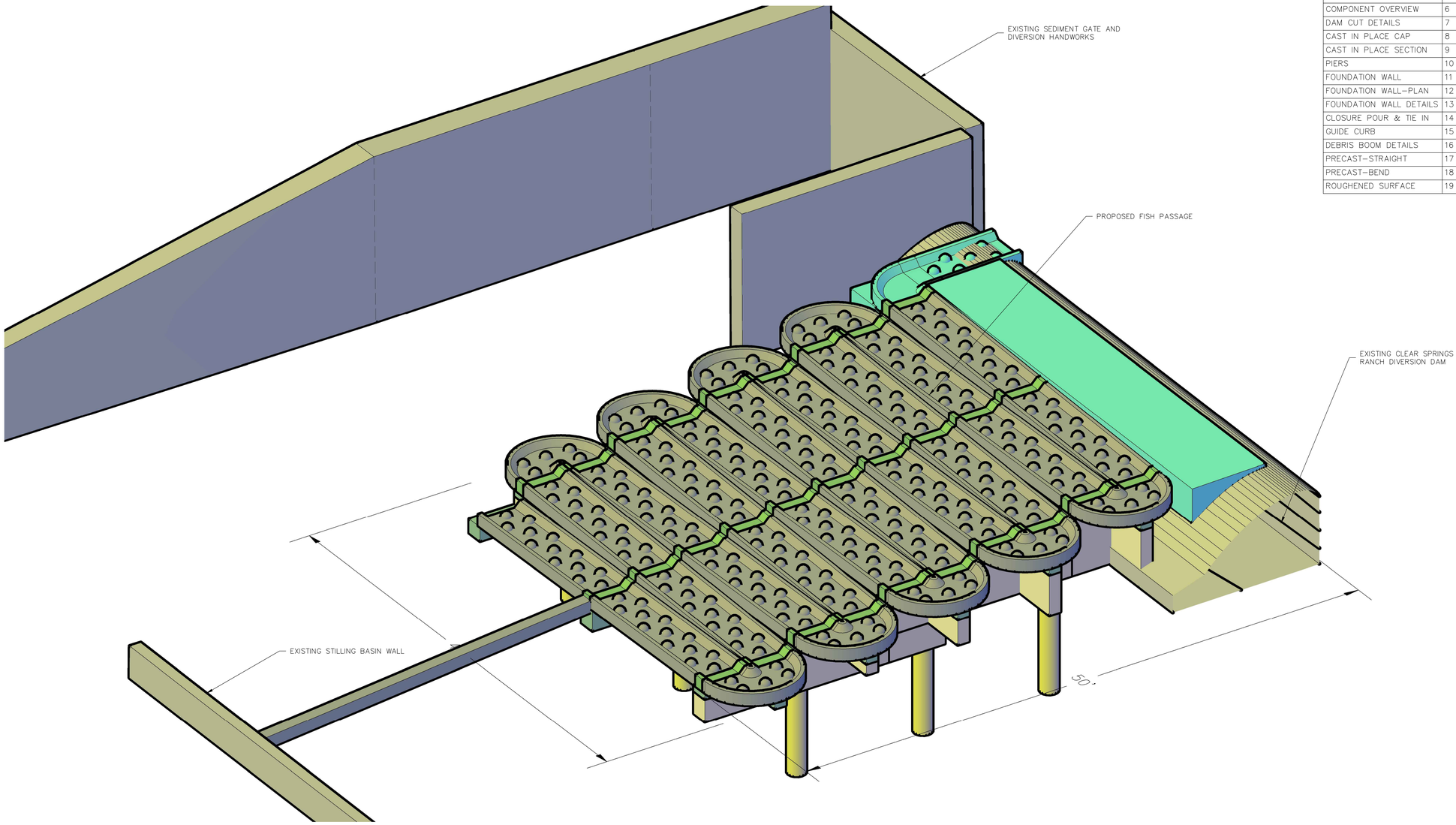
Colorado Springs Utilities
It's how we're all connected

WATER SERVICES DIVISION
WASTEWATER PLANNING AND DESIGN

Approved for Construction

By: _____ _____
Colorado Springs Utilities ***Date***

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE



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(AS BUILT INFORMATION)

DATE STARTED:
DATE COMPLETED:
FOREMAN:
INSPECTOR:
CONTRACTOR:

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: VALUE
PROJECT NUMBER: VALUE
FIMS MAP: VALUE
SHEET NO: 1 OF 19
NETWORK LOCATION & DRAWING TITLE:
L:\WWP\SSCC\CSR FISH PASSAGE CONSTRUCTION\DWG\CSR-CV.dwg
REVISIONS:

GENERAL NOTES

CODE:

INTERNATIONAL BUILDING CODE, 2003 EDITION, & PIKES PEAK REGIONAL BUILDING CODE, 2005 EDITION

DESIGN LOADS:

DEAD LOAD	STRUCTURE WEIGHT
FLUID LOAD	62.4 PCF
100YR FLOOD	V = 21 CFS, DEPTH = 15'

GENERAL:

ALL WORK SHALL BE DONE ACCORDING TO THE CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, APPLICABLE TO THE PROJECT (2005 VERSION).

THE INFORMATION ON THESE PLANS CONCERNING THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

THE CONTRACT STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING OF LOADS DUE TO CONSTRUCTION EQUIPMENT, WIND LOADS, ETC.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL STABILITY DURING CONSTRUCTION. THESE PLANS DO NOT INCLUDE THE NECESSARY COMPONENTS OR EQUIPMENT FOR THE STABILITY OF THE STRUCTURES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATING TO CONSTRUCTION INCLUDING BUT NOT LIMITED TO ERECTION METHODS, BRACING, SHORING, RIGGING, GUYS, SCAFFOLDING, FORMWORK, FALSEWORK, AND OTHER WORK AIDS REQUIRED TO SAFELY PERFORM THE WORK SHOWN.

WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDUM.

NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL AND FOUNDATION NOTES AND TYPICAL DETAILS. WHERE NO SPECIFIC DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.

WHERE ANY DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.

ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF COLORADO.

CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH THE OWNERS' REPRESENTATIVE. DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS.

FOUNDATION:

SOIL BENEATH FOOTINGS, STEM WALLS AND SLABS-ON-GRADE SHALL BE SOLID, UNDISTURBED MATERIAL, FREE OF FROST, WATER AND FOREIGN DEBRIS, OR APPROVED STRUCTURAL FILL, COMPACTED TO 95% OF MODIFIED PROCTOR, ASTM D1557.

NO BACKFILL SHALL BE PLACED BEHIND CANTILEVERED WALLS UNTIL THE CONCRETE HAS ATTAINED 100% OF ITS SPECIFIED COMPRESSIVE STRENGTH.

STRUCTURE BACKFILL SHALL BE CDOT STRUCTURE BACKFILL CLASS 1.

MATERIALS

CONCRETE:

f'c = 6,000 psi (PRECAST CHANNEL SECTIONS)
f'c = 4,500 psi (CLASS D)

ALL CONCRETE SHALL CONFORM TO SECTION 601 OF CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

PRECAST CONCRETE CHANNEL SECTIONS SHALL CONFORM TO SECTION 618 OF CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

ALL CONCRETE SHALL BE DESIGNED IN ACCORDANCE WITH ACI 318-02.

CONSTRUCTION TOLERANCES SHALL BE IN ACCORDANCE WITH ACI 347.

PLACING OF CONCRETE SHALL CONFORM TO ACI 304R. HOT WEATHER CONCRETE SHALL BE PLACED PER ACI 305R. COLD WEATHER CONCRETE SHALL BE PLACED PER ACI 306R.

ALL EXPOSED CONCRETE SURFACES SHALL HAVE A CDOT CLASS 1 FINISH.

CONSTRUCTION JOINTS INDICATED ARE SUGGESTED LOCATIONS. CONTRACTOR MAY REVISE LOCATION OF JOINTS, SUBJECT TO SPECIFIED REQUIREMENTS, AND SHALL SUBMIT ALL JOINT LOCATIONS FOR REVIEW BY THE ENGINEER. ADDITIONAL CONSTRUCTION JOINT LOCATIONS, AS REQUIRED FOR CONSTRUCTION, SHALL BE SUBMITTED FOR REVIEW.

ALL CONSTRUCTION JOINTS NOT SHOWN ON THE PLANS SHALL BE APPROVED BY THE ENGINEER.

ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY ROUGHENED AND CLEANED BEFORE FRESH CONCRETE IS PLACED.

ALL EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 1/2 IN.

CONTINUOUS PLASTIC WATERSTOPS AS SPECIFIED SHALL BE INSTALLED IN ALL CONSTRUCTION JOINTS IN WALLS OF WATER HOLDING BASINS AND CHANNELS AND BELOW GRADE WALLS, EXCEPT WHERE INDICATED OTHERWISE.

THE CONTRACTOR SHALL COORDINATE PLACEMENT OF ALL OPENINGS, CURBS, DOWELS, SLEEVES, CONDUITS, BOLTS AND INSERTS PRIOR TO PLACEMENT OF CONCRETE.

NO ALUMINUM CONDUIT OR PRODUCTS CONTAINING ALUMINUM OR ANY OTHER MATERIAL INJURIOUS TO THE CONCRETE SHALL BE EMBEDDED IN THE CONCRETE.

GROUT UNDER BASE PLATES SHALL BE NON SHRINK NONMETALLIC GROUT WITH A MINIMUM COMPRESSIVE STRENGTH IN 28 DAYS OF 7500 PSI.

CONCRETE REINFORCING STEEL

REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. REINFORCING TO BE WELDED SHALL CONFORM TO ASTM A706, GRADE 60. WELDED WIRE REINFORCEMENT SHALL BE SMOOTH OR DEFORMED STEEL WIRE FABRIC CONFORMING TO ASTM A185 AND A497.

REINFORCEMENT SHALL BE DETAILED IN ACCORDANCE WITH THE ACI DETAILING MANUAL, LATEST EDITION.

ALL BENDS, UNLESS OTHERWISE SHOWN, SHALL BE A 90 DEGREE STANDARD HOOK AS DEFINED IN LATEST EDITION OF ACI 318.

REINFORCEMENT BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH PIPE, PIPE FLANGE, OR METAL PARTS EMBEDDED IN CONCRETE. A MINIMUM OF 2 INCHES CLEARANCE SHALL BE PROVIDED AT ALL TIMES IN CIP MEMBERS.

UNLESS OTHERWISE INDICATED, WALLS AND SLABS WITH ONE LAYER OF REINFORCEMENT SHALL HAVE THAT REINFORCEMENT CENTERED.

IN NO CASE SHALL BARS BE FIELD BENT TO GREATER THAN 6 TO 1 SLOPE.

METAL CLIPS OR SUPPORTS SHALL NOT BE PLACED IN CONTACT WITH THE FORMS OR THE SUBGRADE. CONCRETE BLOCKS (OR DOBIES) SUPPORTING BARS ON SUBGRADE SHALL BE IN SUFFICIENT NUMBERS TO SUPPORT THE BARS WITHOUT SETTLEMENT, BUT IN NO CASE SHALL SUCH SUPPORT BE CONTINUOUS.

DOWELS SHALL BE WIRED OR OTHERWISE HELD IN POSITION. THEY SHALL NOT BE SHOVED INTO FRESHLY PLACED CONCRETE.

IN GENERAL, THE WALL CORNER REINFORCING SIZES AND SPACINGS SHALL BE AS CALLED OUT ON THE PLANS AND REFERENCED TO THESE DETAILS AND THE TYPICAL HORIZONTAL WALL REINFORCING SHALL LAP WITH THE UNIQUE HORIZONTAL REINFORCING. REFER TO WALL CORNER AND WALL INTERSECTION REINFORCING DETAILS.

VERTICAL WALL BARS SHALL BE LAPPED WITH DOWELS FROM THE FOOTINGS OR BASE SLABS, AND SHALL BE EXTENDED INTO THE TOP FACE OF ROOF SLABS AND HOOKED WITH TOP SLAB REINFORCEMENT. PROVIDE A MINIMUM OF TWO FULL HEIGHT VERTICAL BARS WITH MATCHING DOWELS AT WALL ENDS, CORNERS, AND INTERSECTIONS WITH SIZE TO MATCH TYPICAL VERTICAL REINFORCING STEEL SHOWN OR AS REQUIRED BY NOTES ABOVE.

ALL SPLICE LOCATIONS SUBJECT TO APPROVAL. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT CORNERS AND INTERSECTIONS OF FOOTINGS AND WALLS. REINFORCING BAR SPACINGS GIVEN ARE MAXIMUM ON CENTERS. ALL BARS PER CRSI SPECIFICATIONS AND HANDBOOK. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE. WHEN SPLICING BARS OF DIFFERENT SIZE, THE LENGTH OF THE LAP SHALL BE GOVERNED BY THE LARGER DIAMETER BAR. SPLICES ARE TO BE MADE SO THAT THE GIVEN DISTANCES TO THE FACE OF CONCRETE ARE MAINTAINED.

CONCRETE DESIGN STRENGTH = 4,500 PSI		GRADE 60 REINFORING STEEL								
BAR SIZE		#3	#4	#5	#6	#7	#8	#9	#10	#11
LAP SPLICE LENGTH										9'-5"
SPACINGS < 6"	TOP BAR *	1'-4"	2'-0"	3'-0"	4'-0"	5'-10"	6'-8"	7'-7"	8'-6"	7'-3"
	OTHER BAR	1'-4"	1'-7"	2'-4"	3'-1"	4'-6"	5'-2"	5'-10"	6'-7"	5'-8"
SPACING ≥ 6"	TOP BAR *	1'-4"	1'-8"	2'-0"	2'-5"	3'-6"	4'-0"	5'-0"	6'-2"	5'-7"
	OTHER BAR	1'-4"	1'-4"	1'-7"	1'-10"	2'-9"	3'-1"	3'-10	4'-9"	7'-3"
EMBEDMENT LENGTH										5'-7"
SPACING < 6"	TOP BAR *	1'-0"	1'-7"	2'-4"	3'-1"	4'-6"	5'-2"	5'-10"	6'-7"	5'-8"
	OTHER BAR	1'-0"	1'-3"	1'-9"	2'-5"	3'-6"	4'-0"	4'-6"	5'-1"	4'-5"
SPACING ≥ 6"	TOP BAR *	1'-0"	1'-3"	1'-7"	1'-10"	2'-9"	3'-1"	3'-10"	4'-9"	
	OTHER BAR	1'-0"	1'-0"	1'-3"	1'-5"	2'-1"	2'-6"	3'-0"	3'-8"	

* TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR. CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.

SERVICES

Know what's **below.**
Call before you dig.

ABBREVIATIONS

@	ANDDE
ACT	ACTUAL
BFV	BUTTERFLY VALVE
BOP	BOTTOM OF PIPE
BOV	BLOWOFF ASSEMBLY AND VALVE
CB	CATCH BASIN
CMP	CORRUGATED METAL PIPE
CPLG.(INS.),(RED.), (STR.)	COUPLING (INSULATING), (REDUCING), (STRAIGHT)
CR	CURB RETURN
CRA	CONCRETE REVERSE ANCHOR
CTRB	CONCRETE THRUST REACTION BLOCK
DEFL	DEFLECT
DIP	DUCTILE IRON PIPE
EL	ELEVATION
FLG	FLANGE
GPM	GALLONS PER MINUTE
GR.BK.(OR V.P.I.)	V.P.I. GRADE BREAK
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HYD. ASSY.	INCLUDES FIRE HYDRANT, LATERAL, VALVE, TIE RODS AND REVERSE ANCHOR
INV.	INVERT
MJ	MECHANICAL JOINT
N, S, E, W	NORTH, SOUTH, EAST, WEST
PH	POTHOLE
PL	PROPERTY LINE
PP	POWER POLE
PSI	POUNDS PER SQUARE INCH
PUPS	12" OR SMALLER, USE PLAIN END BY PLAIN END, 30" LENGTH, 16" OR LARGER USE PLAIN END BY PLAIN END, 24" LENGTH
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
RED	REDUCER
RSTNT	MJ RESTRAINT (i.e. MEGALUG)
SJ	SLIP JOINT
SS	SANITARY SEWER
STA	STATION
STS	STORM SEWER
TOP	TOP OF PIPE
TS	TEST STATION
WL	WATER LINE
.333	4" ABOVE EXIST. TOP OF CURB OR GROUND

(AS BUILT INFORMATION)

DATE STARTED:
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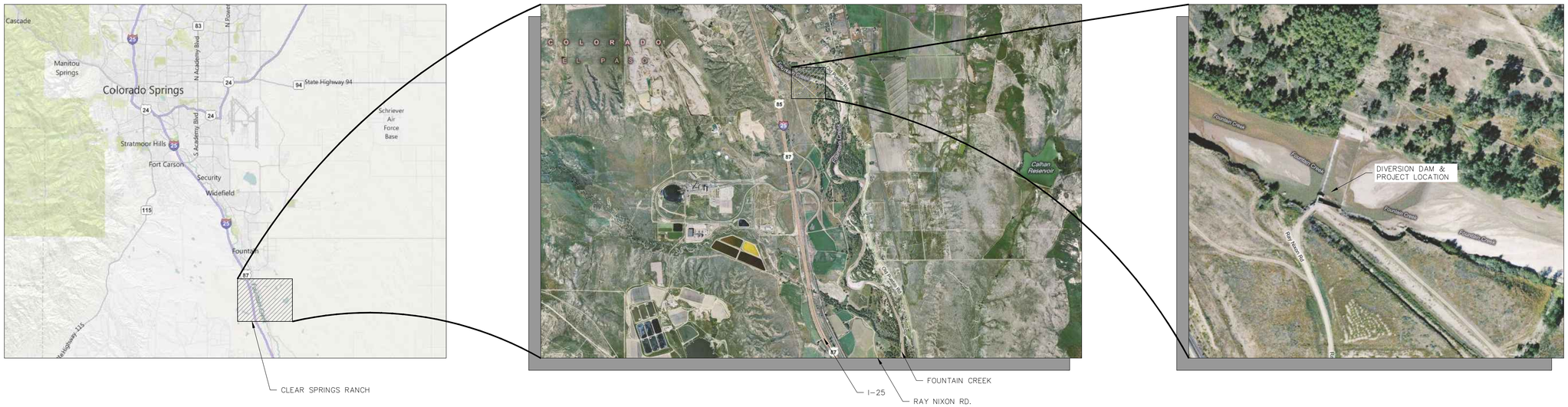
CONTRACTOR:

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

GENERAL NOTES AND MATERIALS

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: VALUE
PROJECT NUMBER: VALUE
FIMS MAP: VALUE
SHEET NO: 2 OF 17
NETWORK LOCATION & DRAWING TITLE: L:\WWP\SSCC\CSR FISH PASSAGE CONSTRUCTION\DWG\CSR-NOTES.dwg
REVISIONS:



VICINITY MAP

TARGETED FISH SPECIES

ARKANSAS DARTER (STATE THREATENED)

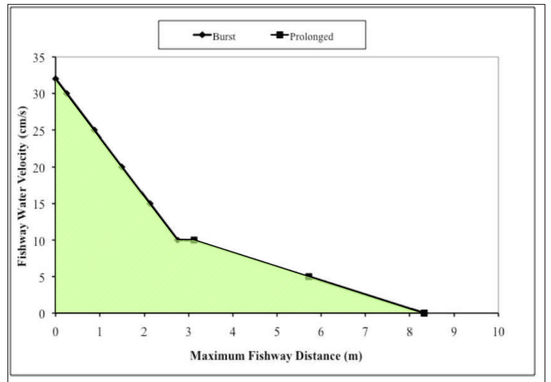
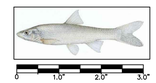


Figure 5. — Maximum allowable distances between velocity refuges and water velocities for Arkansas darters swimming at burst and prolonged speeds at 17.5°C. The observed median for endurance at 16 cm/s was used to construct the prolonged swimming portion of the curve, and the regression equation prediction for 32 cm/s was used to construct the burst swimming portion of the curve (see results for details). The sustained swimming portion of this curve was omitted in order to retain some resolution at the burst speed scale. Any combination of distance between velocity refuges and water velocity under the curve is acceptable for allowing Arkansas darter passage.

FLATHEAD CHUB (STATE SPECIAL CONCERN)



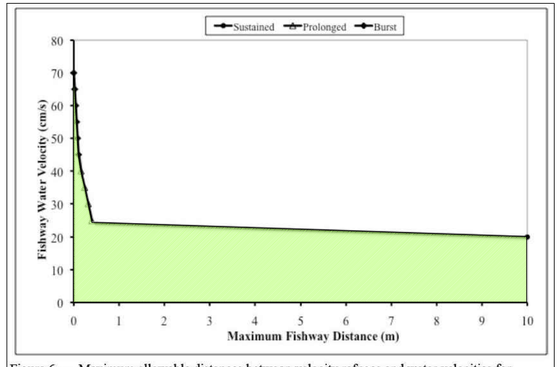


Figure 6. — Maximum allowable distances between velocity refuges and water velocities for flathead chub swimming at burst, sustained, and prolonged speeds at 10°C. Observed medians were used to construct the curve. Any combination of distance between velocity refuges and water velocity under the curve is acceptable for allowing flathead chub passage.

RECOMMENDED DESIGN CRITERIA
30 cm/sec WITH 0.2 m REST INTERVALS
(0.98 ft/sec WITH 7.9 in REST INTERVALS)

FROM THE REPORT; "SWIMMING PERFORMANCE OF TWO FOUNTAIN CREEK FISHES: IMPLICATIONS FOR FISHWAY DESIGN AT THE CLEAR SPRINGS DIVERSION", ASHLEY D. FICKE M.S. AND CHRISTOPHER A. MYRICK, PHD. JANUARY 2010

(AS BUILT INFORMATION)

DATE STARTED:
DATE COMPLETED:
FOREMAN:
INSPECTOR:
CONTRACTOR:

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE
W/ (size & material) W.L.

GENERAL NOTES AND MATERIALS

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: VALUE
PROJECT NUMBER: VALUE
FIMS MAP: VALUE
SHEET NO: 3 OF 19
NETWORK LOCATION & DRAWING TITLE:
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REVISIONS:

1 EXISTING CONDITIONS: PLAN VIEW
Scale: 1" = 40'

N

0 40' 80'
SCALE: 1" = 40'

(AS BUILT INFORMATION)

DATE STARTED:
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CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

EXISTING CONDITIONS

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: VALUE
PROJECT NUMBER: VALUE
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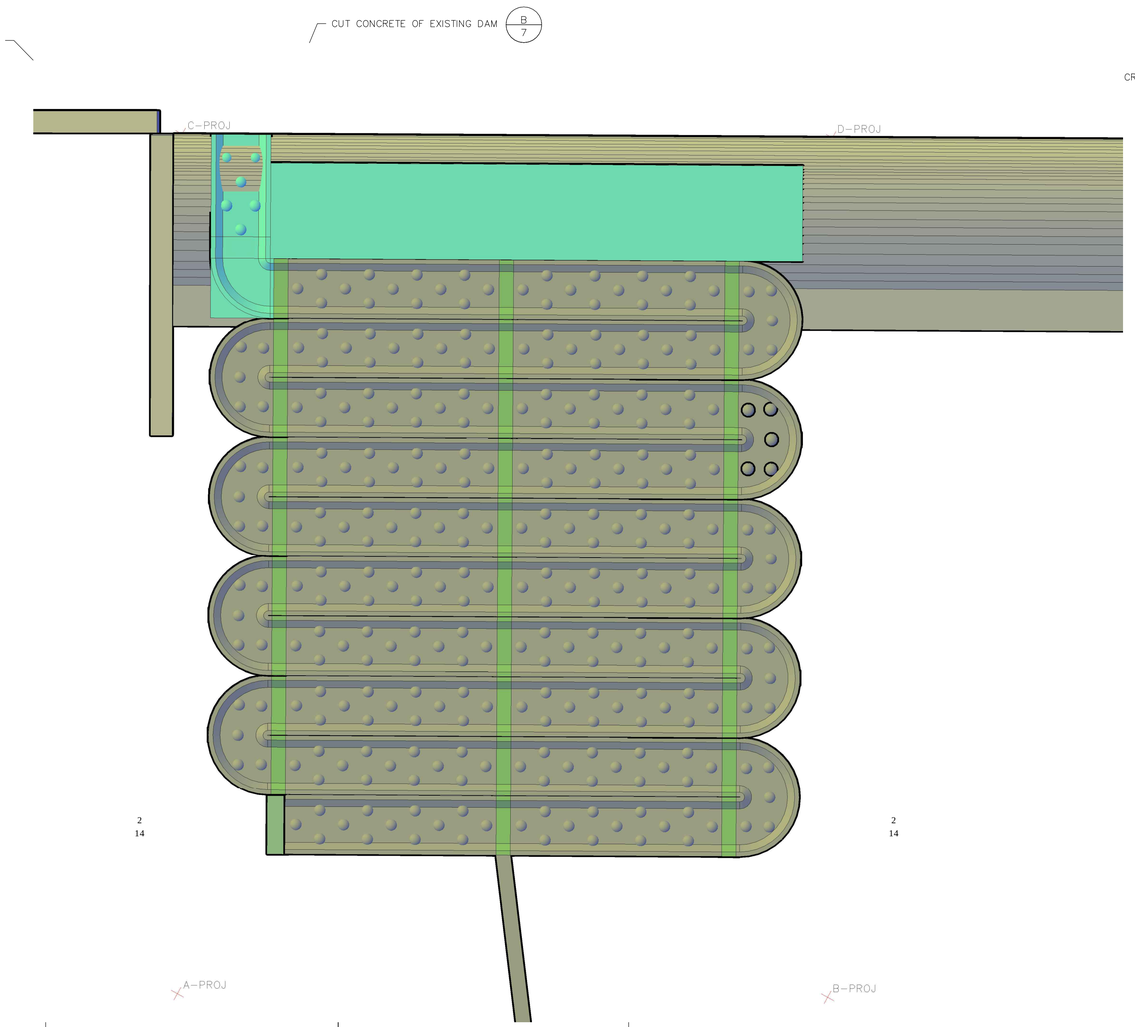

PRECAST MATERIAL TABLE			
PART	NAME	QUANTITY	DETAIL SHEET
A	STRAIGHT SECTION	20	SHEET 15
B	180° BEND SECTION	9	SHEET 16
C	CAST IN PLACE SHORT SECTION	1	SHEET 9
D	CAST IN PLACE 90° BEND SECTION	1	SHEET 9

STATE PLANE					PROJECT COORDINATES				
Point #	Elevation	Northing	Easting	Description	Point #	Elevation	Northing	Easting	Description
1	5436.05	1297549.73	3230931.41	A-SURVEY	1	100.00	100.00	100.00	A-PROJ
2	5436.05	1297593.33	3230944.17	B-SURVEY	2	100.00	143.60	112.76	B-PROJ
3	5436.05	1297566.59	3230873.79	C-SURVEY	3	100.00	116.86	42.38	C-PROJ
4	5436.05	1297610.19	3230886.54	D-SURVEY	4	100.00	160.46	55.13	D-PROJ

1 PASSAGE PLAN VIEW

Scale: 1"=5'

(AS BUILT INFORMATION)

DATE STARTED:
DATE COMPLETED:
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CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

PASSAGE PLAN VIEW

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: VALUE
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FIMS MAP: VALUE
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NETWORK LOCATION & DRAWING TITLE:
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REVISIONS:

1

Scale: NA

PART	NAME	DETAIL SHEET
A	STRAIGHT SECTION	SHEET 15
B	180° BEND SECTION	SHEET 16

(AS BUILT INFORMATION)

DATE STARTED:

DATE COMPLETED:

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CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

COMPONENT OVERVIEW

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: VALUE

PROJECT NUMBER: VALUE

FIMS MAP: VALUE

SHEET NO: 6 OF 17

NETWORK LOCATION & DRAWING TITLE:
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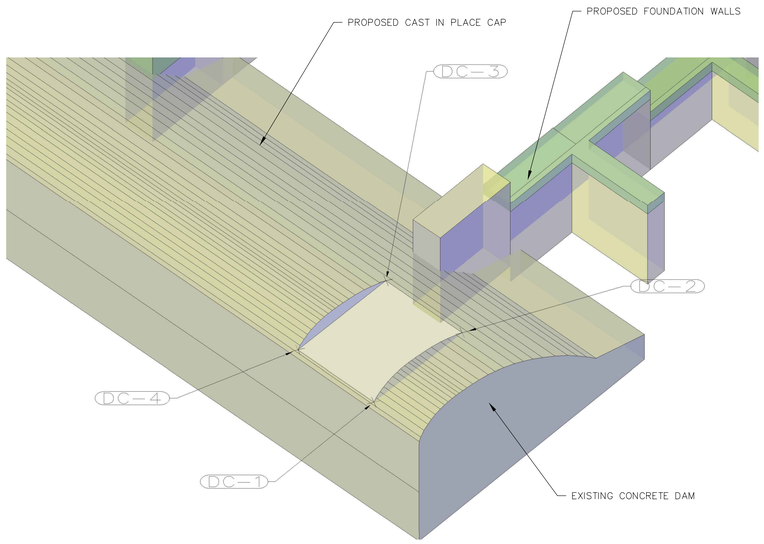
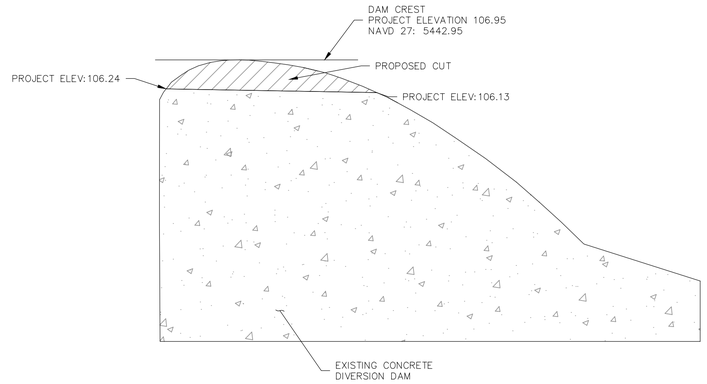
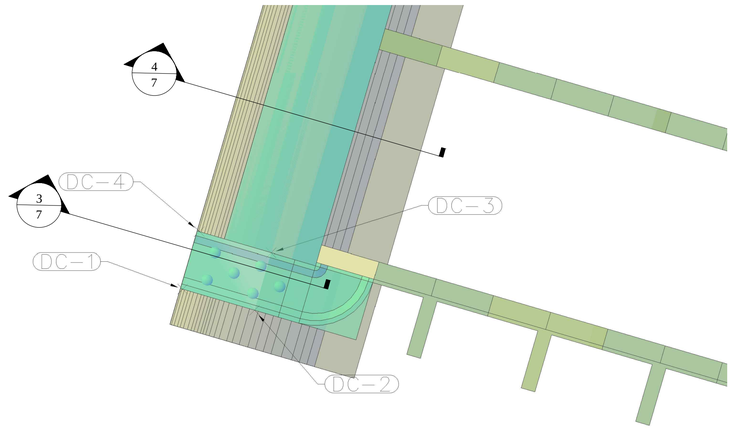


B DAM CUT DETAILS: MODEL VIEW
Scale: NA

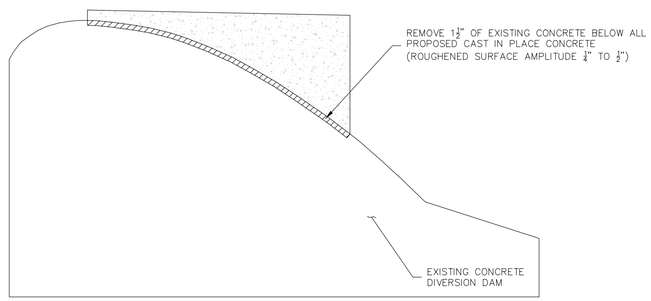
Point Table				
Point #	Elevation	Northing	Easting	Description
104	106.24	122.78	44.28	DC-4
103	106.13	121.31	49.29	DC-3
102	106.13	117.31	48.13	DC-2
101	106.24	118.78	43.11	DC-1



3 DAM CUT DETAILS: SECTION VIEW
Scale: -



2 DAM CUT DETAILS: PLAN VIEW
Scale: 1"=5'



4 DAM CUT DETAILS: CONCRETE REMOVAL SECTION VIEW
Scale: -

(AS BUILT INFORMATION)
DATE STARTED:
DATE COMPLETED:
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CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

DAM CUT DETAILS

(PROJECT RELATED INFORMATION)
PARENT WORK ORDER NUMBER: VALUE
PROJECT NUMBER: VALUE
FIMS MAP: VALUE
SHEET NO: 7 OF 17
NETWORK LOCATION & DRAWING TITLE:
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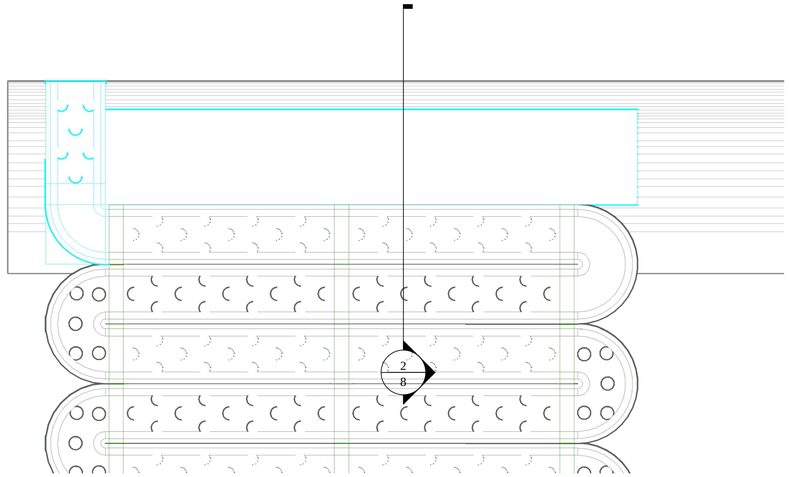
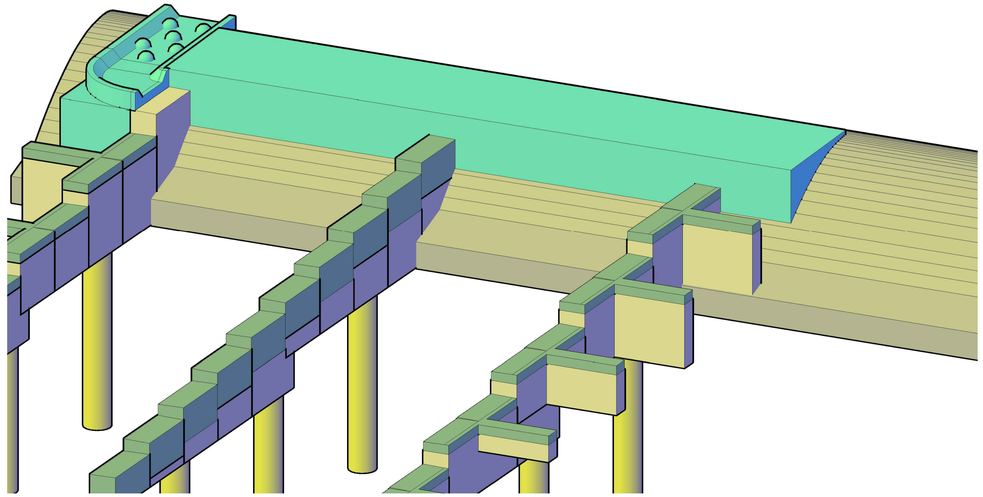
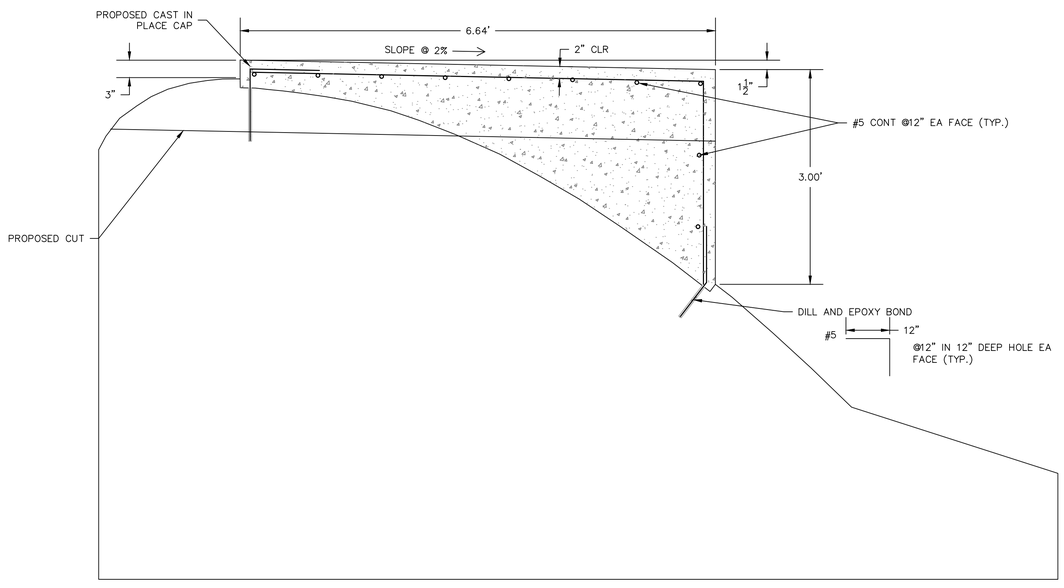


1 CAST IN PLACE CAP: PLAN VIEW
Scale: 1"=5'



D CAST IN PLACE CAP: MODEL VIEW
Scale: NA



2 CAST IN PLACE CAP: SECTION VIEW
Scale: 1" = 1'

(AS BUILT INFORMATION)

DATE STARTED:
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CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

CAST IN PLACE CAP

(PROJECT RELATED INFORMATION)

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SHEET NO: 8 OF 19
NETWORK LOCATION & DRAWING TITLE:
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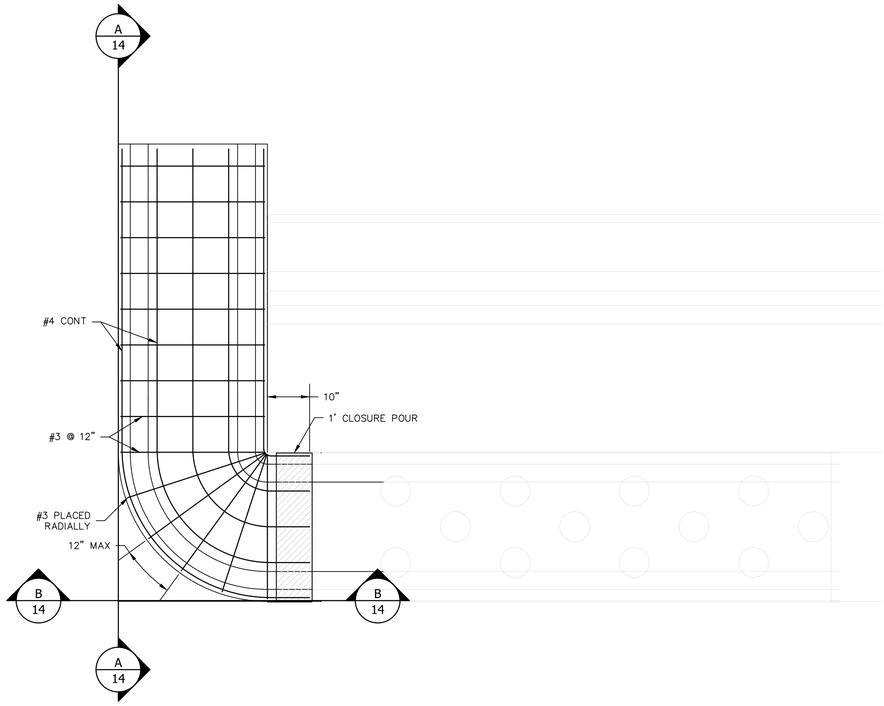
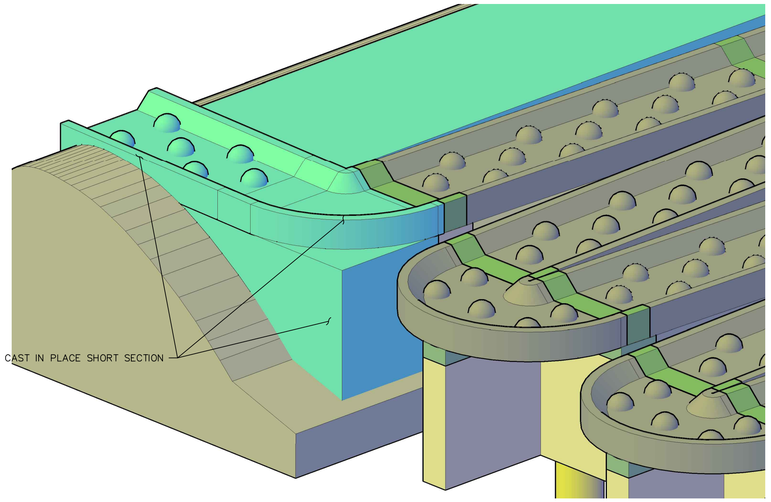


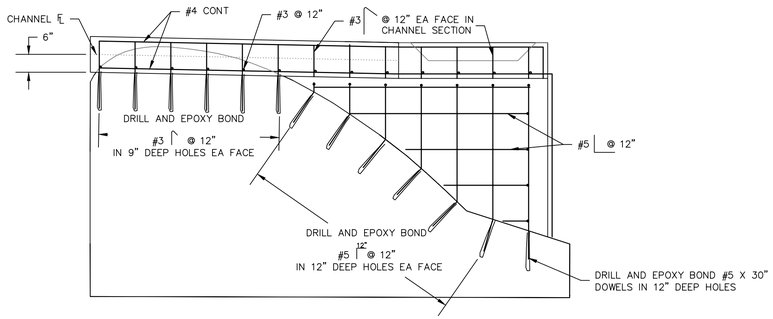
1 CAST IN PLACE CHANNEL (PLAN)

Scale: 1/2"=1'



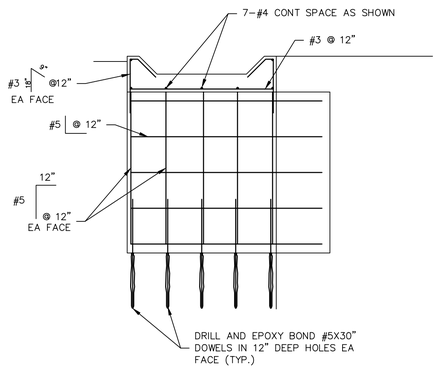
2 CAST IN PLACE CHANNEL (MODEL)

Scale: NA



A CAST IN PLACE CHANNEL (SECTION A-A)

Scale: 1/2"=1'



B CAST IN PLACE CHANNEL (SECTION B-B)

Scale: 1/2"=1'

(AS BUILT INFORMATION)

DATE STARTED:

DATE COMPLETED:

FOREMAN:

INSPECTOR:

CONTRACTOR:

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

CAST IN PLACE SECTION

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: VALUE

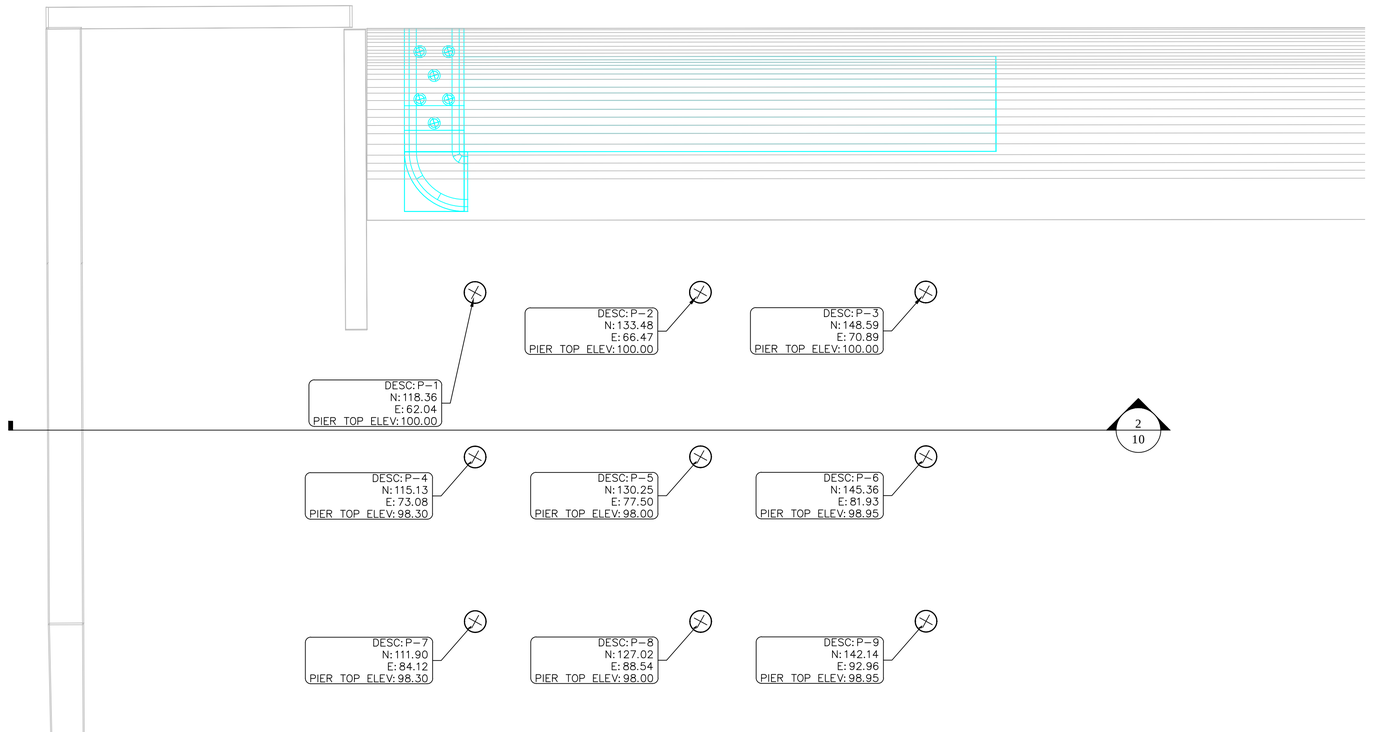
PROJECT NUMBER: VALUE

FMS MAP: VALUE

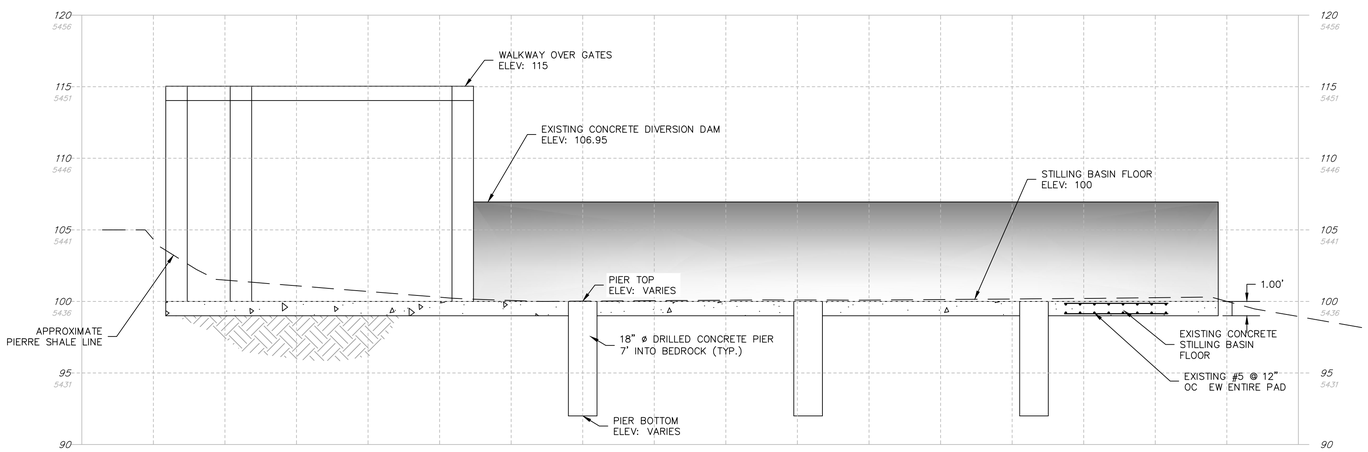
SHEET NO: 9 OF 17

NETWORK LOCATION & DRAWING TITLE:
L:\WWP\SSCC\CSR FISH PASSAGE CONSTRUCTION\DWG\CSR-SHORT-SEC.dwg

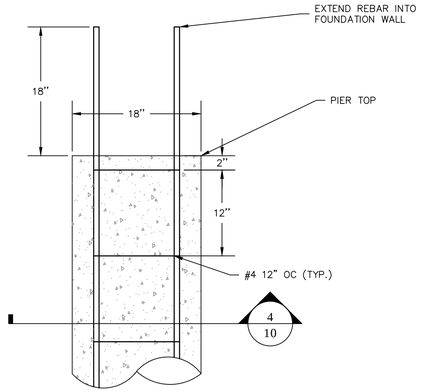
REVISIONS:

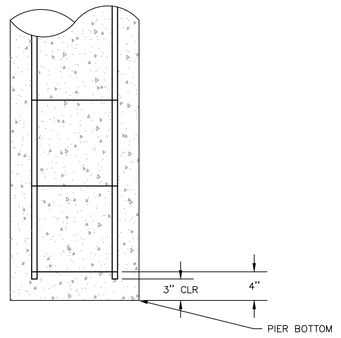


B PIERS: PLAN VIEW
Scale: 1"=5'

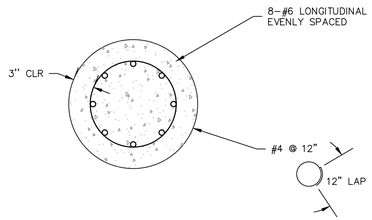


2 PIERS: SECTION VIEW
Scale: 1"=5'





3 PIERS: DETAIL SECTION
Scale: -



4 PIERS: DETAIL SECTION
Scale: -

NOTE:
PIER CONCRETE SHALL BE CDOT CLASS D

(AS BUILT INFORMATION)
DATE STARTED:
DATE COMPLETED:
FOREMAN:
INSPECTOR:
CONTRACTOR:

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

PIERS

(PROJECT RELATED INFORMATION)
PARENT WORK ORDER NUMBER: VALUE
PROJECT NUMBER: VALUE
FIMS MAP: VALUE
SHEET NO: 10 OF 17
NETWORK LOCATION & DRAWING TITLE:
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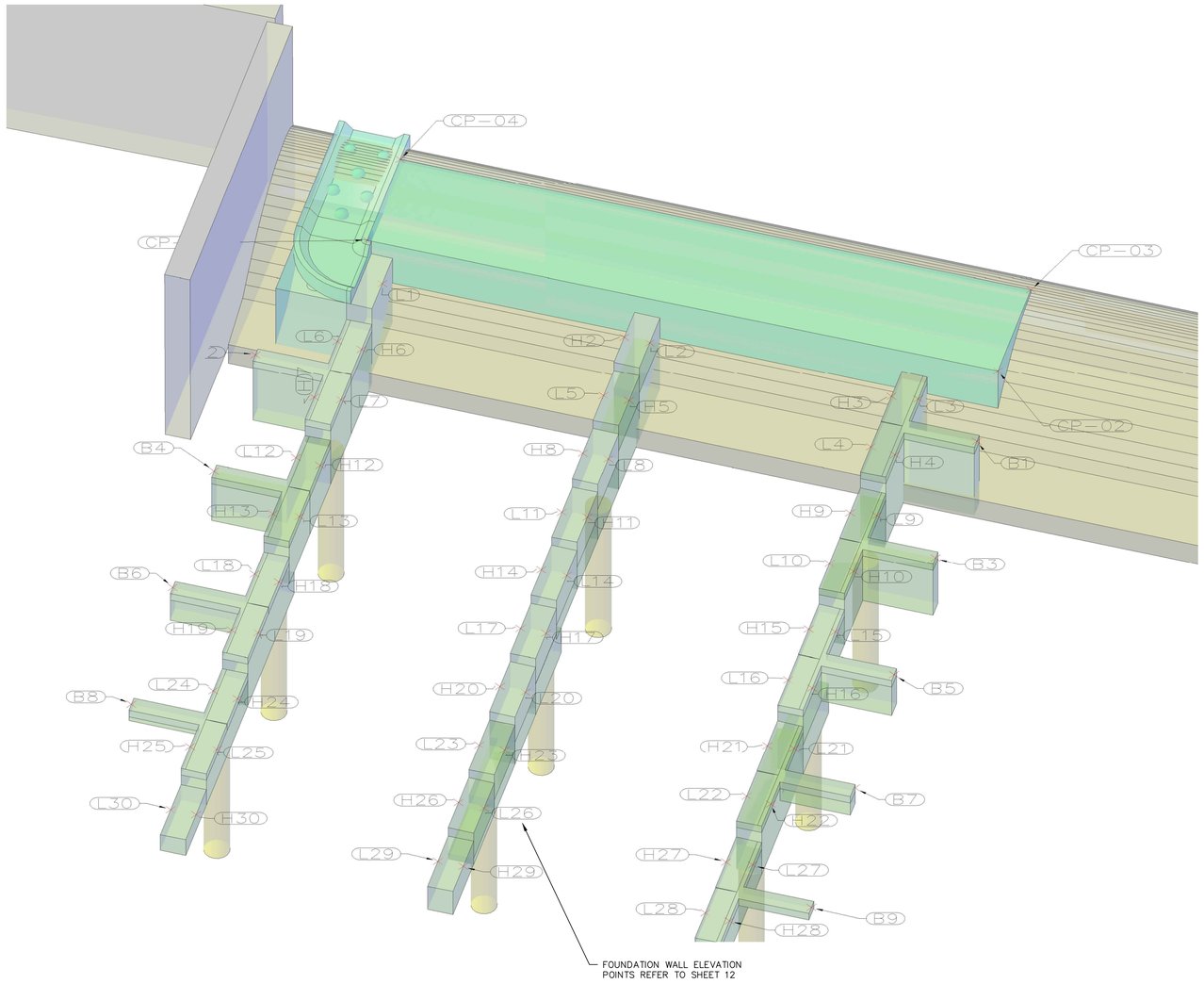
REVISIONS:



C FOUNDATION WALL: MODEL VIEW

Scale: NA

(AS BUILT INFORMATION)

DATE STARTED:

DATE COMPLETED:

FOREMAN:

INSPECTOR:

CONTRACTOR:

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

FOUNDATION WALL

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: VALUE

PROJECT NUMBER: VALUE

FIMS MAP-: VALUE

SHEET NO: 11 OF 19

NETWORK LOCATION & DRAWING TITLE:
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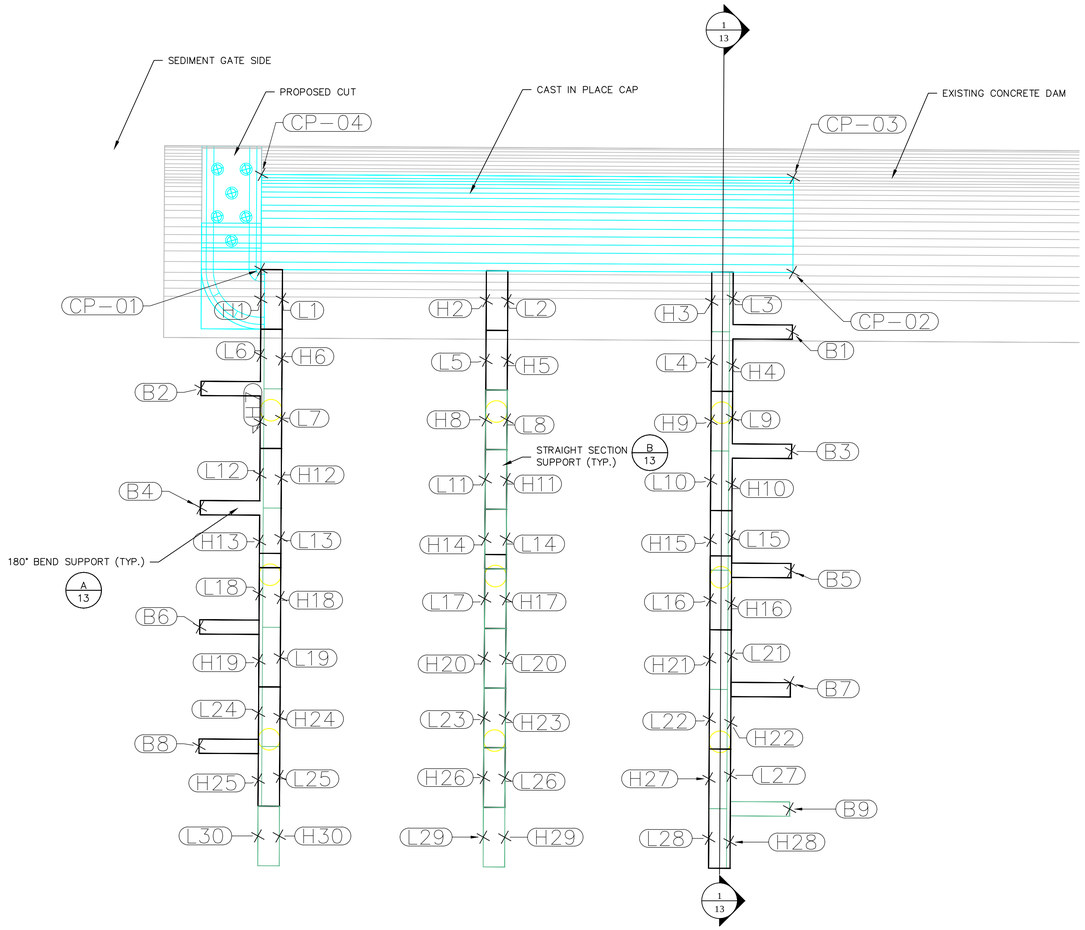
REVISIONS:



C FOUNDATION WALL PLAN VIEW

SCALE: 1"=5'

Point Table				
Point #	Elevation	Northing	Easting	Description
269	99.51	109.29	90.38	L30
268	99.54	110.73	90.81	H30
267	99.83	124.40	94.81	L29
266	99.86	125.84	95.23	H29
265	100.14	139.52	99.23	L28
264	100.16	140.89	99.89	H28
263	100.16	145.52	98.82	B9
262	100.16	142.20	95.41	L27
261	100.19	140.69	95.23	H27
69	107.20	122.27	46.02	CP-04
68	107.20	157.94	56.46	CP-03
67	107.07	156.07	62.83	CP-02
66	107.07	120.40	52.39	CP-01
238	102.48	130.52	79.23	H17
237	102.76	144.20	83.23	L16
236	102.79	145.57	83.90	H16
235	102.79	150.20	82.82	B5
234	102.79	146.88	79.42	L15
233	102.82	145.37	79.24	H15
232	103.10	131.69	75.23	L14

Point Table				
Point #	Elevation	Northing	Easting	Description
231	103.13	130.25	74.81	H14
230	103.42	116.58	70.81	L13
229	103.44	115.07	70.63	H13
228	103.44	111.74	67.23	B4
227	103.44	116.38	66.15	L12
226	103.47	117.75	66.81	H12
225	103.76	131.42	70.81	L11
224	103.79	132.86	71.23	H11
223	104.07	146.54	75.24	L10
222	104.10	147.91	75.90	H10
221	104.10	152.54	74.82	B3
220	104.10	149.22	71.42	L9
219	104.13	147.71	71.24	H9
218	104.41	134.03	67.24	L8
217	104.44	132.59	66.81	H8
216	104.73	118.92	62.81	L7
215	104.75	117.41	62.63	H7
214	104.75	114.08	59.23	B2
213	104.75	118.72	58.15	L6
212	104.78	120.09	58.81	H6

Point Table				
Point #	Elevation	Northing	Easting	Description
211	105.07	133.76	62.82	L5
210	105.10	135.20	63.24	H5
209	105.38	148.88	67.24	L4
208	105.41	150.25	67.90	H4
207	105.41	154.88	66.82	B1
206	105.41	151.56	63.42	L3
205	105.44	150.05	63.24	H3
204	105.73	136.37	59.24	L2
203	105.76	134.93	58.82	H2
202	106.04	121.26	54.81	L1
201	106.07	119.82	54.39	H1
260	100.48	127.01	91.23	L26
259	100.51	125.57	90.81	H26
258	100.80	111.90	86.81	L25
257	100.82	110.39	86.63	H25
256	100.82	107.06	83.22	B8
255	100.82	111.70	82.15	L24
254	100.85	113.07	82.81	H24
253	101.14	126.74	86.81	L23
252	101.17	128.18	87.23	H23

Point Table				
Point #	Elevation	Northing	Easting	Description
251	101.45	141.86	91.23	L22
250	101.48	143.23	91.89	H22
249	101.22	148.00	90.34	B7
248	101.48	144.54	87.41	L21
247	101.51	143.03	87.23	H21
246	101.79	129.35	83.23	L20
245	101.82	127.91	82.81	H20
244	102.11	114.24	78.81	L19
243	102.13	112.73	78.63	H19
242	102.13	109.40	75.22	B6
241	102.13	114.04	74.15	L18
240	102.16	115.41	74.81	H18
239	102.45	129.08	78.81	L17

(AS BUILT INFORMATION)

DATE STARTED:

DATE COMPLETED:

FOREMAN:

INSPECTOR:

CONTRACTOR:

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

FOUNDATION WALL-PLAN

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: VALUE

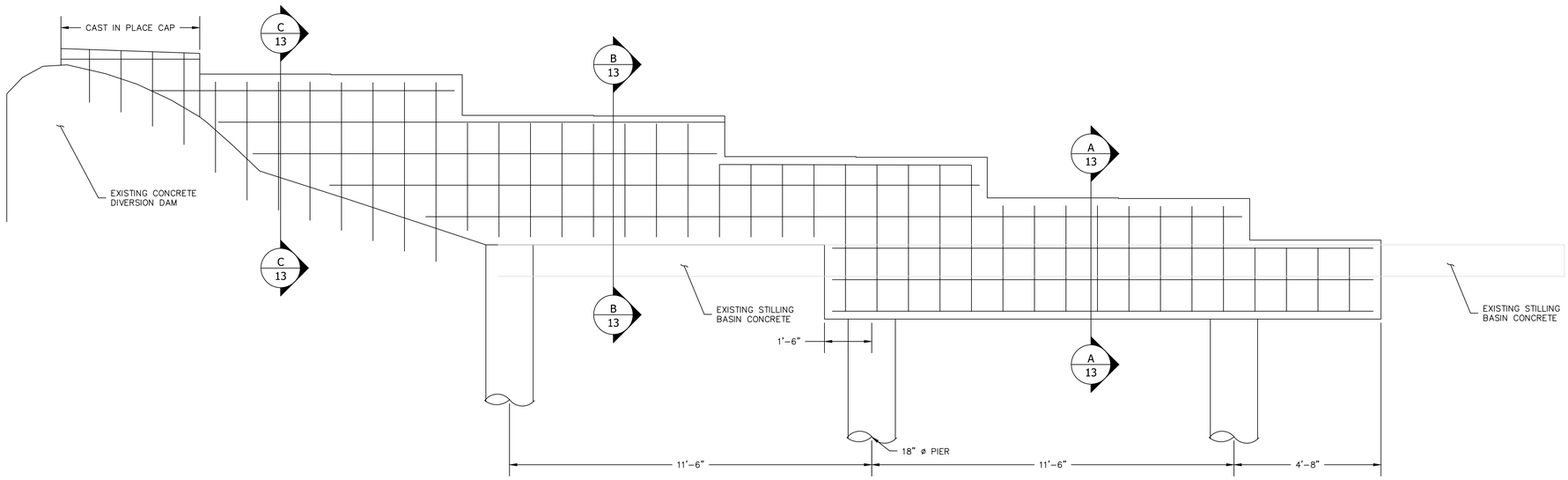
PROJECT NUMBER: VALUE

FIMS MAP: VALUE

SHEET NO: 12 OF 19

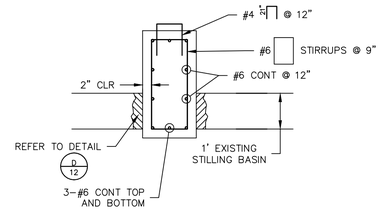
NETWORK LOCATION & DRAWING TITLE:
L:\WWP\SSCC\CSR FISH PASSAGE CONSTRUCTION\DWG\CSR-WALL.dwg

REVISIONS:



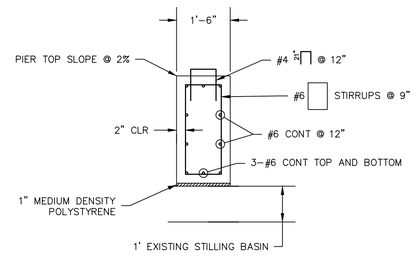
1 FOUNDATION WALL DETAILS: TYPICAL SECTION

Scale: 1/2"=1'



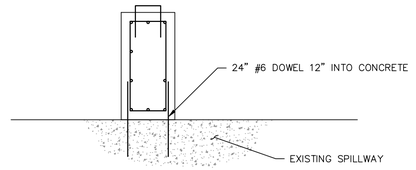
A FOUNDATION WALL DETAILS: SECTION A-A

Scale: 1/2"=1'



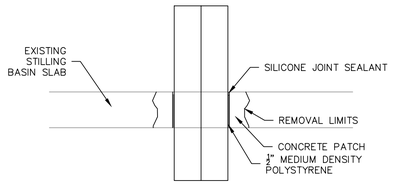
B FOUNDATION WALL DETAILS: SECTION B-B

Scale: 1/2"=1'



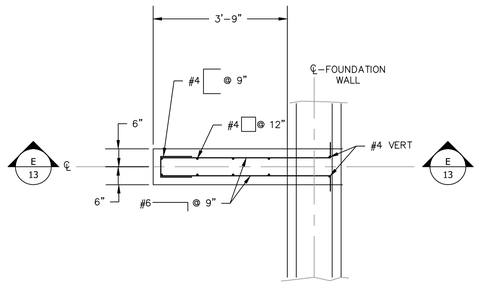
C FOUNDATION WALL DETAILS: SECTION C-C

Scale: 1/2"=1'



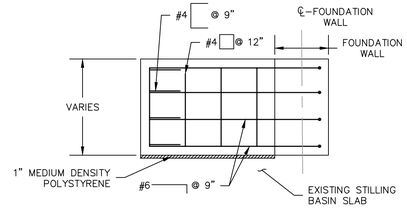
D FOUNDATION WALL DETAILS: SECTION

Scale: 1/2"=1'



D FOUNDATION WALL DETAILS: 180 BEND (PLAN)

Scale: 1/2"=1'



E FOUNDATION WALL DETAILS: 180 BEND (SECTION E-E)

Scale: 1/2"=1'

(AS BUILT INFORMATION)

DATE STARTED:

DATE COMPLETED:

FOREMAN:

INSPECTOR:

CONTRACTOR:

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

FOUNDATION WALL DETAILS

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: VALUE

PROJECT NUMBER: VALUE

FIMS MAP: VALUE

SHEET NO: 13 OF 19

NETWORK LOCATION & DRAWING TITLE:
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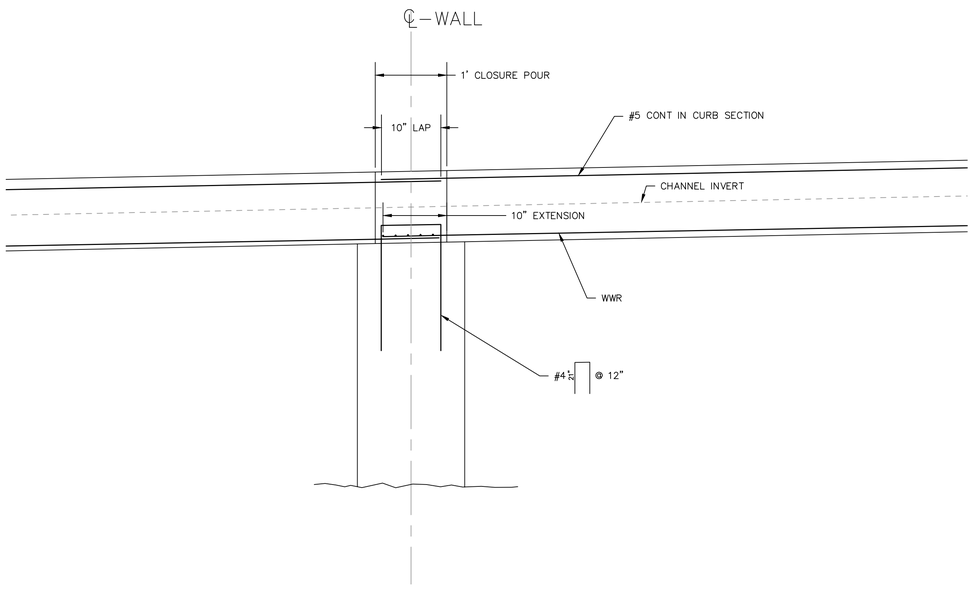
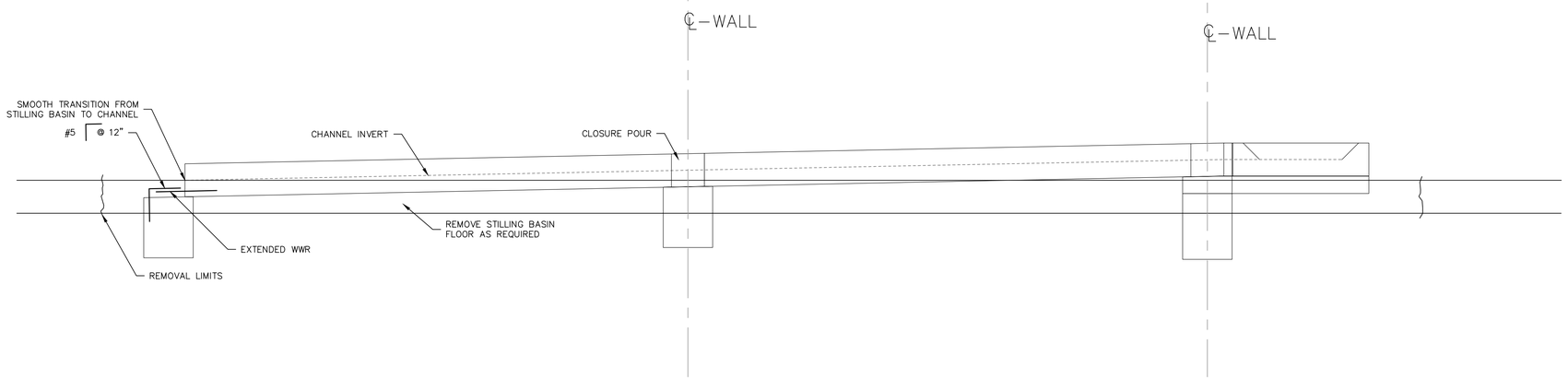
REVISIONS:



1 CLOSURE POUR (SECTION)
Scale: -



2 LOWEST CHANNEL TIE IN (SECTION)
Scale: -

(AS BUILT INFORMATION)

DATE STARTED:
DATE COMPLETED:
FOREMAN:
INSPECTOR:
CONTRACTOR:

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

CLOSURE POUR & TIE IN

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: VALUE
PROJECT NUMBER: VALUE
FIMS MAP: VALUE
SHEET NO: 14 OF 19
NETWORK LOCATION & DRAWING TITLE:
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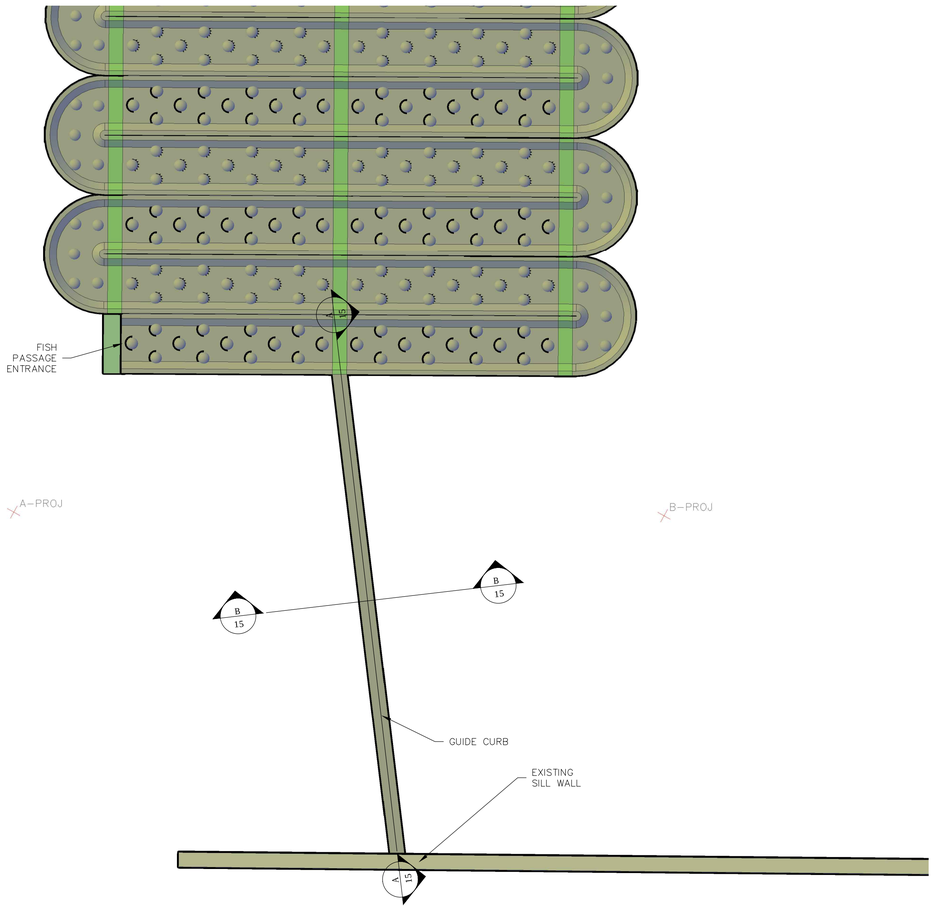
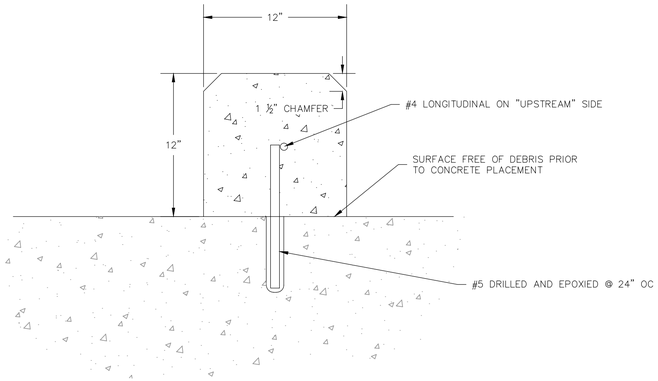
REVISIONS:



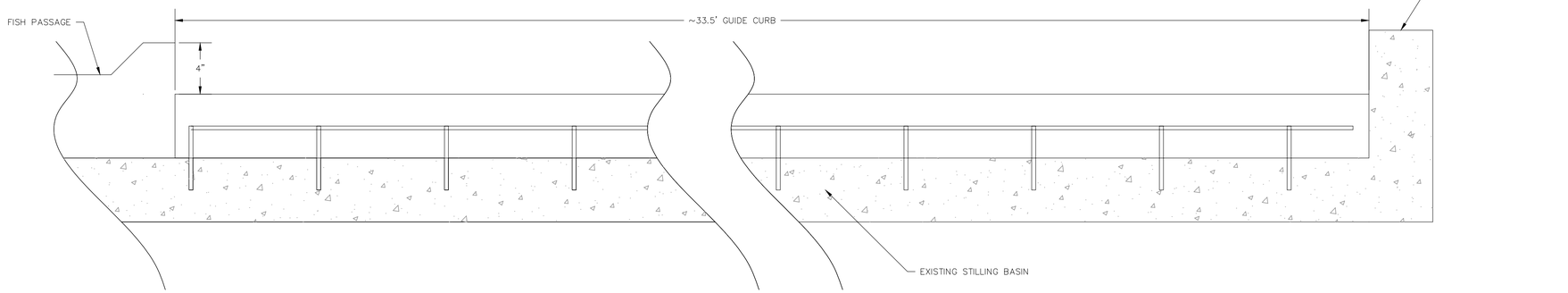
1 GUIDE CURB PLAN VIEW

Scale: 1"=5'



B GUIDE CURB SECTION VIEW

Scale: NTS



A GUIDE CURB SECTION VIEW

Scale: NTS

(AS BUILT INFORMATION)

DATE STARTED:

DATE COMPLETED:

FOREMAN:

INSPECTOR:

CONTRACTOR:

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

GUIDE CURB

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: VALUE

PROJECT NUMBER: VALUE

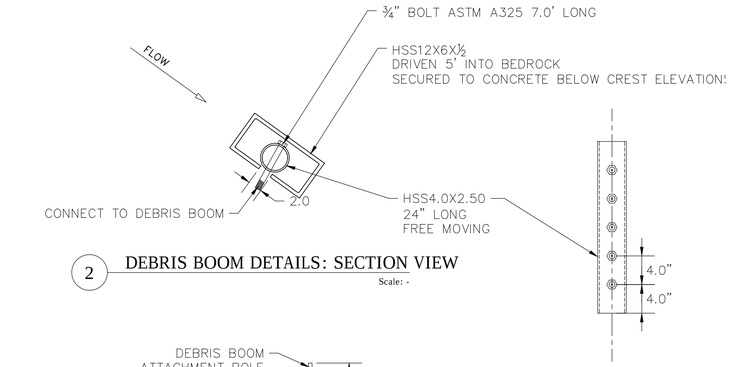
FIMS MAP: VALUE

SHEET NO: 15 OF 19

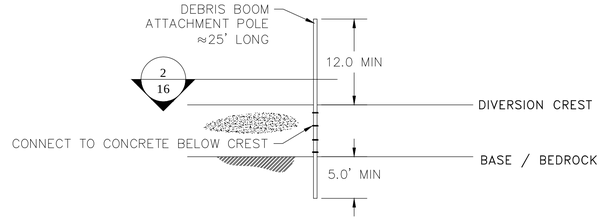
NETWORK LOCATION & DRAWING TITLE:
L:\WWP\SSCC\CSR FISH PASSAGE CONSTRUCTION\DWG\CSR-GUIDE-CURB.dwg

REVISIONS:

1 DEBRIS BOOM DETAILS: PLAN VIEW
Scale: 1" = 10'



2 DEBRIS BOOM DETAILS: SECTION VIEW
Scale: -



3 DEBRIS BOOM DETAILS
Scale: -

(AS BUILT INFORMATION)
DATE STARTED:
DATE COMPLETED:
FOREMAN:
INSPECTOR:
CONTRACTOR:

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

DEBRIS BOOM DETAILS

(PROJECT RELATED INFORMATION)
PARENT WORK ORDER NUMBER: VALUE
PROJECT NUMBER: VALUE
FIMS MAP: VALUE
SHEET NO: 16 OF 19
NETWORK LOCATION & DRAWING TITLE:
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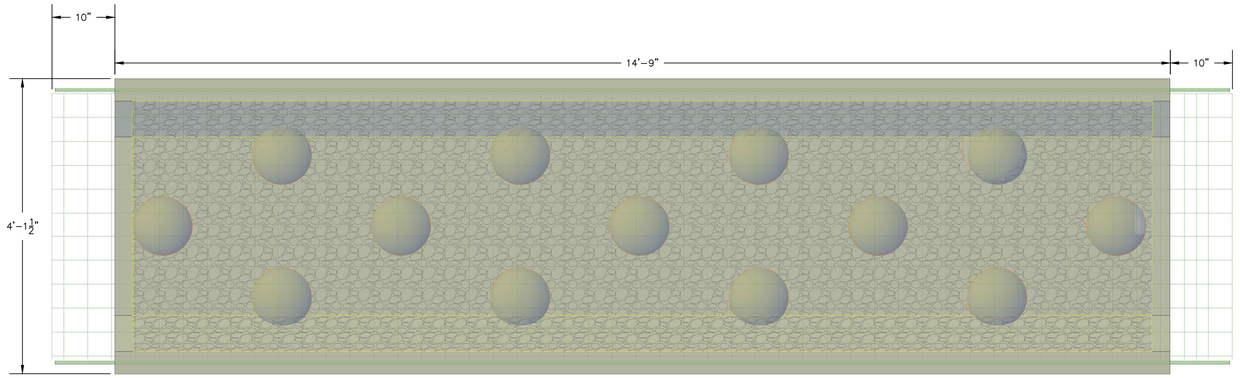
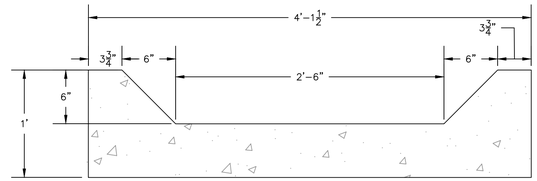
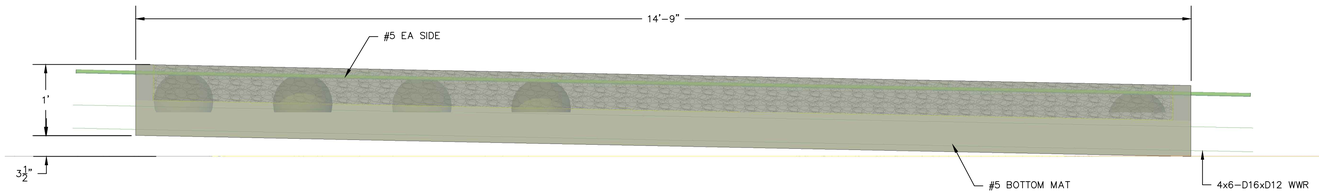
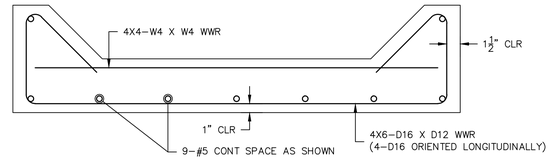
REVISIONS:

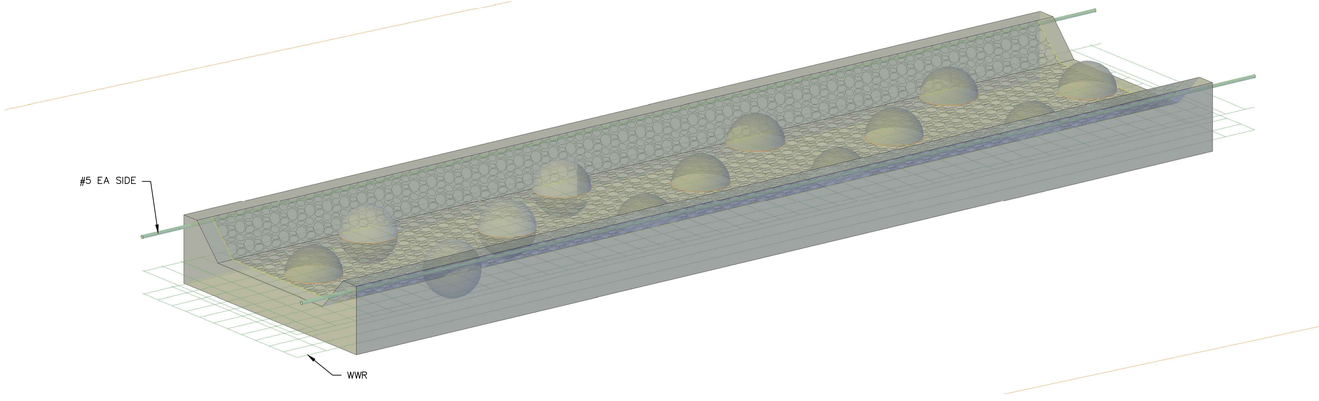




CHANNEL ROUGHENING NOT SHOWN







(AS BUILT INFORMATION)

DATE STARTED:

DATE COMPLETED:

FOREMAN:

INSPECTOR:

CONTRACTOR:

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

PRECAST-STRAIGHT

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: VALUE

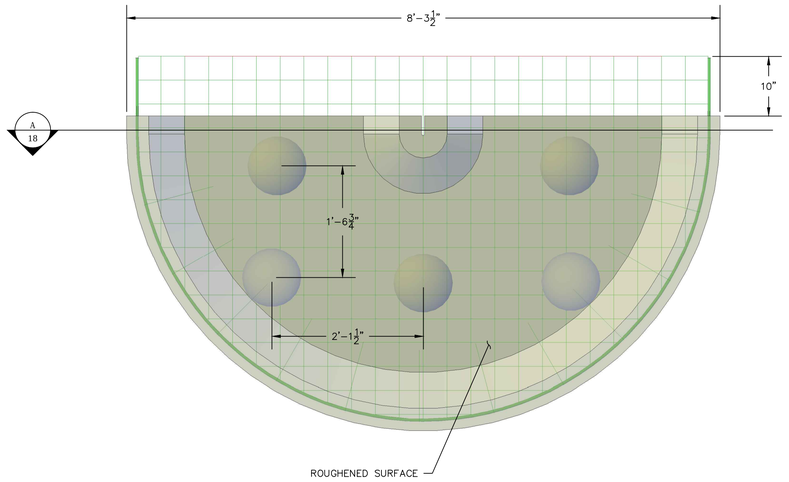
PROJECT NUMBER: VALUE

FIMS MAP: VALUE

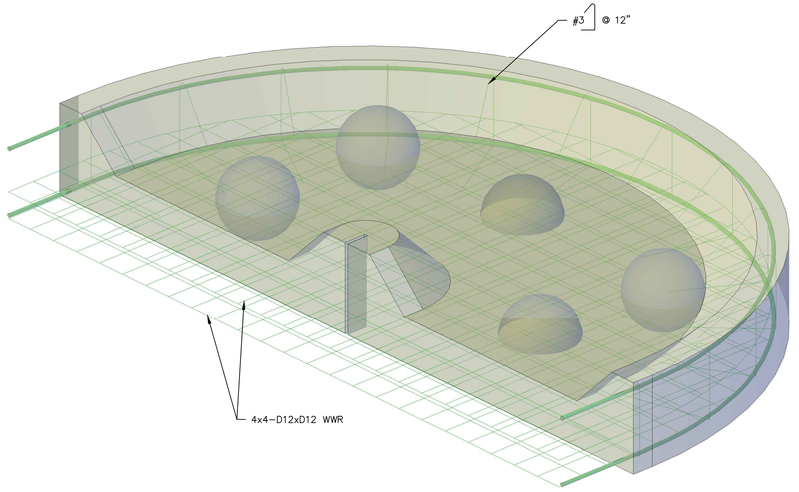
SHEET NO: 15 OF 17

NETWORK LOCATION & DRAWING TITLE:
L:\WWP\SSCC\CSR FISH PASSAGE CONSTRUCTION\DWG\CSR-STR8-SEC.dwg

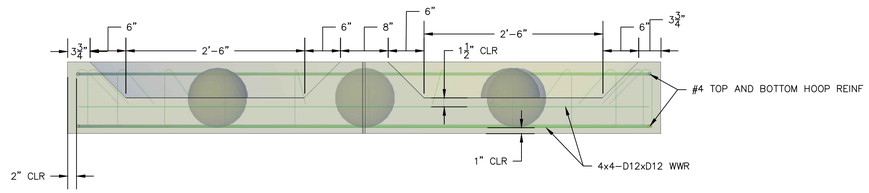
REVISIONS:



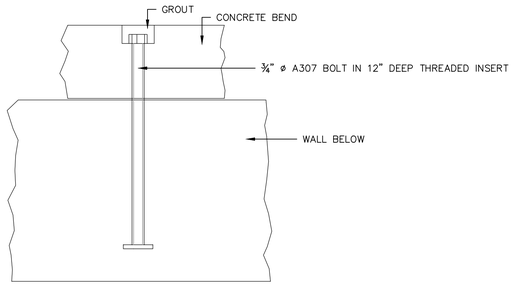
1 180 BEND (PLAN)
Scale: 1" = 1'



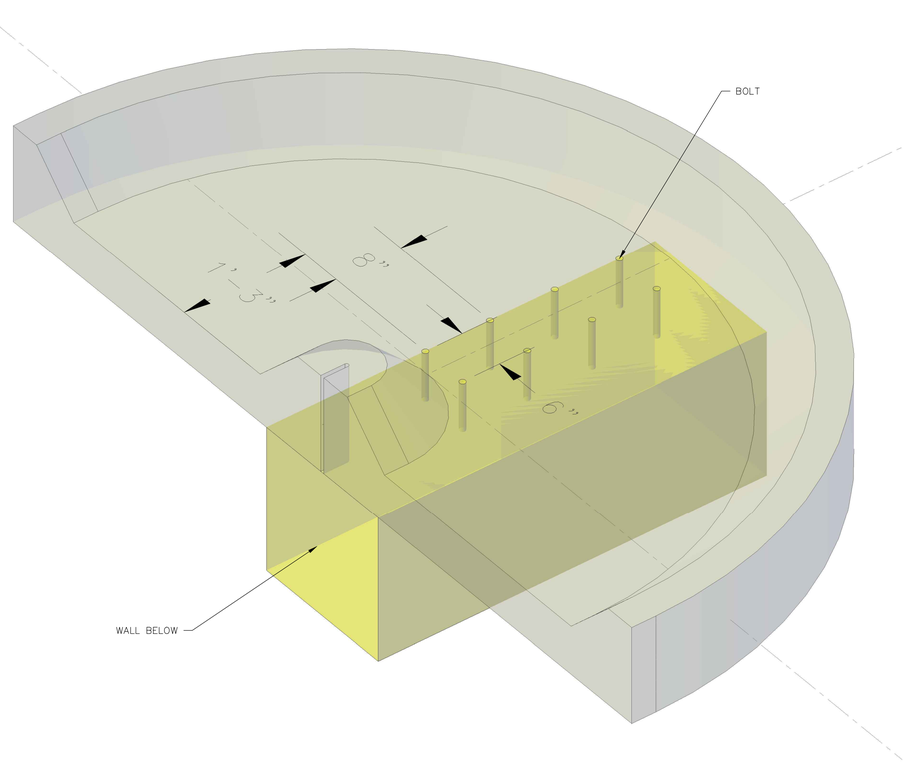
2 180 BEND (MODEL)
Scale: -



A 180 BEND (SECTION)
Scale: 1" = 1'



4 BOLT DETAIL
Scale: -



3 180 BEND BOLT TO FOUNDATION WALL (MODEL)
Scale: -

(AS BUILT INFORMATION)

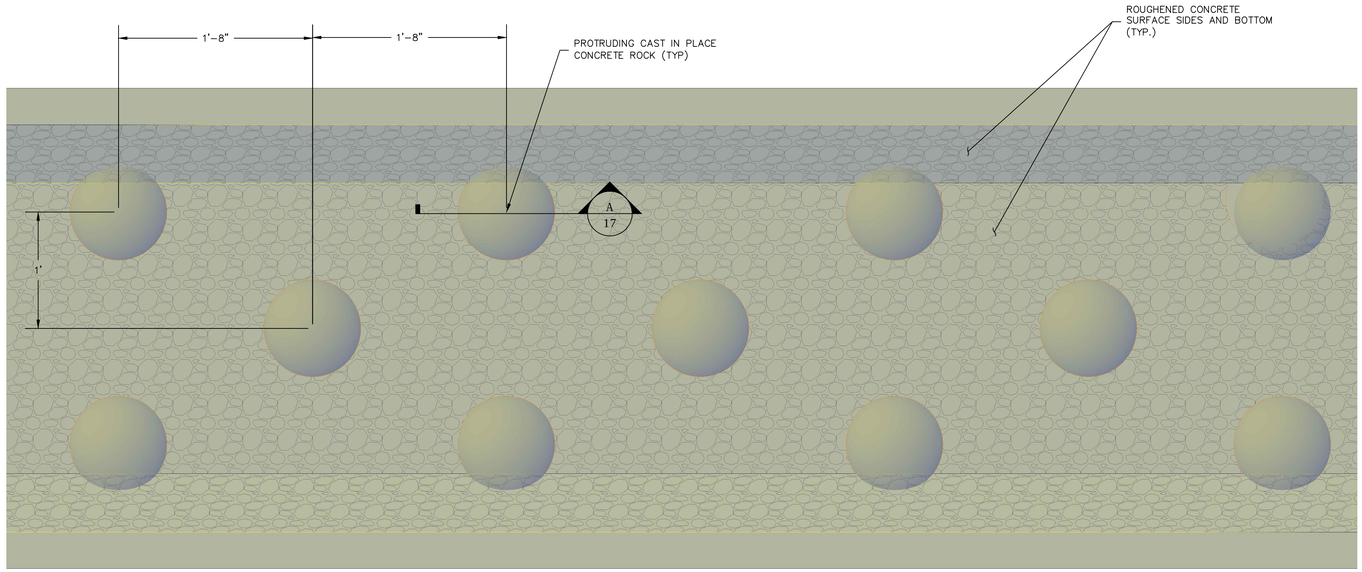
DATE STARTED:
DATE COMPLETED:
FOREMAN:
INSPECTOR:
CONTRACTOR:

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

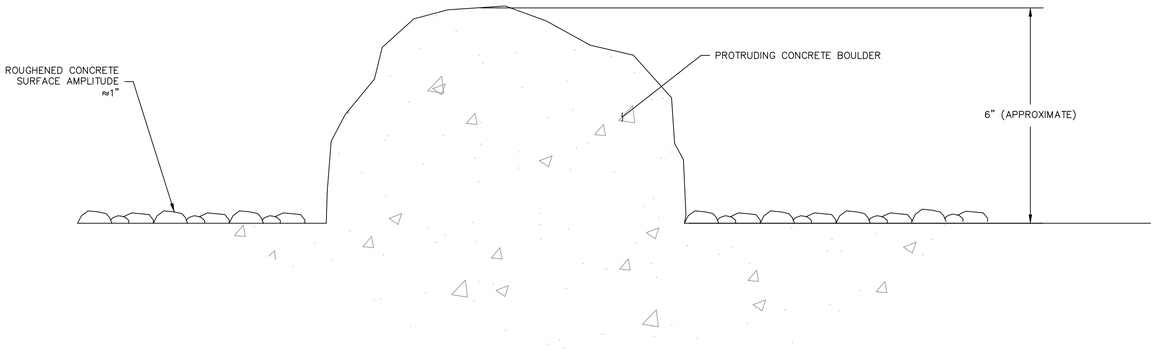
PRECAST-BEND

(PROJECT RELATED INFORMATION)

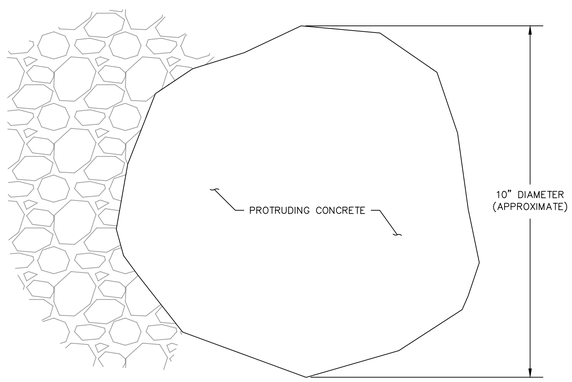
PARENT WORK ORDER NUMBER: VALUE
PROJECT NUMBER: VALUE
FIMS MAP: VALUE
SHEET NO: 18 OF 19
NETWORK LOCATION & DRAWING TITLE:
L:\WWP\SSCC\CSR FISH PASSAGE CONSTRUCTION\DWG\CSR-BEND-SEC.dwg
REVISIONS:



1 ROUGHENED SURFACE: PLAN
Scale: NA



A ROUGHENED SURFACE: CONCRETE BOULDER SECTION
Scale: NA



(AS BUILT INFORMATION)

DATE STARTED:
DATE COMPLETED:
FOREMAN:
INSPECTOR:
CONTRACTOR:

CLEAR SPRINGS RANCH
DIVERSION DAM
FISH PASSAGE

ROUGHENED SURFACE

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: VALUE
PROJECT NUMBER: VALUE
FIMS MAP: VALUE
SHEET NO: 17 OF 17
NETWORK LOCATION & DRAWING TITLE:
L:\WWP\SSCC\CSR FISH PASSAGE CONSTRUCTION\DWG\CSR-STR8-SEC.dwg
REVISIONS: