

# LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT SLATER MILL FISHWAY

PAWTUCKET, RHODE ISLAND

PREPARED FOR:

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
THROUGH THE BLACKSTONE RIVER WATERSHED COUNCIL

## PROJECT PARTNERS



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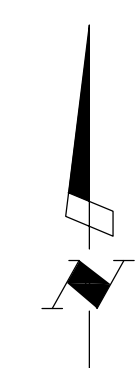
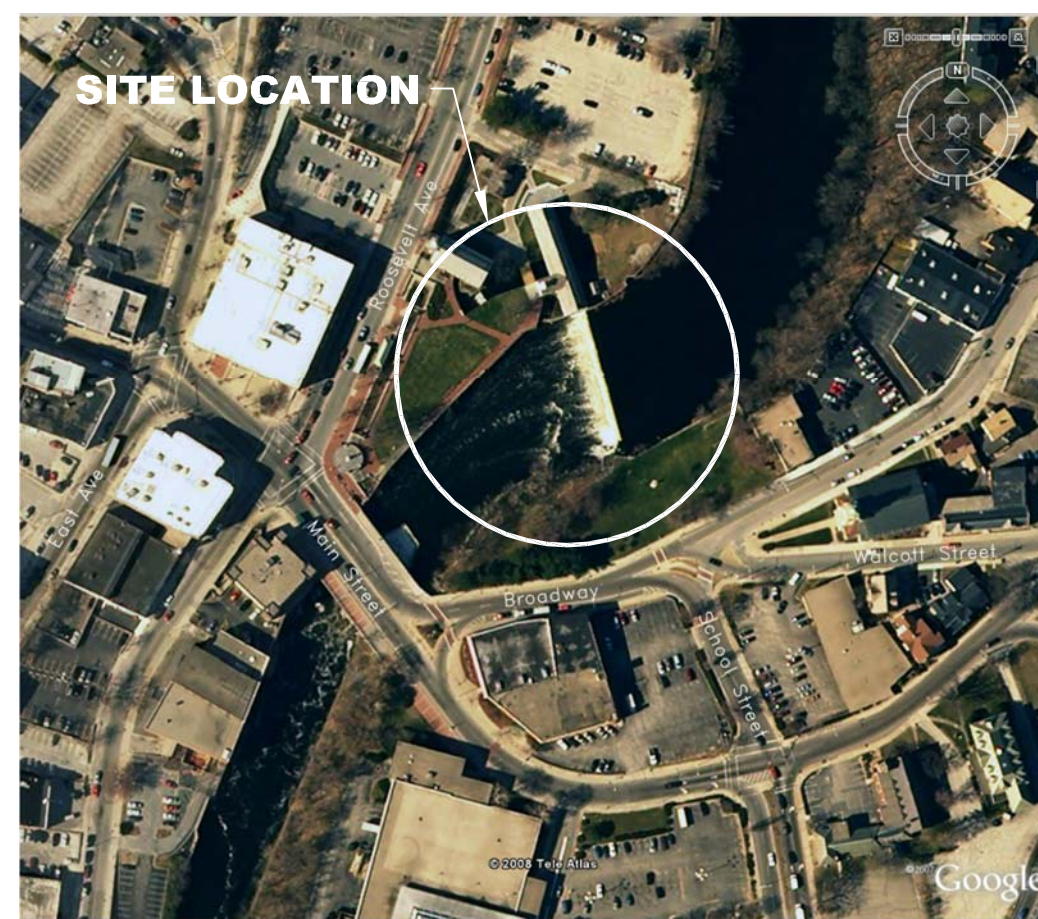
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SOURCE: DOCUMENTS FOR THESE DRAWINGS ARE SHEETS 1-15,  
EA PROJECT NO. 62130.08, APRIL 2011, PREPARED FOR  
US DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES  
CONSERVATION SERVICE.

DRAWING NUMBER	SHEET NUMBER	DRAWING TITLE
T-1	1 OF 15	TITLE SHEET
C-1	2 OF 15	EXISTING CONDITIONS PLAN
C-2	3 OF 15	PROPOSED SITE PLAN
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C-4	5 OF 15	FISHWAY PLAN AND SECTIONS
C-5	6 OF 15	FISHWAY CENTERLINE PROFILE AND BAFFLE DETAILS
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C-7	8 OF 15	DAM REMOVAL, ROCK EXCAVATION, AND FOOTING PLAN
C-8	9 OF 15	NON-OVERFLOW SECTION DETAILS
C-9	10 OF 15	FISHWAY CONCRETE AND REBAR TYPICAL DETAILS
C-10	11 OF 15	FISH COUNTING STATION DETAILS
C-11	12 OF 15	EEL LADDER AND WALKWAY DETAILS
C-12	13 OF 15	FISHWAY ENTRANCE SLIDE GATE AND MISCELLANEOUS DETAILS
C-13	14 OF 15	FISHWAY ACCESS DETAILS
E-1	15 OF 15	ELECTRICAL PLAN



VICINITY MAP

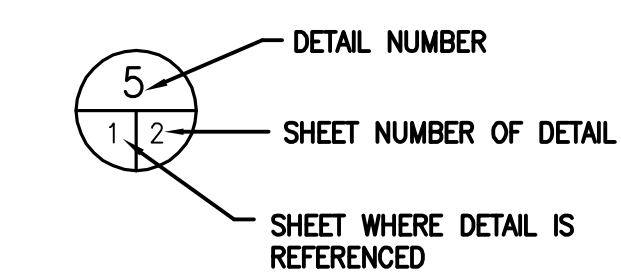
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**EA** EA ENGINEERING,  
SCIENCE, AND  
TECHNOLOGY  
2374 Post Road, Suite 102  
Warwick, Rhode Island 02886  
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ABBREVIATIONS	
ACQ	ALKALINE COPPER QUATERNARY
C	CENTERLINE
CD	COFFERDAM
CONC	CONCRETE
DHW	DOWNSTREAM HIGH WATER
DLW	DOWNSTREAM LOW WATER
EA	EACH
E	EASTING
EL	ELEVATION
EX	EXISTING
FL	FLOOD LEVEL
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
H.W.L.	HIGH WATER LEVEL
HSS	HOLLOW STRUCTURAL SECTIONS
HORZ.	HORIZONTAL
INV.	INVERT
LOW	LIMIT OF WORK
L.W.L.	LOW WATER LEVEL
MIL	MILLILITER
MIN.	MINIMUM
NRCS	NATURAL RESOURCE CONSERVATION SERVICE
N	NORTHING
NO	NORTH
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
P	PLATE OR PROPERTY LINE
PVC	POLYVINYL CHLORIDE PIPE
P.E.	PROFESSIONAL ENGINEER
REQ'D	REQUIRED
RET	RETAINING
RI	RHODE ISLAND
SF	SILT FENCE
SS	STAINLESS STEEL
SST	STAINLESS STEEL THREADED
SHPO	STATE HISTORIC PRESERVATION OFFICE
SIW	STONE RETAINING WALL
TYP	TYPICAL
VERT.	VERTICAL
WL	WETLAND
WF	WETLAND FLAG
YR	YEAR

LEGEND	
	RETAINING WALL
	MINOR CONTOUR LINES
	MAJOR CONTOUR LINES
	EDGE OF WATER
	100-YEAR FLOOD LEVEL
	LIMIT OF WORK
	TEMPORARY COFFERDAM
	APPROXIMATE TREE LINE
	NEW TREE TO BE PLANTED
	WETLAND FLAG
	WETLAND BOUNDARY
	DEWATERING PUMP
	SILT FENCE
	CONSTRUCTION FENCE
	LIGHT POST
	ELECTRICAL CONDUIT
	PROPERTY BOUNDARY
	BENCHMARK/STATION #
	EXISTING BUILDING
	SLATER MILL DAM

## REFERENCE SYMBOLS



ISSUED FOR CONSTRUCTION BIDS

NO.	DATE	BY	DESCRIPTION

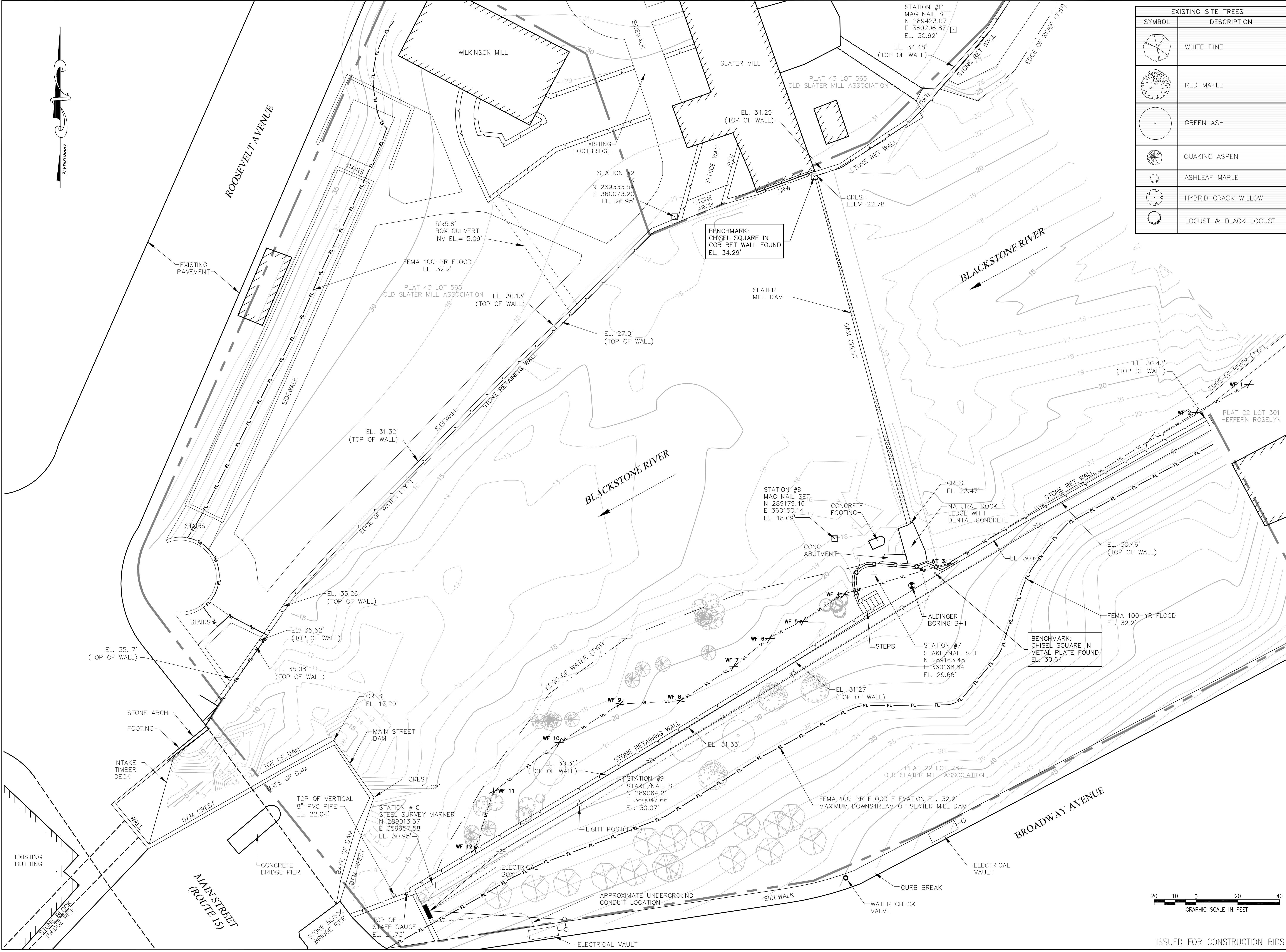
SEAL  
THOMAS G. COOK  
No. 8819  
REGISTERED  
PROFESSIONAL ENGINEER  
CIVIL  
7/20/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT  
SLATER MILL FISHWAY  
PAWTUCKET, RHODE ISLAND

TITLE SHEET

DATE	JUNE 2012
DESIGNED BY	TCC
DRAWN BY	DPA
CHECKED BY	HLB
PROJECT MANAGER	SSW
PROJECT NUMBER	62562.01
SCALE	AS SHOWN
FILE NAME	TITLE SHEET
DRAWING NUMBER	T-1
SHEET NUMBER	1 OF 15





EXISTING SITE TREES	
SYMBOL	DESCRIPTION
	WHITE PINE
	RED MAPLE
	GREEN ASH
	QUAKING ASPEN
	ASHLEAF MAPLE
	HYBRID CRACK WILLOW
	LOCUST & BLACK LOCUST

REVISIONS	
NO.	DESCRIPTION

SEAL  
 THOMAS C. COOK  
 No. 8819  
 REGISTERED PROFESSIONAL ENGINEER  
 CIVIL  
 7/20/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT  
 SLATER MILL FISHWAY  
 PAWTUCKET, RHODE ISLAND  
 EXISTING CONDITIONS PLAN

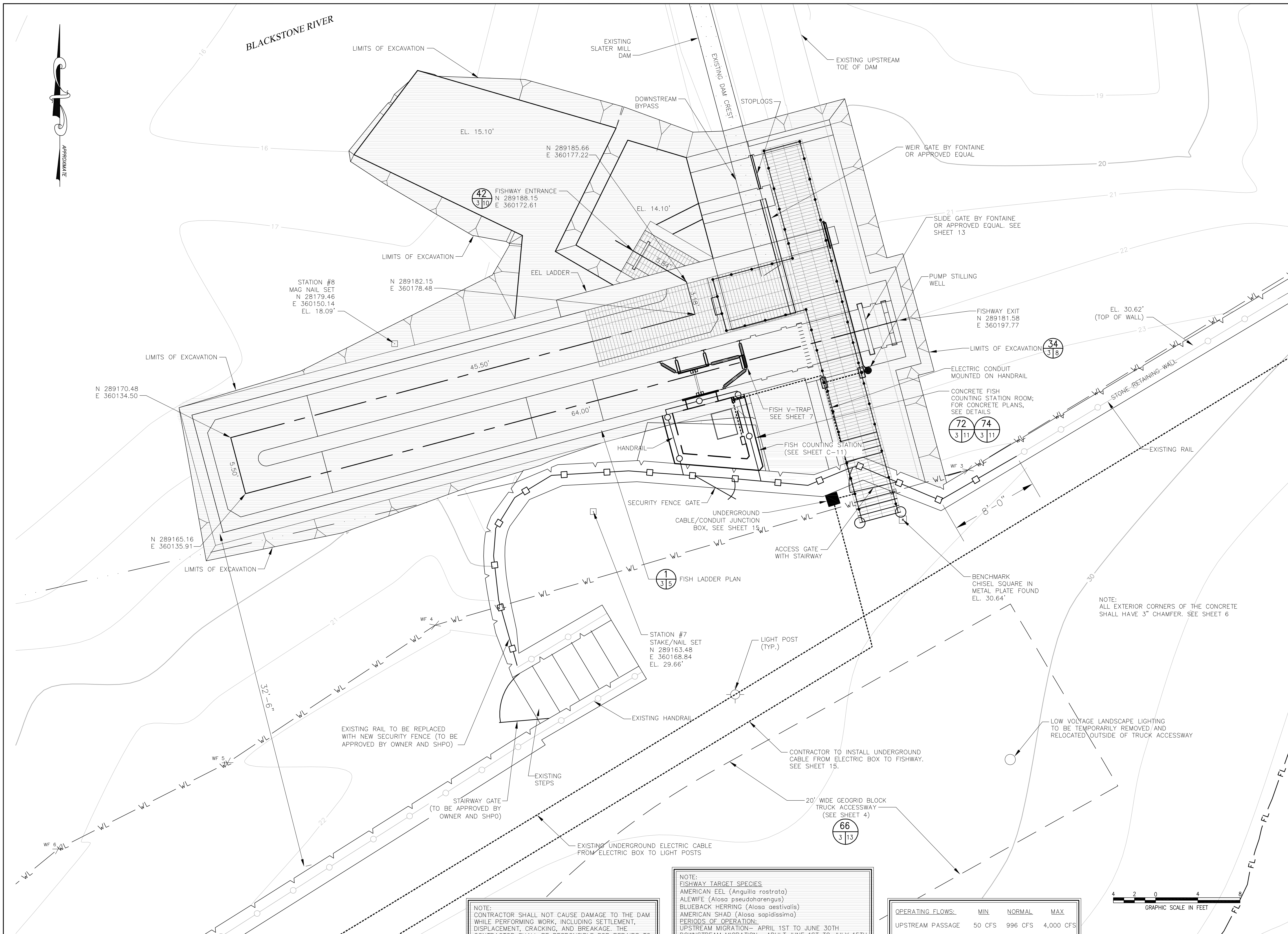
EA ENGINEERING, SCIENCE, AND TECHNOLOGY  
 2374 Post Road, Suite 102  
 Warwick, Rhode Island 02886  
 (401) 736-3440

DATE: JUNE 2012  
 DESIGNED BY: TCC  
 DRAWN BY: DPA  
 CHECKED BY: HLB  
 PROJECT MANAGER: SSW  
 PROJECT NUMBER: 62562.01  
 SCALE: AS SHOWN  
 FILE NAME: C-1-EXISTING CONDITION PLAN  
 DRAWING NUMBER: C-1  
 SHEET NUMBER: 2 OF 15



ISSUED FOR CONSTRUCTION BIDS





NOTE:  
ALL EXTERIOR CORNERS OF THE CONCRETE SHALL HAVE 3" CHAMFER. SEE SHEET 6

EXISTING RAIL TO BE REPLACED WITH NEW SECURITY FENCE (TO BE APPROVED BY OWNER AND SHPO)

STAIRWAY GATE (TO BE APPROVED BY OWNER AND SHPO)

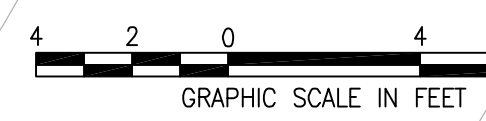
CONTRACTOR TO INSTALL UNDERGROUND CABLE FROM ELECTRIC BOX TO FISHWAY. SEE SHEET 15.

LOW VOLTAGE LANDSCAPE LIGHTING TO BE TEMPORARILY REMOVED AND RELOCATED OUTSIDE OF TRUCK ACCESSWAY

NOTE:  
CONTRACTOR SHALL NOT CAUSE DAMAGE TO THE DAM WHILE PERFORMING WORK, INCLUDING SETTLEMENT, DISPLACEMENT, CRACKING, AND BREAKAGE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS TO ALL DAMAGES, IN KIND, WITHOUT ADDITIONAL COST.

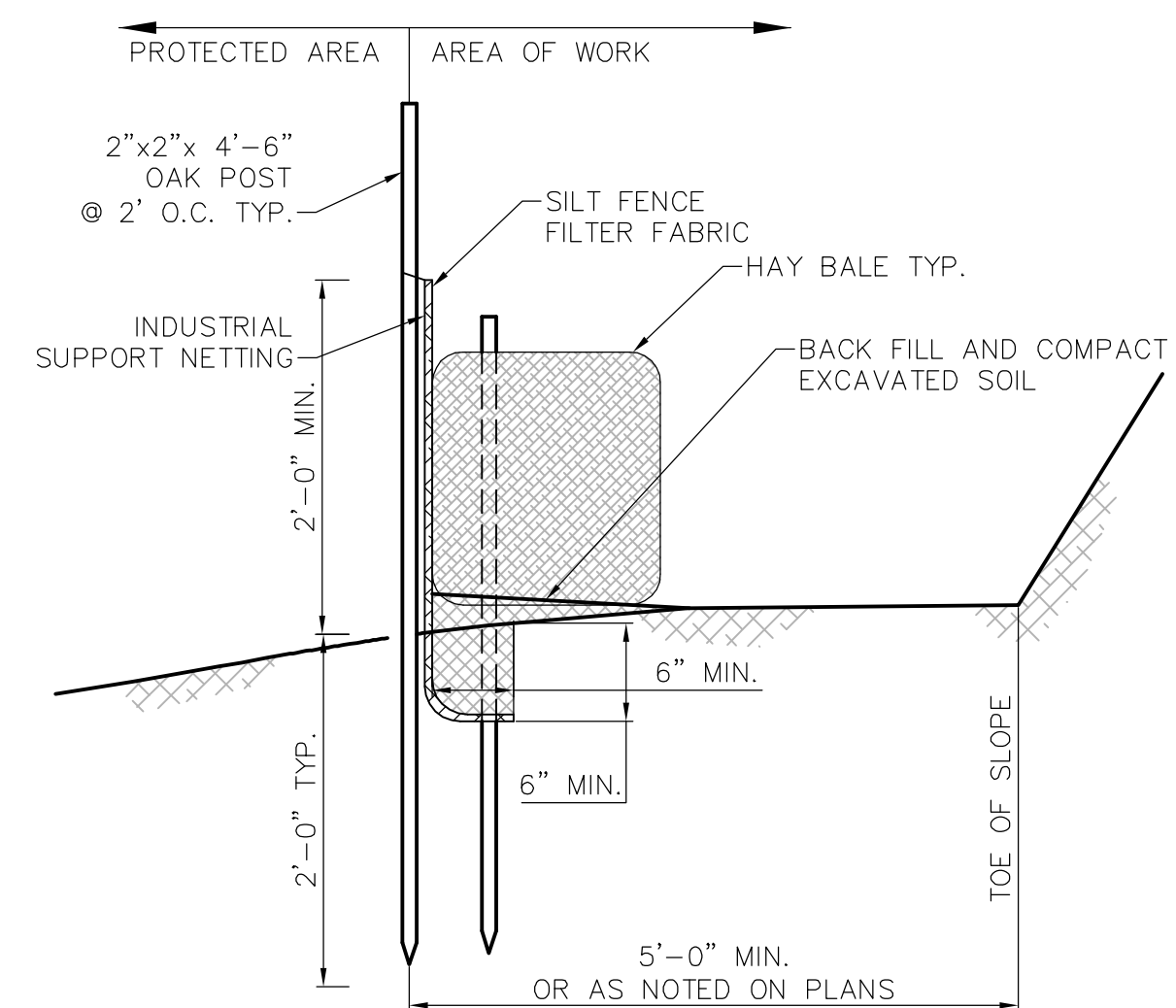
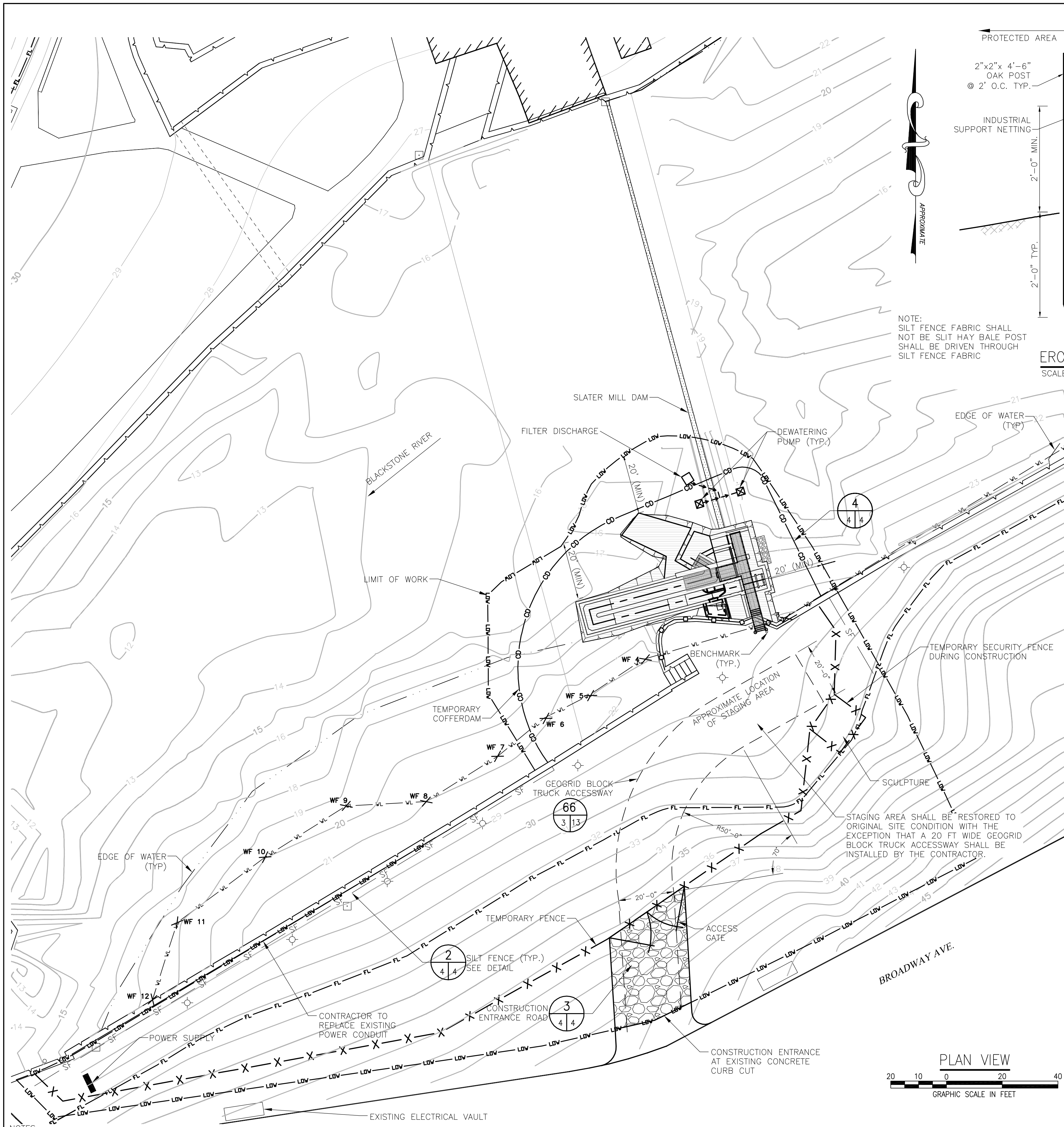
NOTE:  
FISHWAY TARGET SPECIES  
AMERICAN EEL (*Anguilla rostrata*)  
ALEWIFE (*Alosa pseudoharengus*)  
BLUEBACK HERRING (*Alosa aestivalis*)  
AMERICAN SHAD (*Alosa sapidissima*)  
PERIODS OF OPERATION:  
UPSTREAM MIGRATION— APRIL 1ST TO JUNE 30TH  
DOWNSTREAM MIGRATION— ADULT: JUNE 1ST TO JULY 15TH  
JUVENILE: SEPT. 1 TO NOV. 15TH

OPERATING FLOWS:	MIN	NORMAL	MAX
UPSTREAM PASSAGE	50 CFS	996 CFS	4,000 CFS
DOWNSTREAM PASSAGE	24 CFS	298 CFS	900 CFS

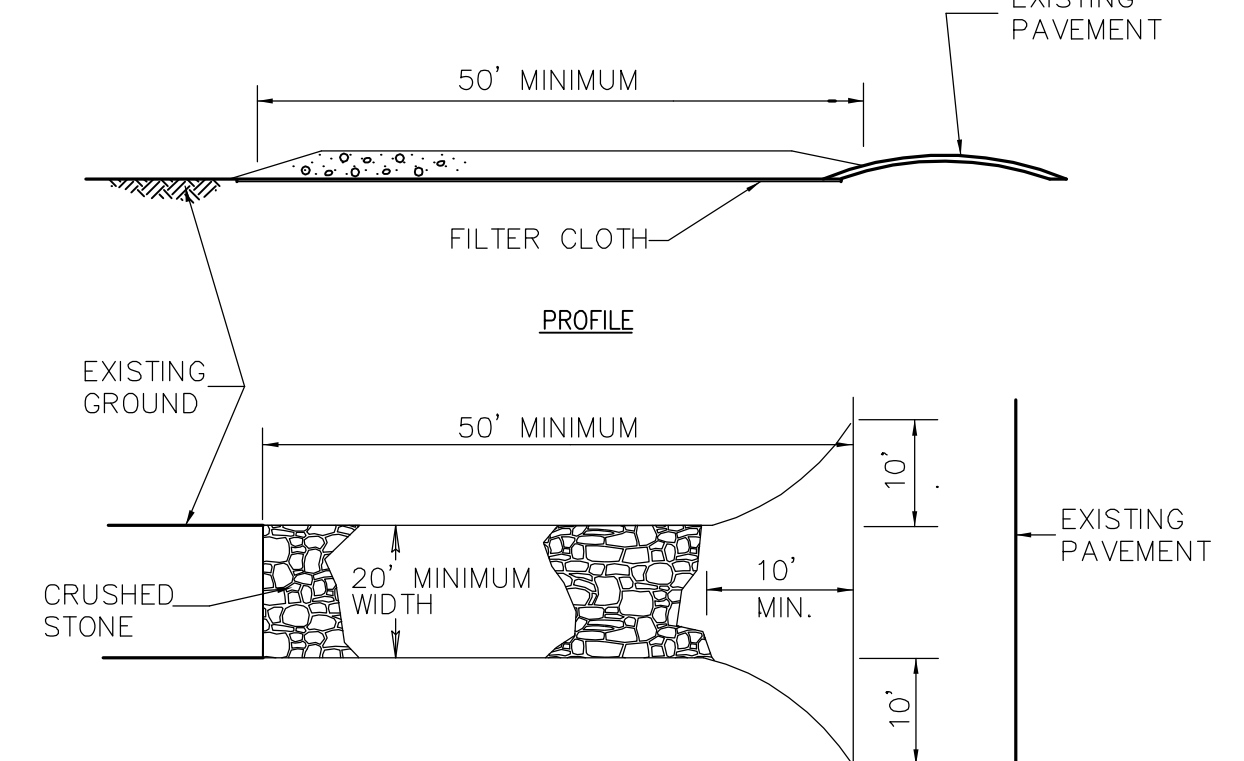


REVISIONS		DESCRIPTION
NO.	DATE	BY
		7/20/12
LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT SLATER MILL FISHWAY PAWTUCKET, RHODE ISLAND		
PROPOSED SITE PLAN		
2374 Post Road, Suite 102 Warwick, Rhode Island 02886 (401) 736-3440		
DATE	JUNE 2012	
DESIGNED BY	TCC	
DRAWN BY	DPA	
CHECKED BY	HLB	
PROJECT MANAGER	SSW	
PROJECT NUMBER	62562.01	
SCALE	AS SHOWN	
FILE NAME	C-2-PROPOSED SITE PLAN	
DRAWING NUMBER	C-2	
SHEET NUMBER	3 OF 15	

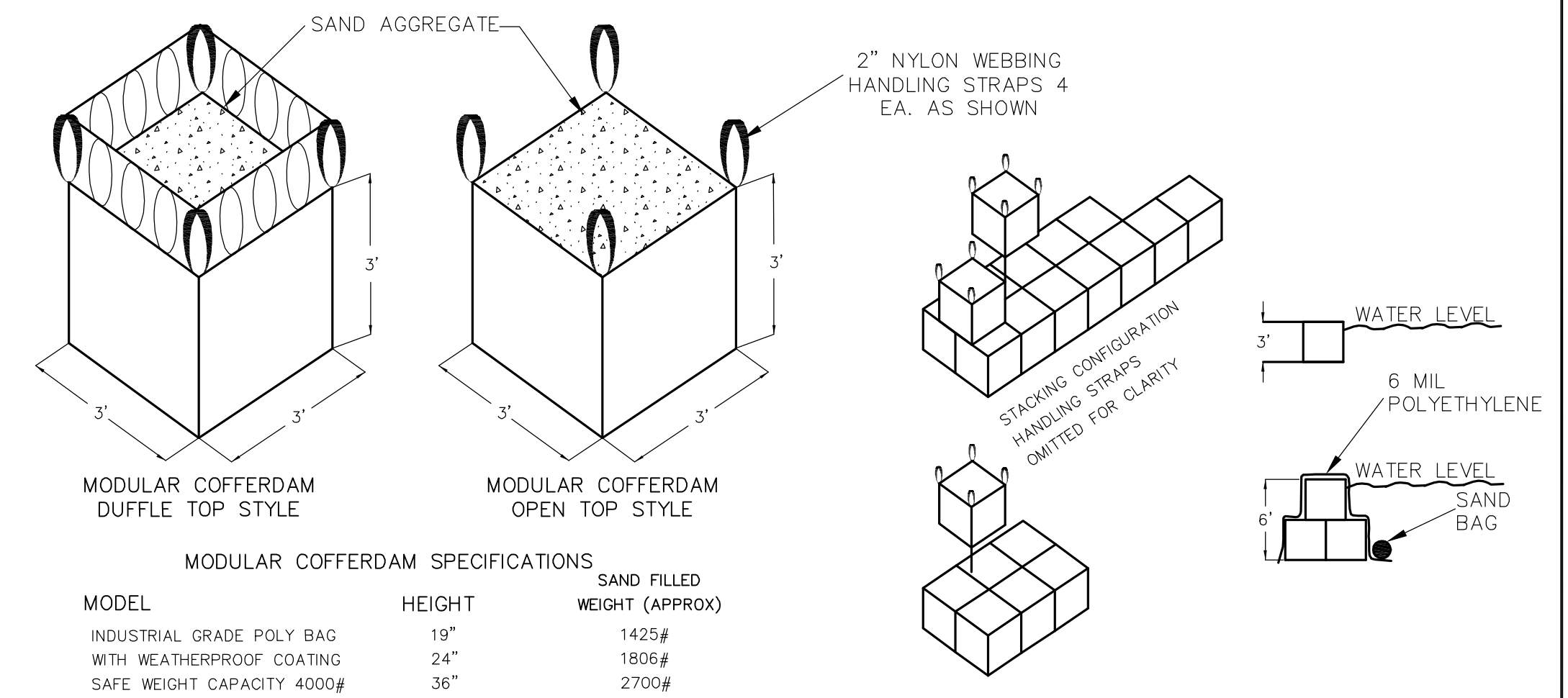




**EROSION CONTROL DETAIL** 2  
SCALE N.T.S. 4/4



**STABILIZED CONSTRUCTION ENTRANCE** 3  
SCALE N.T.S. 4/4



**MODULAR COFFERDAM DETAIL** 4  
SCALE N.T.S. 4/4

- RECOMMENDED SEQUENCE OF CONSTRUCTION:**
- SUBMIT SWPPP, DEWATERING PLAN, AND FOUNDATION INSTALLATION PLAN AT LEAST FORTY-FIVE (45) DAYS PRIOR TO MOBILIZATION.
  - NOTIFY THE NATURAL RESOURCES CONSERVATION SERVICE (NRCS) AT (401) 822-8822 FOR THE REQUIRED PRE-CONSTRUCTION MEETING SEVEN (7) DAYS BEFORE COMMENCING ANY SITE DISTURBANCE. NO SITE DISTURBANCE SHALL OCCUR FOR A SEVEN (7) DAY MINIMUM FOLLOWING THE MEETING TO ALLOW PHOTOGRAPHY OF THE HISTORIC FEATURES.
  - REESTABLISH BENCHMARKS AND MAP AND CLEAR UTILITIES AS NECESSARY.
  - INSTALL STABILIZED CONSTRUCTION ENTRANCES, THEN CLEAR AND GRUB FOR THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT ALL WORK AREAS OUTSIDE OF COFFERDAM.
  - CLEAR AND GRUB VEGETATION WITHIN THE LOW AS NECESSARY FOR SITE ACCESS, STAGING, AND STOCKPILING, AS DETERMINED DURING THE PRE-CONSTRUCTION MEETING.
  - INSTALL COFFERDAM AS SHOWN IN THE PLANS AND DETAILED IN THE SPECIFICATIONS. EQUIPMENT ACCESS RAMPS SHALL BE CONSTRUCTING WITH THE LIMITS OF COFFERDAMS
  - DEWATER THE PROPOSED WORK AREA.
  - REMOVE EXISTING TIMBER DAM TO PROBE FOR LOCATION, EXTENT AND ELEVATION OF DAM APRON. EXPOSE APRON WITHOUT DAMAGE AND ALLOW FOR ENGINEER TO INSPECT AND VERIFY DESIGN ASSUMPTIONS.
  - CONSTRUCT THE FISH PASSAGE STRUCTURE AND NON-OVERFLOW STRUCTURE, INCLUDING ALL ELEMENTS DETAILED IN THE PROJECT PLANS AND SPECIFICATIONS.
  - ON APPROVAL OF THE FISH PASSAGE STRUCTURE, REMOVE THE DEWATERING DEVICES AND COFFERDAMING. DISCARD ALL EXTRA OR REMOVED MATERIAL OFF SITE AS PER THE PROJECT SPECIFICATIONS.
  - UPON COMPLETION OF THE ABOVE ACTIVITIES, STABILIZE THE DISTURBED AREAS WITH THE SPECIFIED NATIVE SEED AND TREES/SHRUBS WITHIN 48 HOURS.
  - WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE PERIMETER EROSION AND SEDIMENT CONTROL DEVICES.
  - RESTORE ALL STAGING, CONSTRUCTION ACCESS, AND STOCKPILE AREAS TO ORIGINAL CONDITION, BACK TO THEIR PRE-CONSTRUCTION CONDITIONS. INSTALL PLANTINGS AS PER PLANTING NOTES (WITHIN ALLOWABLE DATES). INSTALL GEOGRID BLOCK TRUCK ACCESSWAY PER DRAWINGS.
  - INSTALL PERMANENT MONUMENTS FOR POST-CONSTRUCTION MONITORING ON SOUTH SIDE OF RIVER WALL WITHIN 100 FEET UPSTREAM AND DOWNSTREAM OF DAM.

- NOTES:**
- TEMPORARY COFFERDAMS SHALL BE AS FOLLOWS, OR EQUIVALENT: UPSTREAM OF THE DAM, COFFERDAM SHALL CONSIST OF SUITABLE NUMBER AND SIZE OF SAND BAGS, SECURING AN IMPERMEABLE GEOTEXTILE MATERIAL. DOWNSTREAM OF THE DAM, SEALED AS NECESSARY, COFFERDAMS SHALL EXTEND TO AT LEAST 1.5 FEET ABOVE THE 2-YEAR FLOOD LEVELS INDICATED ON SHEET C-6.
  - WATER FROM DEWATERING SYSTEM SHALL BE PUMPED THROUGH A FILTER BAG, WITH DISCHARGE TO THE RIVER DOWNSTREAM OF DAM. DISCHARGE SHALL BE DIRECTED ONTO EXISTING BEDROCK.
  - CONTRACTOR SHALL SUBMIT A DEWATERING PLAN (CERTIFIED BY A RI P.E.) INCLUDING STORMWATER POLLUTION PREVENTION PLAN (SWPPP), AND COFFERDAM INSTALLATION AT LEAST 45 DAYS PRIOR TO MOBILIZATION. DEWATERING PLAN SHALL INCLUDE FILTER CONTROLS TO ENSURE DISCHARGE IS LESS THAN 10 NTUS.
  - STAGING AND STOCKPILING AREA TO BE FINALIZED AT PRE-CONSTRUCTION MEETING. CONTRACTOR TO BE RESPONSIBLE FOR TEMPORARY SECURITY FENCING AT THESE AREAS AS NECESSARY

- NOTES:**
- ALL ELEVATIONS REFERENCE NGVD29 DATUM, HORIZONTAL COORDINATES ARE IN R.I. STATE PLANE NAD83.
  - ALL SURVEY DATA AND SITE FEATURES IN MAIN RIVER CHANNEL FROM SURVEY DATED AUGUST 2007, PERFORMED BY SMC, INC.
  - SITE IS LOCATED AT 67 ROOSEVELT AVENUE, PAWTUCKET, RI. APPROXIMATELY 400 FT EAST OF THE MAIN STREET, ROOSEVELT AVENUE INTERSECTION.
  - FISHWAY SECURITY FENCE TO BE APPROVED BY SHPO AND OWNER. FOR BID PURPOSES, FENCE SHALL BE 8 FEET HIGH, BLACK PICKET FENCE MANUFACTURED BY AMETCO MANUFACTURING CORP.
  - CONCRETE FORM LINER, COLORING, AND STAIN FACING FOR NEW FISHWAY CONCRETE WALLS ON EXTERIOR OF ALL NEW STRUCTURES TO BE APPROVED BY SHPO AND OWNER.
  - ALL EXTERIOR CORNERS OF CONCRETE WALL TO HAVE 3" CHAMFER
  - ALL MISCELLANEOUS STEEL, HANDRAILS, AND GRATING TO HAVE BLACK EPOXY COATING.

REVISIONS

NO.	DATE	BY	DESCRIPTION

THOMAS C. COOK  
No. 8819  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL  
7/25/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT  
SLATER MILL FISHWAY  
PAWTUCKET, RHODE ISLAND  
CONSTRUCTION MANAGEMENT PLAN

**EA** ENGINEERING, SCIENCE AND TECHNOLOGY

2374 Post Road, Suite 102  
Warwick, Rhode Island 02886  
(401) 735-3440

DATE: JUNE 2012

DESIGNED BY: TCC

DRAWN BY: DPA

CHECKED BY: HLB

PROJECT MANAGER: SSW

PROJECT NUMBER: 62562.01

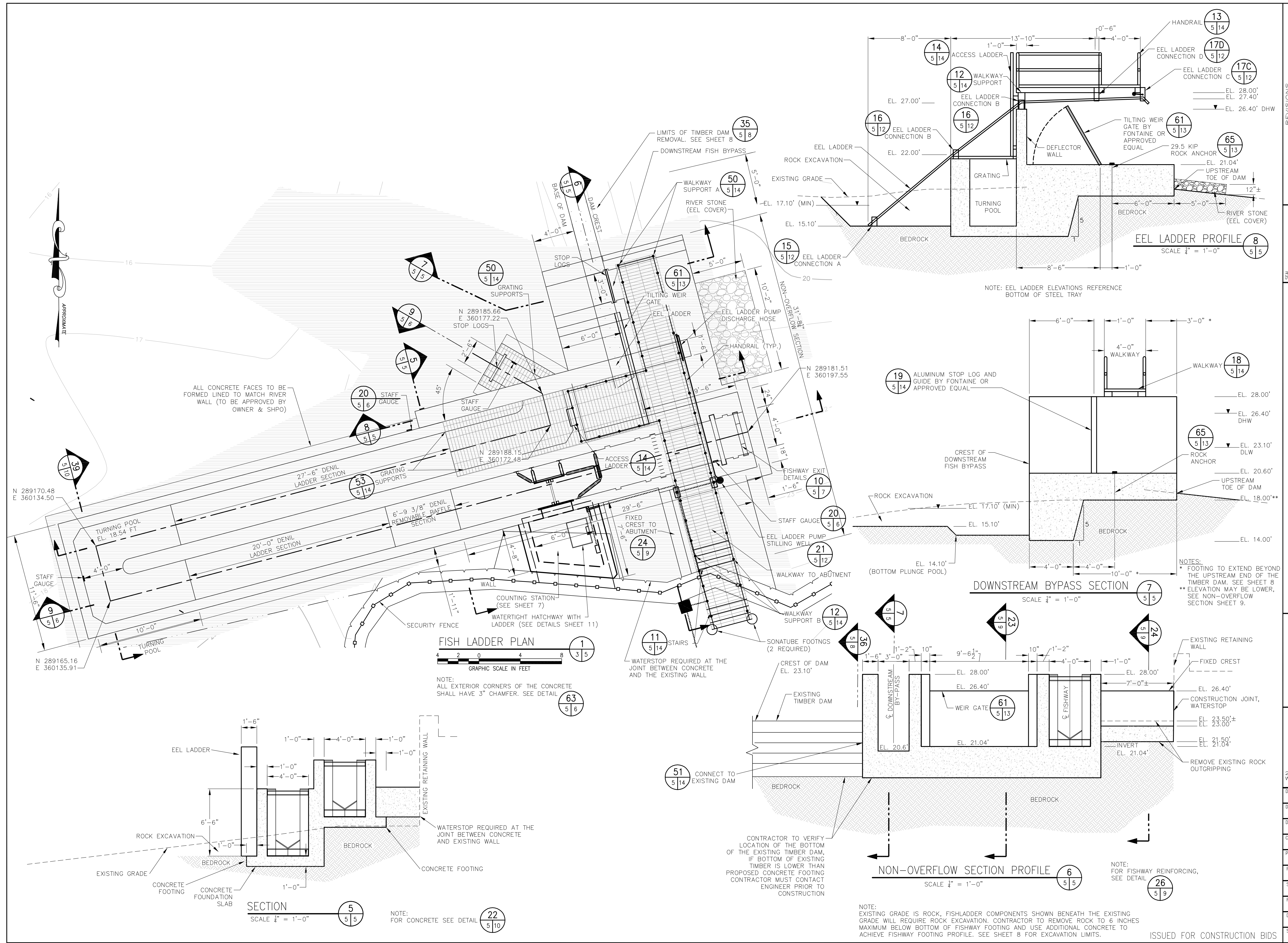
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FILE NAME: C-3-CONSTRUCTION MANAGEMENT...

DRAWING NUMBER: C-3

SHEET NUMBER: 4 OF 15





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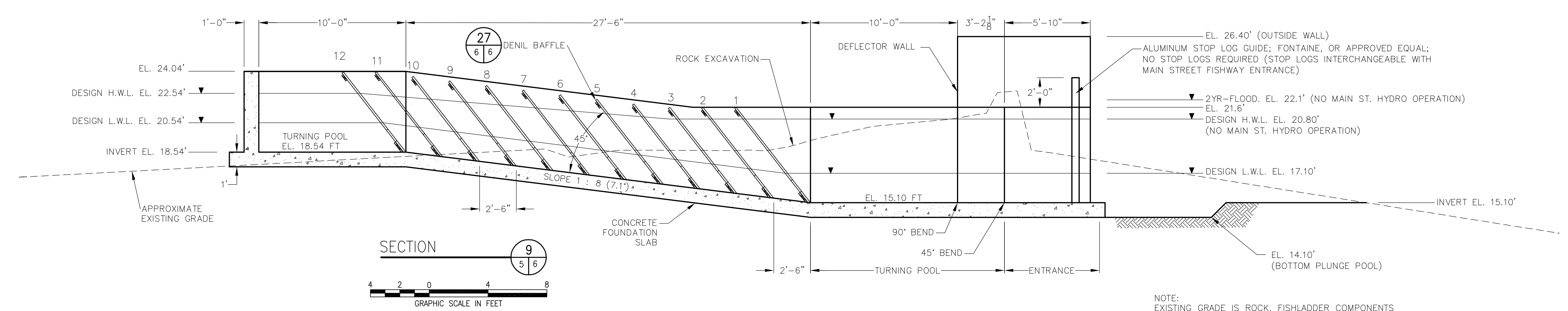
  

THOMAS C. COOK <i>Thomas C. Cook</i> No. 8819 REGISTERED PROFESSIONAL ENGINEER CIVIL 7/20/12	LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT SLATER MILL FISHWAY PAWTUCKET, RHODE ISLAND FISHWAY PLAN AND SECTIONS
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 EA ENGINEERING, SCIENCE, AND TECHNOLOGY 2374 Post Road, Suite 102 Warwick, Rhode Island 02886 (401) 736-3440	DATE: JUNE 2012 DESIGNED BY: TCC DRAWN BY: DPA CHECKED BY: HLB PROJECT MANAGER: SSW PROJECT NUMBER: 62562.01 SCALE: AS SHOWN FILE NAME: C-4-C-5-FISHWAY PLAN AND... DRAWING NUMBER: C-4 SHEET NUMBER: 5 OF 15
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ISSUED FOR CONSTRUCTION BIDS



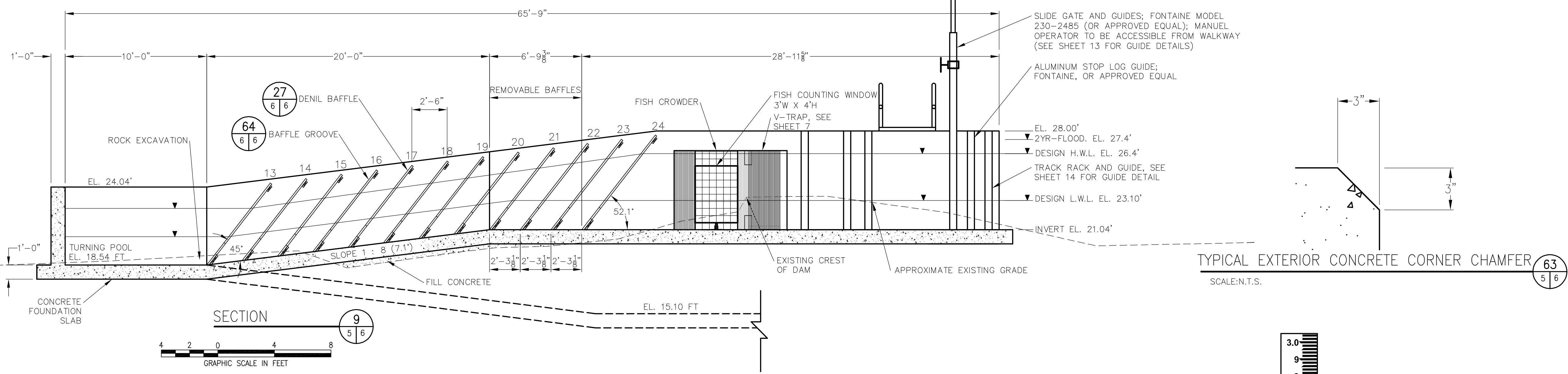
NOTE:  
EXISTING GRADE IS ROCK, FISHLADDER COMPONENTS SHOWN BENEATH THE EXISTING GRADE WILL REQUIRE ROCK EXCAVATION.

REVISIONS	DESCRIPTION
NO.	BY
DATE	
NO.	

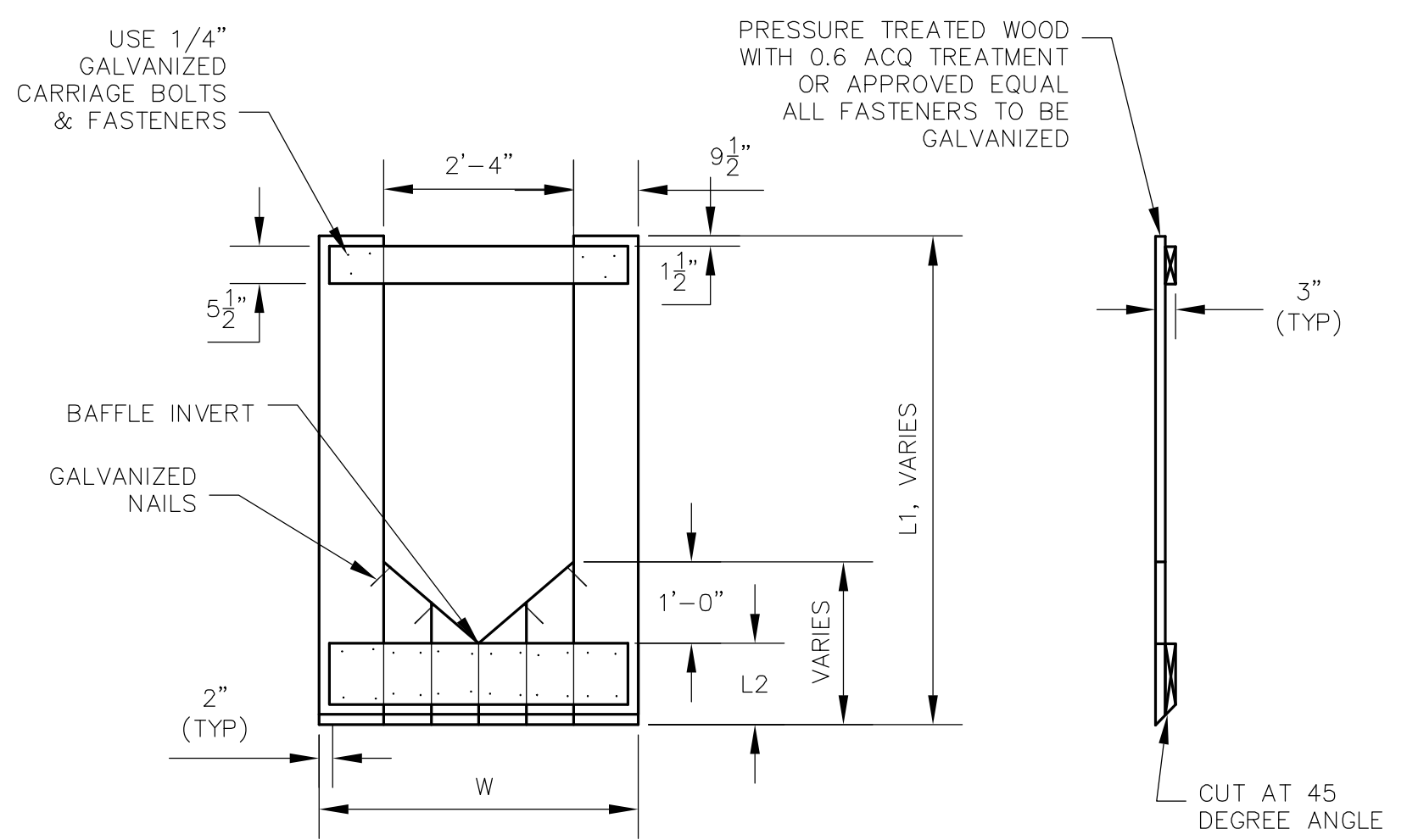
SEAL  
THOMAS C. COOK  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL  
No. 8819  
7/2/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT  
SLATER MILL FISHWAY  
PAWTUCKET, RHODE ISLAND

FISHWAY CENTERLINE PROFILE AND BAFFLE DETAILS



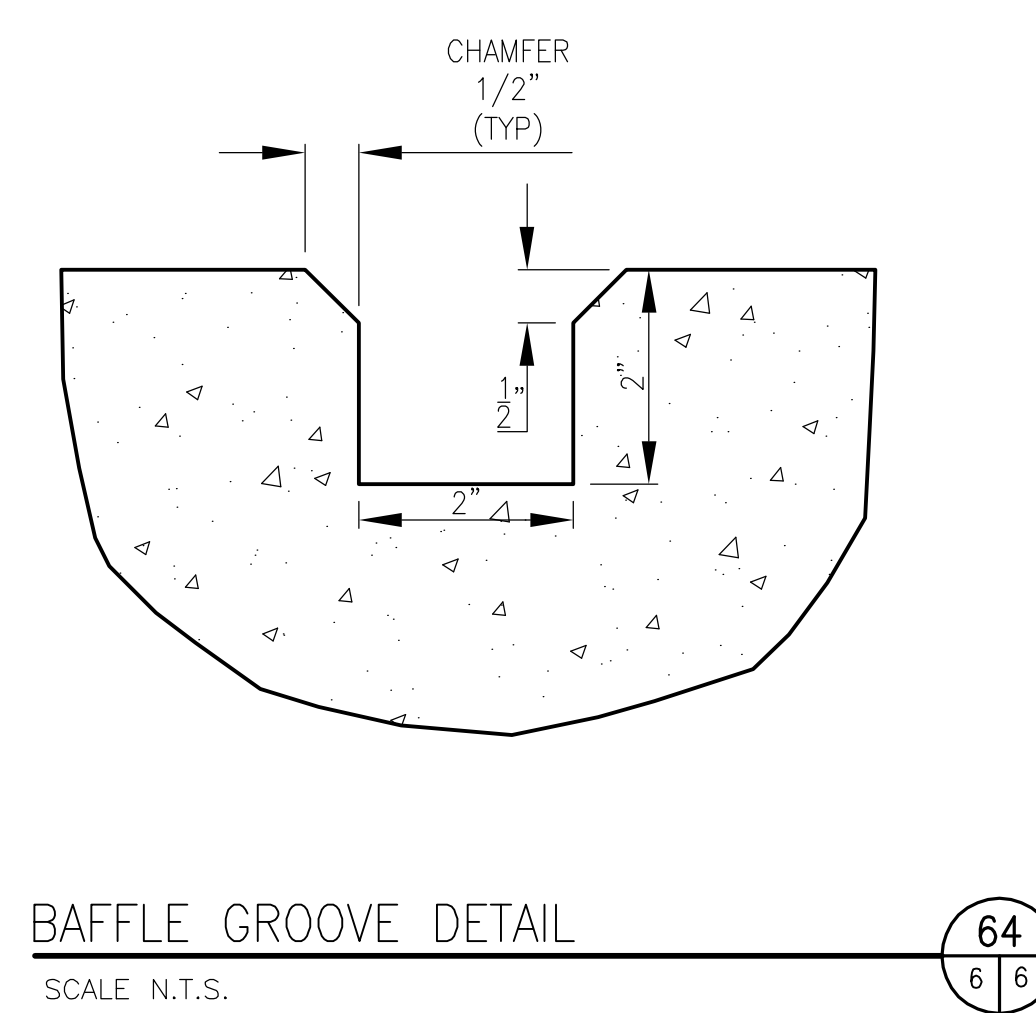
TYPICAL EXTERIOR CONCRETE CORNER CHAMFER (63)  
SCALE: N.T.S.



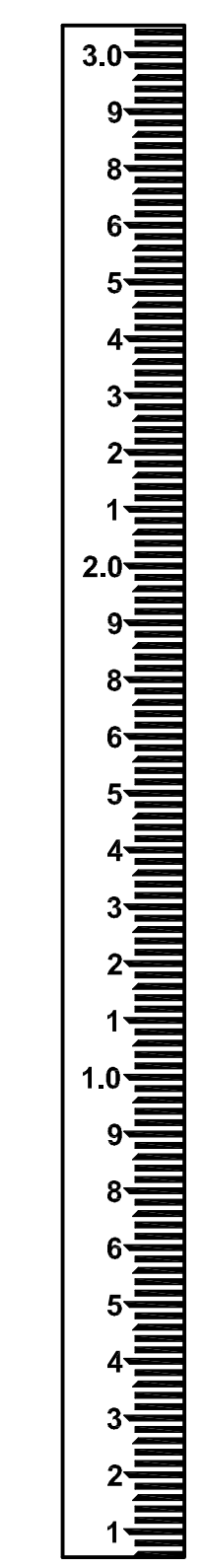
DENIL BAFFLE DETAIL (27)  
SCALE N.T.S.

BAFFLE NO.	BAFFLE INVERT EL. (FT)	BAFFLE WIDTH "W" (IN.)	BAFFLE LENGTH "L1" (IN.)	BAFFLE HEIGHT "L2" (IN.)	INVERT EL. (IN.)
1	15.89	50	98	12	12
2	16.20	50	93	12	12
3	16.51	50	89	12	12
4	16.83	50	88	12	12
5	17.14	50	88	12	12
6	17.45	50	88	12	12
7	17.76	50	88	12	12
8	18.08	50	88	12	12
9	18.39	50	88	12	12
10	18.70	50	88	12	12
11	19.01	50	88	12	12
12	19.33	50	83	12	12
13	19.33	50	88	12	12
14	19.64	50	88	12	12
15	19.95	50	88	12	12
16	20.26	50	88	12	12
17	20.58	50	88	12	12
18	20.89	50	88	12	12
19	21.20	50	88	12	12
20	21.51	50	88	12	12
21	21.83	50	88	12	12
22	22.14	50	92	16	11/16
23	22.45	50	96	21	7/16
24	22.76	50	102	26	3/16

ALL ELEVATIONS  
REFERENCE NGVD29 DATUM



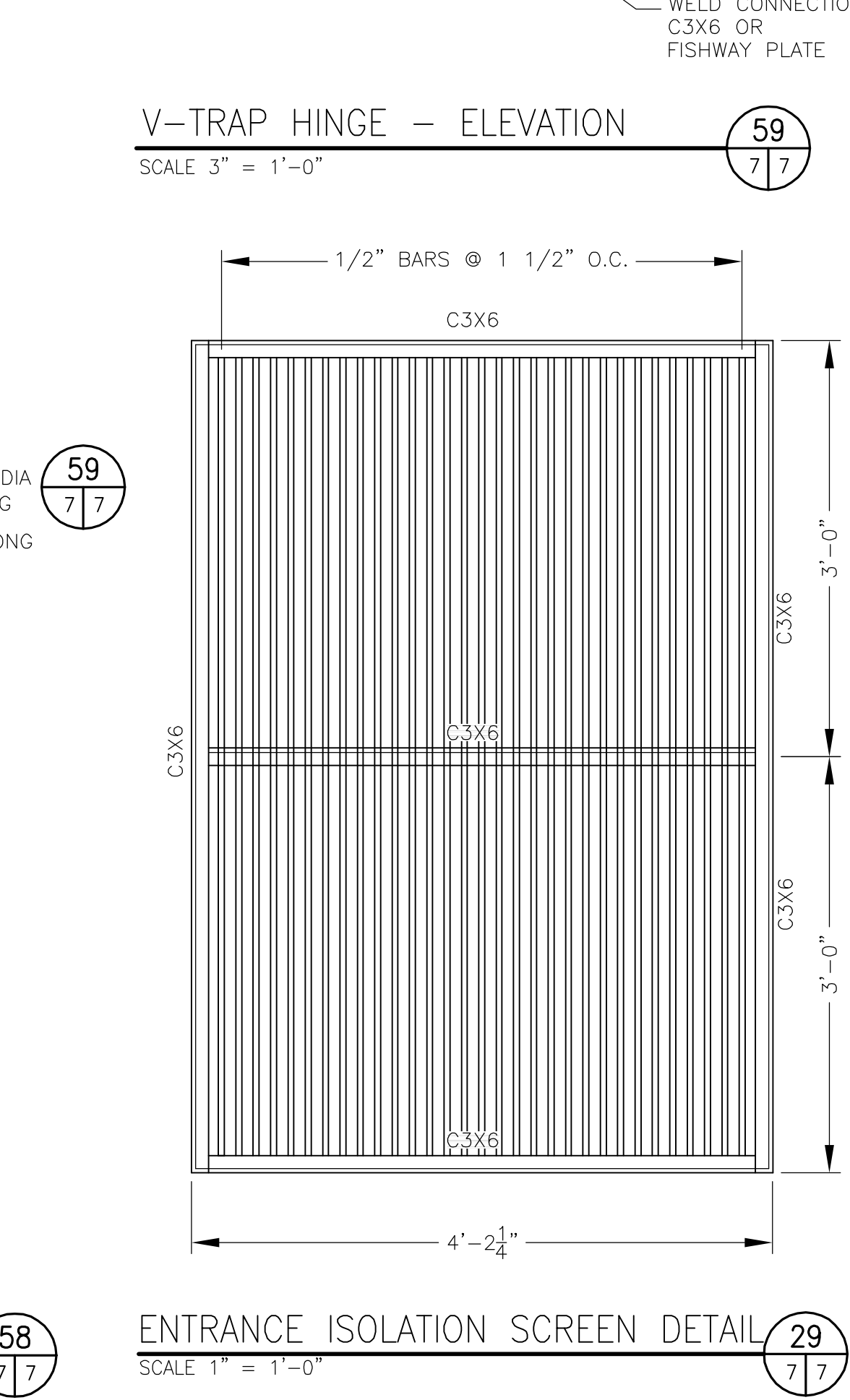
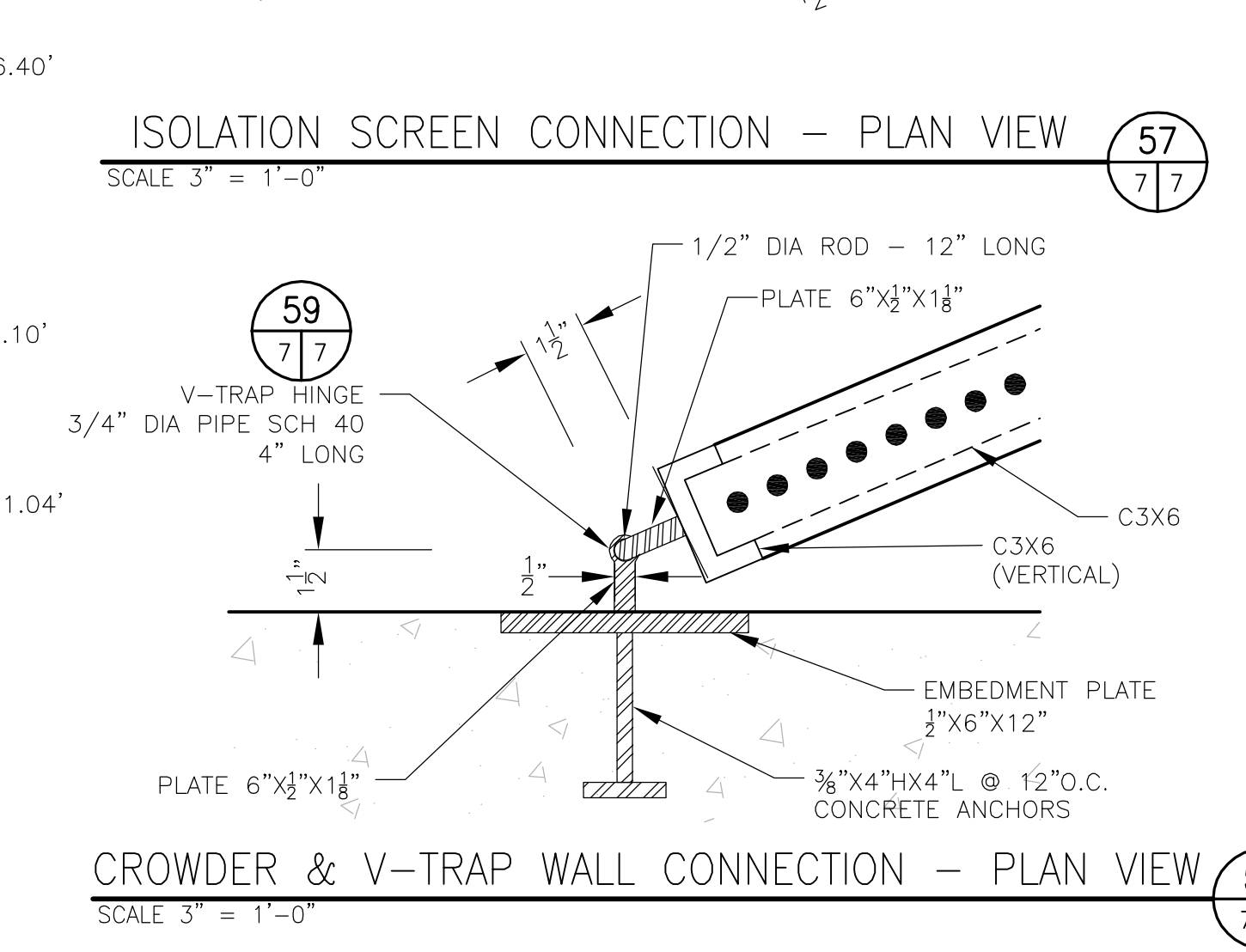
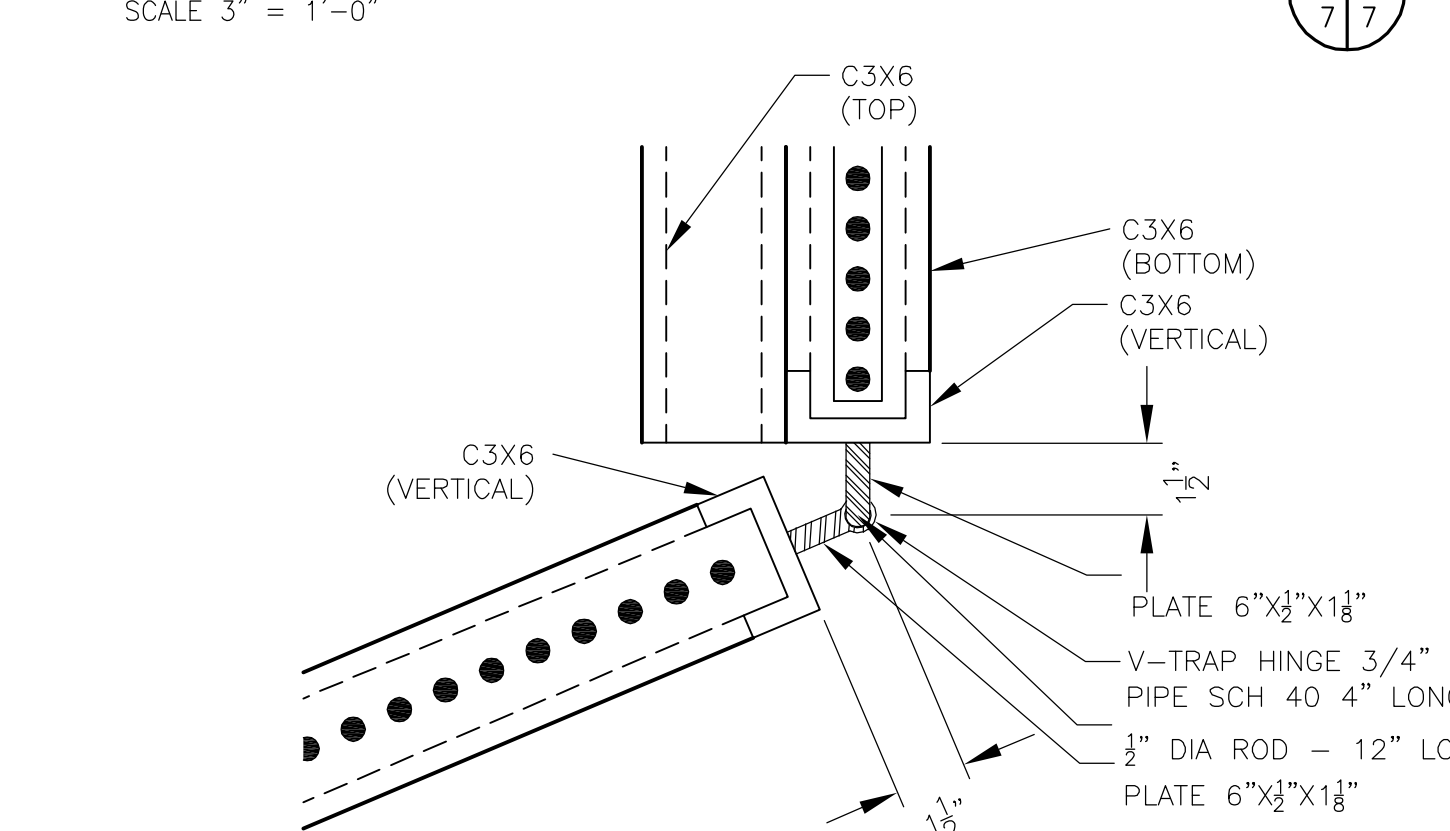
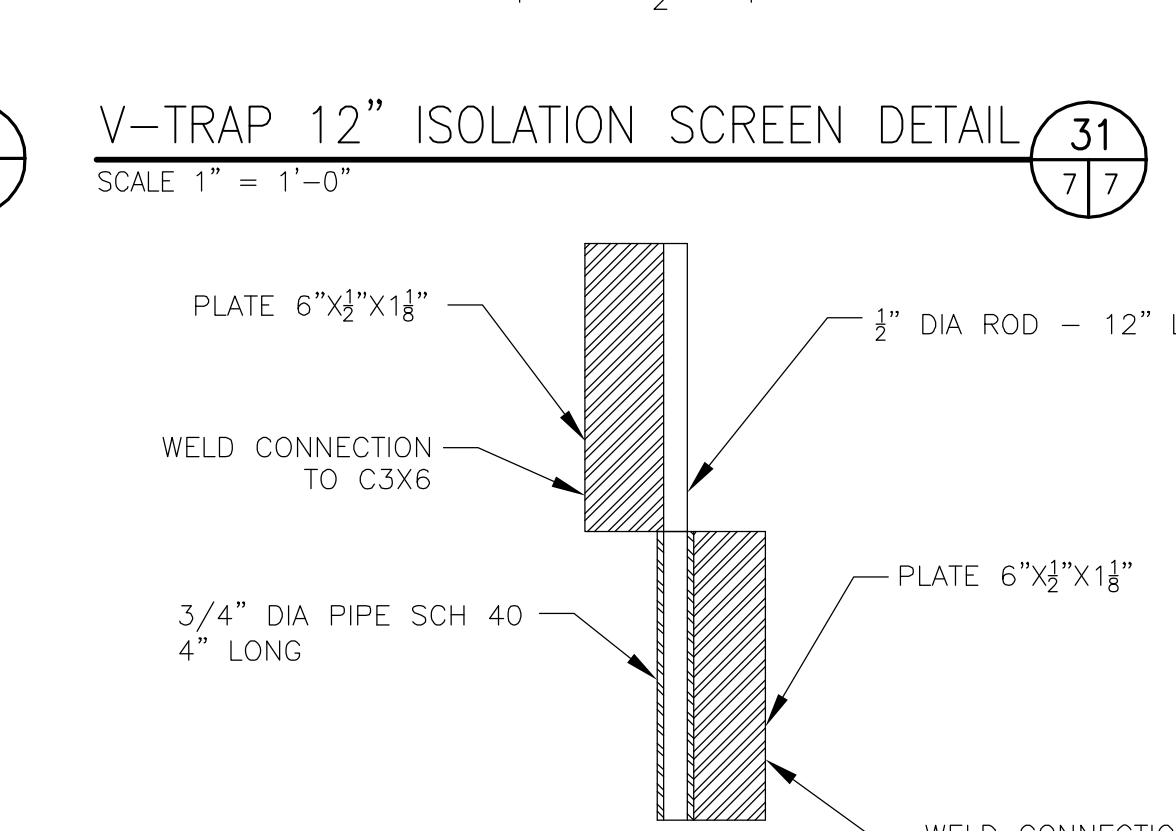
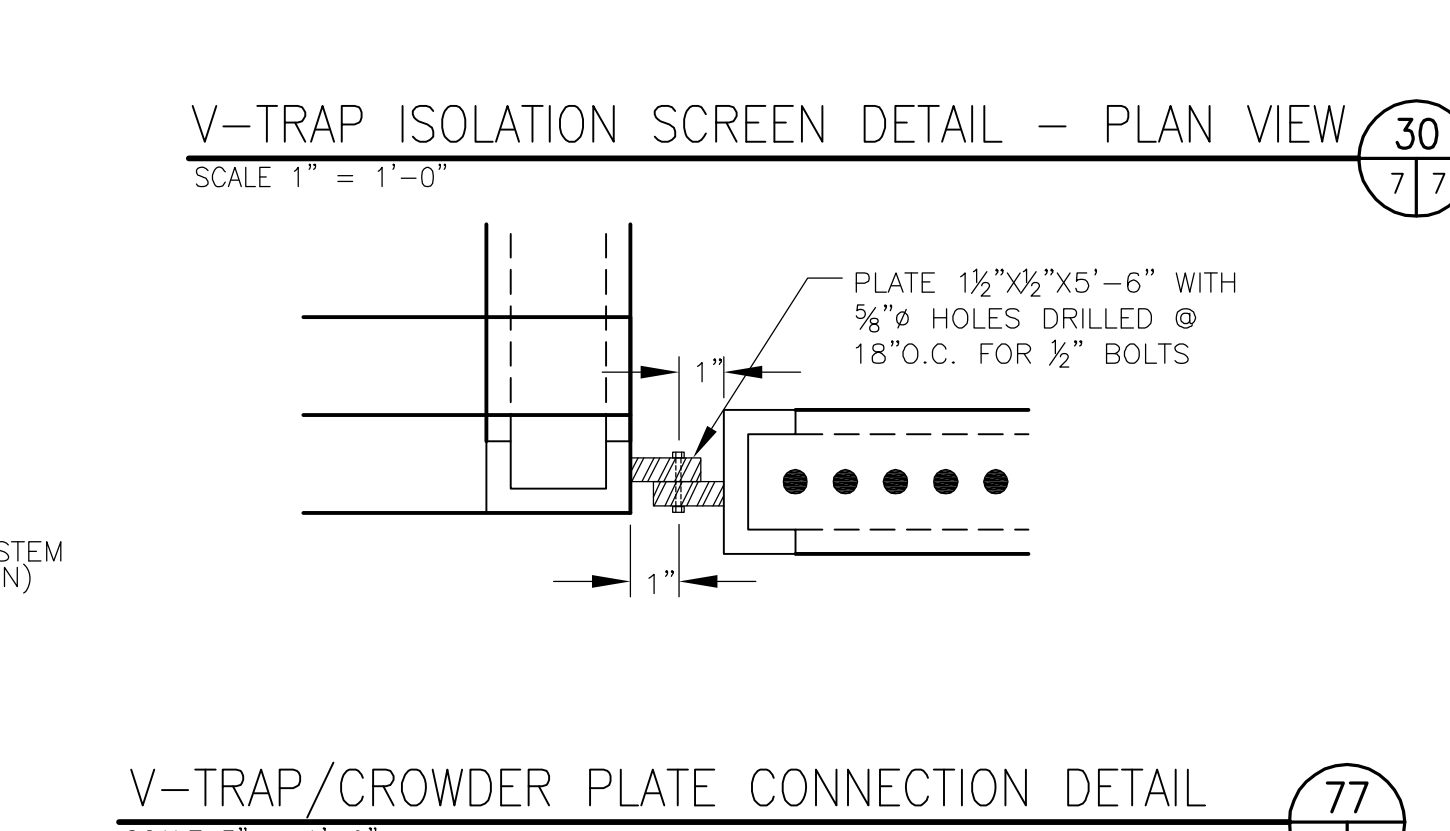
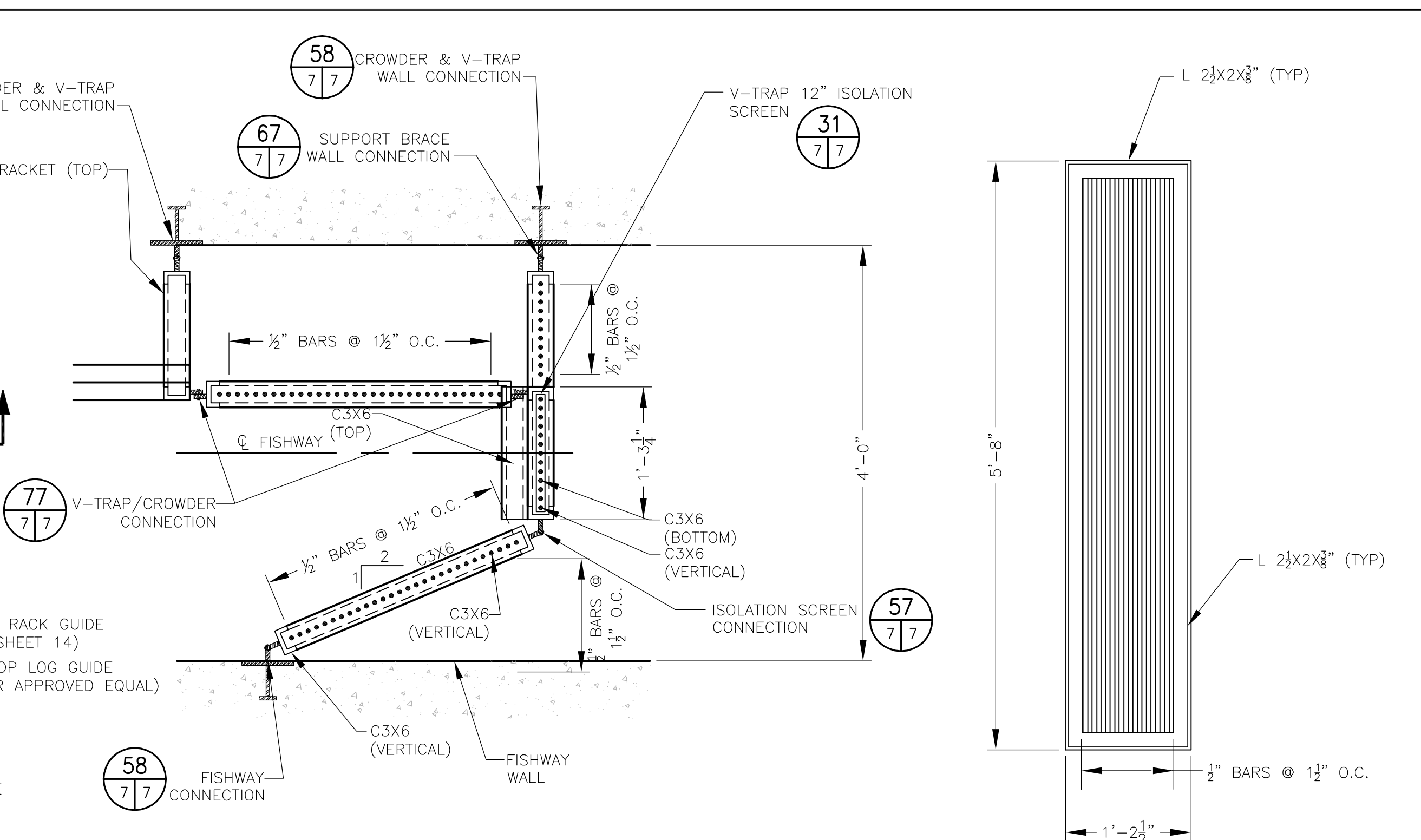
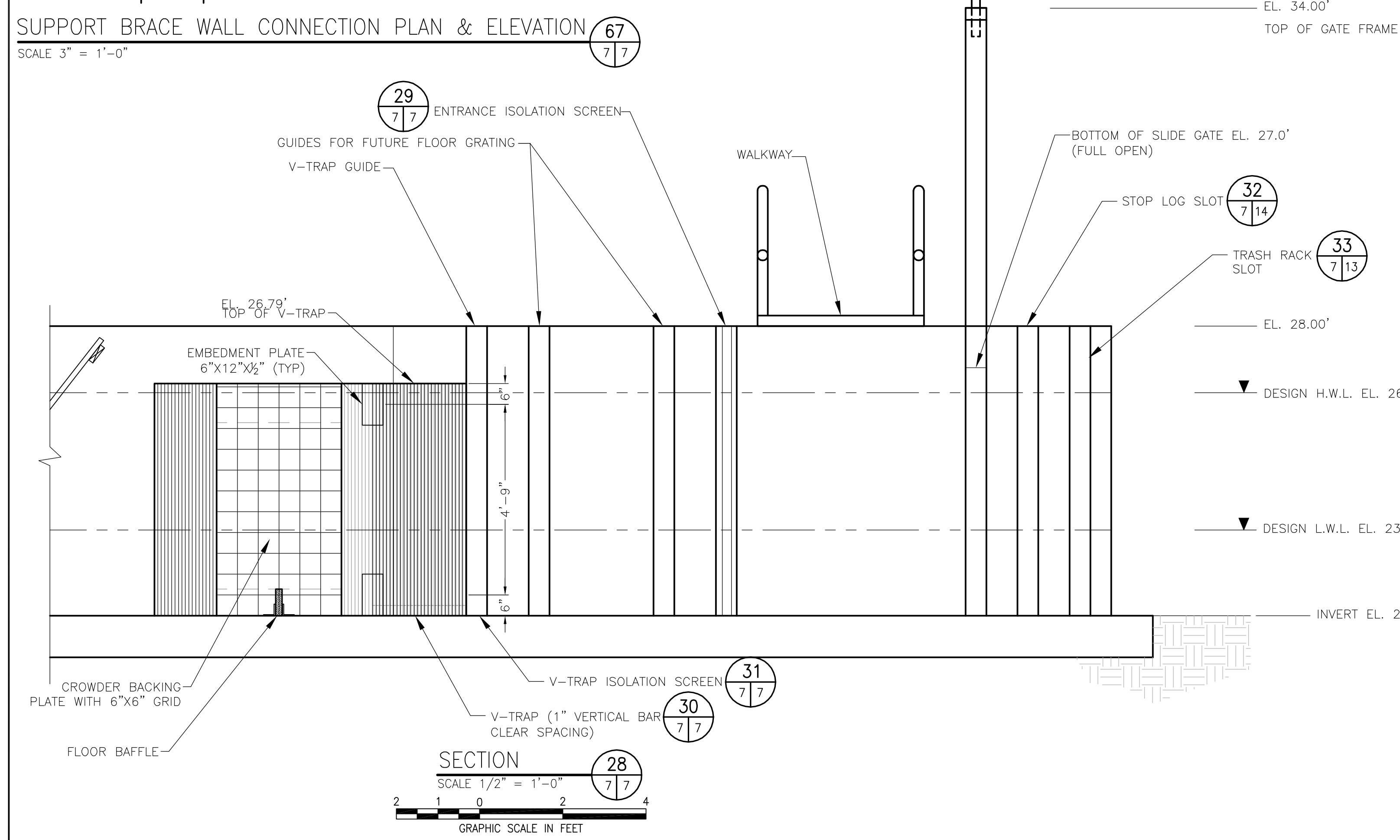
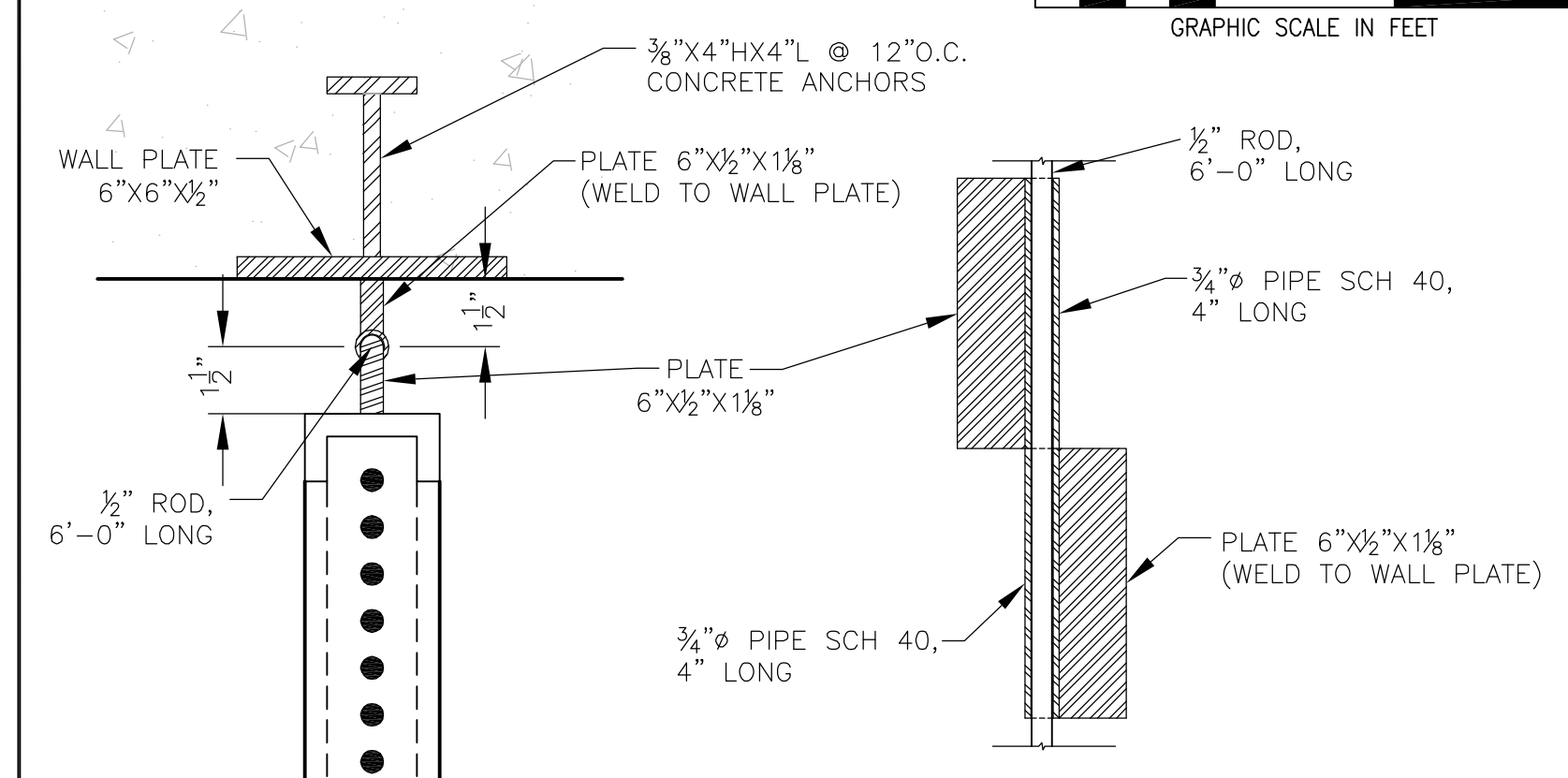
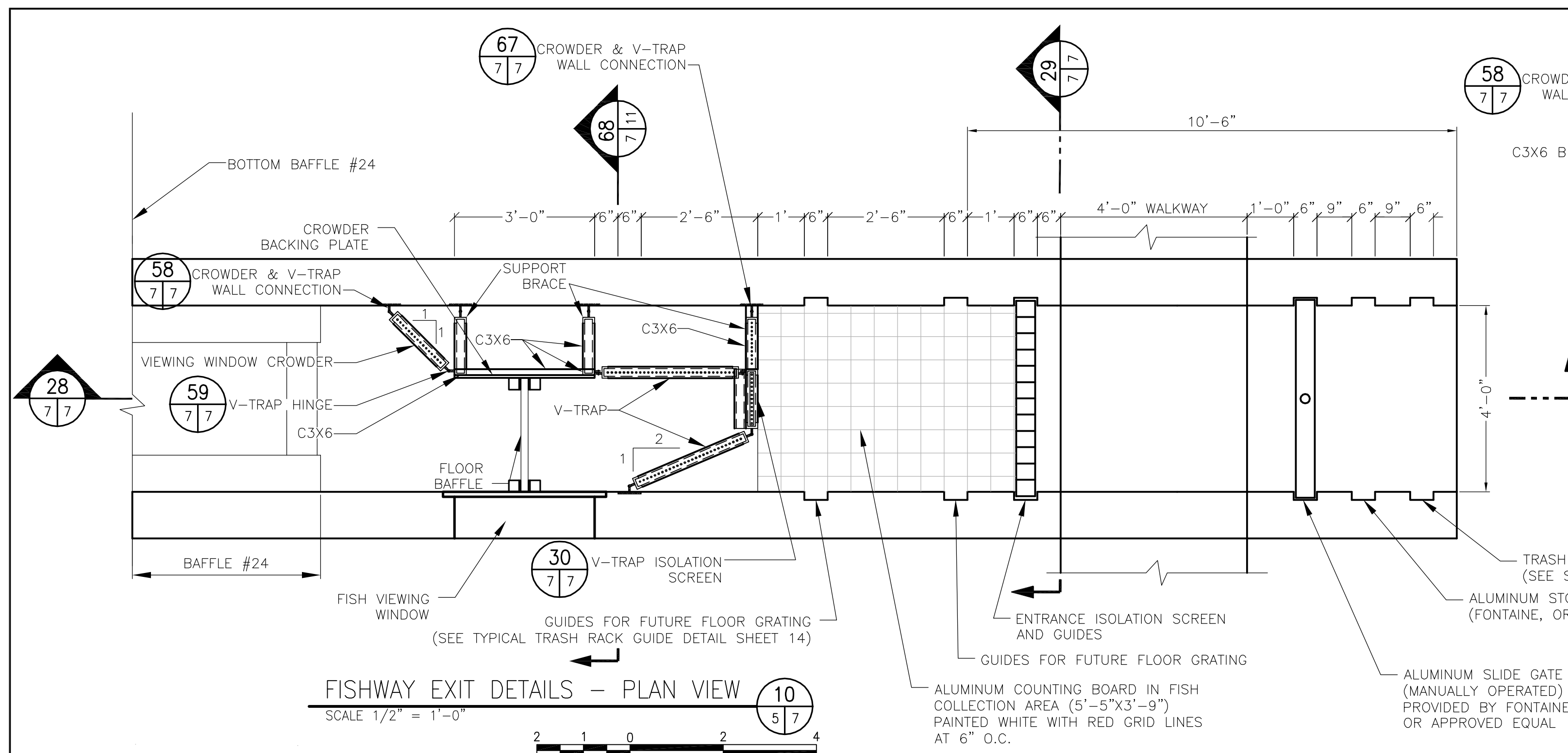
BAFFLE GROOVE DETAIL (64)  
SCALE N.T.S.



STAFF GAUGE DETAIL (20)  
SCALE: N.T.S.

NOTE: REFERENCE ELEVATIONS  
FISHWAY ENTRANCE EL. 15.10 FT = 0.0 FT (2 REQUIRED)  
FISHWAY EXIT EL. 21.04 FT = 0.0 FT (1 REQUIRED)  
TURNING POOL EL. 18.54 FT = 0.0 FT (1 REQUIRED)





NO.	DATE	BY	DESCRIPTION

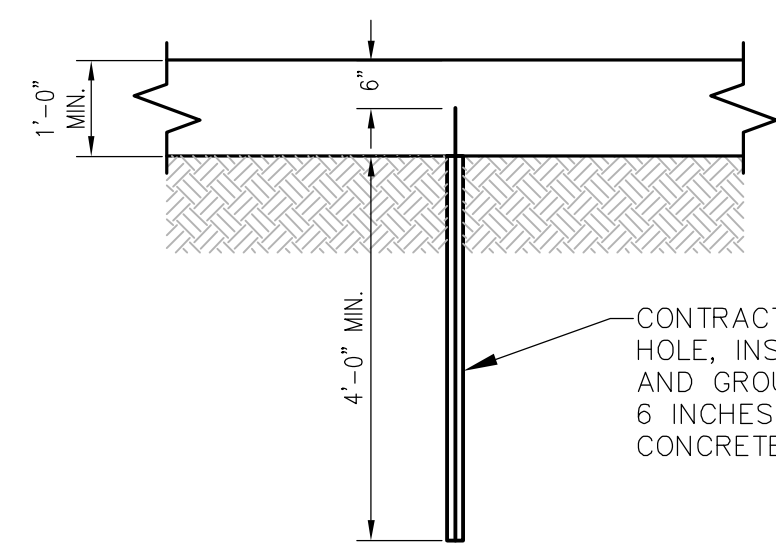
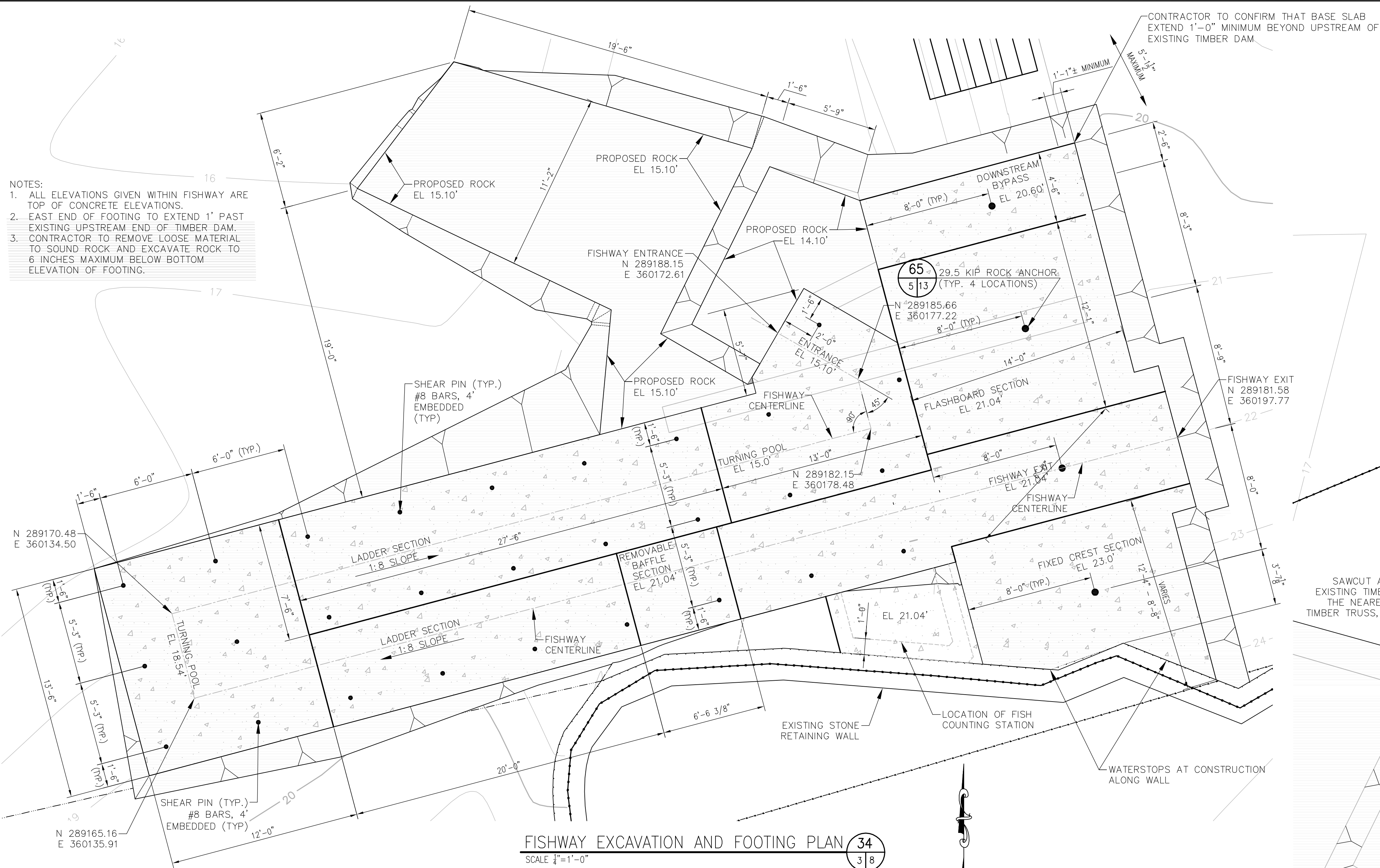
  

<p>LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT SLATER MILL FISHWAY PAWTUCKET, RHODE ISLAND</p>
<p>FISHWAY EXIT DETAILS</p>
<p>2374 Post Road, Suite 102 Warwick, Rhode Island 02886 (401) 736-3440</p>
<p>DATE: JUNE 2012</p>
<p>DESIGNED BY: TCC</p>
<p>DRAWN BY: DPA</p>
<p>CHECKED BY: HLB</p>
<p>PROJECT MANAGER: SSW</p>
<p>PROJECT NUMBER: 62562.01</p>
<p>SCALE: AS SHOWN</p>
<p>FILE NAME: C-6-FISHWAY EXIT DETAILS</p>
<p>DRAWING NUMBER: C-6</p>
<p>SHEET NUMBER: 7 OF 15</p>

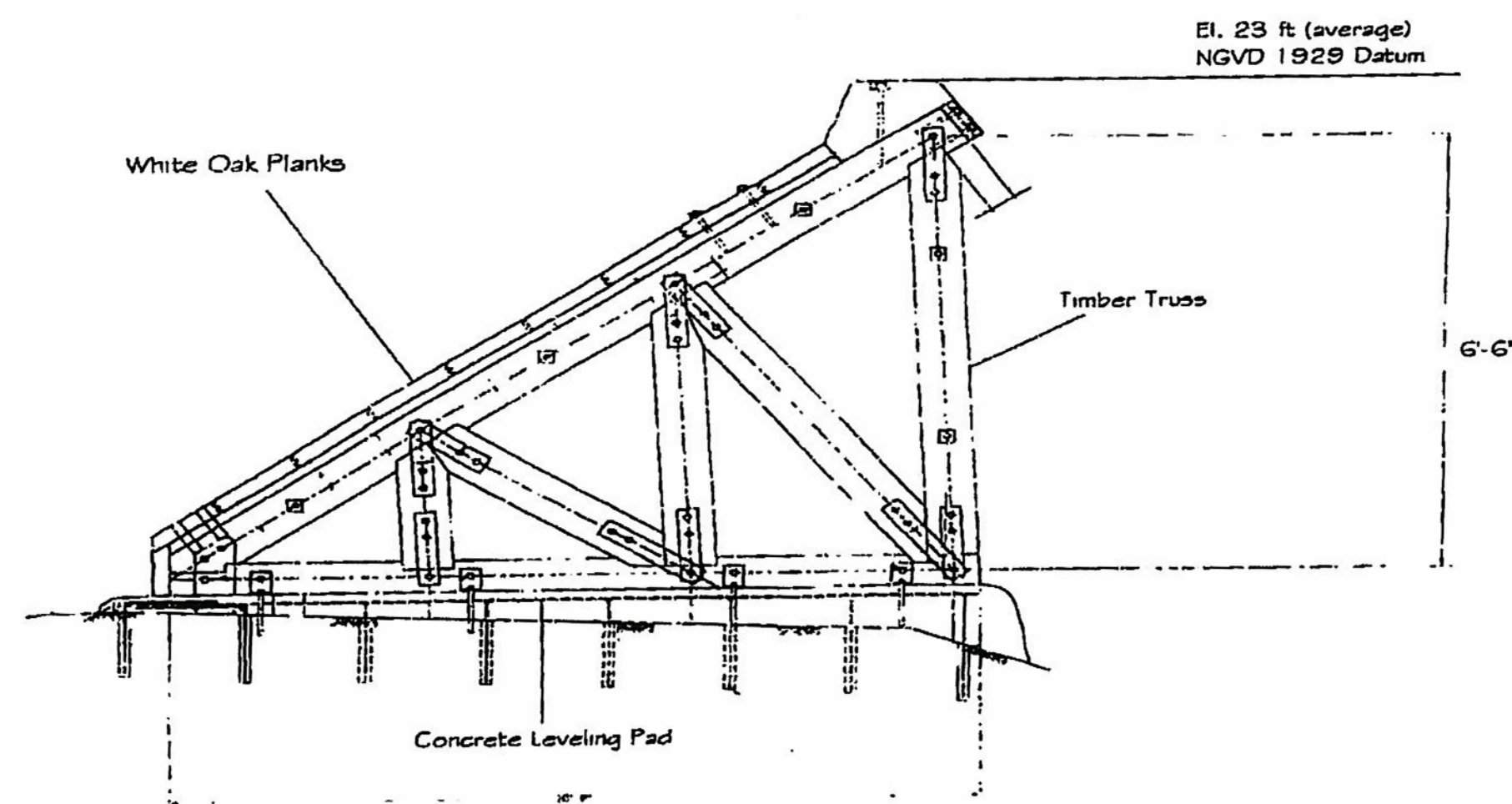
ISSUED FOR CONSTRUCTION BIDS



- NOTES:  
 1. ALL ELEVATIONS GIVEN WITHIN FISHWAY ARE TOP OF CONCRETE ELEVATIONS.  
 2. EAST END OF FOOTING TO EXTEND 1' PAST EXISTING UPSTREAM END OF TIMBER DAM.  
 3. CONTRACTOR TO REMOVE LOOSE MATERIAL TO SOUND ROCK AND EXCAVATE ROCK TO 6 INCHES MAXIMUM BELOW BOTTOM ELEVATION OF FOOTING.

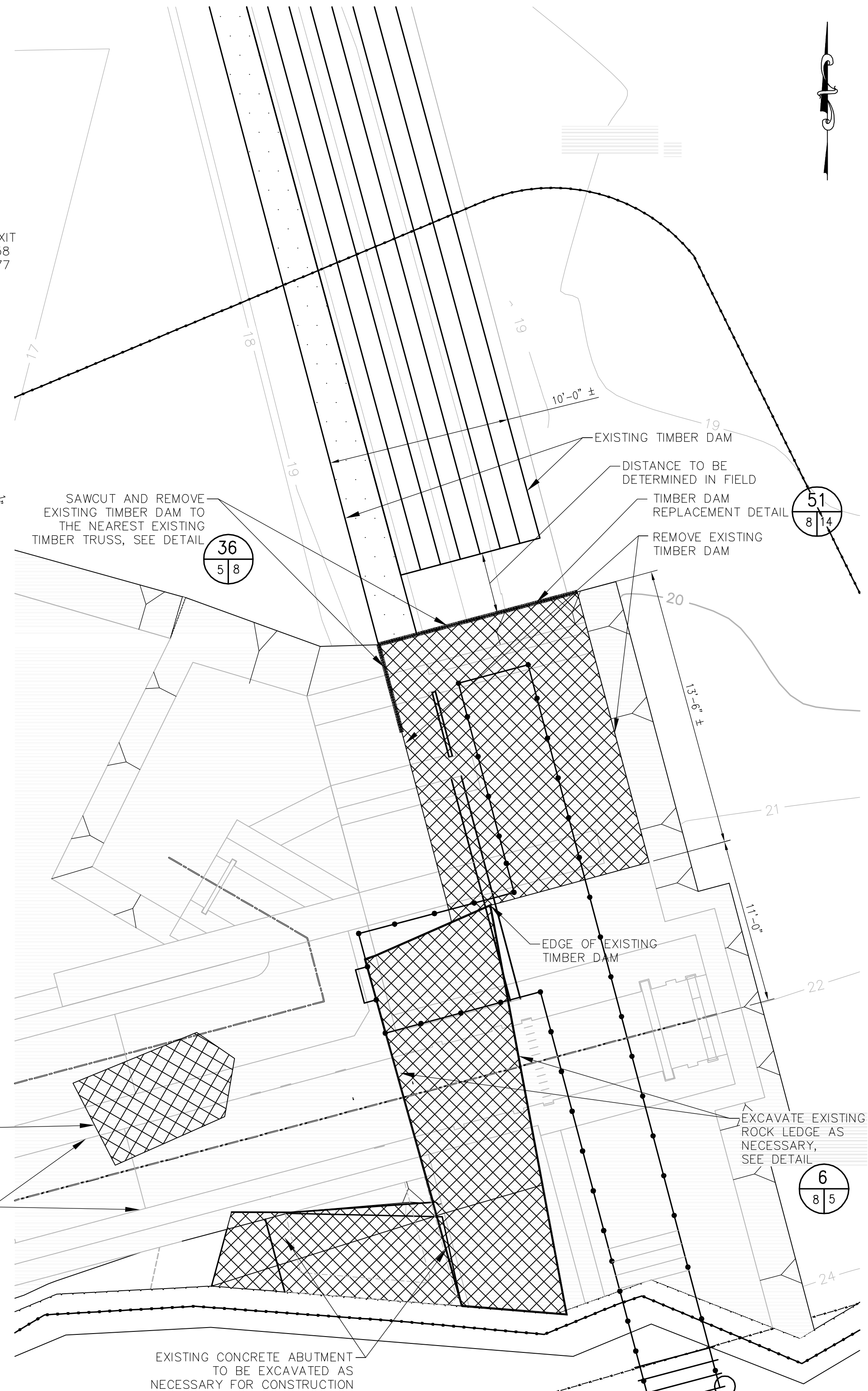


SHEAR PIN (TYPICAL)  
 SCALE: 1/2" = 1'



EXISTING TRUSS DETAIL (36)  
 SCALE: N.T.S.

NOTES:  
 1. BY OTHERS, NOT TO SCALE OR TO BE USED FOR CONSTRUCTION. REFERENCE ONLY.



NO.	DATE	BY	DESCRIPTION

THOMAS C. COOK  
 No. 8819  
 REGISTERED PROFESSIONAL ENGINEER  
 CIVIL  
 7/20/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT  
 SLATER MILL FISHWAY  
 PAWTUCKET, RHODE ISLAND

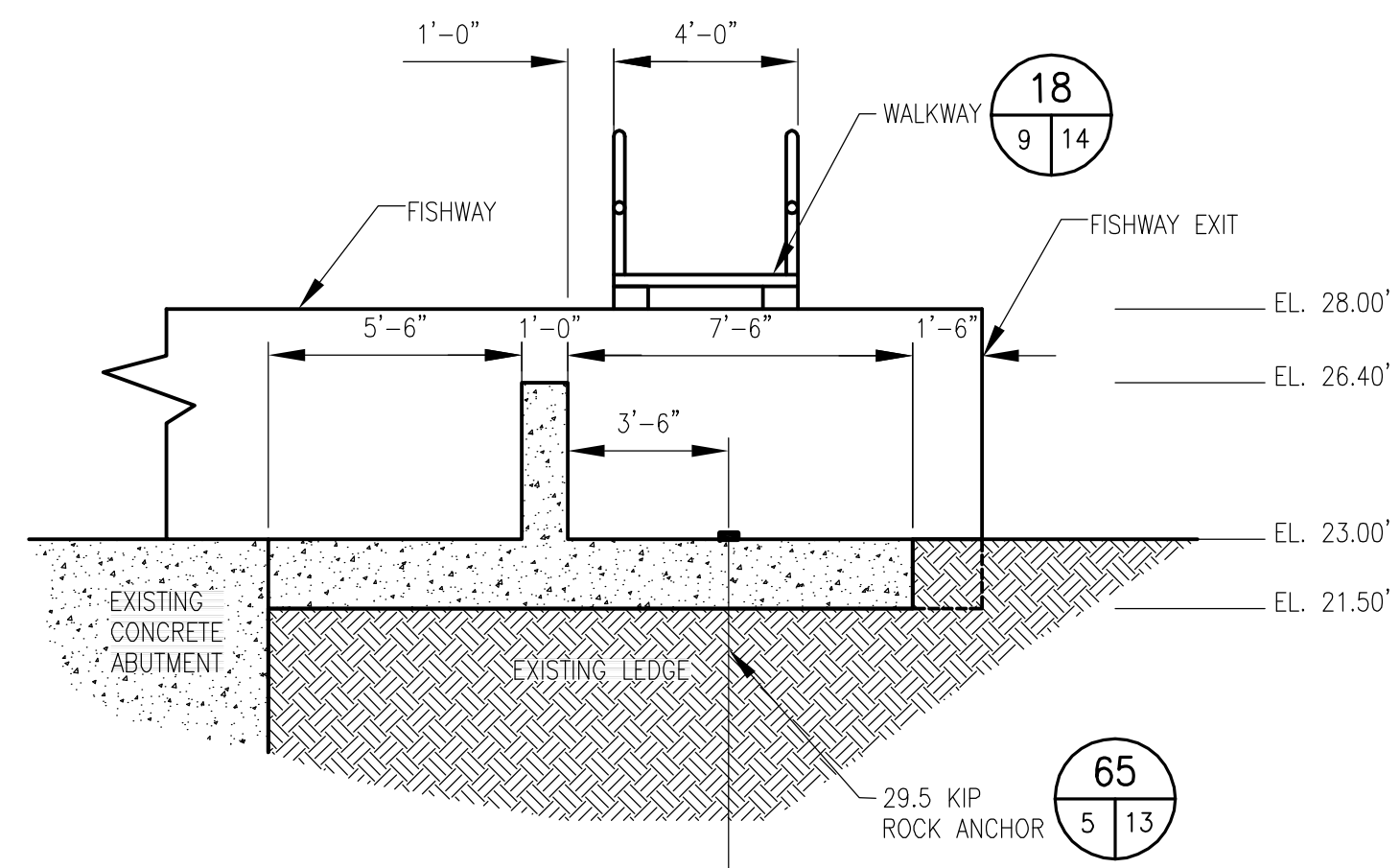
DAM REMOVAL, ROCK EXCAVATION, AND FOOTING PLAN

**EA**  
 EA ENGINEERING,  
 SCIENCE, AND  
 TECHNOLOGY

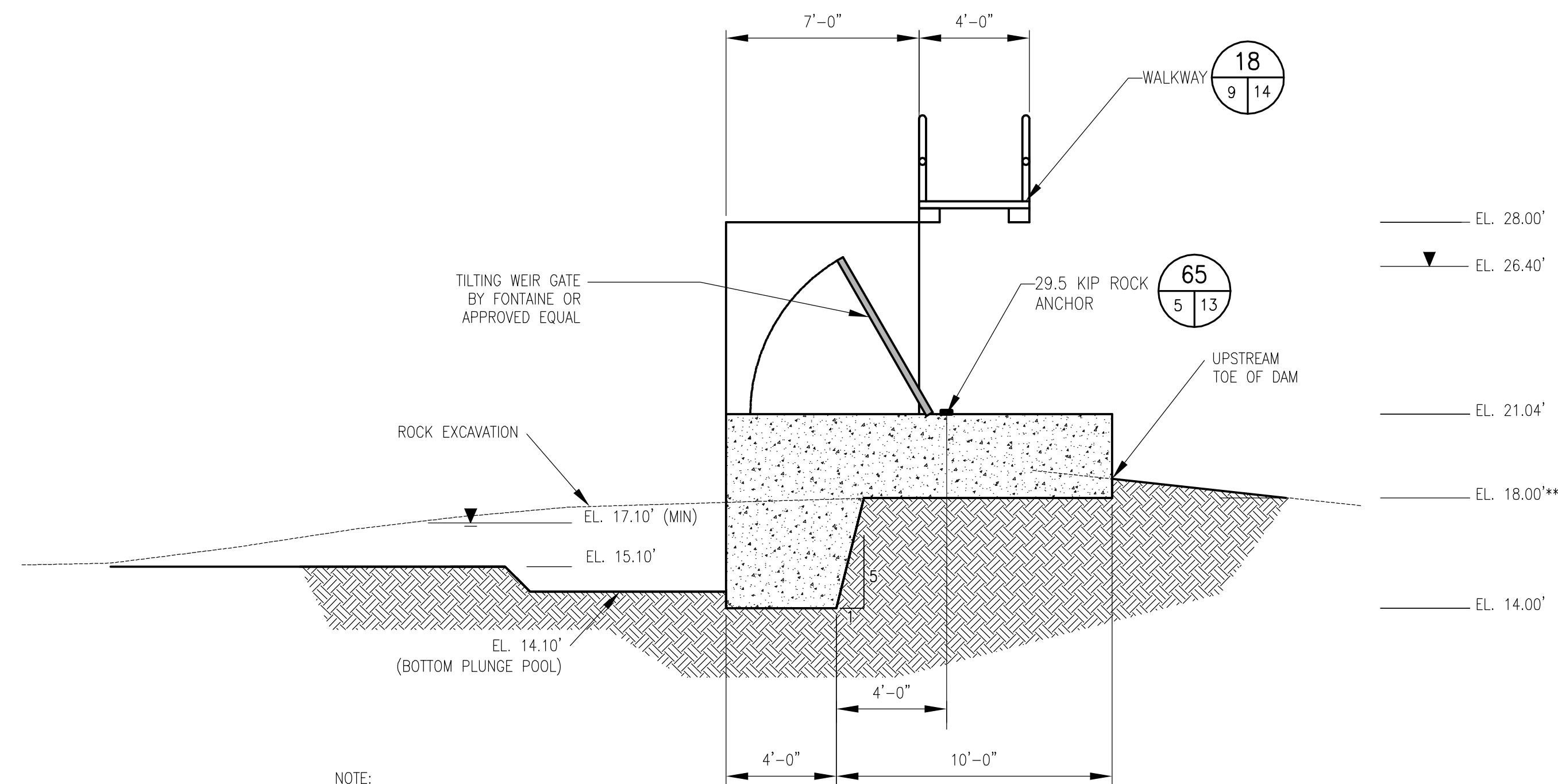
2374 Post Road, Suite 102  
 Warwick, Rhode Island 02886  
 (401) 736-3440

DATE: JUNE 2012  
 DESIGNED BY: TCC  
 DRAWN BY: DPA  
 CHECKED BY: HLB  
 PROJECT MANAGER: SSW  
 PROJECT NUMBER: 62562.01  
 SCALE: AS SHOWN  
 FILE NAME: C-7 DAM REMOVAL  
 DRAWING NUMBER: C-7  
 SHEET NUMBER: 8 OF 15





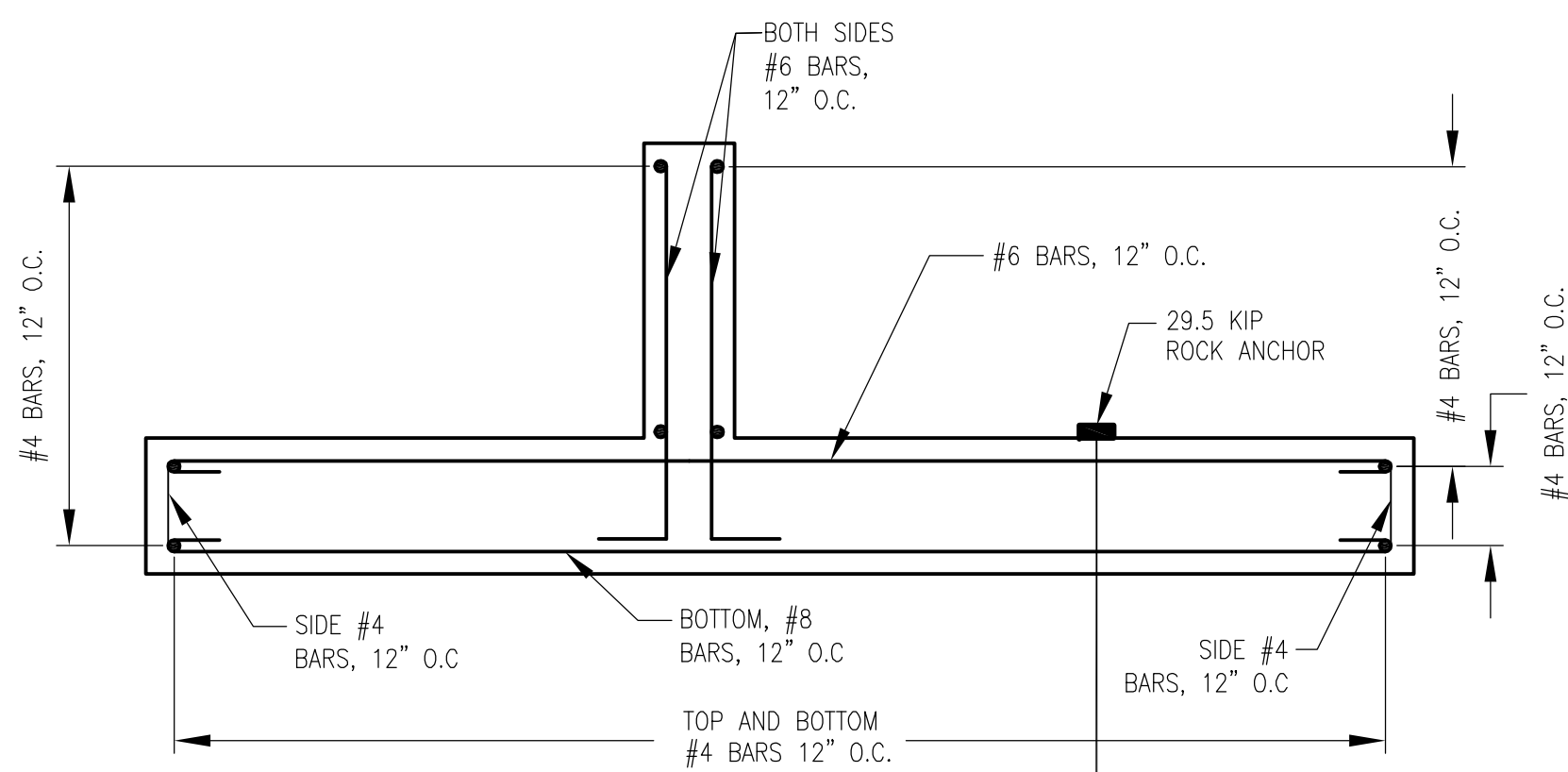
**FIXED CREST SECTION** 24  
SCALE 1/4"=1'-0"



**FLASHBOARD SECTION** 23  
SCALE 1/4"=1'-0"

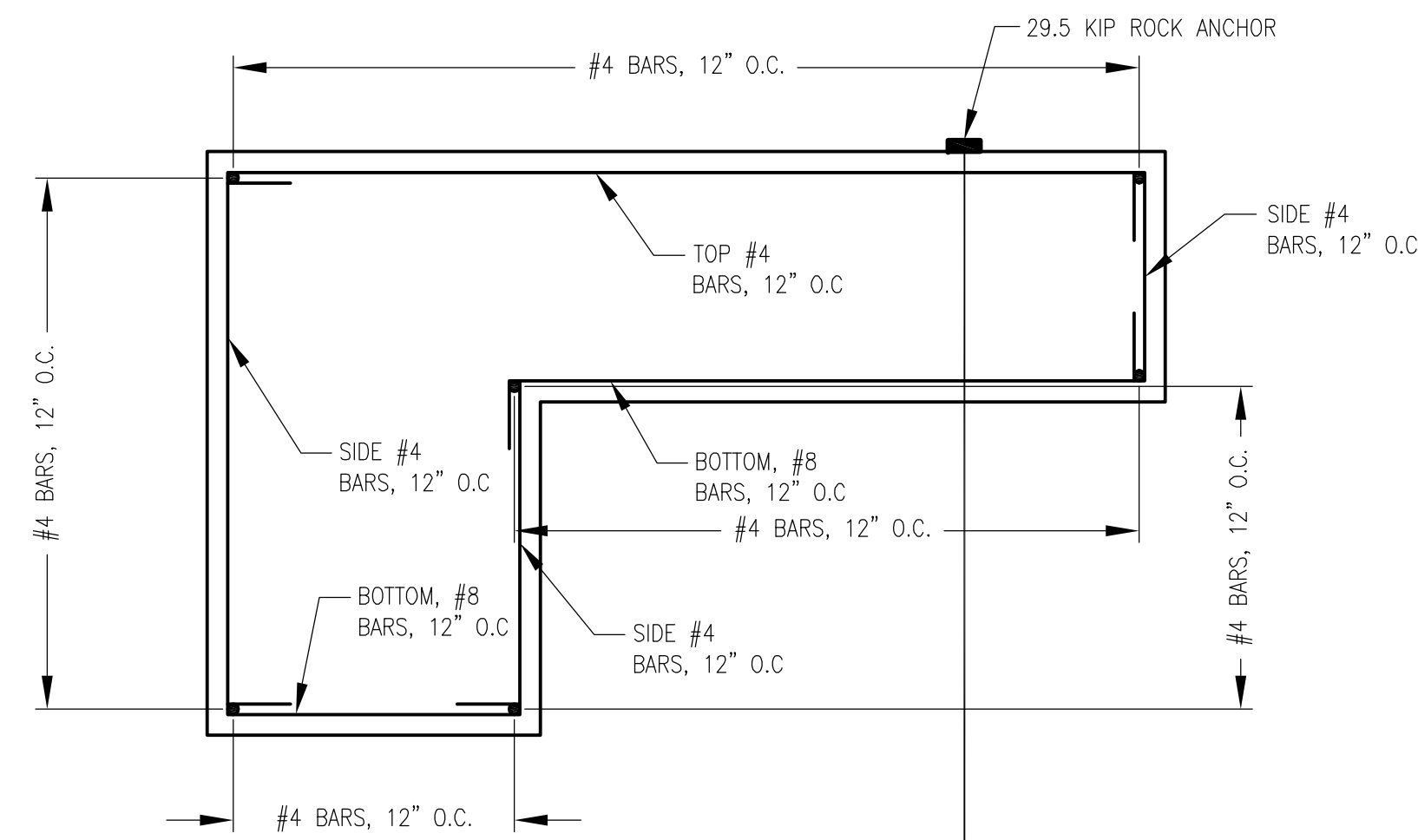
\*-NOTE: FOOTING TO EXTEND BEYOND THE UPSTREAM END OF THE TIMBER DAM. SEE SHEET 8

\*\*NOTE: ELEVATION MAY BE LOWER, SEE NON-OVERFLOW SECTION. SEE SHEET 5



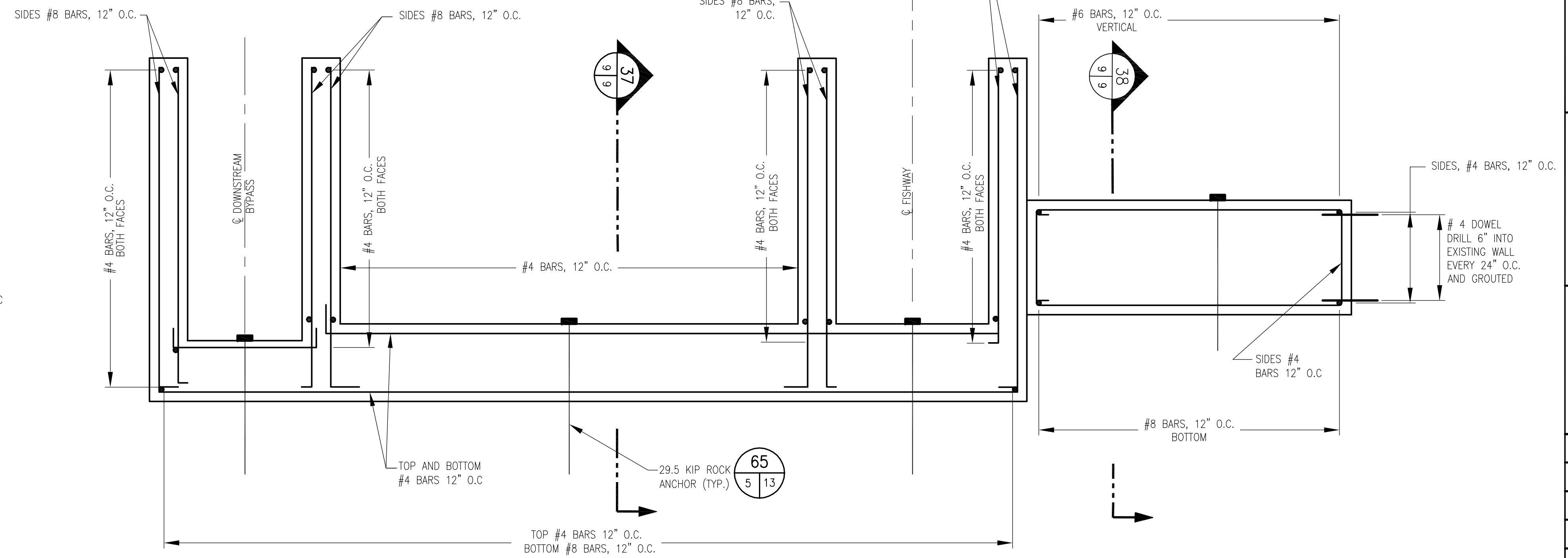
**FIXED CREST REBAR DETAIL** 38  
SCALE 3/8"=1'-0"

NOTE: A MINIMUM OF 3" COVER ON ALL REBAR



**TYPICAL NON-OVERFLOW SECTION REBAR** 37  
SCALE 3/8"=1'-0"

NOTE: A MINIMUM OF 3" COVER ON ALL REBAR



**NON-OVERFLOW SECTION REBAR** 26  
SCALE 3/8"=1'-0"

- NOTE:
1. A MINIMUM OF 3" COVER ON ALL REBAR
  2. CONCRETE WALLS, SLABS, AND FOOTINGS THAT CONNECT TO FISHWAY SHALL USE REINFORCEMENT DIAMETER, SPACING, AND SPLICE LENGTH AS FISHWAY STRUCTURE
  3. ALL CONSTRUCTION JOINTS SHALL HAVE WATERSTOPS.
  4. CONTRACTOR TO SUBMIT REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL.

NO.	DATE	BY	DESCRIPTION

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT  
SLATER MILL FISHWAY  
PAWTUCKET, RHODE ISLAND

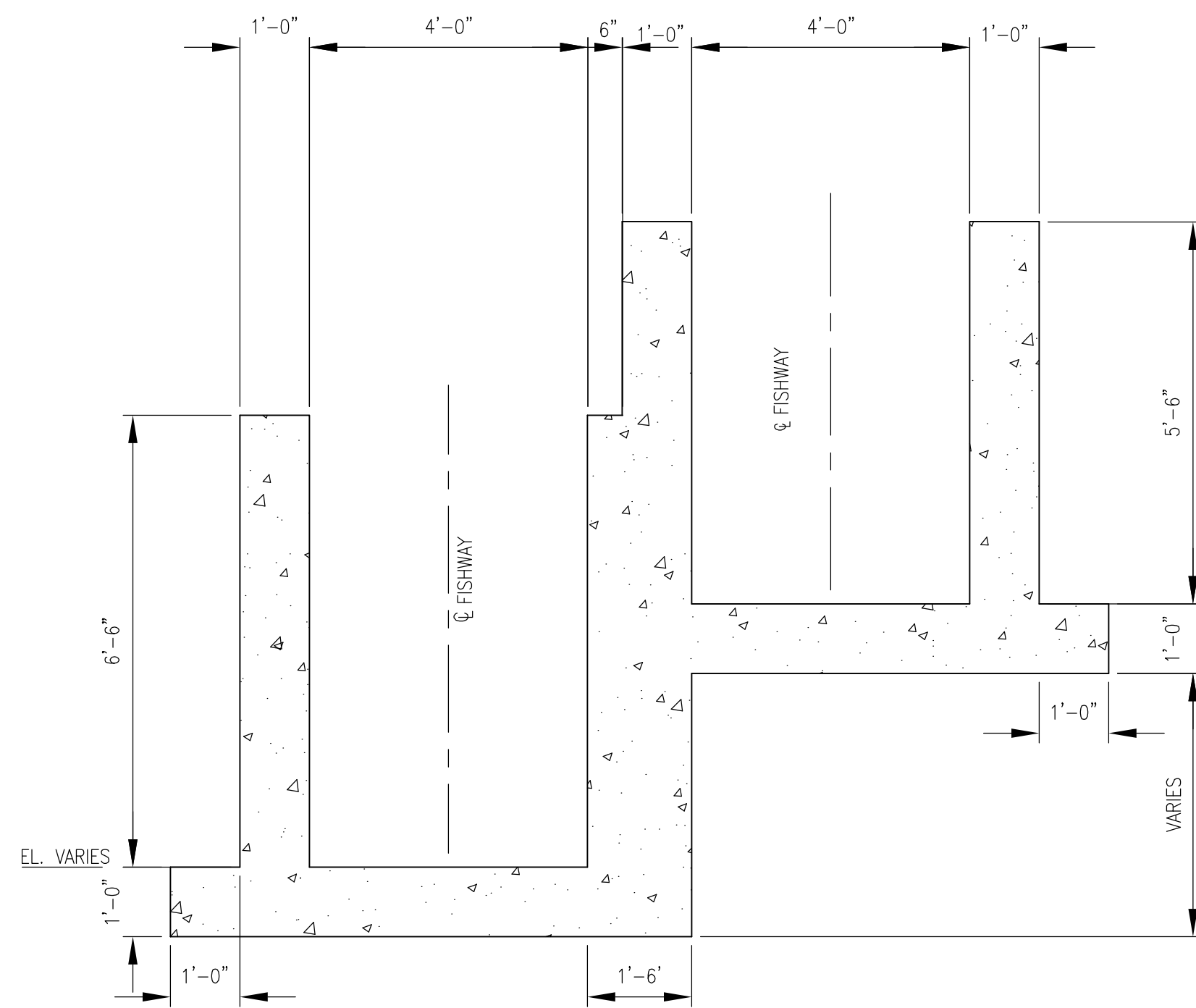
NON-OVERFLOW SECTION CONCRETE AND REBAR DETAILS

SEAL

THOMAS C. COOK  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL  
No. 8819  
7/20/12

DATE	JUNE 2012
DESIGNED BY	TCC
DRAWN BY	DPA
CHECKED BY	HLB
PROJECT MANAGER	SSW
PROJECT NUMBER	62562.01
SCALE	AS SHOWN
FILE NAME	C-8 FISHWAY NON-OVERFLOW
DRAWING NUMBER	C-8
SHEET NUMBER	9 OF 15





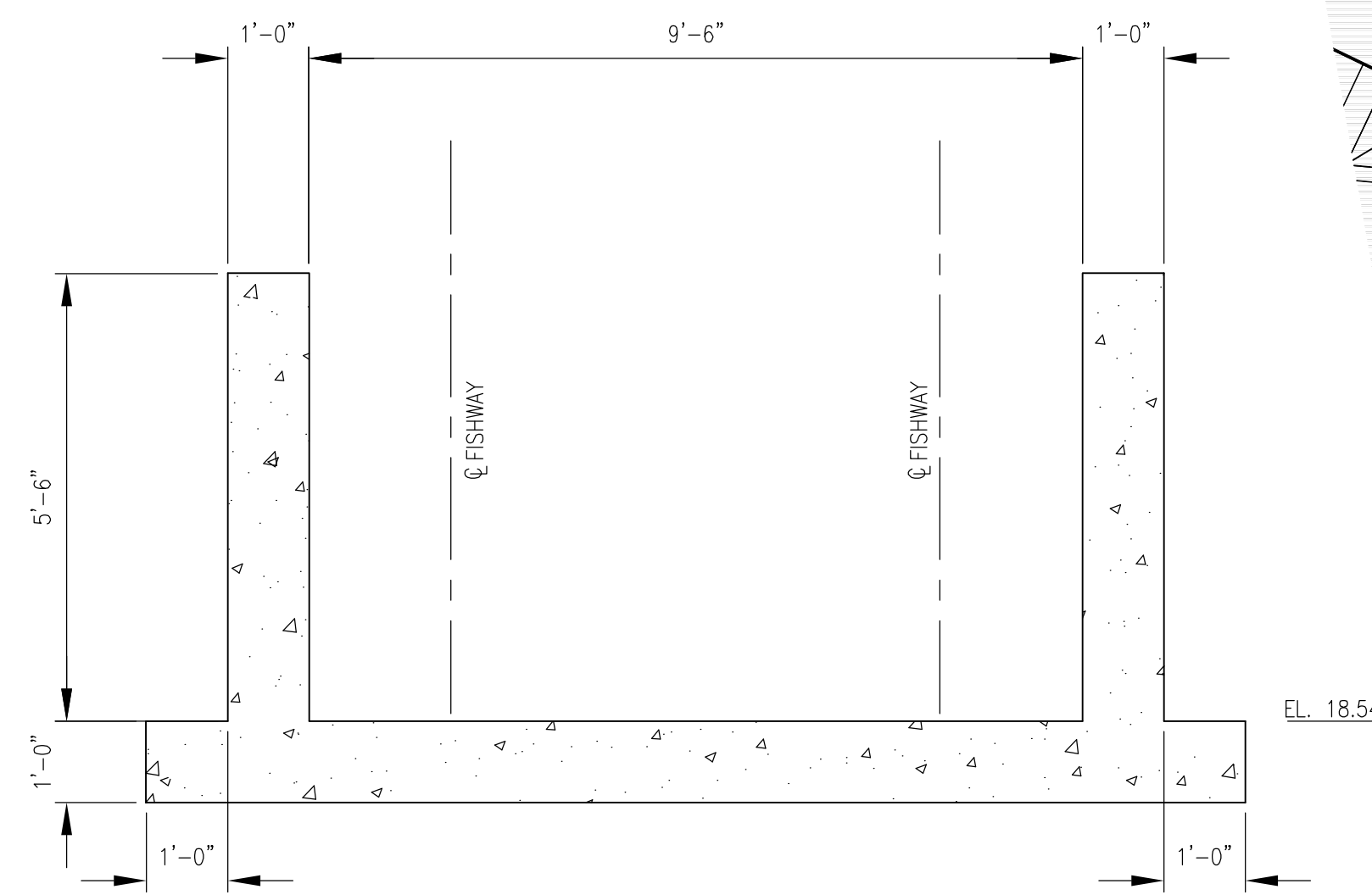
**FISHWAY CONCRETE DETAIL** 22  
SCALE 1/2" = 1'-0"



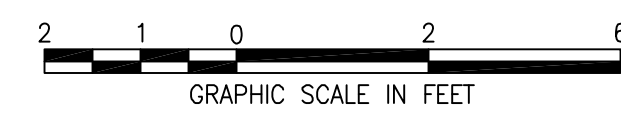
NOTES:

- FOR REINFORCING DETAIL SEE 41
- REINFORCING FOR BAFFLE SLOTS, SEE 64

EL. VARIES

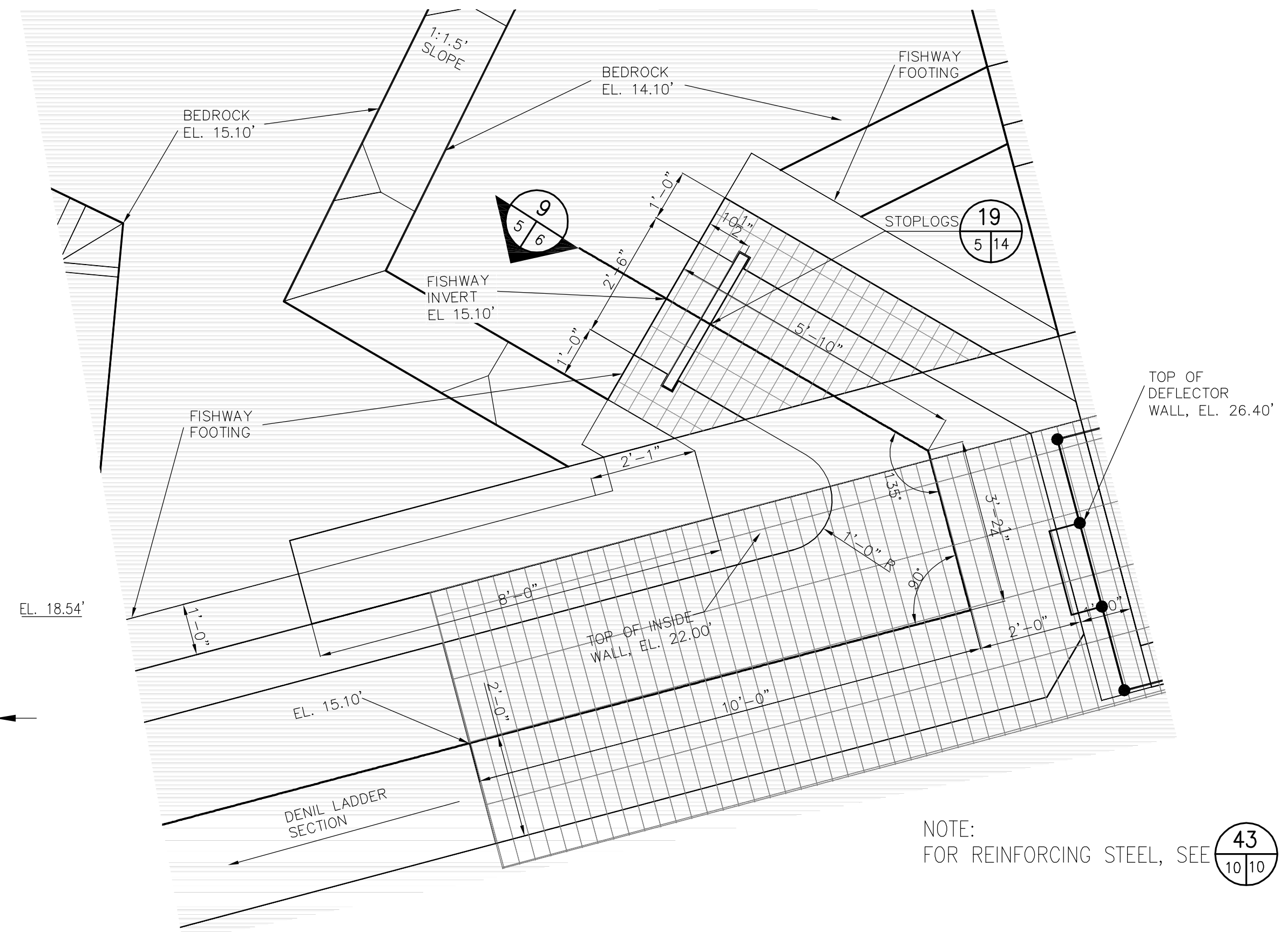


**TURNING POOL CONCRETE DETAIL** 39  
SCALE 1/2" = 1'-0"



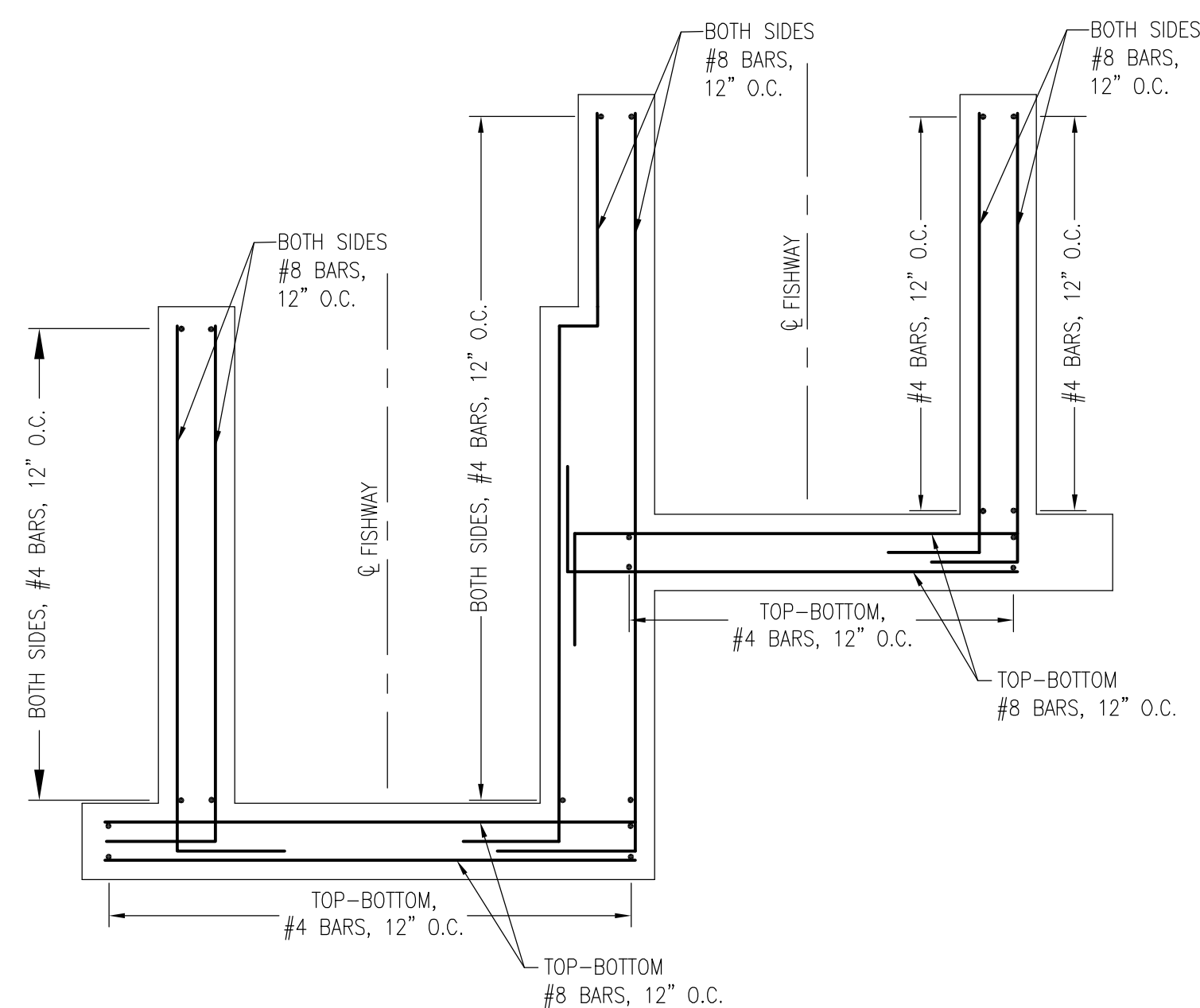
NOTE: FOR REINFORCING, SEE 40

FOR BAFFLE GROOVE, SEE 64

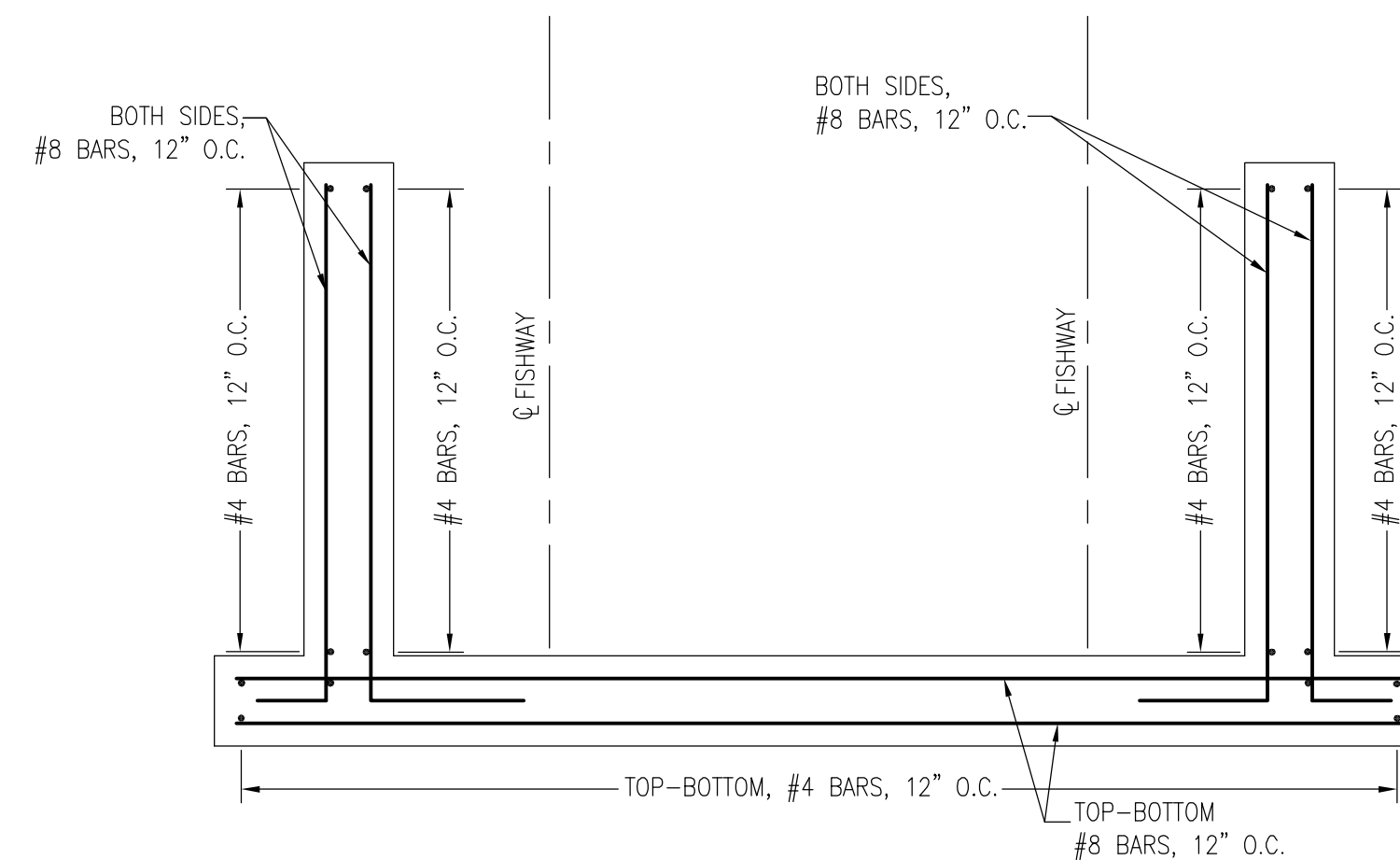


**FISHWAY ENTRANCE CONCRETE PLAN** 42  
SCALE 1/2" = 1'-0"

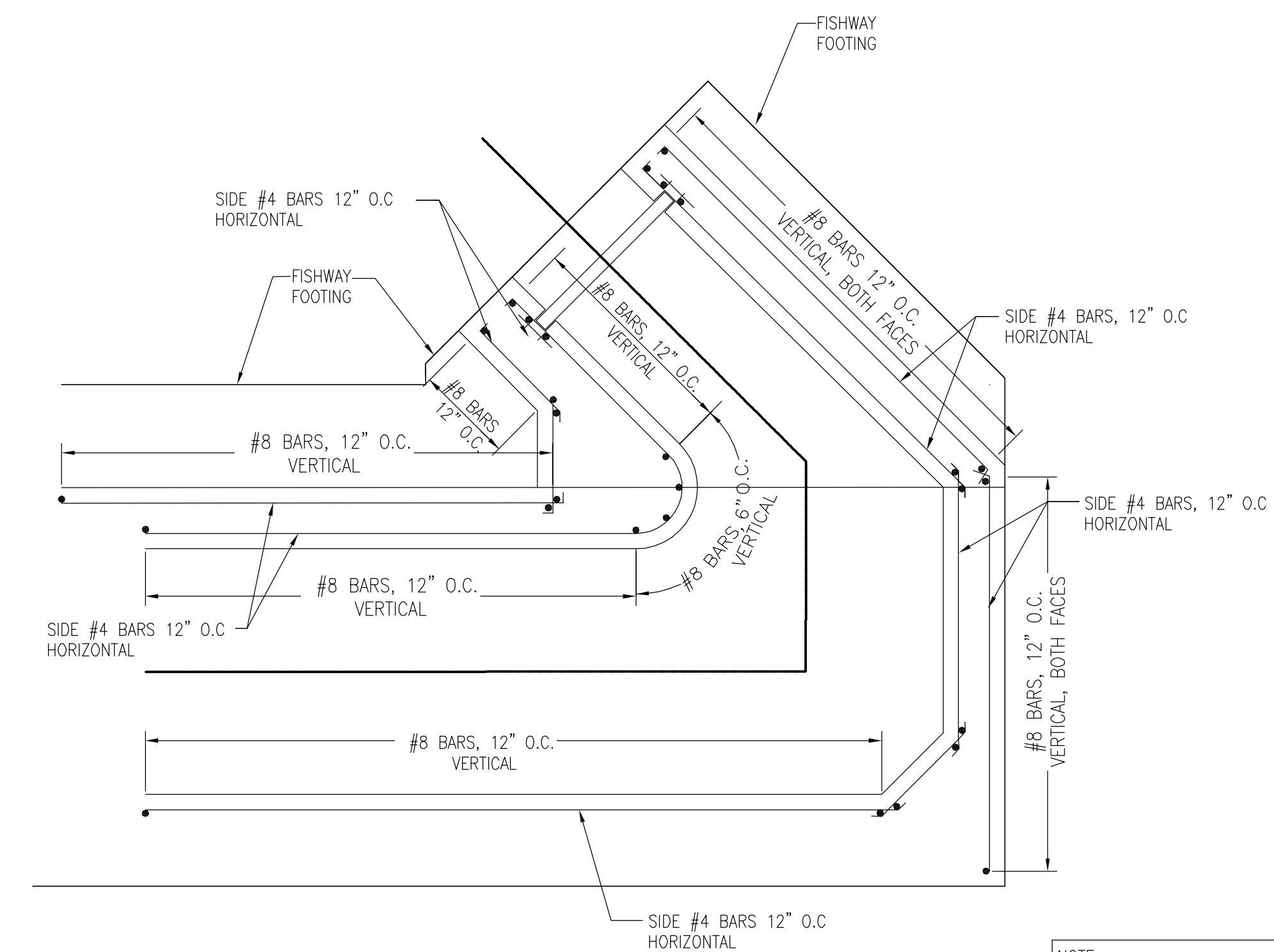
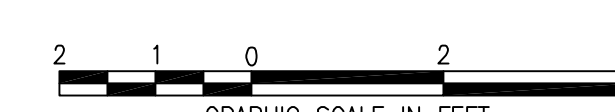
NOTE: FOR REINFORCING STEEL, SEE 43



**FISHWAY REBAR DETAIL** 41  
SCALE 1/2" = 1'-0"



**TURNING POOL REBAR DETAIL** 40  
SCALE 1/2" = 1'-0"



**FISHWAY ENTRANCE REBAR** 43  
SCALE 1/2" = 1'-0"

- NOTE:
- A MINIMUM OF 3" COVER ON ALL REBAR CONCRETE WALLS, SLABS, AND FOOTINGS THAT CONNECT TO FISHWAY SHALL USE THE SAME REINFORCEMENT DIAMETER, SPACING AND SPLICE LENGTH AS FISHWAY STRUCTURE.
  - ALL CONSTRUCTION JOINTS SHALL HAVE WATERSTOPS.
  - CONTRACTOR TO SUBMIT REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL.

NO.	DATE	BY	DESCRIPTION

THOMAS C. COOK  
No. 8819  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL  
7/20/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT  
SLATER MILL FISHWAY  
PAWTUCKET, RHODE ISLAND

FISHWAY CONCRETE AND REBAR TYPICAL DETAILS

**EA ENGINEERING, SCIENCE, AND TECHNOLOGY**

2374 Post Road, Suite 102  
Warwick, Rhode Island 02886  
(401) 736-3440

DATE: JUNE 2012

DESIGNED BY: TCC

DRAWN BY: DPA

CHECKED BY: HLB

PROJECT MANAGER: SSW

PROJECT NUMBER: 62562.01

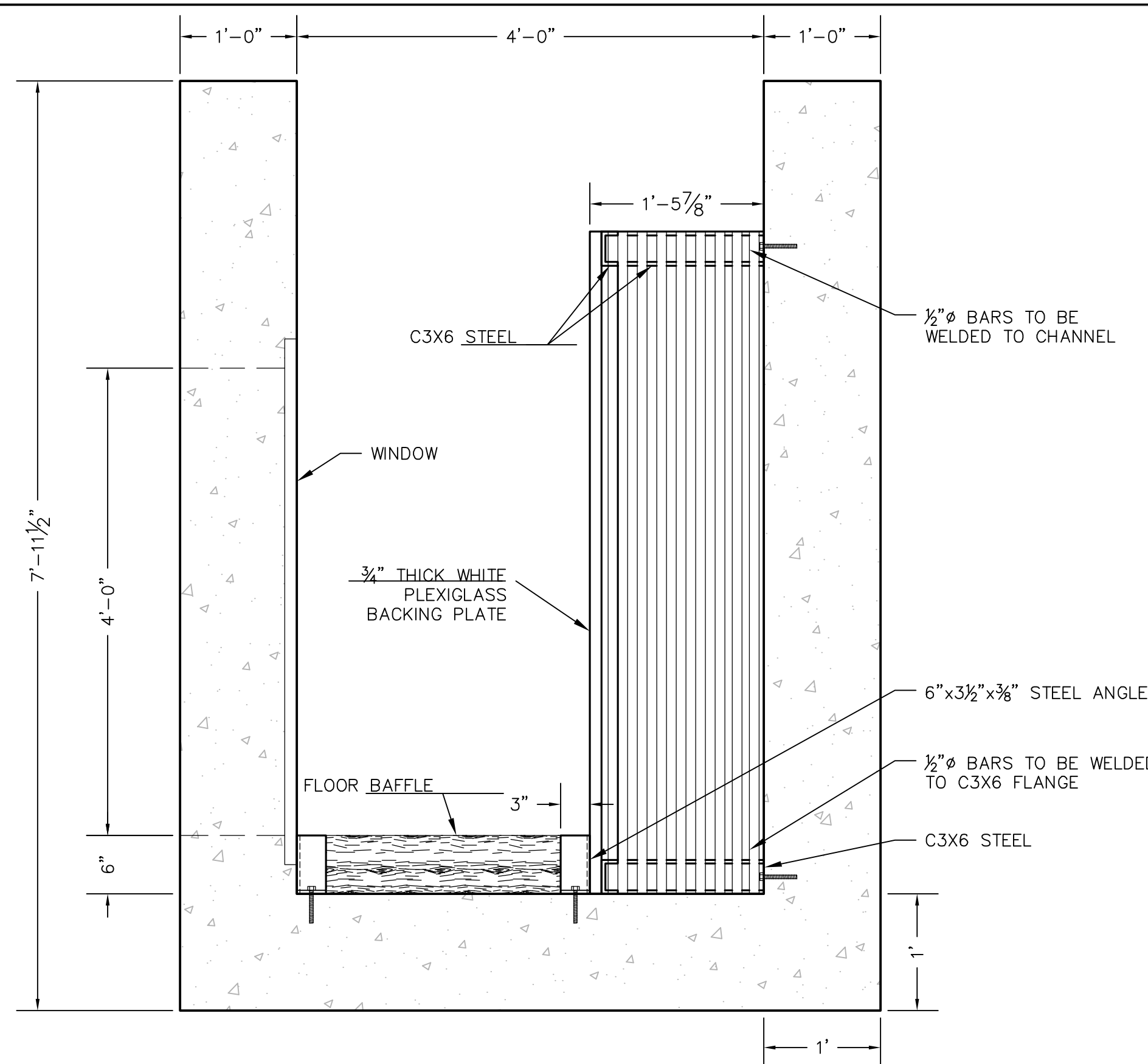
SCALE: AS SHOWN

FILE NAME: C-9 FISHWAY CONCRETE DETAILS

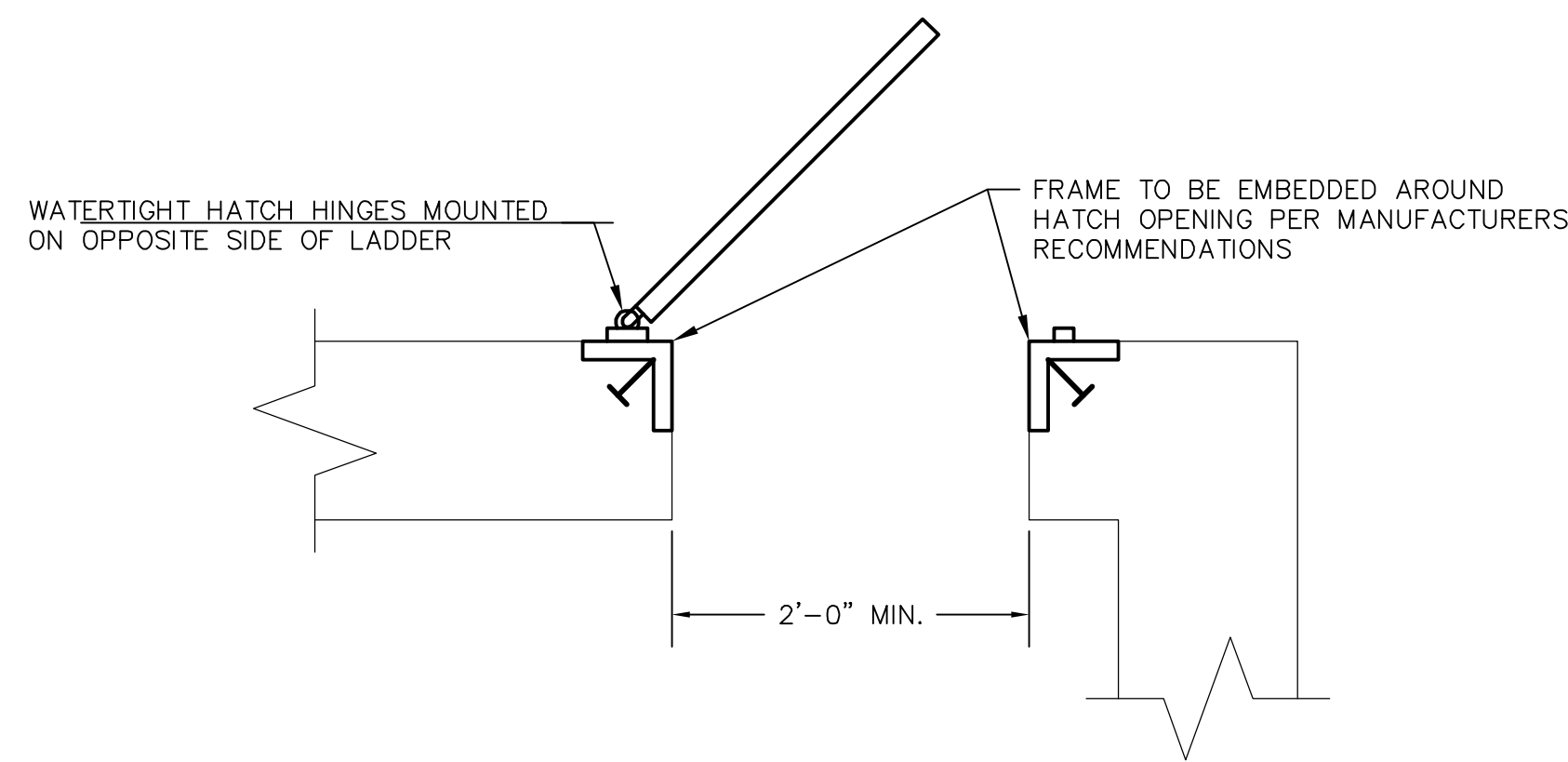
DRAWING NUMBER: C-9

SHEET NUMBER: 10 OF 15

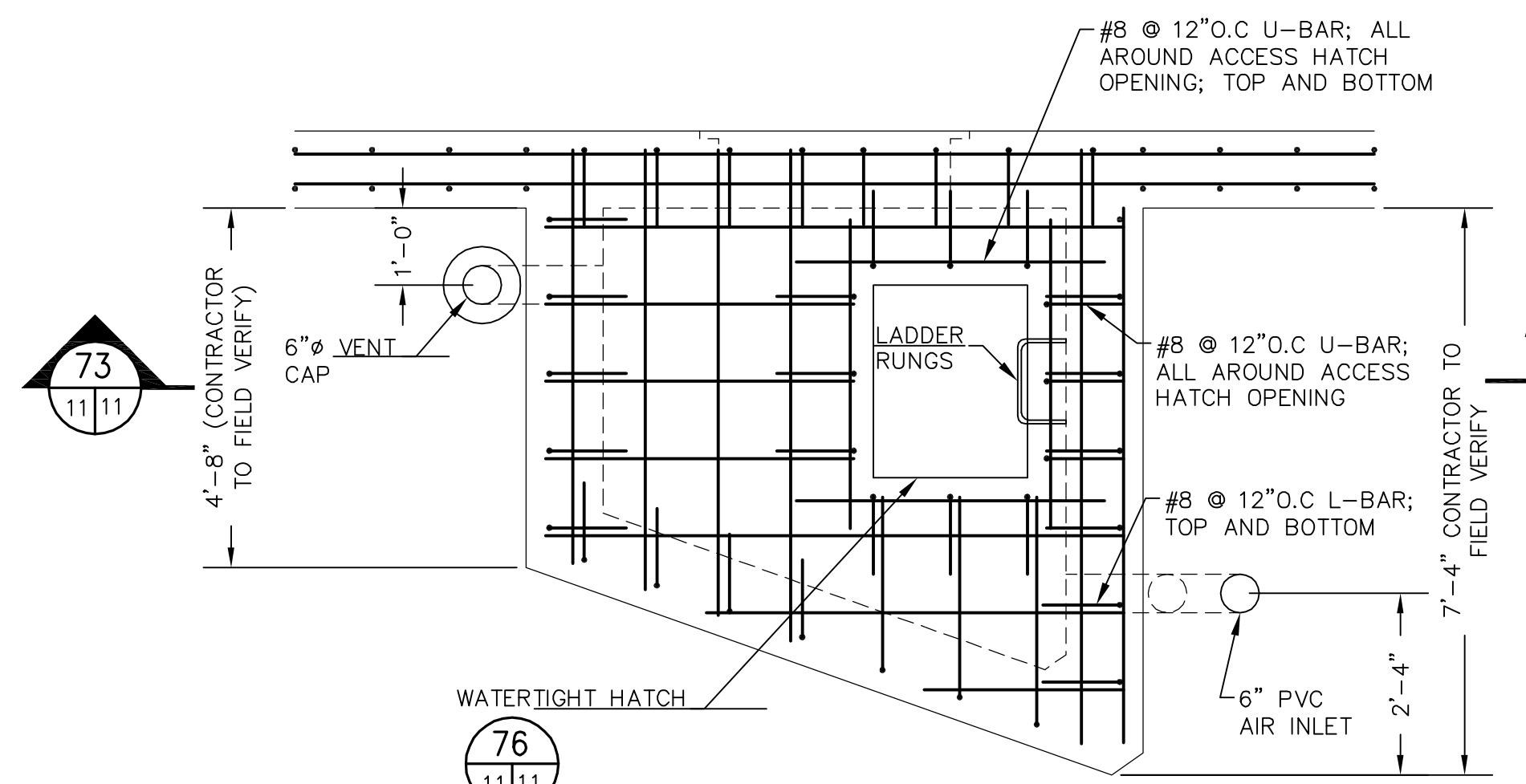




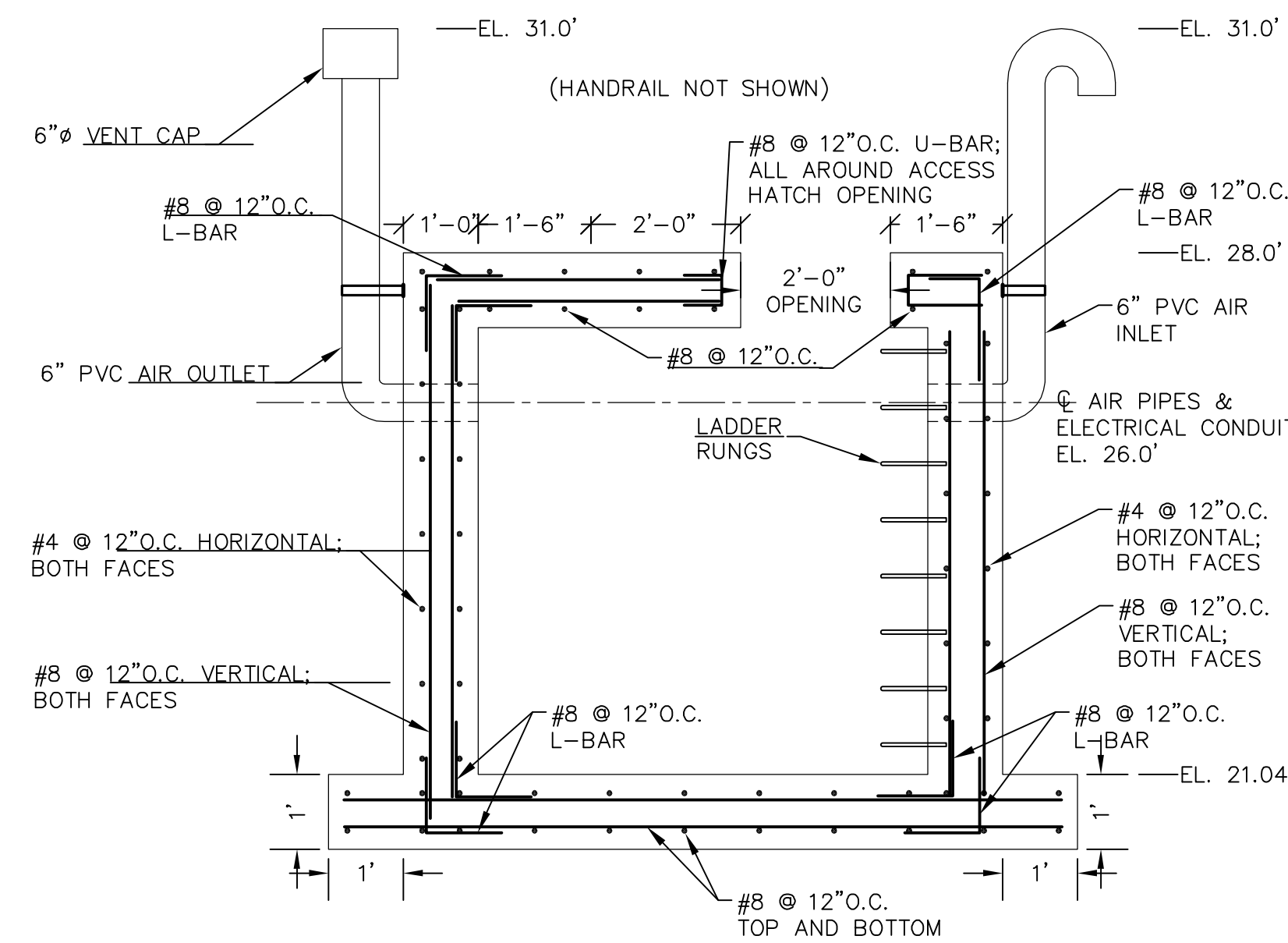
FISHWAY ENTRANCE CROWDER SECTION (68)  
SCALE 1"=1'-0"



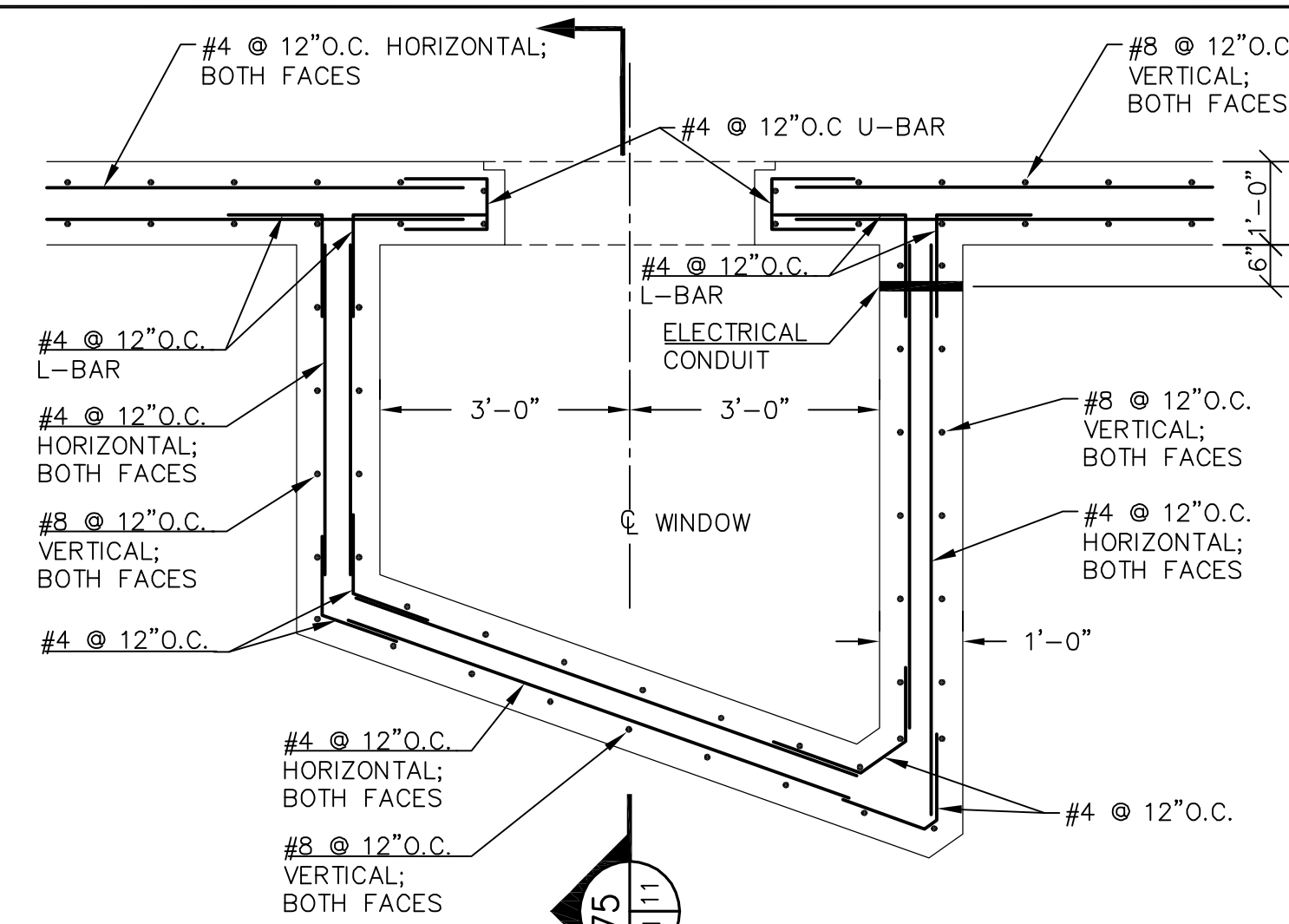
WATERTIGHT HATCH (76)  
SCALE 1"=1'-0"



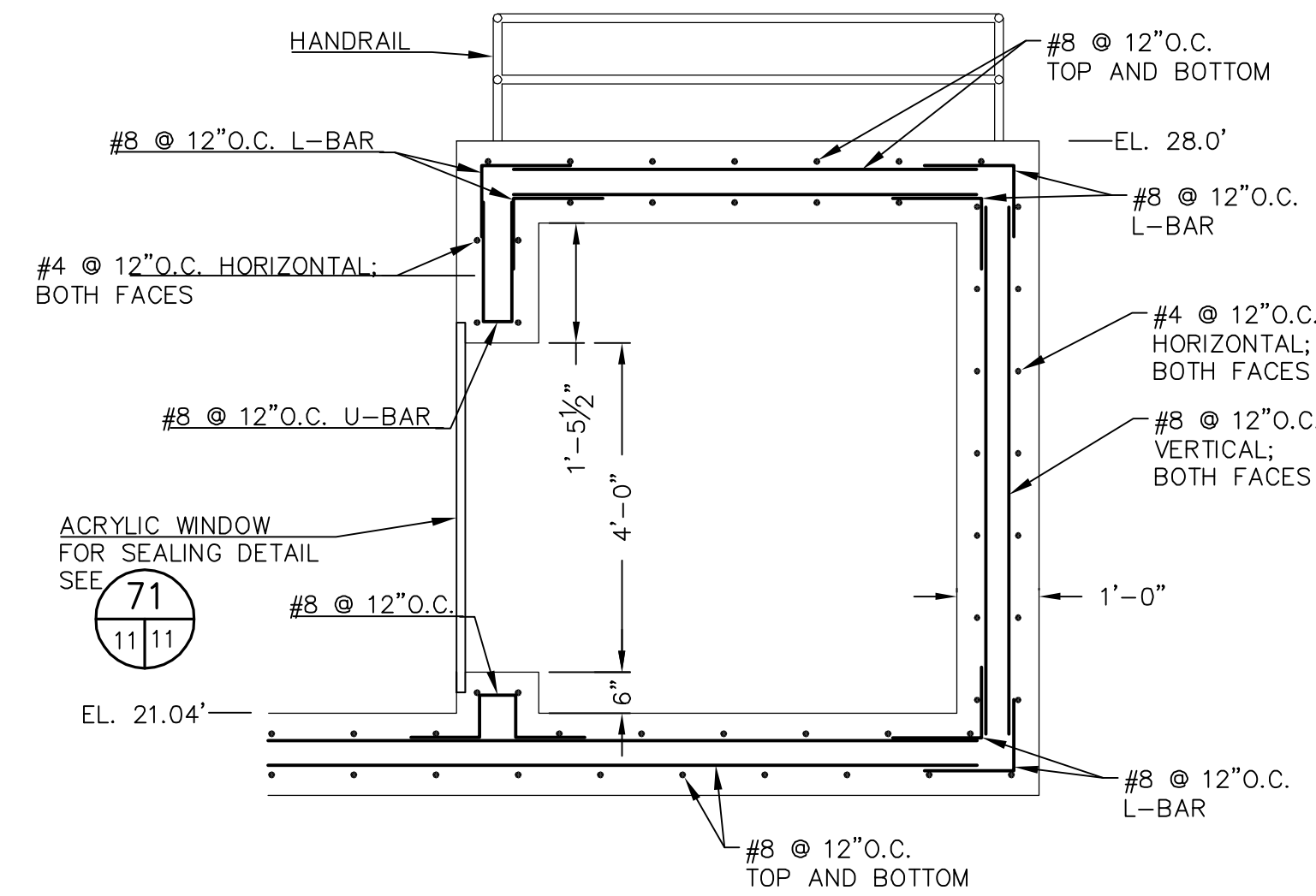
COUNTING STATION - ROOF PLAN (72)  
SCALE 1/2"=1'-0"



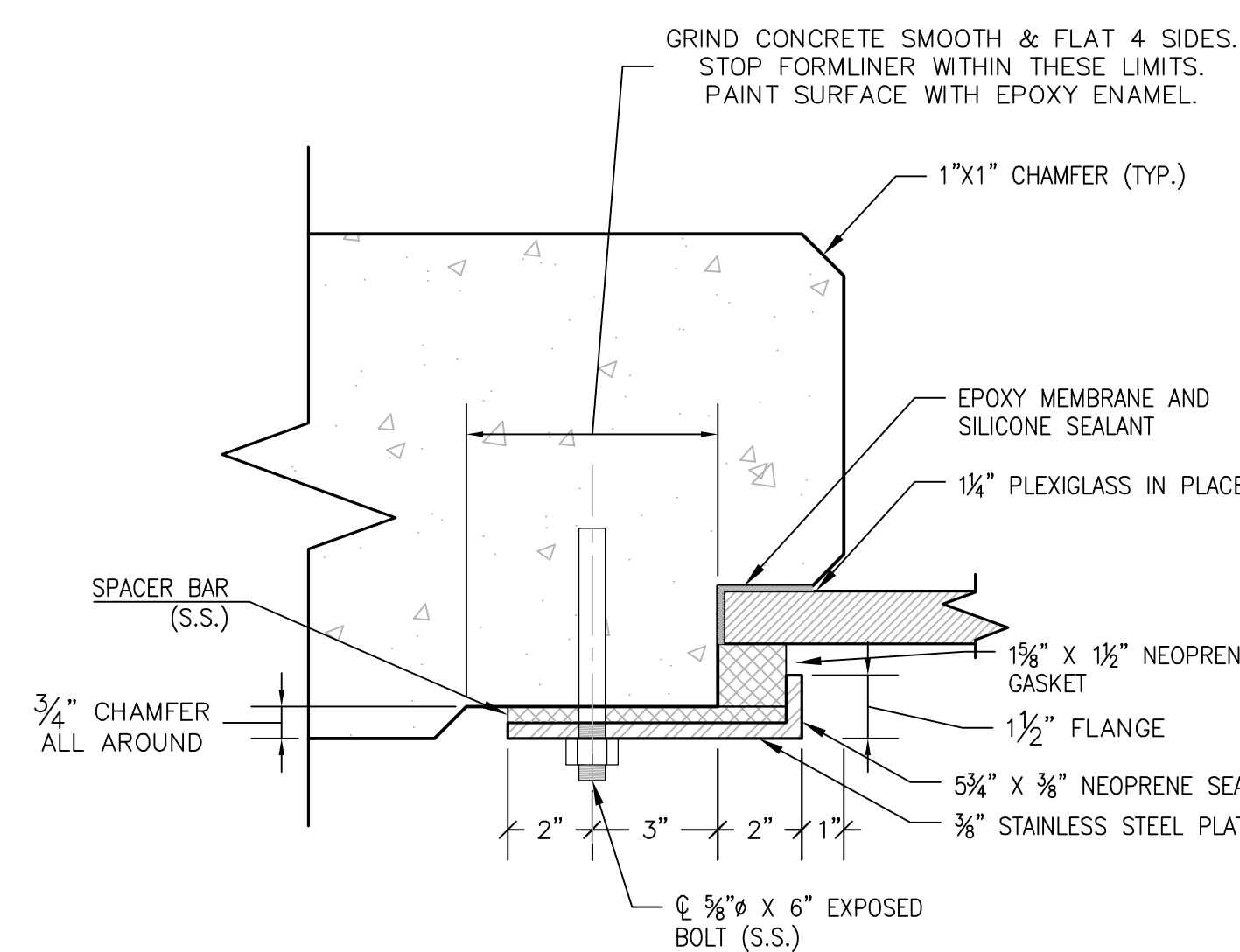
COUNTING STATION - SECTION (73)  
SCALE 1/2"=1'-0"



COUNTING STATION - PLAN EL. 124.0' (74)  
SCALE 1/2"=1'-0"

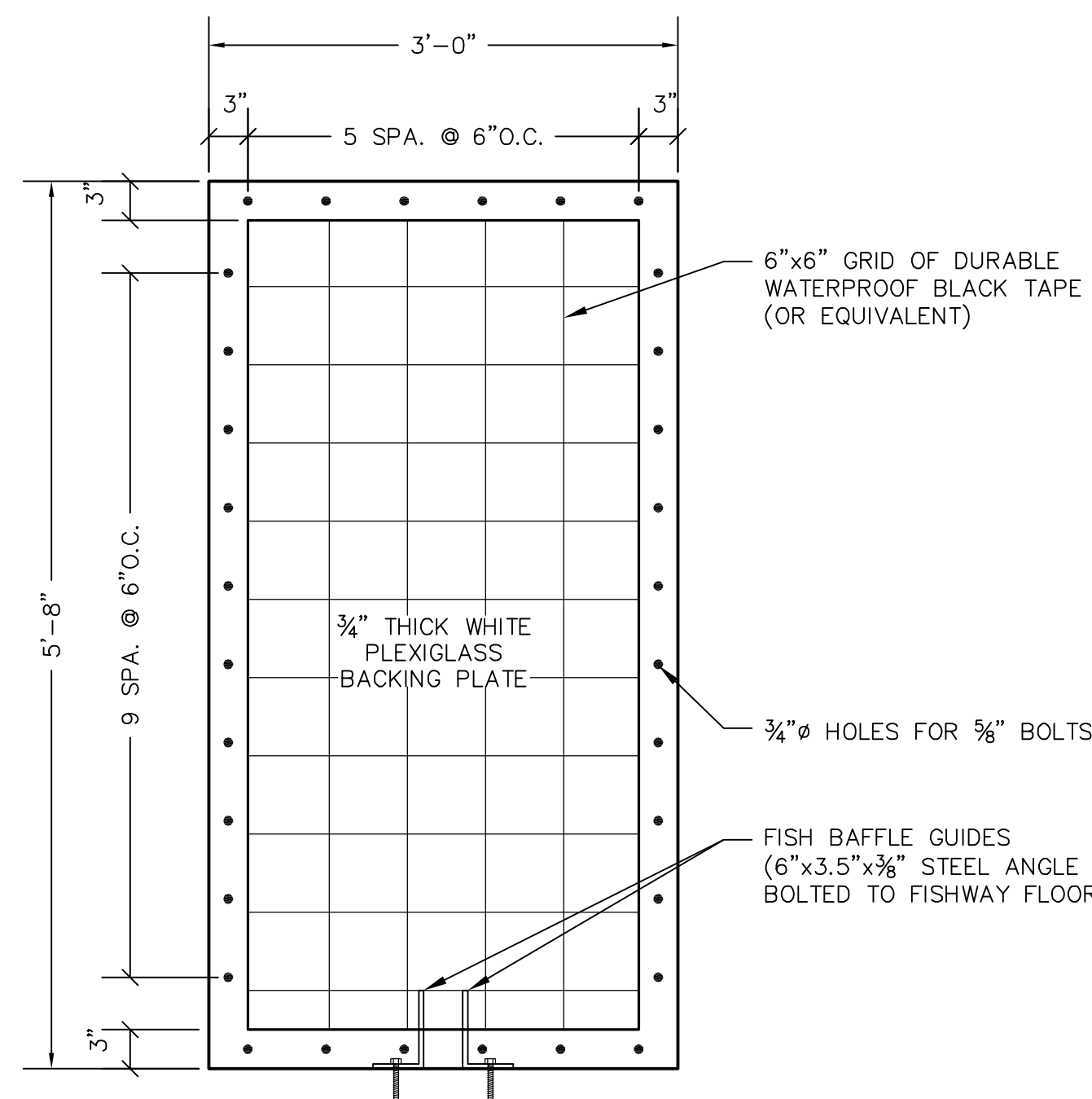


COUNTING STATION - SECTION (75)  
SCALE 1/2"=1'-0"

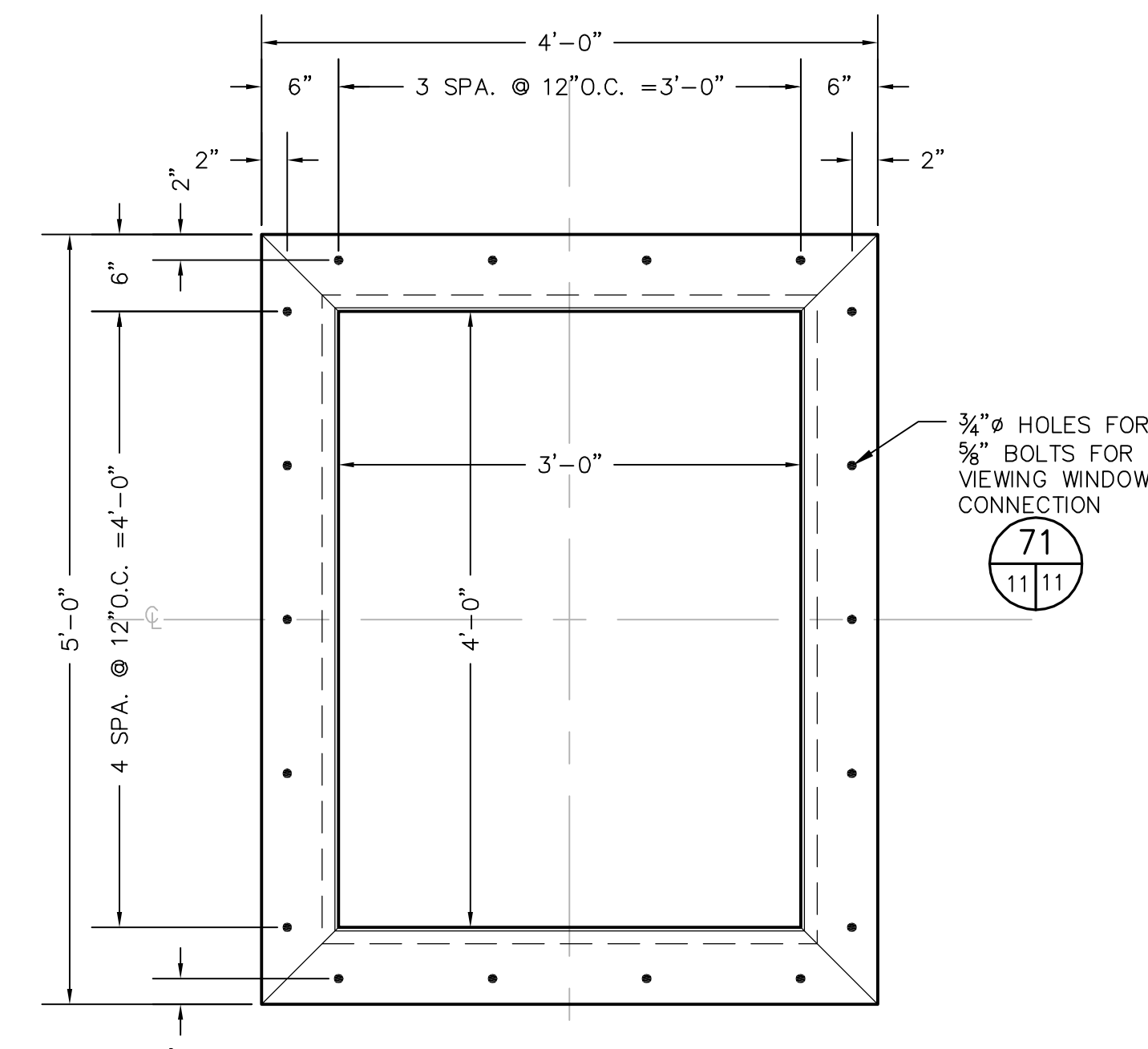


NOTE: GENERAL CONTRACTOR TO COORDINATE CONCRETE OPENING SIZE, JAMB, AND SILL DETAILS WITH MANUFACTURER OF VIEWING WINDOW.

VIEWING WINDOW CONNECTION (71)  
SCALE 3"=1'-0"



LATERAL CROWDER BACKING PLATE (69)  
SCALE 1"=1'-0"



VIEWING WINDOW - ELEVATION VIEW (70)  
SCALE 1"=1'-0"

REVISIONS	DESCRIPTION
NO.	DATE
BY	

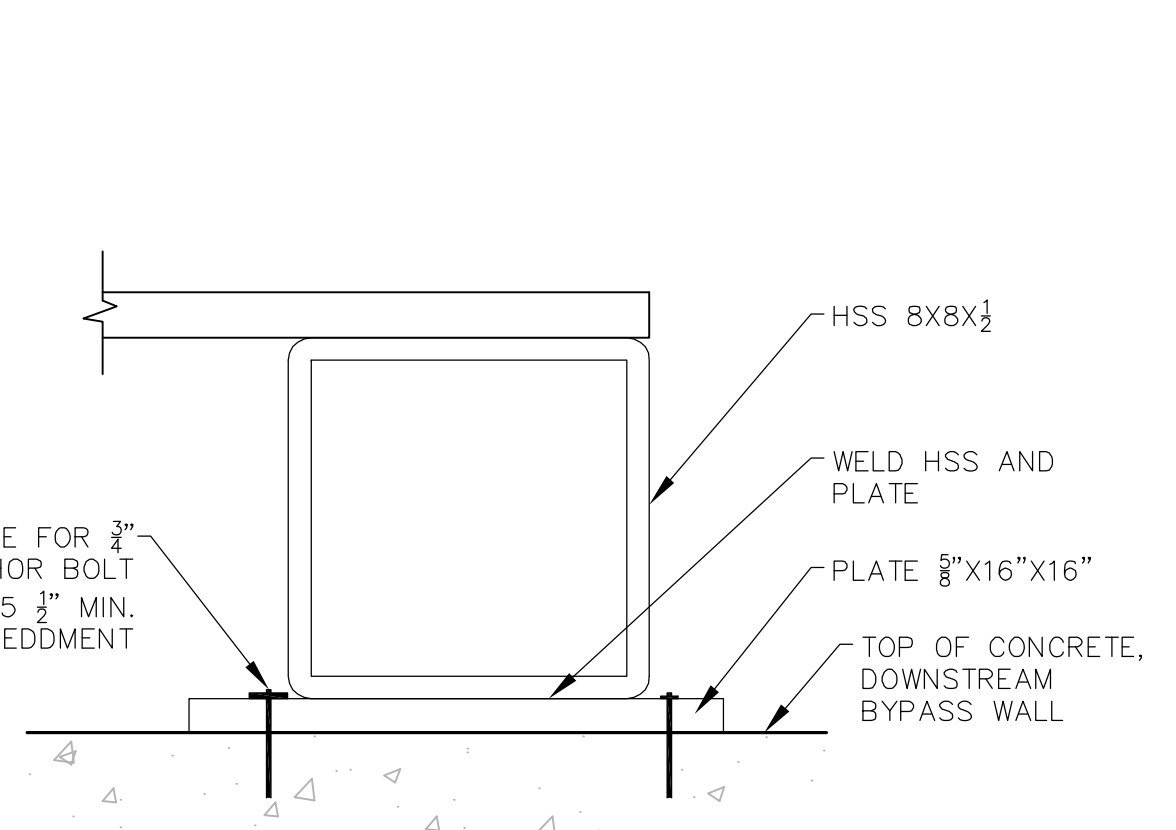
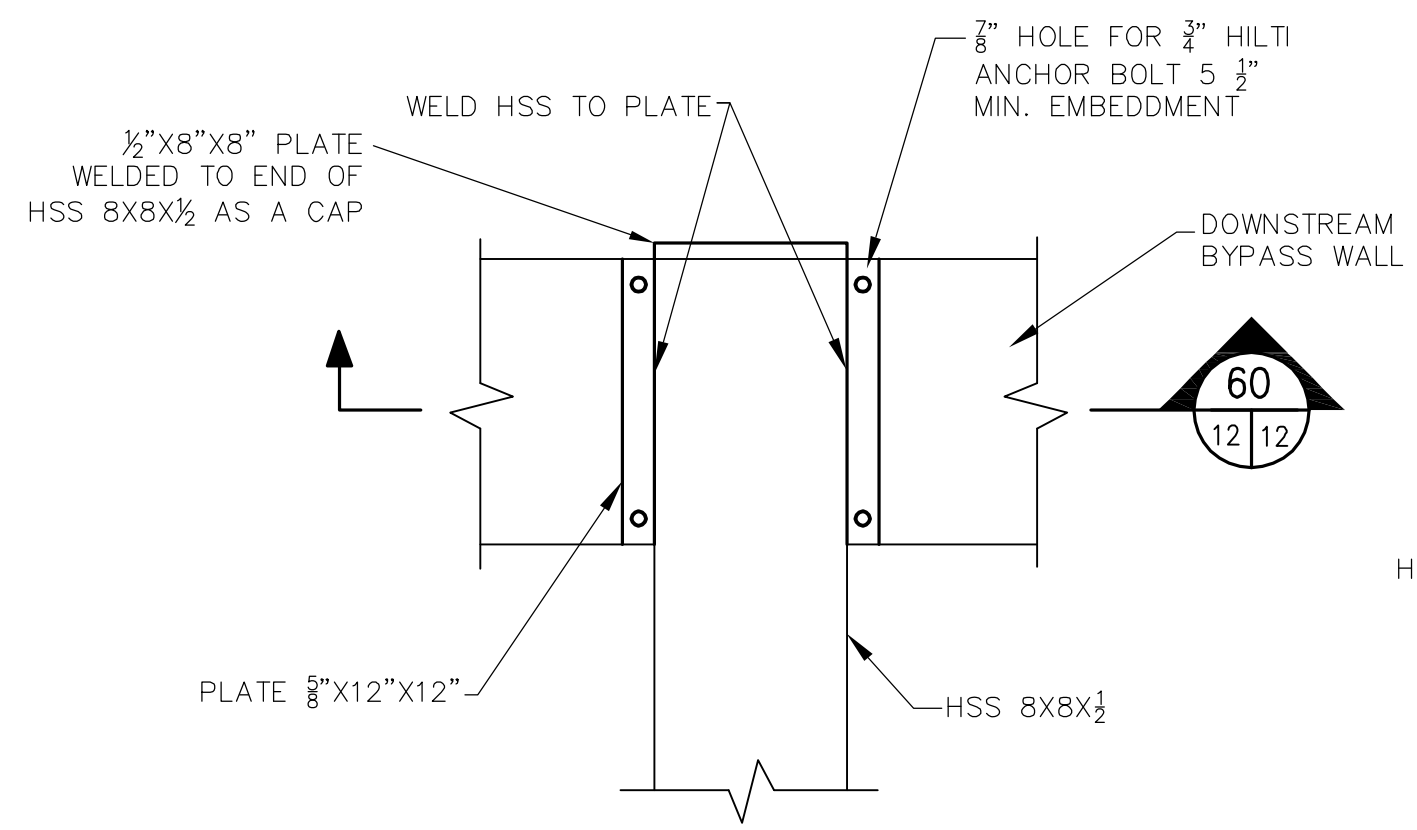
  

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LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT  
SLATER MILL FISHWAY  
PAWTUCKET, RHODE ISLAND  
FISH COUNTING STATION DETAILS

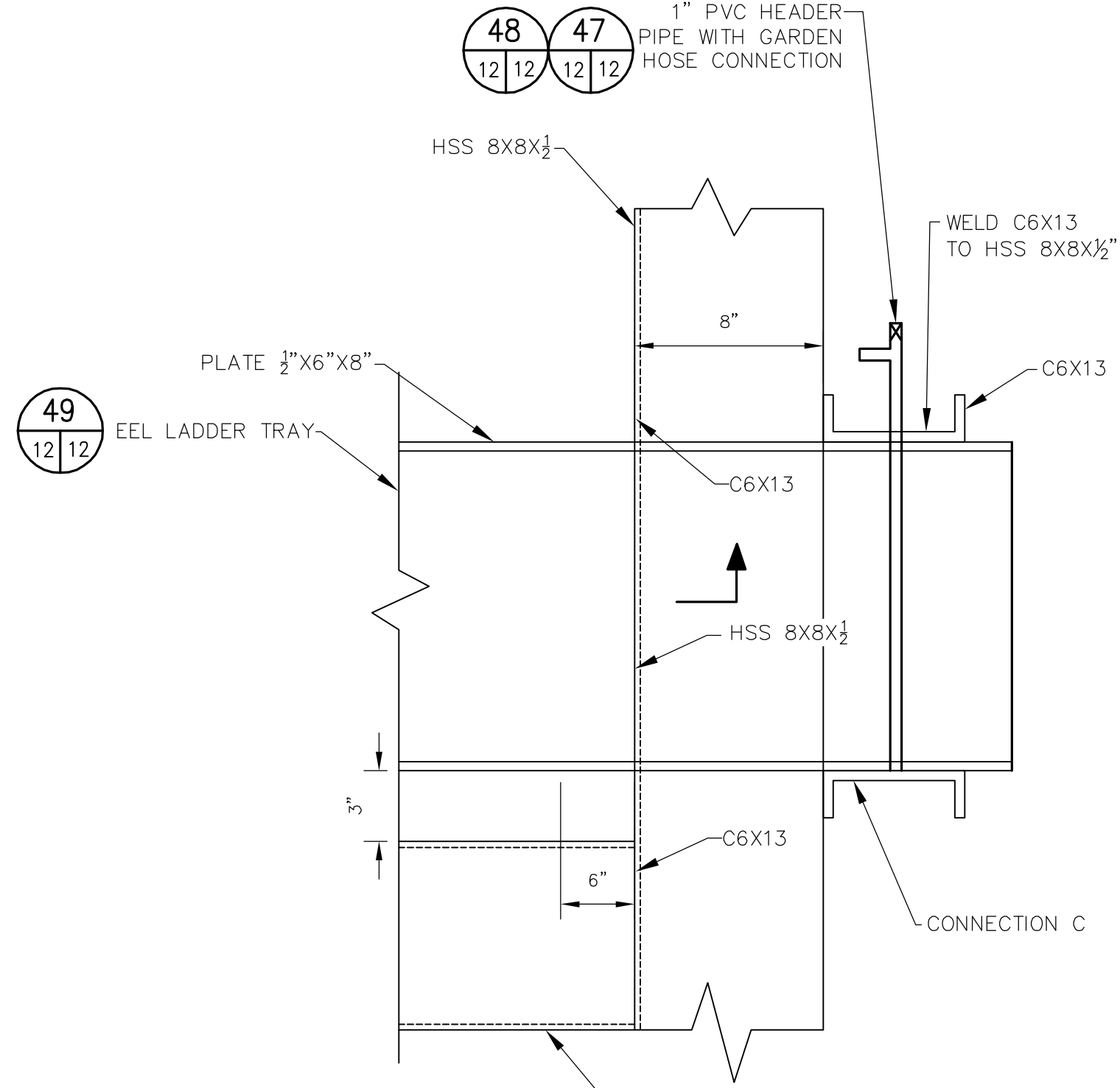
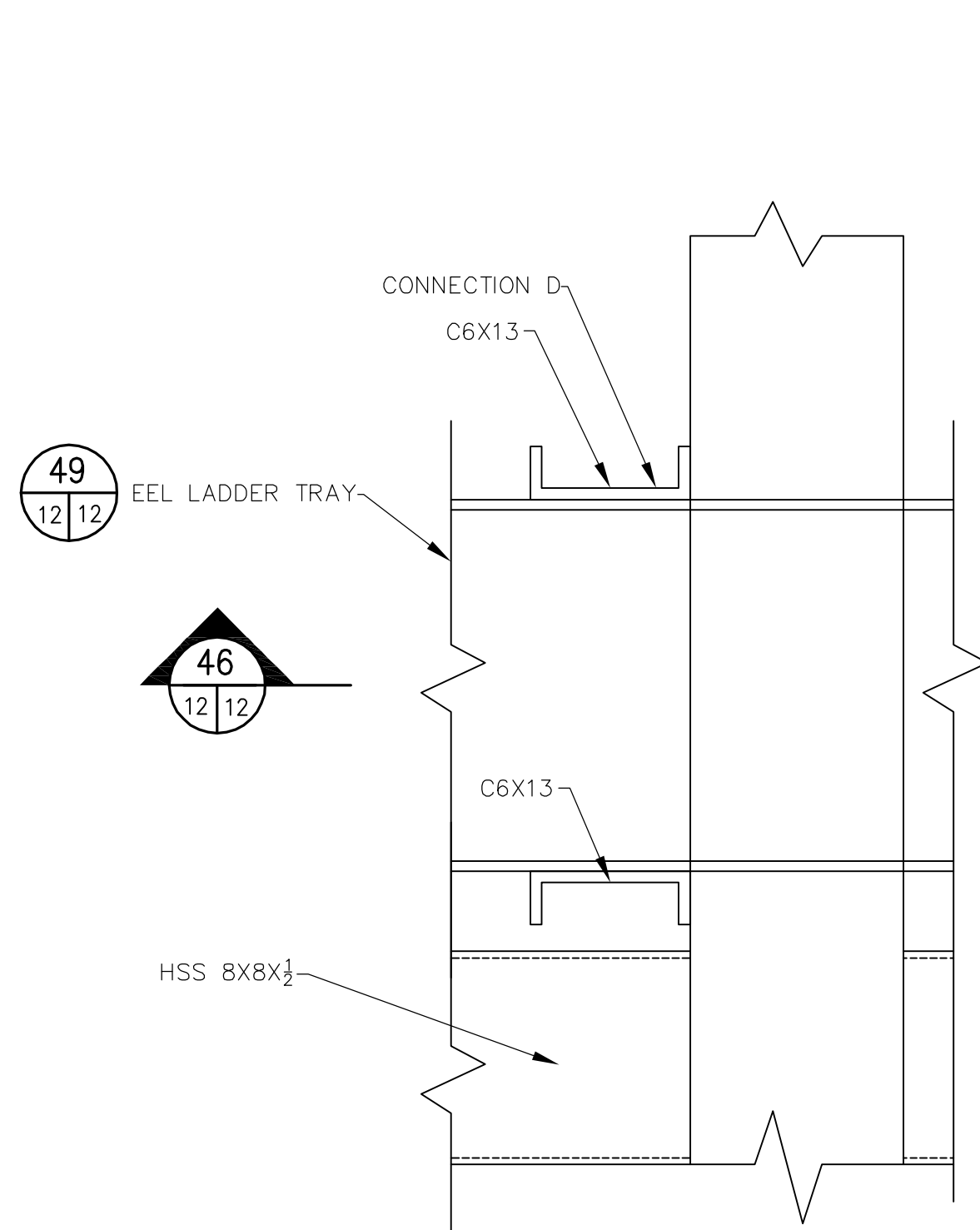
2374 Post Road, Suite 102 Warwick, Rhode Island 02886 (401) 736-3440
DATE: JUNE 2012
DESIGNED BY: TCC
DRAWN BY: DPA
CHECKED BY: HLB
PROJECT MANAGER: SSW
PROJECT NUMBER: 62562.01
SCALE: AS SHOWN
FILE NAME: C-10 FISHWAY ENTRANCE
DRAWING NUMBER: C-10
SHEET NUMBER: 11 OF 15





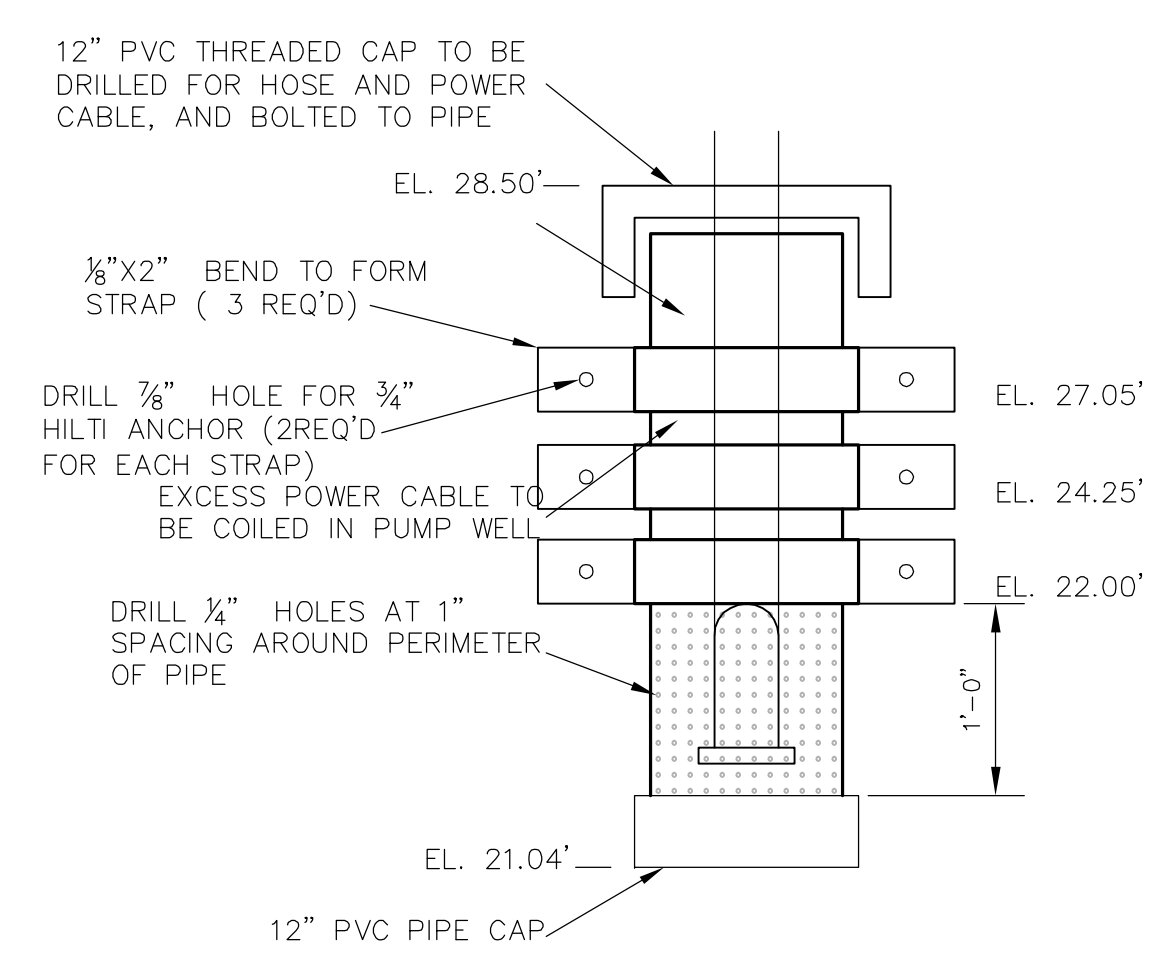
WALKWAY SUPPORT CONNECTION A - PLAN (50)  
SCALE: N.T.S.

WALKWAY SUPPORT CONNECTION A (60)  
SCALE: N.T.S.

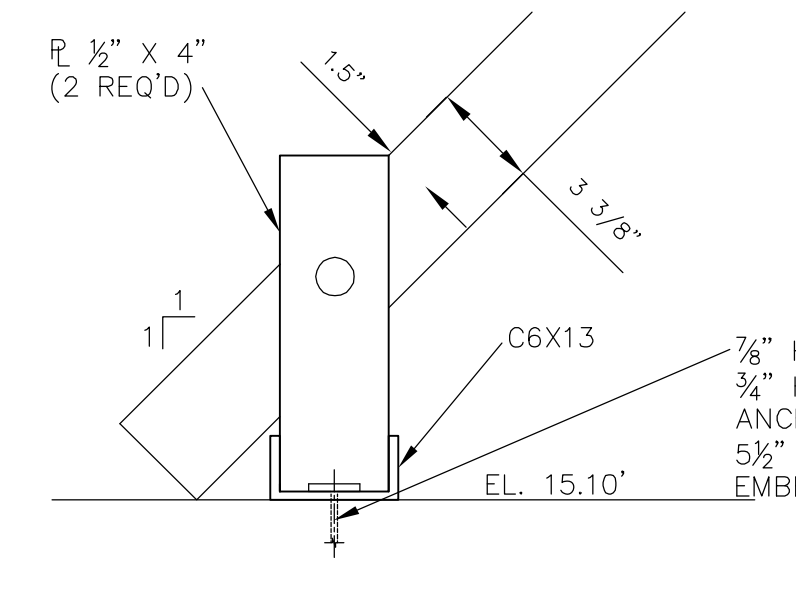


EEL LADDER CONNECTION C AND D PLAN (17)  
SCALE: N.T.S.

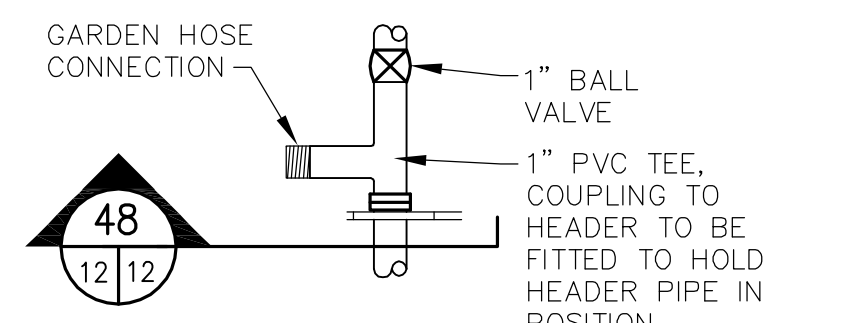
EEL LADDER CONNECTION C AND D PLAN (46)  
SCALE: N.T.S.



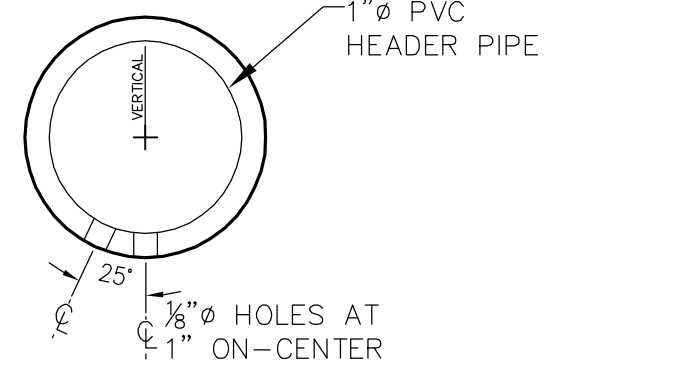
EEL LADDER PUMP STILLING WELL (21)  
SCALE: N.T.S.



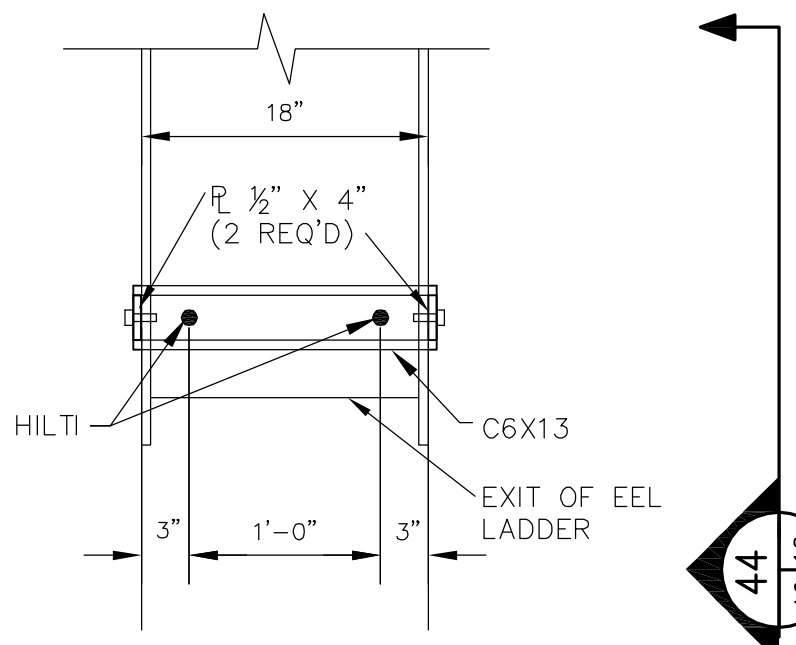
EEL LADDER CONNECTION A (44)  
SCALE: N.T.S.



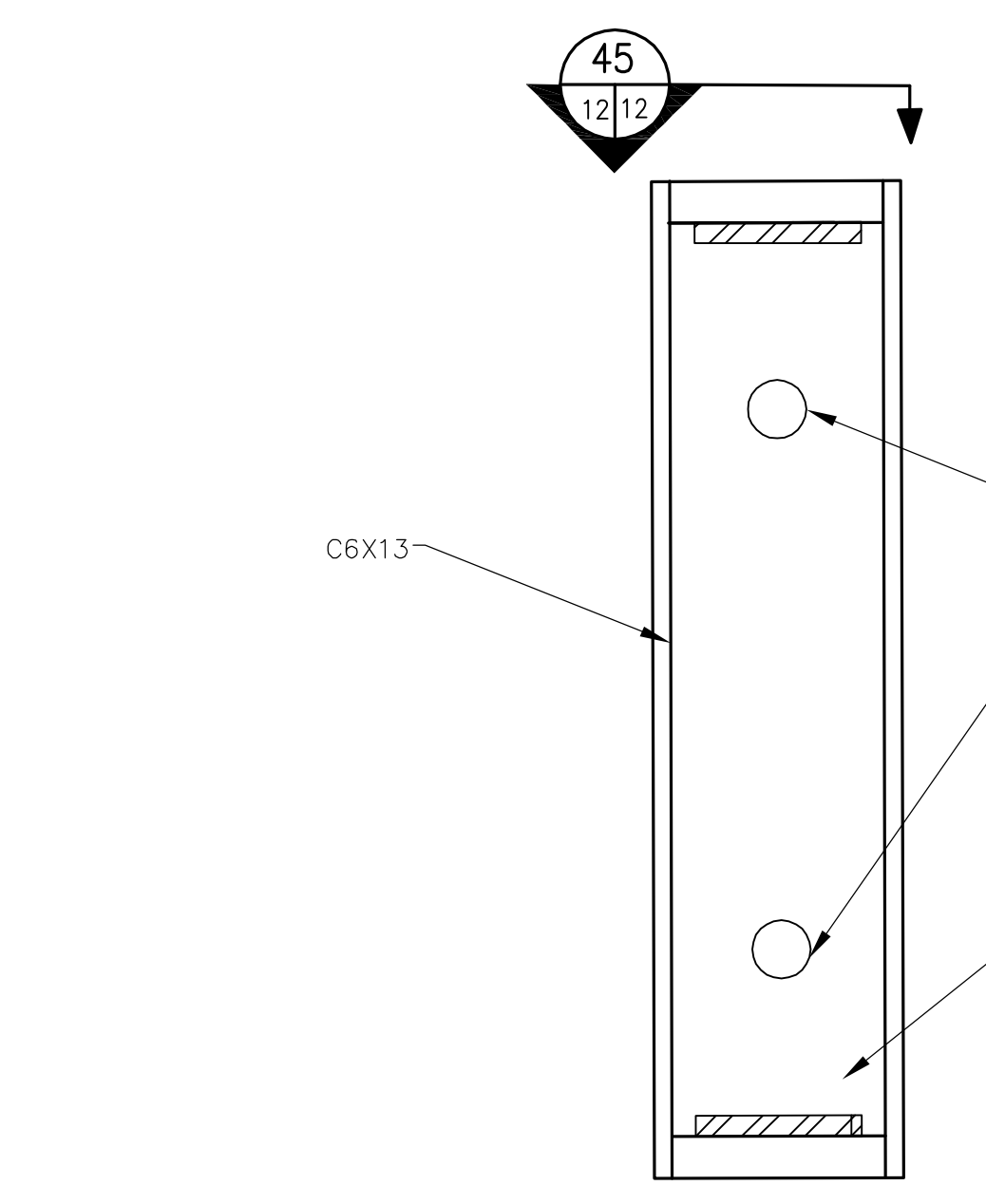
EEL LADDER HEADER DETAIL (47)  
SCALE: N.T.S.



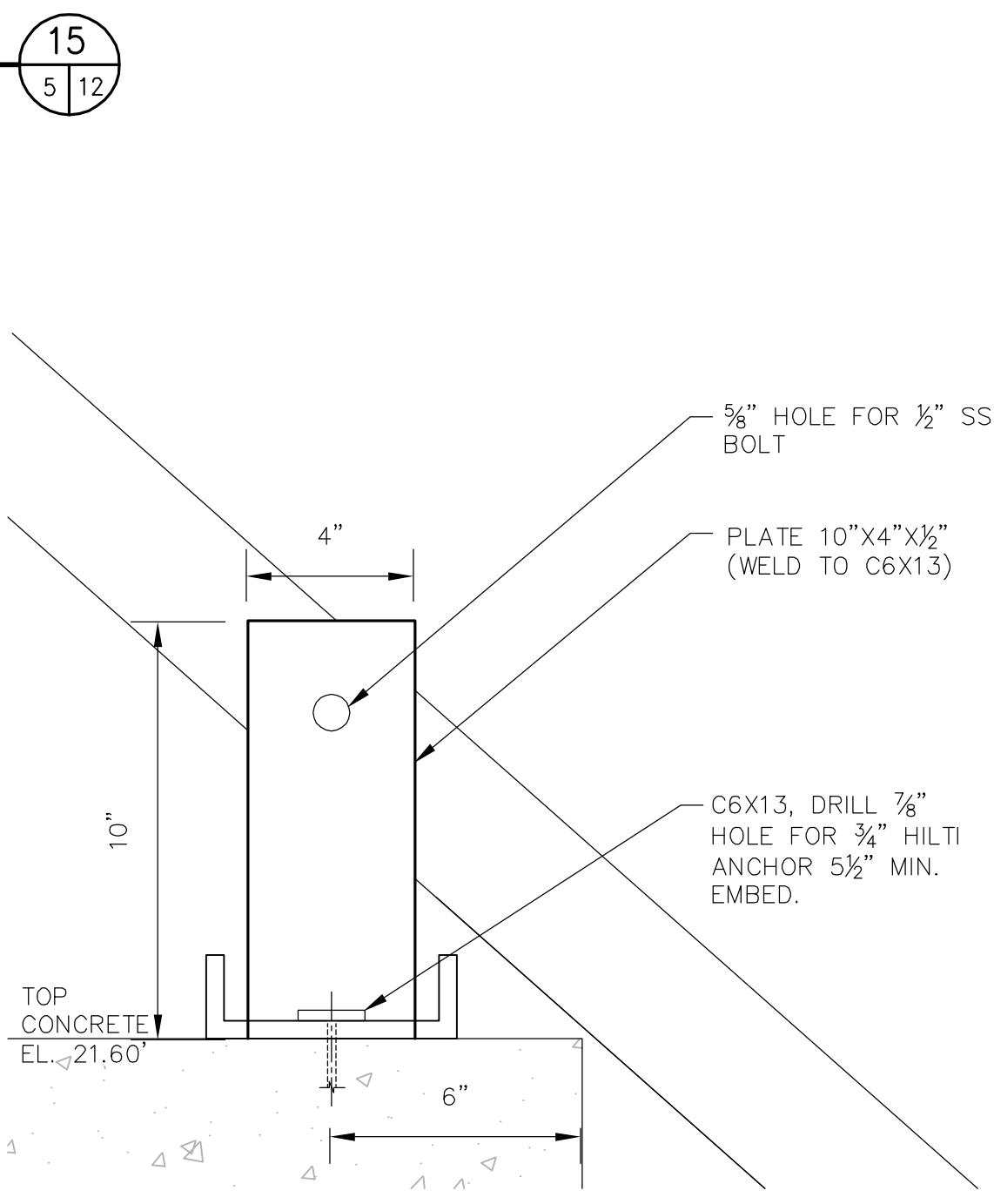
EEL LADDER HEADER SECTION (48)  
SCALE: N.T.S.



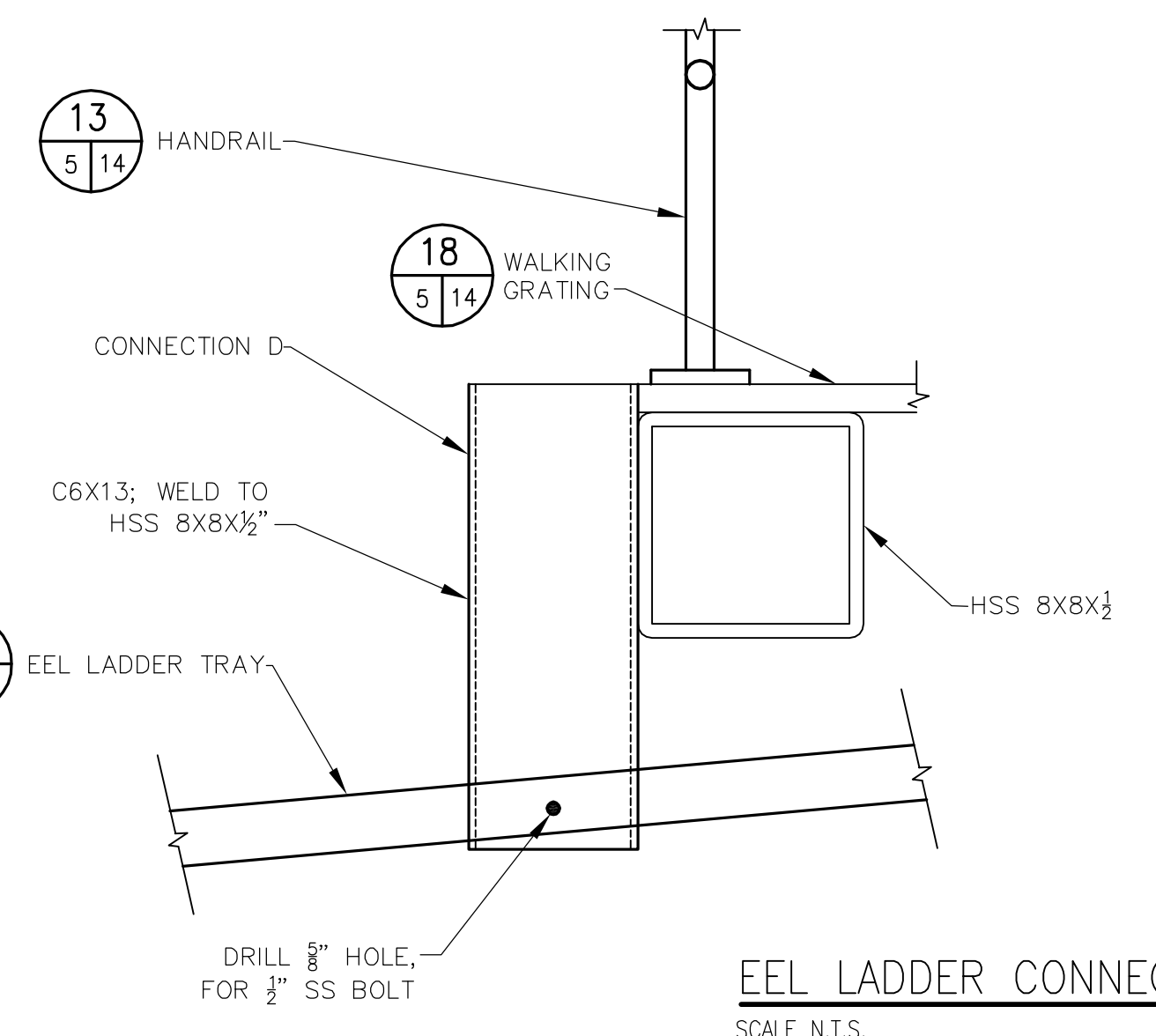
EEL LADDER CONNECTION A - PLAN (15)  
SCALE: 1"=1'-0"



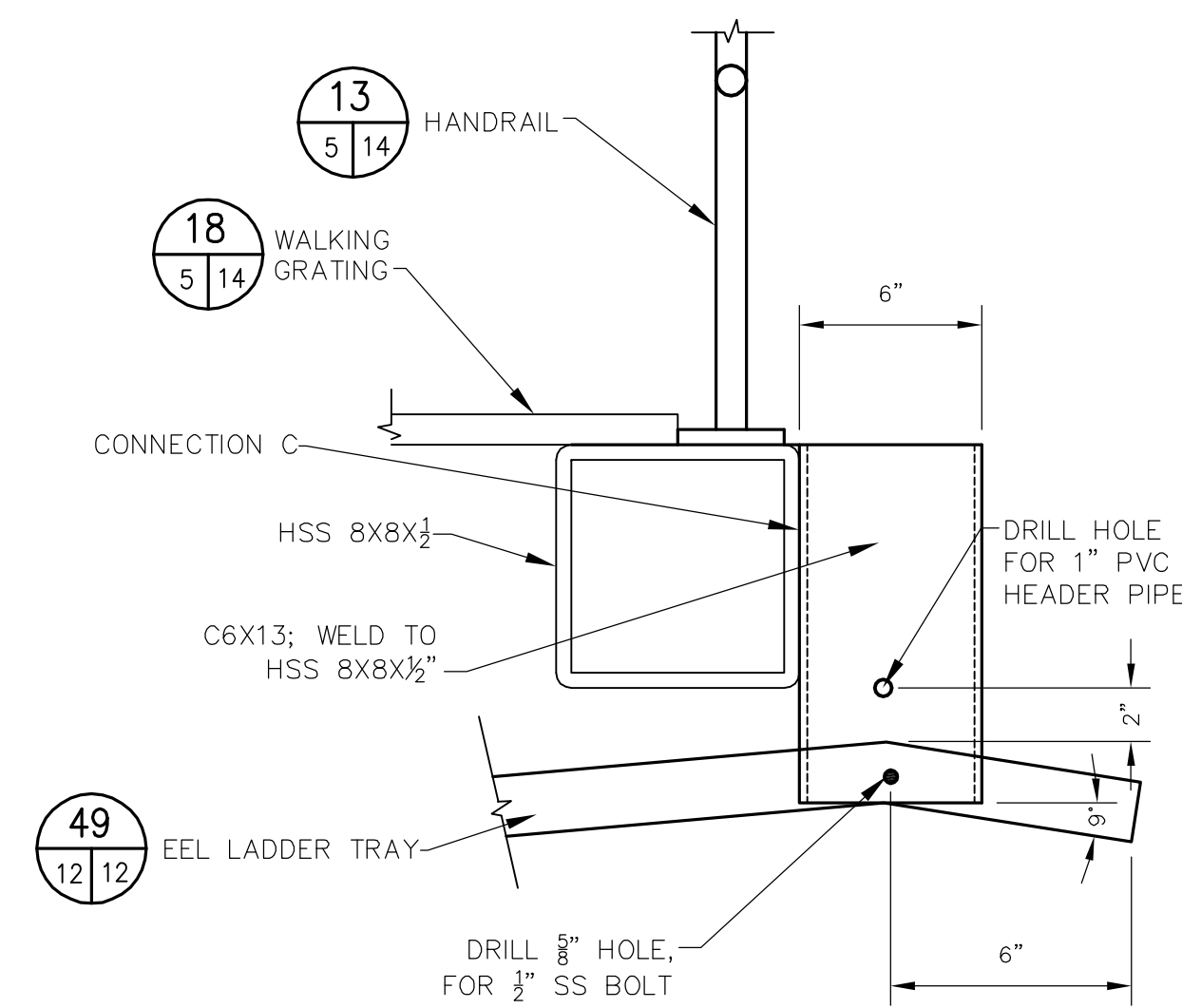
EEL LADDER CONNECTION B PLAN (16)  
SCALE: 1"=1'-0"



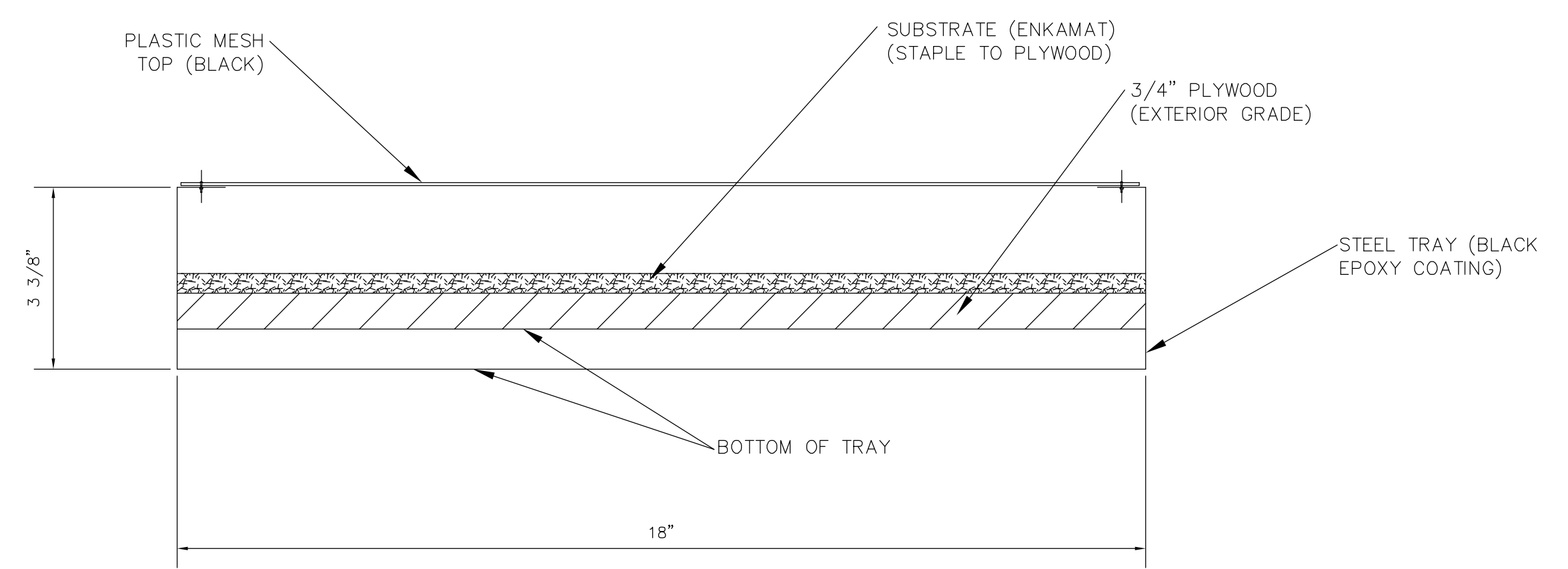
EEL LADDER CONNECTION B (45)  
SCALE: 4"=1'-0"



EEL LADDER CONNECTION C AND D (46)  
SCALE: N.T.S.



EEL LADDER CONNECTION C AND D (49)  
SCALE: N.T.S.



TYPICAL EEL LADDER SECTION DETAIL (49)  
SCALE: N.T.S.

- NOTES:
- ALL ELEVATIONS REFERENCE NGVD 1929 DATUM.
  - CONTRACTOR TO VERIFY EXISTING CONCRETE DIMENSIONS.
  - EEL LADDER SUBSTRATE TO BE UNFILLED ENKAMAT MANUFACTURED BY COLBOND INC., OR EQUAL.
  - STEEL TRAY TO BE MPHUSKY PH-18 OR EQUAL, PAINTED BLACK WITH EPOXY COATING.
  - ALL HILTI, BOLTS, WASHERS, AND NUTS TO BE STAINLESS STEEL.
  - ALL STEEL TO BE COATED IN BLACK EPOXY PAINT.

NO.	DATE	BY	DESCRIPTION
48	12/12		
47	12/12		

THOMAS C. COOK  
Professional Engineer  
No. 8819  
7/20/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT  
SLATER MILL FISHWAY  
PAWTUCKET, RHODE ISLAND

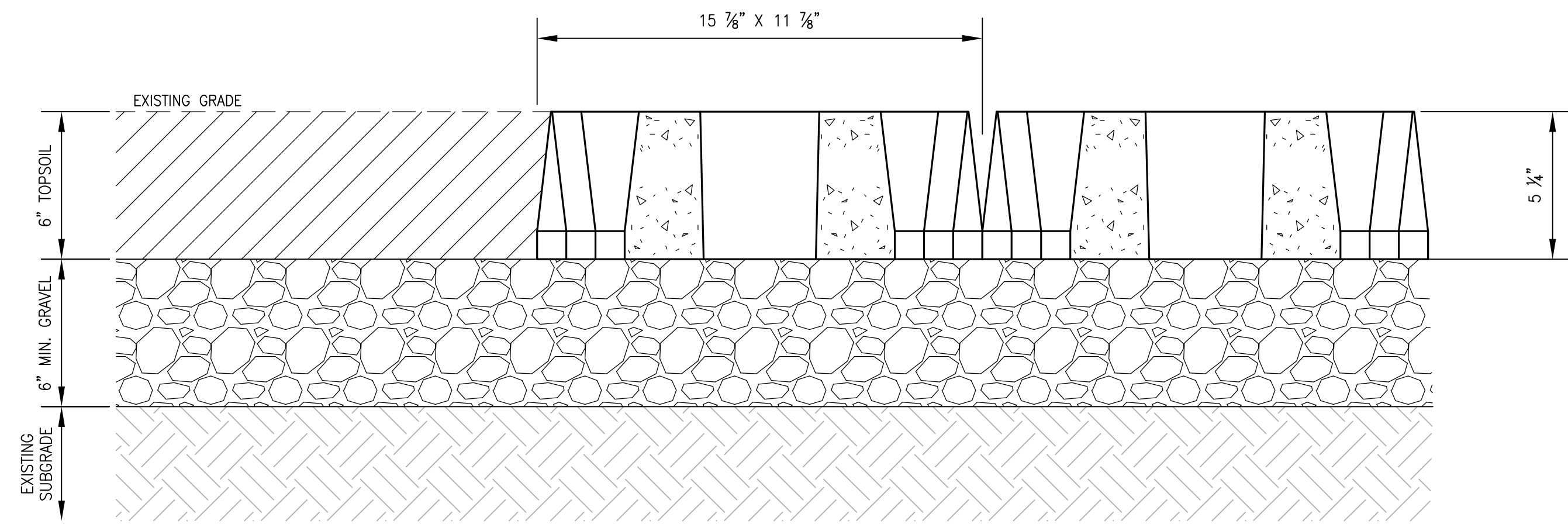
EEL LADDER AND WALKWAY DETAILS

DATE	JUNE 2012
DESIGNED BY	TCC
DRAWN BY	DPA
CHECKED BY	HLB
PROJECT MANAGER	SSW
PROJECT NUMBER	62562.01
SCALE	AS SHOWN
FILE NAME	C-11 EEL LADDER DETAILS
DRAWING NUMBER	C-11
SHEET NUMBER	12 OF 15

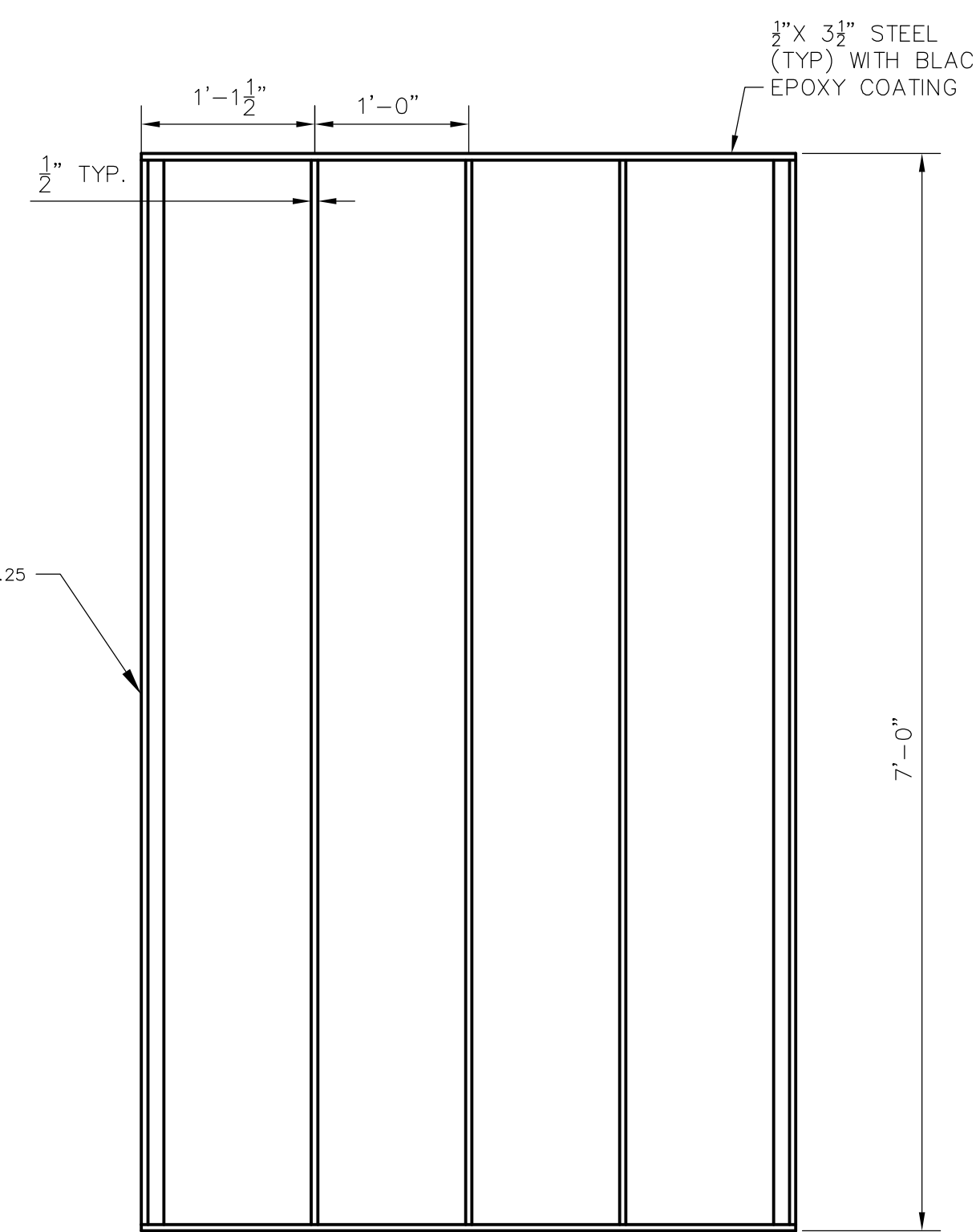
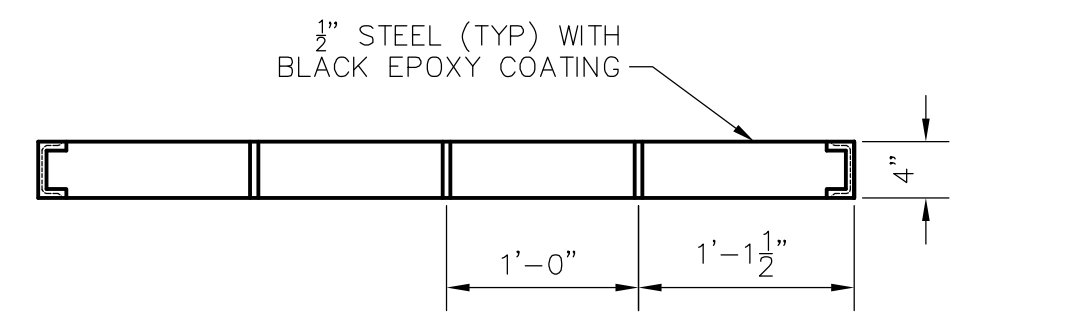


2374 Post Road, Suite 102  
Warwick, Rhode Island 02886  
(401) 736-3440

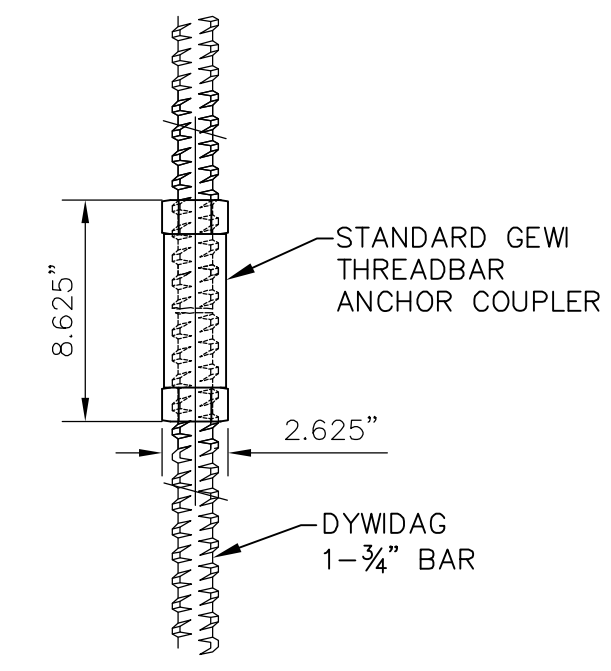




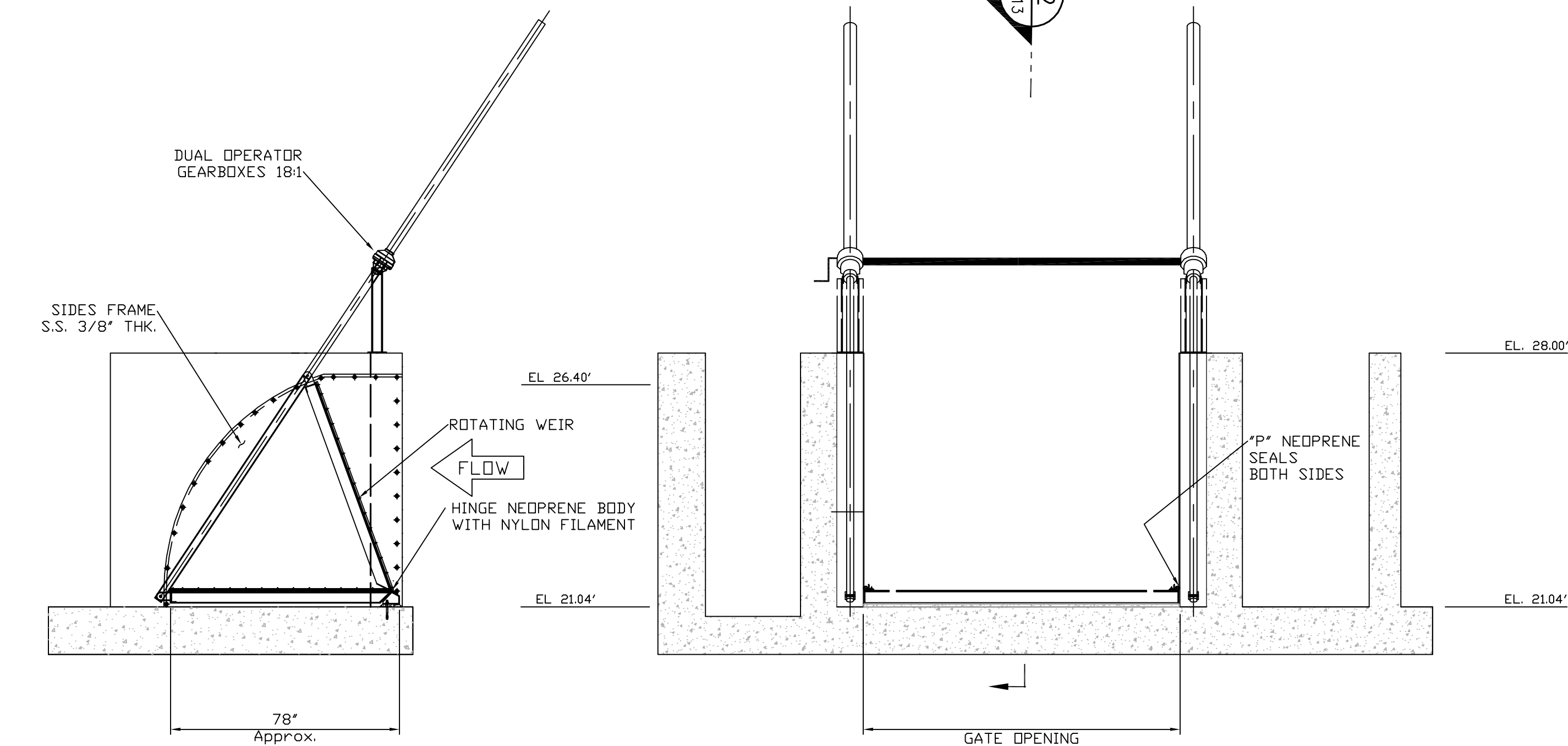
GEOGRID BLOCK ACCESSWAY DETAIL 66  
SCALE: N.T.S.



TRASH RACK DETAIL 33  
SCALE: N.T.S.

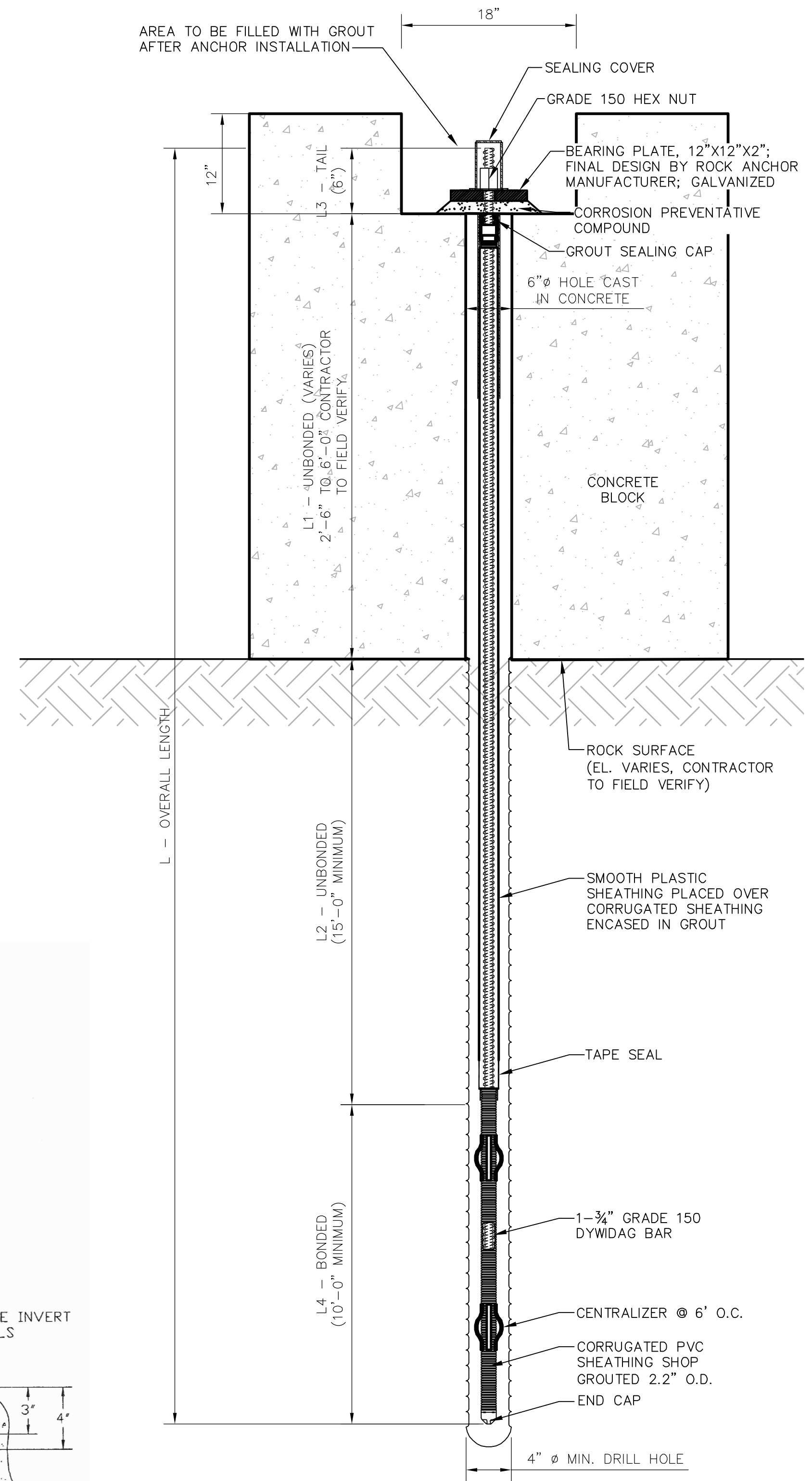


TYPICAL SPLICE DETAIL  
SCALE: N.T.S.

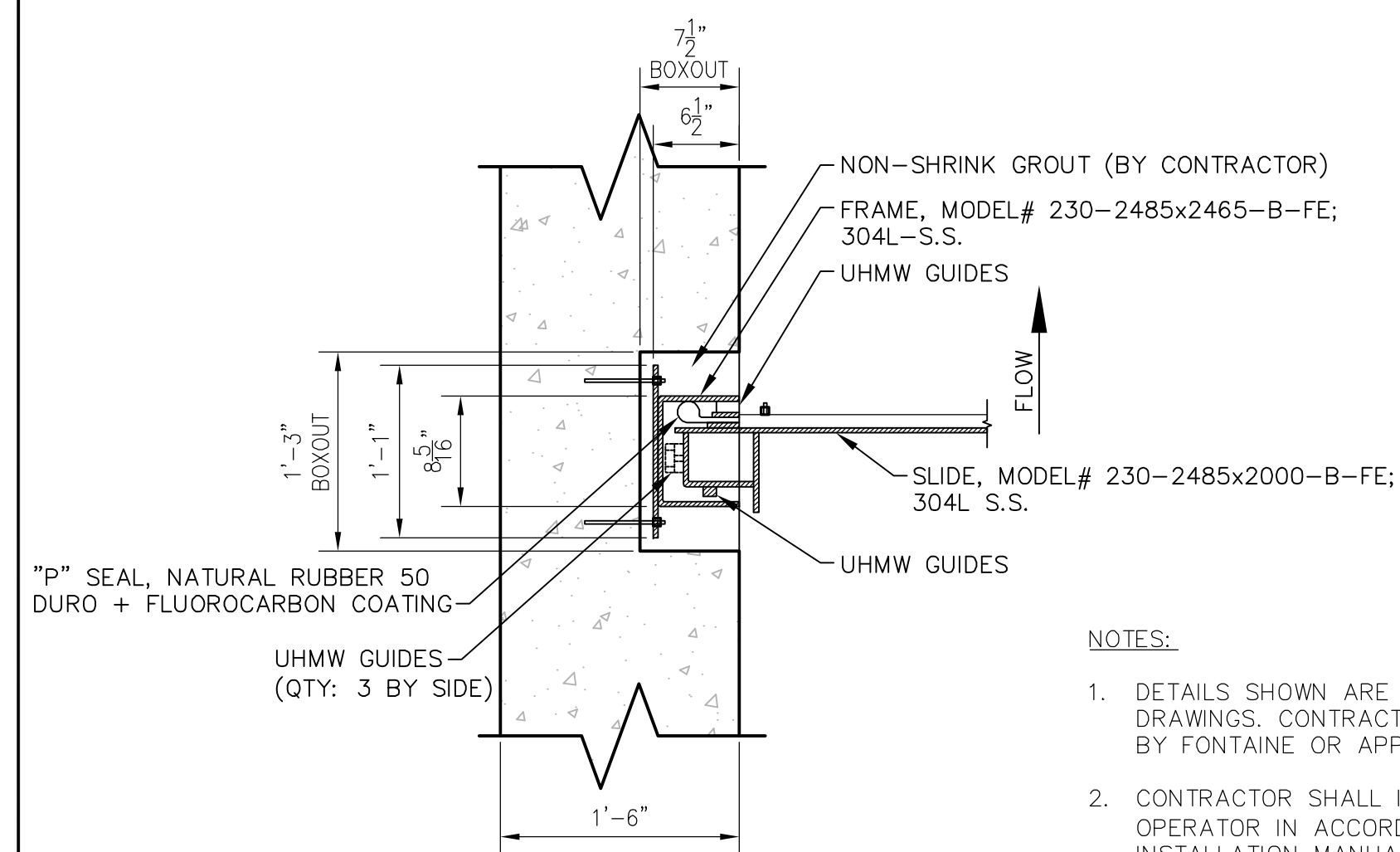


TILTING WEIR GATE - ELEVATION 62  
SCALE: N.T.S.

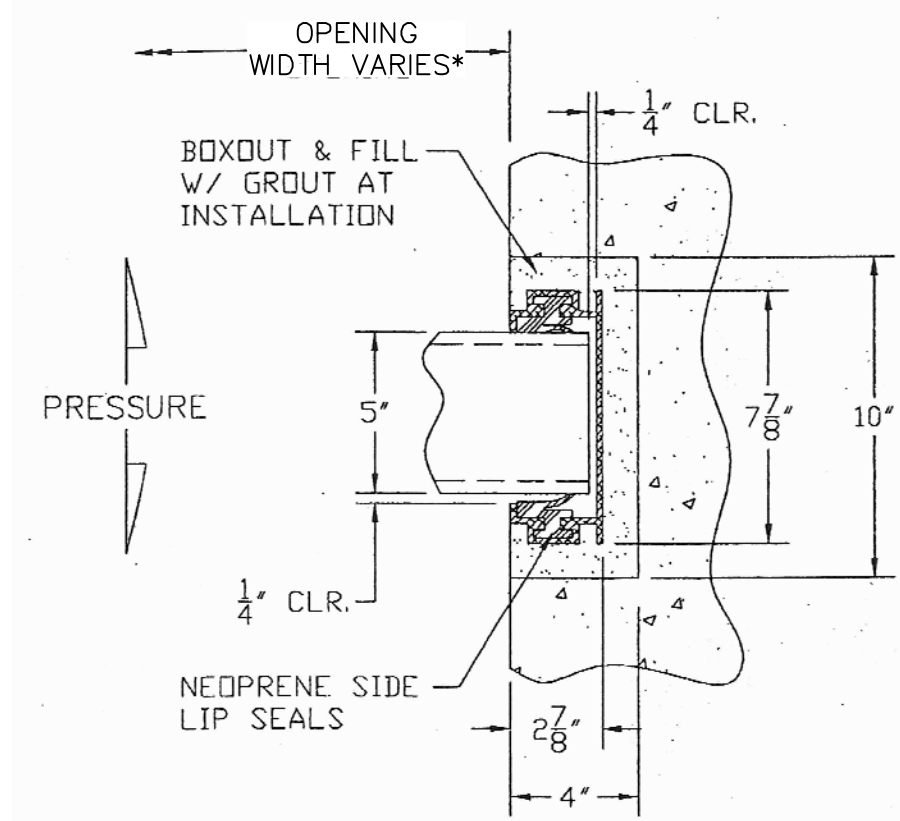
TILTING WEIR GATE - OPEN POSITION 61  
SCALE: N.T.S.



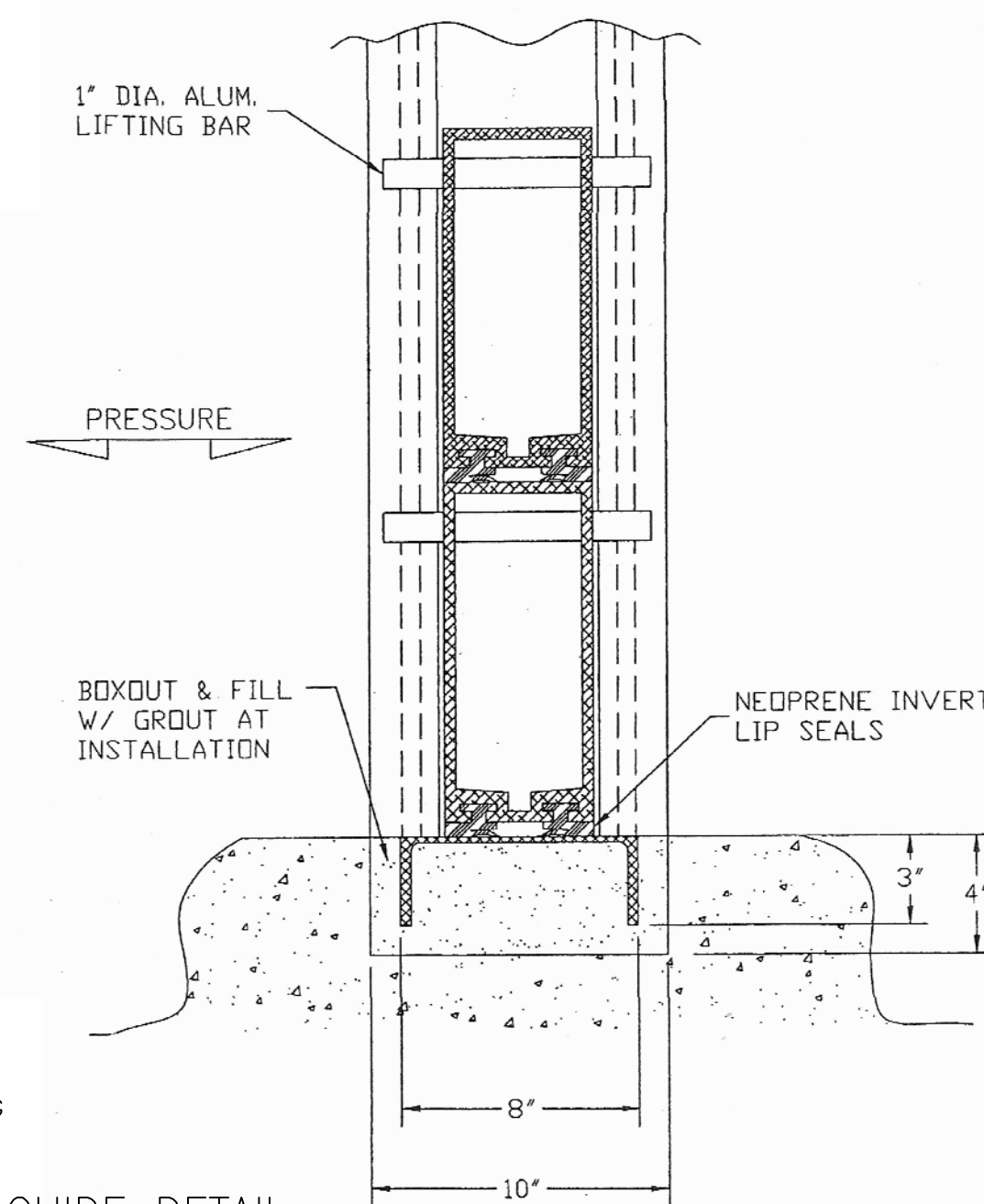
TYPICAL ROCK ANCHOR DETAIL (29.5 KIP DESIGN LOAD) 65  
SCALE: N.T.S.



TYPICAL SLIDE GATE GUIDE DETAIL  
SCALE: N.T.S.



TYPICAL STOP LOG GUIDE DETAIL  
SCALE: N.T.S.



- NOTES:
1. DETAILS SHOWN ARE BASED ON FONTAINE CONCEPTUAL DRAWINGS. CONTRACTOR TO PROVIDE DETAILED SHOP DRAWINGS BY FONTAINE OR APPROVED EQUAL MANUFACTURER.
  2. CONTRACTOR SHALL INSTALL GATE, SIDE SEALS, AND MANUAL OPERATOR IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION MANUAL.
  3. ALL GATE COMPONENTS ABOVE WATER TO HAVE BLACK EPOXY COATING TO MAXIMUM EXTENT POSSIBLE.

- \* FISHWAY ENTRANCE: 2'-6" WIDE OPENING
- FISHWAY EXIT: 4'-0" WIDE OPENING
- DOWNSTREAM FISH BYPASS: 3'-0" WIDE OPENING

NO.	DATE	BY	DESCRIPTION

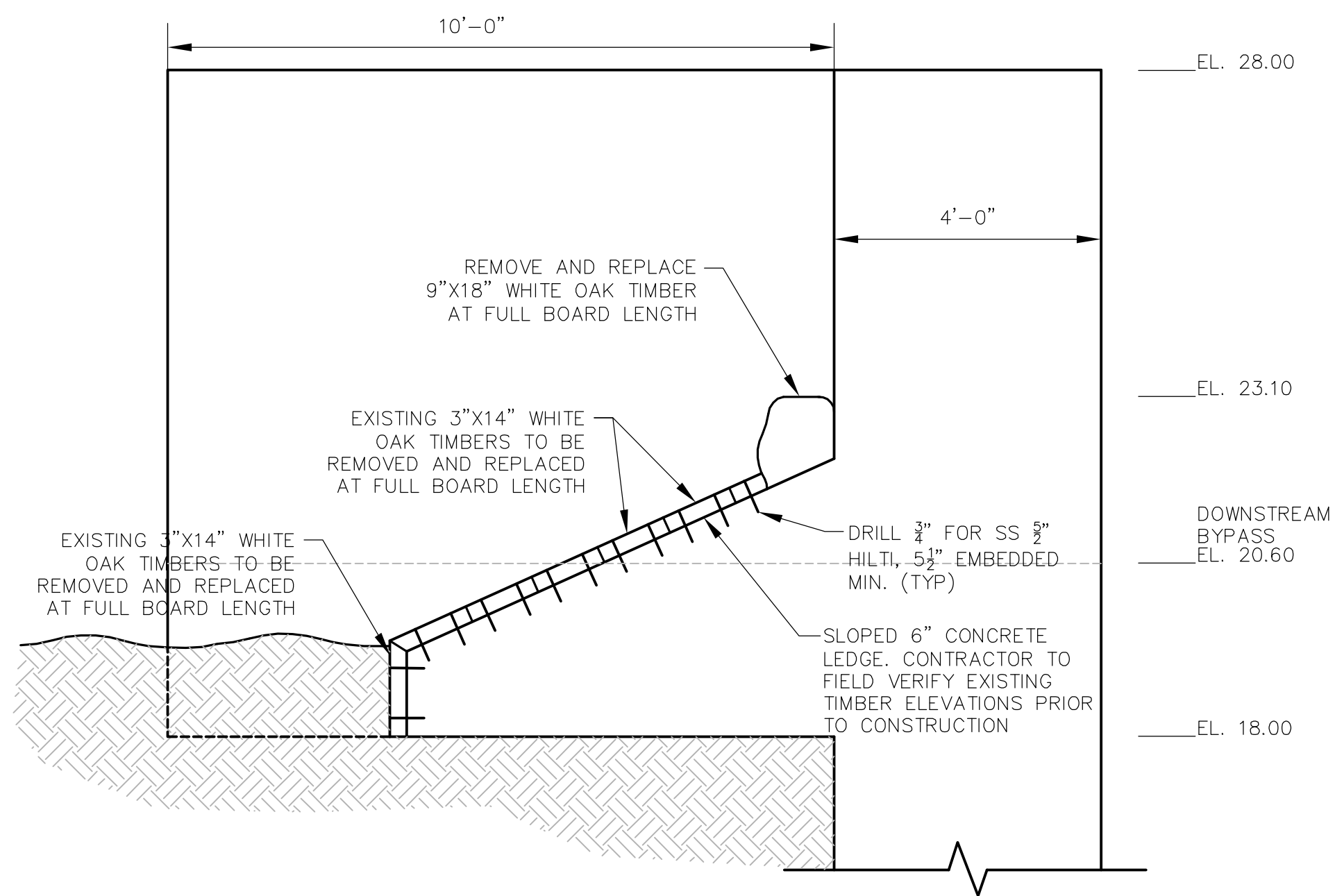
THOMAS G. COOK  
No. 8819  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL  
7/8/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT  
SLATER MILL FISHWAY  
PAWTUCKET, RHODE ISLAND

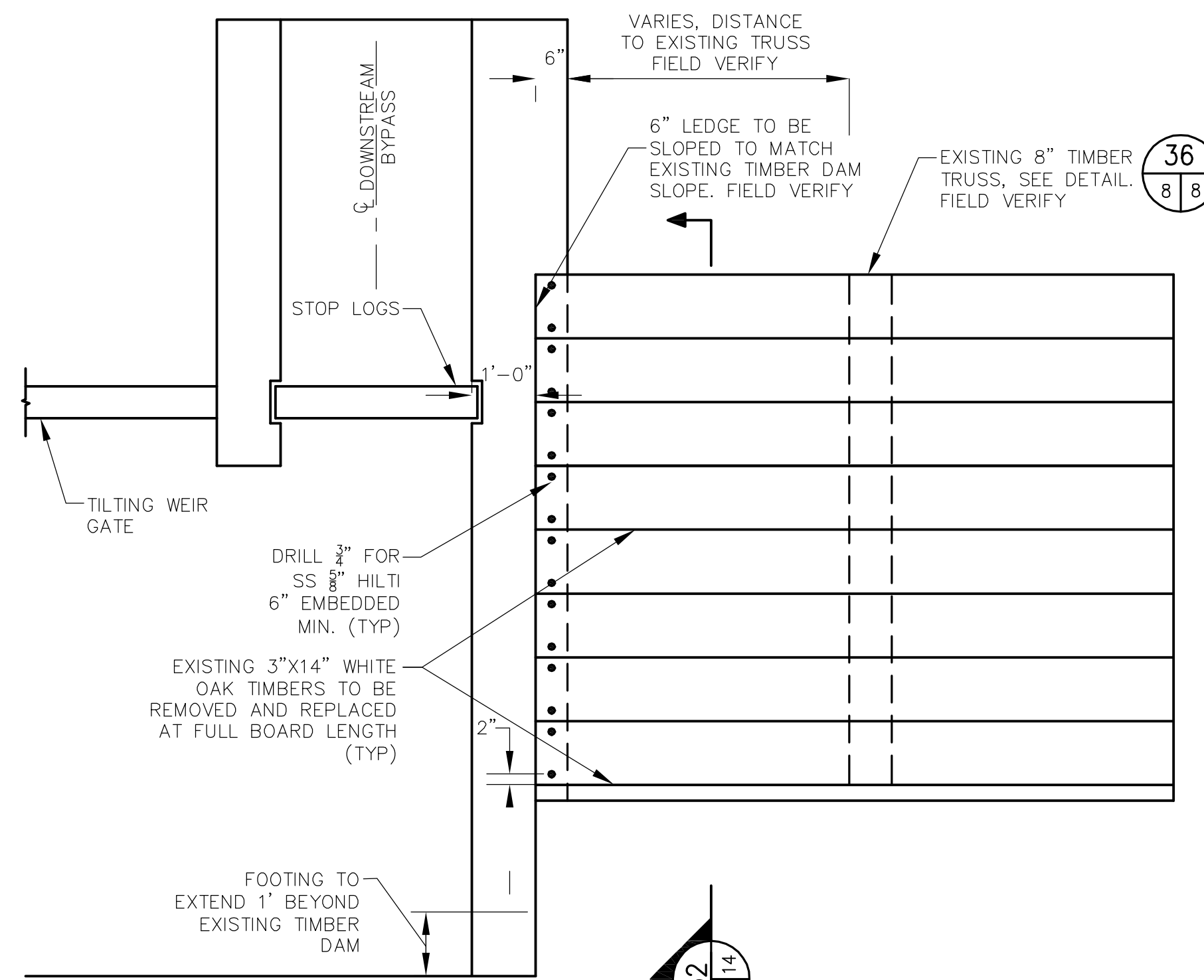
FISHWAY ENTRANCE SLIDE GATE AND MISCELLANEOUS DETAILS

<b>EA</b> EA ENGINEERING, SCIENCE, AND TECHNOLOGY	
2374 Post Road, Suite 102 Warwick, Rhode Island 02886 (401) 736-3440	
DATE	JUNE 2012
DESIGNED BY	TCC
DRAWN BY	DPA
CHECKED BY	HLB
PROJECT MANAGER	SSW
PROJECT NUMBER	62562.01
SCALE	AS SHOWN
FILE NAME	C-12 FISHWAY ENTRANCE SLIDE GATE
DRAWING NUMBER	C-12
SHEET NUMBER	13 OF 15

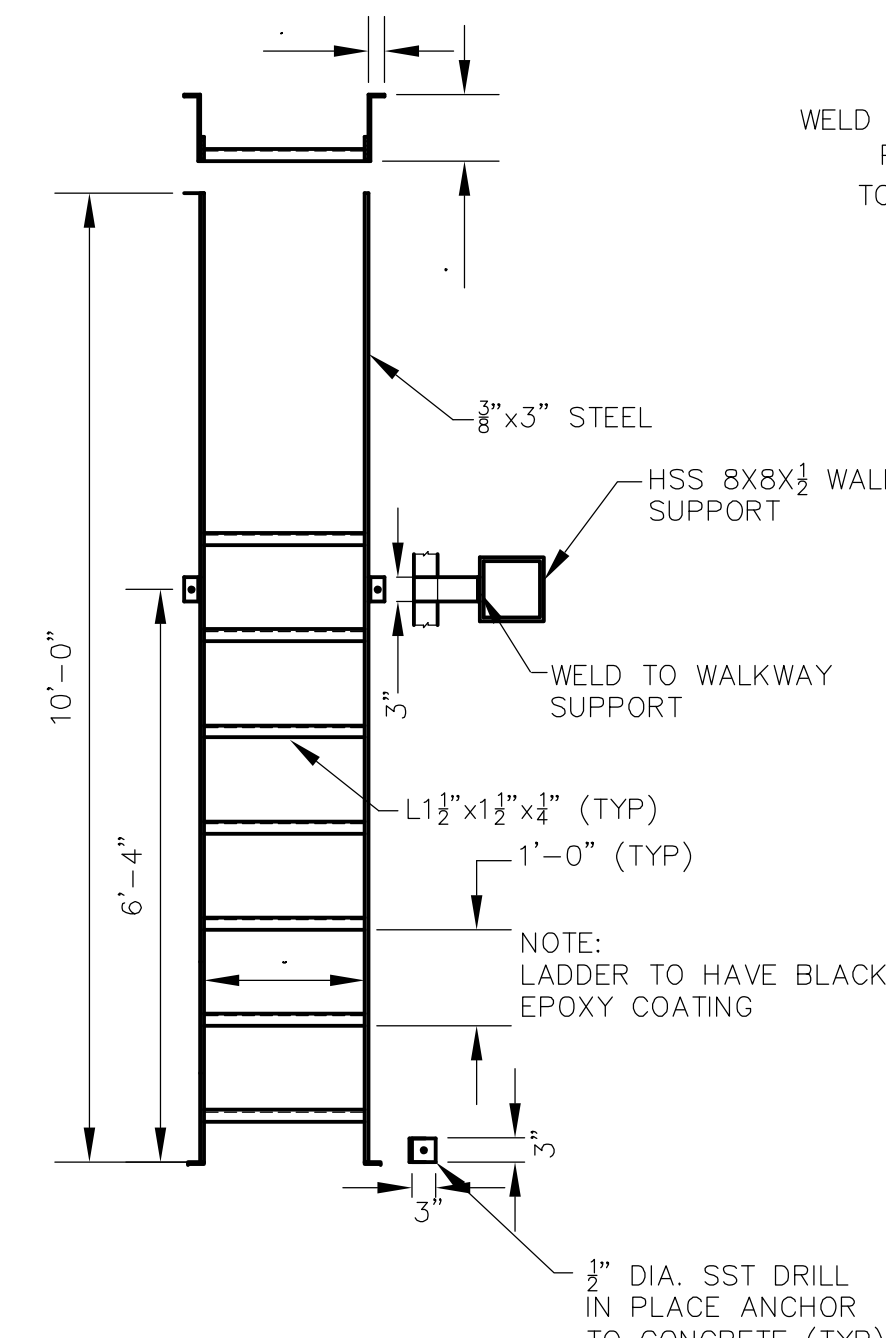




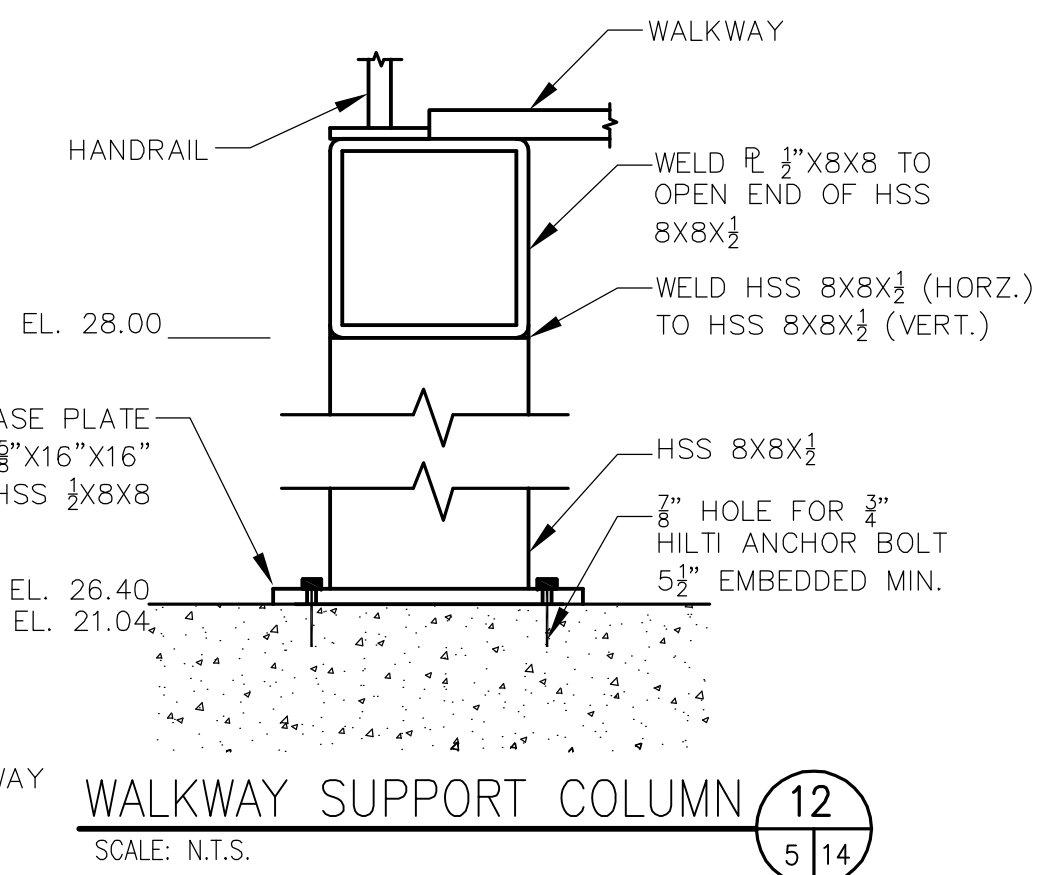
EXISTING DAM CONNECTION (52)  
SCALE: 1/2"=1'-0"



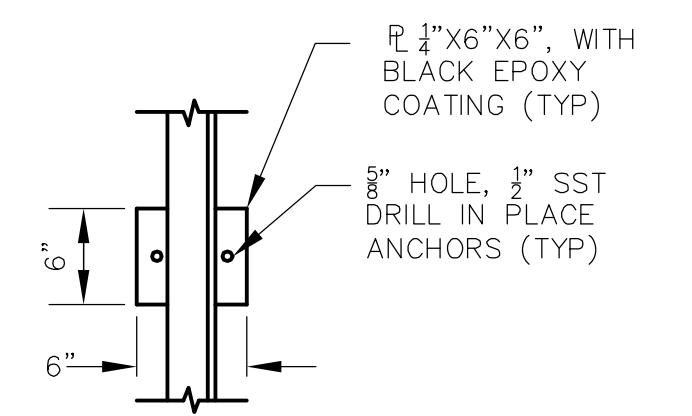
EXISTING DAM CONNECTION PLAN (51)  
SCALE: 1/2"=1'-0"



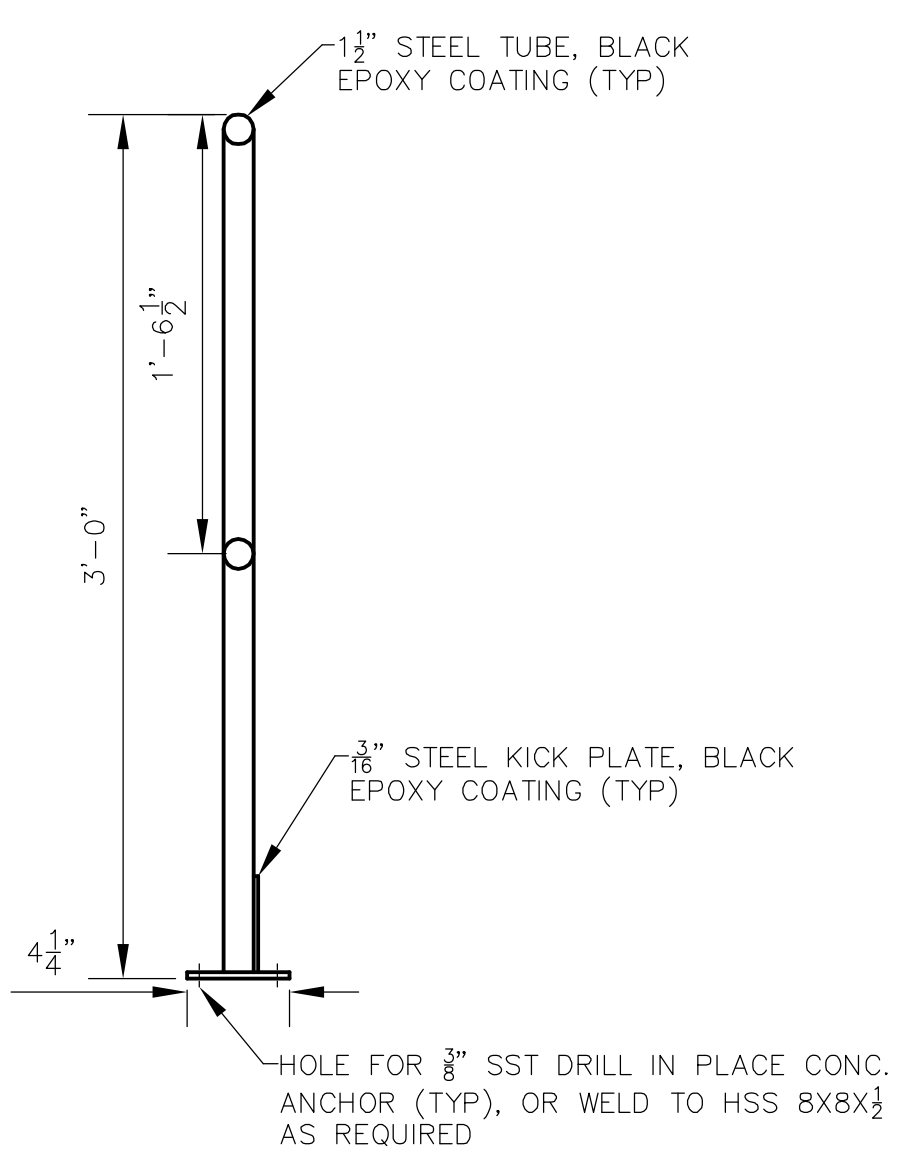
ACCESS LADDER DETAIL (14)  
SCALE: N.T.S.



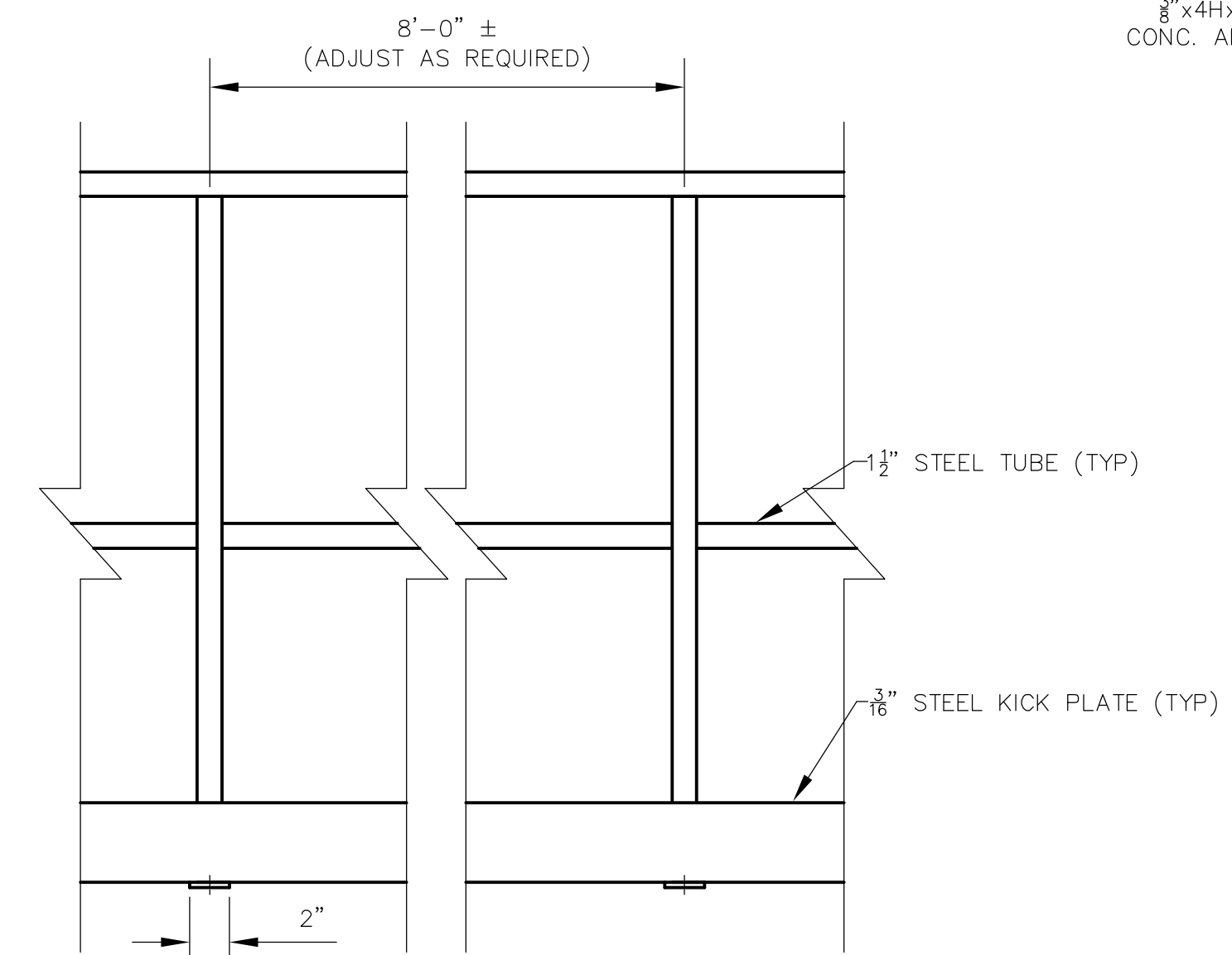
WALKWAY SUPPORT COLUMN (12)  
SCALE: N.T.S.



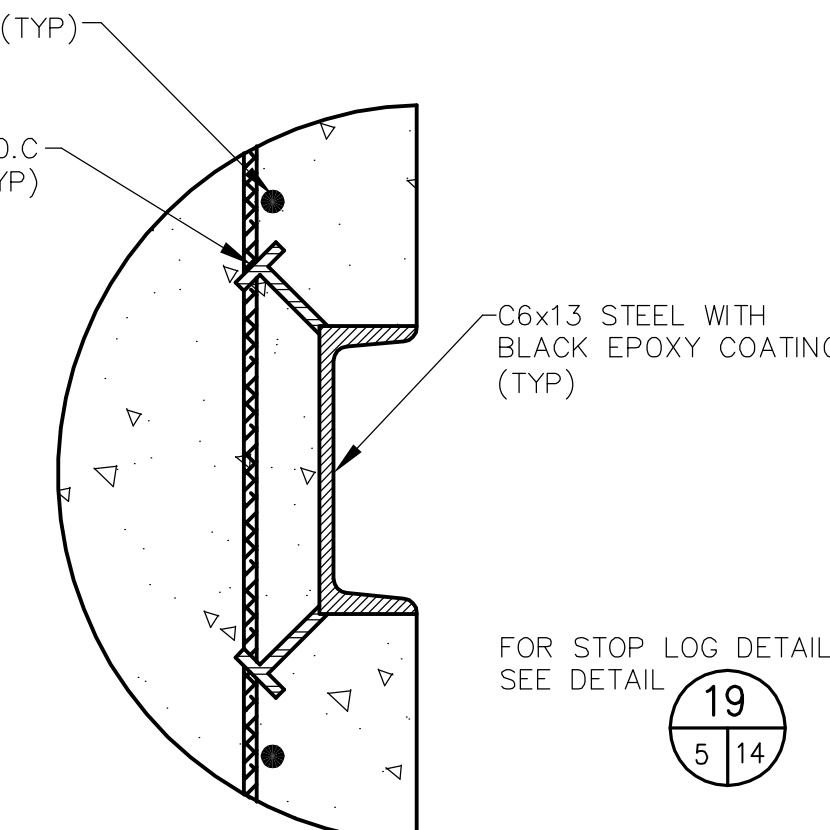
GRATING SUPPORT (54)  
SCALE: N.T.S.



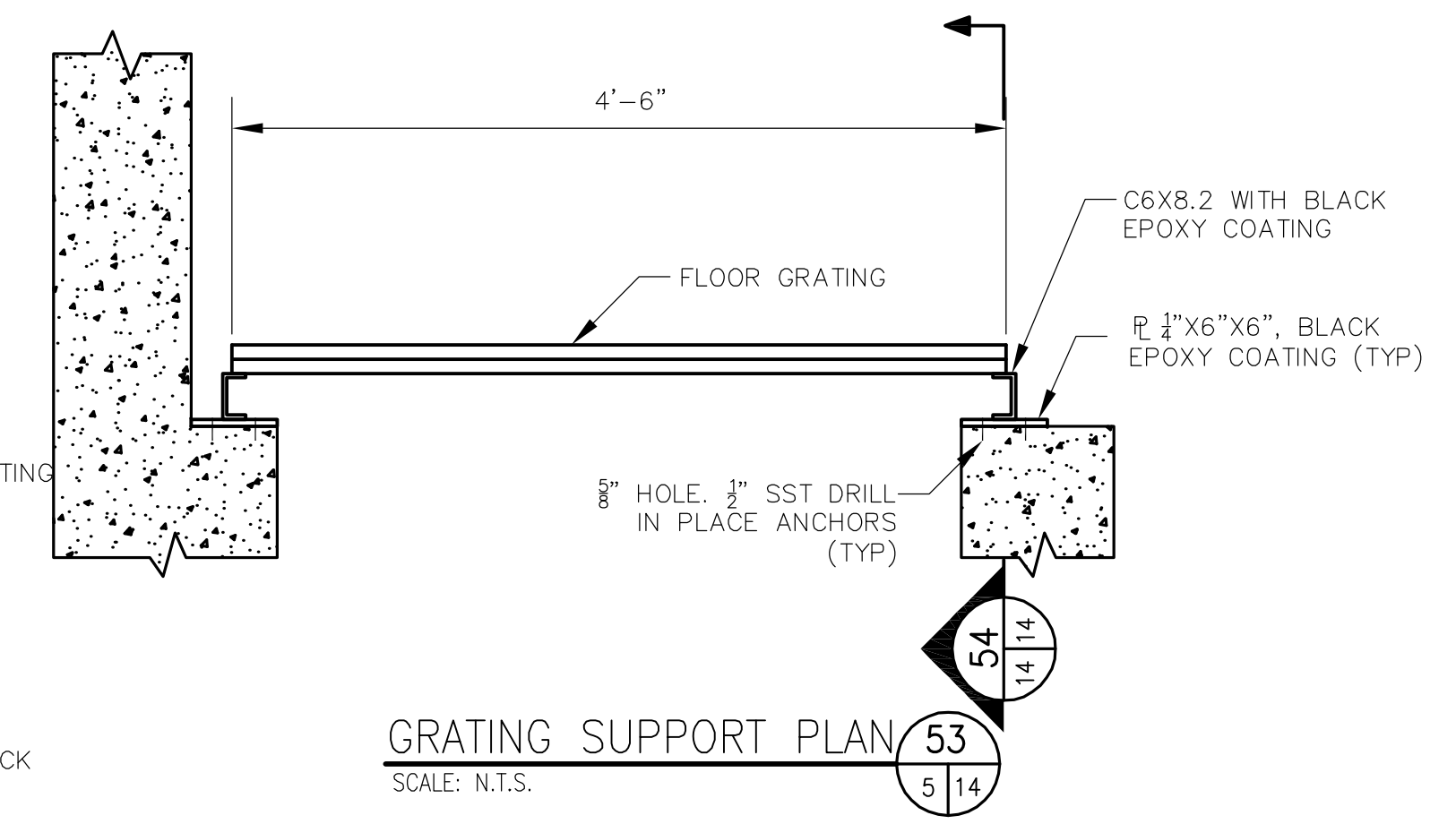
HANDRAIL DETAIL (13)  
SCALE: N.T.S.



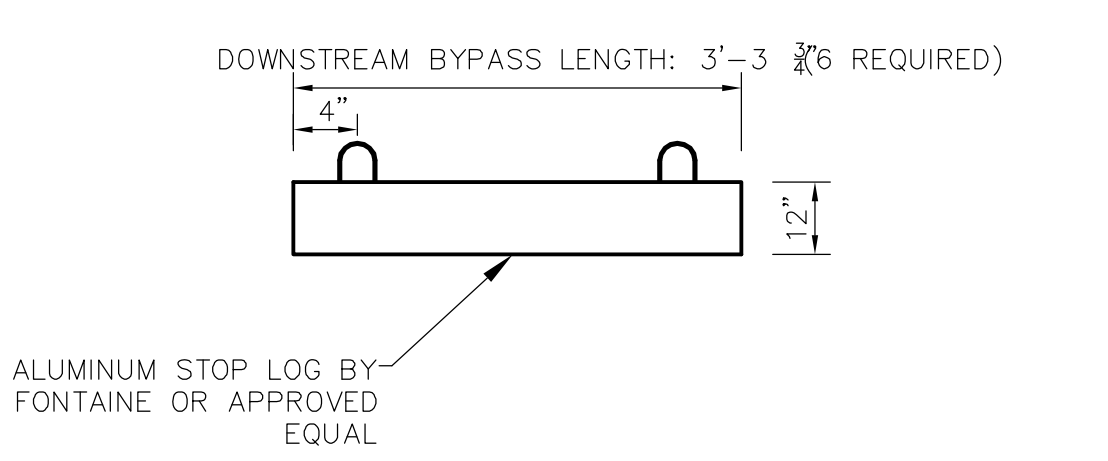
TYPICAL FISHWAY TRASH RACK GUIDE DETAIL (32)  
SCALE: N.T.S.



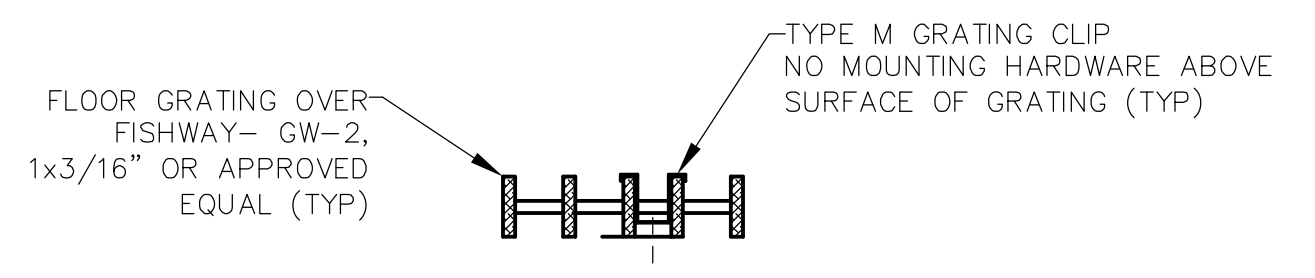
GRATING SUPPORT PLAN (56)  
SCALE: N.T.S.



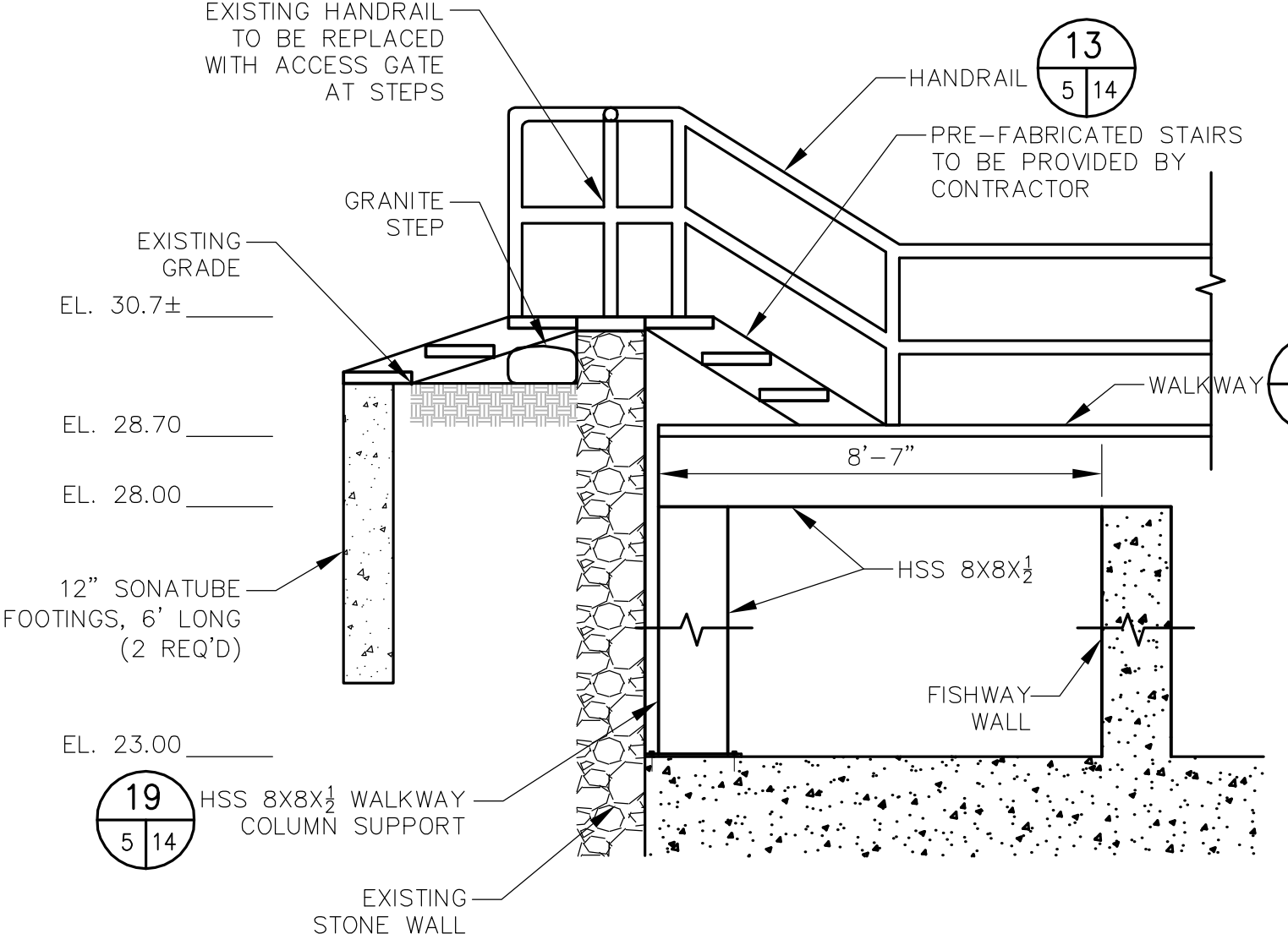
GRATING SUPPORT PLAN (53)  
SCALE: N.T.S.



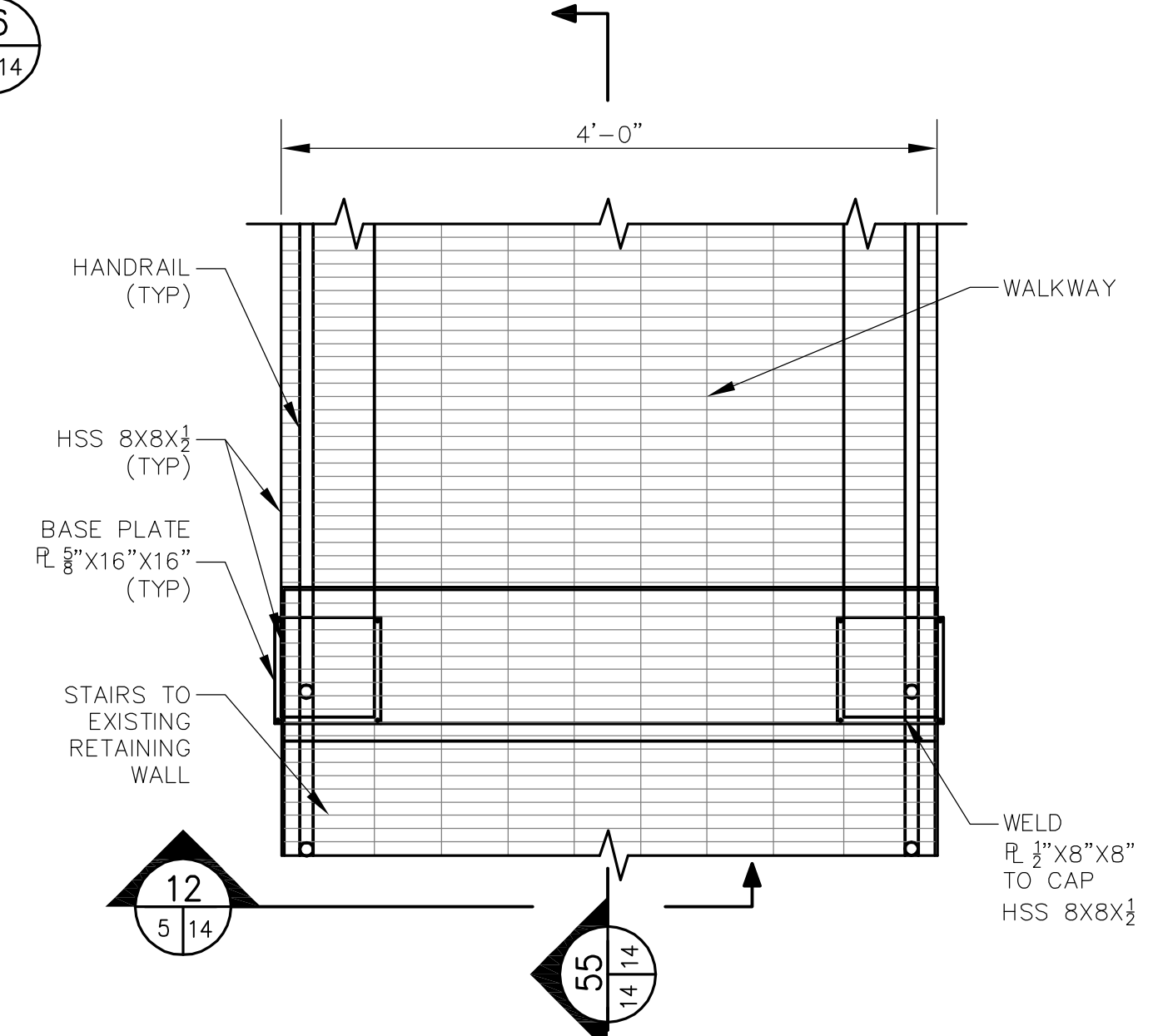
DOWNSTREAM BYPASS STOP LOG DETAIL (19)  
SCALE: N.T.S.



FLOOR GRATING DETAIL (18)  
SCALE: N.T.S.



WALKWAY AND STAIRS DETAIL (55)  
SCALE: N.T.S.

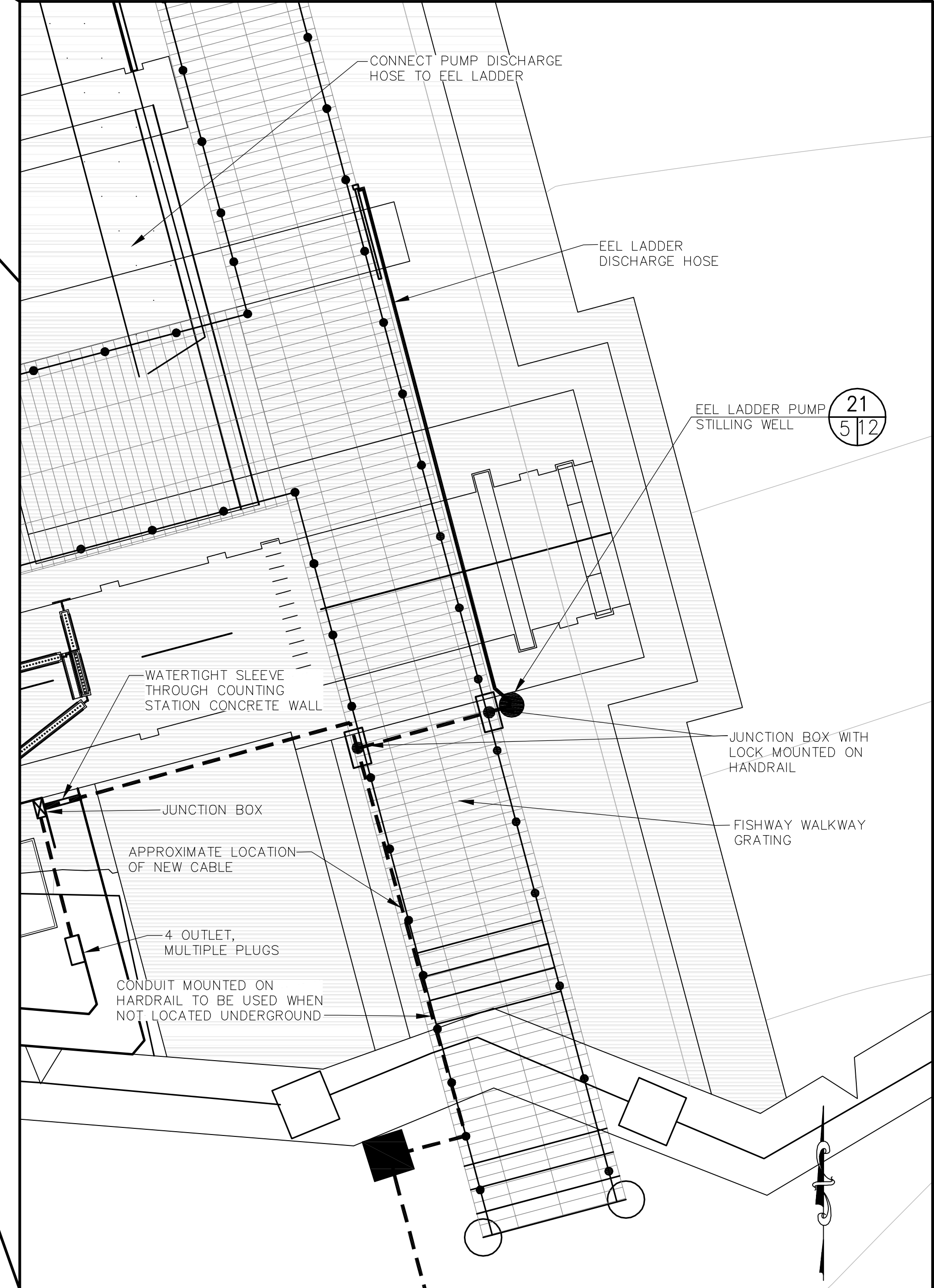
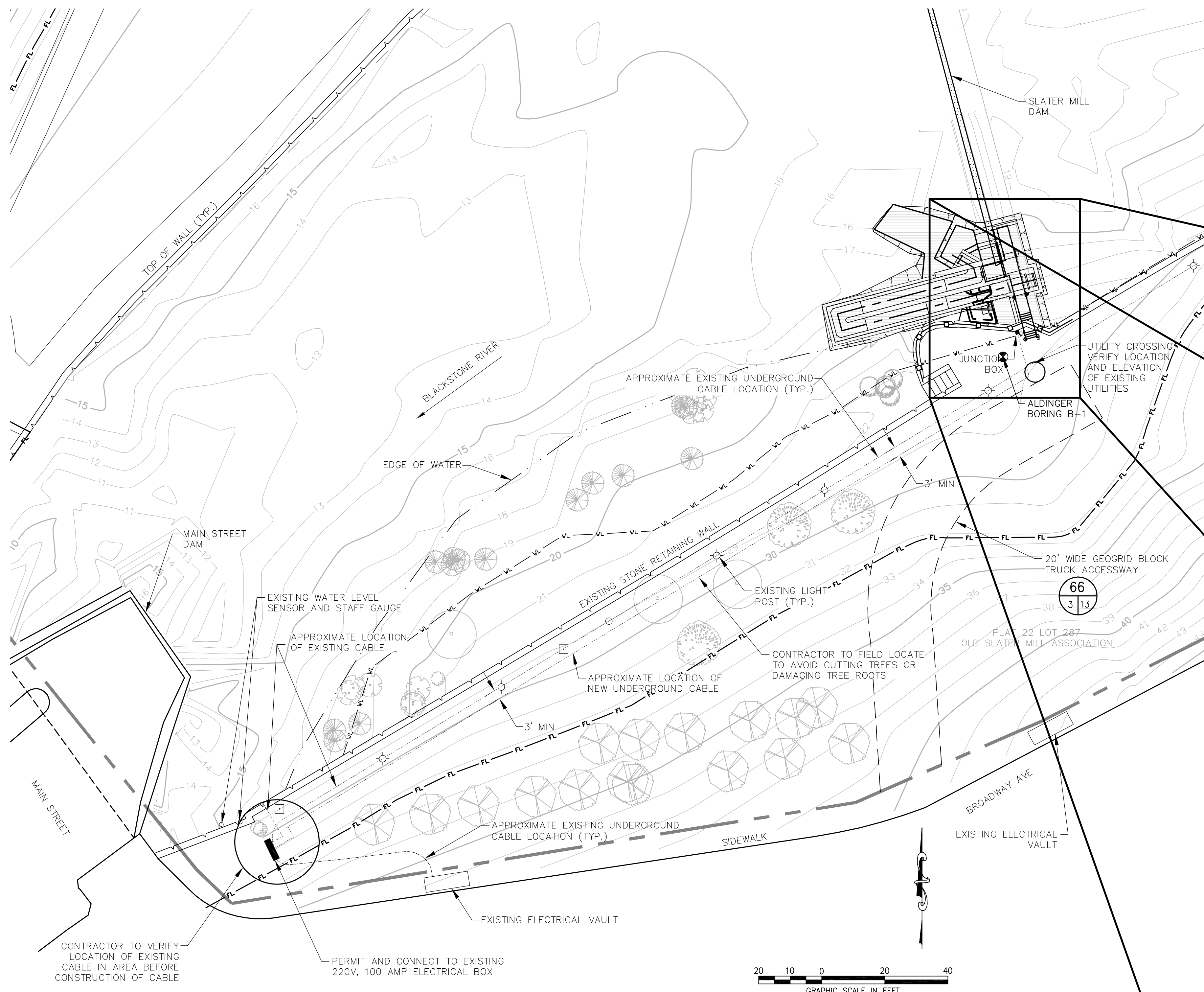


WALKWAY SUPPORT PLAN (11)  
SCALE: N.T.S.

REVISIONS	DESCRIPTION
NO.	DATE
BY	
NO.	
<b>LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT</b> <b>SLATER MILL FISHWAY</b> <b>PAWTUCKET, RHODE ISLAND</b> <b>FISHWAY ACCESS DETAILS</b>	
2374 Post Road, Suite 102 Warwick, Rhode Island 02886 (401) 736-3440	
DATE	JUNE 2012
DESIGNED BY	TCC
DRAWN BY	DPA
CHECKED BY	HLB
PROJECT MANAGER	SSW
PROJECT NUMBER	62562.01
SCALE	AS SHOWN
FILE NAME	C-13 FISHWAY ACCESS DRAWING
DRAWING NUMBER	C-13
SHEET NUMBER	14 OF 15

ISSUED FOR CONSTRUCTION BIDS





- NOTES:
1. CONTRACTOR TO FILE PERMIT FOR THE ELECTRICAL WORK.
  2. CONTRACTOR TO CONTACT DIG SAFE 1-888-DIG-SAFE AND SHALL LOCATE AND VERIFY THE LOCATION OF ANY EXISTING UTILITIES IN THE CONSTRUCTION AREA.
  3. PROPOSED CABLE TO BE #12 WIRE RATED FOR UNDERGROUND SERVICE INSTALLED 18-24 INCHES BELOW EXISTING GRADE.
  4. CONDUIT SHALL BE PLACED SO THAT NO EXISTING TREES OR MAJOR ROOTS ARE DISTURBED, AND IS A MINIMUM OF 3- FEET FROM EXISTING UNDERGROUND CABLE AND LIGHT POLES.
  5. CONTRACTOR TO USE EXISTING EXCAVATED SOIL AS FILL OR EQUAL, AND SEED BACKFILLED AREA AS NECESSARY.
  6. ALL ELECTRICAL CONDUIT, JUNCTION BOXES, AND HARDWARE THAT ARE VISIBLE SHALL HAVE BLACK EPOXY COATING.

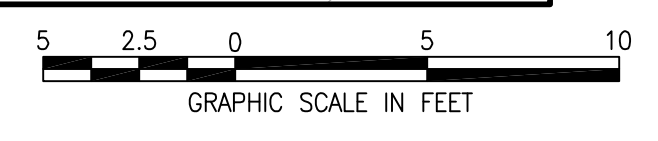
NO.	DATE	BY	DESCRIPTION

SEAL THOMAS C. COOK <i>Thomas C. Cook</i> No. 8819 REGISTERED ENGINEER CIVIL 7/6/12
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LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT  
 SLATER MILL FISHWAY  
 PAWTUCKET, RHODE ISLAND  
 ELECTRICAL PLAN

2374 Post Road, Suite 102 Warwick, Rhode Island 02886 (401) 736-3440	
DATE	JUNE 2012
DESIGNED BY	TCC
DRAWN BY	DPA
CHECKED BY	HLB
PROJECT MANAGER	SSW
PROJECT NUMBER	62562.01
SCALE	AS SHOWN
FILE NAME	E-1 ELECTRICAL PLANS
DRAWING NUMBER	E-1
SHEET NUMBER	15 OF 15



ISSUED FOR CONSTRUCTION BIDS