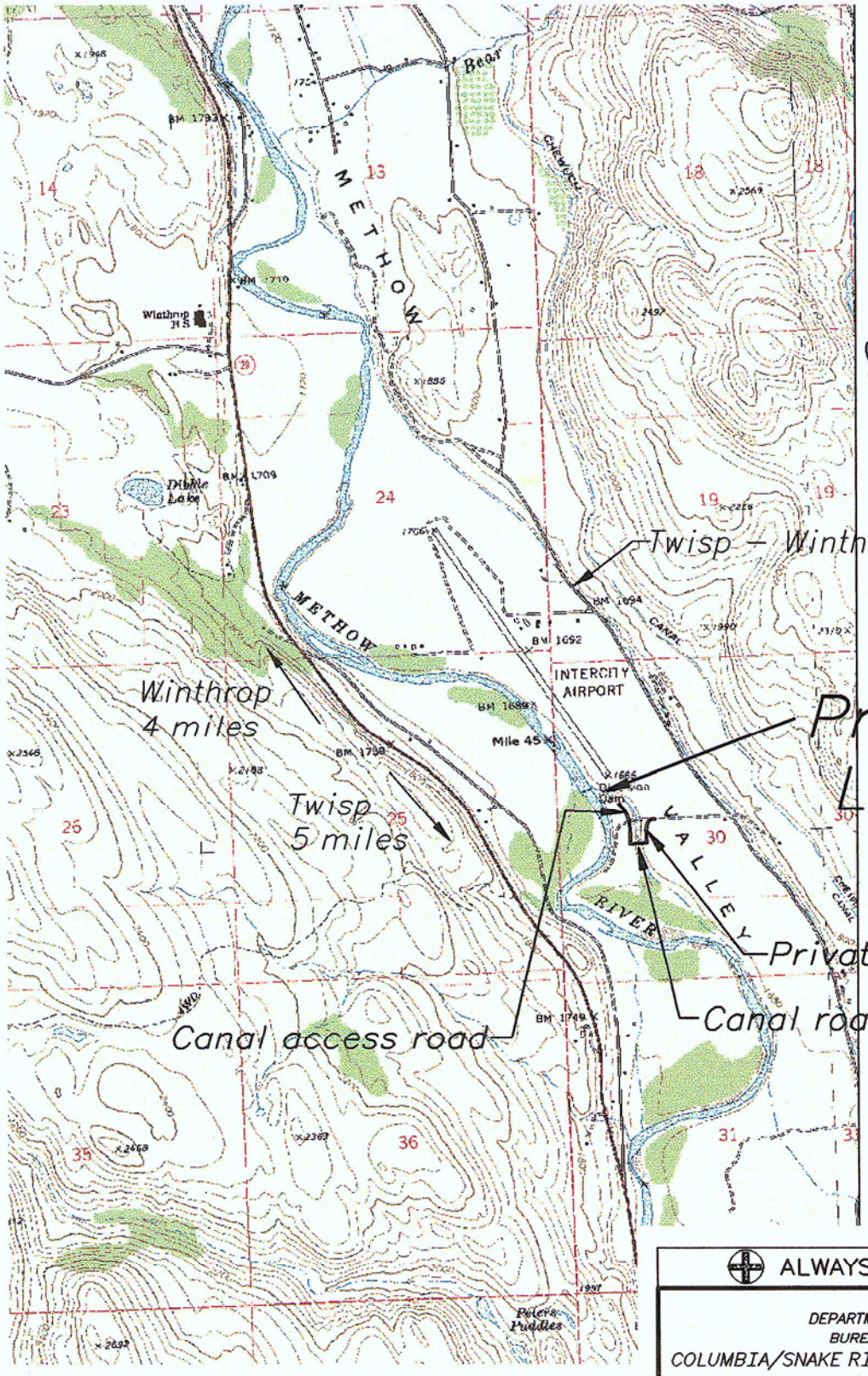
APPENDIX A
MVID East Fish Screen Structure



0 1 1.5
SCALE OF MILES

ALWAYS THINK SAFETY

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM

MVID EAST DIVERSION
LOCATION MAP

DESIGNED	TECH. APPROVAL
DRAWN GGrooms	SUBMITTED
CHECKED	APPROVED REGIONAL ENGINEER
CADD SYSTEM AutoCAD Rel. 15.06	CADD FILENAME 1678-100-305.DWG
BOISE, IDAHO MAY 1, 2003	1678-100-305

DATE AND TIME PLOTTED
AUGUST 1, 2003 10:41
PLOTTED BY
EMORDHORST

SURVEY CONTROL POINTS				
Number	Northing	Easting	Elevation	Description
1	518,321.24	1,808,601.04	1686.73	rebar
2	518,399.46	1,808,511.84	1689.29	rebar
50	518,063.45	1,808,621.11	1668.99	spike

NOTES:

- date of survey, November 2002
- horizontal control – Washington state plane coordinate system north zone nad 83 based on gps observation from ngs station "f 378"
- vertical control – north American vertical datum of 1988 based on gps observation from ngs station f 378 elevation 1752.83

LEGEND

- 6' Chain link fence
- Approximate construction ROW boundary
- Approximate permanent ROW boundary
- Approximate existing permanent ROW boundary
- Approximate property boundary

Washington State Div. of Aeronautics
Washington State Dept. of Lands
36" wide gate
CP #2
70'±
12"ø tree to be removed
Trashrack and walkway (–326)
CP #1
6' chain link fence
Existing fish screen structure and fence to be removed
Estimated "High water line"
Existing Headworks
Existing diversion dam
Fishscreen structure (–312)
Check structure (–327)
Existing Fish Ladder
Approximate limits of existing permanent ROW
Approximate limits of permanent ROW
Existing fish return pipe. Cap each end and abandon in place.
Approximate limits of staging area
Fish return inlet structure (–312)
14' wide double gate
6' chain link fence
Methow River flow
Estimated existing contour lines (typ.)
Approximate limits of existing access road
Fish return pipe (–307)
Approximate property corner
Washington State Div. of Aeronautics
Fish return outlet structure (–307)
CP #50
Merutka (private)
Approximate limits of permanent ROW
Approximate limits of construction ROW
Merutka (private)
Washington State Dept. of Lands
50.00'
40.00'
100.00'
60.00'
20.00'
50.00'
E1808300
N518300
E1808700
N518300
N518200
E1808400
N518100
E1808600
N518100
1655
1660
1665
1670
1675
1680
SCALE OF FEET 20 0 20 40 60

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BUREAU OF RECLAMATION

COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM

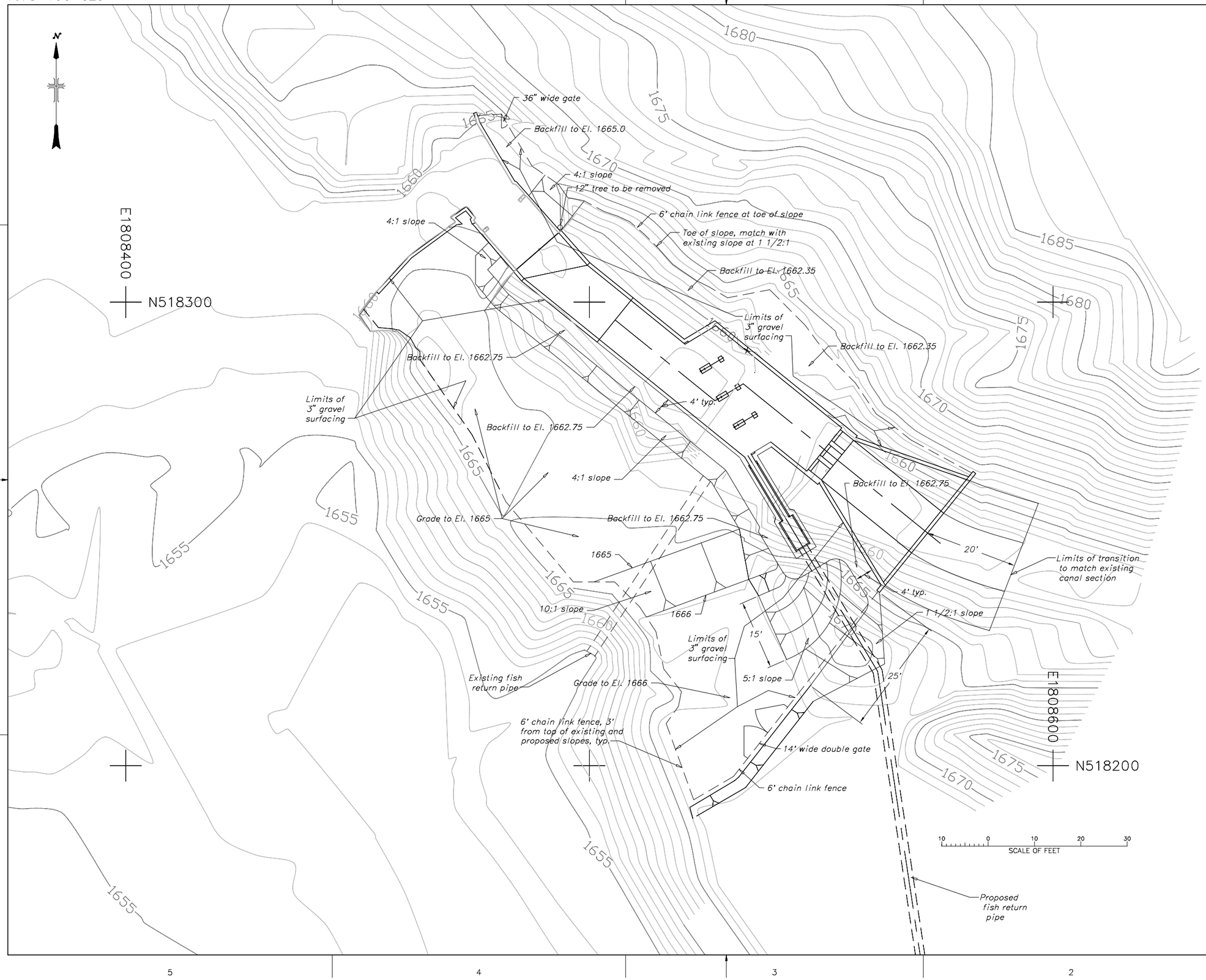
MVID EAST DIVERSION
FISHSCREEN STRUCTURE
SITE PLAN

DESIGNED _____ CHECKED _____
DRAWN Ed Mordhorst/G. Hope TECH. APPROVAL _____
PROGRAM MANAGER

CADD SYSTEM AutoCAD Rel. 15.06 BOISE, IDAHO
CADD FILENAME 1678-100-324.DWG 23 JULY 2003
1678-100-324
SPECIFICATION #

SEPTEMBER 3, 2003 11:30
PLOTTED BY RODRZYCA

1678-100-323



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COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM

MVID EAST DIVERSION

FISHSCREEN STRUCTURE

GRADING PLAN

DESIGNED _____ CHECKED _____

DRAWN _____ TECH. APPROVAL _____

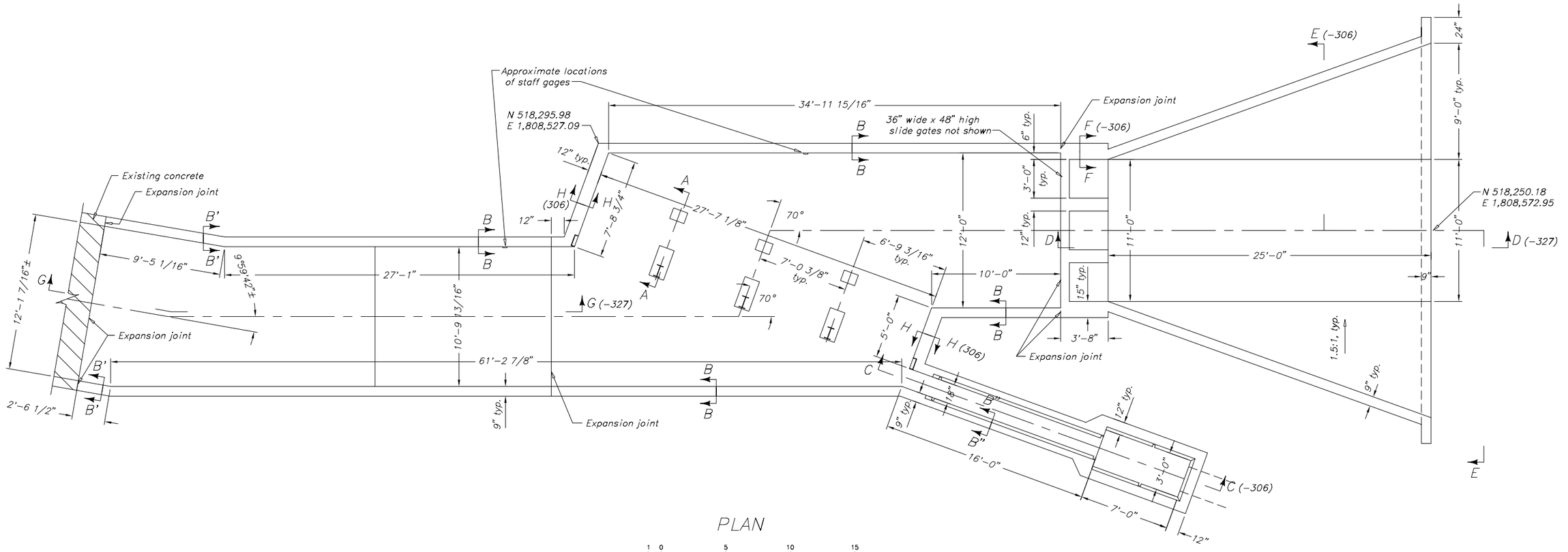
PROGRAM MANAGER

CADD SYSTEM AutoCAD Rel. 15.06 BOISE, IDAHO	CADD FILENAME 1678-100-323.DWG 21 JULY 2003

1678-100-323

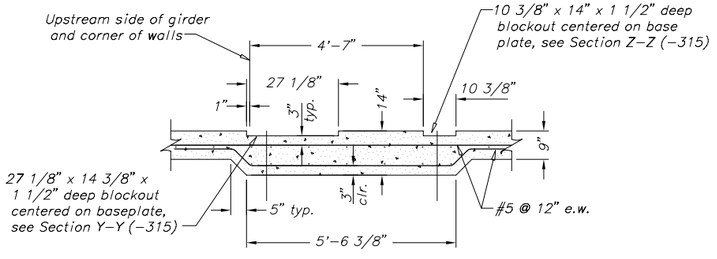
SPECIFICATION #

SEPTEMBER 3, 2003 11:00
PLOTTED BY
RDORCZYCA

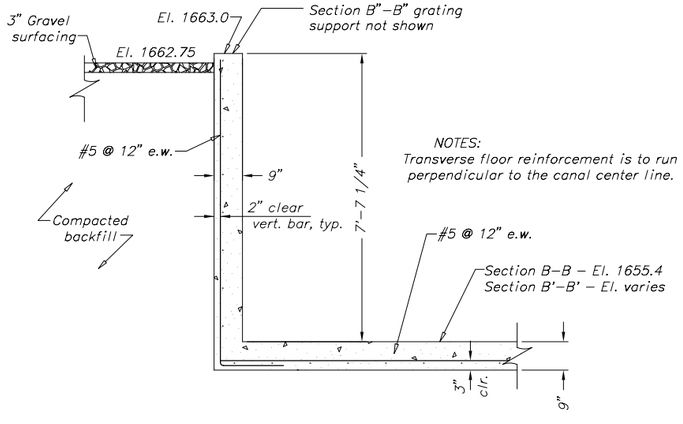


PLAN

1 0 5 10 15
SCALE OF FEET



SECTION A-A



SECTION B-B
(Section B'-B' similar)
(Section B"-B" similar)

1 0 1 2 3 4 5
SCALE OF FEET

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COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM

MVID EAST DIVERSION

FISH SCREEN STRUCTURE

CONCRETE - PLAN AND SECTIONS

DESIGNED _____ CHECKED _____

DRAWN Ed Mordhorst TECH. APPROVAL _____

PROGRAM MANAGER

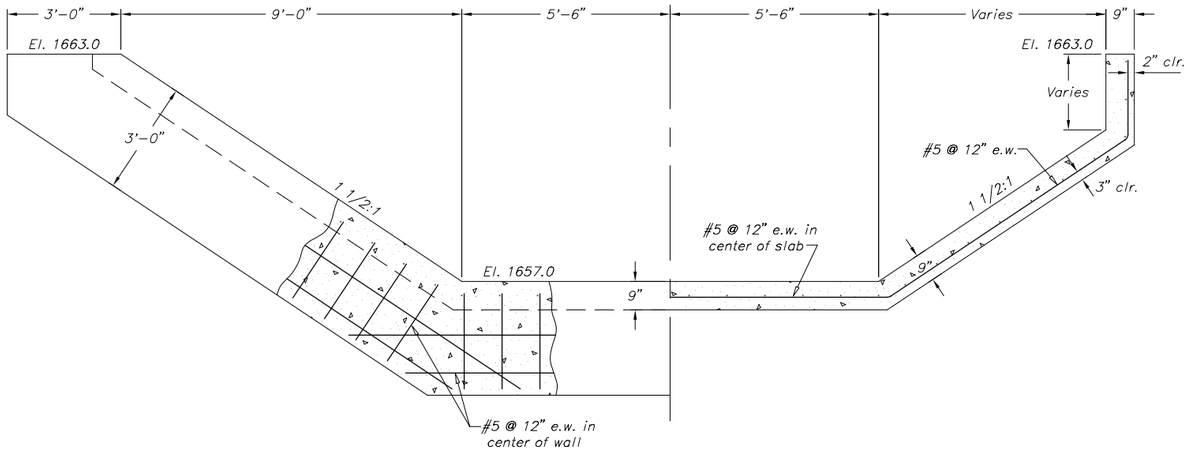
CADD SYSTEM AutoCAD Rel. 15.06
BOISE, IDAHO

CADD FILENAME 1678-100-312.DWG
8 JULY 2003

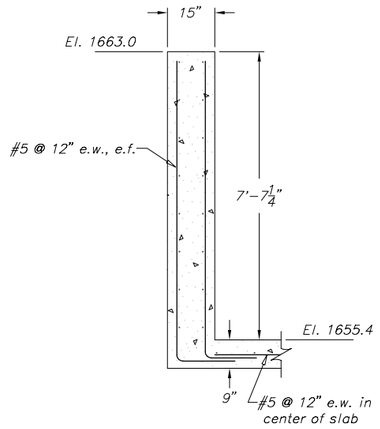
1678-100-312

SPECIFICATION #

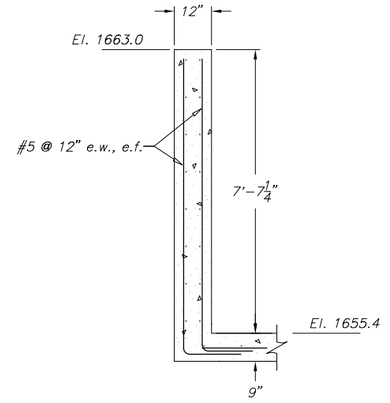
SEPTEMBER 3, 2003 11:38
PLOTTED BY RODRIZTCA



SECTION E-E
(-312)

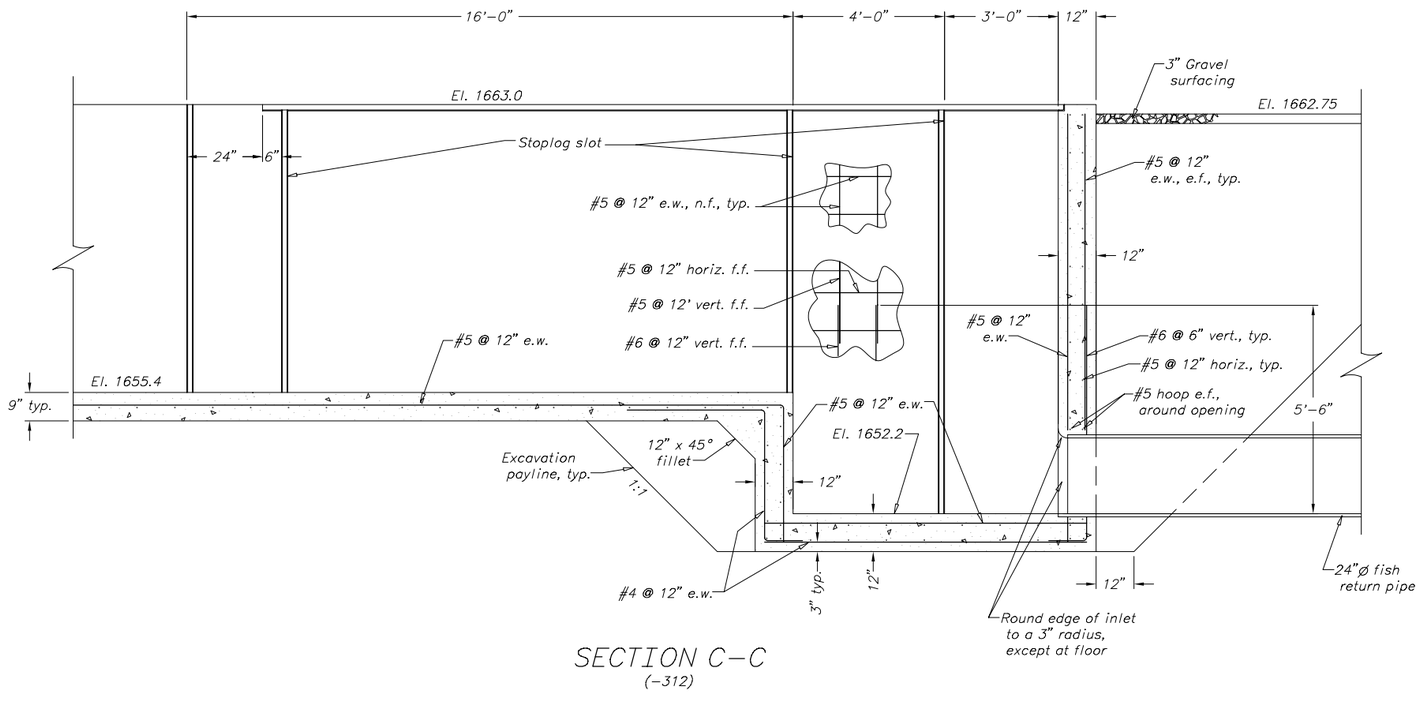


SECTION F-F
(-312)



SECTION H-H
(-312)

1 0 1 2 3 4 5
SCALE OF FEET



SECTION C-C
(-312)

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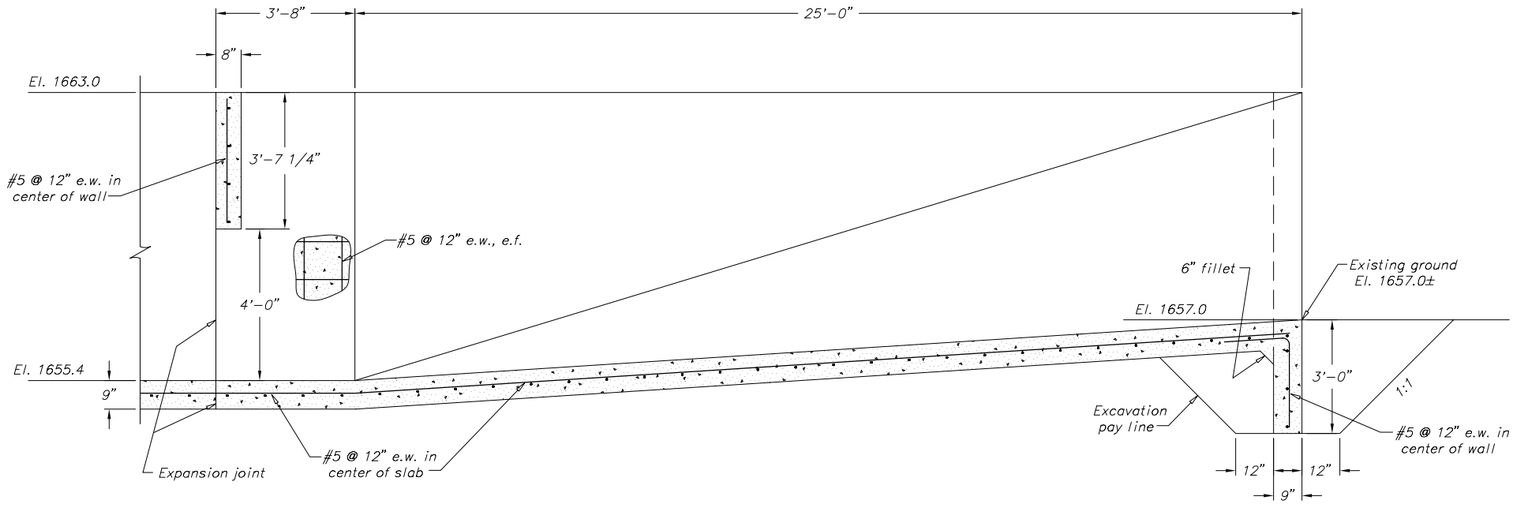
COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM

MVID EAST DIVERSION
FISH SCREEN STRUCTURE
CONCRETE SECTIONS

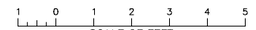
DESIGNED _____ CHECKED _____
DRAWN Ed Mordhorst TECH. APPROVAL _____
PROGRAM MANAGER

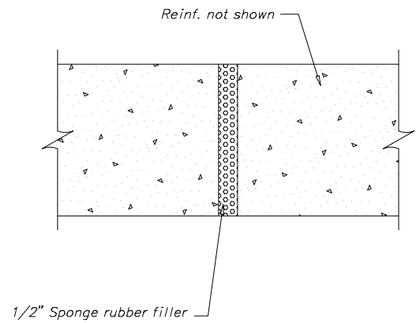
CADD SYSTEM AutoCAD Rel. 15.06
CADD FILENAME 1678-100-306.DWG
BOISE, IDAHO 27 JUNE 2003
1678-100-306
SPECIFICATION #

SEPTEMBER 3, 2003 11:37
PLOTTED BY
RGOREZYCA

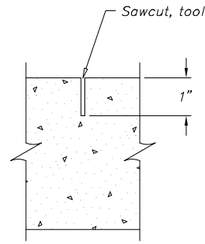


SECTION D-D
(-312)

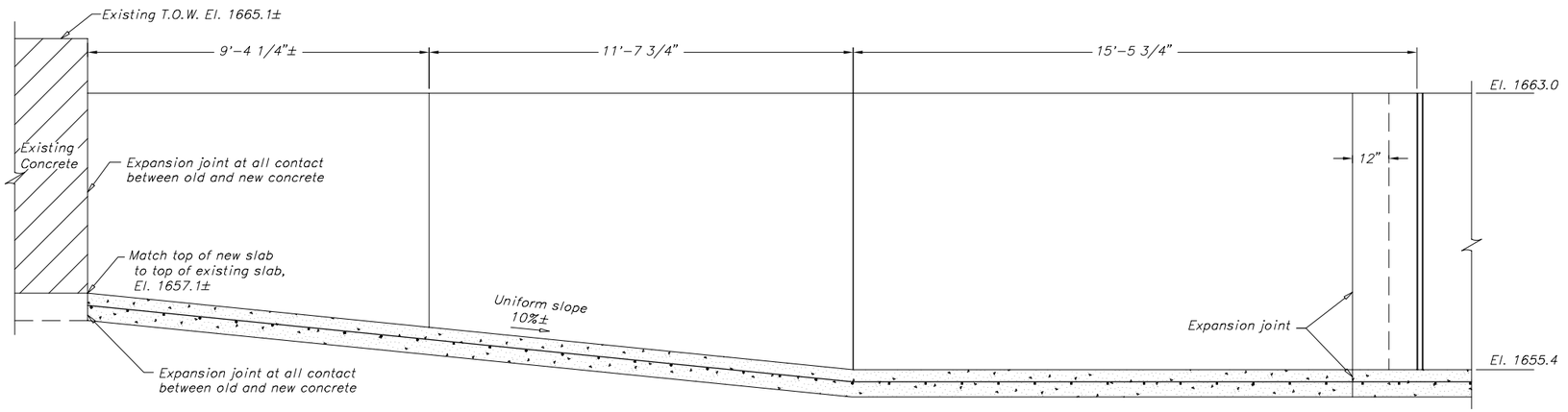




TYPICAL EXPANSION JOINT



TYPICAL CONTRACTION JOINT



SECTION G-G
(-312)

NOTE:
Transverse construction or contraction joint @10' max. spacing in walls and floors between expansion joints, in section G-G only

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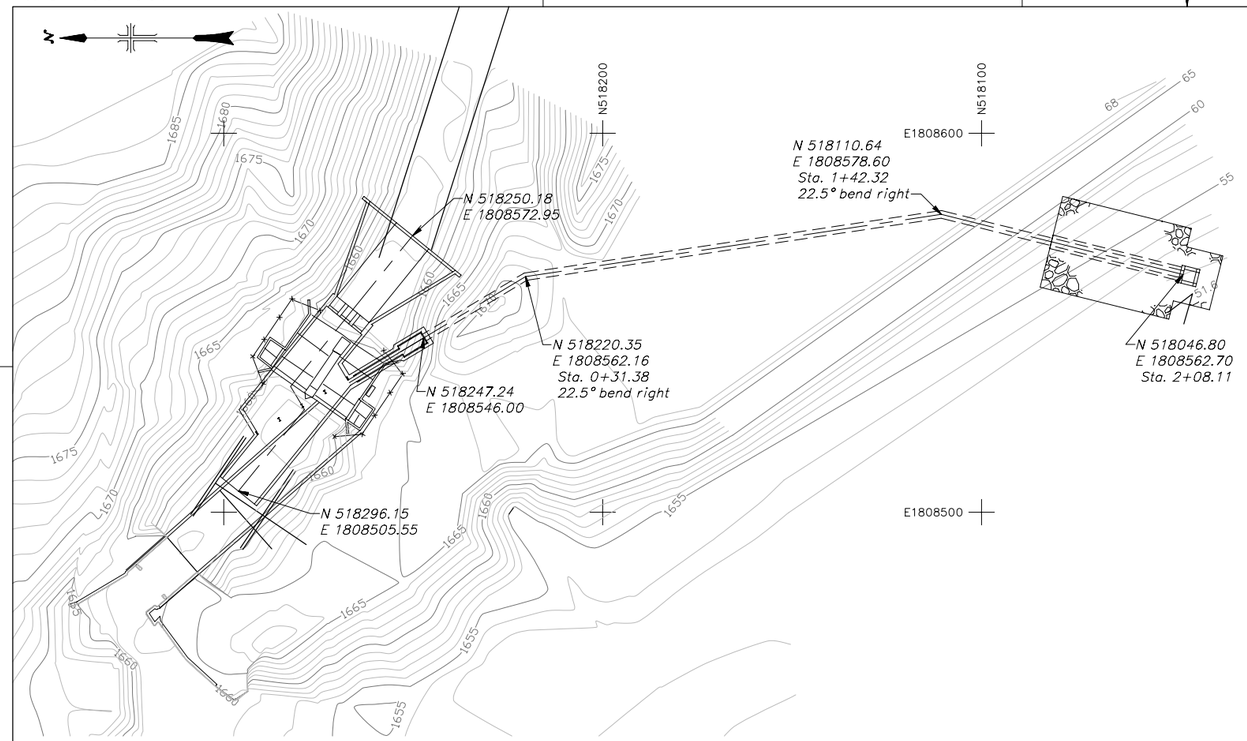
COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM

MVID EAST DIVERSION
FISHSCREEN STRUCTURE
CONCRETE SECTIONS AND DETAILS

DESIGNED _____ CHECKED _____
DRAWN Ed Mordhorst TECH. APPROVAL _____
PROGRAM MANAGER

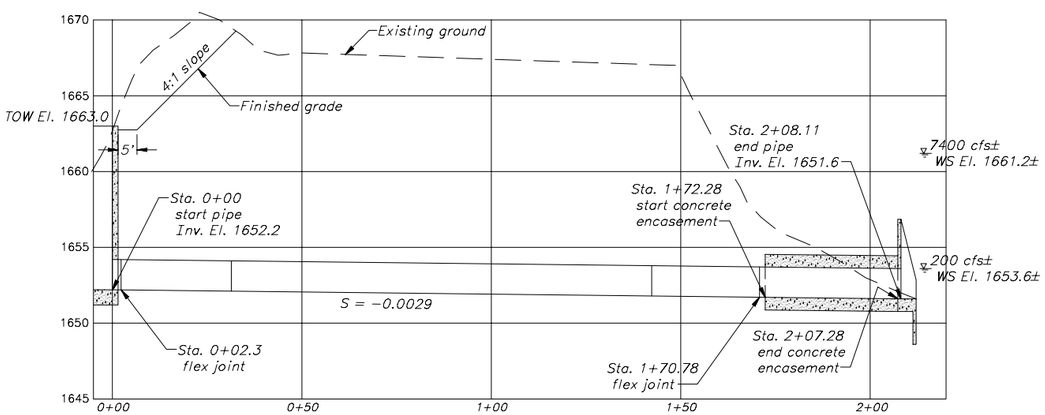
CADD SYSTEM AutoCAD Rel. 15.06
CADD FILENAME 1678-100-327.DWG
BOISE, IDAHO 29 JULY 2003
1678-100-327
SPECIFICATION #

SEPTEMBER 3, 2003 11:39
PLOTTED BY
RODRCZYCA

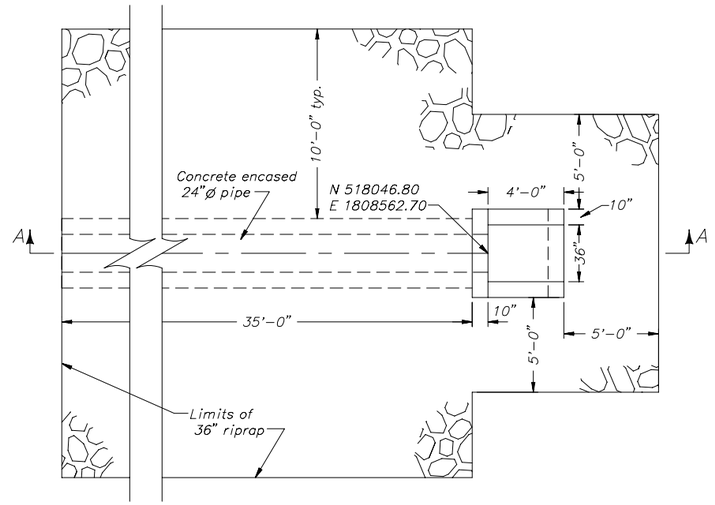


SITE PLAN

20 0 20 40 60
SCALE OF FEET

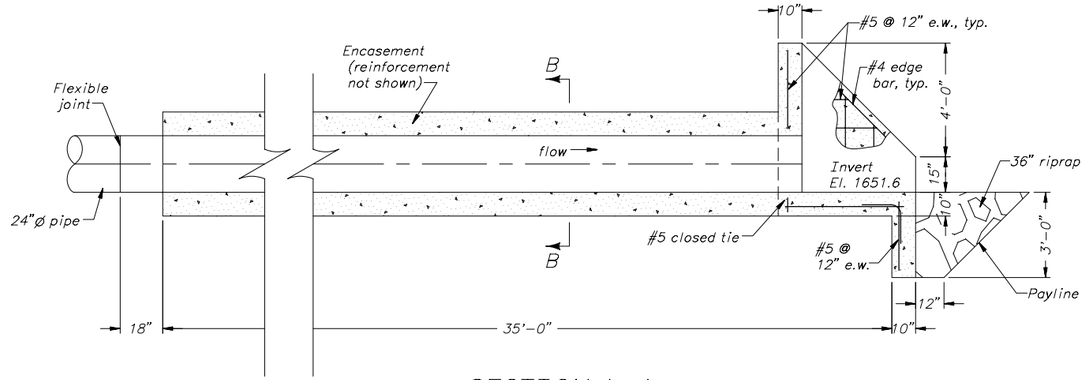


FISH RETURN PIPE – PROFILE



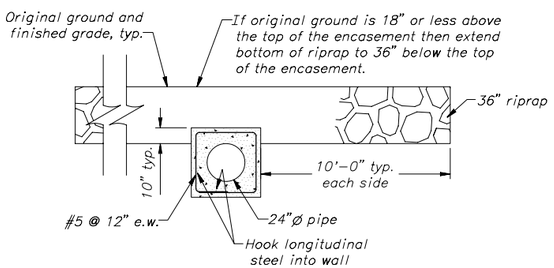
FISH RETURN OUTLET STRUCTURE PLAN

1 0 5 10 15
SCALE OF FEET



SECTION A–A

1 0 1 2 3 4 5 6 7 8
SCALE OF FEET



SECTION B–B

1 0 5 10 15
SCALE OF FEET

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COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM

MVID EAST DIVERSION

FISHSCREEN
FISH RETURN PIPE
PLAN, PROFILE, AND SECTIONS

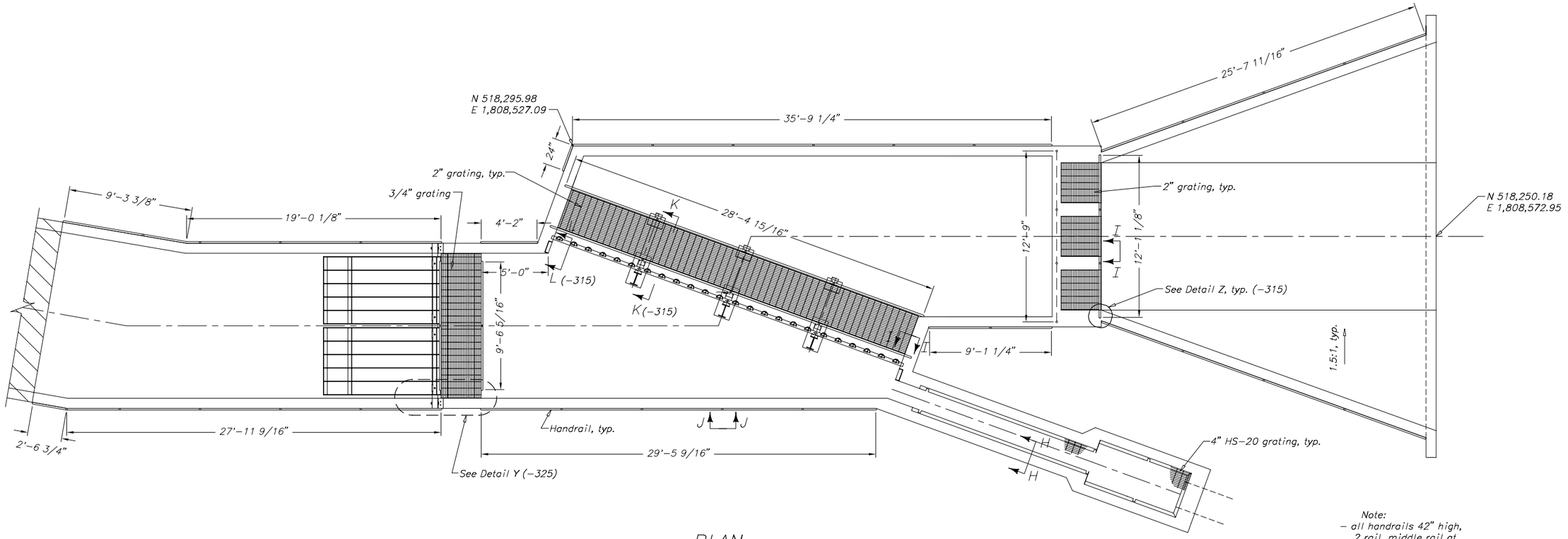
DESIGNED _____ CHECKED _____
DRAWN Ed Mordhorst TECH. APPROVAL _____
PROGRAM MANAGER

CADD SYSTEM AutoCAD Rel. 15.06	CADD FILENAME 1678-100-307.DWG
BOISE, IDAHO	9 JULY 2003

1678-100-307

SPECIFICATION #

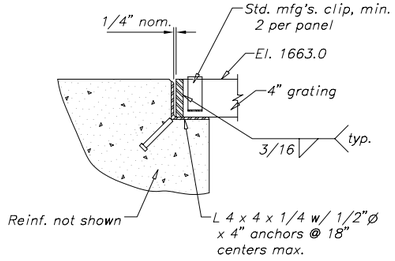
SEPTEMBER 3, 2003 12:00
PLOTTED BY
RDORCZYCA



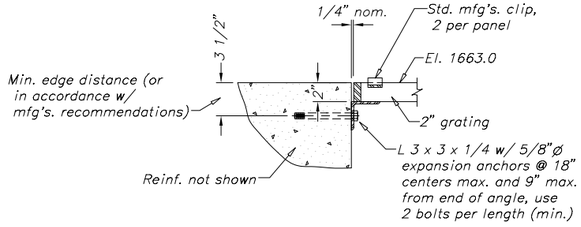
PLAN

1 0 5 10 15
SCALE OF FEET

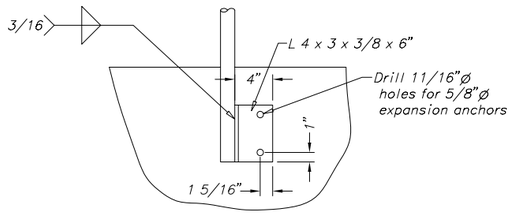
Note:
– all handrails 42" high, 2 rail, middle rail at 21" high, 8 foot max. post spacing.



SECTION H-H



SECTION I-I



Note:
Handrail post to be flush with edge of concrete

SECTION J-J

1 0 1 2
SCALE OF FEET

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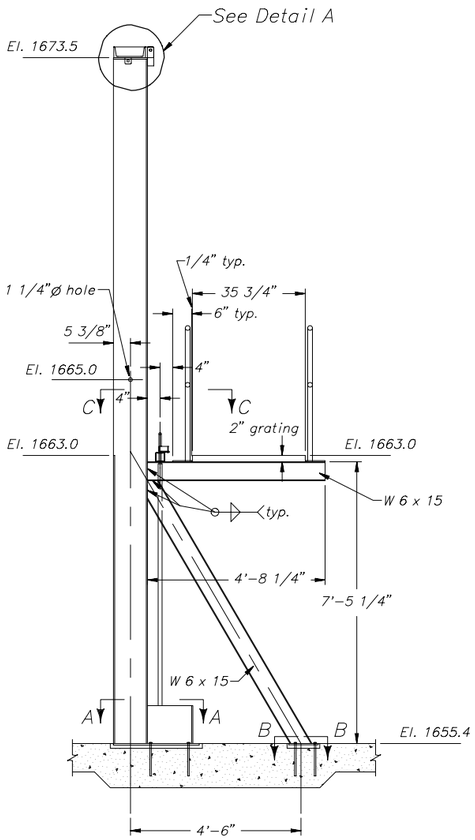
COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM

MVID EAST DIVERSION
FISH SCREEN STRUCTURE
METALWORK – PLAN AND SECTIONS

DESIGNED _____ CHECKED _____
DRAWN Ed Mordhorst TECH. APPROVAL _____
PROGRAM MANAGER

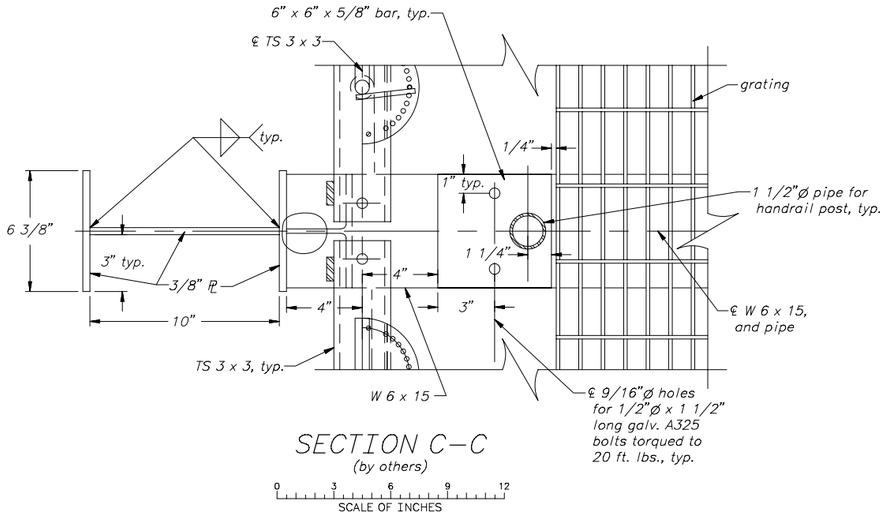
CADD SYSTEM AutoCAD Rel. 15.06
CADD FILENAME 1678-100-326.DWG
BOISE, IDAHO 22 JULY 2003 1678-100-326
SPECIFICATION #

SETTLEMENT 3, 2003 12:01
PLOTTED BY RDORCZYCA



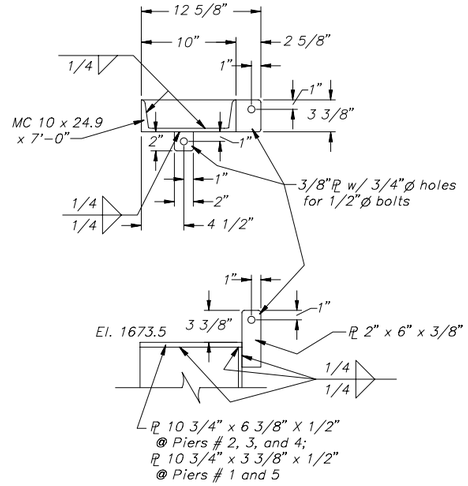
SECTION K-K
(-326)
(Typical Section, Piers 2, 3, & 4)
(by others except for blockouts and reinforced concrete)

SCALE OF FEET: 1 0 1 2 3 4 5

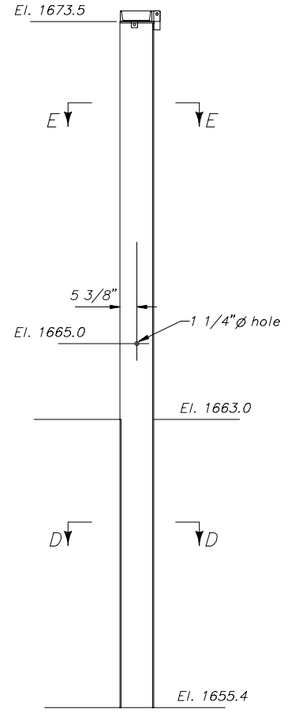


SECTION C-C
(by others)

SCALE OF INCHES: 0 3 6 9 12

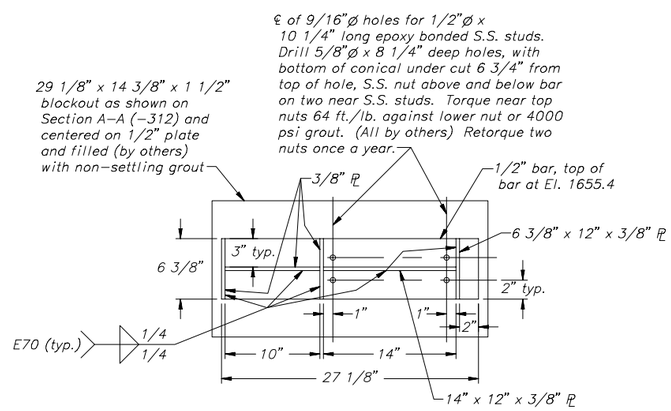


DETAIL A
(by others)
(Exploded)



SECTION L-L
(-326)
(Piers 1 and 5, Typical Section)
(Pier 5 shown, Pier 1 opposite hand)

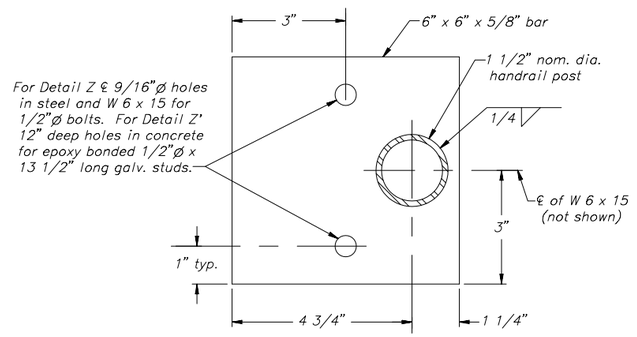
SCALE OF FEET: 1 0 1 2 3 4 5



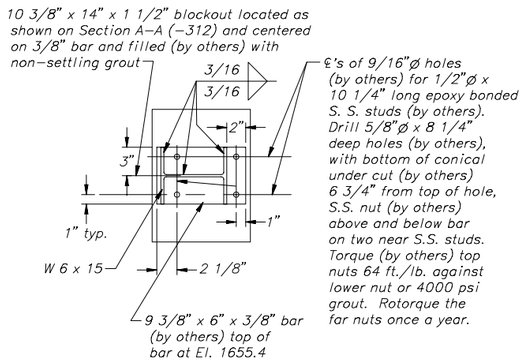
SECTION A-A
(by others except for blockouts & reinforced concrete)

SCALE OF FEET: 1 0 1 2

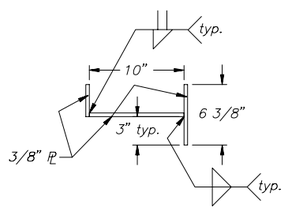
SECTION D-D



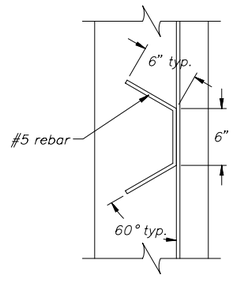
DETAIL Z
(-326)
(by others)



SECTION B-B
(by others except for blockouts & reinforced concrete)



SECTION E-E



SECTION F-F

ALWAYS THINK SAFETY

UNITED STATES
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BUREAU OF RECLAMATION

COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM

MVID EAST DIVERSION
FISHSCREEN STRUCTURE
METALWORK - SECTIONS AND DETAILS

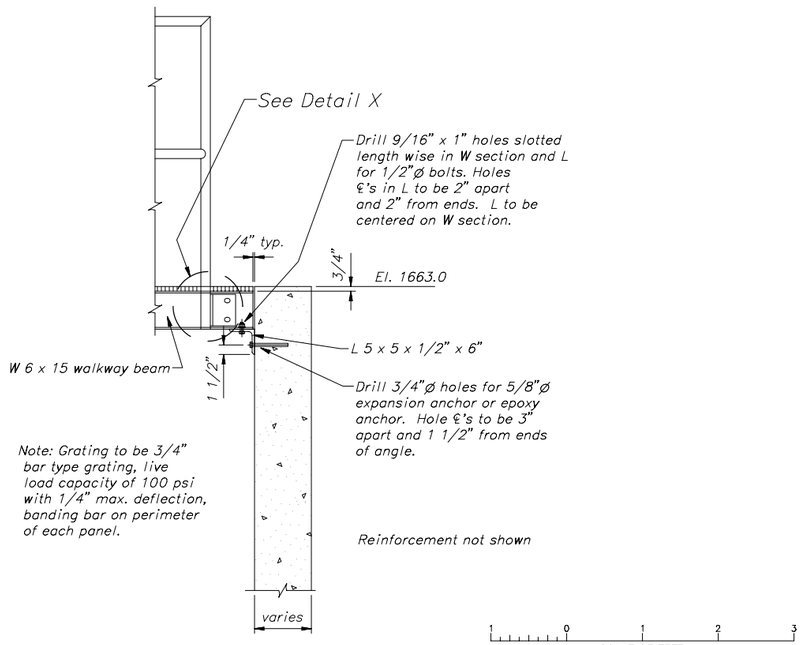
DESIGNED _____ CHECKED _____
DRAWN _____ TECH. APPROVAL _____
PROGRAM MANAGER

CADD SYSTEM: AutoCAD Rel. 15.06
BOISE, IDAHO
CADD FILENAME: 1678-100-315.DWG
17 JULY 2003

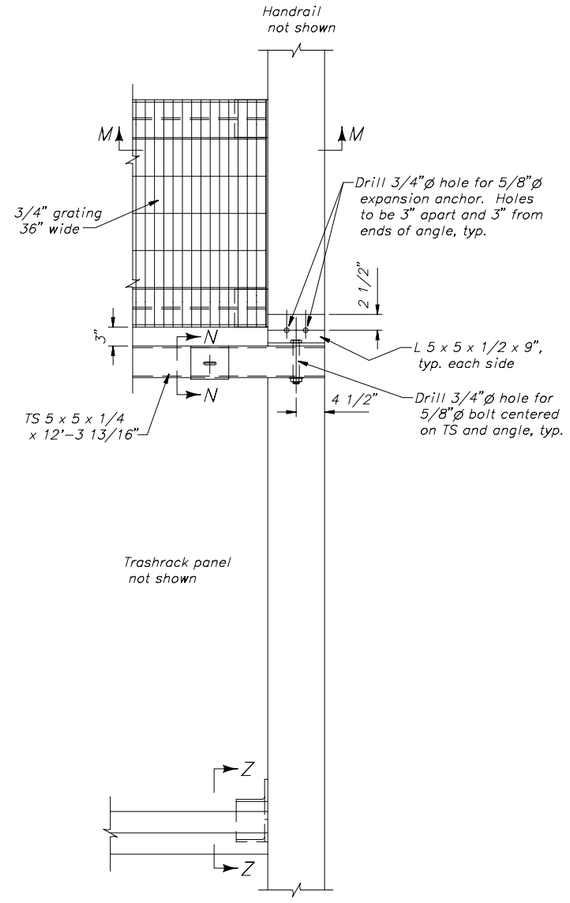
1678-100-315

SPECIFICATION #

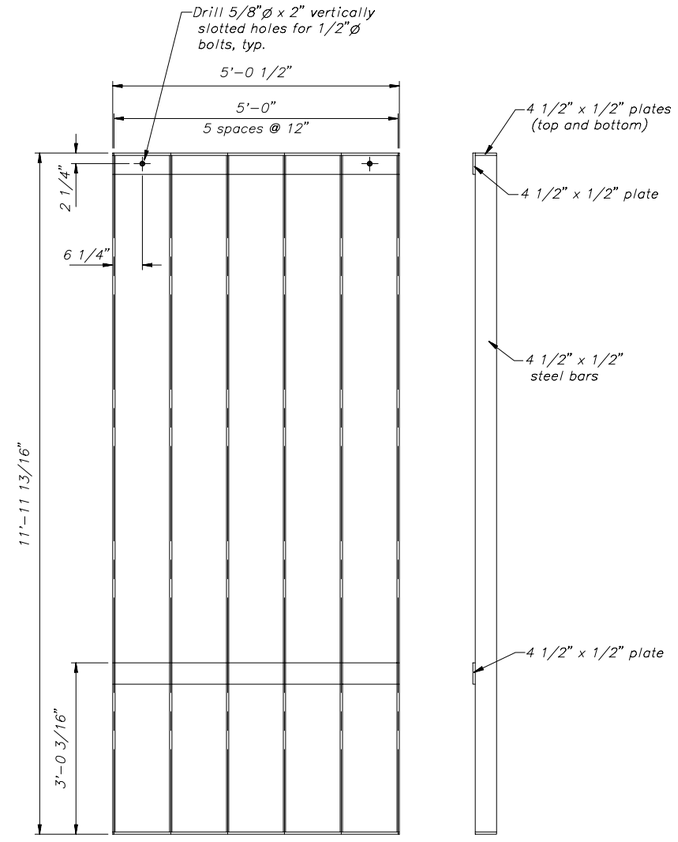
SEPTEMBER 3, 2003 12:04
PLOTTED BY RODRIGUEZCA



SECTION M-M



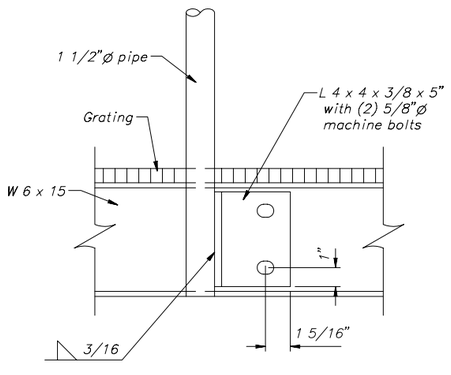
DETAIL Y
(-326)



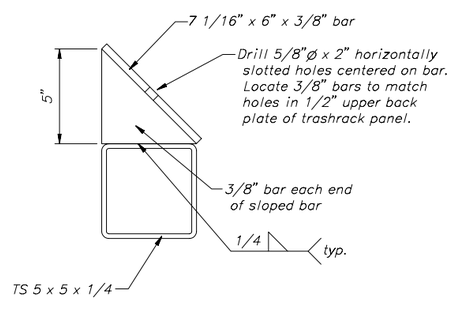
NOTES:
1. Full length, both sides, 1/4" fillet welds at all joints.
2. Diagonal measurements for each panel to be within 1/4".
3. Install panels to provide equal spacing at walls and between panels.

TRASHRACK PANEL - ELEVATION
(2 Required)

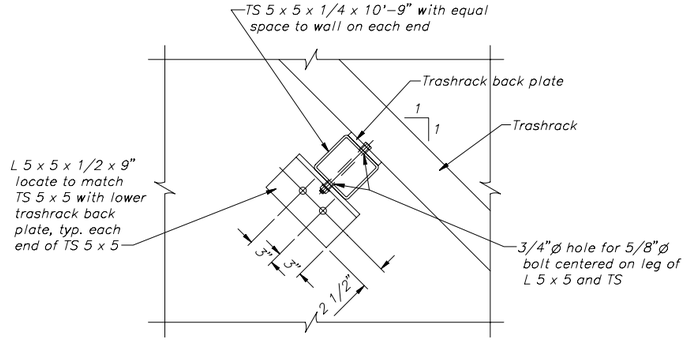
1 0 1 2 3 4 5
SCALE OF FEET



DETAIL X



SECTION N-N



SECTION Z-Z

0 3 6 9 12
SCALE OF INCHES

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COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM

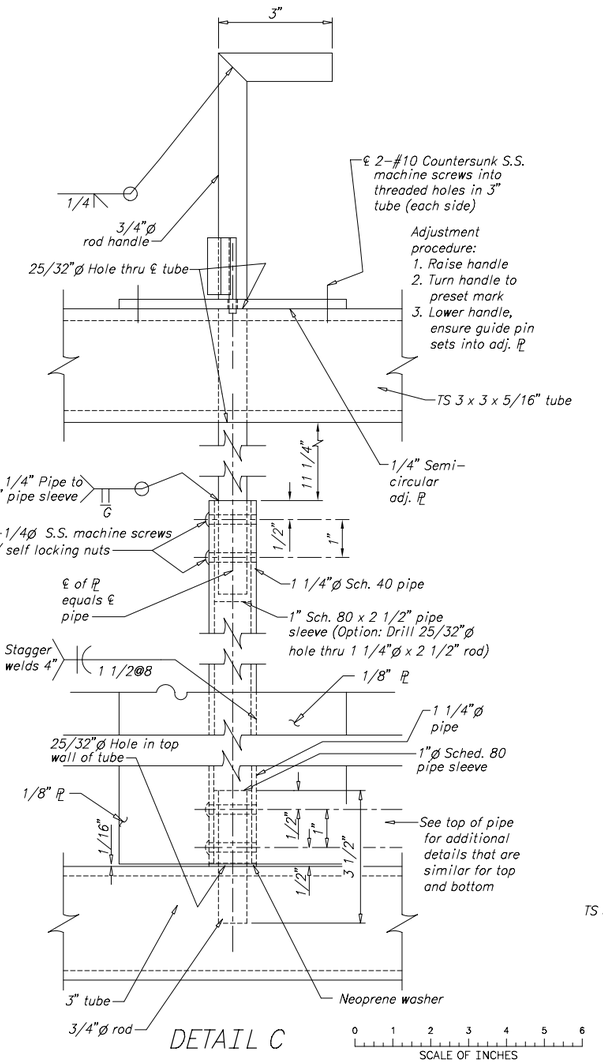
MVID EAST DIVERSION
FISHSCREEN STRUCTURE
METALWORK
TRASHRACK SECTIONS, ELEVATION, AND DETAILS

DESIGNED _____ CHECKED _____
DRAWN _____ TECH. APPROVAL _____
PROGRAM MANAGER

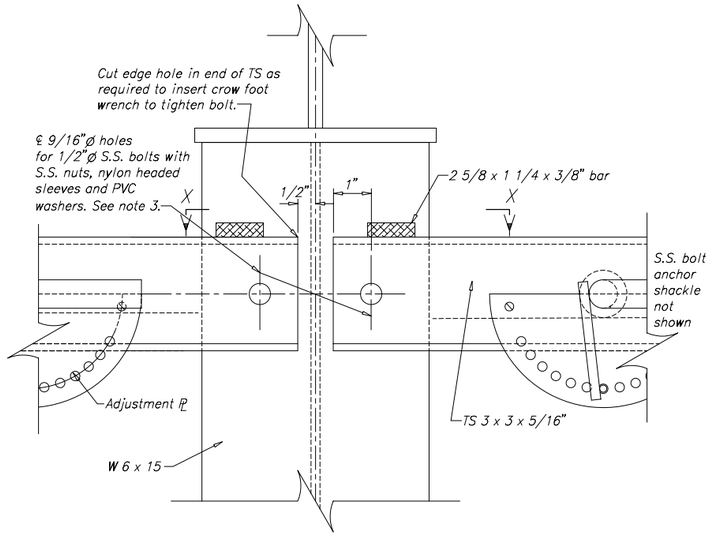
CADD SYSTEM: AutoCAD Rel. 15.06
CADD FILENAME: 1678-100-325.DWG
BOISE, IDAHO — 23 JULY 2003 — 1678-100-325

SPECIFICATION #

SEPTEMBER 3, 2003 12:03
PLOTTED BY
RODRCZYCA

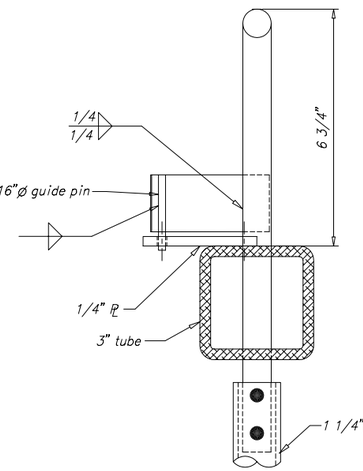


DETAIL C



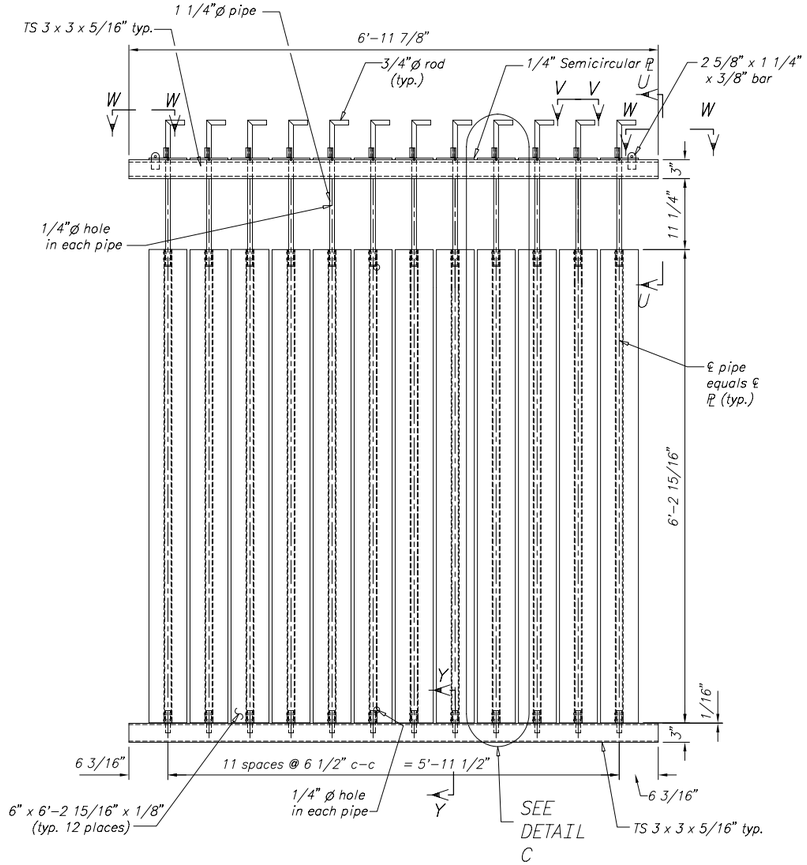
SECTION W-W
(Shown in Installed Position)

0 1 2 3 4 5 6
SCALE OF INCHES



SECTION U-U

1 0 1 2 3 4 5
SCALE OF FEET



BAFFLE (4 REQ'D.)

Elevation-looking at upstream face

1 0 1 2 3
SCALE OF FEET

SECTION Y-Y

SECTION X-X

SECTION V-V

1 0 1 2 3 4 5
SCALE OF FEET

Notes:

1. Pipe diameters are nominal diameters.
2. Baffles are made of aluminum except where otherwise shown. Aluminum shall be 6063-T6.

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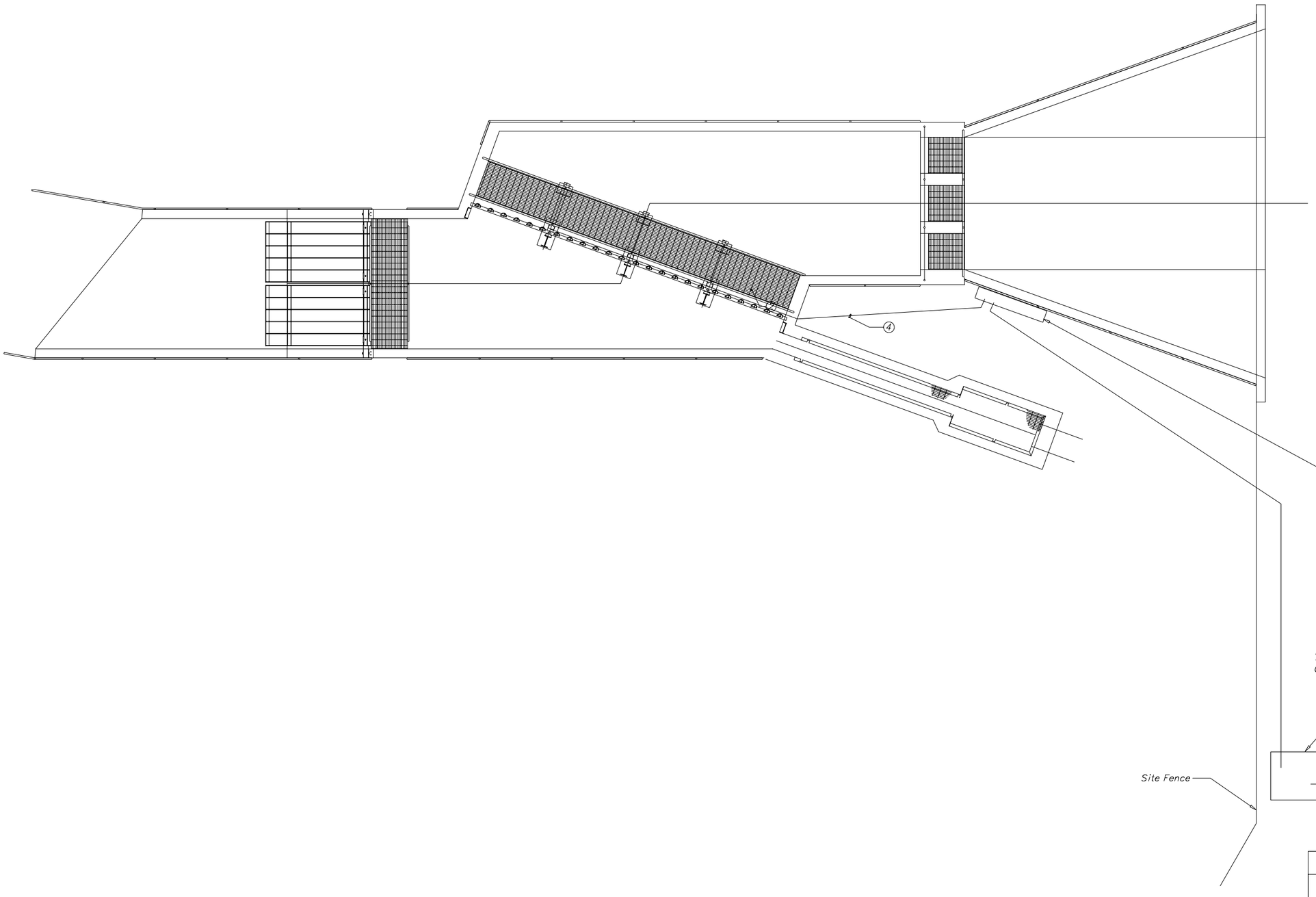
COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM
MVID EAST DIVERSION

FISHSCREEN
METALWORK
BAFFLE ELEVATION, SECTIONS & DETAIL

DESIGNED _____ CHECKED _____
DRAWN Ed Mordhorst TECH. APPROVAL _____
PROGRAM MANAGER

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
AutoCAD Rel. 15.06	1678-100-314.DWG	SEPTEMBER 3, 2003 12:05
BOISE, IDAHO	14 JULY 2003	1678-100-314



Notes:

1. *Conduit No. 1 shall contain pull rope for utility installed cable.*
2. *See Drawing xxxx for motor receptacle location / detail.*
3. *See drawing 1678-100-331 for conduit 1-7 details*

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COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM

MVID EAST DIVERSION

FISHSCREEN STRUCTURE

ELECTRICAL SITE PLAN

DESIGNED _____ CHECKED _____

DRAWN Ed Mordhorst TECH. APPROVAL _____

PROGRAM MANAGER

CADD SYSTEM	CADD FILENAME
AutoCAD Rel. 15.06	1678-100-329.DWG
BOISE, IDAHO 23 JULY 2003	1678-100-329

SPECIFICATION #

SEPTEMBER 3, 2003 12:08
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RGORCZYCA

Panel No. : MVID PPM	Section :	BUS: 240/120 Volts	☒ Main Ckt. Breaker 100 AMP
Location : MVID – East	Serving : Fishscreen	1 PH 3 WIRE 125 AMP	☐ Main Lugs Only
Fully Rated SCI 10,000 RMS SYS AMPS	☐ Feed Through Lugs ☐ SubFeed Lugs	☐ Isolated Ground Bus	☐ Flush Mount ☒ Surface Mount ☐ Top Feed ☒ Bottom Feed

LOAD TYPE	CIRCUIT DESCRIPTION	CONN VA	C.B. AMP	C.B. POLE	CKT	PH	C.B. CKT	C.B. POLE	C.B. AMP	CONN VA	CIRCUIT DESCRIPTION	LOAD TYPE
M	SCREEN MOTOR	741	20	2	1	N/A	2	2	20	741	SCREEN MOTOR	M
M	——— II ———	741	20	2	3	N/A	4	2	20	741	——— II ———	M
M	SCREEN MOTOR	741	20	2	5	N/A	6	2	20	741	SCREEN MOTOR	M
M	——— II ———	741	20	2	7	N/A	8	2	20	741	——— II ———	M
R	GENERAL RECEPTACLE	1800	20	1	9	N/A	10	1	20	1920	SPARE	
	SPARE	1920	20	1	11	N/A	12	1	20	1920	SPARE	
	SPARE	1920	20	1	13	N/A	14	1	20	1920	SPARE	
	Space				15	N/A	16				Space	
	Space				17	N/A	18				Space	
	Space				19	N/A	20				Space	
	Space				21	N/A	22				Space	
	Space				23	N/A	24				Space	
	Space				25	N/A	26				Space	
	Space				27	N/A	28				Space	
	Space				29	N/A	30				Space	
	Space				31	N/A	32				Space	
	Space				33	N/A	34				Space	
	Space				35	N/A	36				Space	
	Space				37	N/A	38				Space	
	Space				39	N/A	40				Space	
	Space				41	N/A	42				Space	

Total Receptacle (R) Load @ 180VA/each=>100% for first 10KVA & 50% for remainder: kVA

Total Non-coincidental (E) Load: kVA

Total Lighting (L) Load @ 125% : kVA

Total Motor (M) Load : kVA

Total Heating (H) Load : kVA

Total Non-continuous (N) Load : kVA

Largest Motor (25% added to demand load): HP kVA

TOTAL CONNECTED LOAD : kVA	CONNECTED AMP Total Amp / PH :	A	B	C	TOTAL DEMAND LOAD AMP kVA

Notes:
1. Field verify panel mounting location.

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COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM

MVID – EAST FISHSCREEN

ELECTRICAL INSTALLATION

PANEL SCHEDULE

DESIGNED _____ CHECKED _____

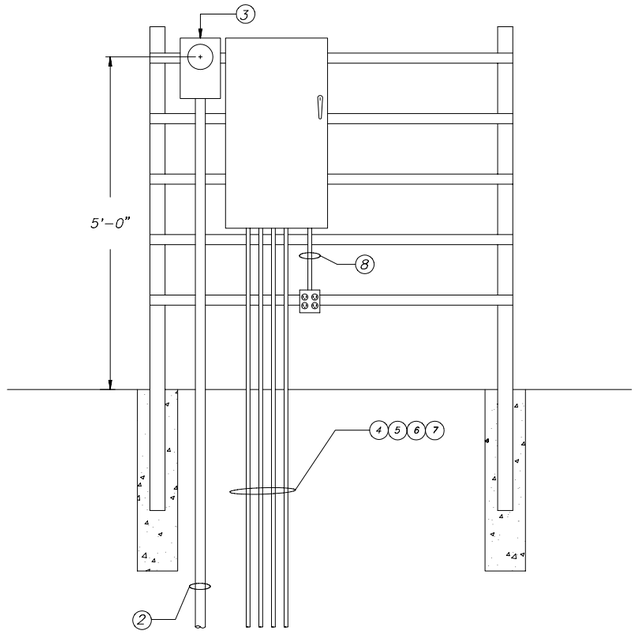
DRAWN _____ TECH. APPROVAL _____

PROGRAM MANAGER

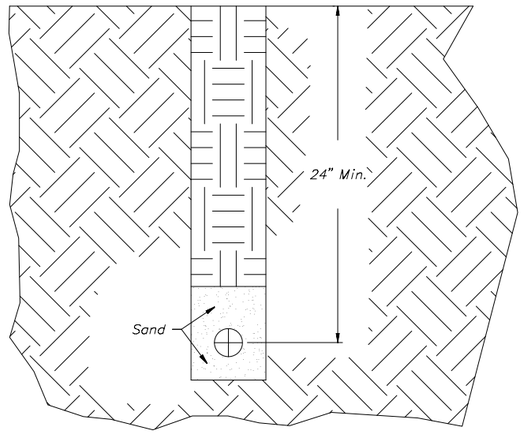
CADD SYSTEM	CADD FILENAME
BOISE, IDAHO	6 AUGUST 2003 | 1678-100-330

PLOTTED BY

Notes:
1. Conduit No. 1 Shown on Electrical Site Plan.
2. Field Verify Panel Mounting Location.



METER BASE / PANEL DETAIL



CONDUIT/ TRENCH DETAIL

CONDUIT & CABLE SCHEDULE

Conduit No.	Cable	Conduit Size	From	To	Remarks
1	(BY OTHERS)	2"	UTILITY SPLICE	UTILITY XFMR	UTILITY INSTALLED CABLE
2	3-1C No. 2	2"	UTILITY XFMR	METER BASE	BURRIED/SURFACE MOUNT
3	4-1C No. 2	2"	METER BASE	PANEL	NIPPLE
4	4-1C No. 12	3/4"	PANEL	MOTOR 1	EMBEDDED/BURRIED/SURFACE
5	4-1C No. 12	3/4"	PANEL	MOTOR 2	EMBEDDED/BURRIED/SURFACE
6	4-1C No. 12	3/4"	PANEL	MOTOR 3	EMBEDDED/BURRIED/SURFACE
7	4-1C No. 12	3/4"	PANEL	MOTOR 4	EMBEDDED/BURRIED/SURFACE
8	3-1C No. 12	3/4"	PANEL	RECEPTACLES	SURFACE

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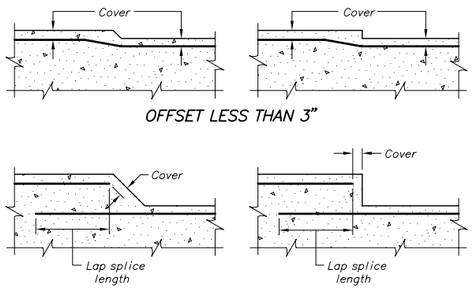
COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM

MVID - EAST FISHSCREEN
ELECTRICAL INSTALLATION
CONDUIT SCHEDULE & DETAILS

DESIGNED _____ CHECKED _____
DRAWN _____ TECH. APPROVAL _____
APPROVAL _____
PROGRAM MANAGER

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
BOISE, IDAHO	MARCH 2002	1678-100-331



OFFSET LESS THAN 3"

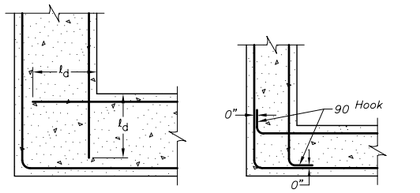
OFFSET 3" TO 8"

NOTE TO DESIGNERS AND DETAILERS: This detail may not be appropriate for tension areas of shallow structural members. If in doubt, use detail for offset greater than 8". See limits for noncontact lap splices in General Notes, Splices.

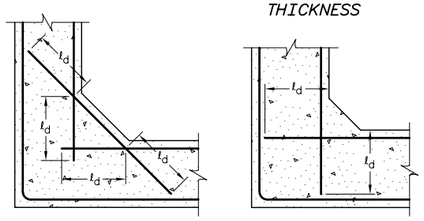
OFFSET GREATER THAN 8"

OFFSET GREATER THAN 8"
RESTRICTED MEMBER THICKNESS

TYPICAL OFFSET DETAILS



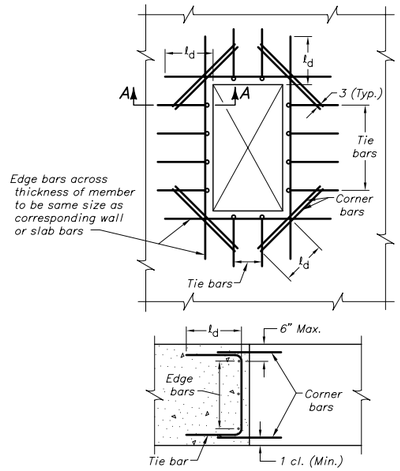
RESTRICTED MEMBER THICKNESS



FILLET 1'-0" OR GREATER

FILLET LESS THAN 1'-0"

TYPICAL CORNER DETAILS



SECTION A-A

OPENINGS:

TABLE FOR ADDITIONAL REINFORCEMENT

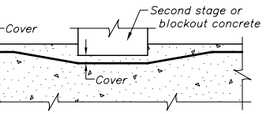
MEMBER THICKNESS	TIE BARS	EDGE BARS	CORNER BARS
Less than 10	None	1 – ctr.	2 – #4 ctr.
10 thru 1-6	None	2 – (1 ef)	4 – #4 (2 ef)
1-7 thru 3-0	#4 @ 1-0	3 – eq. spc.	4 – #4 (2 ef)
Over 3-0	#6 @ 1-0	Spc. @ 1-0	4 – #5 (2 ef)

Omit edge and tie bars along sides of openings where dimension is less than 1'-6".
Omit corner bars at sides of openings adjacent to floors, walls, or beams.
Omit corner bars if both dimensions of opening are less than 1'-6".

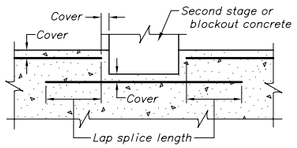
RECESSES:

Use corner bars in face of recesses deeper than 4" if either dimension of recess is equal to or greater than 1'-6".

ADDITIONAL REINFORCEMENT AROUND OPENINGS AND RECESSES

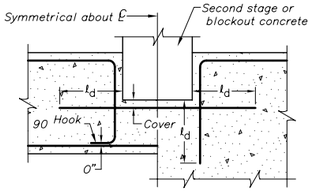


RECESS LESS THAN 3" DEEP



RECESS 3" TO 8" DEEP

NOTE TO DESIGNERS AND DETAILERS: This detail may not be appropriate for tension areas of shallow structural members. If in doubt, use detail for recess greater than 8". See limits for noncontact lap splices in General Notes, Splices.



RECESS GREATER THAN 8"

TYPICAL BLOCKOUT RECESS DETAILS

(Second stage concrete shown)

GENERAL NOTES 1/

UNLESS OTHERWISE SHOWN ON THE REINFORCEMENT DESIGN DRAWINGS, THE DETAILS AND NOTES SHOWN ARE MINIMUM REQUIREMENTS AND TYPICAL FOR ALL REINFORCEMENT DRAWINGS THAT REFER TO THIS DRAWING

ABBREVIATIONS:

bf = bottom face	br = bottom row	bl = bottom layer
tf = top face	tr = top row	tl = top layer
nf = near face	nr = near row	ml = middle layer
ff = far face	fr = far row	ns = near side
ef = each face	er = each row	fs = far side
if = inside face	ir = inside row	es = each side
of = outside face	or = outside row	ew = each way
	mr = middle row	ec = each corner

spc. = space or spaces
eq. spc. = equally spaced, equal spaces
d_b = nominal diameter or reinforcing bar
uv = uniformly varying lengths of bars between lengths shown
cl. = clear
ctr. = center or centers
add'l = additional
t_d = development length

SYMBOLS:

Bars shown thus —#8@1-0 or —#6@8 indicate a group of the same size bars equally spaced.
—○ An open circle at the end of a bar indicates a bend with the bar turned away from the observer.
—● A closed circle at the end of a bar indicates a bend with the bar turned towards the observer.
Splices shown thus —— indicate a lap splice, not a bend in the bar.

DIMENSIONS:

Dimensions are to the centerline of the bars except for embedment of hooks, which are dimensioned to the outside of the bar.
Clear cover dimensions are marked "cl." and are dimensioned to the outside of the bar.

COVER:

Place the reinforcement so that the clear distance between face of concrete and nearest reinforcement is 1½" for #5 bars and smaller, 2" for #6 bars through #8 bars and 3" for #9 bars through #11 bars. Provide 3" clear distance from face of concrete for all bars when the concrete is placed against earth or rock. Clear distance is to the design dimension line.
Reinforcement parallel construction joints shall have a minimum of 2" clear cover.

PLACING:

Reinforcement at small openings (max. 1'-6") in walls and slabs may be spread apart not more than 1.50 times the bar spacing.
Reinforcement may be adjusted laterally to maintain a clear distance of at least 1" between the reinforcement and keys, water stops, anchor bolts, form ties, conduits, and other embedded materials. In heavily reinforced areas, relocation of the embedded material must be considered.
When bars are bent due to offsets less that 3" and recesses less that 3" deep, the slope of the inclined portion must not exceed 6 to 1.
Reinforcement parallel to anchor bolts or other embedded material shall be placed to maintain a clear distance of at least 1.33 times the maximum size aggregate.

SPACING:

The first and last bars in walls and slabs, stirrups in beams, and ties in columns are to start and end at a maximum of one half of the adjacent bar spacing. The minimum edge spacing shall be the smaller of either $2.5d_b$ or 0.5 of the adjacent bar spacing.

STANDARD HOOKS:

1. 180-degree bend plus $4d_b$ extension, but not less than 2½" at the free end of the bar.
2. 90-degree bend plus $12d_b$ extension at free end of the bar.

STIRRUP AND THE HOOKS:

1. #5 bar and smaller, 90-degree bend plus $6d_b$ extension at the free end of the bar.
2. #6, #7, and #8 bars, 90-degree bend plus $12d_b$ extension at the free end of the bar.
3. #8 bars and smaller, 135-degree bend plus $6d_b$ extension at the free end of the bar.

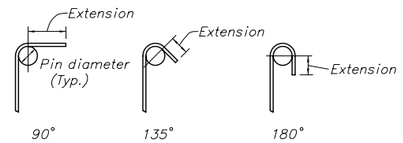


TABLE OF PIN DIAMETERS IN INCHES

BAR NO.	3	4	5	6	7	8	9	10	11
Standard bends	2 ¼	3	3 ¾	4 ½	5 ¼	6	9 ½	10 ¾	12
Stirrup and tie bends	1 ½	2	2 ½	4 ½	5 ¼	6			

REINFORCEMENT DOWELS:

Dowels indicated on the drawing, such as #8(d), shall be embedded a length equal to t_d and shall have a projection equal to that required for lap splicing to a bar of the same diameter.

PLAIN DOWELS:

Plain dowels across contraction joints shall be smooth bars uniformly coated with a film of oil before concrete placement. Viscosity of the oil shall have a SAE rating of not less than 250.

ACCESSORIES:

Bar supports, spacers, and other accessories are not shown on the design drawings. The recommendations of the ACI Detailing Manual-1988, or other approved supporting systems may be used.

DRAWING REFERENCES:

Numerals in parentheses ( ) following notes and section letters or numbers indicate the number of the drawing upon which the section or detail is shown; for example (524) denotes Drawing No. 557-D-524.

CODE AND DETAILING REFERENCES:

ACI Building Code Requirements for Structural Concrete (ACI 318-95).
ACI Detailing Manual – 1994.

NOTES TO DESIGNERS AND DETAILERS:

Splice lengths shown in the tables on this drawing are for Class B tension lap splices in accordance with ACI 318-95. Assumed conditions for these tables in addition to the requirements shown on this drawing are uncoated reinforcement, normal weight concrete, and the transverse reinforcement index (K_{tr}) equal to zero. Splices or development lengths other than those shown in the tables must be detailed on the reinforcement design drawings.

Some factors which require additional consideration are: Beams or columns with ties, lightweight aggregate concrete, epoxy-coated reinforcement, excess reinforcement, bars in compression, bundled bars, and seismic considerations.

1/ Unless otherwise shown on the reinforcement design drawings or this drawing, follow the recommendations established by the ACI Detailing manual – 1994.

SPLICES:

The minimum length of lap for splicing parallel bars shall be as given in the applicable table.
Staggered splices shall be separated to give 12 inches clear between ends of adjacent splices.
Bars spliced by noncontact lap splices shall not be spaced transversely farther apart than one-fifth the required lap splice length, nor 6" on centers.
When reinforcing bars of different size are to be spliced, the length of lap shall be governed by the smaller diameter bar.
Splices are to be made so that the required clear distances to face of concrete will be maintained.

f'c = 3000 psi TABLE 3 – 60 fy = 60,000 psi

BAR SIZE NO.	MINIMUM ℄ to ℄ BAR SPACING (INCHES)	LENGTH OF LAPPED SPLICE (INCHES)		DEVELOPMENT LENGTH l_d (INCHES)	
		TOP BARS *	OTHER BARS	TOP BARS *	OTHER BARS
3	3	17	16	13	12
4	3	23	18	18	14
5	4	28	22	22	17
6	5	34	26	26	20
7	6	49	38	38	29
8	6	56	43	43	33
9	7	63	49	49	38
10	8	71	55	55	42
11	9	79	61	61	47
9	6	63 **	49 **	49	38
10	6	75 **	58 **	58	45
11	6	93 **	71 **	71	55

f'c = 4000 psi TABLE 4 – 60 fy = 60,000 psi

BAR SIZE NO.	MINIMUM ℄ to ℄ BAR SPACING (INCHES)	LENGTH OF LAPPED SPLICE (INCHES)		DEVELOPMENT LENGTH l_d (INCHES)	
		TOP BARS *	OTHER BARS	TOP BARS *	OTHER BARS
3	3	16	16	12	12
4	3	20	16	15	12
5	4	25	19	19	15
6	5	29	23	23	18
7	6	43	33	33	25
8	6	49	37	37	29
9	7	55	42	42	33
10	8	62	47	47	37
11	9	68	53	53	41
9	6	55 **	42 **	42	33
10	6	65 **	50 **	50	39
11	6	80 **	62 **	62	48

* Top bars are all horizontal bars so placed that more than 12 inches of fresh concrete is cast below the development length or splice.
** Splices must be staggered.

6-1-97 D- G.P.G.	CONVERTED TO AUTOCAD DRAWING. REVISED TO CONFORM TO ACI 318-95. OTHER MINOR REVISIONS.
2-29-92 D- ROA	TOP BAR DEFINITION AND MINOR PUNCTUATION REVISION IN PLACING NOTE.
12-7-90 D- J.D.S.	REDRAWN TO NEW DRAFTING STANDARDS. REVISED CONCRETE COVER, NOTES TO DESIGNERS, TABLES, REINFORCEMENT AROUND OPENINGS, AND OTHER MINOR REVISIONS. REVISED TO CONFORM TO ACI 318-89.
9-27-84 D- NFP DG	REVISED PIN DIAMETER TABLE, REFERENCED THE ACI DETAILING MANUAL 1980. ADDED NOTES UNDER PLACING AND STANDARD HOOKS.
12-8-76 D- WRW	MINOR REVISIONS.

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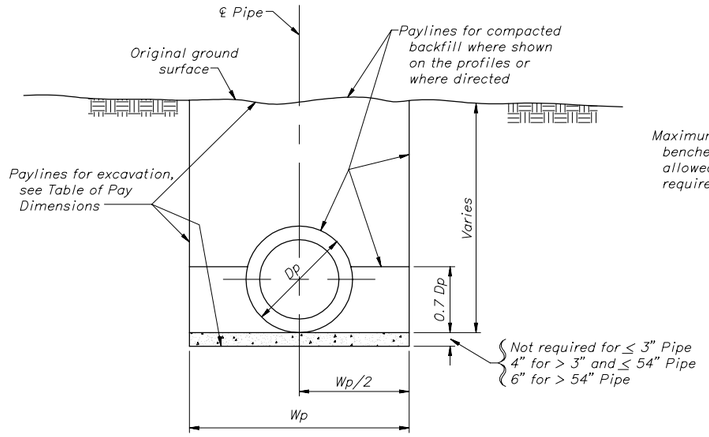
STANDARD DESIGNS

GENERAL NOTES AND MINIMUM REQUIREMENTS FOR DETAILING REINFORCEMENT

DESIGNED M.F.WARD J.G.STARBUCK CHECKED GAYLE A.ERICKSON
DRAWN M.CAMPBELL TECH. APPROVAL H.G.ARTHUR
ACTING DIRECTOR, DESIGN AND CONSTRUCTION

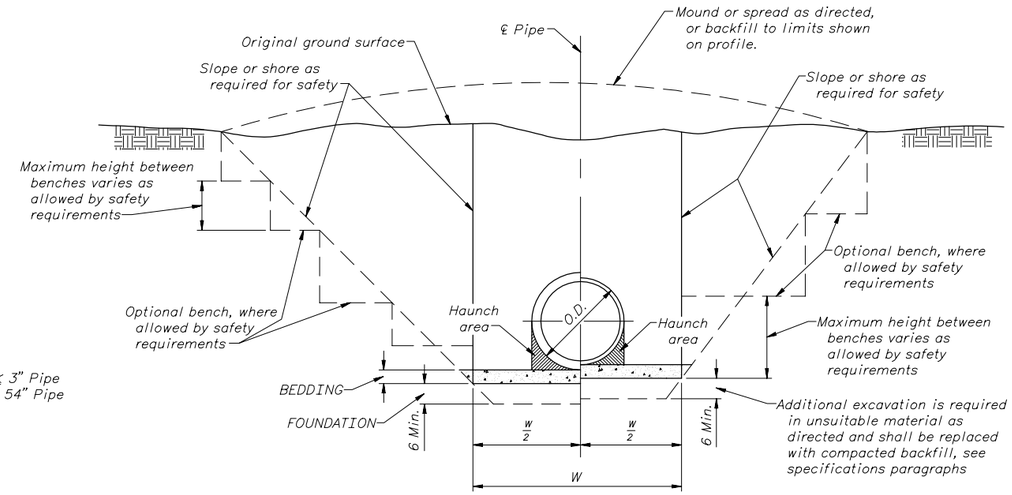
CADD SYSTEM AutoCAD Rel. 15.06	CADD FILENAME 40-D-6263.DWG	DATE AND TIME PLOTTED APRIL 3, 2003 13:49
DENVER, COLORADO	JULY 12, 1972	40-D-6263



TRENCH FOR PAYLINES ONLY ALL TYPES OF PIPE

TABLE OF PAY DIMENSIONS

Pipe I.D. (Inches)	Dp (Inches)	Wp (Feet)
6 and less	I.D. + 2	2.0
Over 6 thru 18	I.D. + 4	$\frac{1}{12}$ (I.D. +24)
Over 18 thru 24	I.D. + 4	$\frac{1}{12}$ (I.D. +40)
Over 24	1.167 I.D.	$\frac{1}{12}$ (1.167 I.D. + 36)



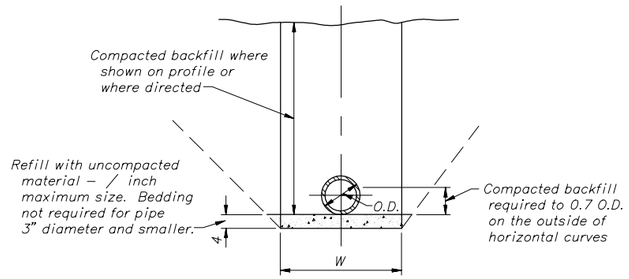
HALF SECTION RIGID PIPE

HALF SECTION FLEXIBLE PIPE

TYPICAL TRENCH DETAILS

MINIMUM INSTALLATION WIDTH

PIPE I.D. (INCHES)	W (FEET)
6 and less	2.0
Over 6 thru 18	$\frac{1}{12}$ (O.D. + 20)
Over 18	$\frac{1}{12}$ (O.D. + 36)



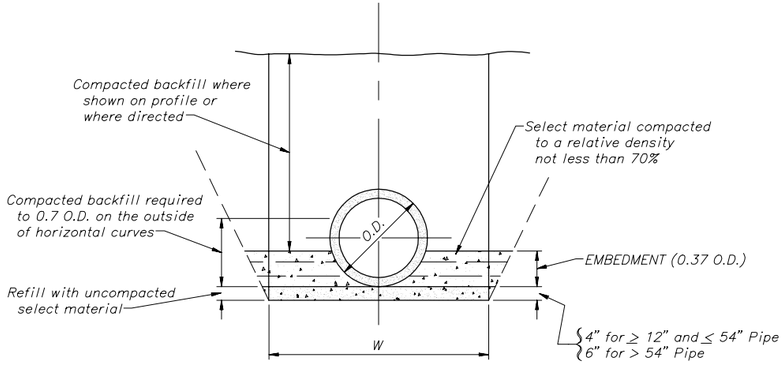
PIPE 10 INCH DIAMETER AND SMALLER

PVC
STEEL
DUCTILE IRON

GRADUATION LIMITS FOR SELECT MATERIAL

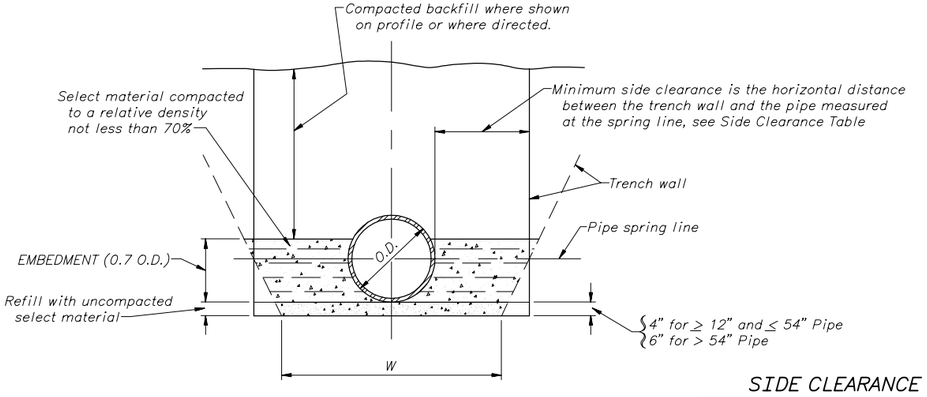
SIZE *	PERCENT BY WEIGHT
Passing No. 200 sieve	5 or less
Passing No. 50 sieve	25 or less

* Maximum size shall not exceed $\frac{3}{4}$ inch.



RIGID PIPE

DUCTILE IRON _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ 12" – 20"
REINFORCED CONCRETE _ _ _ _ _ _ _ _ _ _ _ _ 12" AND LARGER
REINFORCED CONCRETE CYLINDER _ _ _ _ _ 48" AND LARGER



FLEXIBLE PIPE

PVC _ 12" – 36"
PRETENSIONED CONCRETE CYLINDER _ _ _ _ 12" – 66"
STEEL _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ 12" AND LARGER
FIBERGLASS _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ 12" AND LARGER
DUCTILE IRON _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ 24" AND LARGER

SIDE CLEARANCE TABLE

TRENCH TYPE	MINIMUM SIDE CLEARANCE (INCHES)
1	10 INCHES FOR 12" THRU 18" I.D. 18 INCHES FOR OVER 18" I.D.
2	ONE O.D.
3	TWO O.D.

For location of Trench Types, see Specifications.

NOTES

Dp and Wp are used for calculating pay quantities for all pipe and trench types. Calculations are based on vertical walls.
Paylines for backfill will be the paylines for excavation, except the volume of the pipe, based on the diameter Dp will be deducted, and except where the depth of backfill is limited as shown on profiles.
W is minimum width of excavation in feet at bottom of bedding. The minimum side clearance for flexible pipe may require a wider trench bottom than dimension W.
Pipe diameters shown are the nominal inside diameter (I.D.) of the pipe in inches unless otherwise indicated.
O.D. is outside diameter in inches of the pipe actually installed.
Where pipe slope exceeds 0.3, see specifications paragraphs for backfill in pipe trenches.
Sloping, shoring, and benching shall be in accordance with Reclamation Construction Safety Standards.
Other installation methods with comparable pipe designs may be submitted for approval.

11/27/91 D- LAK	REMOVED NOTES ABOUT EQUAL LIFTS "RIGID PIPE" AND "FLEXIBLE PIPE".
10/17/91 D- LAK	REDRAWN WITH MINOR REVISIONS.

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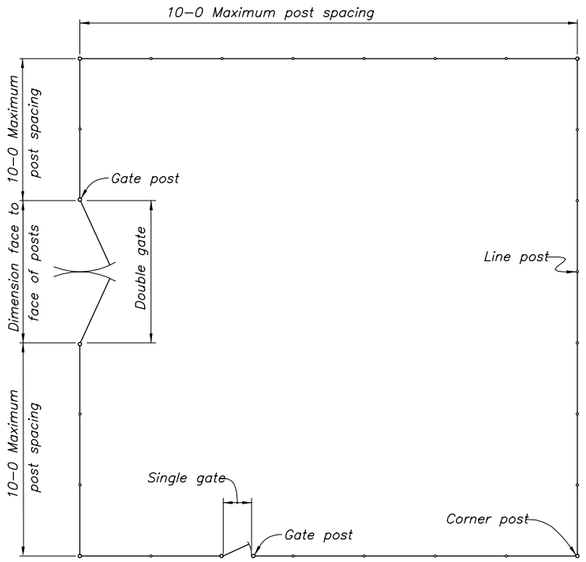
STANDARD DESIGNS

PRESSURE PIPE TRENCH INSTALLATION

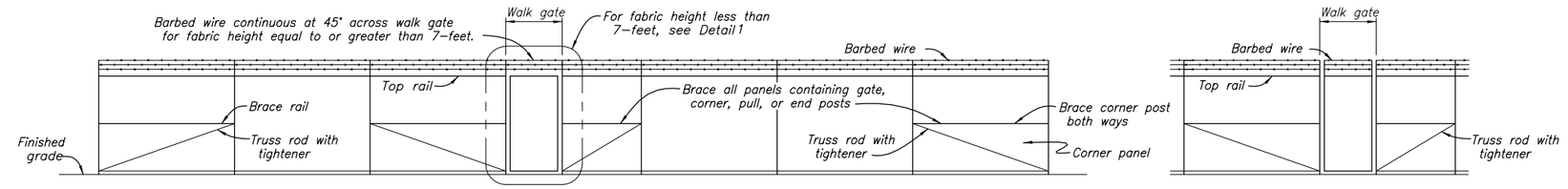
SELECT MATERIAL

DESIGNED Richard P. Fuerst TECHNICAL APPROVAL Leo A. Kinney, Jr.
DRAWN Bob Schully SUBMITTED Douglas H. Wegener
CHECKED Leo A. Kinney, Jr. APPROVED W. L. Long
CHIEF, WATER CONVEYANCE BRANCH

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
AutoCAD Rel. 15.0	40-D-6551.DWG	JULY 20, 2000 08:03
DENVER, COLORADO	APRIL 1, 1991	40-D-6551

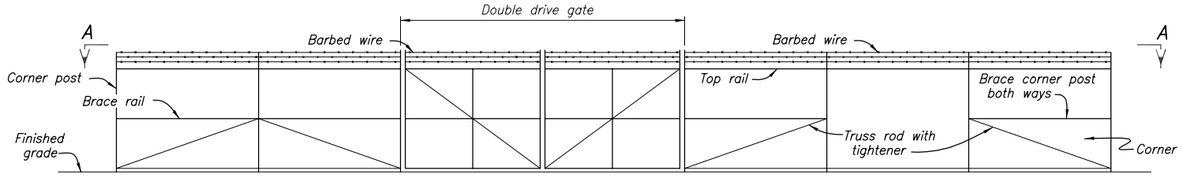


TYPICAL FENCING PLAN

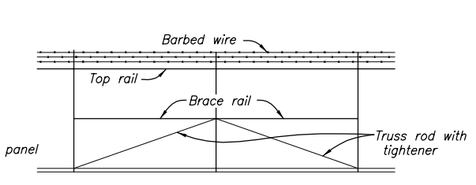


TYPICAL ELEVATION

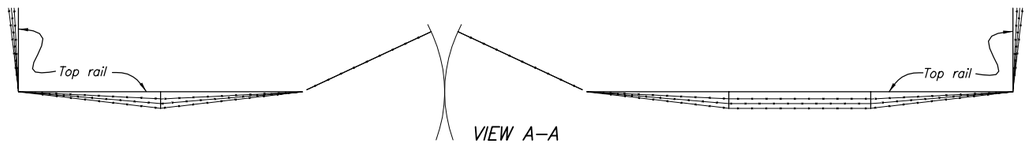
DETAIL 1



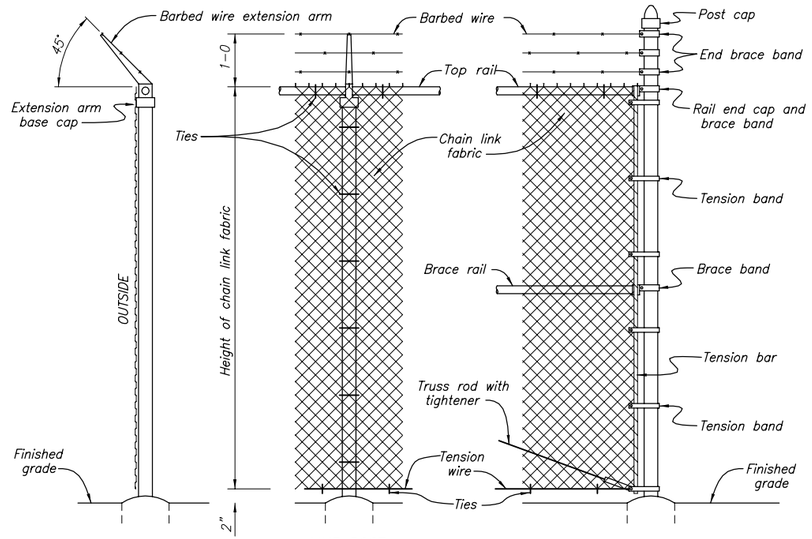
TYPICAL ELEVATION



PULL POST

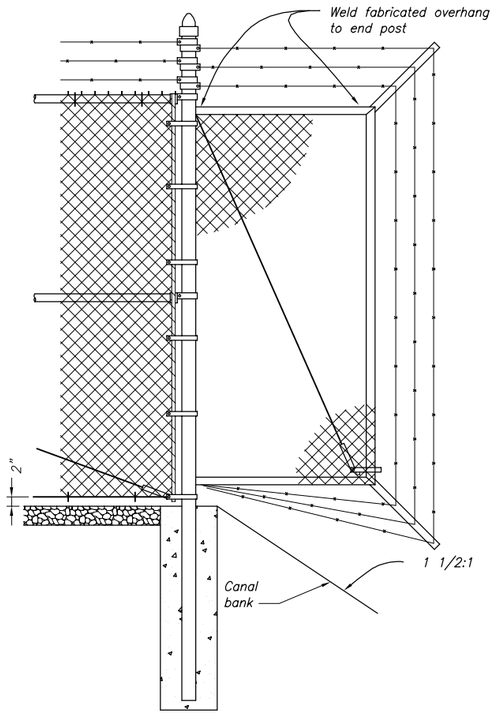


VIEW A–A

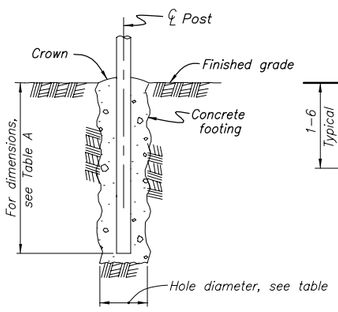


LINE POST

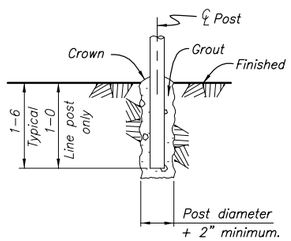
END POST, CORNER POST, OR GATE POST



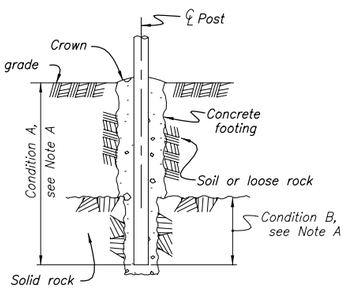
FENCE OVERHANG DETAIL



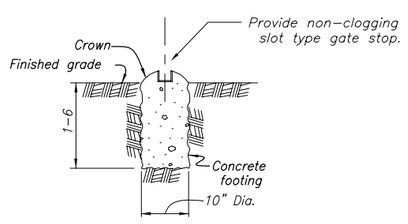
SOIL OR LOOSE ROCK



SOLID ROCK



POST FOOTING IN SOLID ROCK WITH OVERBURDEN OF SOIL OR LOOSE ROCK



GATE STOP FOOTING

TABLE A

POST FOOTING SIZES IN SOIL OR LOOSE ROCK

POST	FABRIC HEIGHT	HOLE DIAMETER AT TOP	HOLE DEPTH	POST EMBEDMENT
Line	3 ft. to 4 ft.	6 inches	24 inches	21 inches
Line	5 ft.	8 inches	30 inches	27 inches
Line	6 ft. to 12 ft.	9 inches	38 inches	36 inches
Terminal	3 ft. to 5 ft.	10 inches	32 inches	30 inches
Terminal	6 ft. to 12 ft.	12 inches	38 inches	36 inches

Note A: Satisfy Condition A or Condition B.
Condition A: Depth required for footing in soil or loose rock.
Condition B: Depth required for embedment in rock.

NOTES

All fencing materials and accessories shall be in accordance with the specifications and the Chain Link Fencing Manufacturers Institute (CLFMI) standards.
All post and frame dimensions shall be in accordance with Table 4 (CLFMI). Concrete footing dimensions shall be in accordance with Table A above.
See site plans for fence layout and swing of gate.
Install pull posts at a maximum interval of 500 feet and at changes in horizontal or vertical alignment.
Weld all joints between tubular gate frame members and frame overhangs or use heavy fittings to provide rigid and watertight connections.
Provide latches, stops and keepers for all gates as specified.
End posts, corner posts, pull posts, and gate posts are designed as terminal posts.
Brace rails are not required for fabric less than 6 feet high.
For typical grounding details, see 40–D–4334, 40–D–4335 and 40–D–6376.

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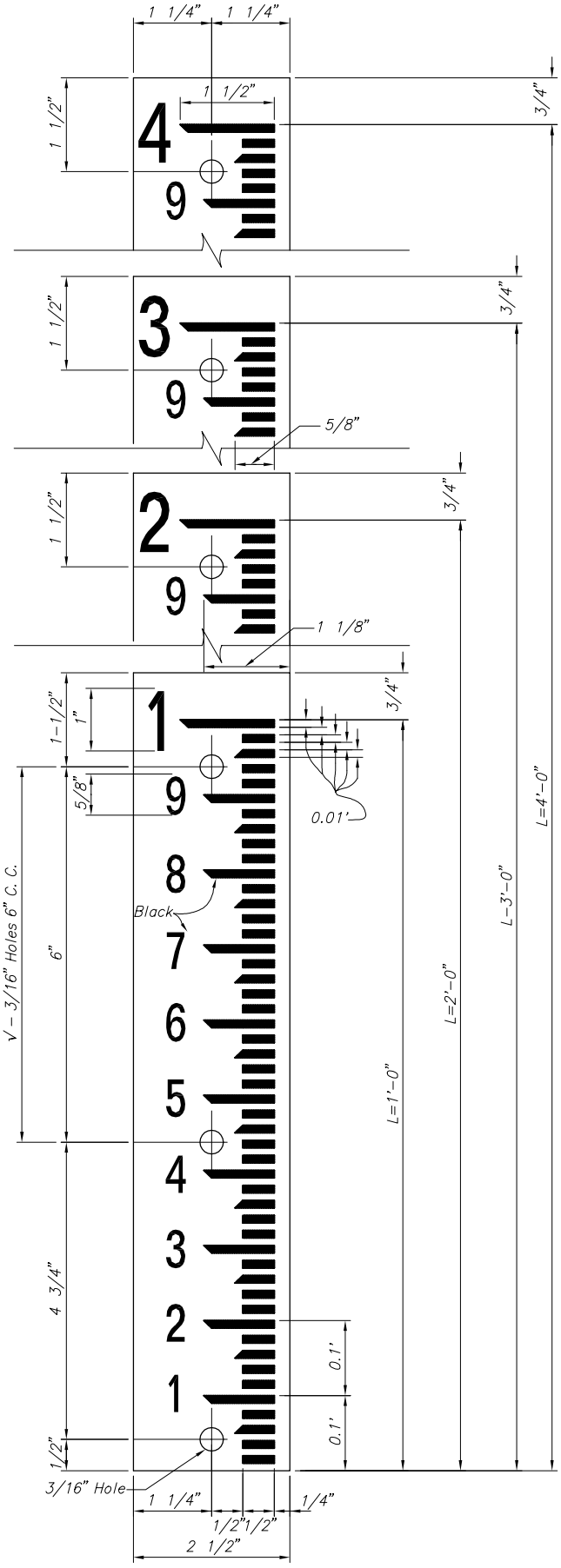
STANDARD DRAWINGS

CHAIN LINK FENCING DETAILS

DESIGNED CLFMI STANDARD
DRAWN Charles H. Ferguson
CHECKED Douglas K. Vice
TECHNICAL APPROVAL
APPROVED
PROJECT CONSTRUCTION ENGINEER

Cadd System: AutoCAD Release 13	Filename: YAK255.DWG	Date and Time Plotted: April 17, 1997
YAKIMA, WASHINGTON CADD	FEBRUARY 1997	1022–155–255



NOTES:

Gages to be of No. 18 gage (U.S. standard) mild steel plate and to be covered with porcelain enamel with a minimum thickness of 12 mils on numeral side and 3 mils on the reverse side and on edges where plate has been cut, punched or drilled.

All cutting, drilling and punching of the plates shall be completed before the porcelain enamel is applied.

The face of the gage shall be white and all numerals and graduations shall be black.

Graduations shall be sharp and accurate to the dimensions shown.

The length "L" shall be as given in the schedule. In case a greater length than 4'-0" is required the details shall be similar to details shown for shorter lengths.

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STANDARD DESIGNS

ENAMELED WEIR GAGES

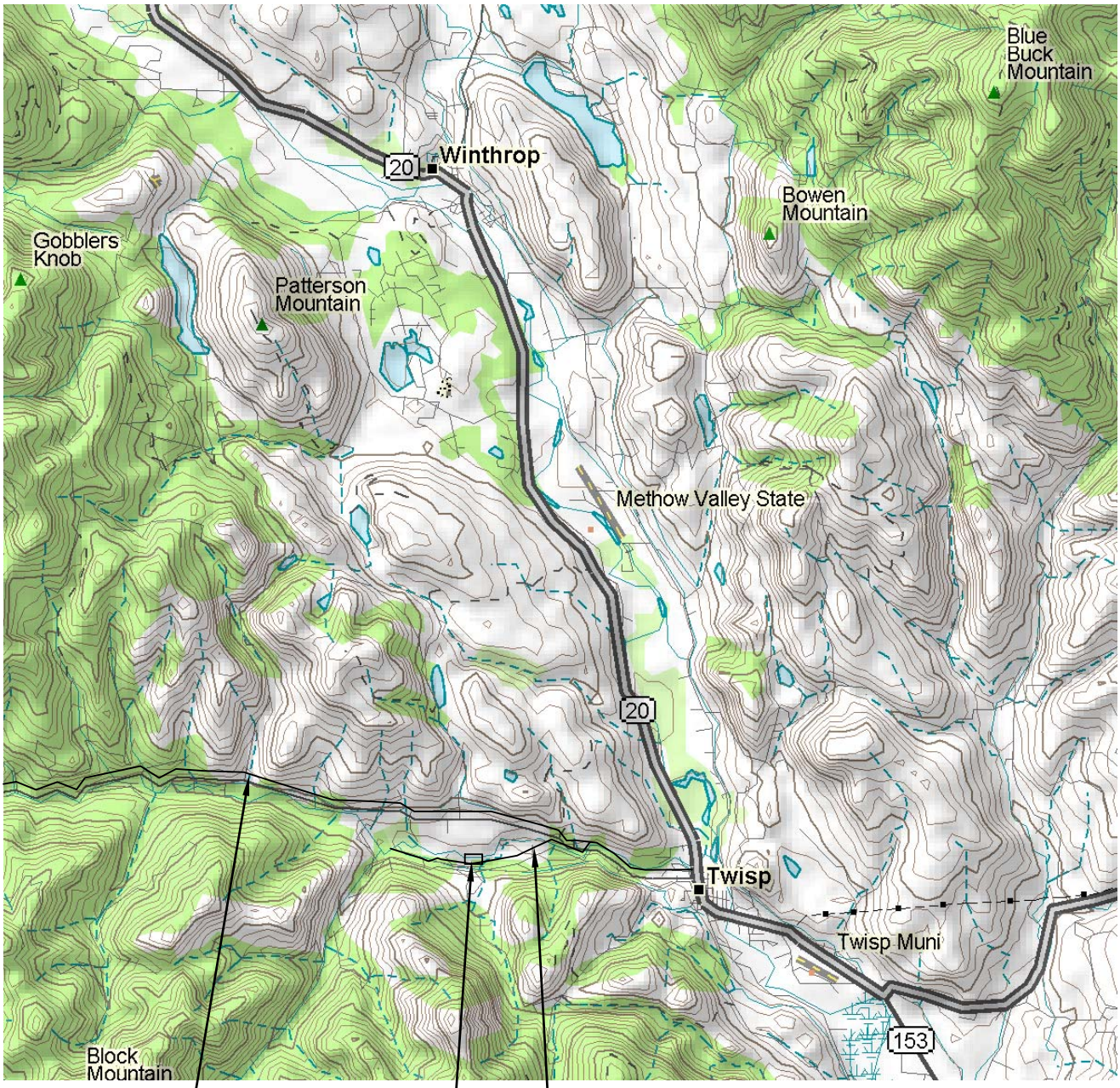
DESIGNED _____ TECH. APPROVAL _____

DRAWN I. Lawyer _____

CHECKED _____ APPROVED _____

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
AutoCAD Rel.12	9003-100-217.DWG	JULY 15, 1996 09:56
BOISE, IDAHO	FEBRUARY 1995	9003-100-217

APPENDIX B
MVID West Fish Screen Structure



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COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM – WASHINGTON
FISH PASSAGE AND PROTECTION FACILITIES

METHOW VALLEY IRRIGATION DISTRICT

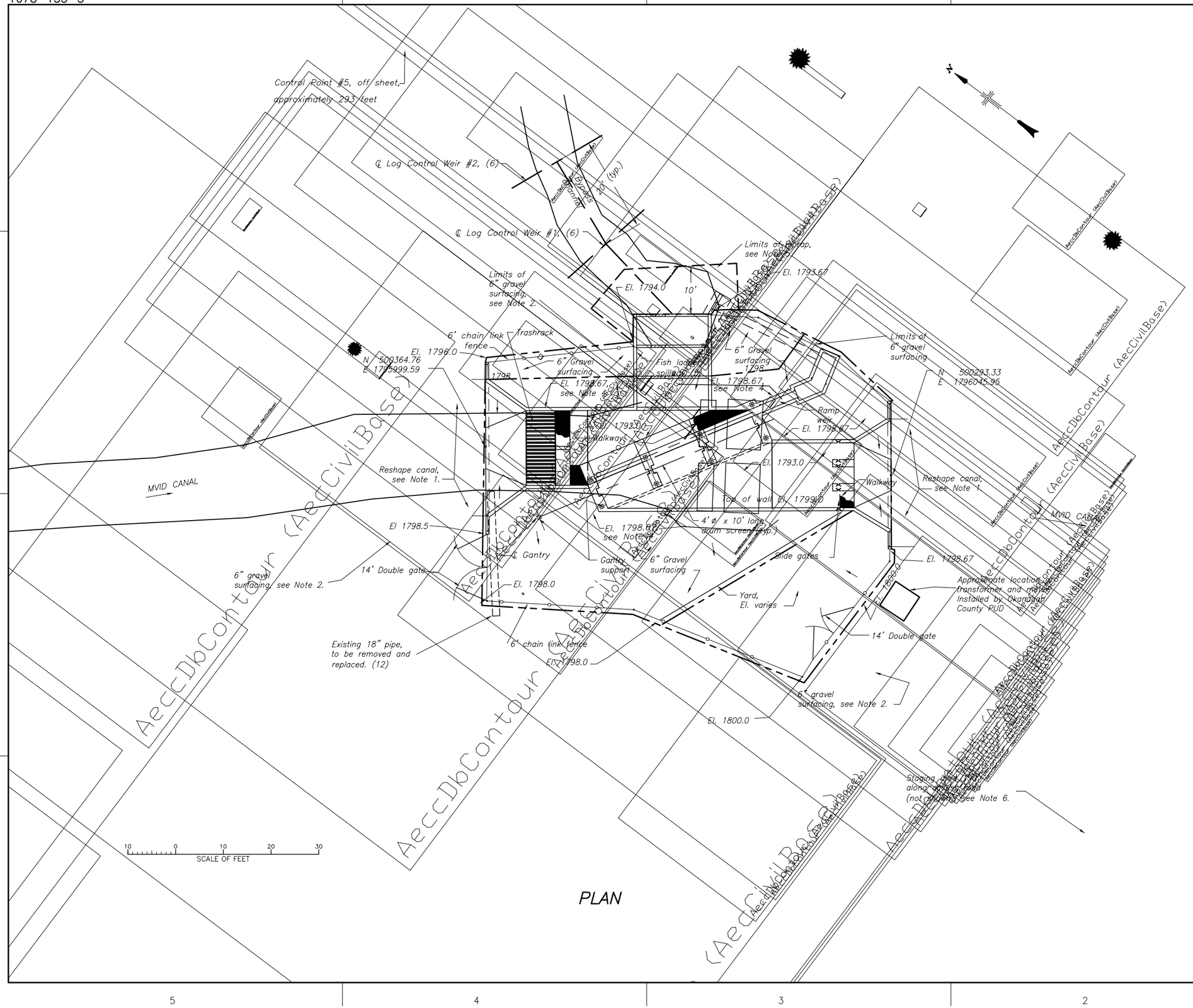
WEST FISH SCREEN STRUCTURE

LOCATION MAP

DESIGNED Gwendolyn Christensen CHECKED Todd Hill

DRAWN Gwendolyn Christensen TECH. APPROVAL John Manfredi
PROGRAM MANAGER

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
AUTOCAD2000	16781552.DWG	07/24/03
YAKIMA, WASHINGTON	JULY 24, 2003	1678-155-2



PLAN

NOTES:

1. Reshape canal as directed 20' upstream and downstream from concrete transitions.
2. Gravel surface within fenceline and 20 ft. outside fence at gate openings.
3. Existing ground contours shown outside of structures and fence limits. Slope finish grade from 1' outside fenceline on 1.5:1 to meet existing ground, except 10:1 outside gates.
4. Finished grade around concrete structure walls El. 1798.67, unless otherwise shown. Slope finish grade uniformly from structure to breaklines and point elevations shown 1' outside fenceline.
5. Riprap bypass channel, invert, and finish channel slopes to elevation 1794.0.
6. Staging area is located along access road approximately 150 ft. south of screen site and is 100 by 95.
7. Survey information: Site was surveyed October 2002. Basis of Bearing – Washington State Plane North Zone Coordiante System NAD 83. Horizontal Control – Washington State Plane North Zone Coordiante System North Zone NAD 83. Based on GPS Observation from DOT BC F378. Vertical Control – North American Vertical Datim of 1988 Based on GPS Observation from DOT BC F378.
8. Referece drawing 1678-155-12 for existing screen and spillway demolition.
9. Numbers in parentheses are drawing numbers.

SURVEY CONTROL:

CONTROL POINT	Northing	Easting	Elevation
5	500432.38	1796105.71	1791.86
1707	500205.81	1796091.22	1797.46

LEGEND:

1798	Finished grade breakline, elevation, see Note 4.
El. 1796.0	Finished grade point elevation, see Note 4.
⚠	Survey control points, see Note 7.

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METHOW VALLEY IRRIGATION DISTRICT

WEST FISH SCREEN STRUCTURE

SITE PLAN

DESIGNED	Gwendolyn Christensen	CHECKED	Todd Hill
DRAWN	Gwendolyn Christensen	TECH. APPROVAL	John Manfredi, PROGRAM MANAGER

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
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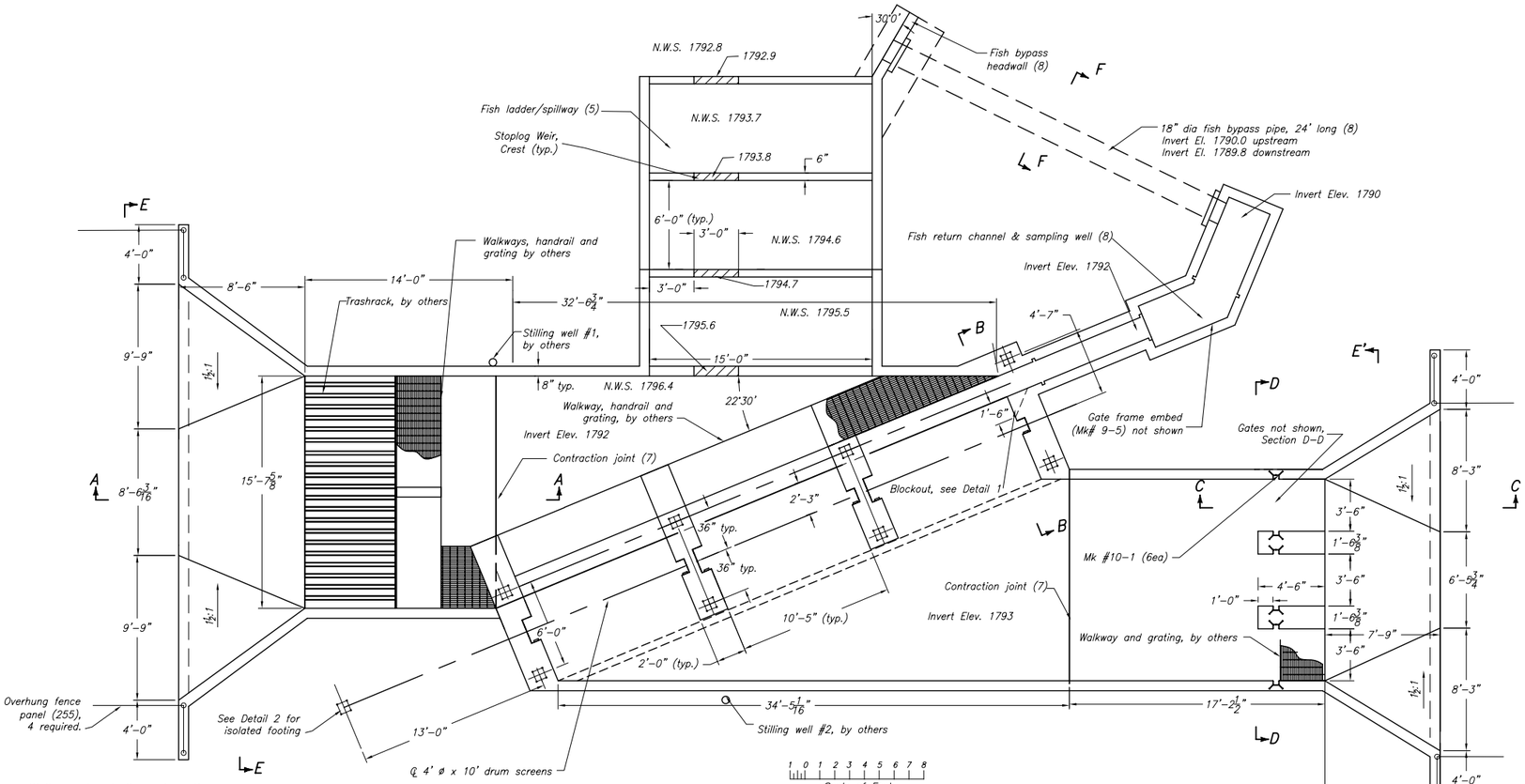
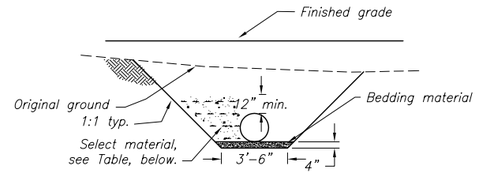
YAKIMA, WASHINGTON	AUGUST 28, 2003	1678-155-3



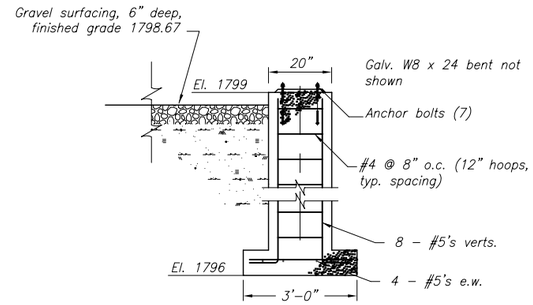


SECTION F-F

GRADATION LIMITS FOR SELECT MATERIAL

SIZE*	PERCENT WEIGHT BY PASSING
Passing No. 4 seive	50-75
Passing No. 50 seive	10-25
Passing No. 200 sieve	12 or less

* Maximum particle size shall not exceed 3/4 inch.



DETAIL 2
ISOLATED FOOTING

NOTES:

1. Number in parentheses are drawing numbers.
2. Structural design is based on concrete with a minimum compressive strength of 4000 psi at 28 days, and a minimum reinforcement steel yield strength of 60000 psi. See 40-D-6263 for minimum requirements for detailing reinforcement.
3. Fabrication and installation of the rotary drum screens, walkway grating and framing, handrails, trashrack, ramp flume and lift, and gantry frame metalwork items to be performed by others.
4. All buried and embedded electrical conduits to be installed by contractor.
5. 4" of 3/8" minus crushed gravel bedding required below all concrete slabs.

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FISH PASSAGE AND PROTECTON FACILITIES

METHOW VALLEY IRRIGATION DISTRICT

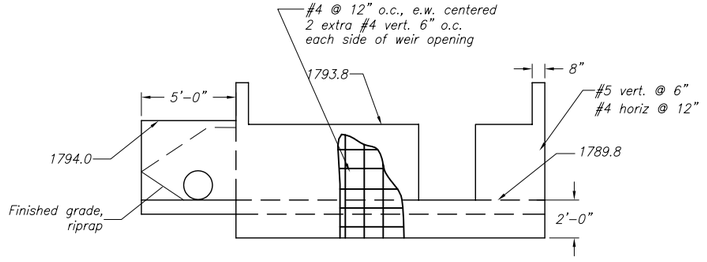
WEST FISH SCREEN STRUCTURE

PLAN, SECTIONS & DETAILS

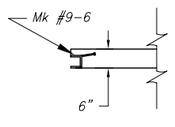
DESIGNED_ Gwendolyn Christensen _ _ _ CHECKED _ Todd Hill _ _ _ _ _ _ _

DRAWN _Gwendolyn Christensen_ _ _ _ _ TECH. APPROVAL _John Manfredi_ _ _
PROGRAM MANAGER

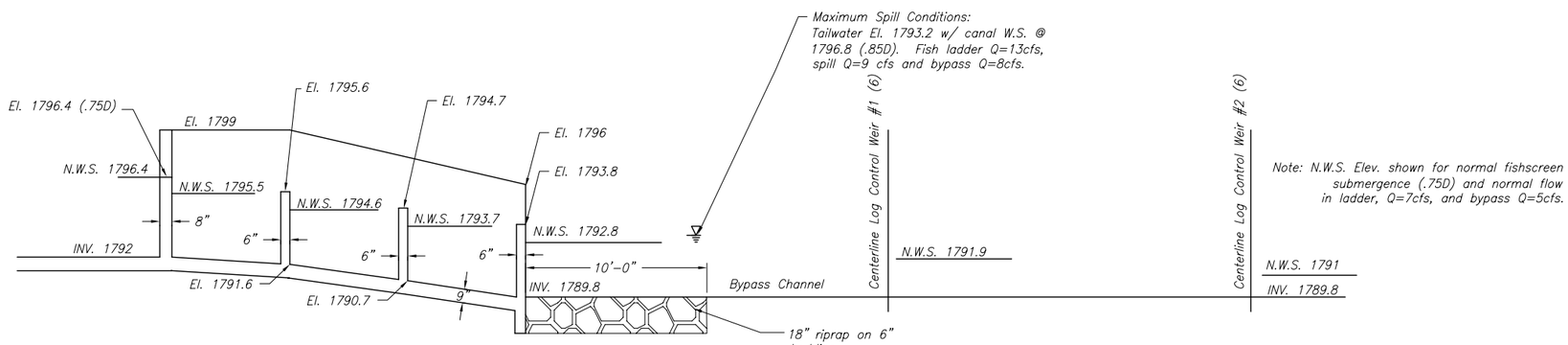
CADD SYSTEM AUTOCAD2000	CADD FILENAME 16781554.DWG	DATE AND TIME PLOTTED
YAKIMA, WASHINGTON	AUGUST 28, 2003	1678-155-4



SECTION H-H



DETAIL 3
FISH LADDER WALL GUIDE
(4 as shown, 4 opposite side)



SECTION G-G
PROFILE

Note: N.W.S. Elev. shown for normal fishscreen submergence (.75D) and normal flow in ladder, Q=7cfs, and bypass Q=5cfs.

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FISH PASSAGE AND PROTECTON FACILITIES

METHOW VALLEY IRRIGATION DISTRICT

FISH LADDER AND SPILLWAY

PLAN AND SECTIONS

DESIGNED_ Gwendolyn Christensen _ _ _ CHECKED _ Todd Hill _ _ _ _ _ _ _ _

DRAWN _Gwendolyn Christensen_ _ _ _ _ TECH. APPROVAL _John Monfredi_ _ _
PROGRAM MANAGER

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
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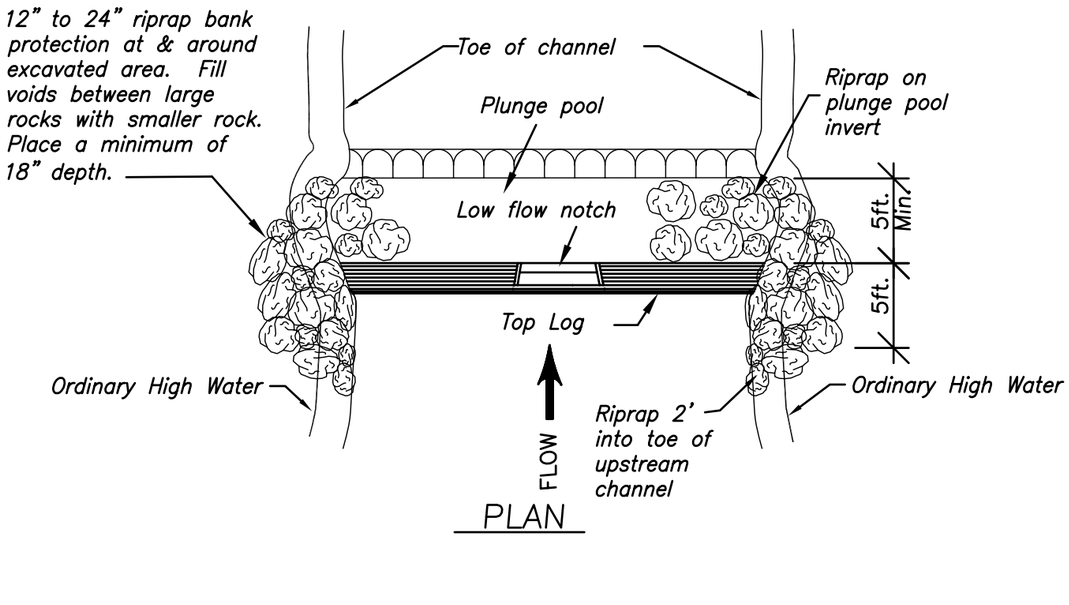
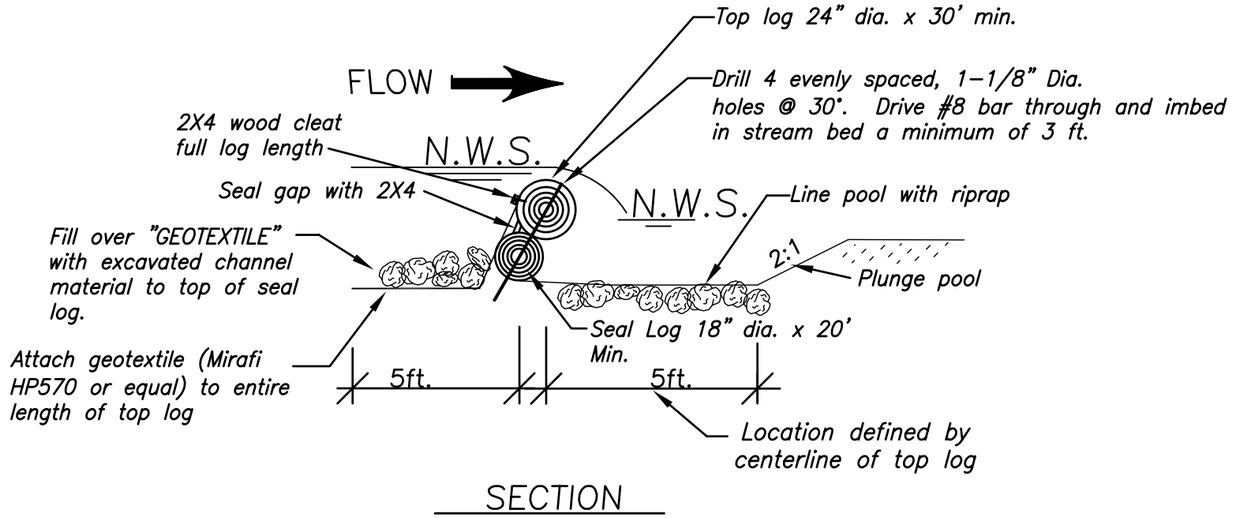
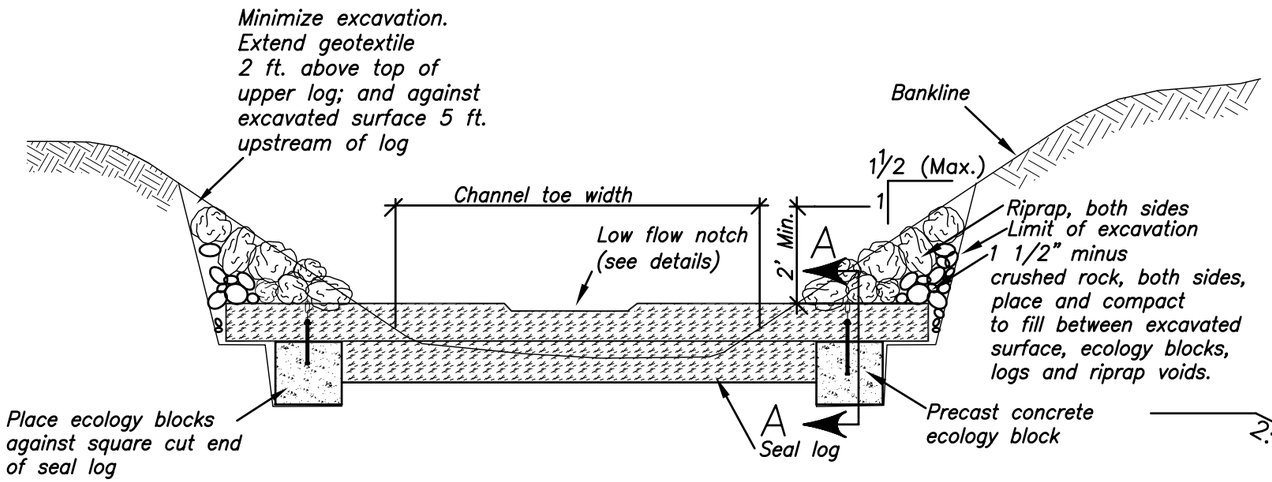
YAKIMA, WASHINGTON	AUGUST 28, 2003	1678-155-5



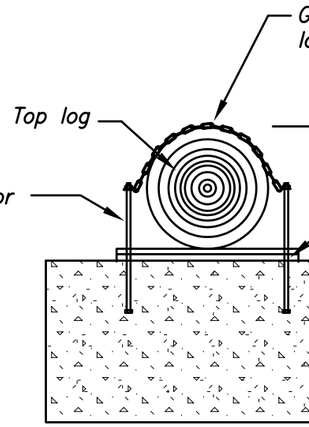
PLAN



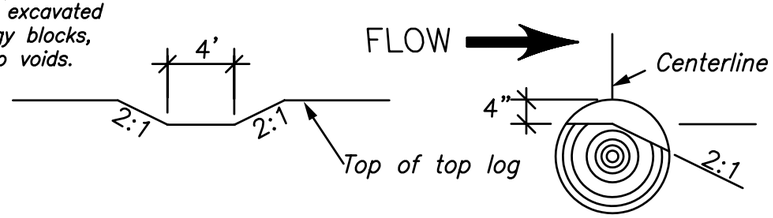
SECTION



ELEVATION



SECTION A-A
Seal log, not shown



ELEVATION SECTION
LOW FLOW NOTCH DETAILS

NOTES:

1. Not To Scale
2. See Drawings 1678-155-3 and 5 for Log Control Weir locations.
3. Drawing adapted from State of Washington Department of Fish and Wildlife Logcon.dwg

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FISH PASSAGE AND PROTECTIVE FACILITIES

METHOW VALLEY IRRIGATION DISTRICT

LOG CONTROL WEIRS #1 AND #2
PLAN, SECTIONS, DETAILS

DESIGNED_ Gwendolyn Christensen _ _ _ _ CHECKED _ _ Todd Hill _ _ _ _ _ _ _
DRAWN _ Gwendolyn Christensen _ _ _ _ _ TECH. APPROVAL _ John Manfredi _ _ _
PROGRAM MANAGER

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
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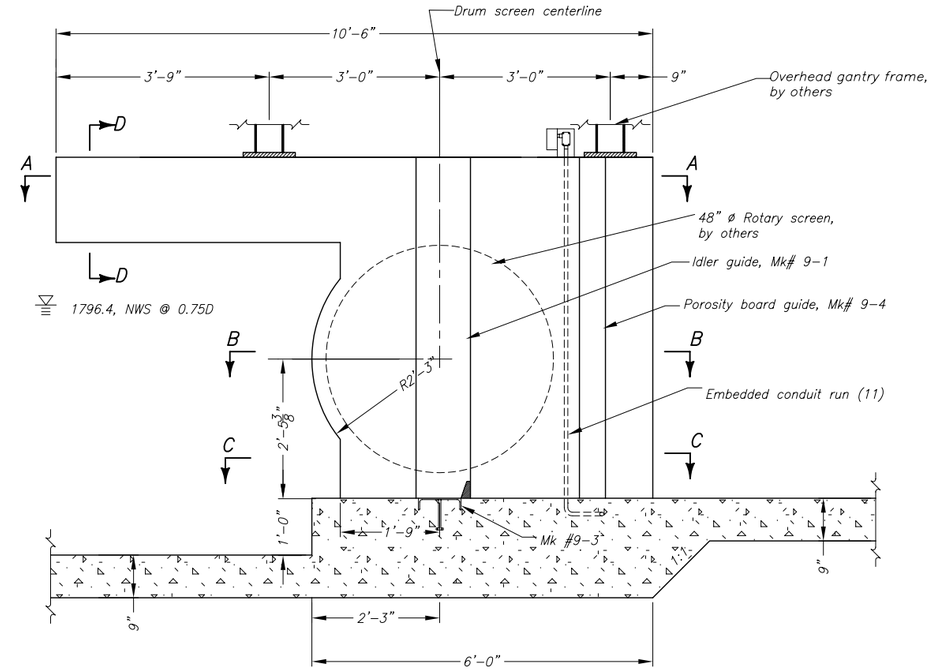
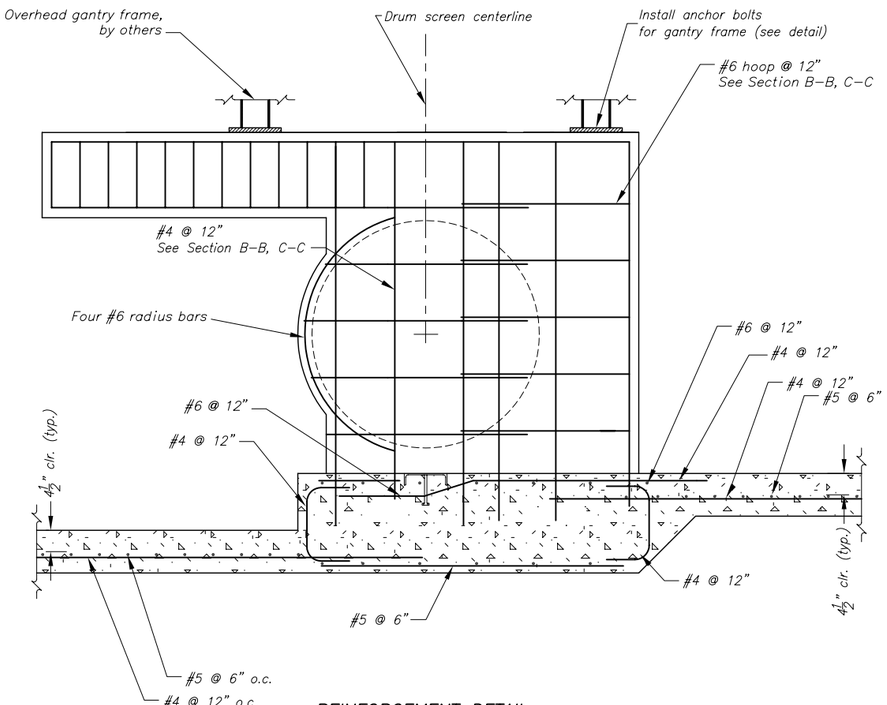
YAKIMA, WASHINGTON	AUGUST 28, 2003	1678-155-6

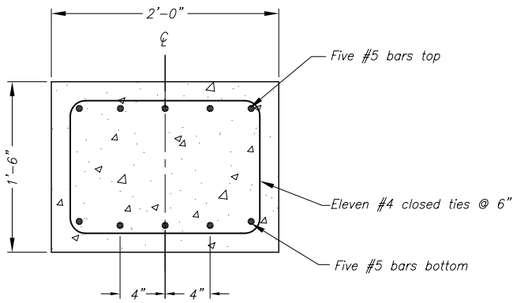


PIER ELEVATION

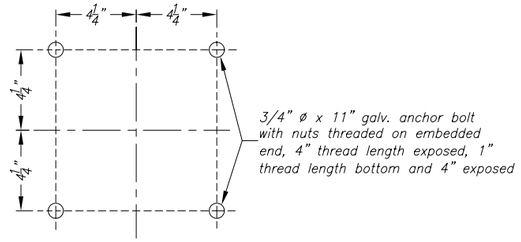


REINFORCEMENT DETAIL

Near face shown

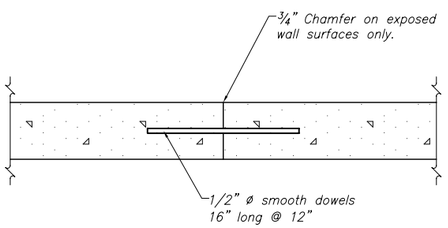


SECTION D-D



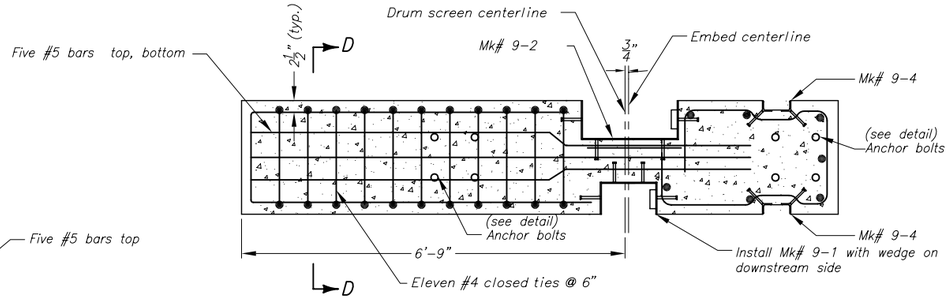
ANCHOR BOLT DETAIL

(9 locations)

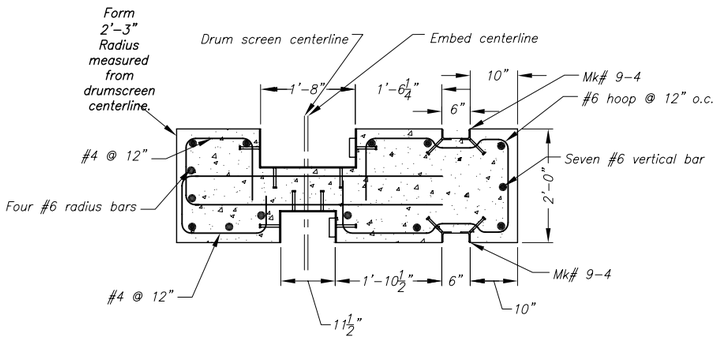


TYPICAL FLOOR AND WALL CONTRACTION JOINT

Reinforcement not shown



SECTION A-A



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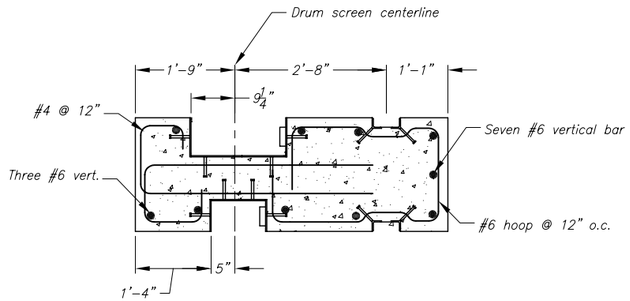

SECTION C-C

NOTES:

Driver and Idlers guide centerlines are offset ¾"downstream from screen centerline and overhead gantry frame.

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METHOW VALLEY IRRIGATION DISTRICT

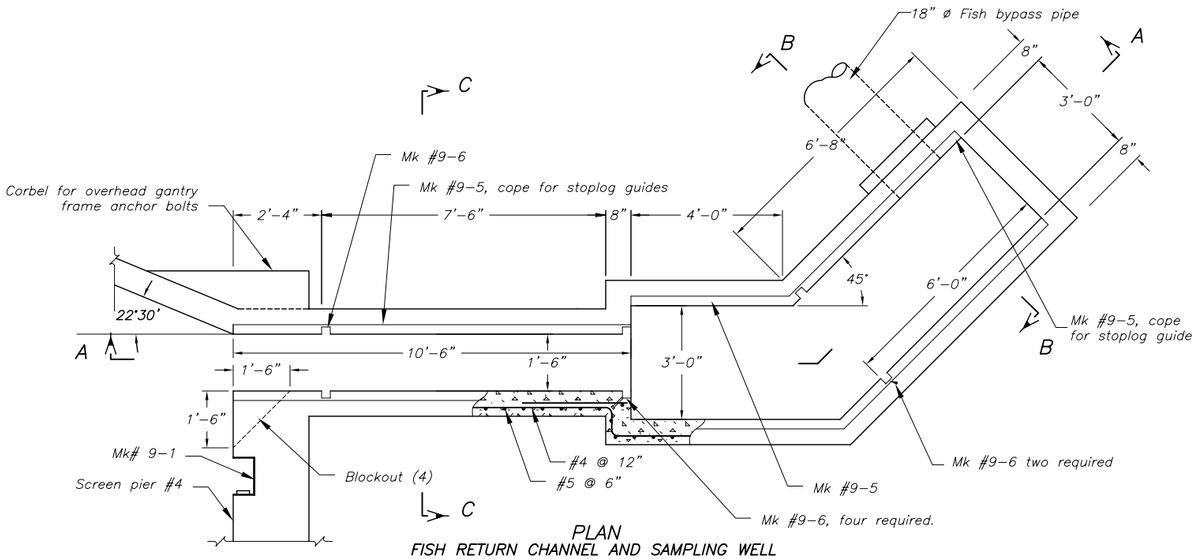
WEST CANAL FISHSCREEN STRUCTURE

STANDARD PIER FOR 48" ø ROTARY SCREEN

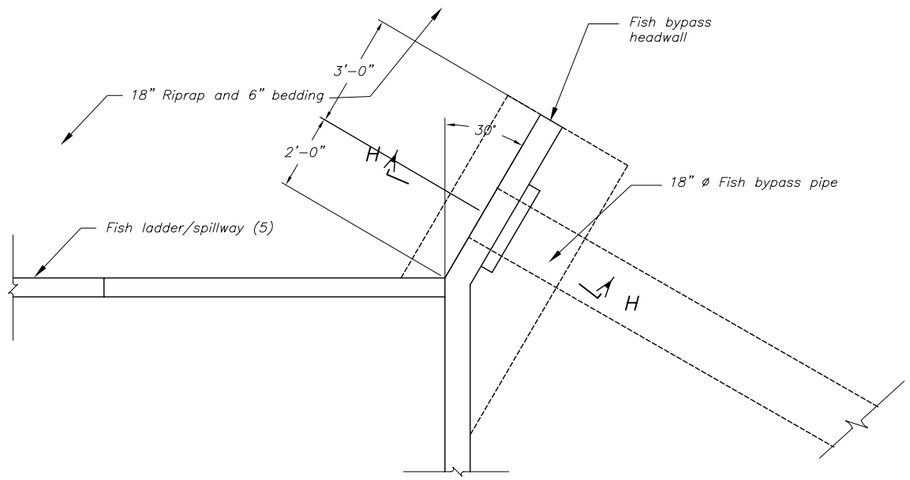
DESIGNED Gwendolyn Christensen CHECKED Todd Hill

DRAWN Gwendolyn Christensen TECH. APPROVAL John Manfredi PROGRAM MANAGER

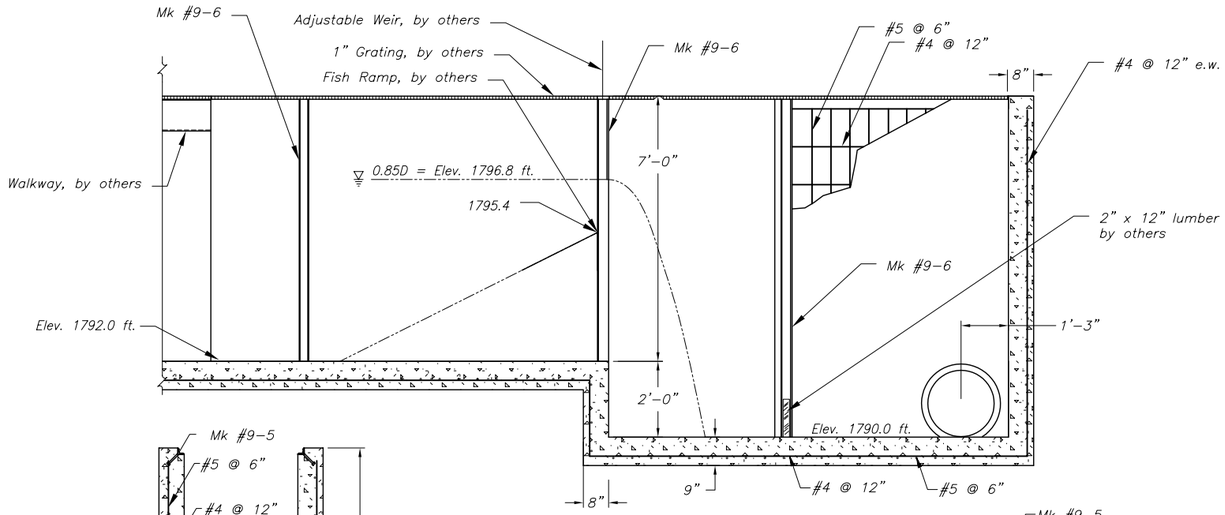
CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
ACAD2000	16781557.DWG	
YAKIMA, WASHINGTON	AUGUST 28, 2003	1678-155-7



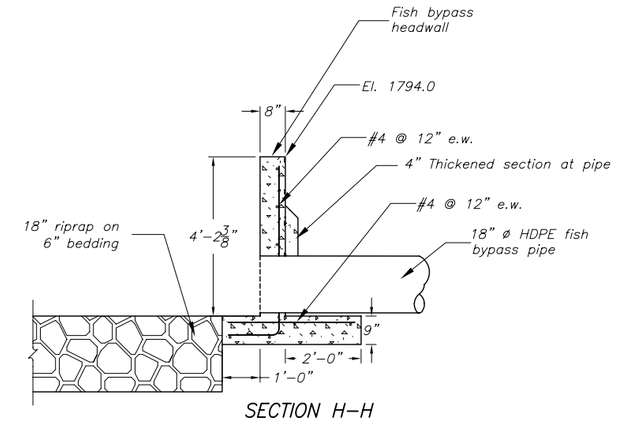
PLAN
FISH RETURN CHANNEL AND SAMPLING WELL



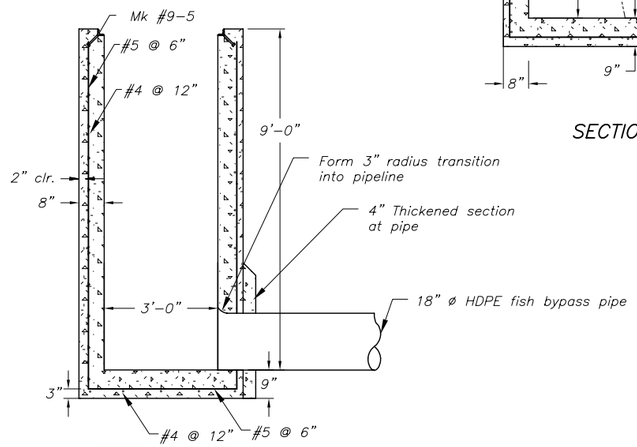
OUTLET STRUCTURE
PLAN



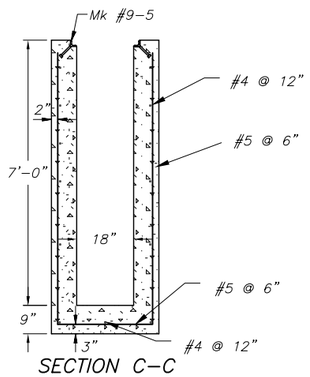
SECTION A-A



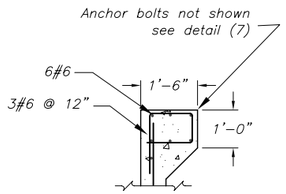
SECTION H-H



SECTION B-B



SECTION C-C



CORBEL

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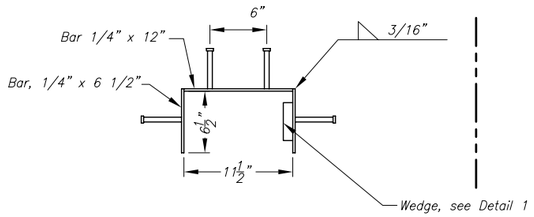
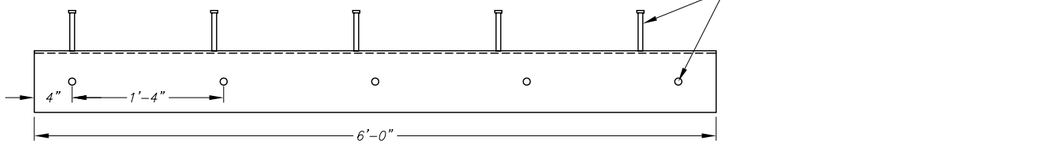
METHOW VALLEY IRRIGATION DISTRICT

FISH BYPASS CHANNEL, SAMPLING WELL
& OUTLET STRUCTURE

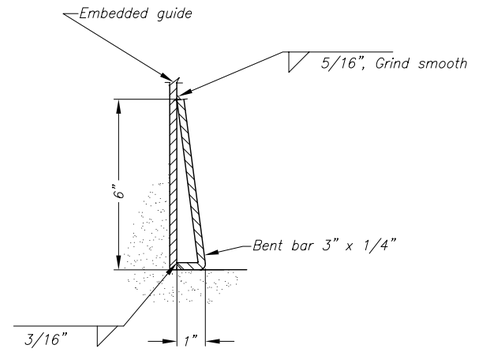
DESIGNED Gwendolyn Christensen CHECKED Todd Hill
DRAWN Gwendolyn Christensen TECH. APPROVAL John Manfredi
PROGRAM MANAGER

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
AutoCAD 2000 YAKIMA, WASHINGTON	16781558.dwg AUGUST 28, 2003	1678-155-8

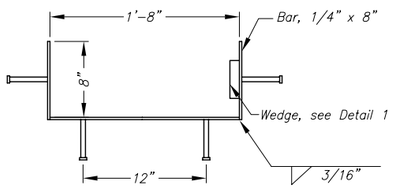


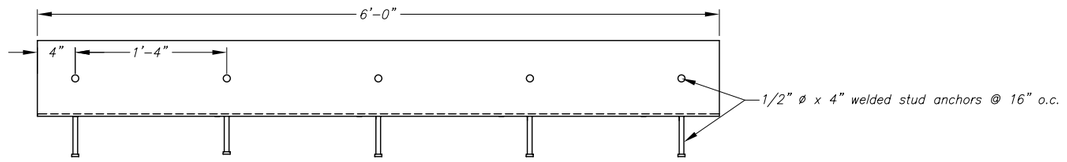


MK# 9-1, IDLER GUIDE, three required

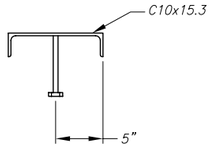


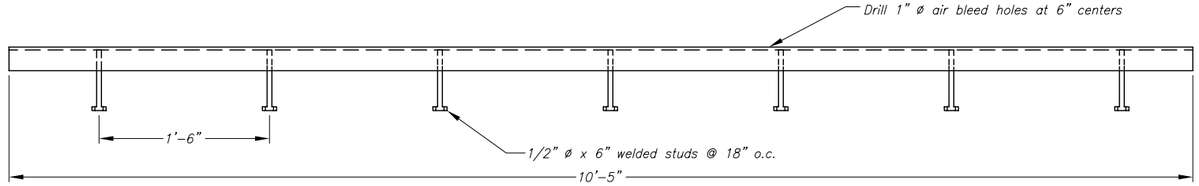
Detail 1



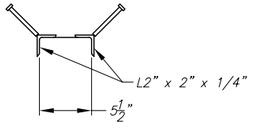


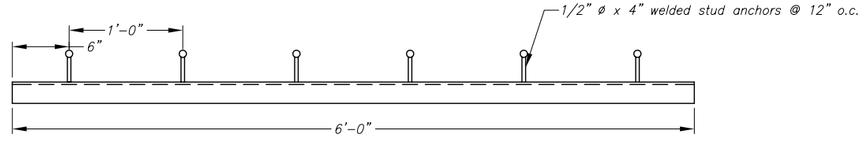
MK# 9-2, DRIVER GUIDE, three required



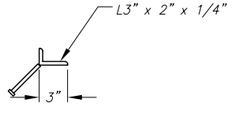


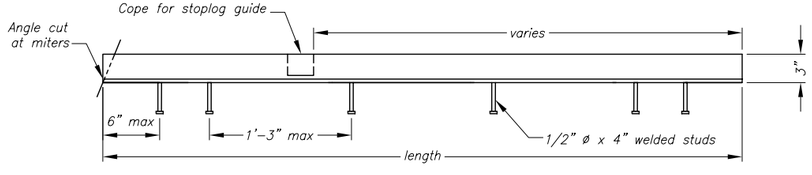
MK# 9-3, SILL PLATE, three required



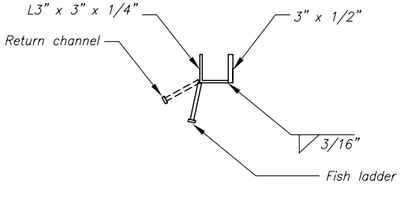


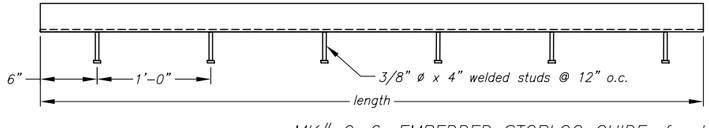
MK# 9-4, POROSITY BOARD GUIDES, six pairs required





PLAN VIEW, MK# 9-5, EMBEDDED GRATING FRAME, four required
two as shown, two opposite





MK# 9-6, EMBEDDED STOPLOG GUIDE, fourteen required
4 @ 7'
2 @ 9'
8 @ 4'

1. Hot dip galvanized after fabrication

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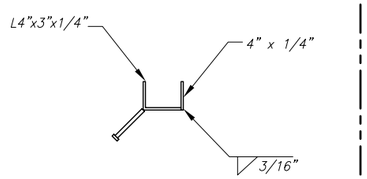
FISH PASSAGE AND PROTECTIVE FACILITIES

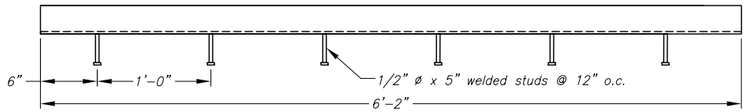
METHOW VALLEY IRRIGATION DISTRICT

MISCELLANEOUS EMBEDED METALWORK

DESIGNED Gwendolyn Christensen CHECKED Todd Hill
DRAWN Gwendolyn Christensen TECH. APPROVAL John Manfredi
PROGRAM MANAGER

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
ACAD2000	16781559.DWG	
YAKIMA, WASHINGTON	AUGUST 28, 2003	1678-155-9





MK# 10-1, SLIDE GATE GUIDE, six required

1. Hot dip galvanized after fabrication

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METHOW VALLEY IRRIGATION DISTRICT

MISCELLANEOUS EMBEDDED METALWORK

DESIGNED Gwendolyn Christensen CHECKED Todd Hill
DRAWN Gwendolyn Christensen TECH. APPROVAL John Manfredi
PROGRAM MANAGER

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
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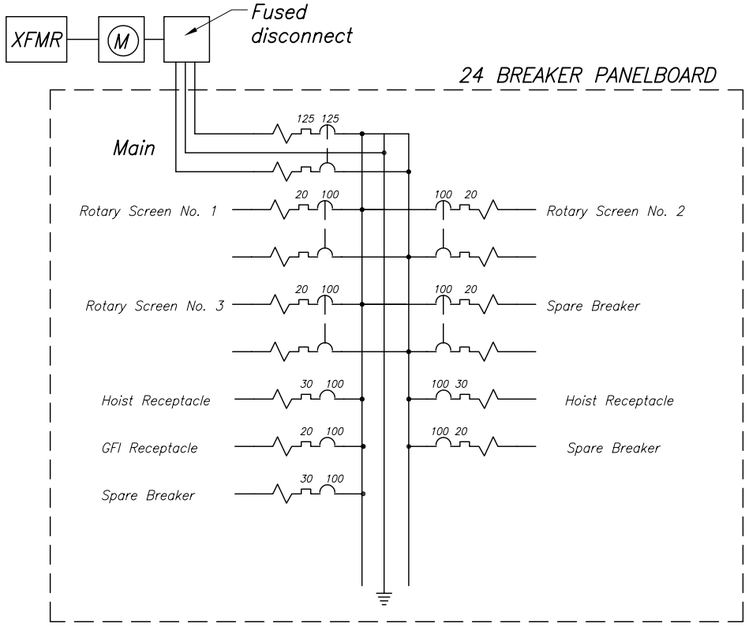
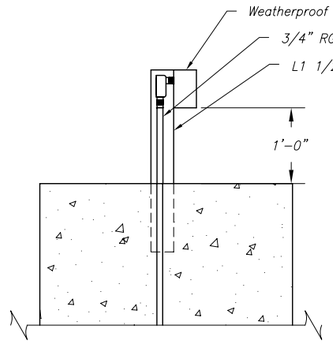
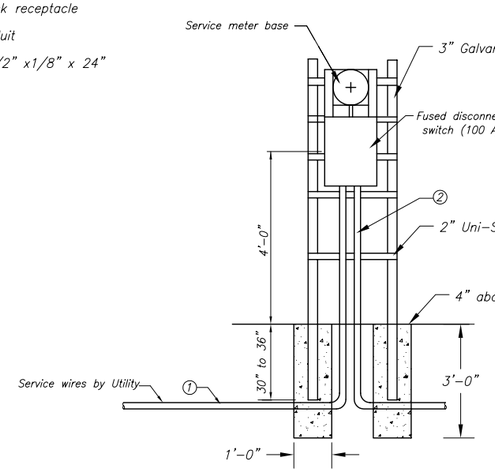
YAKIMA, WASHINGTON	AUGUST 28, 2003	1678-155-10



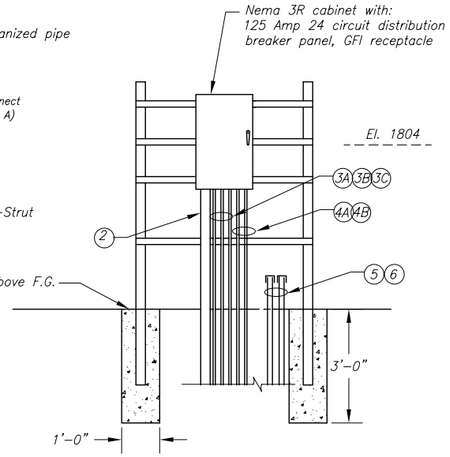


MOTOR RECEPTACLE

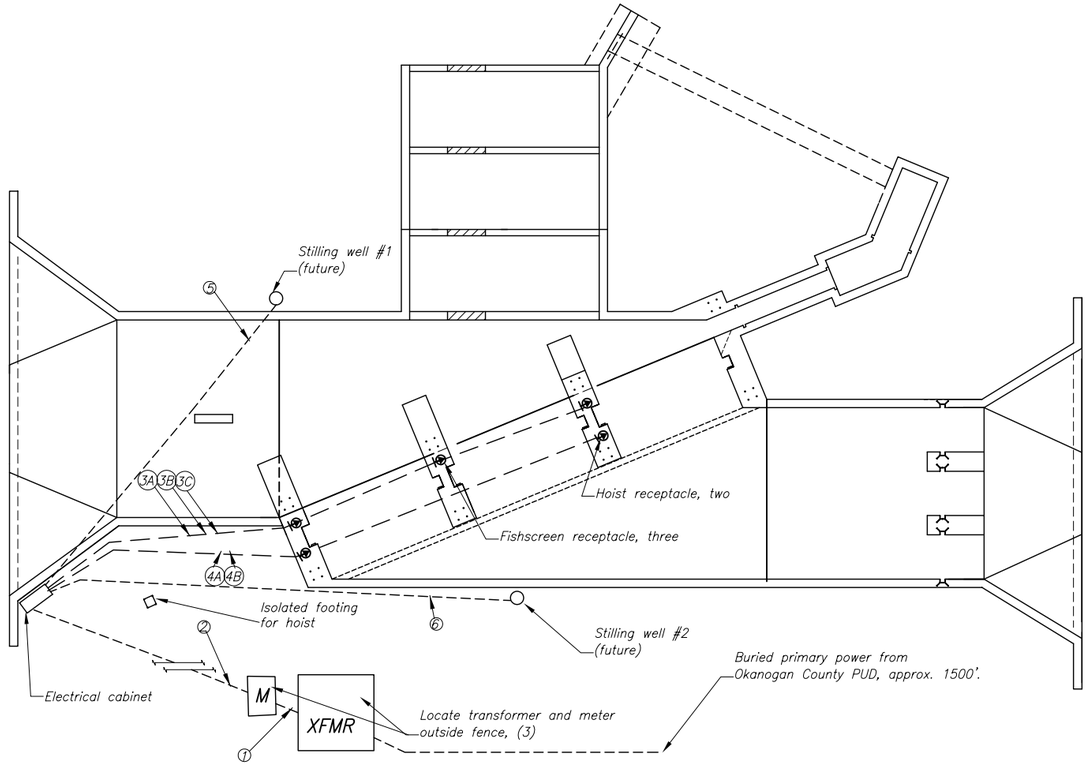
Three as shown for rotary screens, two similar blank boxes for hoist receptacles.



METER



ELECTRICAL CABINET



CONDUIT PLAN

CONDUIT & CABLE SCHEDULE

Conduit No.	Cable	Conduit Size	From	To	Remarks
1	By Utility		Service XFMR	Meter	Coordinate w/ Okanogan County PUD
2	4–1C No. 6	2"	Meter/Fused Disconnect	Breaker Panel	Buried
3A, 3B, 3C	4–1C No. 12	three – 3/4"	Breaker Panel	Fish Screen Motor Receptacles	Buried/Embeded conduits
4A, 4B	3–1C No. 10	two – 3/4"	Breaker Panel	Hoist Receptacles	Buried/Embeded conduits
5	Future	3/4"	Breaker Panel	Stilling Well #1	Buried, cap ends @ El. 1799.5/99
6	Future	3/4"	Breaker Panel	Stilling Well #2	Buried, cap ends @ El. 1799.5/99

See 104–D–757 for symbols

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FISH PASSAGE AND PROTECTIVE FACILITIES

METHOW VALLEY IRRIGATION DISTRICT

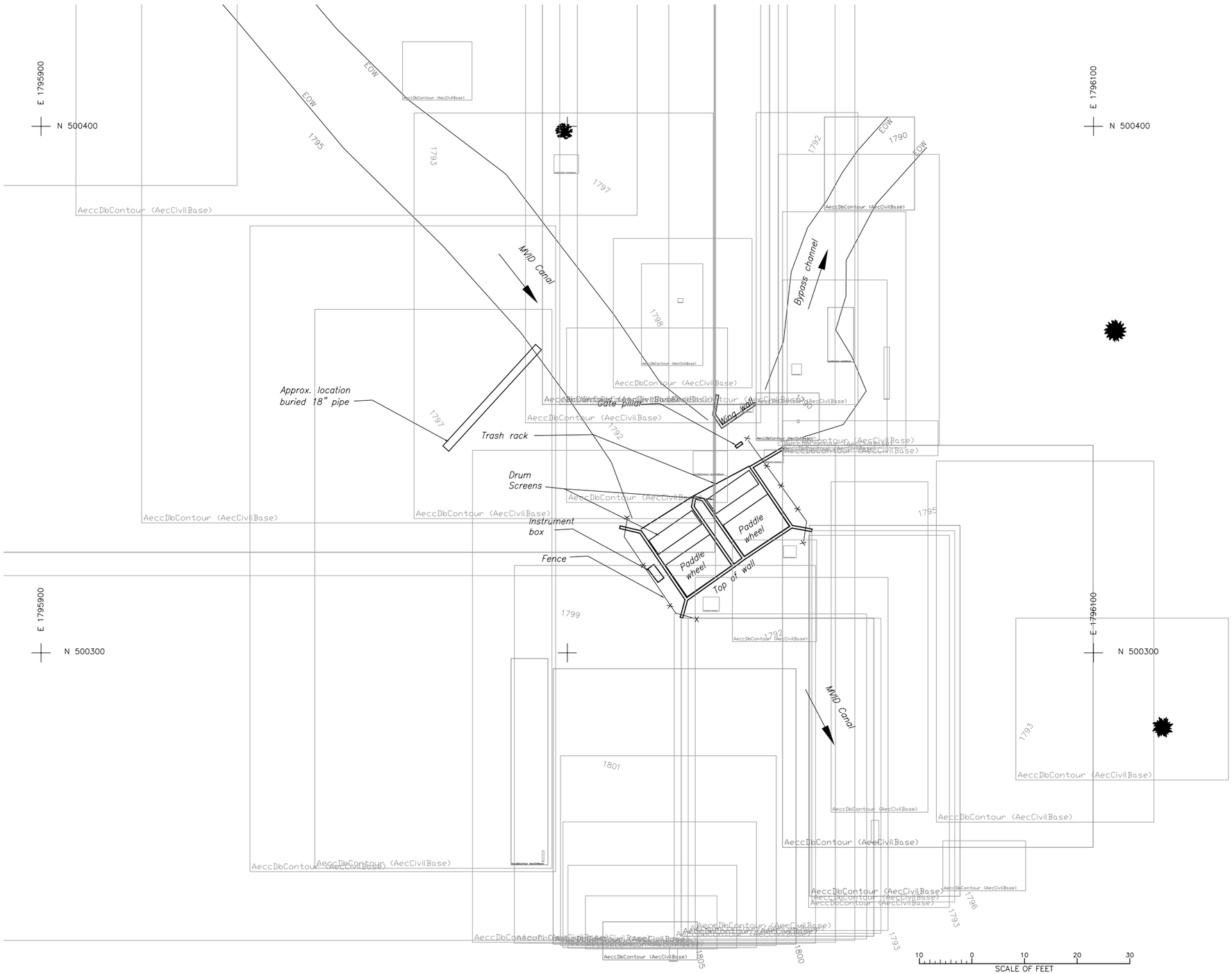
ELECTRICAL INSTALLATION

METER DISTRIBUTION PANEL , RECEPTACLES AND CONDUIT

DESIGNED Gwendolyn Christensen CHECKED Todd Hill

DRAWN Gwendolyn Christensen TECH. APPROVAL John Manfredi
PROGRAM MANAGER

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
AUTOCAD2000	167815511.DWG	AUGUST 28, 2003
YAKIMA, WASHINGTON		1678–155–11



NOTES:

1. Remove and dispose of exisiting concrete structure, metalwork, wood, and fence.
2. Instrument box is to be removed by others prior to construction.
3. Remove and replace existing 18" pipe, 5 feet upstream of new fishscreen structure.

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METHOW VALLEY IRRIGATION DISTRICT

EXISTING FISH SCREEN STRUCTURE AND BYPASS

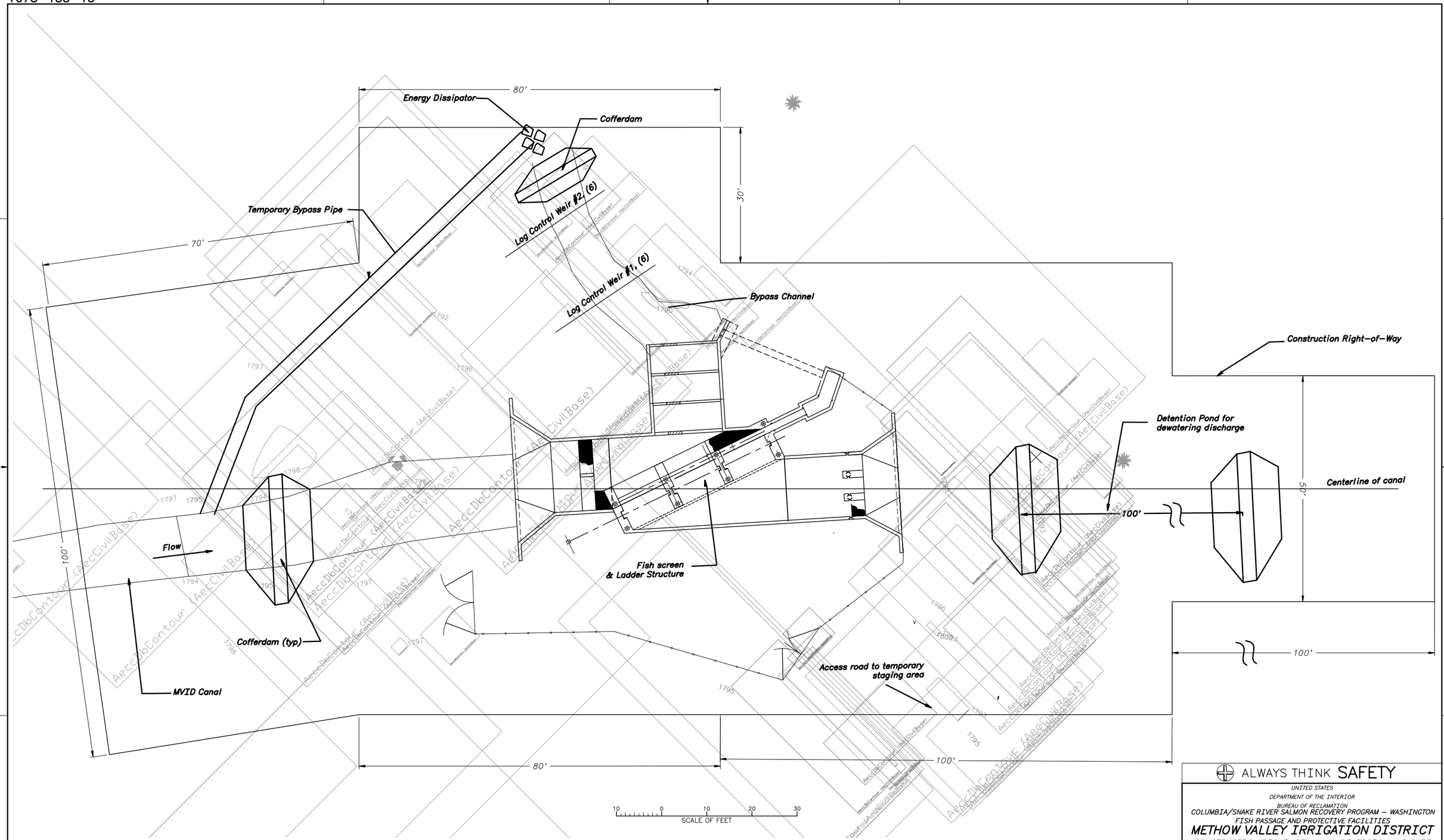
SITE PLAN

DESIGNED Gwendolyn Christensen CHECKED Todd Hill
DRAWN Gwendolyn Christensen TECH. APPROVAL John Manfredi
PROGRAM MANAGER

CADD SYSTEM	CADD FILENAME
CADSYS	167815512.DWG
YAKIMA, WASHINGTON	AUGUST 28, 2003

1678-155-12

FILMFILE PLOTTED BY USER



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METHOW VALLEY IRRIGATION DISTRICT

CONSTRUCTION RIGHT-OF-WAY & DIVERSION AND CARE

LAYOUT

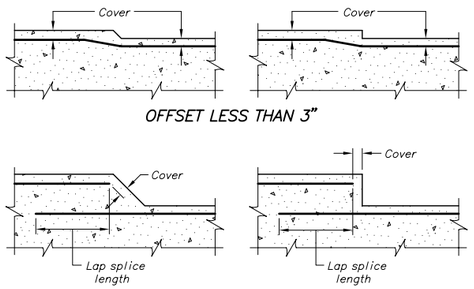
DESIGNED Gwendolyn Christensen CHECKED Todd Hill

DRAWN Gwendolyn Christensen TECH. APPROVAL John Manfredi
PROGRAM MANAGER

CADD SYSTEM	CADD FILENAME
CADSYS	167815513.DWG
YAKIMA, WASHINGTON	AUGUST 28, 2003

1678-155-13

PLOTTED BY USER



OFFSET LESS THAN 3"

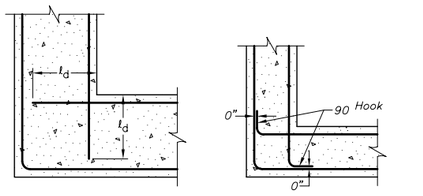
OFFSET 3" TO 8"

NOTE TO DESIGNERS AND DETAILERS: This detail may not be appropriate for tension areas of shallow structural members. If in doubt, use detail for offset greater than 8". See limits for noncontact lap splices in General Notes, Splices.

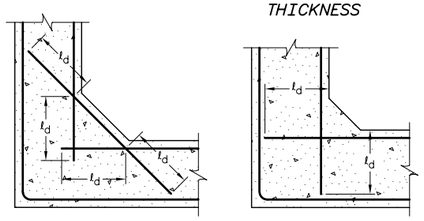
OFFSET GREATER THAN 8"

OFFSET GREATER THAN 8"
RESTRICTED MEMBER THICKNESS

TYPICAL OFFSET DETAILS



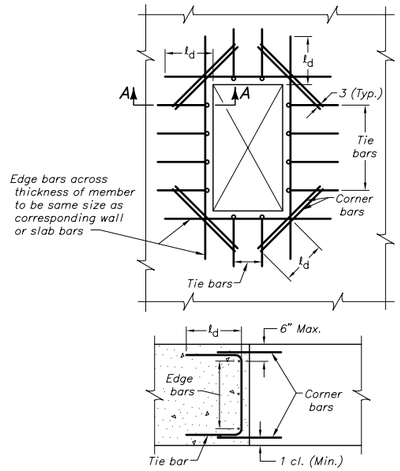
RESTRICTED MEMBER THICKNESS



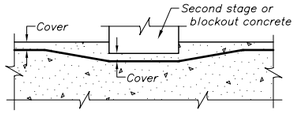
FILLET 1'-0" OR GREATER

FILLET LESS THAN 1'-0"

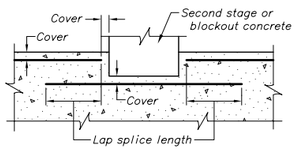
TYPICAL CORNER DETAILS



SECTION A-A

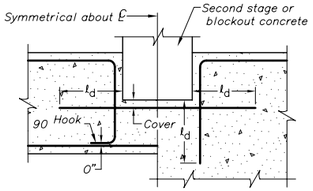


RECESS LESS THAN 3" DEEP



RECESS 3" TO 8" DEEP

NOTE TO DESIGNERS AND DETAILERS: This detail may not be appropriate for tension areas of shallow structural members. If in doubt, use detail for recess greater than 8". See limits for noncontact lap splices in General Notes, Splices.



RECESS GREATER THAN 8"

TYPICAL BLOCKOUT RECESS DETAILS

(Second stage concrete shown)

OPENINGS:

TABLE FOR ADDITIONAL REINFORCEMENT

MEMBER THICKNESS	TIE BARS	EDGE BARS	CORNER BARS
Less than 10	None	1 – ctr.	2 – #4 ctr.
10 thru 1–6	None	2 – (1 ef)	4 – #4 (2 ef)
1–7 thru 3–0	#4 @ 1–0	3 – eq. spc.	4 – #4 (2 ef)
Over 3–0	#6 @ 1–0	Spc. @ 1–0	4 – #5 (2 ef)

Omit edge and tie bars along sides of openings where dimension is less than 1'–6".
Omit corner bars at sides of openings adjacent to floors, walls, or beams.
Omit corner bars if both dimensions of opening are less than 1'–6".

RECESSES:

Use corner bars in face of recesses deeper than 4" if either dimension of recess is equal to or greater than 1'–6".

ADDITIONAL REINFORCEMENT AROUND OPENINGS AND RECESSES

GENERAL NOTES 1/

UNLESS OTHERWISE SHOWN ON THE REINFORCEMENT DESIGN DRAWINGS, THE DETAILS AND NOTES SHOWN ARE MINIMUM REQUIREMENTS AND TYPICAL FOR ALL REINFORCEMENT DRAWINGS THAT REFER TO THIS DRAWING

ABBREVIATIONS:

bf = bottom face
tf = top face
nf = near face
ff = far face
ef = each face
if = inside face
of = outside face
br = bottom row
tr = top row
nr = near row
fr = far row
er = each row
ir = inside row
or = outside row
mr = middle row
bl = bottom layer
tl = top layer
ml = middle layer
ns = near side
fs = far side
es = each side
ew = each way
ec = each corner
spc. = space or spaces
eq. spc. = equally spaced, equal spaces
d_b = nominal diameter or reinforcing bar
uv = uniformly varying lengths of bars between lengths shown
cl. = clear
ctr. = center or centers
add'l = additional
t_d = development length

SYMBOLS:

Bars shown thus —#8@1–0 or —#6@8 indicate a group of the same size bars equally spaced.
An open circle at the end of a bar indicates a bend with the bar turned away from the observer.
A closed circle at the end of a bar indicates a bend with the bar turned towards the observer.
Splices shown thus indicate a lap splice, not a bend in the bar.

DIMENSIONS:

Dimensions are to the centerline of the bars except for embedment of hooks, which are dimensioned to the outside of the bar.
Clear cover dimensions are marked "cl." and are dimensioned to the outside of the bar.

COVER:

Place the reinforcement so that the clear distance between face of concrete and nearest reinforcement is 1½" for #5 bars and smaller, 2" for #6 bars through #8 bars and 3" for #9 bars through #11 bars. Provide 3" clear distance from face of concrete for all bars when the concrete is placed against earth or rock. Clear distance is to the design dimension line.
Reinforcement parallel construction joints shall have a minimum of 2" clear cover.

PLACING:

Reinforcement at small openings (max. 1'–6") in walls and slabs may be spread apart not more than 1.50 times the bar spacing.
Reinforcement may be adjusted laterally to maintain a clear distance of at least 1" between the reinforcement and keys, water stops, anchor bolts, form ties, conduits, and other embedded materials. In heavily reinforced areas, relocation of the embedded material must be considered.
When bars are bent due to offsets less that 3" and recesses less that 3" deep, the slope of the inclined portion must not exceed 6 to 1.
Reinforcement parallel to anchor bolts or other embedded material shall be placed to maintain a clear distance of at least 1.33 times the maximum size aggregate.

SPACING:

The first and last bars in walls and slabs, stirrups in beams, and ties in columns are to start and end at a maximum of one half of the adjacent bar spacing. The minimum edge spacing shall be the smaller of either $2.5d_b$ or 0.5 of the adjacent bar spacing.

STANDARD HOOKS:

1. 180–degree bend plus $4d_b$ extension, but not less than 2½" at the free end of the bar.
2. 90–degree bend plus $12d_b$ extension at free end of the bar.

STIRRUP AND THE HOOKS:

1. #5 bar and smaller, 90–degree bend plus $6d_b$ extension at the free end of the bar.
2. #6, #7, and #8 bars, 90–degree bend plus $12d_b$ extension at the free end of the bar.
3. #8 bars and smaller, 135–degree bend plus $6d_b$ extension at the free end of the bar.

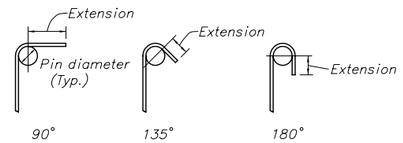


TABLE OF PIN DIAMETERS IN INCHES

BAR NO.	3	4	5	6	7	8	9	10	11
Standard bends	2 ¼	3	3 ¾	4 ½	5 ¼	6	9 ½	10 ¾	12
Stirrup and tie bends	1 ½	2	2 ½	4 ½	5 ¼	6			

REINFORCEMENT DOWELS:

Dowels indicated on the drawing, such as #8(d), shall be embedded a length equal to t_d and shall have a projection equal to that required for lap splicing to a bar of the same diameter.

PLAIN DOWELS:

Plain dowels across contraction joints shall be smooth bars uniformly coated with a film of oil before concrete placement. Viscosity of the oil shall have a SAE rating of not less than 250.

ACCESSORIES:

Bar supports, spacers, and other accessories are not shown on the design drawings. The recommendations of the ACI Detailing Manual–1988, or other approved supporting systems may be used.

DRAWING REFERENCES:

Numerals in parentheses ( ) following notes and section letters or numbers indicate the number of the drawing upon which the section or detail is shown; for example (524) denotes Drawing No. 557–D–524.

CODE AND DETAILING REFERENCES:

ACI Building Code Requirements for Structural Concrete (ACI 318–95).
ACI Detailing Manual – 1994.

NOTES TO DESIGNERS AND DETAILERS:

Splice lengths shown in the tables on this drawing are for Class B tension lap splices in accordance with ACI 318–95. Assumed conditions for these tables in addition to the requirements shown on this drawing are uncoated reinforcement, normal weight concrete, and the transverse reinforcement index (K_{tr}) equal to zero. Splices or development lengths other than those shown in the tables must be detailed on the reinforcement design drawings.

Some factors which require additional consideration are: Beams or columns with ties, lightweight aggregate concrete, epoxy–coated reinforcement, excess reinforcement, bars in compression, bundled bars, and seismic considerations.

1/ Unless otherwise shown on the reinforcement design drawings or this drawing, follow the recommendations established by the ACI Detailing manual – 1994.

SPLICES:

The minimum length of lap for splicing parallel bars shall be as given in the applicable table.
Staggered splices shall be separated to give 12 inches clear between ends of adjacent splices.
Bars spliced by noncontact lap splices shall not be spaced transversely farther apart than one–fifth the required lap splice length, nor 6" on centers.
When reinforcing bars of different size are to be spliced, the length of lap shall be governed by the smaller diameter bar.
Splices are to be made so that the required clear distances to face of concrete will be maintained.

f'c = 3000 psi TABLE 3 – 60 fy = 60,000 psi

BAR SIZE NO.	MINIMUM ℄ to ℄ BAR SPACING (INCHES)	LENGTH OF LAPPED SPLICE (INCHES)		DEVELOPMENT LENGTH t_d (INCHES)	
		TOP BARS *	OTHER BARS	TOP BARS *	OTHER BARS
3	3	17	16	13	12
4	3	23	18	18	14
5	4	28	22	22	17
6	5	34	26	26	20
7	6	49	38	38	29
8	6	56	43	43	33
9	7	63	49	49	38
10	8	71	55	55	42
11	9	79	61	61	47
9	6	63 **	49 **	49	38
10	6	75 **	58 **	58	45
11	6	93 **	71 **	71	55

f'c = 4000 psi TABLE 4 – 60 fy = 60,000 psi

BAR SIZE NO.	MINIMUM ℄ to ℄ BAR SPACING (INCHES)	LENGTH OF LAPPED SPLICE (INCHES)		DEVELOPMENT LENGTH t_d (INCHES)	
		TOP BARS *	OTHER BARS	TOP BARS *	OTHER BARS
3	3	16	16	12	12
4	3	20	16	15	12
5	4	25	19	19	15
6	5	29	23	23	18
7	6	43	33	33	25
8	6	49	37	37	29
9	7	55	42	42	33
10	8	62	47	47	37
11	9	68	53	53	41
9	6	55 **	42 **	42	33
10	6	65 **	50 **	50	39
11	6	80 **	62 **	62	48

* Top bars are all horizontal bars so placed that more than 12 inches of fresh concrete is cast below the development length or splice.
** Splices must be staggered.

6–1–97 D– G.P.G.	CONVERTED TO AUTOCAD DRAWING. REVISED TO CONFORM TO ACI 318–95. OTHER MINOR REVISIONS.
2–29–92 D– ROA	TOP BAR DEFINITION AND MINOR PUNCTUATION REVISION IN PLACING NOTE.
12–7–90 D– J.D.S.	REDRAWN TO NEW DRAFTING STANDARDS. REVISED CONCRETE COVER, NOTES TO DESIGNERS, TABLES, REINFORCEMENT AROUND OPENINGS, AND OTHER MINOR REVISIONS. REVISED TO CONFORM TO ACI 318–89.
9–27–84 D– NFP DG	REVISED PIN DIAMETER TABLE, REFERENCED THE ACI DETAILING MANUAL 1980. ADDED NOTES UNDER PLACING AND STANDARD HOOKS.
12–8–76 D– WRW	MINOR REVISIONS.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

STANDARD DESIGNS

GENERAL NOTES AND MINIMUM REQUIREMENTS FOR DETAILING REINFORCEMENT

DESIGNED M.F.WARD J.G.STARBUCK CHECKED GAYLE A.ERICKSON
DRAWN M.CAMPBELL TECH. APPROVAL H.G.ARTHUR
ACTING DIRECTOR, DESIGN AND CONSTRUCTION

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
AutoCAD Rel. 15.06	40–D–6263.DWG	APRIL 3, 2003 13:49
DENVER, COLORADO	JULY 12, 1972	40–D–6263

MISCELLANEOUS DESIGNATIONS

ALT _____ Alternator
A _____ Suffix designation for auxilliary control circuit
ASC _____ Adjustable speed controller
BFV _____ Butterfly valve
C or CAP _____ Capacitor
CB _____ Circuit breaker
CLF _____ Current limiting fuse
CNT _____ Counter
DV _____ Discharge valve
EXC _____ Exciter
FU _____ Fuse
GFCI _____ Ground fault circuit interrupter
GRD _____ Ground
GRS _____ Galvanized rigid steel conduit
GV _____ Gate or guard valve
HR _____ Hand reset (Use as suffix)
I _____ Input
IL _____ Indicating lamp, add prefix for color
IMC _____ Intermediate steel conduit
MCE _____ Motor control equipment (2500 - 5000 volts)
M _____ Motor
MCC _____ Motor control center (600 - volts and lower)
NP _____ Nameplate
NC _____ Normally closed
NO _____ Normally opened
NSPB _____ Nonsegregated phase bus
O _____ Output
PB _____ Pushbutton (Momentary contact type)
PBM _____ Pushbutton (Maintaining contact type)
PC _____ Programmable controller
PR _____ Probe operated relay (Refer to FS for suffix)
REC _____ Rectifier
R/I _____ Resistance to current transducer
SF _____ Service factor
SO _____ Solenoid oiler
SV _____ Solenoid operated valve
TE _____ Time delay on energization
TD _____ Time delay on deenergization
TT _____ Thermal switch
V/I _____ Voltage to current transducer
VLV _____ Valve
WL _____ Water level contact on telemeter receiver (Refer to FS for suffix)

WRM _____ Wound rotor motor
X,Y,X _____ Suffix for auxiliary relay, switch, or contactor (ALX,CSX,FLX, ect.)

-1,-2,-3, etc. _____ Suffix for unit number for pumping units, gates, valves, ect.

1,2,3, etc. _____ Suffix for electrical device numbering, such as TR1, TR2, ect.

* _____ Estimated rating

RELAY DESIGNATIONS

AL _____ Alarm relay
BG _____ Bearing temperature relay
CR _____ Control relay
FL _____ Field loss relay
FR _____ Field application relay
GP _____ Ground protective relay
IS _____ Incomplete sequence relay
LO _____ Lockout relay
OC _____ Overcurrent relay
OL _____ Overload relay
OV _____ Overvoltage relay
PO _____ Pullout (Loss of synchronism relay)
RC _____ Remote control relay
RSR _____ Remote sensing relay
SC _____ Squirrel cage (damper winding(relay
SR _____ Shift register
TR _____ Time delay relay
UF _____ Under frequency relay
UV-OPR _____ Undervoltage single and reverse phase relay
WT _____ Winding temperature relay

CONTACTOR DESIGNATIONS

FC _____ Field contactor
LC _____ Lighting contactor
M _____ Main contactor
MA _____ Air compressor motor contactor
MF _____ Vent fan motor contactor
MG* _____ Gate motor contactor
MO* _____ Oil pump motor contactor
MV* _____ Valve motor contactor
*Use suffix as application
-C Closing function
-L Lowering function
-O Opening function
-R Rasing function
S _____ Starting contractor
1S _____ Start contactor
2S _____ Start transition contactor } Reduced voltage starting
R _____ Run contactor

SWITCH DESIGNATIONS

CS _____ Control switch
FCD _____ Foreign circuit disconnect switch
FS _____ Float switch (Use suffix letter__ C-canal, P-pipe, R-reservoir, S-sump, T-tank)
LS _____ Limit switch
PS _____ Pressure switch
SS _____ Selector switch
TQ _____ Torque switch
TSW _____ Transfer switch

TRANSFORMER DESIGNATIONS

CCT _____ Control circuit transformer
CT _____ Current transformer
PT _____ Potential transformer
T _____ Transformer
TH _____ Transformer oil temperature
TL _____ Transformer oil level
TP _____ Transformer pressure relief
SST _____ Station service transformer

INSTRUMENT AND METER DESIGNATIONS

AM _____ Ammeter
AS _____ Ammeter transfer switch
CNT _____ Start counter
INT _____ Integrating instrument
PF _____ Power-factor meter
PST _____ Phase shifting transformer
RDM _____ Recording demand meter
TM _____ Time meter
V _____ Voltmeter
VAR _____ Varmeter
VARH _____ Varhour meter
VS _____ Voltmeter transfer switch
W _____ Wattmeter
WH _____ Watthour meter
WHD _____ Watthour demand meter
(R) _____ Indicates recording instruments
The asterisk is not part of the symbol.
Replace the asterisk with letter or letters depending on the function of the instrument.

DEVICE SYMBOLS

CS — Control switch
AS — Ammeter transfer switch
VS — Voltmeter tansfer switch
Surge arrester
Capacitor
Reactor
Potential transformer
Current transformer
Power or distribution transformer
3Ø, Wye grounded connection
3Ø, Delta connection
3Ø, Broken delta connection
3Ø, Open delta connection (corner grounded)

Disconnecting switch
Liquid level switch (Normally open)
Vacuum and pressure switch (Normally closed)
Temperature actuated switch (Normally open)
Flow actuated switch (Normally open)
Limit switch-direct actuated (Normally open)
Torque switch (Normally closed)
3-Position selector switch
Air circuit breaker thermomagetic trip 1 Frame size, 2 Inverse time trip, 3 Instantaneous trip
1 Rectifier, 2 Reactor, 3 Inverter
Silicon controlled rectifier (Solid state DC switch)
Air circuit breaker, electrically operated
Air circuit breaker, withdraw type
Contactor with thermal trip
Contactor with magnetic trip
Contactor with CT and magnetic trip relay
Contactor (Normally open)
Contactor (Normally closed)
Auxiliary contactor (Closes when main device is closed)
Auxiliary contactor (Open when main device is closed)
Relay contact number
Relay coil, contactor coil
Horn-gap disconnectiong switch
Fuse
Fuse, current limiting type
Instrument shunt
Resistor
Rheostat, or potentiometer
Separable connector
Indicating lamp W-white, R-red, G-green, Y-yellow, A-amber, B-blue
Battery
Bell
Horn
Pushbutton (Normally open, momentary contact)
Pushbutton (Normally closed, momentary contact)
Maintained contact pushbutton

Probe, water level detector
Load interrupter switch
Motor
Triac (Solid state AC switch)
Wound rotor motor

WIRING SYMBOLS

Ground connection
Interconnection between separately owned systems
Duplex single-gang plug receptacle
Single weatherproof plug receptacle
Watertight three-phase power receptacle
Single pole switch
Three way switch
Luminaire, letter indicates type, number indicates wattage
Represents connection from external equipment. Does not necessarily represent a terminal block.
High voltage cable termination
Represents connection from external equipment via-multi-pair control (signal) cable.

GROUND SYMBOLS

Cable exposed
Cable embedded in concrete
Cable concealed but not embedded
Cable buried directly in earth
Ground rod
Welded or bolted connection
Cable riser
Indicates ground when required for clarity
Ground connector per 40-D-4334, Fig. 4
Ground ring

CONDUIT SYMBOLS

Exposed
Embedded in concrete
Concealed but not embedded
Buried directly in earth
Bending toward observer
Bending away from observer
Capped
Pull box or junction box
Designation number
Liquid tight flexible metal conduit
Sealing bushing, conduit to cable

NOTES

1. If designations and symbols other than the ones shown on this drawing used, they shall be shown on the appropriate drawing.
2. For additional designations and symbols refer to NEMA Standards Pub, ICS-1970.
3. Contacts in control circuits are shown in the deenergized position. Liquid level switches are shown with liquid container empty. Vaccum and pressure switches are shown at ambient pressure. Temperature switches are shown at ambient temperature.

3 - 24 - 00 D - L.G.	REVISED TITLE BLOCK AND REDRAWN IN AUTOCAD 14.
3 - 11 - 81 D - D.G.	MINOR REVISIONS

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
STANDARD DESIGNS

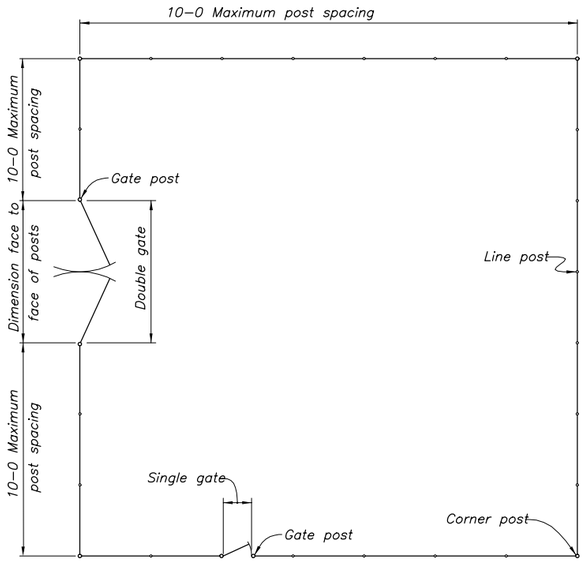
PUMPING PLANT
ELECTRICAL INSTALLATIONS
DESIGNATIONS AND SYMBOLS

DESIGNED	N.J.B.	TECH. APPR.	P.L. ANNA
DRAWN	D.D. DROULLARD	SUBMITTED	S.M. DENTON
CHECKED	E.M.T.	APPROVED	M.H. KIGHT

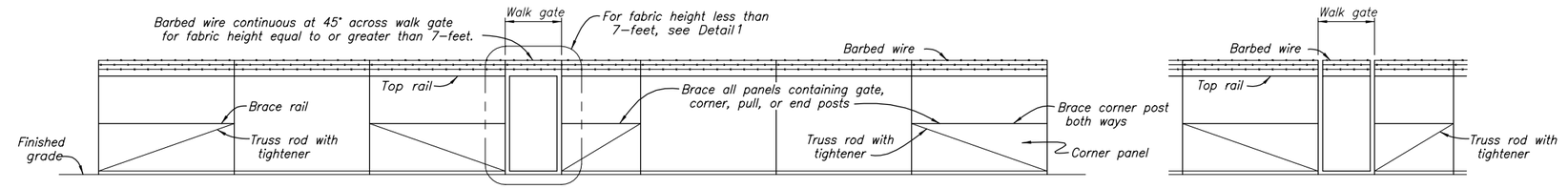
CHIEF, ELECTRICAL BRANCH

CADD SYSTEM AutoCAD Rel. 15.0 DENVER, COLORADO	CADD FILENAME 1040757.DWG FEBRUARY 13, 1962	DATE AND TIME PLOTTED AUGUST 9, 2000 14:29

104-D-757

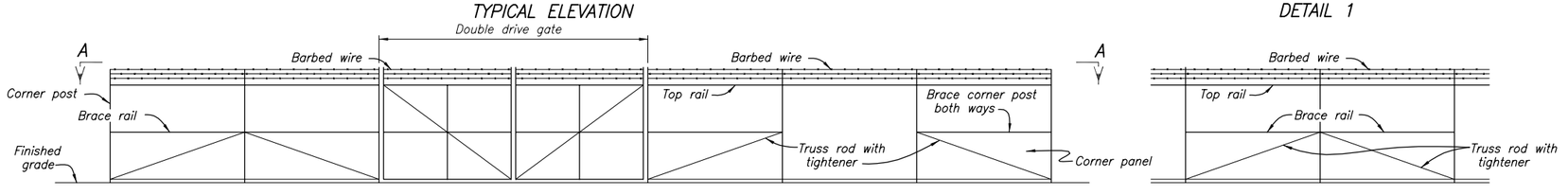


TYPICAL FENCING PLAN



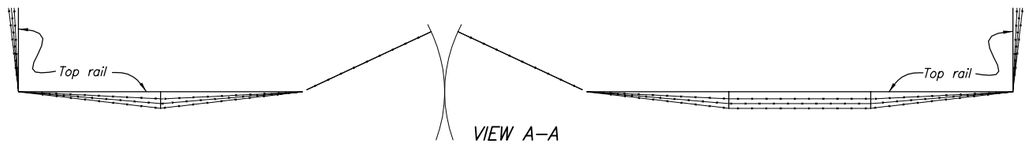
TYPICAL ELEVATION

DETAIL 1

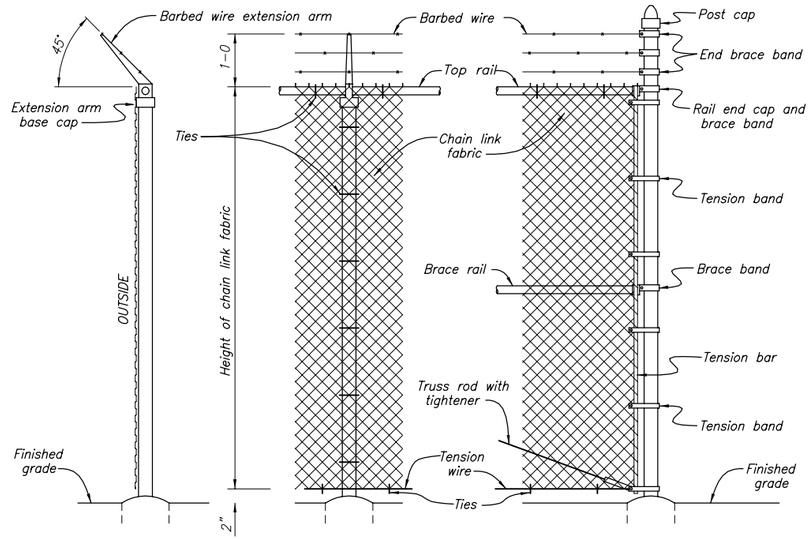


TYPICAL ELEVATION

PULL POST

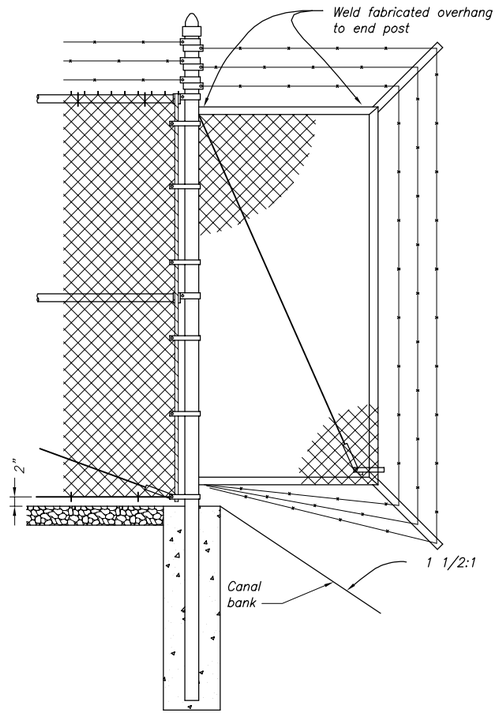


VIEW A–A

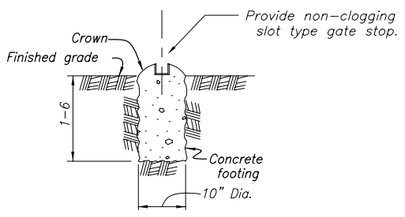


LINE POST

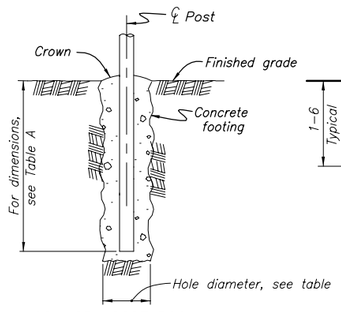
END POST, CORNER POST, OR GATE POST



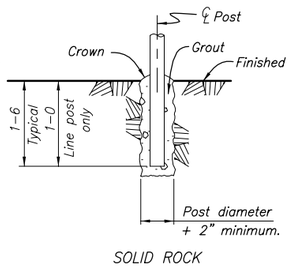
FENCE OVERHANG DETAIL



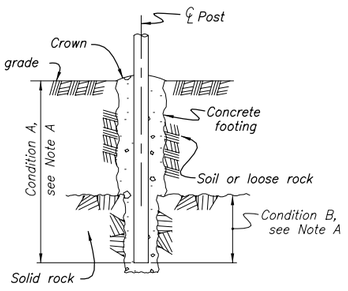
GATE STOP FOOTING



SOIL OR LOOSE ROCK



SOLID ROCK



POST FOOTING IN SOLID ROCK WITH OVERBURDEN OF SOIL OR LOOSE ROCK

TABLE A

POST FOOTING SIZES IN SOIL OR LOOSE ROCK				
POST	FABRIC HEIGHT	HOLE DIAMETER AT TOP	HOLE DEPTH	POST EMBEDMENT
Line	*3 ft. to 4 ft.*	*6 inches*	*24 inches*	*21 inches*
Line	*5 ft.*	*8 inches*	*30 inches*	*27 inches*
Line	*6 ft. to 12 ft.*	*9 inches*	*38 inches*	*36 inches*
Terminal	*3 ft. to 5 ft.*	*10 inches*	*32 inches*	*30 inches*
Terminal	*6 ft. to 12 ft.*	*12 inches*	*38 inches*	*36 inches*

Note A: Satisfy Condition A or Condition B.
Condition A: Depth required for footing in soil or loose rock.
Condition B: Depth required for embedment in rock.

NOTES

All fencing materials and accessories shall be in accordance with the specifications and the Chain Link Fencing Manufacturers Institute (CLFMI) standards.
All post and frame dimensions shall be in accordance with Table 4 (CLFMI). Concrete footing dimensions shall be in accordance with Table A above.
See site plans for fence layout and swing of gate.
Install pull posts at a maximum interval of 500 feet and at changes in horizontal or vertical alignment.
Weld all joints between tubular gate frame members and frame overhangs or use heavy fittings to provide rigid and watertight connections.
Provide latches, stops and keepers for all gates as specified.
End posts, corner posts, pull posts, and gate posts are designed as terminal posts.
Brace rails are not required for fabric less than 6 feet high.
For typical grounding details, see 40–D–4334, 40–D–4335 and 40–D–6376.

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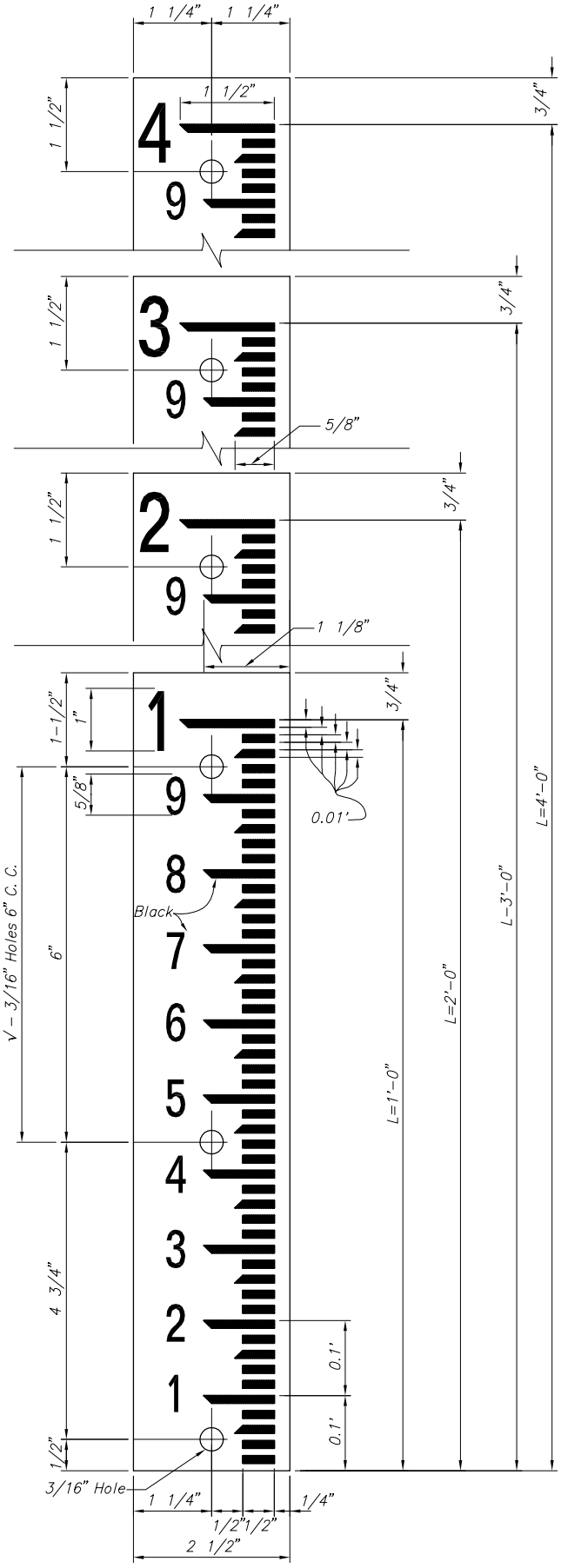
BUREAU OF RECLAMATION

STANDARD DRAWINGS

CHAIN LINK FENCING DETAILS

DESIGNED CLFMI STANDARD
DRAWN Charles H. Ferguson
CHECKED Douglas K. Wise
TECHNICAL APPROVAL M. Schuyler
APPROVED Brent Mattson
PROJECT CONSTRUCTION ENGINEER

Cadd System: AutoCAD Release 13	Filename: YAK255.DWG	Date and Time Plotted: April 17, 1997
YAKIMA, WASHINGTON CADD	FEBRUARY 1997	1022–155–255



NOTES:

Gages to be of No. 18 gage (U.S. standard) mild steel plate and to be covered with porcelain enamel with a minimum thickness of 12 mils on numeral side and 3 mils on the reverse side and on edges where plate has been cut, punched or drilled.

All cutting, drilling and punching of the plates shall be completed before the porcelain enamel is applied.

The face of the gage shall be white and all numerals and graduations shall be black.

Graduations shall be sharp and accurate to the dimensions shown.

The length "L" shall be as given in the schedule. In case a greater length than 4'-0" is required the details shall be similar to details shown for shorter lengths.

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BUREAU OF RECLAMATION

STANDARD DESIGNS

ENAMELED WEIR GAGES

DESIGNED _____ TECH. APPROVAL _____

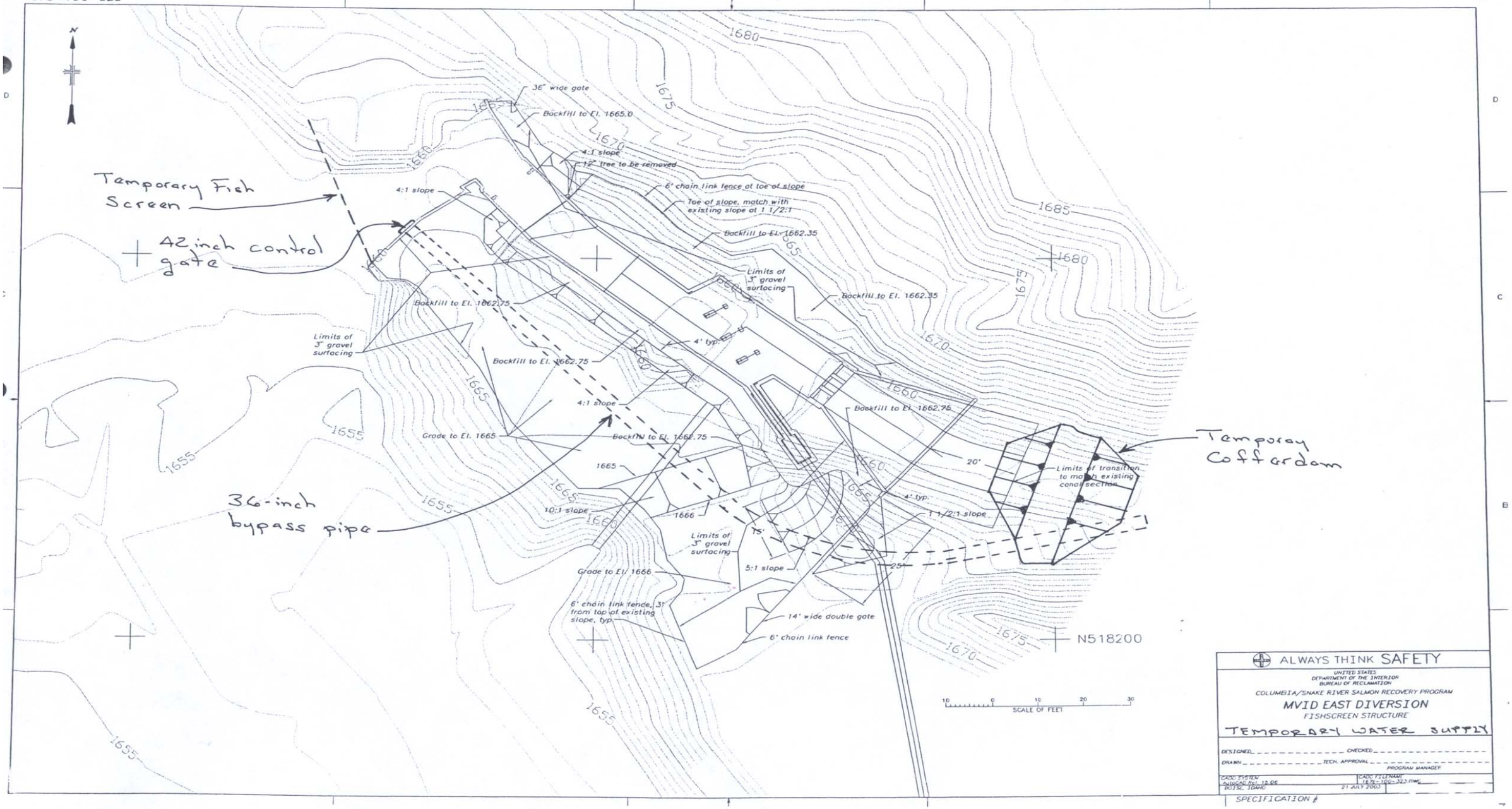
DRAWN I. Lawyer _____

CHECKED _____ APPROVED _____

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
AutoCAD Rel.12	9003-100-217.DWG	JULY 15, 1996 09:56
BOISE, IDAHO	FEBRUARY 1995	9003-100-217

APPENDIX C
MVID East Temporary Water Diversion

1678-100-323



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COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM

MVID EAST DIVERSION

FISHSCREEN STRUCTURE

TEMPORARY WATER SUPPLY

DESIGNED _____ CHECKED _____

DRAWN _____ TECH. APPROVAL _____

PROGRAM MANAGER

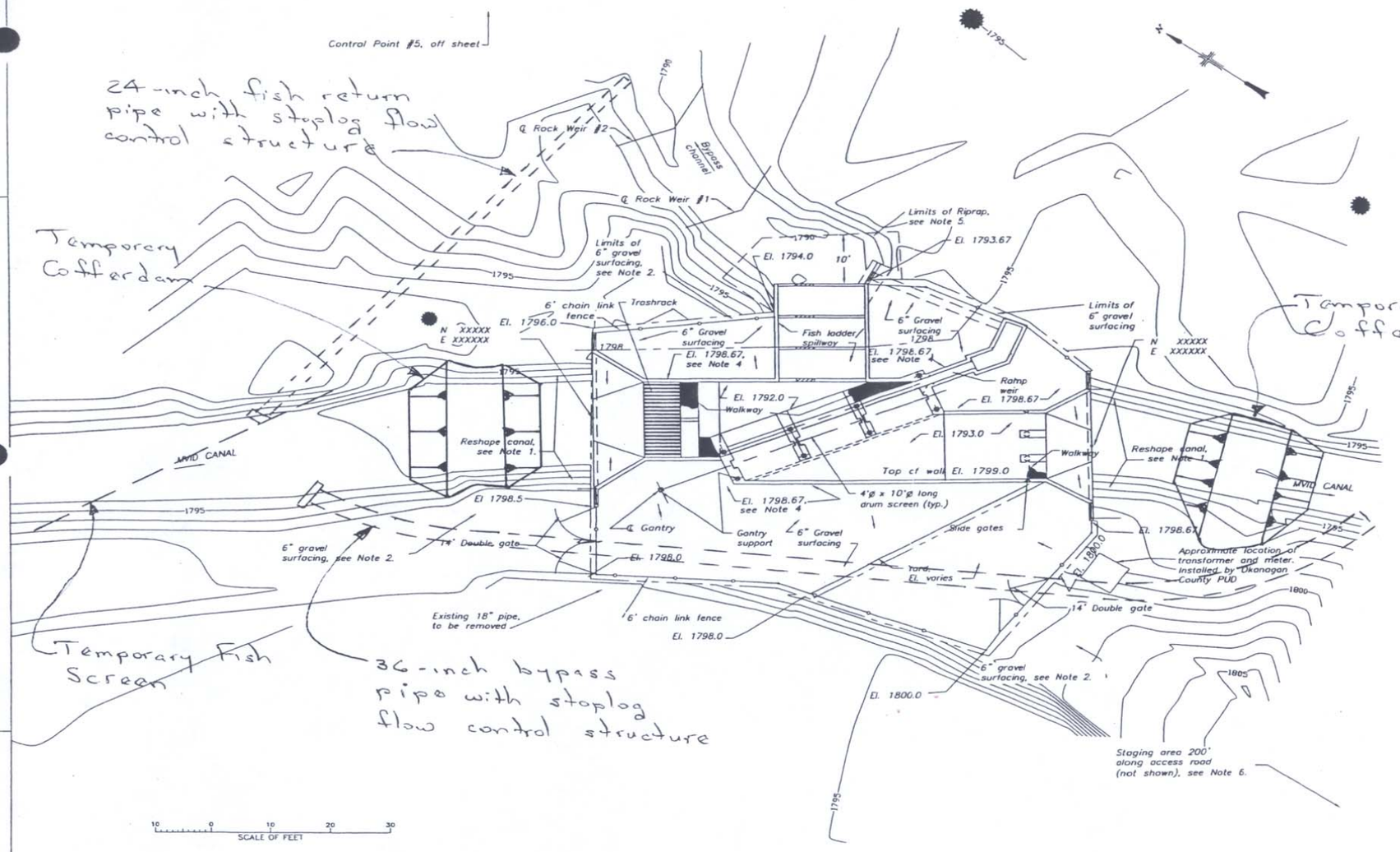
CADD SYSTEM: AutoCAD Rel. 13.0E
BOISE, IDAHO

CADD FILENAME: 1678-100-323.DWG

21 JULY 2003

SPECIFICATION #

APPENDIX D
MVID West Temporary Water Diversion



PLAN

NOTES:

1. Reshape canal as directed 20' upstream and downstream from concrete transitions.
2. Gravel surface within fenceline and 20 ft. outside fence at gate openings.
3. Existing ground contours shown outside of structures and fence limits. Slope finish grade from 1' outside fenceline on 1.5:1 to meet existing ground, except 10:1 outside gates.
4. Finished grade around concrete structure walls El. 1798.67, unless otherwise shown. Slope finish grade uniformly from structure to breaklines and point elevations shown 1' outside fenceline.
5. Riprap bypass channel, invert, and finish channel slopes to elevation 1794.0.
6. Staging area is located along access road approximately 200 ft. south of screen site and is x by x.
7. Survey information: Site was surveyed October 2002. Basis of Bearing = Washington State Plane North Zone Coordiante System NAD 83. Horizontal Control = Washington State Plane North Zone Coordiante System North Zone NAD 83. Based on GPS Observation from DOT BC F378. Vertical Control = North American Vertical Datum of 1988 Based on GPS Observation from DOT BC F378.
8. Referece drawing 1678-155-12 for existing screen and spillway demolition.

SURVEY CONTROL:

POINT	Northing	Easting	Elevation
1707	XXXXX	XXXXXXX	XXXXX
5	XXXXX	XXXXXXX	XXXXX

LEGEND:

1798	Finished grade breakline, elevation, see Note 4.
El. 1796.0	Finished grade point: elevation, see Note 4.
△	Survey control points, see Note 7.

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BUREAU OF RECLAMATION

COLUMBIA/SNAKE RIVER SALMON RECOVERY PROGRAM - WASHINGTON
FISH PASSAGE AND PROTECTON FACILITIES

METHOW VALLEY IRRIGATION DISTRICT
WEST FISH SCREEN STRUCTURE
TEMPORARY WATER SUPPLY

DESIGNED	CHECKED
DRAWN	TECH. APPROVAL
	PROGRAM MANAGER

CADD SYSTEM	CADD FILENAME	DATE AND TIME PLOTTED
AUTOCAD2000	1678155312MC	
YAKIMA, WASHINGTON	JULY 31, 2003	