

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT MAIN STREET FISHWAY

PAWTUCKET, RHODE ISLAND

PREPARED FOR:

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

PROJECT PARTNERS

SOURCE DOCUMENTS FOR THESE DRAWINGS ARE SHEETS 1-21, EA PROJECT NO. 62130.08, APRIL 2011, PREPARED FOR US DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE.



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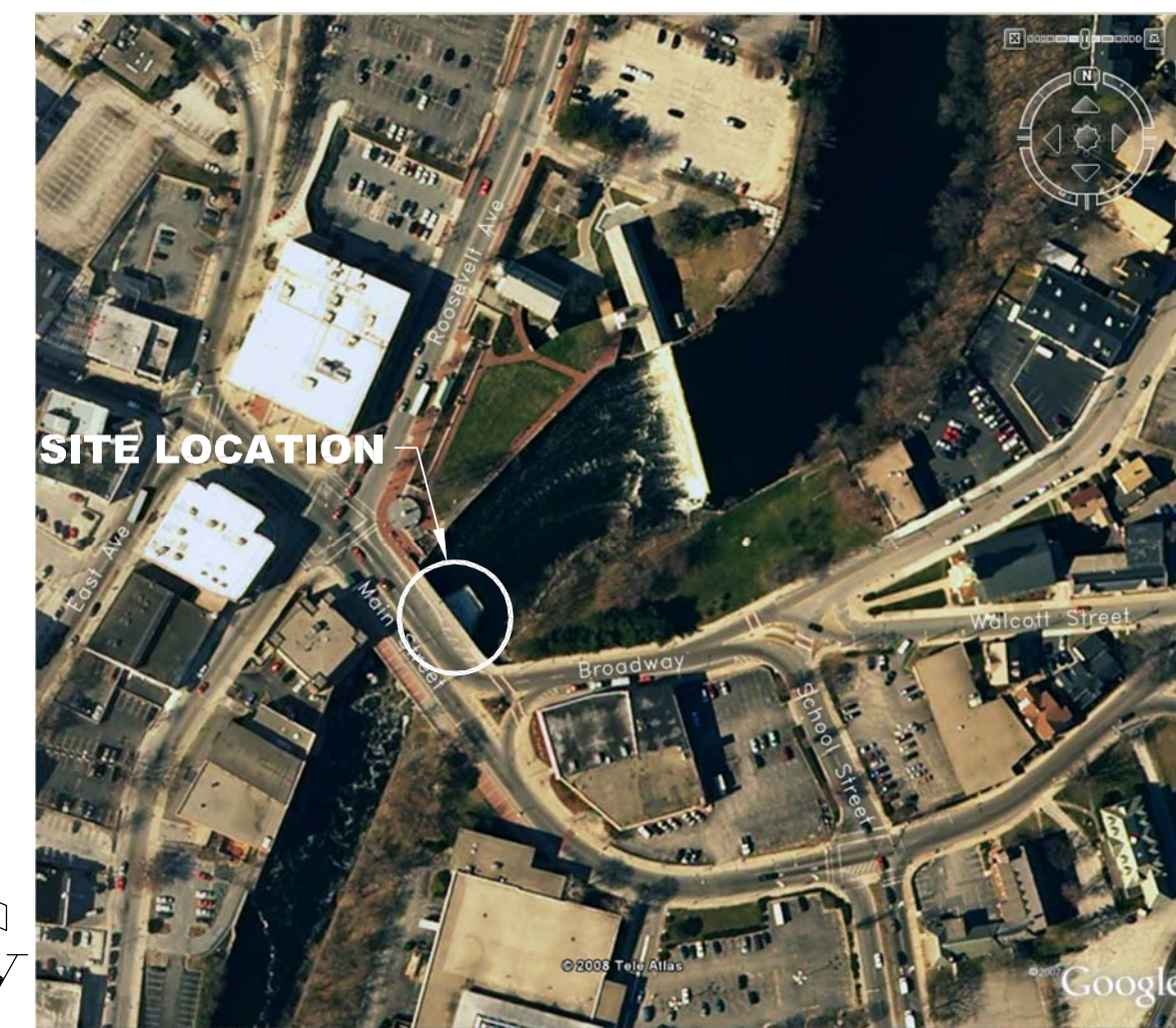


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DRAWING NUMBER	SHEET NUMBER	DRAWING TITLE
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C-22	23 OF 24	FISHWAY EXIT REINFORCEMENT DETAILS
E-1	24 OF 24	ELECTRICAL DETAILS



VICINITY MAP

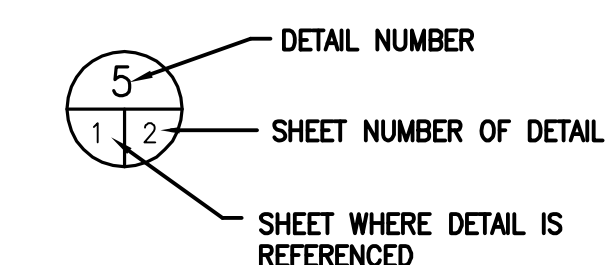
PREPARED BY



ABBREVIATIONS	
ACO	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
HORIZ.	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
SRW	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
	PRECAST FISHWAY
	PRECAST PIER
	UNDERWATER GROUT CONCRETE

REFERENCE SYMBOLS



ISSUED FOR CONSTRUCTION BIDS

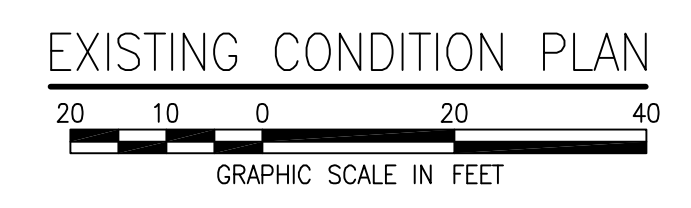
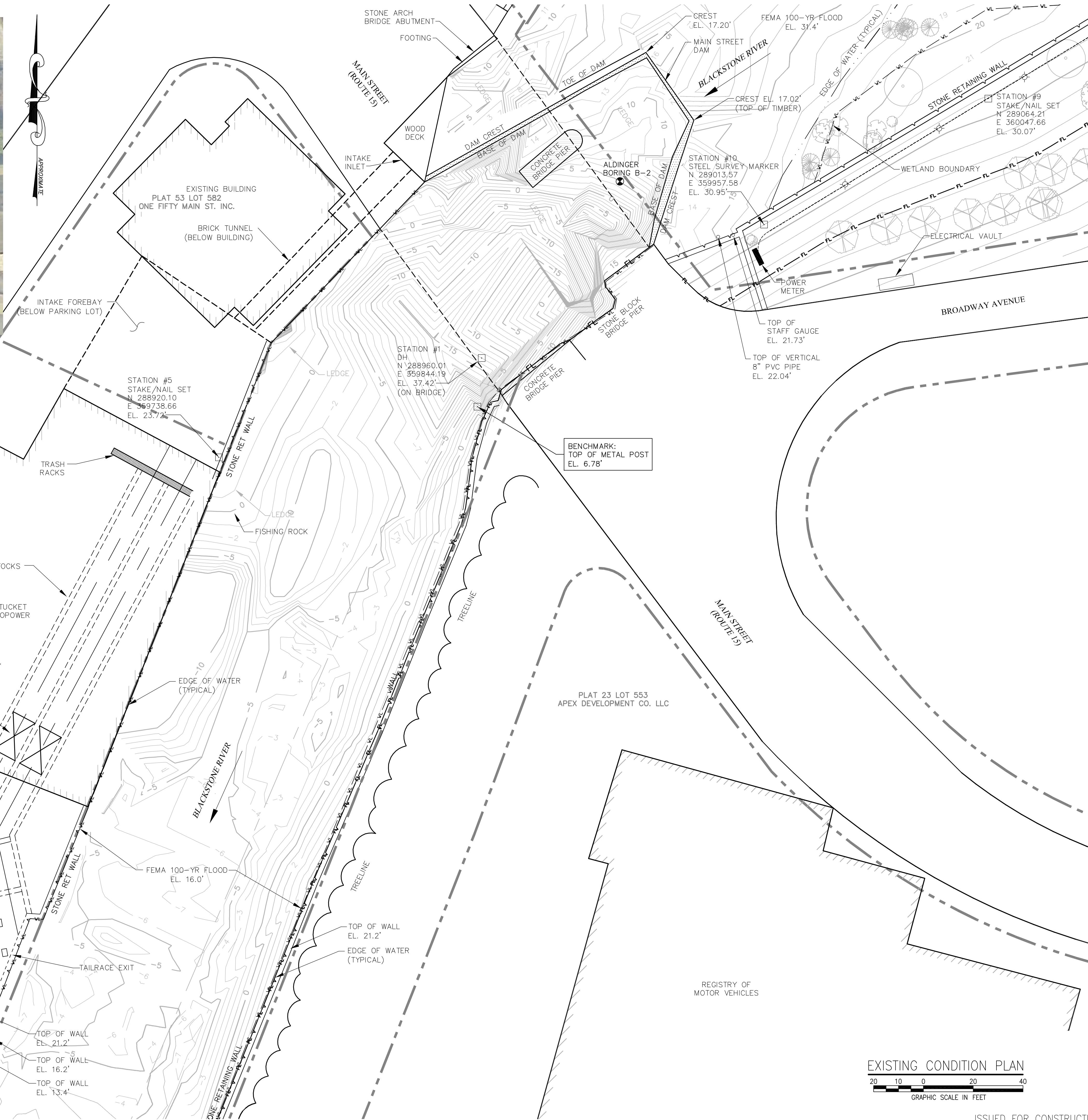
NO.	DATE	BY	DESCRIPTION

SEALED
THOMAS C. COOK
Professional Engineer
No. 8819
REGISTERED PROFESSIONAL ENGINEER
CIVIL
7/6/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
MAIN STREET FISHWAY
PAWTUCKET, RHODE ISLAND

TITLE SHEET

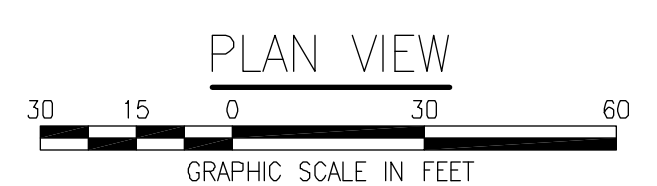
DATE	JUNE 2012
DESIGNED BY	TCC
DRAWN BY	DPA
CHECKED BY	HLB
PROJECT MANAGER	SSW
PROJECT NUMBER	62562.01
SCALE	AS SHOWN
FILE NAME	TITLE SHEET
DRAWING NUMBER	T-1
SHEET NUMBER	1 OF 24



NO.	DATE	BY	DESCRIPTION

THOMAS C. COOK
Thomas C. Cook
 No. 8819
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL
 7/6/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT MAIN STREET FISHWAY PAWTUCKET, RHODE ISLAND	
EXISTING CONDITIONS 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-1-EXISTING CONDITION PLAN
DRAWING NUMBER	C-1
SHEET NUMBER	2 OF 24



- NOTES:**
- ALL ELEVATIONS REFERENCE NGVD29 DATUM, HORIZONTAL COORDINATES ARE IN RI STATE PLANE NAD83.
 - ALL SURVEY DATA AND SITE FEATURES IN RIVER CHANNEL FROM SURVEY DATED "AUG 2007", PERFORMED BY "SMC, INC".
 - SITE IS LOCATED AT 150 MAIN STREET PAWTUCKET, RI.
 - 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. COFFERDAMS SHALL EXTEND TO AT LEAST 1.5 FEET ABOVE THE 2-YEAR FLOOD LEVELS INDICATED ON SHEET C-6. NO COFFERDAMS SHALL BE USED DOWNSTREAM OF DAM.
 - DEWATERING PUMPS SHALL DISCHARGE ONTO BEDROCK TO THE RIVER THROUGH FILTER BAGS TO CONTROL TURBIDITY IN RIVER.
 - CONTRACTOR SHALL SUBMIT A DEWATERING PLAN (CERTIFIED BY A RI P.E.) INCLUDING A 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 NTU'S.
 - STOCKPILING AREA TO BE LOCATED IN STAGING AREA 1 AND WILL BE FINALIZED DURING THE PRE-CONSTRUCTION MEETING.
 - LIMIT OF WORK INCLUDES DOWNSTREAM TO STAGING AREA AT CITY OF PAWTUCKET BOAT RAMP AND PARKING LOT. SEE SUPPLEMENTAL CONDITIONS SECTION OF DIVISION 0 CONTRACT REQUIREMENT FOR DETAILS.
 - STAGING AREA 2 SHALL BE USED FOR LOADING WORK BARGES AND BOATS AND STOCKPILING OF SOLID WOOD, PLASTIC, AND STEEL COMPONENTS. NO STOCKPILING OF EARTH OR NON-SOLID MATERIALS INCLUDING FUEL IS ALLOWED IN STAGING AREA 2.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY SECURITY FENCING AT THESE AREAS AS NECESSARY.
 - ALL FUEL STORAGE LOCATIONS SHALL BE CONTAINED SUCH THAT IT WILL NOT LEAK OR SPILL ONTO THE SURROUNDING AREA, OR SHALL BE STORED OFF-SITE.
 - FISHWAY SECURITY FENCE TO BE APPROVED BY SHPO AND OWNER.
 - 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.

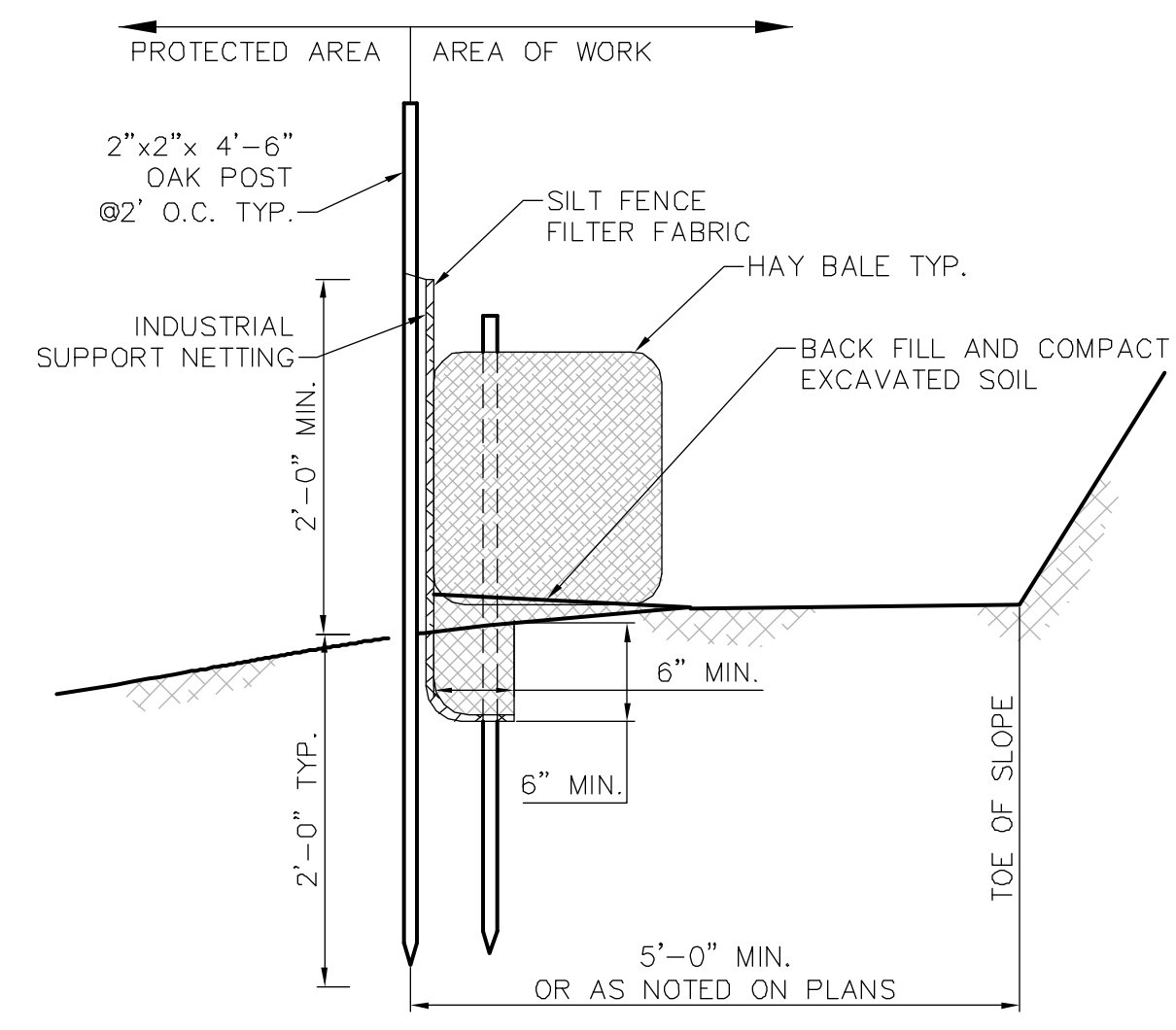
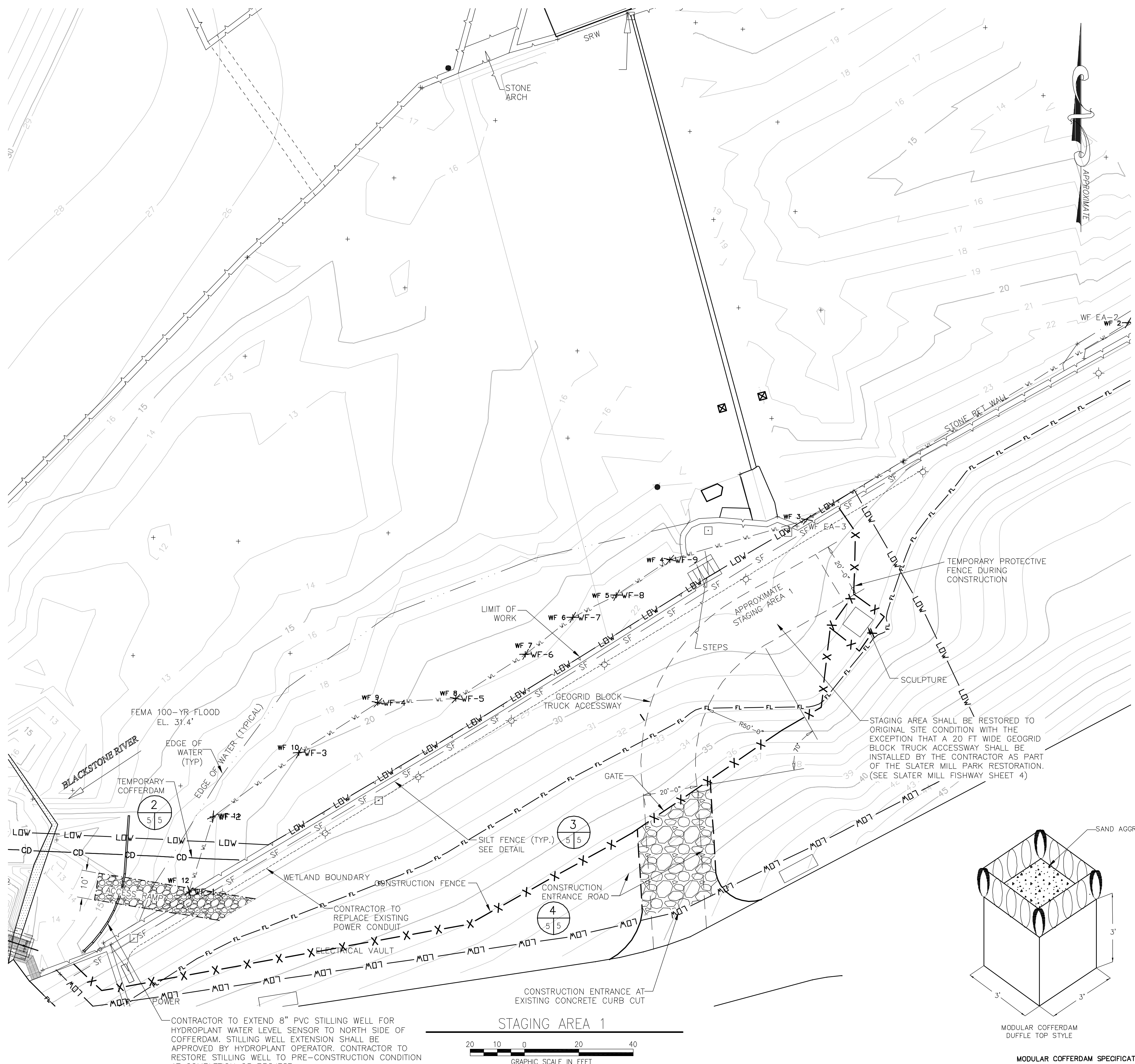


STAGING AREAS
STATE PIER (NOT AVAILABLE FOR STAGING AREA)

- RECOMMENDED SEQUENCE OF CONSTRUCTION:**
PHASE I - FISHWAY
- SUBMIT DEWATERING PLAN AND FOUNDATION INSTALLATION PLAN AT LEAST FORTY-FIVE (45) DAYS PRIOR TO MOBILIZATION.
 - NOTIFY THE FEDERAL ENERGY REGULATORY COMMISSION NEW YORK REGIONAL OFFICE, NATURAL RESOURCES CONSERVATION SERVICE (NRCS), AND PAWTUCKET HYDROPOWER LLC. AT (401) 822-8822 FOR THE REQUIRED PRE-CONSTRUCTION MEETING SEVEN (7) DAYS BEFORE COMMENCING ANY SITE DISTURBANCE. NO SITE DISTURBANCE SHALL OCCUR FOR SEVEN (7) DAYS FOLLOWING THE MEETING TO ALLOW PHOTOGRAPHY OF THE HISTORIC FEATURES.
 - MAP AND CLEAR UTILITIES AS NECESSARY.
 - INSTALL STABILIZED CONSTRUCTION ENTRANCES, THEN CLEAR AND GRUB FOR THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROL DEVICES ONLY.
 - CLEAR AND GRUB VEGETATION WITHIN THE LOW NECESSARY FOR SITE ACCESS, STAGING, AND STOCKPILING, AS DETERMINED DURING THE PRE-CONSTRUCTION MEETING.
 - HYDROPLANT OWNER TO LOWER HEADPOND TO EL. 15.0 FT (2 FT BELOW CREST OF DAM) BY OPERATION OF HYDRAULIC TURBINES FOR UP TO EIGHT HOURS PER DAY TO ALLOW INSTALLATION OF COFFERDAM. CONTRACTOR SHALL ONLY ATTEMPT TO INSTALL COFFERDAM WHEN RIVER FLOW IS LESS THAN 750 CFS. CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING CHANGES IN RIVER CONDITIONS AND TURBINE OPERATION THAT ARE BEYOND CONTROL OF HYDROPLANT OWNER.
 - INSTALL COFFERDAM AND DEWATERING SYSTEM AS SHOWN IN THE PLANS AND DETAILED IN THE SPECIFICATIONS. EQUIPMENT ACCESS RAMPS SHALL BE CONSTRUCTED WITHIN LIMITS OF THE COFFERDAM. CONTRACTOR SHALL EXTEND HYDROPLANT WATER LEVEL SENSOR STILLING WELL TO NORTH SIDE OF COFFERDAM AS APPROVED BY HYDROPLANT OWNER.
 - HYDRO PLANT OWNER TO CONTROL FLOW OVER DAM AND MAINTAIN HEADPOND AT DAM CREST TO THE MOST REASONABLE EXTENT POSSIBLE BY OPERATION OF HYDRAULIC TURBINES. HOWEVER, MAXIMUM TURBINE CAPACITY IS 1,200 CFS AT LOW TIDE AND IF TURBINES TRIP, THE PORTION OF THE DAM OUTSIDE OF THE COFFERDAM WILL BE INSTANTANEOUSLY OVERTOPPED. THE CONTRACTORS SAFETY PLAN SHALL ADDRESS DAM OVERTOPPING AND PROCEDURES NECESSARY TO ASSURE SAFETY OF WORKERS.
 - DEWATER THE PROPOSED WORK AREA BETWEEN UPSTREAM COFFERDAM AND DAM USING DEWATERING SYSTEM, AND THEN HYDROPLANT OWNER TO RAISE HEADPOND TO CREST OF DAM LEVELS BY OPERATION OF HYDRAULIC TURBINES.
 - DIVERS USED AS NECESSARY TO INSTALL GROUT BAGS AND LEVEL PAD ON BEDROCK FOR INSTALLATION OF FOUNDATION FOR FISHWAY PIERS.
 - INSTALL FOUNDATION PIERS USING BARGE-MOUNTED EQUIPMENT, CONSTRUCT FISHWAY EXIT CHANNEL THROUGH DAM, AND INSTALL STOPLOGS OR TEMPORARY BULKHEAD IN FISHWAY EXIT CHANNEL.
 - HYDROPLANT OWNER TO LOWER HEADPOND BY OPERATION OF HYDRAULIC TURBINES (SEE NOTE 6 ABOVE), PREPARE FISHWAY EXIT, AND REMOVE COFFERDAM FOR HIGH SPRING RIVER FLOWS. CONTRACTOR SHALL ONLY ATTEMPT TO REMOVE COFFERDAM WHEN RIVER FLOW IS LESS THAN 750 CFS. HYDROPLANT OWNER TO RESUME NORMAL PLANT OPERATION AFTER COFFERDAM IS REMOVED.
 - AFTER SPRING RIVER FLOWS HAVE RECEDED, REINSTALL UPSTREAM COFFERDAM, SIMILAR TO STEPS 6-8.
 - CONSTRUCT REMAINDER OF FISH PASSAGE STRUCTURE, INCLUDING ALL ELEMENTS DETAILED IN THE PROJECT PLANS AND SPECIFICATIONS.
 - ON APPROVAL OF THE FISH PASSAGE STRUCTURE, REMOVE THE DEWATERING DEVICES AND COFFERDAMS, SIMILAR TO STEP 11. 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 MULCH 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 PERMANENT MONUMENTS FOR POST-CONSTRUCTION MONITORING, AS DIRECTED BY THE ENGINEER.

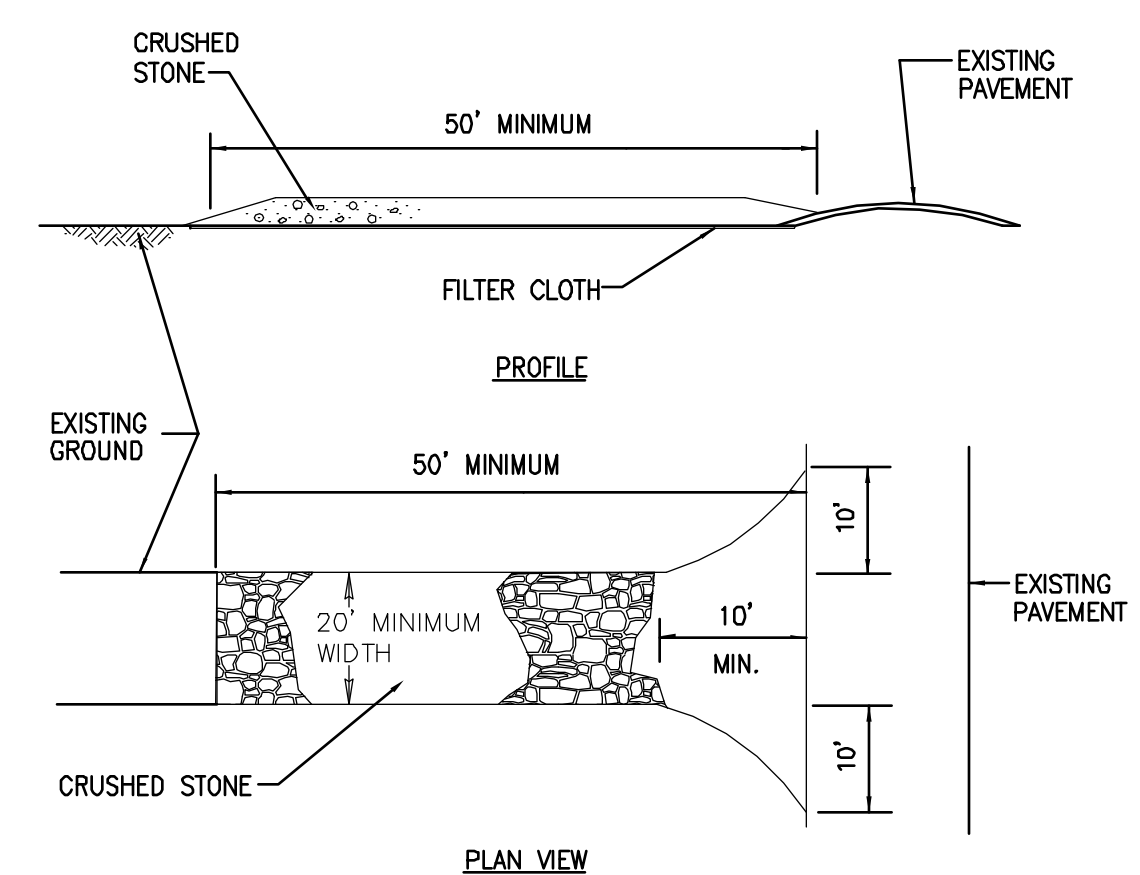
- PHASE II - DOWNSTREAM FISH PASSAGE FACILITY**
- SUBMIT DEWATERING PLAN AT LEAST SIXTY (60) DAYS PRIOR TO MOBILIZATION.
 - NOTIFY PAWTUCKET HYDROPOWER LLC 10 DAYS PRIOR TO INITIATING WORK AT HYDROPLANT INTAKE.
 - HYDROPLANT OWNER TO SHUTDOWN FLOW THROUGH HYDROPOWER PLANT AND LOCKOUT UNITS FOR THE DURATION OF THE WORK IN THE INTAKE DURING THE SUMMER LOW FLOW PERIOD (JUNE 15-SEPTEMBER 30). THE HYDROPLANT SHALL NOT BE SHUTDOWN MORE THAN 105 DAYS.
 - DIVERS TO REMOVE EXISTING TIMBERS AND STEEL FRAMING, AND INSTALL NEW STEEL STOP LOGS GUIDES, REPLACE TIMBER DECK, AND INSTALL STOP LOGS.
 - REMOVE EXISTING TRASH RACKS.
 - REMOVE SEDIMENT AND DEBRIS ACCUMULATION IN INTAKE STRUCTURE UPSTREAM OF TRASH RACKS AND DISPOSE OF IN APPROPRIATE LANDFILL.
 - INSTALL REPLACEMENT TRASH RACK HOISTING SYSTEM AND REPLACEMENT.
 - MODIFY BUILDING FOUNDATION FOR FISH BYPASS SLUICE.
 - INSTALL BYPASS SLUICE USING SCAFFOLDING SUSPENDED FROM ROOF AND BARGE-MOUNTED CRANE.
 - INSTALL NEW TRASH RACKS AND STORAGE SYSTEM.
 - HYDROPLANT OWNER TO RESUME NORMAL PLANT OPERATION AFTER ALL WORK IN THE INTAKE STRUCTURE IS COMPLETE.
 - RESTORE STAGING AREA 2 PER CITY OF PAWTUCKET PLANS AND DIRECTION.

SEAL	THOMAS C. COOK Professional Engineer No. 8819 7/16/12	REVISIONS
	NO.	DATE
LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT MAIN STREET FISHWAY PAWTUCKET, RHODE ISLAND		
CONSTRUCTION MANAGEMENT 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-3-CONSTRUCTION MANAGEMENT...	
DRAWING NUMBER	C-3	
SHEET NUMBER	4 OF 24	

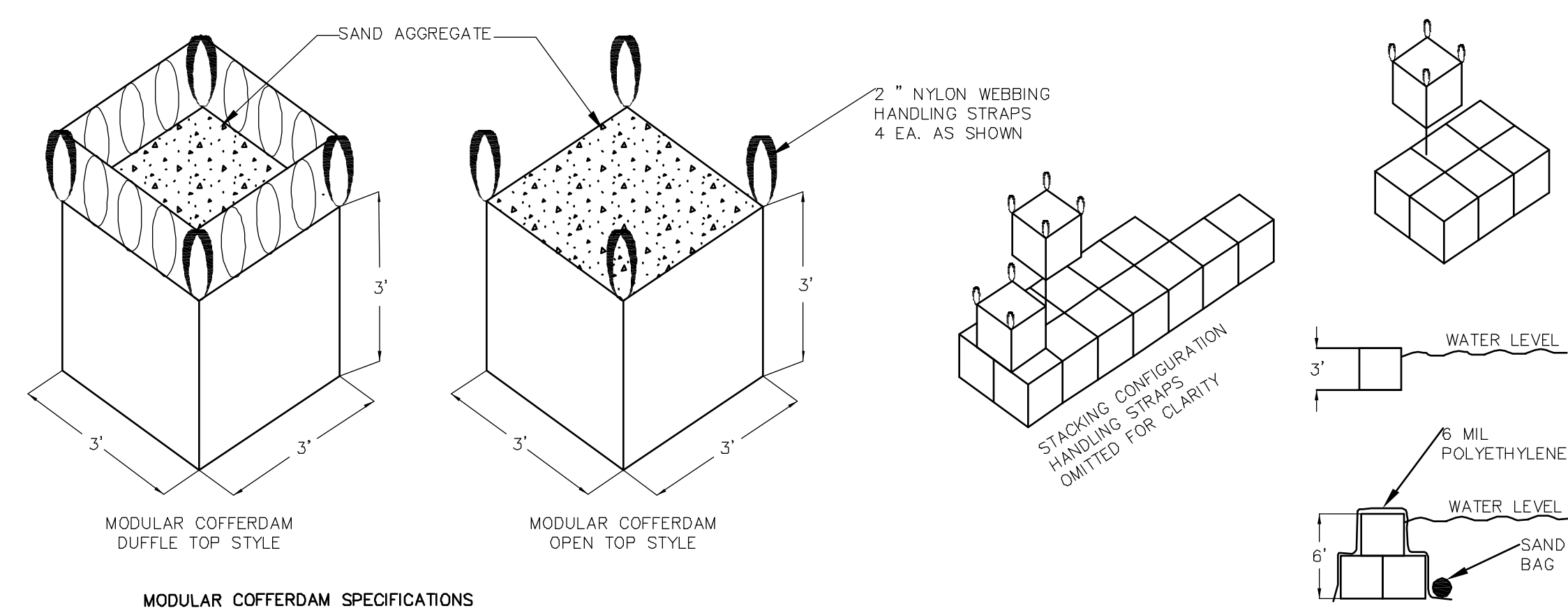


NOTE:
SILT FENCE FABRIC SHALL NOT BE SLIT HAY BALE POST SHALL BE DRIVEN THROUGH SILT FENCE FABRIC

EROSION CONTROL DETAIL 3
SCALE N.T.S.



STABILIZED CONSTRUCTION ENTRANCE 4
NOT TO SCALE



MODULAR COFFERDAM SPECIFICATIONS

MODEL	HEIGHT	SAND FILLED WEIGHT (APPROX)
INDUSTRIAL GRADE POLY BAG WITH WEATHERPROOF COATING	19"	1425#
	24"	1806#
	36"	2700#
	49"	3475#

MODULAR COFFERDAM DETAIL 2
NOT TO SCALE

- NOTES:
- SEE NOTES SHEET 4.
 - STAGING AREA 1 IS LOCATED AT 67 ROOSEVELT AVENUE, PAWTUCKET, RI. APPROXIMATELY 400 FT EAST OF THE MAIN STREET, ROOSEVELT AVENUE INTERSECTION.



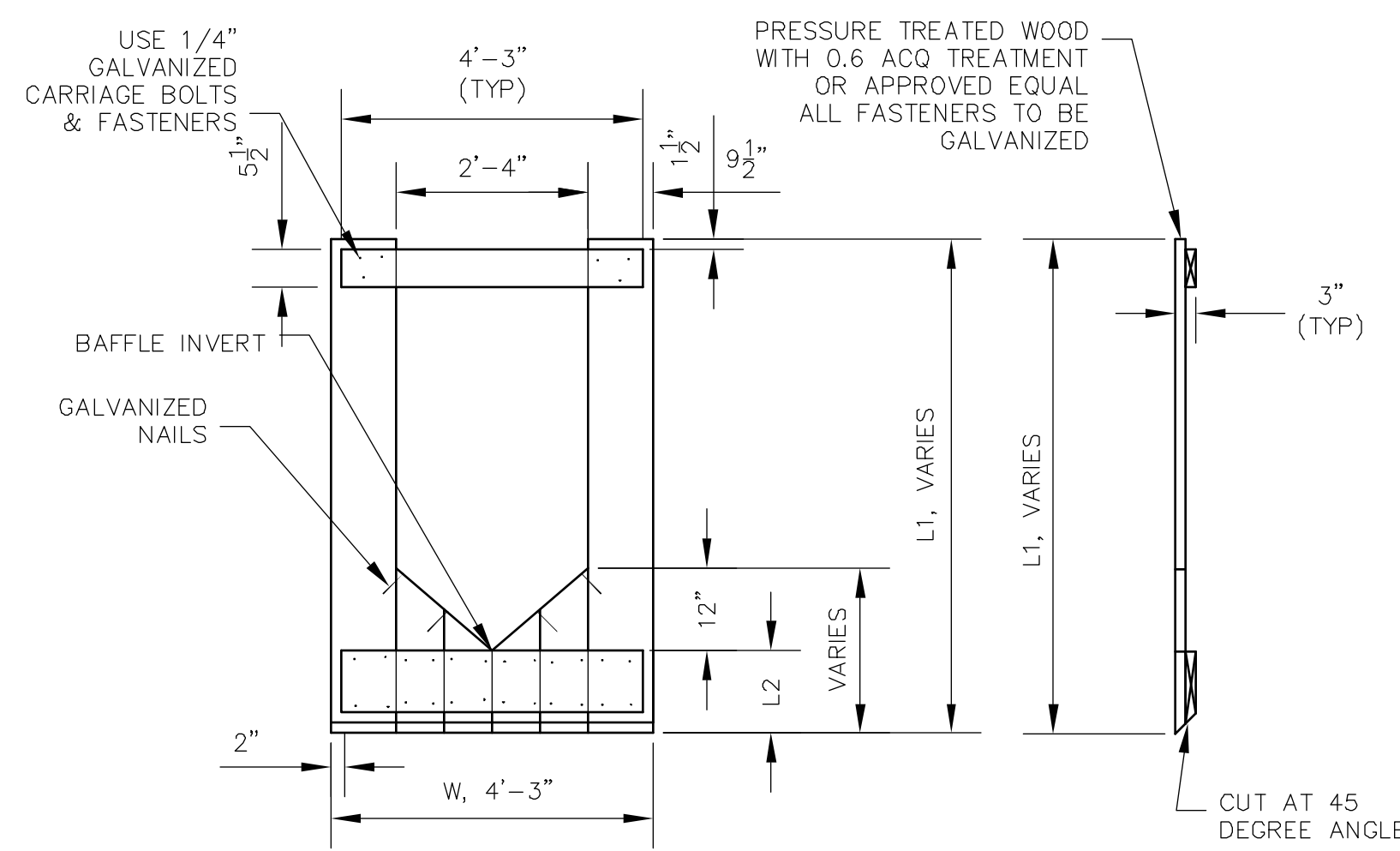
REVISIONS	DESCRIPTION
NO.	BY
DATE	
NO.	
THOMAS C. COOK Professional Engineer No. 8819 7/10/12	REGISTERED PROFESSIONAL ENGINEER CIVIL
LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT MAIN STREET FISHWAY PAWTUCKET, RHODE ISLAND	
STAGING AREA 1 DETAILS	
2374 Post Road, Suite 102 Warwick, Rhode Island 02886 (401) 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-4 CONSTRUCTION MANAGEMENT2.DWG
DRAWING NUMBER	C-4
SHEET NUMBER	5 OF 24

BAFFLE NO.	BAFFLE INVERT EL. (FT)	BAFFLE WIDTH "W" (IN.)	BAFFLE LENGTH "L1" (IN.)	BAFFLE HEIGHT "L2" (IN.)
1	-3.04	51	137	12
2	-2.72	51	132	12
3	-2.41	51	127	12
4	-2.10	51	123	12
5	-1.79	51	118	12
6	-1.47	51	113	12
7	-1.16	51	108	12
8	-0.85	51	103	12
9	-0.54	51	99	12
10	-0.22	51	94	12
11	0.09	51	89	12
12	0.40	51	88	12
13	0.72	51	88	12
14	1.03	51	88	12
15	1.34	51	88	12
16	1.65	51	88	12
17	1.97	51	88	12
18	2.28	51	88	12
19	2.59	51	88	12
20	2.90	51	88	12
21	3.22	51	88	12
22	3.53	51	88	12
23	3.84	51	88	12

BAFFLE NO.	BAFFLE INVERT EL. (FT)	BAFFLE WIDTH "W" (IN.)	BAFFLE LENGTH "L1" (IN.)	BAFFLE HEIGHT "L2" (IN.)
24	3.84	51	88	12
25	4.15	51	88	12
26	4.47	51	88	12
27	4.78	51	88	12
28	5.09	51	88	12
29	5.40	51	88	12
30	5.72	51	88	12
31	6.03	51	88	12
32	6.34	51	88	12
33	6.65	51	83	12
34	6.65	51	88	12
35	6.96	51	88	12
36	7.28	51	88	12
37	7.59	51	88	12
38	7.90	51	88	12
39	8.21	51	88	12
40	8.53	51	88	12
41	8.84	51	88	12
42	9.15	51	88	12
43	9.46	51	83	12

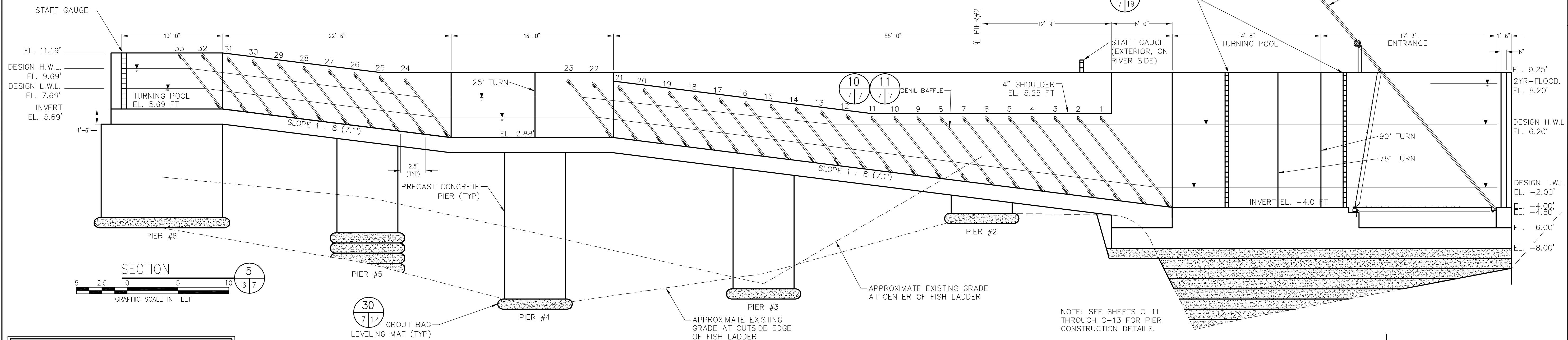
BAFFLE NO.	BAFFLE INVERT EL. (FT)	BAFFLE WIDTH "W" (IN.)	BAFFLE LENGTH "L1" (IN.)	BAFFLE HEIGHT "L2" (IN.)
44	9.46	51	132	12
45	9.77	51	127	12
46	10.09	51	123	12
47	10.40	51	118	12
48	10.71	51	113	12
49	11.02	51	108	12
50	11.34	51	103	12
51	11.65	51	99	12
52	11.96	51	94	12
53	12.27	51	89	12
54	12.59	51	88	12
55	12.90	51	88	12
56	13.21	51	88	12
57	13.52	51	88	12
58	13.84	51	88	12
59	14.15	51	88	12
60	14.46	51	88	12
61	14.77	51	88	12
62	15.09	51	88	12
63	15.40	51	88	12
64	15.71	51	88	12
65	16.02	51	88	12
66	16.02	51	88	12
67	16.33	51	88	15 14/16
68	16.65	51	88	19 12/16
69	16.96	51	90	23 11/16
70	17.27	51	96	27 9/16

DENIL BAFFLE TABLE
ALL ELEVATIONS
REFERENCE NGVD29 DATUM

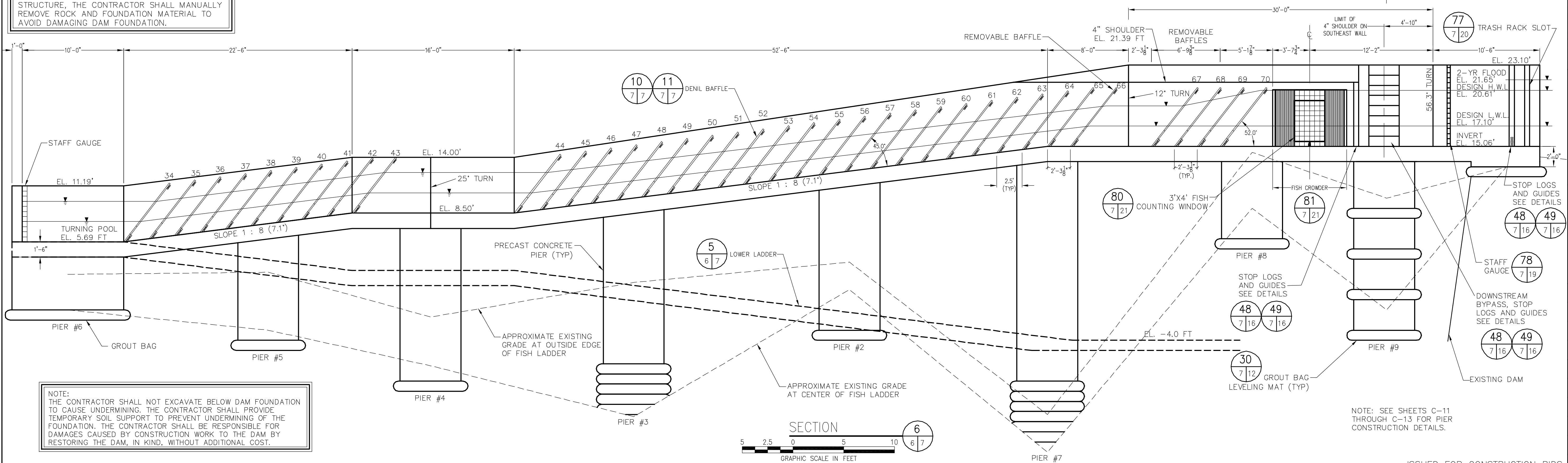


BAFFLE GROOVE DETAIL (11)
SCALE: N.T.S.

DENIL BAFFLE DETAIL (10)
SCALE: N.T.S.



NOTE:
WHEN EXCAVATING ADJACENT TO EXISTING DAM STRUCTURE, THE CONTRACTOR SHALL MANUALLY REMOVE ROCK AND FOUNDATION MATERIAL TO AVOID DAMAGING DAM FOUNDATION.



NOTE:
THE CONTRACTOR SHALL NOT EXCAVATE BELOW DAM FOUNDATION TO CAUSE UNDERMINING. THE CONTRACTOR SHALL PROVIDE TEMPORARY SOIL SUPPORT TO PREVENT UNDERMINING OF THE FOUNDATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES CAUSED BY CONSTRUCTION WORK TO THE DAM BY RESTORING THE DAM, IN KIND, WITHOUT ADDITIONAL COST.

REVISIONS

NO.	DATE	BY	DESCRIPTION

THOMAS C. COOK
Professional Engineer
No. 6819
7/20/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
MAIN STREET FISHWAY
PAWTUCKET, RHODE ISLAND

FISHWAY CENTERLINE PROFILE AND BAFFLE DETAILS

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

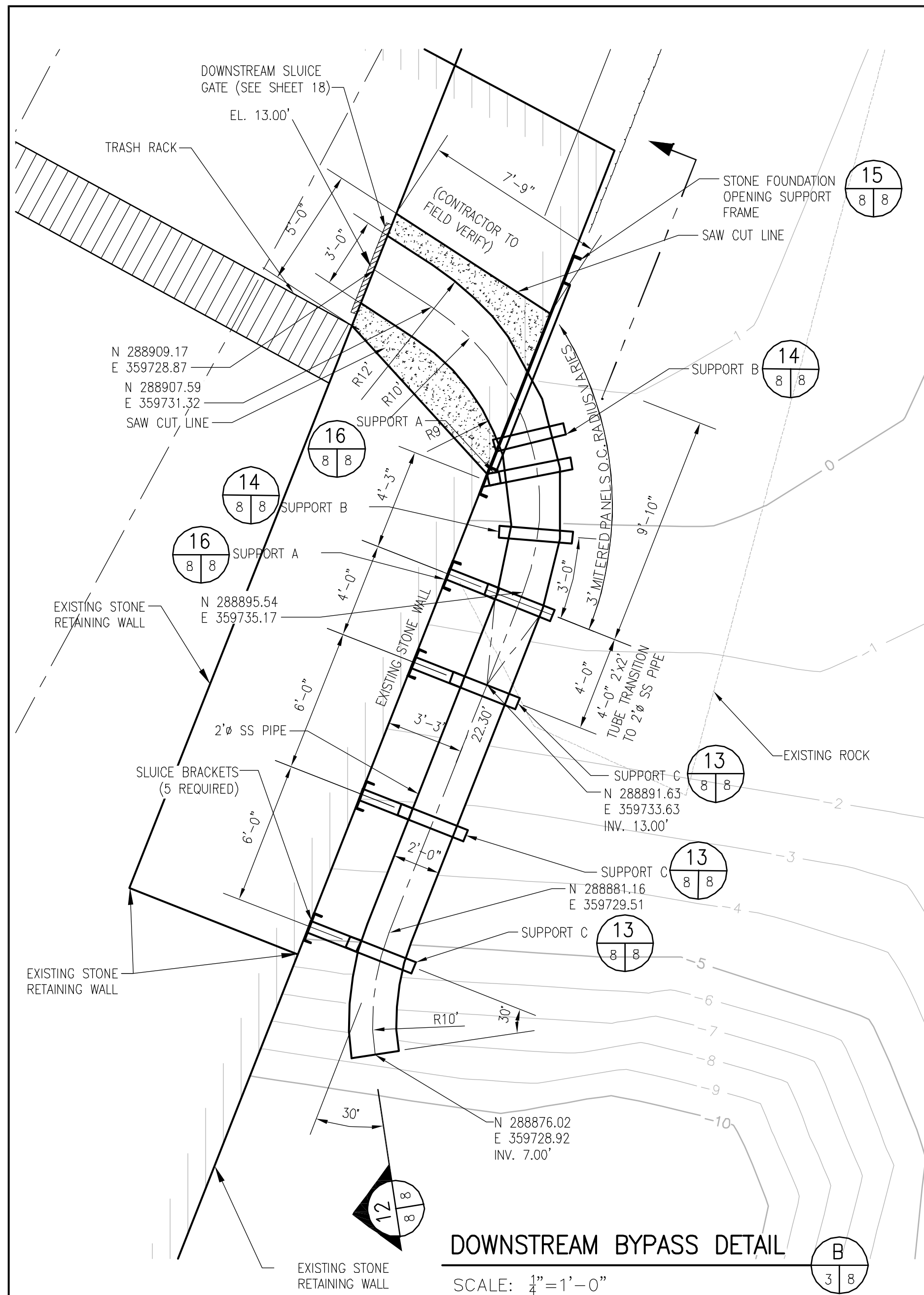
FILE NAME: C-5-C-6-FISHWAY PLAN AND...

DRAWING NUMBER: C-6

SHEET NUMBER: 7 OF 24

NOTE: SEE SHEETS C-11 THROUGH C-13 FOR PIER CONSTRUCTION DETAILS.

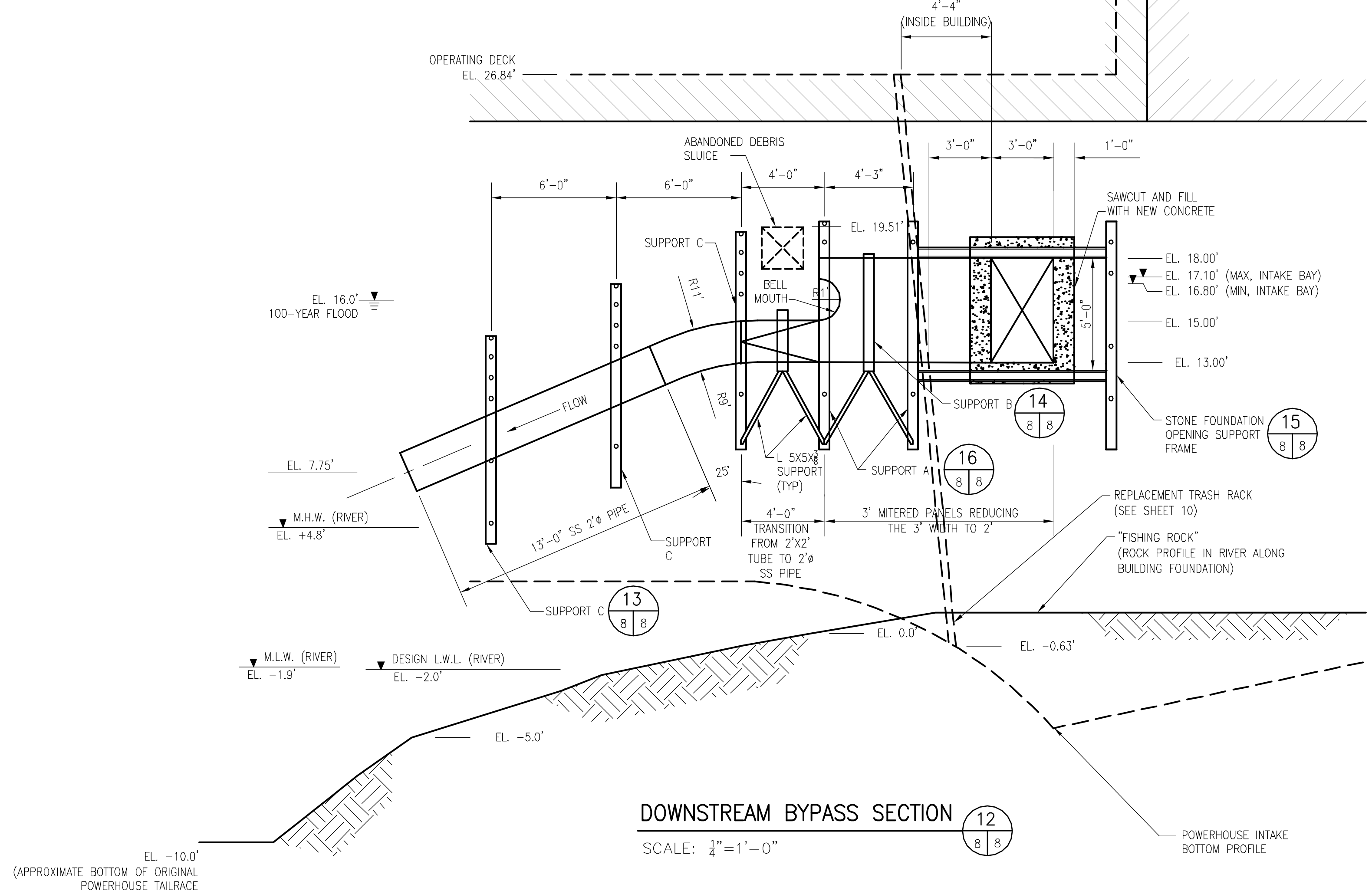
ISSUED FOR CONSTRUCTION BIDS



DOWNSTREAM BYPASS DETAIL

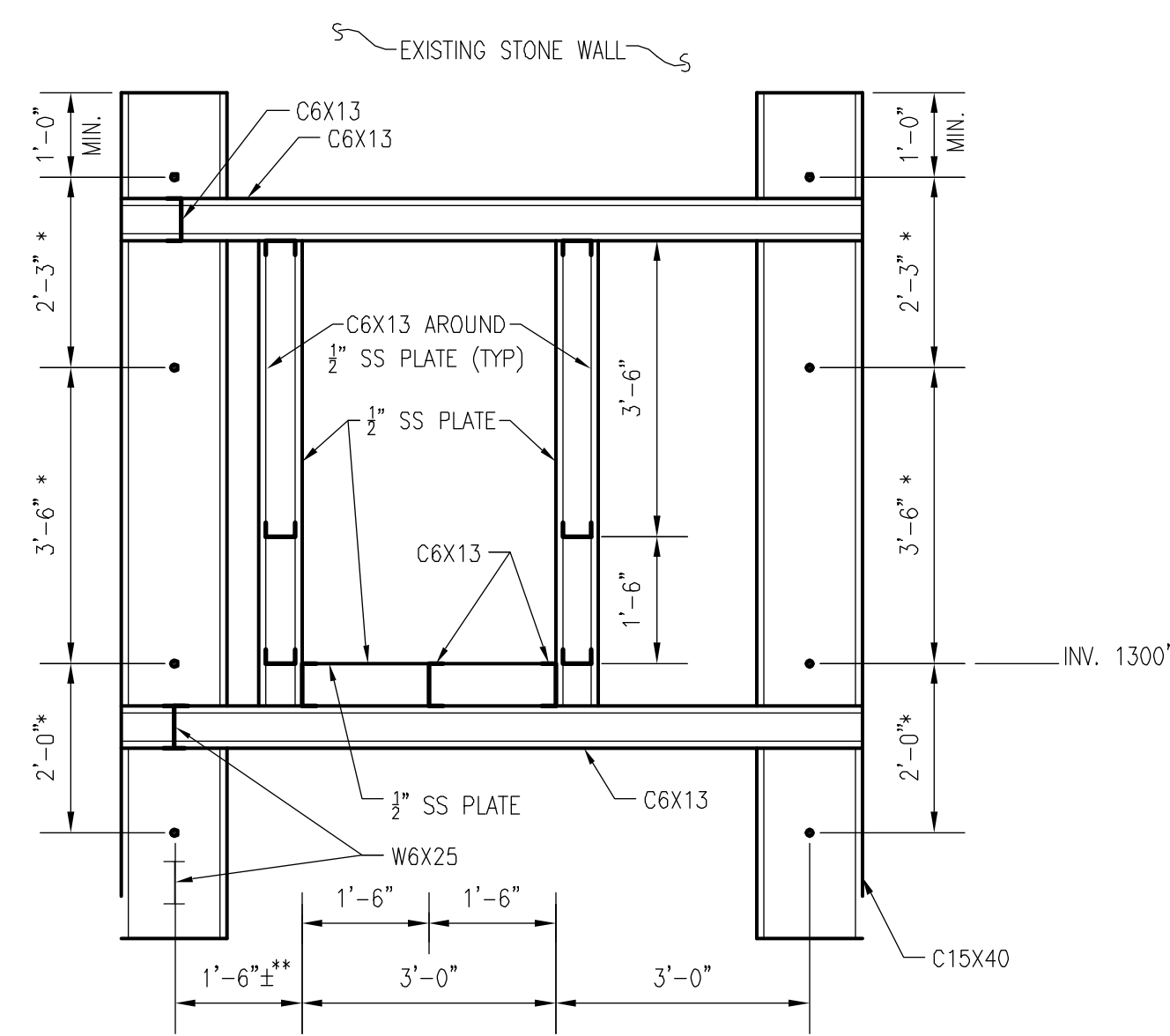
SCALE: 1/4" = 1'-0"

- NOTES:
1. CONTRACTOR SHALL SUBMIT PLAN FOR MODIFYING BUILDING TO INCORPORATE DOWNSTREAM FISH BYPASS 45 DAYS PRIOR TO INITIATING CONSTRUCTION. PLAN TO BE APPROVED BY NATIONAL GRID PRIOR TO ANY WORK.
 2. CONTRACTOR SHALL DOCUMENT THE FOUNDATION STONE MASONRY WALL COMPOSITION PRIOR TO INSTALLATION OF THE CONCRETE SUPPORT AROUND THE FOUNDATION HOLE AND PRIOR TO INSTALLATION OF THE FISH SLUICE ANCHOR SYSTEM, AND PROVIDE TO THE ENGINEER FOR EVALUATION OF DESIGN ASSUMPTION.
 3. CONTRACTOR SHALL ONLY INSTALL FISH SLUICE ANCHOR SYSTEM AFTER AUTHORIZATION BY ENGINEER.
 4. THE TOP ANCHOR ON EACH DOWNSTREAM BYPASS SUPPORT SHALL BE TESTED USING THE TEST JACK TENSIONING METHOD. THE TEST JACK SYSTEM SHALL BE DESIGNED TO SPAN THE GRANITE BLOCK IN WHICH THE ANCHOR BEING TESTED IS LOCATED TO ALLOW TESTING OF THE BOND STRENGTH OF THE ANCHOR AND THE INTEGRITY OF THE WALL TO WITHSTAND THE ANCHOR FORCES. ALL OTHER ANCHOR BOLTS SHALL BE TESTED USING THE TORQUE TENSIONING METHOD. ALL ANCHOR BOLTS SHALL BE TENSIONED TO 15,000 LBS.



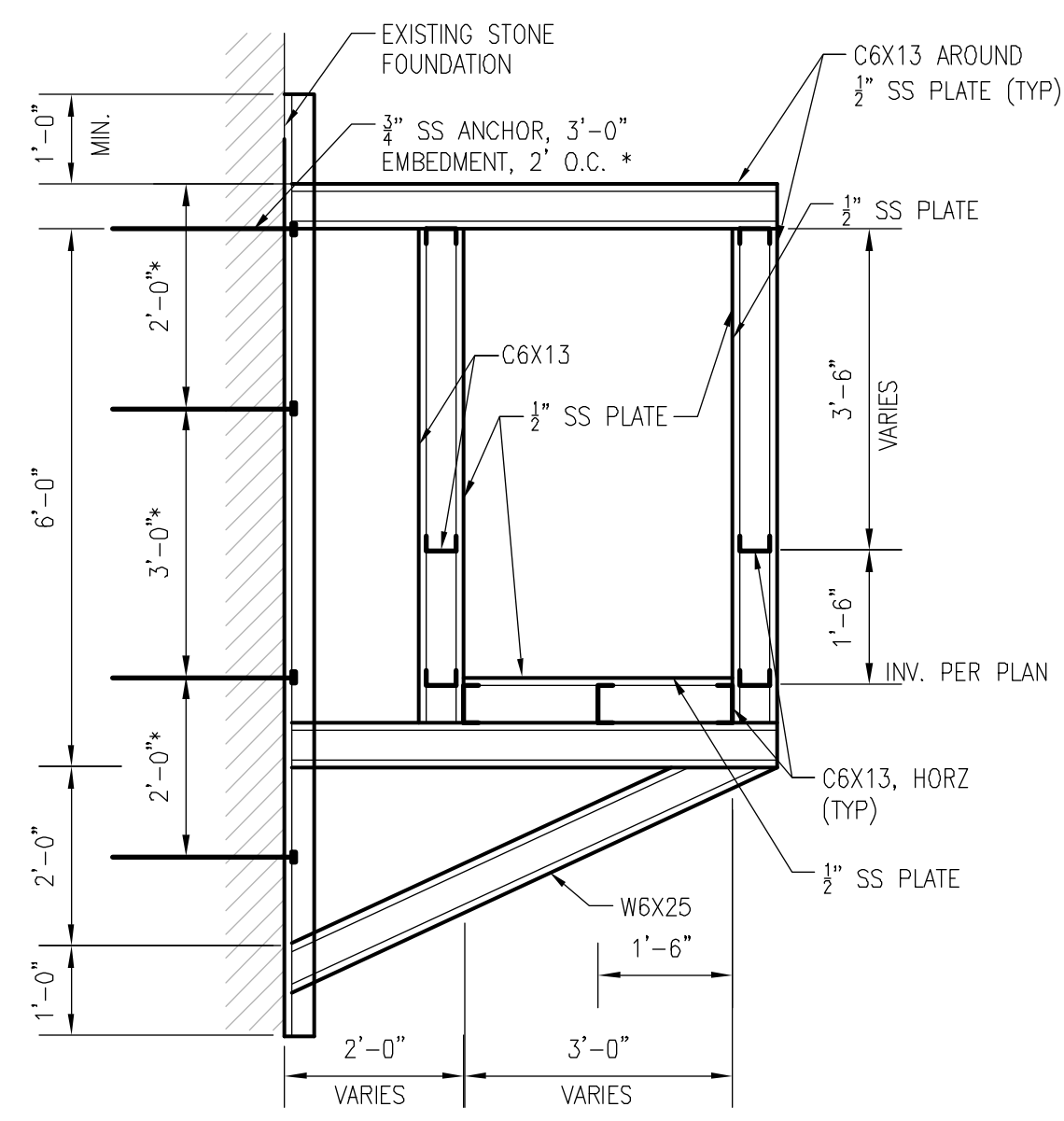
DOWNSTREAM BYPASS SECTION

SCALE: 1/4" = 1'-0"



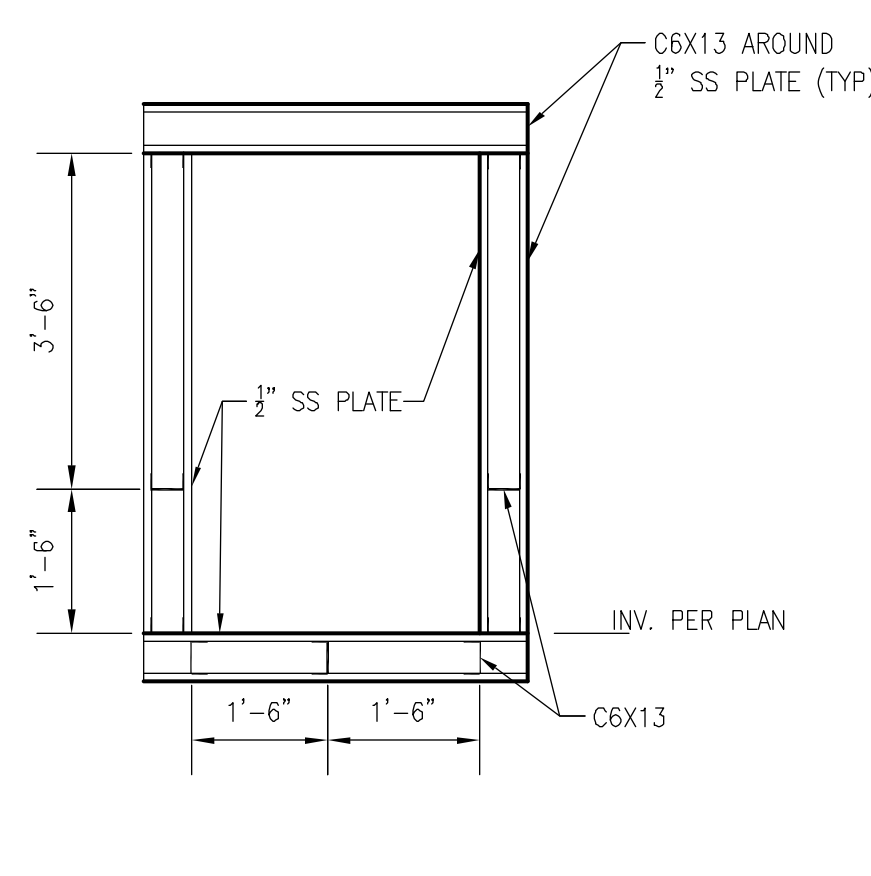
STONE FOUNDATION OPENING

SCALE: 1/2" = 1'-0"



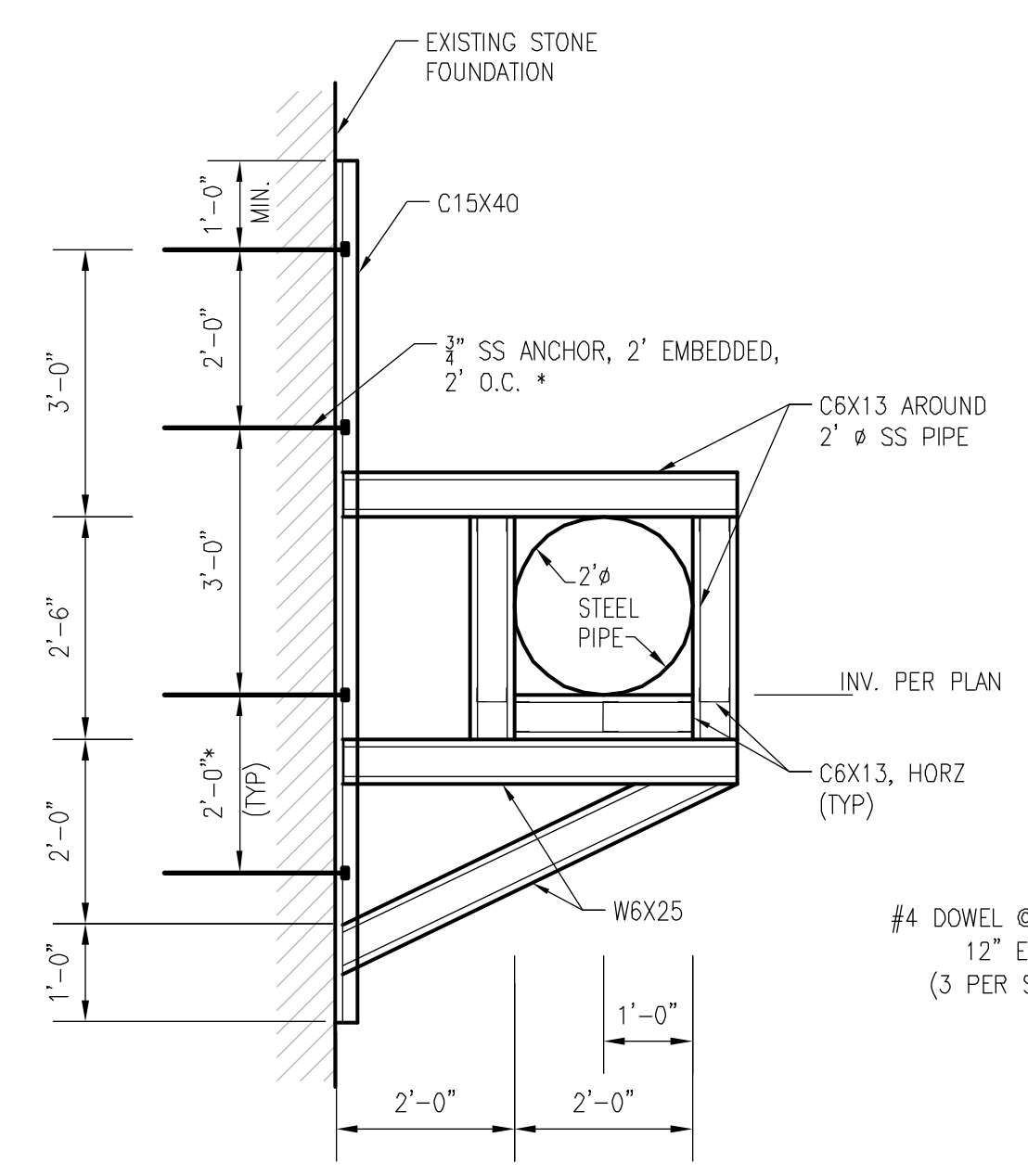
DOWNSTREAM BYPASS SUPPORT A

SCALE: 1/2" = 1'-0"



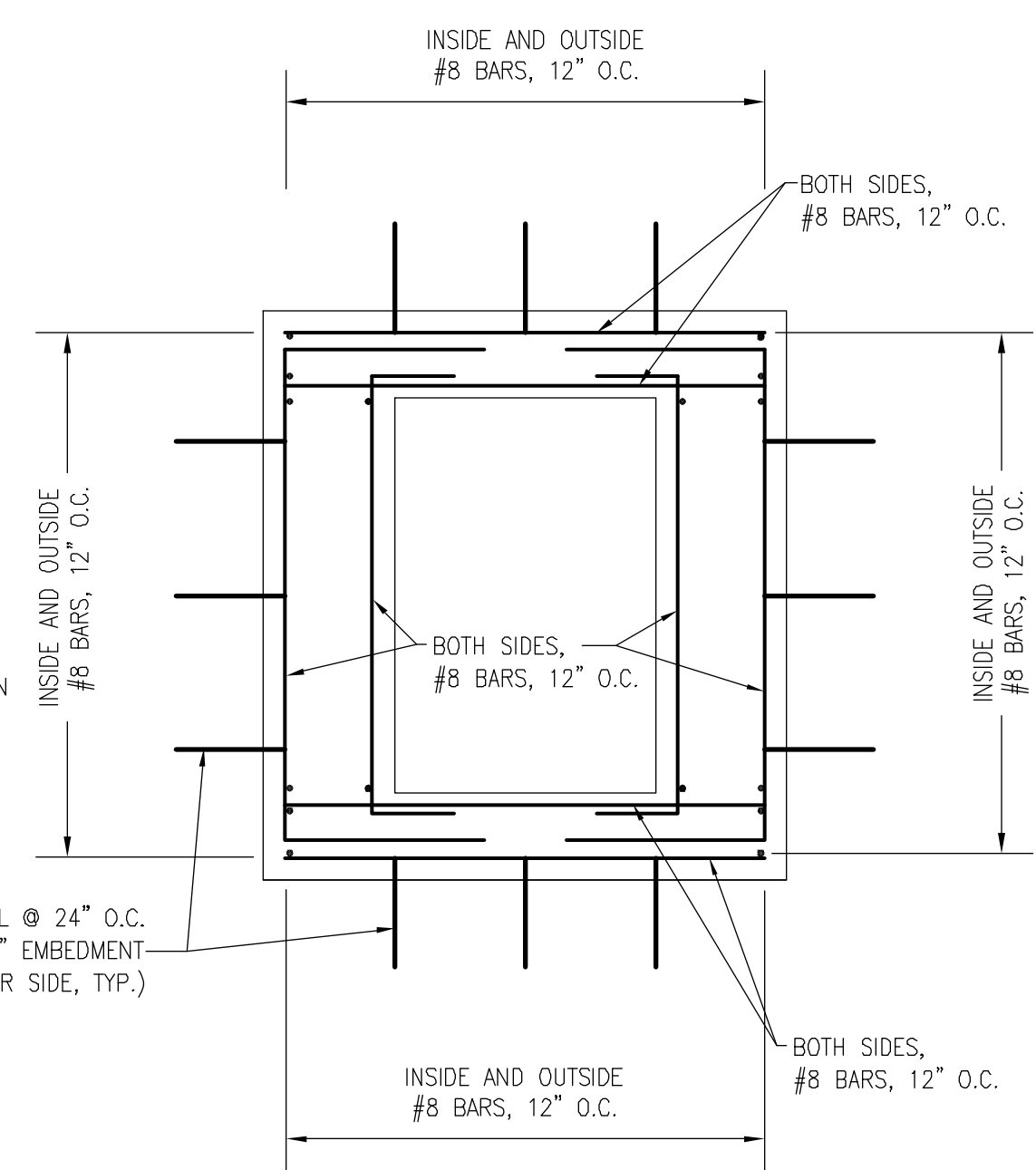
DOWNSTREAM BYPASS SUPPORT B

SCALE: 1/2" = 1'-0"



DOWNSTREAM BYPASS SUPPORT C

SCALE: 1/2" = 1'-0"



FOUNDATION OPENING - REBAR

SCALE: 1/2" = 1'-0"

* ANCHORS TO BE PLACED WITHIN 6" ABOVE SHOWN LOCATION IN ORDER TO BE CENTER IN AN EXISTING STONE BLOCK

** DISTANCE TO BE DETERMINED ON DOWNSTREAM, BY-PASS PLAN

* ANCHORS TO BE PLACED WITHIN 6" ABOVE SHOWN LOCATION IN ORDER TO BE CENTER IN AN EXISTING STONE BLOCK

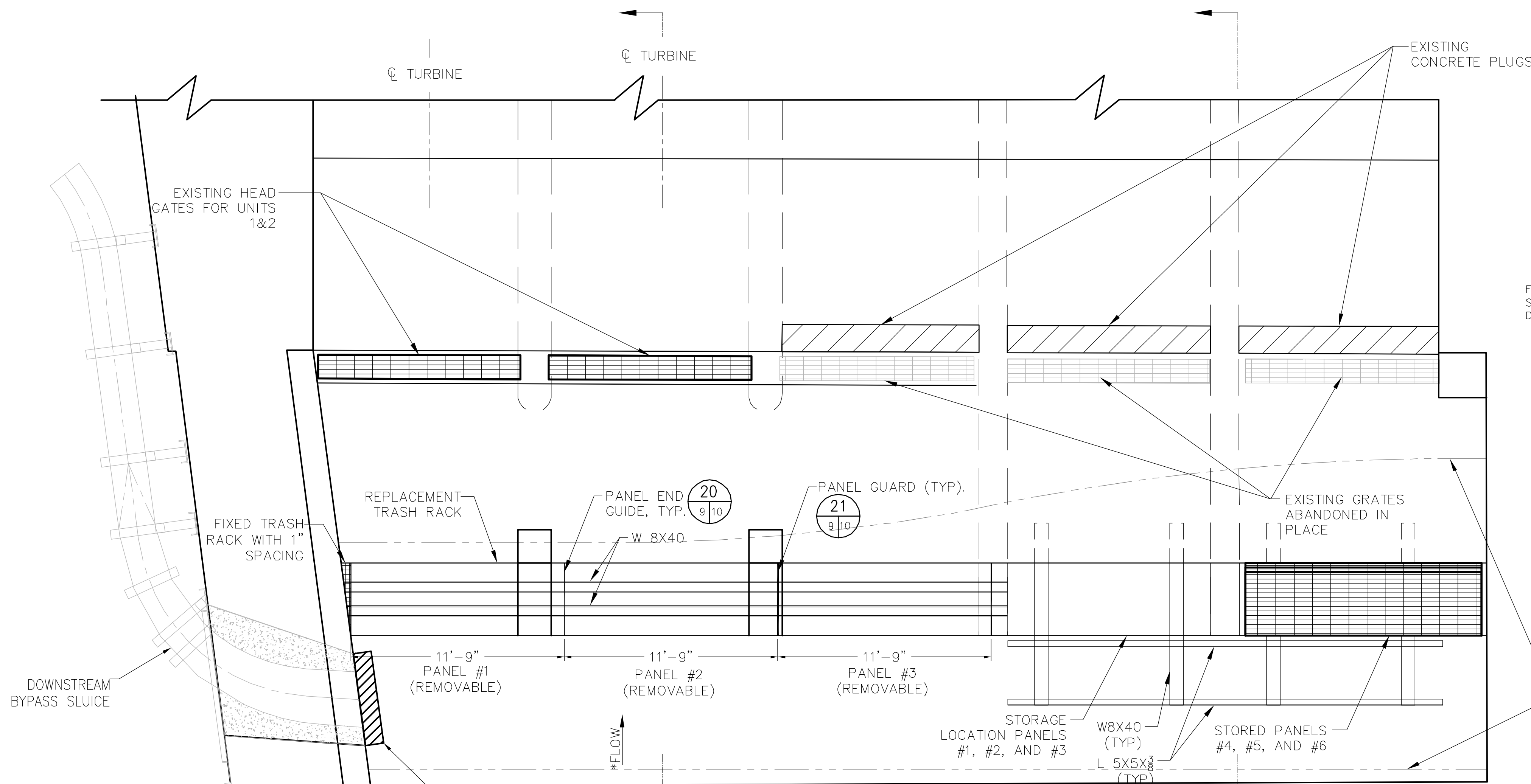
NO.	DATE	BY	DESCRIPTION

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
MAIN STREET FISHWAY
PAWTUCKET, RHODE ISLAND

DOWNSTREAM FISH BYPASS DETAILS

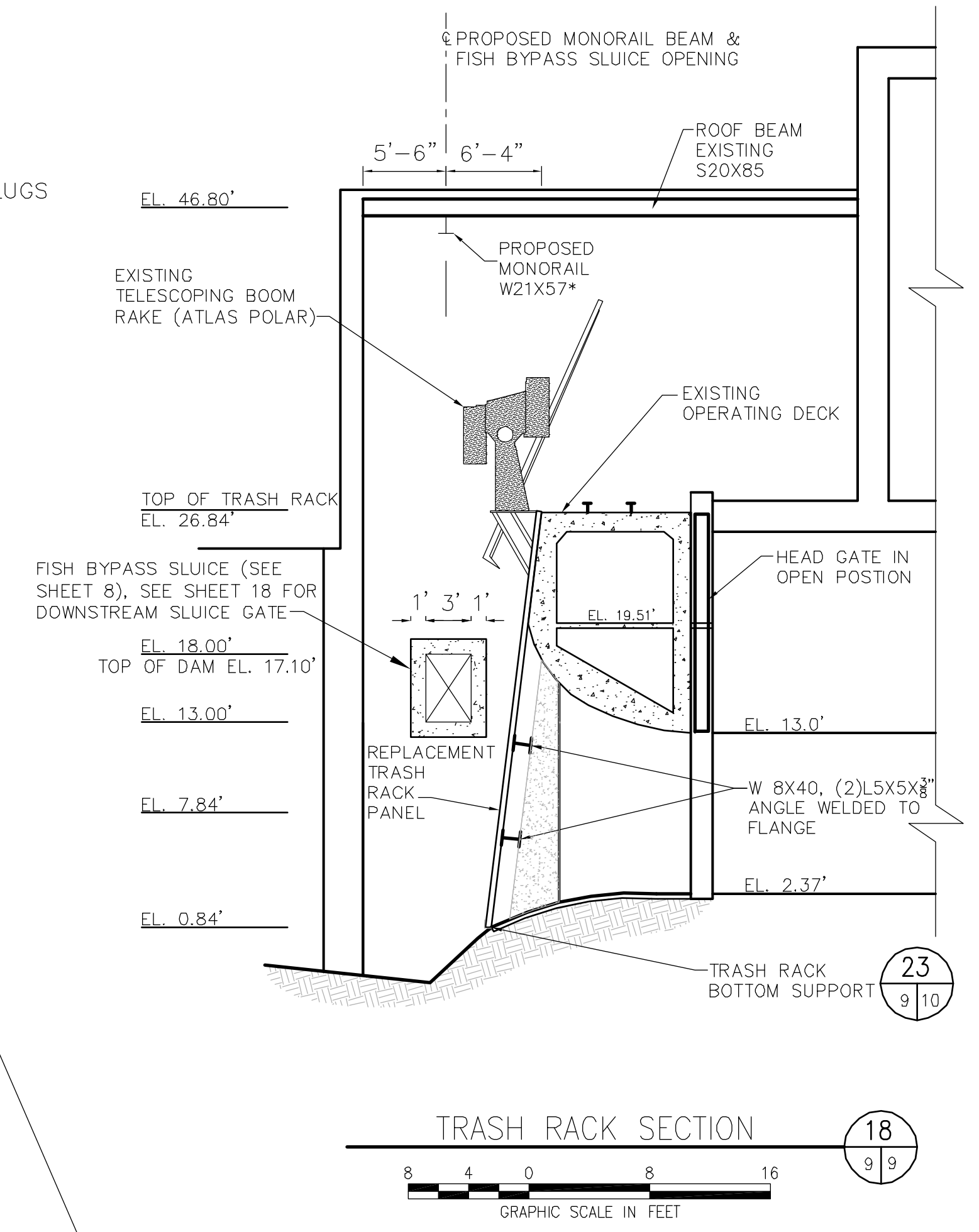
EA ENGINEERING, SCIENCE, AND TECHNOLOGY
 2374 Post Road, Suite 102
 Warwick, Rhode Island 02886
 (401) 736-3440

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-7-DOWNSTREAM BYPASS DETAILS
DRAWING NUMBER	C-7
SHEET NUMBER	8 OF 24



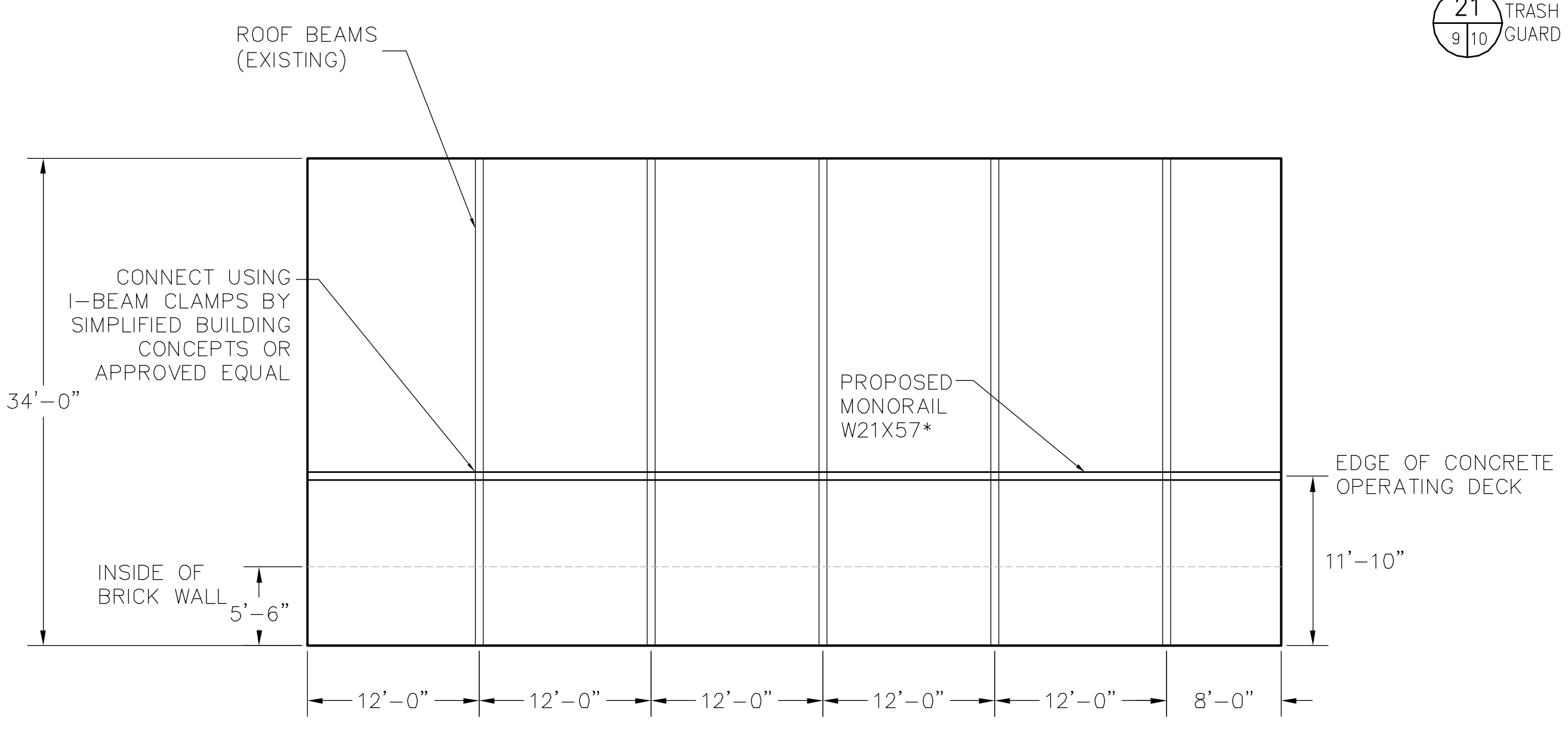
PLAN - OPERATING DECK EL. 26.84' (73/9/9)

*NOTE: THE APPROACH VELOCITY IS 2 FT/S



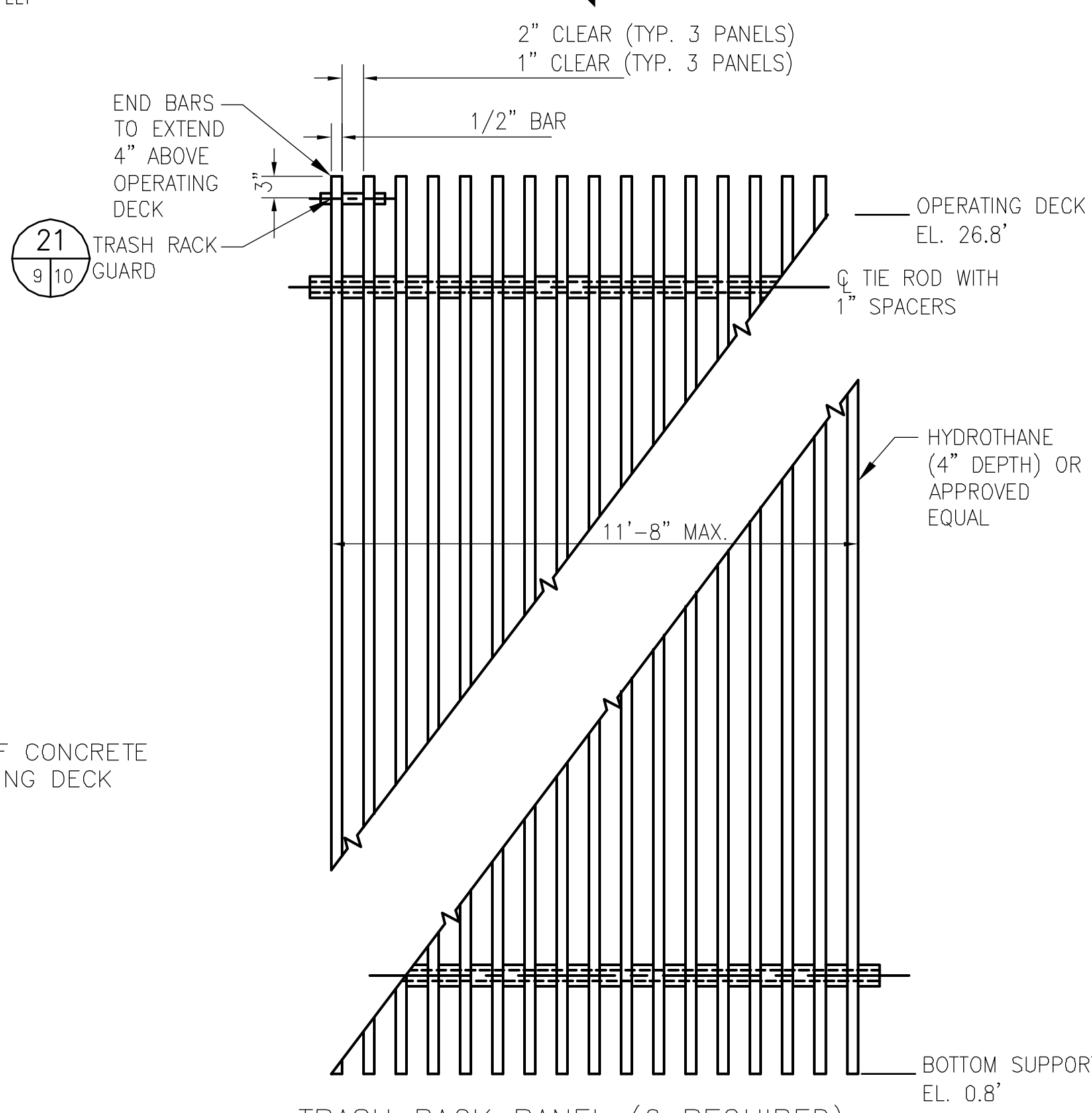
TRASH RACK SECTION (18/9/9)

LIMITS OF DEBRIS AND SEDIMENT REMOVAL. CONTRACTOR TO REMOVE AND PROPERLY DISPOSE OF ALL DEBRIS AND SEDIMENT IN THIS AREA OF FOREBAY.

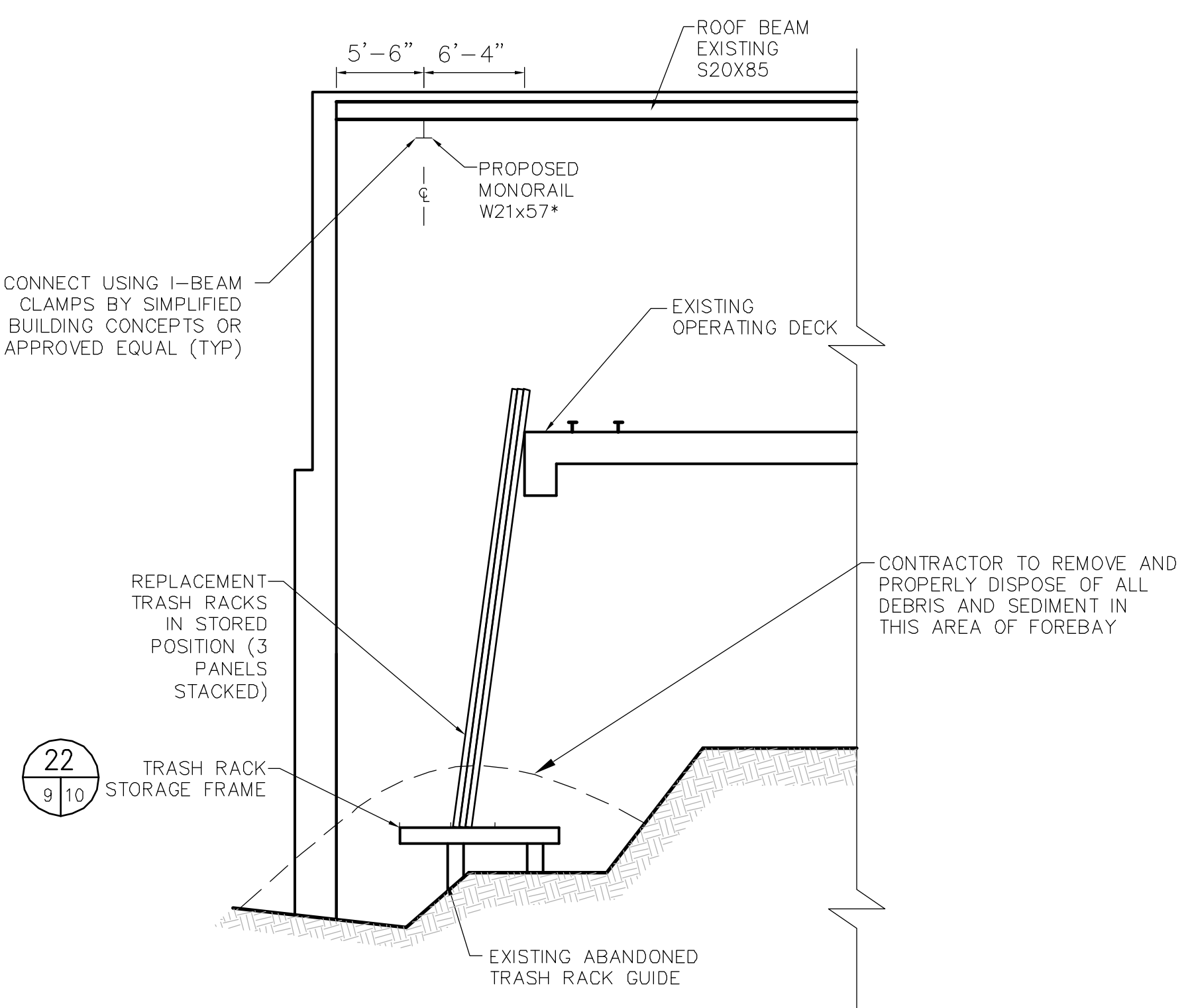


PLAN - ROOF EL. 46.8'

*TO BE CONFIRMED BY MONORAIL HOIST SYSTEM MANUFACTURER



TRASH RACK PANEL (6 REQUIRED)



TRASH RACK SECTION (19/9/9)

CONTRACTOR TO REMOVE AND PROPERLY DISPOSE OF ALL DEBRIS AND SEDIMENT IN THIS AREA OF FOREBAY

NO.	DATE	BY	DESCRIPTION

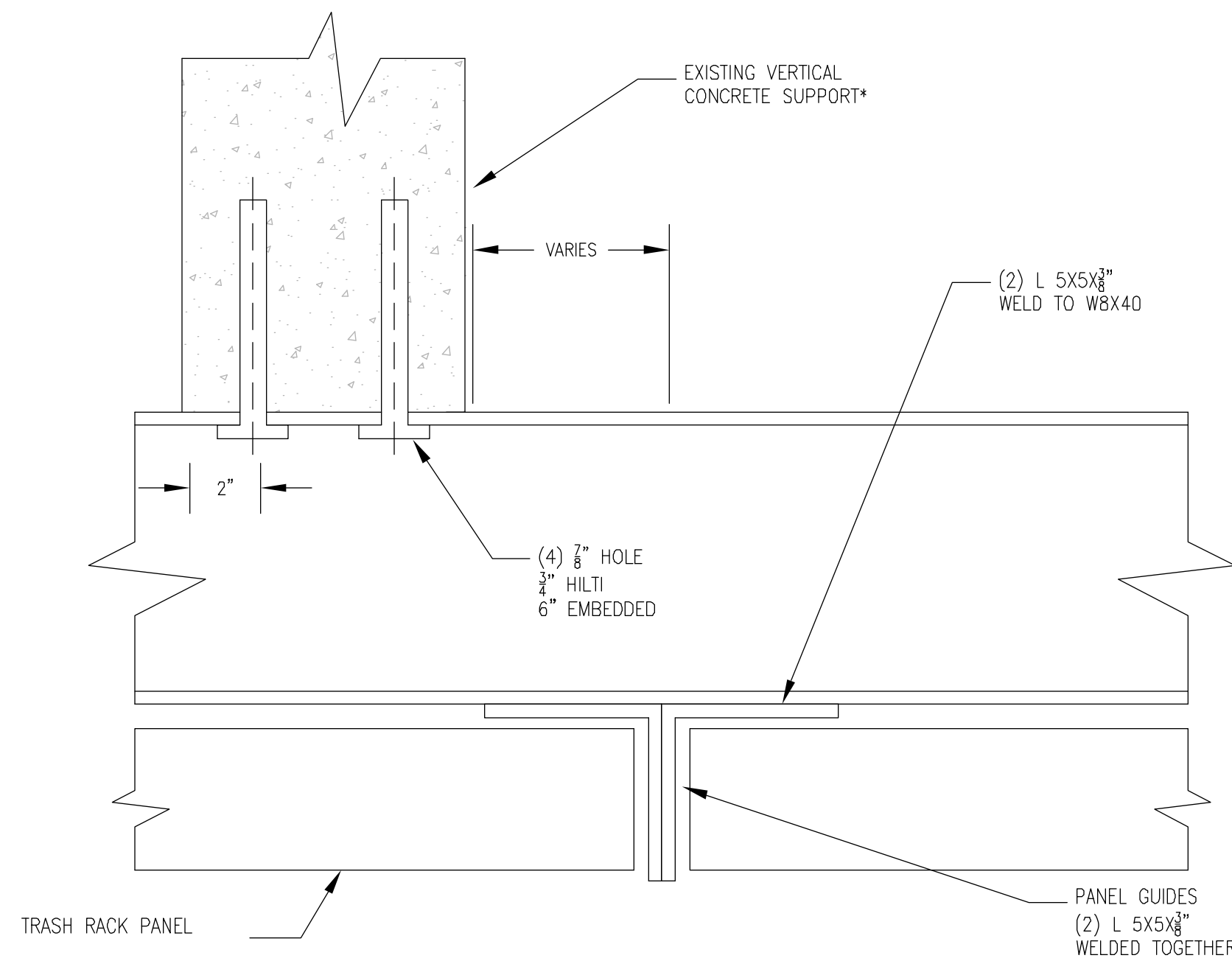
LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
 MAIN STREET FISHWAY
 PAWTUCKET, RHODE ISLAND

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

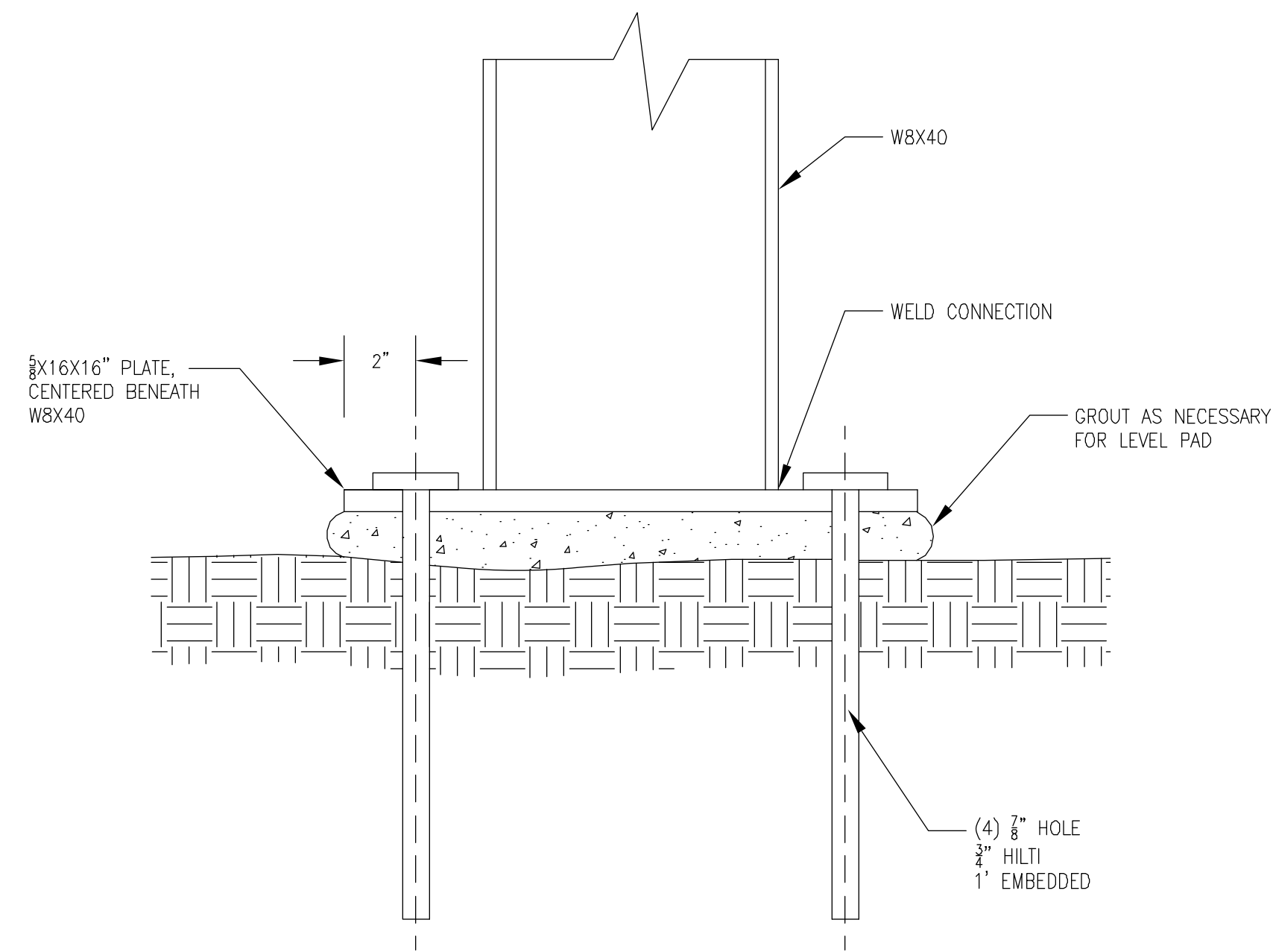
EA
 EA ENGINEERING,
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 (401) 736-3440

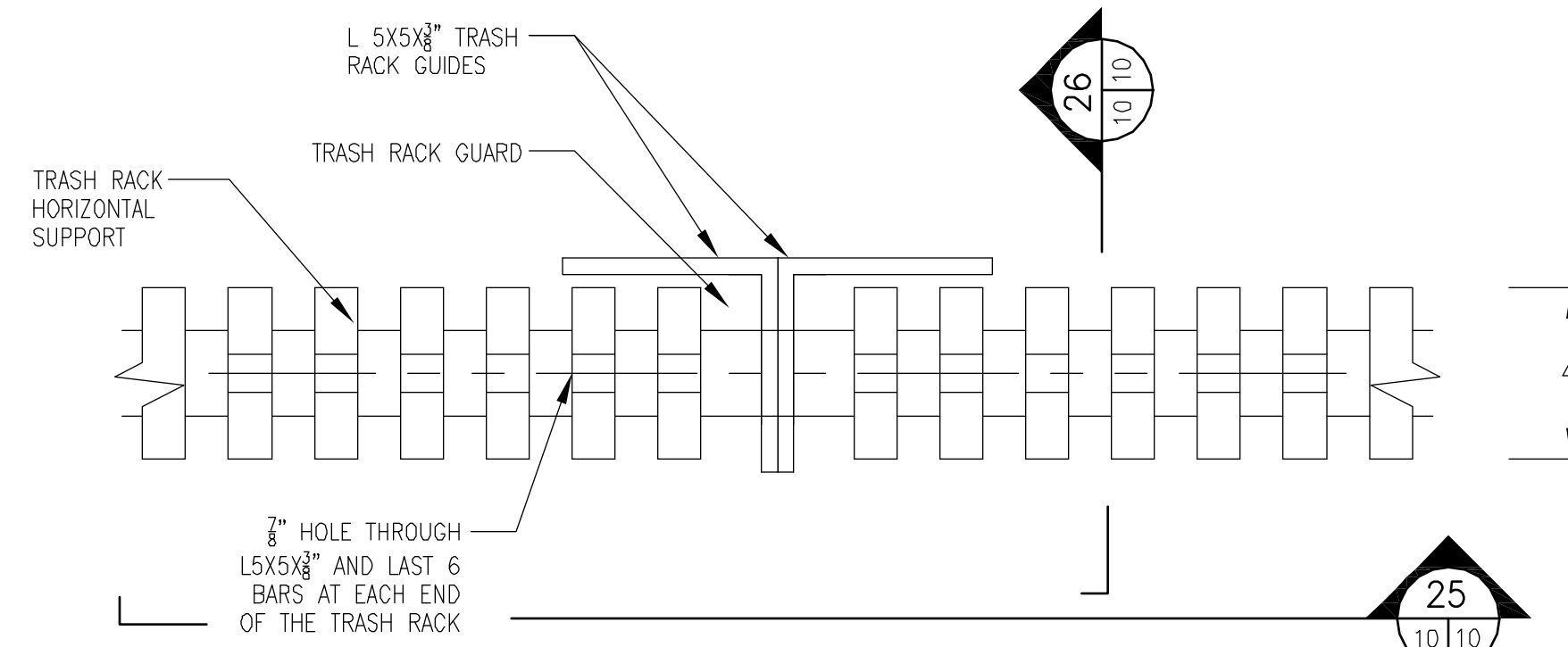
DATE: JUNE 2012
 DESIGNED BY: TCC
 DRAWN BY: DPA
 CHECKED BY: HLB
 PROJECT MANAGER: SSW
 PROJECT NUMBER: 62562.01
 SCALE: AS SHOWN
 FILE NAME: C-8-REPLACEMENT TRASH RACKS
 DRAWING NUMBER: C-8
 SHEET NUMBER: 9 OF 24



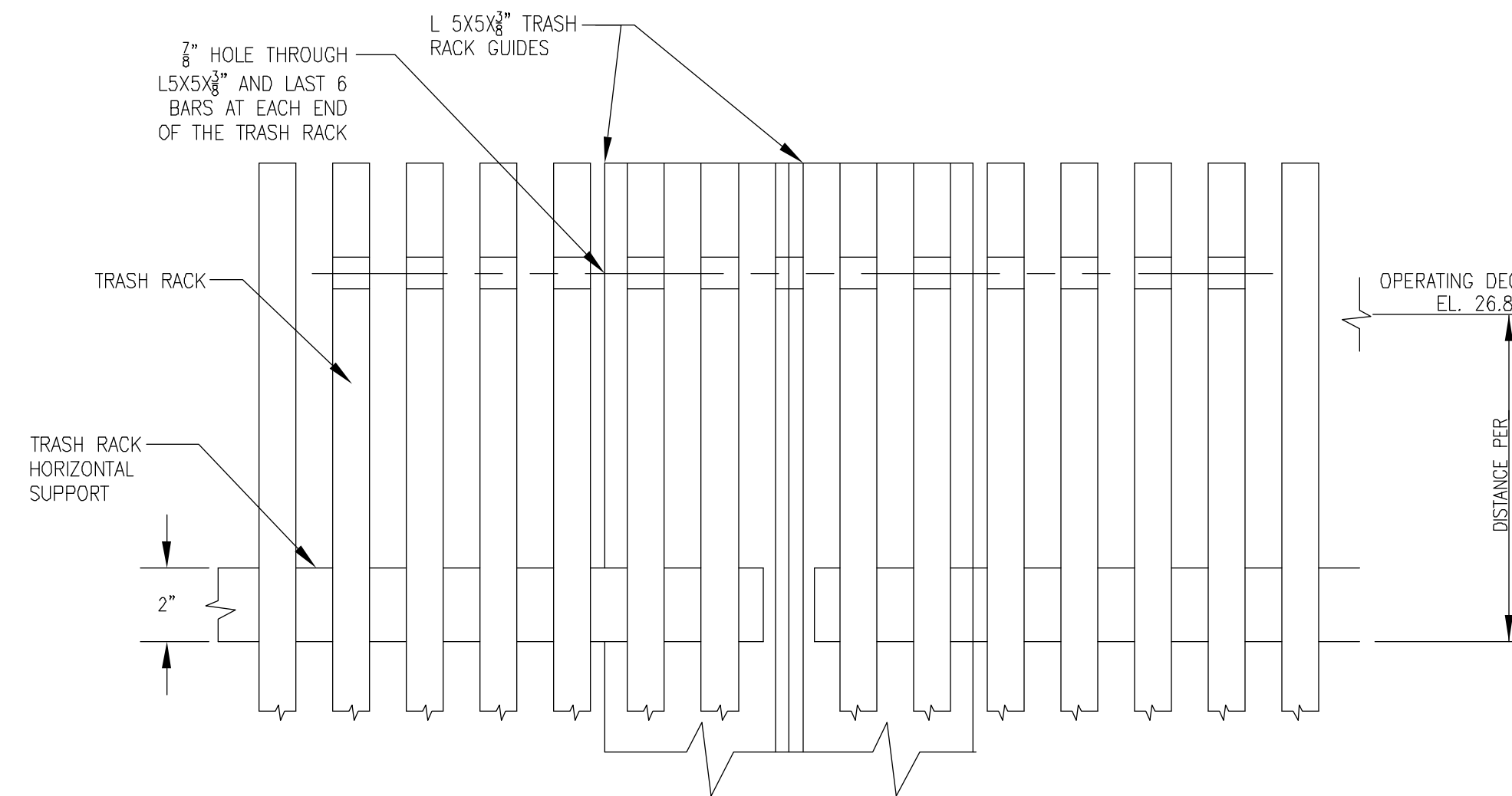
TRASH RACK PANEL GUIDES 20
SCALE: 1/4"=1"
9 | 10



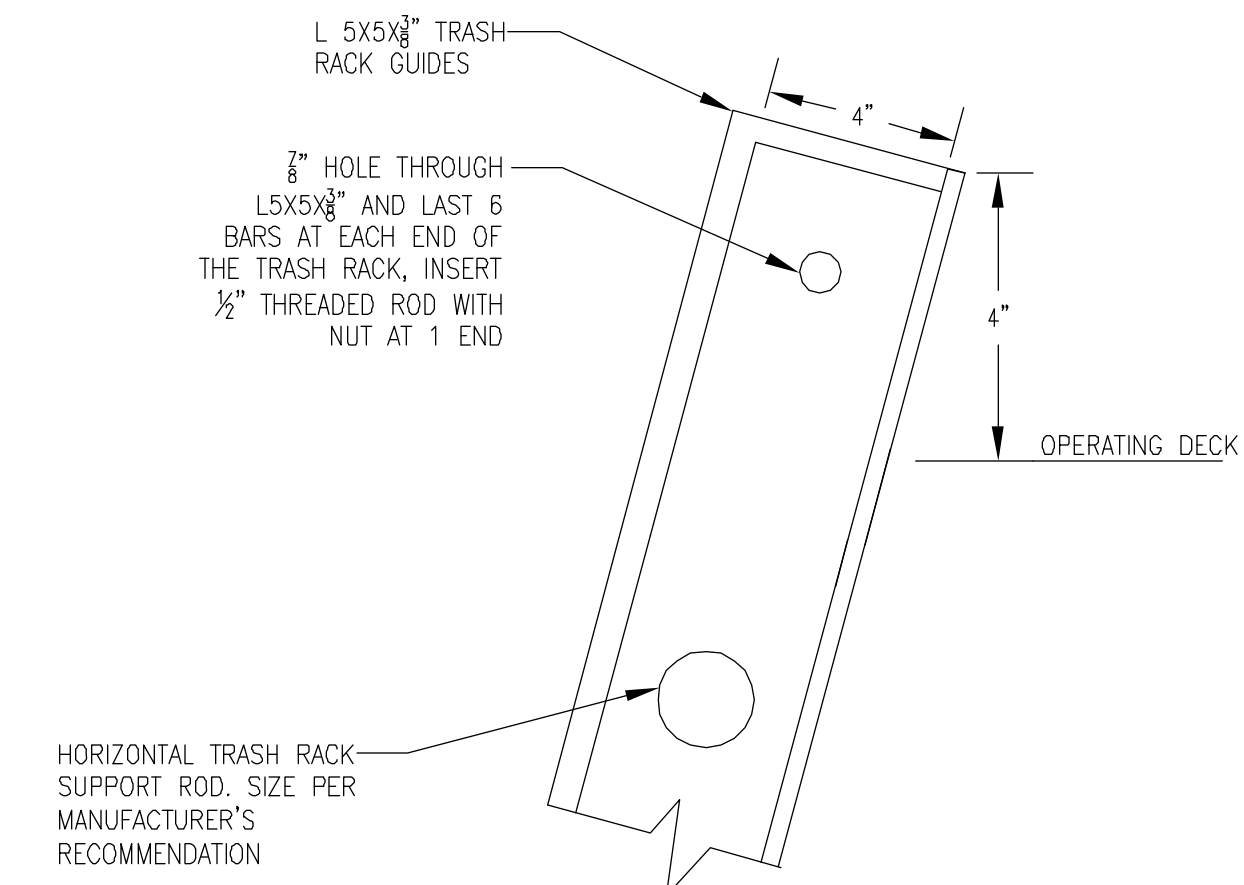
STORAGE FRAME SUPPORT DETAIL - ELEVATION 24
SCALE: 1/4"=1"
10 | 10



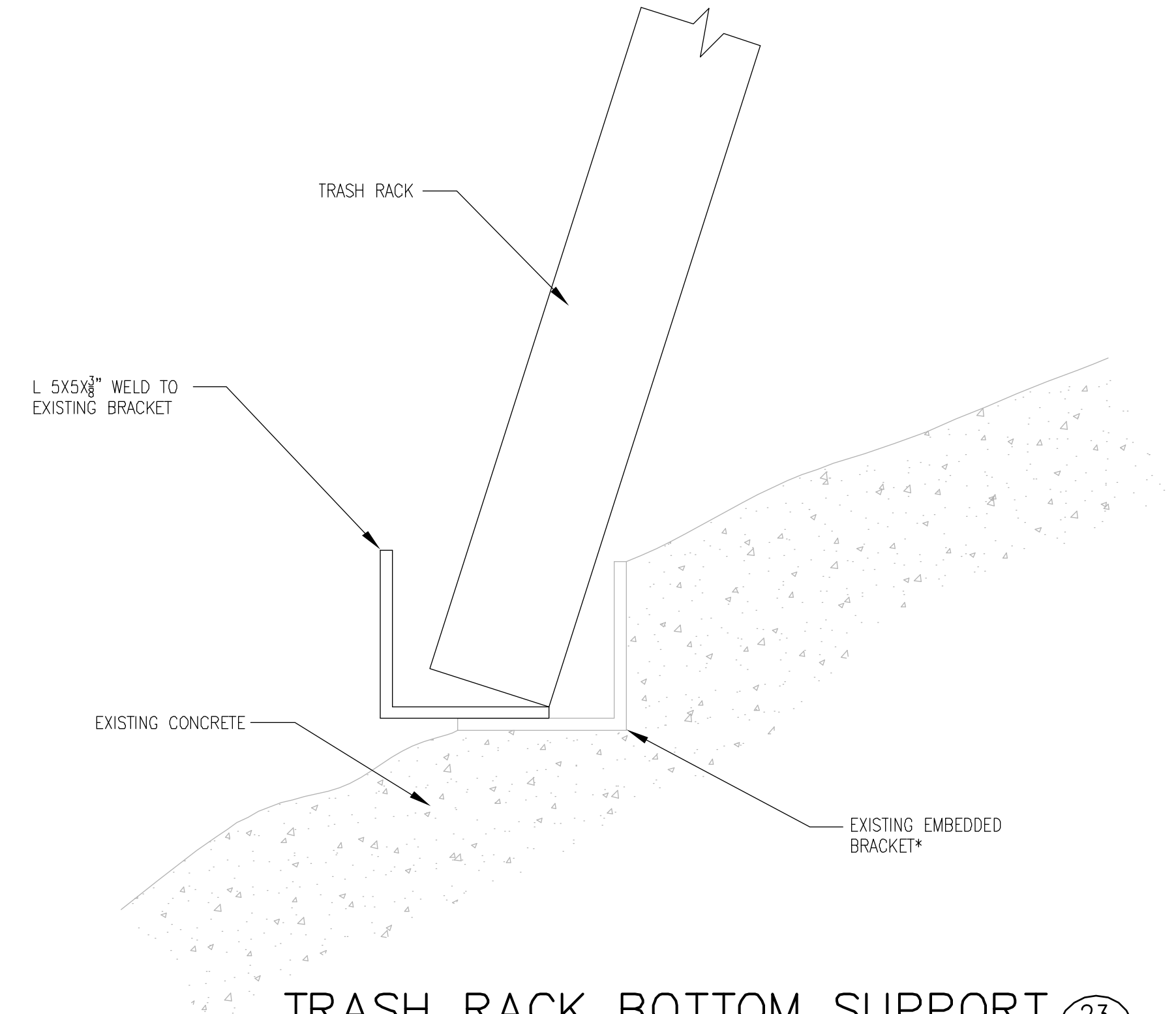
TRASH RACK GUARD PLAN 21
SCALE: 1/4"=1"
9 | 10



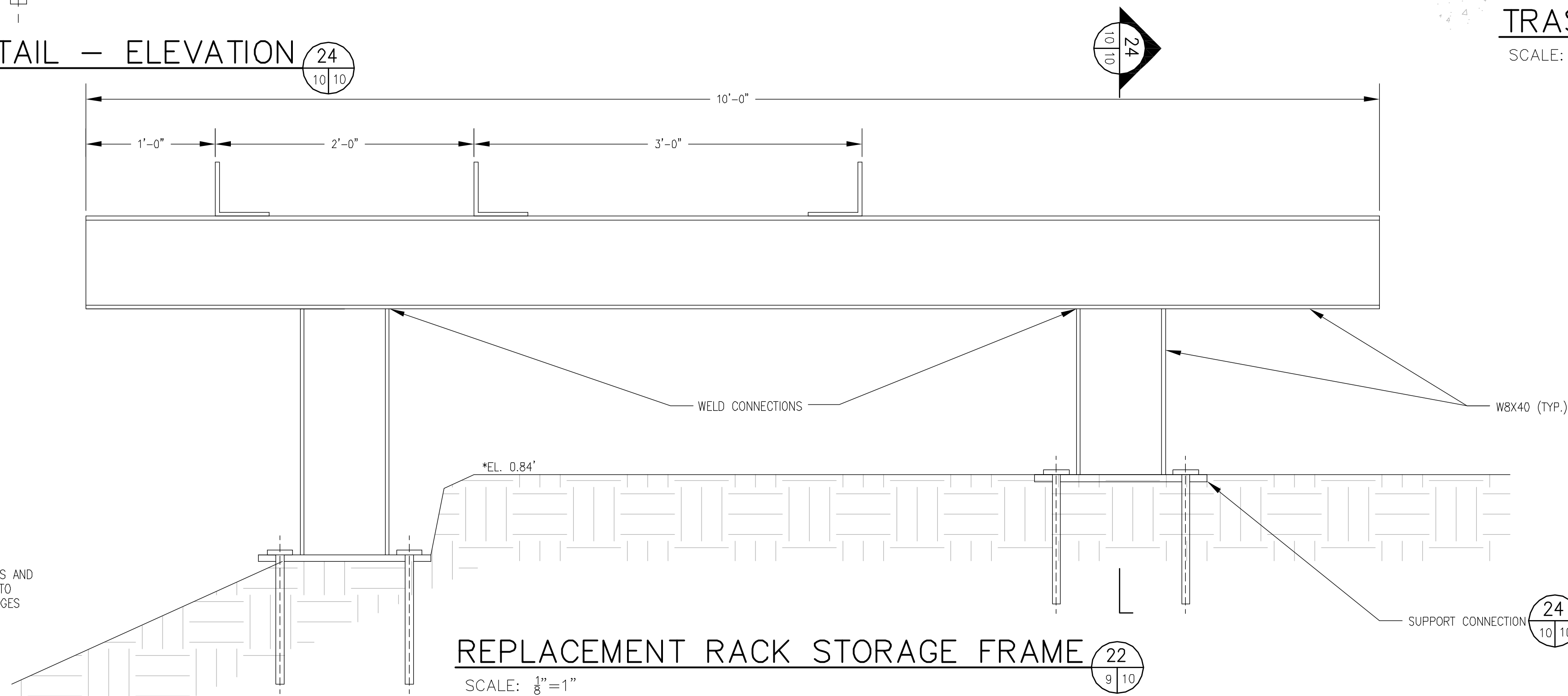
TRASH RACK GUARD ELEVATION 25
SCALE: 1/4"=1"
10 | 10



TRASH RACK GUARD 26
SCALE: 1/4"=1"
10 | 10



TRASH RACK BOTTOM SUPPORT 23
SCALE: 1/4"=1"
9 | 10



REPLACEMENT RACK STORAGE FRAME 22
SCALE: 1/8"=1"
9 | 10

*NOTE: CONTRACTOR TO VERIFY EXISTING CONDITIONS AND ELEVATIONS PRIOR TO CONSTRUCTION, AND TO NOTIFY ENGINEER OF ANY SIGNIFICANT CHANGES

NO.	DATE	BY	DESCRIPTION

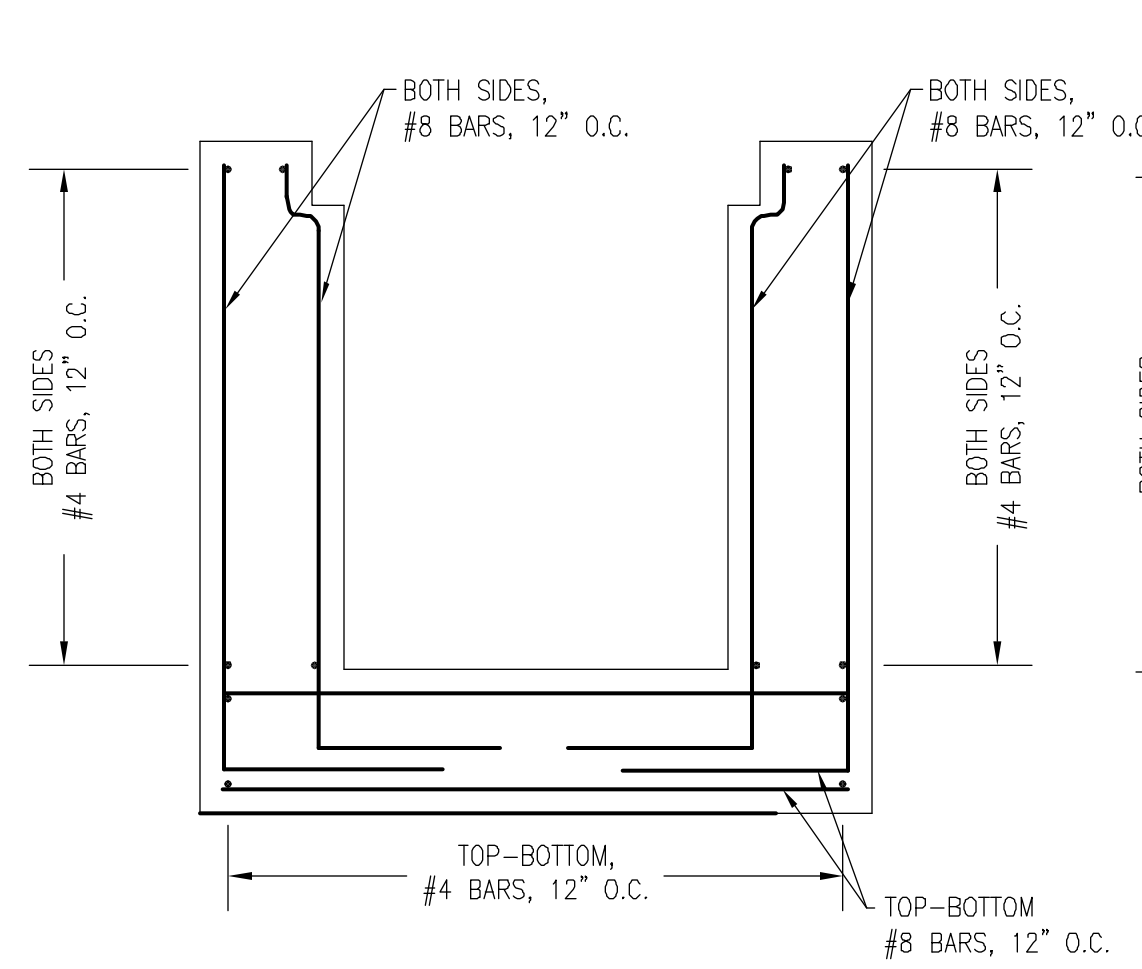
SEAL THOMAS C. COOK <i>Thomas C. Cook</i> No. 8819 REGISTERED PROFESSIONAL ENGINEER CIVIL 7/20/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
 MAIN STREET FISHWAY
 PAWTUCKET, RHODE ISLAND
 REPLACEMENT TRASH RACK DETAILS

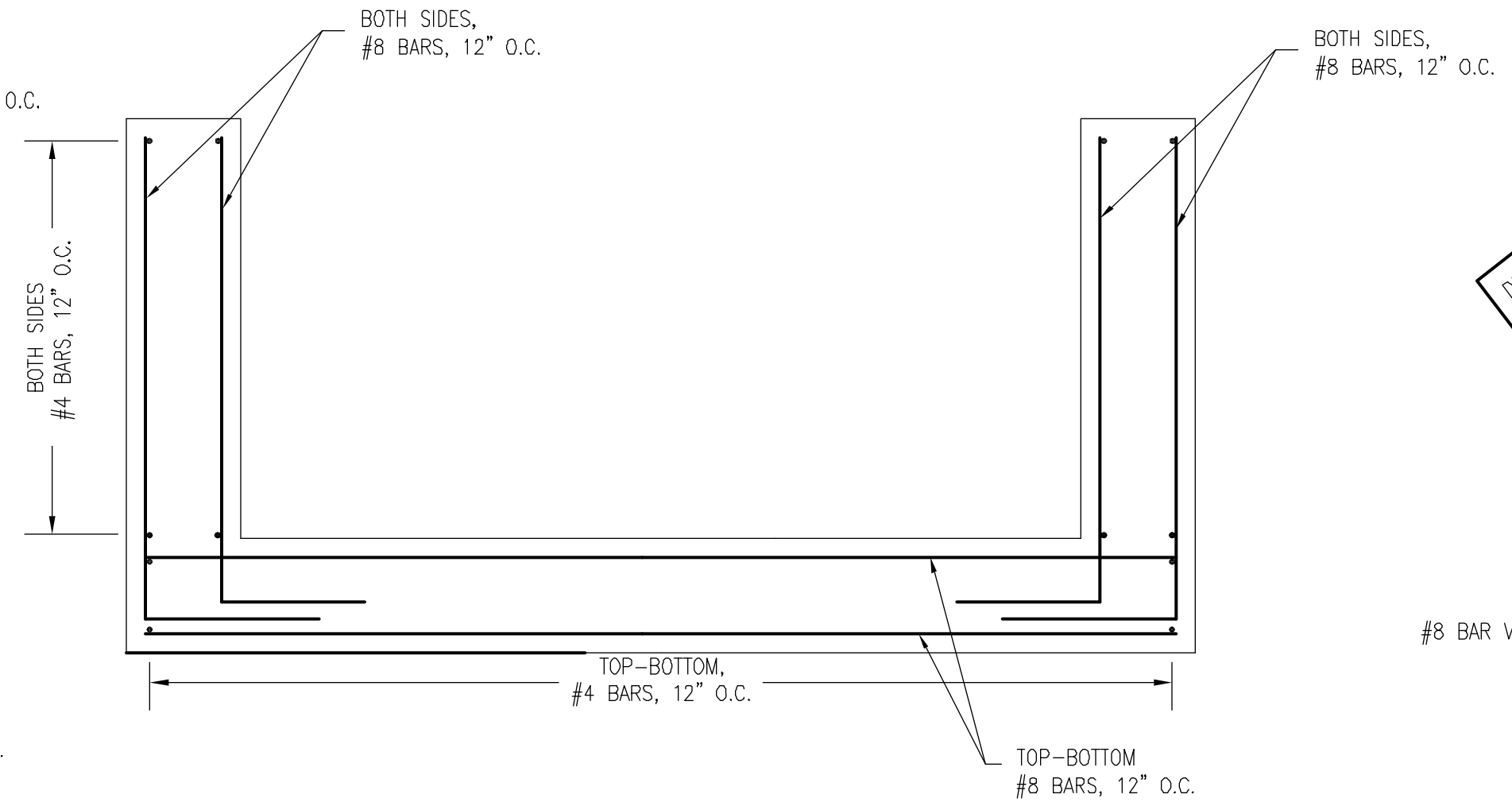


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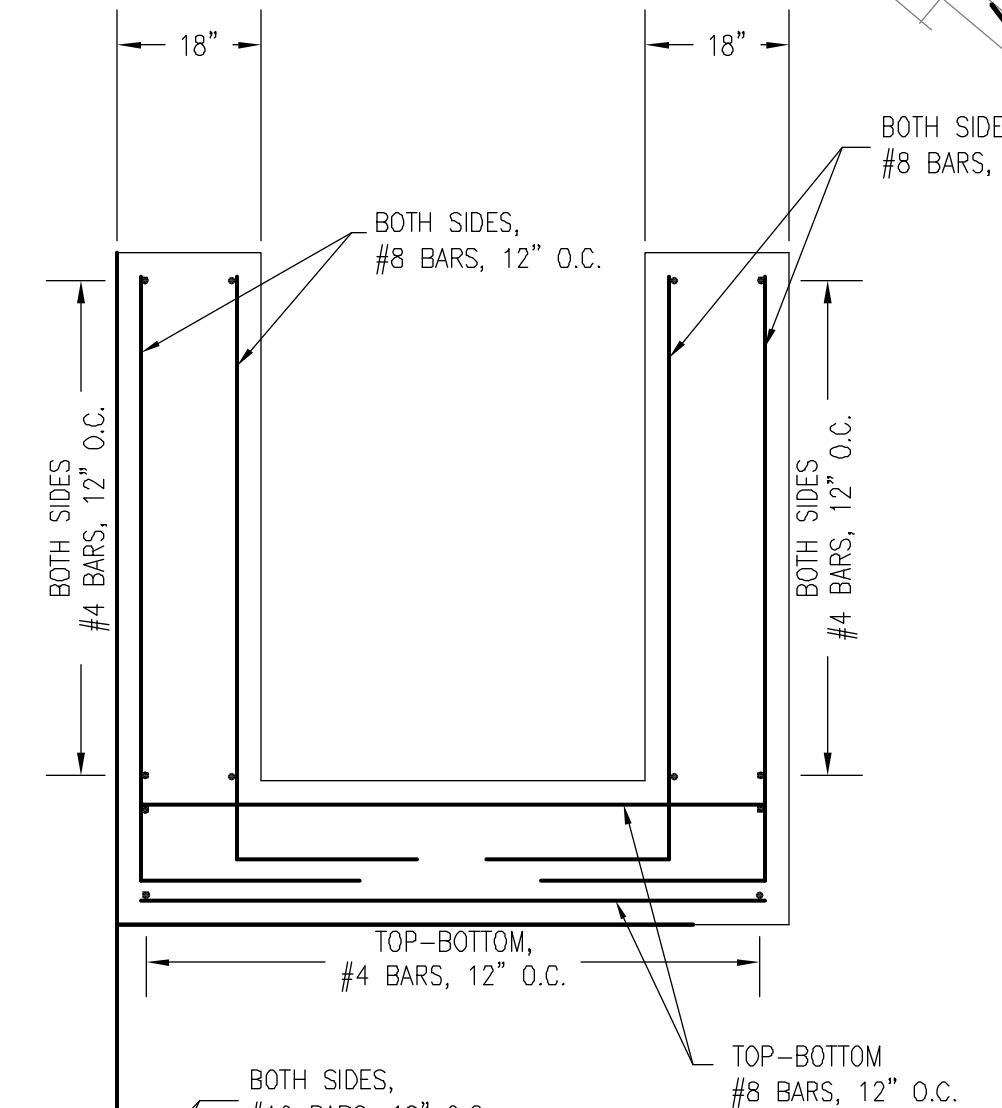
DATE	JUNE 2012
DESIGNED BY	TCC
DRAWN BY	DPA
CHECKED BY	HLB
PROJECT MANAGER	SSW
PROJECT NUMBER	62562.01
SCALE	AS SHOWN
FILE NAME	C-7-MISCELLANEOUS DETAILS
DRAWING NUMBER	C-9
SHEET NUMBER	10 OF 24



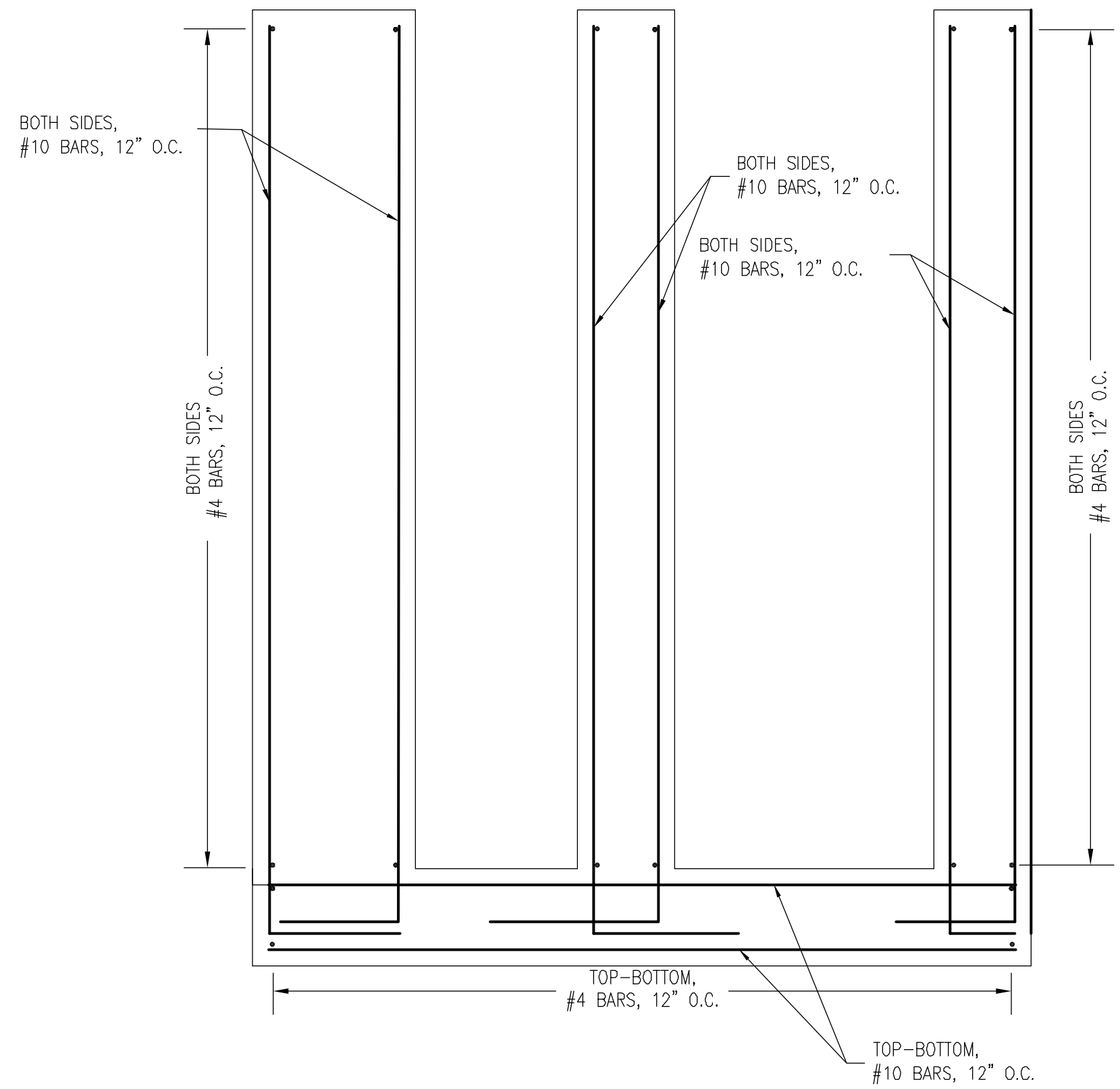
SECTION 26
SCALE: 1/2" = 1'-0"



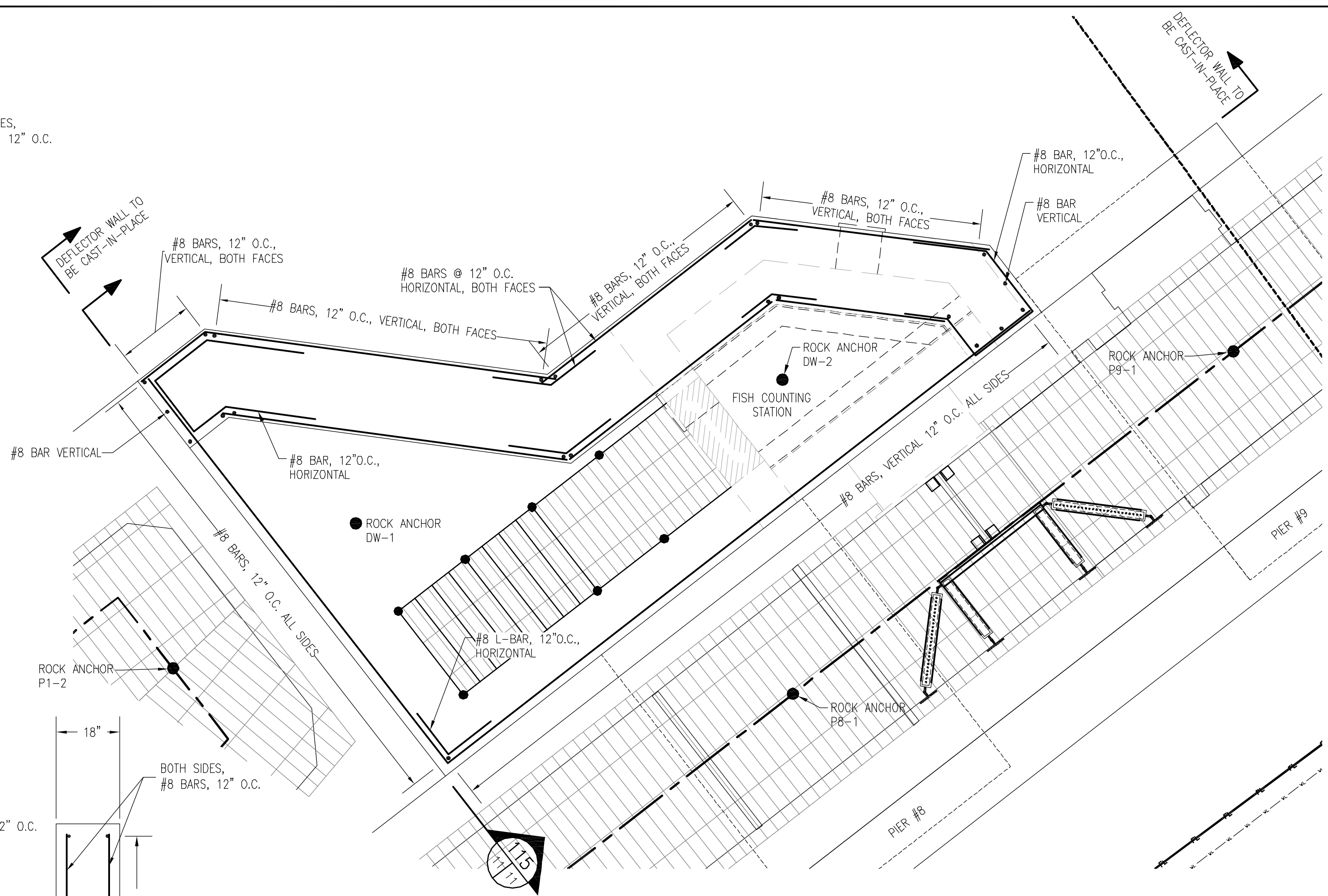
SECTION 27
SCALE: 1/2" = 1'-0"



SECTION 28
SCALE: 1/2" = 1'-0"

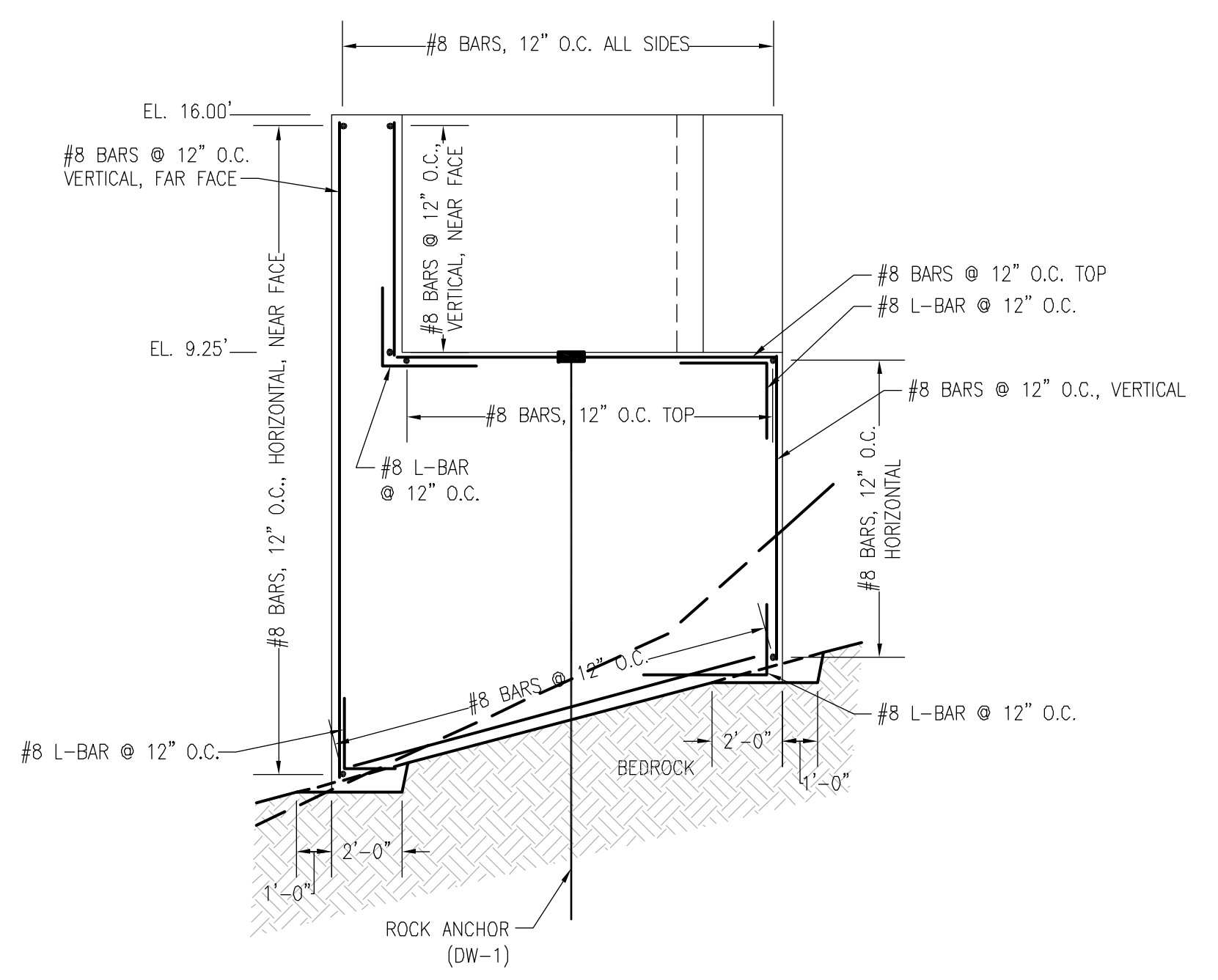


SECTION 29
SCALE: 1/2" = 1'-0"



DEFLECTOR WALL REBAR - PLAN 114
SCALE: 1/2" = 1'-0"

NOTE:
 1. 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.
 2. ALL CONSTRUCTION JOINTS SHALL HAVE WATERSTOPS.
 3. CONTRACTOR TO SUBMIT REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL.



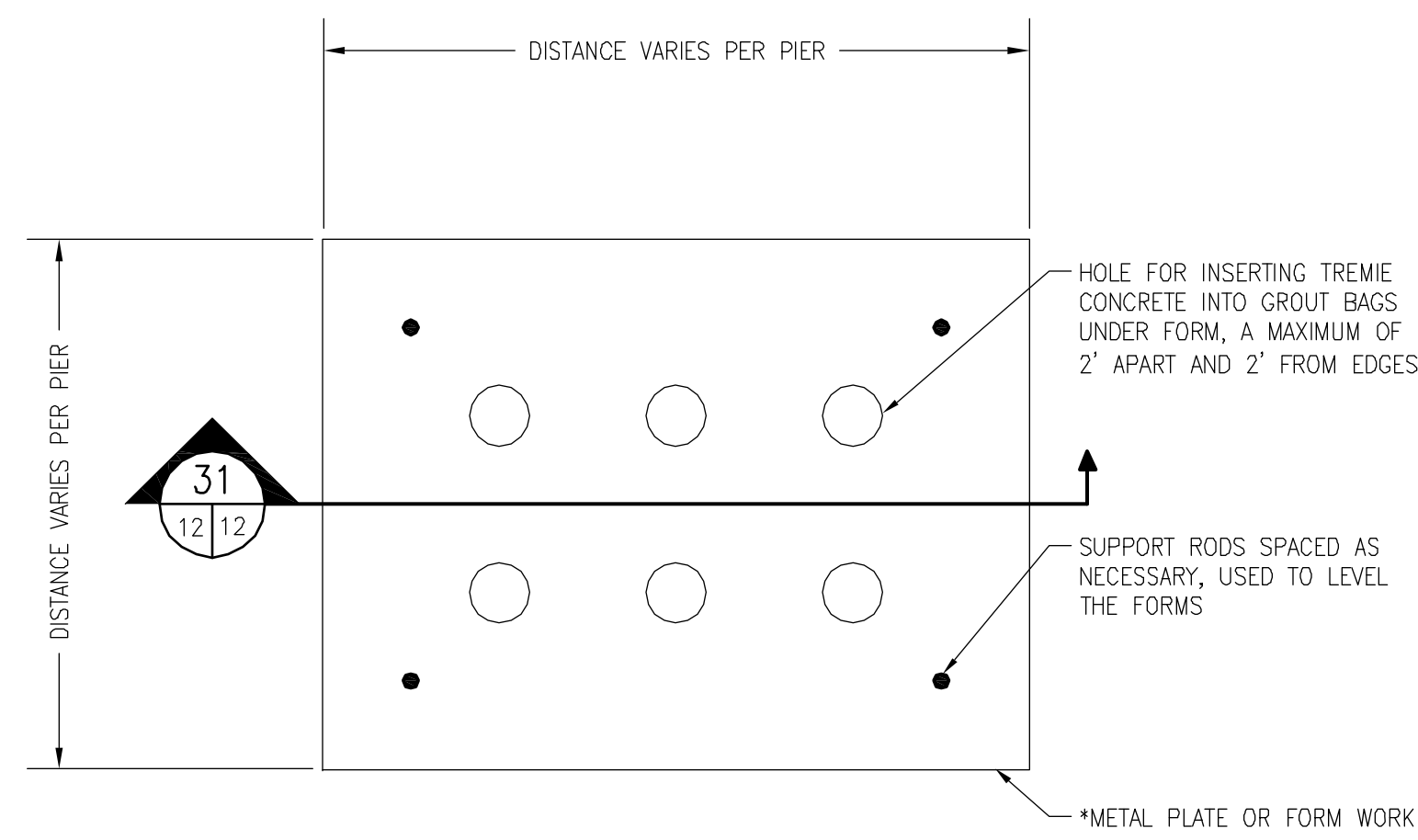
DEFLECTOR WALL REBAR - ELEVATION 115
SCALE: 1/4" = 1'-0"

NO.	DATE	BY	DESCRIPTION

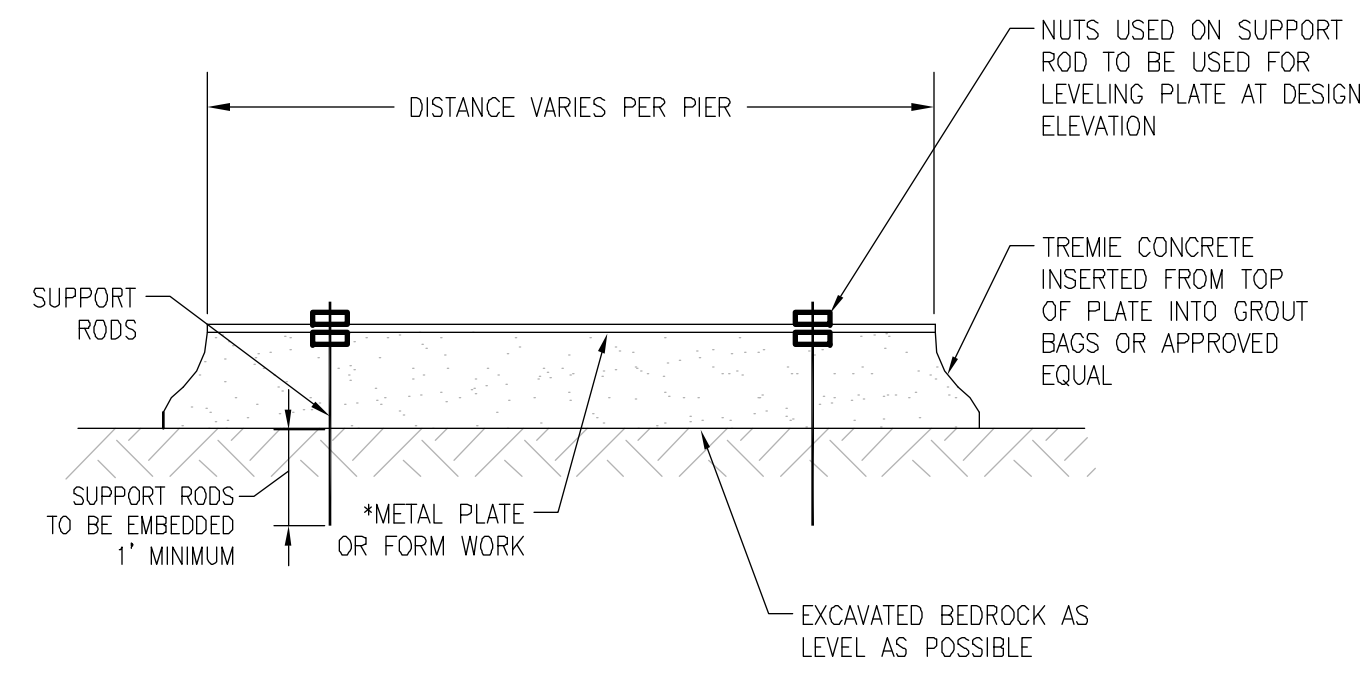
SEAL
 THOMAS C. COOK
Thomas C. Cook
 No. 8819
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL
 7/20/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
 MAIN STREET FISHWAY
 PAWTUCKET, RHODE ISLAND
 FISHWAY CONCRETE REINFORCEMENT

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 PLAN AND SECTIONS
DRAWING NUMBER	C-10
SHEET NUMBER	11 OF 24

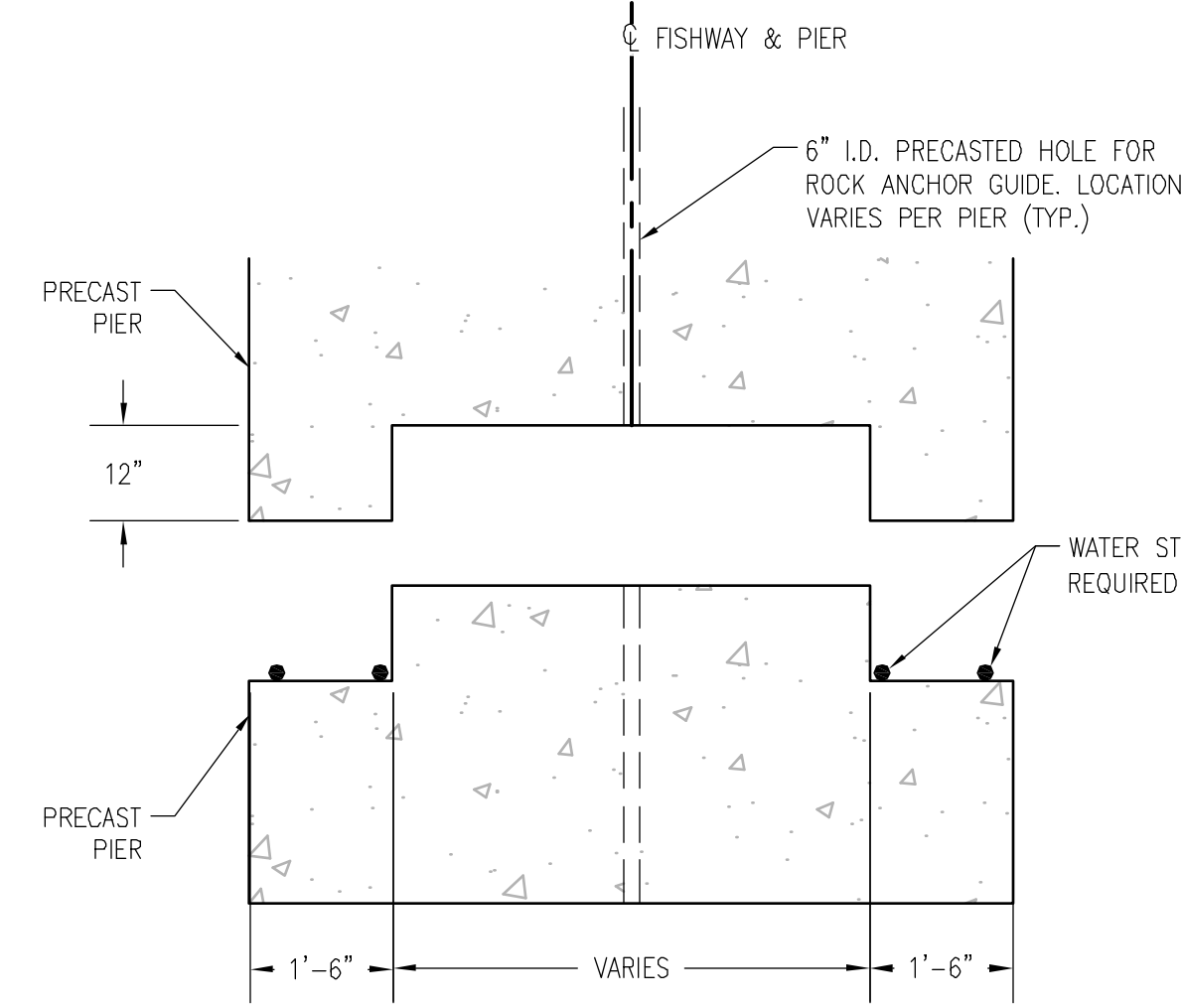


1' LEVELING PAD PLAN VIEW (30)
SCALE: 1/2" = 1'-0"



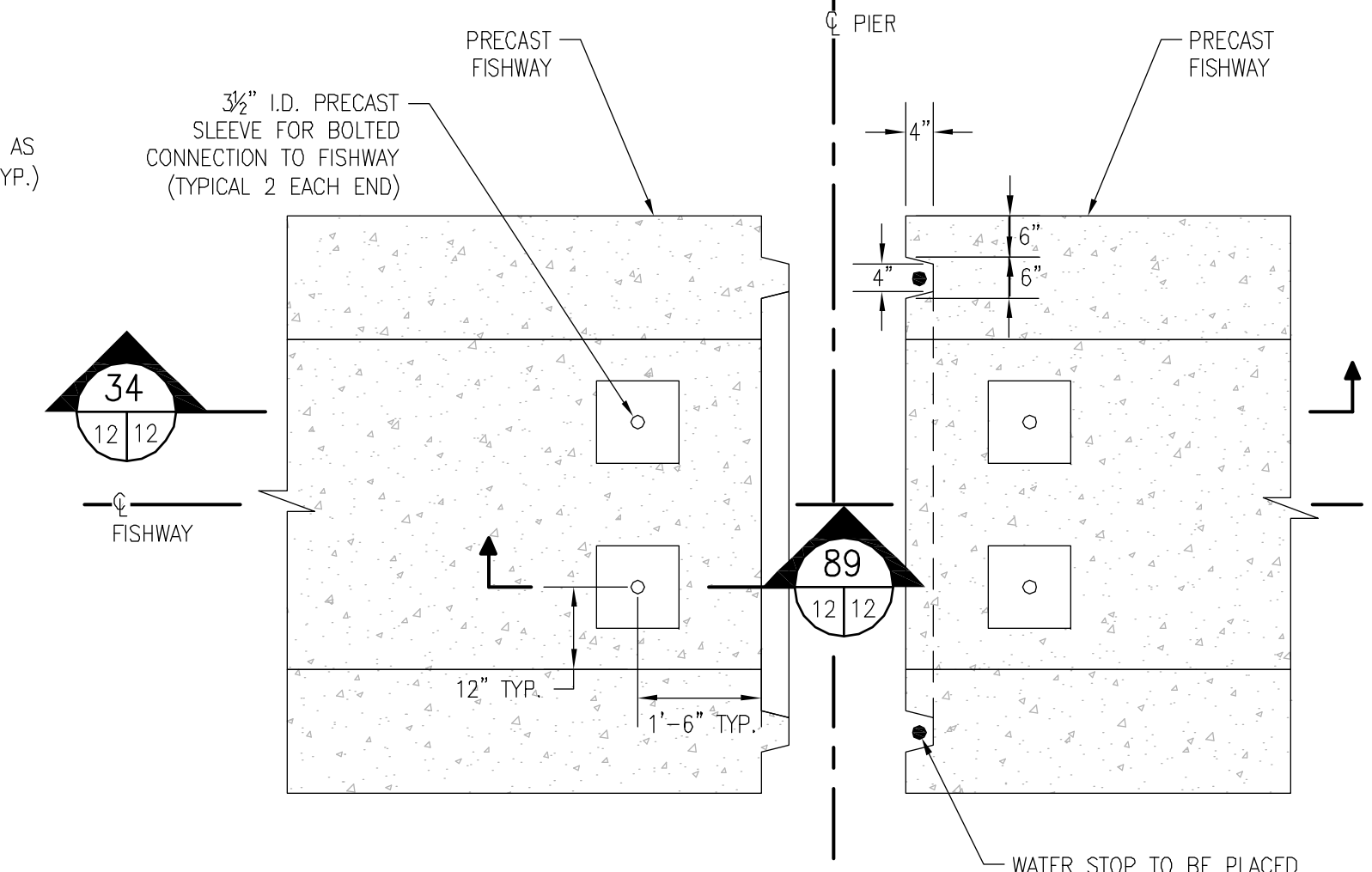
1' LEVELING PAD ELEVATION (31)
SCALE: 1/2" = 1'-0"

*NOTE:
PLATE TO BE REMOVED AFTER TREMIE CONCRETE HAS CURED AND SUPPORT RODS CUT FLUSH WITH TOP OF GROUT BAG. TOP SURFACE OF GROUT BAGS TO BE REMOVED PRIOR TO INSTALLATION OF PRECAST CONCRETE UNITS. AS-BUILT OF CONCRETE PAD IS REQUIRED PRIOR TO CONSTRUCTION OR PRECASTING OF PIERS



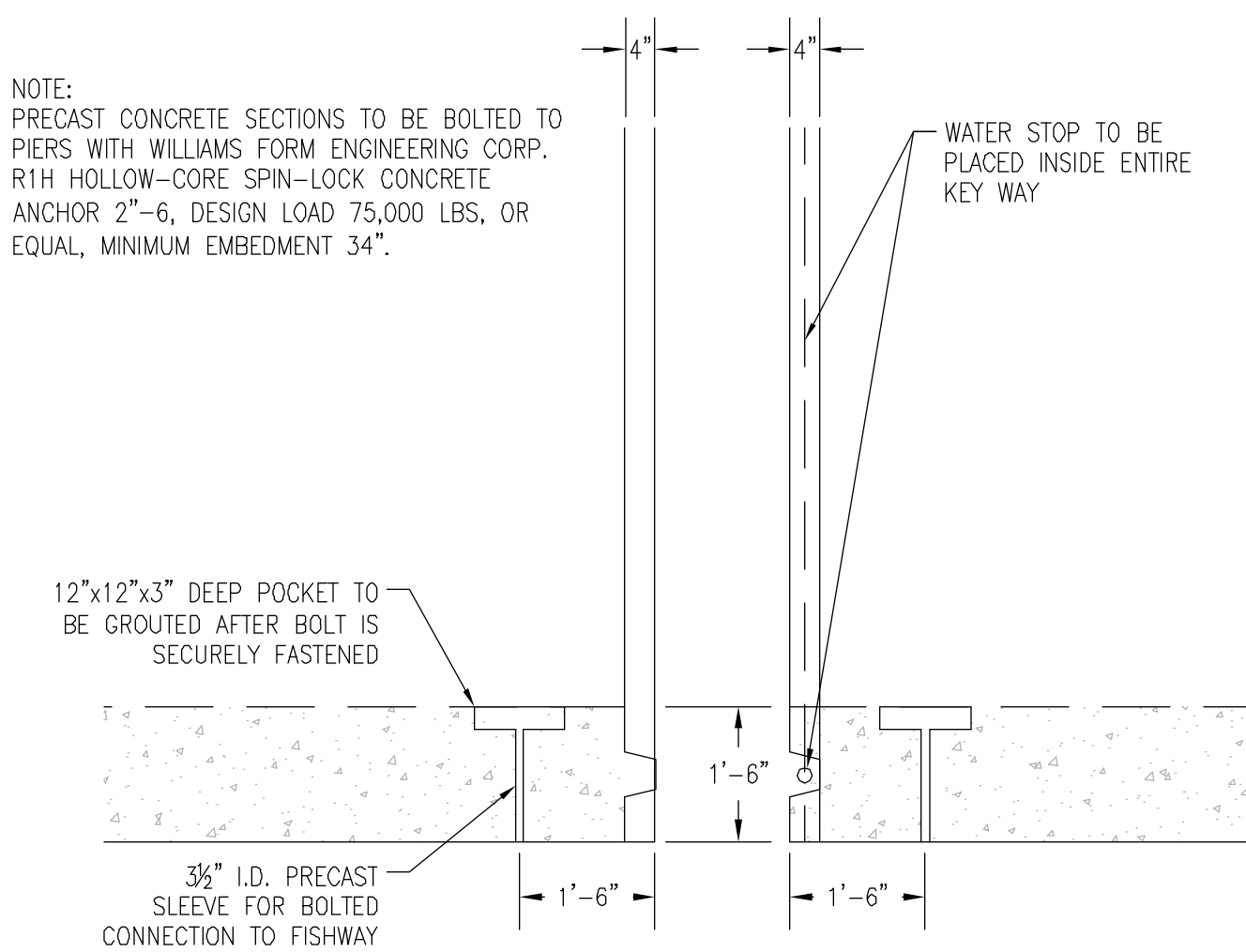
PRECAST PIER CONNECTION ELEVATION (32)
SCALE: 1/2" = 1'-0"

NOTE:
DETAIL IS TYPICAL FOR BOTH SIDES OF THE PIER

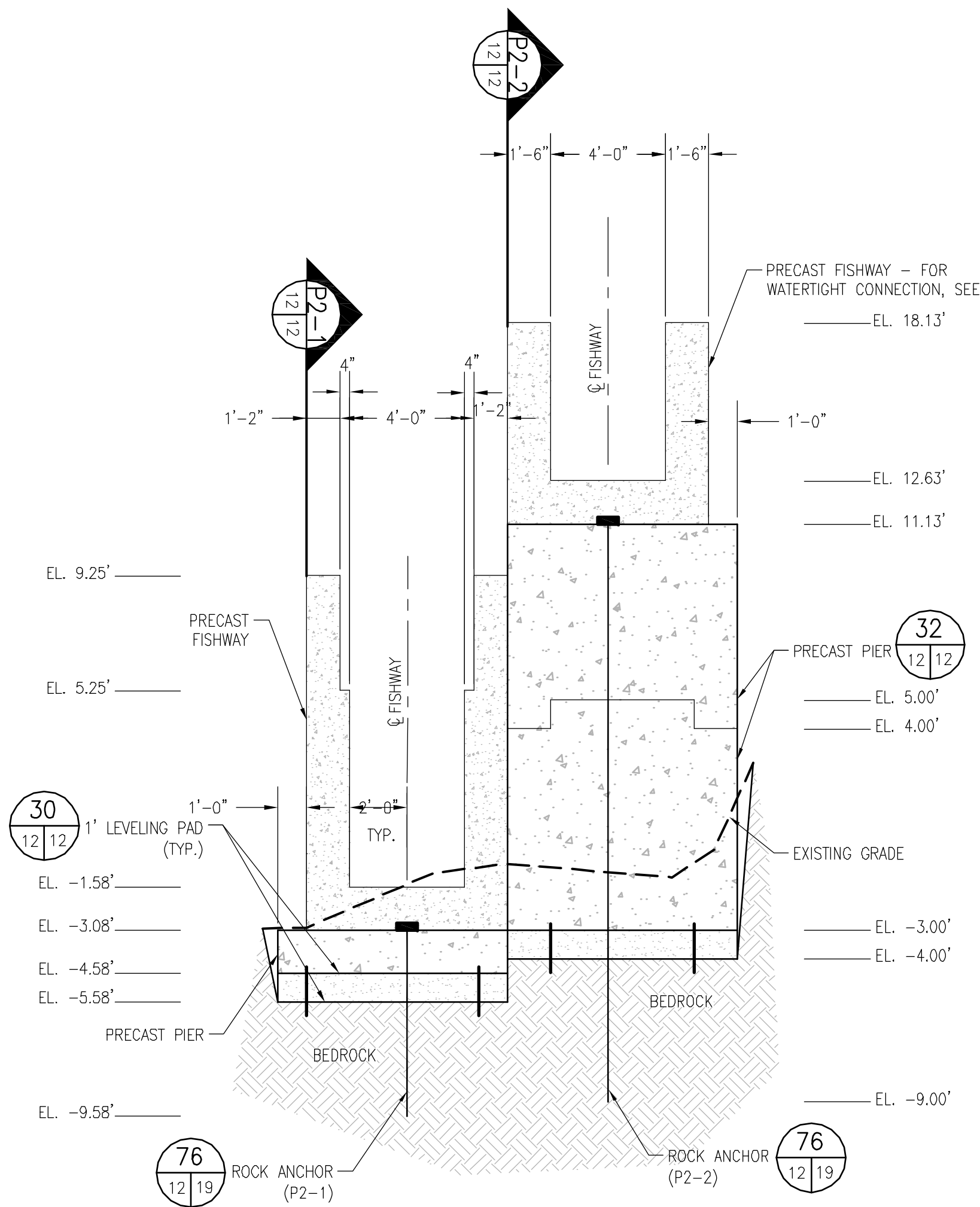


FISHWAY PRECAST CONNECTION PLAN VIEW (33)
SCALE: 1/2" = 1'-0"

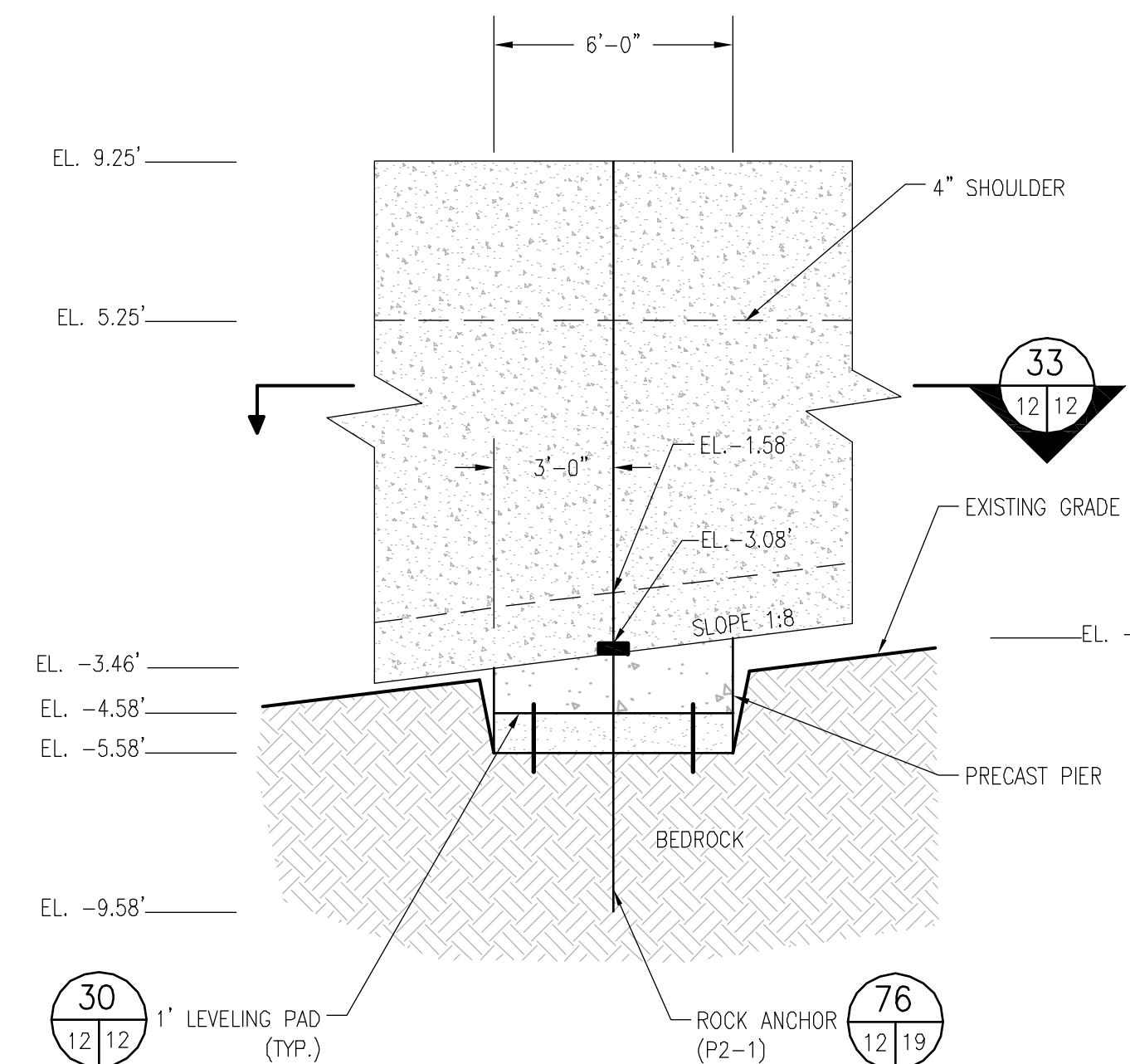
NOTE:
PRECAST CONCRETE SECTIONS TO BE BOLTED TO PIERS WITH WILLIAMS FORM ENGINEERING CORP. R1H HOLLOW-CORE SPIN-LOCK CONCRETE ANCHOR 2"-6", DESIGN LOAD 75,000 LBS. OR EQUAL, MINIMUM EMBEDMENT 34".



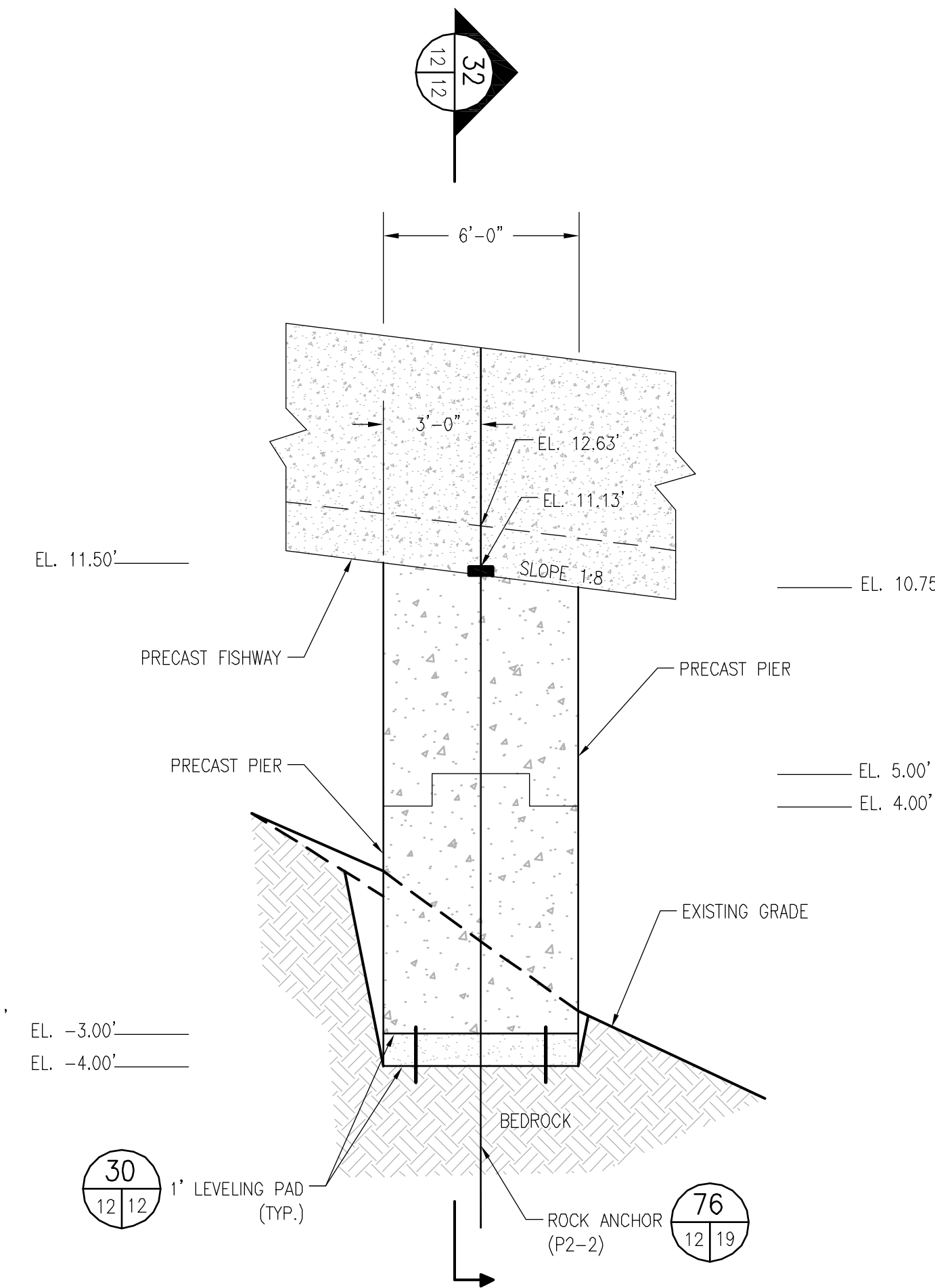
FISHWAY PRECAST CONNECTION ELEVATION (34)
SCALE: 1/2" = 1'-0"



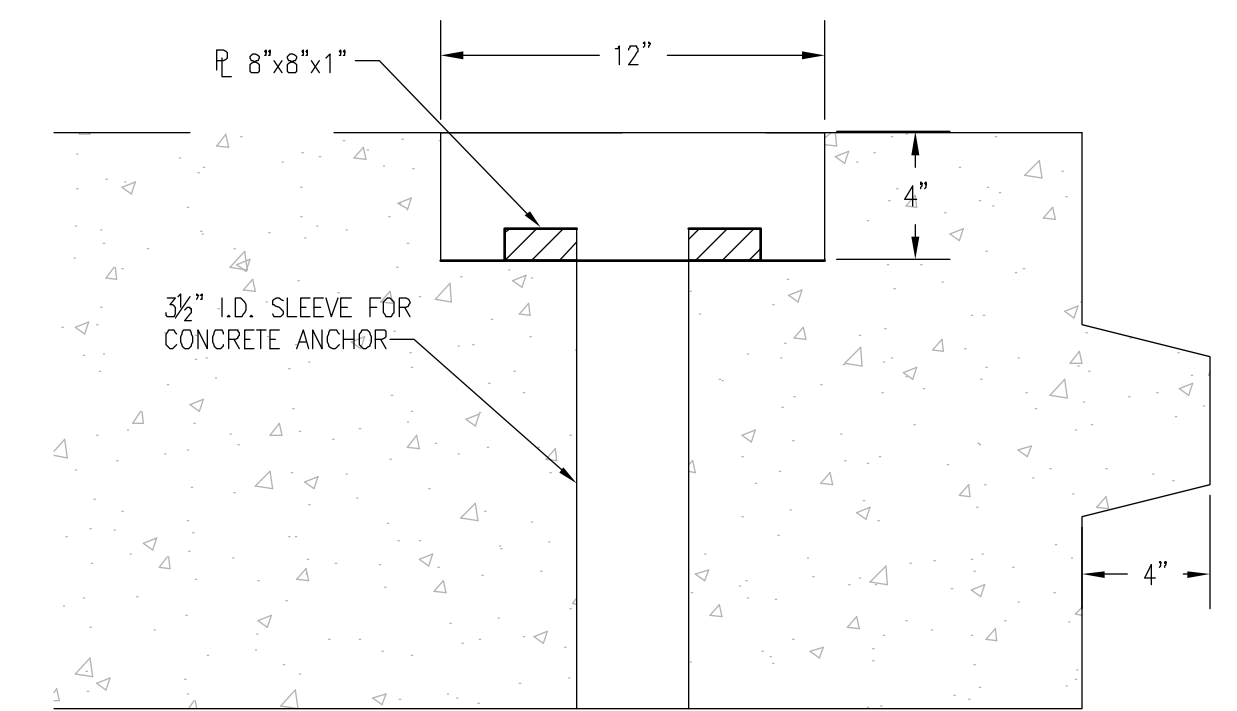
PIER 2 ELEVATION (P2)
SCALE: 1/4" = 1'-0"



PIER 2 ELEVATION (P2-1)
SCALE: 1/4" = 1'-0"



PIER 2 ELEVATION (P2-2)
SCALE: 1/4" = 1'-0"



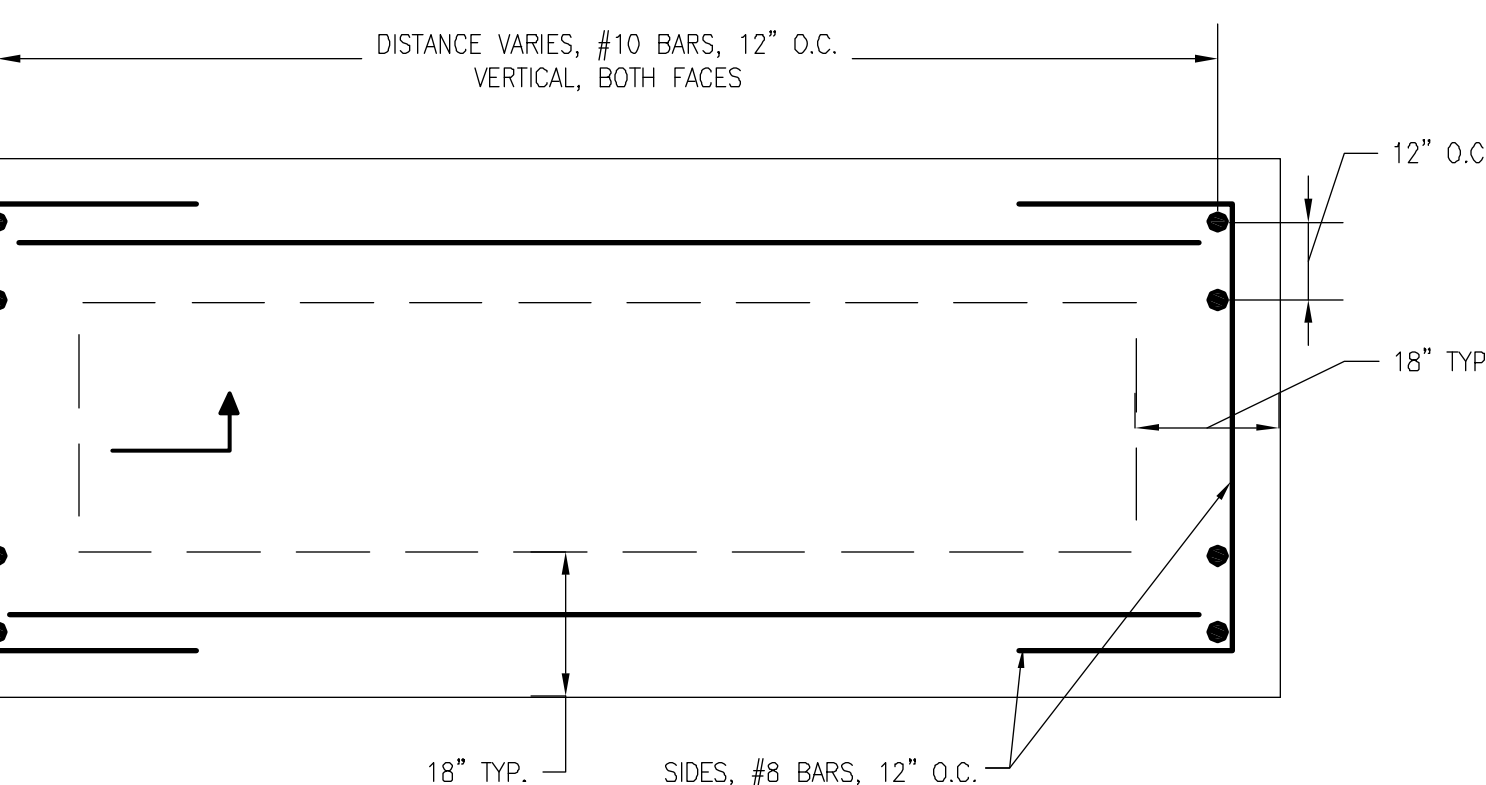
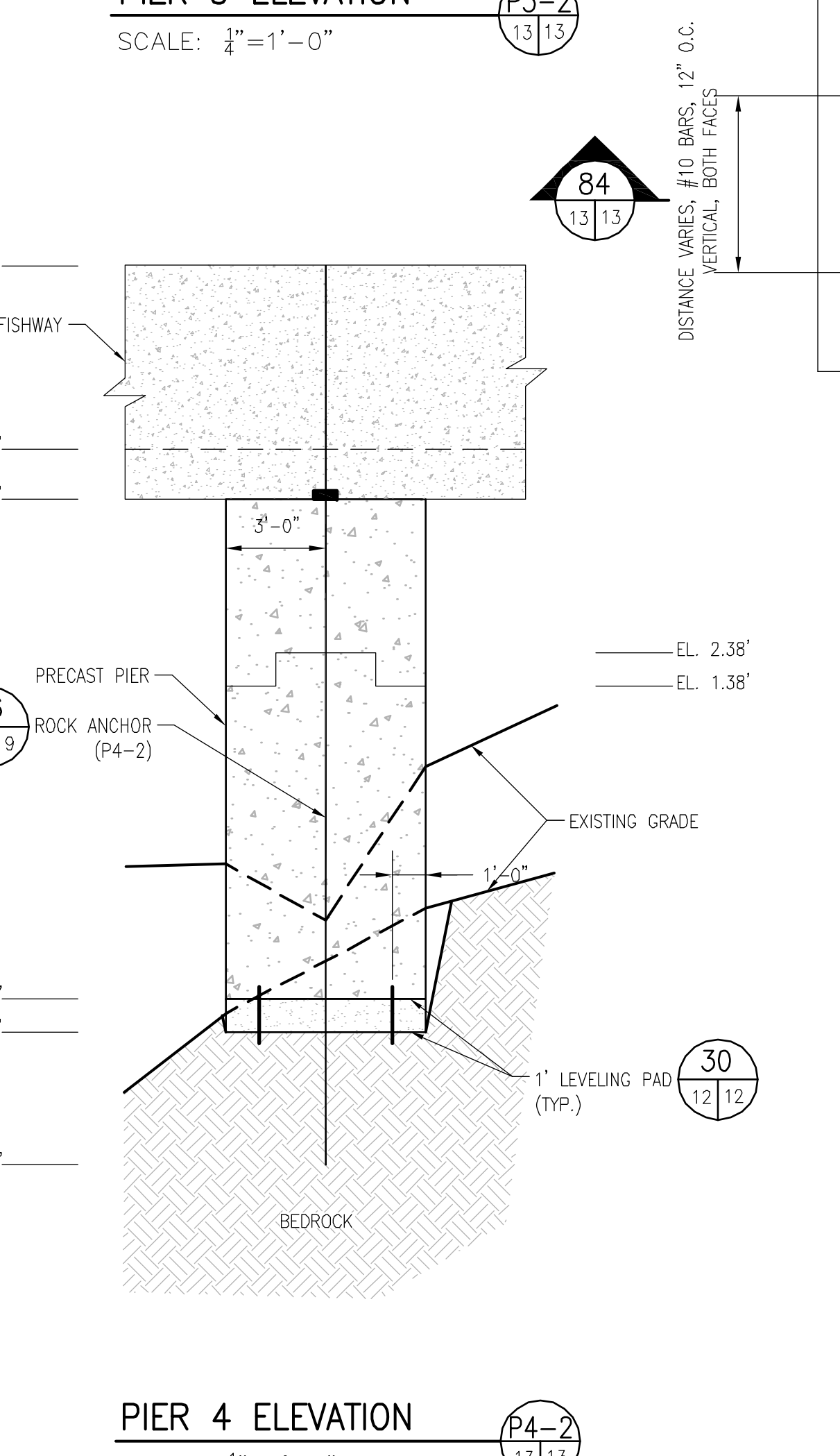
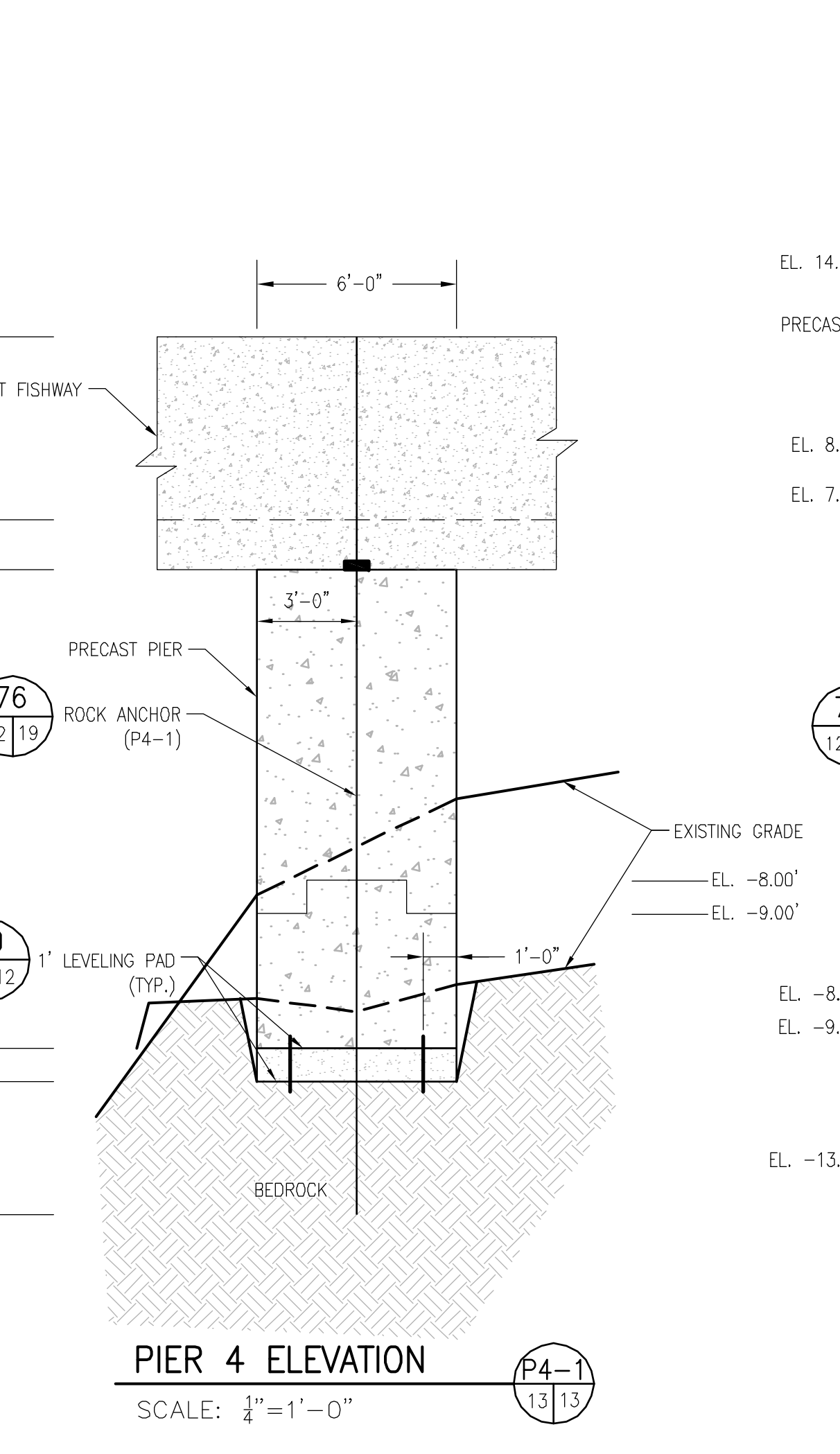
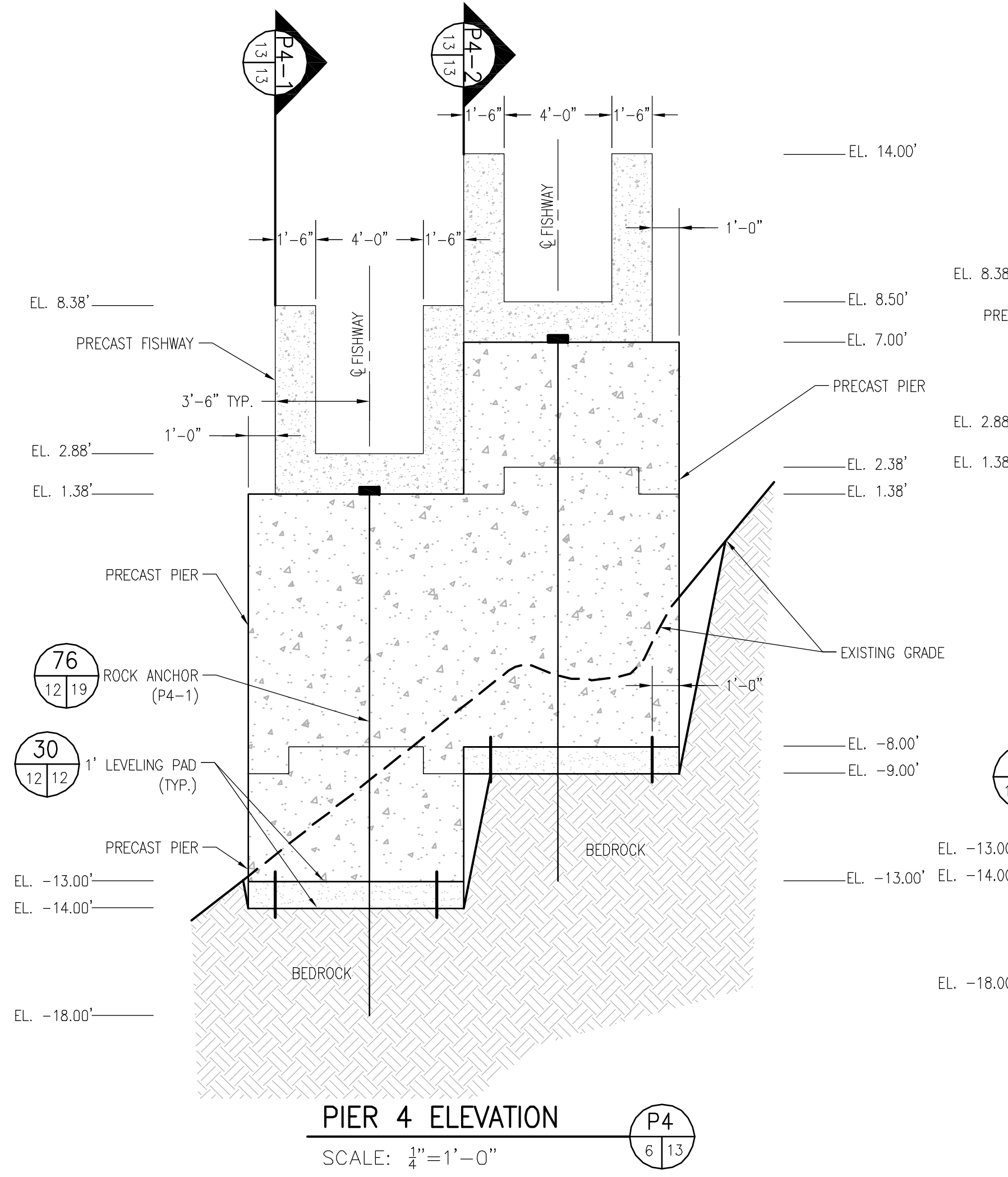
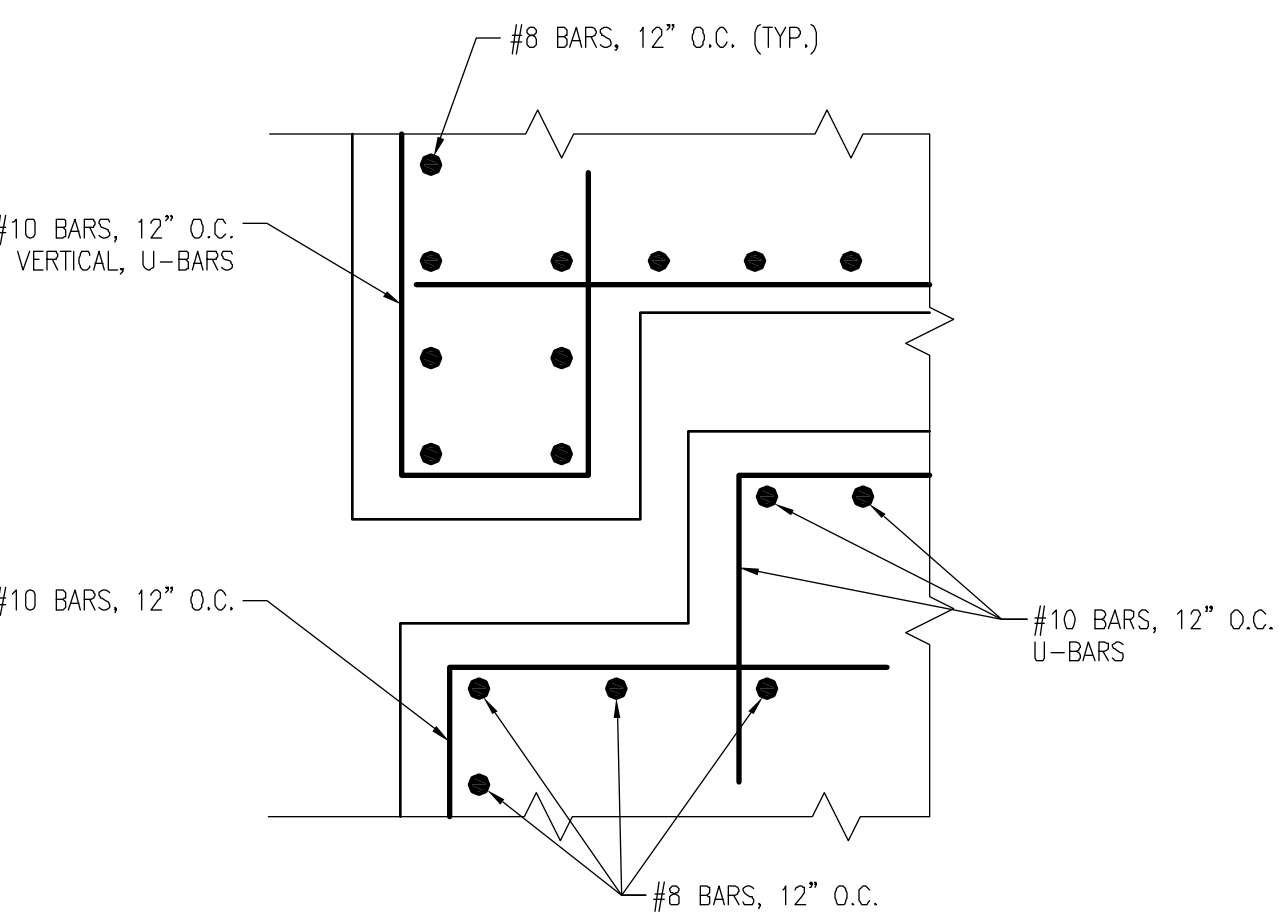
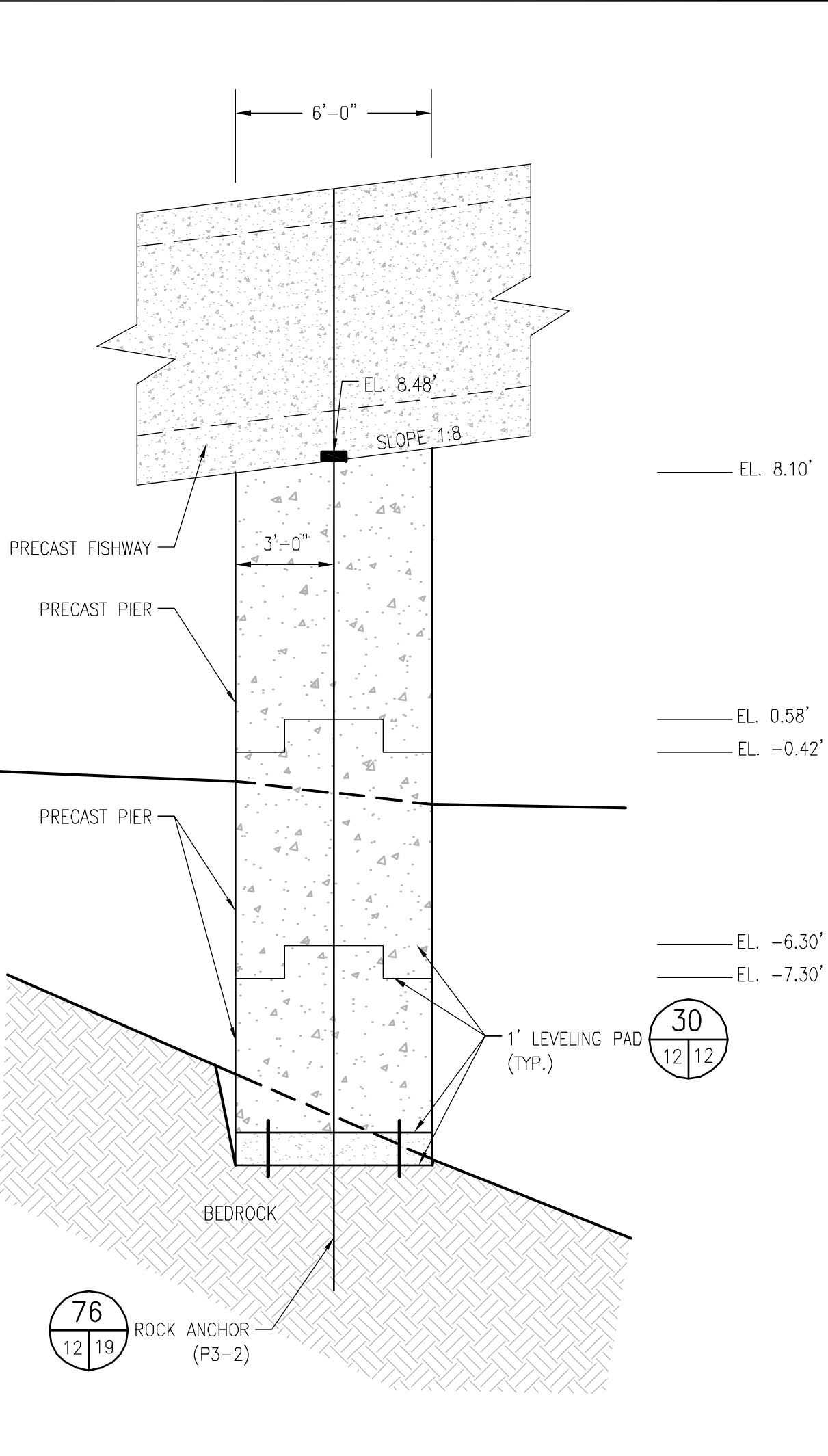
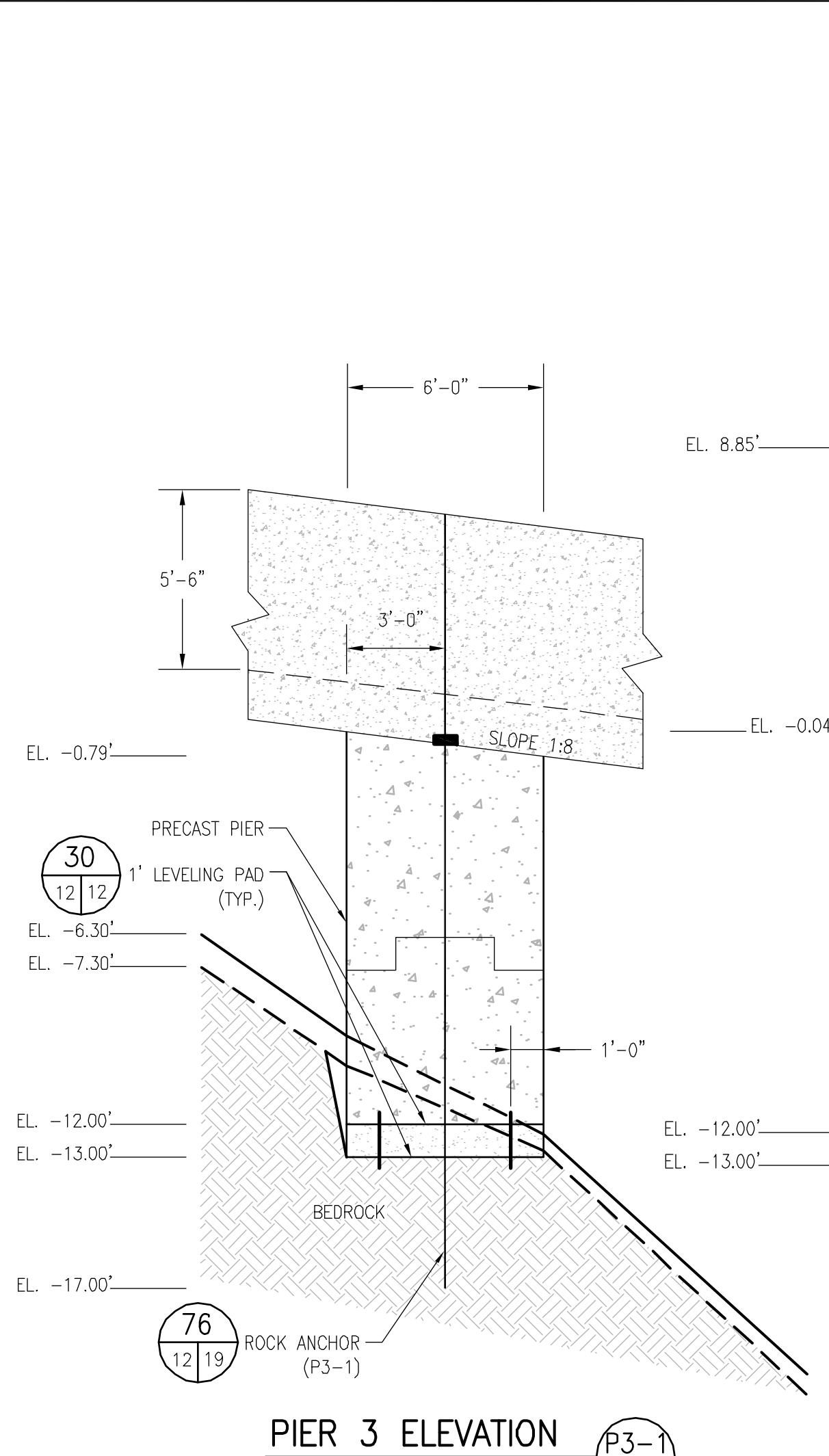
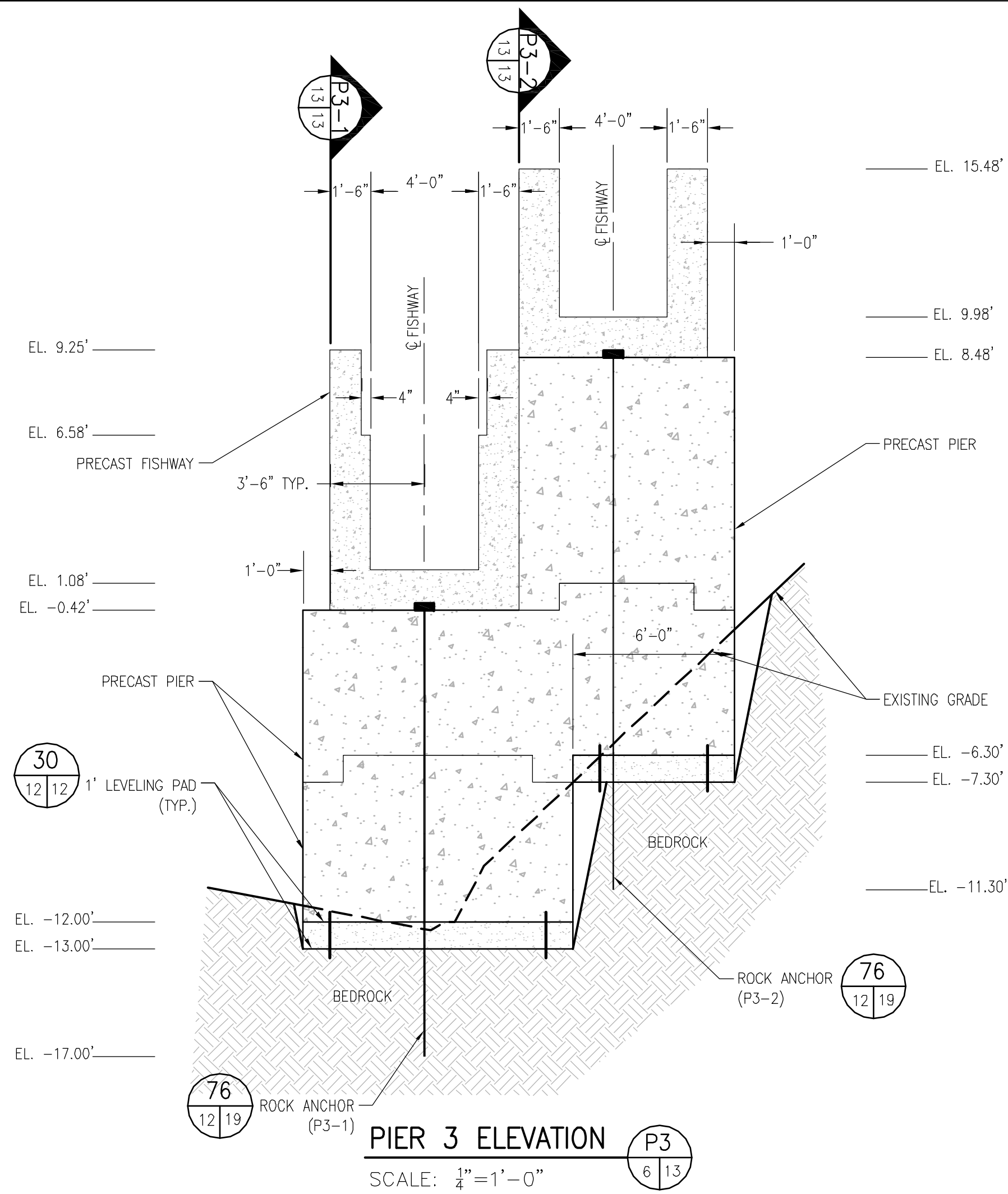
PRECAST FISHWAY TO PIER CONNECTION (89)
SCALE: 2" = 1'-0"

NO.	DATE	BY	DESCRIPTION

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
MAIN STREET FISHWAY
PAWTUCKET, RHODE ISLAND
PIER 2 AND PRECAST CONCRETE

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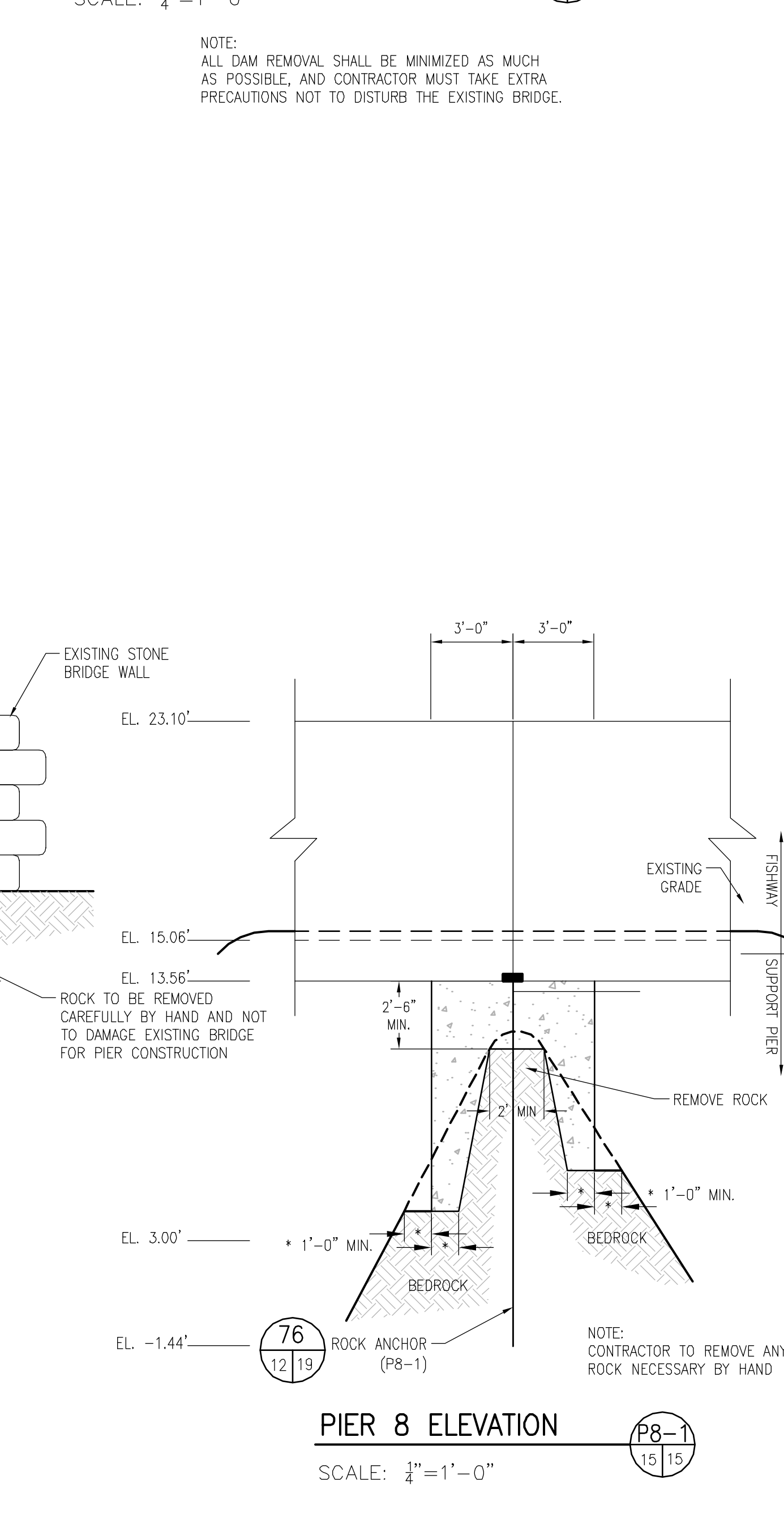
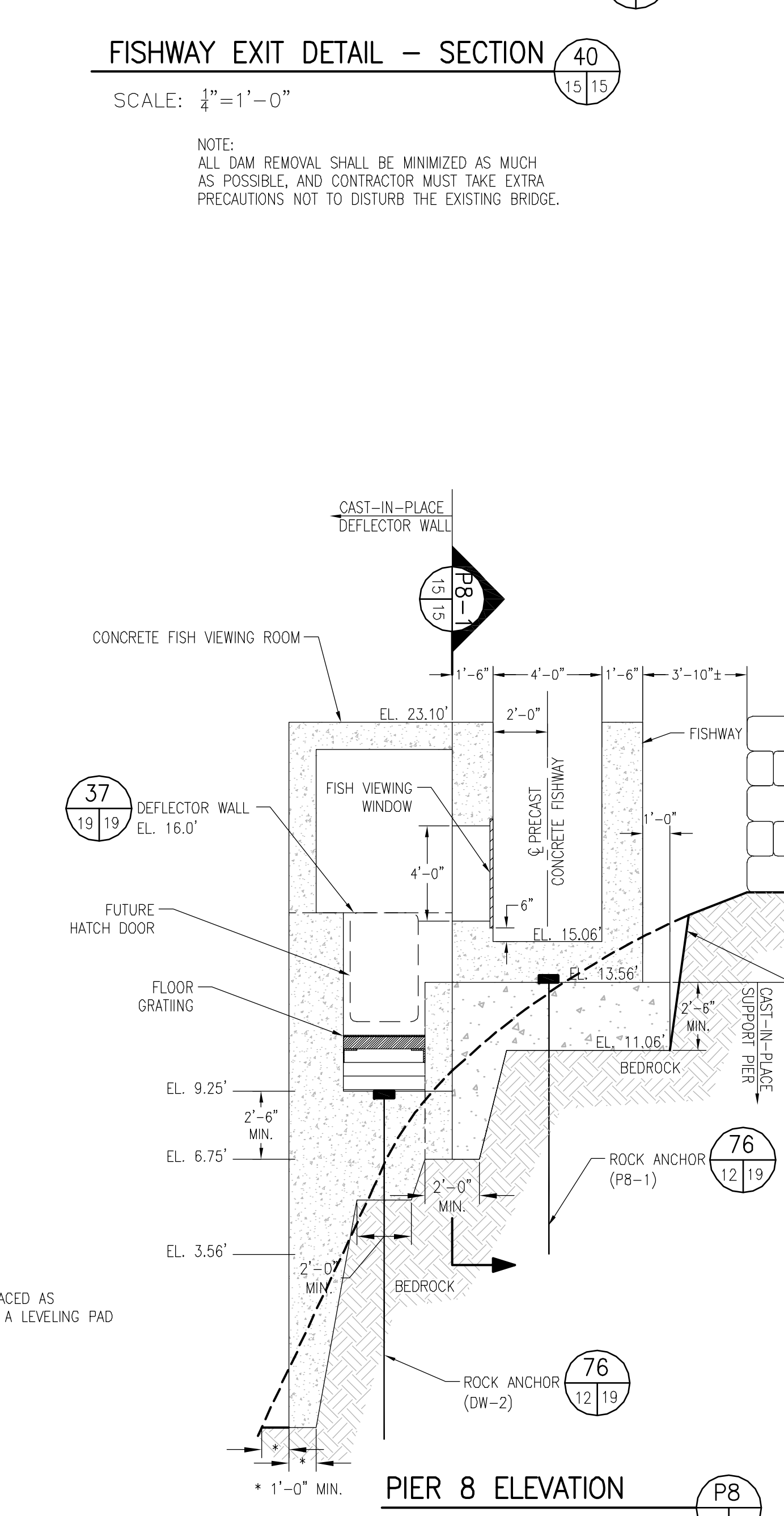
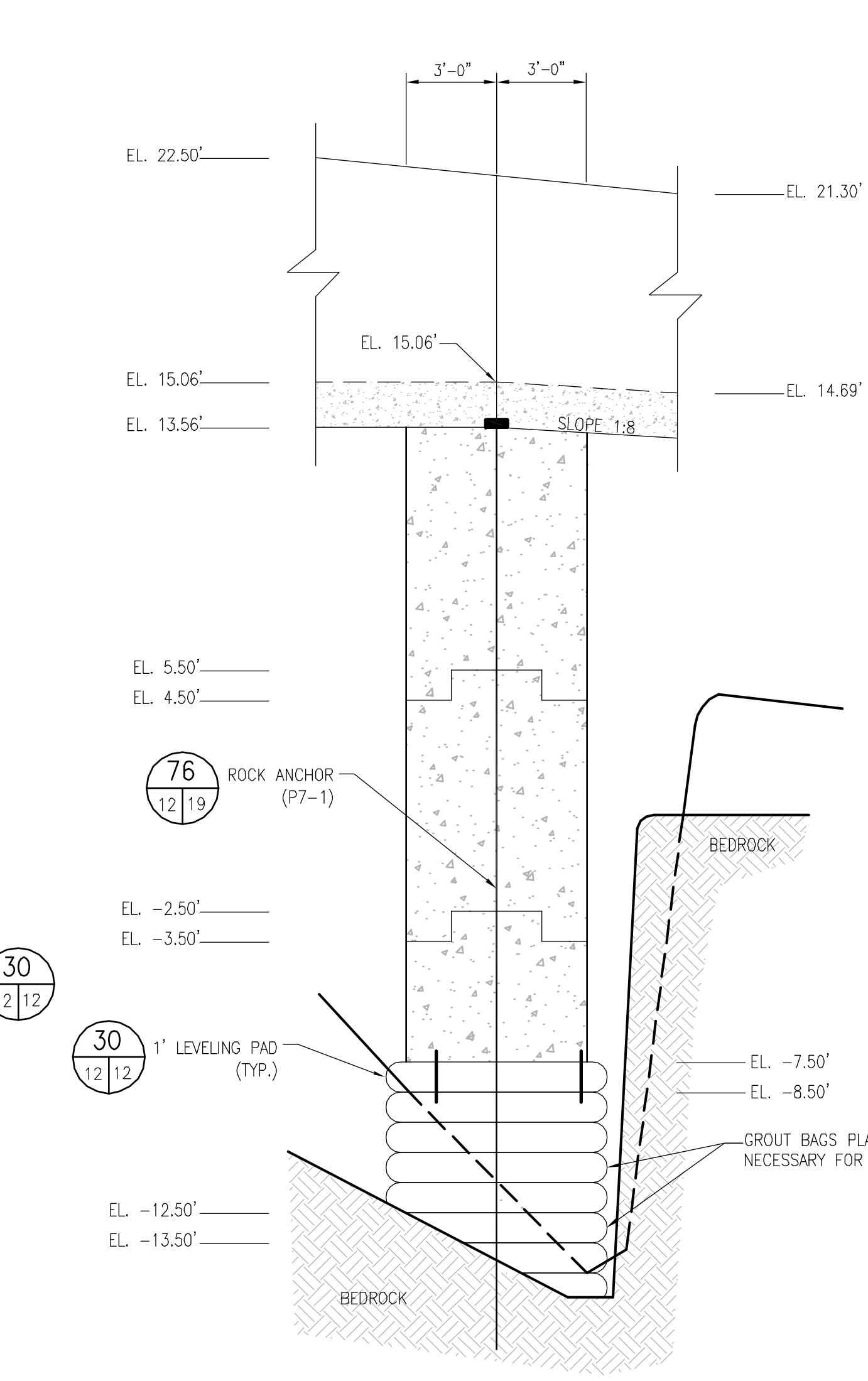
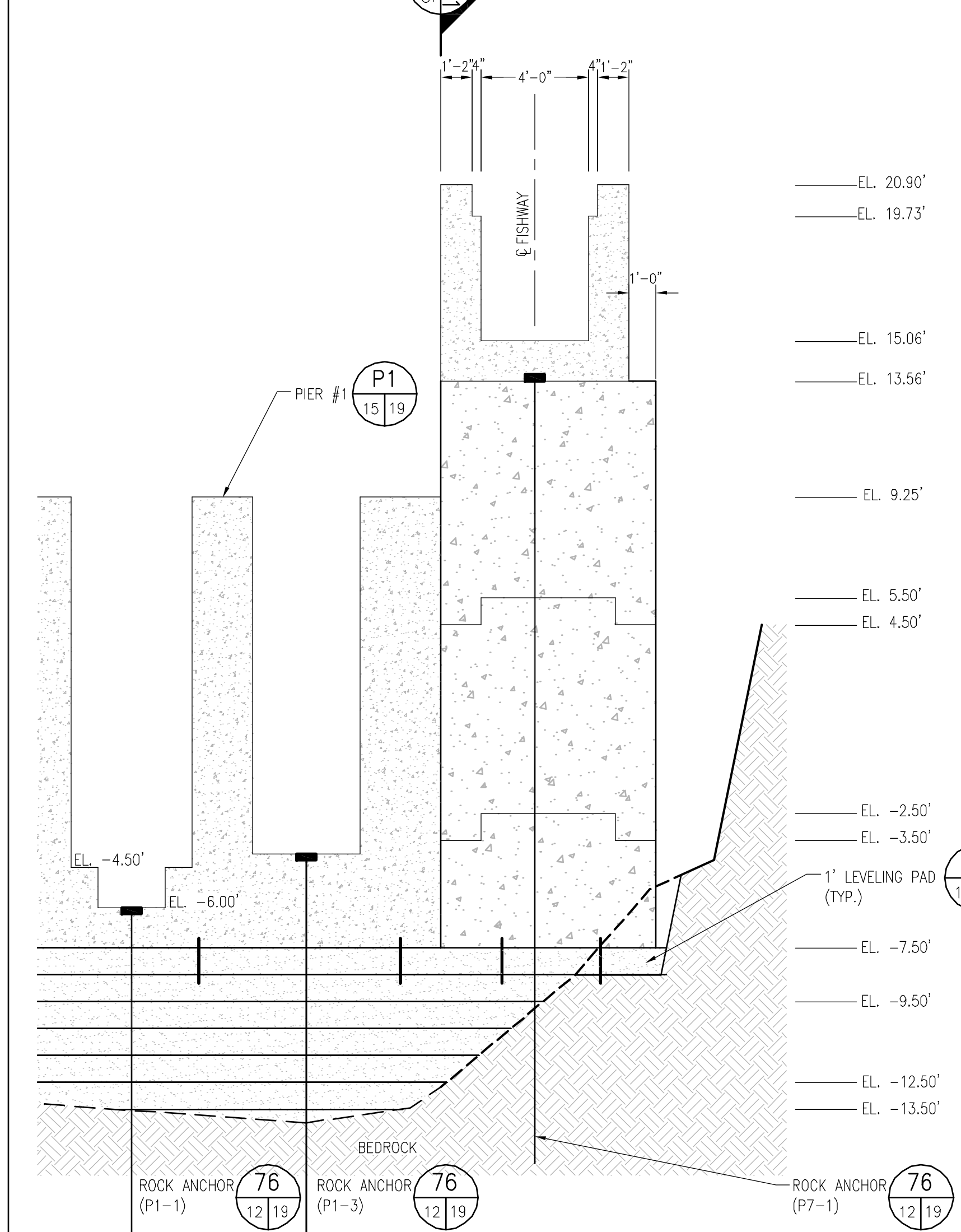
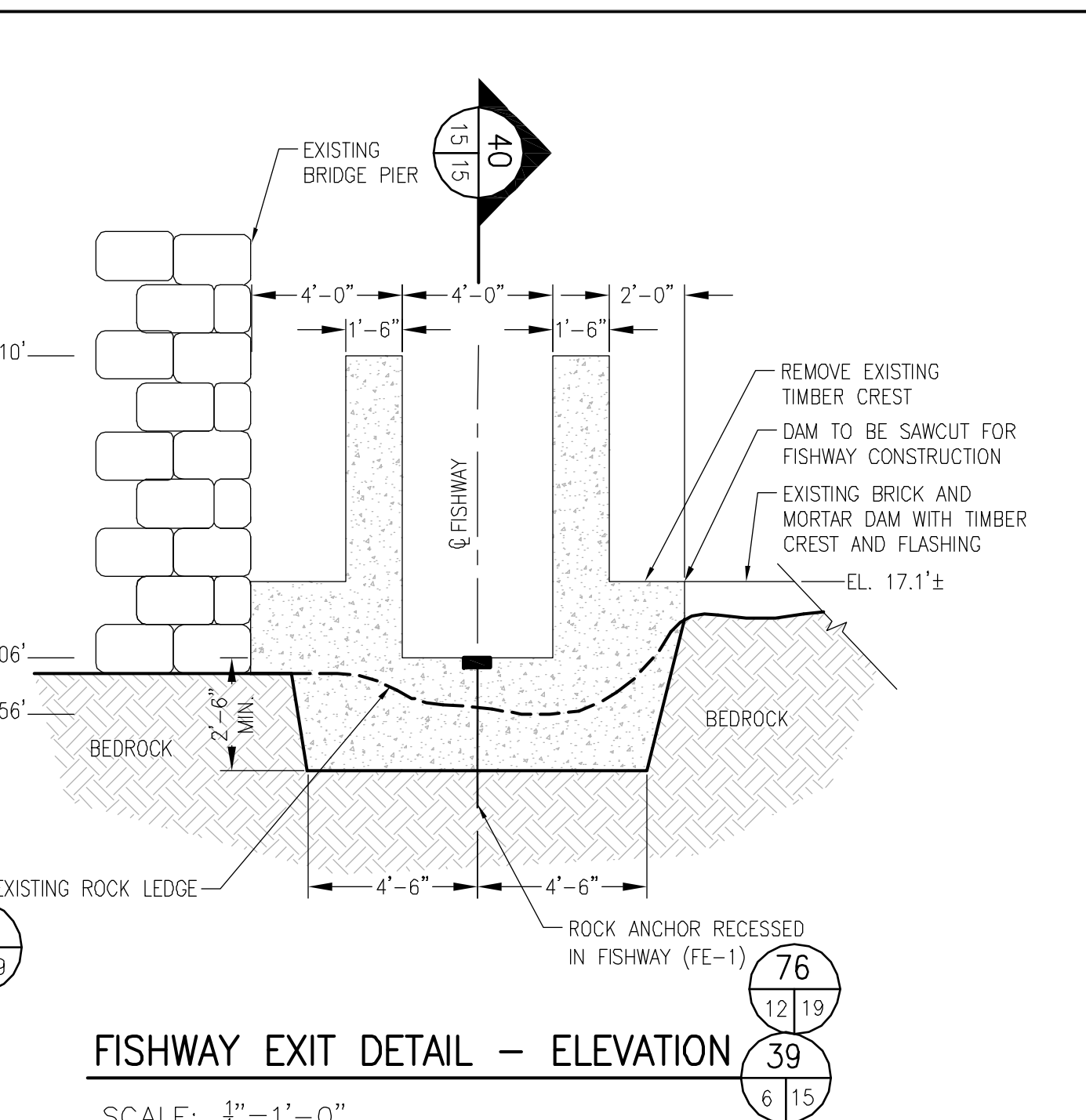
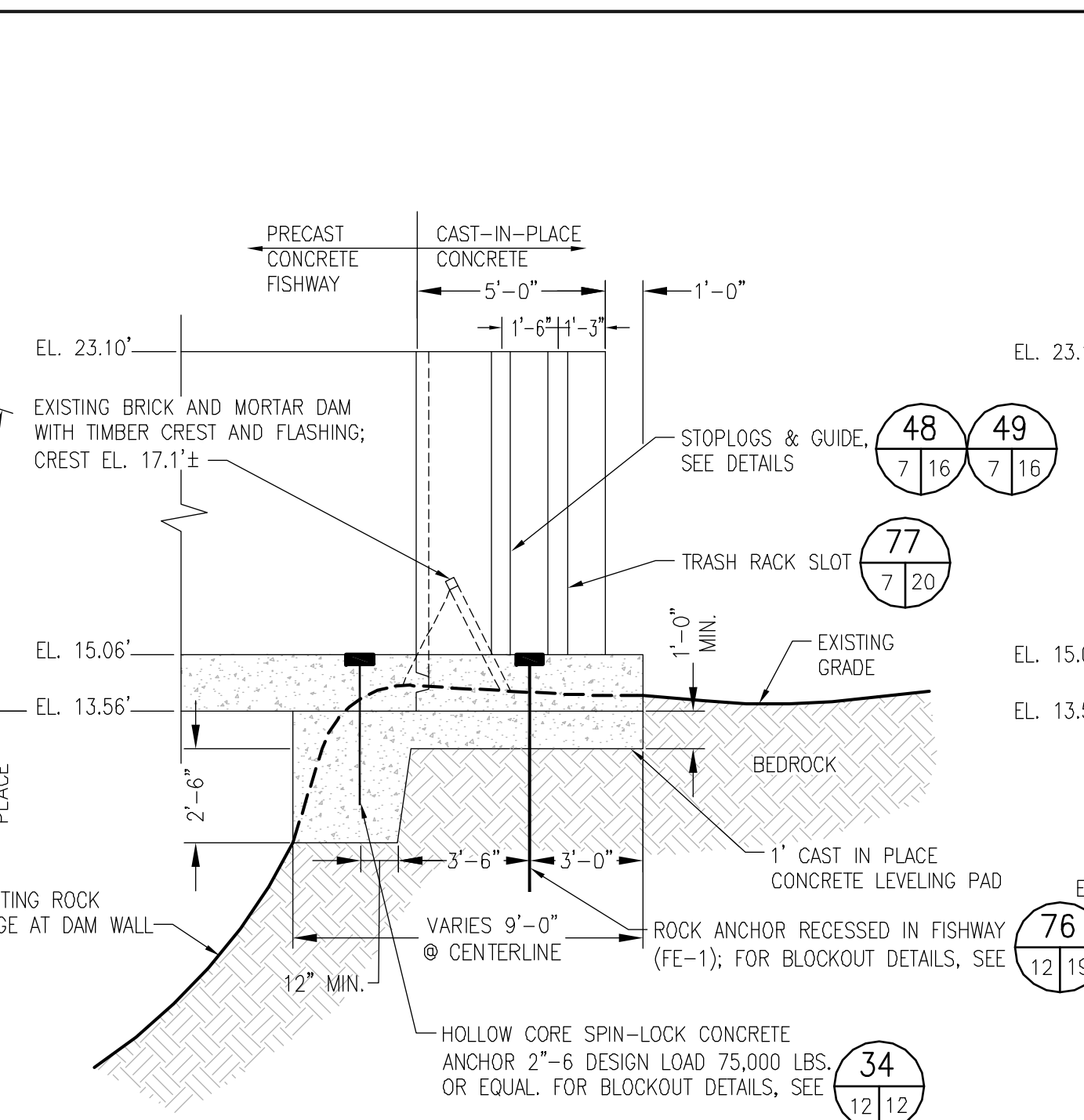
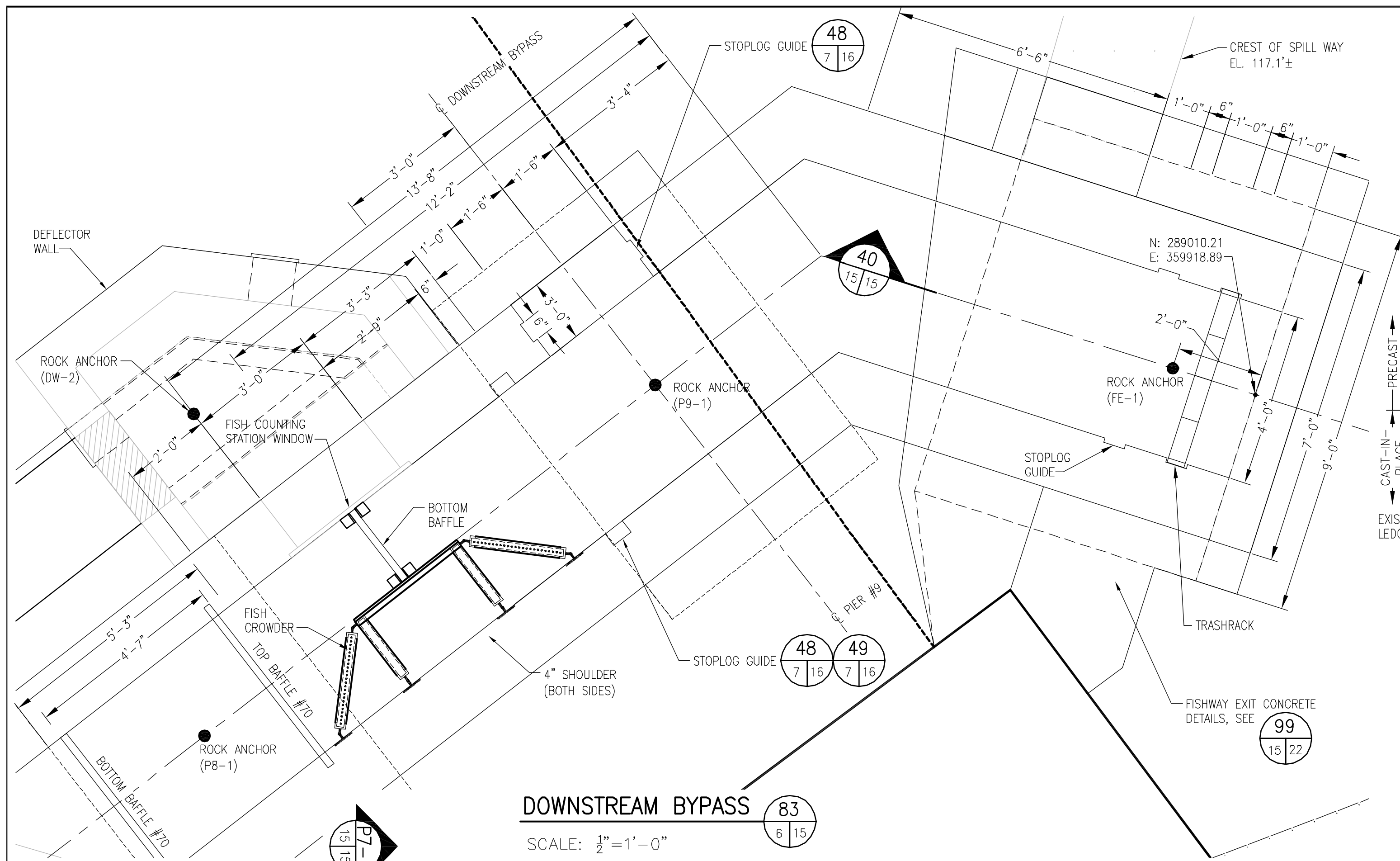
DATE: JUNE 2012
DESIGNED BY: TCC
DRAWN BY: DPA
CHECKED BY: HLB
PROJECT MANAGER: SSW
PROJECT NUMBER: 62562.01
SCALE: AS SHOWN
FILE NAME: C-11-12-13-FOOTING DETAILS
DRAWING NUMBER: C-11
SHEET NUMBER: 12 OF 24



NOTE:
REBAR SHALL HAVE A MINIMUM COVER OF 3"

NO.	DATE	BY	DESCRIPTION

<p>LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT MAIN STREET FISHWAY PAWTUCKET, RHODE ISLAND</p>
<p>PIER 3 AND 4 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-11-12-13-FOOTING DETAILS</p>
<p>DRAWING NUMBER: C-12</p>
<p>SHEET NUMBER: 13 OF 24</p>



NO.	DATE	BY	DESCRIPTION

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

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
MAIN STREET FISHWAY
PAWTUCKET, RHODE ISLAND

PIER 7, PIER 8, AND DOWNSTREAM BYPASS 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

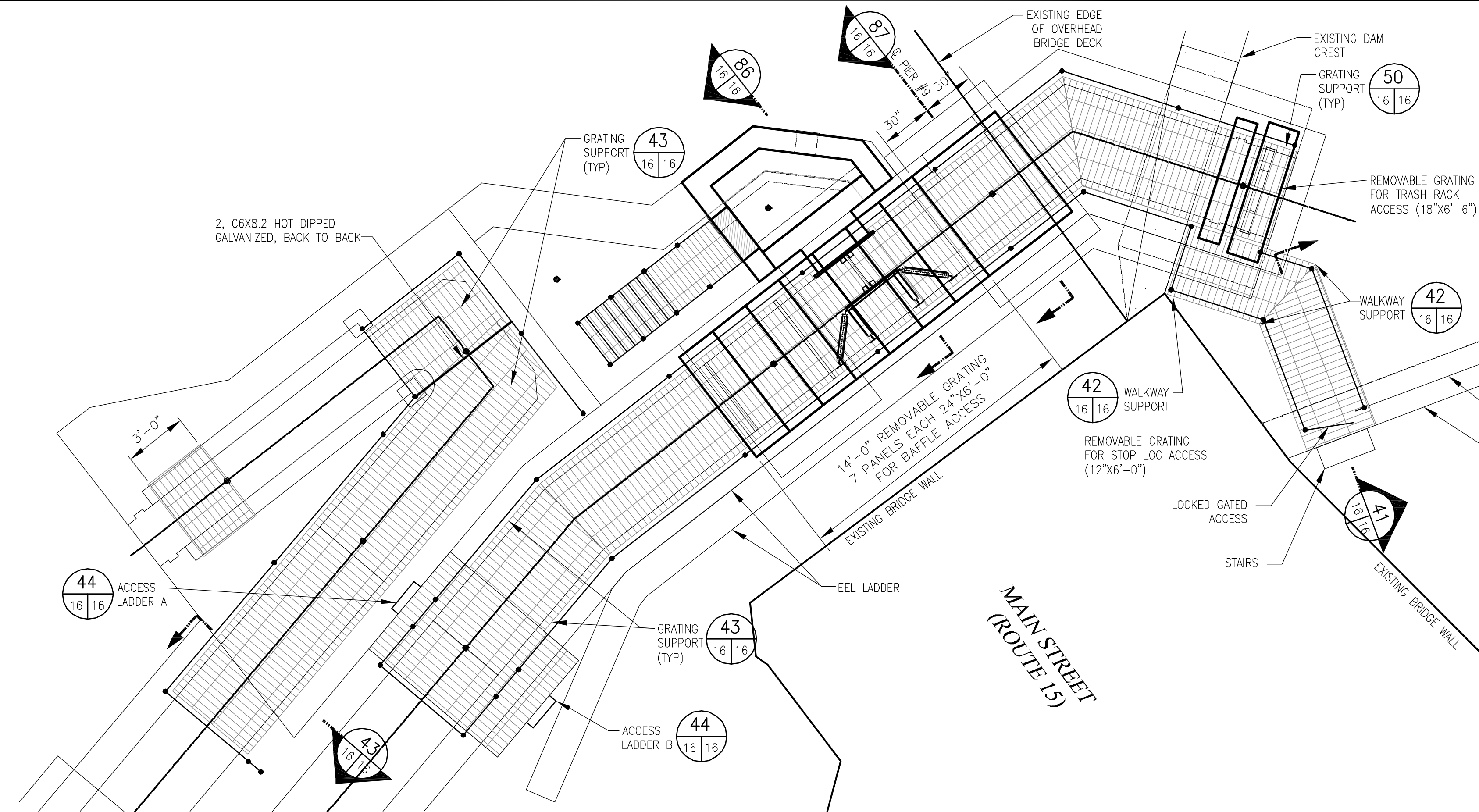
PROJECT NUMBER: 62562.01

SCALE: AS SHOWN

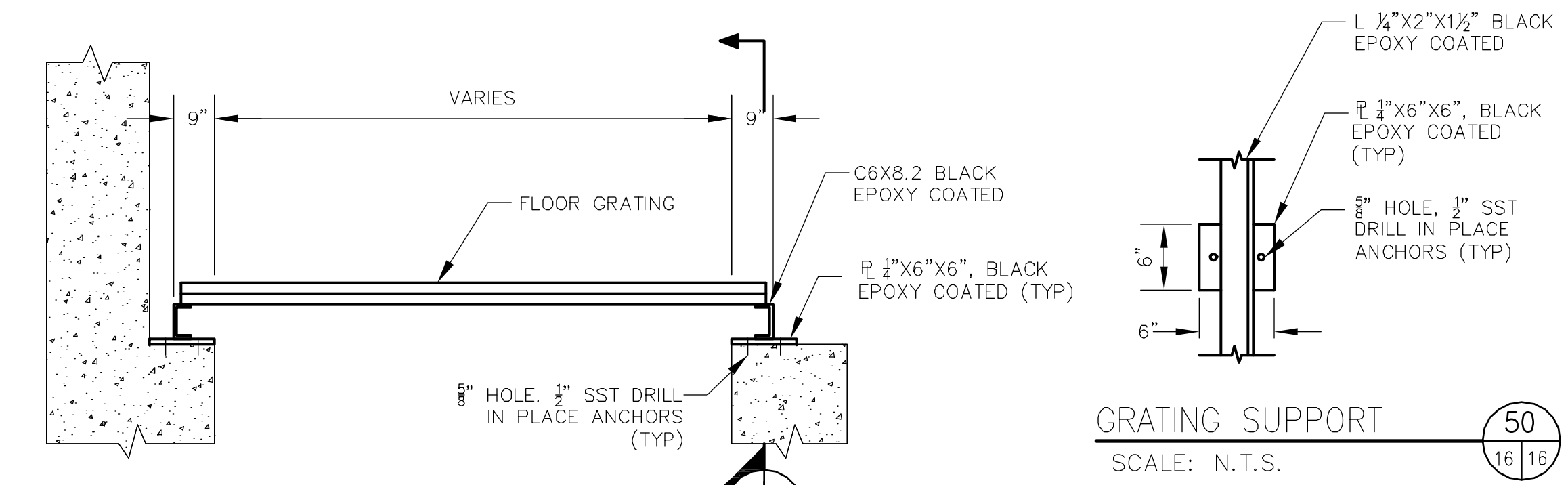
FILE NAME: C-14-DOWNSTREAM BYPASS

DRAWING NUMBER: C-14

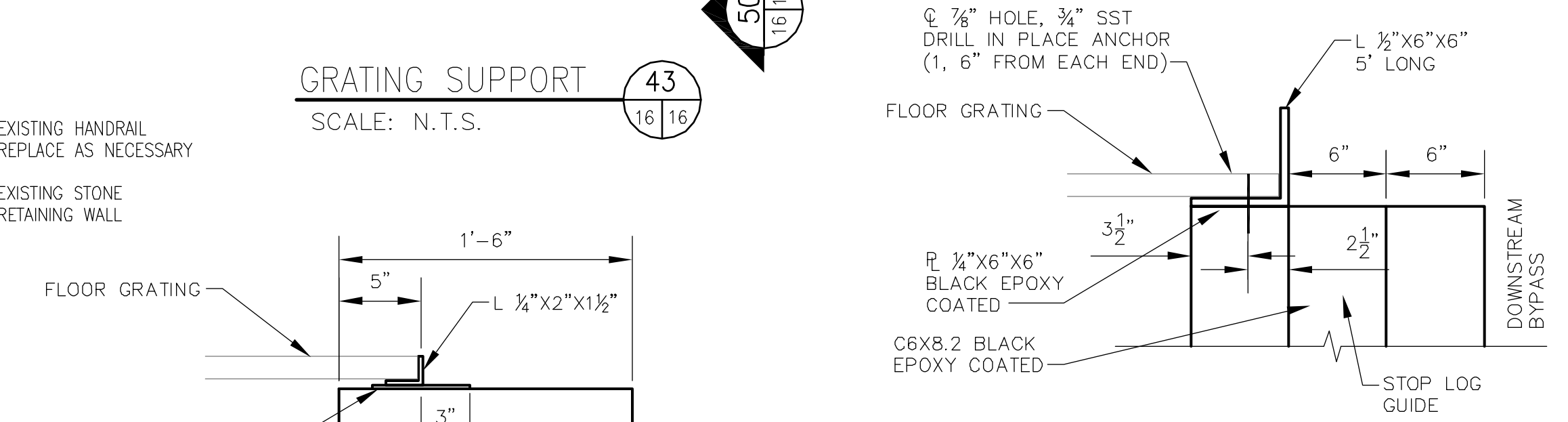
SHEET NUMBER: 15 OF 24



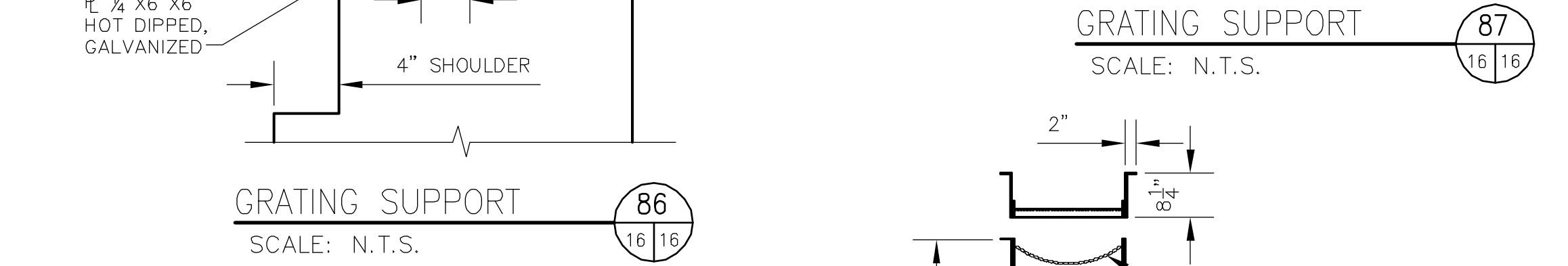
FISHWAY ACCESS - PLAN 54
SCALE: N.T.S.



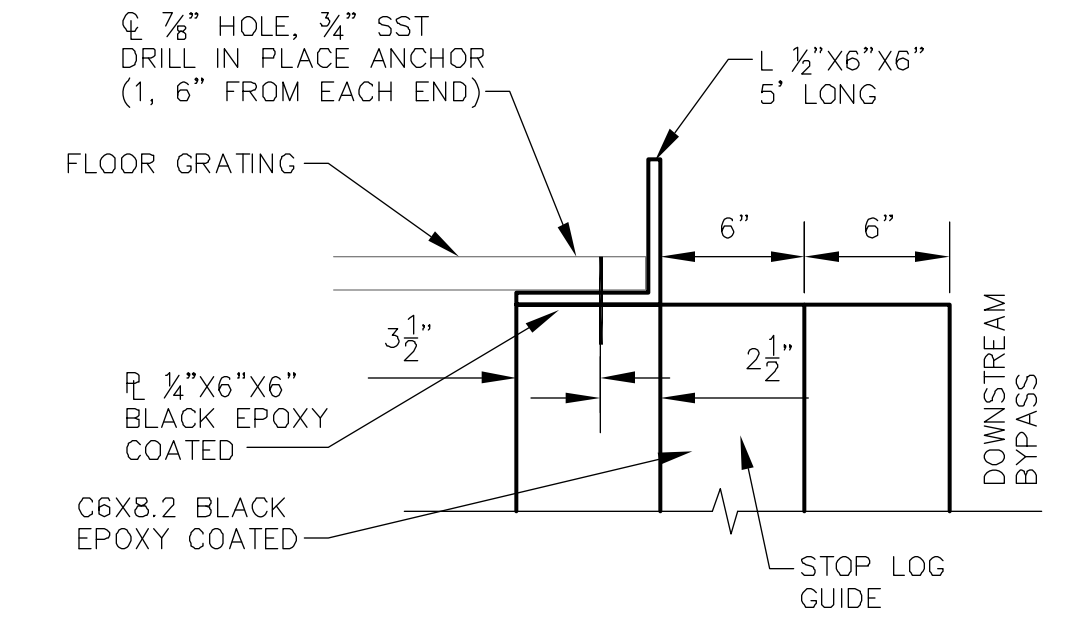
GRATING SUPPORT 50
SCALE: N.T.S.



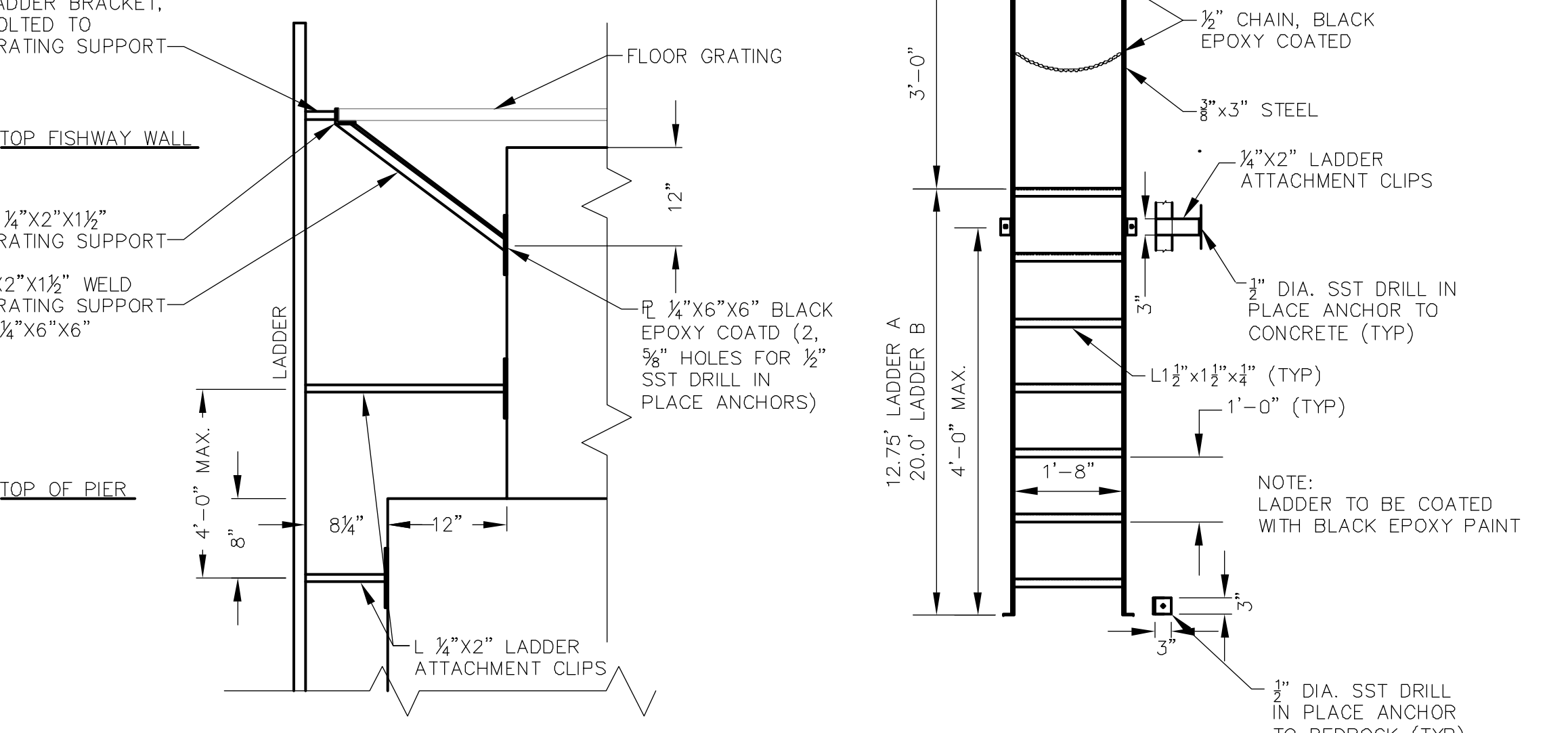
GRATING SUPPORT 43
SCALE: N.T.S.



GRATING SUPPORT 86
SCALE: N.T.S.



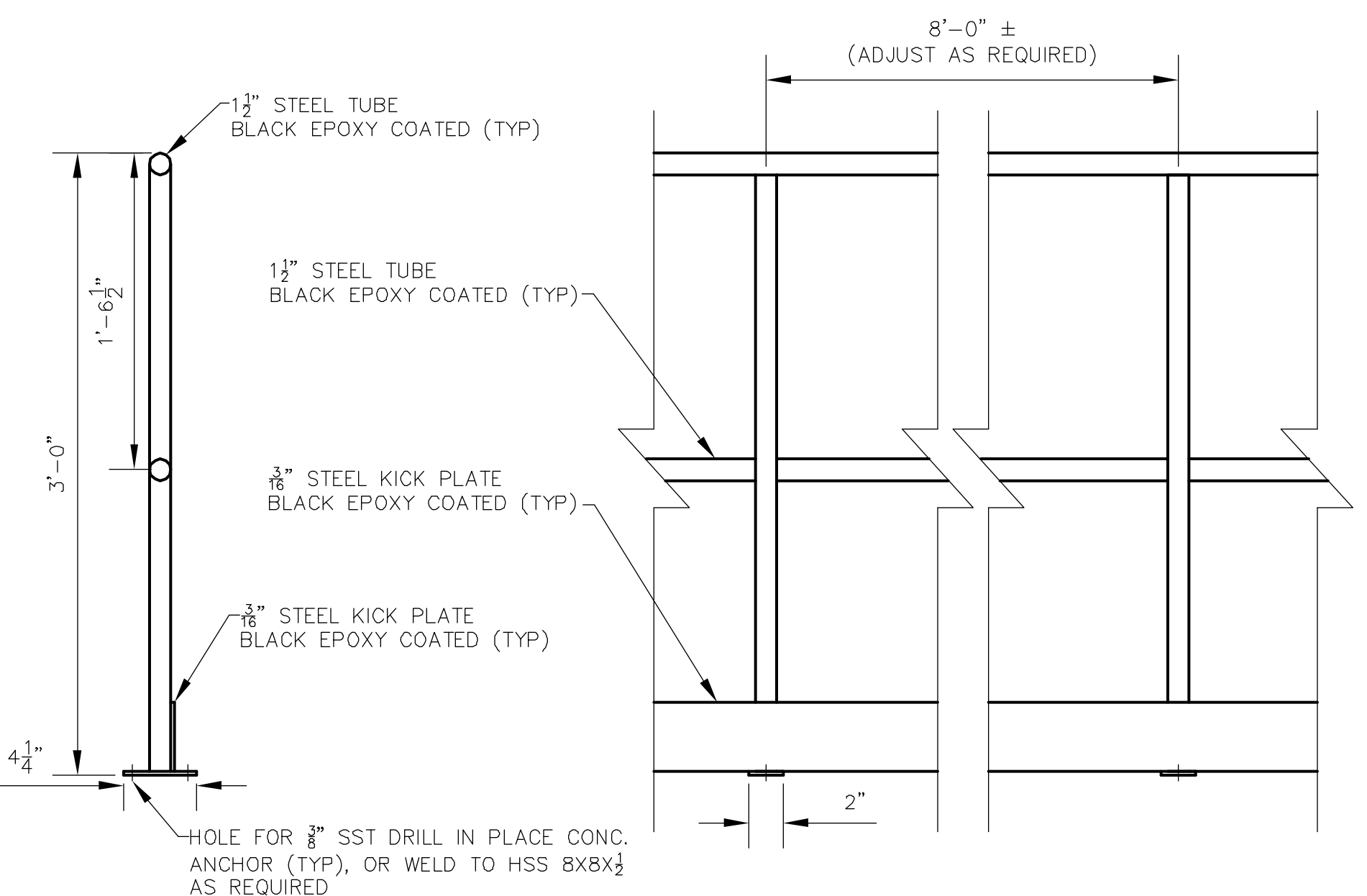
GRATING SUPPORT 87
SCALE: N.T.S.



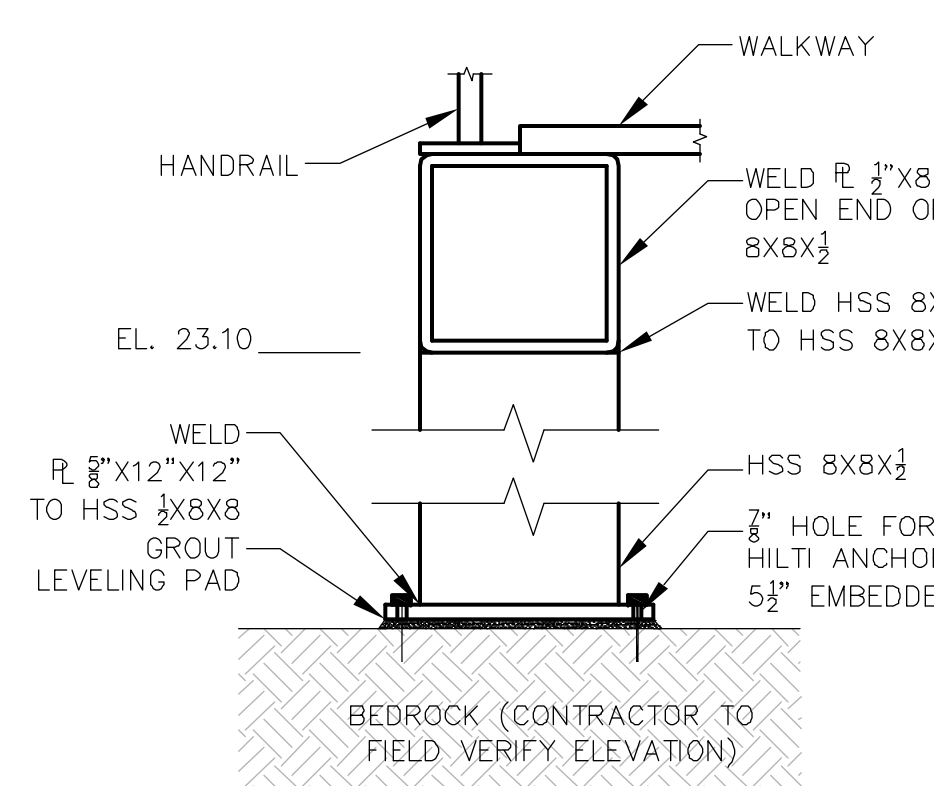
ACCESS LADDER DETAIL 44
SCALE: N.T.S.



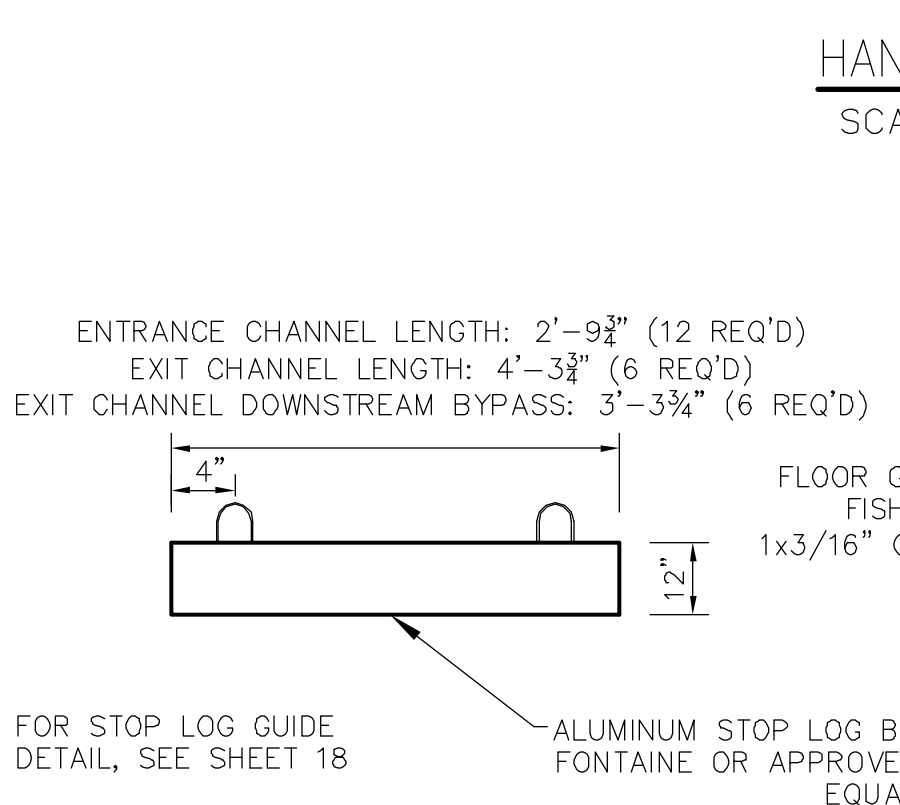
ACCESS LADDER DETAIL 88
SCALE: N.T.S.



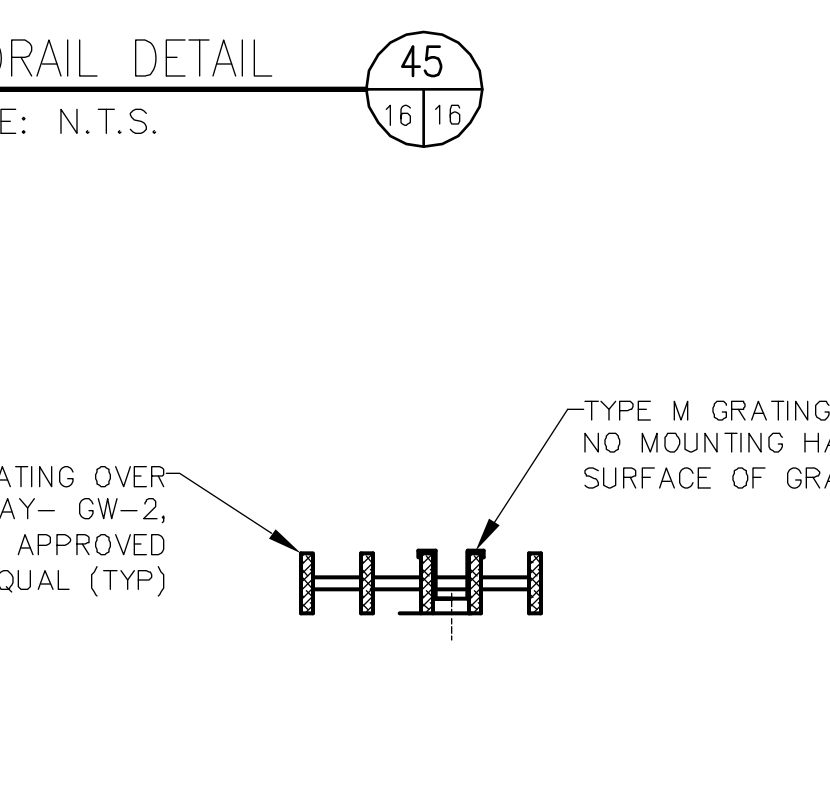
HANDRAIL DETAIL 45
SCALE: N.T.S.



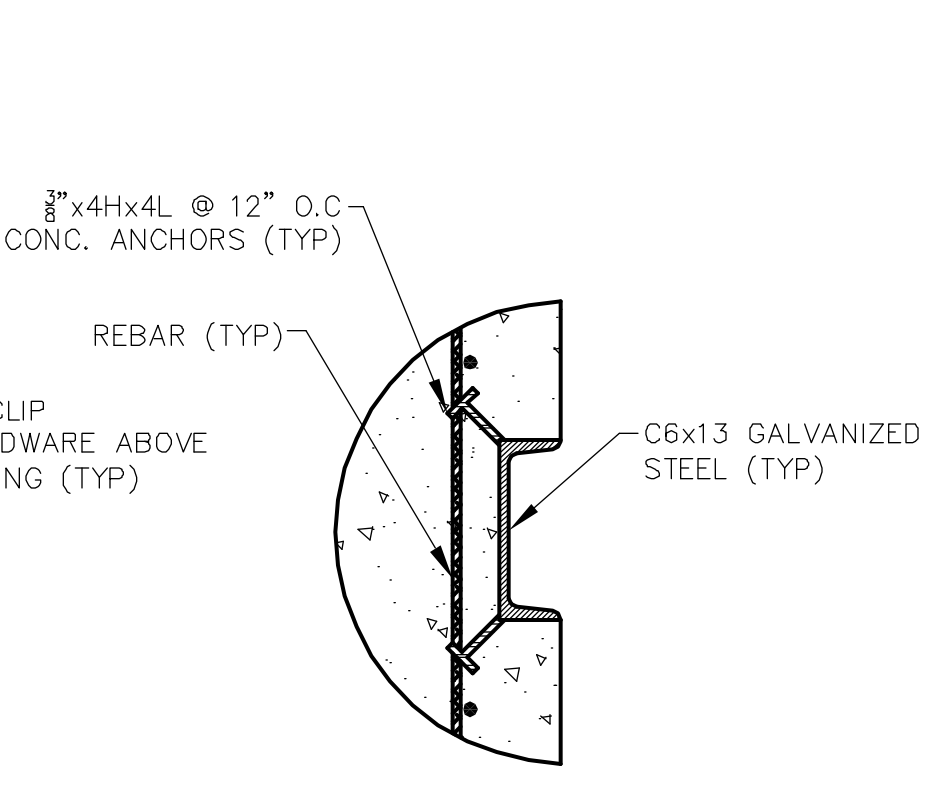
WALKWAY SUPPORT 47
SCALE: N.T.S.



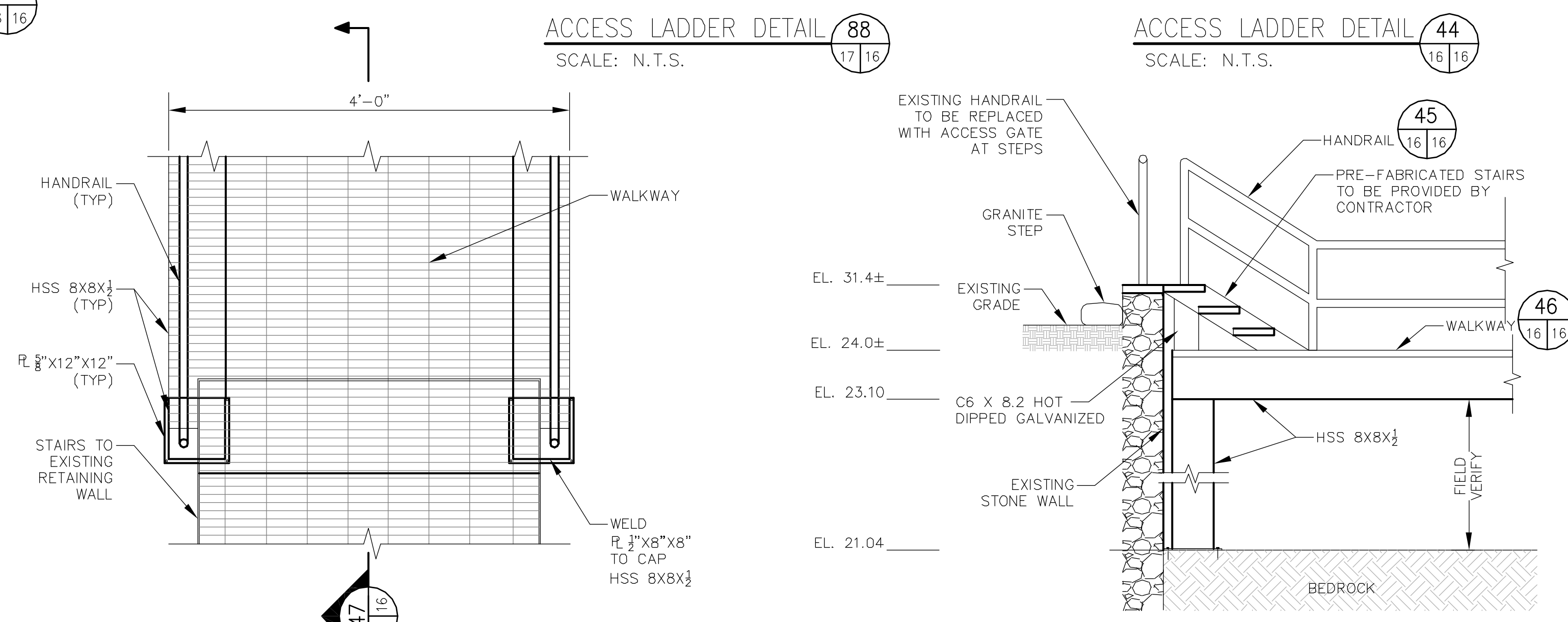
STOP LOG DETAIL 49
SCALE: N.T.S.



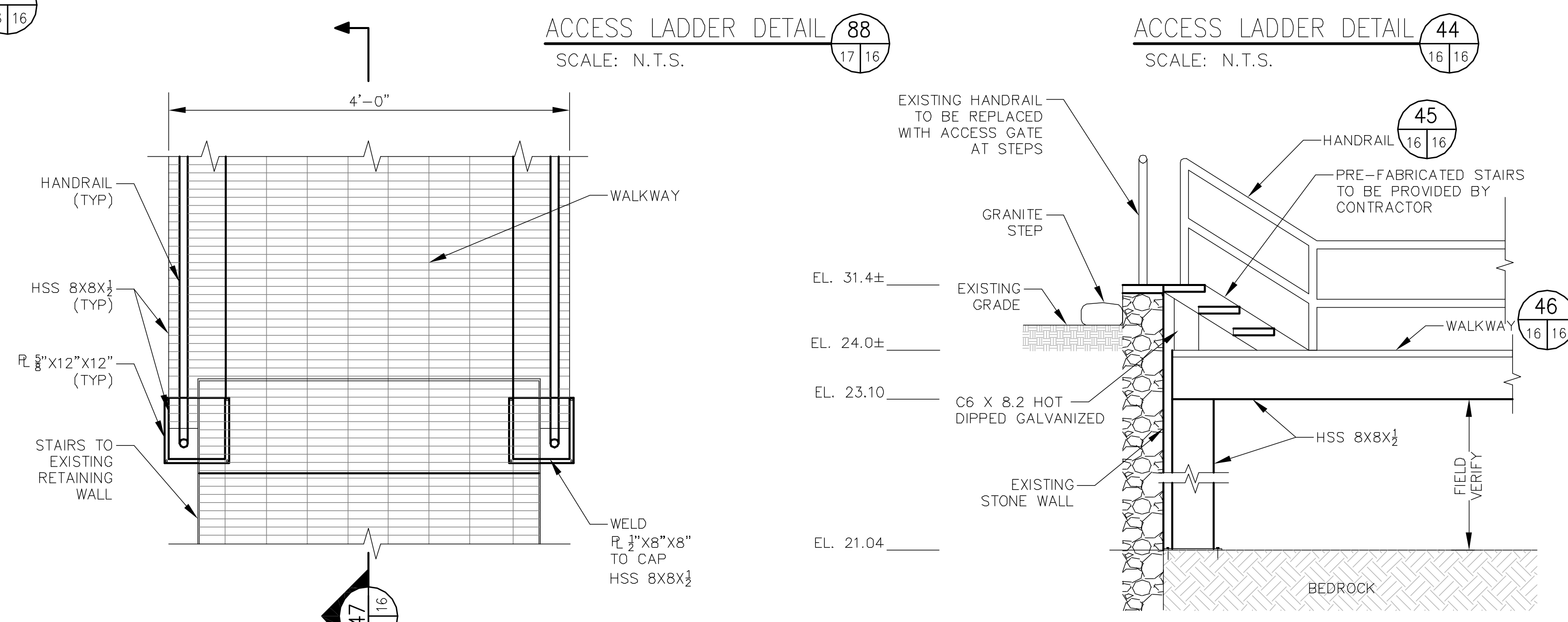
FLOOR GRATING DETAIL 46
SCALE: N.T.S.



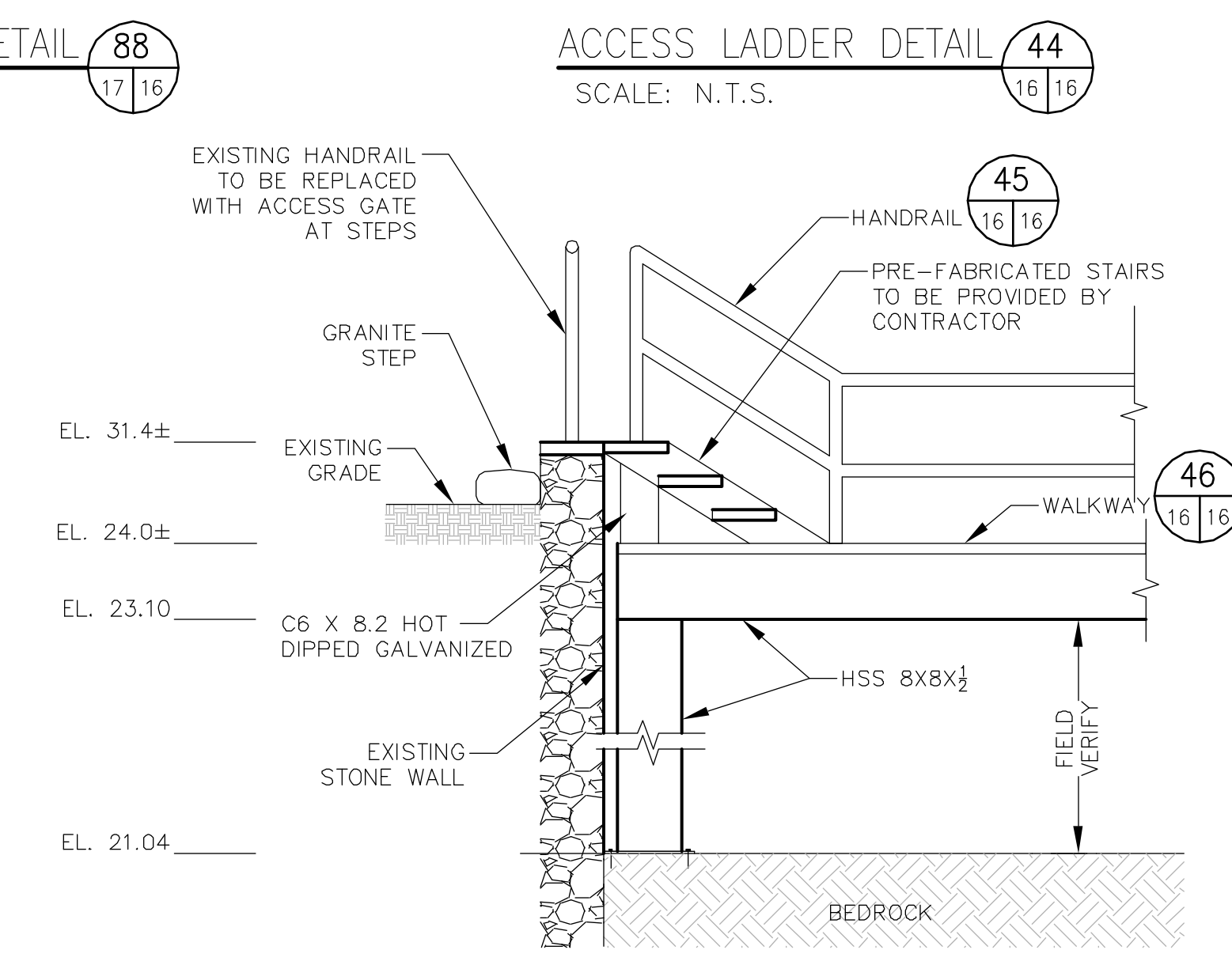
TRASH RACK GUIDE DETAIL 48
SCALE: N.T.S.



WALKWAY AND STAIRS DETAIL 41
SCALE: N.T.S.



WALKWAY SUPPORT PLAN 42
SCALE: N.T.S.



WALKWAY AND STAIRS DETAIL 46
SCALE: N.T.S.

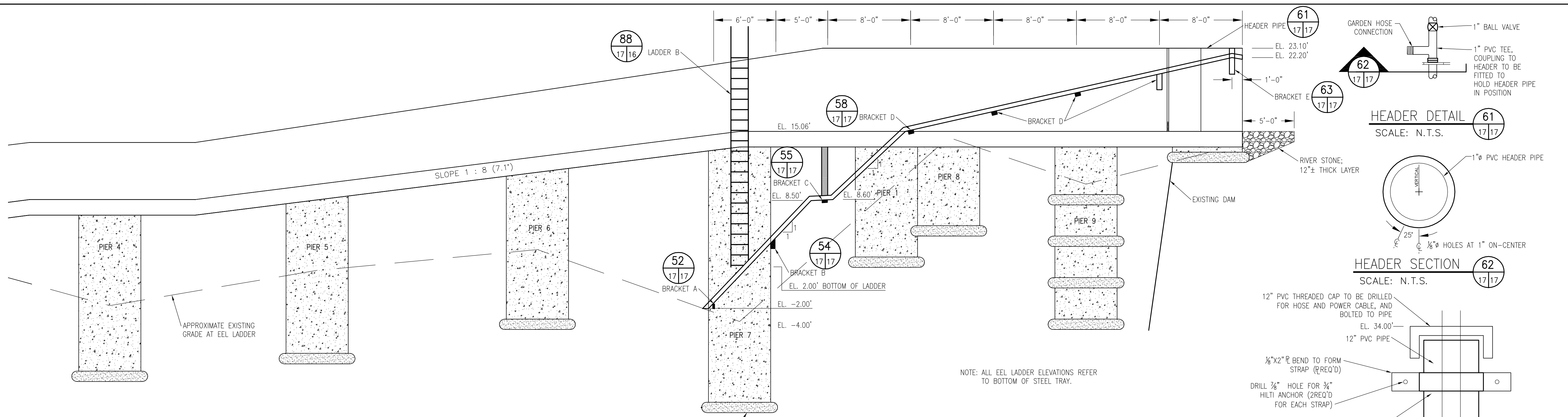
NO.	DATE	BY	DESCRIPTION

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

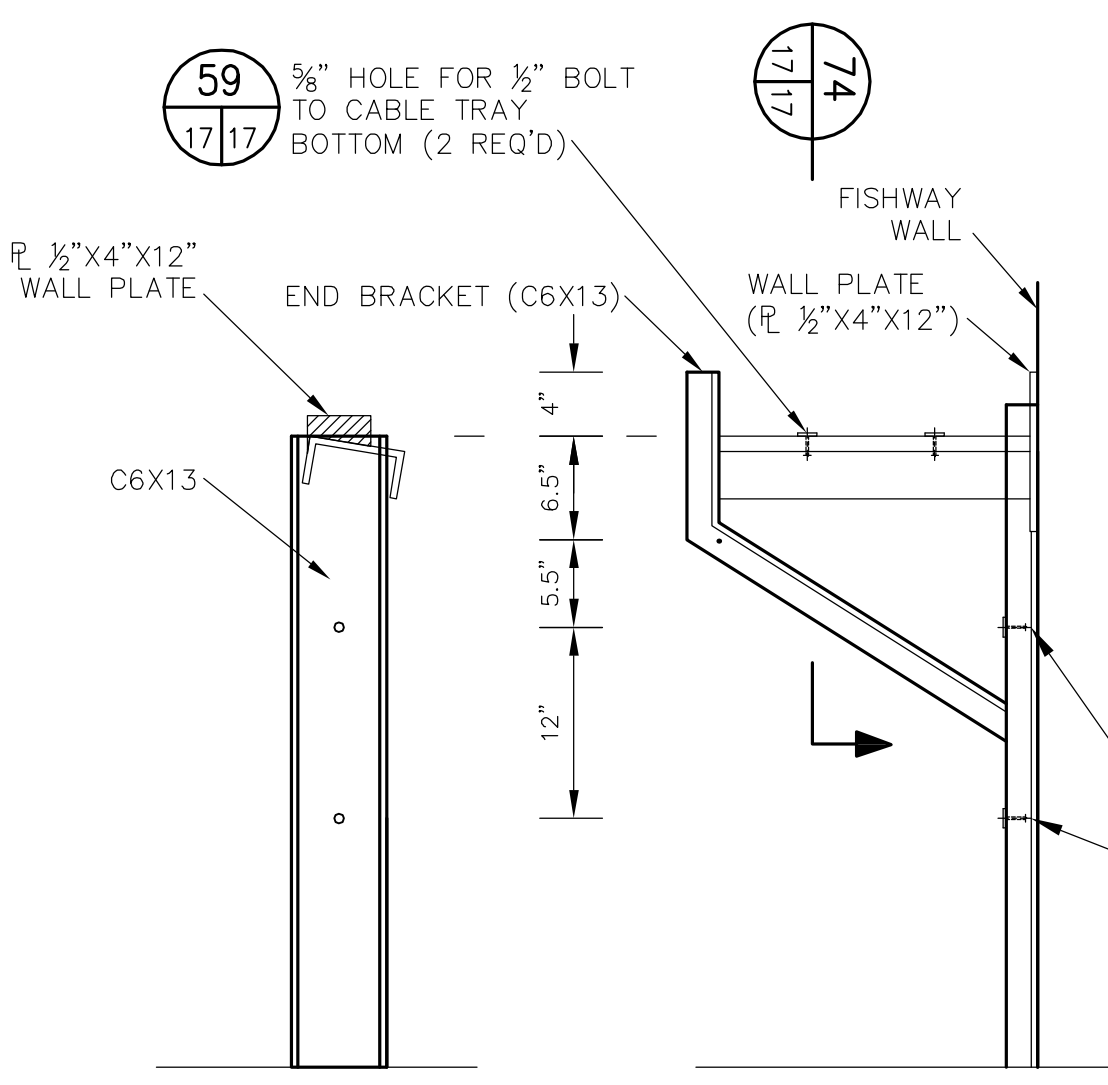
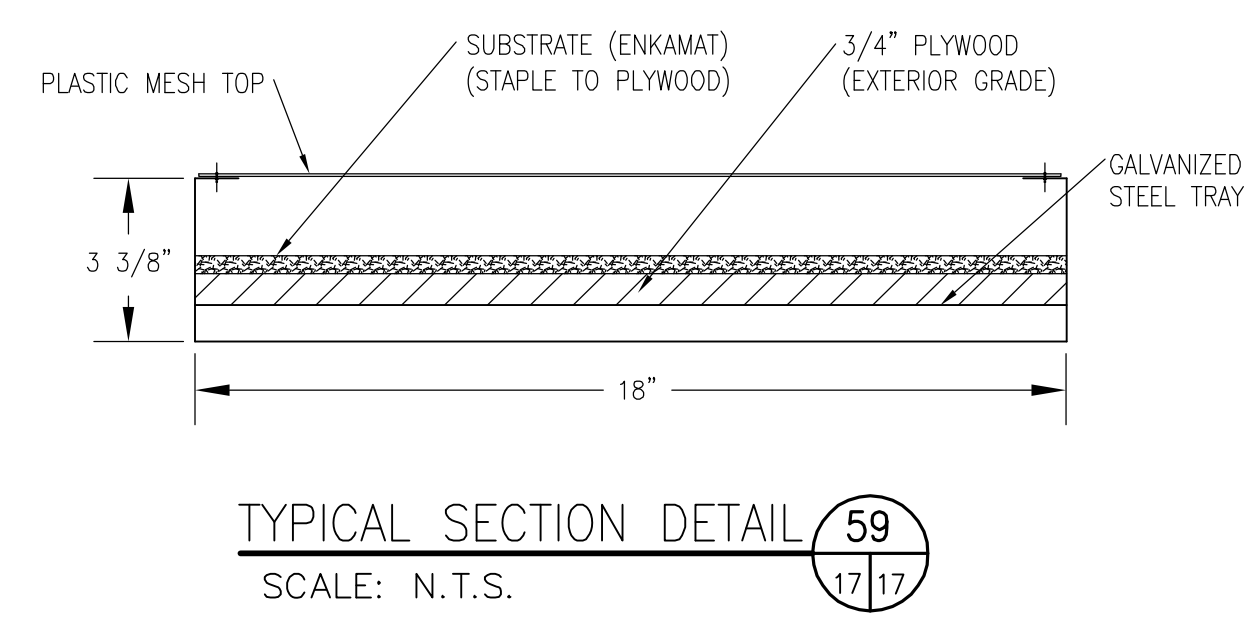
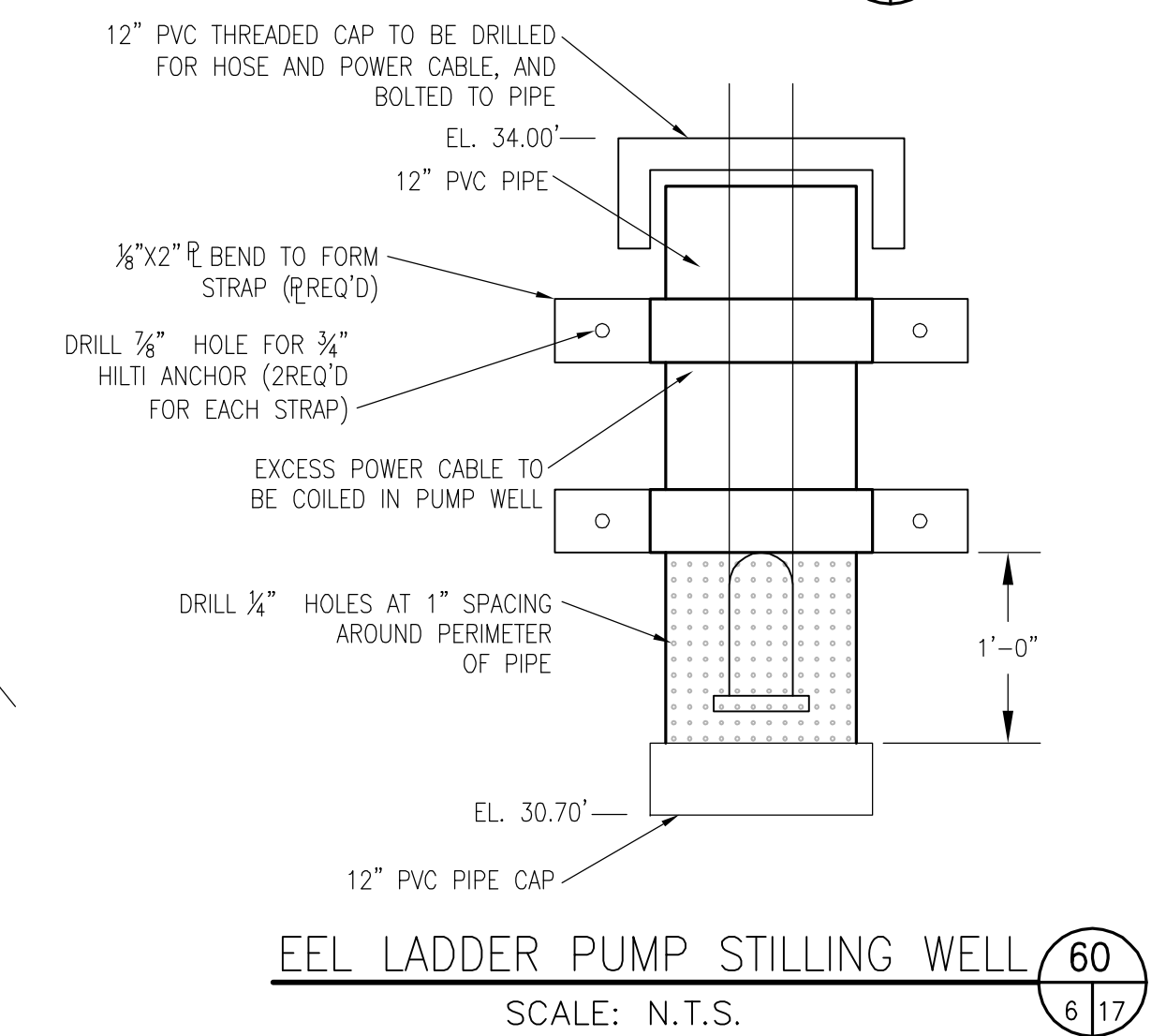
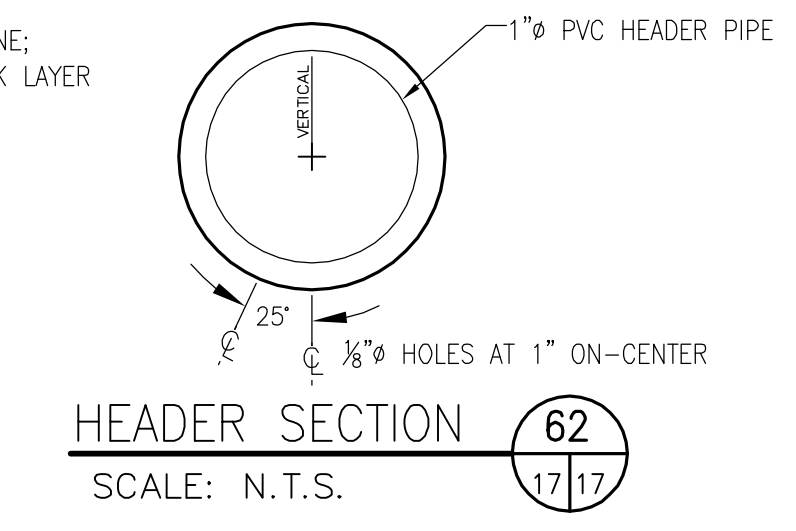
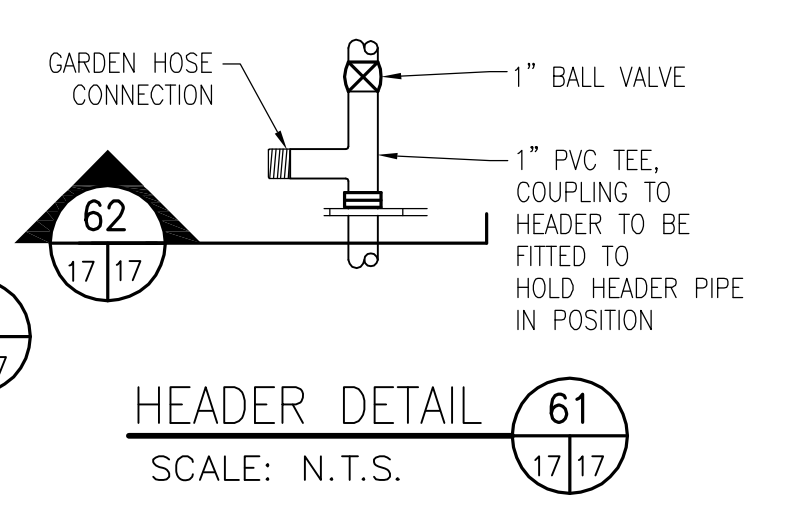
LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
 MAIN STREET FISHWAY
 PAWTUCKET, RHODE ISLAND
 FISHWAY ACCESS DETAILS

EA
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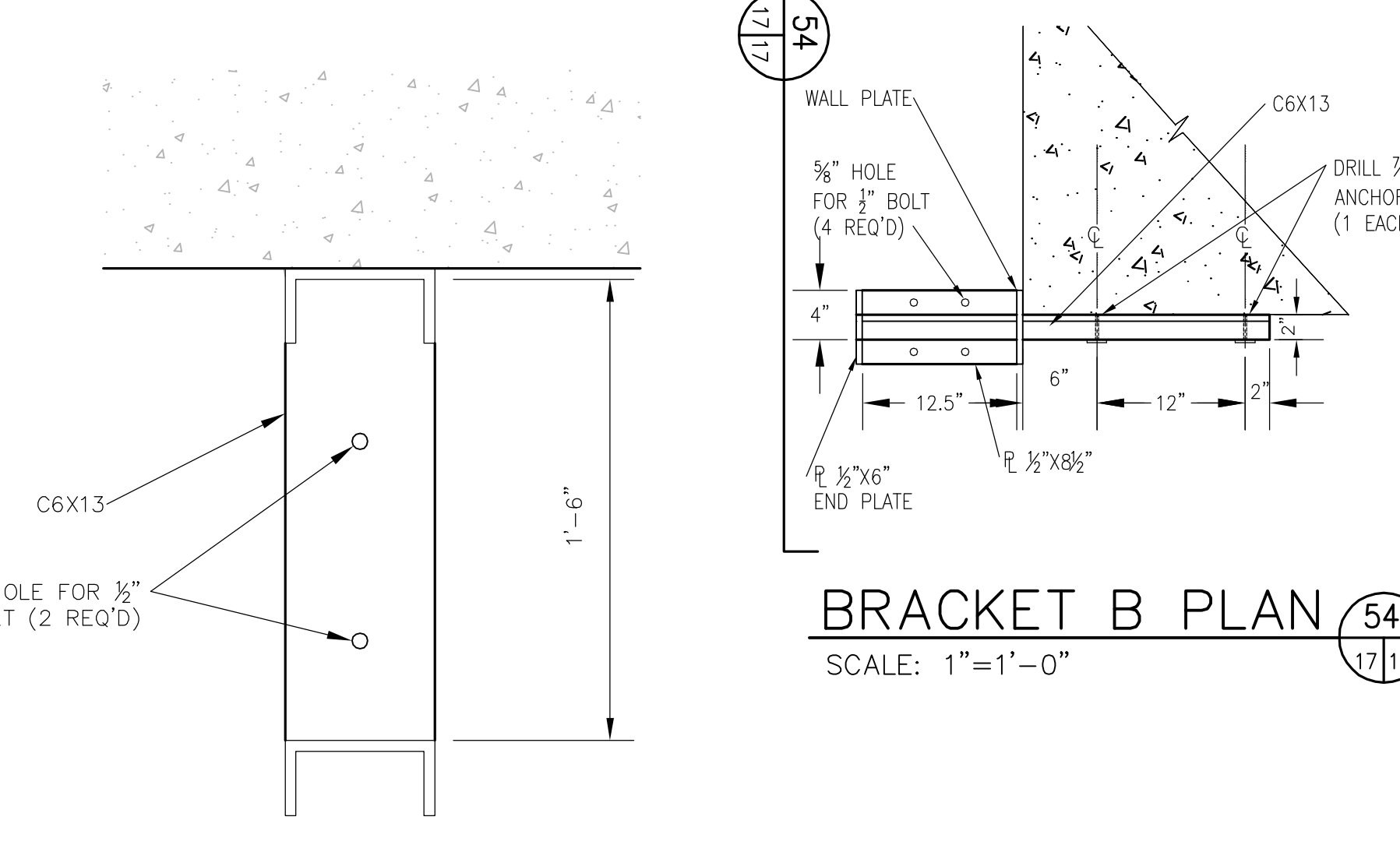
DATE: JUNE 2012
 DESIGNED BY: TCC
 DRAWN BY: DPA
 CHECKED BY: HLB
 PROJECT MANAGER: SSW
 PROJECT NUMBER: 62562.01
 SCALE: AS SHOWN
 FILE NAME: C-15-FISHWAY ACCESS DRAWING
 DRAWING NUMBER: C-15
 SHEET NUMBER: 16 OF 24



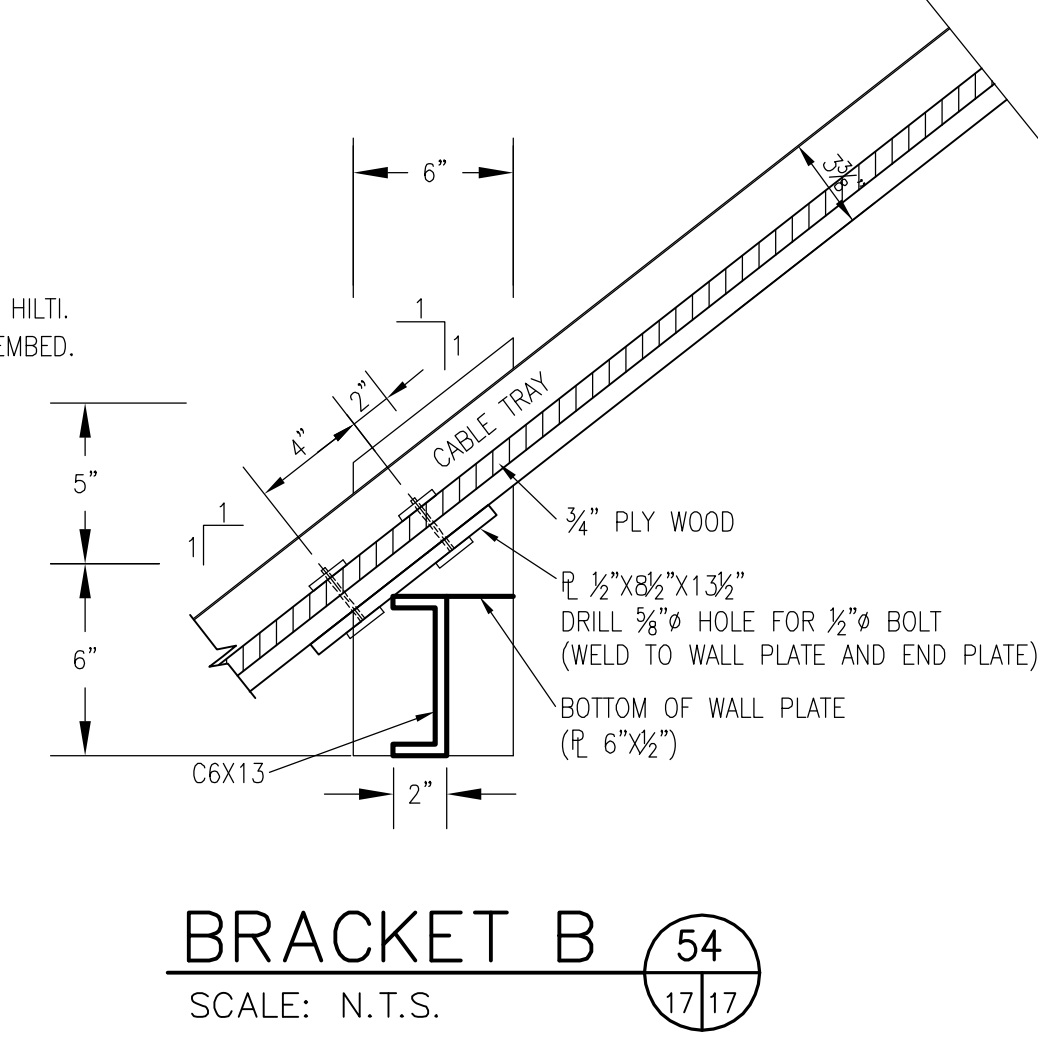
EEL LADDER PROFILE (51)
SCALE: 1"=5'-0"



BRACKET D (74) SCALE: N.T.S.
BRACKET D (58) SCALE: N.T.S.



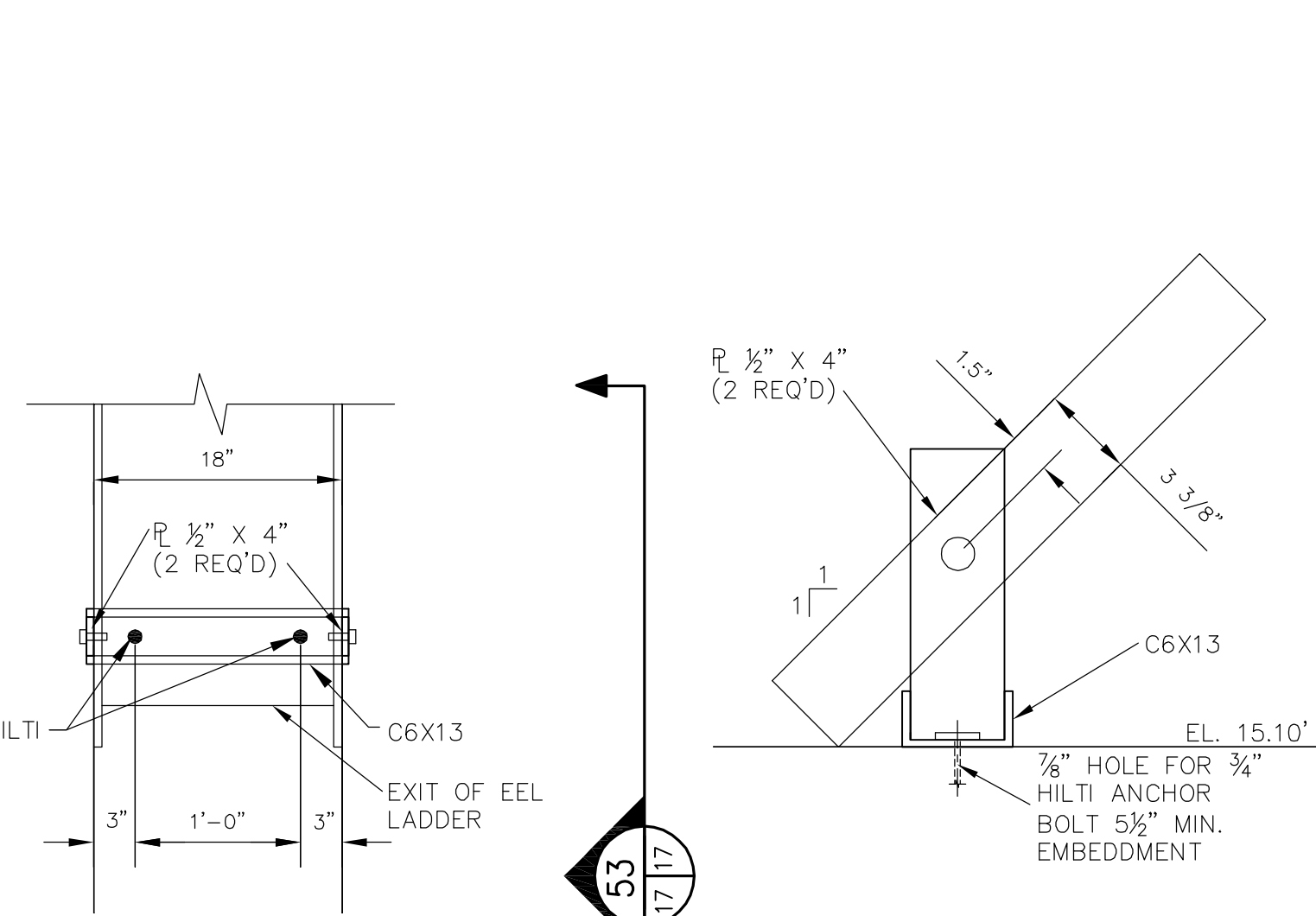
BRACKET B PLAN (54)
SCALE: 1"=1'-0"



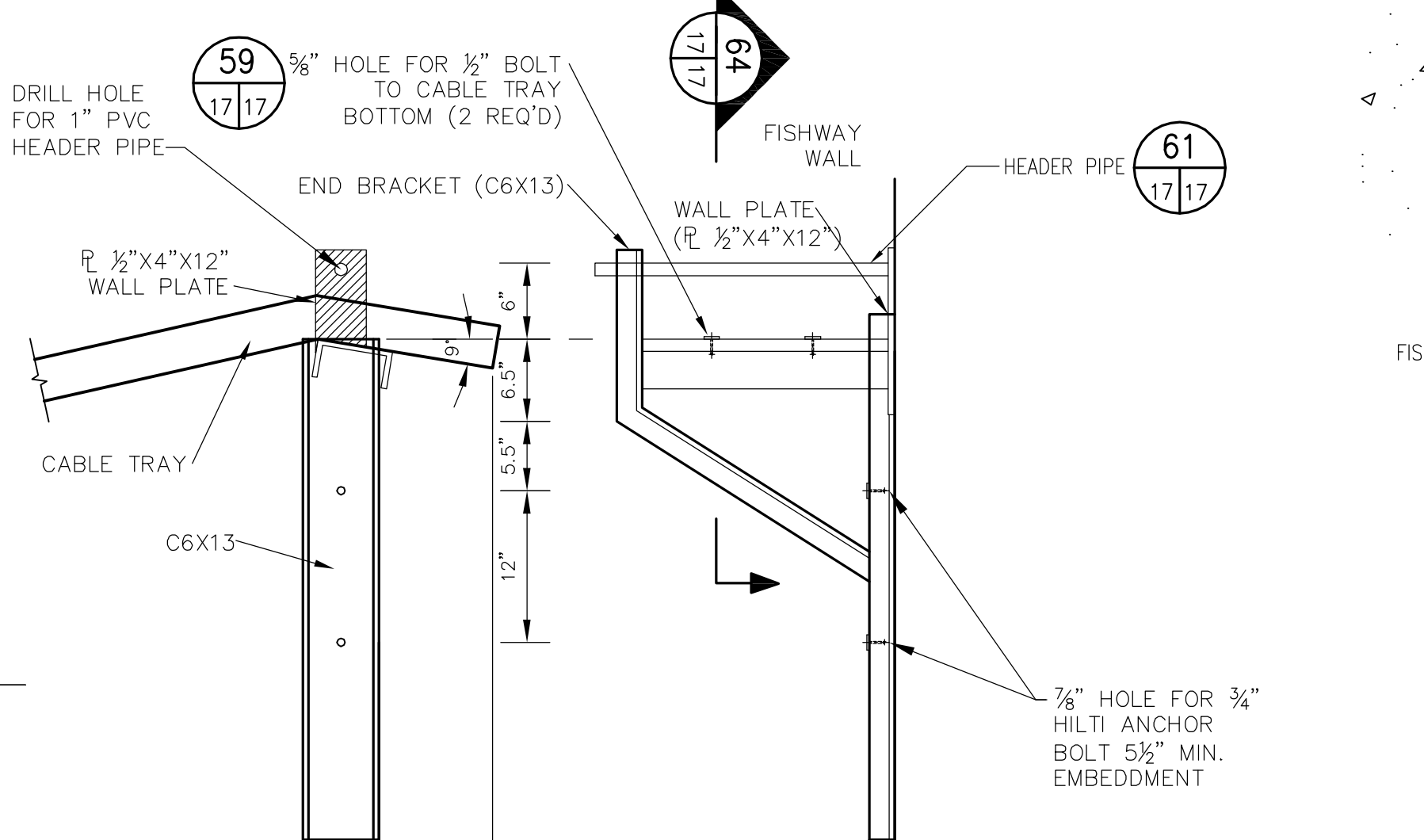
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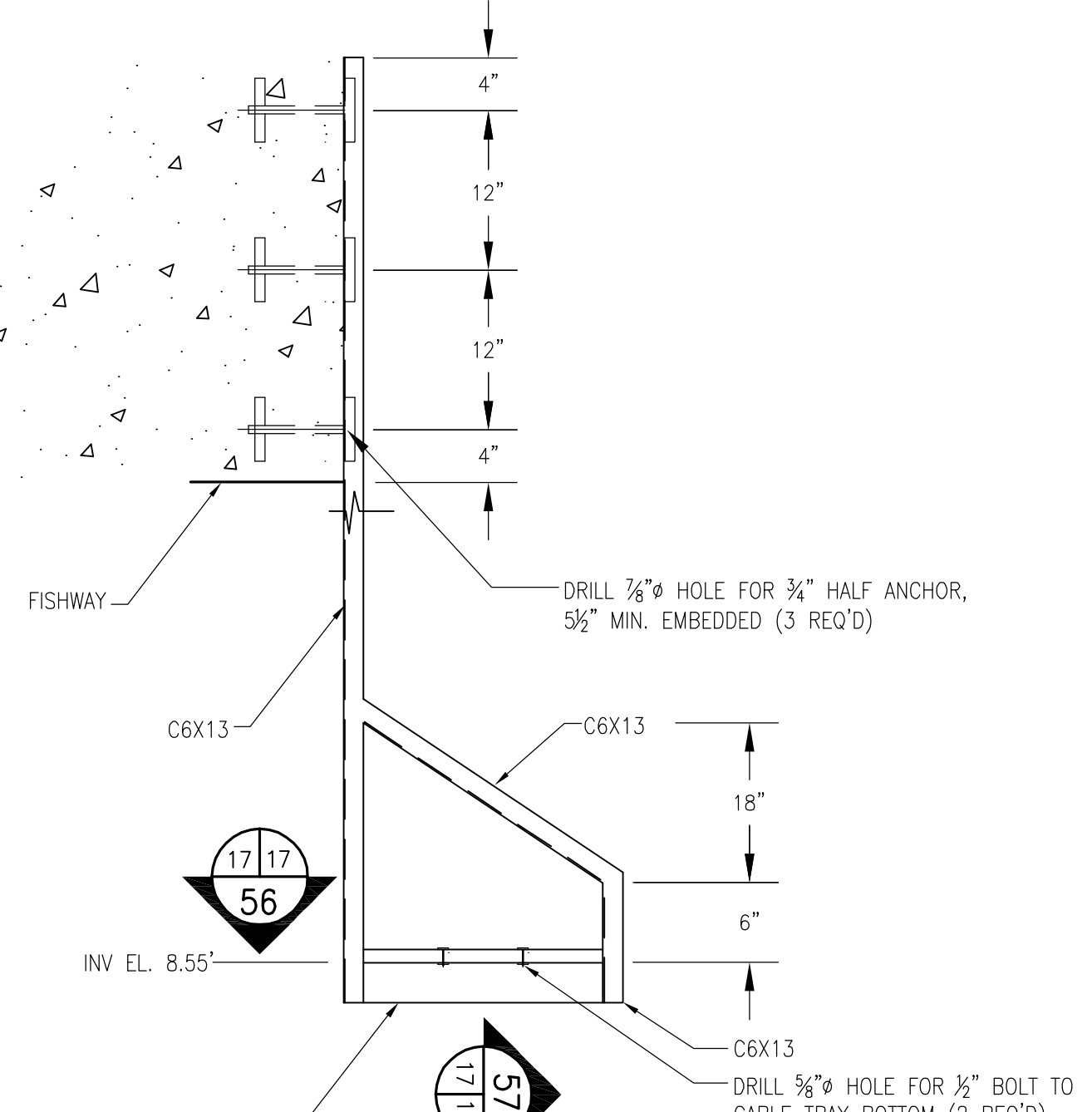
BRACKET B & E PLAN (56)
SCALE: N.T.S.



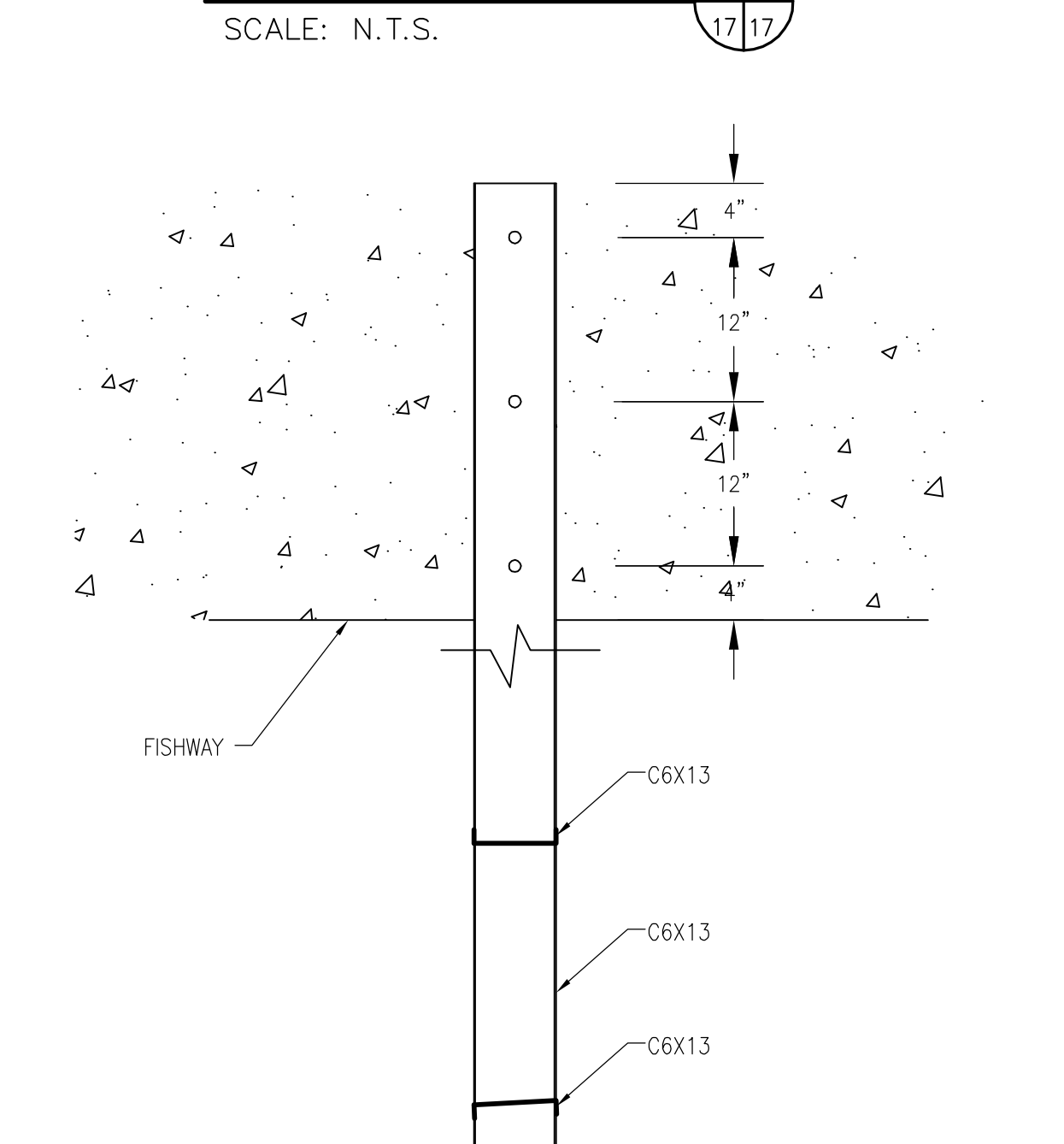
BRACKET A (52) SCALE: N.T.S.
BRACKET A (53) SCALE: N.T.S.



BRACKET E (64) SCALE: N.T.S.
BRACKET E (63) SCALE: N.T.S.



BRACKET C PLAN (55)
SCALE: 1"=1'-0"



BRACKET C (57)
SCALE: 1"=1'-0"

NO.	DATE	BY	DESCRIPTION

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THOMAS C. COOK
 No. 8819
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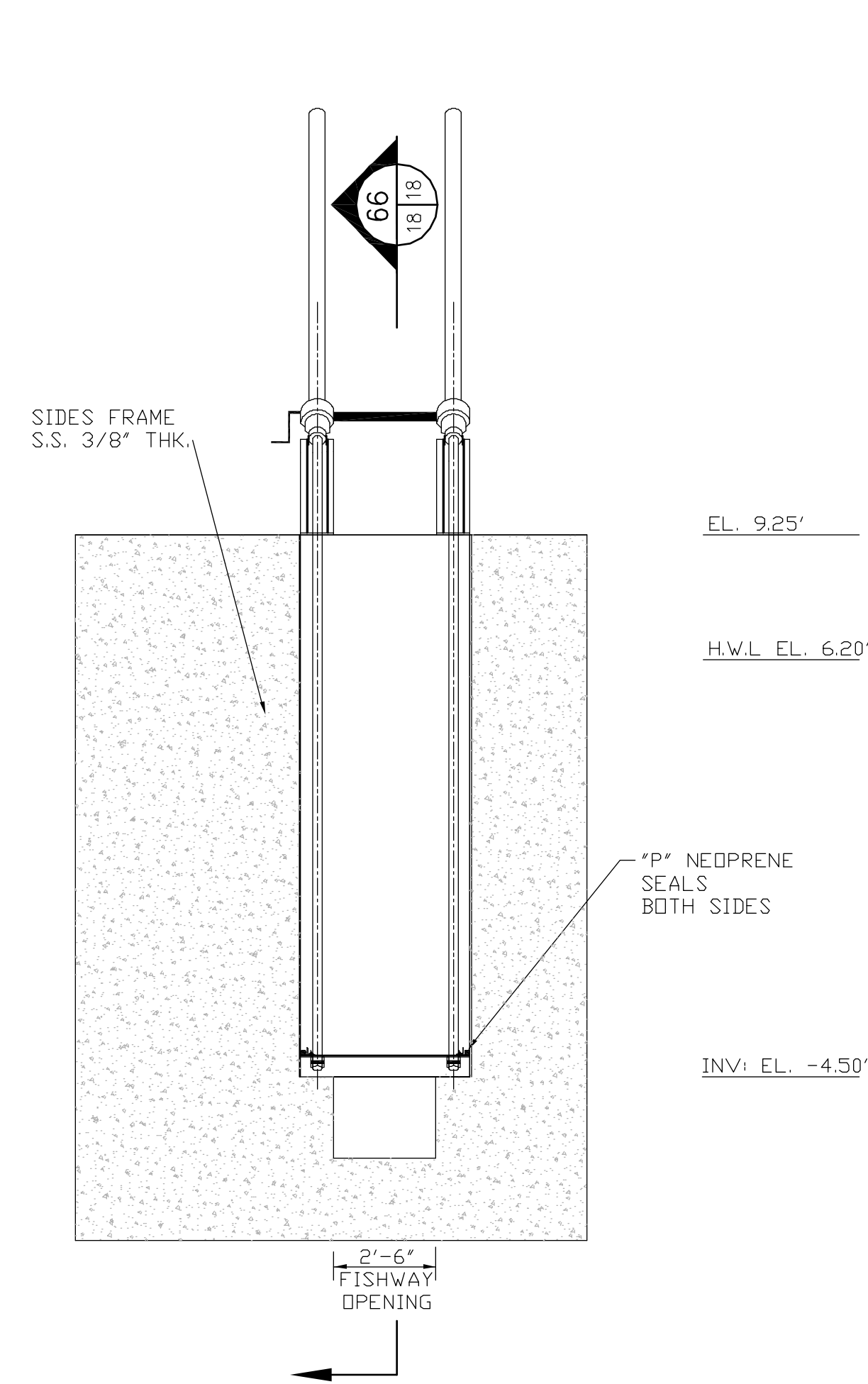
LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
 MAIN STREET FISHWAY
 PAWTUCKET, RHODE ISLAND

EEL LADDER DETAILS

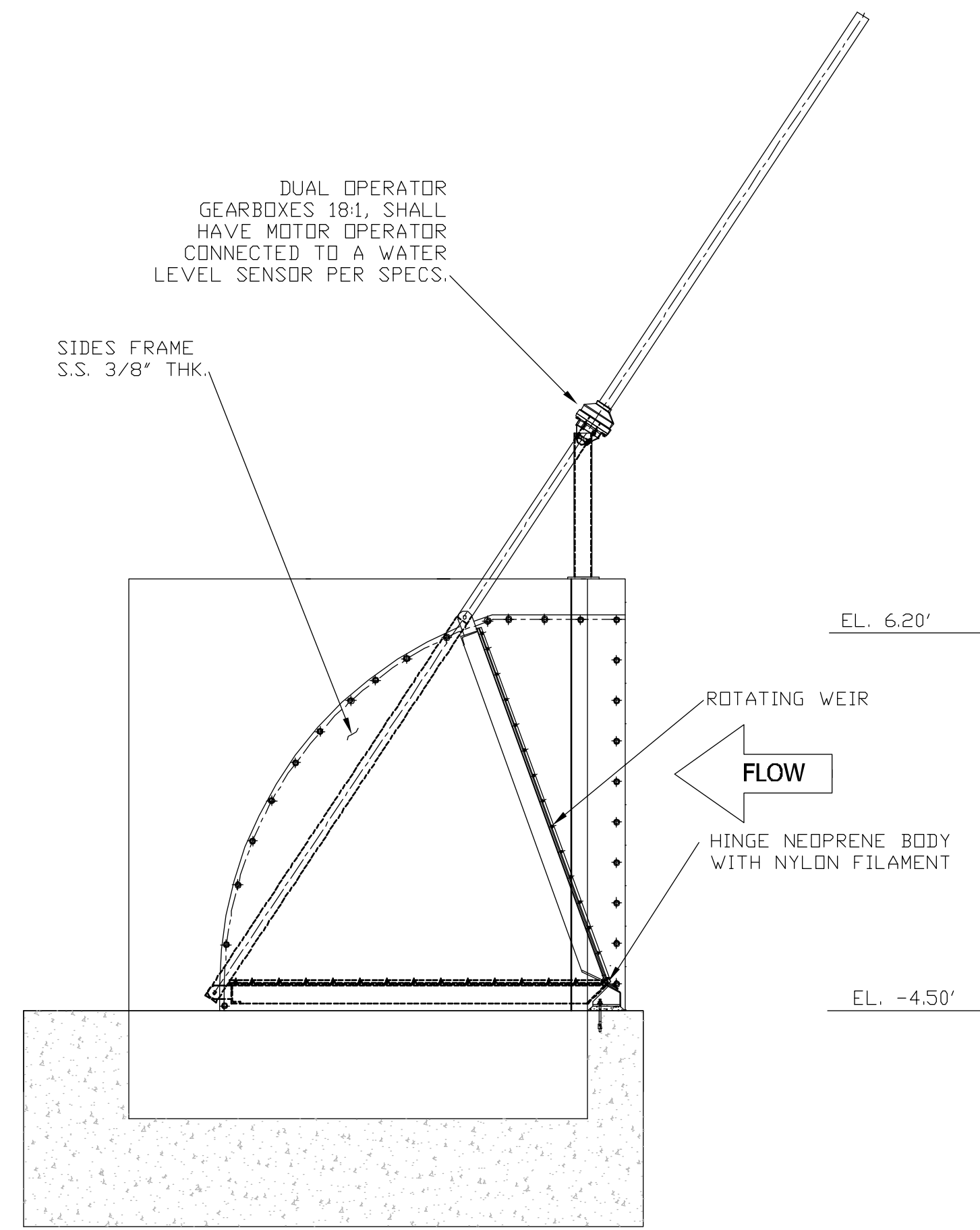
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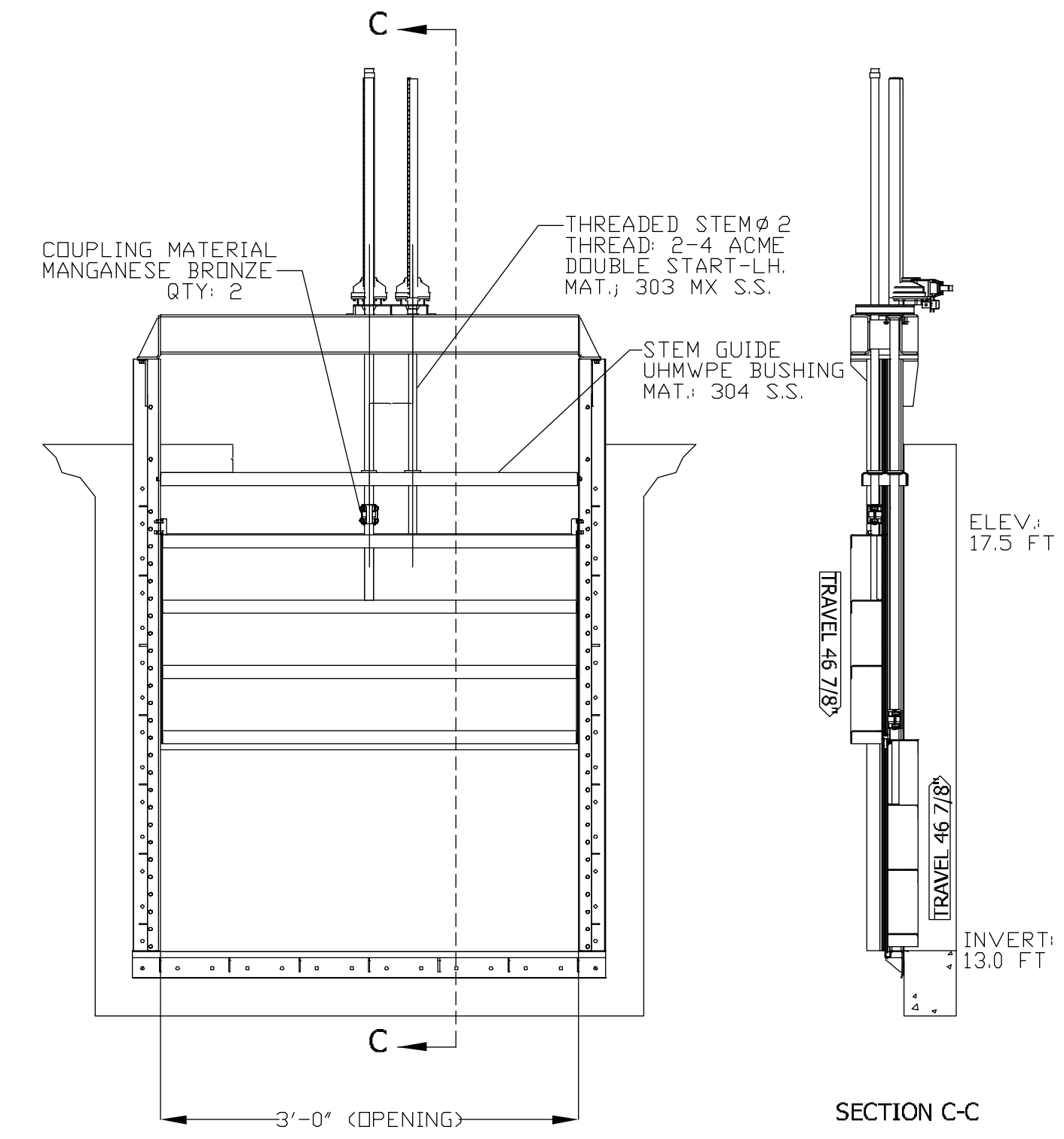
DATE: JUNE 2012
 DESIGNED BY: TCC
 DRAWN BY: DPA
 CHECKED BY: HLB
 PROJECT MANAGER: SSW
 PROJECT NUMBER: 62562.01
 SCALE: AS SHOWN
 FILE NAME: C-16-EEL LADDER DETAILS
 DRAWING NUMBER: C-16
 SHEET NUMBER: 17 OF 24



ENTRANCE GATE – ELEVATION 65
 SCALE: N.T.S.



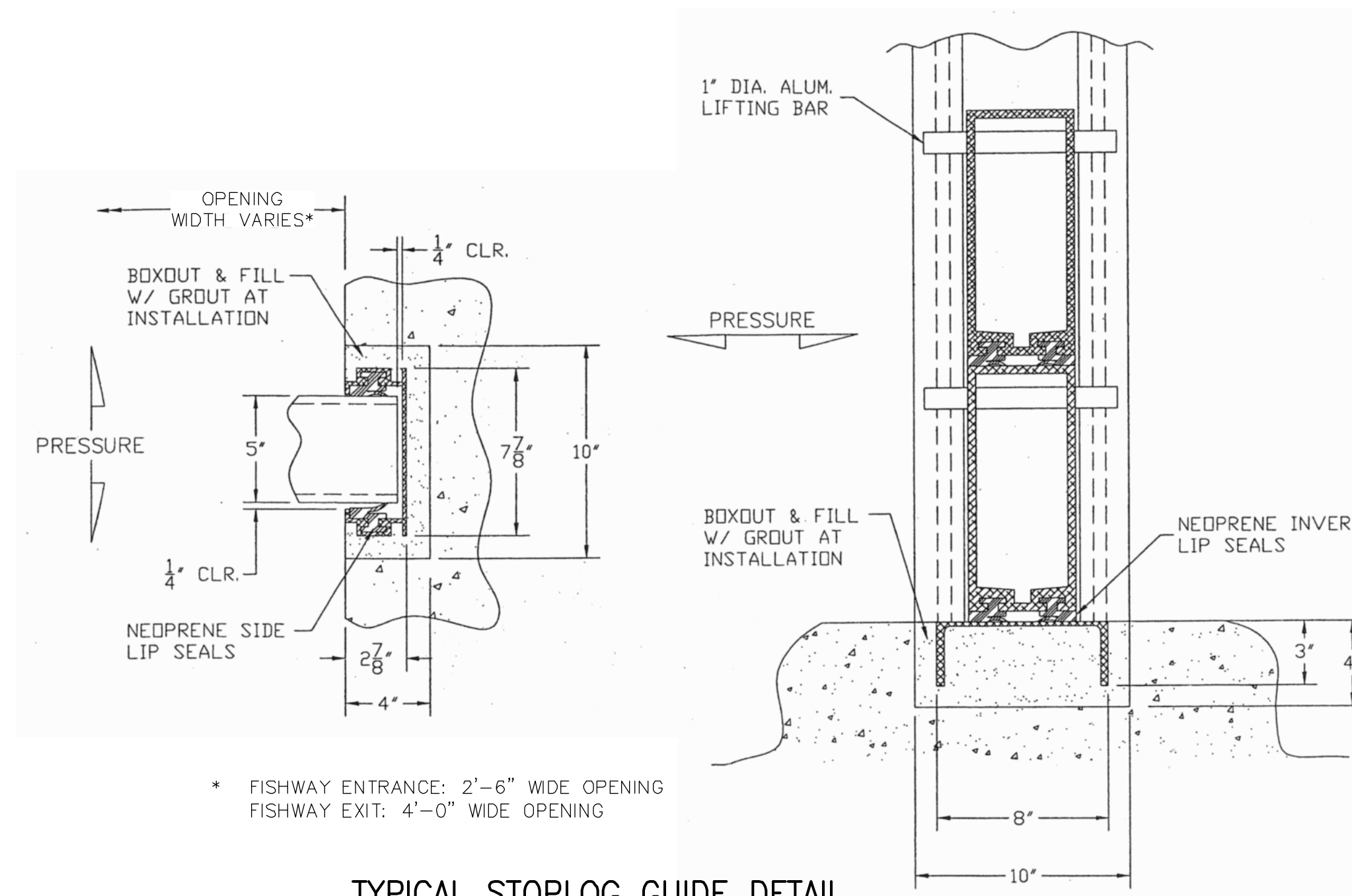
ENTRANCE GATE – SECTION 66
 SCALE: N.T.S.



DOWNSTREAM SLUICE GATE 67
 SCALE: N.T.S.

NOTES:

1. THE ENTRANCE GATE IS CONCEPTUAL PLAN FOR A TILTING WEIR GATE FROM FONTAINE. CONTRACTOR TO PROVIDE DETAILED SHOP DRAWINGS FROM FONTAINE OR APPROVED EQUAL.
2. THE DOWNSTREAM SLUICE GATE IS CONCEPTUAL PLAN FOR A DUAL LEAF GATE FROM FONTAINE. CONTRACTOR TO PROVIDE DETAILED SHOP DRAWINGS FROM FONTAINE OR APPROVED EQUAL.
3. ALL DETAILS ARE INTENDED FOR CONCEPTUAL USE AND THEREFORE SHALL NOT BE USED FOR CONSTRUCTION.
4. THE LOCATION OF THE PEDESTALS AND MOTOR OPERATOR FOR THE TILTING GATE SHALL BE PER MANUFACTURER RECOMMENDATION AND APPROVED BY THE ENGINEER.
5. ALL VISIBLE GATE COMPONENTS ABOVE WATER TO HAVE BLACK EPOXY COATING TO MAXIMUM EXTENT POSSIBLE.



TYPICAL STOPLOG GUIDE DETAIL
 SCALE: N.T.S.

NO.	DATE	BY	DESCRIPTION

SEAL

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

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
 MAIN STREET FISHWAY
 PAWTUCKET, RHODE ISLAND

FISHWAY ENTRANCE WEIR AND DOWNSTREAM FISH BYPASS SLUICE GATE

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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

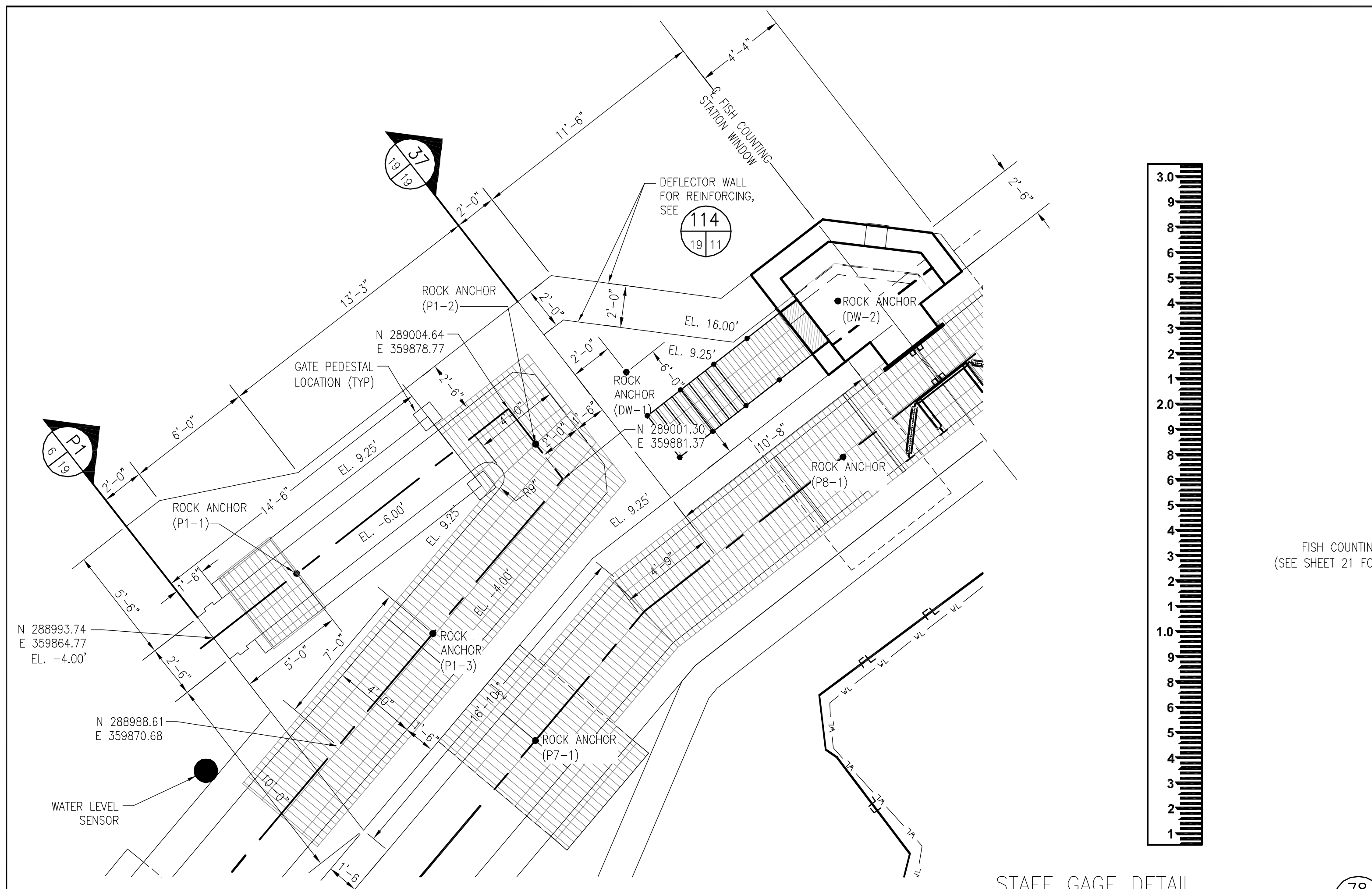
PROJECT NUMBER: 62562.01

SCALE: AS SHOWN

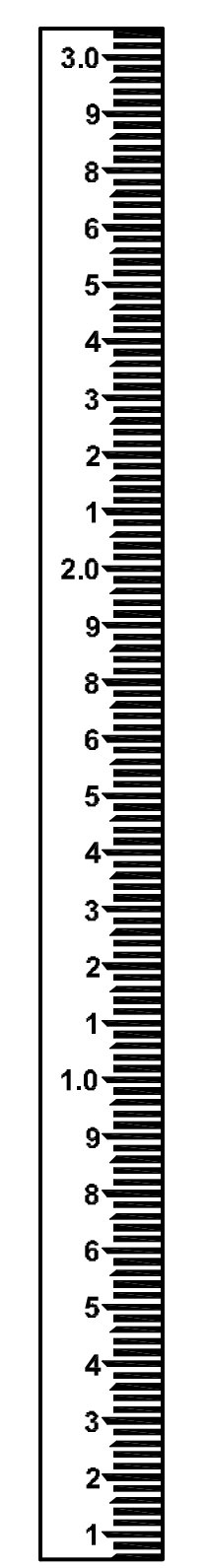
FILE NAME: C-17-FISHWAY ENTRANCE WEIR

DRAWING NUMBER: C-17

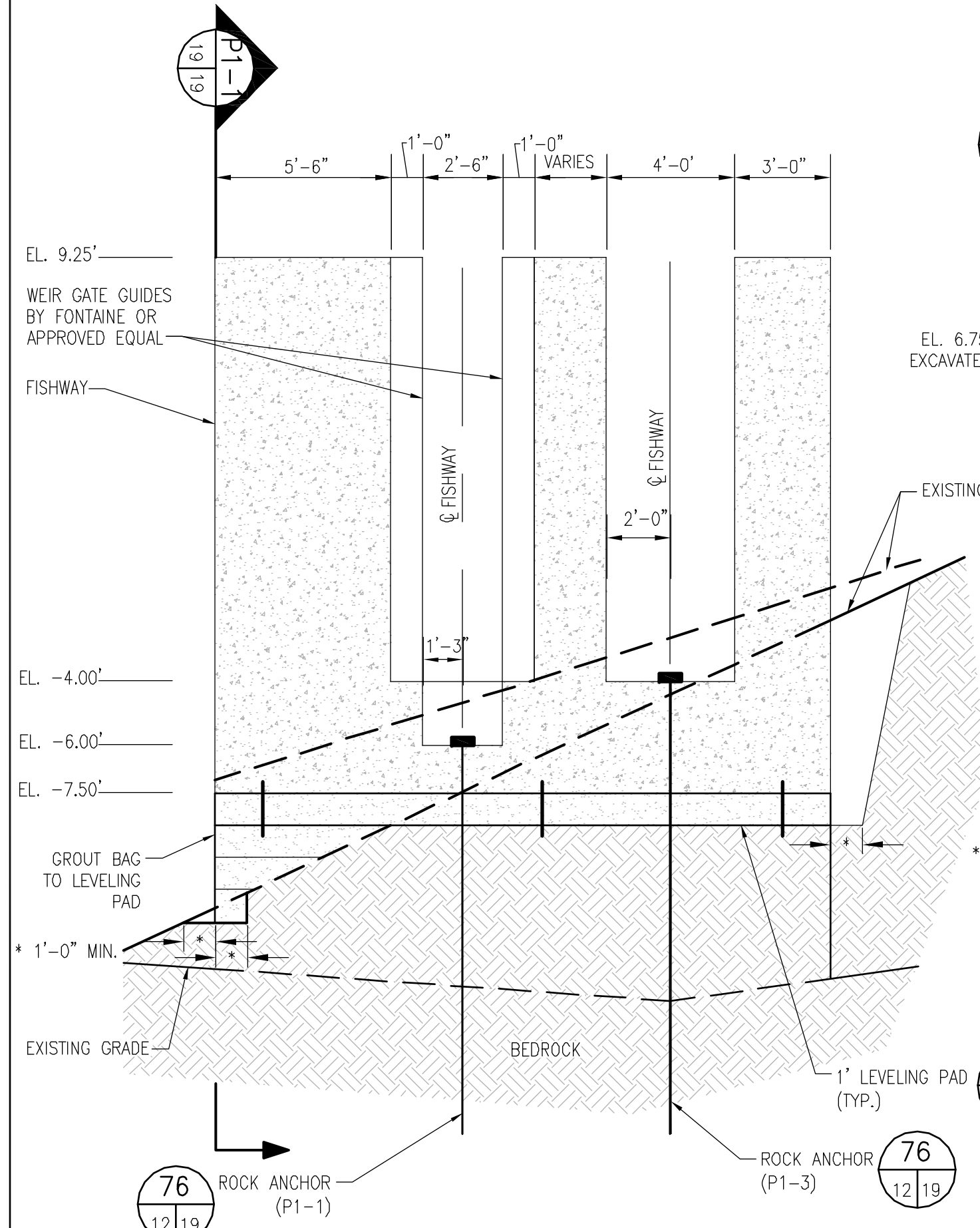
SHEET NUMBER: 18 OF 24



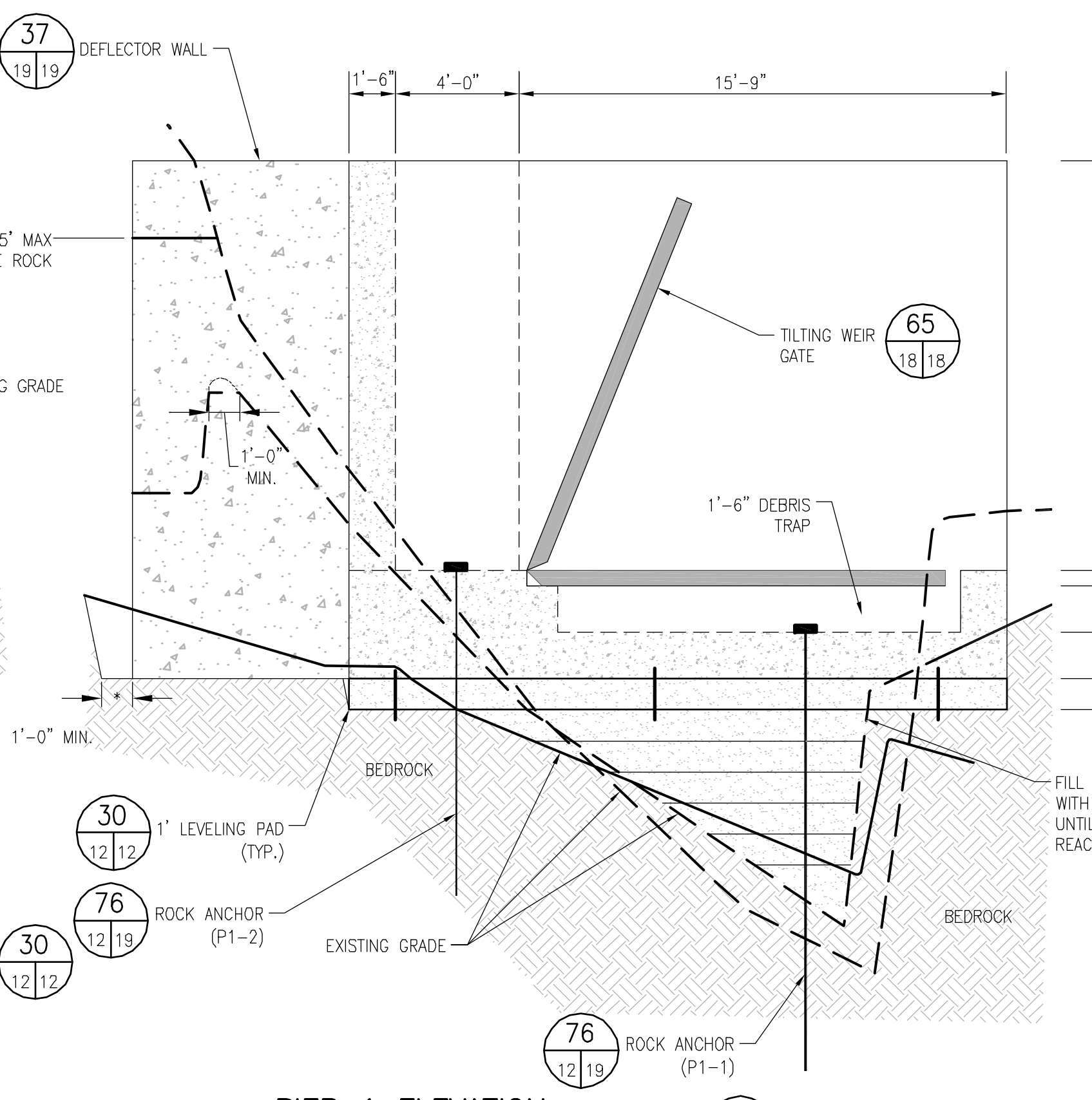
FISHWAY ENTRANCE PLAN (116)
SCALE: 1/4" = 1'-0"



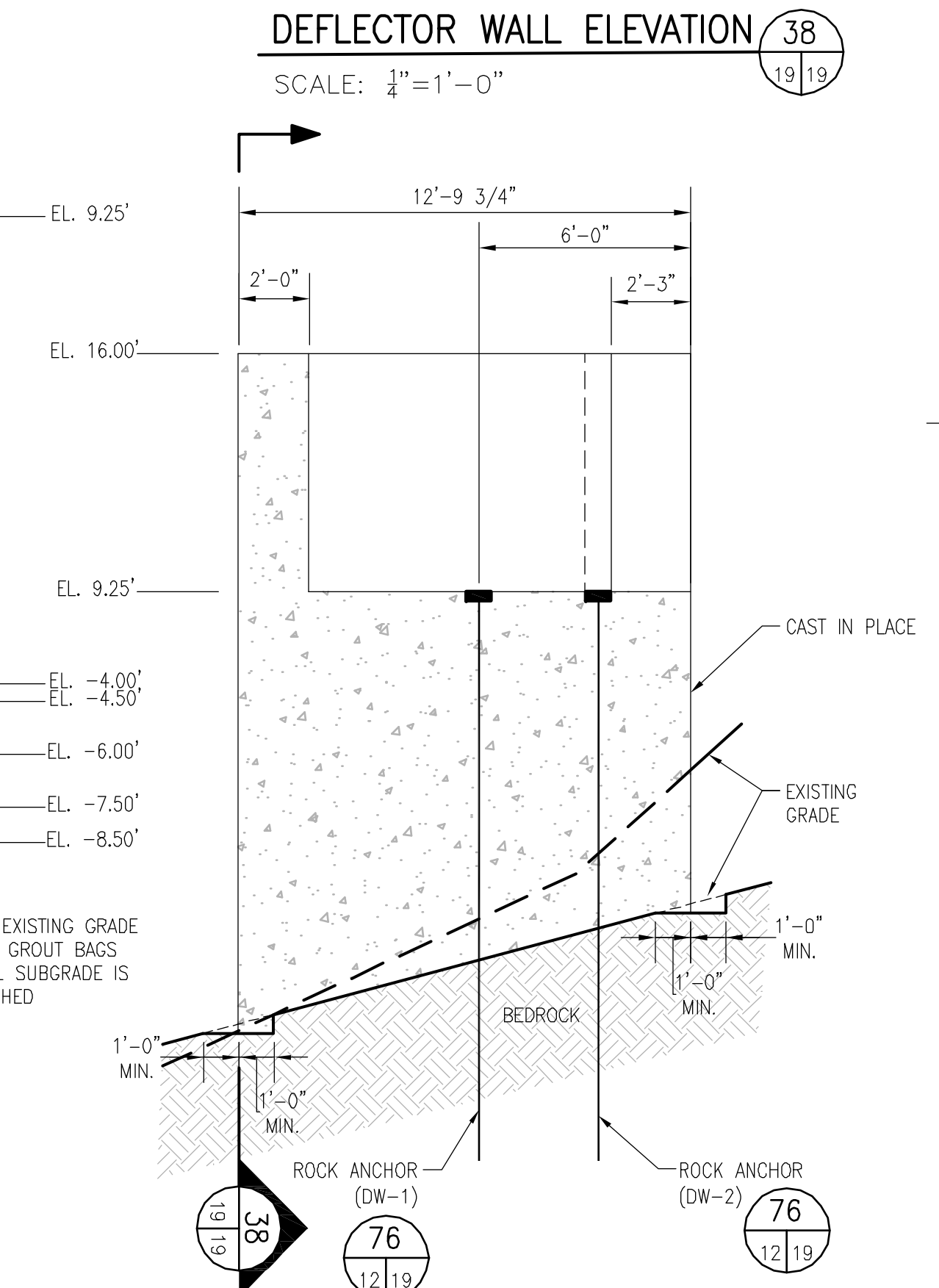
STAFF GAGE DETAIL (78)
SCALE: N.T.S.
NOTE: REFERENCE ELEVATIONS
FISHWAY ENTRANCE EL. -4.0 FT = 0.0 FT (3 REQUIRED)
FISHWAY EXIT EL. 15.06 FT = 0.0 FT (1 REQUIRED)
TURNING POOL EL. 5.69 FT = 0.0 FT (1 REQUIRED)



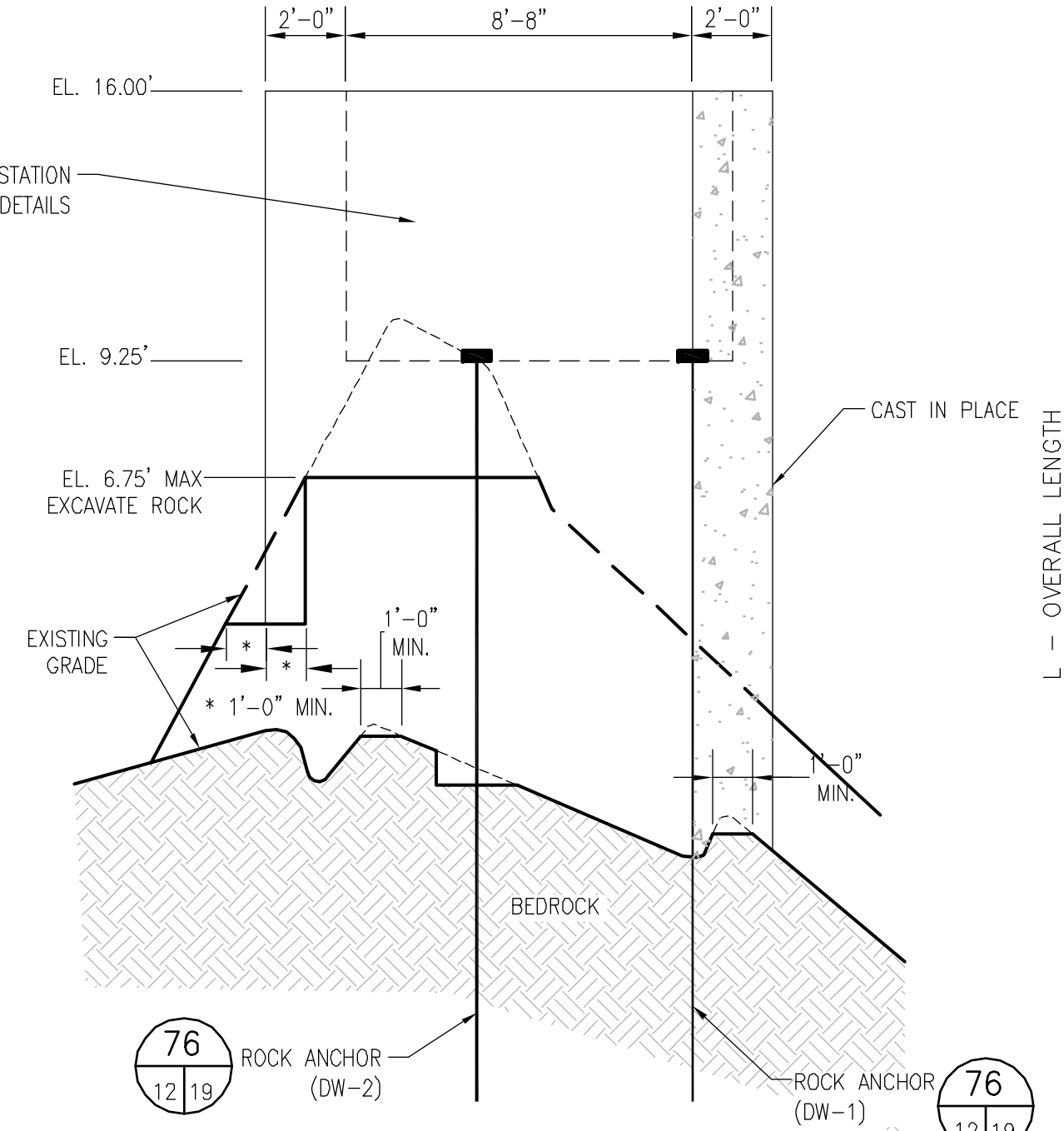
PIER 1 ELEVATION (P1)
SCALE: 1/4" = 1'-0"



PIER 1 ELEVATION (P1-1)
SCALE: 1/4" = 1'-0"

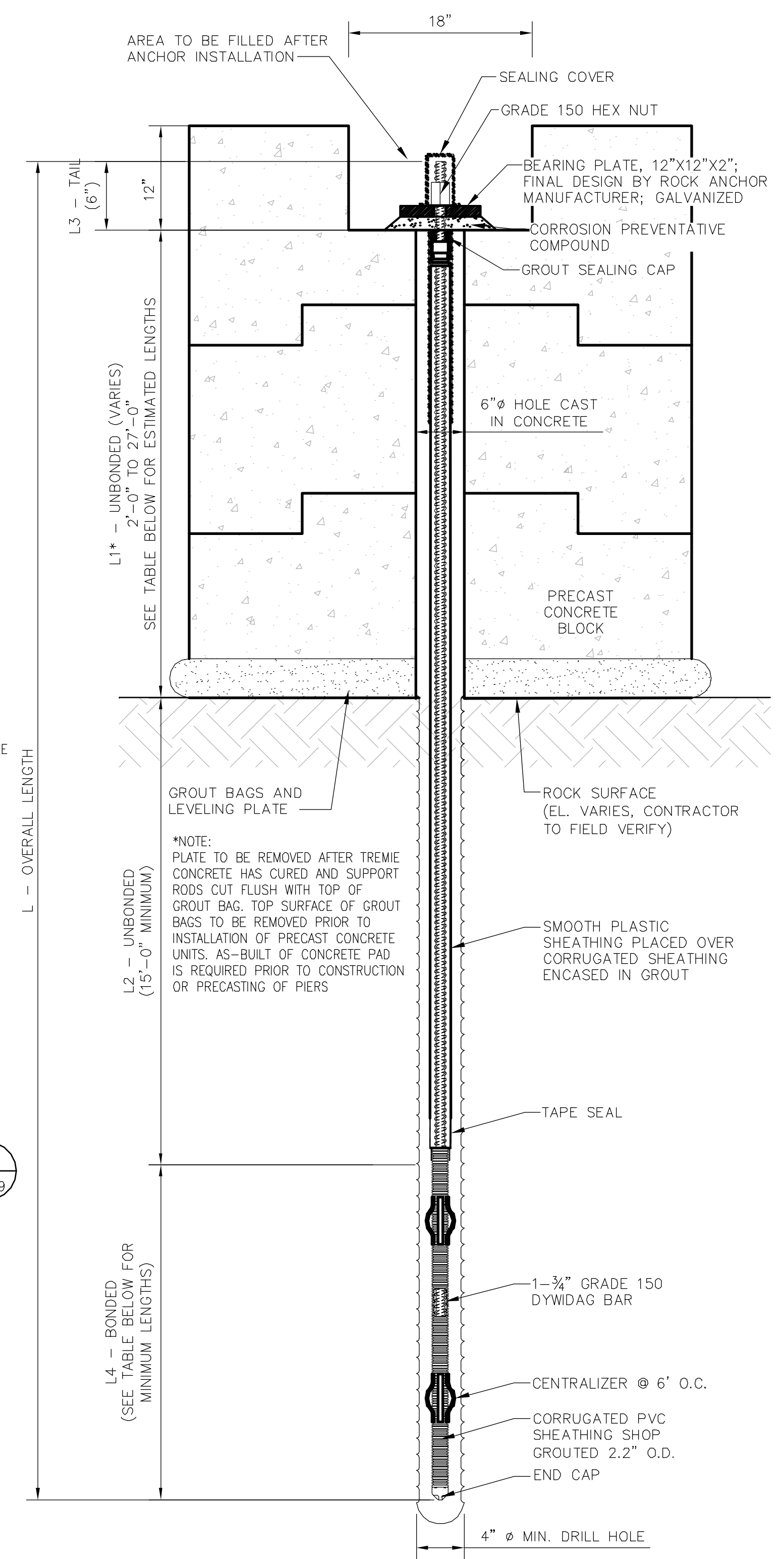
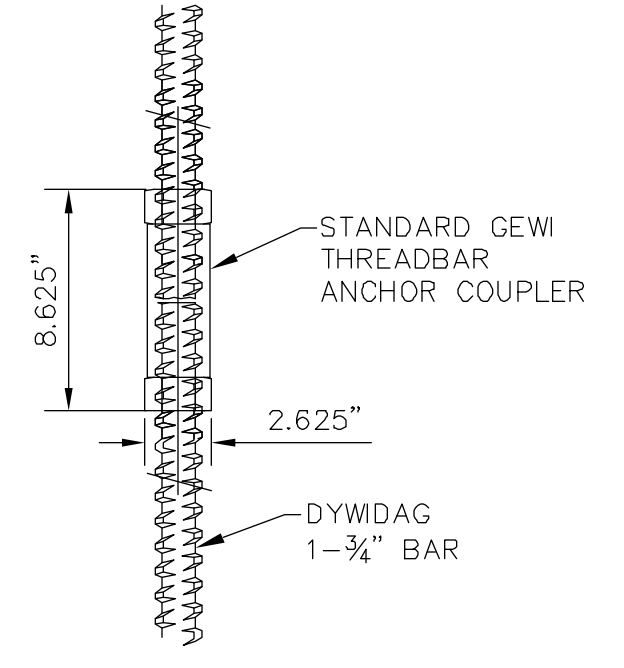


DEFLECTOR WALL ELEVATION (37)
SCALE: 1/4" = 1'-0"



DEFLECTOR WALL ELEVATION (38)
SCALE: 1/4" = 1'-0"

TYPICAL SPLICE DETAIL
SCALE: N.T.S.

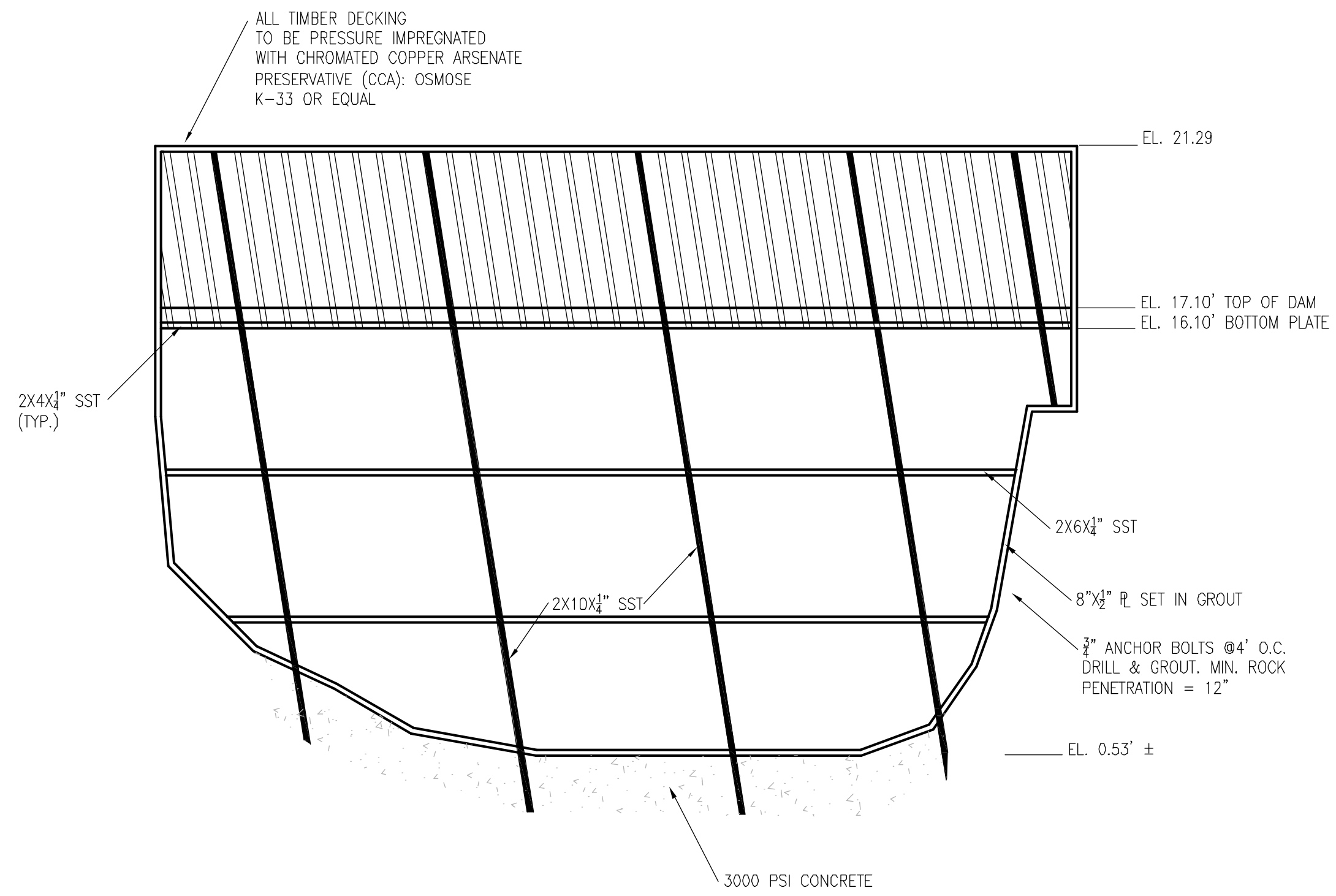


ROCK ANCHOR DETAIL (76)
SCALE: N.T.S. *CONTRACTOR TO FIELD VERIFY ROCK ELEVATION TO VERIFY L1 DIMENSION.

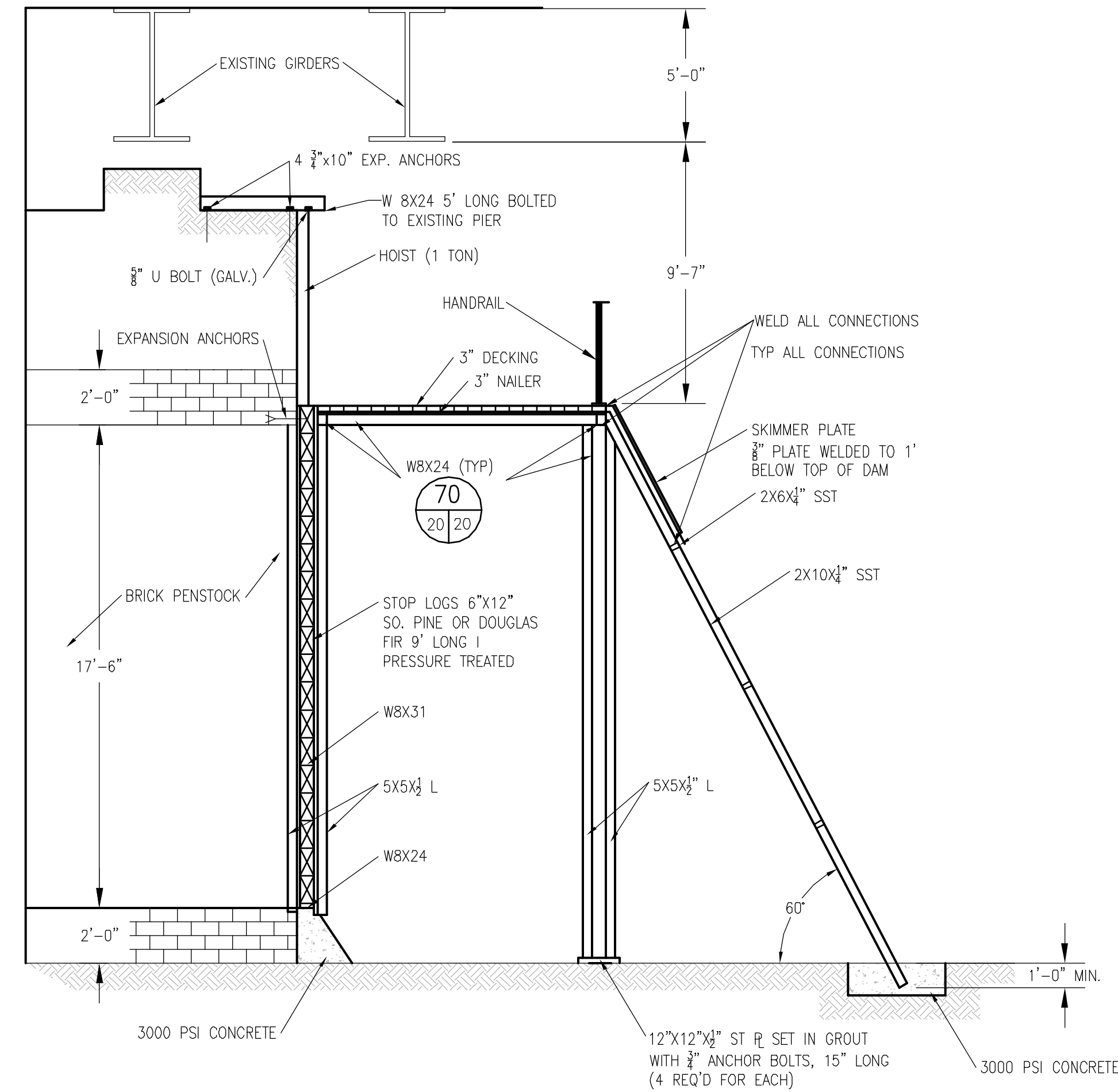
LOCATION	ANCHOR	DESIGN LOAD	L1*	L4	APPROX. L
PIER 1	P1-1	150 KIPS	2' 25"	43'	
	P1-2	150 KIPS	4' 25"	45'	
	P1-3	150 KIPS	4' 25"	45'	
PIER 2	P2-1	150 KIPS	2' 25"	43'	
	P2-2	150 KIPS	9' 25"	50'	
PIER 3	P3-1	150 KIPS	12' 25"	53'	
	P3-2	150 KIPS	16' 25"	56'	
PIER 4	P4-1	150 KIPS	15' 25"	56'	
	P4-2	150 KIPS	15' 25"	56'	
PIER 5	P5-1	150 KIPS	10' 25"	50'	
	P5-2	150 KIPS	11' 25"	51'	
PIER 6	P6-1	60 KIPS	9' 10"	34'	
	P6-2	60 KIPS	9' 10"	34'	
	P6-3	60 KIPS	6' 10"	31'	
	P6-4	60 KIPS	6' 10"	31'	
PIER 7	P7-1	150 KIPS	27' 25"	67'	
PIER 8	P8-1	150 KIPS	5' 25"	45'	
PIER 9	P9-1	150 KIPS	17' 25"	58'	
DEFLECTOR WALL	DW-1	150 KIPS	10' 25"	41'	
DEFLECTOR WALL	DW-2	150 KIPS	10' 25"	41'	
FISHWAY EXIT	FE-1	150 KIPS	2' 25"	43'	

ISSUED FOR CONSTRUCTION BIDS

SEAL	THOMAS C. COOK No. 8819 REGISTERED PROFESSIONAL ENGINEER CIVIL 7/20/12
REVISIONS	DESCRIPTION
NO.	DATE
BY	
LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT MAIN STREET FISHWAY PAWTUCKET, RHODE ISLAND	
FISHWAY ENTRANCE CONCRETE AND MISC. 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-17-FISHWAY ENTRANCE LFAF GATE
DRAWING NUMBER	C-18
SHEET NUMBER	19 OF 24

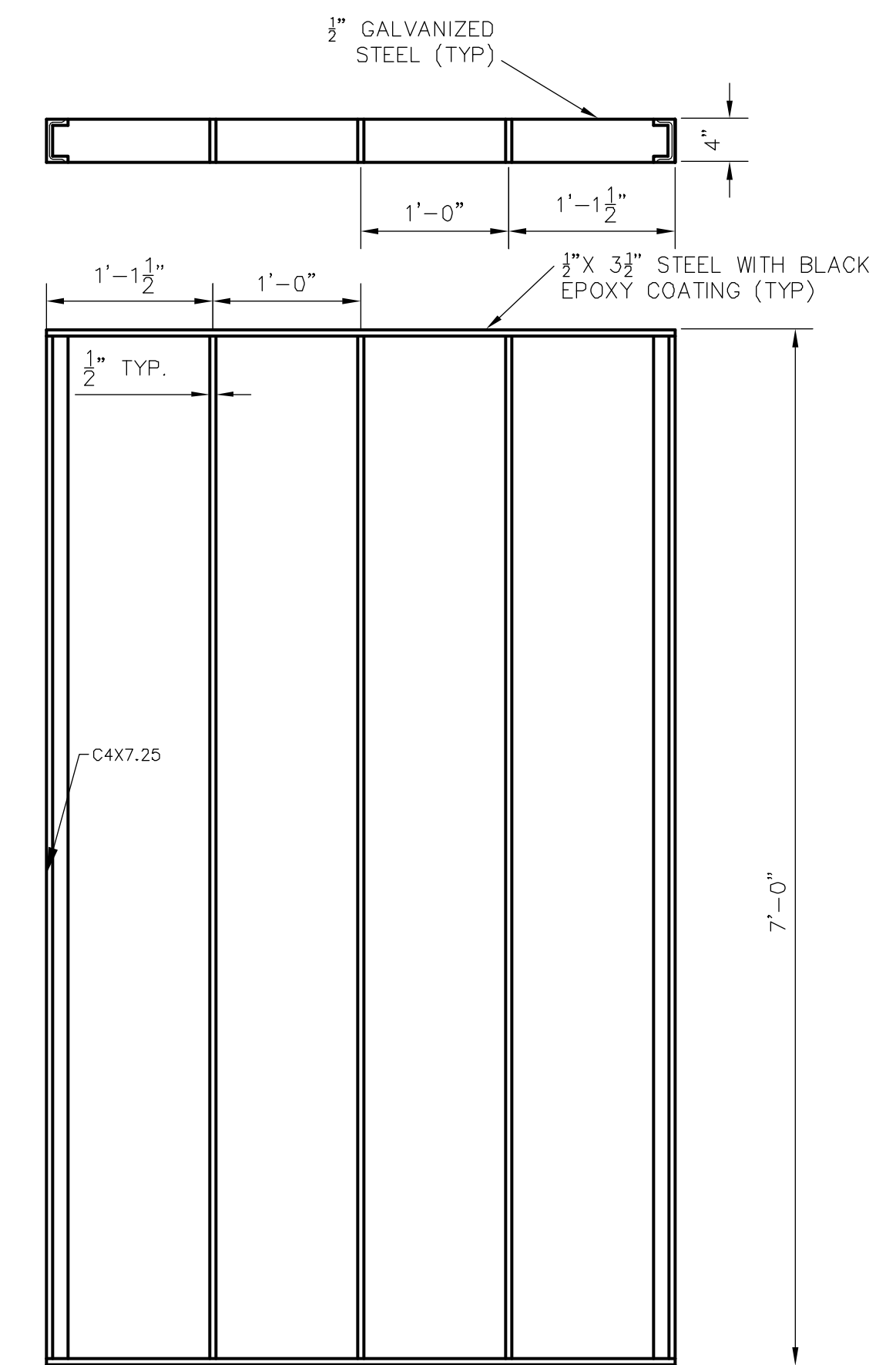


TIMBER DECK FRONT ELEVATION (72)
SCALE: 1/4" = 1'-0"

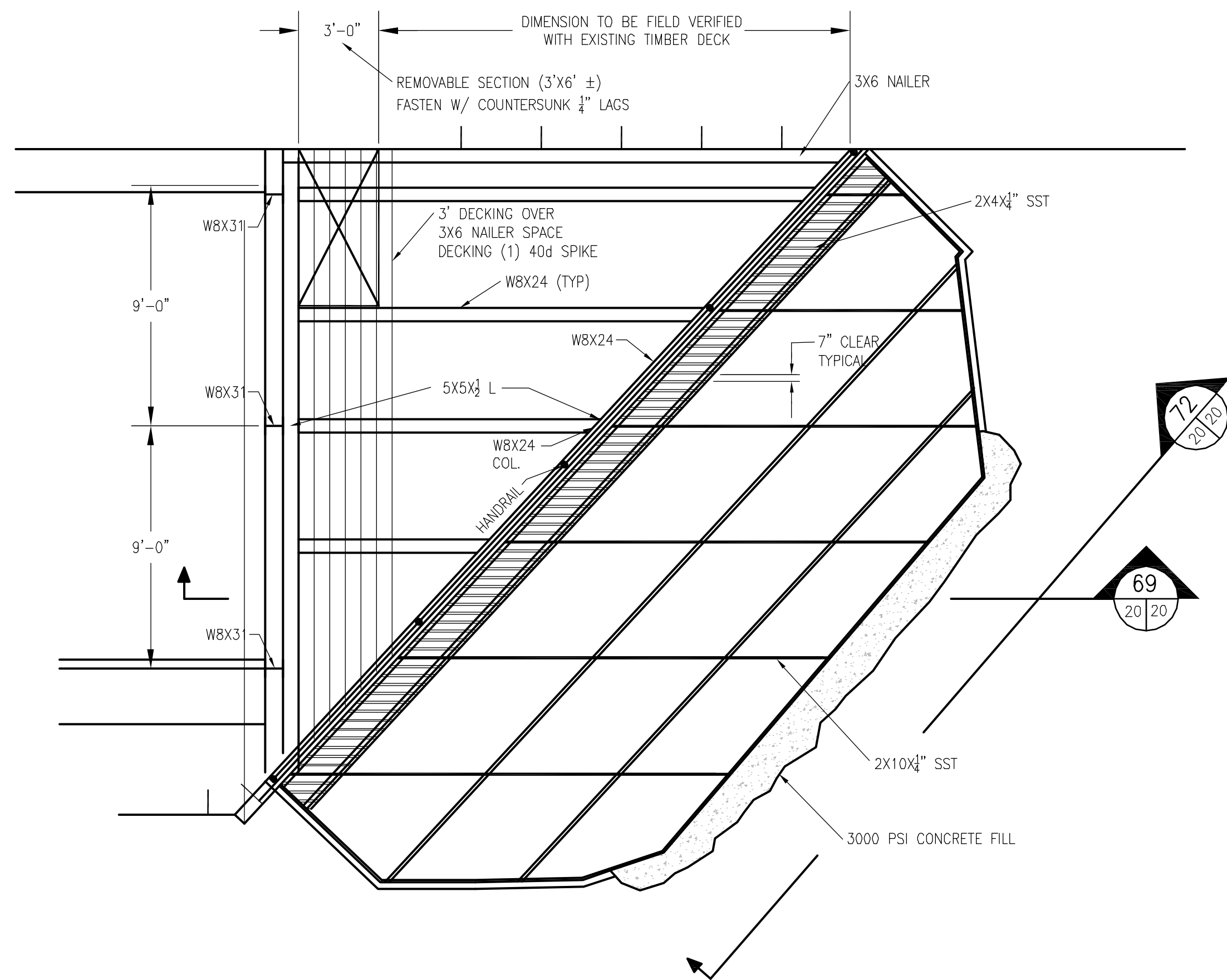


TIMBER DECK ELEVATION (69)
SCALE: 1/4" = 1'-0"

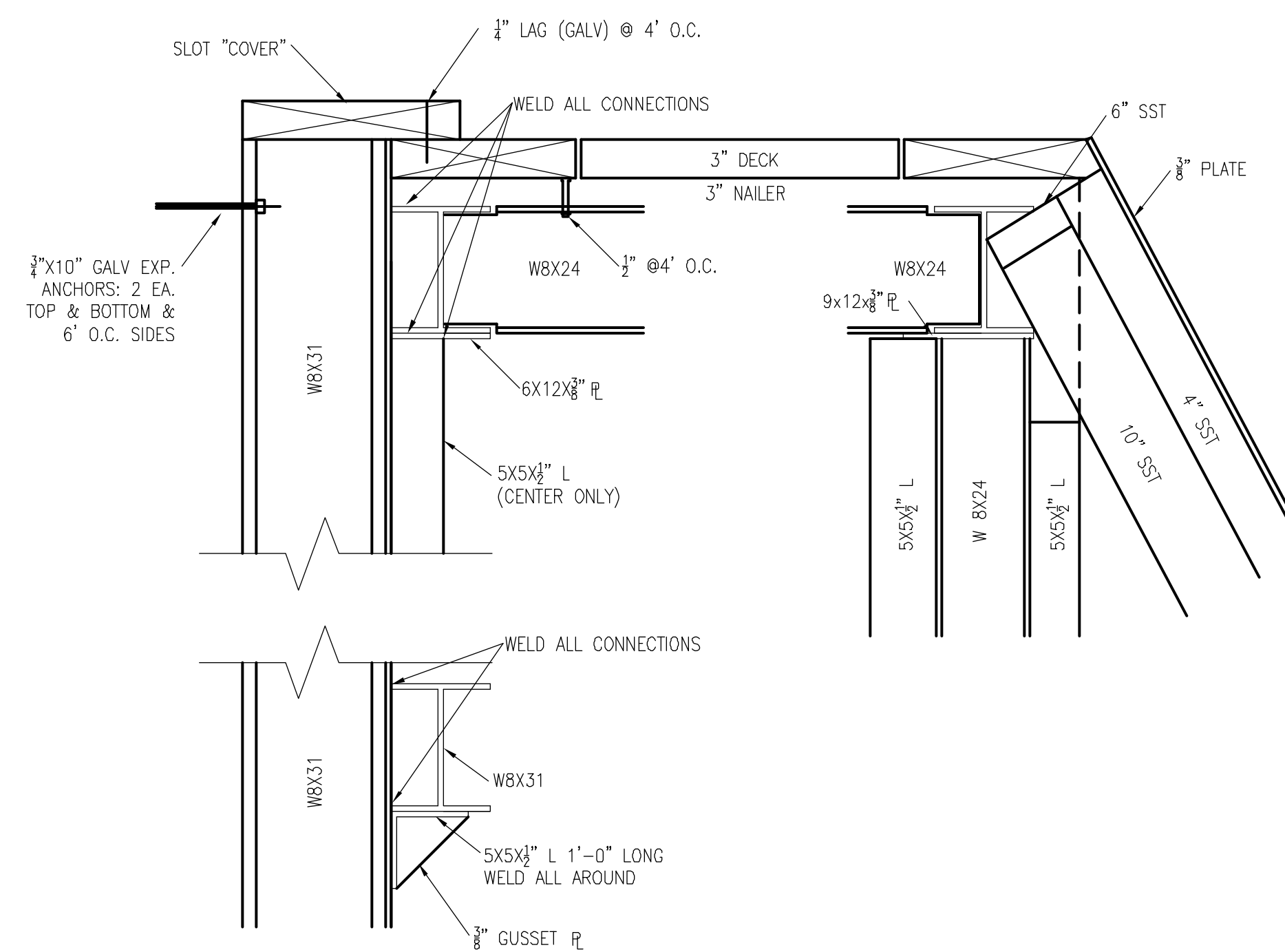
- NOTES:
- TIMBER DECK DETAILS WERE PRODUCED FROM ORIGINAL BLUEPRINTS TO REPLICATE THE EXISTING PLATFORM AND SUPPORTS, ACTUAL DIMENSIONS AND STEEL SIZE SHALL BE ESTABLISHED BY THE CONTRACTOR IN THE FIELD.
 - ALL TIMBER DECK SUPPORT STEEL TO HAVE BLACK EPOXY COATING.



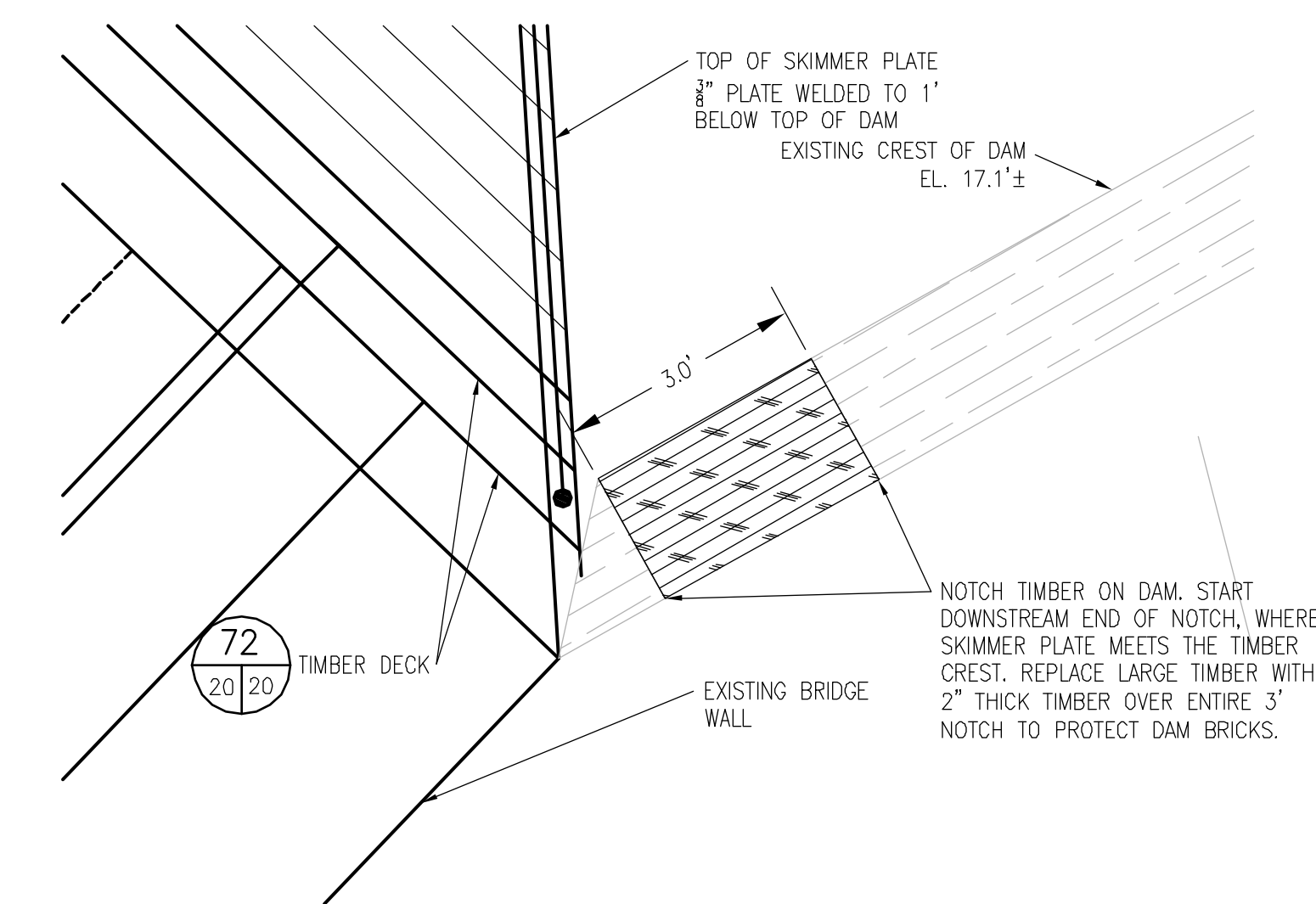
FISHWAY EXIT TRASH RACK DETAIL (77)
SCALE: N.T.S.



TIMBER DECK AND PENSTOCK - PLAN (71)
SCALE: 1/4" = 1'-0"



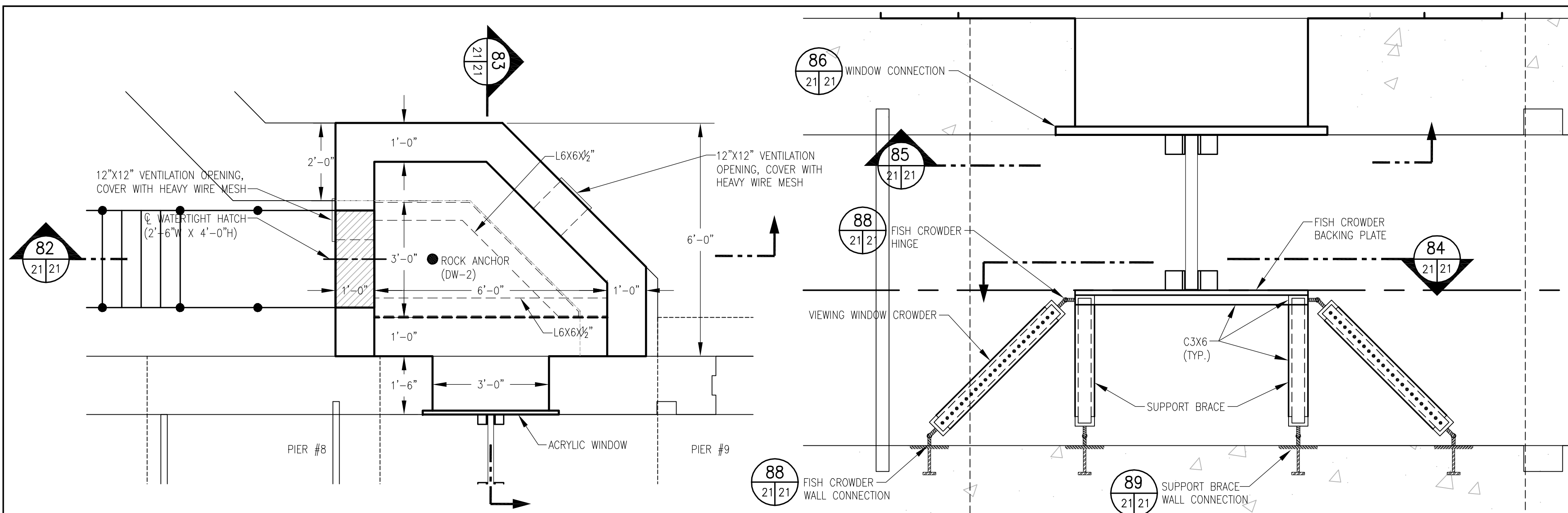
TIMBER DECK CONNECTIONS DETAIL (70)
SCALE: 1/2" = 1'-0"



TIMBER DAM NOTCH (79)
SCALE: AS SHOWN

NO.	DATE	BY	DESCRIPTION

	<p>LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT MAIN STREET FISHWAY PAWTUCKET, RHODE ISLAND</p>
<p>TIMBER DECK REPLACEMENT AND TRASH RACK DETAIL</p>	<p>EA ENGINEERING, SCIENCE, AND TECHNOLOGY 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-19-TIMBER DECK REPLACEMENT</p>
<p>DRAWING NUMBER: C-19</p>	<p>SHEET NUMBER: 20 OF 24</p>

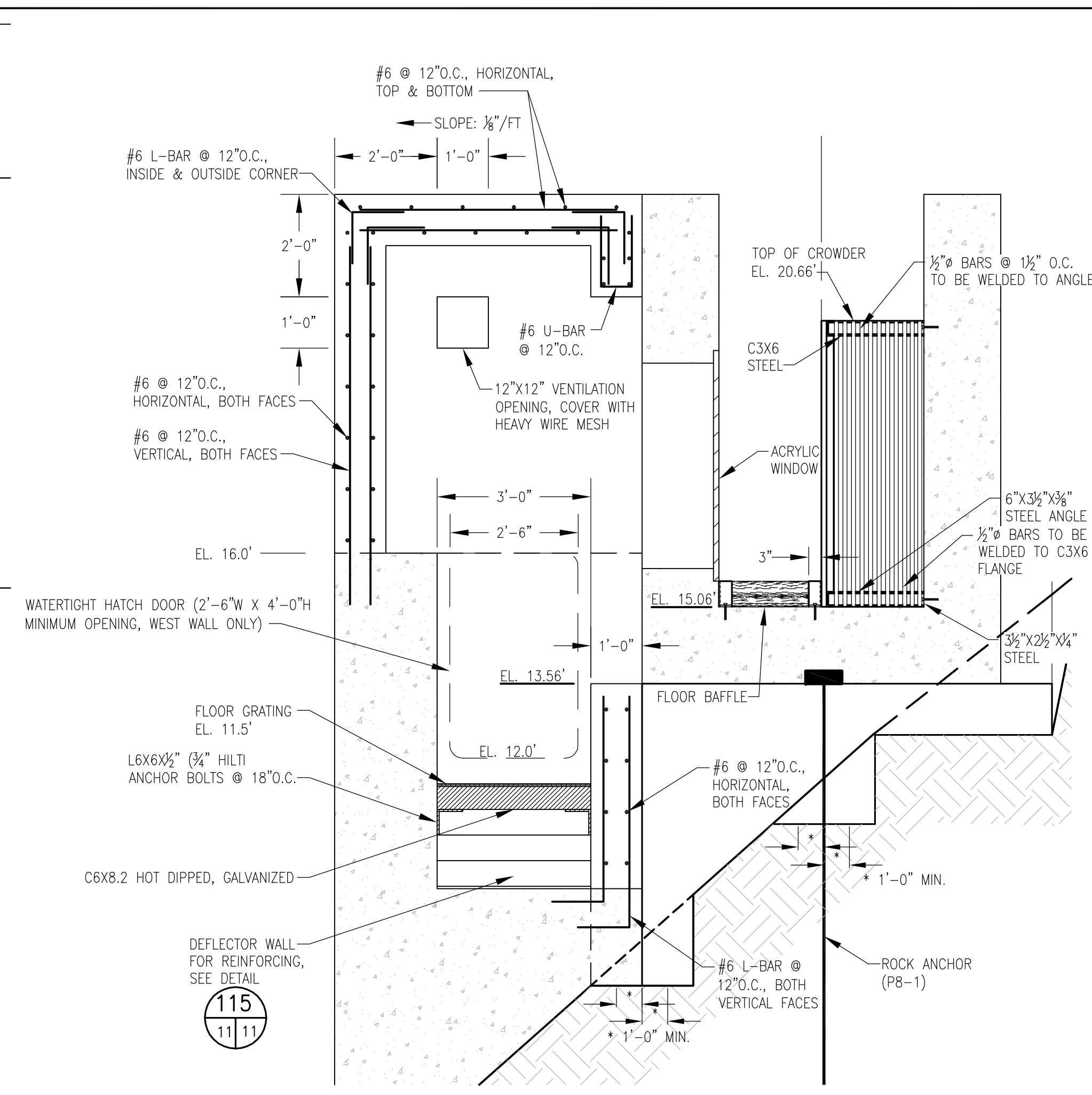


FISH COUNTING STATION PLAN (80)

SCALE: 1/2"=1"

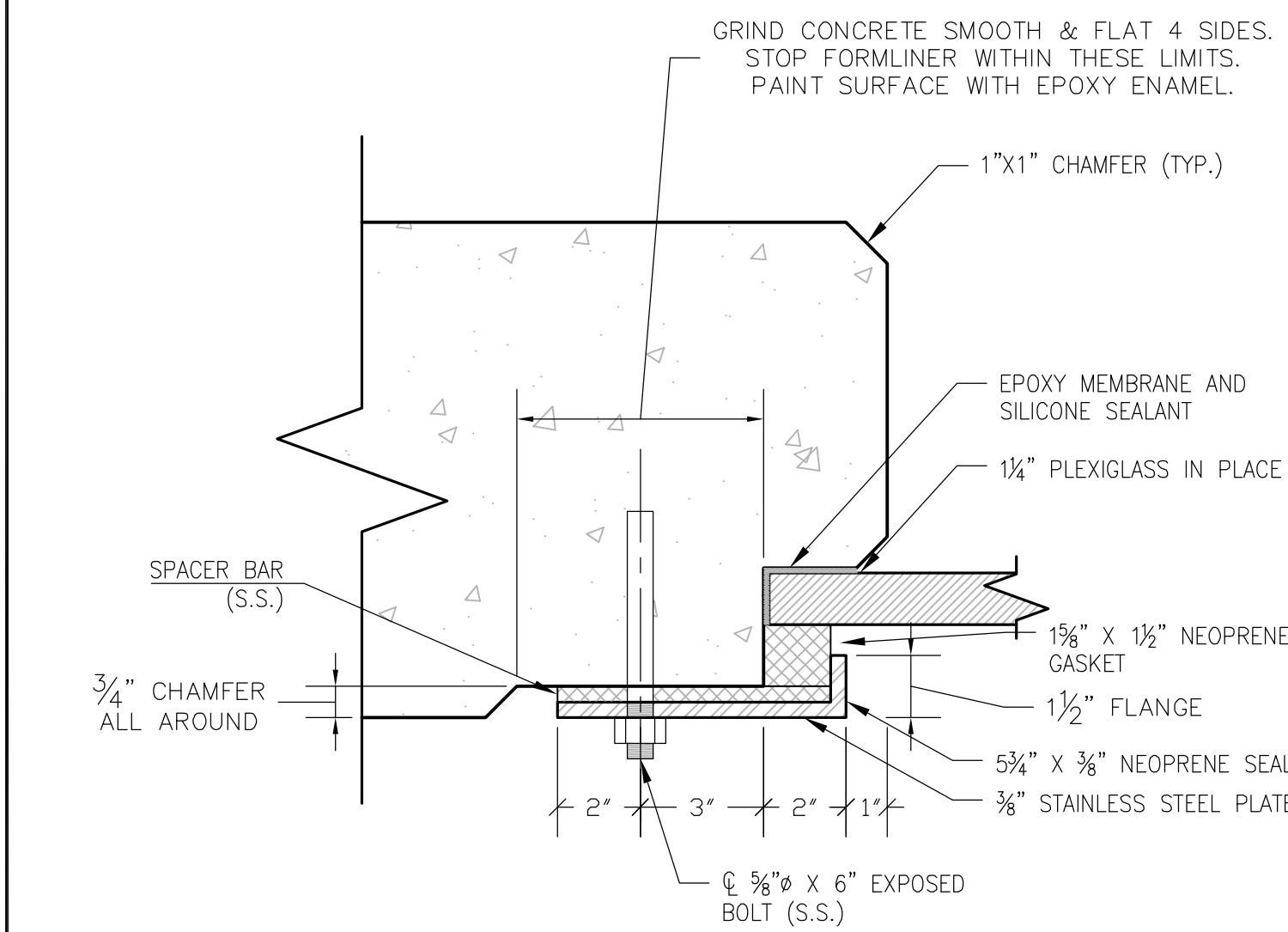
FISH CROWDER PLAN DETAIL (81)

SCALE: 1"=1"



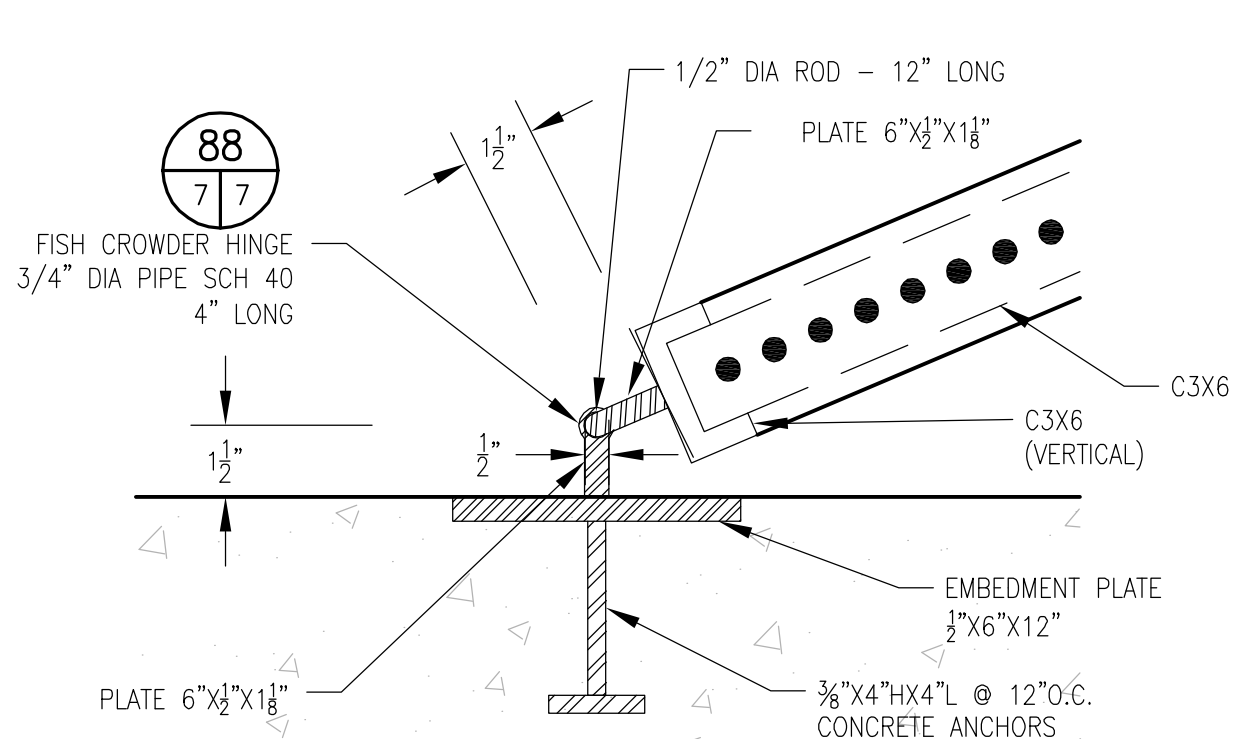
FISH VIEWING ROOM - ELEVATION (83)

SCALE: 1/2"=1"



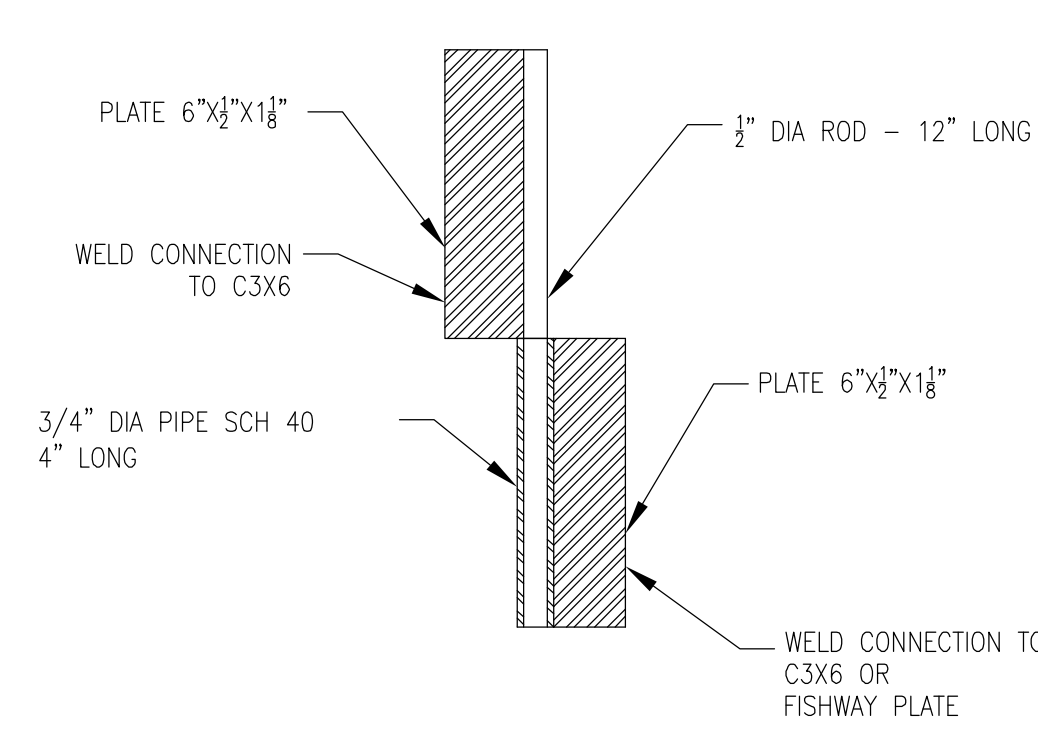
VIEWING WINDOW CONNECTION (86)

SCALE: 3"=1"



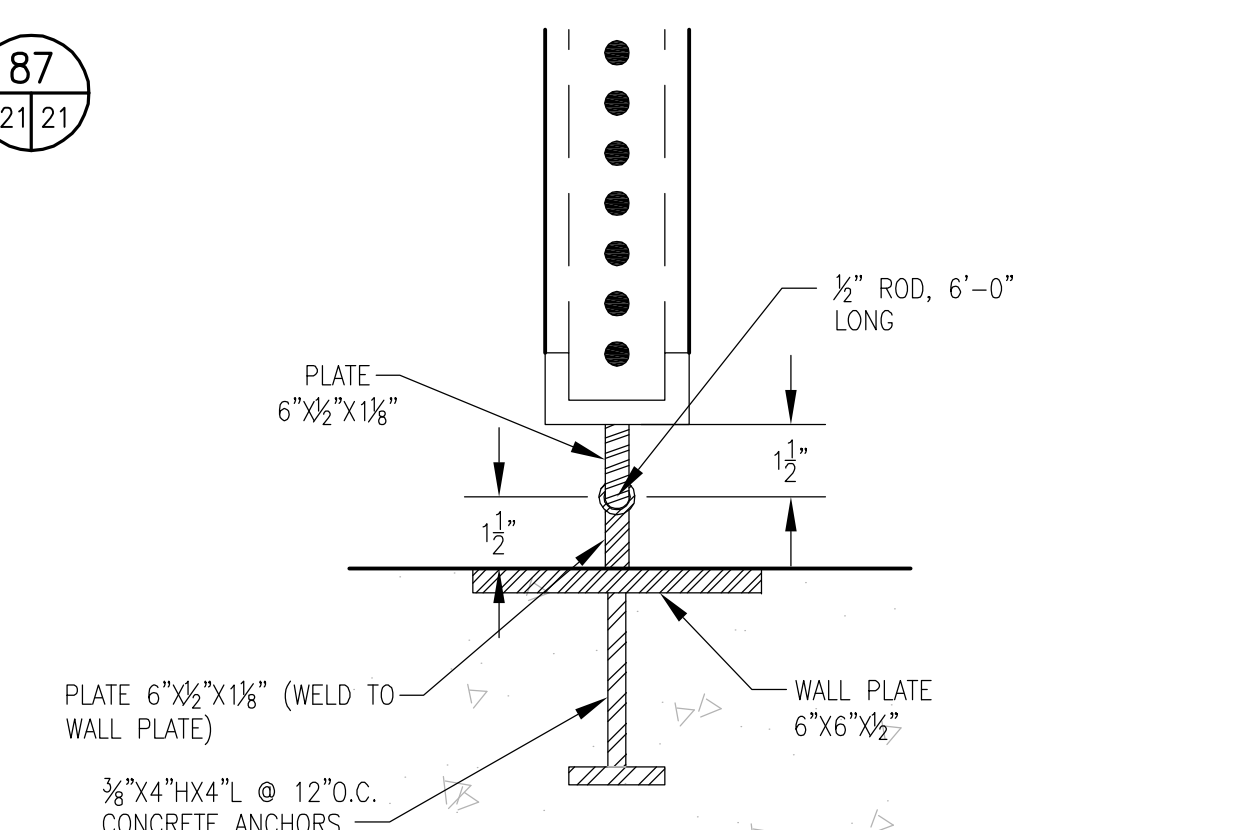
CROWDER WALL CONNECTION - PLAN VIEW (87)

SCALE 3"=1'-0"



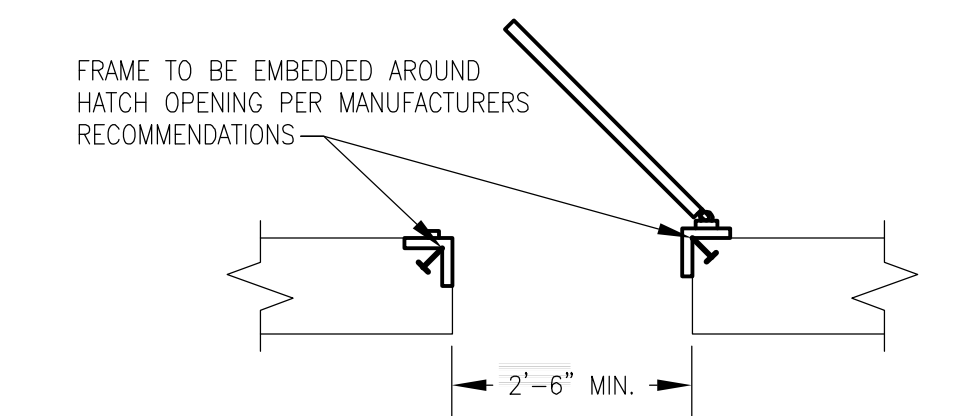
FISH CROWDER HINGE - ELEVATION (88)

SCALE 3"=1'-0"



SUPPORT BRACE WALL CONNECTION (89)

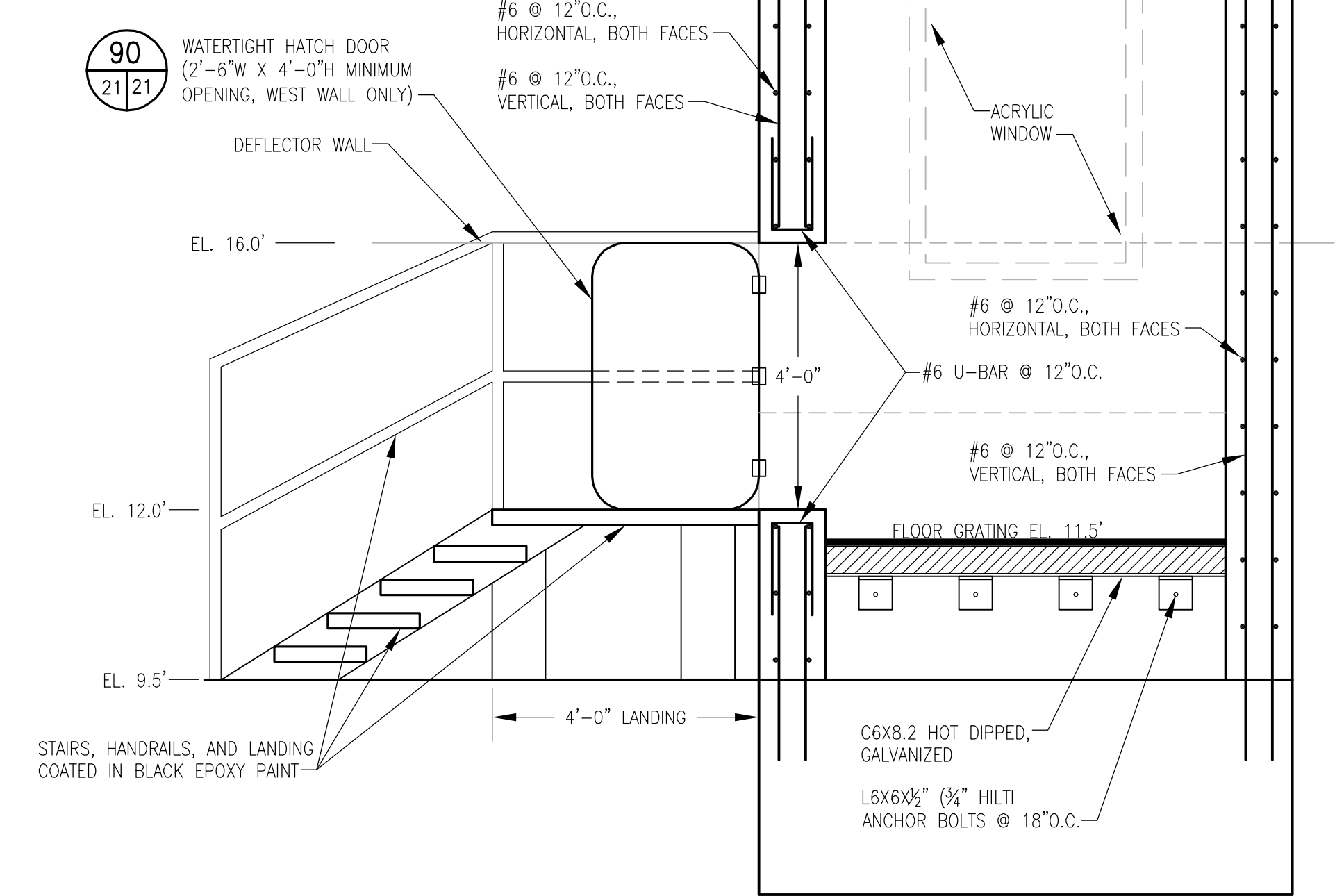
SCALE 3"=1'-0"



WATERTIGHT HATCH DOOR (90)

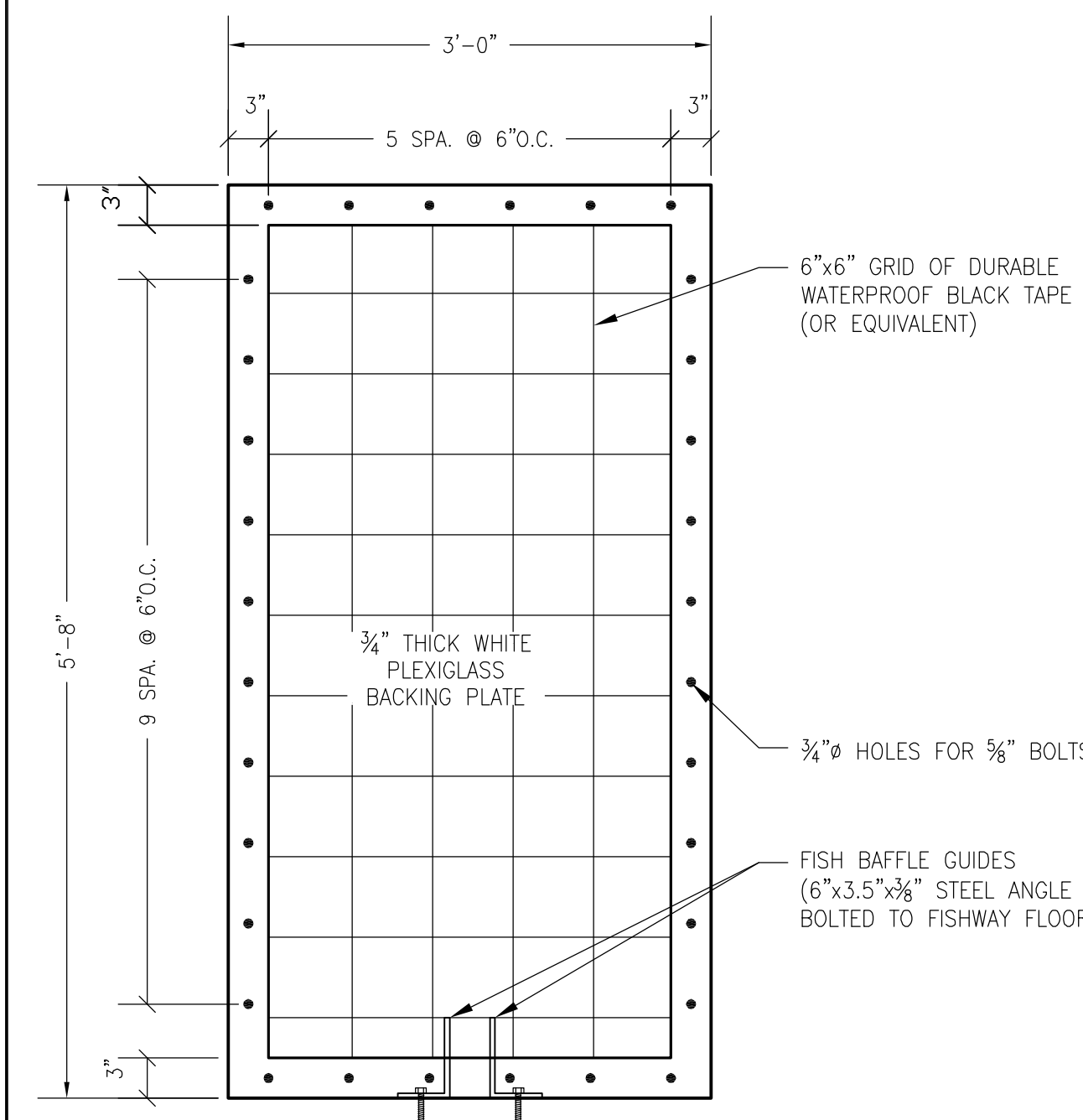
SCALE 1/2"=1'-0"

- NOTE:**
1. 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.
 2. ALL CONSTRUCTION JOINTS SHALL HAVE WATERSTOPS.
 3. CONTRACTOR TO SUBMIT REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL.



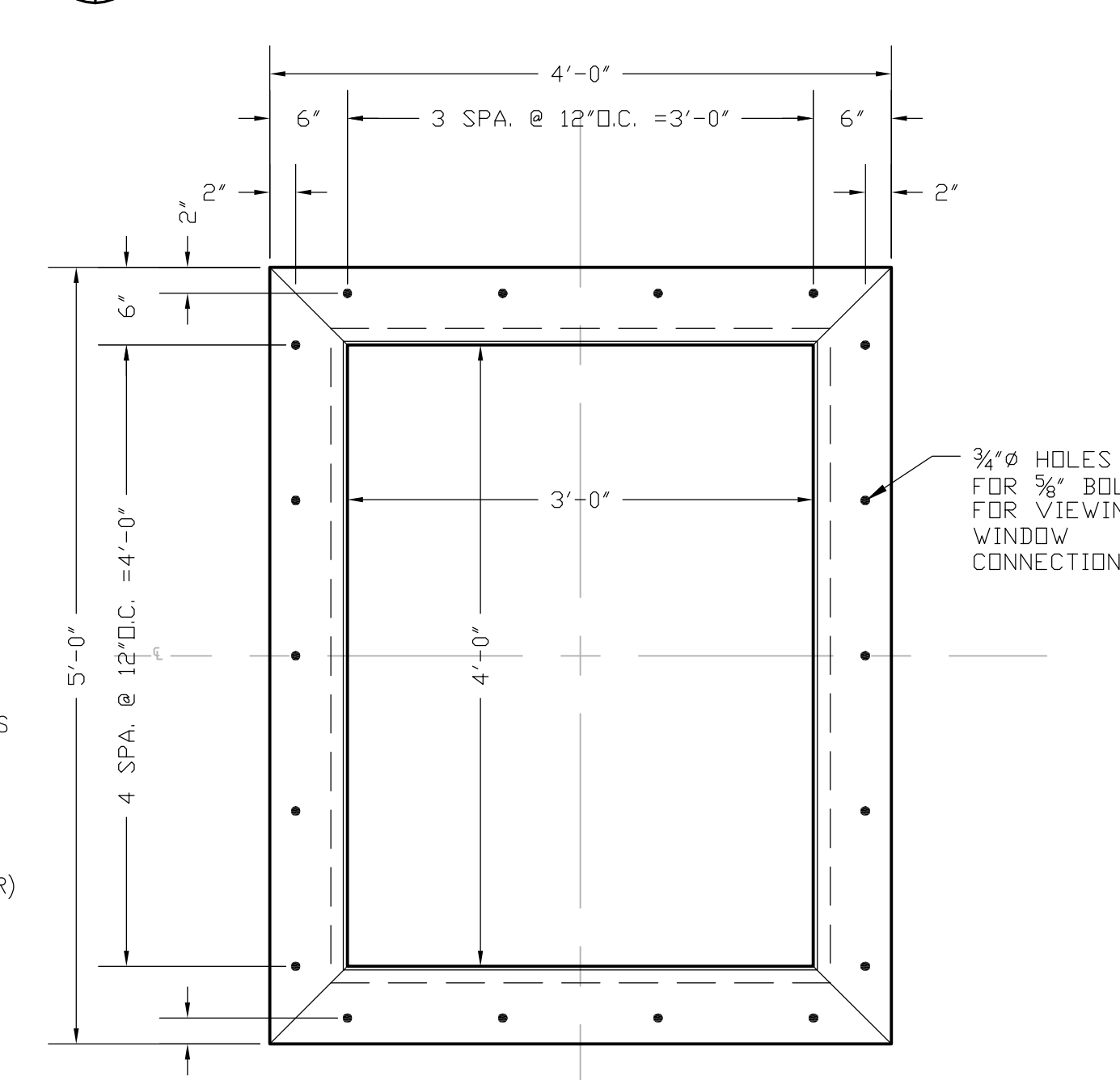
FISH VIEWING ROOM - ELEVATION (82)

SCALE: 1/2"=1"



LATERAL CROWDER BACKING PLATE (84)

SCALE 1"=1'-0"



VIEWING WINDOW - ELEVATION VIEW (85)

SCALE 1"=1'-0"

REVISIONS

NO.	DATE	BY	DESCRIPTION

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Thomas C. Cook
 No. 8819
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 7/20/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
 MAIN STREET FISHWAY
 PAWTUCKET, RHODE ISLAND

FISH COUNTING STATION DETAILS

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

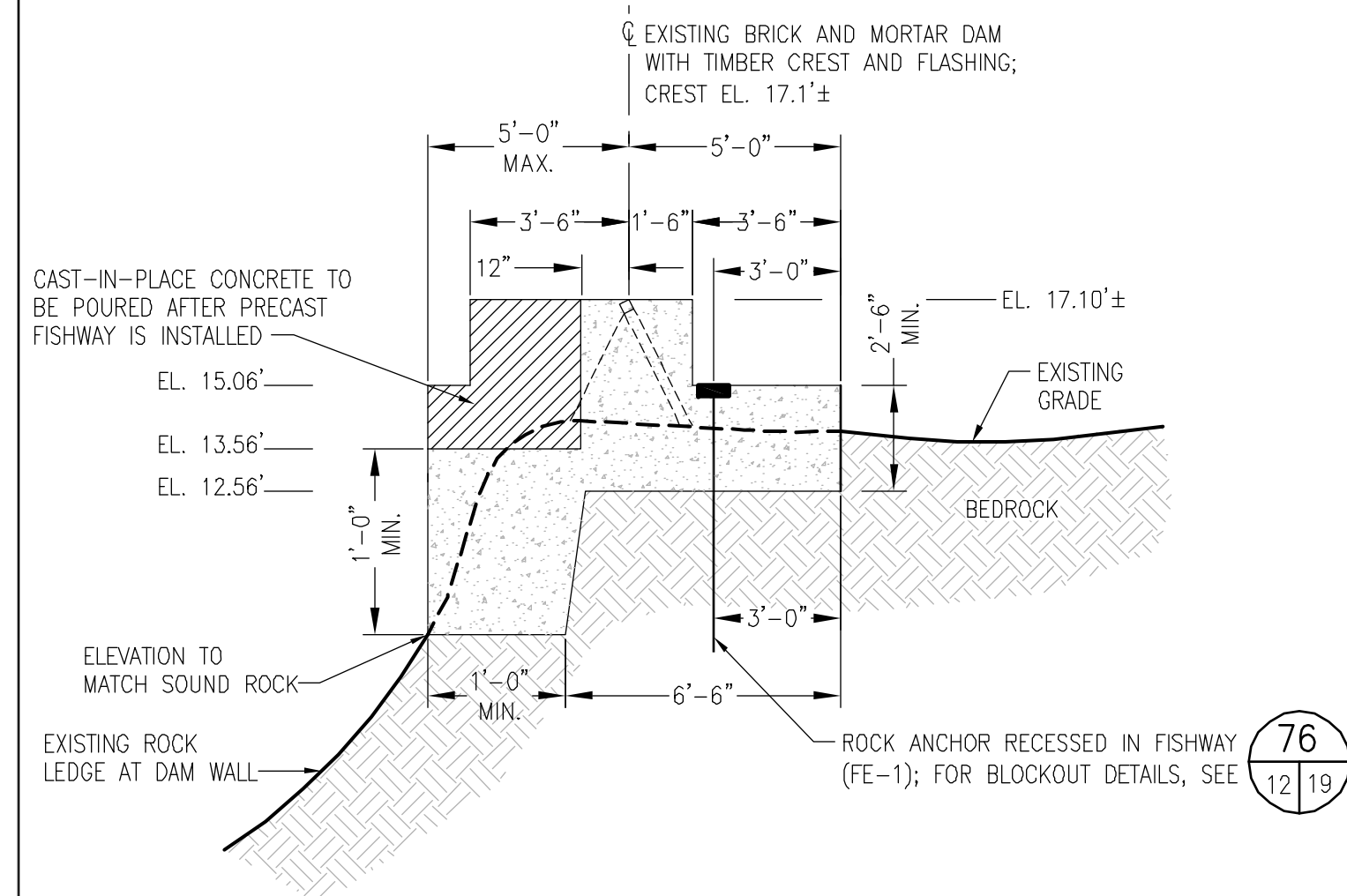
PROJECT NUMBER: 62562.01

SCALE: AS SHOWN

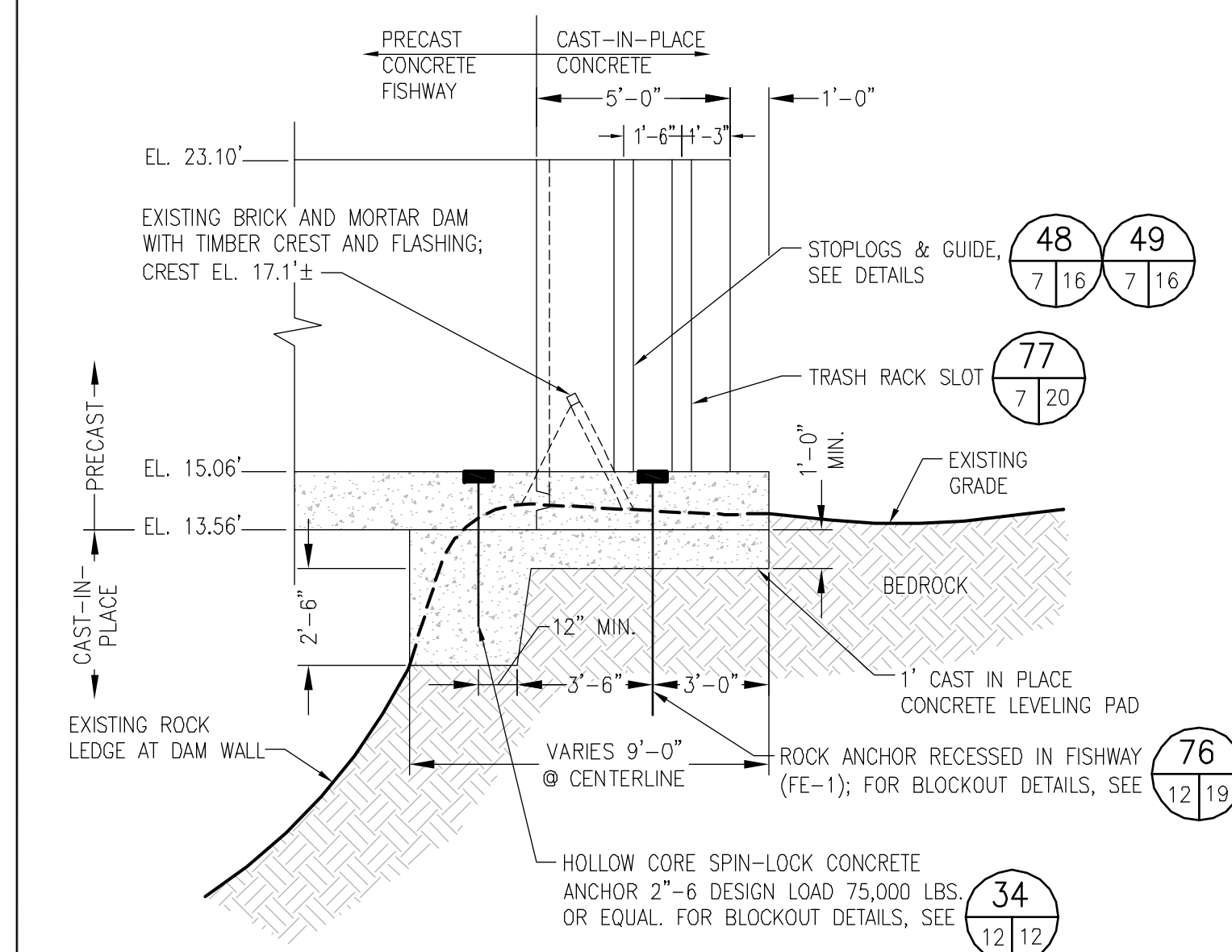
FILE NAME: C-20 FISH VIEWING DETAILS

DRAWING NUMBER: C-20

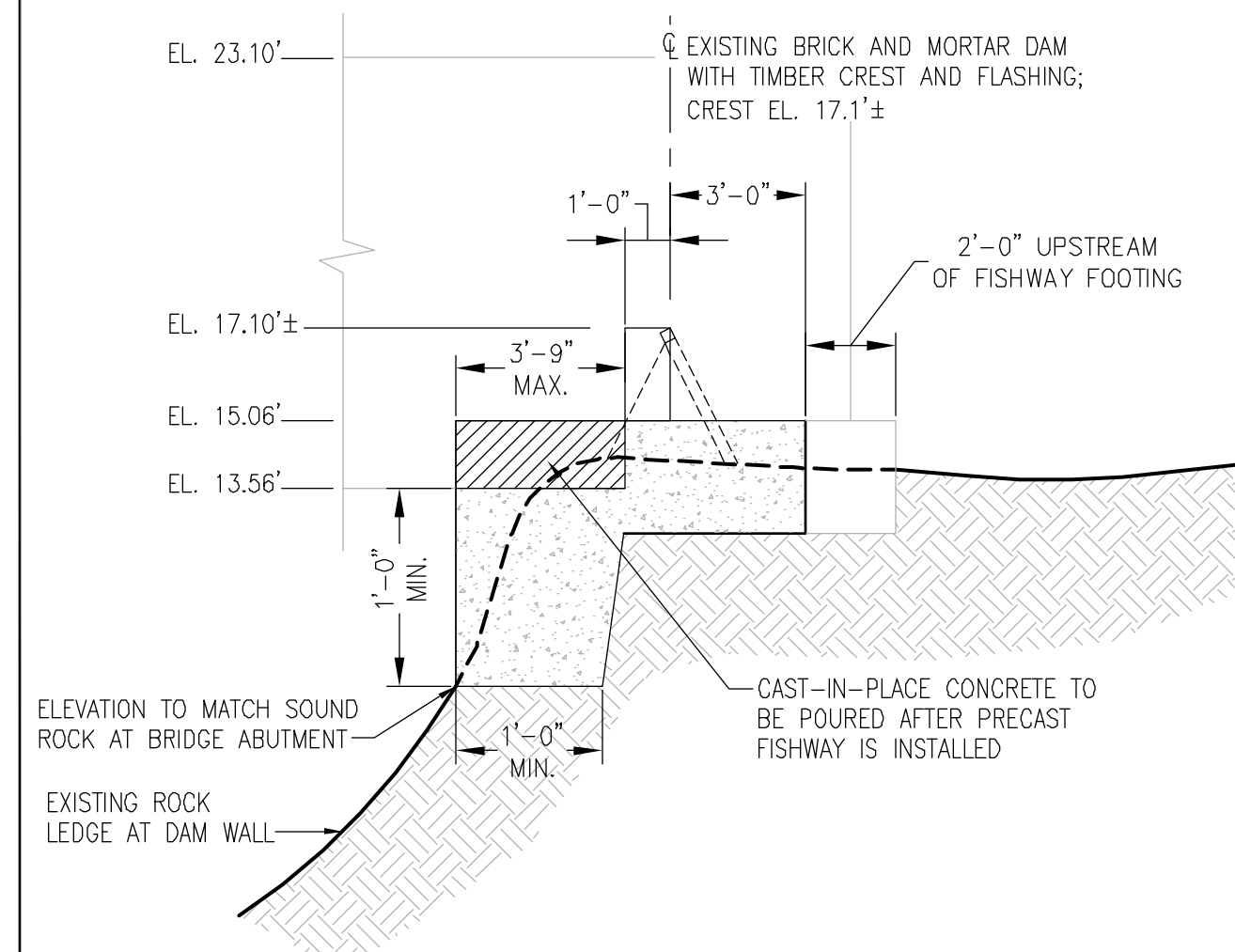
SHEET NUMBER: 21 OF 24



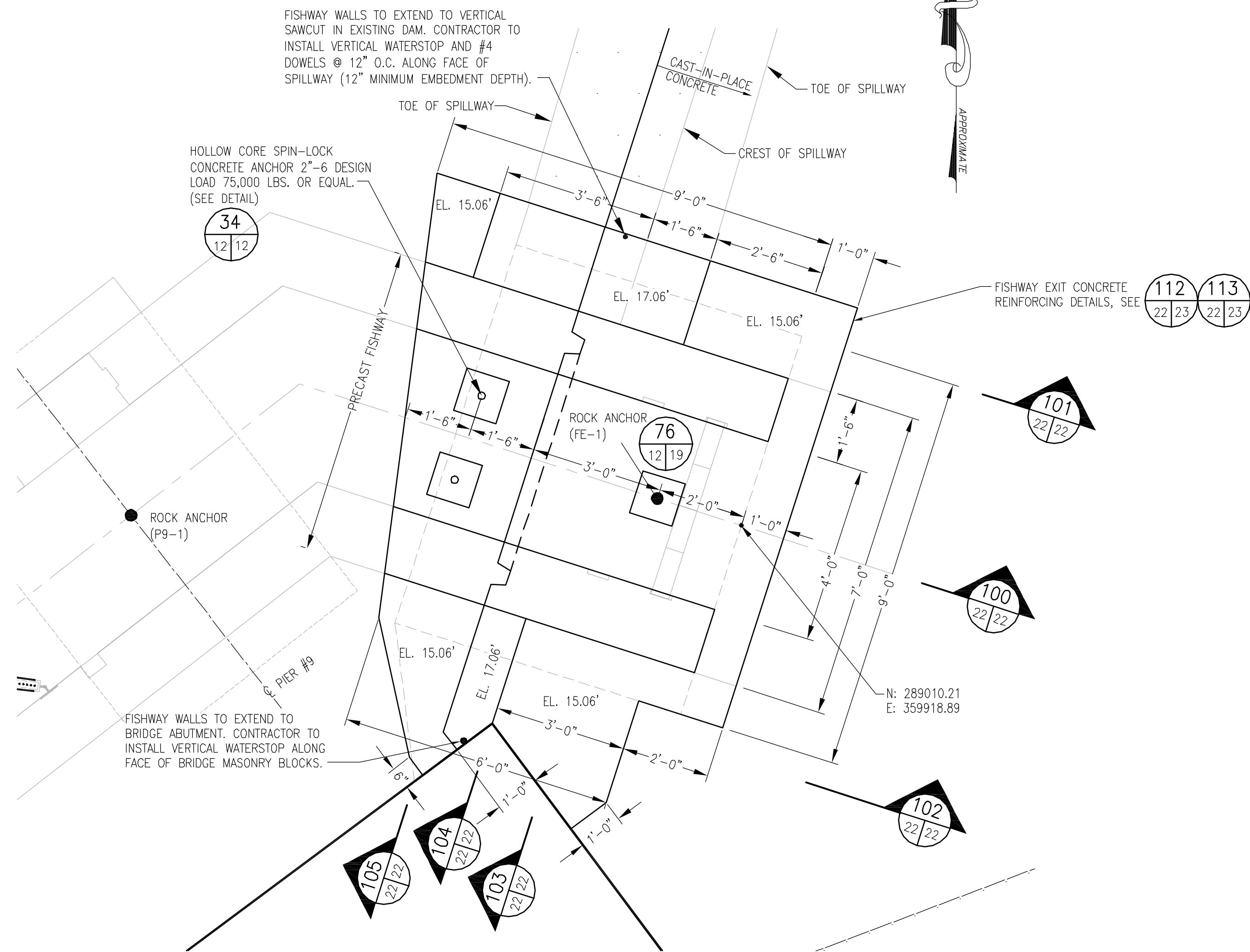
FISHWAY EXIT DETAIL - SECTION 101
SCALE: 1/4" = 1'-0"



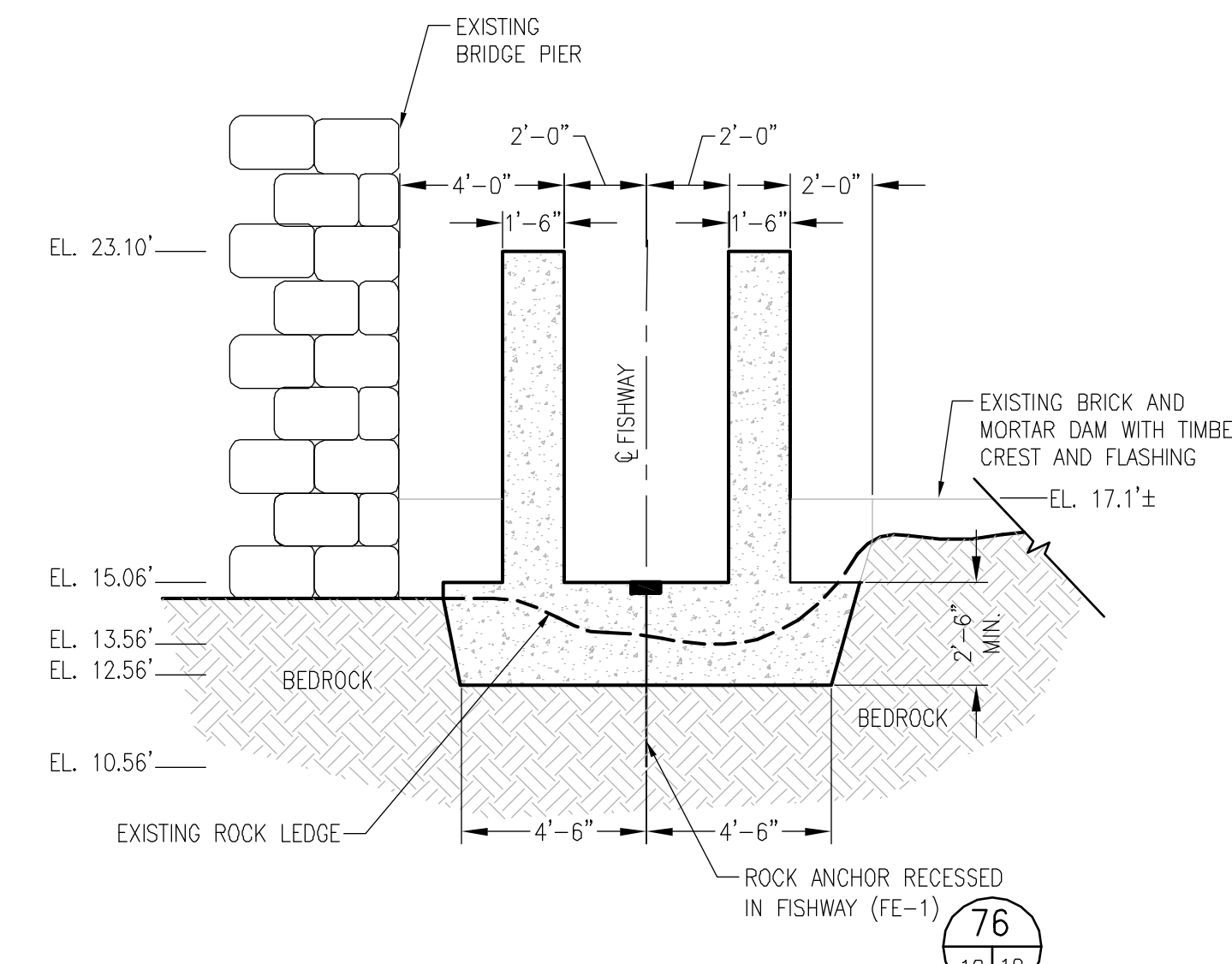
FISHWAY EXIT DETAIL - SECTION 100
SCALE: 1/4" = 1'-0"



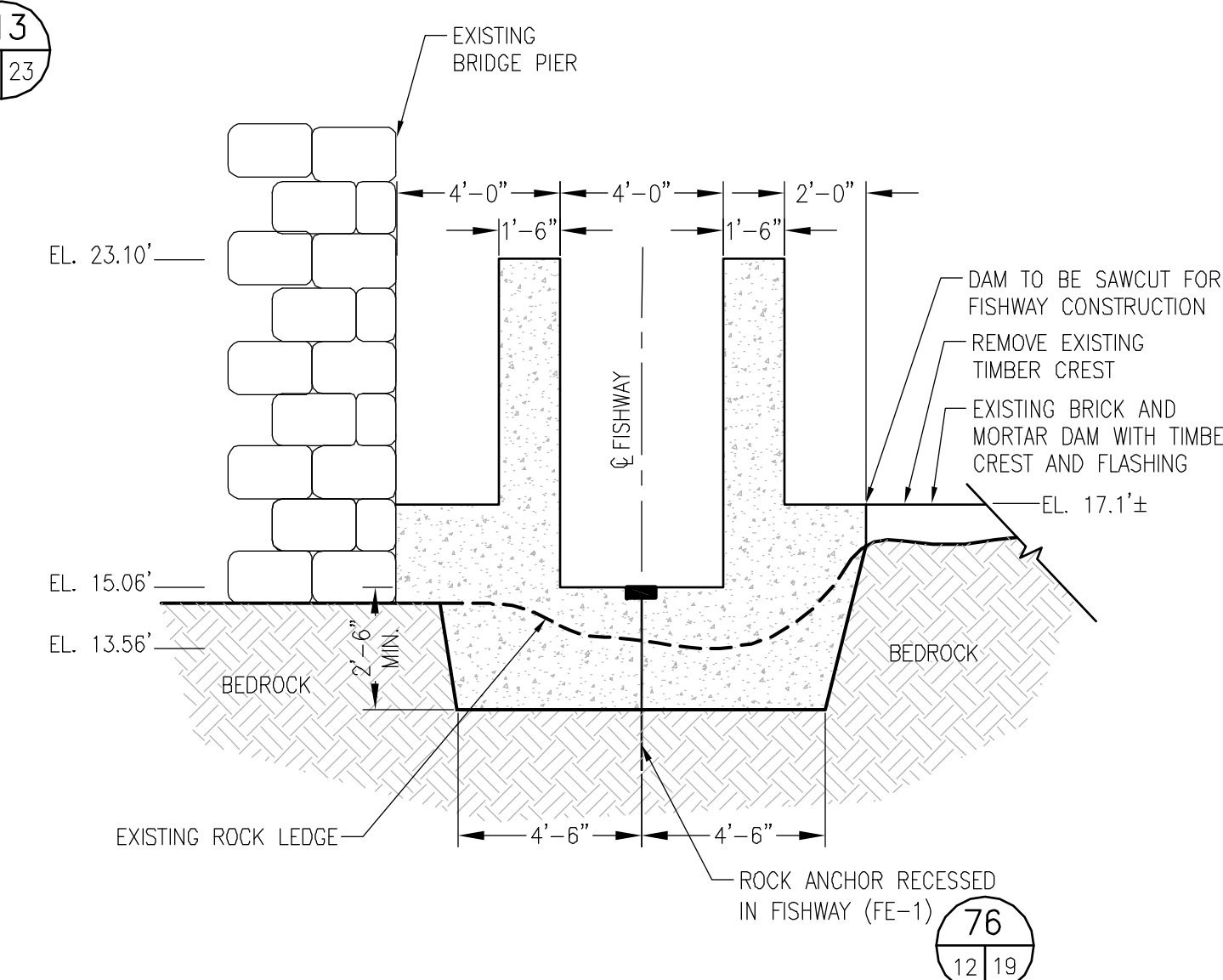
FISHWAY EXIT DETAIL - SECTION 102
SCALE: 1/4" = 1'-0"



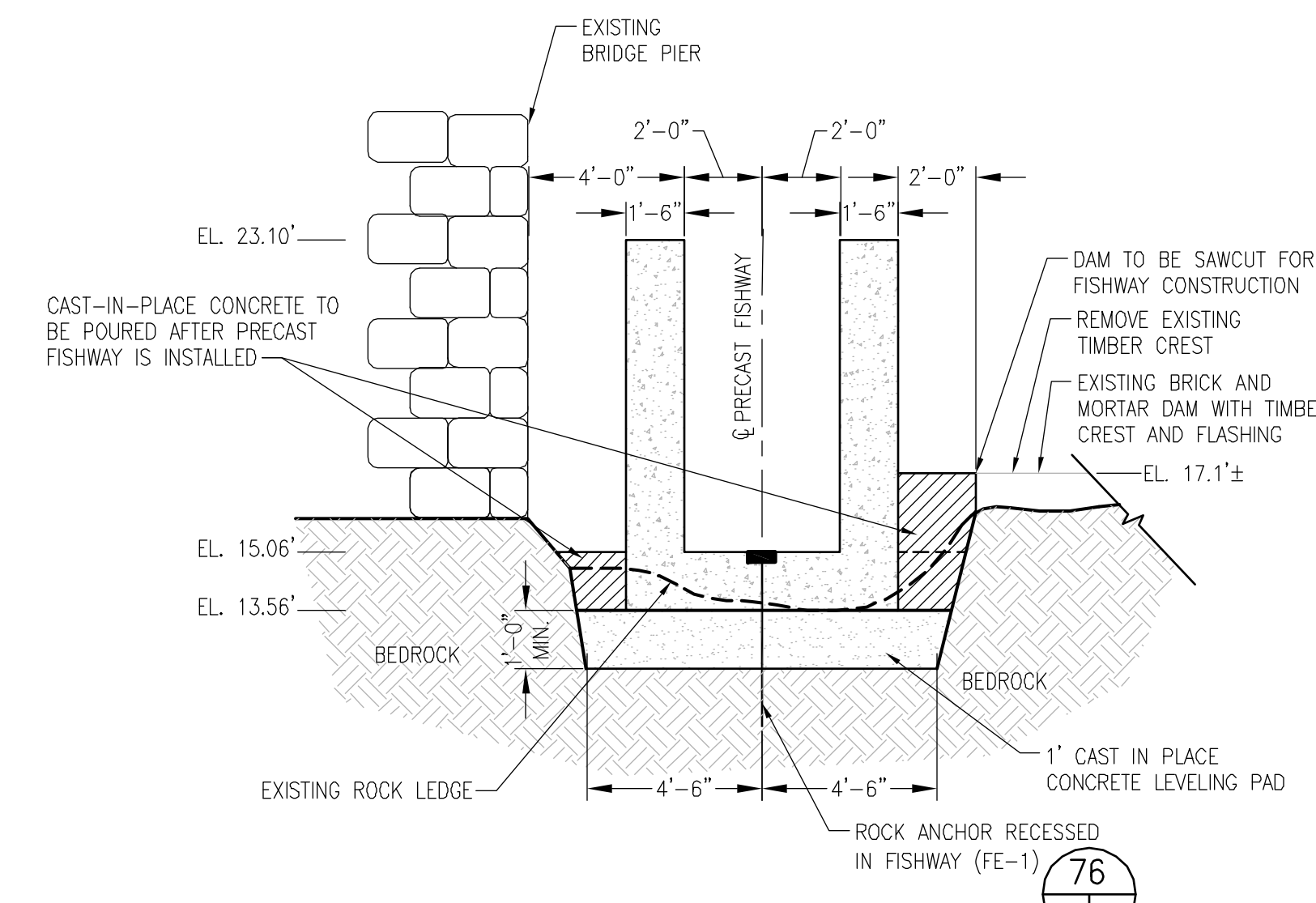
FISHWAY EXIT 99
SCALE: 3/8" = 1'-0"



FISHWAY EXIT DETAIL - ELEVATION 103
SCALE: 1/4" = 1'-0"



FISHWAY EXIT DETAIL - ELEVATION 104
SCALE: 1/4" = 1'-0"



FISHWAY EXIT DETAIL - ELEVATION 105
SCALE: 1/4" = 1'-0"

NO.	DATE	BY	DESCRIPTION
76	12/19		

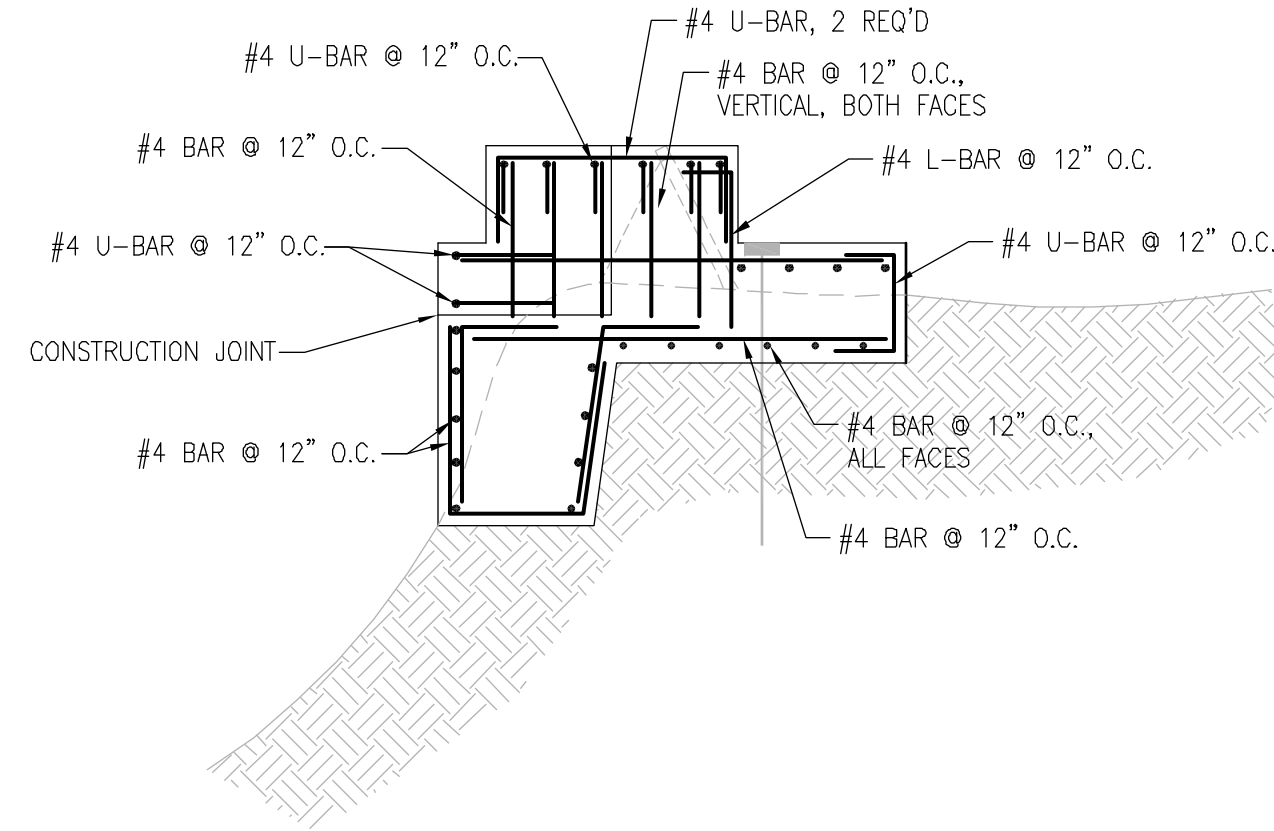
SEAL: THOMAS C. COOK, No. 8819, REGISTERED PROFESSIONAL ENGINEER CIVIL, 7/20/12

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
MAIN STREET FISHWAY
PAWTUCKET, RHODE ISLAND
FISHWAY EXIT CONCRETE DETAILS

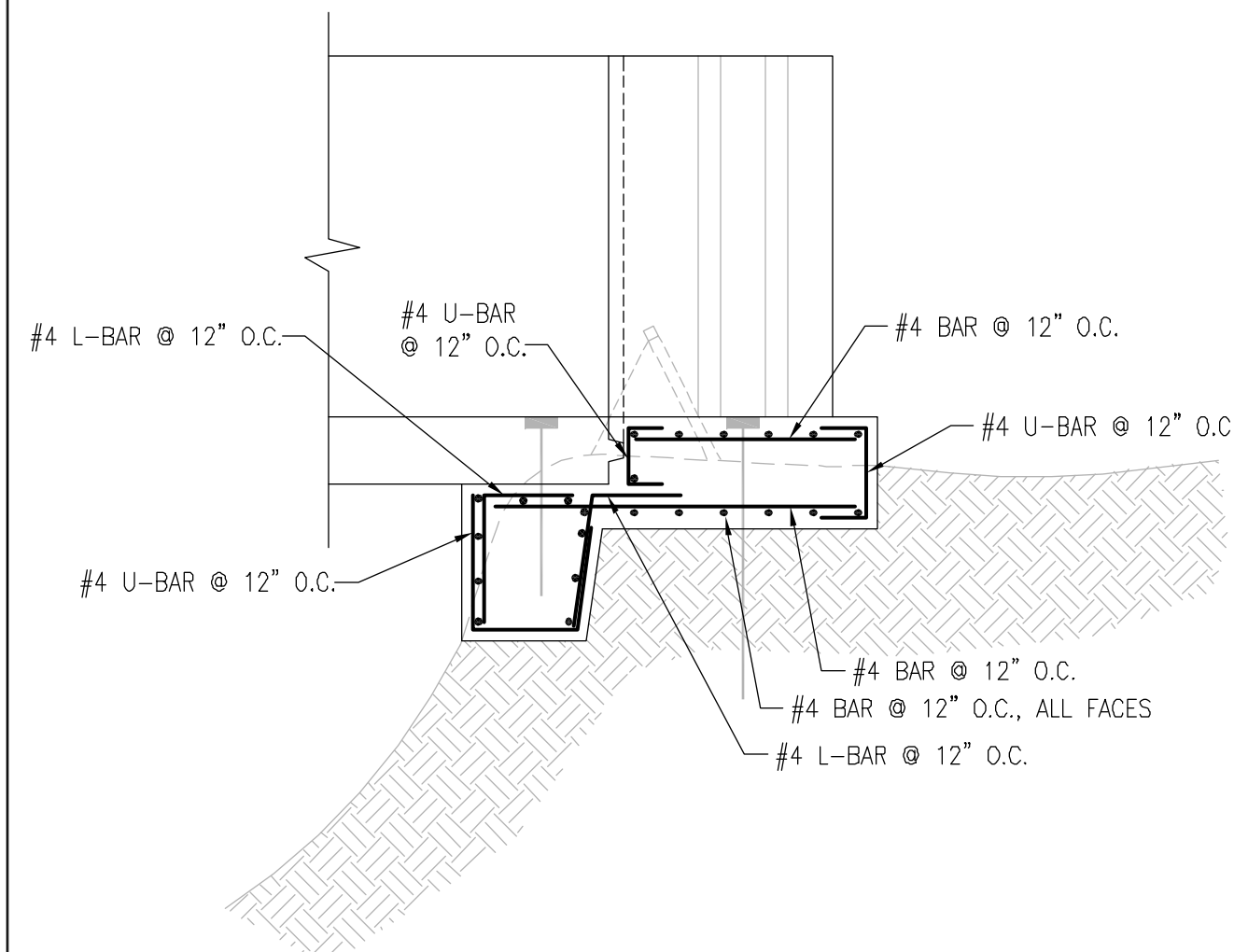


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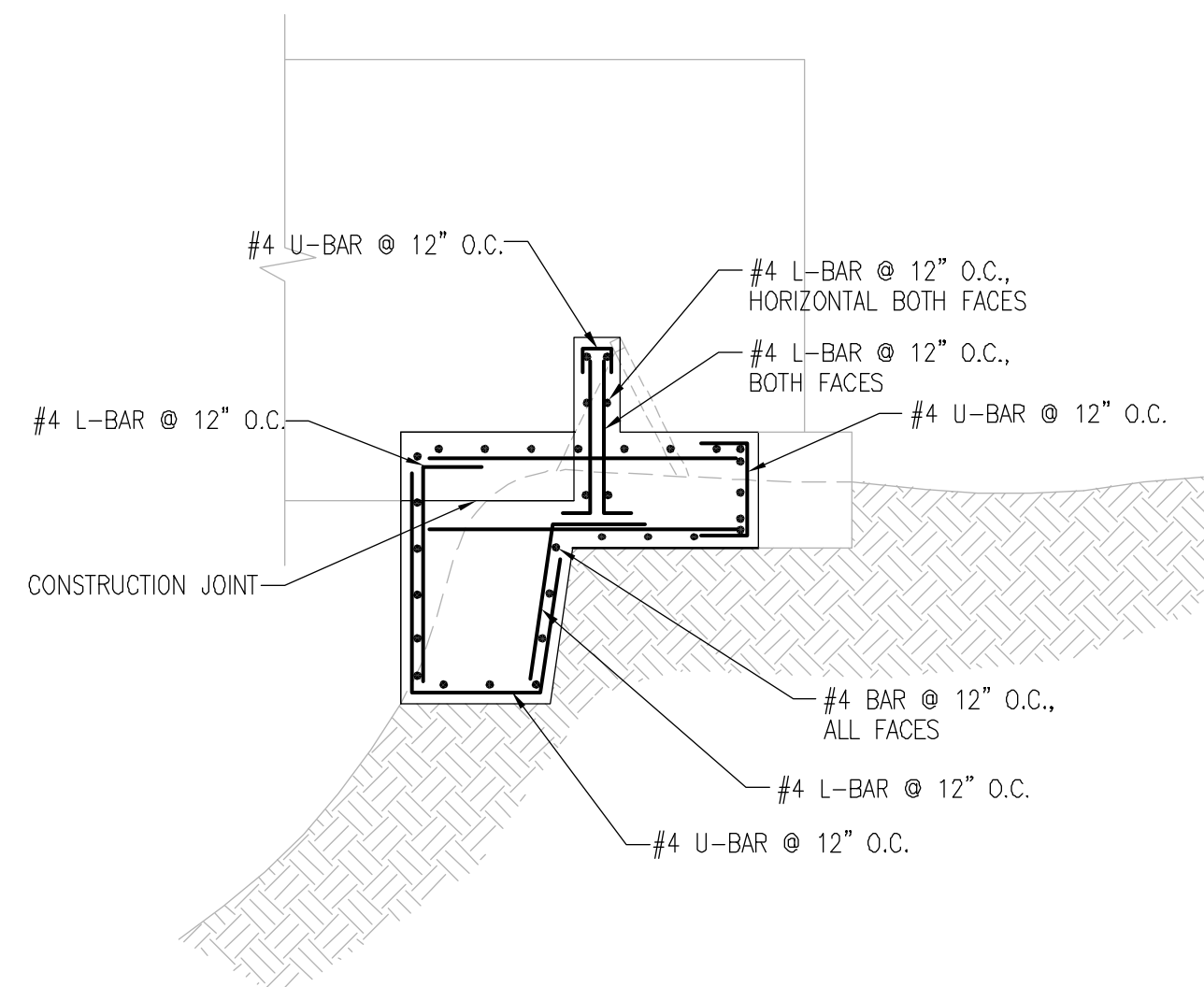
DATE	JUNE 2012
DESIGNED BY	TCC
DRAWN BY	DPA
CHECKED BY	HLB
PROJECT MANAGER	SSW
PROJECT NUMBER	62562.01
SCALE	AS SHOWN
FILE NAME	C-21-EXIT CHANNEL CONCRETE
DRAWING NUMBER	C-21
SHEET NUMBER	22 OF 24



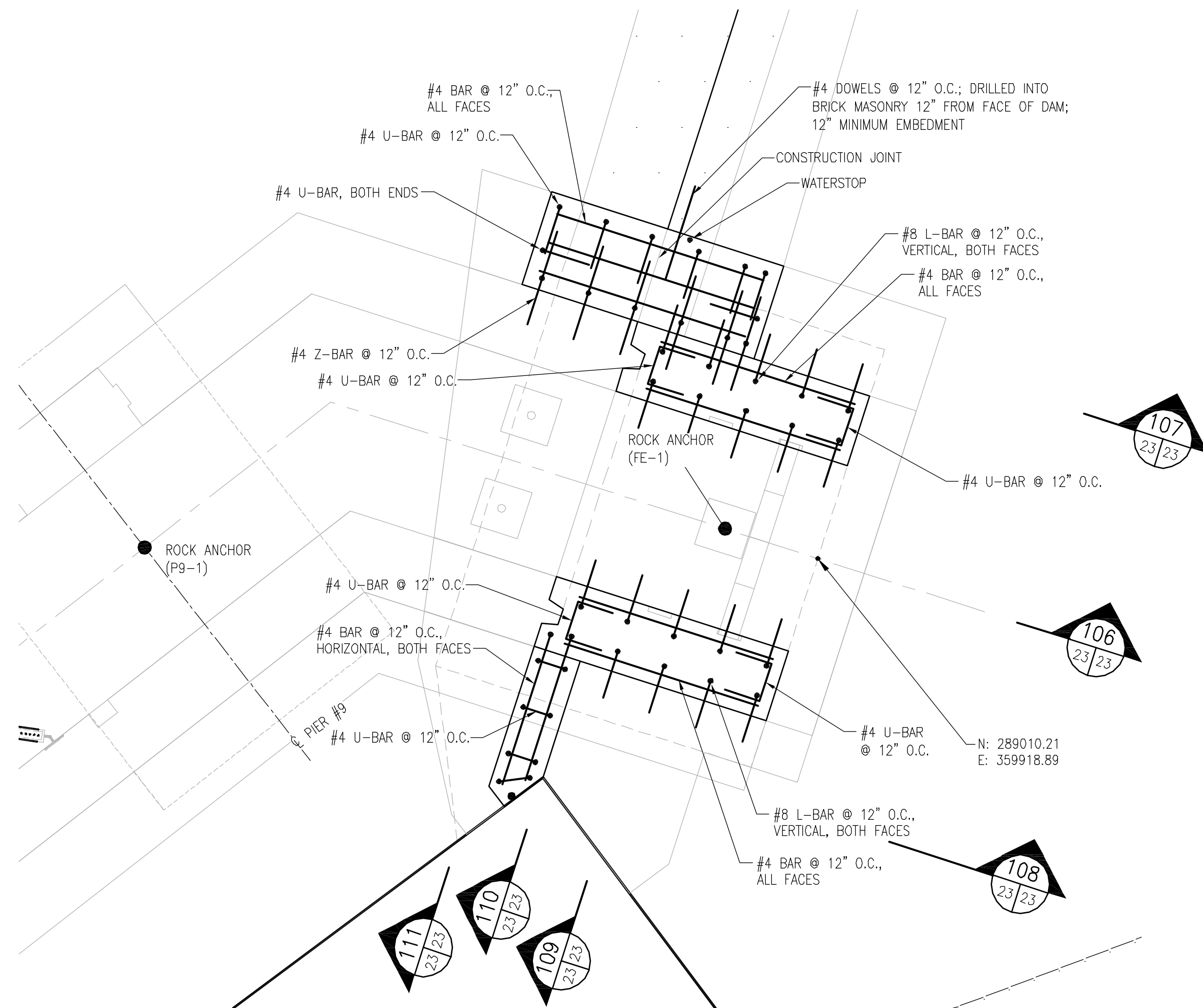
FISHWAY EXIT REBAR – ELEVATION 107
SCALE: 1/4"=1'-0"



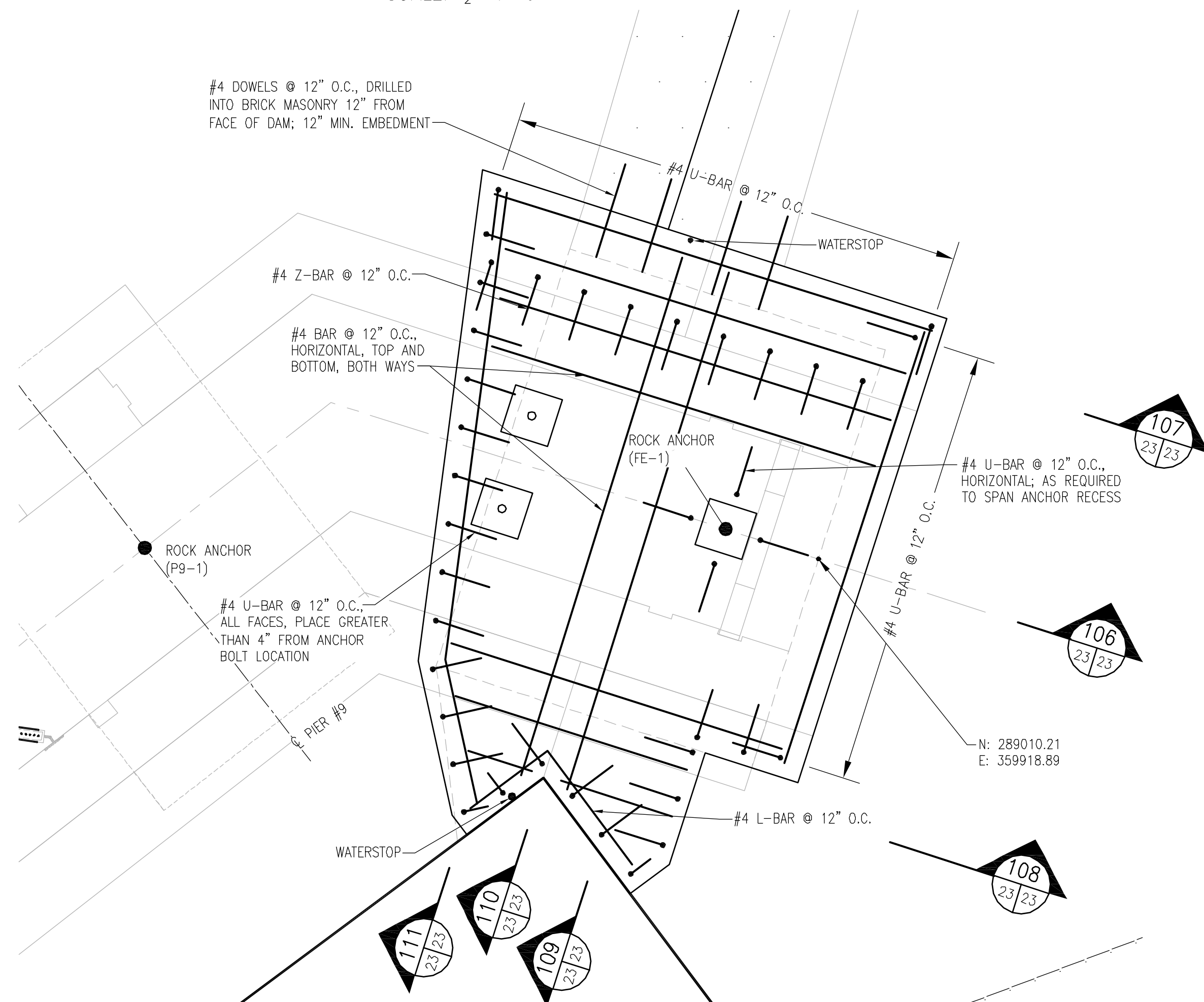
FISHWAY EXIT REBAR – ELEVATION 106
SCALE: 1/4"=1'-0"



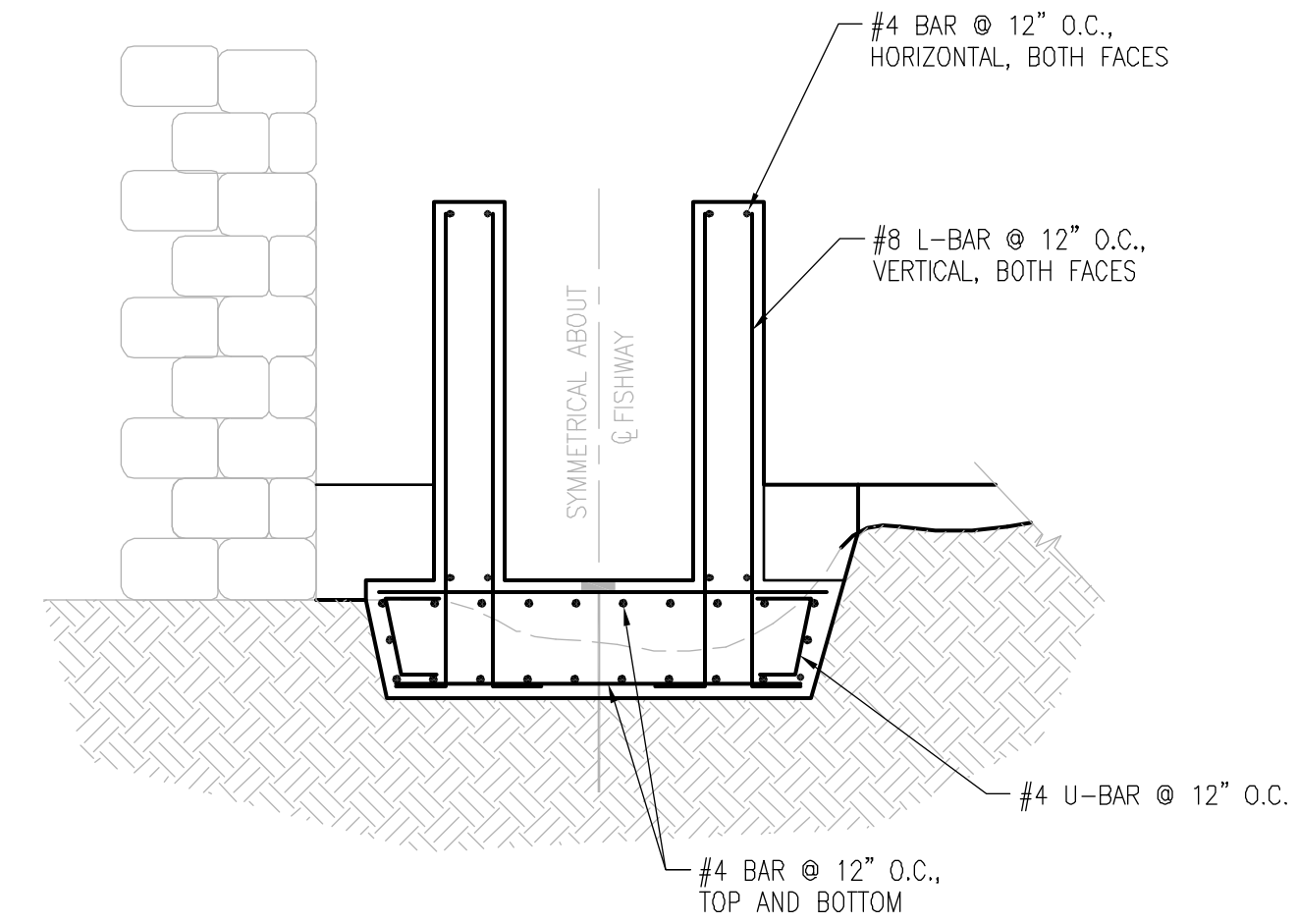
FISHWAY EXIT REBAR – ELEVATION 108
SCALE: 1/4"=1'-0"



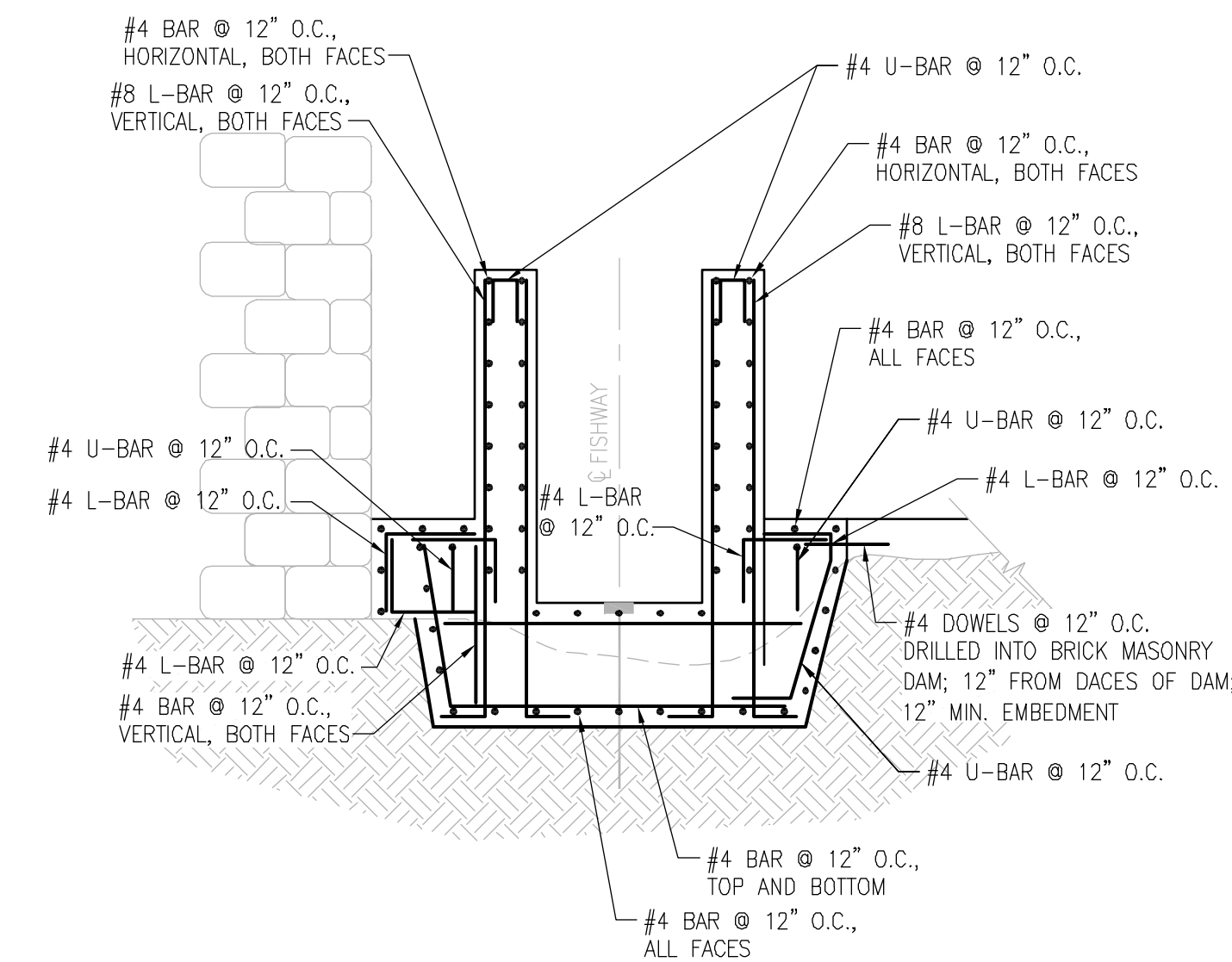
FISHWAY EXIT WALL REBAR PLAN 112
SCALE: 1/2"=1'-0"



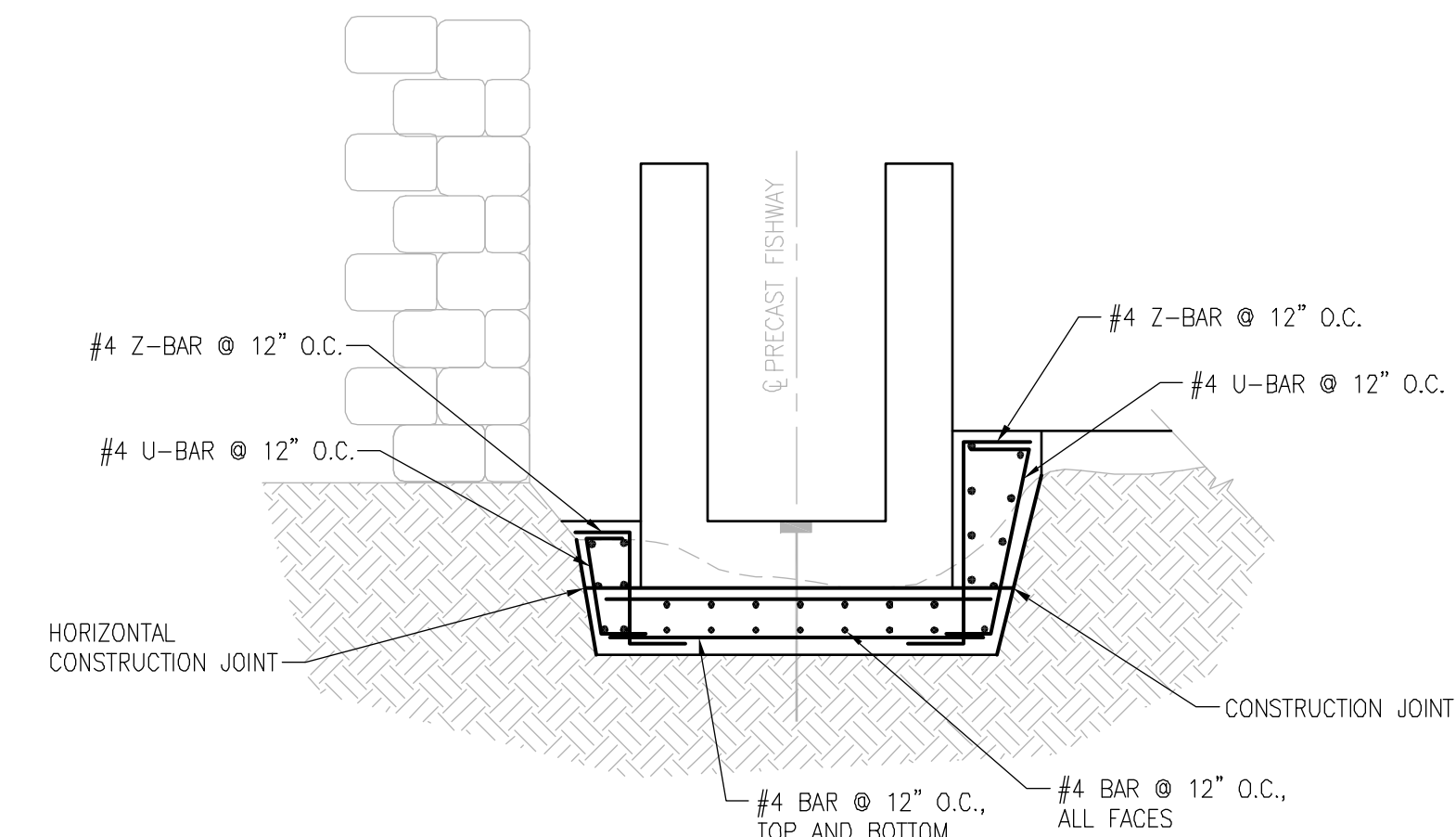
FISHWAY EXIT FOOTING REBAR PLAN 113
SCALE: 1/2"=1'-0"



FISHWAY EXIT REBAR – SECTION 109
SCALE: 1/4"=1'-0"



FISHWAY EXIT REBAR – SECTION 110
SCALE: 1/4"=1'-0"



FISHWAY EXIT REBAR – SECTION 111
SCALE: 1/4"=1'-0"

NO.	DATE	BY	DESCRIPTION

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

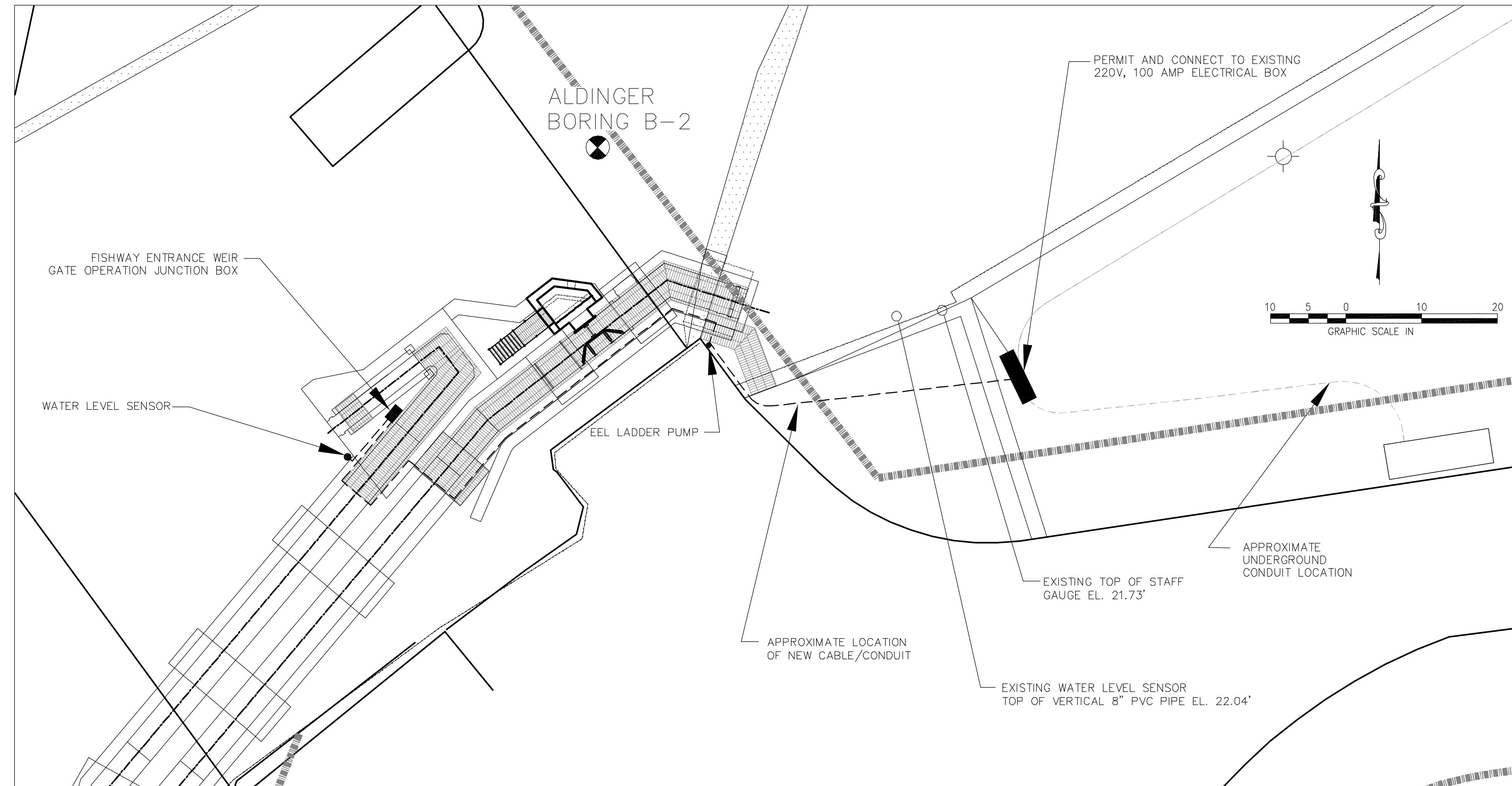
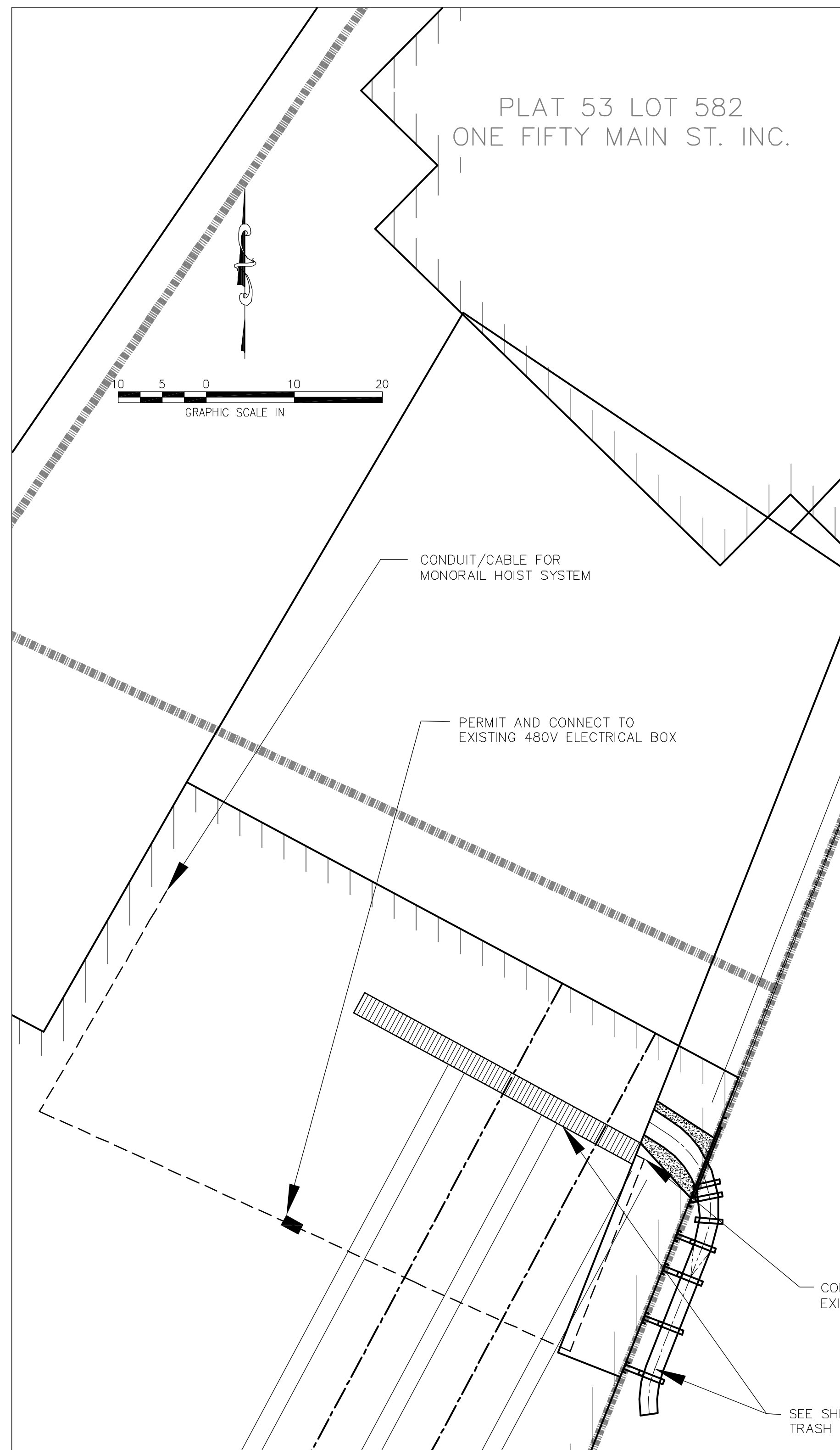
LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
MAIN STREET FISHWAY
PAWTUCKET, RHODE ISLAND

FISHWAY EXIT REINFORCEMENT 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-21-EXIT CHANNEL REBAR
DRAWING NUMBER	C-22
SHEET NUMBER	23 OF 24



NOTES:

1. CONTRACTOR TO FILE PERMIT FOR THE ELECTRICAL WORK, AND CONTACT EXISTING OWNER PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO CONTACT DIG SAFE 1-888-DIG-SAFE AND TO LOCATE OR VERIFY THE LOCATION OF ANY EXISTING UTILITIES IN THE CONSTRUCTION AREA.
3. PROPOSED CABLE TO BE WIRE SIZE MANUFACTURER RATED FOR UNDERGROUND SERVICE INSTALLED 18-24 INCHES BELOW EXISTING GRADE OR ON SIDE OF WALKWAY.
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.

NO.	DATE	BY	DESCRIPTION

SEAL

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

LOWER BLACKSTONE RIVER FISH PASSAGE PROJECT
MAIN STREET FISHWAY
PAWTUCKET, RHODE ISLAND

ELECTRICAL 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	E-1-ELECTRICAL DETAILS
DRAWING NUMBER	E-1
SHEET NUMBER	24 OF 24