

 FISHERIES AND OCEANS CANADA  
PACIFIC REGION

HABITAT AND ENHANCEMENT BRANCH,  
BIOLOGICAL AND ENGINEERING SUPPORT DIVISION.

SUITE 400, 3rd FLOOR, Room 360

555 WEST HASTINGS STREET,  
VANCOUVER, B. C.  
V6B 5G3.

Technical inquiries: Ian Ross, P. Engineer, Ph: (604) 666-0019  
Sam McNeil, Eng. Technician, Ph: (604) 666-2035  
Fax: (604) 666-0292

BULKLEY RIVER PROJECT  
CONTRACT No. F1528-9-6083  
FABRICATION AND DELIVERY OF  
STRUCTURAL STEEL FOR  
ADULT FENCE STRUCTURE  
NOVEMBER 1999

THIS CONTRACT SET CONTAINS THE FOLLOWING DRAWINGS:

21-35-10  
21-35-11  
21-35-12  
21-35-13  
21-35-14  
21-35-15  
21-35-19  
21-35-20

CONTACT 'FISHERIES AND OCEANS CANADA' TO RECEIVE  
ANY DRAWINGS WHICH MAY BE MISSING FROM THIS SET.





**GENERAL NOTES**

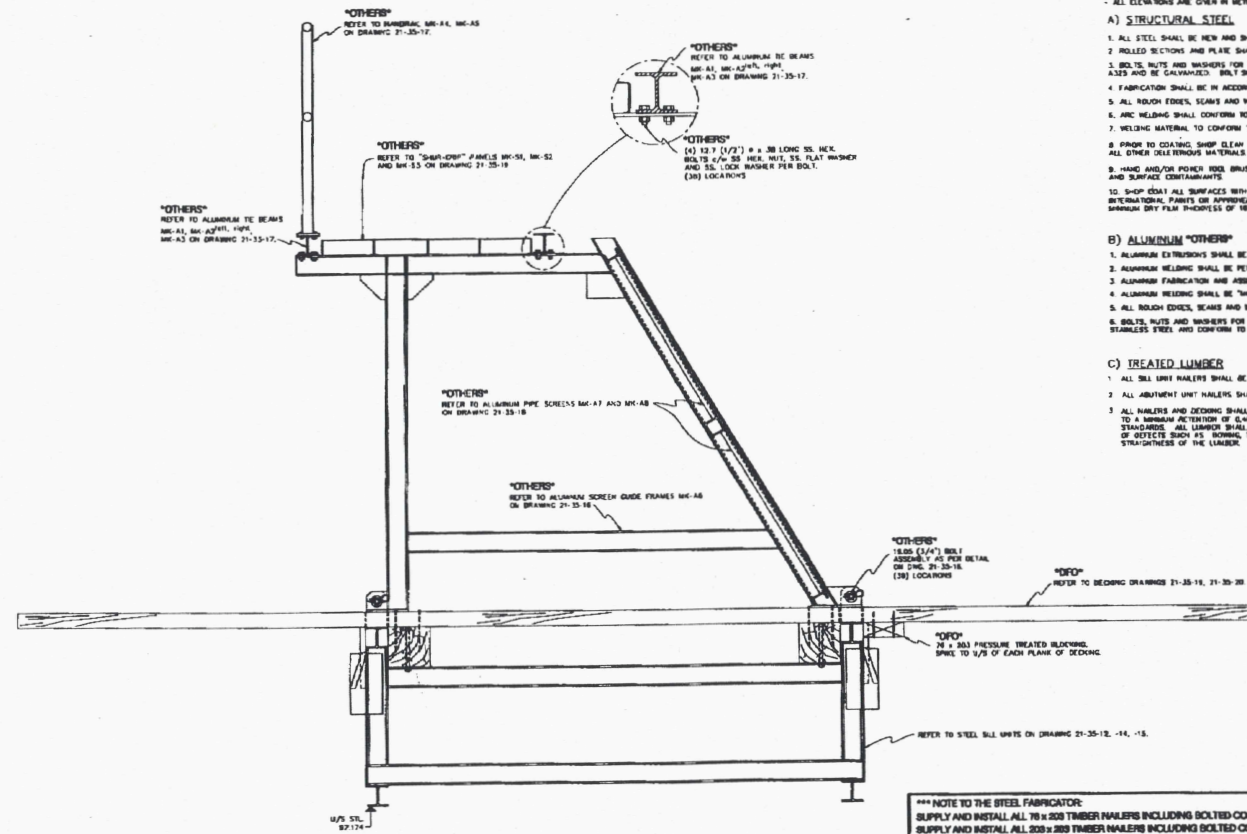
- ALL ELEVATIONS ARE GIVEN IN METRES. ALL DIMENSIONS ARE IN MILLIMETRES.
- A) STRUCTURAL STEEL**
1. ALL STEEL SHALL BE NEW AND SHAPES LISTED IN CURRENT C.I.S.C. HANDBOOK.
  2. ROLLED SECTIONS AND PLATE SHALL CONFORM TO C.S.A. STANDARD C-121-M, GRADE 50 OR 60,000.
  3. BOLTS, NUTS AND WASHERS FOR STEEL TO TIMBER CONNECTIONS SHALL CONFORM TO A.S.T.M. STANDARD A325 AND BE GALVANNEED. BOLT SIZES AS NOTED ON THE DRAWINGS.
  4. FABRICATION SHALL BE IN ACCORDANCE WITH C.S.A. S16-1988 AND C.S.A. S16-1-87B (CURRENT EDITION).
  5. ALL ROUGH EDGES, SEAMS AND WELDS TO BE GRIND SMOOTH AND WELD SPATTER REMOVED.
  6. ARC WELDING SHALL CONFORM TO C.S.A. W54.1.
  7. WELDING MATERIAL TO CONFORM TO C.S.A. W54.
  8. PRIOR TO COATING, SHOP CLEAN ALL MEMBER AND COMPONENT SURFACES FREE OF OIL, GREASE, DIRT AND ALL OTHER CONTAMINANTS.
  9. HAND AND/OR POWER BRUSH ALL SURFACES TO BE COATED TO REMOVE LOOSE MILLSCALE, RUST, AND SURFACE CONTAMINANTS.
  10. SHOP COAT ALL SURFACES WITH EQUAL TARI EPOXY "HYDROLUX" OR 100/200/110 EPOXY "BLACK" BY INTERNATIONAL PAINTS OR APPROVED EQUIVALENT. APPLY ACCORDING TO MANUFACTURER'S INSTRUCTIONS TO A MINIMUM DRY FILM THICKNESS OF 18 µm OR APPROVED EQUAL.

- B) ALUMINUM "OTHERS"**
1. ALUMINUM EXTRUSIONS SHALL BE NEW AND CONFORM TO C.S.A. A-13, ALCAN STRUCTURAL ALLOY 6061-T6.
  2. ALUMINUM WELDING SHALL BE PERFORMED TO THE REQUIREMENT OF C.S.A. STANDARD SPECIFICATION W-17.2.
  3. ALUMINUM FABRICATION AND ASSEMBLY SHALL CONFORM TO CSA SPECIFICATION W-97.
  4. ALUMINUM WELDING SHALL BE "MIG" OR "TIG" PROCESS USING ALCAN ALLOY 4356 FILLER ROD.
  5. ALL ROUGH EDGES, SEAMS AND WELDS TO BE GRIND SMOOTH AND WELD SPATTER REMOVED.
  6. BOLTS, NUTS AND WASHERS FOR ALUMINUM CONNECTIONS AND STEEL TO ALUMINUM CONNECTIONS SHALL BE STAINLESS STEEL AND CONFORM TO A.S.T.M. STANDARD A316. BOLT SIZES AS NOTED ON THE DRAWINGS.

- C) TREATED LUMBER**
1. ALL 200 MMx200 MMx2000 MM (8" x 8") ALL ABUTMENT UNIT NAELERS SHALL BE POLISH SAWN 200 mm x 200 mm (8" x 8").
  2. ALL ABUTMENT UNIT NAELERS SHALL BE FINISH SAWN 75 mm x 200 mm (3" x 8").
  3. ALL NAELERS AND DECORS SHALL BE C2 OR BETTER HEAVY PRESSURE TREATED WITH CCA 300 PRESERVATIVE TO A MINIMUM PENETRATION OF 600 LB./CU. FT. IN ACCORDANCE WITH C.S.A. 6000 WOOD PRESERVATION STANDARDS. ALL LUMBER SHALL BE MOIST PRIOR TO RECEIVING PRESERVATIVE TREATMENT & SHALL BE FREE OF DEFECTS SUCH AS BOWING, TWISTING, CRACKING, AND CUPPING. THAT IS DEFECTS AFFECTING THE STRAIGHTNESS OF THE LUMBER.

**LEGEND**

PL	PLATE OR SHEET MATERIAL
CL	CENTRELINE
TOP	TYPICAL
SYMB.	SYMBOLICAL
DI	DIAMETER
TR	TRIAL BAR SHAPE
U/D	UNLESS NOTED OTHERWISE
O/D	OUT TO OUT DISTANCE
C/A	CENTRELINE TO OUT DISTANCE
C/W	COMPLETE WITH
N/S	NOT TO SCALE
MIN	MINIMUM
MAX	MAXIMUM
U/S	UNDERSIDE
CL	CLEARANCE
FLNG	FLANGE
GALV.	GALVANNEED
CSL	CANON STEEL
T/D	TOP OF
SE	SHIMMED STEEL
HE	HORIZONTAL
VE	VERTICAL
T.O.S.	TOP OF STEEL
SCH.	SCHEDULE
CONJ.	CONNECTION
REF.	REFERENCE INFORMATION
ALUM.	ALUMINUM

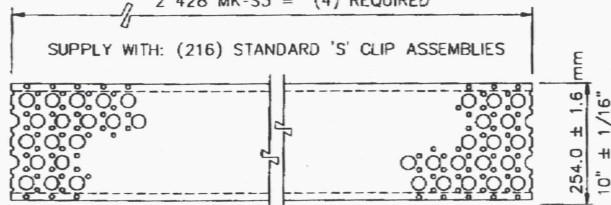


SECTION A SCALE 1:10 10, 18, 20

TYPICAL SECTION THROUGH STEEL SILL UNIT AT ALUMINUM SCREEN GUIDE FRAME

<p>1. ITEMS NOT SUPPLIED UNDER CONTRACT #F1528-9-8083 ARE INDICATED AS FOLLOWS:</p> <p>2. ITEMS SUPPLIED AND INSTALLED BY "FISHERIES AND OCEANS CANADA" ARE INDICATED THIS "OFC"</p> <p>3. ITEMS SUPPLIED BY OTHERS ARE INDICATED THIS "OTHERS"</p>	<p>NO. DATE</p>	<p>REVISIONS</p>	<p>DATE</p>	<p>SCALE</p>	<p>AS NOTED</p>	<p>DATE</p>	<p>NO. OF SHEETS</p>	<p>DRAWING NUMBER</p>	<p>21-35-11</p>	<p>REVISED</p>

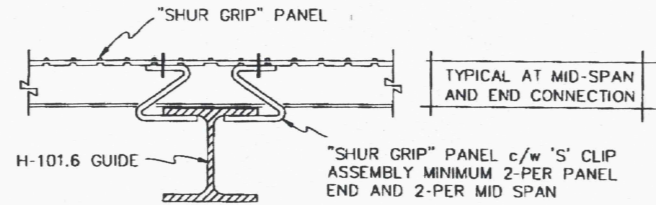
3 590 MK-S1 = (8) REQUIRED  
 3 648 MK-S2 = (16) REQUIRED  
 2 428 MK-S3 = (4) REQUIRED



GALV. STEEL WALKWAY 254 (10") 5-HOLE  
 "SHUR GRIP" PANEL 76.2 (3") CHANNEL  
 DEPTH 3.0 mm (11 GA.) STEEL PART No.  
 S-51130-G AS SUPPLIED BY "FISHER &  
 LUDLOW" 19469 92nd AVE. SURREY, B.C.  
 V3T 4W2 TEL. (604) 888-0911

**PLAN - WALKWAY PANEL**

SCALE 1:10




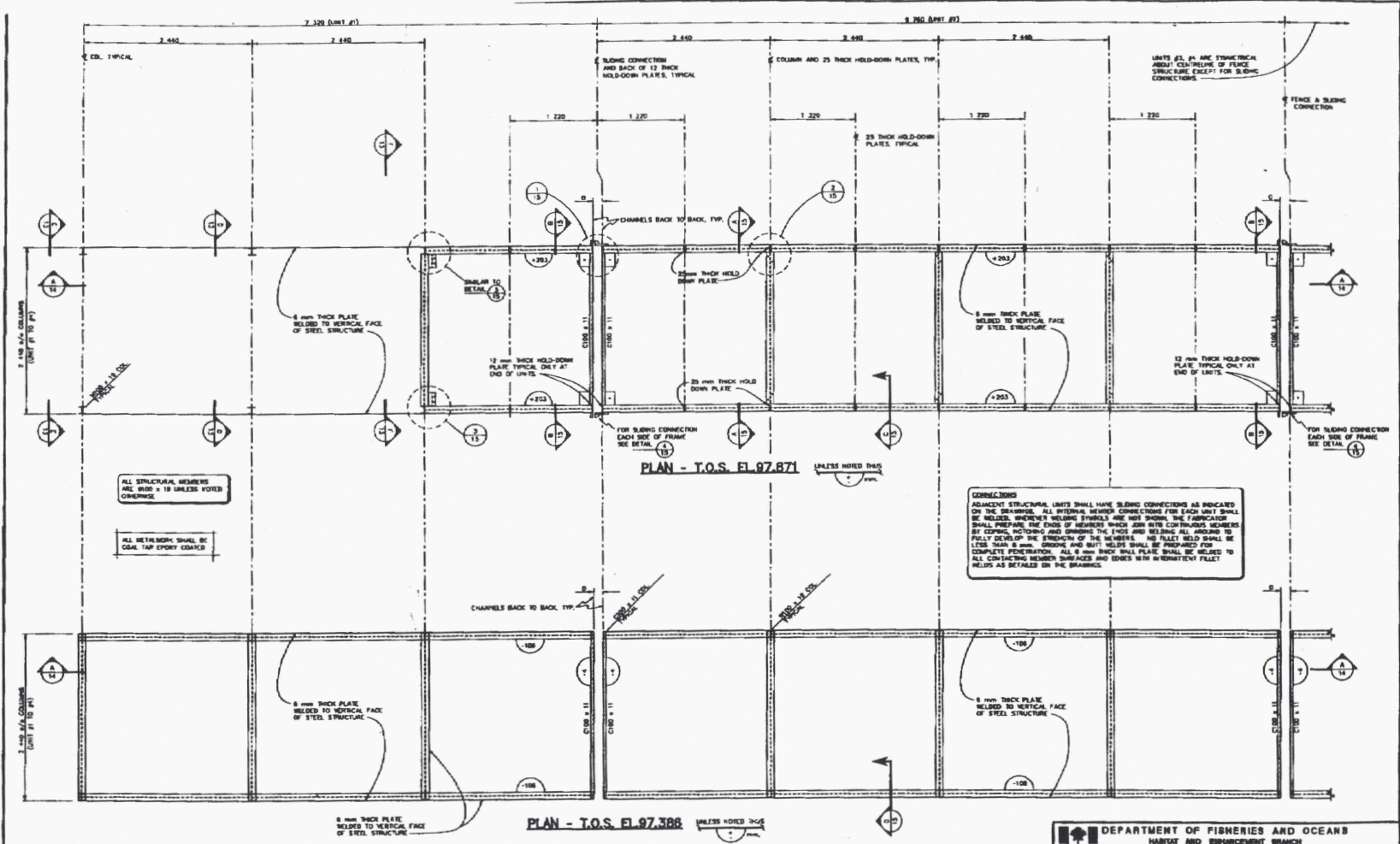
**WALKWAY PANELS - TYPICAL CONNECTION**

SCALE 1:5

**GENERAL ALUMINUM NOTES**

1. ALUMINUM EXTRUSIONS SHALL BE NEW AND CONFORM TO C.S.A. HA.5, ALCAN STRUCTURAL ALLOY 6061-T6.
2. ALUMINUM WELDING SHALL BE PERFORMED TO THE EQUIVALENT OF CSA STANDARD SPECIFICATION W47.2
3. ALUMINUM FABRICATION AND ASSEMBLY SHALL CONFORM TO CSA SPECIFICATION S157.
4. ALUMINUM WELDING SHALL BE "MIG" OR "TIG" PROCESS USING ALCAN ALLOY 5356 FILLER ROD.
5. ALL ROUGH EDGES, SEAMS AND WELDS TO BE GROUND SMOOTH AND WELD SPLATTER REMOVED.
6. BOLTS, NUTS AND WASHERS FOR ALUMINUM CONNECTIONS AND STEEL TO ALUMINUM CONNECTIONS SHALL BE STAINLESS STEEL AND CONFORM TO A.S.T.M. STANDARD A316. BOLT SIZES AS NOTED ON THE DRAWINGS.

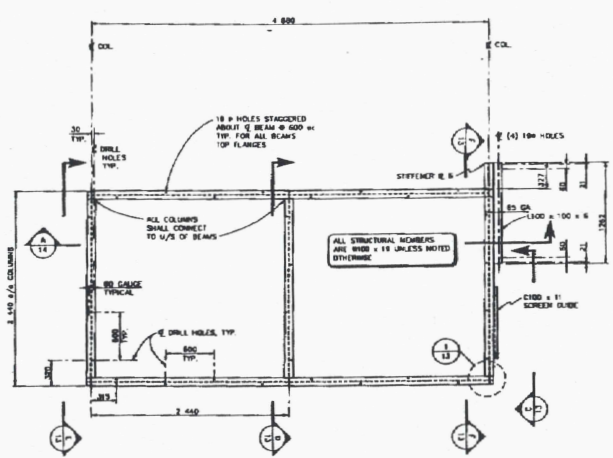
DESIGNED I.R. / S.M.	BULKLEY RIVER PROJECT CONTRACT #F1528-9-6085 ADULT FENCE STRUCTURE ALUMINUM FABRICATION WALKWAY PANELS AND GENERAL ALUMINUM NOTES	SCALE AS NOTED
DRAWN C. Reichhardt		DATE NOV. 1999.
CHECKED		DRAWING NUMBER 21-35-11A
 <b>DEPARTMENT OF FISHERIES AND OCEANS</b> HABITAT AND ENHANCEMENT BRANCH		



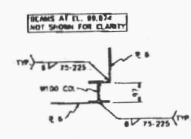
DESIGNED BY	CHECKED BY	APPROVED BY	DATE	REVISIONS	SCALE	DEPARTMENT OF FISHERIES AND OCEANS HABITAT AND ENHANCEMENT BRANCH
						BULKLEY RIVER PROJECT CONTRACT #1528-9-8083 ADULT FENCE STRUCTURE STRUCTURAL STEEL FABRICATION SHEET 1 OF 4 PLANS
NO.	DATE	NO.	DATE	NO.	DATE	1:20 DATE NOV. 1999 DRAWING NUMBER 21-35-12 REVISION

1. FOR LEGEND AND GENERAL NOTES REFER TO DRAWING No 21-35-11.

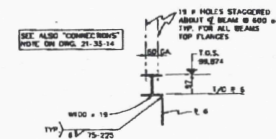




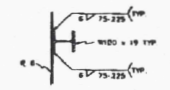
**PLAN T.O.S. EL. 99.874**  
SCALE 1:25  
**STEEL ABUTMENT UNIT #4**  
(UNIT #1 SAME EXCEPT OPPOSITE HAND AND NO SHOW FOR SLABING CONNECTIONS ON DRAWING 21-35-14)



**DETAIL 1**  
SCALE 1:10



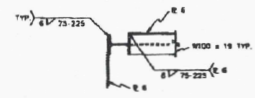
**DETAIL 2**  
SCALE 1:10



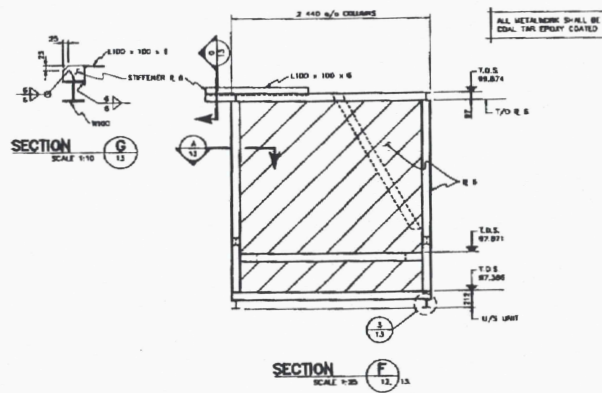
**SECTION B**  
SCALE 1:10 (TAKEN FROM SECTION 12, 13)



**DETAIL 3**  
SCALE 1:10

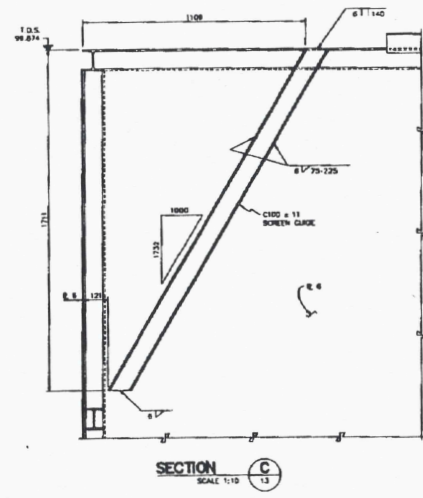


**SECTION A**  
SCALE 1:10

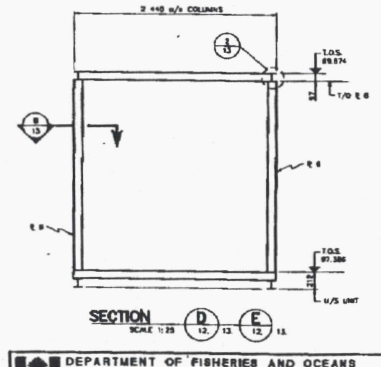


**SECTION C**  
SCALE 1:10

**SECTION F**  
SCALE 1:25



**SECTION D**  
SCALE 1:10

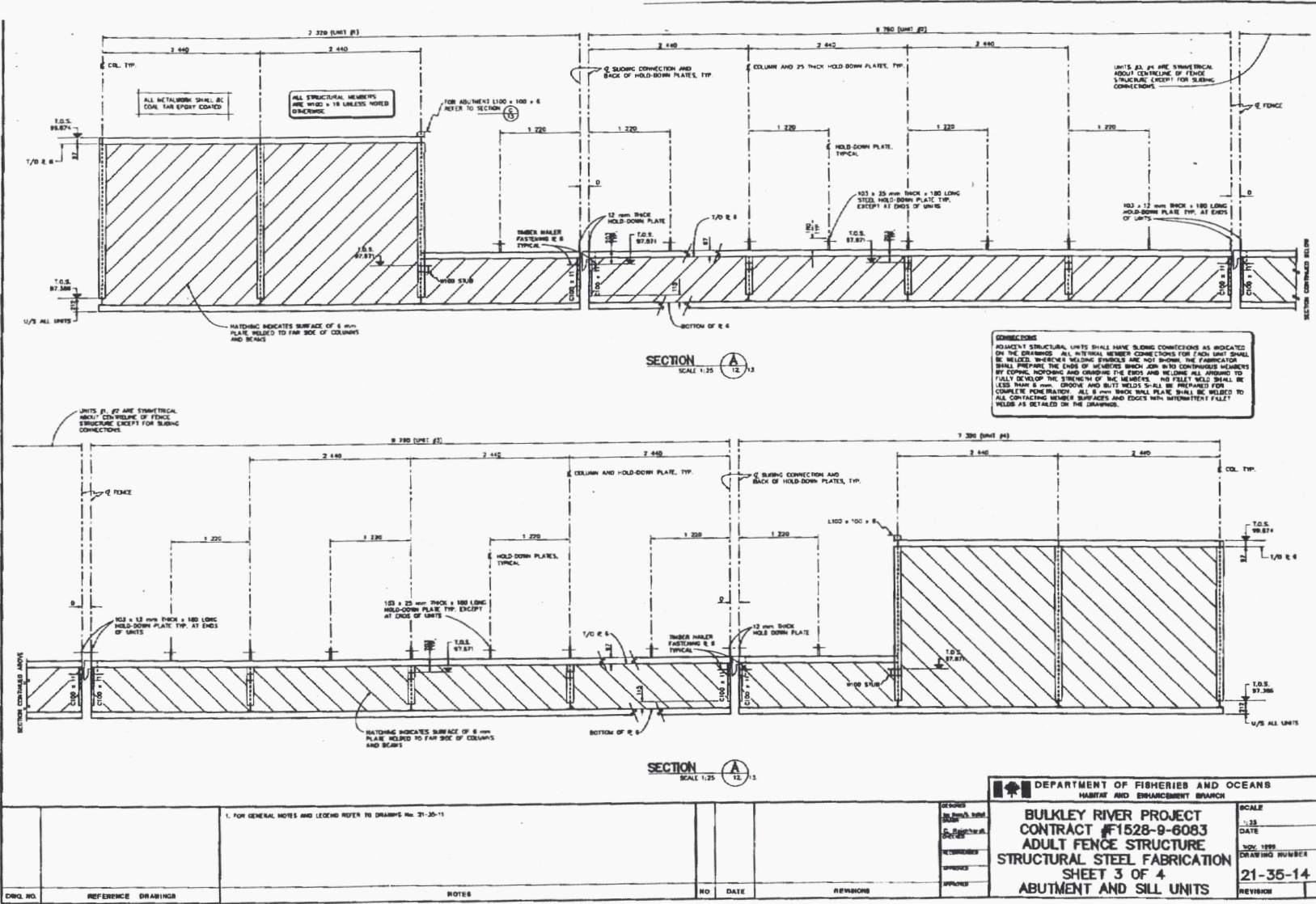


**SECTION E**  
SCALE 1:25

1. FOR GENERAL NOTES AND LEGEND REFER TO DRAWING NO. 21-35-11.

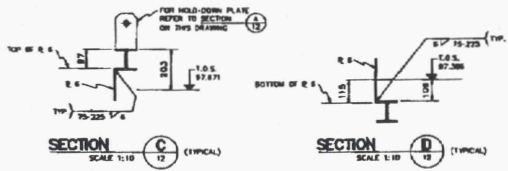
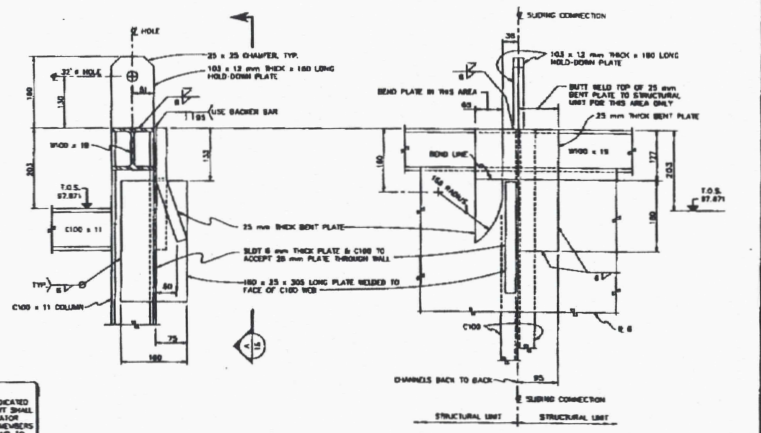
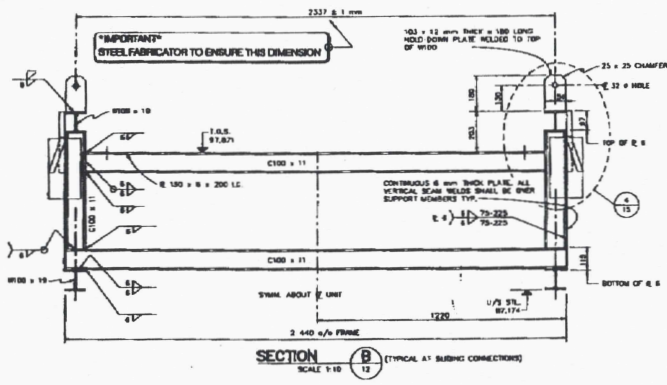
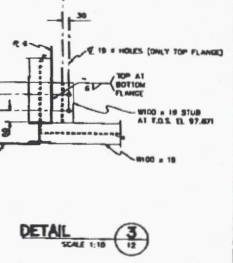
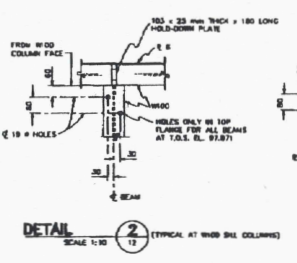
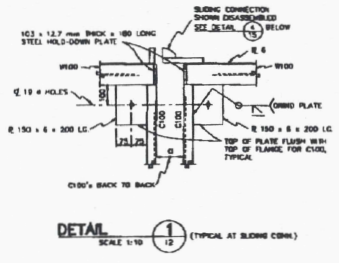
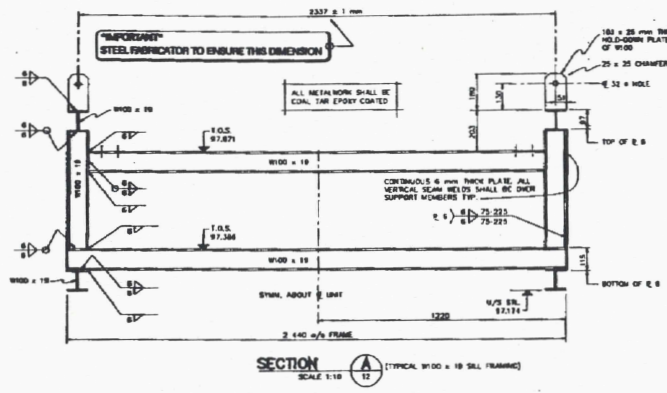
<b>DEPARTMENT OF FISHERIES AND OCEANS</b> HABITAT AND ENHANCEMENT BRANCH		SCALE AS NOTED DATE NOV. 1999 DRAWING NUMBER 21-35-13 REFERENCE
<b>BULKLEY RIVER PROJECT</b> <b>CONTRACT #1528-9-8083</b> <b>ADULT FENCE STRUCTURE</b> <b>STRUCTURAL STEEL FABRICATION</b> <b>SHEET 2 OF 4</b> <b>ABUTMENT UNITS #1 &amp; #4</b>		

REQ. NO.	REFERENCE DRAWINGS	NOTES	NO.	DATE	REVISIONS



DRWG. NO.	REFERENCE DRAWINGS	NOTES	NO.	DATE	REVISIONS
		1. FOR GENERAL NOTES AND LEGEND REFER TO DRAWING No. 21-35-11			

 DEPARTMENT OF FISHERIES AND OCEANS HABITAT AND ENHANCEMENT BRANCH		SCALE 1:25 DATE NOV. 1999 DRAWING NUMBER 21-35-14 REVISION
DESIGN DRAWN CHECKED APPROVED	<b>BULKLEY RIVER PROJECT</b> <b>CONTRACT #1528-9-6083</b> <b>ADULT FENCE STRUCTURE</b> <b>STRUCTURAL STEEL FABRICATION</b> <b>SHEET 3 OF 4</b> <b>ABUTMENT AND SILL UNITS</b>	



**CONNECTIONS**  
 ADJACENT STRUCTURAL UNITS SHALL HAVE SLIDING CONNECTIONS AS INDICATED ON THE BRASSINGS. ALL INTERNAL MEMBER CONNECTIONS FOR EACH UNIT SHALL BE WELDED. BEFORE WELDING STUDIES ARE NOT WARRAN, THE FABRICATOR SHALL PREPARE THE ENDS OF MEMBERS WHICH JOSE INTO CONTINUOUS MEMBERS BY CORING NOTCHES AND CHAMFER THE ENDS AND WELDING ALL AROUND TO FULLY DEVELOP THE STRENGTH OF THE MEMBERS. NO FLLET WELD SHALL BE LESS THAN 6 mm. GROOVE AND BUTT WELDS SHALL BE PREPARED FOR COMPLETE PENETRATION. ALL 6 mm THICK WALL PLATE SHALL BE WELDED TO ALL CONTACTING MEMBER SURFACES AND EDGES WITH WAREPARENT FLLET WELDS AS DETAILD ON THE BRASSINGS.

DRAW. NO.	REFERENCE DRAWINGS	NOTES	R.D. DATE	REVISIONS	DEPARTMENT OF FISHERIES AND OCEANS HABITAT AND ENHANCEMENT BRANCH <b>BULKLEY RIVER PROJECT</b> <b>CONTRACT #1528-9-8083</b> <b>ADULT FENCE STRUCTURE</b> <b>STRUCTURAL STEEL FABRICATION</b> <b>SHEET 4 OF 4</b> <b>SILL UNIT SECTIONS</b>	SCALE AS NOTED DATE NOV. 1999 DRAWING NUMBER <b>21-35-15</b> REVISION



**█** **FISHERIES AND OCEANS CANADA**  
**PACIFIC REGION**

HABITAT AND ENHANCEMENT BRANCH,  
BIOLOGICAL AND ENGINEERING SUPPORT DIVISION.

SUITE 400, 3rd FLOOR, Room 360

555 WEST HASTINGS STREET,  
VANCOUVER, B. C.  
V6B 5G3.

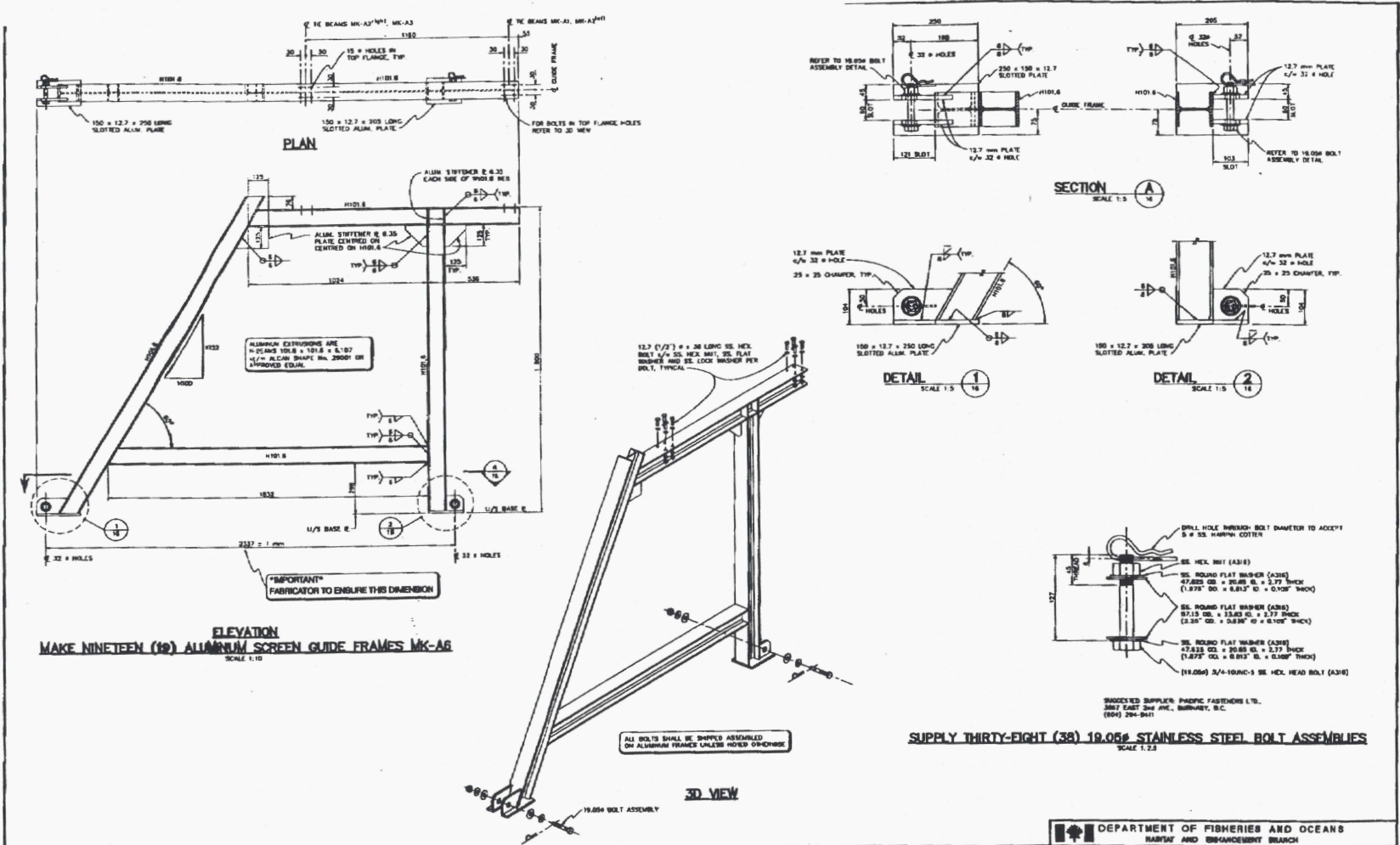
Technical inquiries: Ian Ross, P. Engineer, Ph: (604) 666-0019  
Sam McNeil, Eng. Technician, Ph: (604) 666-2035  
Fax: (604) 666-0292

**BULKLEY RIVER PROJECT**  
**CONTRACT No. F1528-9-6085**  
**FABRICATION AND DELIVERY OF**  
**STRUCTURAL ALUMINUM FOR**  
**ADULT FENCE STRUCTURE**  
**DECEMBER 1999**

THIS CONTRACT SET CONTAINS THE FOLLOWING DRAWINGS:

21-35-16  
21-35-17  
21-35-18

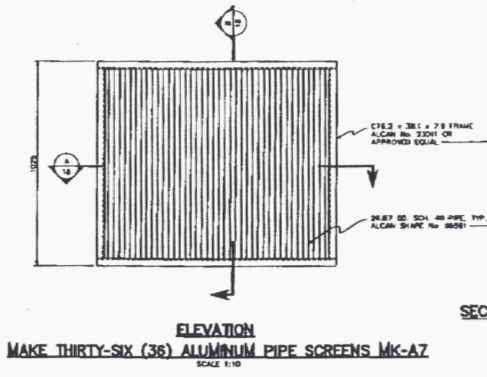
CONTACT "FISHERIES AND OCEANS CANADA" TO RECEIVE  
ANY DRAWINGS WHICH MAY BE MISSING FROM THIS SET.



1. FOR GENERAL NOTES AND LEGENDS REFER TO DRAWING No. 21-35-11.		NO.	DATE	REVISIONS	<p>DEPARTMENT OF FISHERIES AND OCEANS          MARINE AND SHIPMENT BRANCH</p> <p><b>BULKLEY RIVER PROJECT</b>  <b>CONTRACT #F1528-9-8085</b>  <b>ALUMINUM FABRICATION</b>  <b>SCREEN GUIDE FRAMES MK-A6</b></p> <p>SCALE          AS SHOWN          DATE          NOV. 1999          DRAWING NUMBER  <b>21-35-16</b>          REVISION</p>
DRG. NO.	REFERENCE	DESCRIPTION	NOTES	NO. DATE	REVISIONS

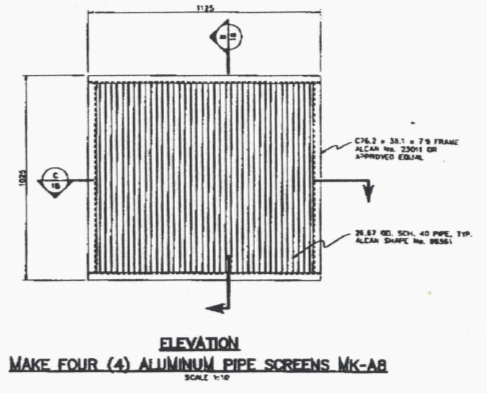




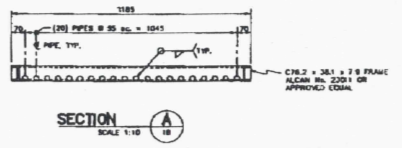


**ELEVATION**  
**MAKE THIRTY-SIX (36) ALUMINUM PIPE SCREENS MK-A7**  
 SCALE 1:10

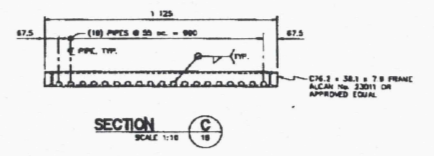
**SECTION B**  
 SCALE 1:10



**ELEVATION**  
**MAKE FOUR (4) ALUMINUM PIPE SCREENS MK-A8**  
 SCALE 1:10



**SECTION A**  
 SCALE 1:10



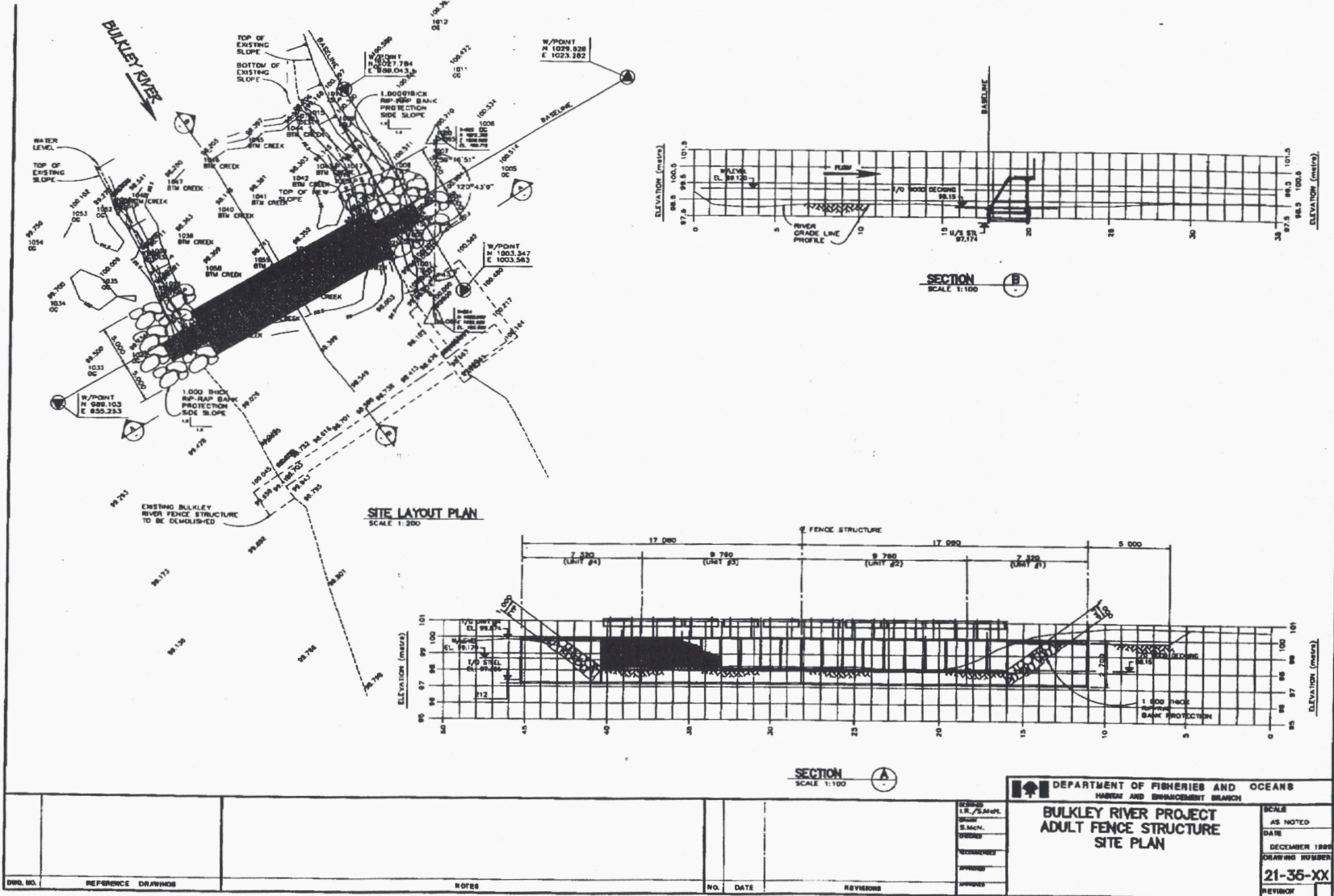
**SECTION C**  
 SCALE 1:10

<p>1. FOR GENERAL NOTES AND LEGEND REFER TO DRAWING No. 21-35-11.</p>		<p>DEPARTMENT OF FISHERIES AND OCEANS                  MARINE AND ENHANCEMENT BRANCH</p>					
<p>DWG. NO.</p>	<p>REFERENCE DRAWING</p>	<p>NO.</p>	<p>DATE</p>	<p>REVISIONS</p>	<p>DESIGNED BY: [Signature]</p>	<p><b>BULKLEY RIVER PROJECT</b>  <b>CONTRACT #F1628-9-8085</b>  <b>ADULT FENCE STRUCTURE</b>  <b>ALUMINUM FABRICATION</b>  <b>SHEET 3 OF 3</b>  <b>PIPE SCREENS MK-A7, MK-A8</b></p>	<p>SCALE AS NOTED</p>
					<p>APPROVED BY: [Signature]</p>		<p>DATE</p>
<p>DWG. NO.      REFERENCE DRAWING      NO.      DATE      REVISIONS</p>					<p>HOW USED DRAWING NUMBER</p>	<p>21-35-18</p>	<p>REVISION</p>









**SITE LAYOUT PLAN**  
SCALE 1:200

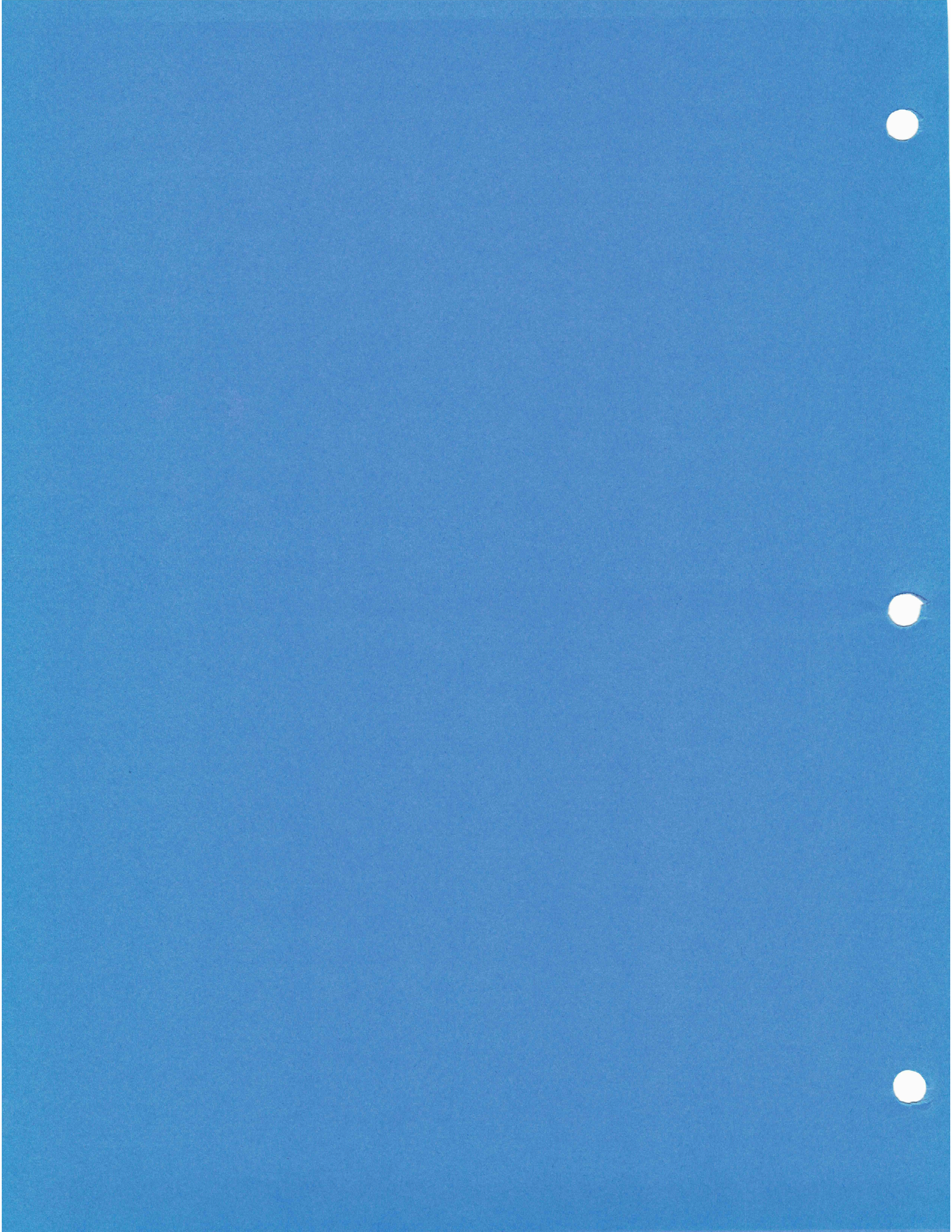
**SECTION B**  
SCALE 1:100

**SECTION A**  
SCALE 1:100

<b>DEPARTMENT OF FISHERIES AND OCEANS</b> HABITAT AND ENHANCEMENT BRANCH	
<b>BULKLEY RIVER PROJECT</b> <b>ADULT FENCE STRUCTURE</b> <b>SITE PLAN</b>	SCALE AS NOTED DATE DECEMBER 1999 DRAWING NUMBER <b>21-36-XX</b> REVISION

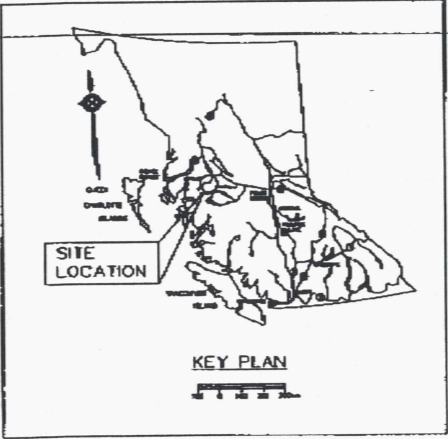
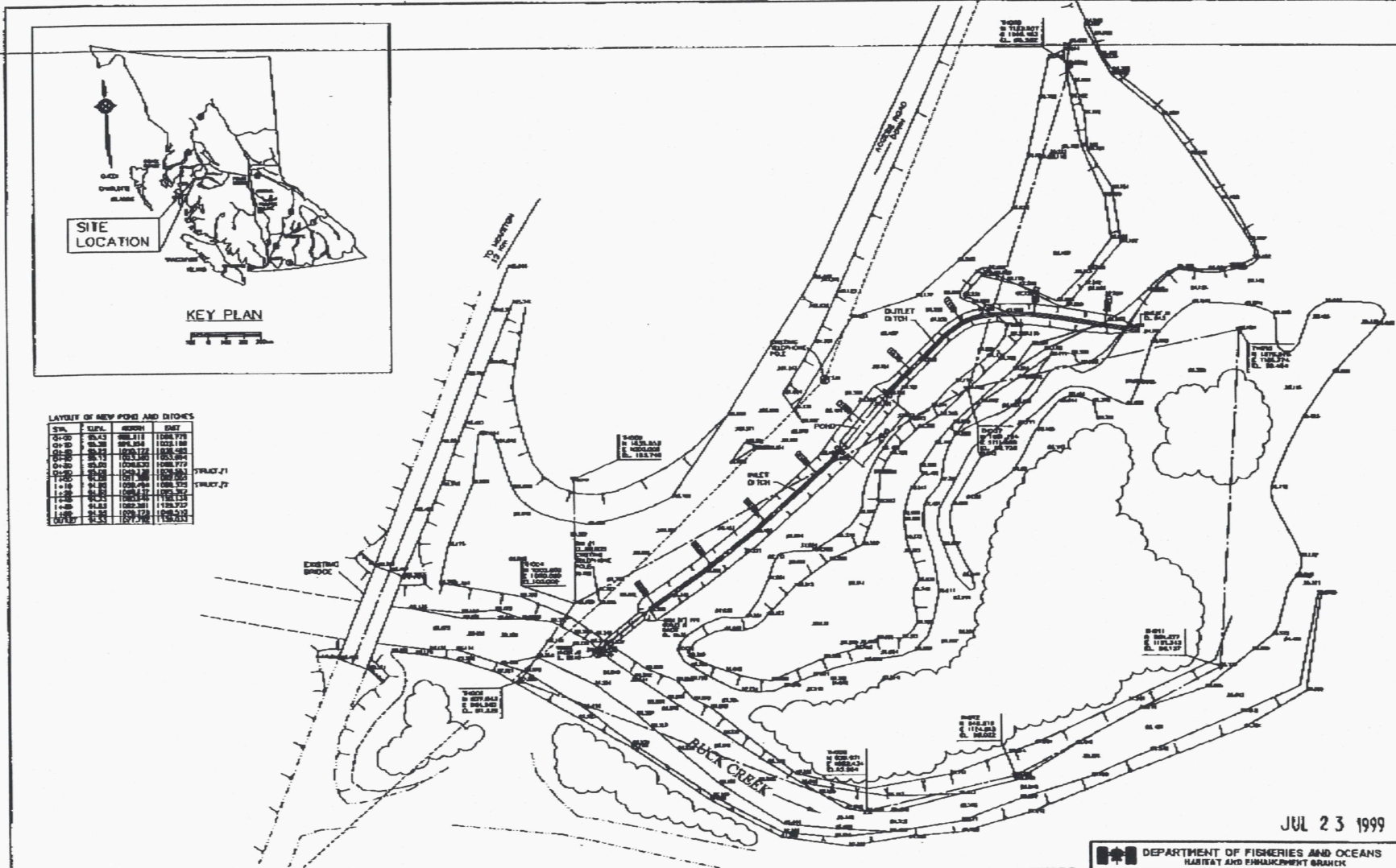
NO.	DATE	REVISIONS







Buck Cr. Plan



LAYOUT OF NEW POND AND DITCHES

SYD	AREA	PERIMETER	DEPTH
01-01	100.00	100.00	1.00
01-02	100.00	100.00	1.00
01-03	100.00	100.00	1.00
01-04	100.00	100.00	1.00
01-05	100.00	100.00	1.00
01-06	100.00	100.00	1.00
01-07	100.00	100.00	1.00
01-08	100.00	100.00	1.00
01-09	100.00	100.00	1.00
01-10	100.00	100.00	1.00
01-11	100.00	100.00	1.00
01-12	100.00	100.00	1.00
01-13	100.00	100.00	1.00
01-14	100.00	100.00	1.00
01-15	100.00	100.00	1.00
01-16	100.00	100.00	1.00
01-17	100.00	100.00	1.00
01-18	100.00	100.00	1.00
01-19	100.00	100.00	1.00
01-20	100.00	100.00	1.00
01-21	100.00	100.00	1.00
01-22	100.00	100.00	1.00
01-23	100.00	100.00	1.00
01-24	100.00	100.00	1.00
01-25	100.00	100.00	1.00
01-26	100.00	100.00	1.00
01-27	100.00	100.00	1.00
01-28	100.00	100.00	1.00
01-29	100.00	100.00	1.00
01-30	100.00	100.00	1.00
01-31	100.00	100.00	1.00

JUL 23 1999

DEPARTMENT OF FISHERIES AND OCEANS  
HABITAT AND FINANCEMENT BRANCH

BUCK CREEK  
SITE PLAN

SCALE  
1 : 500

DATE  
JULY 1999

DRAWING NUMBER  
21-44-1

REVISION

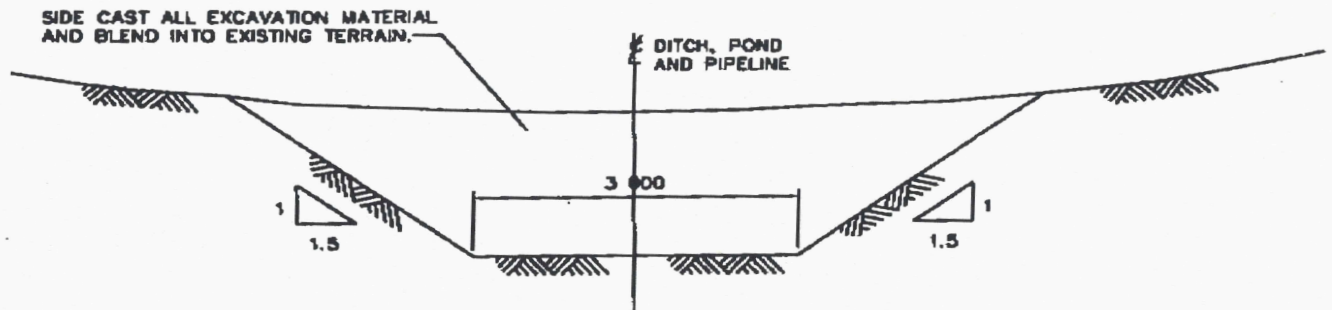
DWG. NO.	REFERENCE DRAWINGS	NOTES	NO.	DATE	REVISIONS
		SEE DRAWING 21-44-1 FOR DETAILS AND ALSO SEE OTHER DRAWINGS.			



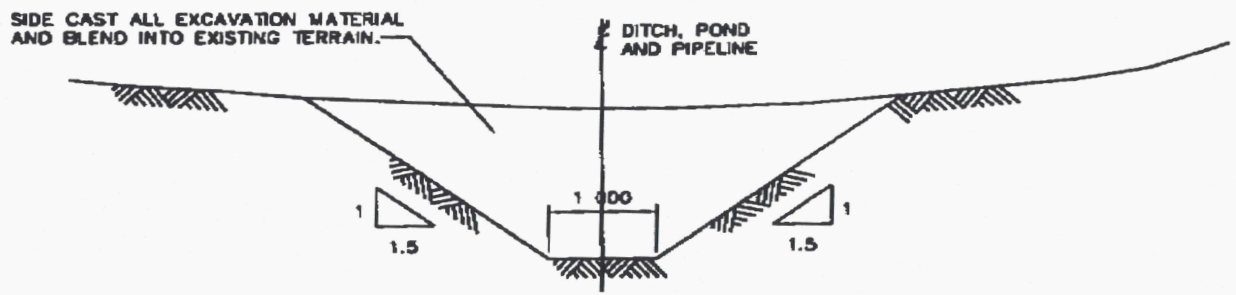


# CENTRELINE PROFILE (CONT'D)

SCALE 1:100 VERT.  
1:200 HORIZ.



TYPICAL POND SECTION  
SCALE 1 : 50

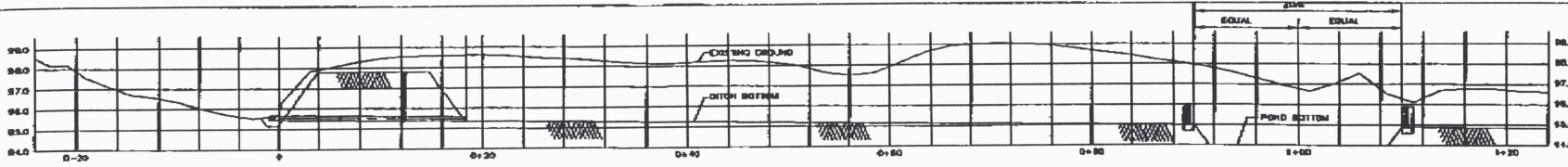


TYPICAL DITCH SECTION  
SCALE 1 : 50

DWG. NO.	REFERENCE DRAWINGS	NOTES

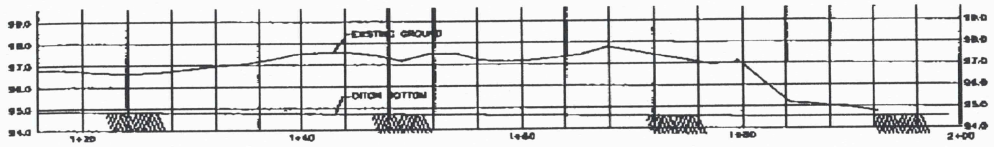
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7  
8



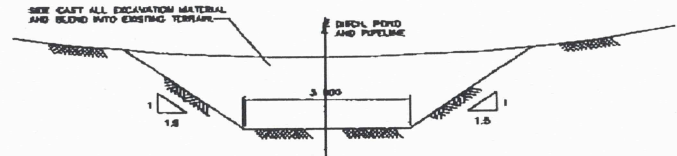
**CENTRELINE PROFILE**

SCALE 1:200 VERT.  
1:500 HORIZ.



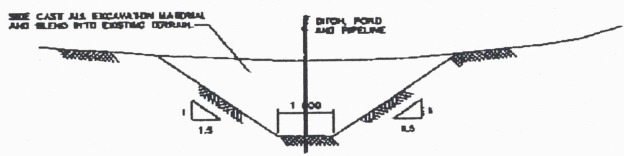
**CENTRELINE PROFILE (CONT'D)**

SCALE 1:100 VERT.  
1:200 HORIZ.



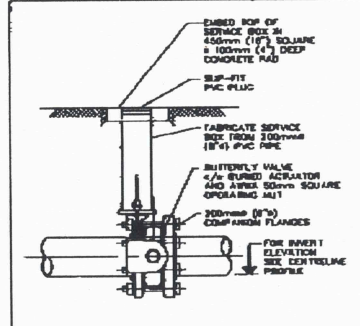
**TYPICAL POND SECTION**

SCALE 1 : 50



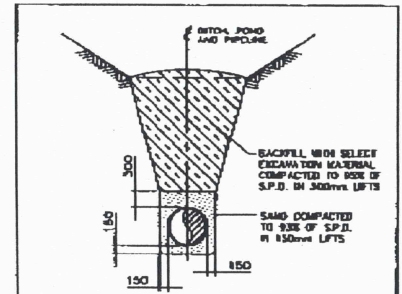
**TYPICAL DITCH SECTION**

SCALE 1 : 50



**TYPICAL BURIED VALVE**

SCALE 1 : 50



**TYPICAL PIPE TRENCH**

SCALE 1 : 50

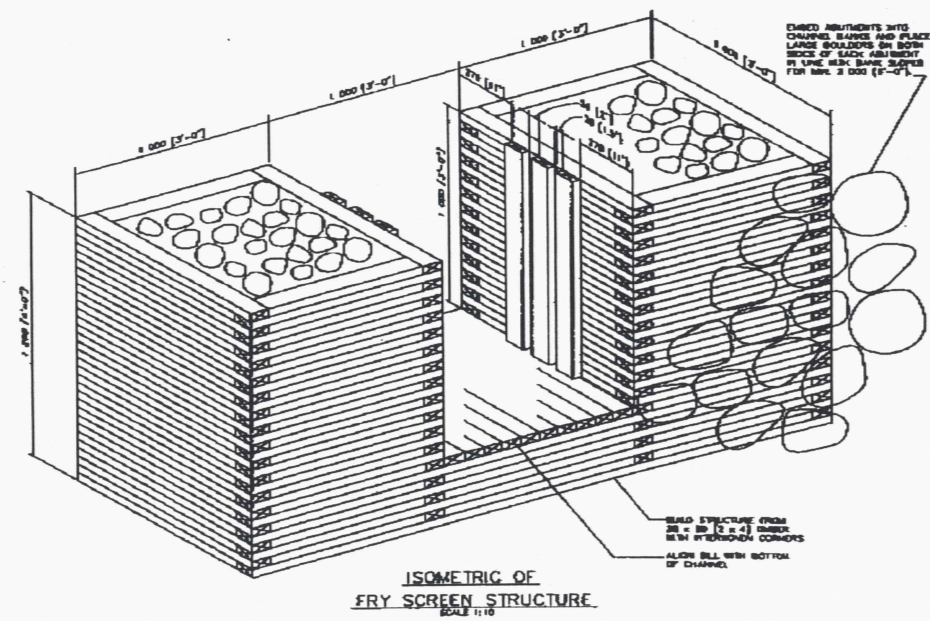
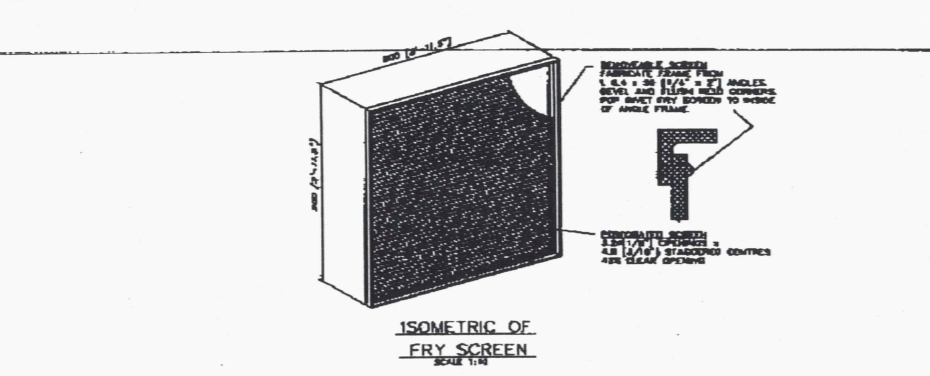
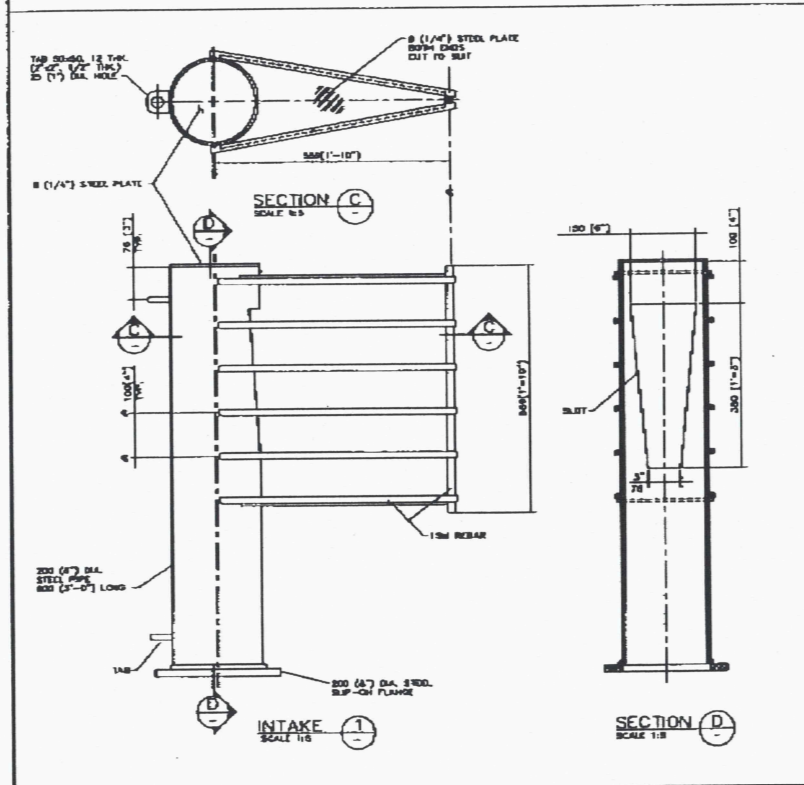
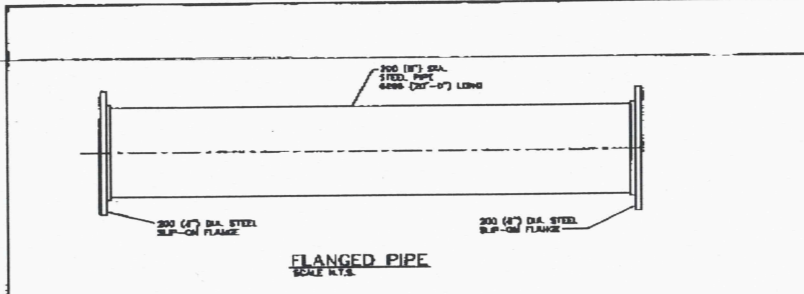
JUL 23 1999

DEPARTMENT OF FISHERIES AND OCEANS  
HABITAT AND ENHANCEMENT BRANCH

DESIGNED BY	DATE	REVISIONS
DRAWN BY		
CHECKED BY		
APPROVED BY		
DATE		
NOTES		
REFERENCE DRAWINGS		

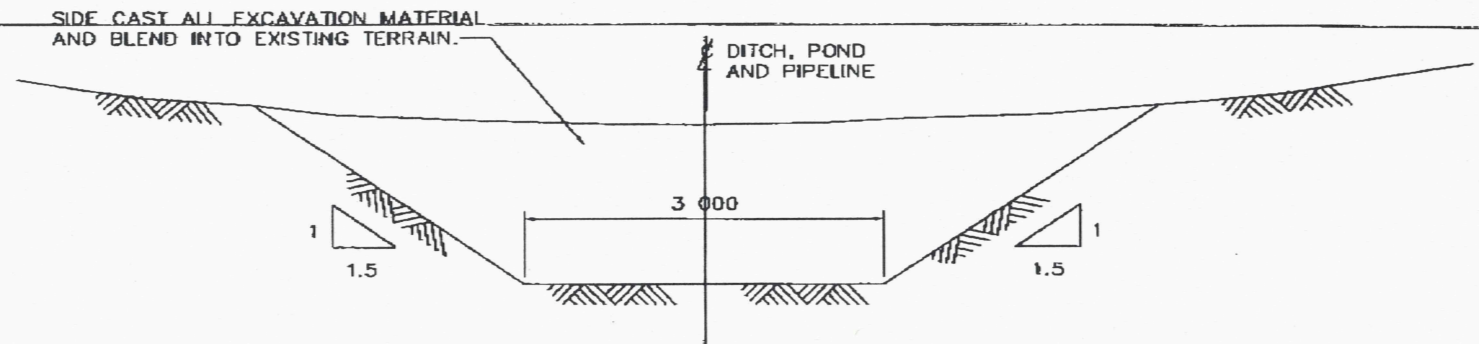
**BUCK CREEK  
CENTRELINE PROFILE  
AND TYPICAL SECTIONS**

SCALE	1 : 200
DATE	JULY 1999
DRAWING NUMBER	21-44-2
REVISION	

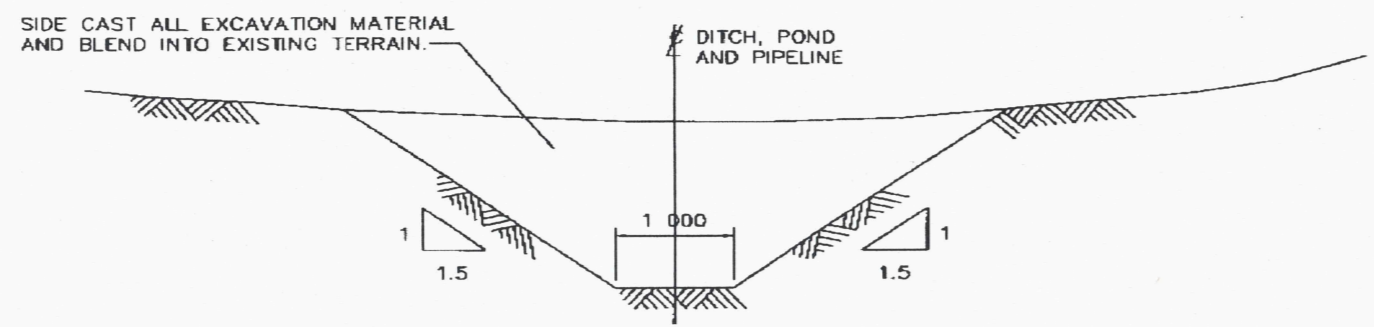


JUL 23 1999

<p><b>METAL FABRICATION NOTES</b></p> <ol style="list-style-type: none"> <li>1. METRIC DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.</li> <li>2. ALL HOLES TO BE DRILLED BEFORE WELDING.</li> <li>3. APPLY COAL-TAR EPXY AFTER FABRICATION.</li> <li>4. DIMENSIONS ARE IN MILLIMETRES.</li> </ol>		<p>DEPARTMENT OF FISHERIES AND OCEANS HABITAT AND ENHANCEMENT BRANCH</p> <p><b>BUCK CREEK INTAKE AND FRY SCREEN STRUCTURE</b></p>		<p>SCALE AS SHOWN</p> <p>DATE JULY 1999</p> <p>DRAWING NUMBER 21-44-3</p> <p>REVISION</p>
<p>DRG. NO.</p>	<p>REFERENCE DRAWINGS</p>	<p>NOTES</p>	<p>NO. DATE</p>	<p>REVISIONS</p>

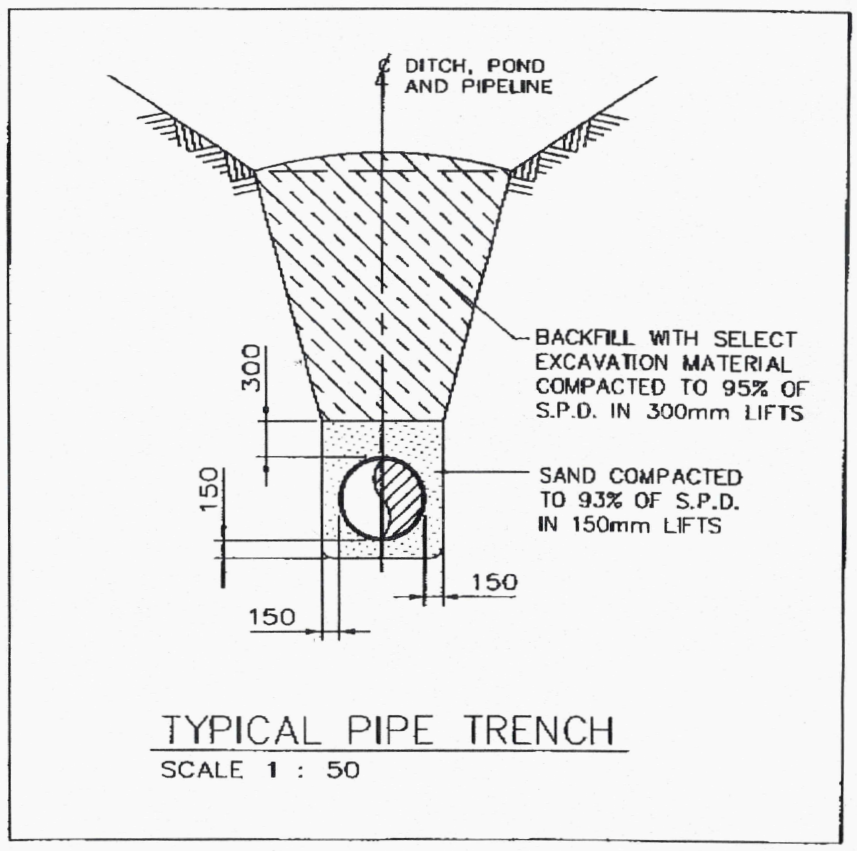
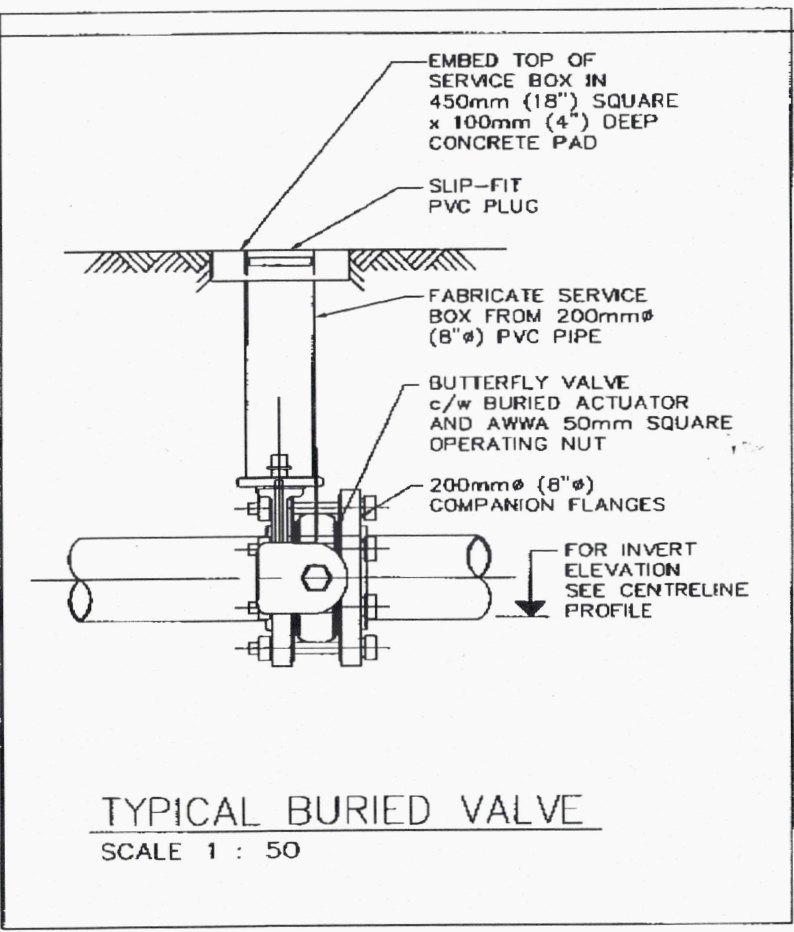


TYPICAL POND SECTION  
SCALE 1 : 50



TYPICAL DITCH SECTION  
SCALE 1 : 50





JUL 23 1999