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 by email, 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.

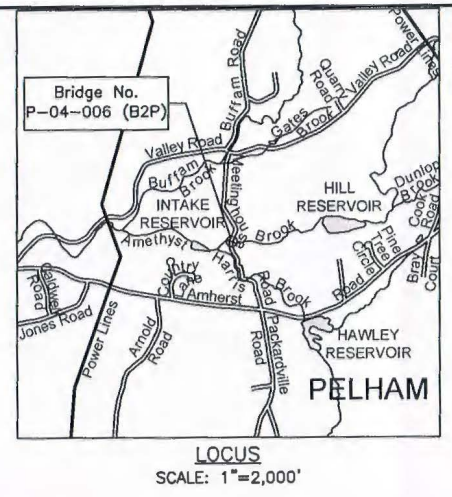
NAME: _____
ADDRESS: _____
PHONE: _____

604429 WATER QUALITY CERTIFICATE SUBMISSION 06/13/14
 604429 EV (P04006) DWG
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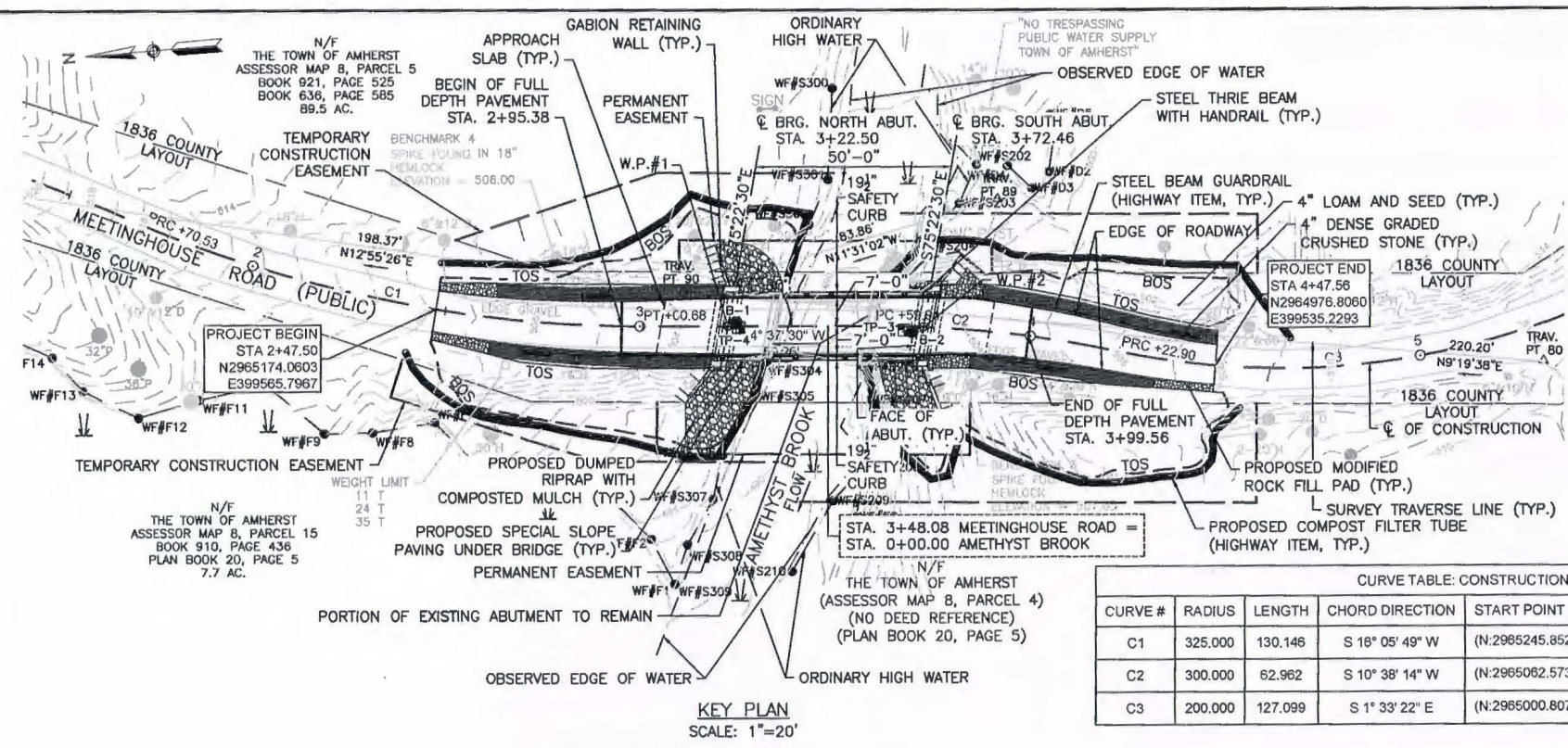
**PELHAM
MEETINGHOUSE ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		1	9
PROJECT FILE NO.		604429	

TITLE SHEET

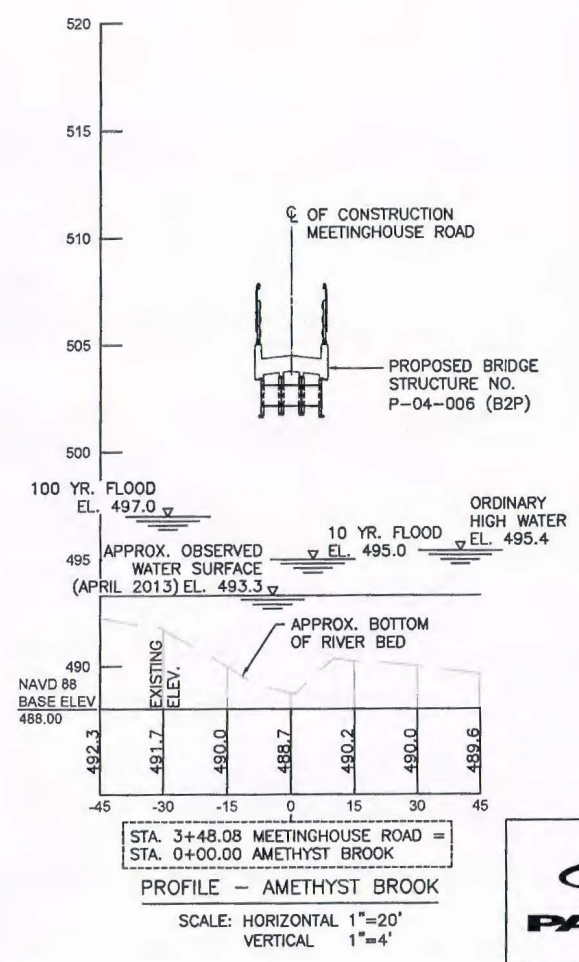
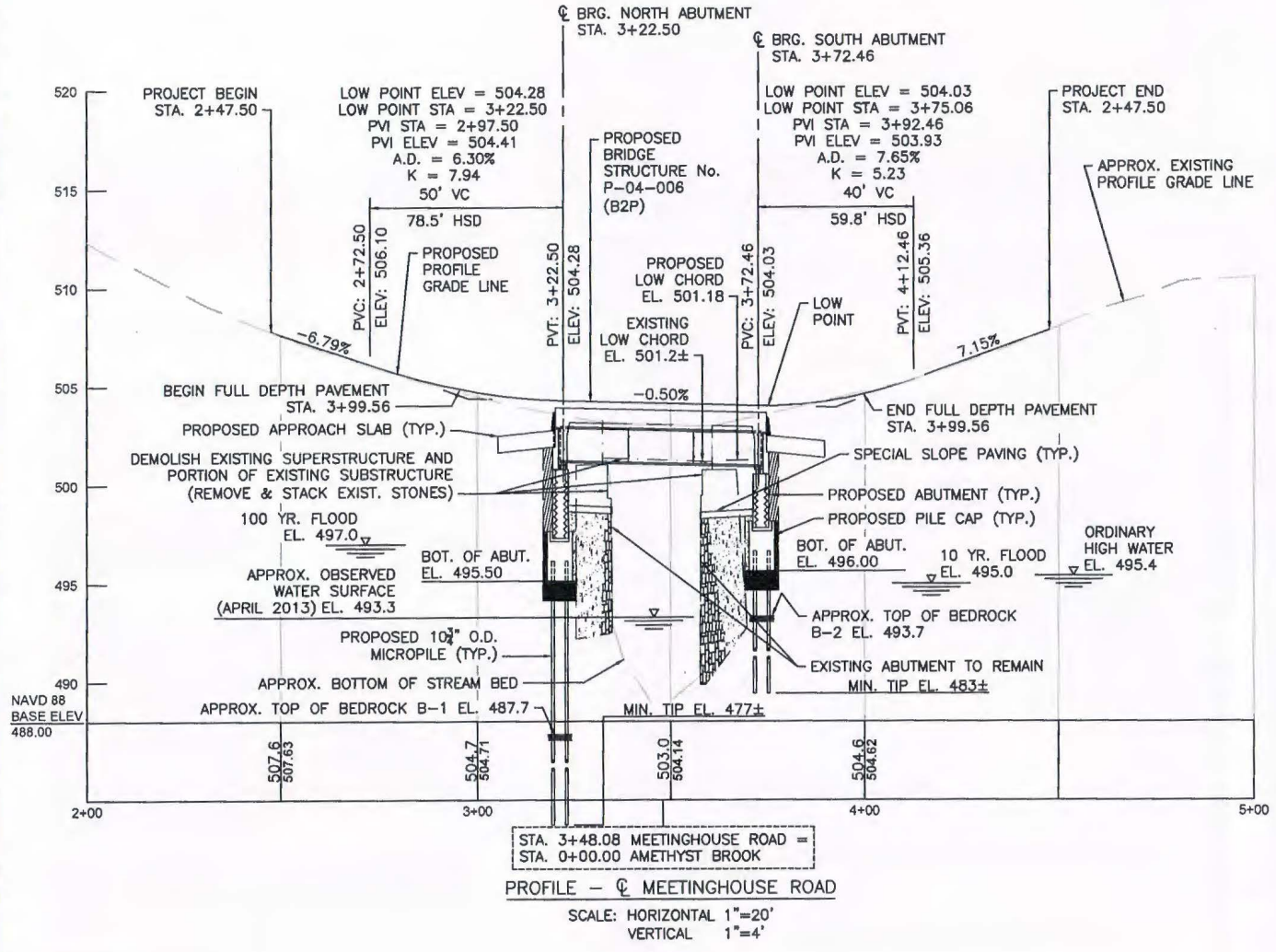


- INDEX OF DRAWINGS**
- 1 TITLE SHEET
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CURVE TABLE: CONSTRUCTION BASELINE

CURVE #	RADIUS	LENGTH	CHORD DIRECTION	START POINT	END POINT
C1	325.000	130.146	S 16° 05' 49" W	(N:2965245.8524,E:399593.0454)	(N:2965121.643,E:399557.201)
C2	300.000	62.962	S 10° 38' 14" W	(N:2965082.5735,E:399552.4231)	(N:2965000.807,E:399540.822)
C3	200.000	127.099	S 1° 33' 22" E	(N:2965000.8073,E:399540.8223)	(N:2964875.882,E:399544.216)



**WATER QUALITY CERTIFICATE SUBMISSION
JULY 9, 2014**

	MONTH DO, YYYY ISSUED FOR CONSTRUCTION
PARE CORPORATION ENGINEERS - SURVEYORS - PLANNERS 8 BRACKSTONE VALLEY PLACE LINCOLN, RI 02865 401-334-1100	PROPOSED BRIDGE PELHAM MEETINGHOUSE ROAD OVER AMETHYST BROOK MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION 10 PARK PLAZA BOSTON, MASS
TITLE: _____ CHIEF ENGINEER	TITLE: _____ CHIEF ENGINEER

GENERAL NOTES:

DESIGN

IN ACCORDANCE WITH THE 2012 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS, WITH CURRENT INTERIM SPECIFICATIONS THROUGH 2013 FOR HL-93 LOADING.

EXISTING CONDITIONS

ALL DIMENSIONS AND DETAILS SHOWN FOR THE EXISTING STRUCTURE ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS AND DETAILS NECESSARY FOR COMPLETION OF ALL WORK BY FIELD MEASUREMENTS AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY AND ACCURACY THEREOF, AND SHALL NOT ORDER ANY MATERIAL OR COMMENCE ANY FABRICATION UNTIL HE/SHE HAS MADE THE REQUIRED MEASUREMENTS ON THE ACTUAL STRUCTURE AND THE EXTENT OF THE PROPOSED WORK HAS BEEN APPROVED BY THE ENGINEER. EXISTING STRUCTURE IS SHOWN THUS ----- EXCEPT AS NOTED.

SURVEY NOTEBOOKS

ELECTRONIC SURVEY WAS USED. A COPY OF THE DATA FILE MAY BE OBTAINED FROM MASSACHUSETTS DEPARTMENT OF TRANSPORTATION.

BENCHMARK

BENCHMARK 4, SPIKE IN 18" HEMLOCK CONSTRUCTION BASELINE STA. 2+77.45, 16.31' LT EL. 506.00.
BENCHMARK 3, SPIKE IN 16" HEMLOCK CONSTRUCTION BASELINE STA. 3+85.50, 13.20' RT EL. 507.65.

ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

DATE

DATE TO BE PLACED ON THE OUTSIDE FACE OF THE DECK EXTERIOR EDGE AT MIDSPAN, BOTH SIDES. A SHEET SHOWING THE SIZE AND CHARACTER OF NUMERALS WILL BE FURNISHED. THE DATE USED SHALL BE THE LATEST YEAR OF CONTRACT COMPLETION AS OF THE DATE THE FIRST SAFETY CURB IS CONSTRUCTED. BOTH SIDES SHALL FEATURE THE SAME DATE.

FOUNDATIONS

FOUNDATIONS MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION, WITH THE APPROVAL OF THE ENGINEER.

UNSUITABLE MATERIAL

ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE AS DIRECTED BY THE ENGINEER.

SEISMIC GROUND SHAKING HAZARD

DESIGN SPECTRA:

$A_g = 0.066$
 $S_{0.5} = 0.156$
 $S_{0.1} = 0.063$

SITE CLASS = C

SEISMIC DESIGN CATEGORY (SDC) = A

ANCHOR BOLTS

ALL BRIDGE BEARING ANCHOR BOLTS SHALL BE SET BY TEMPLATE BEFORE THE CONCRETE IS PLACED, EXCEPT AT ABUTMENTS, WHERE CORING AND GROUTING MAY BE USED AT THE CONTRACTOR'S OPTION, PROVIDED THAT THE METHOD OF INSTALLATION WILL NOT CUT REINFORCING STEEL.

REINFORCEMENT

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60. UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

MODIFICATION CONDITION	#4 BARS	#5 BARS
1. NONE	21"	26"
2. 12" OF CONCRETE BELOW BAR	29"	36"
3. COATED BARS, COVER < 3db, OR CLEAR SPACING < 6db	31"	39"
4. COATED BARS, ALL OTHER CASES	25"	31"
5. CONDITION 2. AND 3.	35"	44"
6. CONDITION 2. AND 4.	34"	43"

IF THE ABOVE BARS ARE SPACED 6" OR MORE ON CENTER, THE LAP LENGTH SHALL BE 80% OF THE LAP LENGTH GIVEN ABOVE. ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

REINFORCING STEEL PLACED AT THE FOLLOWING LOCATIONS SHALL BE EPOXY COATED: ABUTMENT STEMS, CURTAIN WALL, AND BACKWALLS; BRIDGE DECKS AND SAFETY CURBS; END DIAPHRAGMS AND KEEPER BLOCKS. ALL OTHER REINFORCING SHALL BE UNCOATED.

UTILITIES

THE CONTRACTOR SHALL LOCATE AND PROTECT FROM DAMAGE ALL EXISTING UTILITIES.

CONCRETE MIXES

THE FOLLOWING ELEMENTS ARE PRECAST: ABUTMENT STEMS AND CURTAIN WALLS, ABUTMENT BACKWALLS, APPROACH SLABS.

(1) (2) (3) TO BE USED IN CONSTRUCTION OF:
4000 1 1/2 565 ABUTMENTS, PILE CAPS, APPROACH SLAB, APPROACH SLAB CLOSURE POURS, SUBSTRUCTURE CLOSURE POURS

4000 3/4 585 HP CEMENT CONCRETE BRIDGE DECK, END DIAPHRAGM

4000 3/4 610 ABUTMENT SHEAR KEYS, BACKWALLS, KEEPER BLOCKS

5000 3/4 685 HP CEMENT CONCRETE SAFETY CURBS

(1) 28 DAY COMPRESSIVE STRENGTH (PSI)

(2) MAXIMUM AGGREGATE SIZE (IN)

(3) CEMENTITIOUS CONTENT (POUND/C.Y.)

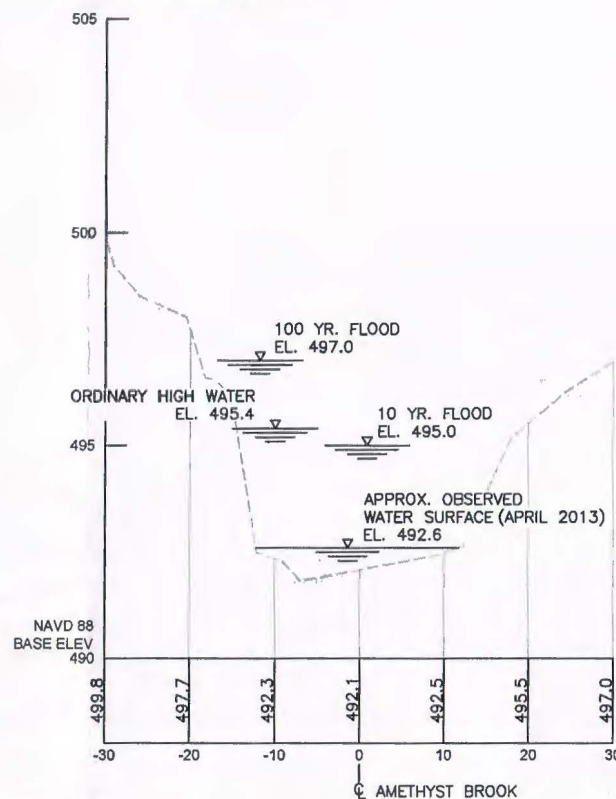
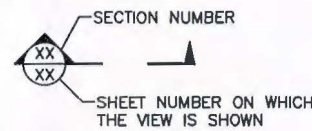
STRUCTURAL STEEL

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50 UNLESS OTHERWISE NOTED HEREIN. ALL STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED.

SCALES

SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY 2 FOR HALF SIZE PRINTS.

SECTION MARK



NOTE: APPROACH CHANNEL GRADING WILL NOT BE ALTERED BY BRIDGE CONSTRUCTION.

CHANNEL APPROACH SECTION

SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=2'

SECTION AT APPROXIMATELY 40 FEET UPSTREAM OF PROPOSED BRIDGE CENTERLINE OF CONSTRUCTION.

PELHAM MEETINGHOUSE ROAD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		2	9

PROJECT FILE NO. 604429

BRIDGE NOTES

ESTIMATED QUANTITIES (NOT GUARANTEED)	
DEMOLITION OF BRIDGE NO. P-04-006(ORM)	1 LS
REINFORCED CONCRETE EXCAVATION	50 CY
BRIDGE EXCAVATION	230 CY
GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES	60 CY
CONTROLLED DENSITY FILL - NON-EXCAVATABLE	6 CY
CRUSHED STONE	170 TON
CRUSHED STONE FOR BRIDGE FOUNDATIONS	80 TON
GABIONS	40 CY
STONE MASONRY ABUTMENT IN CEMENT MORTAR	20 CY
STONE MASONRY WALL REMOVED AND REBUILT IN CEMENT MORTAR	10 CY
STONE MASONRY ABUTMENT REPAIR	110 CF
GEOTEXTILE FABRIC FOR PERMANENT EROSION CONTROL	800 SY
COMPOST TOP SOIL	60 CY
SEEDING - RESTORATION MIX	800 SY
STRAW MULCH	500 SY
COMPOSTED MULCH FOR MODIFIED ROCK FILL	300 SY
MATTING FOR EROSION CONTROL	30 5Y
DRILLED MICROPILE 10-3/4 INCH OUTSIDE DIAMETER	500 FT
MICROPILE VERIFICATION LOAD TEST	2 EA
MODIFIED ROCK FILL	180 TON
SPECIAL SLOPE PAVING UNDER BRIDGE - CEMENT CONCRETE	60 SY
CONTROL OF WATER - STRUCTURE NO. P-04-006 (B2P)	1 LS
BRIDGE STRUCTURE, BRIDGE NO. P-04-006 (B2P)	1 LS

HYDRAULIC DATA

DRAINAGE AREA: 4.4 SQUARE MILES
DESIGN DISCHARGE: 453 CUBIC FEET PER SECOND
DESIGN FREQUENCY: 10 YEARS
DESIGN VELOCITY: 9.0 FEET PER SECOND
DESIGN HIGH WATER ELEVATION: 495.0 FEET

BASE (100-YEAR) FLOOD DATA

Q (100 YEAR): 959 CUBIC FEET PER SECOND
WATER SURFACE ELEVATION: 497.0 FEET

FLOOD RECORD

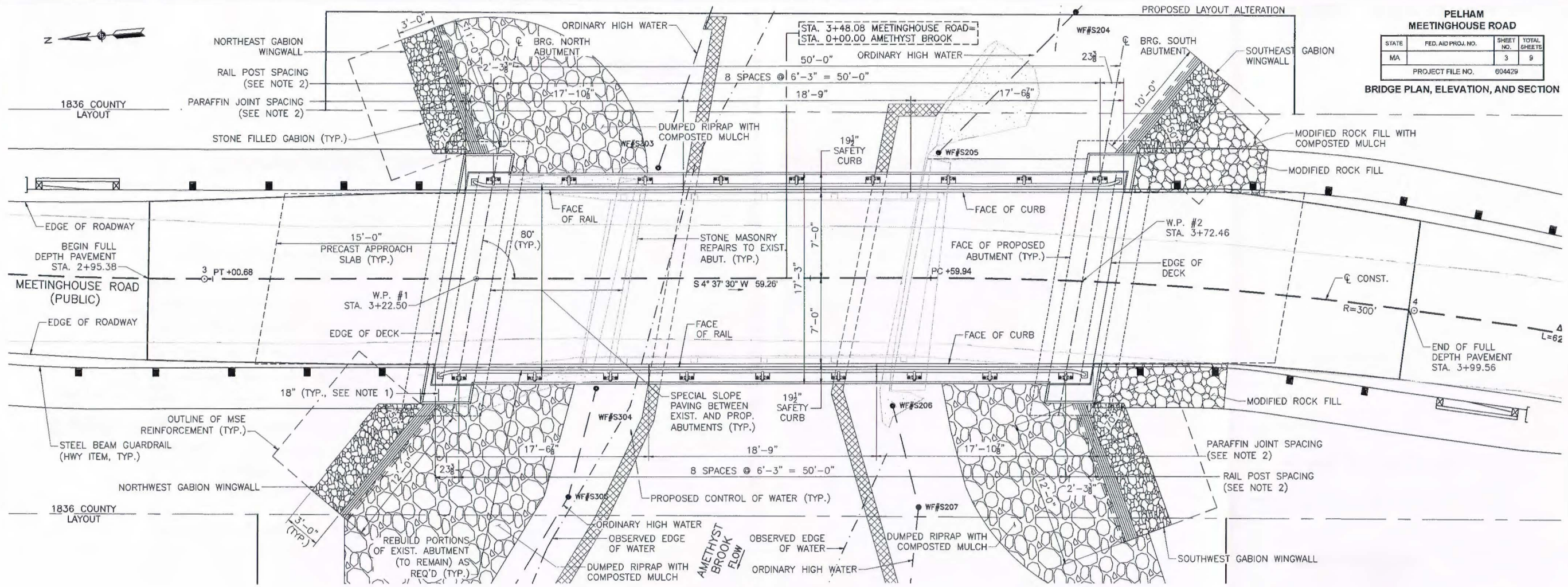
Q = UNKNOWN CUBIC FEET PER SECOND
FREQUENCY (IF KNOWN): UNKNOWN YEARS
DATE: UNKNOWN
HISTORY OF ICE FLOES: NONE DOCUMENTED
EVIDENCE OF SCOUR AND EROSION: SOME OF THE BEARING STONES OF THE EXISTING SOUTH ABUTMENT AND WINGWALL HAVE BEEN UNDERMINED/DISPLACED

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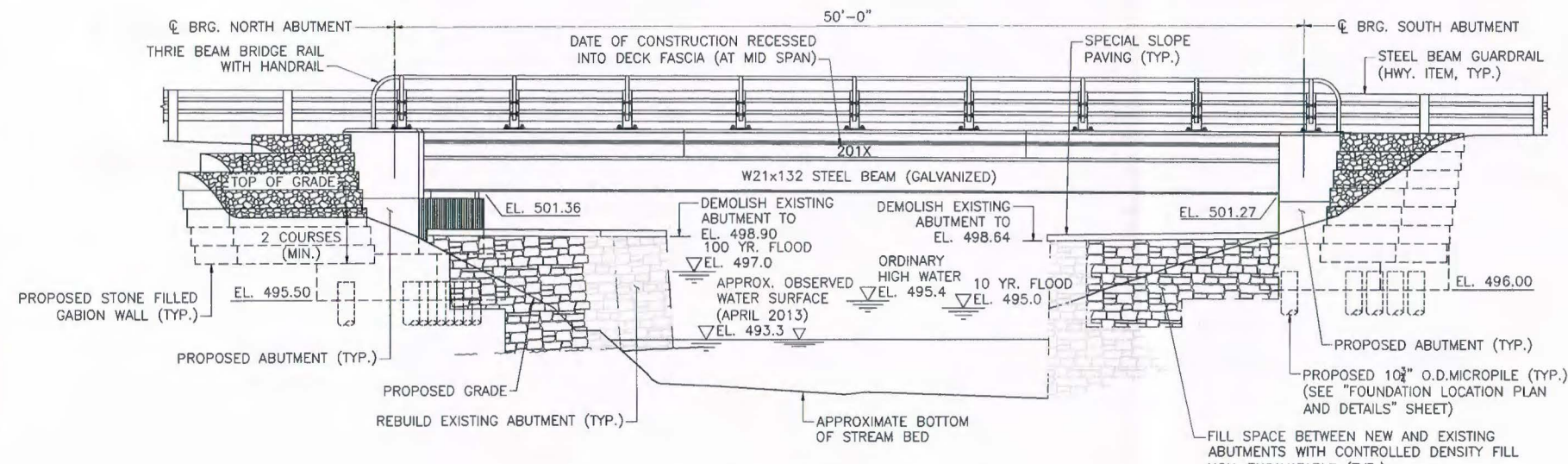
PELHAM MEETINGHOUSE ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		3	9
PROJECT FILE NO.		604429	

BRIDGE PLAN, ELEVATION, AND SECTION

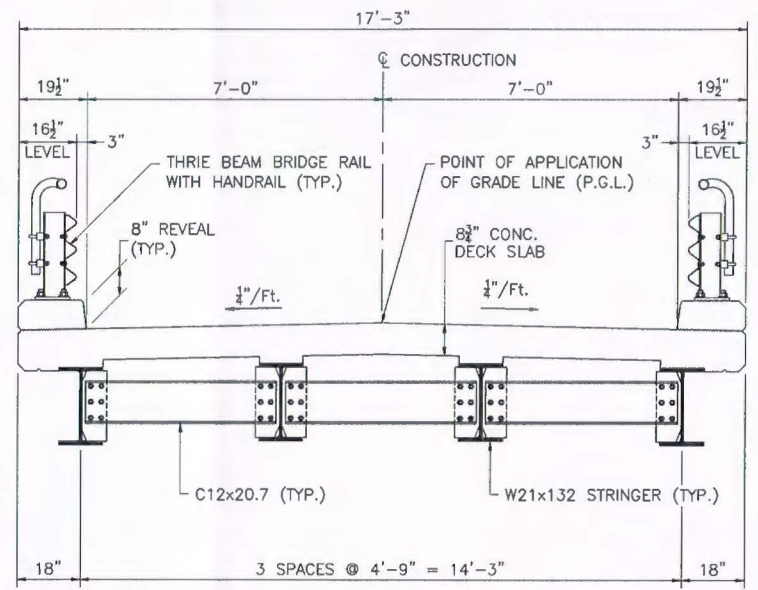


- NOTES:**
1. WINGWALL LENGTHS AND DIMENSIONS ARE GIVEN AT PROPOSED GRADE IN FRONT OF WALL.
 2. PARAFFIN AND RAIL POST DIMENSIONS ARE GIVEN ALONG FACE OF CURB.

BRIDGE PLAN
SCALE: 1/4" = 1'-0"



BRIDGE ELEVATION
SCALE: 1/4" = 1'-0"



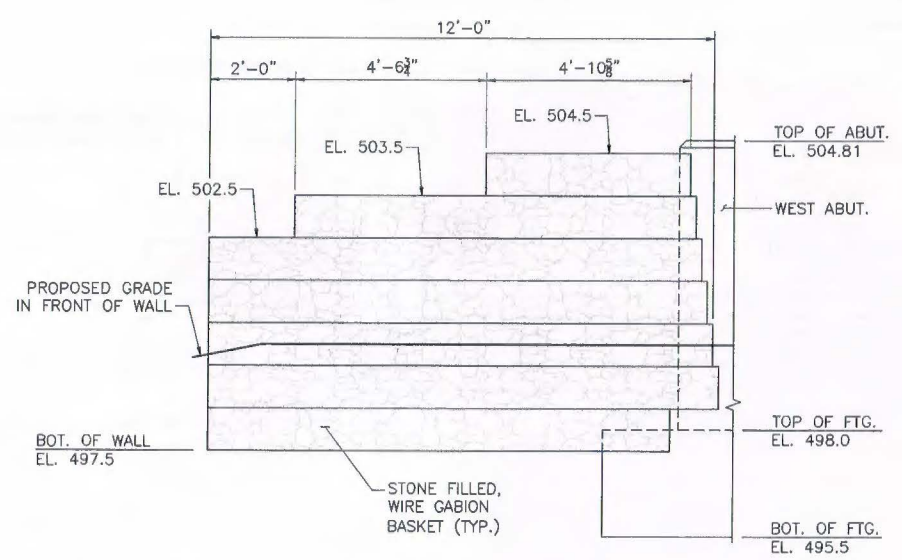
TRANSVERSE SECTION
SCALE: 1/2" = 1'-0"

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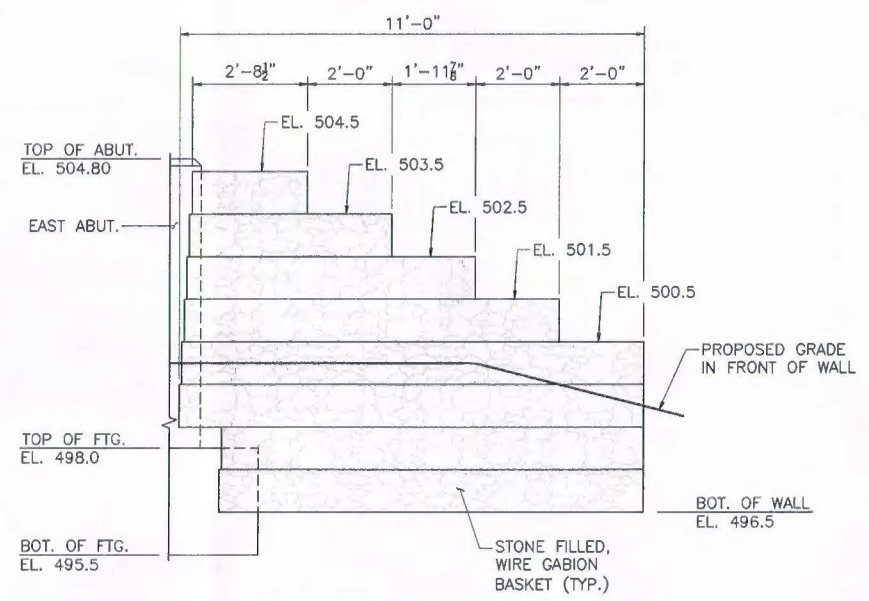
**PELHAM
MEETINGHOUSE ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		4	9
PROJECT FILE NO.		604429	

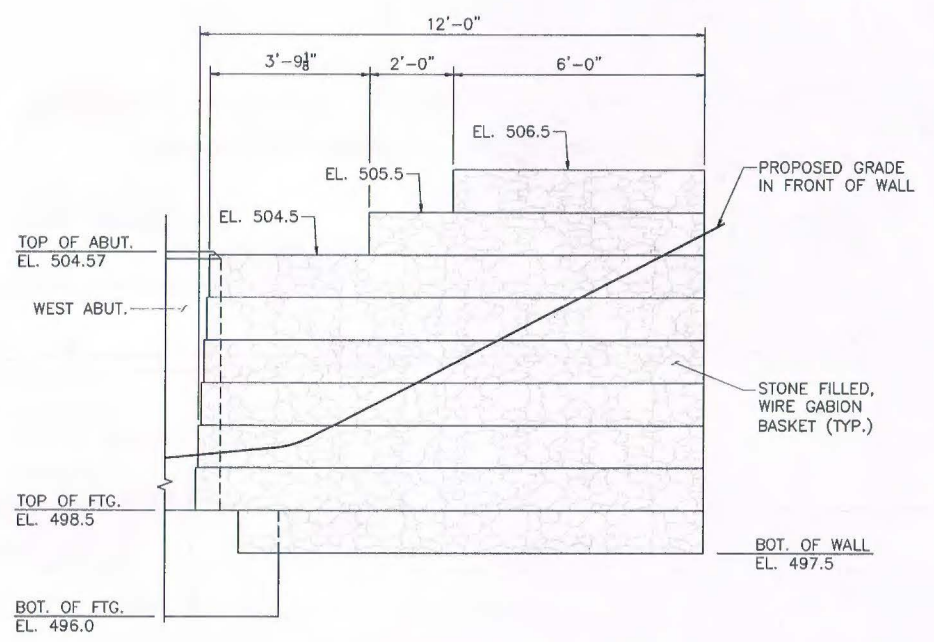
WINGWALL ELEVATIONS AND SECTION



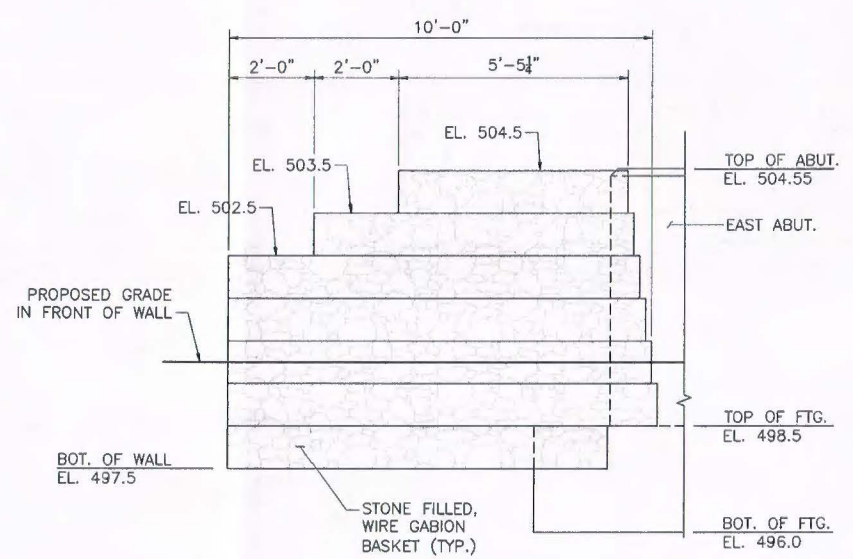
NORTHWEST WINGWALL ELEVATION
SCALE: 1/2" = 1'-0"



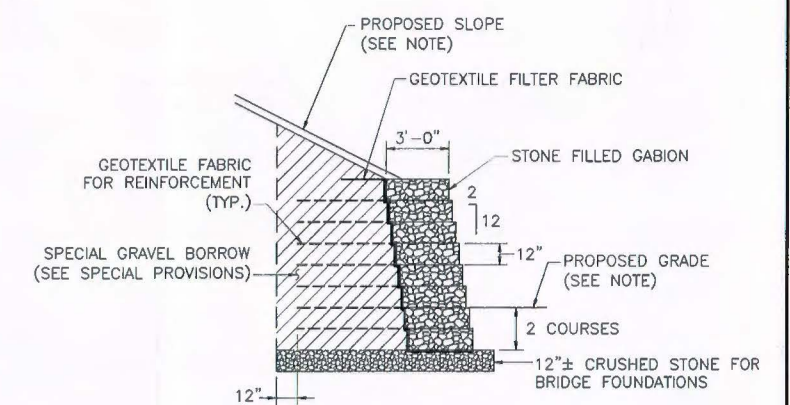
NORTHEAST WINGWALL ELEVATION
SCALE: 1/2" = 1'-0"



SOUTHWEST WINGWALL ELEVATION
SCALE: 1/2" = 1'-0"



SOUTHEAST WINGWALL ELEVATION
SCALE: 1/2" = 1'-0"



NOTE:
FOR SLOPE TREATMENTS AND PLANTINGS IN FRONT AND BEHIND WALL, REFER TO LANDSCAPE PLANS AND DETAILS SHEETS.

SECTION - GABION WALL
SCALE: 1/4" = 1'-0"

NOTE:
SEE "SECTION-GABION WALL" ON THIS SHEET FOR MSE, CRUSHED STONE, AND GABION BASKET CONSTRUCTION DETAILS.

604429 WATER QUALITY CERTIFICATE SUBMISSION 06/13/14

PELHAM MEETINGHOUSE ROAD			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		5	9
PROJECT FILE NO.		604429	
CONSTRUCTION PLAN			

HIGHWAY GUARD DETAILS

STEEL W BEAM HIGHWAY GUARD (SINGLE FACED)
 STA. 2+96.08 RT TO STA. 3+08.48 RT
 STA. 3+85.83 LT TO STA. 4+16.24 LT

STEEL HIGHWAY GUARD TRANSITION BEAM
 STA. 3+08.48 RT
 STA. 3+11.52 LT
 STA. 3+77.64 RT
 STA. 3+79.76 LT

STEEL THRIE BEAM HIGHWAY GUARD (SINGLE FACED)
 STA. 3+14.73 RT TO STA. 3+20.98 RT
 STA. 3+17.77 LT TO STA. 3+24.02 LT
 STA. 3+71.25 RT TO STA. 3+77.64 RT
 STA. 3+73.68 LT TO STA. 3+79.76 LT

STEEL BEAM HIGHWAY GUARD TANGENT END TREATMENT
 STA. 2+71.63, 7.1' RT TO STA. 2+96.08, 7.3' RT
 STA. 2+86.20, 7.0' LT TO STA. 3+11.52, 7.3' LT
 STA. 3+84.01, 6.4' RT TO STA. 4+09.57, 6.6' RT
 STA. 4+16.24, 7.8' LT TO STA. 4+41.70, 6.5' LT

TRAFFIC SIGNAL CONDUIT

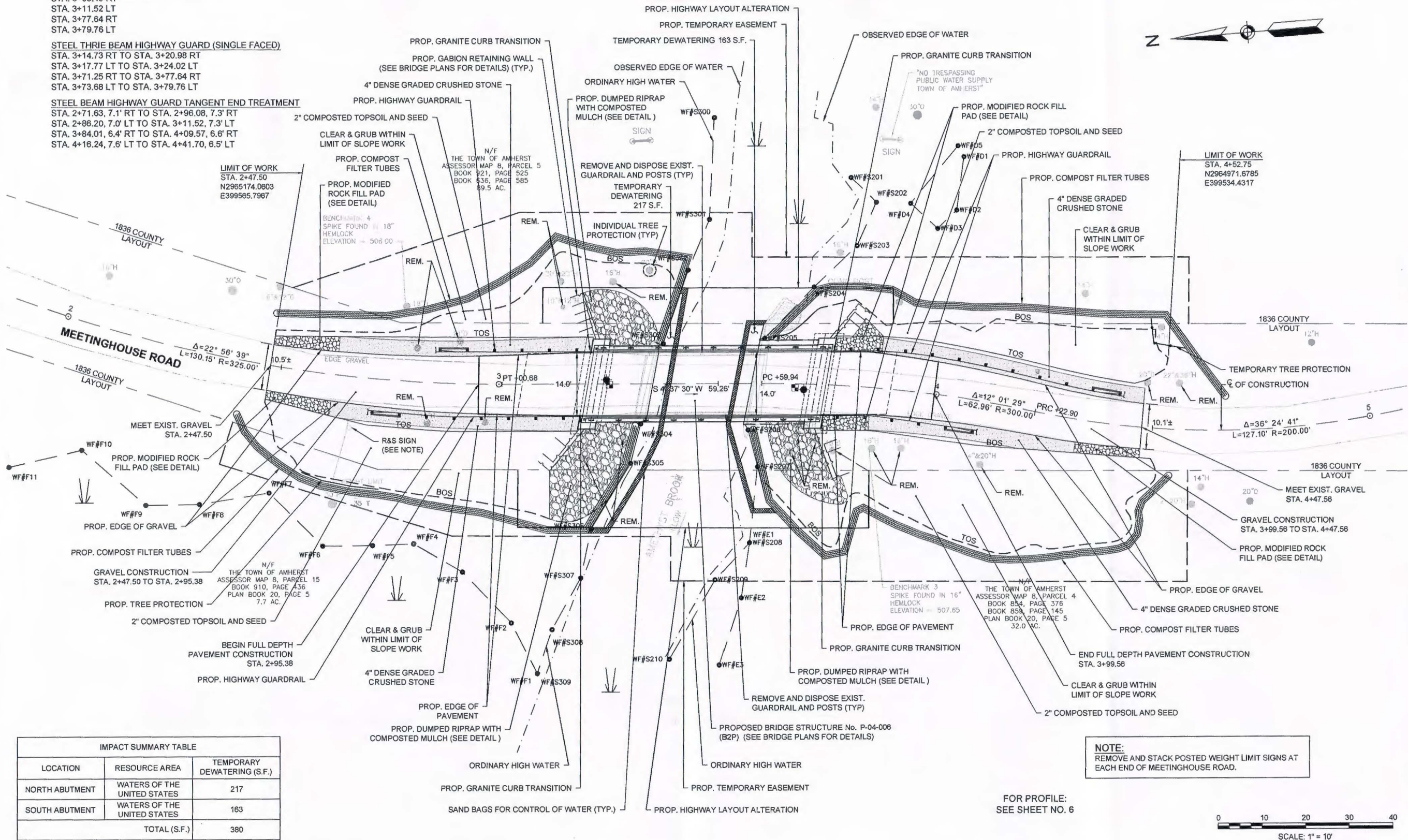
NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

NONE



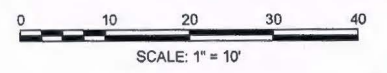
LIMIT OF WORK
 STA. 2+47.50
 N2965174.0603
 E399565.7967

LIMIT OF WORK
 STA. 4+52.75
 N2964971.6785
 E399534.4317

LOCATION	RESOURCE AREA	TEMPORARY DEWATERING (S.F.)
NORTH ABUTMENT	WATERS OF THE UNITED STATES	217
SOUTH ABUTMENT	WATERS OF THE UNITED STATES	163
TOTAL (S.F.)		380

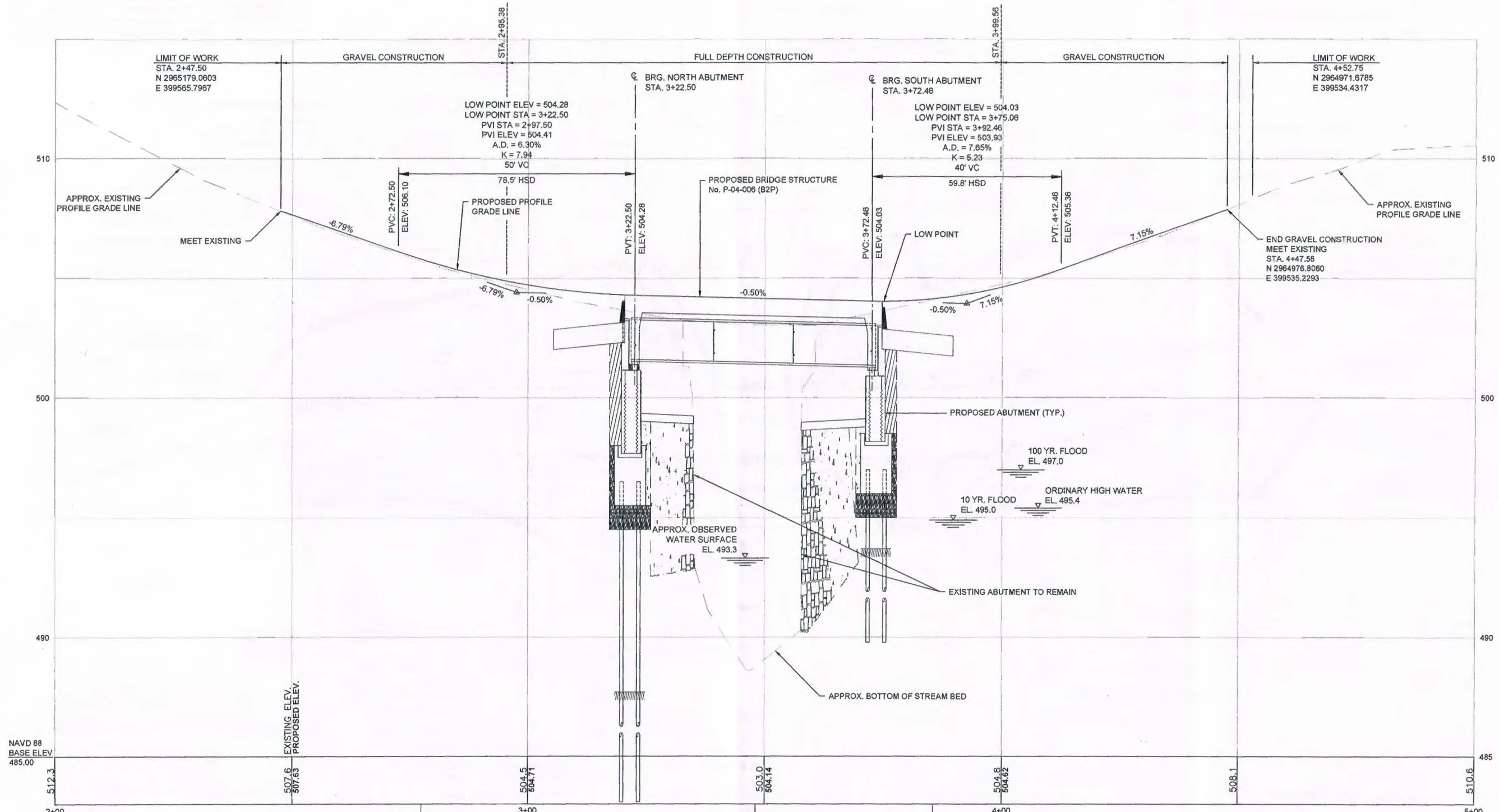
NOTE:
 REMOVE AND STACK POSTED WEIGHT LIMIT SIGNS AT EACH END OF MEETINGHOUSE ROAD.

FOR PROFILE:
 SEE SHEET NO. 6



604429_E:\V\04\006\DWG 06/13/14 1:16 PM 604429 WATER QUALITY CERTIFICATE SUBMISSION 06/13/14

PELHAM MEETINGHOUSE ROAD			
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PROFILE			



NAVD 88
BASE ELEV
485.00

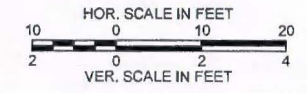
EXISTING ELEV.
507.6
PROPOSED ELEV.
507.63

BENCHMARK 4
SPIKE IN 18"
HEMLOCK
ELEVATION = 506.00
STA. 2+77.45, 16.31' LT

STA. 3+48.08 MEETINGHOUSE ROAD =
STA. 0+00.00 AMETHYST BROOK

BENCHMARK 3
SPIKE IN 18"
HEMLOCK
ELEVATION = 507.65
STA. 3+88.50, 13.20' RT

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 4

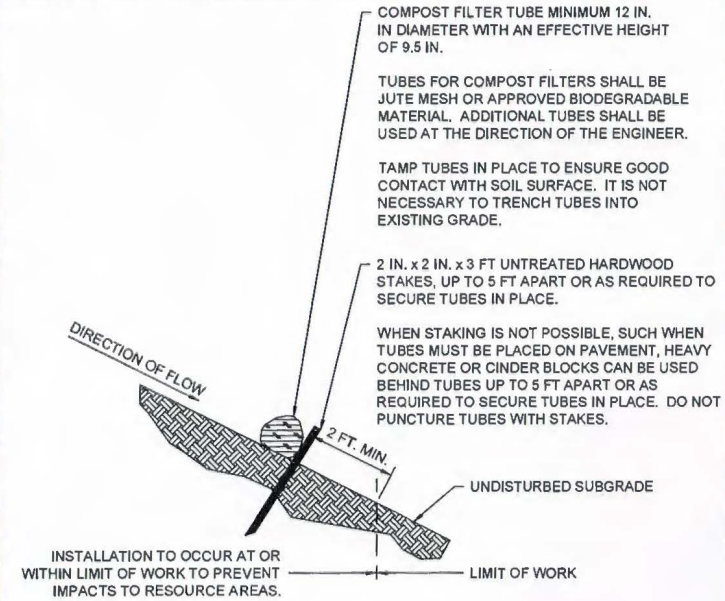


604429 WATER QUALITY CERTIFICATE SUBMISSION 08/13/14 Plotted on 9-Jul-2014 1:22 PM

**PELHAM
MEETINGHOUSE ROAD**

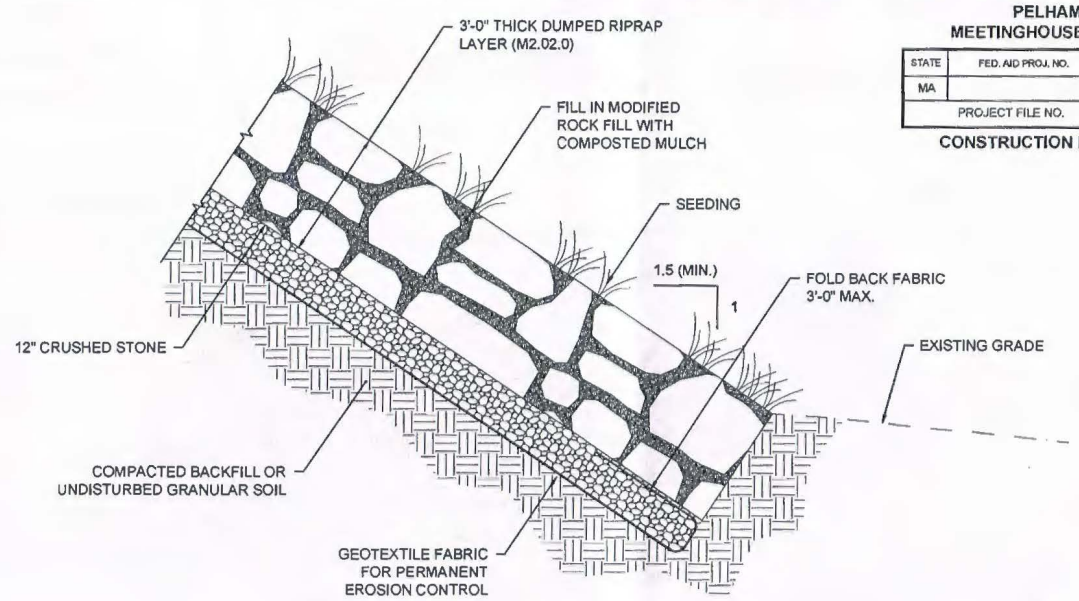
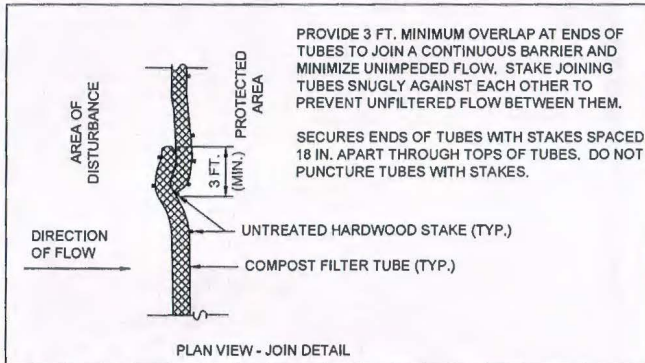
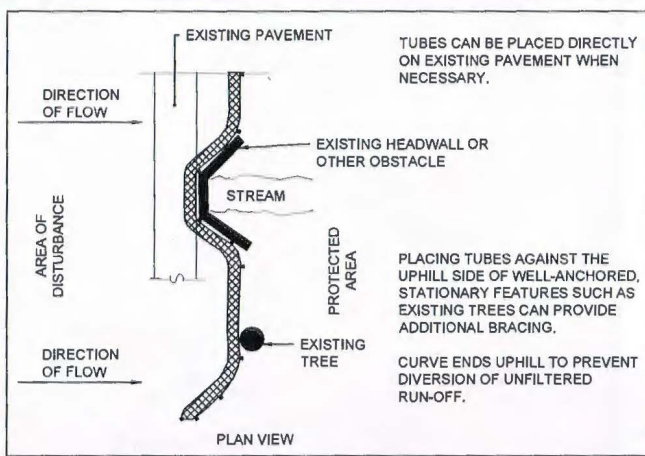
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		7	9
PROJECT FILE NO.		604429	

CONSTRUCTION DETAILS



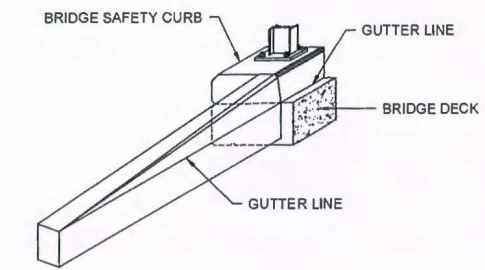
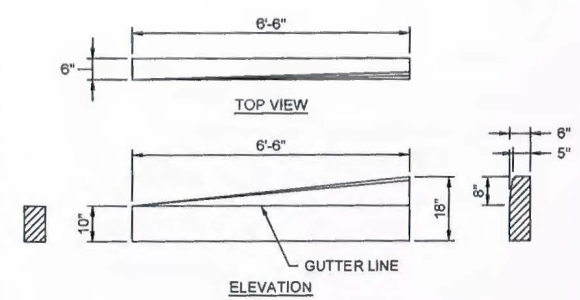
- GENERAL NOTES:**
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
 2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
 3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
 4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.

SINGLE COMPOST FILTER TUBE DETAIL
NOT TO SCALE

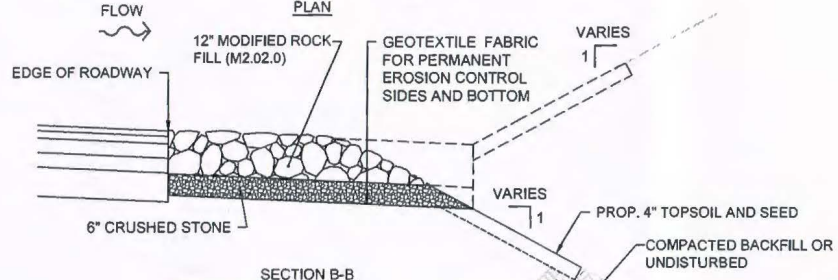
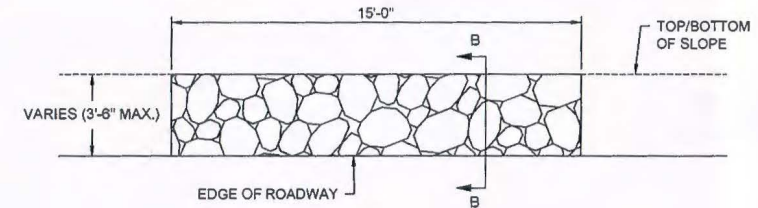


- NOTES:**
1. ALL RECOMMENDATIONS SHALL BE UTILIZED FOR INSTALLATION.
 2. IF BEDROCK IS ENCOUNTERED CLOSER THAN 3'-0" TO FINISH GRADE, ELIMINATE CRUSHED STONE LAYER THICKNESS AND GEOTEXTILE FABRIC.

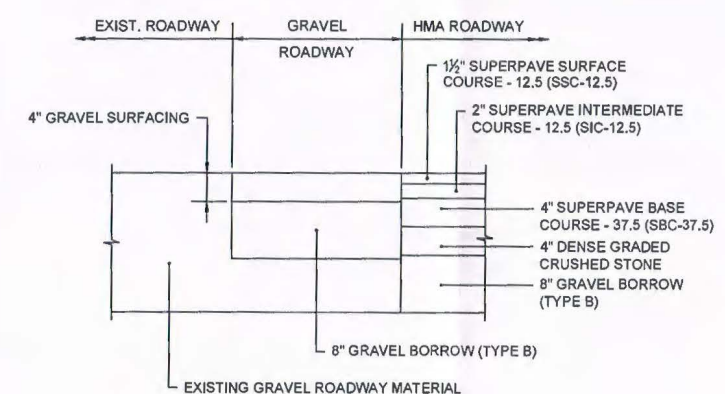
RIPRAP DETAIL
NOT TO SCALE



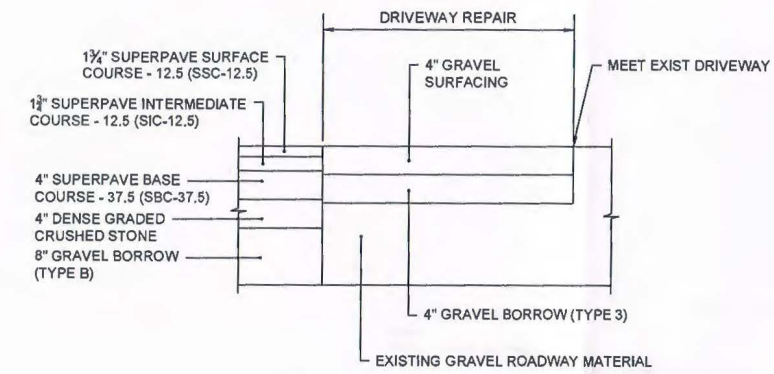
GRANITE CURB TRANSITION DETAIL
NOT TO SCALE



MODIFIED ROCK FILL PAD DETAIL
NOT TO SCALE



GRAVEL ROAD TO HMA TRANSITION
NOT TO SCALE



GRAVEL DRIVEWAY
NOT TO SCALE

604429_EV(7)(P04006).DWG Plotted on 9-24-2014 1:23 PM 604429 WATER QUALITY CERTIFICATE SUBMISSION 08/31/14

PLANT LIST -Amethyst Brook only

SYM	QTY	NAME	SIZE	REMARKS
ASAc5	6	Acer saccharum Maple - Sugar	2-2.5 IN CAL	SINGLE LEADER
BLUh2	5	Betula lutea Birch - Yellow	6-8 FT	MULTI-LEADER
LLc4	3	Larix laricina Eastern Larch	1.5-2 IN CAL	SINGLE LEADER FULL TO GROUND
PSTh2	20	Pinus strobus Pine - White	6-8 FT	SINGLE LEADER FULL TO GROUND
HVsd3	11	Hamamelis virginiana Witchhazel - Common	2-3 FT	FULL
IGNg1	20	Ilex glabra 'Nigra' Inkberry 'Nigra'	1 Gallon	FULL
IGs2	38	Ilex glabra Inkberry	2-2.5 FT	FULL
VCs2	20	Vaccinium corymbosum Blueberry - Highbush	2-2.5 FT	FULL
VDs1	15	Viburnum dentatum Viburnum - Arrowwood	12-18"	FULL
TUBELINGS	15	Salix exigua Sandbar Willow	6-24" ht	MIX EQUALLY
TUBELINGS	15	Salix discolor Pussy Willow	6-24" ht	MIX EQUALLY
TUBELINGS	15	Cornus sericea Red Osier Dogwood	6-24" ht	MIX EQUALLY

- RESTORATION SEED OVER TWO INCHES COMPOST TOPSOIL (SLOPES OVER 3:1 SHALL USE JUTE MESH)
- RESTORATION SEED ON COMPOST MULCH OVER RIP RAP
- TREE PROTECTION FENCE LOCATE AROUND DRIPLINE OF TREE

PELHAM
MEETINGHOUSE ROAD

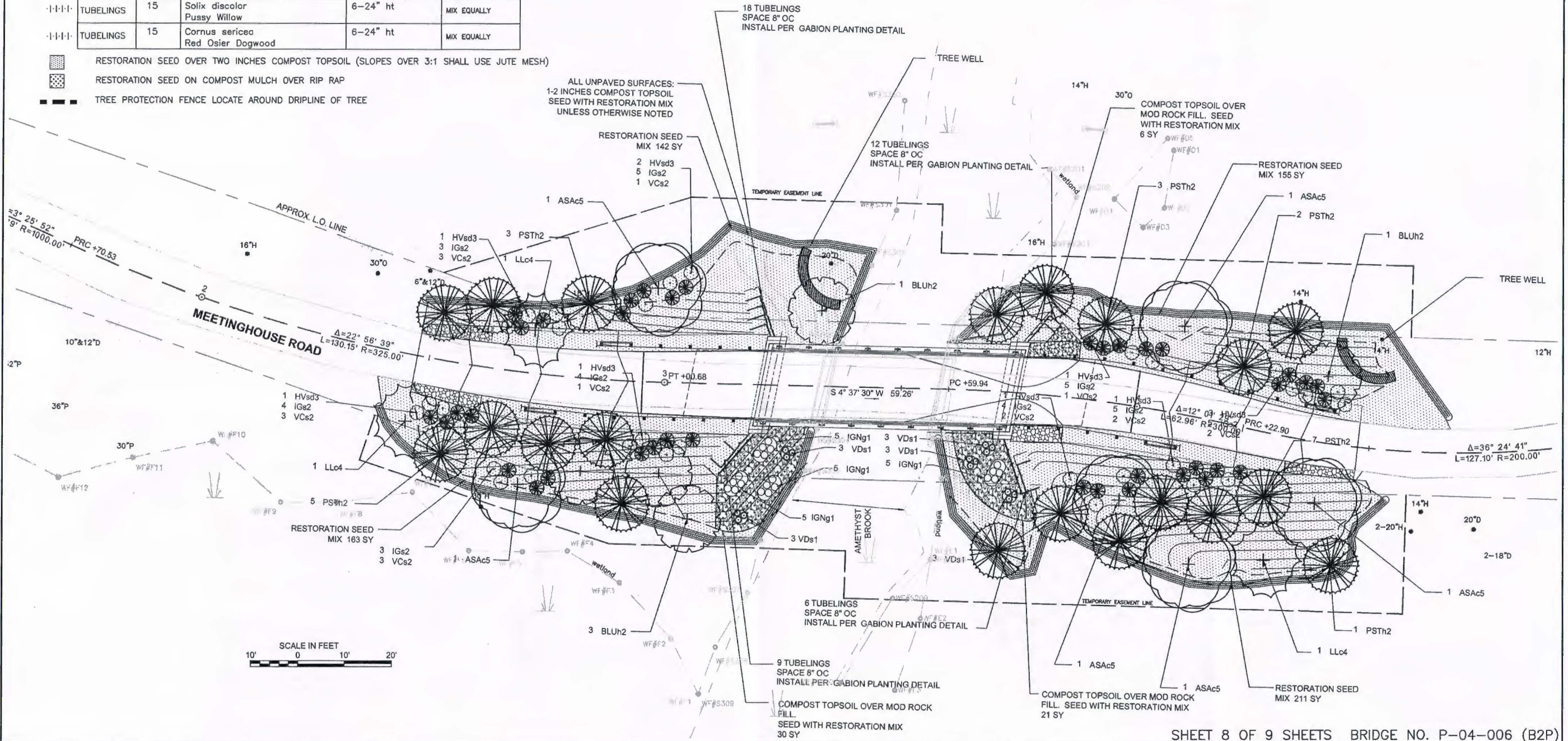
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		8	9
PROJECT FILE NO.		604429	

LANDSCAPE PLAN

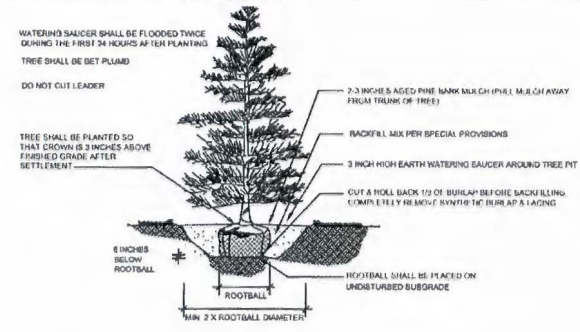


PLANTING NOTES

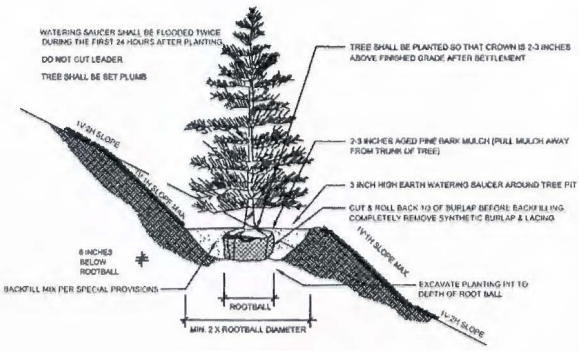
- CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
- TREE PROTECTION BARRIER SHALL BE APPROVED BY LANDSCAPE ARCHITECT AND RESIDENT ENGINEER PRIOR TO CONSTRUCTION.
- FINAL LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO PLANTING.
- ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME & SIZE.
- ALL PLANTS WILL BE MULCHED PER THE PLANTING SPECIFICATIONS AND DETAILS. PLANTING DETAILS AND SPECIAL PROVISIONS.
- ALL DISTURBED AREAS WILL BE SPREAD WITH TWO INCHES COMPOST TOPSOIL AND SEEDED UNLESS NOTED OTHERWISE.



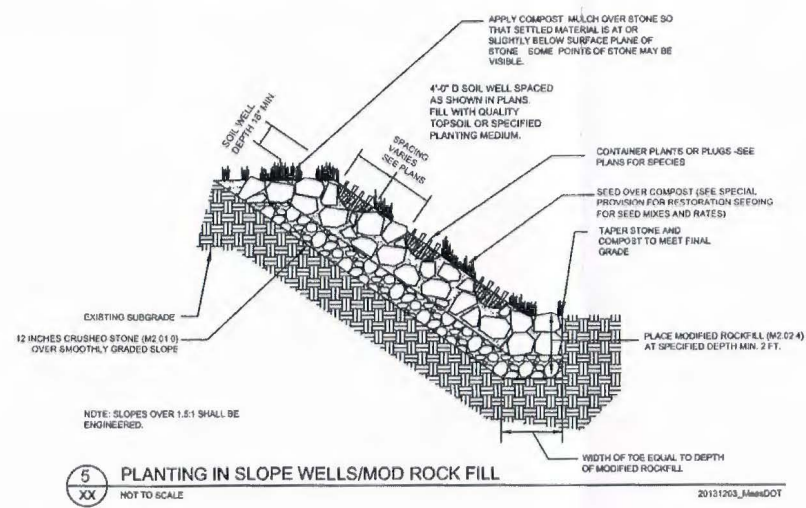
604429_WATER QUALITY CERTIFICATE SUBMISSION_08/13/14 Plotted on 9-Jul-2014 1:24 PM



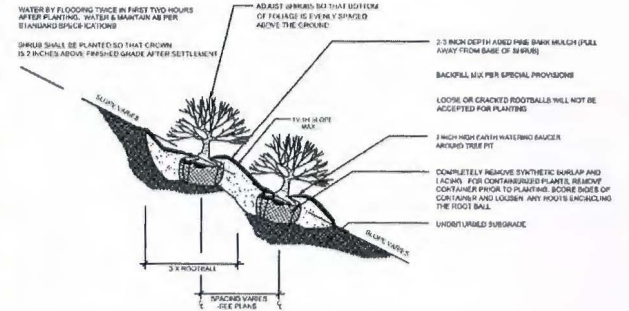
1 EVERGREEN TREE PLANTING
NOT TO SCALE



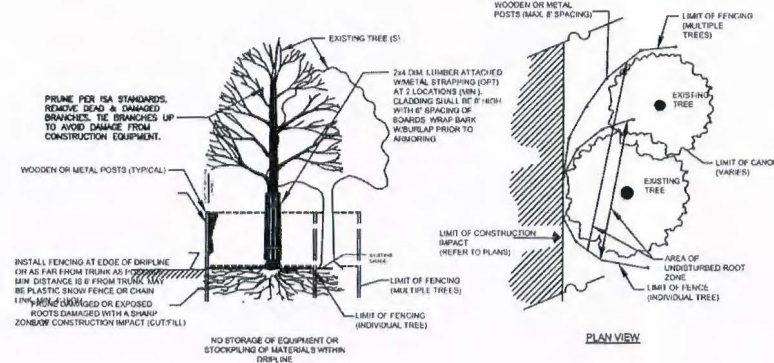
2 EVERGREEN TREE PLANTING (SLOPE)
NOT TO SCALE



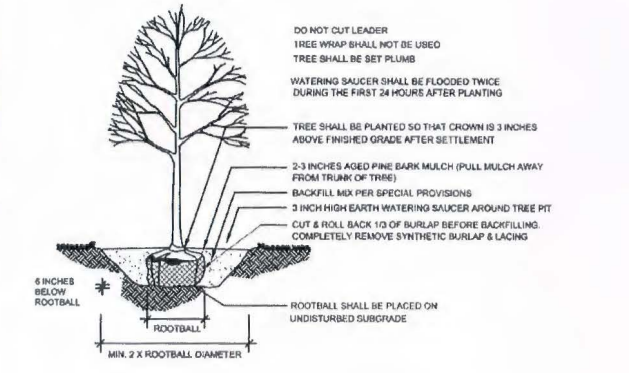
5 PLANTING IN SLOPE WELLS/MOD ROCK FILL
NOT TO SCALE



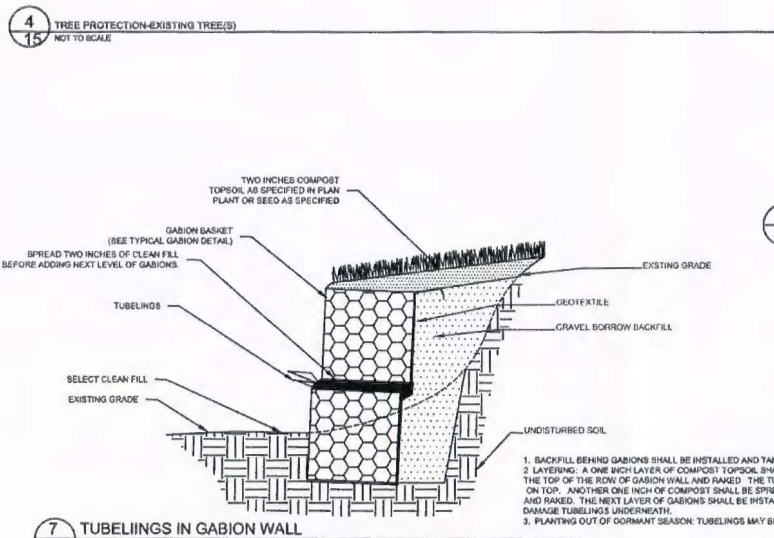
3 CONTAINERIZED SHRUB PLANTING (SLOPE) DETAIL
NOT TO SCALE



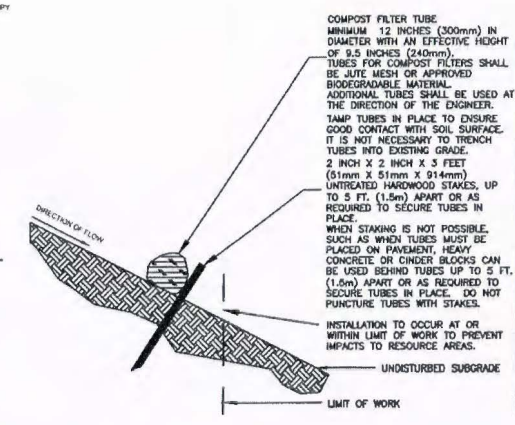
4 TREE PROTECTION-EXISTING TREE(S)
NOT TO SCALE



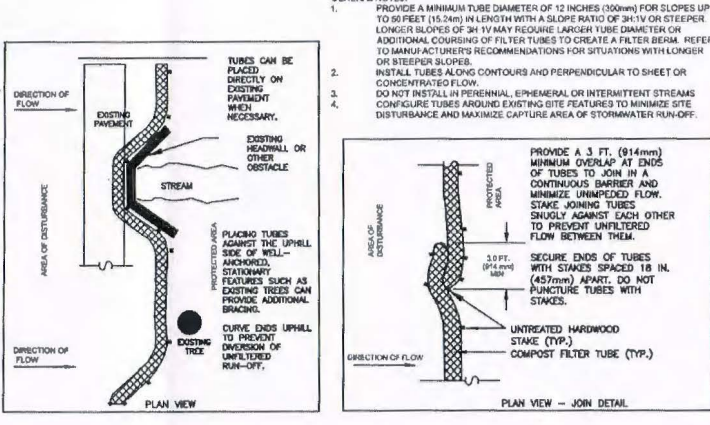
6 DECIDUOUS TREE PLANTING
NOT TO SCALE



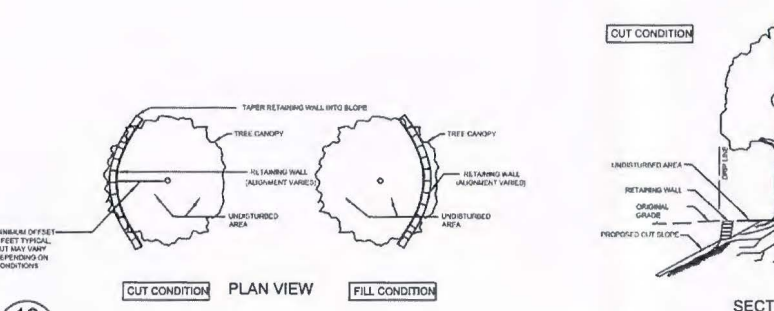
7 TUBELINGS IN GABION WALL
NOT TO SCALE



8 SINGLE COMPOST FILTER TUBE DETAIL
NOT TO SCALE



9 DECIDUOUS TREE PLANTING (SLOPE)
NOT TO SCALE



10 TREE WALL
NOT TO SCALE

PLANT LIST
Trees and Shrubs

SYM	QTY	NAME	SIZE	REMARKS
ASAc5	12	Acer saccharum Maple - Sugar	2-2.5 IN CAL	SINGLE LEADER
BLUH2	9	Betula lutea Birch - Yellow	6-8 FT	MULTI-LEADER
LLo4	5	Larix laricina Eastern Larch	1.5-2 IN CAL	SINGLE LEADER FULL TO GROUND
PSTh2	43	Pinus strobus Pine - White	6-8 FT	SINGLE LEADER FULL TO GROUND
HVsD3	30	Hamamelis virginiana Witchhazel - Common	2-3 FT	FULL
IGNg1	73	Ilex glabra 'Nigra' Inkberry 'Nigra'	1 Gallon	FULL
IGs2	77	Ilex glabra Inkberry	2-2.5 FT	FULL
VCs2	45	Vaccinium corymbosum Blueberry - Highbush	2-2.5 FT	FULL
VDs1	56	Viburnum dentatum Viburnum - Arrowwood	12-18"	FULL
TUBELINGS	51	Salix nigra Black Willow	6-24 INCHES	MIX TUBELINGS EQUALLY
TUBELINGS	51	Salix discolor Pussy Willow	6-24 INCHES	MIX TUBELINGS EQUALLY
TUBELINGS	51	Cornus sericea Red Osier Dogwood	6-24 INCHES	MIX TUBELINGS EQUALLY

604429_LDR(P04006).DWG Plotted on 9-Jul-2014 1:25 PM 06/13/14 06:429 WATER QUALITY CERTIFICATE SUBMISSION