APPENDIX D

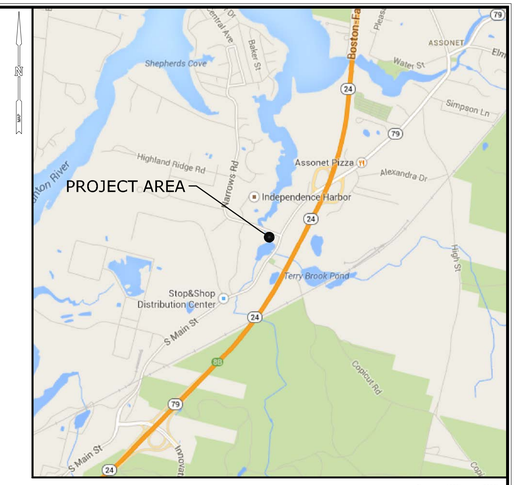
Project Engineering Designs

RATTLESNAKE BROOK RESTORATION

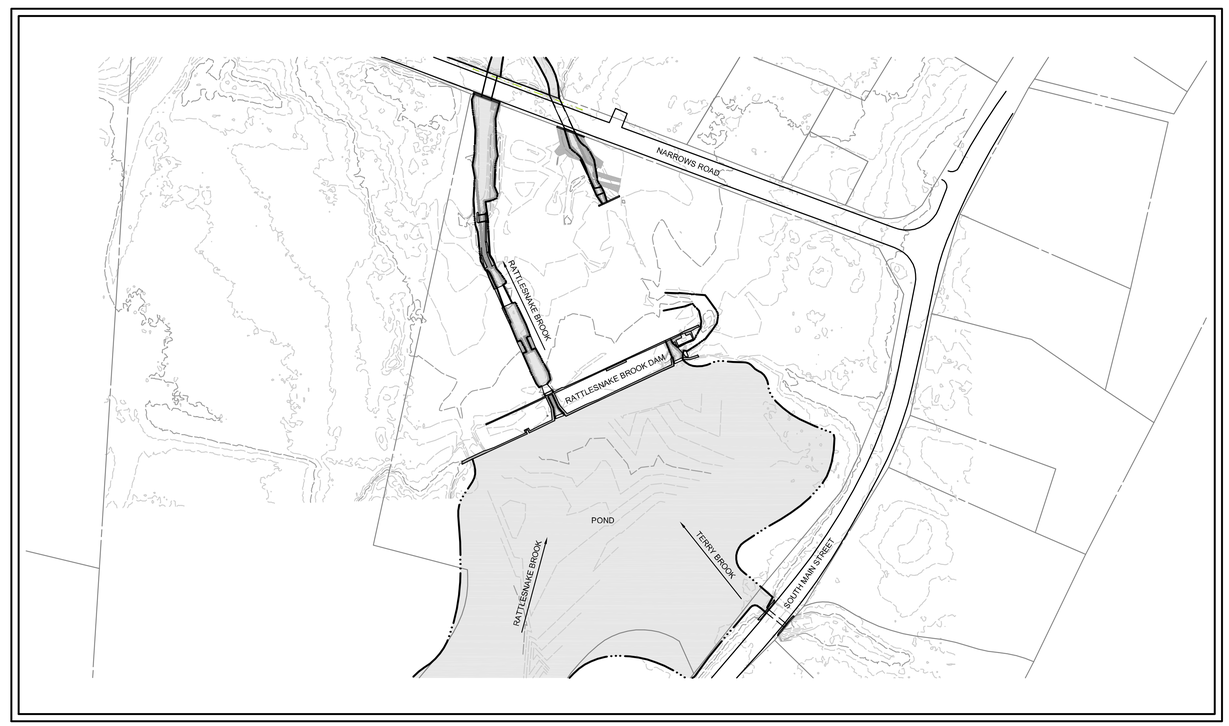
NARROWS ROAD
TOWN OF FREETOWN, MASSACHUSETTS

MMI NO. 5237-01 / 2688-32

FINAL DESIGN (90%)
OCTOBER 30, 2015



LOCATION MAP:



PROJECT SITE VICINITY MAP:

PREPARED FOR:

CITY OF FALL RIVER
WATER DIVISION
1 GOVERNMENT CENTER
FALL RIVER, MA 02722

COMMONWEALTH OF MASSACHUSETTS
DIVISION OF ECOLOGICAL RESTORATION
251 CAUSEWAY STREET, SUITE 400
BOSTON, MA 02114

A PORTION OF THIS WORK WAS PAID FOR BY THE MASSACHUSETTS ENVIRONMENTAL TRUST

LIST OF DRAWINGS

NO.	NAME	TITLE
01	--	TITLE SHEET
02	EC-1	EXISTING CONDITIONS
03	MPT-1	MAINTENANCE AND PROTECTION OF TRAFFIC
04	SE-1	SEDIMENT AND EROSION CONTROL PLAN
05	WC-1	CONSTRUCTION ACCESS AND WATER CONTROL
06	RP-1	REMOVALS PLAN
07	RP-2	REMOVALS PLAN - DAM DETAIL
08	SP-1	LAYOUT PLAN
09	GR-1	GRADING AND UTILITIES PLAN
10	RS-1	RESTORATION PLAN
11	PR-1	RATTLESNAKE BROOK PROFILE
12	CS-1	RATTLESNAKE BROOK CROSS SECTIONS
13	RE-1	REGULATED RESOURCES PLAN
14	SD-1	SITE DETAILS
15	SD-2	SITE DETAILS

PREPARED BY:

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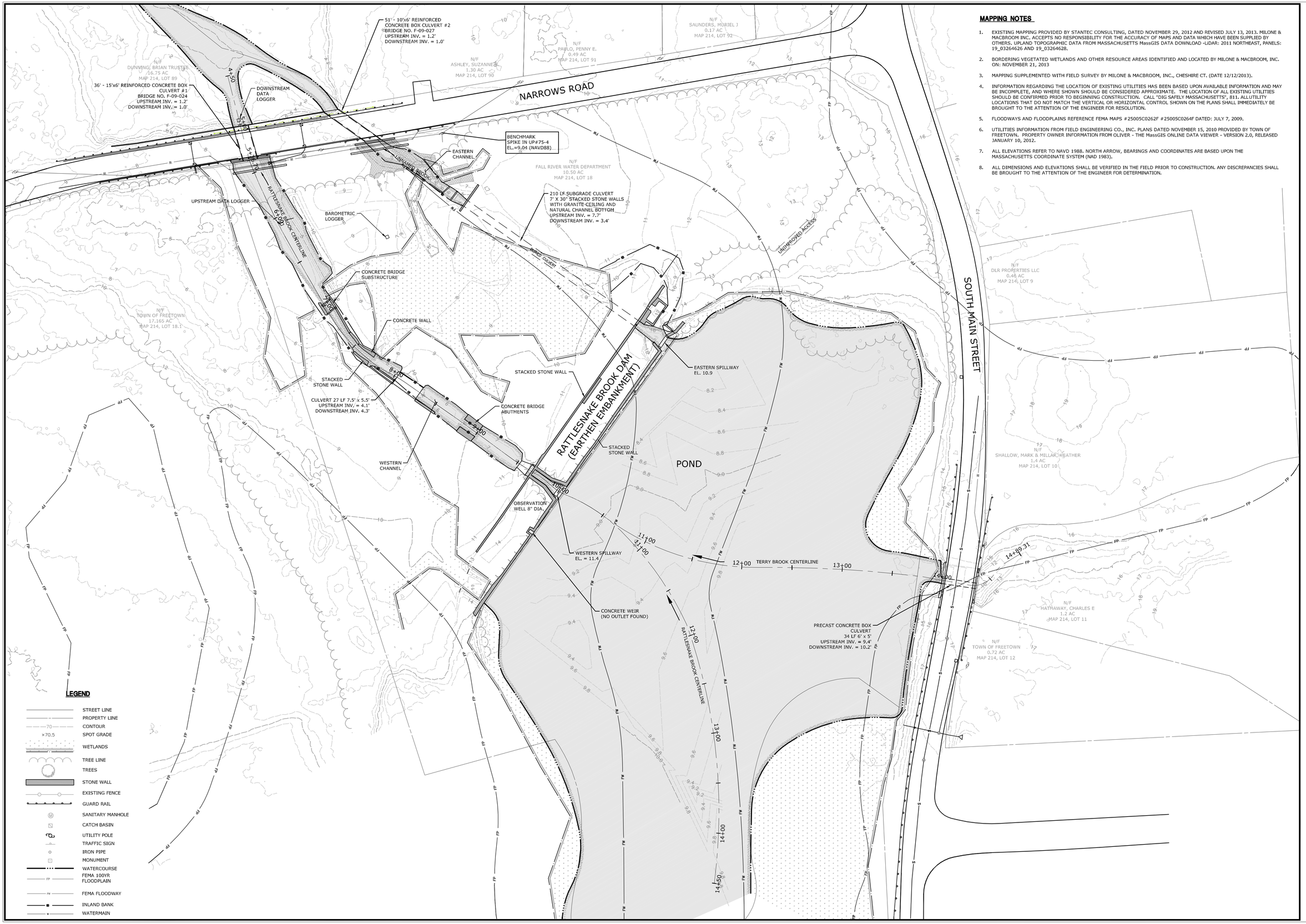

MAPPING NOTES

1. EXISTING MAPPING PROVIDED BY STANTEC CONSULTING, DATED NOVEMBER 29, 2012 AND REVISED JULY 13, 2013. MILONE & MACBROOM INC. ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF MAPS AND DATA WHICH HAVE BEEN SUPPLIED BY OTHERS. UPLAND TOPOGRAPHIC DATA FROM MASSACHUSETTS MassGIS DATA DOWNLOAD -LIDAR: 2011 NORTHEAST, PANELS: 19_03264626 AND 19_03264628.
2. BORDERING VEGETATED WETLANDS AND OTHER RESOURCE AREAS IDENTIFIED AND LOCATED BY MILONE & MACBROOM, INC. ON: NOVEMBER 21, 2013
3. MAPPING SUPPLEMENTED WITH FIELD SURVEY BY MILONE & MACBROOM, INC., CHESHIRE CT. (DATE 12/12/2013).
4. 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 "DIG SAFELY MASSACHUSETTS", 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.
5. FLOODWAYS AND FLOODPLAINS REFERENCE FEMA MAPS #25005C0262F #25005C0264F DATED: JULY 7, 2009.
6. UTILITIES INFORMATION FROM FIELD ENGINEERING CO., INC. PLANS DATED NOVEMBER 15, 2010 PROVIDED BY TOWN OF FREETOWN. PROPERTY OWNER INFORMATION FROM OLIVER - THE MassGIS ONLINE DATA VIEWER - VERSION 2.0, RELEASED JANUARY 10, 2012.
7. ALL ELEVATIONS REFER TO NAVD 1988. NORTH ARROW, BEARINGS AND COORDINATES ARE BASED UPON THE MASSACHUSETTS COORDINATE SYSTEM (NAD 1983).
8. ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR DETERMINATION.

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

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DESCRIPTION	DATE	BY
CHANNEL NOTATION	3/26/2015	BAM

EXISTING CONDITIONS
RATTLESNAKE BROOK RESTORATION
NARROWS ROAD
TOWN OF FREETOWN, MASSACHUSETTS

DESIGNED	DRAWN	CHECKED
---	JCS	WAG

SCALE: 1"=40'
DATE: OCTOBER 30, 2015
PROJECT NO.: 5237-01
SHEET NO.: 02 OF 15
SHEET NAME: EC-1

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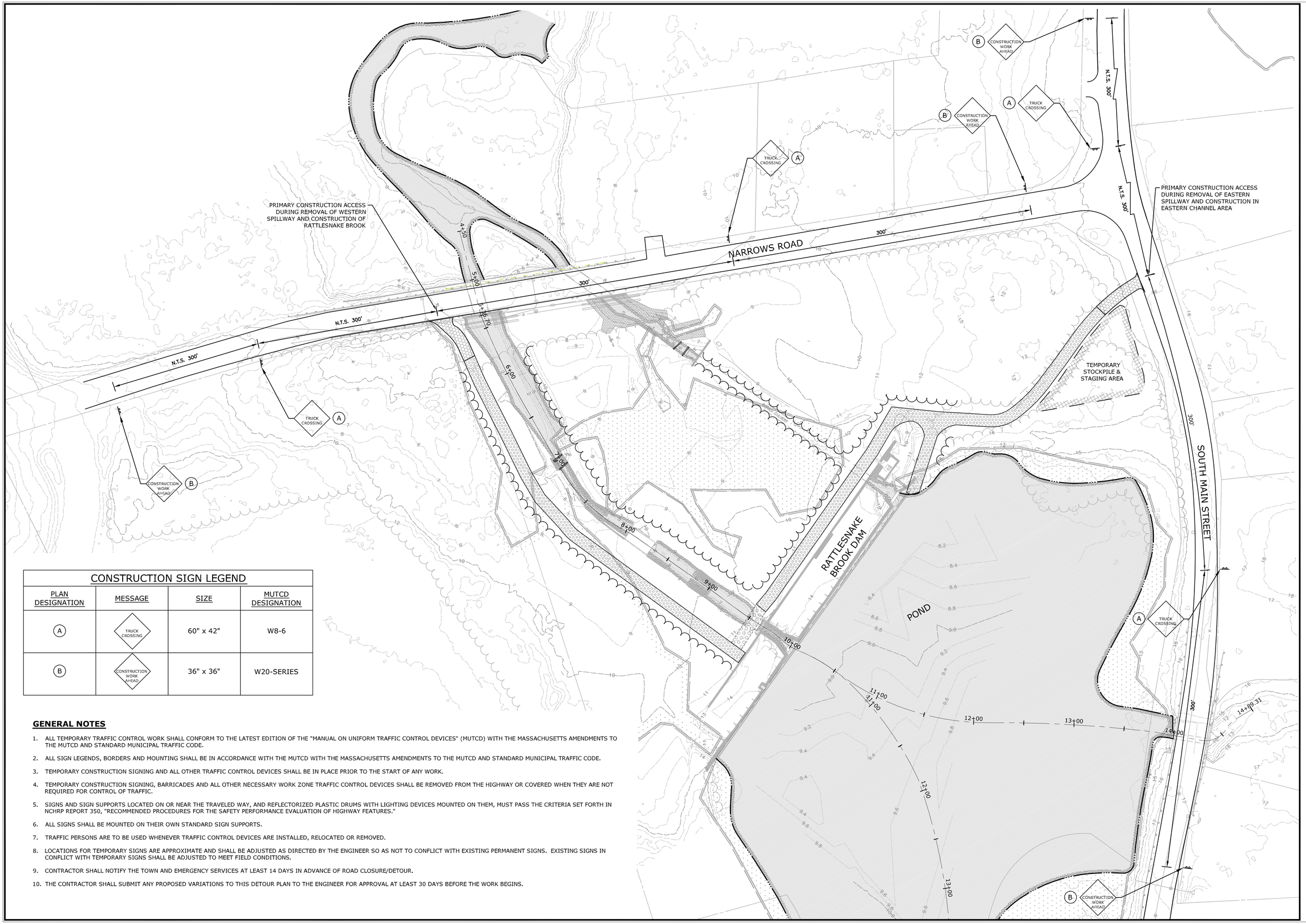

CONSTRUCTION SIGN LEGEND

PLAN DESIGNATION	MESSAGE	SIZE	MUTCD DESIGNATION
A	TRUCK CROSSING	60" x 42"	W8-6
B	CONSTRUCTION WORK AHEAD	36" x 36"	W20-SERIES

GENERAL NOTES

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) WITH THE MASSACHUSETTS AMENDMENTS TO THE MUTCD AND STANDARD MUNICIPAL TRAFFIC CODE.
2. ALL SIGN LEGENDS, BORDERS AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD WITH THE MASSACHUSETTS AMENDMENTS TO THE MUTCD AND STANDARD MUNICIPAL TRAFFIC CODE.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, AND REFLECTORIZED PLASTIC DRUMS WITH LIGHTING DEVICES MOUNTED ON THEM, MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES."
6. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
7. TRAFFIC PERSONS ARE TO BE USED WHENEVER TRAFFIC CONTROL DEVICES ARE INSTALLED, RELOCATED OR REMOVED.
8. LOCATIONS FOR TEMPORARY SIGNS ARE APPROXIMATE AND SHALL BE ADJUSTED AS DIRECTED BY THE ENGINEER SO AS NOT TO CONFLICT WITH EXISTING PERMANENT SIGNS. EXISTING SIGNS IN CONFLICT WITH TEMPORARY SIGNS SHALL BE ADJUSTED TO MEET FIELD CONDITIONS.
9. CONTRACTOR SHALL NOTIFY THE TOWN AND EMERGENCY SERVICES AT LEAST 14 DAYS IN ADVANCE OF ROAD CLOSURE/DETOUR.
10. THE CONTRACTOR SHALL SUBMIT ANY PROPOSED VARIATIONS TO THIS DETOUR PLAN TO THE ENGINEER FOR APPROVAL AT LEAST 30 DAYS BEFORE THE WORK BEGINS.

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DESCRIPTION	DATE	BY

MAINTENANCE AND PROTECTION OF TRAFFIC
RATTLESNAKE BROOK RESTORATION
NARROWS ROAD
TOWN OF FREETOWN, MASSACHUSETTS

DRM	DRM	WAG
DESIGNED	DRAWN	CHECKED

SCALE: 1"=40'
DATE: OCTOBER 30, 2015
PROJECT NO.: 5237-01
SHEET NO.: 03 OF 15
SHEET NAME: MPT-1

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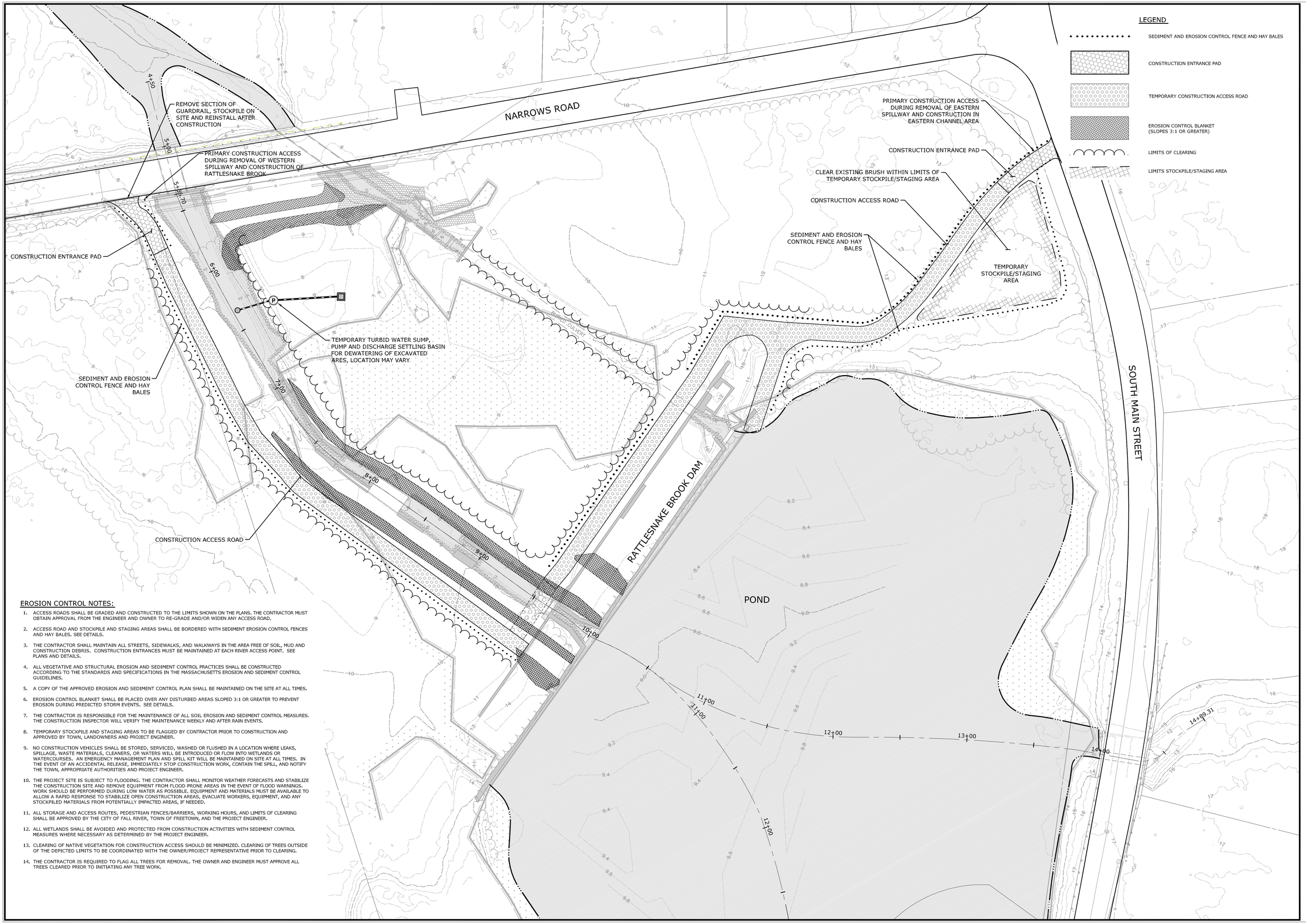

EROSION CONTROL NOTES:

1. ACCESS ROADS SHALL BE GRADED AND CONSTRUCTED TO THE LIMITS SHOWN ON THE PLANS. THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE ENGINEER AND OWNER TO RE-GRADE AND/OR WIDEN ANY ACCESS ROAD.
2. ACCESS ROAD AND STOCKPILE AND STAGING AREAS SHALL BE BORDERED WITH SEDIMENT EROSION CONTROL FENCES AND HAY BALES. SEE DETAILS.
3. THE CONTRACTOR SHALL MAINTAIN ALL STREETS, SIDEWALKS, AND WALKWAYS IN THE AREA FREE OF SOIL, MUD AND CONSTRUCTION DEBRIS. CONSTRUCTION ENTRANCES MUST BE MAINTAINED AT EACH RIVER ACCESS POINT. SEE PLANS AND DETAILS.
4. ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED ACCORDING TO THE STANDARDS AND SPECIFICATIONS IN THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES.
5. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
6. EROSION CONTROL BLANKET SHALL BE PLACED OVER ANY DISTURBED AREAS SLOPED 3:1 OR GREATER TO PREVENT EROSION DURING PREDICTED STORM EVENTS. SEE DETAILS.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES. THE CONSTRUCTION INSPECTOR WILL VERIFY THE MAINTENANCE WEEKLY AND AFTER RAIN EVENTS.
8. TEMPORARY STOCKPILE AND STAGING AREAS TO BE FLAGGED BY CONTRACTOR PRIOR TO CONSTRUCTION AND APPROVED BY TOWN, LANDOWNERS AND PROJECT ENGINEER.
9. 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.
10. 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 AS POSSIBLE. EQUIPMENT AND MATERIALS MUST BE AVAILABLE TO ALLOW A RAPID RESPONSE TO STABILIZE OPEN CONSTRUCTION AREAS, EVACUATE WORKERS, EQUIPMENT, AND ANY STOCKPILED MATERIALS FROM POTENTIALLY IMPACTED AREAS, IF NEEDED.
11. ALL STORAGE AND ACCESS ROUTES, PEDESTRIAN FENCES/BARRIERS, WORKING HOURS, AND LIMITS OF CLEARING SHALL BE APPROVED BY THE CITY OF FALL RIVER, TOWN OF FREETOWN, AND THE PROJECT ENGINEER.
12. ALL WETLANDS SHALL BE AVOIDED AND PROTECTED FROM CONSTRUCTION ACTIVITIES WITH SEDIMENT CONTROL MEASURES WHERE NECESSARY AS DETERMINED BY THE PROJECT ENGINEER.
13. CLEARING OF NATIVE VEGETATION FOR CONSTRUCTION ACCESS SHOULD BE MINIMIZED. CLEARING OF TREES OUTSIDE OF THE DEPICTED LIMITS TO BE COORDINATED WITH THE OWNER/PROJECT REPRESENTATIVE PRIOR TO CLEARING.
14. THE CONTRACTOR IS REQUIRED TO FLAG ALL TREES FOR REMOVAL. THE OWNER AND ENGINEER MUST APPROVE ALL TREES CLEARED PRIOR TO INITIATING ANY TREE WORK.

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DESCRIPTION	DATE	BY

SEDIMENT AND EROSION CONTROL PLAN

RATTLESNAKE BROOK RESTORATION

NARROWS ROAD
TOWN OF FREETOWN, MASSACHUSETTS

DRM	DRM	WAG
DESIGNED	DRAWN	CHECKED

SCALE: 1"=30'

DATE: OCTOBER 30, 2015

PROJECT NO.: 5237-01

SHEET NO.: 04 OF 15

SHEET NAME: **SE-1**

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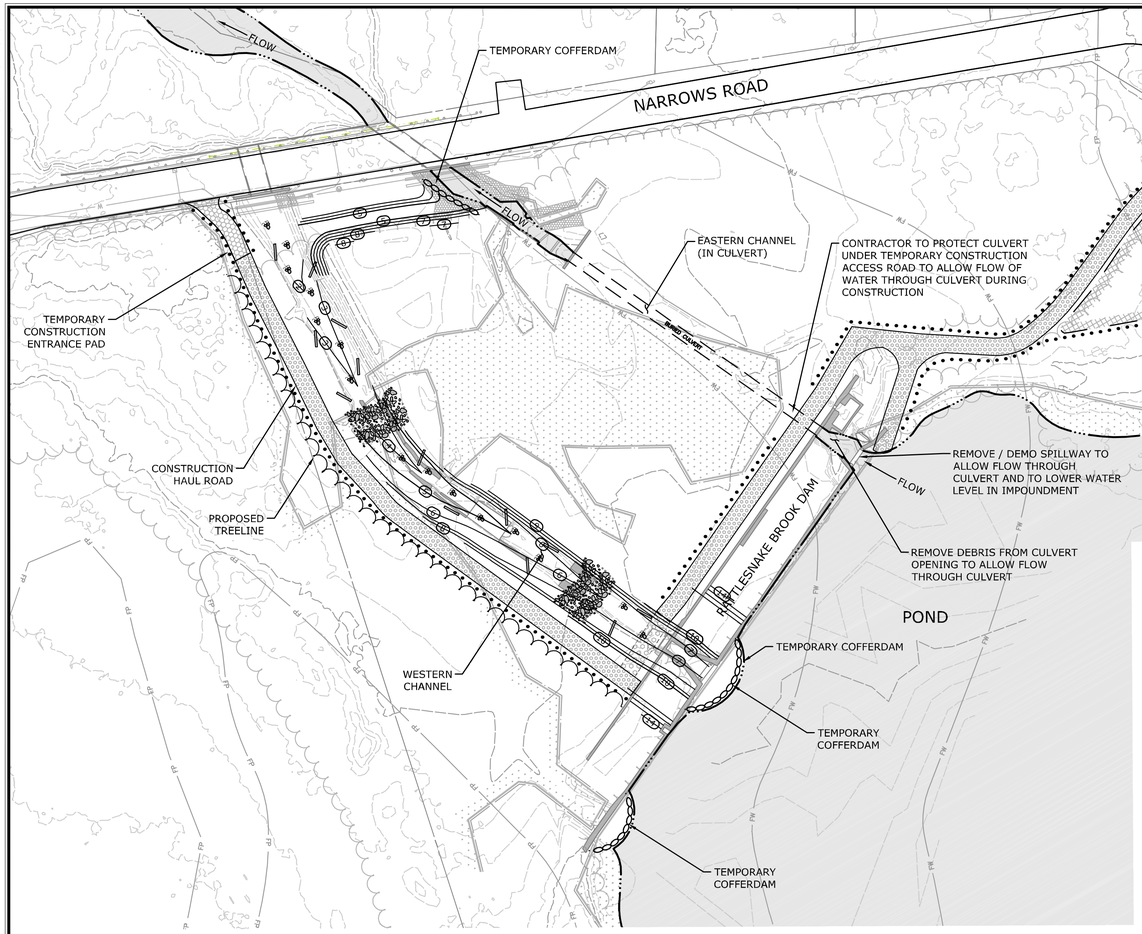


CONSTRUCTION PHASE I

SCALE: 1"=50'

PHASE I CONSTRUCTION SEQUENCE

1. INSTALL ALL TRAFFIC PROTECTION SIGNAGE AS INDICATED ON THE MAINTENANCE AND TRAFFIC PROTECTION PLAN.
2. INSTALL CONSTRUCTION ENTRANCE PADS AND TEMPORARY CONSTRUCTION ACCESS ROUTES FROM SOUTH MAIN STREET AND NARROWS ROAD. INSTALL SILT FENCE AND OTHER SEDIMENT AND EROSION CONTROLS AS INDICATED ON THE SEDIMENT AND EROSION CONTROL PLAN.
3. REMOVE DEBRIS FROM EASTERN SPILLWAY CULVERT AND DEMO/REMOVE EASTERN SPILLWAY TO CONTROL FLOW OF WATER THROUGH EASTERN CULVERT AND TO LOWER IMPOUNDMENT.
4. INSTALL COFFERDAMS ON THE WESTERN SPILLWAY AND WESTERN CHANNEL LOCATION TO DIVERT FLOW TO EASTERN CHANNEL.
5. REMOVE CONCRETE STRUCTURES, STONE WALLS, AND OTHER STRUCTURES AS INDICATED ON THE REMOVALS PLAN.
6. PERFORM CHANNEL AND BANK GRADING AND INSTALL IN-STREAM FEATURES IN THE WESTERN CHANNEL.
7. REMOVE SPILLWAY AND DAM TO LIMITS SHOWN ON GRADING PLAN AND COMPLETE CHANNEL GRADING AND RECONSTRUCTION.
8. INSTALL COFFERDAM ALONG EASTERN CHANNEL AT LOCATION OF HYDRAULIC CONNECTOR CHANNEL.
9. PERFORM GRADING OF HYDRAULIC CONNECTOR CHANNEL.
10. REMOVE UPSTREAM COFFERDAMS.
11. DIVERT FLOW TO THE RECONSTRUCTED WESTERN CHANNEL.

PHASE II CONSTRUCTION SEQUENCE

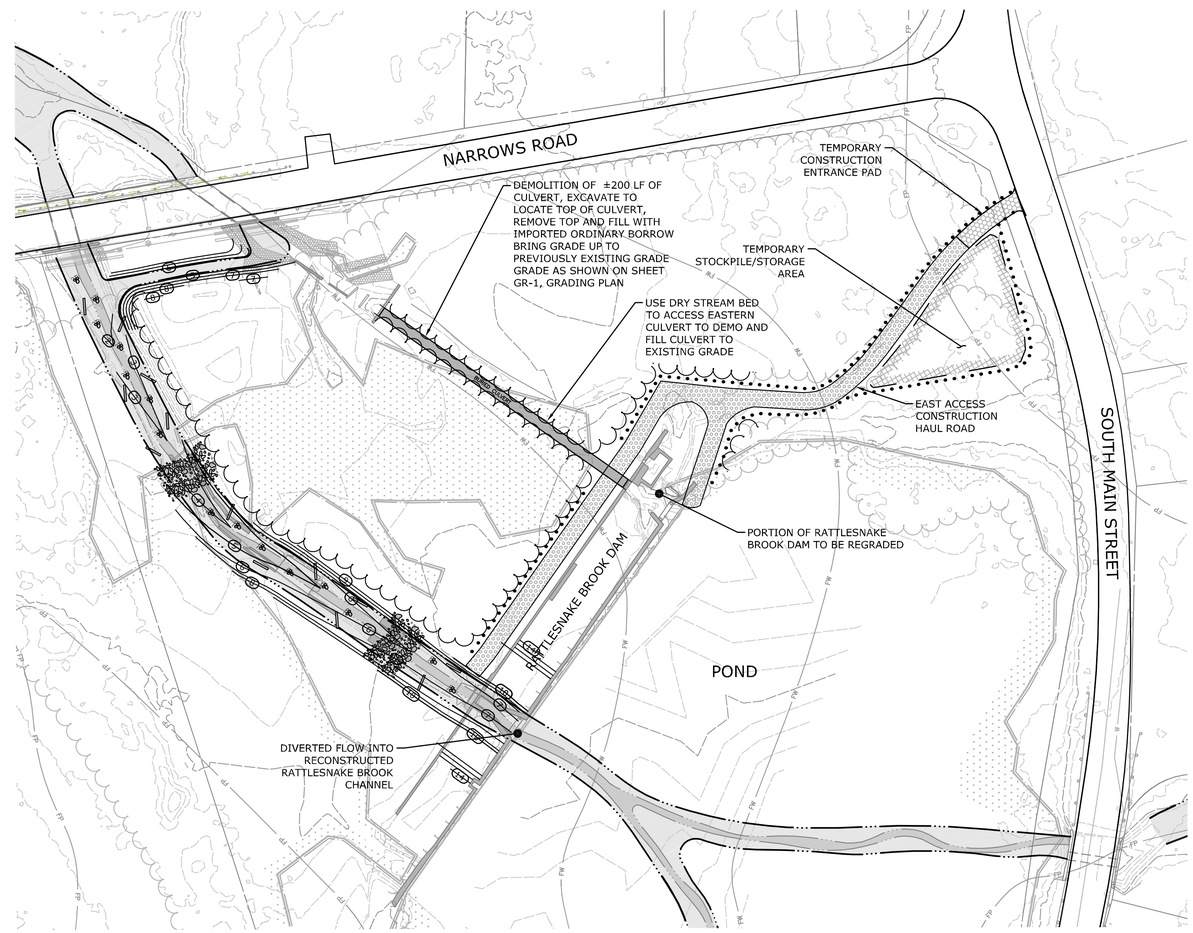
1. REMOVE CONCRETE STRUCTURES, STONE WALLS, AND OTHER STRUCTURES AS INDICATED ON THE REMOVALS PLAN.
2. PERFORM GRADING AT RATTLESNAKE BROOK DAM.
3. DEMO CULVERT, PLACE ORDINARY BORROW TO MATCH PREVIOUSLY EXISTING GRADE.
4. REMOVE COFFERDAMS, PUMPS, SUMP, AND SEDIMENT TRAPS.
5. REMOVE TEMPORARY CONSTRUCTION ACCESS ROADS, ENTRANCES, AND CONSTRUCTION SIGNAGE.

WATER CONTROL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR WATER CONTROL DURING CONSTRUCTION AND FOR SUBMITTING A PROPOSED WATER CONTROL PLAN FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION.
2. 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.
3. DURING ANY DEWATERING OPERATIONS WHERE PUMPING IS PROPOSED, WATER MUST BE PUMPED INTO A SEDIMENT BASIN OR TRAP. THE DISCHARGE LOCATION SHALL BE APPROVED BY THE PROJECT ENGINEER AND THE TOWN. DEWATERING DIRECTLY INTO STORM WATER STRUCTURES OR THE RIVER IS PROHIBITED.
4. IT IS EXPECTED THAT MONITORING OF DRAWDOWN LEVELS WILL BE CONDUCTED BY THE CONTRACTOR AND REPORTED TO THE PROJECT ENGINEER REGULARLY DURING DRAWDOWN AND DAM BREACH.
5. THE WATER CONTROL MEASURES AS PRESENTED ON THIS PLAN ARE PRESENTED AS CONCEPTUAL ONLY, AND SUBJECT TO CHANGE BASED ON SEASONAL, WEATHER, AND FIELD CONDITIONS.
6. TEMPORARY COFFERDAMS TO BE CONSTRUCTED OF ROCK FILL, SANDBAGS, OR APPROVED EQUAL, AS GIVEN IN THE TECHNICAL SPECIFICATIONS.
7. TEMPORARY SEDIMENTATION BASINS TO BE CONSTRUCTED WITH SANDBAGS OR JERSEY BARRIERS AND LINED WITH POLYETHYLENE. COLLECTED SEDIMENT TO BE DISPOSED OF OFFSITE AT A REGULATED AND PERMITTED AREA AT THE CONTRACTOR'S EXPENSE.
8. IF A FLOOD EVENT OCCURS, WHICH OVERWHELMS THE WATER CONTROL MEASURES DURING CONSTRUCTION, THE CONTRACTOR MUST BE PREPARED TO RESPOND. FLOOD FLOWS MUST BE ALLOWED TO PASS THROUGH THE BROOK CHANNEL AND WORK AREA. ANY EQUIPMENT, MATERIAL, ETC. THAT MAY IMPEDE FLOOD FLOWS MUST BE REMOVED FROM THE WORK AREAS AND EXPOSED CONSTRUCTION AREAS STABILIZED TO PREVENT DAMAGE OR WASHOUT. EQUIPMENT AND MATERIALS MUST BE AVAILABLE TO ALLOW A RAPID RESPONSE TO STABILIZE OPEN CONSTRUCTION AREAS. EVACUATE WORKERS, EQUIPMENT AND ANY STOCKPILED MATERIALS FROM POTENTIALLY IMPACTING AREAS IF NEEDED. WEATHER AND RUNOFF CONDITIONS NEED TO BE MONITORED TO ALLOW AS MUCH RESPONSE TIME AS POSSIBLE.

LEGEND

- SEDIMENT AND EROSION CONTROL FENCE AND HAY BALES
- CONSTRUCTION ENTRANCE PAD
- TEMPORARY CONSTRUCTION ACCESS ROAD
- TEMPORARY COFFERDAM
- LIMITS OF CLEARING



CONSTRUCTION PHASE II

SCALE: 1"=50'

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DESCRIPTION	DATE	BY
REVISE CULVERT NOTES	3/26/2015	BAM
PROPOSED TREELINE REVISION	6/8/2015	JEP

CONSTRUCTION ACCESS AND WATER CONTROL
RATTLESNAKE BROOK RESTORATION
NARROWS ROAD
TOWN OF FREETOWN, MASSACHUSETTS

EL	JCS	WAG
DESIGNED	DRAWN	CHECKED

SCALE: 1"=50'
DATE: OCTOBER 30, 2015
PROJECT NO.: 5237-01
SHEET NO.: 05 OF 15
SHEET NAME: WC-1

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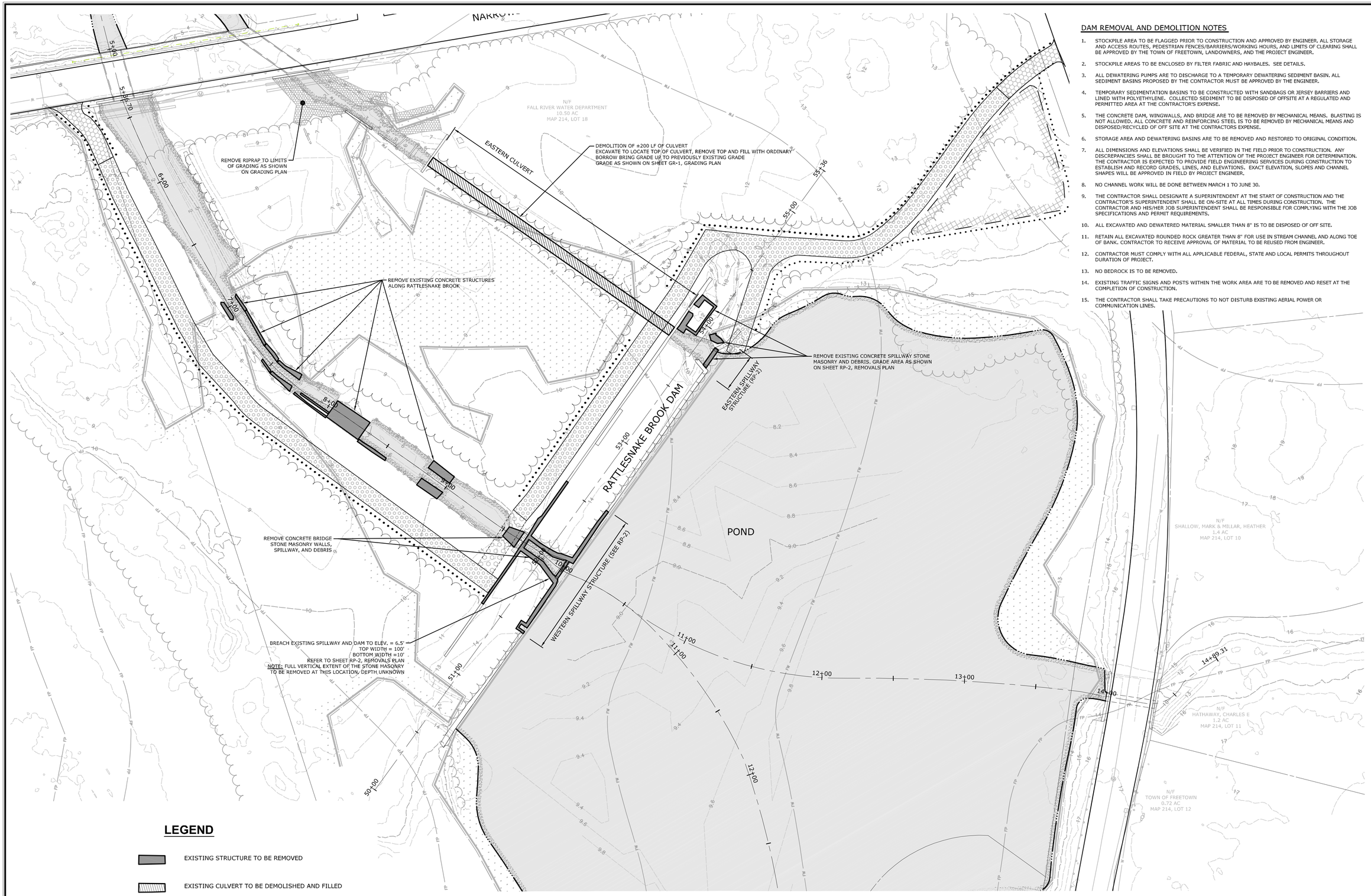

DAM REMOVAL AND DEMOLITION NOTES

1. STOCKPILE AREA TO BE FLAGGED PRIOR TO CONSTRUCTION AND APPROVED BY ENGINEER. ALL STORAGE AND ACCESS ROUTES, PEDESTRIAN FENCES/BARRIERS/WORKING HOURS, AND LIMITS OF CLEARING SHALL BE APPROVED BY THE TOWN OF FREETOWN, LANDOWNERS, AND THE PROJECT ENGINEER.
2. STOCKPILE AREAS TO BE ENCLOSED BY FILTER FABRIC AND HAYBALES. SEE DETAILS.
3. ALL DEWATERING PUMPS ARE TO DISCHARGE TO A TEMPORARY DEWATERING SEDIMENT BASIN. ALL SEDIMENT BASINS PROPOSED BY THE CONTRACTOR MUST BE APPROVED BY THE ENGINEER.
4. TEMPORARY SEDIMENTATION BASINS TO BE CONSTRUCTED WITH SANDBAGS OR JERSEY BARRIERS AND LINED WITH POLYETHYLENE. COLLECTED SEDIMENT TO BE DISPOSED OF OFFSITE AT A REGULATED AND PERMITTED AREA AT THE CONTRACTOR'S EXPENSE.
5. THE CONCRETE DAM, WINGWALLS, AND BRIDGE ARE TO BE REMOVED BY MECHANICAL MEANS. BLASTING IS NOT ALLOWED. ALL CONCRETE AND REINFORCING STEEL IS TO BE REMOVED BY MECHANICAL MEANS AND DISPOSED/RECYCLED OF OFF SITE AT THE CONTRACTORS EXPENSE.
6. STORAGE AREA AND DEWATERING BASINS ARE TO BE REMOVED AND RESTORED TO ORIGINAL CONDITION.
7. ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER FOR DETERMINATION. THE CONTRACTOR IS EXPECTED TO PROVIDE FIELD ENGINEERING SERVICES DURING CONSTRUCTION TO ESTABLISH AND RECORD GRADES, LINES, AND ELEVATIONS. EXACT ELEVATION, SLOPES AND CHANNEL SHAPES WILL BE APPROVED IN FIELD BY PROJECT ENGINEER.
8. NO CHANNEL WORK WILL BE DONE BETWEEN MARCH 1 TO JUNE 30.
9. 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.
10. ALL EXCAVATED AND DEWATERED MATERIAL SMALLER THAN 8" IS TO BE DISPOSED OF OFF SITE.
11. RETAIN ALL EXCAVATED ROUNDED ROCK GREATER THAN 8" FOR USE IN STREAM CHANNEL AND ALONG TOE OF BANK. CONTRACTOR TO RECEIVE APPROVAL OF MATERIAL TO BE REUSED FROM ENGINEER.
12. CONTRACTOR MUST COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL PERMITS THROUGHOUT DURATION OF PROJECT.
13. NO BEDROCK IS TO BE REMOVED.
14. EXISTING TRAFFIC SIGNS AND POSTS WITHIN THE WORK AREA ARE TO BE REMOVED AND RESET AT THE COMPLETION OF CONSTRUCTION.
15. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO NOT DISTURB EXISTING AERIAL POWER OR COMMUNICATION LINES.

LEGEND

- EXISTING STRUCTURE TO BE REMOVED
- EXISTING CULVERT TO BE DEMOLISHED AND FILLED

RATTLESNAKE BROOK DAM - PLAN VIEW

SCALE: 1"=30'

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DESCRIPTION	DATE	BY
REVISE NOTATIONS	3/26/2015	BAM

REMOVALS PLAN
RATTLESNAKE BROOK RESTORATION
NARROWS ROAD
TOWN OF FREETOWN, MASSACHUSETTS

DRM	DRM	WAG
DESIGNED	DRAWN	CHECKED

SCALE: 1"=30'
DATE: OCTOBER 30, 2015
PROJECT NO.: 5237-01
SHEET NO.: 06 OF 15
SHEET NAME: RP-1

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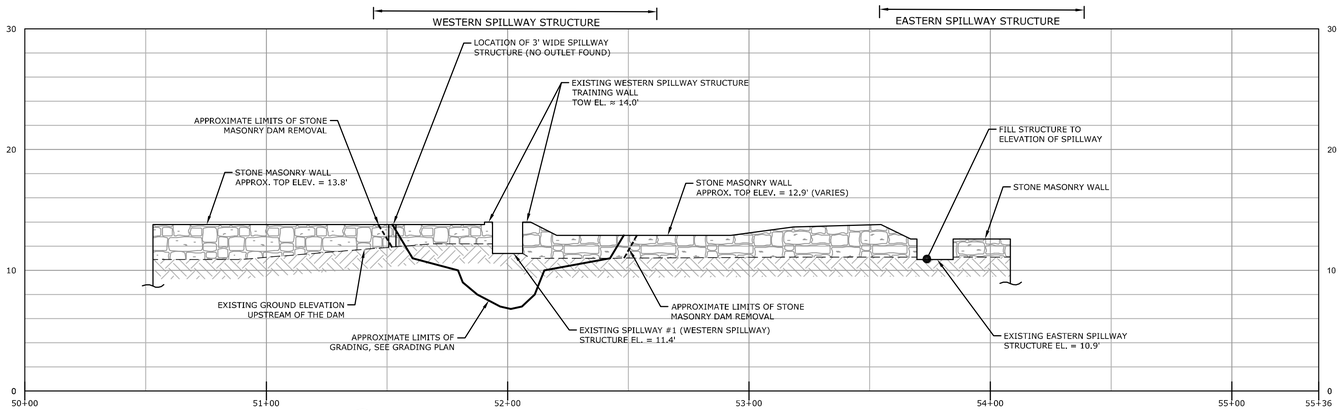
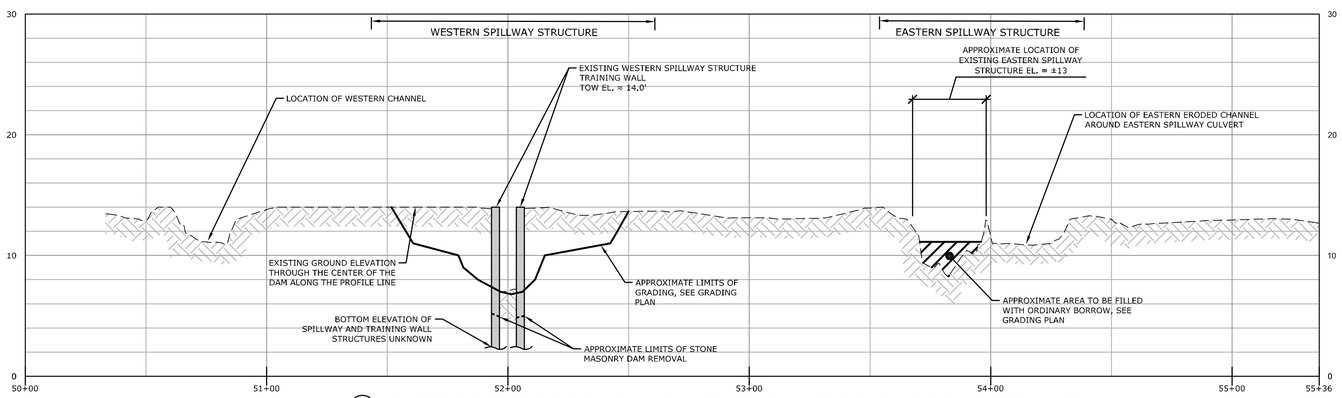


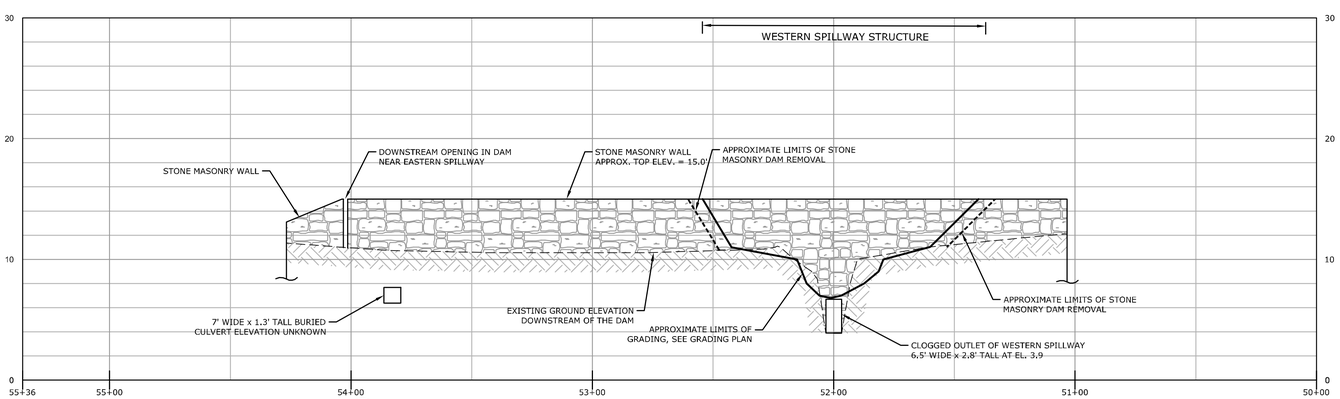
(A) RATTLESNAKE BROOK DAM UPSTREAM FACE (LOOKING DOWNSTREAM)

SCALE: 1"=30' (H) ; 1"=6' (V)



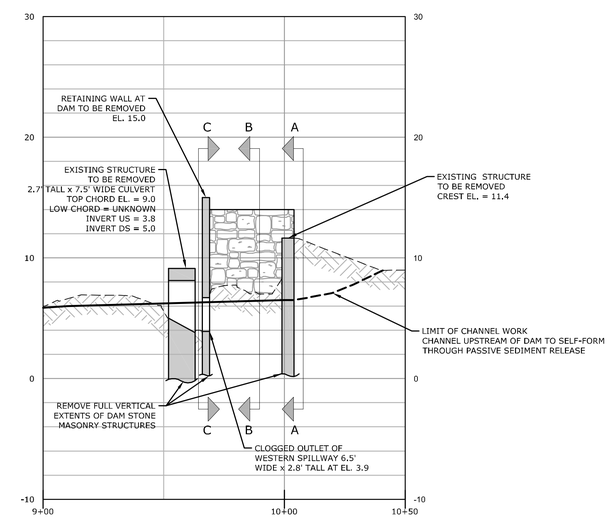
(B) RATTLESNAKE BROOK DAM THROUGH DAM (LOOKING DOWNSTREAM)

SCALE: 1"=30' (H) ; 1"=6' (V)



(C) RATTLESNAKE BROOK DAM DOWNSTREAM FACE (LOOKING UPSTREAM)

SCALE: 1"=30' (H) ; 1"=6' (V)



RATTLESNAKE BROOK DAM (LOOKING NORTHEAST) - PROFILE VIEW

SCALE: 1"=30' (H) ; 1"=6' (V)

0' 15' 30'
0 1/2" 1"

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DESCRIPTION	DATE	BY
SHEET ADDED	10/23/2015	DRM

REMOVALS PLAN - DAM DETAIL

RATTLESNAKE BROOK RESTORATION

NARROWS ROAD
TOWN OF FREETOWN, MASSACHUSETTS

DRM	DRM	WAG
DESIGNED	DRAWN	CHECKED

SCALE: 1"=30'

DATE: OCTOBER 30, 2015

PROJECT NO. 5237-01

SHEET NO. 07 OF 15

SHEET NAME: RP-2

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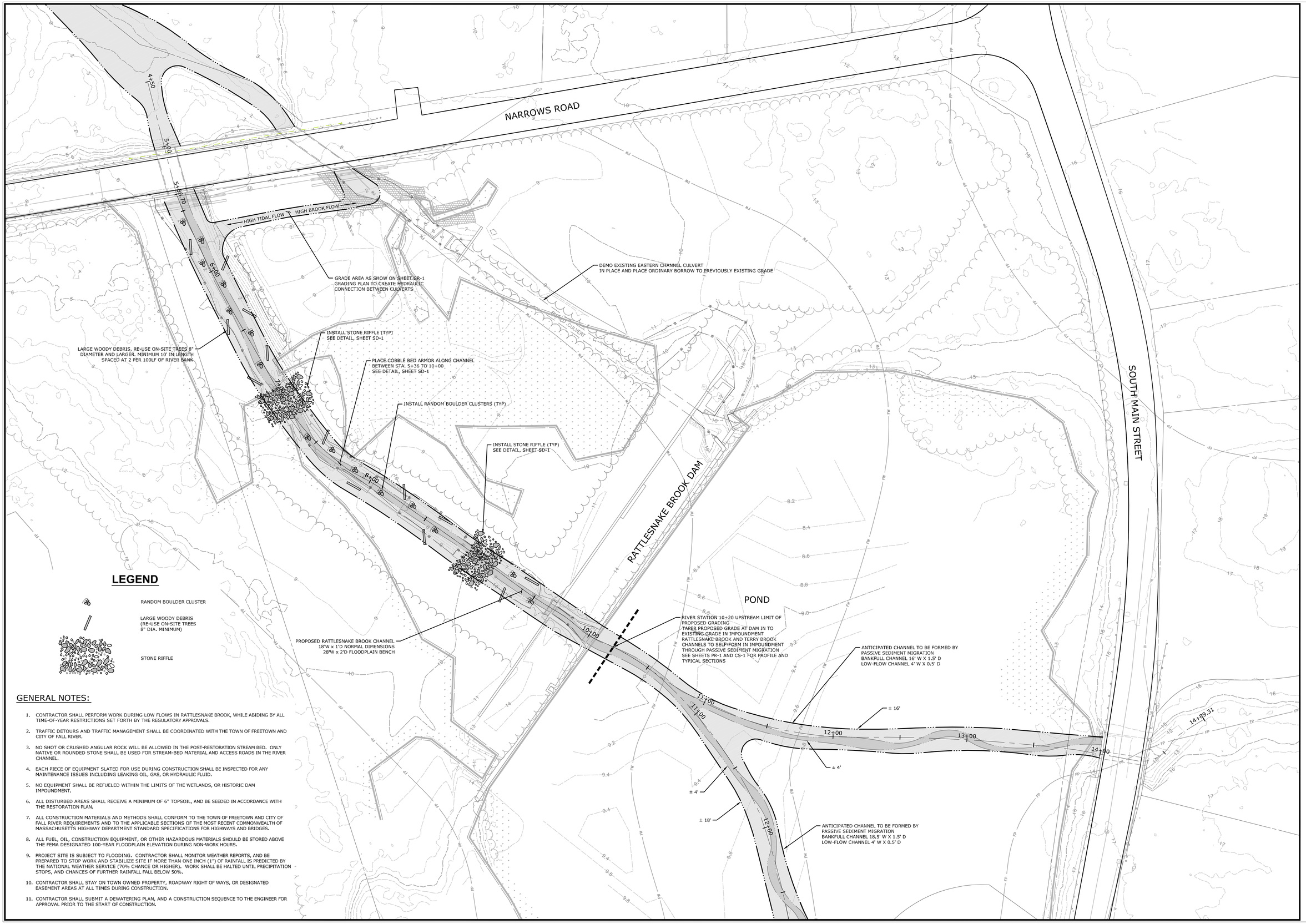

GENERAL NOTES:

1. CONTRACTOR SHALL PERFORM WORK DURING LOW FLOWS IN RATTLESNAKE BROOK, WHILE ABIDING BY ALL TIME-OF-YEAR RESTRICTIONS SET FORTH BY THE REGULATORY APPROVALS.
2. TRAFFIC DETOURS AND TRAFFIC MANAGEMENT SHALL BE COORDINATED WITH THE TOWN OF FREETOWN AND CITY OF FALL RIVER.
3. NO SHOT OR CRUSHED ANGULAR ROCK WILL BE ALLOWED IN THE POST-RESTORATION STREAM BED. ONLY NATIVE OR ROUNDED STONE SHALL BE USED FOR STREAM-BED MATERIAL AND ACCESS ROADS IN THE RIVER CHANNEL.
4. EACH PIECE OF EQUIPMENT SLATED FOR USE DURING CONSTRUCTION SHALL BE INSPECTED FOR ANY MAINTENANCE ISSUES INCLUDING LEAKING OIL, GAS, OR HYDRAULIC FLUID.
5. NO EQUIPMENT SHALL BE REFUELED WITHIN THE LIMITS OF THE WETLANDS, OR HISTORIC DAM IMPOUNDMENT.
6. ALL DISTURBED AREAS SHALL RECEIVE A MINIMUM OF 6" TOPSOIL, AND BE SEEDED IN ACCORDANCE WITH THE RESTORATION PLAN.
7. ALL CONSTRUCTION MATERIALS AND METHODS SHALL CONFORM TO THE TOWN OF FREETOWN AND CITY OF FALL RIVER REQUIREMENTS AND TO THE APPLICABLE SECTIONS OF THE MOST RECENT COMMONWEALTH OF MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
8. ALL FUEL, OIL, CONSTRUCTION EQUIPMENT, OR OTHER HAZARDOUS MATERIALS SHOULD BE STORED ABOVE THE FEMA DESIGNATED 100-YEAR FLOODPLAIN ELEVATION DURING NON-WORK HOURS.
9. PROJECT SITE IS SUBJECT TO FLOODING. CONTRACTOR SHALL MONITOR WEATHER REPORTS, AND BE PREPARED TO STOP WORK AND STABILIZE SITE IF MORE THAN ONE INCH (1") OF RAINFALL IS PREDICTED BY THE NATIONAL WEATHER SERVICE (70% CHANCE OR HIGHER). WORK SHALL BE HALTED UNTIL PRECIPITATION STOPS, AND CHANCES OF FURTHER RAINFALL FALL BELOW 50%.
10. CONTRACTOR SHALL STAY ON TOWN OWNED PROPERTY, ROADWAY RIGHT OF WAYS, OR DESIGNATED EASEMENT AREAS AT ALL TIMES DURING CONSTRUCTION.
11. CONTRACTOR SHALL SUBMIT A DEWATERING PLAN, AND A CONSTRUCTION SEQUENCE TO THE ENGINEER FOR APPROVAL PRIOR TO THE START OF CONSTRUCTION.

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DESCRIPTION	DATE	BY
ADD NOTE RE:CULVERT	3/26/2015	BAM

LAYOUT PLAN

RATTLESNAKE BROOK RESTORATION

NARROWS ROAD
TOWN OF FREETOWN, MASSACHUSETTS

EL	JCS	WAG
DESIGNED	DRAWN	CHECKED

SCALE: 1"=30'

DATE: OCTOBER 30, 2015

PROJECT NO.: 5237-01

SHEET NO.: 08 OF 15

SHEET NAME: SP-1

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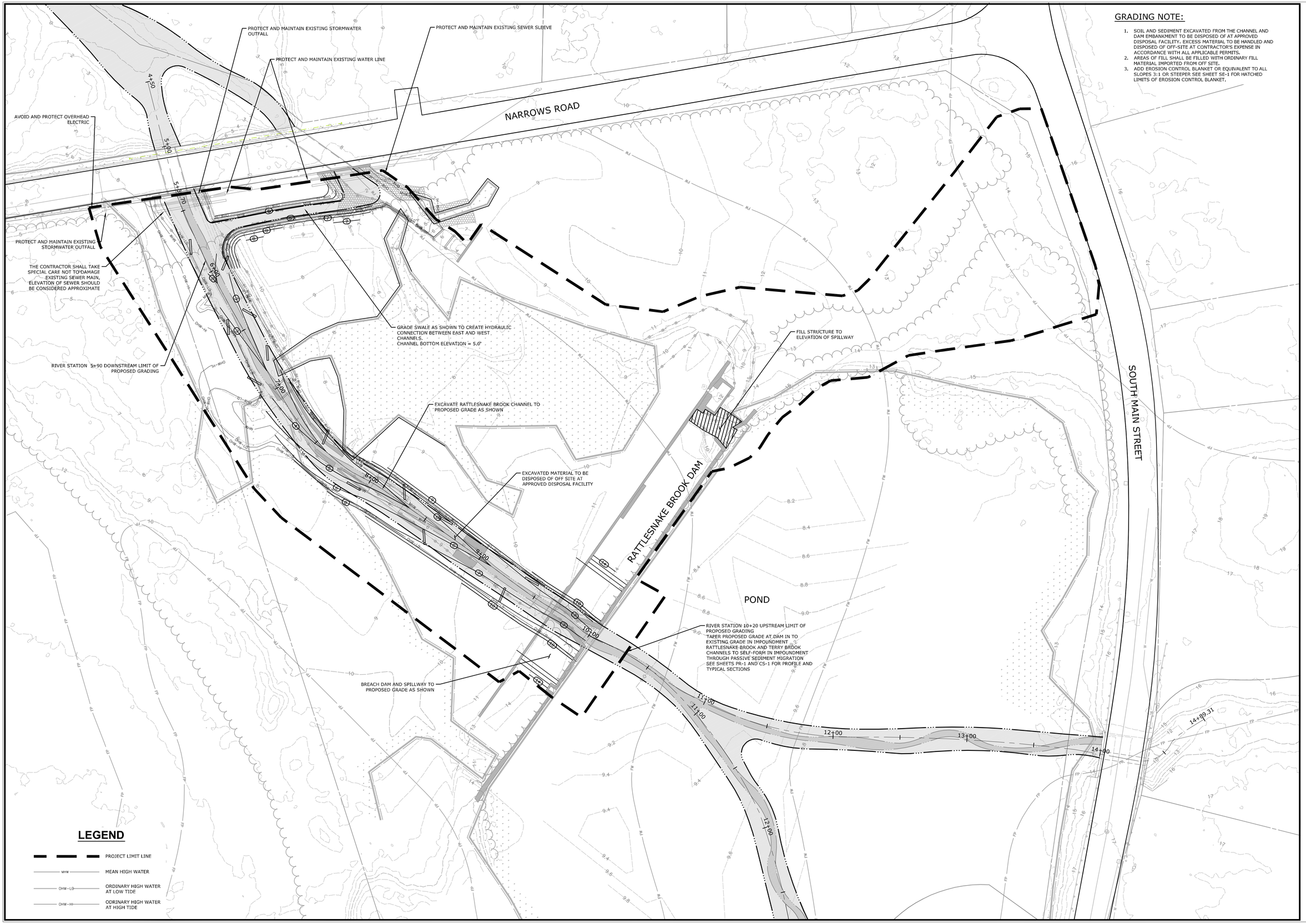

GRADING NOTE:

1. SOIL AND SEDIMENT EXCAVATED FROM THE CHANNEL AND DAM EMBANKMENT TO BE DISPOSED OF AT APPROVED DISPOSAL FACILITY. EXCESS MATERIAL TO BE HANDLED AND DISPOSED OF OFF-SITE AT CONTRACTOR'S EXPENSE IN ACCORDANCE WITH ALL APPLICABLE PERMITS.
2. AREAS OF FILL SHALL BE FILLED WITH ORDINARY FILL MATERIAL IMPORTED FROM OFF SITE.
3. ADD EROSION CONTROL BLANKET OR EQUIVALENT TO ALL SLOPES 3:1 OR STEEPER SEE SHEET SE-1 FOR HATCHED LIMITS OF EROSION CONTROL BLANKET.

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DESCRIPTION	DATE	BY

GRADING AND UTILITIES PLAN

RATTLESNAKE BROOK RESTORATION

NARROWS ROAD
TOWN OF FREETOWN, MASSACHUSETTS

EL	DRM	WAG
DESIGNED	DRAWN	CHECKED

SCALE: 1"=30'

DATE: OCTOBER 30, 2015

PROJECT NO.: 5237-01

SHEET NO.: 09 OF 15

SHEET NAME: GR-1

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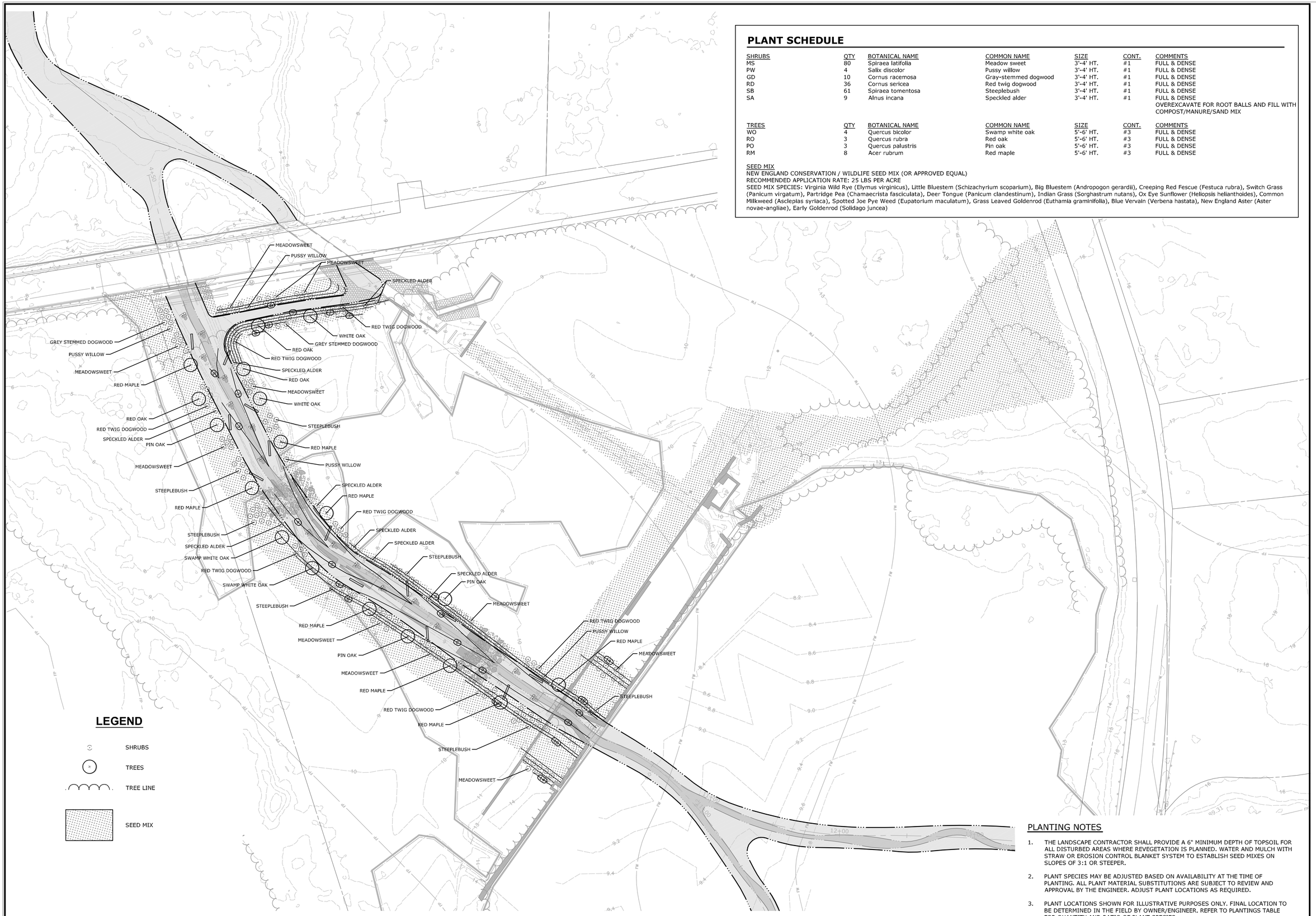

PLANT SCHEDULE

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONT.	COMMENTS
MS	80	Spiraea latifolia	Meadow sweet	3'-4' HT.	#1	FULL & DENSE
PW	4	Salix discolor	Pussy willow	3'-4' HT.	#1	FULL & DENSE
GD	10	Cornus racemosa	Gray-stemmed dogwood	3'-4' HT.	#1	FULL & DENSE
RD	36	Cornus sericea	Red twig dogwood	3'-4' HT.	#1	FULL & DENSE
SB	61	Spiraea tomentosa	Steeplebush	3'-4' HT.	#1	FULL & DENSE
SA	9	Alnus incana	Speckled alder	3'-4' HT.	#1	FULL & DENSE OVEREXCAVATE FOR ROOT BALLS AND FILL WITH COMPOST/MANURE/SAND MIX

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	CONT.	COMMENTS
WO	4	Quercus bicolor	Swamp white oak	5'-6' HT.	#3	FULL & DENSE
RO	3	Quercus rubra	Red oak	5'-6' HT.	#3	FULL & DENSE
PO	3	Quercus palustris	Pin oak	5'-6' HT.	#3	FULL & DENSE
RM	8	Acer rubrum	Red maple	5'-6' HT.	#3	FULL & DENSE

SEED MIX
NEW ENGLAND CONSERVATION / WILDLIFE SEED MIX (OR APPROVED EQUAL)
RECOMMENDED APPLICATION RATE: 25 LBS PER ACRE
SEED MIX SPECIES: Virginia Wild Rye (Elymus virginicus), Little Bluestem (Schizachyrium scoparium), Big Bluestem (Andropogon gerardii), Creeping Red Fescue (Festuca rubra), Switch Grass (Panicum virgatum), Partridge Pea (Chamaecrista fasciculata), Deer Tongue (Panicum clandestinum), Indian Grass (Sorghastrum nutans), Ox Eye Sunflower (Heliopsis helianthoides), Common Milkweed (Asclepias syriaca), Spotted Joe Pye Weed (Eupatorium maculatum), Grass Leaved Goldenrod (Euthamia graminifolia), Blue Vervain (Verbena hastata), New England Aster (Aster novae-angliae), Early Goldenrod (Solidago juncea)

PLANTING NOTES

1. THE LANDSCAPE CONTRACTOR SHALL PROVIDE A 6" MINIMUM DEPTH OF TOPSOIL FOR ALL DISTURBED AREAS WHERE REVEGETATION IS PLANNED. WATER AND MULCH WITH STRAW OR EROSION CONTROL BLANKET SYSTEM TO ESTABLISH SEED MIXES ON SLOPES OF 3:1 OR STEEPER.
2. PLANT SPECIES MAY BE ADJUSTED BASED ON AVAILABILITY AT THE TIME OF PLANTING. ALL PLANT MATERIAL SUBSTITUTIONS ARE SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER. ADJUST PLANT LOCATIONS AS REQUIRED.
3. PLANT LOCATIONS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. FINAL LOCATION TO BE DETERMINED IN THE FIELD BY OWNER/ENGINEER. REFER TO PLANTINGS TABLE FOR QUANTITY AND RATIO OF PLANT SPECIES.

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DESCRIPTION	DATE	BY
ADD NOTE RE:CULVERT	3/26/2015	BAM
PLANTING REVISION	6/8/2015	JEP

RESTORATION PLAN
RATTLESNAKE BROOK RESTORATION
NARROWS ROAD
TOWN OF FREETOWN, MASSACHUSETTS

EL	JCS	WAG
DESIGNED	DRAWN	CHECKED

SCALE: 1"=30'
DATE: OCTOBER 30, 2015
PROJECT NO.: 5237-01
SHEET NO.: 10 OF 15
SHEET NAME: RS-1

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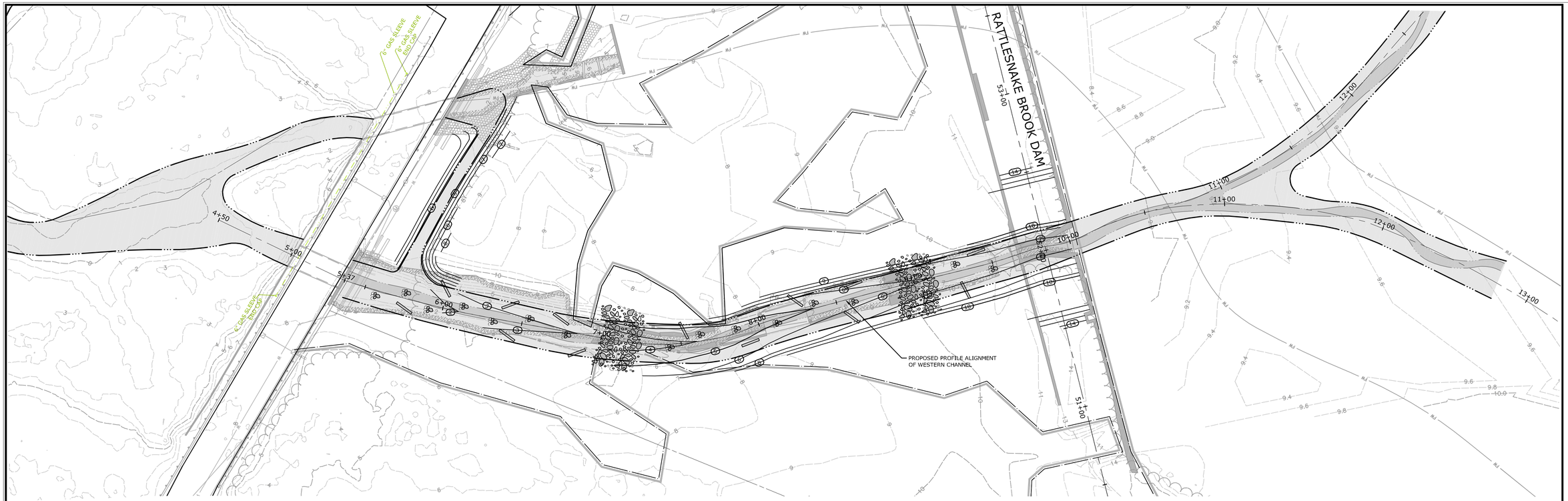
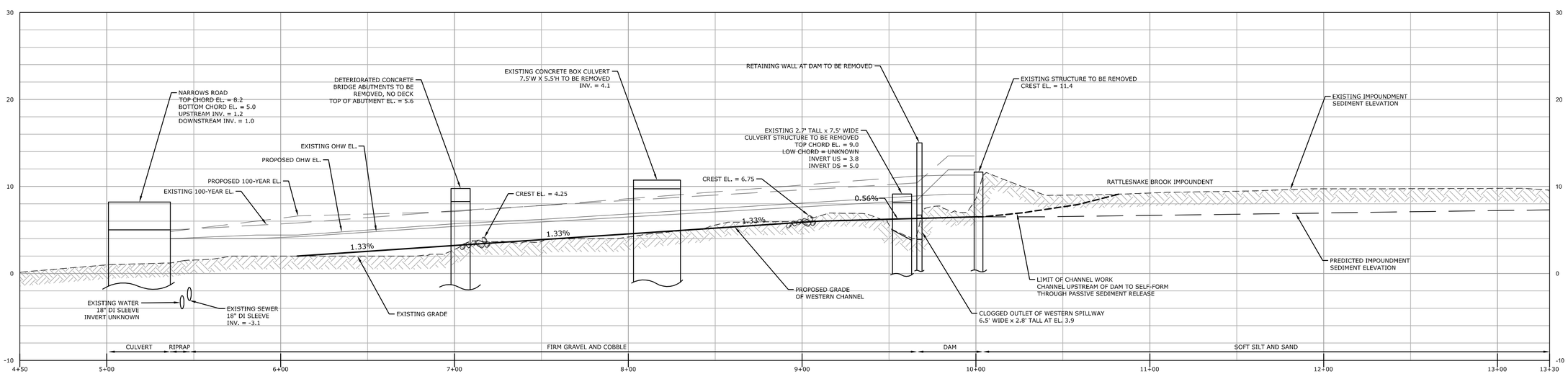


RATTLESNAKE BROOK - PLAN VIEW

SCALE: 1"=30'



RATTLESNAKE BROOK - WESTERN CHANNEL - PROFILE

SCALE: 1"=30' (H) ; 1"=6' (V)

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DESCRIPTION	DATE	BY
CHANNEL NOTATIONS	3/26/2015	BAM

RATTLESNAKE BROOK PROFILE

RATTLESNAKE BROOK RESTORATION

NARROWS ROAD
TOWN OF FREETOWN, MASSACHUSETTS

EL	JCS	WAG
DESIGNED	DRAWN	CHECKED

SCALE: AS NOTED

DATE: OCTOBER 30, 2015

PROJECT NO.: 5237-01

SHEET NO.: 11 OF 15

SHEET NAME: PR-1

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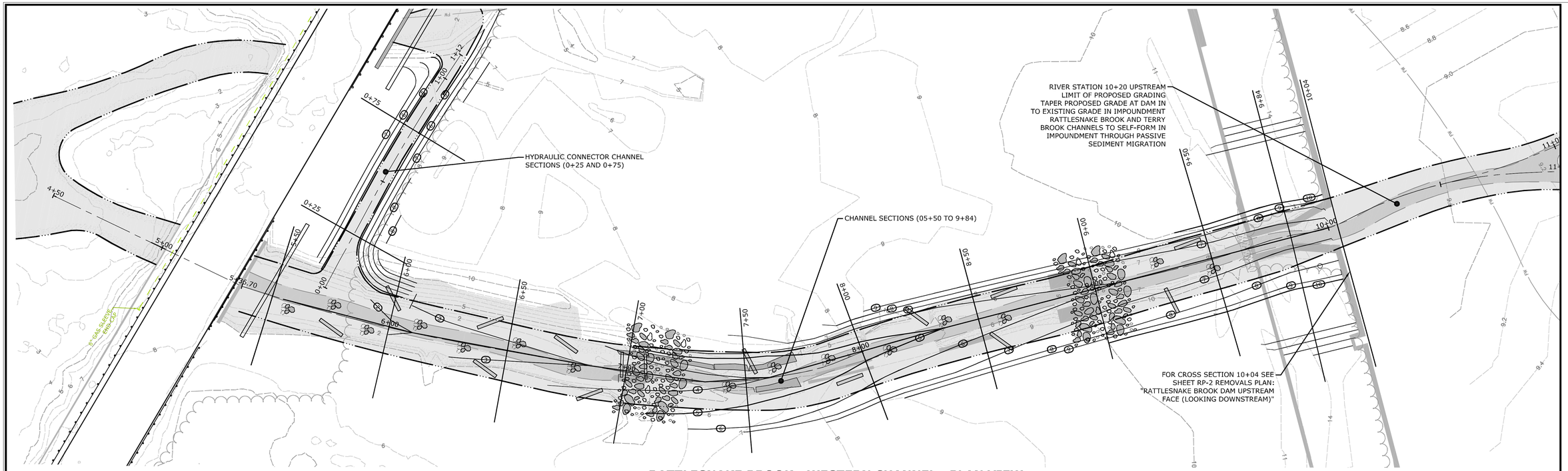
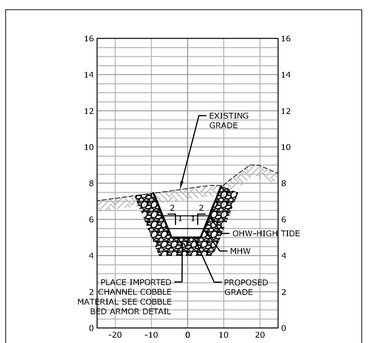
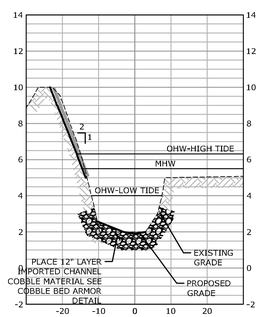


RATTLESNAKE BROOK - WESTERN CHANNEL - PLAN VIEW

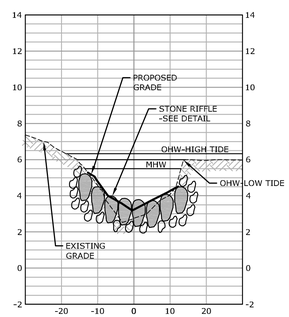
SCALE: 1"=20'



0+75



6+00



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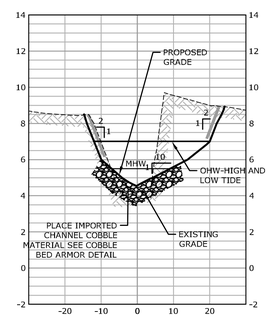

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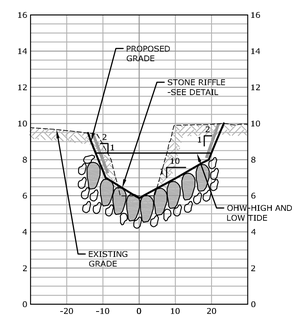
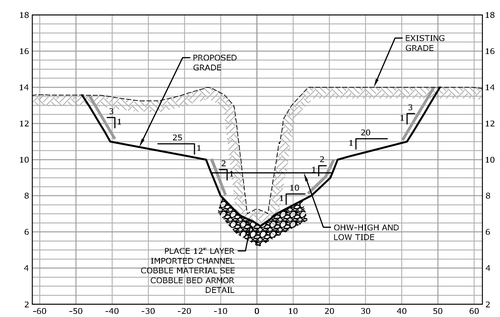
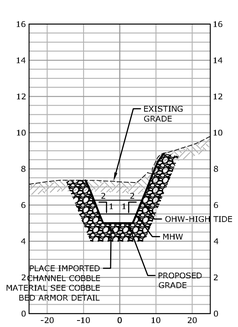


9+00



9+84



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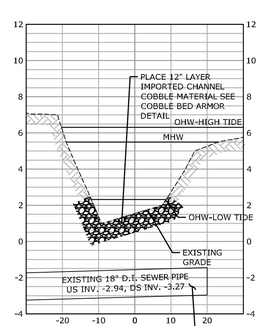
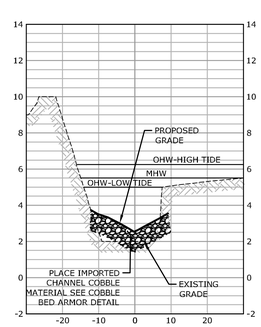
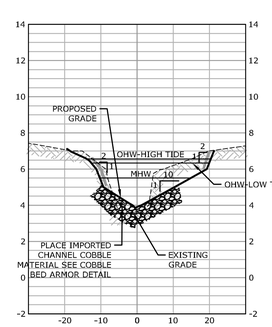


5+50

THE CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO DAMAGE EXISTING SEWER MAIN, ELEVATION OF SEWER SHOULD BE CONSIDERED APPROXIMATE



6+50



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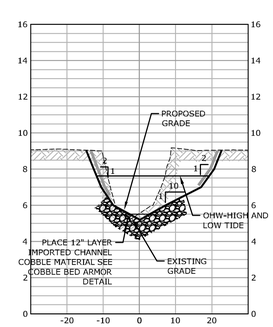
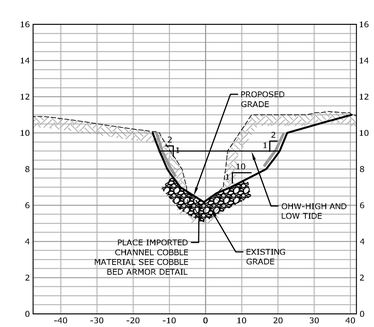


8+50



9+50

RATTLESNAKE BROOK HYDRAULIC CONNECTOR CHANNEL - SECTIONS

SCALE: 1"=20' (H) ; 1"=4' (V)

RATTLESNAKE BROOK - WESTERN CHANNEL - SECTIONS

SCALE: 1"=20' (H) ; 1"=4' (V)

NOTE: SECTIONS LOOK UPSTREAM

LEGEND

- STONE RIFFLE
- EROSION CONTROL BLANKET
- PROPOSED GRADE
- EXISTING GRADE

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DESCRIPTION	DATE	BY
ADD CROSS SECTIONS	6/8/2015	DRM

RATTLESNAKE BROOK CROSS SECTIONS

RATTLESNAKE BROOK RESTORATION

NARROWS ROAD
TOWN OF FREETOWN, MASSACHUSETTS

EL	DRM	WAG
DESIGNED	DRAWN	CHECKED

AS NOTED
SCALE

OCTOBER 30, 2015
DATE

5237-01
PROJECT NO.

12 OF 15
SHEET NO.

CS-1
SHEET NAME

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BUFFER ZONE & RESOURCE AREA IMPACTS

RESOURCE AREA	EXISTING CONDITIONS	PROPOSED CONDITIONS	PROPOSED ALTERATION
BANK	1,500 LF	1,800 LF	+300 LF
LAND UNDER WATER	245,400 SF	45,200 LF	-200,200 SF
BORDERING VEGETATED WETLAND (BVW)	148,100 SF *	348,300 SF	+200,200 SF
BORDERING LAND SUBJECT TO FLOODING	387,200 SF	387,200 SF	0 SF
RIVERFRONT AREA	411,200 SF	333,000 SF	-78,200 SF

NOTE: * INDICATES THAT THE ENTIRE PROPERTY WAS NOT SURVEYED FOR BORDERING VEGETATED WETLANDS. THE NUMBER SHOWN IS THE TOTAL BORDERING VEGETATED WETLANDS SURVEYED IN WHICH CONSTRUCTION OCCURS.

NARROWS ROAD

SOUTH MAIN STREET

RATTLESNAKE BROOK DAM

POND

CONSTRUCTION ENTRANCE PAD

CONSTRUCTION ACCESS ROAD

200 FT - EX. RIVERFRONT AREA

200 FT - PR. RIVERFRONT AREA

200 FT - RIVERFRONT AREA

4+50 5+00 5+50 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 14+89.31

REGULATED RESOURCES

- LOSS OF BORDERING VEGETATED WETLANDS
- LOSS OF LAND UNDER WATERBODIES & WATERWAYS, BORDERING VEGETATED WETLANDS GAINED
- SEDIMENT AND EROSION CONTROL FENCE AND HAY BALES
- TEMPORARY COFFERDAM
- LIMITS OF CLEARING
- PROJECT LIMIT LINE
- EX RFA — EX. RIVERFRONT AREA (±200' FROM HIGH WATER LINE)
- PR RFA — PR. RIVERFRONT AREA (±200' FROM HIGH WATER LINE)
- FP — LAND SUBJECT TO FLOODING (FEMA FLOODPLAIN)
- FW — FEMA FLOODWAY
- IB — INLAND BANK

0' 15' 30' 0 1/2" 1"

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DESCRIPTION	DATE	BY
REGULATED RESOURCES REVISION	6/8/2015	JEP

REGULATED RESOURCES PLAN

RATTLESNAKE BROOK RESTORATION

NARROWS ROAD
TOWN OF FREETOWN, MASSACHUSETTS

EL	JCS	WAG
DESIGNED	DRAWN	CHECKED

SCALE: 1"=30'

DATE: OCTOBER 30, 2015

PROJECT NO.: 5237-01

SHEET NO.: 13 OF 15

SHEET NAME: RE-1

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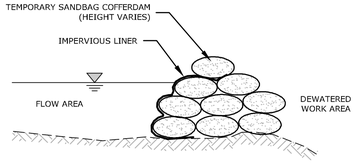
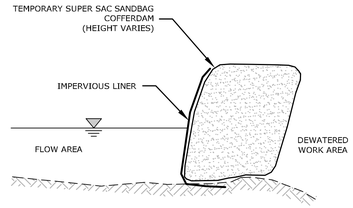


NOTE:
1. COFFER DAM AND PUMP SYSTEM TO BE SIZED FOR NORMAL FLOW CONDITIONS.

TEMPORARY SANDBAG COFFERDAM DETAIL

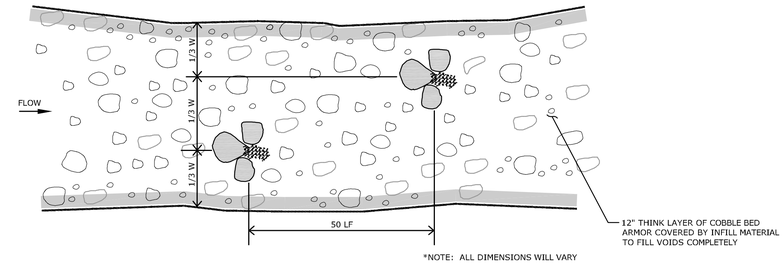
NOT TO SCALE



NOTE:
1. COFFER DAM AND PUMP SYSTEM TO BE SIZED FOR NORMAL FLOW CONDITIONS.
2. IMPERVIOUS LINER TO BE AFFIXED TO SUPER SAC SANDBAG.

TEMPORARY SUPER SAC SANDBAG COFFERDAM DETAIL

NOT TO SCALE

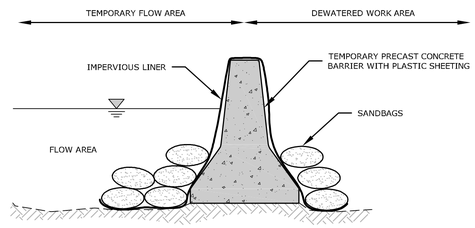


COBBLE BED ARMOR

NOT TO SCALE

COBBLE BED ARMOR NOTES:

1. COBBLE BED ARMOR TO BE PLACE ALONG ENTIRE LENGTH OF CHANNEL FROM STA. 5+36 TO 10+00 AND ALONG HYDRAULIC CONNECTOR CHANNEL.
2. PLACE 3" TO 9" DIAMETER STONES TO A DEPTH OF 12" AS SHOWN ON THE CROSS SECTIONS.
3. PLACE IMPORTED INFILL MATERIAL OVER COBBLES AND MECHANICALLY WORK SMALLER MATERIAL IN TO COBBLE. WASH IN FILLER MATERIAL (SEE TECH SPECS) TO COMPLETELY FILL ALL VOIDS.

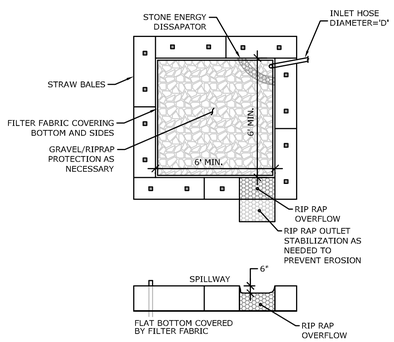


NOTES:

1. COFFER DAM AND PUMP SYSTEM TO BE SIZED FOR NORMAL FLOW CONDITIONS.

TEMPORARY CONCRETE COFFERDAM DETAIL

NOT TO SCALE

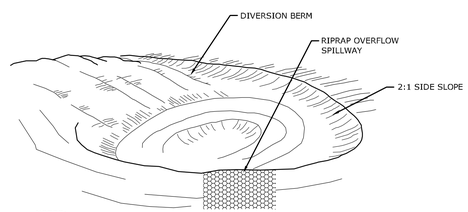


EXTEND BASIN LENGTH FOR ADDITIONAL SETTLING TIME, IF NECESSARY

NOTES:
1. IF PUMPING VOLUME EXCEEDS BASIN CAPACITY, BASIN MAY BE USED IN TANDEM OR TIERS.
2. INCREASE RIPRAP SIZE ON BASIN BOTTOM, OR SIZE/LENGTH OF OUTLET STABILIZATION AS NECESSARY TO MAINTAIN SEDIMENT-FREE DISCHARGE WATERS.
3. ALTERNATIVE OPTIONS MAY BE REVIEWED AND APPROVED BY THE ENGINEER.
4. IF NATURAL, STABLE DEPRESSION(S) OF SUFFICIENT CAPACITY, CONTAINING INFILTRATION-PRONE SOILS, BEING RELATIVELY FLAT WITH NO OUTLET WHERE CHANNELIZED FLOW (AND THE POTENTIAL FOR EROSION) CAN DEVELOP, ARE PRESENT IN THE AREA(S) OF DISCHARGE, THESE AREAS SHOULD BE UTILIZED IN FAVOR OVER THE STRAW BALE IMPOUNDMENTS WHERE POSSIBLE. IN SUCH CASES, HOSE ENDS SHOULD DISCHARGE ONTO STABLE RIP-RAP STONE OUTLET APRONS.

DEWATERING DISCHARGE BASIN

N.T.S.

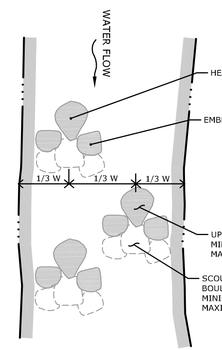


NOTES:
REFER TO SEDIMENT & EROSION CONTROL PLAN FOR APPROXIMATE DIMENSIONS AND REQUIRED VOLUME.

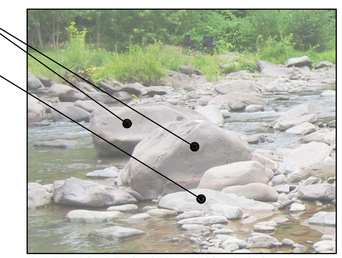
SOURCE: 2002 CT. GUIDELINES
FOR SOIL EROSION AND SEDIMENT CONTROL

TEMPORARY SEDIMENT TRAP

(SCALE: N.T.S.)



PLAN VIEW



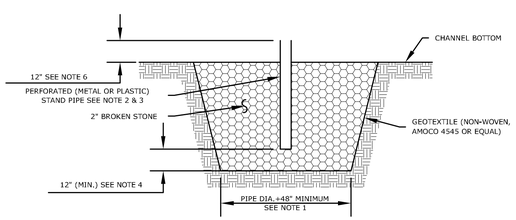
RANDOM BOULDER CLUSTER - TYPICAL PHOTO

RANDOM BOULDER CLUSTER

NOT TO SCALE

NOTES:

1. 3 BOULDERS PER RANDOM BOULDER CLUSTER, PLUS 3 SCOUR PROTECTION FOOTER BOULDERS.
2. PLACE BOULDERS IN THE MIDDLE THIRD OF THE STREAM WITHIN DEEPEST PORTION OF CHANNEL.
3. POSITION BOULDER GROUPS IN A UPSTREAM "V" FORMATION.
4. INDIVIDUAL BOULDERS PLACED IN THE STREAM SHOULD BE 24" TO 48" IN DIAMETER.
5. POSITION BOULDERS WITH THEIR LONG AXIS PARALLEL TO THE STREAM FLOW.
6. INSTALL FOOTER BOULDER TO WEDGE HEADER BOULDER IN PLACE FROM DOWNSTREAM.
7. INSTALLHEADER BOULDERS AT A LOW PROFILE SUCH THAT THEY ARE PARTIALLY SUBMERGED DURING NORMAL LOW FLOW. INSTALL SUCH THAT ¼ OF ROCK DIAMETER IS BURIED IN STREAM CHANNEL.
8. FINISHED ELEVATION OF THE BOULDERS WILL BE DETERMINED IN THE FIELD.



NOTES:
1. OVERALL SUMP PIT DIMENSIONS TO BE COMPATIBLE WITH ANTICIPATED SEEPAGE RATES AND PUMP TO BE USED.
2. THE STAND PIPE DIAMETER AND NUMBER OF PERFORATIONS TO BE COMPATIBLE WITH THE PUMP SIZE BEING USED.
3. PERFORATIONS IN THE STANDPIPE TO BE EITHER CIRCULAR OR SLOTS, PERFORATION SIZE SHALL NOT EXCEED 1/2" DIAMETER.
4. 2" BROKEN STONE SHALL EXTEND A MINIMUM OF 12" BELOW THE BOTTOM OF THE STANDPIPE.
5. A PROPERLY DESIGNED GEOTEXTILE TO BE PLACED BETWEEN THE EXISTING SOILS AND THE CRUSHED STONE BACKFILL.
6. THE STANDPIPE SHALL EXTEND A MINIMUM OF 12" ABOVE THE SURROUNDING GROUND.

TEMPORARY DEWATERING SUMP

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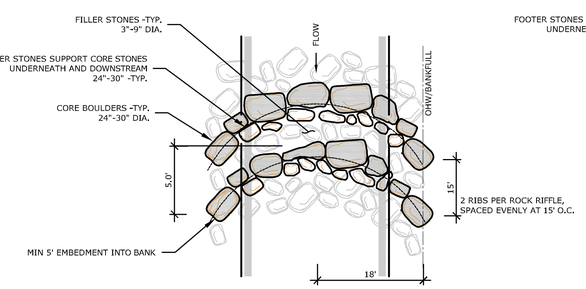
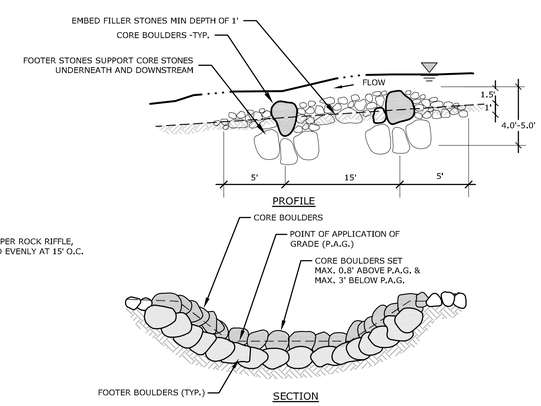


PLAN



PROFILE

SECTION

STONE RIFFLE

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MILONE & MACBROOM®
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DESCRIPTION	DATE	BY

SITE DETAILS
RATTLESNAKE BROOK RESTORATION
NARROWS ROAD
TOWN OF FREETOWN, MASSACHUSETTS

EL	DRM	WAG
DESIGNED	DRAWN	CHECKED

SCALE: AS NOTED
DATE: OCTOBER 30, 2015
PROJECT NO.: 5237-01
SHEET NO.: 14 OF 15
SHEET NAME: SD-1

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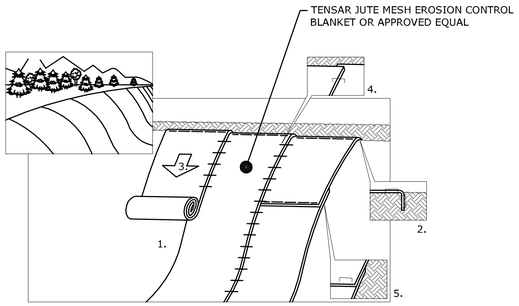

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN TENSAR NORTH AMERICAN GREEN SC150BN, DO NOT SEED PREPARED AREA. TENSAR NORTH AMERICAN GREEN SC150BN MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS DOWN THE SLOPE IN THE DIRECTION OF THE WATER FLOW.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 6" OVERLAP. STAPLE THROUGH OVERLAP AREA, APPROXIMATELY 12" APART.

REFER TO GENERAL STAPLE PATTERN GUIDE IN NORTH AMERICAN GREEN CATALOG FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.

EROSION CONTROL BLANKET

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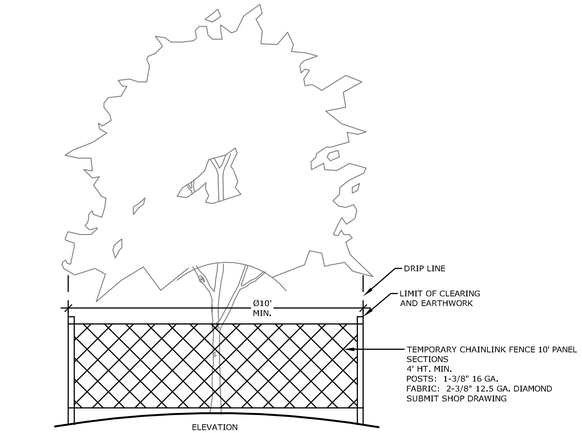
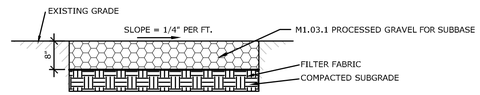


NOTE: DETAIL TO BE USED FOR TREE PROTECTION AS DETERMINED BY THE ENGINEER IN THE FIELD.

TREE PROTECTION

(SCALE: N.T.S.)



NOTES:
1. PROCESSED GRAVEL FOR SUBBASE TO BE REMOVED UPON COMPLETION OF CONSTRUCTION, AND REPLACED WITH TOPSOIL. DISTURBED AREAS TO BE SEEDED AND MULCHED ACCORDING TO THE RESTORATION PLAN.

TEMPORARY CONSTRUCTION ACCESS ROAD

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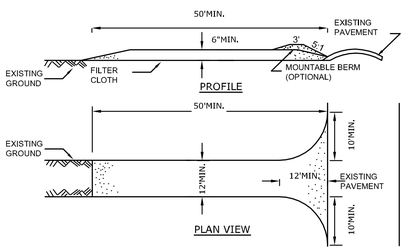

CONSTRUCTION ENTRANCE PAD

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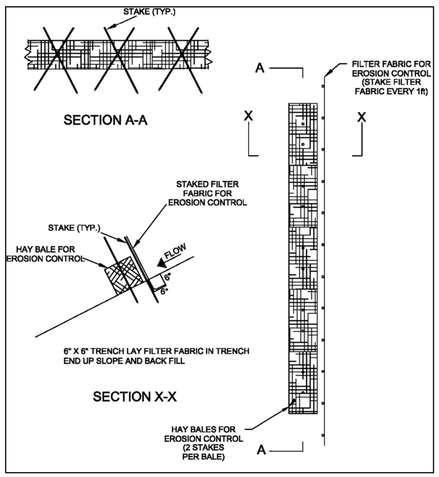
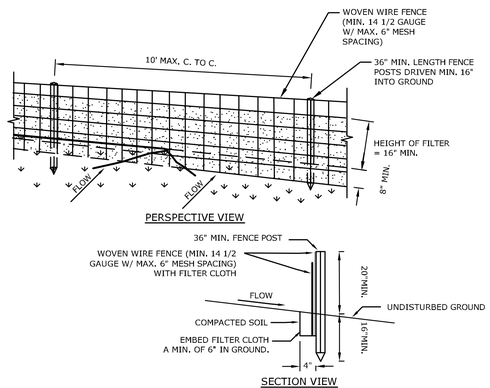
CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - M1.03.1 PROCESSED GRAVEL FOR SUBBASE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.



HAY BALES AND SILT FENCE FOR EROSION CONTROL

(SCALE: N.T.S.)



SILT FENCE

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CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER- LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

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