APPENDIX D

Concept Plans

Concord River Diadromous Fish Restoration Feasibility Study

CONCORD RIVER

ISLAND
(NOT SURVEYED)

CONC. WALL
EL 69.1

CONC. SILL
EL. 54.9

STEEL BEAMS

CONC. WALL
EL. 63.9

CONC. WALL
EL. 67.9

CONC. WALL
EL. 69.1

FORMER RACEWAY

CONC. WALL
EL. 67.2

LEDGE OUTCROP
MIN CH. EL. 58.0

TOE OF WINGWALL
EL. 52.0

GRANITE BLOCKS AT
END OF BREACHED DAM

TOP OF WINGWALL
EL. 63.7

TOP OF BREACHED
MIDDLESEX DAM EL. 64.6

WOOD BEAM 57.2

LARGE BOULDER
CREATING POOL

TOE OF DAM EL. 56.8

BM EL. 67.50
NAVD 88

BANKFULL WIDTH

APPROX. LOCATION
OF LEFT ABUTMENT
(NOT SURVEYED)

BOULDER SUBSTRATE

BOULDER

BANKFULL WIDTH

GRAVEL

CEMENT RUBBLE

GRAVEL BOTTOM
IN HEAD FLOW

SITE PLAN LEGEND

MAJOR CONTOUR	110
MINOR CONTOUR	108
TOP OF BANK (TOB) MEAN ANNUAL HIGH WATER (MAHW) ORDINARY HIGH WATER (OHW)	
LEDGE	
LIMIT OF LAND UNDER WATER	

NOTES:
1. CHANNEL TOPOGRAPHY AND DAM ABUTMENT ELEVATIONS FROM A 7/2000 PLAN BY NRCS.
2. ADDITIONAL SPOT ELEVATIONS FROM A 10/6/2014 SURVEY BY GOMEZ AND SULLIVAN ENGINEERS, DPC,
3. UPLAND TOPOGRAPHY DERIVED FROM LIDAR DATA COLLECTED 12/2010. NOTE THIS IS NOT CONTINUOUS IN THE CHANNEL AND ISLAND AREAS.
4. VERTICAL DATUM: NAVD 88 (FT).
5. HORIZONTAL DATUM: NAD 93 STATE PLANE MA MAINLAND (FT).
6. BENCHMARK IS A CHISELED SQUARE ON NORTHWEST END OF BREACHED DAM ON TOP OF WINGWALL, MAINLAND SIDE OF DAM, 8 FT FROM CHAIN LINK FENCE ON WARREN STREET. ASSUMED ELEV. 67.50 FT NAVD 88.

30' 0 30'

SCALE: 1" = 30'

CONCEPTUAL NOT FOR CONSTRUCTION

ISSUE	DESCRIPTION	BY	APP

DRAWN BY:	BAS / JSC
CHECKED BY:	JWG
APPROVED BY:	JWG
PROJECT NO.	1647 DATE: 2/22/16

CONCORD RIVER
DIADROMOUS FISH RESTORATION

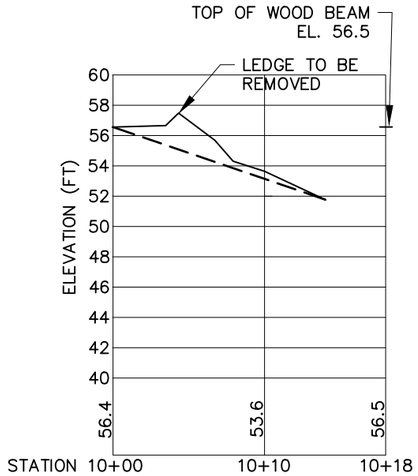
MIDDLESEX FALLS
EXISTING CONDITIONS PLAN

Massachusetts Dept. of Fish and Game,
Div. of Marine Fisheries
251 Causeway Street Suite 400
Boston, MA 02114

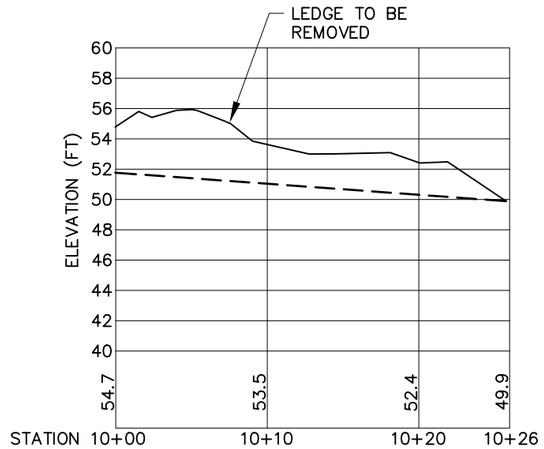
Gomez and Sullivan Engineers, DPC
41 Liberty Hill Road
PO Box 2179
Henniker, NH 03242

SCALE: 1" = 30'

DRAWING: 1



1/2 PROFILE 1A
1" = 10'



2/2 PROFILE 1
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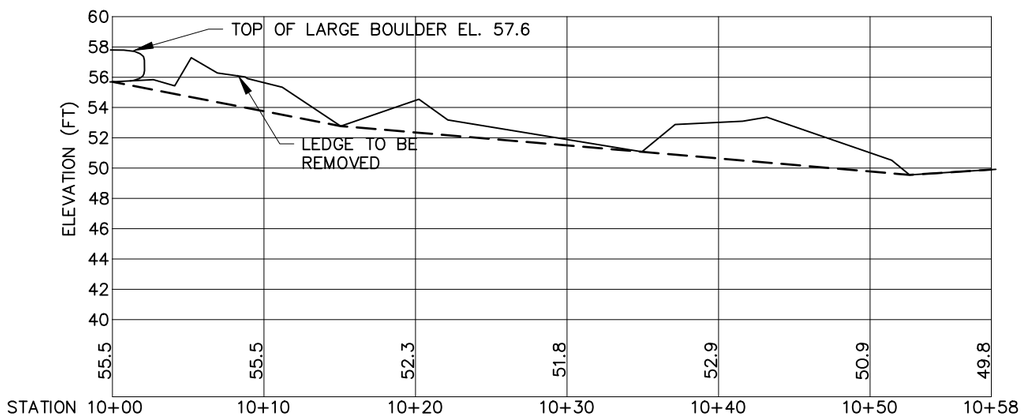
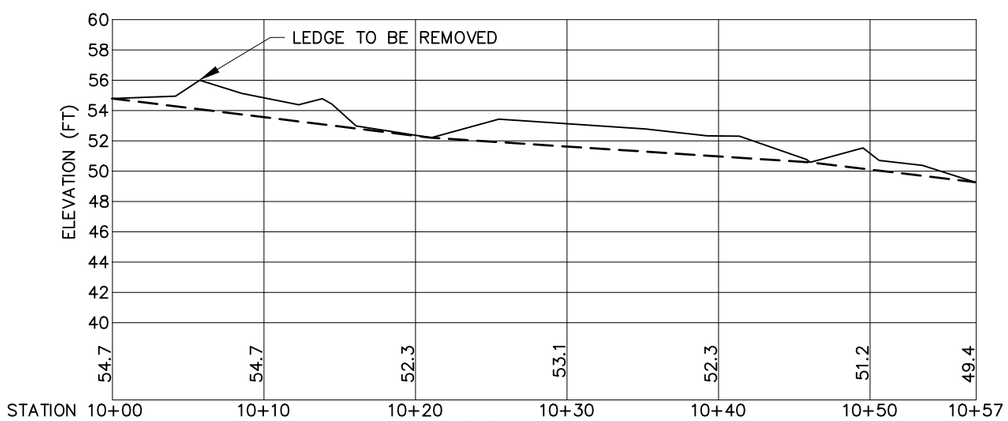
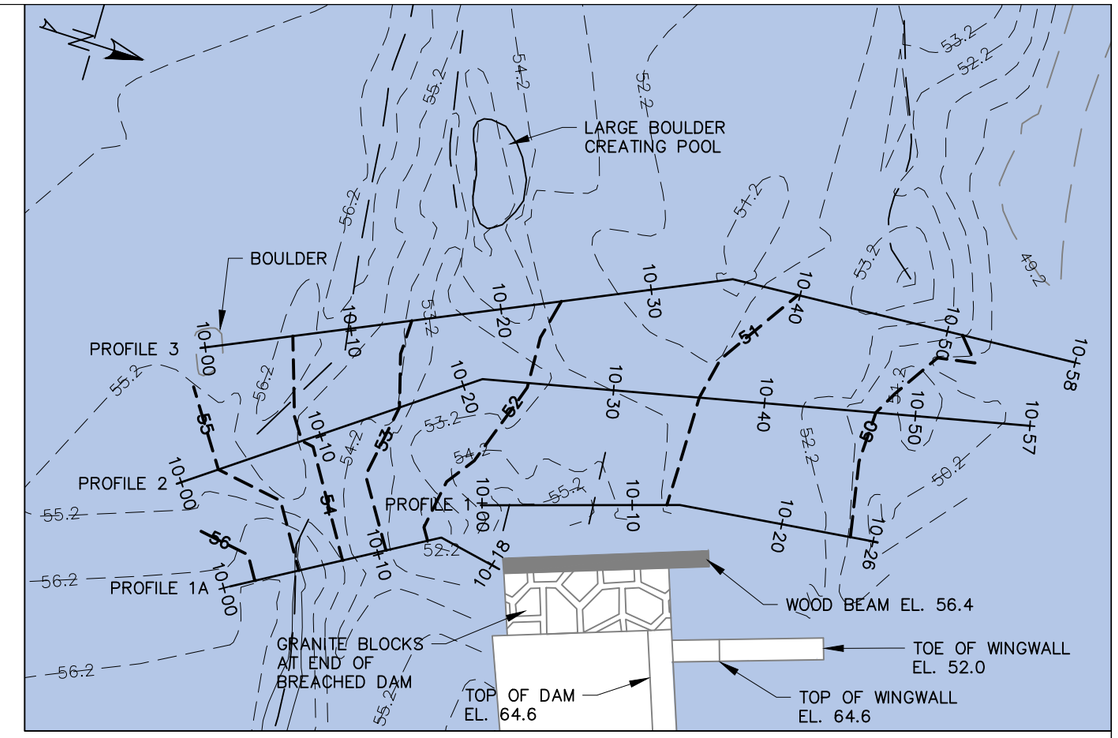


3/2 PROFILE 2
1" = 10'



4/2 PROFILE 3
1" = 10'



SITE PLAN LEGEND

MAJOR CONTOUR	110
MINOR CONTOUR	108
LEDGE	
PROPOSED GRADE	
PROPOSED CONTOUR	
LIMIT OF LAND UNDER WATER	

ALL ELEVATIONS ARE IN NAVD 88 (FT)

10' 0 10'

SCALE: 1" = 10'

CONCEPTUAL NOT FOR CONSTRUCTION

ISSUE	DESCRIPTION	BY	APP

DRAWN BY:	BAS / JSC		
CHECKED BY:	JWG		
APPROVED BY:	JWG		
PROJECT NO.	1647	DATE: 2/22/16	

CONCORD RIVER
DIADROMOUS FISH RESTORATION

ALTERNATIVE 1A
MIDDLESEX FALLS
PROPOSED PLAN/SECTIONS

Massachusetts Dept. of Fish and Game,
Div. of Marine Fisheries
251 Causeway Street Suite 400
Boston, MA 02114

Gomez and Sullivan Engineers, DPC
41 Liberty Hill Road
PO Box 2179
Henniker, NH 03242

SCALE: 1" = 10'

DRAWING: 2

FAULKNER MILLS COMPLEX

STILLING BASIN

CB R = 114.0

103.8

100.8

OUTLET GATE

STONE WALL

CB R = 113.4

CB R = 113.4

104.6

CONC. WEIR WITH SLUICE GATE

FOOTBRIDGE

SLUICEWAY

BIT. CONC.

CONC. SIDEWALK

STONE RETAINING WALL

GAZEBO

101.8

101.8

FORMER FISHWAY LOCATION

100.2

CONCRETE ABUTMENT

GRANITE CAPSTONE

CONCORD RIVER

FAULKNER STREET

99.7

95.5

96.2

98.9

97.0

96.7

113.8

GRANITE MASONRY SPILLWAY APPROX. CREST EL. 108.2 FT

APPROX. LOCATION OF 1798 WOOD FRAME\ROCK FILL DAM REPORTEDLY SUBMERGED 8–12 FT UPSTREAM. APPROX. CREST EL. 107.0–107.2 FT

ROCK FILL REPORTEDLY PLACED BETWEEN DAMS

GRANITE ABUTMENT

APPROX. LOCATION OF IRON BOLT BENCHMARK EL. 108.81 FT NAVD 88

PARKING LOT

TALBOT MILLS COMPLEX

IMPOUNDMENT (MILL POND)

FORMER INTAKE STRUCTURE

OLD WAREHOUSE

NOTES:

1. STRUCTURE ELEVATIONS, IMPOUNDMENT BATHYMETRY, AND SPOT ELEVATION BELOW CONCRETE ABUTMENT FROM A 10/6/2014 SURVEY BY GOMEZ AND SULLIVAN ENGINEERS, DPC.
2. SPOT ELEVATIONS ALONG FAULKNER STREET BRIDGE FROM SURVEY DATA COLLECTED FOR THE 2014 FLOOD INSURANCE STUDY BY THE STRATEGIC ALLIANCE FOR RISK REDUCTION (STARR). DETAILED CHANNEL TOPOGRAPHY DOWNSTREAM OF DAM NOT OBTAINED.
3. SITE LAYOUT AND ALL OTHER ELEVATIONS FROM A 4/14/2009 SURVEY BY EAGLEBROOK ENGINEERING & SURVEY, LLC FOR GEOTECHNICAL CONSULTANTS, INC IN A 5/22/2009 DAM SAFETY REPORT.
4. UPLAND TOPOGRAPHY DERIVED FROM LIDAR DATA COLLECTED 12/2010.
5. VERTICAL DATUM: NAVD 88 (FT)
6. HORIZONTAL DATUM: NAD 93 STATE PLANE MA MAINLAND (FT)

LEGEND

MAJOR CONTOUR	110
MINOR CONTOUR	108
TOP OF BANK (TOB) MEAN ANNUAL HIGH WATER (MAHW) ORDINARY HIGH WATER (OHW)	
CONCRETE	
STONE MASONRY	
TREELINE	
PROPERTY LINE	
OVERHEAD ELECTRIC LINES	OHE
LIMIT OF LAND UNDER WATER	
SPOT ELEVATION	+

40' 0 40'

SCALE: 1" = 40'

CONCEPTUAL NOT FOR CONSTRUCTION

ISSUE	DESCRIPTION	BY	APP

DRAWN BY:	BAS / JSC
CHECKED BY:	JWG
APPROVED BY:	JWG
PROJECT NO.	1647 DATE: 2/22/16

CONCORD RIVER DIADROMOUS FISH RESTORATION

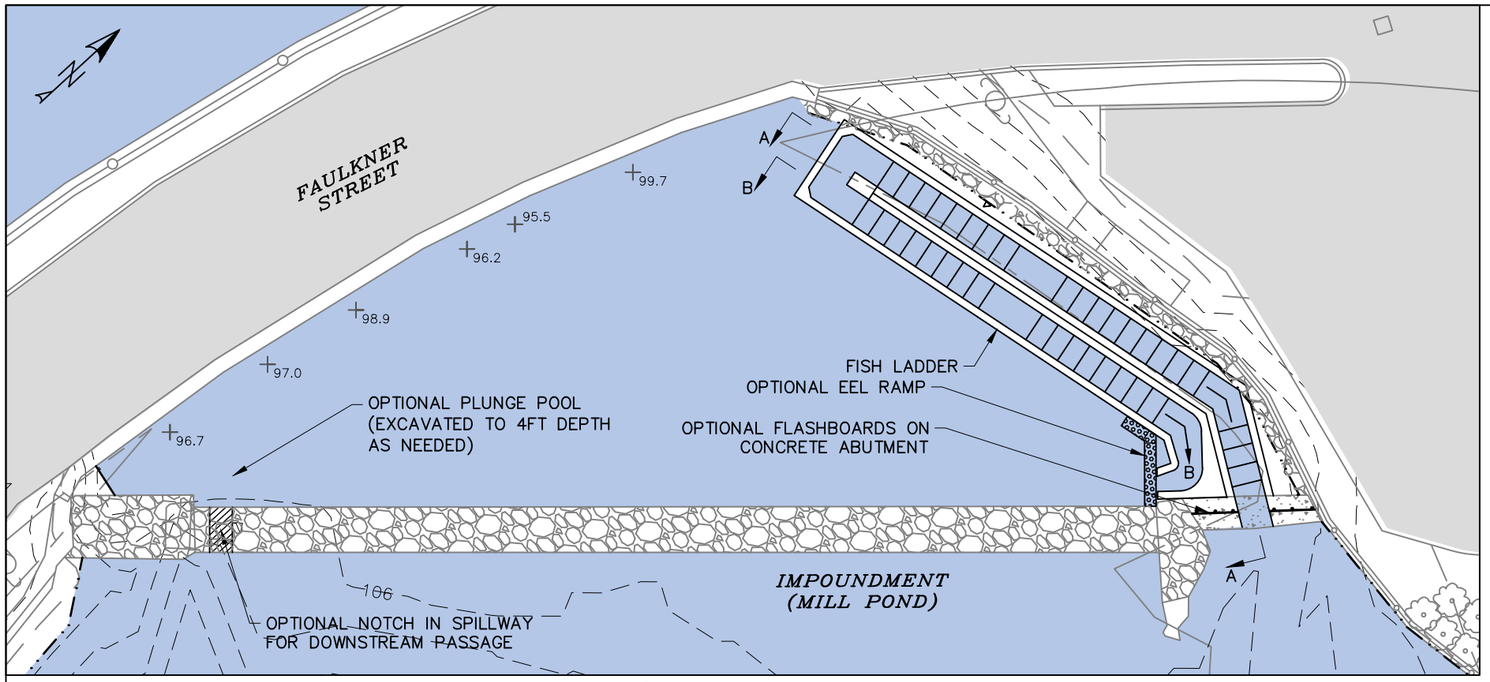
TALBOT MILLS DAM EXISTING CONDITIONS PLAN

Massachusetts Dept. of Fish and Game, Div. of Marine Fisheries
251 Causeway Street Suite 400
Boston, MA 02114

Gomez and Sullivan Engineers, DPC
41 Liberty Hill Road
PO Box 2179
Henniker, NH 03242

SCALE: 1" = 40'

DRAWING: 3

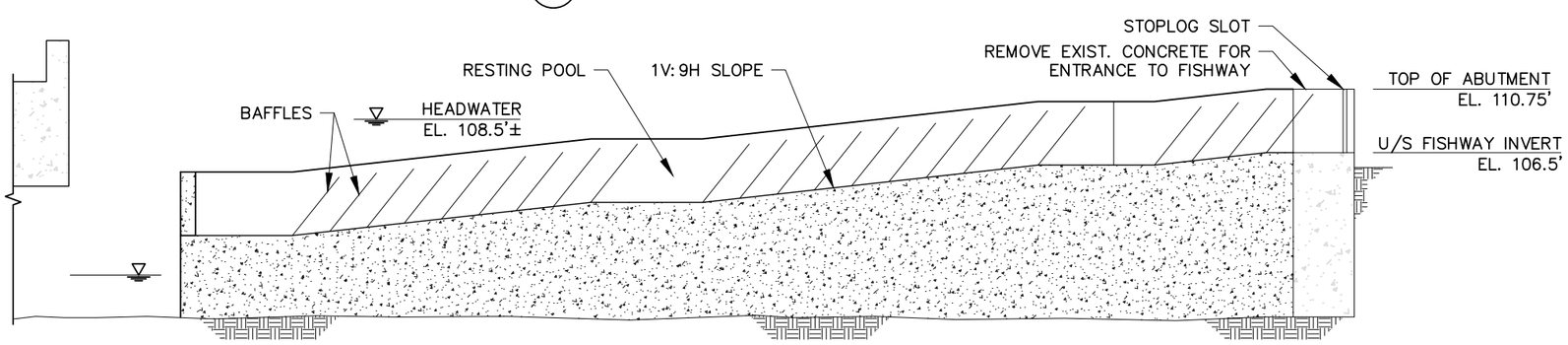


1/2 FISHWAY SITE PLAN
1" = 20'

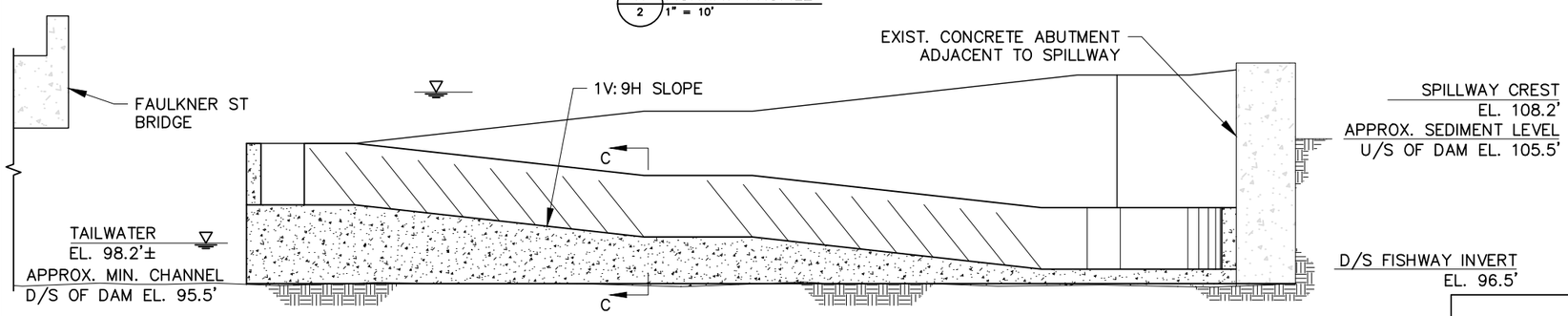
LEGEND

MAJOR CONTOUR	110
MINOR CONTOUR	108
TOP OF BANK (TOB) MEAN ANNUAL HIGH WATER (MAHW) ORDINARY HIGH WATER (OHW)	
CONCRETE	
STONE MASONRY	
TREELINE	
PROPERTY LINE	
OVERHEAD ELECTRIC LINES	OHE OHE OHE
LIMIT OF LAND UNDER WATER	
SPOT ELEVATION	+

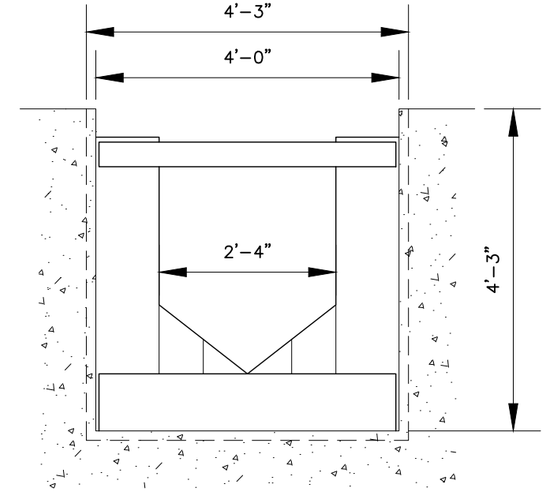
ALL ELEVATIONS ARE IN NAVD 88 (FT)



A/2 FISHWAY PROFILE
1" = 10'



B/2 FISHWAY PROFILE
1" = 10'



C/2 TYP. BAFFLE SECTION
1" = 10'

NOTE: HEADWATER AND TAILWATER SHOWN ARE APPROXIMATE AND BASED ON MODELED FLOW DURING UPSTREAM MIGRATION PERIOD (APRIL 15 TO JULY 15) FOR 95% EXCEEDENCE FLOW (105 CFS).

CONCEPTUAL NOT FOR CONSTRUCTION

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APPROVED BY:	JWG
PROJECT NO.	1647 DATE: 2/22/16

CONCORD RIVER
DIADROMOUS FISH RESTORATION

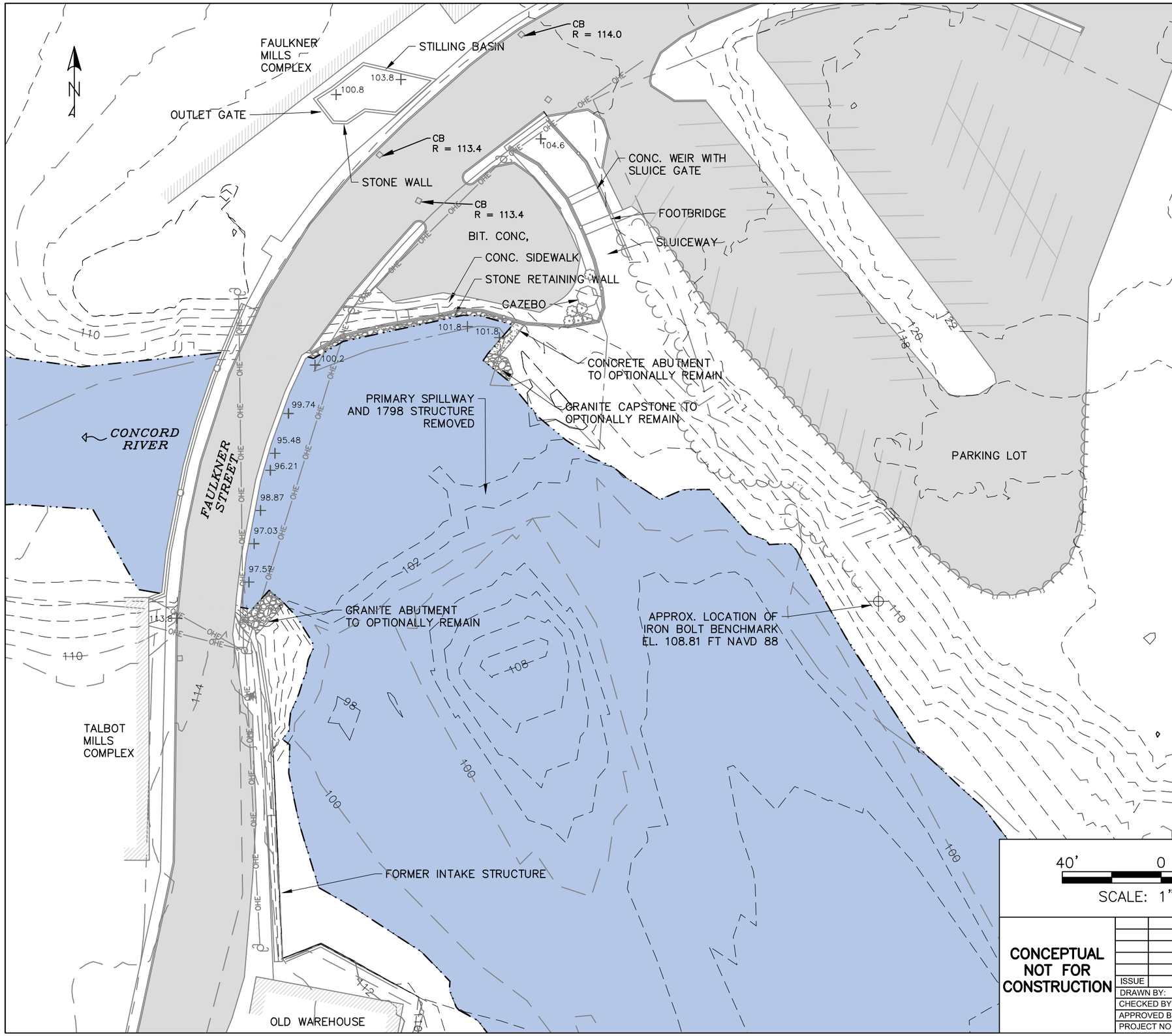
ALTERNATIVE 3A
TALBOT MILLS DAM
FISHWAY PLAN

Massachusetts Dept. of Fish and Game, Div. of Marine Fisheries
251 Causeway Street Suite 400
Boston, MA 02114

Gomez and Sullivan Engineers, DPC
41 Liberty Hill Road
PO Box 2179
Henniker, NH 03242

SCALE: AS NOTED

DRAWING: 4



NOTES:

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LEGEND

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MINOR CONTOUR	108
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CONCRETE	
STONE MASONRY	
TREELINE	
PROPERTY LINE	
OVERHEAD ELECTRIC LINES	OHE
LIMIT OF LAND UNDER WATER	
SPOT ELEVATION	+

40' 0 40'

SCALE: 1" = 40'

CONCEPTUAL NOT FOR CONSTRUCTION

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CONCORD RIVER DIADROMOUS FISH RESTORATION

ALTERNATIVE 3B TALBOT MILLS DAM REMOVAL PLAN

Massachusetts Dept. of Fish and Game, Div. of Marine Fisheries
251 Causeway Street Suite 400
Boston, MA 02114

Gomez and Sullivan Engineers, DPC
41 Liberty Hill Road
PO Box 2179
Henniker, NH 03242

SCALE: 1" = 40'

DRAWING: 5