



**Vermont Department of Environmental Conservation**  
 Watershed Management Division  
 Barre Regional Office  
 5 Perry Street, Suite 80  
 Barre, VT 05641  
 www.watershedmanagement.vt.gov

Agency of Natural Resources

[phone] 802-476-0190  
 [fax] 802-476-0131  
 [cell] 802-279-1143

**AUTHORIZATION TO CONDUCT STREAM ALTERATION ACTIVITIES**

Pursuant to Section C.2.2 of the VT Stream Alteration General Permit (Reporting activities not requiring an application)

Project Number: SA-03- 106 -2015  
 Applicant Name: Town of Stratford  
 Mailing Address: P.O. Box 27 Stratford VT 05072 Phone: (802) 765-4411  
 Project Location Maple Hill Road Email: \_\_\_\_\_

The Secretary of the Vermont Agency of Natural Resources (VT ANR) has determined that:

1. This project authorizes the replacement of an existing culvert with a new bfw open bottom structure.
2. The proposed activity is eligible for coverage under the VT ANR Stream Alteration General Permit.
3. The proposed activity will meet the terms and conditions of the General Permit provided:
  - a) The project will be completed and approved as shown on the plan dated 2/3/15, prepared by Milone & MacBroom, and approved by the Vermont Agency of Natural Resources.
  - b) The project will not adversely affect the public safety by increasing flood hazards.
  - c) The project will not significantly damage fish life or wildlife.
  - d) The project will not significantly damage the rights of riparian owners.
  - e) The project will not obstruct the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.
  - f) The project is conducted in a manner which minimizes or avoids any discharge of sediment or other pollutants to surface waters in violation of the VT Water Quality Standards.
  - g) The ANR River Management Engineer is notified by phone or email when construction begins and when the project is complete.
  - h) A final construction inspection is required for all culvert and bridge projects.
  - i) In-stream working dates are from June 1<sup>st</sup> through October 1<sup>st</sup>; any in-stream work outside these dates will require an Individual Stream Alteration Permit authorization by the River Management Engineer.
  - j) This authorization has been posted for three days public comment. This authorization constitutes final approval.
  - k) Additional Conditions for this project: \_\_\_\_\_

If there are any changes in the project plan or deviation in construction from the plan, the Permittee must notify the River Management Engineer immediately.

If the project is constructed as you have described, as shown on the above referenced approved plans and according to the above conditions, there is no reason to expect any violation of Vermont Water Quality Standards.

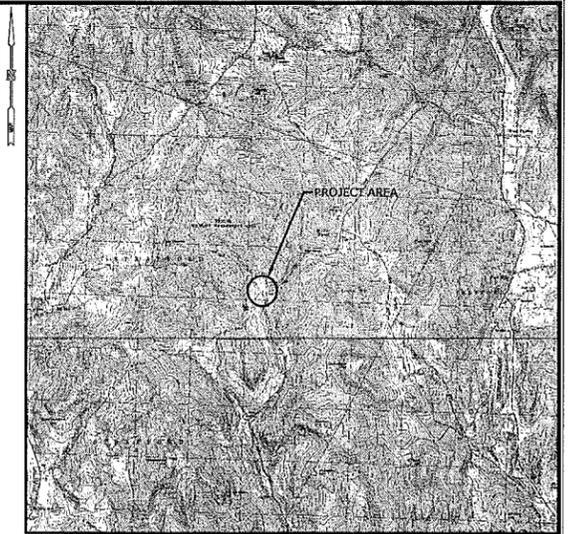
David K. Mears, Commissioner  
 Department of Environmental Conservation

by: Patrick J. Ross, P.E. dated: 2-18-2015  
 Patrick Ross, P.E., River Management Engineer

# MAPLE HILL ROAD AND ABBOTT BROOK AQUATIC ORGANISM PASSAGE PROJECT

MAPLE HILL ROAD  
STRAFFORD, VERMONT

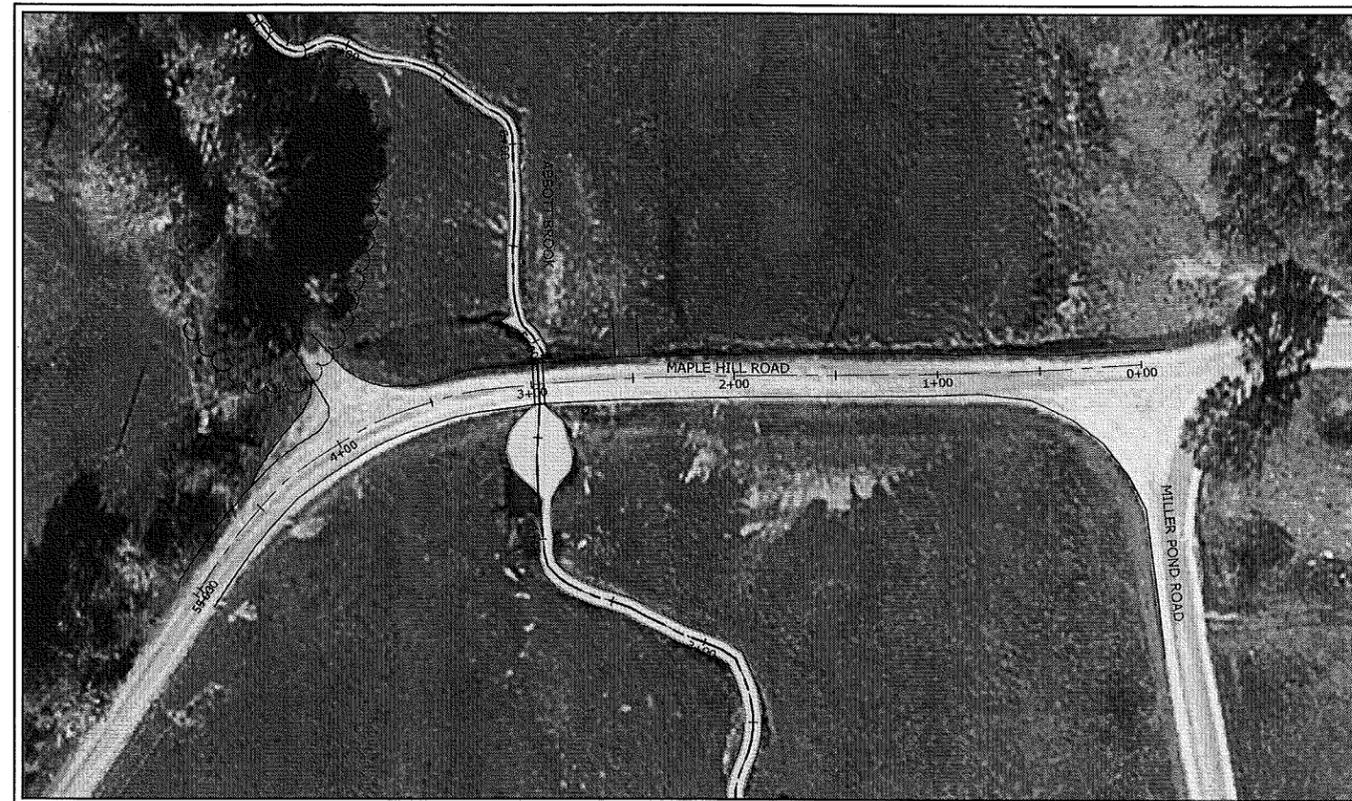
FINAL DESIGN  
FEBRUARY 3, 2015



LOCATION MAP:



SCALE 1" = 5,000'



PROJECT SITE VICINITY MAP:



SCALE 1" = 60'

**PREPARED FOR:**

CONNECTICUT RIVER WATERSHED COUNCIL  
GREENFIELD, MASSACHUSETTS

**SHEET LIST:**

NO.	NAME	TITLE
01		TITLE PAGE & LOCATION MAP
02	SP-1	SITE PLAN - EXISTING CONDITIONS
03	STR-1	STRUCTURE DETAILS
04	STR-2	STRUCTURE DETAILS
05	D-1	SITE DETAILS & NOTES

**APPROVAL**

WATERSHED MANAGEMENT DIVISION

DATE 2-17-2015

BY PATRICK ROSS, P.E.

THIS APPROVAL IS SUBJECT TO THE TERMS  
AND CONDITIONS OF STREAM ALTERATION  
PERMIT # SA-03-106-2015 ISSUED HEREWITH

**PREPARED BY:**



1 South Main Street - 2nd Floor  
Waterbury, Vermont 05676  
(802) 882-8335 Fax (802) 882-8346  
www.miloneandmacbroom.com



Know what's below.  
Call before you dig.  
www.cbyd.com

**SP-1**

SHEET NO. 02 OF 05

PROJECT NO. 2826-06

DATE: FEBRUARY 3, 2015

SCALE: 1"=10'

DESIGNED	DRAWN	CHECKED
JCL	JCL	RKS

**SITE PLAN - EXISTING CONDITIONS**

**MAPLE HILL ROAD AND ABBOTT BROOK AQUATIC ORGANISM PASSAGE PROJECT**

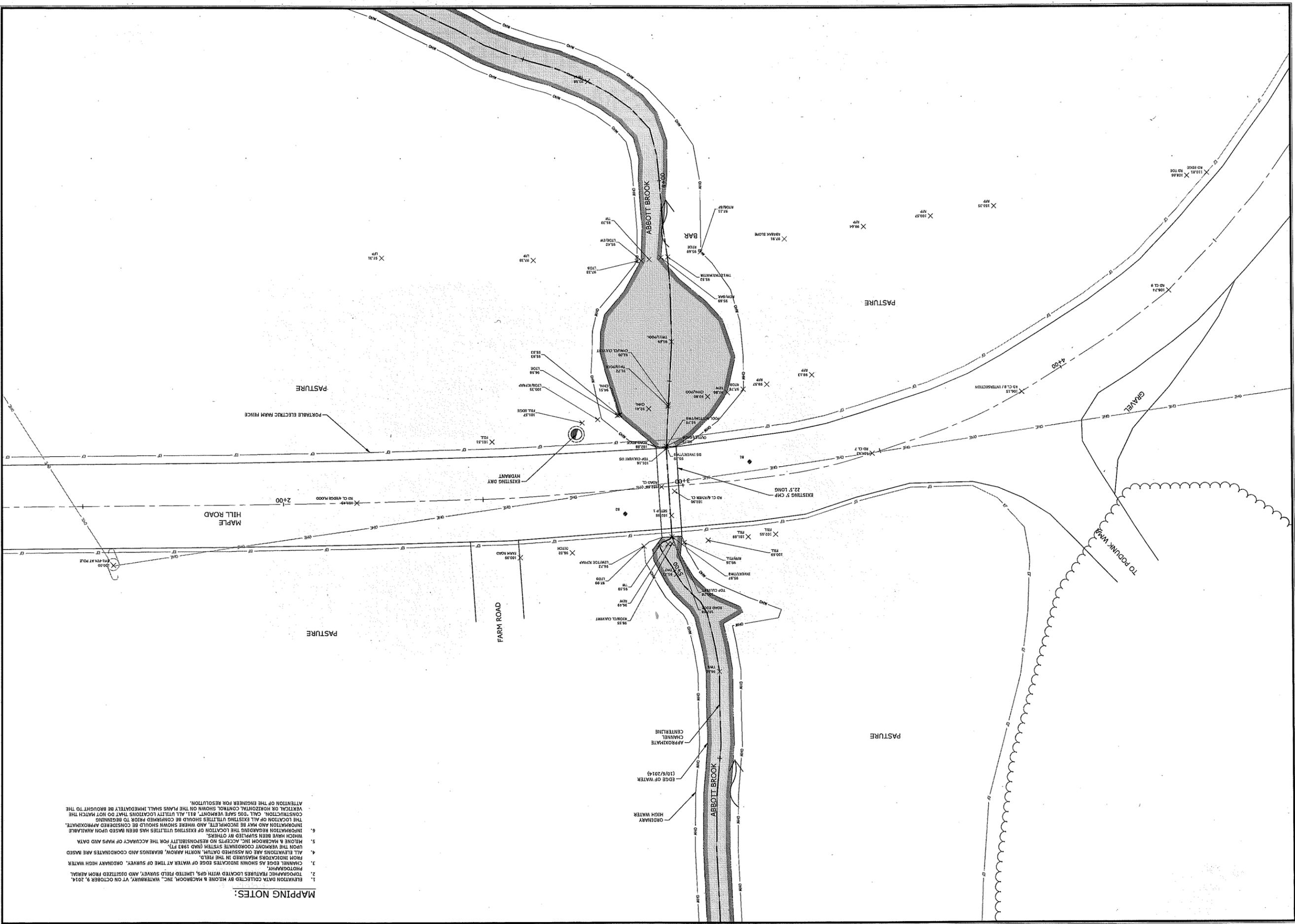
MAPLE HILL ROAD  
STRAFFORD, VERMONT

FINAL DESIGN

DESCRIPTION	DATE	BY

**MILONE & MACBROOM®**

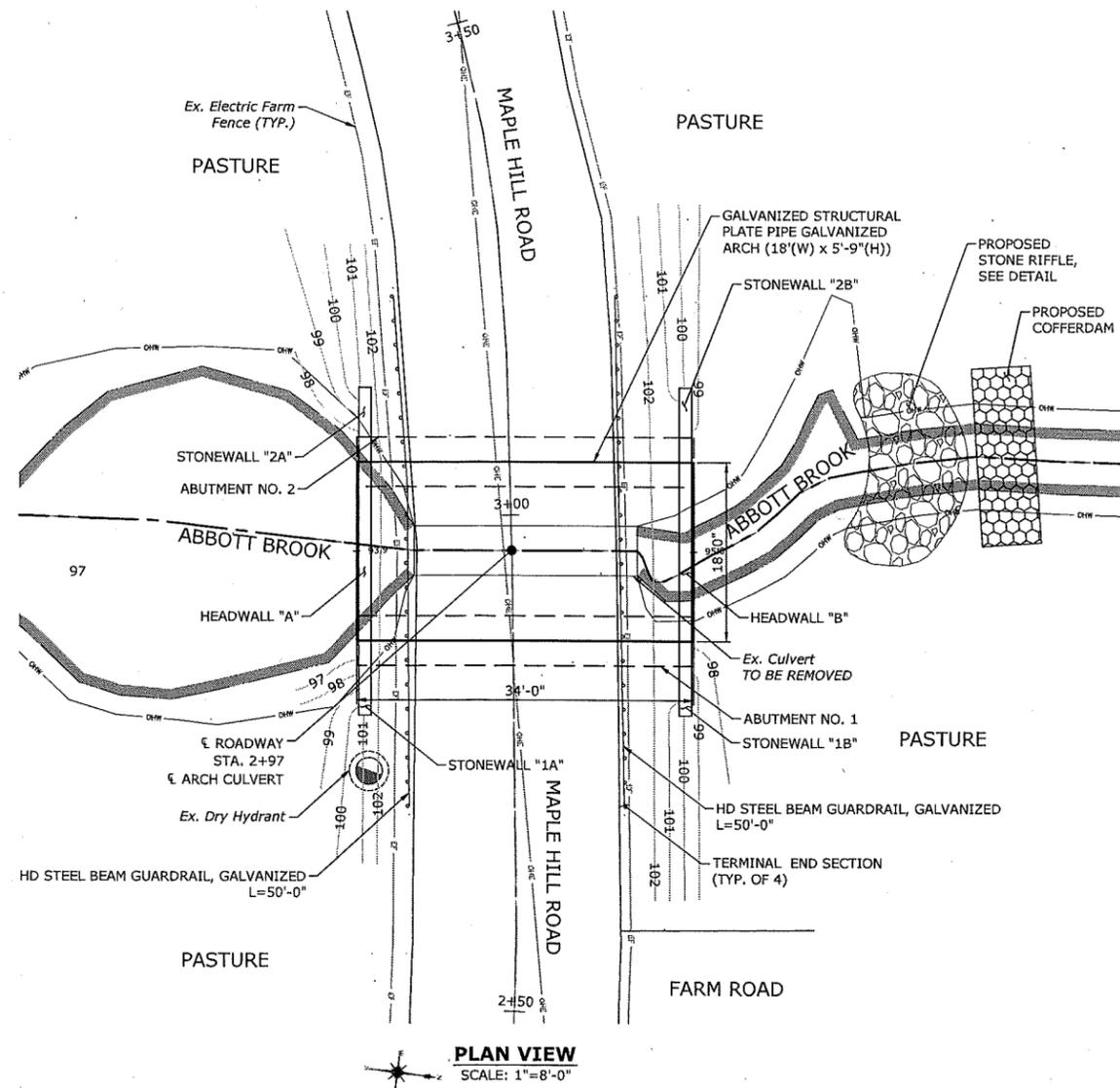
1 South Main Street, 2nd Floor  
Waterbury, Vermont 05676  
(802) 882-8333  
Fax: (802) 882-8346  
www.miloneandmacbroom.com



**MAPPING NOTES:**

- ELEVATION DATA COLLECTED BY MILONE & MACBROOM, INC., WATERBURY, VT ON OCTOBER 9, 2014.
- TOPOGRAPHIC FEATURES LOCATED WITH GPS, LIMITED FIELD SURVEY, AND DIGITIZED FROM AERIAL PHOTOGRAPHY.
- CHANNEL EDGE AS SHOWN INDICATES EDGE OF WATER AT TIME OF SURVEY. ORDINARY HIGH WATER FROM INDICATORS MEASURED IN THE FIELD.
- ALL ELEVATIONS ARE ON ASSUMED DATUM, NORTH AMERICAN BEANINGS AND COORDINATES ARE BASED UPON THE VERMONT COORDINATE SYSTEM (NAD 1983 FT).
- MILONE & MACBROOM INC. ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF MAPS AND DATA WHICH HAVE BEEN SUPPLIED BY OTHERS.
- INFORMATION REGARDING THE LOCATION OF EXISTING UTILITIES HAS BEEN BASED UPON AVAILABLE INFORMATION AND MAY BE INCOMPLETE, AND WHERE SHOWN SHOULD BE CONSIDERED APPROXIMATE. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE CONFIRMED PRIOR TO BEGINNING CONSTRUCTION. CALL THE STATE OF VERMONT, 811, ALL UTILITY LOCATIONS THAT DO NOT MATCH THE VERTICAL OR HORIZONTAL CONTROL SHOWN ON THE PLANS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.

Drawn by: RKS, Checked by: JCL, Date: 02/03/2015



**GENERAL NOTES**

ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2006, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 2007, AND ITS LATEST REVISIONS.

TYPICAL DETAILS AND NOTES ON THESE DRAWINGS SHALL APPLY UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE. CONSTRUCTION DETAILS NOT FULLY SHOWN OR NOTED SHALL BE SIMILAR TO DETAILS SHOWN FOR OTHER SIMILAR CONDITIONS.

IF ANY CONDITIONS ARISE DURING CONSTRUCTION THAT PRECLUDE COMPLIANCE WITH THE DETAILS SHOWN ON THESE DRAWINGS, THE WORK IN THE AFFECTED AREAS SHALL CEASE AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR EXCAVATION PROCEDURES, SHORING, AND PROTECTION. FOUNDATION EXCAVATIONS SHALL BE REVIEWED AND ACCEPTED BY THE ENGINEER OR HIS REPRESENTATIVE PRIOR TO THE PLACEMENT OF ANY REINFORCING STEEL OR CONCRETE.

**CONCRETE NOTES**

ALL PORTIONS OF THE SPILLWAY SHALL BE "CONCRETE, HIGH PERFORMANCE - CLASS B".

THE MINIMUM COVER FOR REINFORCING STEEL IN THE SUBSTRUCTURE SHALL BE THREE INCHES ALONG WALL FACES AGAINST EARTH, AND TWO INCHES ELSEWHERE UNLESS NOTED OTHERWISE.

REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:

SPACING +/- 1"  
CLEARANCE +/- 1/4"

REINFORCING SHALL CONFORM TO ASTM A615 GRADE 60. REINFORCING STEEL SHALL BE CONTINUOUS AND SHALL BE FABRICATED AND PLACED IN ACCORDANCE WITH ACI 318, LATEST EDITION.

**BACKFILL SPECS**

- GRANULAR BACKFILL FOR STRUCTURES:** GRANULAR BACKFILL FOR STRUCTURES SHALL BE OBTAINED FROM APPROVED SOURCES, IT SHALL CONSIST OF SATISFACTORILY GRADED, FREE DRAINING GRANULAR MATERIAL REASONABLY FREE FROM LOAM, SILT, CLAY, AND ORGANIC MATERIAL.

GRANULAR BACKFILL FOR STRUCTURES SHALL MEET THE GRADATION REQUIREMENTS OF THE FOLLOWING TABLE AS DETERMINED IN ACCORDANCE WITH AASHTO T27 AND AASHTO T11:

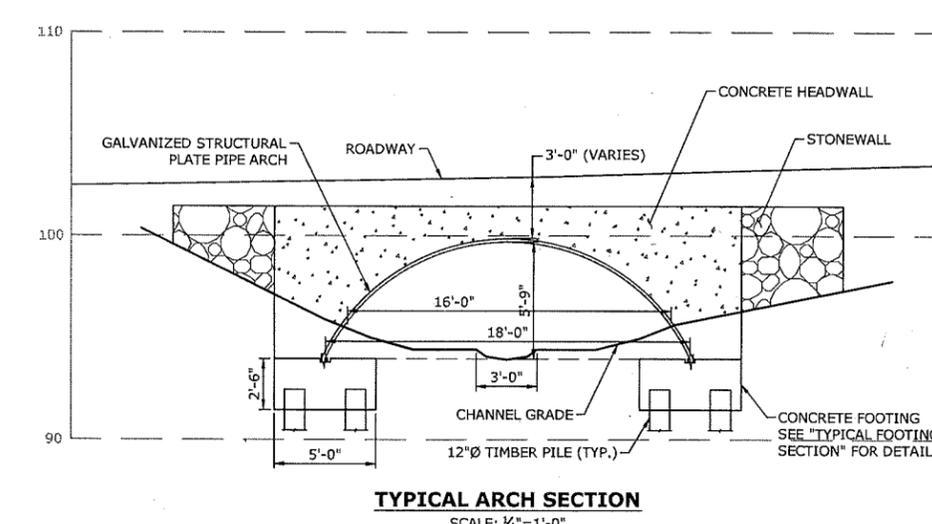
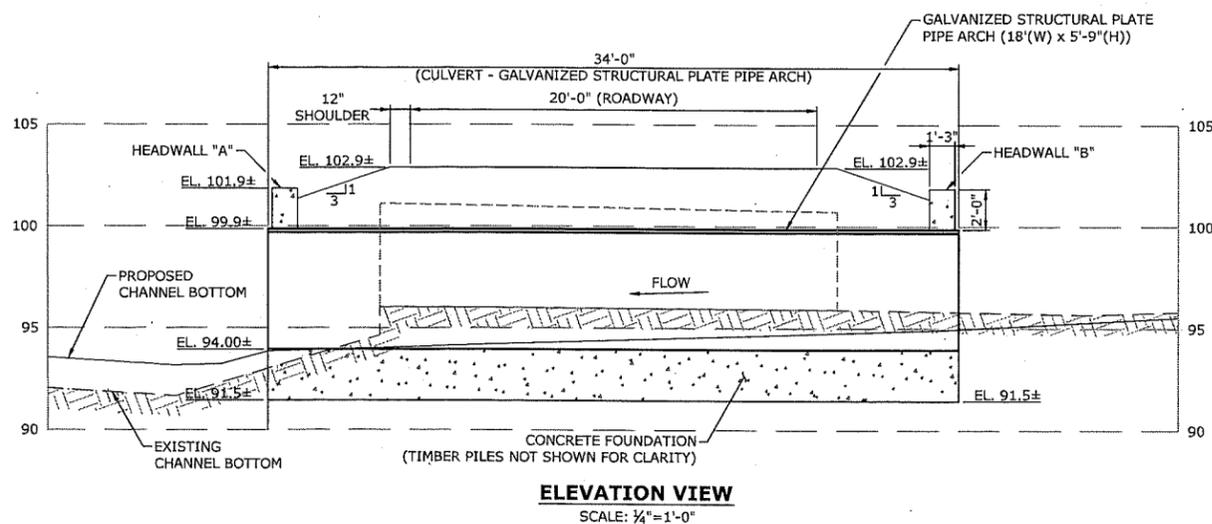
TABLE 704.08A GRANULAR BACKFILL FOR STRUCTURES	
SIEVE DESIGNATION	PERCENTAGE BY MASS (WEIGHT) PASSING SQUARE MESH SIEVES
75 mm (3 inch)	100
4.75 mm (No. 4)	45 TO 75
150 µm. (No. 100)	0 TO 12
75 µm. (No. 200)	0 TO 6

**CONSTRUCTION SEQUENCE NOTES**

- INSTALL SEDIMENT & EROSION CONTROLS AS REQUIRED.
- INSTALL TEMPORARY COFFERDAM AND DEWATERING BASIN AS SHOWN ON PLANS.
- EXCAVATE FOR ABUTMENTS PER PLANS AND STOCKPILE MATERIAL FOR RE-USE.
- INSTALL TIMBER PILES AND PERFORM LOAD TESTS.
- INSTALL CONCRETE ABUTMENTS.
- REMOVE EXISTING CMP PIPE.
- GRADE CHANNEL PER PLANS USING STOCKPILE MATERIAL.
- INSTALL GALVANIZED STRUCTURAL PLATE PIPE ARCH, HEADWALLS AND STONE WALLS.
- BACKFILL AND PREPARE ROADWAY.
- COMPACT ALL BACKFILL UNDER HAUNCHES, AROUND AND UNDER PIPE IN 6" LIFTS TO MINIMUM 95% AASHTO T99 STANDARD PROCTOR DENSITY. ASSURE VOIDS AND SOFT SPOTS DO NOT OCCUR UNDER THE HAUNCHES. BACKFILL HEIGHTS MUST NOT HAVE MORE THAN A TWO LIFT DIFFERENTIAL FROM ONE SIDE OF THE PIPE TO THE OTHER TO PREVENT DISTORTION DURING COMPACTION.
- ESTABLISH FINAL GRADING AND TURF.
- CREATE NATURAL STREAMBED.
- REMOVE ALL TEMPORARY FACILITIES.
- RESTORE SITE (SEE RESTORATION NOTES).

**NOTE**

- CONTRACTOR MAY SUBMIT ALTERNATE CONSTRUCTION SEQUENCE TO THE ENGINEER FOR APPROVAL.
- WORK TO BE COMPLETED DURING LOW FLOW.
- ROAD SURFACE MATERIAL AND CONSTRUCTION SPECIFICATIONS TO BE APPROVED BY TOWN.



DESCRIPTION	DATE	BY

**MILONE & MACBROOM**  
1 South Main Street, 2nd Floor  
Waterbury, Vermont 05676  
(802) 882-8335  
Fax: (802) 882-8346  
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**STRUCTURE DETAILS**  
MAPLE HILL ROAD AND ABBOTT BROOK  
AQUATIC ORGANISM PASSAGE PROJECT  
MAPLE HILL ROAD  
STRAFFORD, VERMONT

KP DESIGNED NP DRAWN KP CHECKED  
AS NOTED  
SCALE  
DATE FEBRUARY 3, 2015  
PROJECT NO. 2525-06  
DRAWING NO. 03 OF 05

**STR-1**



**GENERAL NOTES:**

1. THE PROJECT INCLUDES RESTORATION OF AQUATIC ORGANISM PASSAGE AT A CULVERT IN STRAFFORD, VERMONT. THE CROSSING HAS BEEN REDESIGNED TO INCLUDE A NATURAL STREAM BOTTOM BY REPLACING THE STRUCTURE WITH AN OPEN-BOTTOM ARCH AND CORRECTING SLOPE AND INVERT DROPS.
2. OBTAIN ANY NECESSARY WORK PERMITS AND SUBMIT SCHEDULES, PLANS AND PRODUCT INFORMATION, INCLUDING THE SEDIMENT AND EROSION CONTROL PLAN, CONSTRUCTION SEQUENCE, AND EMERGENCY OPERATION FLOOD AND SPILL PLAN TO THE PROJECT ENGINEER FOR REVIEW FIVE DAYS PRIOR TO INITIATION OF CONSTRUCTION. INSTALL CONSTRUCTION WARNING SIGNS AND FENCING.
3. CONTRACTOR SHALL PARTICIPATE IN A PRE-CONSTRUCTION SITE MEETING WITH TOWN AND THE PROJECT ENGINEER TO REVIEW CONSTRUCTION DETAILS, PERMIT REQUIREMENTS, CONTRACT PROVISIONS, SPECIFICATIONS AND PROJECT LIMITS.
4. SUBMIT ANTICIPATED WORK SCHEDULE TO THE TOWN AND PROJECT ENGINEER PRIOR TO THE COMMENCEMENT OF WORK. THE TOWN SHALL BE NOTIFIED OF ANY CHANGES IN SCHEDULE IMMEDIATELY.
5. THE FINAL LOCATION OF THE PROPOSED STRUCTURES SHALL BE DETERMINED IN THE FIELD BY PROJECT ENGINEER PRIOR TO CONSTRUCTION.
6. THE ELEVATIONS PROPOSED FOR THE STRUCTURE BOTTOM INVERT, CHANNEL INVERT, AND STREAM BED, MAY BE ADJUSTED SLIGHTLY BY PROJECT ENGINEER BASED ON FIELD CONDITIONS.
7. PERFORM MINIMAL MODIFICATIONS TO THE SITE TO ALLOW EQUIPMENT ACCESS. ALL SITE ACCESS IMPROVEMENTS AND/OR MODIFICATIONS PROPOSED BY THE CONTRACTOR, AS WELL AS THE TYPE OF EQUIPMENT THAT IS PROPOSED, SHALL BE APPROVED BY THE TOWN AND PROJECT ENGINEER PRIOR TO CONSTRUCTION.
8. TEMPORARY STOCKPILE AND STAGING AREAS ARE TO BE FLAGGED BY CONTRACTOR PRIOR TO CONSTRUCTION AND APPROVED BY THE TOWN AND PROJECT ENGINEER.
9. ALL PROPOSED GRADES AND SPOT ELEVATIONS IN PLAN VIEW INDICATE FINISHED GRADE. THE NEED TO MODIFY PROPOSED FINISHED GRADES MAY BE REQUIRED IF UNEXPECTED CONDITIONS ARE ENCOUNTERED (E.G., BEDROCK, LEDGE, ETC.). CONSULT PROJECT ENGINEER FOR ANY RECOMMENDED CHANGES.
10. CLEAR AND GRUB TOP AND SIDE SLOPES OF THE EXISTING ROAD EMBANKMENT WITHIN THE ESTABLISHED LIMITS OF CLEARING. ALL CLEARING AND GRUBBING MATERIALS SHALL BE DISPOSED OF AT AN APPROVED SITE. STOCKPILE GRUBBING TO BE REUSED FOR SITE RECOVERY.
11. NO DISTURBANCE BEYOND THE ESTABLISHED LIMITS OF CLEARING IS ALLOWED UNLESS PRIOR PERMISSION IS OBTAINED FROM THE PROJECT ENGINEER.
12. CONTRACTOR MUST COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL PERMITS AND REGULATIONS THROUGHOUT THE DURATION OF PROJECT.
13. AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL PROVIDE A FORM OF BARRIER OR CONSTRUCTION FENCING AT THE SITE TO PREVENT MOTORIZED VEHICLE ACCESS.
14. CLOSE ROAD IN COORDINATION WITH TOWN.
15. ALL PRECAUTIONS SHALL BE TAKEN TO PREVENT THE POTENTIAL TRANSPORT OF INVASIVE SPECIES TO THE CONSTRUCTION SITE. THE CONTRACTOR SHALL INSPECT AND CLEAN ALL EQUIPMENT PRIOR TO TRANSPORT TO THE CONSTRUCTION SITE.
16. CONSTRUCTION IS TO TAKE PLACE DURING LOW WATER CONDITIONS. A WATER CONTROL PLAN HAS BEEN PROVIDED. THE CONTRACTOR SHALL BE PREPARED TO PROVIDE WATER HANDLING AS SPECIFIED IN THE WATER CONTROL PLAN SHOULD THE NEED ARISE DURING THE CONSTRUCTION. ANY CHANGES OR MODIFICATIONS TO THE WATER HANDLING APPROACH BY THE CONTRACTOR IS SUBJECT TO REVIEW AND APPROVAL BY THE PROJECT ENGINEER.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING THE WEATHER FORECASTS AND SHALL BE RESPONSIBLE FOR STABILIZING THE SITE AND REMOVING EQUIPMENT FROM FLOOD PRONE AREAS IN THE EVENT OF FLOOD WARNINGS. A FLOOD CONTINGENCY AND EMERGENCY ACTION PLAN SHALL BE PROVIDED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
18. ALL EQUIPMENT USED IN OR NEAR TO THE WATER SHALL HAVE TIGHT SEALS, AND SHALL NOT POLLUTE THE WATER.
19. NO CONSTRUCTION VEHICLES SHALL BE STORED, SERVICED, WASHED OR FLUSHED IN A LOCATION WHERE LEAKS, SPILLAGE, WASTE MATERIALS, CLEANERS, OR WATERS WILL BE INTRODUCED OR FLOW INTO WETLANDS, WATERCOURSES, OR STORM DRAINAGE SYSTEM. AN EMERGENCY MANAGEMENT PLAN AND SPILL KIT WILL BE MAINTAINED ON SITE AT ALL TIMES. IN THE EVENT OF AN ACCIDENTAL RELEASE, IMMEDIATELY STOP CONSTRUCTION WORK, CONTAIN THE SPILL, AND NOTIFY APPROPRIATE AUTHORITIES AND PROJECT ENGINEER.
20. ANY MATERIAL EXPORTED OFF-SITE SHALL BE LEGALLY DISPOSED OF IN AN UPLAND LOCATION AT NO ADDITIONAL COST. THE CONTRACTOR IS RESPONSIBLE FOR FINDING A SUITABLE RECIPIENT OF THE MATERIAL, GAINING REGULATORY APPROVAL FOR EXPORTED MATERIAL PLACEMENT IF NEEDED, AND HAULING.
21. ALL AREAS SURROUNDING THE PROJECT SITE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED UPON COMPLETION OF CONSTRUCTION. THE RESTORATION OF THE SITE IS SUBJECT TO APPROVAL BY THE TOWN AND THE PROJECT ENGINEER.
22. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE CONFIRMED PRIOR TO BEGINNING CONSTRUCTION. CALL "DIG SAFE" AT 1-888-DIG-SAFE (344-7233) A MINIMUM OF 3 DAYS PRIOR TO DIGGING. ALL UTILITY LOCATIONS THAT DO NOT MATCH THE VERTICAL OR HORIZONTAL CONTROL SHOWN ON THE PLANS OR CONFLICT WITH THE PROPOSED CONSTRUCTION SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE TOWN AND PROJECT ENGINEER FOR RESOLUTION. APPROPRIATE ACTION SHALL BE DETERMINED AND AGREED UPON BY THE TOWN PRIOR TO PROCEEDING WITH CONSTRUCTION.
23. FOLLOWING COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL PARTICIPATE IN A FINAL INSPECTION WITH THE PROJECT ENGINEER AND TOWN FOR THE PURPOSE OF DETERMINING THAT THE PROJECT HAS BEEN COMPLETED ACCORDING TO THE CONSTRUCTION DRAWINGS AND THE TERMS AND CONDITIONS OF THE CONTRACT.
24. THE CONTRACTOR SHALL VISIT THE PROJECT SITE WITH THE TOWN AND PROJECT ENGINEER FOLLOWING THE FIRST HIGH FLOW TO OBSERVE SITE CONDITIONS. EROSION AND/OR AOP PROBLEMS WILL BE CORRECTED IF THEY ARE PRESENT. THIS WOULD LIKELY OCCUR WITHIN 6 MONTHS OF PROJECT COMPLETION AND COULD RESULT IN MAXIMUM OF 1 DAY OF MACHINE TIME TO FINE TUNE STRUCTURES OR ROAD.

**SEDIMENT & EROSION CONTROL NOTES:**

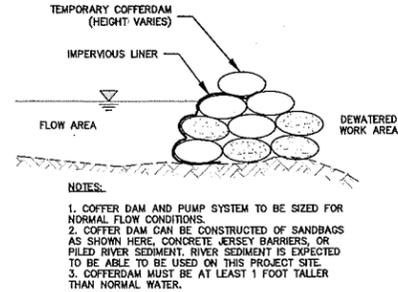
1. THE SEDIMENT AND EROSION CONTROL PRACTICES IMPLEMENTED AS PART OF THE PROJECT SHALL BE IMPLEMENTED AND MAINTAINED ACCORDING TO "THE LOW RISK SITE HANDBOOK FOR EROSION PROTECTION AND SEDIMENT CONTROL" GUIDANCE DOCUMENT FROM THE VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION, WHERE APPLICABLE, IN CONSULTATION WITH PROJECT ENGINEER.
2. THE PROJECT IS LOCATED SO RUNOFF WILL BE MOSTLY CONTAINED WITHIN THE PROPOSED STRUCTURE EXCAVATION AND DIRTY WATER PRODUCED DURING CONSTRUCTION WILL BE TREATED AS SHOWN ON PLANS. EROSION CONTROLS NEEDED INCLUDE: DEWATERING BASIN AND POSSIBLY LIMITED SILT FENCING IF SEDIMENT MIGRATION IS OBSERVED DURING CONSTRUCTION, AS DETERMINED BY THE PROJECT ENGINEER IN THE FIELD.
3. THE LIMITS OF DISTURBANCE SHALL BE CLEARLY MARKED IN THE FIELD FOR REVIEW BY THE PROJECT ENGINEER.
4. LIMIT SOIL DISTURBANCE. NO DISTURBED SOIL SURFACES SHALL BE ALLOWED TO REMAIN EXPOSED FOR MORE THAN 7 CONSECUTIVE DAYS.
5. THE CONTRACTOR SHALL MAINTAIN ALL STREETS, SIDEWALKS, AND WALKWAYS IN THE AREA FREE OF SOIL, MUD AND CONSTRUCTION DEBRIS.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES. THE CONSTRUCTION INSPECTOR WILL VERIFY THE MAINTENANCE ON A PREDETERMINED SCHEDULE AND AFTER RAINFALL EVENTS OF 0.5 INCH OR GREATER.
7. WITHIN 48 HOURS OF FINAL GRADING, EXPOSED SOIL NOT PROTECTED BY STONE RIPRAP MUST BE SEEDED AND MULCH (SEE SITE RESTORATION NOTES).
8. THE SITE SHOULD BE KEPT CLEAN OF LOOSE DEBRIS, LITTER, AND BUILDING MATERIALS.
9. A COPY OF ALL PLANS AND REVISIONS, APPLICABLE PERMITS, AND THE SEDIMENT AND EROSION CONTROL PLAN SHALL BE MAINTAINED ON-SITE BY THE CONTRACTOR AT ALL TIMES DURING CONSTRUCTION.

**SITE RESTORATION NOTES:**

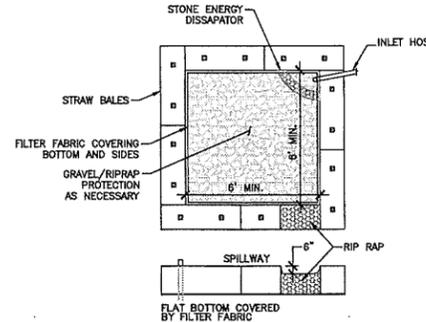
1. THIS WORK SHALL CONSIST OF RESTORING THE PROJECT SITE, ACCESS ROUTE, AND ALL OTHER AREAS DISTURBED DURING CONSTRUCTION TO PRE-CONSTRUCTION CONDITIONS TO THE EXTENT POSSIBLE. IN ADDITION, THE FOLLOWING SPECIFICATIONS APPLY.
2. RE-CREATE NATIVE STREAMBED WITH MIX OF PARTICLE SIZES THROUGH STRUCTURE AND ON ALL DISTURBED ADJACENT STREAMBED. ROUGHEN CHANNEL WITH RANDOM BOULDER CLUSTERS, WHERE NECESSARY. REFER TO CHANNEL AWAY FROM ROAD FOR EXAMPLE (VIANS SPECIFICATION 203.27 FOR CHANNEL EXCAVATION).
3. ALL DISTURBED AREAS SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS UPON COMPLETION OF WORK, INCLUDING BUT NOT LIMITED TO ANY STOCKPILE AND STAGING AREAS, CONSTRUCTION EQUIPMENT PARKING AREAS, AND ANY OTHER AREAS DISTURBED OR DAMAGED DURING CONSTRUCTION. RESTORATION MAY INCLUDING LIGHT GRADING, TOPSOIL AND SEED, MULCH, AND/OR PATCHING OF ROAD SURFACE. ANY PATCHING OF THE GRAVEL ROADWAY SHALL USE MATCHING MATERIAL, AS SPECIFIED BY THE TOWN.
4. REAPPLY STOCKPILED GRUBBING MATERIAL TO A DEPTH OF 6" MINIMUM AT ALL DISTURBED AREAS, ACCORDING TO VIANS SPECIFICATION 651.07.
5. APPLY EROSION CONTROL BLANKET TO SLOPES STEEPER THAN 2:1 SLOPE. USE BIONET SHORT TERM BIODEGRADABLE EROSION CONTROL BLANKETS ITEM NUMBER S1509N, AS MANUFACTURED BY NORTH AMERICAN GREEN, 5401 ST. WENDEL-CYNTHIANA ROAD, POSEVILLE, IN 47633. INSTALL EROSION CONTROL BLANKET ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS.
6. ALL DISTURBED AREAS TO BE RE-VEGETATED SHALL BE SEEDED AND PROTECTED FROM EROSION AS SOON AS PRACTICAL ONCE FINISH GRADE IS ACHIEVED. REVEGETATION PROCEDURES SHOULD FOLLOW VIANS SPECIFICATION 651 FOR TURF ESTABLISHMENT.
7. SEED MIX FOR RESTORING ALL DISTURBED AREAS WITHIN THE PROJECT SITE SHALL BE NEW ENGLAND CONSERVATION / WILDLIFE MIX (PROVIDED BY NEW ENGLAND WETLAND PLANTS, INC. 820 WEST STREET, AMHERST, MA 01002, OR APPROVED EQUAL) APPLIED AT A RATE OF 25 POUNDS PER ACRE OR APPROVED EQUAL. CONTRACTOR SHALL PROVIDE A LIST OF SPECIES INCLUDED IN THE MIX PRIOR TO APPLICATION FOR REVIEW AND APPROVAL BY THE TOWN. SEED QUALITY WILL CONFORM TO VIANS SPECIFICATION 755.04.
8. ALL SEEDED AREAS WILL BE COVERED WITH HAY MULCH ACCORDING TO VIANS SPECIFICATION 755.10, APPLIED AT A RATE OF 2 TONS/ACRE, AND MECHANICALLY ANCHORED.
9. ALL RESTORATION WORK IS SUBJECT TO FINAL APPROVAL BY THE TOWN.

**WATER CONTROL PLAN:**

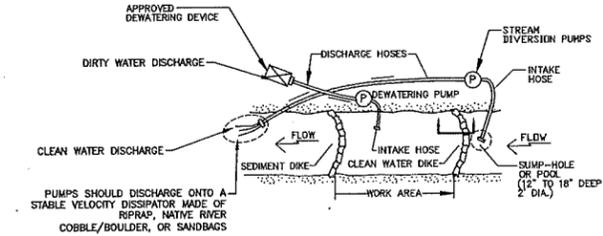
1. THE PROPOSED WATER CONTROL PLAN IS PROVIDED AS A RECOMMENDED APPROACH. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING A PROPOSED CONSTRUCTION SEQUENCE TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION.
2. WORK DURING LOW WATER.
3. OK TO WORK IN WET, YET MINIMIZE RIVER CHANNEL DISTURBANCE. WORK ON PLATFORM OF RIVER COBBLE ADJACENT.
4. INSTALL DEWATERING BASIN OR OTHER APPROVED DEWATERING DEVICE TO RECEIVE DIRTY WATER DURING CONSTRUCTION. DEWATERING BASINS ARE EXPECTED TO BE IN THE FLOODPLAIN AREA ON THE DOWNSTREAM SIDE OF THE ROAD EMBANKMENT. NO PERMANENT DISTURBANCE IS EXPECTED DUE TO DEWATERING BASIN PLACEMENT.
5. IDENTIFY AND PREPARE CLEAN WATER DISCHARGE AREA AND REINFORCE WITH APPROVED ENERGY DISSIPATER.
6. BUILD COFFERDAM UPSTREAM AND DOWNSTREAM OF WORK AREA. USE RIVER SEDIMENT OR OTHER COFFERDAM MATERIAL TO CREATE COFFERDAM, SEE DETAIL. ALL COFFERDAMS NEED TO BE REMOVED AT END OF PROJECT.
7. INSTALL PUMP TO BYPASS CLEAN WATER TO DOWNSTREAM CHANNEL. DIRECT DISCHARGE TO PREPARED ENERGY DISSIPATER.
8. BEGIN WORK, USING SECOND PUMP TO DEWATER CONSTRUCTION AREA AS NEEDED. DIRECT DEWATERED DIRTY WATER TO DEWATERING BASIN.
9. CONTINUE PUMP AROUND PRACTICE UNTIL WORK IS COMPLETE.
10. THERE SHALL BE NO CLAIMS FOR EXTRA COMPENSATION FOR PROJECT DELAYS DUE TO WATER CONTROL ASSOCIATED WITH HIGH WATER LEVELS FROM NATURAL EVENTS SUCH AS FLOODS.



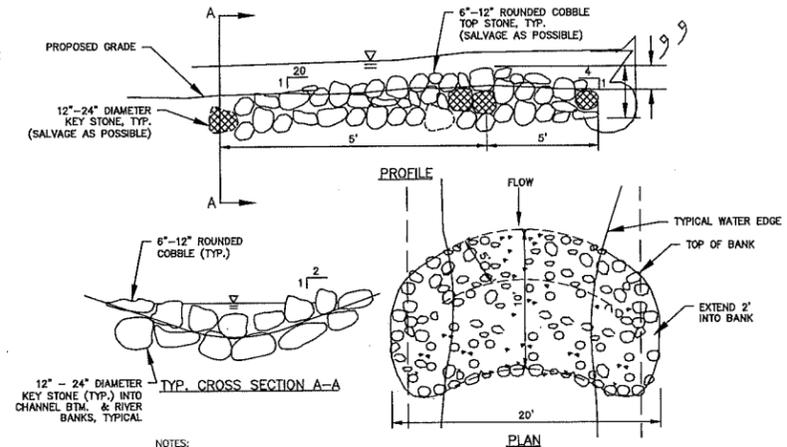
**TEMPORARY COFFERDAM DETAIL**  
NOT TO SCALE



**TEMPORARY DEWATERING BASIN**  
NOT TO SCALE



**PUMP AROUND PRACTICE**  
NOT TO SCALE



**STONE RIFFLE**  
NOT TO SCALE

*Borings*

MIKE'S BORING & CORING LLC. PO Box 75 • East Barre, Vermont 05649 • 802-476-6073										
TO	Client	PROJECT NAME	LOCATION	SHEET	DATE	Ground Water Observations				
10	Milone & MacBroom, Inc. 1 South Main Street, 2nd Floor Waterbury, VT 05676	Maple Hill Rd Culvert	Stratford, VT	1	10-30-14	7	at	0	hours	Augers - Size 1.5" Split Spoon Hammer 90' Hammer Fall 20'
		MHC JOB #	14088	DATE	10-30-14					Surface Elevation: 140a
		HOLE #	LINE & STA.	OFFSET	DATE COMPLETED					Inspector: Mike McGonley Soils Engineer
					10-30-14					
LOCATION OF BORING: As staked										
Boring	Date	Type of Sample	Flow per 10' on Sampler	Moisture Content or Consist.	Water Charge	Soil Description	No.	Feet	Exc. Inches	Remarks
5-7	Dry	2/3/42		Wet	6	Brown fine sand and silt, some gravel	1	24	6	
10-12	Dry	2/3/52		Wet	6	Brown/gray fine sand and silt, with some gravel	2	24	14	
15-17	Dry	1/2/2/3		Wet	6	Brown fine sand and silt	3	24	16	
20-22	Dry	6/5/20/27		Wet	6	Stones at 18.5	4	24	20	
25-27	Dry	24/24/20/27		Wet	6	Brown fine sand and medium gravel (flowing sand)	5	24	24	
30-32	Dry	10/10/13/13		Wet	6	Brown fine sand and medium gravel (flowing sand) with some rock	6	24	24	
Ground Surface to 30' Used 3.25' augers: Then 55 to 32 Earth Boring Rock Coring Samples HOLE NUMBER 6 B-1										

**BORING B-1**

MIKE'S BORING & CORING LLC. PO Box 75 • East Barre, Vermont 05649 • 802-476-6073										
TO	Client	PROJECT NAME	LOCATION	SHEET	DATE	Ground Water Observations				
10	Milone & MacBroom, Inc. 1 South Main Street, 2nd Floor Waterbury, VT 05676	Maple Hill Rd Culvert	Stratford, VT	2	10-30-14	7	at	0	hours	Augers - Size 1.5" Split Spoon Hammer 90' Hammer Fall 30'
		MHC JOB #	14088	DATE	10-30-14					Surface Elevation: 140a
		HOLE #	LINE & STA.	OFFSET	DATE COMPLETED					Inspector: Mike McGonley Soils Engineer
					10-30-14					
LOCATION OF BORING: As staked										
Boring	Date	Type of Sample	Flow per 10' on Sampler	Moisture Content or Consist.	Water Charge	Soil Description	No.	Feet	Exc. Inches	Remarks
5-7	Dry	2/2/4/5		Damp	6	Brown fine sand with some gravel into dark brown silty fine sand with some organic	1	24	16	
10-12	Dry	2/2/2/0		Wet	6	Brown/gray fine sand with some silt	2	24	14	
15-17	Dry	1/1/1/2		Wet	6	Brown/gray fine sand with some silt	3	24	16	
20-22	Dry	1/0/0/4/1/1/1		Wet	6	Brown/gray medium fine sand	4	24	18	
25-27	Dry	2/3/4/7		Wet	6	Brown/gray medium fine sand	5	24	20	
30-32	Dry	4/5/5 for 2'		Wet	6	Brown medium fine sand with some weathered gravel	6	6	10	
Ground Surface to 30' Used 3.25' augers: Then 55 to refusal at 30' Earth Boring Rock Coring Samples HOLE NUMBER 6 B-2										

**BORING B-2**

**MILONE & MACBROOM**  
1 South Main Street, 2nd Floor  
Waterbury, Vermont 05676  
(802) 882-8335 FAX (802) 882-8346  
www.miloneandmacbroom.com

DATE	DESCRIPTION

FINAL DESIGN

**SITE DETAILS & NOTES**  
MAPLE HILL ROAD AND ABBOTT BROOK  
AQUATIC ORGANISM PASSAGE PROJECT  
MAPLE HILL ROAD  
STRAFFORD, VERMONT

JCL	JCL	RKS
DESIGNED	DRAWN	CHECKED
NOT TO SCALE		
SCALE		
FEBRUARY 3, 2015		
DATE		
2525-06		
PROJECT NO.		
05 OF 05		
SHEET NO.		
D-1		
SHEET NAME		