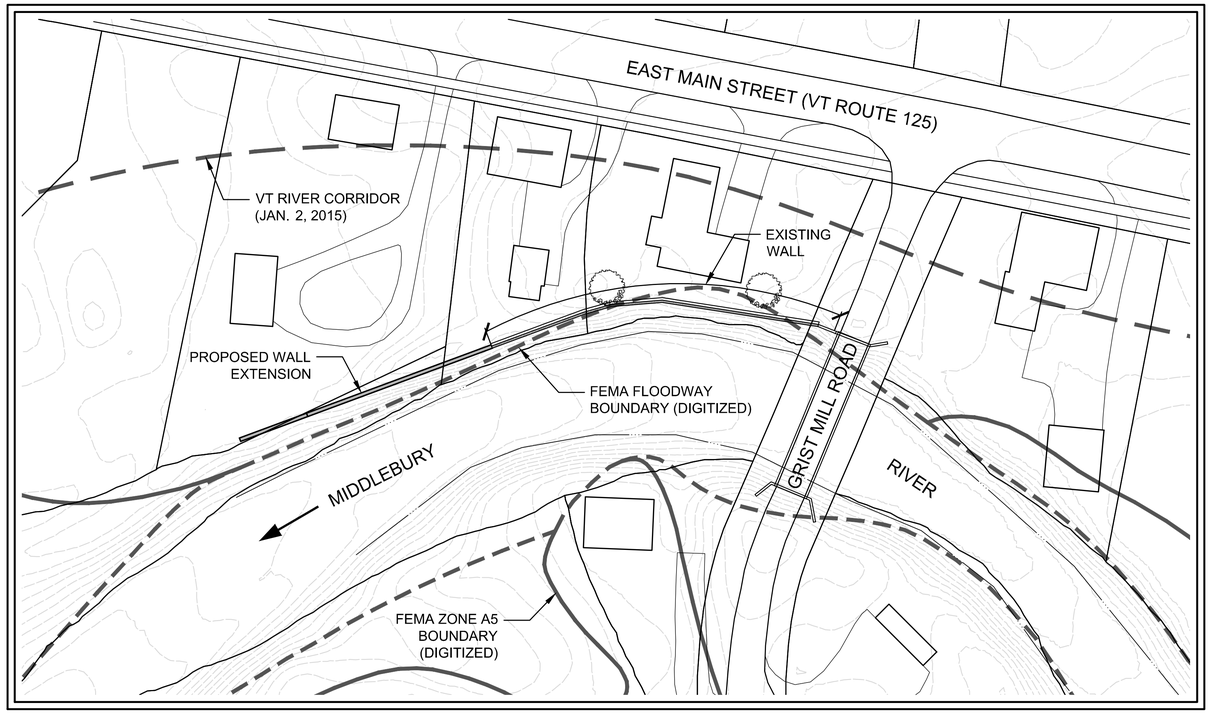
GRIST MILL ROAD FLOODWALL STABILIZATION & EXTENSION

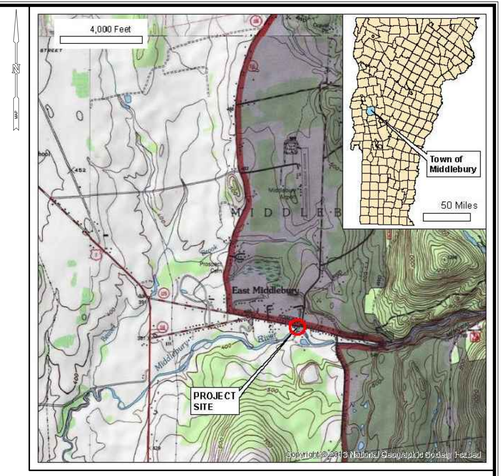
GRIST MILL ROAD
EAST MIDDLEBURY, VERMONT

5032-01-3
MAY 12, 2014
REVISED: JANUARY 29, 2019
REVISED: AUGUST 10, 2020



PROJECT SITE VICINITY MAP:

0' 20' 40'
0 1/2" 1"
SCALE 1" = 40'



LOCATION MAP:

0' 2000' 4000'
0 1/2" 1"
SCALE 1" = 4000'

PREPARED FOR:

TOWN OF MIDDLEBURY
94 MAIN STREET
MIDDLEBURY, VERMONT 05753

LIST OF DRAWINGS

NO.	NAME	TITLE
01	--	TITLE SHEET
02	STR-1	STRUCTURAL PLAN AND ELEVATION
03	STR-2	GENERAL NOTES AND BORING LOGS
04	STR-3	STRUCTURAL DETAILS - TYPICAL WALL SECTIONS

PREPARED BY:

MILONE & MACBROOM®

1 South Main Street - 2nd Floor
Waterbury, Vermont 05676
(802) 882-8335 Fax (802) 882-8346
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811
Know what's **below.**
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EXISTING HOUSE

EXISTING GARAGE

PROTECT AND MAINTAIN EXISTING TREE

EXISTING CONCRETE FLOODWALL (L=±177LF)

PROTECT AND MAINTAIN EXISTING TREE

MIDDLEBURY RIVER

GRIST MILL ROAD

REPAIR ±177 LF EXISTING FLOOD WALL SEE DETAILS

CREATE WORK AREA PLATFORM BY LEVELING EXISTING STONE ARMORING AND MATERIAL ALONG THE CHANNEL AND FLOODWALL. PREVENT MATERIAL FROM BLOCKING THE FLOW OF THE RIVER TO THE EXTENT POSSIBLE.

FEMA FLOODWAY BOUNDARY (DIGITIZED)

FEMA ZONE A5 BOUNDARY (DIGITIZED)

PROPOSED GRAVITY FLOODWALL MEASURED ALONG FRONT FACE

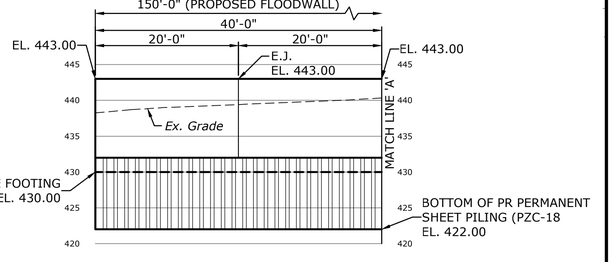
FEMA FLOODWAY BOUNDARY (DIGITIZED)

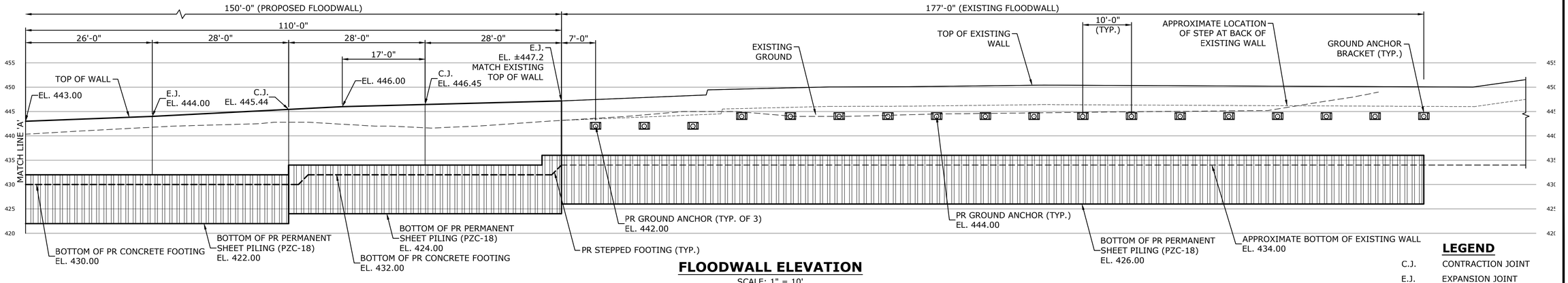
150'-0" (PROPOSED FLOODWALL)

440.20 GS
440.25 TOE
445.25 TOP
445.53 TOP
447.18 TOPWALL 15(
432.73 TOE WL
431.75 CL CHANNEL
431.73 CL CHANNEL NG
431.70 CL CHANNEL
439.91 TOE
441.23 TOPOFSW END
450.05 TOPWALL 15(
449.45 TOPWALL 15(
448.40 TOPWALL 15(
450.09 TOPWALL 15(
448.42 TOPWALL 15(
449.12 GS
450.01 TOPWALL 15(22(
438.72 TOE WL
435.61 TOE WL
437.36 CL CHANNEL
430.31 TOE WL
432.39 TOE WL

FLOODWALL PLAN

SCALE: 1" = 10'





FLOODWALL ELEVATION

SCALE: 1" = 10'

LEGEND

C.J. CONTRACTION JOINT

E.J. EXPANSION JOINT

Engineering, Landscape Architecture and Environmental Sciences

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REVISIONS

01/29/19	FEMA DATA/RIVER CORRIDOR
08/10/20	WALL EXTENSION EDITS

STRUCTURAL PLAN AND ELEVATION

EAST MIDDLEBURY VILLAGE FLOOD RESILIENCY FLOODWALL REPAIRS

GRIST MILL ROAD
MIDDLEBURY, VERMONT

KP	TEB	GDJ
DESIGNED	DRAWN	CHECKED

SCALE 1" = 10'

DATE MAY 12, 2014

PROJECT NO. 5032-01

STR-1

SHEET NO.

GENERAL NOTES

THE PURPOSE OF THIS PROJECT IS TO INSTALL STABILIZATION MEASURES ALONG THE EXISTING FLOODWALL AND CONSTRUCT A FLOODWALL EXTENSION ALONG THE MIDDLEBURY RIVER IN THE VILLAGE OF EAST MIDDLEBURY, VERMONT.

THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE CONFIRMED PRIOR TO BEGINNING CONSTRUCTION. CALL "DIG SAFE" AT 1-888-DIG-SAFE (344-7233). THE CONTRACTOR SHALL TAKE PRECAUTIONS NOT TO DISTURB EXISTING UTILITIES.

THE CONTRACTOR SHALL DESIGNATE A SUPERINTENDENT AT THE START OF CONSTRUCTION AND THE CONTRACTOR'S SUPERINTENDENT SHALL BE ON-SITE AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR AND HIS/HER JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR COMPLYING WITH THE JOB SPECIFICATIONS AND PERMIT REQUIREMENTS.

ALL STORAGE AND ACCESS ROUTES, PEDESTRIAN FENCES/BARRIERS, WORKING HOURS, AND LIMITS OF CLEARING SHALL BE FLAGGED BY CONTRACTOR PRIOR TO CONSTRUCTION AND APPROVED BY TOWN AND PROJECT ENGINEER.

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 OR WATERCOURSES. 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 THE TOWN, APPROPRIATE AUTHORITIES AND PROJECT ENGINEER.

THE PROJECT SITE IS SUBJECT TO FLOODING. THE CONTRACTOR SHALL MONITOR WEATHER FORECASTS AND STABILIZE THE CONSTRUCTION SITE AND REMOVE EQUIPMENT FROM FLOOD PRONE AREAS IN THE EVENT OF FLOOD WARNINGS. WORK SHOULD BE PERFORMED DURING LOW WATER.

THERE SHALL BE NO CLAIMS FOR EXTRA COMPENSATION DUE TO DELAYS IN WATER CONTROL ASSOCIATED WITH HIGH WATER LEVELS FROM NATURAL EVENTS SUCH AS FLOODS.

THE CONTRACTOR SHALL MAINTAIN ALL ROADWAYS, SIDEWALKS, AND WALKWAYS IN THE AREA FREE OF SOIL, MUD, AND CONSTRUCTION DEBRIS. CONSTRUCTION ENTRANCES MUST BE MAINTAINED AT EACH SITE ACCESS POINT. SEE PLANS AND DETAILS.

CONTRACTOR MUST COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL PERMITS THROUGHOUT DURATION OF PROJECT.

TRAFFIC CONTROL MUST CONFORM TO GUIDELINES SET IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", MOST CURRENT EDITION, AS PUBLISHED BY U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

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.

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.

FOLLOWING COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL PARTICIPATE IN A FINAL SITE INSPECTION WITH THE TOWN AND PROJECT ENGINEER FOR THE PURPOSE OF VERIFYING THAT THE PROJECT HAS BEEN COMPLETED ACCORDING TO THE CONSTRUCTION PLANS, SPECIFICATIONS AND THE TERMS AND CONDITIONS OF THE CONTRACT.

SURVEY POINTS COLLECTED IN APRIL 2013 BY LAROSE SURVEY, INC. BASE MAPPING SUPPLEMENTED WITH 1-FOOT CONTOURS DERIVED FROM ADDISON COUNTY LiDAR DATA RELEASED IN MARCH, 2014. ALL ELEVATIONS REFER TO THE NAVD 88 VERTICAL DATUM.

PROPERTY BOUNDARIES SHOWN ON THE BASE MAPPING WERE OBTAINED FROM THE VERMONT CENTER FOR GEOGRAPHIC INFORMATION (VCGI) AND SHOULD BE CONSIDERED APPROXIMATE IN NATURE.

FEATURES SHOWN ON THE BASE MAPPING WERE OBTAINED FROM AVAILABLE GIS DATA, AERIAL PHOTOGRAPHY, AND FIELD MEASUREMENTS. THE HORIZONTAL DATUM REFERENCES THE NAD 83 VERMONT STATE PLANE WITH UNITS OF FEET.

EROSION CONTROL NOTES

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.

CLEARING OF NATIVE VEGETATION FOR CONSTRUCTION ACCESS SHOULD BE MINIMIZED.

THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES. THE CONTRACTOR WILL VERIFY THE MAINTENANCE WEEKLY AND AFTER RAIN EVENTS AND REPORT TO PROJECT ENGINEER.

THE PROJECT ENGINEER IS TO BE NOTIFIED IMMEDIATELY IF EXCESSIVE SEDIMENT EROSION TAKES PLACE, IF SIGNIFICANT FINE GRAIN SEDIMENT IS ENCOUNTERED OR IF POTENTIALLY CONTAMINATED SEDIMENTS ARE ENCOUNTERED (OILY, DARK COLOR, CHEMICAL ODOR).

PLAN AND PERFORM WORK DURING LOW FLOW PERIODS.

THE EXISTING STONE ARMORING ALONG THE EXISTING FLOODWALL AND CHANNEL BANK MAY BE USED TO CREATE A WORK PLATFORM ALLOWING ACCESS TO THE RIVER-SIDE OF THE EXISTING FLOODWALL AND PROPOSED WALL EXTENSION ALIGNMENT. PITCH THE WORK PLATFORM TOWARDS THE FLOODWALL TO PREVENT SEDIMENT TRANSPORT INTO THE RIVER.

PUMPING AND DE-WATERING ARE NOT EXPECTED TO BE NECESSARY FOR THIS PROJECT. SHOULD DE-WATERING BE REQUIRED, METHODOLOGY AND PLACEMENT SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO DE-WATERING. DE-WATERING ACTIVITIES SHALL FALL UNDER SECTION 204 - EXCAVATION FOR STRUCTURES AS DESCRIBED IN THE LATEST REVISION OF THE VTRANS STANDARD SPECIFICATIONS FOR CONSTRUCTION.

CONSTRUCTION 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.

ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.

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.

THE ALIGNMENT AND LOCATION OF THE PROPOSED FLOODWALL WILL BE STAKED BY THE CONTRACTOR IN THE FIELD AND CONFIRMED BY THE PROJECT ENGINEER PRIOR TO CONSTRUCTION.

THE SHAPE AND EXTENT OF THE EXISTING RIVER BANK AND CHANNEL MUST BE MAINTAINED POST CONSTRUCTION. CONTRACTOR SHALL VERIFY THAT THE EXTENT OF THE RIVER BANK STONE ARMORING MATCHES THE PRE-CONSTRUCTION CONDITIONS TO PREVENT ENCROACHMENT INTO THE RIVER CHANNEL.

CONCRETE NOTES

ALL CONCRETE FOR THE PROPOSED FLOODWALL / WALL EXTENSION 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 DETAILED 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.

MISCELLANEOUS

NO CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN, SHALL BE ALLOWED UNLESS APPROVED BY THE PROJECT ENGINEER. ALL PROPOSED CONSTRUCTION JOINTS SHALL BE SHOWN ON THE REINFORCING SHOP DRAWINGS.

CHA

Middlebury Flood Wall
SUBSURFACE LOG
HOLE NUMBER B-1

Page 1 of 2

PROJECT NUMBER: 27701.1000.32000
LOCATION: Middlebury, Vermont
CLIENT: Milone & MacBroom, Inc
CONTRACTOR: Mikes Boring & Coring LLC
DRILLER: M. McGinley | INSPECTOR: J. Cheung
START DATE and TIME: 1/17/2014 9:36:00 AM
FINISH DATE and TIME: 1/17/2014 11:40:00 AM
SURFACE ELEV.: N/A | CHECKED BY:
DRILL FLUID: WaterPolymer @ 22' | DRILLING METHOD: 3.25" HSA
HAMMER TYPE: Safety On Cathead Rope | ROD SIZE: AW
DRILLING TYPE & MODEL: Truck Rig, MOBILE B59

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	1-17-14	11:40 AM	Estimated	8.5	10	12

SAMPLE/CORE NUMBER	SAMP./CR'D LEN. (ft)	SAMP./CR'D RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S-1	2	1.6	48-68-23-17	68				TOPSOIL f.m.c. SAND, Some f.c. Gravel, trace silt, brown, very compact, moist **(FILL)**			
S-2	2	0.7	5-4-3-4	7		5		f.m.c. SAND, Some f.c. Gravel, trace silt, brown, loose, moist **(SP)**			
S-3	2	0.6	2-2-4-5	6		10		f.m.c. SAND, Some f.c. Gravel, trace silt, brown, loose, wet **(SP)**		Groundwater levels encountered during drilling may not represent static condition.	
S-4	2	1.1	6-5-4-15	9		15		f.m.c. SAND, Some f. Gravel, trace silt, brown, loose, wet **(SP)** f.c. GRAVEL, grey/white, loose, wet **(GP)**			
S-5	2	1.3	1-5-4-7	9		20		f.m.c. SAND, trace c. gravel, brown, loose, wet **(SP)**		Water and polymer solution introduced at depth of 22 feet.	

CHA

Middlebury Flood Wall
SUBSURFACE LOG
HOLE NUMBER B-1

Page 2 of 2

PROJECT NUMBER: 27701.1000.32000

SAMPLE/CORE NUMBER	SAMP./CR'D LEN. (ft)	SAMP./CR'D RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S-6	2	1.2	5-4-3-5	7				f.m. SAND, trace silt, trace c. gravel, brown, loose, wet **(SP)**			
S-7	2	1.4	1-1-2-3	3		30		f.m.c. SAND, little f.c. gravel, trace silt, tan, very loose, wet **(SP)**			
S-8	2	1.4	2-3-9-9	11		35		f.m. SAND, tan, medium compact, wet **(SP)**			
S-9	2	1.5	7-9-5-4	14		40		Similar Soil **(SP)** f.m.c. SAND, Some f.c. Gravel, tan, wet **(SP)** End of Boring at 42 ft.			

CHA

Middlebury Flood Wall
SUBSURFACE LOG
HOLE NUMBER B-2

Page 1 of 1

PROJECT NUMBER: 27701.1000.32000
LOCATION: Middlebury, Vermont
CLIENT: Milone & MacBroom, Inc
CONTRACTOR: Mikes Boring & Coring LLC
DRILLER: M. McGinley | INSPECTOR: J. Cheung
START DATE and TIME: 1/17/2014 12:25:00 PM
FINISH DATE and TIME: 1/17/2014 1:31:00 PM
SURFACE ELEV.: N/A | CHECKED BY:
DRILL FLUID: None | DRILLING METHOD: 3.25" HSA
HAMMER TYPE: Safety On Cathead Rope | ROD SIZE: AW
DRILLING TYPE & MODEL: Truck Rig, MOBILE B59

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	1-17-14	1:31 PM	Completion	None	8	8

SAMPLE/CORE NUMBER	SAMP./CR'D LEN. (ft)	SAMP./CR'D RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S-1	2	1	20-18-14-14	32				TOPSOIL f.m.c. SAND, Some f.c. Gravel, trace silt, trace organics, brown/tan, moist **(SP)**		Groundwater levels encountered during drilling may not represent static condition.	
S-2	2	0.6	12-18-4-15	22				Similar Soil **(SP)**		Boulders and cobbles likely present throughout sand layer.	
S-3	2	0.4	12-30-13-10	43		5		f.m.c. SAND, Some f.c. Gravel, tan/orange, compact, moist **(SP)**		Drill rig began chattering at a depth of 4 feet. Spoon was bouncing on sample S-3.	
S-4	1.2	0.4	6-50-50/2"	R				f.m.c. SAND, Some f.c. Gravel, tan/orange, very compact, moist **(SP)**		Rock lodged in shoe of sample S-4. Drill rig experienced auger refusal on probable boulder or cobble at depth of 8 feet. Offset approximately 5 feet to the west and advanced boring B-2A.	
						10		End of Boring at 8 ft			
						15					
						20					

CHA

Middlebury Flood Wall
SUBSURFACE LOG
HOLE NUMBER B-2A

Page 1 of 2

PROJECT NUMBER: 27701.1000.32000
LOCATION: Middlebury, Vermont
CLIENT: Milone & MacBroom, Inc
CONTRACTOR: Mikes Boring & Coring LLC
DRILLER: M. McGinley | INSPECTOR: J. Cheung
START DATE and TIME: 1/17/2014 1:45:00 PM
FINISH DATE and TIME: 1/20/2014 1:40:00 PM
SURFACE ELEV.: N/A | CHECKED BY:
DRILL FLUID: Water @ 5' | DRILLING METHOD: 3.25"HSA/2.875"FJC
HAMMER TYPE: Safety On Cathead Rope | ROD SIZE: AW
DRILLING TYPE & MODEL: Truck Rig, MOBILE B59

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	1-20-14	1:40 PM	During Drilling	8	8	8.4

SAMPLE/CORE NUMBER	SAMP./CR'D LEN. (ft)	SAMP./CR'D RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S-1	0.4	0.4	50/5"	R				f.c. GRAVEL, trace f.m c. sand, tan/gray, very compact, wet **(GP)** Boulders and/or cobbles		Advanced 3.25-inch hollow stem augers to a depth of 5 feet and encountered high drilling resistance throughout due to probable boulders and cobbles. Boring advancement continued by spinning 2.875-inch flush joint casing from 5 feet to the boring termination depth at 40 feet.	
C-1	1	0.5		0%		10				Boulders and cobbles likely present throughout gravel layer.	
S-2	2	0.3	7-7-4-4	11				c. GRAVEL, tan/grey, medium compact, wet **(GP)**		Spoon was bouncing on sample S-1. Groundwater levels encountered during drilling may not represent static condition. Cored through boulder from 9 to 10 feet.	
S-3	2	1.5	5-3-5-4	8		20		f. SAND, little silt, tan, loose, wet **(SM)**		Drilling resistance significantly decreased at depth of 11.5 feet.	
S-4	2	1.1	2-3-3-3	5				Similar Soil **(SM)**			

CHA

Middlebury Flood Wall
SUBSURFACE LOG
HOLE NUMBER B-2A

Page 2 of 2

PROJECT NUMBER: 27701.1000.32000

SAMPLE/CORE NUMBER	SAMP./CR'D LEN. (ft)	SAMP./CR'D RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S-5	2	1.8	3-5-5-5	10				f.m. SAND, little silt, tan, loose, wet **(SM)**			
S-6	2	1.1	10-15-7-8	23		30		f.m.c. SAND, Some f.c. Gravel, trace silt, tan, medium compact, wet **(SP)**			
S-7	2	1.2	5-4-5-5	9		35		f.m.c. SAND, trace f. gravel, trace silt, tan, loose, wet **(SP)**			
						40		End of Boring at 40 ft			
						45					
						50					
						55					

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REVISIONS

01/29/19	CONSTRUCTION NOTES

GENERAL NOTES AND BORING LOGS
EAST MIDDLEBURY VILLAGE FLOOD RESILIENCY
FLOODWALL REPAIRS
GRIST MILL ROAD
MIDDLEBURY, VERMONT

KP	TEB	GDJ
DESIGNED	DRAWN	CHECKED

SCALE: AS SHOWN
DATE: MAY 12, 2014
PROJECT NO.: 5032-01

STR-2
SHEET NO.

GENERAL NOTES AND SPECIFICATIONS FOR GROUND ANCHORS AND SHEET PILING

GROUND ANCHORS

1. GROUND ANCHORS SHALL BE INSTALLED TO A MINIMUM CAPACITY OF 40 KIPS. BOND ZONE LENGTH 20 FEET MINIMUM.
2. GROUND ANCHORS AND THEIR COMPONENTS SHALL CONFORM TO THE REQUIREMENTS OF THE RECOMMENDATIONS FOR PRE-STRESSED ROCK AND SOIL ANCHORS, LATEST EDITION, ADOPTED BY THE POST-TENSIONING INSTITUTE.
3. GROUND ANCHORS AND THEIR COMPONENTS SHALL BE PROTECTED FROM CORROSION. CORROSION PROTECTION SHALL INCLUDE DELIVERY AND STORAGE METHOD OF TENDONS OR BARS, ADEQUATE BOREHOLE DIAMETER, PVC SHEATHING IN FREE LENGTH, TEMPORARY AND PERMANENT LUBRICANTS, PERMANENT SHEATHING OF TENDON, COVER BOX FOR ANCHORAGE HEAD, CORRUGATED PVC PIPE FOR CASING, IF REQUIRED, AND CONSOLIDATION GROUT FOR ANCHOR ZONE.
4. BEARING PLATES SHALL CONFORM TO ASTM A36, EPOXY COATED.
5. PERFORM PERFORMANCE TEST ON ONE (1) GROUND ANCHOR IN ACCORDANCE WITH THE RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS LATEST EDITION, ADOPTED BY THE POST-TENSIONING INSTITUTE.
6. PROOF TEST EACH GROUND ANCHOR IN ACCORDANCE WITH THE RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS LATEST EDITION, ADOPTED BY THE POST-TENSIONING INSTITUTE.
7. TYPE II OR III PORTLAND CEMENT SHALL BE USED FOR GROUT. A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI MUST BE ACHIEVED BEFORE STRESSING.
8. ROTARY OR PERCUSSION DRILLING EQUIPMENT MAY BE USED. BOREHOLE ALIGNMENT SHALL BE WITHIN 3 DEGREES OF SPECIFIED ANGLE. BOREHOLE DIAMETER SHALL BE UNIFORM WITH 1/4-INCH VARIATION ALLOWABLE AND SHALL BE DRILLED 12 INCHES TO 18 INCHES BELOW END OF ANCHOR TO ALLOW FOR COLLECTION OF HEAVY "DEBRIS" THAT CANNOT BE FLUSHED. BOREHOLE SHALL BE FLUSHED WITH AIR OR WATER UNDER PRESSURE. PREVENT DRILL CUTTINGS FROM ENTERING WATERWAYS.
9. COMPLETED ANCHORS SHALL BE LOCKED-OFF TO 80% OF DESIGN SERVICE LOAD. STRESSING, PERFORMANCE TESTING, AND PROOF TESTS SHALL CONFORM TO THE REQUIREMENTS OF THE RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS LATEST EDITION, ADOPTED BY THE POST-TENSIONING INSTITUTE.

STEEL SHEET PILES

1. STEEL SHEET PILES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A572, GRADE 50.
2. WELDING SHALL CONFORM TO THE "STRUCTURAL WELDING CODE FOR STEEL", LATEST EDITION, AS ADOPTED BY THE AMERICAN WELDING SOCIETY (AWS). WELDING SHALL BE PERFORMED BY A WELDER CERTIFIED IN ACCORDANCE WITH AWS STANDARDS.
3. STEEL SHEET PILES SHALL BE INSTALLED BY EXCAVATION AND BACKFILL.

STRUCTURAL STEEL

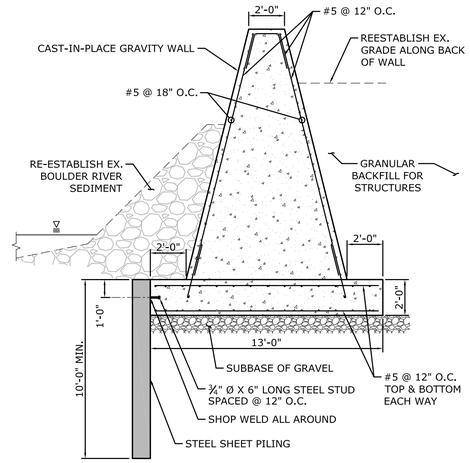
1. DESIGN FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE "MANUAL OF STEEL CONSTRUCTION - ASD", NINTH EDITION AS ADOPTED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.
2. WELDING SHALL CONFORM TO THE "STRUCTURAL WELDING CODE FOR STEEL", LATEST EDITION, AS ADOPTED BY THE AMERICAN WELDING SOCIETY (AWS). WELDING SHALL BE PERFORMED BY A WELDER CERTIFIED IN ACCORDANCE WITH AWS STANDARDS.
3. ARC WELDING ELECTRODES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A233. E70XX SERIES, AS REQUIRED FOR CONDITIONS OF INTENDED USE.
4. TIE-RODS ASSEMBLIES CONSISTING OF TIE-ROD, STEEL COUPLERS, AND NUTS, SHALL BE DYWIDAG THREADBAR REINFORCING SYSTEM AS MANUFACTURED BY DYWIDAG SYSTEMS INTERNATIONAL, USA, INC. THREADBAR SHALL BE GRADE 150 CONFORMING TO ASTM A722. TIE ROD ASSEMBLIES SHALL BE FUSION BONDED EPOXY COATED. FUSION BONDED EPOXY COATING SHALL CONFORM TO ASTM A775.

SHOP DRAWINGS

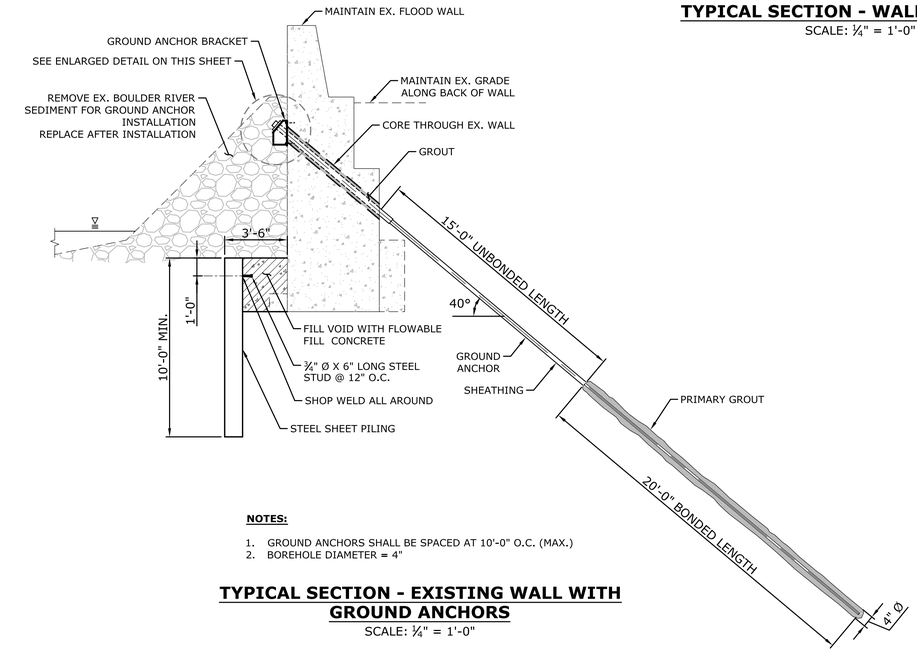
1. PRIOR TO START OF WORK, SUBMIT SHOP DRAWINGS OF ALL GROUND ANCHOR DETAILS AND PROCEDURES FOR PROOF AND PERFORMANCE TESTING.

CONSTRUCTION SEQUENCE

1. CONTRACTOR TO VERIFY EXISTING CONDITIONS AND DIMENSIONS IN THE FIELD.
2. RE-POSITION EXISTING STONE RIPRAP TO CREATE WORK AREA PLATFORM AND EXPOSE TOP HALF OF EXISTING FLOODWALL TO INSTALL GROUND ANCHORS. DO NOT EXPOSE FULL HEIGHT OF EXISTING FLOODWALL. WORK IN SECTIONS AS NEEDED.
3. INSTALL GROUND ANCHORS PER DETAILS.
4. EXCAVATE AND INSTALL SHEET PILING ALONG EXISTING WALL. WORK IN SECTIONS AS NEEDED.
5. RESTORE STONE ARMORING BY REMOVING WORK AREA PLATFORM AND REPLACING STONE RIPRAP ALONG THE FRONT OF EXISTING FLOODWALL AS SECTIONS ARE COMPLETED. MAINTAIN BANKFULL CHANNEL WIDTH.
6. RE-POSITION EXISTING STONE RIPRAP TO CREATE WORK AREA PLATFORM ALONG THE ALIGNMENT OF THE PROPOSED FLOODWALL EXTENSION. LOCATE PROPOSED SHEETING, FRONT OF PROPOSED FLOODWALL.
7. EXCAVATE AND INSTALL SHEET PILING ALONG PROPOSED FLOODWALL ALIGNMENT. WORK IN SECTIONS AS NEEDED.
8. PREPARE SUBGRADE FOR PROPOSED WALL WITH PROOF ROLLING USING A SMOOTH DRUM VIBRATORY ROLLER WITH A STATIC UNIT WEIGHT OF AT LEAST 10 TONS. THE ROLLER SHALL OPERATE IN ITS VIBRATORY MODE, AND COMPLETE AT LEAST SIX PASSES OVER THE SUBGRADE AT A SPEED NOT EXCEEDING 3 FEET PER SECOND (FPS). ANY AREAS WHICH PUMP OR HEAVE DURING PROOF COMPACTION SHALL BE UNDERCUT A MINIMUM OF 12.0 INCHES AND STABILIZED WITH STRUCTURAL FILL. IF THE VIBRATORY ROLLER TENDS TO "BRING UP" MOISTURE, THE SUBGRADE SHOULD BE PROOF ROLLED WITH THE ROLLER OPERATING IN THE STATIC MODE.
9. CONSTRUCT PROPOSED WALL EXTENSION PER DETAILS.
10. RESTORE STONE ARMORING BY REMOVING WORK AREA PLATFORM AND REPLACING STONE RIPRAP ALONG THE FRONT OF THE PROPOSED FLOODWALL EXTENSION. MATCH PRE-CONSTRUCTION RIVER BANK AND CHANNEL SHAPE ALONG EXITING AND PROPOSED FLOODWALL. MAINTAIN BANKFULL CHANNEL WIDTH. FINISH GRADING AND RESTORE ALL DISTURBED AREAS.



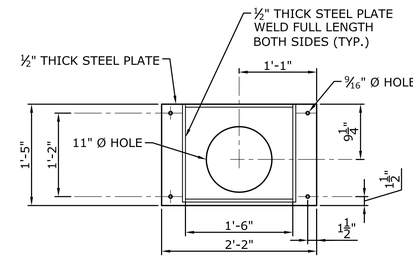
TYPICAL SECTION - WALL EXTENSION
SCALE: ¼" = 1'-0"



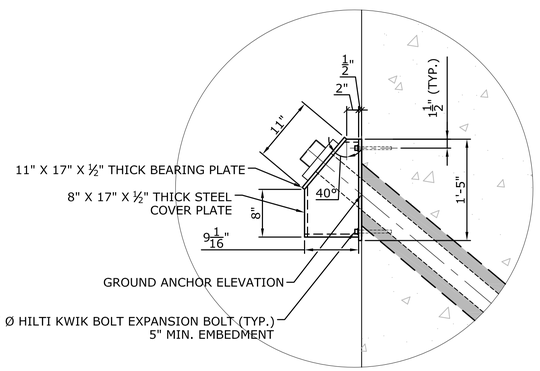
NOTES:

1. GROUND ANCHORS SHALL BE SPACED AT 10'-0" O.C. (MAX.)
2. BOREHOLE DIAMETER = 4"

TYPICAL SECTION - EXISTING WALL WITH GROUND ANCHORS
SCALE: ¼" = 1'-0"



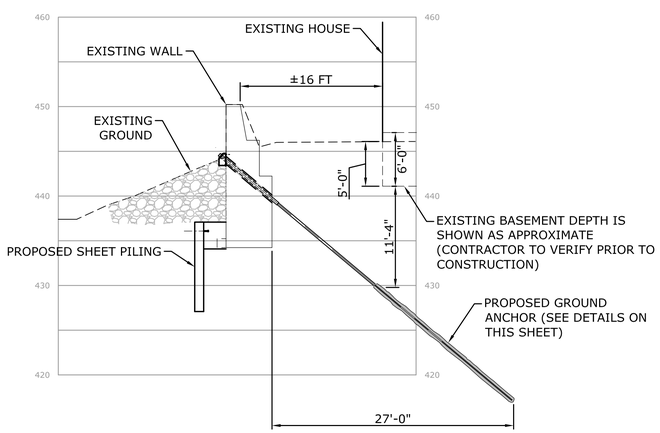
PLAN



NOTES:

1. STEEL BRACKET SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
2. EXPANSION BOLTS SHALL BE HOT DIP GALVANIZED.
3. STEEL COVER PLATE AND BEARING PLATE SHALL BE HOT DIPPED GALVANIZED AND FIELD INSTALLED.
4. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL.
5. SEE GENERAL NOTES ON THIS SHEET.

GROUND ANCHOR BRACKET WITH BEARING PLATE DETAILS
SCALE: 1" = 1'-0"



CRITICAL SECTION AT EXISTING HOUSE
SCALE: 1" = 8'

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REVISIONS

DATE	DESCRIPTION
01/29/19	CONSTRUCTION SEQUENCE

STRUCTURAL DETAILS - TYPICAL WALL SECTIONS
EAST MIDDLEBURY VILLAGE FLOOD RESILIENCY FLOODWALL REPAIRS
GRIST MILL ROAD
MIDDLEBURY, VERMONT

KP	TEB	GDJ
DESIGNED	DRAWN	CHECKED

SCALE: AS NOTED
DATE: MAY 12, 2014
PROJECT NO. 5032-01

STR-3
SHEET NO.