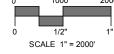
# UPPER LAKE ANADROMOUS FISHERIES RESTORATION

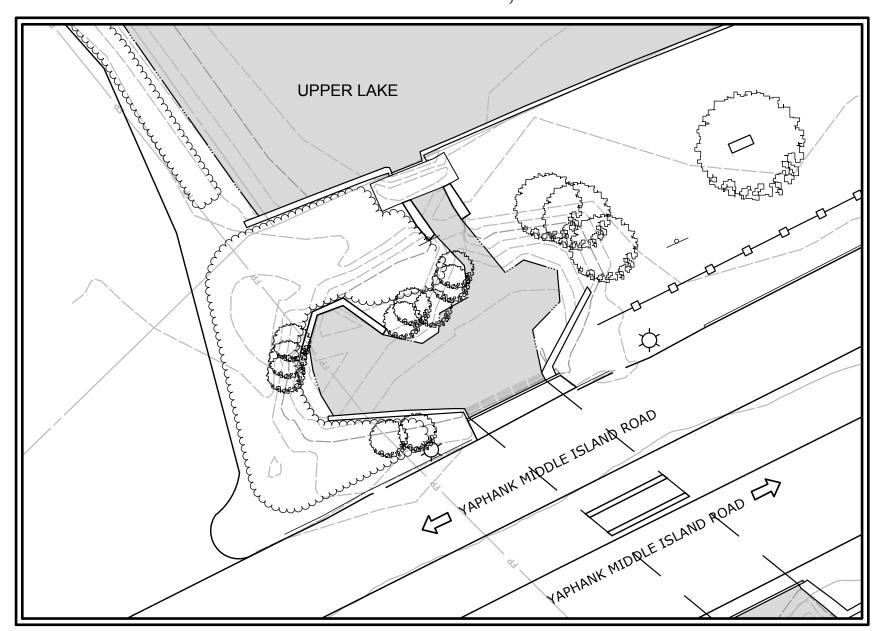
# MILL ROAD BROOKHAVEN, NEW YORK MMI# 4791-01



**LOCATION MAP:** 



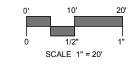
# SEMI-FINAL DESIGN (90%) DECEMBER 23, 2015



# PREPARED FOR:

TOWN OF BROOKHAVEN ONE INDEPENDENCE HILL FARMINGVILLE, NEW YORK 11738

#### **PROJECT SITE VICINITY MAP:**



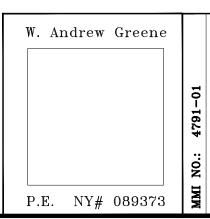
#### **LIST OF DRAWINGS:**

NO.	NAME	TITLE
01		TITLE SHEET
02	EX-1	EXISTING CONDITIONS
03	RE-1	REMOVALS PLAN
04	LA-1	LAYOUT
05	PR-1	GRADING AND PROFILE
06	CP-1	CONSTRUCTION PLAN
07	RP-1	RESTORATION & PLANTING PLAN
80	D-1	DETAILS (1)
09-18	STR-01 - STR-10	STRUCTURAL PLANS & DETAILS

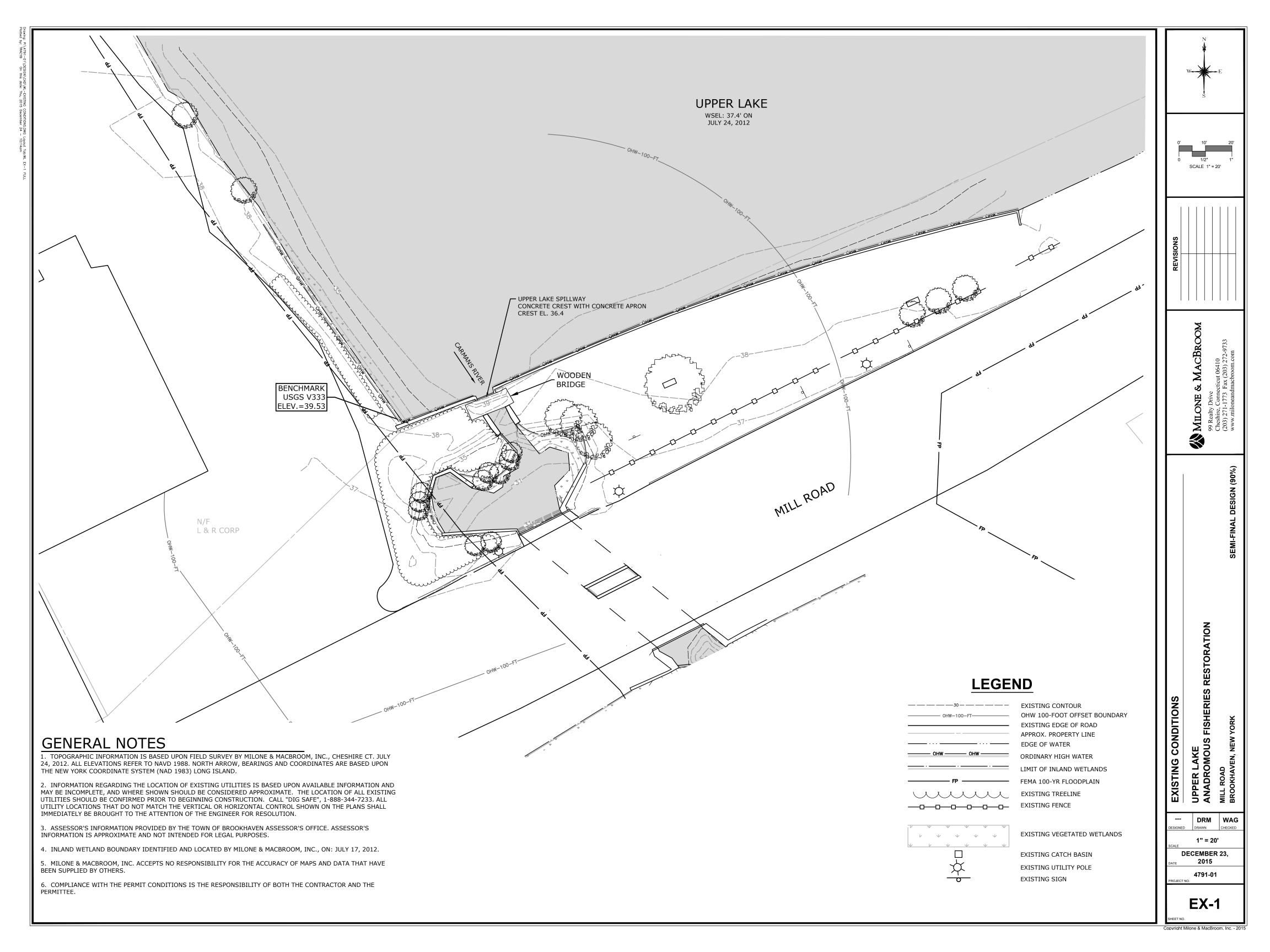
# PREPARED BY: MILONE & MACBROOM®

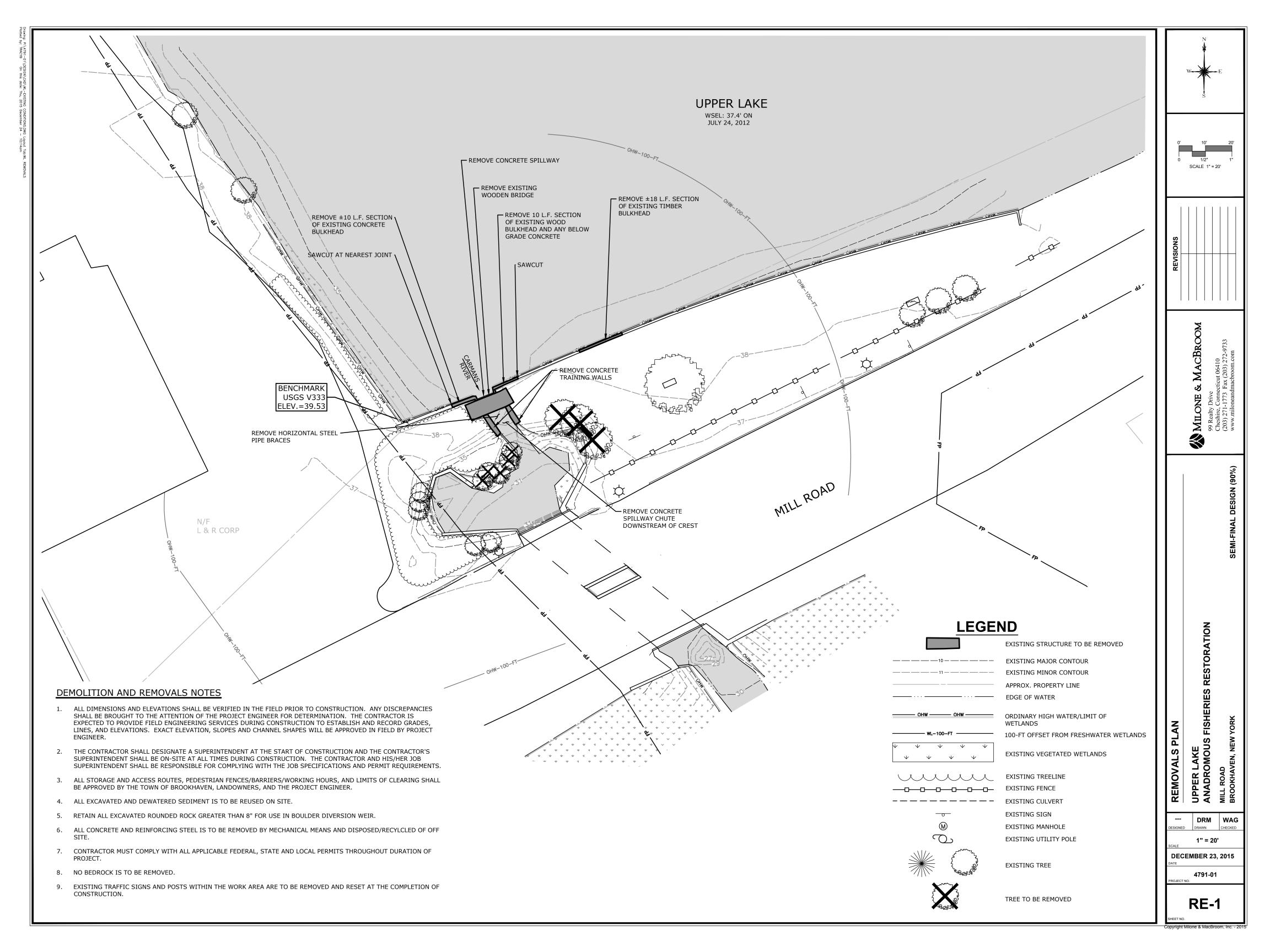
99 Realty Drive Cheshire, Connecticut 06410 (203) 271-1773 Fax (203) 272-9733 www.miloneandmacbroom.com UNAUTHORIZED ALTERATION TO A MAP BEARING A LICENSED PROFESSIONAL ENGINEER'S SEAL IS IN VIOLATION OF SECTION 7209, SUB-DIVISION 2, OF THE NEW YORK STATE EDUCATION LAW ARTICLE 145. THE CERTIFICATION IS NOT AN EXPRESS OR IMPLIED WARRANTY OR GUARANTEE, IT IS PURELY A STATEMENT OF PROFESSIONAL OPINION BASED ON KNOWLEDGE, INFORMATION AND BELIEF. BASED ON EXISTING FIELD EVIDENCE AND DOCUMENTARY EVIDENCE AVAILABLE. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS. COPIES OF NOT HAVING THE EMBOSSED SEAL OF THE ENGINEER SHALL NOT BE VALID.

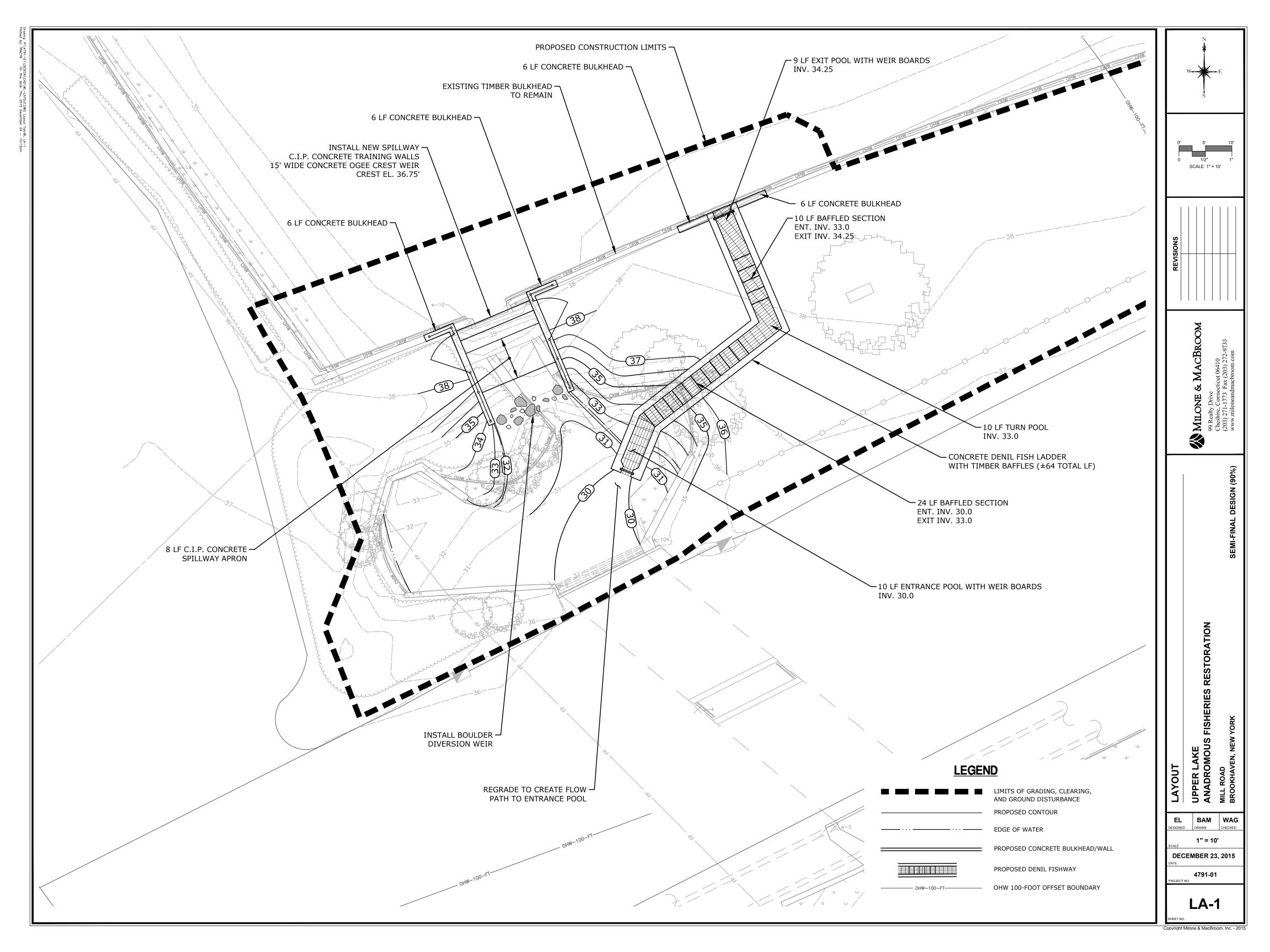
ANY ALTERATION OF REVISIONS OF THESE PLANS, UNLESS DONE BY OR UNDER THE DIRECTION OF THE NYS LICENSED AND REGISTERED ENGINEER THAT PREPARED THEM, IS A VIOLATION OF THE NYS EDUCATION LAW.

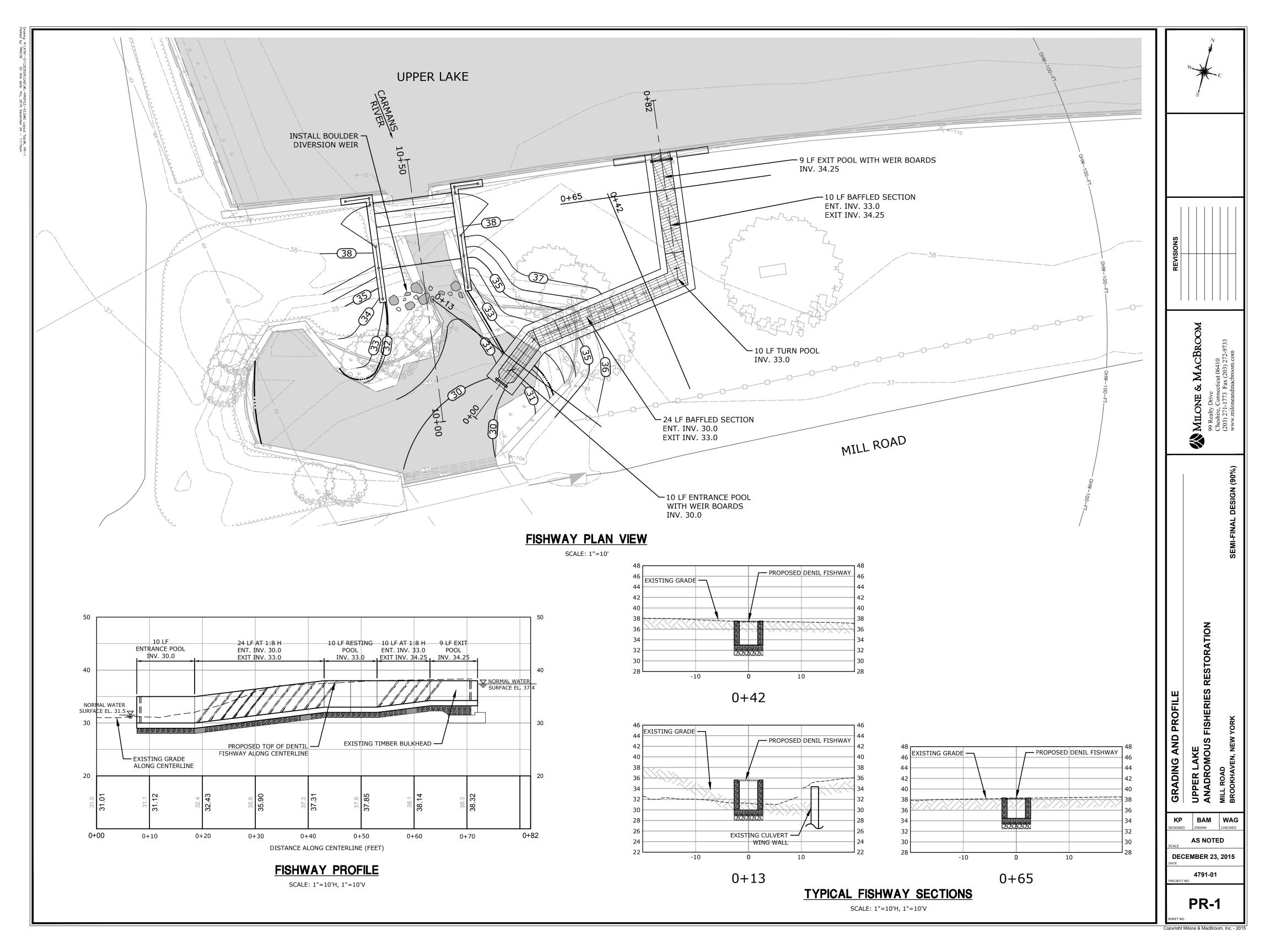


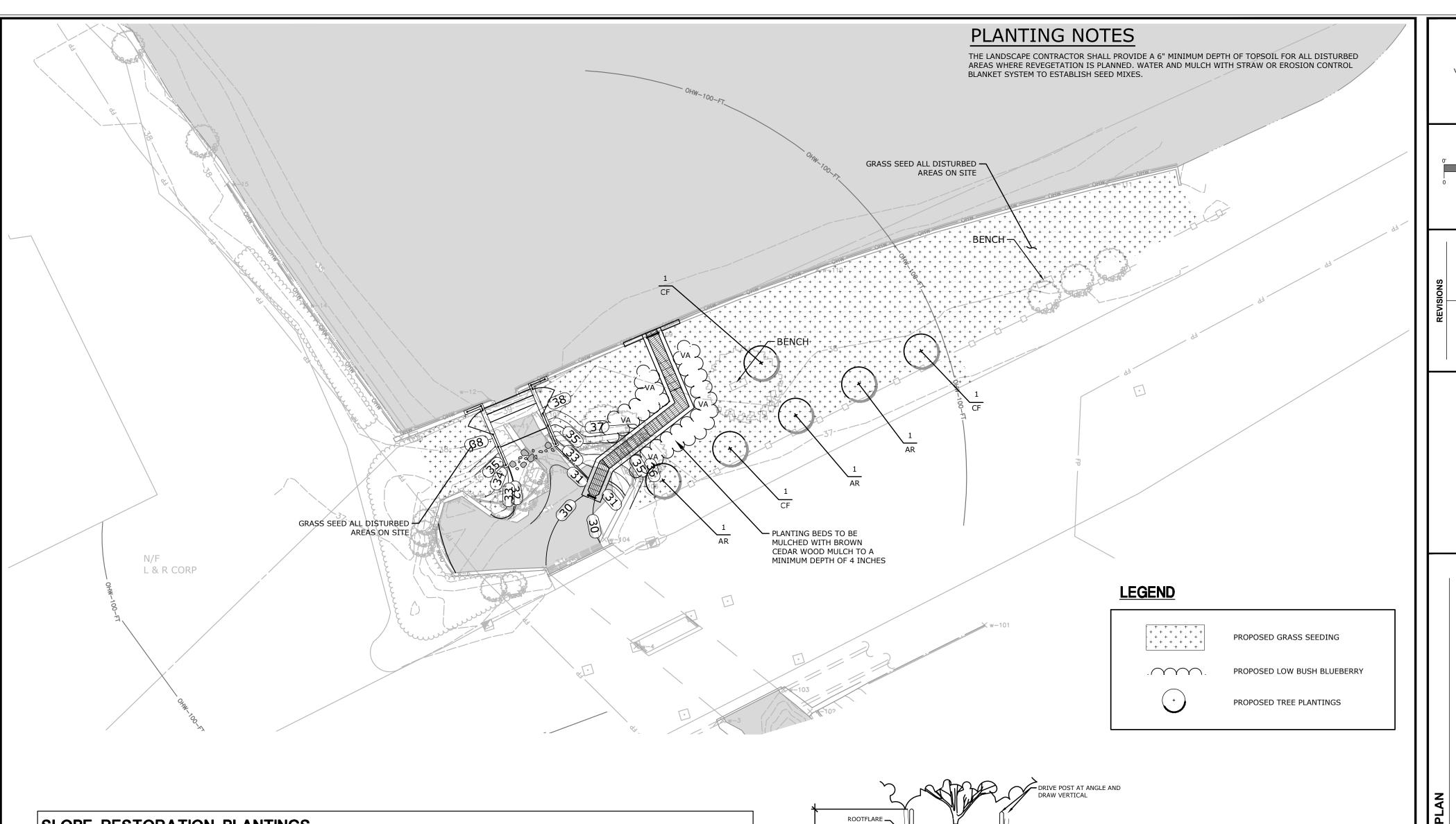












SLOPE RESTORATION PLANTINGS								
TREES L		INIT QTY KEY		COMMON NAME	BOTANICAL NAME	SIZE	COMMENTS	
EA		3	AR	RED MAPLE	ACER RUBRUM	2.5"-3" CAL.	SINGLE STEM	
	EACH	3	CF	FLOWERING DOGWOOD	CORNUS FLORIDA	2"-2.5" CAL.	SINGLE STEM	
SHRUBS UNIT		QTY	KEY	COMMON NAME	BOTANICAL NAME	SIZE	COMMENTS	
	SF	375	VA	LOW BUSH BLUEBERRY (TOPHAT)	VACCINIUM ANGUSTIFOLIUM X CORYMBOSUM	1 GAL.	FULL AND DENSE	
SEED MIXES		KEY		COMMON NAME	BOTANICAL NAME	PROVIDER	COMMENTS	
+ + + + + + + + + + + + + + + + + + +	+			NEW ENGLAND EROSION CONTROL MIX		(SEE BELOW)		

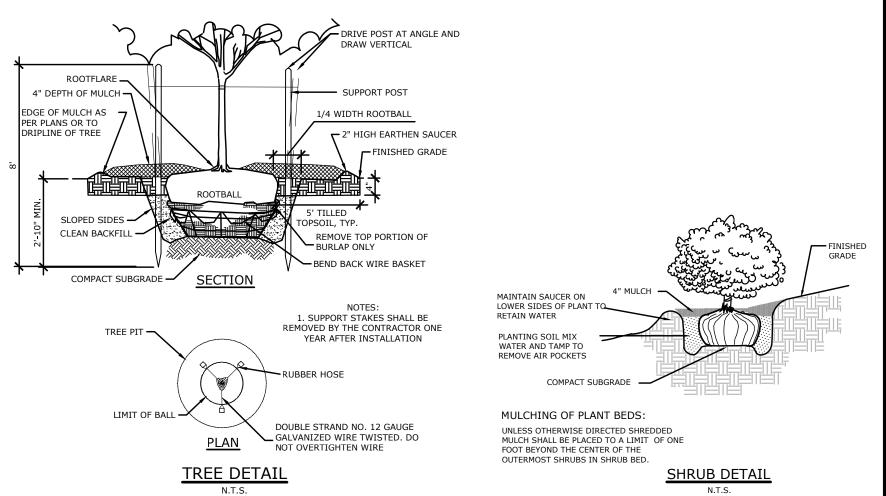
NOTE: CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF TREES AND SHRUBS AND COORDINATION OF DELIVERY FROM OWNER. CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING TREES, SHRUBS AND SEED MIXES.

NEW ENGLAND EROSION CONTROL/RESTORATION MIX

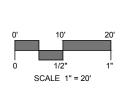
PROVIDED BY: NEW ENGLAND WETLAND PLANTS INC. RECOMMENDED APPLICATION RATE: (1250 SQUARE FEET/ LB)

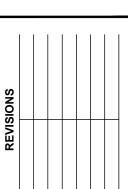
SEED MIX SPECIES: Creeping Red Fescue, (Festuca rubra), Canada Wild Rye, (Elymus canadensis), Annual Ryegrass, (Lolium multiflorum),

Perennial Ryegrass, (Lolium perenne), Blue Grama, (Bouteloua gracilis), Little Bluestem, (Schizachyrium scoparium), Indian Grass, (Sorghastrum nutans), Rough Bentgrass, (Agrostis scabra), Upland Bentgrass, (Agrostis perennans).









MILONE & MACBROOM

REST **FISHERIES** UPPER LAKE
ANADROMOUS F
MILL ROAD
BROOKHAVEN, NEW Y

PLANTING

∞

RESTORATION BAM WAG 1" = 20'

**DECEMBER 23, 2015** 

RP-1

- 1. OVERALL SUMP PIT DIMENSIONS TO BE COMPATIBLE WITH ANTICIPATED SEEPAGE RATES
- 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 CONSTRUCTION DEWATERING SUMP

NOT TO SCALE

#### **DEWATERING BASIN**

STONE ENERGY -DISSAPATOR

FLAT BOTTOM COVERED

BY FILTER FABRIC

**SPILLWAY** 

STRAW BALES -

GRAVEL/RIPRAP

PROTECTION AS

**NECESSARY** 

FILTER FABRIC COVERING -BOTTOM AND SIDES NOT TO SCALE

WOVEN WIRE FENCE

(MIN. 14 1/2 GAUGE

W/ MAX. 6" MESH

– 36" MIN. LENGTH FENCE POSTS DRIVEN MIN. 16'

SPACING)

INTO GROUND.

HEIGHT OF FILTER

= 16" MIN.

**INLET HOSE** DIAMETER='D'

1. IF PUMPING VOLUME EXCEEDS BASIN

CAPACITY, BASIN MAY BE USED IN

2. INCREASE RIPRAP SIZE ON BASIN BOTTOM AS NECESSARY TO MAINTAIN

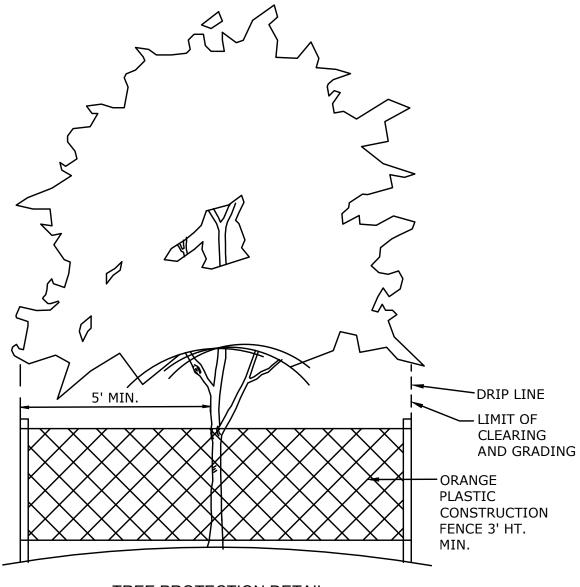
SEDIMENT-FREE DISCHARGE WATERS

3. ALTERNATIVE OPTIONS MAY BE

REVIEWED AND APPROVED BY THE

TANDEM OR TIERS.

ENGINEER.

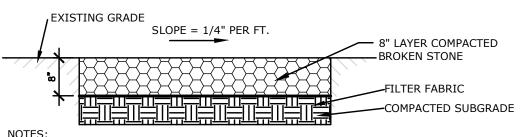


TREE PROTECTION DETAIL

# SUPERSAC 1 CY SANDBAG IMPERVIOUS LINER · **DEWATERED** FLOW AREA WORK AREA

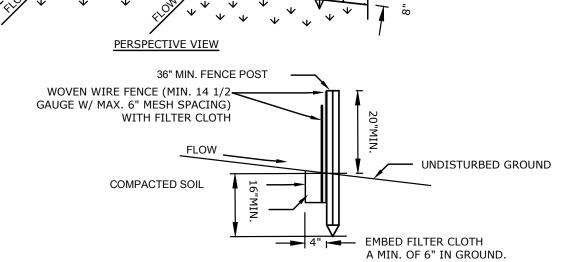
#### TEMPORARY COFFERDAM DETAIL

NOT TO SCALE



1. BROKEN STONE 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 DETAIL**



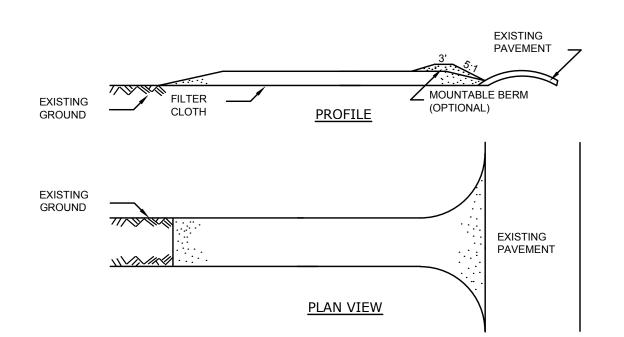
**SECTION VIEW** 

#### **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.

#### SILT FENCE NOT TO SCALE

10' MAX. C. TO C.



#### STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

### **CONSTRUCTION SPECIFICATIONS**

1. STONE SIZE - USE 2" STONE, 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).

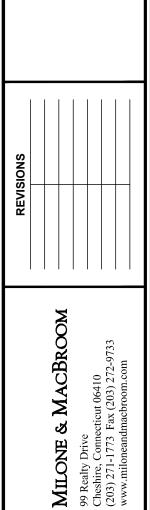
- 3. THICKNESS NOT LESS THAN SIX (6) INCHES.
- 4. WIDTH TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
- 5. FILTER CLOTH WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.

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.



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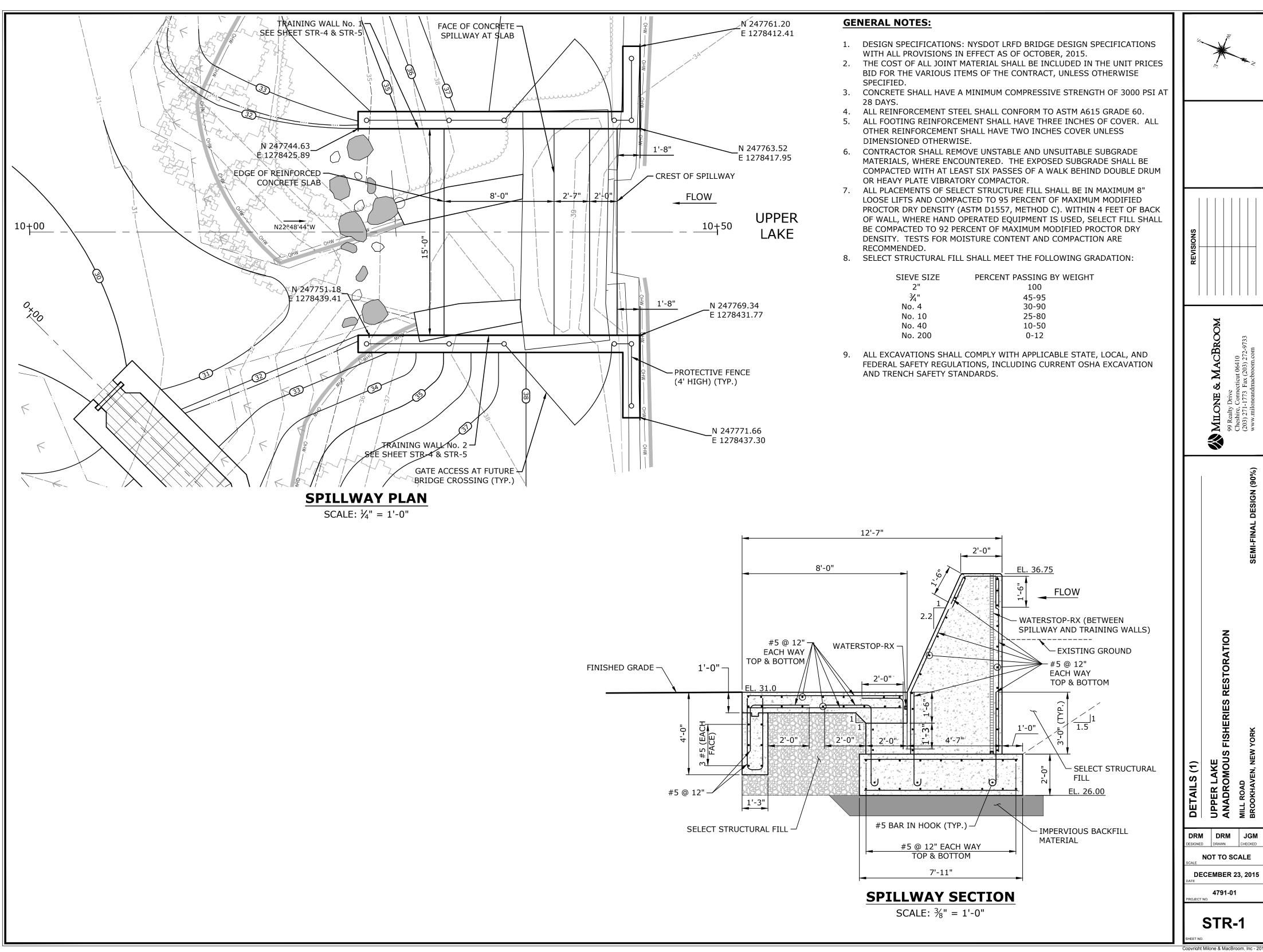
RES<sup>-</sup> S

UPPER LAKE
ANADROMOUS
MILL ROAD
BROOKHAVEN, NEV DRM JGM

S

NOT TO SCALE DECEMBER 23, 2015

4791-01



	В	BORING LO	OG NO. B-	1				Р	age 1 of 1
PF	ROJECT: Proposed Upper Lake Anadrom Restoration	ous Fisheries	CLIENT: Milone Chest	e & MacBroor hire, Connecti	n, Inc cut	•			
SI	TE: Mill Road Brookhaven, New York								
GRAPHIC LOG	LOCATION See Exhibit A-2  DEPTH		Approximate Surface	e Elev: 38.5 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS
	FILL - POORLY GRADED SAND WITH SILT, to brown, very loose to medium dense, (FILL)	race gravel, roots,	and organics, gray to		_		X	14	6-6-6-7 N=12
					_		X	8	7-8-8-2 N=16
					5 <del>-</del>	<u> </u>	X	4	1/12"-1/12" N=2
	8.0  POORLY GRADED SAND WITH SILT (SP-SM). dense, (GLACIAL OUTWASH)	, trace gravel, brow	n, loose to medium	30.5+/-	_ _ _		X	16	2-4-9-12 N=13
					10 <del>-</del>		X	4	3-4-5-9 N=9
					- - 15-				
					- -		Д	18	5-7-9-12 N=16
					20-				5-8-11-16
	22.0  Boring Terminated at 22 Feet			16.5+/-	-		Д	20	N=19
	Stratification lines are approximate. In-situ, the transition may Samples taken with a 2" O.D. split spoon sampler driven by a winch and cable.		d by						
3 1 Aband	/4-inch inside diameter hollow-stem augers.	See Exhibit A-3 for desconcedures. See Appendix B for desconcedures and addition See Appendix C for explabbreviations.	cription of laboratory al data (if any).	Notes:					
	WATER LEVEL OBSERVATIONS	71.		Boring Started: 8/24/	2015	E	Boring	Comp	leted: 8/24/2015
	4.5' While Drilling	ligit	acon	Drill Rig: Mobile B53			Oriller:	M. St.	. John
		15 Marway Ci Rochester,	rcle, Suite 2B	Project No.: J515512		E	Exhibit	: <i>P</i>	λ-4

PROJECT: Proposed Upper Lake Anadromous Fisheries Restoration  SITE: Mill Road Brookhaven, New York    COCATION   See Exhibit A 2		Page 1 of 1
LOCATION See Exhibit A-2    Comparison of the property of the		; <b>.</b>
FILL -POORLY GRADED SAND WITH SILT. trace gravel and wood, gray to brown, very loose to medium dense, (FILL)  5 —  POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, brown, medium dense to very dense, (GLACIAL OUTWASH)  10 —  15 —  20 —  21 —  22 —  30 —  31.4	SAMPLE TYPE RECOVERY (In.)	WATER LEVEL OBSERVATIONS SAMPLE TYPE RECOVERY (In.) FIELD TEST RESULTS
8.0  POORLY GRADED SAND WITH SILT (SP-SM). trace gravel, brown, medium dense to very dense, (GLACIAL OUTWASH)  10- 15- 20- 21- 30- 31.4	16	16 4-3-4-8 N=7
POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, brown, medium dense to very dense, (GLACIAL OUTWASH)  10- 15- 20- 25- 31.4	14	14 5-6-6-8 N=12
POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, brown, medium dense to very dense, (GLACIAL OUTWASH)  10- 15- 20- 25- 31.4	10	10 2-1-1-3 N=2
20- - - 20- - - - - - - - - - - - - - -	18	18 2-3-5-7 N=8
20	15	15 9-1-14-15 N=15
25	18	18 5-7-9-12 N=16
30-	20	20 5-8-11-16 N=19
31.4	16	16 9-14-16-1 N=30
Boring Terminated at 31.4 Feet	10	10 11-22-50/8
Stratification lines are approximate. In situ, the transition may be gradual		
Stratification lines are approximate. In-situ, the transition may be gradual.  Samples taken with a 2" O.D. split spoon sampler driven by a safety hammer operated by winch and cable.  ancement Method:  1/4-inch inside diameter hollow-stem augers.  See Exhibit A-3 for description of field procedures.  See Appendix B for description of laboratory procedures and additional data (if any).  See Appendix C for explanation of symbols and abbreviations.		
WATER LEVEL OBSERVATIONS  Boring Started: 8/24/2015  Boring Started: 8/24/2015	oring Cor	Boring Completed: 8/24/201
2 3.8' While Sampling Drill Rig: Mobile B53 Dr	riller: M.	Driller: M. St. John
15 Marway Circle, Suite 2B Rochester, New York Project No.: J5155126 Ex	xhibit:	Exhibit: A-5

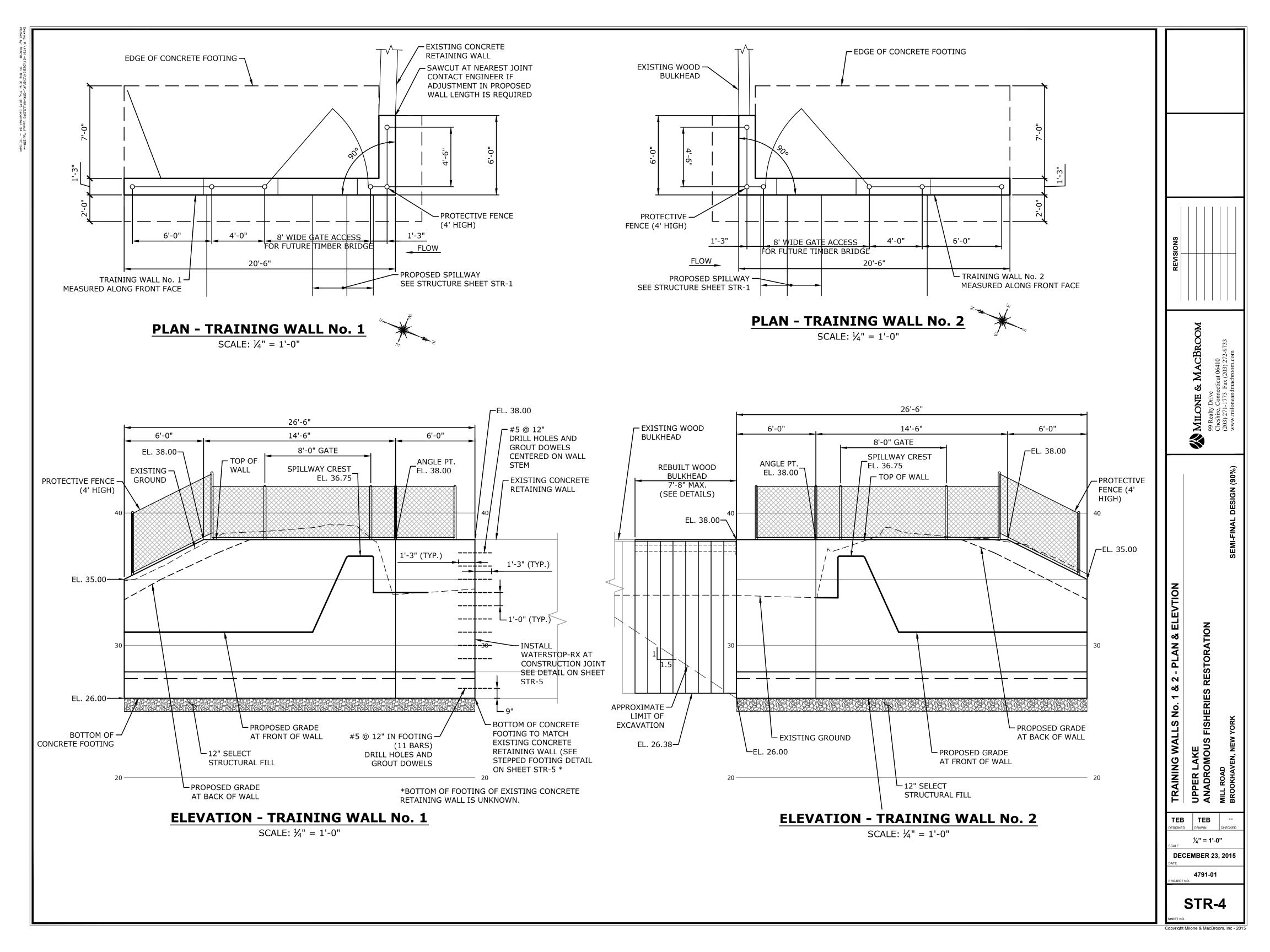
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MILL ROAD
BROOKHAVEN, NEW YORK TEB --DRAWN CHECKED NOT TO SCALE DECEMBER 23, 2015 **4791-01** STR-2

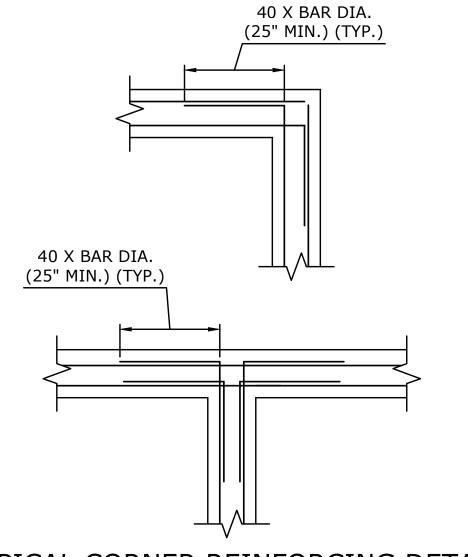
SHEET NO.

		BORING L	OG NO. B-	3				F	Page 1 of 1
PR	OJECT: Proposed Upper Lake Anadror Restoration	nous Fisheries	CLIENT: Milon Chesi	e & MacBroor nire, Connecti	n, Inc cut	·.			•
SIT	E: Mill Road Brookhaven, New York								
GRAPHIC LOG	LOCATION See Exhibit A-2  DEPTH		Approximate Surfa	ace Elev: 37 (Ft.) +/- ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS
	FILL - POORLY GRADED SAND WITH SILT , medium dense, (FILL)	trace gravel, gray to	brown, very loose to				X	12	6-6-4-2 N=10
					_		X	4	4-4-2-2 N=6
					5 <del>-</del> -	<u> </u>	X	6	1-1-1-4 N=2
	7.0  7.8 PEAT (PT), dark brown, loose  POORLY GRADED SAND WITH SILT (SP-SN (GLACIAL OUTWASH)	<u>I)</u> , trace gravel, brow	n, dense to very der	30+/- 29+/- nse,	_		$\bigvee$	12	4-7-15-14 N=22
					10- -		X	6	15-15-17-14 N=32
					- 15 <del>-</del>				
					-		X	12	15-40-50/5"
					20 <del>-</del>		$\bigvee$	16	17-21-16-18
	22.0  Boring Terminated at 22 Feet			15+/-	-		$\triangle$		N=37
	Stratification lines are approximate. In-situ, the transition ma Samples taken with a 2" O.D. split spoon sampler driven by winch and cable.		ed by				•	·	
3 1/ Aband	cement Method: 4-inch inside diameter hollow-stem augers. onment Method: ing backfilled with soil cuttings upon completion.	See Exhibit A-3 for desc procedures. See Appendix B for des procedures and addition See Appendix C for exp abbreviations.	cription of laboratory al data (if any).	Notes:					
	WATER LEVEL OBSERVATIONS	75		Boring Started: 8/24/	2015	E	Boring	Comp	oleted: 8/24/2015
V	4.5' While Drilling	llerr	acon	Drill Rig: Mobile B53					. John
			rcle, Suite 2B	Project No.: J515512		$\dashv$	Exhibi	topicetoritani	A-6

SIT		Proposed Upper Lake Anadrom Restoration Mill Road	nous Fisheries	CLIENT: Milon Ches	e & MacBroon hire, Connecti	n, Inc cut				
		Brookhaven, New York								
GRAPHIC LOG		N See Exhibit A-2		Approximate Surfac	e Elev: 38.5 (Ft.) +/-	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS
<b>***</b>	DEPTH FILL to me	- POORLY GRADED SAND WITH SILT, edium dense, (FILL)	trace gravel and wo	od, gray to brown, lo	ELEVATION (Ft.) DOSE	_		X	14	5-5-4-3 N=9
$\overset{\otimes}{\otimes}$						_	$\nabla$	X	10	2-6-6-4 N=12
$\overset{\otimes}{\otimes}$						5-		X	10	3-2-1-1 N=3
$\overset{\otimes}{\otimes}$	9.0				29.5+/-	_		$\bigvee$	14	2-4-6-9 N=10
$\widehat{\parallel}$	POO	RLY GRADED SAND WITH SILT (SP-SM) WASH)	, trace gravel, brow	n, dense, <b>(GLACIAL</b>		10-			10	12-16-14-14
						-		$\wedge$		N=30
						15 <del>-</del>		V	14	14-18-16-19 N=34
						_				14-04
						20-		V	16	12-17-20-20 N=37
<u>.</u>	22.0 <b>Borii</b>	ng Terminated at 22 Feet			16.5+/-	-		$\hookrightarrow$		IN-37
		on lines are approximate. In situ, the transition may	v be gradual							
	Stratificati	on lines are approximate. In-situ, the transition may		ed by						
		aken with a 2" O.D. split spoon sampler driven by a cable.	satety hammer operate							
	Samples t winch and cement Meth	cable. iod: diameter hollow-stem augers.	See Exhibit A-3 for desc procedures. See Appendix B for desc procedures and addition	cription of laboratory al data (if any).	Notes:					
3 1/4 band	Samples t winch and cement Meth 4-inch inside onment Meth ng backfilled	cable. lod: diameter hollow-stem augers. lod: with soil cuttings upon completion.	See Exhibit A-3 for desc procedures. See Appendix B for desc	cription of laboratory al data (if any).	Notes:		1			
3 1/4	Samples t winch and cement Meth 4-inch inside onment Meth ing backfilled	cable. lod: diameter hollow-stem augers. lod:	See Exhibit A-3 for desc procedures. See Appendix B for desc procedures and addition See Appendix C for exp abbreviations.	cription of laboratory al data (if any).	Notes:  Boring Started: 8/24/2  Drill Rig: Mobile B53		_	Boring Priller:		leted: 8/24/2015

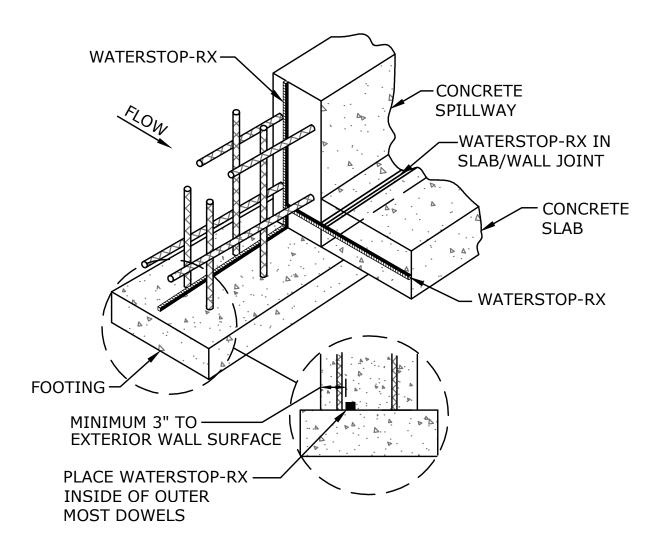
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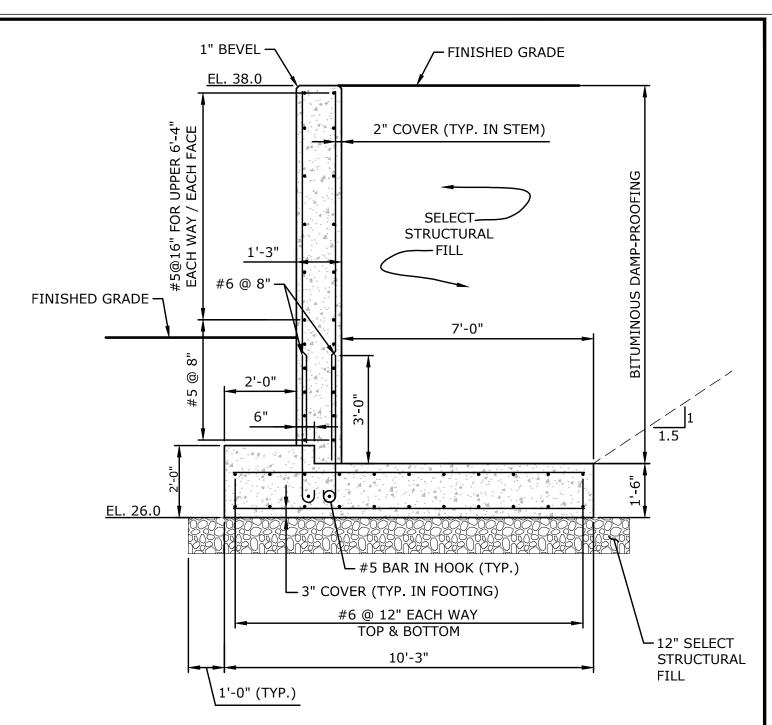




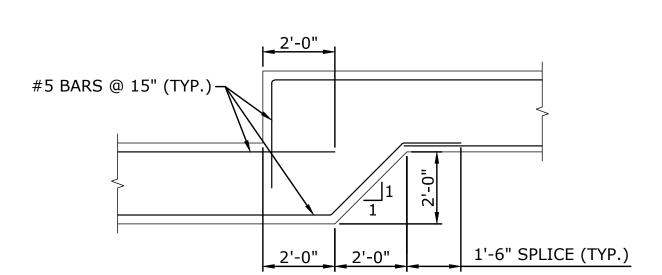
NOT TO SCALE



VOLCLAY WATER-RX (OR APPROVED EQUAL) WATERSTOP DETAIL
NOT TO SCALE



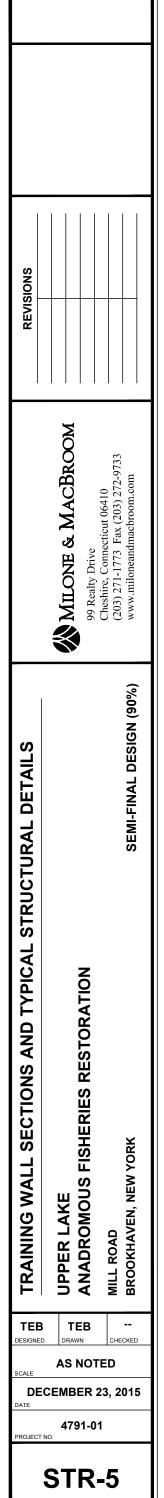
**TYPICAL SECTION - TRAINING WALL No. 1 & 2** SCALE: 3/8" = 1'-0"

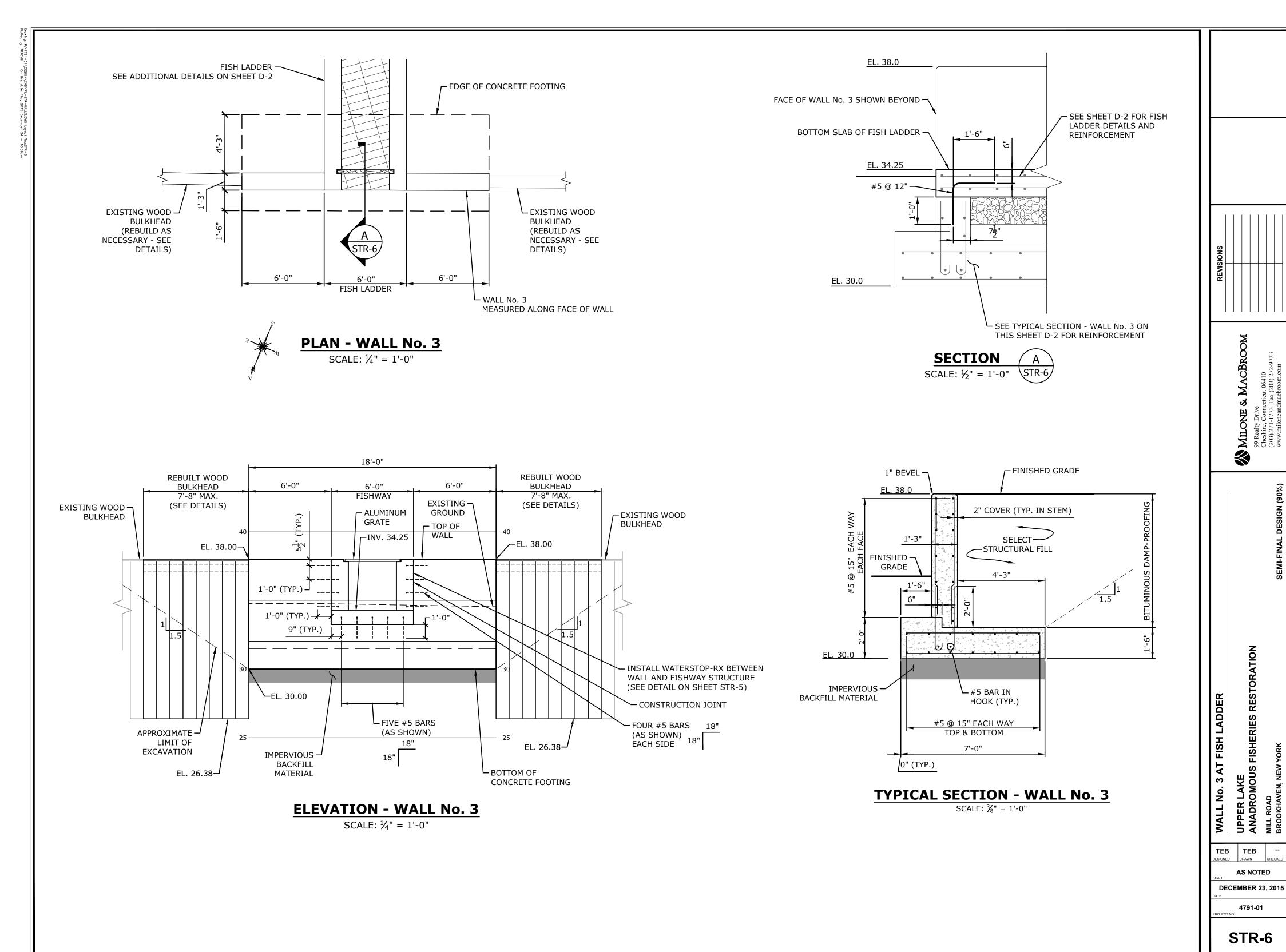


#### **NOTE**

FOR THE PURPOSE OF CLARITY, ONLY LONGITUDINAL BARS ARE SHOWN

# STEPPED FOOTING DETAIL (2 FT OR LESS) NOT TO SCALE





SHEET NO.

### STEEL PLATE CONNECTION TO CONCRETE WALL

SCALE:  $\frac{3}{4}$ " = 1'-0"

#### **SPECIFICATIONS**

#### PART 1 - GENERAL

<u>DESCRIPTION OF WORK:</u> REBUILD WOOD BULKHEAD CONSTRUCTION INCLUDES THE FOLLOWING TYPES OF WORK: PROVIDE SHOP DRAWINGS AS INDICATED ON PLANS, FURNISH AND INSTALL WOOD AND STEEL FRAMING AND ALL CONNECTION AND FASTENING HARDWARE.

#### **REFERENCES:**

<u>LUMBER STANDARDS:</u> COMPLY WITH APPLICABLE RULES OF THE RESPECTIVE GRADING AND INSPECTING AGENCIES FOR SPECIES AND PRODUCTS INDICATED.

#### **SUBMITTALS:**

PRODUCT DATA: SUBMIT MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR MATERIALS LISTED BELOW:

WOOD TREATMENT DATA: SUBMIT TREATMENT MANUFACTURER'S INSTRUCTIONS FOR PROPER USE OF EACH TYPE OF TREATED MATERIAL.

<u>PRESSURE TREATMENT:</u> FOR EACH TYPE SPECIFIED, INCLUDE CERTIFICATION BY TREATING PLANT STATING CHEMICALS AND PROCESS USED, NET AMOUNT OF PRESERVATIVE RETAINED AND CONFORMANCE WITH APPLICABLE STANDARDS.

#### PRODUCT HANDLING:

<u>DELIVERY AND STORAGE:</u> KEEP MATERIALS DRY AT ALL TIMES. PROTECT AGAINST EXPOSURE TO WEATHER AND CONTACT WITH DAMP OR WET SURFACES. STACK LUMBER AND PROVIDE AIR CIRCULATION WITHIN STACKS.

#### PART 2 - PRODUCTS

#### MATERIALS:

#### **LUMBER, GENERAL:**

<u>FACTORY MARK:</u> EACH PIECE OF LUMBER WITH TYPE, GRADE, MILL AND GRADING AGENCY, EXCEPT OMIT MARKING FROM SURFACES TO BE EXPOSED WITH TRANSPARENT FINISH OR WITHOUT FINISH.

NOMINAL SIZES: ARE INDICATED, EXCEPT AS SHOWN BY DETAIL DIMENSIONS. PROVIDE ACTUAL SIZES.

PROVIDE DRESSED LUMBER: S4S, UNLESS OTHERWISE INDICATED.

PROVIDE SEASONED LUMBER: WITH 19% MAXIMUM MOISTURE CONTENT AT THE TIME OF DRESSING.

#### PROVIDE SOUTHERN PINE LUMBER:

ALL TIMBER FOR BULKHEAD SYSTEM TO BE No. 1 GRADE SOUTHERN YELLOW PINE. APWA USE CATEGORY AND EXPOSURE CATEGORY SHALL BE UC4B GROUND/FRESHWATER CONTACT.

#### MISCELLANEOUS MATERIALS:

<u>FASTENERS AND ANCHORAGES:</u> PROVIDE SIZE, TYPE, MATERIAL AND FINISH AS INDICATED AND AS RECOMMENDED BY APPLICABLE STANDARDS, COMPLYING WITH APPLICABLE FEDERAL SPECIFICATIONS FOR NAILS, STAPLES, SCREWS, BOLTS, NUTS, WASHERS AND ANCHORING DEVICES. ALL FASTENERS AND ANCHORAGES SHALL BE TYPE 316 STAINLESS STEEL.

WOOD PRESERVATIVE TREATMENT: .60 ACQ-C PER AWPA STANDARDS.

COAT ALL CUT ENDS AND FIELD DRILLED HOLES: SOUTHERN YELLOW PINE: APPLY ACQ WOOD PRESERVATIVE. FILL COUNTERSUNK HOLES WITH SEALANT.

#### PART 3 - EXECUTION

#### **MATERIALS**

#### **GENERAL:**

<u>DISCARD UNITS OF MATERIAL:</u> WITH DEFECTS WHICH MIGHT IMPAIR QUALITY OF WORK, AND UNITS WHICH ARE TOO SMALL TO USE IN FABRICATING WORK.

SET WORK: ACCURATELY TO REQUIRED LEVELS AND LINES, WITH MEMBERS PLUMB AND TRUE AND ACCURATELY CUT AND FITTED.

SECURELY ATTACH WORK: COUNTERSINK HARDWARE WHERE INDICATED AND FILL HOLES. INSTALL FASTENERS WITHOUT SPLITTING OF WOOD; PREDRILL AS REQUIRED.

#### ATTACH 2X12 CAP WITH #10X 3" LONG -STAINLESS STEEL WOOD SCREWS STAGGERED SPACING AT 12" 7'-8" (MAX.) 10 ½" X 10" X ½" THICK GALVANIZED STEEL PLATE SEE STEEL PLATE CONNECTION **DETAIL ON THIS SHEET** 3" MEASURED FROM FACE OF STEEL PLATE EXISTING WOOD BULKHEAD -- ⅓" MOLDED PAD BETWEEN AT BRACED LOCATION $1'-9\frac{1}{4}"$ 1'-9<del>|</del> 1'-9<del>\frac{1}</del>" 1'-9<del>\</del>\_' STEEL PLATE AND WALL 0 - --COUNTERSUNNK ½" Ø X 9" LONG − 5" EMBEDMENT STAINLESS STEEL HEX BOLT FASTEN THROUGH HSS 5X5 MEMBER WITH NUT AND WASHER (TYP.) - CONCRETE WALL 5<del>3</del>" 11½" 4X12 TIMBER SHEETING ~ - 6" OVERLAP OF CONCRETE WALL AND WOOD BULKHEAD - GALVANIZED STEEL HSS 5X5X ⅓" 9/16" Ø SHOP-DRILLED HOLE FRONT AND PROVIDE NOTCH IN BACK OF HSS PRIOR TO HOT-DIPPED CONCRETE WALL FOR TIMBER ► 9/16" Ø SHOP-DRILLED HOLE TOP AND GALVANIZING (TYP.) SHEETING BOTTOM PRIOR TO HOT-DIPPED GALVANIZING (TYP.)

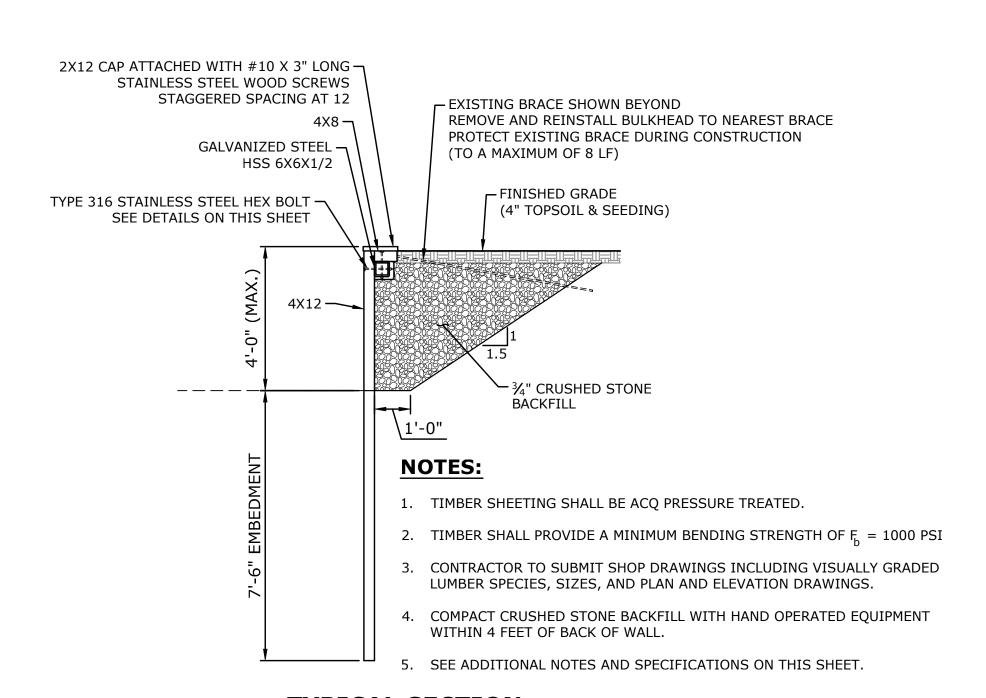
NOTE

1. HOT-DIP GALVANIZING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A123.

- 2. ALL HARDWARE SHALL BE TYPE 316 STAINLESS STEEL.
- 3. MOLDED PADS SHALL BE MANUFACTURED FROM NEW UNVULCANIZED ELASTOMER AND UNUSED SYNTHETIC FIBERS, WITH A WEIGHT PROPORTION OF FIBER CONTENT EQUAL TO APPROXIMATELY ONE-HALF OF THE TOTAL WEIGHT OF THE PAD. THE PADS SHALL BE FORMED INTO SINGLE SHEETS OF 1/8" MINIMUM THICKNESS, WITH A TOLERANCE OF PLUS OR MINUS 10 PERCENT. PADS SHALL HAVE A SHORE 'A' DUROMETER HARDNESS WITHIN THE RANGE OF 70 TO 90, AND SHALL HAVE A MINIMUM COMPRESSIVE BREAKDOWN OF 7,000 PSI.

#### WOOD BULKHEAD ATTACHMENT TO STEEL BEAM

SCALE:  $\frac{3}{4}$ " = 1'-0"

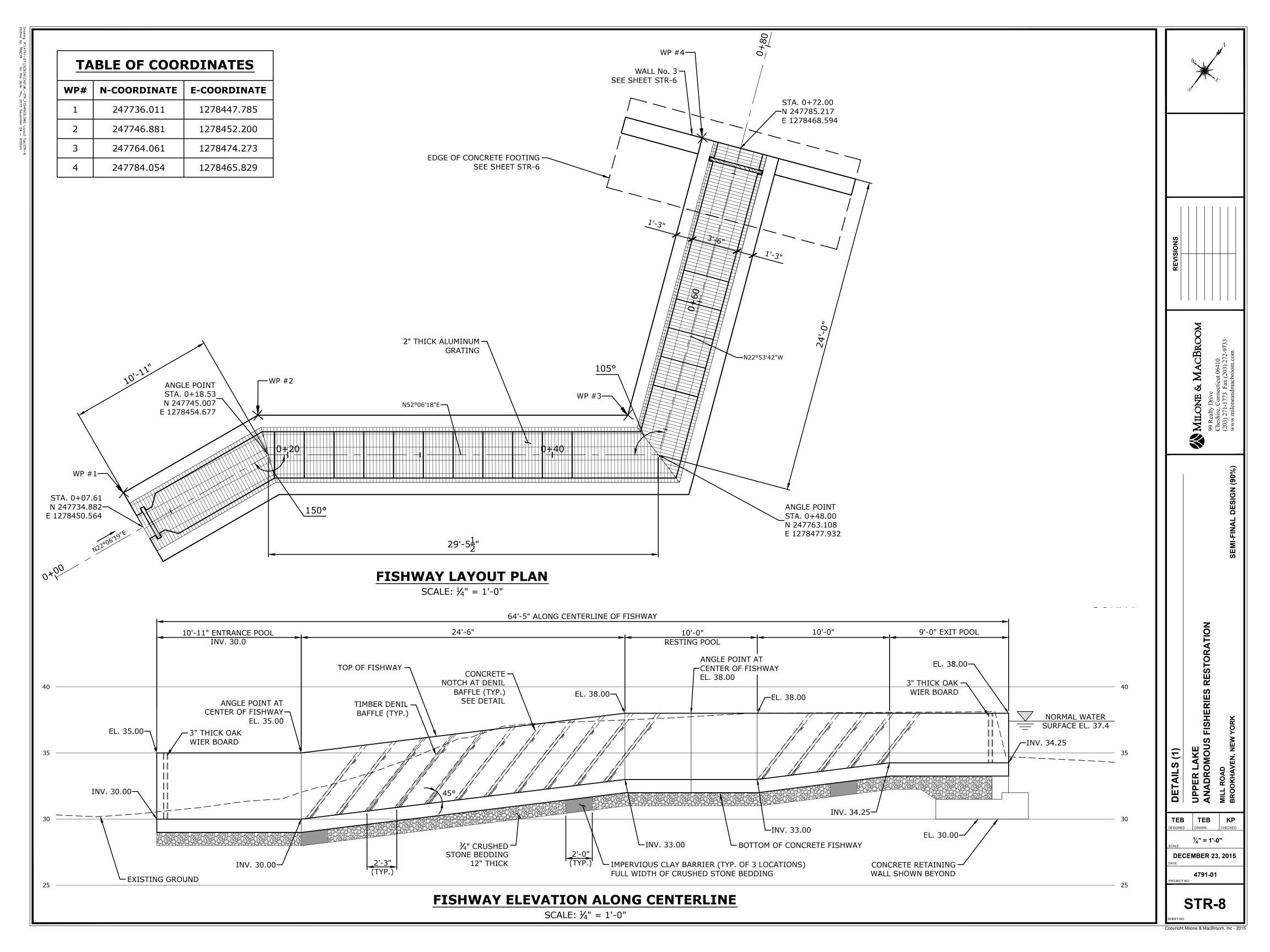


# TYPICAL SECTION REBUILT WOOD BULKHEAD

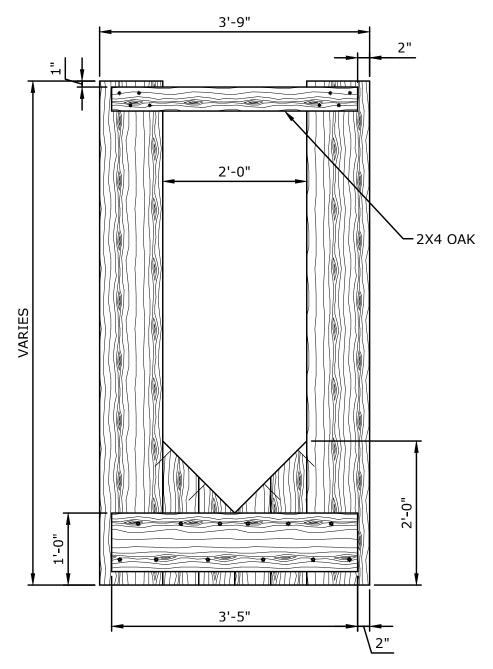
SCALE:  $\frac{3}{8}$ " = 1'-0"

& MACBROOM MILONE BULKH UPPER LAKE ANADROMOUS WOOD TEB **AS NOTED DECEMBER 23, 2015** STR-7

SHEET NO.

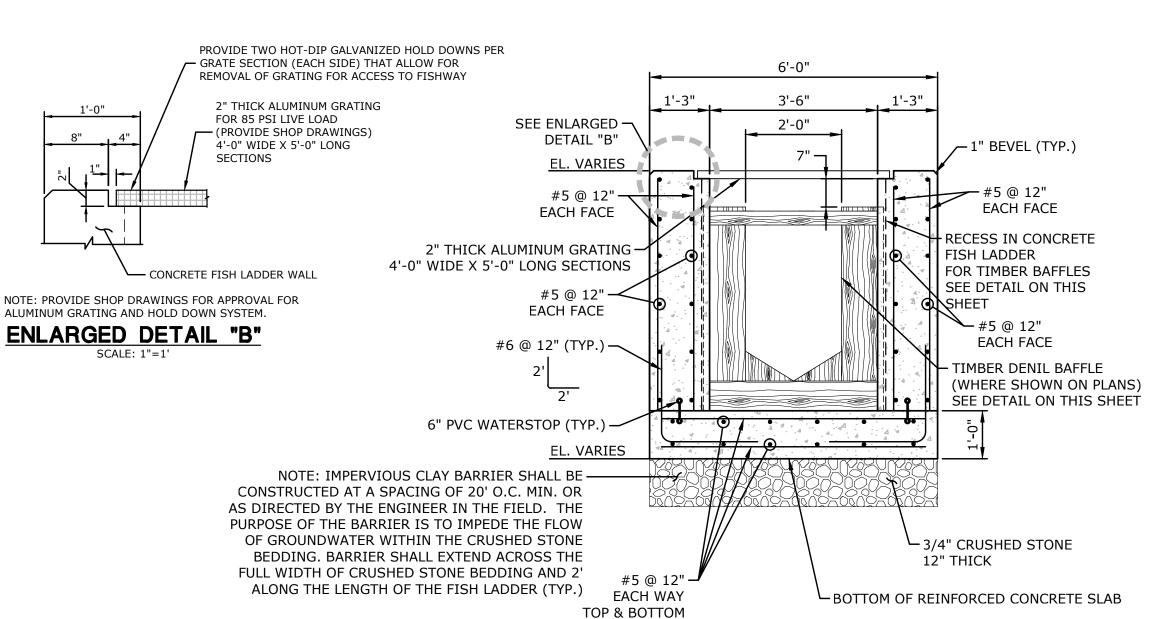


TYPICAL RECESS CONCRETE FISH LADDER WALL **DETAIL AT DENIL BAFFLE** 



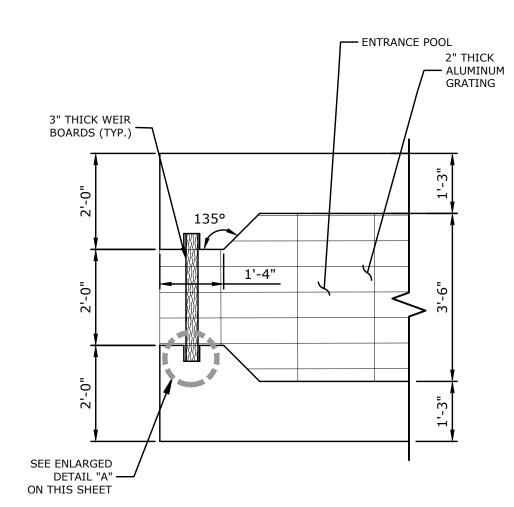
# **TIMBER DENIL BAFFLE**

SCALE:  $\frac{3}{4}$ " = 1'-0"

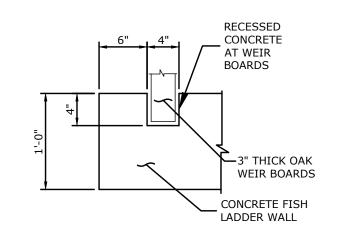


### **TYPICAL FISH LADDER SECTION**

SCALE:  $\frac{1}{2}$ " = 1'-0"

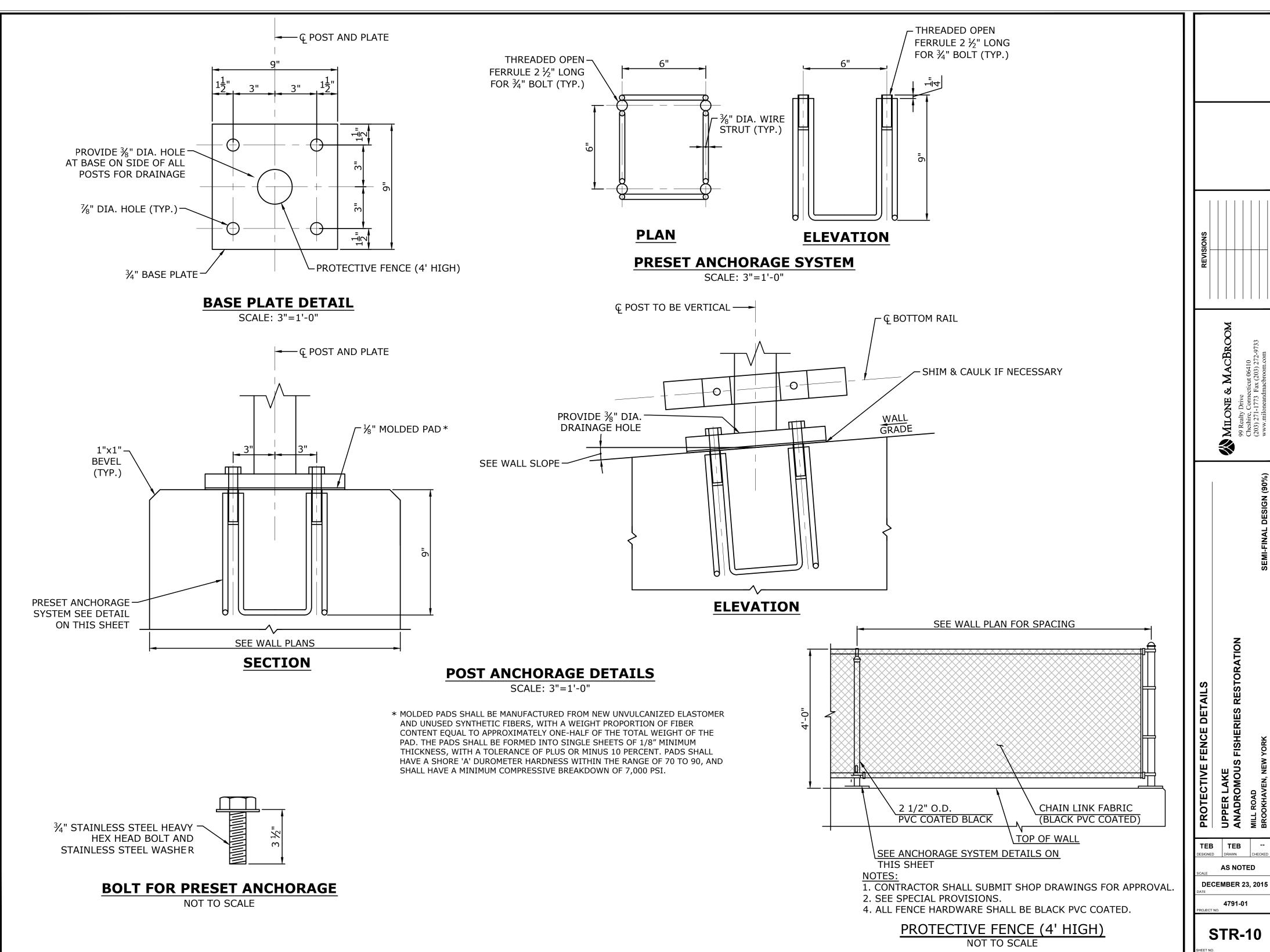


# FISHWAY ENTRANCE AND POOL



**ENLARGED DETAIL "A"** 

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www.miloneandmacbroom.com **REST** FISHWAY DETAIL UPPER LAKE ANADROMOUS F TEB **AS NOTED DECEMBER 23, 2015** STR-9



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