# PUBLIC NOTICE

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

**Comment Period Begins: April 15, 2014**
**Comment Period Ends: May 15, 2014**
**File Number: NAE-2014-00525**
**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 at the bridge (No. W-37-009) conveying Hopper Road over the Green River in Williamstown, Massachusetts.

The site coordinates are: Latitude 42.677784°, Longitude -73.211147°.

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 1,645 square feet of fill material into the Green River associated with the replacement of the bridge (No. W-37-009) conveying Hopper Road over the Green River in Williamstown, Massachusetts. The purpose of the work is to replace the existing, structurally deficient, functionally obsolete bridge with a new bridge. The proposed work would replace the existing two-span structure with a single span structure. The new abutments would be constructed behind the existing abutments. The existing north abutment would be removed entirely. The existing south abutment would be cut down to the 10-year flood elevation and retained for use as scour protection for the new south abutment, and to create a corridor for wildlife passage. The area between the old and new abutments will consist of rip-rap topped with compost and seed. The existing center pier would be cut down to the substrate. While the low chord of the new bridge will be slightly lower than the existing bridge, it will be over two feet above the 100-year flood level. Section 404 impacts are limited to the installation of a temporary sandbag cofferdam to allow demolition of the existing center pier to occur under dry conditions. No other work is proposed within the river and flow will be maintained throughout construction.

NOTE – A temporary bridge would be installed 300 feet downstream at a historic crossing location to act as a detour during construction, with the temporary abutments located behind the existing abutments, and the low chord above the 100-year flood level. The temporary bridge would consist of a span with no impacts to waters of the U.S. and will be removed following the completion of construction.

The work is shown on the attached plans entitled "WILLIAMSTOWN, HOPPER ROAD" on 8 sheets, and dated "February 17, 2014" (except sheet 1, which is dated "February 19, 2014").

In developing plans for replacing the Hopper 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 demolition work within a sandbag cofferdam to reduce turbidity, and installation of debris nets or similar containment methods to prevent debris from entering the river. No compensatory mitigation is proposed because there are no permanent impacts proposed.

**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**

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.

**CENAE-R**
**FILE NO. NAE-2014-00525**

**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 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: _____

## NOTES:

1. EXISTING SITE TOPOGRAPHY, DETAIL, PROPERTY LINE AND STATE SURVEY BASELINE INFORMATION SHOWN ON THE PLANS WERE DEVELOPED FROM SURVEY PREPARED BY CGC ASSOCIATES, INC., DATED AUGUST 16, 2012. (SEE MASSDOT SURVEY NOTEBOOK 30290 FOR ADDITIONAL INFORMATION.)
2. NORTH IS BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD-83), MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, MAINLAND ZONE. COORDINATES ARE BASED ON CONTROL PROVIDED BY MASSDOT GEODETIC SURVEY FOR STATIONS MGPS WIL1 AND WIL2.
3. VERTICAL CONTROL IS BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AS PROVIDED BY MASSDOT FOR STATIONS MGPS WIL1 AND WIL2.

## DRAINAGE DETAILS

STA 2+97.13 RT 30.79' - STA 3+06.03 RT 27.84', INFILTRATION SWALE
STA 4+25.00 RT 23.78' - STA 5+09.00 RT 26.49', INFILTRATION SWALE
STA 4+25.00 LT 25.78' - STA 5+14.34 LT 38.28', INFILTRATION SWALE

## LEGEND:

▨ TEMP. IMPACT TO WATERS OF THE UNITED STATES/LAND UNDER WATER (AREA=1645 SF)

## DRAINAGE NOTES:

1. DROP INLET GRATES TO BE STANDARD PARALLEL BAR GRATE IN ACCORDANCE WITH STANDARD DETAIL E.201.11.0
2. EXISTING PIPES TO REMAIN. NEW PIPE REQUIRED TO ACCOMMODATE THE NEW DROP INLET SHALL BE INCLUDED IN THE COST OF DROP INLET PIPE TO MATCH EXISTING TYPE AND SIZE.
3. DROP INLET GRATE TO BE SET FLUSH WITH EXISTING GROUND. GRATE ELEVATIONS ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD.
4. DEEP SUMP DROP INLET TYPE CF TO BE PAID FOR AS DROP INLET TYPE CF.

DRAINAGE STRUCTURE DATA

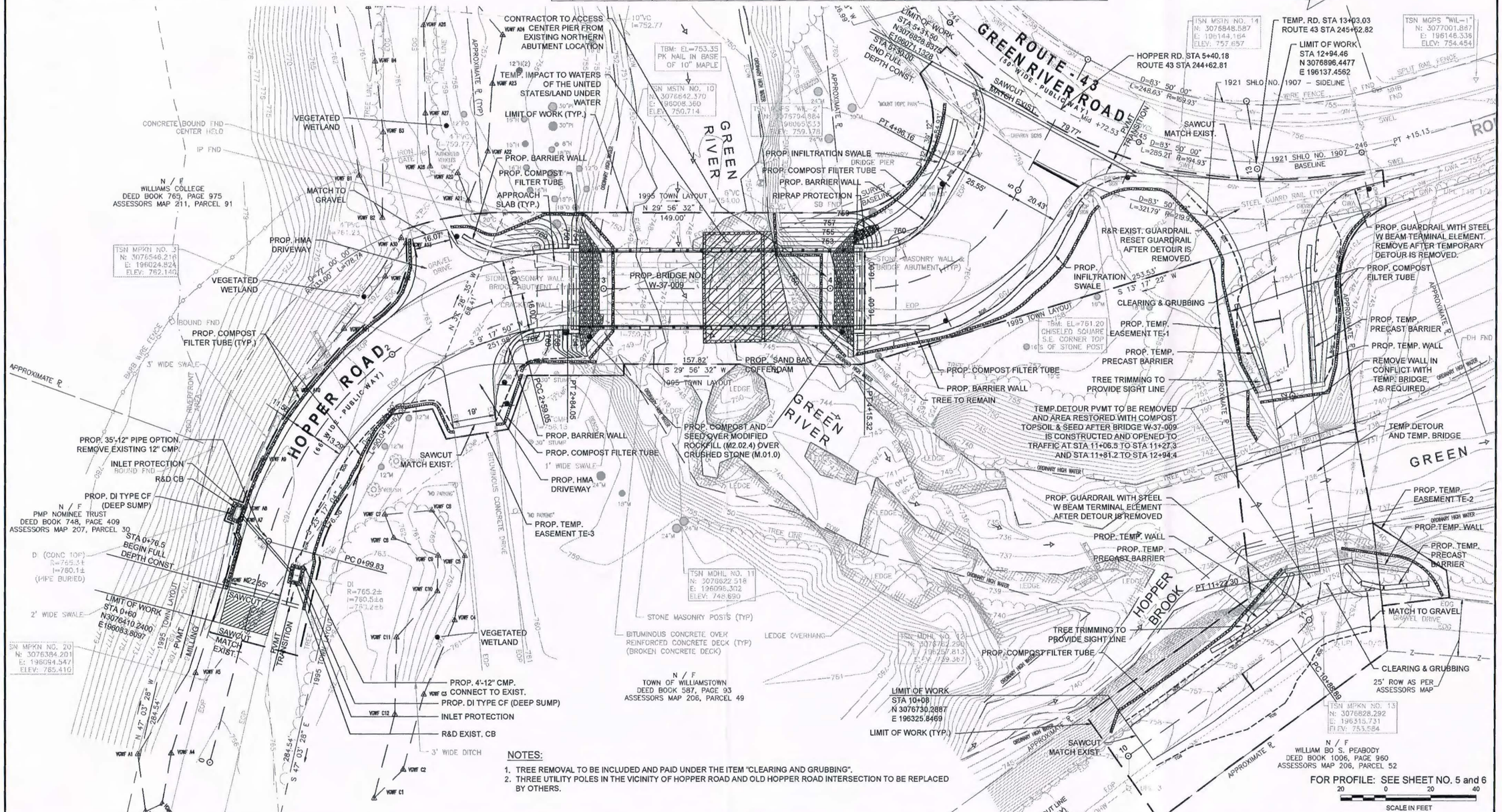
| NO. | TYPE | STATION | RIM ELEV. | INV. ELEV IN | INV. ELEV. OUT | REMARKS |
|---|---|---|---|---|---|---|
| 1 | DI CF (DEEP SUMP) | 0+88.93, 15.84' RT | 764.88± | 760.5± | 760.2± | 4' DEEP SUMP. CONNECT TO EXISTING CMP. |
| 2 | DI CF (DEEP SUMP) | 1+07.54, 16.65 LT | 765.3± | - | 760.85±, MATCH EXIST. CMP | 4' DEEP SUMP. |

**WILLIAMSTOWN**
**HOPPER ROAD**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 1 | 8 |
| PROJECT FILE NO. | 605935 | | |

**ENVIRONMENTAL PLAN**

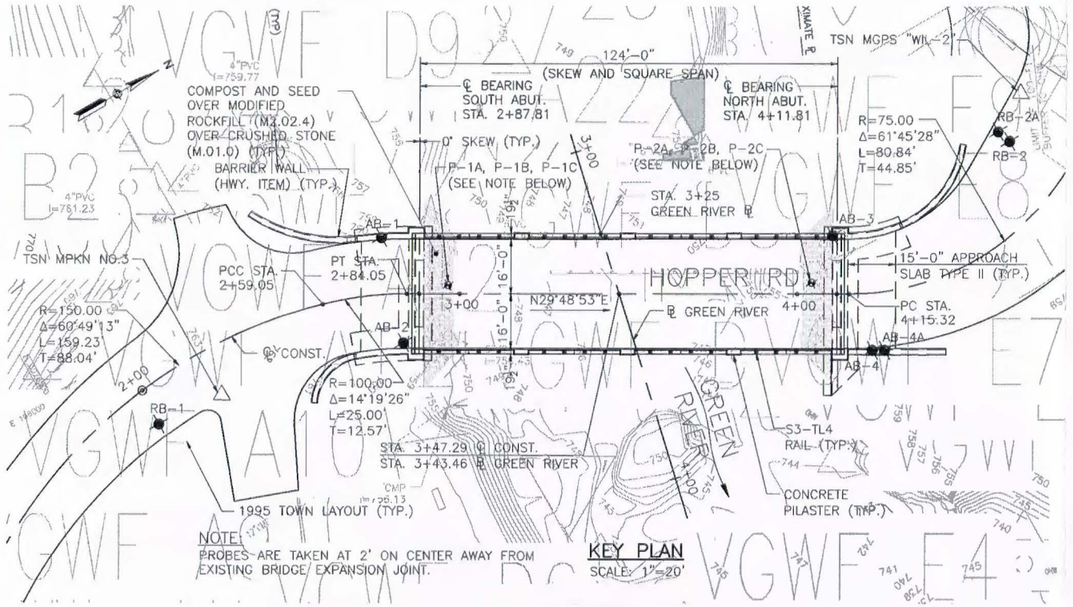
605935_EV1(CONST PLAN).DWG 19-Feb-2014

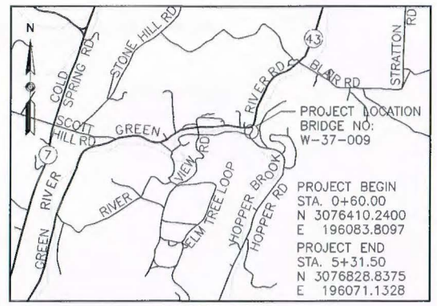


## NOTES:

1. TREE REMOVAL TO BE INCLUDED AND PAID UNDER THE ITEM "CLEARING AND GRUBBING".
2. THREE UTILITY POLES IN THE VICINITY OF HOPPER ROAD AND OLD HOPPER ROAD INTERSECTION TO BE REPLACED BY OTHERS.

FOR PROFILE: SEE SHEET NO. 5 and 6



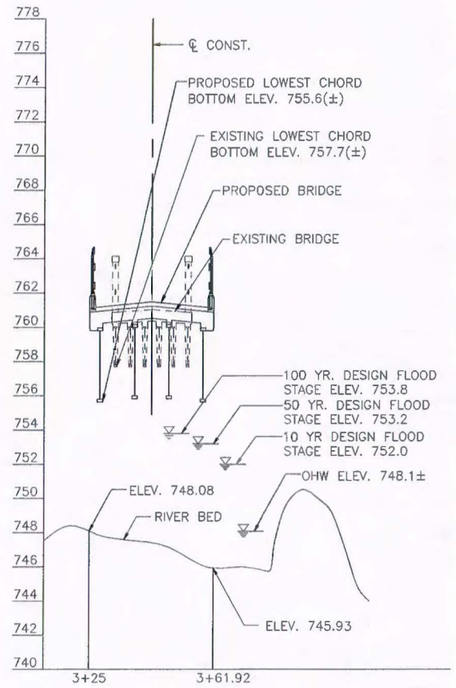




LOCUS MAP
SCALE: 1'=2000'

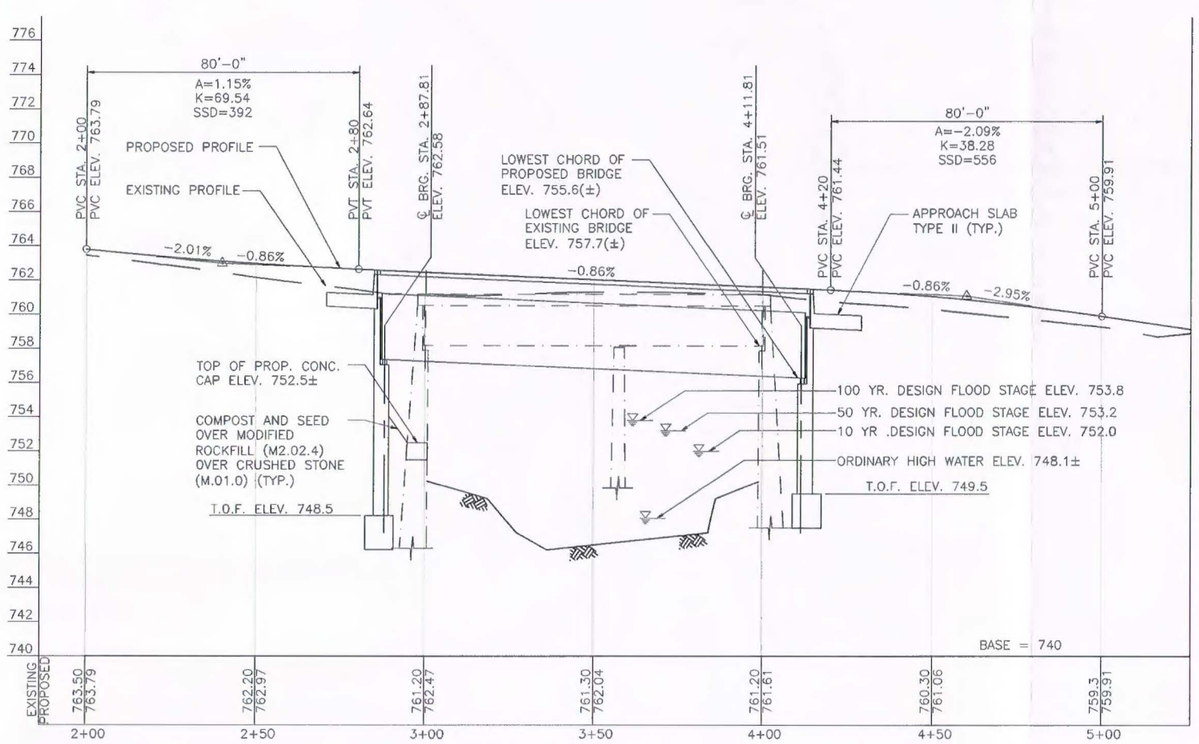
WILLIAMSTOWN
HOPPER ROAD

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 2 | 8 |
| PROJECT FILE NO. 605935 | | | |

605935_EV2\BRIDGE-COVER\.DWG 17-Feb-2014




PROFILE ALONG GREEN RIVER ℄
HORIZ. SCALE: 1"=20'
VERT. SCALE: 1"=4'




PROFILE ALONG ℄ CONST.
HORIZ. SCALE: 1"=20'
VERT. SCALE: 1"=4'

## GENERAL NOTES
FOR GENERAL NOTES, SEE SHEET 3

## HYDRAULIC NOTES
FOR HYDRAULIC NOTES, SEE SHEET 3

| | MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
|---|---|---|

massDOT Highway Division
PROPOSED BRIDGE

**WILLIAMSTOWN**
HOPPER ROAD OVER
GREEN RIVER

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

GM2 ASSOCIATES, INC.
CONSULTING ENGINEERS
115 GLASTONBURY BLVD.
GLASTONBURY, CT 06033

TITLE: CHIEF ENGINEER

## GENERAL NOTES

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

### MASS DOT BENCH MARK:
TSN MGPS "WIL-2": N3076794.884 E196065.533 ELEV. 759.178
TSN MPKN NO. 3: N3076546.216 E196024.824 ELEV. 762.140
ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAV) OF 1988.

### DATE:
TO BE PLACED ON THE INSIDE FACE OF THE NORTHWEST AND SOUTHEAST WINGWALLS. 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 WINGWALL IS CONSTRUCTED. ALL WINGWALLS SHALL FEATURE THE SAME DATE.

### MASSDOT SURVEY NOTEBOOKS:
EXISTING SITE TOPOGRAPHY, DETAIL, PROPERTY LINE AND STATE SURVEY BASELINE INFORMATION SHOWN ON THE PLANS WERE DEVELOPED FROM SURVEY PREPARED BY CGC ASSOCIATES, INC.

### 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 FOUNDATION OF THE STRUCTURE, AS DIRECTED BY THE ENGINEER.

### SEISMIC GROUND SHAKING HAZARD:
DESIGN SPECTRA:
$A_S$ = 0.070
$S_{DC}$ = 0.158
$S_{D1}$ = 0.069
SITE CLASS = C
SEISMIC DESIGN CATEGORY = A

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

### CONCRETE:
ABUTMENT FOOTINGS AND STEMS BELOW BRIDGE SEATS, WINGWALL FOOTINGS AND STEMS BELOW BARRIERS, APPROACH SLABS, AND CAP ON TOP OF EXISTING SOUTH ABUTMENT SHALL BE 4000 PSI, 1½", 565 CEMENT CONCRETE. BRIDGE CURBS, BRIDGE PILASTERS, AND BARRIERS ON TOP OF WINGWALLS SHALL BE 5000 PSI, ¾", 685 HP CEMENT CONCRETE. THE CONCRETE DECK AND END DIAPHRAGMS SHALL BE 4000 PSI, ¾", 585 HP CONCRETE CEMENT. ABUTMENT BACKWALLS, KEEPER BLOCKS, CURTAIN WALLS AND CEMENT CONCRETE BLOCKS BETWEEN FOOTINGS AND STEMS SHALL BE 4000 PSI, ¾", 610 CEMENT CONCRETE. IF THE BOTTOM OF FOOTING IS PARTIALLY ON ROCK, AND PARTIALLY ON SOIL, SOIL SHALL BE REMOVED AND REPLACED WITH 2500 PSI, 1½", 425 CEMENT CONCRETE SUBFOOTING.

### REINFORCEMENT:
REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60. ALL REINFORCEMENT IN DECK, SAFETY CURBS, BRIDGE SEATS, BACKWALLS AND TOP OF WINGWALLS SHALL BE EPOXY COATED. 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 < $3d_b$ OR CLEAR SPACING < $6d_b$ | 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.

### STRUCTURAL STEEL:
ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS. ALL BOLTS SHALL BE AASHTO M164 TYPE 3, UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS.

### TRAFFIC:
THE BRIDGE WILL BE CLOSED TO TRAFFIC DURING CONSTRUCTION.

### EXISTING PLANS:
PLANS FOR THE EXISTING BRIDGE ARE AVAILABLE THROUGH THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION DISTRICT 1 OFFICE IN LENOX.

## ESTIMATED QUANTITIES (NOT GUARANTEED)

| | |
|---|---|
| DEMOLITION OF BRIDGE NO. W-37-009 | 1 LS |
| REINFORCED CONCRETE EXCAVATION | 1 CY |
| BRIDGE EXCAVATION | 815 CY |
| ROCK EXCAVATION | 30 CY |
| GRAVEL BORROW FOR BRIDGE STRUCTURE AND PIPES | 315 CY |
| SUPERPAVE BRIDGE SURFACE COURSE-12.5 (SSC-B-12.5) | 39 TON |
| SUPERPAVE BRIDGE PROTECTIVE COURSE-12.5 (SPC-B-12.5) | 39 TON |
| GEOTEXTILE FABRIC FOR SEPARATION | 97 SY |
| COMPOSTED MULCH FOR RIPRAP | 97 SY |
| 2500 PSI, 1½ IN, 425 CEMENT CONCRETE | 15 CY |
| 4000 PSI, ⅜ IN, 660 CEMENT CONCRETE | 1 CY |
| CEMENTITIOUS MORTAR FOR PATCHING | 50 SF |
| STEEL REINFORCEMENT FOR STRUCTURE-EPOXY COATED | 100 LB |
| DRILLING AND GROUTING DOWELS | 530 LF |
| MODIFIED ROCK FILL | 185 TON |
| CONTROL OF WATER - BRIDGE NO. W-37-009 | 1 LS |
| BRIDGE STRUCTURE, BRIDGE NO. W-37-009 | 1 LS |

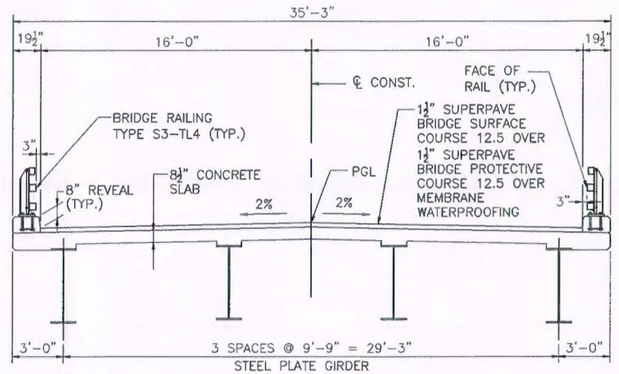
## HYDRAULIC NOTES:

### HYDRAULIC DATA
DRAINAGE AREA: = 31.7 $MI^2$
DESIGN DISCHARGE: = 2360 $FT^3/S$
DESIGN FREQUENCY: = 10 YEARS
DESIGN FLOOD STAGE: = 752.0 FT NAVD
DESIGN VELOCITY: = 10.8 FT/S

### BASIC FLOOD DATA
100 YEAR FLOOD DISCHARGE: = 4950 $FT^3/S$
100 YEAR FLOOD STAGE: = 753.8 FT NAVD

### FLOOD OF RECORD
DISCHARGE: = UNKNOWN
STAGE: = UNKNOWN
DATE: = SEPTEMBER 1938

### FOOT NOTES
HISTORY OF ICE: NON DOCUMENTED IN NBIS DATABASE
EVIDENCE OF SCOUR OR EROSION: THE DOWNSTREAM END OF THE EXISTING PIER FOOTING / LEVELING PAD IS PARTIALLY EXPOSED.




## TYPICAL SECTION OF SUPERSTRUCTURE
SCALE: ¼" = 1'-0"

WILLIAMSTOWN
HOPPER ROAD

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 3 | 8 |
| PROJECT FILE NO. 605935 | | | |

| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
|---|---|
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

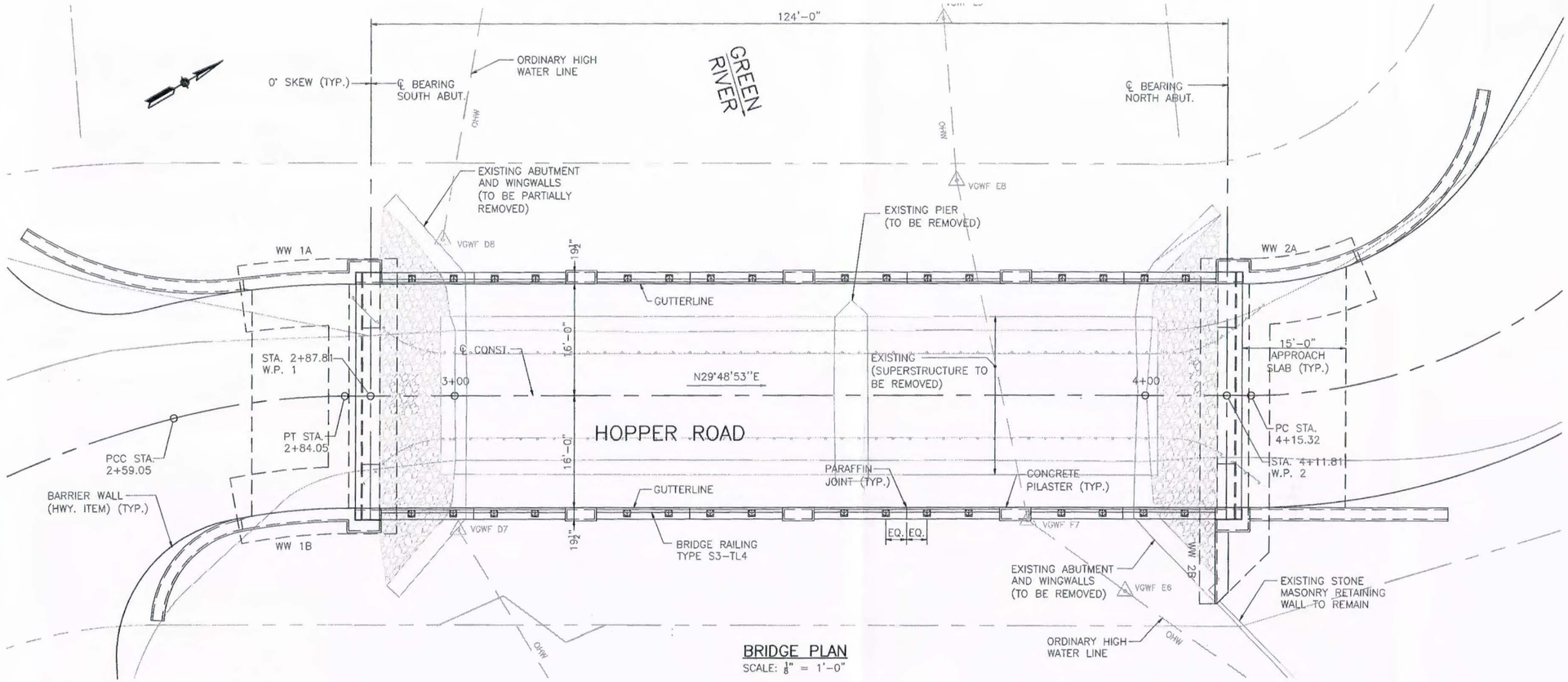


605935_EYA\BRIDGE-NOTES).DWG 17-Feb-2014

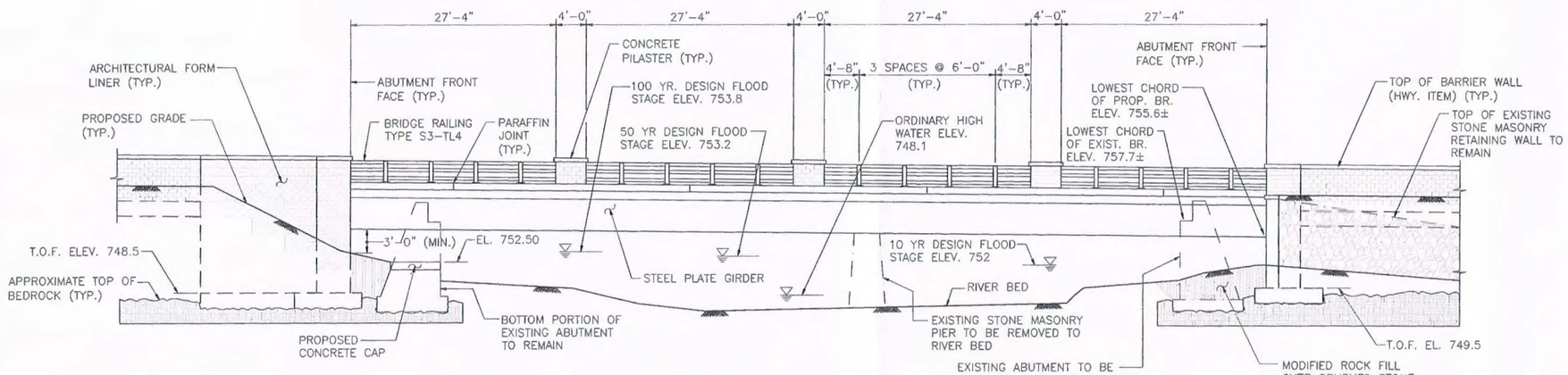
WILLIAMSTOWN
HOPPER ROAD

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 4 | 8 |
| PROJECT FILE NO. 605935 | | | |

605935_EV4(BRIDGE-PLAN_ELV).DWG 17-Feb-2014




BRIDGE PLAN
SCALE: 1/8" = 1'-0"




NOTE:
RAILING PICKETS ARE NOT SHOWN FOR CLARITY.

BRIDGE ELEVATION
SCALE: 1/8" = 1'-0"

| WORKING POINT NO. | NORTHING | EASTING |
|---|---|---|
| 1 | 3076611.25 | 196027.86 |
| 2 | 3076718.83 | 196089.51 |

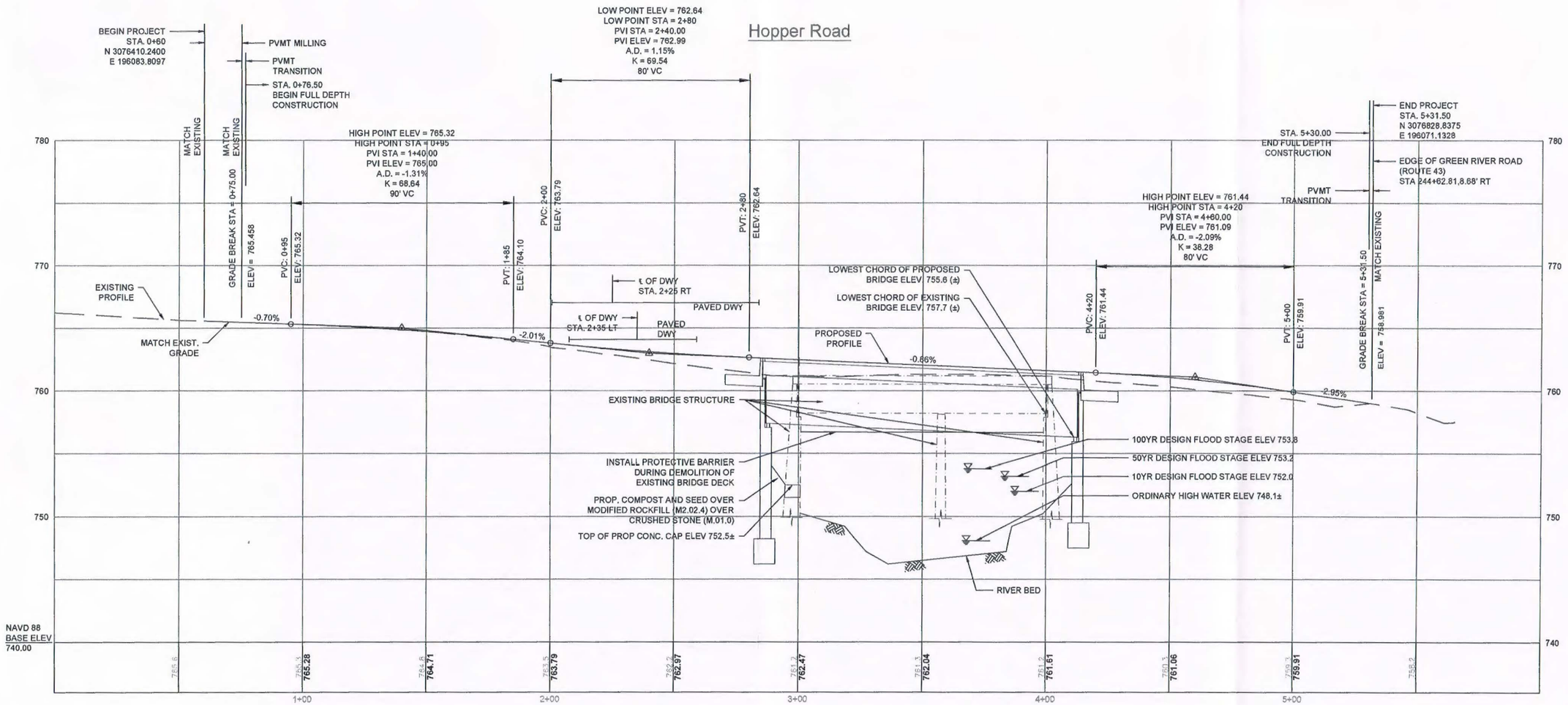
| | |
|---|---|
| MONTH DD, YYYY | ISSUED FOR CONSTRUCTION |
| DATE | DESCRIPTION |
| USE ONLY PRINTS OF LATEST DATE | |

**WILLIAMSTOWN**
**HOPPER ROAD**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 5 | 8 |
| PROJECT FILE NO. | | 605935 | |

**PROFILE - 1**

605935_EVS(PROFILE-1).DWG 17-Feb-2014




| CONTROL POINT DATA - HOPPER ROAD | | | | | |
|---|---|---|---|---|---|
| DESCRIPTION | STATION | OFFSET | ELEVATION | NORTHING | EASTING |
| TSN MGPS " WIL-1" | 246+57.43 | LT, 16.96' | 754.454 | 3077001.8670 | 196146.3380 |
| TSN MGPS "WIL-2" | 5+05.65 | LT, 22.72' | 759.178 | 3076794.8840 | 196065.5330 |
| TSN MPKN NO. 3 | 2+19.73 | RT, 17.49' | 762.140 | 3076546.2164 | 196024.8243 |
| TSN MPKN NO. 4 | 241+54.29 | RT, 157.64 | 761.450 | 3076673.5445 | 195745.4163 |
| TSN MPKN NO. 5 | 239+75.64 | RT, 177.14 | 762.850 | 3076679.8536 | 195559.3806 |
| TSN MSTN NO. 6 | 240+33.92 | RT, 22.13 | 765.740 | 3076823.3914 | 195641.9860 |
| TSN MSTN NO. 7 | 242+27.92 | RT, 26.01 | 762.830 | 3076795.0247 | 195834.7967 |
| TSN MSTN NO. 10 | 3+05.12 | LT, 32.39 | 750.714 | 3076642.3705 | 196008.3605 |
| TSN MDHL NO. 11 | 3+32.61 | RT, 55.51 | 748.690 | 3076622.5181 | 196098.3021 |
| TSN MDHL NO. 12 | 10+46.50 | LT, 64.58 | 739.367 | 3076762.2903 | 196257.8127 |
| TSN MPKN NO. 13 | 11+05.05 | RT, 4.38 | 753.584 | 3076828.2924 | 196315.7314 |
| TSN MSTN NO. 14 | 5+09.62 | RT, 72.42 | 757.657 | 3076848.5869 | 196144.1636 |
| TSN MPKN NO. 20 | 0+30.69 | LT, 10.79' | 765.410 | 3076384.2012 | 196094.5470 |

SCALE : 1" = 20' (HORZ.)
1" = 4' (VERT.)

HYDRAULIC NOTES:

HYDRAULIC DATA
- DRAINAGE AREA = 31.7 SQUARE MILE
- DESIGN DISCHARGE = 2360 CFS
- DESIGN FREQUENCY = 10 YEAR
- DESIGN FLOOD STAGE = 752.0 FT, NAVD
- DESIGN VELOCITY = 10.8 FPS

BASE FLOOD DATA
- 100 YEAR FLOOD DISCHARGE = 4950 CFS
- 100 YEAR FLOOD STAGE = 753.8 FT, NAVD

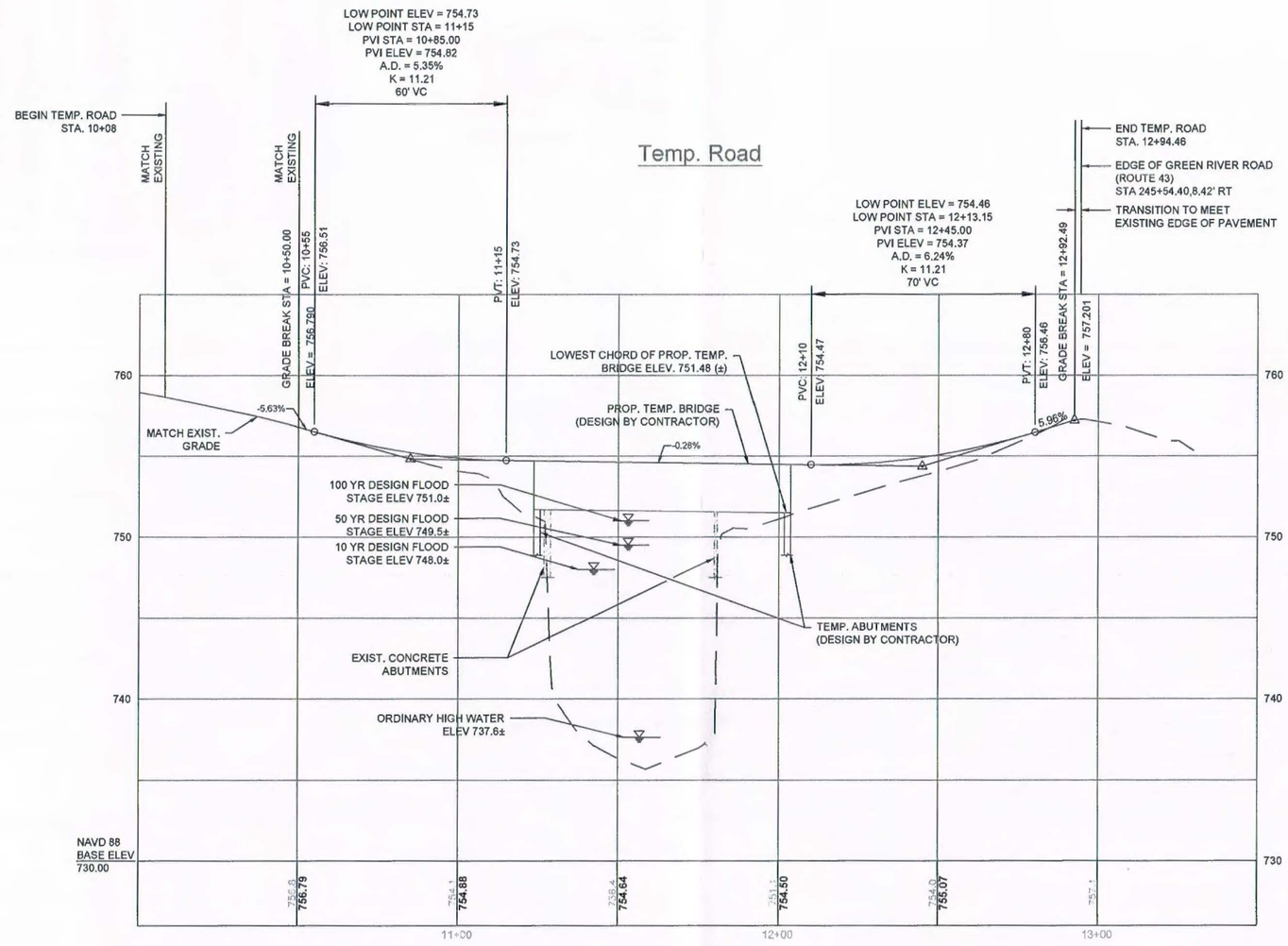
FOR ENVIRONMENTAL PLAN:
SEE SHEET NO. 1

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

**WILLIAMSTOWN**
**HOPPER ROAD**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 6 | 8 |
| PROJECT FILE NO. | 605935 | | |

**PROFILE - 2**




| CONTROL POINT DATA - HOPPER ROAD | | | | | |
|---|---|---|---|---|---|
| DESCRIPTION | STATION | OFFSET | ELEVATION | NORTHING | EASTING |
| TSN MGPS " WIL-1" | 246+57.43 | LT, 16.96' | 754.454 | 3077001.8670 | 196146.3360 |
| TSN MGPS "WIL-2" | 5+05.65 | LT, 22.72' | 759.178 | 3076794.8840 | 196065.5330 |
| TSN MPKN NO. 3 | 2+19.73 | RT, 17.49' | 762.140 | 3076546.2164 | 196024.8243 |
| TSN MPKN NO. 4 | 241+54.29 | RT, 157.64 | 761.450 | 3076673.5445 | 195745.4163 |
| TSN MPKN NO. 5 | 239+75.64 | RT, 177.14 | 762.850 | 3076679.8536 | 195559.3806 |
| TSN MSTN NO. 6 | 240+33.92 | RT, 22.13 | 765.740 | 3076823.3914 | 195641.9860 |
| TSN MSTN NO. 7 | 242+27.92 | RT, 26.01 | 762.830 | 3076795.0247 | 195834.7967 |
| TSN MSTN NO. 10 | 3+05.12 | LT, 32.39 | 750.714 | 3076642.3705 | 196008.3605 |
| TSN MDHL NO. 11 | 3+32.61 | RT, 55.51 | 748.690 | 3076622.5181 | 196098.3021 |
| TSN MDHL NO. 12 | 10+46.50 | LT, 64.58 | 739.367 | 3076762.2903 | 196257.8127 |
| TSN MPKN NO. 13 | 11+05.05 | RT, 4.38 | 753.584 | 3076828.2924 | 196315.7314 |
| TSN MSTN NO. 14 | 5+09.62 | RT, 72.42 | 757.657 | 3076848.5869 | 196144.1536 |
| TSN MPKN NO. 20 | 0+30.69 | LT, 10.79' | 765.410 | 3076384.2012 | 196094.5470 |

SCALE : 1" = 20' (HORZ.)
1" = 4' (VERT.)

FOR ENVIRONMENTAL PLAN:
SEE SHEET NO. 1

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

605935_EVG(PROFILE-2).DWG 17-Feb-2014

**WILLIAMSTOWN**
**HOPPER ROAD**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 7 | 8 |
| PROJECT FILE NO. | | 605935 | |

**GRADING PLANS**

605935_EV7(GRADING PLAN).DWG 17-Feb-2014

N

N / F
WILLIAMS COLLEGE
DEED BOOK 765, PAGE 975
ASSESSORS MAP 211, PARCEL 91

N / F
PMP NOMINEE TRUST
DEED BOOK 748, PAGE 409
ASSESSORS MAP 207, PARCEL 30

N / F
TOWN OF WILLIAMSTOWN
DEED BOOK 587, PAGE 93
ASSESSORS MAP 206, PARCEL 49

N / F
WILLIAM BO S. PEABODY
DEED BOOK 1006, PAGE 960
ASSESSORS MAP 206, PARCEL 52

PROP. BRIDGE NO.
W-37-009

1995 TOWN LAYOUT
N 29° 56' 32" E
149.00'

1995 TOWN LAYOUT
S 29° 56' 32" W
157.82'

1995 TOWN LAYOUT
S 13° 17' 22" W
253.53'

1921 SHLO NO. 1907 – SIDELINE

1921 SHLO NO. 1907
BASELINE

TEMP. RD. STA 13+03.03
ROUTE 43 STA 245+62.62

HOPPER RD. STA 5+40.18
ROUTE 43 STA 244+62.81

LIMIT OF WORK
STA 5+31.50
N3076871.2378
E196071.1328

LIMIT OF WORK
STA 12+94.46
N 3076896.4477
E 196137.4562

LIMIT OF WORK
STA 0+60
N3076410.2400
E196083.8097

LIMIT OF WORK
STA 10+08
N 3076720.2887
E 196525.8469

STA 4+30.00
END FULL DEPTH CONST.

STA 0+76.5
BEGIN FULL DEPTH CONST.

SAWCUT MATCH EXIST.

PVMT TRANSITION

PVMT MILLING

TEMP.DETOUR
AND TEMP. BRIDGE

MATCH TO GRAVEL
GRAVEL DRIVE

25' ROW AS PER
ASSESSORS MAP

TSN MPKN NO. 3
N: 3076546.216
E: 196024.824
ELEV: 762.140

TSN MPKN NO. 20
N: 3076384.201
E: 196094.547
ELEV: 785.410

TSN MPKN NO. 13
N: 3076628.292
E: 196515.731
ELEV: 753.584

TSN MSTN NO. 10
N: 3076642.370
E: 196008.360
ELEV: 756.714

TSN MSTN NO. 14
N: 3076848.587
E: 196144.164
ELEV: 797.657

TSN MGPS "WIL-2"
N: 3076794.884
E: 196065.533
ELEV: 759.178

TSN MGPS "WIL-1"
N: 3077001.367
E: 196146.336
ELEV: 754.454

TSN MDHL NO. 11
N: 3076622.518
E: 196098.302
ELEV: 748.690

TSN MDHL NO. 12
N: 3076782.290
E: 196257.813
ELEV: 759.367

TBM: EL=753.35
PK NAIL IN BASE
OF 10" MAPLE

TBM: EL=781.20
CHISELED SQUARE
S.E. CORNER TOP
OF STONE POST

BRIDGE NO. 1909

STONE MASONRY BRIDGE PIER

STONE MASONRY BRIDGE ABUTMENT (TYP)

MASONRY BRIDGE ABUTMENT (TYP)

MECHANICALLY STABILIZED EARTH WALL

STONE MASONRY WALL

STONE MASONRY POSTS (TYP)

BITUMINOUS CONCRETE OVER REINFORCED CONCRETE DECK (TYP)
(BROKEN CONCRETE DECK)

LEDGE OVERHANG

BITUMINOUS CONCRETE DRIVE

3' WIDE DITCH

1' WIDE SWALE

2' WIDE SWALE

3' WIDE SWALE

CONCRETE BOUND FND
CENTER HELD

IP FND

BOUND FND

IRON GATE

SPLIT RAIL FENCE

WIRE FENCE

STEEL GUARD RAIL (TYP)

CHAIN LINK FENCE

BARB WIRE FENCE

TREE LINE

EDGE OF WATER

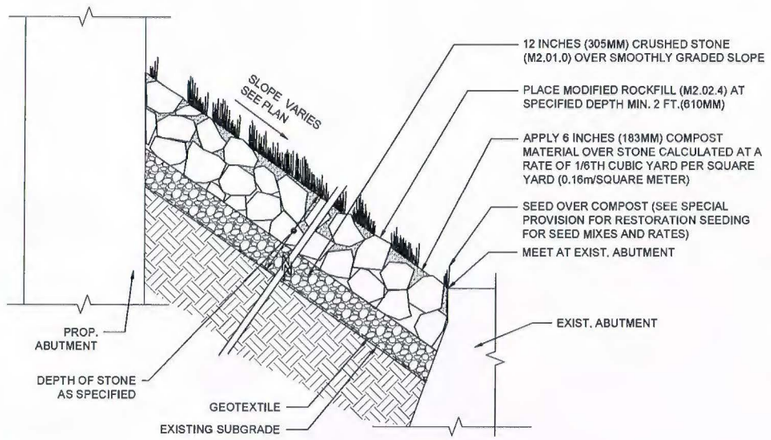
LIMIT OF 100-FT BUFFER ZONE

200' RIVERFRONT AREA

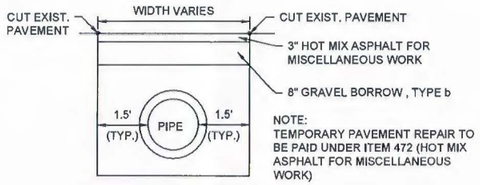
APPROXIMATE R

SCALE IN FEET
20 0 20 40

605935_EW(CONST DETAILS).DWG 17-Feb-2014

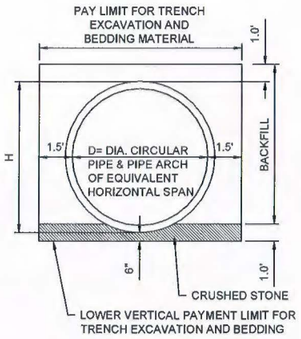



COMPOST AND SEED OVER MODIFIED ROCKFILL (NON-WATERWAY)
NOT TO SCALE

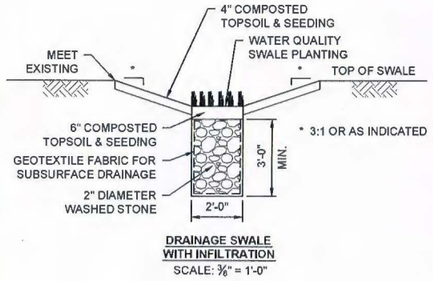



NOTE:
TEMPORARY PAVEMENT REPAIR TO BE PAID UNDER ITEM 472 (HOT MIX ASPHALT FOR MISCELLANEOUS WORK)

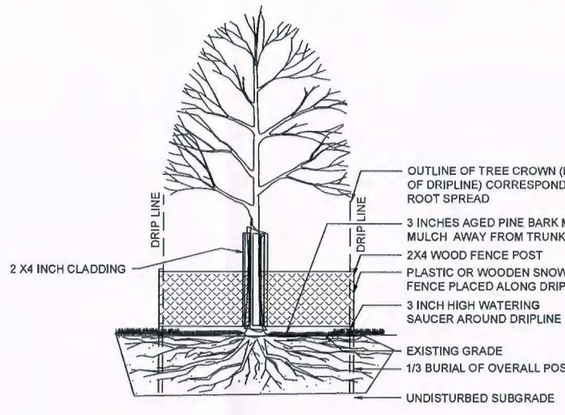
TEMPORARY PAVEMENT REPAIR DETAIL
NOT TO SCALE

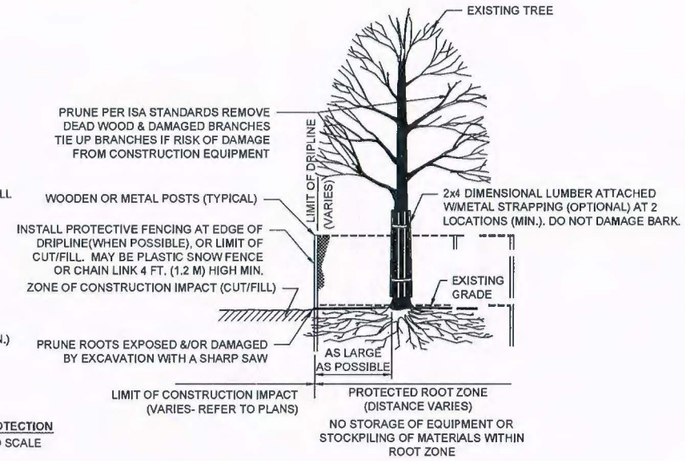



TRENCH DETAIL
NOT TO SCALE

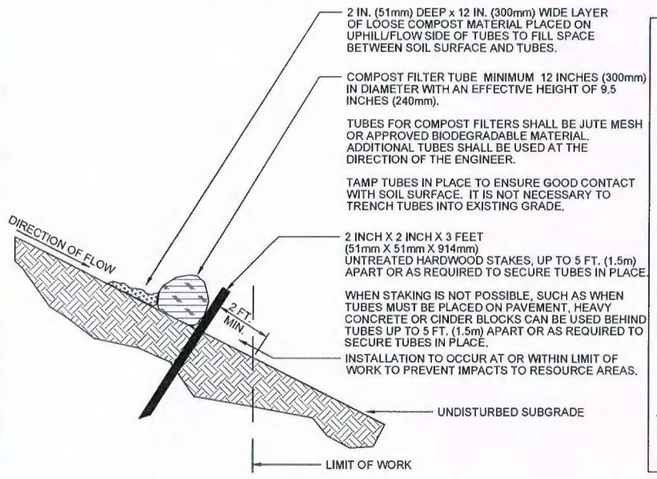



DRAINAGE SWALE WITH INFILTRATION
SCALE: ⅜" = 1'-0"

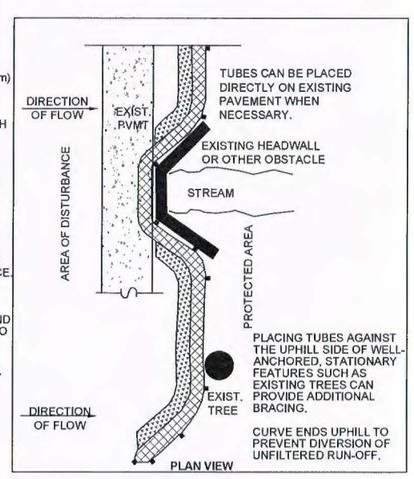



TREE PROTECTION
NOT TO SCALE

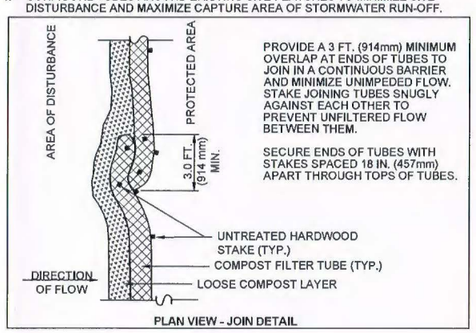



SINGLE COMPOST FILTER TUBE DETAIL

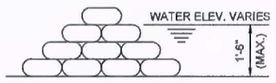


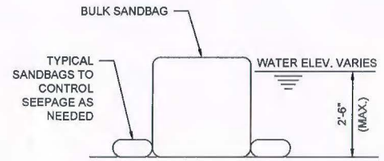

TEMPORARY EROSION AND SEDIMENT CONTROL DETAILS
NOT TO SCALE

GENERAL NOTES:
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) 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.




PLAN VIEW - JOIN DETAIL




CONTROL OF WATER SAND BAGS CONFIGURATION
NOT TO SCALE

NOTES:
1. TYPICAL SANDBAGS SHALL BE SAND-FILLED BAGS, 26"x14" WITH A MASS OF APPROXIMATELY 75 LBS. DIMENSIONS ARE NOMINAL AND MAY VARY.
2. BULK SANDBAGS SHALL BE SAND-FILLED BAGS, 35"x35"x35" WITH A MASS OF APPROXIMATELY 3000 LBS. DIMENSIONS ARE NOMINAL AND MAY VARY.