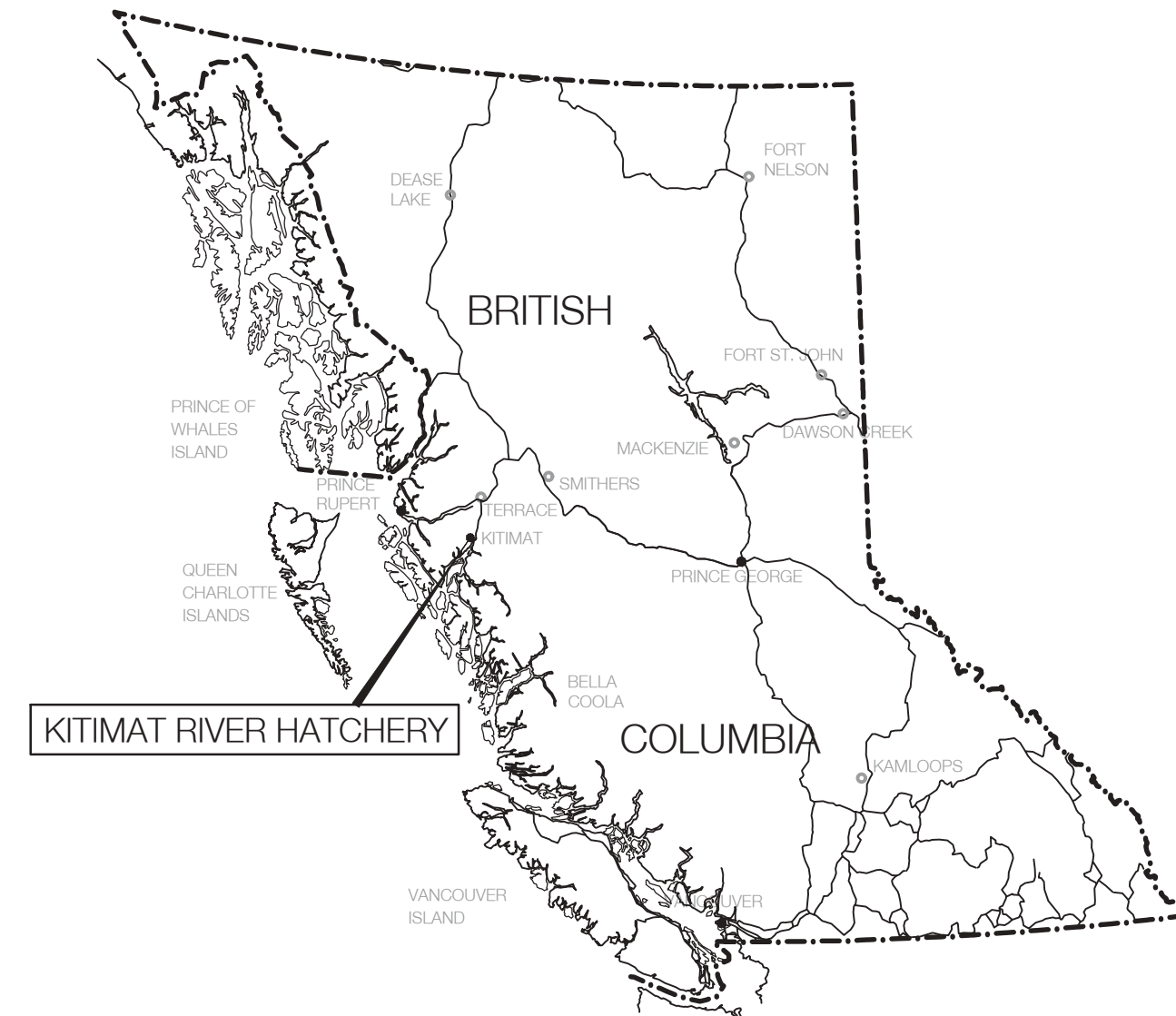




# KITIMAT RIVER HATCHERY VALVE REPLACEMENT

283 HAISLA BLVD  
KITIMAT, B.C.

## KEY MAP



## SITE AERIAL



KITIMAT RIVER HATCHERY

## PROJECT DRAWING LIST

### CIVIL

- C0 COVER PAGE
- C1 SITE PLAN (DFO REF DWG: 22-35-286)
- C2 PONDS 1, 2, 3, 4 (DFO REF DWG: 22-35-288)
- C3 PONDS 5, 6 (DFO REF DWG: 22-35-289)
- C4 PONDS 7, 8, 9, 10 (DFO REF DWG: 22-35-290)
- C5 PONDS 11, 12, 13, 14 (DFO REF DWG: 22-35-291)
- C6 TRANSPORTATION CHANNEL (DFO REF DWG: 22-35-292)
- C7 WATER SUPPLY PIPING (DFO REF DWG: 22-35-293)
- C8 REFERENCE DETAILS (DFO REF DWG: 22-35-294)
- C9 DETAIL DRAWING
- C10 VALVE REPLACEMENT SCHEDULE
- C11 PAVEMENT RESTORATION (DFO REF DWG: 22-35-420)
- C12 PONDS 1, 2, 3, 4 - CONCRETE OUTLINE (DFO REF DWG: 22-35-272)
- C13 PONDS 5, 6 - CONCRETE OUTLINE (DFO REF DWG: 22-35-273)
- C14 TRANSPORTATION PIPE - LOCATION & LAYOUT DETAIL (DFO REF DWG: 22-35-274)

### GEOTECHNICAL

- G1 SITE PLAN
- G2 SECTIONS

NOTE: DFO REFERENCE RECORD DRAWINGS INCLUDED UNDER SEPARATE COVER

## PROJECT PHASING

Phase	Valves
Summer 2020 (Previously Completed)	37-43
Fall 2020 - Phase 1 (This Contract)	1-12, 46-47
Fall 2020 - Phase 2 (This Contract)	32-36, 44-45
Future Contract	13-31



**DNA**

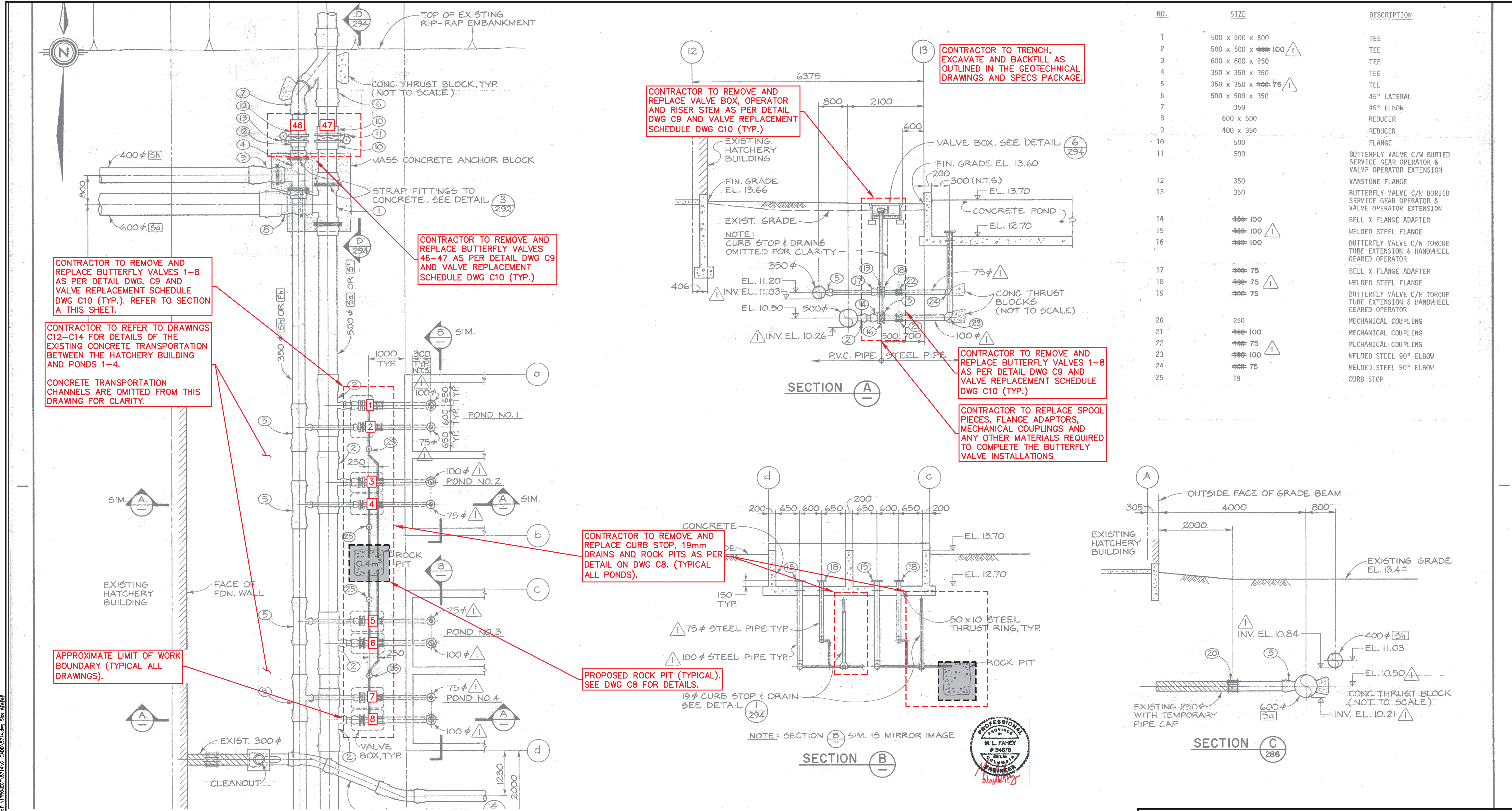
**David Nairne & Associates Ltd**

5714









NO.	SIZE	DESCRIPTION
1	500 x 500 x 500	TEE
2	500 x 500 x 100	TEE
3	600 x 600 x 250	TEE
4	350 x 350 x 350	TEE
5	350 x 350 x 75	TEE
6	500 x 500 x 350	45° LATERAL
7	350	45° ELBOW
8	600 x 500	REDUCER
9	400 x 350	REDUCER
10	500	FLANGE
11	500	BUTTERFLY VALVE C/W BURIED SERVICE GEAR OPERATOR & VALVE OPERATOR EXTENSION
12	350	VANSTONE FLANGE
13	350	BUTTERFLY VALVE C/W BURIED SERVICE GEAR OPERATOR & VALVE OPERATOR EXTENSION
14	100	BELL X FLANGE ADAPTER
15	100	WELDED STEEL FLANGE
16	100	BUTTERFLY VALVE C/W TORQUE TUBE EXTENSION & HANDWHEEL GEARED OPERATOR
17	75	BELL X FLANGE ADAPTER
18	75	WELDED STEEL FLANGE
19	75	BUTTERFLY VALVE C/W TORQUE TUBE EXTENSION & HANDWHEEL GEARED OPERATOR
20	250	MECHANICAL COUPLING
21	100	MECHANICAL COUPLING
22	75	MECHANICAL COUPLING
23	100	WELDED STEEL 90° ELBOW
24	75	WELDED STEEL 90° ELBOW
25	19	CURB STOP

CONTRACTOR TO REMOVE AND REPLACE BUTTERFLY VALVES 1-8 AS PER DETAIL DWG. C9 AND VALVE REPLACEMENT SCHEDULE DWG C10 (TYP.). REFER TO SECTION A THIS SHEET.

CONTRACTOR TO REFER TO DRAWINGS C12-C14 FOR DETAILS OF THE EXISTING CONCRETE TRANSPORTATION BETWEEN THE HATCHERY BUILDING AND PONDS 1-4.

CONCRETE TRANSPORTATION CHANNELS ARE OMITTED FROM THIS DRAWING FOR CLARITY.

APPROXIMATE LIMIT OF WORK BOUNDARY (TYPICAL ALL DRAWINGS).

CONTRACTOR TO REMOVE AND REPLACE BUTTERFLY VALVES 46-47 AS PER DETAIL DWG C9 AND VALVE REPLACEMENT SCHEDULE DWG C10 (TYP.).

CONTRACTOR TO REMOVE AND REPLACE VALVE BOX, OPERATOR AND RISER STEM AS PER DETAIL DWG C9 AND VALVE REPLACEMENT SCHEDULE DWG C10 (TYP.).

CONTRACTOR TO TRENCH, EXCAVATE AND BACKFILL AS OUTLINED IN THE GEOTECHNICAL DRAWINGS AND SPECS PACKAGE.

CONTRACTOR TO REMOVE AND REPLACE BUTTERFLY VALVES 1-8 AS PER DETAIL DWG C9 AND VALVE REPLACEMENT SCHEDULE DWG C10 (TYP.).

CONTRACTOR TO REPLACE SPOOL PIECES, FLANGE ADAPTORS, MECHANICAL COUPLINGS AND ANY OTHER MATERIALS REQUIRED TO COMPLETE THE BUTTERFLY VALVE INSTALLATIONS

CONTRACTOR TO REMOVE AND REPLACE CURB STOP, 19mm DRAINS AND ROCK PITS AS PER DETAIL ON DWG C8. (TYPICAL ALL PONDS).

PROPOSED ROCK PIT (TYPICAL). SEE DWG C8 FOR DETAILS.

1. BACKGROUND UNDERLAY FOR THIS DRAWING TAKEN FROM DFO RECORD DRAWING 22-35-288 (MAY, 1982 - CONTRACT NO. 6)

NOTES

NO.	DATE	REVISIONS
5	2020-JUN-18	ISSUED FOR TENDER - FALL 2020 CONSTRUCTION
4	2020-FEB-25	RE-ISSUED FOR TENDER
3	2019-FEB-21	ISSUED FOR TENDER
2	2019-JAN-30	ISSUED FOR FINAL DFO REVIEW
1	2018-NOV-30	ISSUED FOR DFO REVIEW

DESIGNED	NEC
DRAWN	NEC
CHECKED	MF
RECOMMENDED	MF
APPROVED	
APPROVED	

FISHERIES AND OCEANS CANADA  
REAL PROPERTY AND TECHNICAL SUPPORT

KITIMAT RIVER HATCHERY  
VALVE REPLACEMENT  
PONDS 1, 2, 3, 4  
DFO REF DWG: 22-35-288

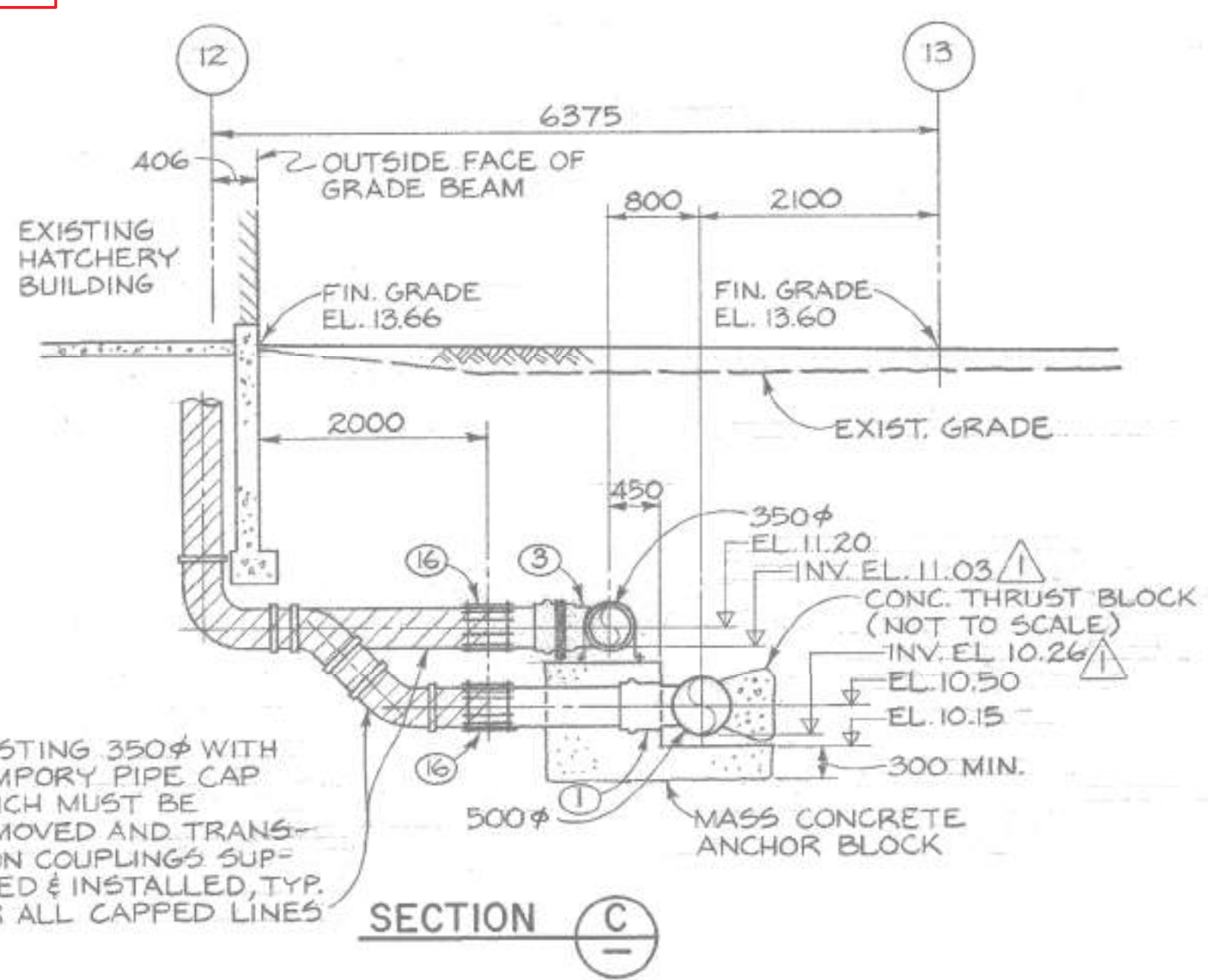
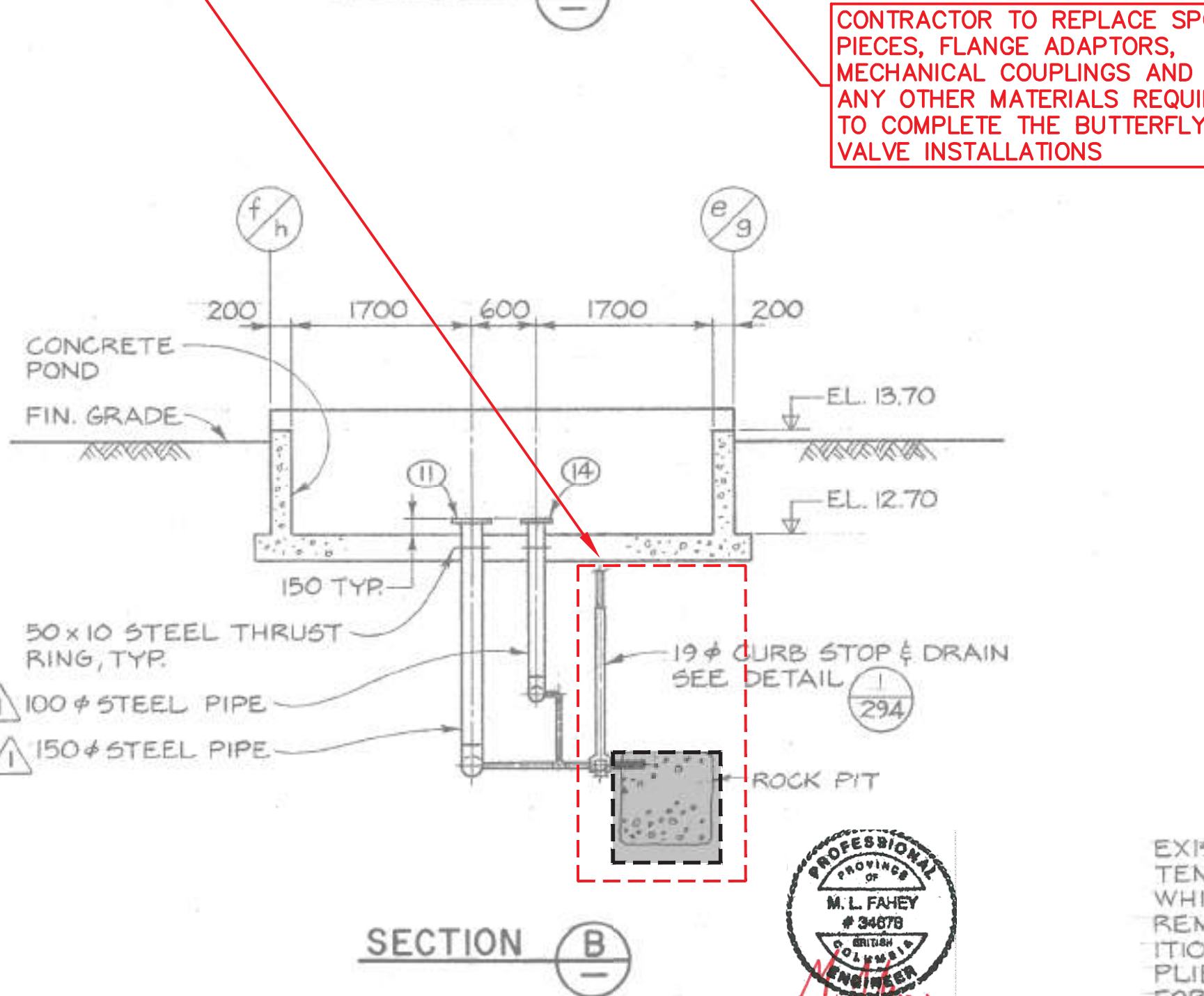
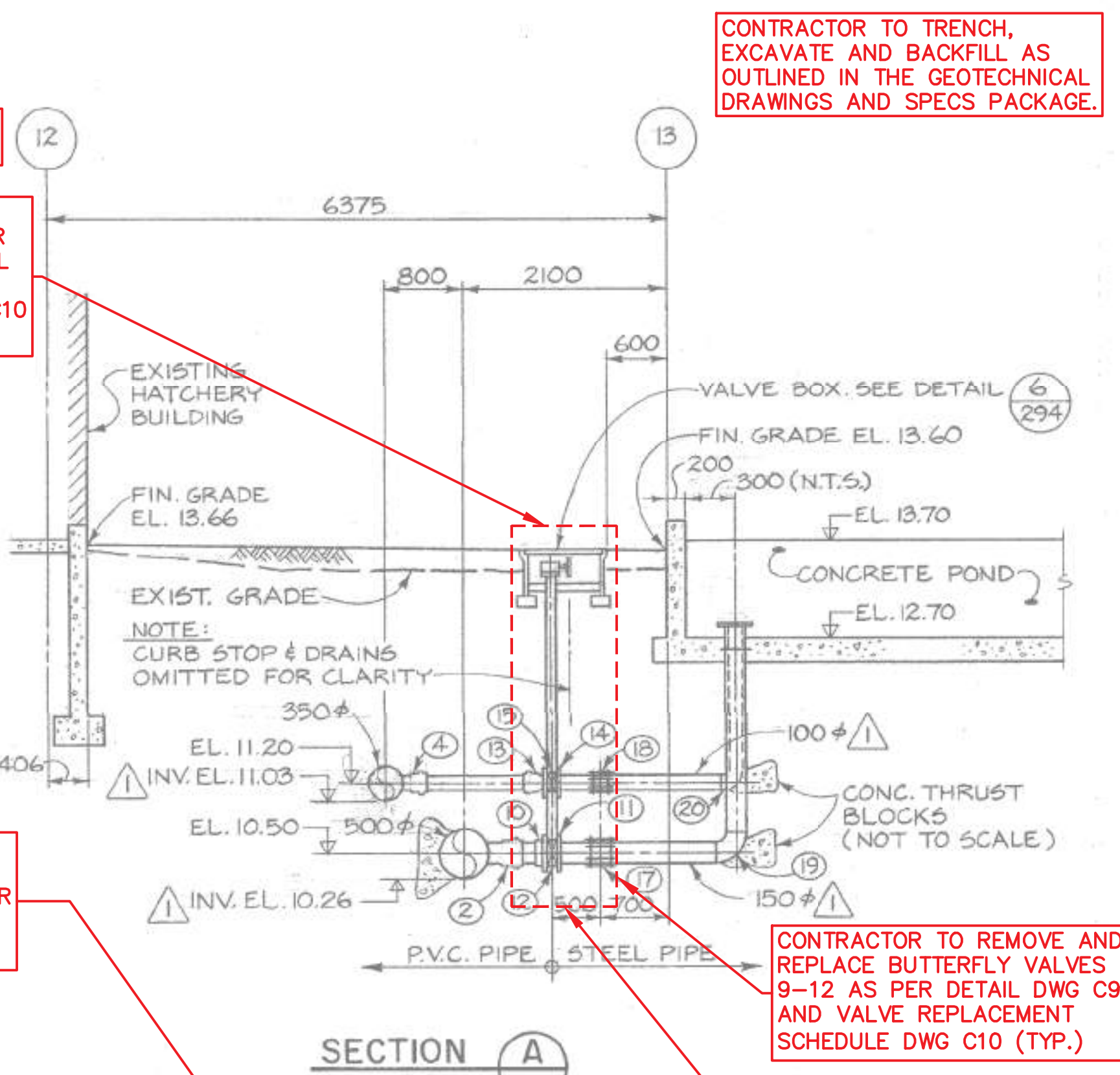
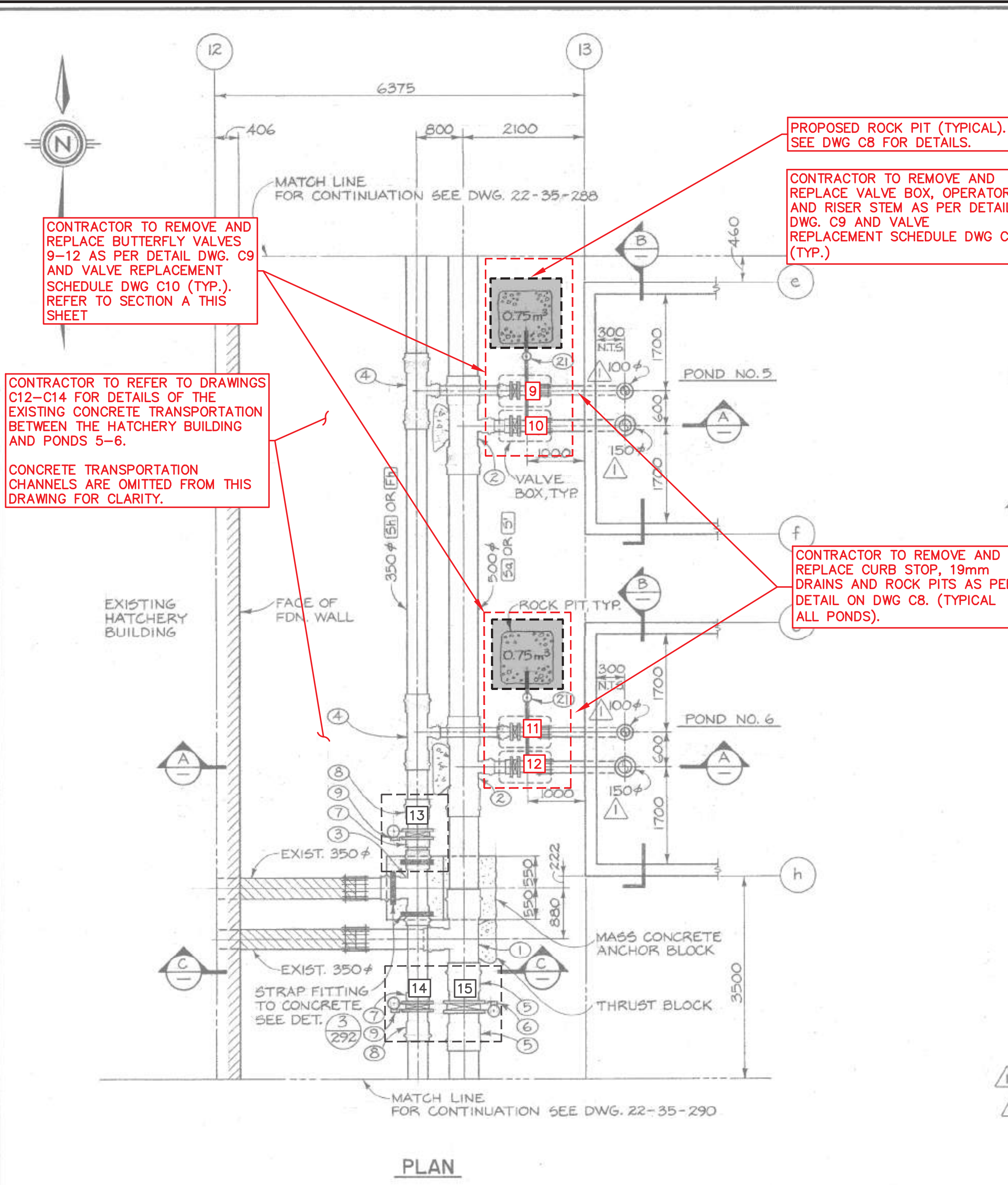
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DATE	2018-NOV-01
DRAWING NUMBER	C2
REVISION	5

Plotted by: Neil Courtney Plot Date: 18-Jan-20 Path: \\msm211\projects\2018\2018-NOV-01\2018-NOV-01.dwg Size: 444KB



KEY TO NUMBERED PARTS

NO.	SIZE	DESCRIPTION
1	500 x 500 x 350	TEE
2	500 x 500 x 150	TEE
3	350 x 350 x 350	TEE
4	350 x 350 x 100	TEE
5	500	BELL X FLANGE ADAPTER
6	500	BUTTERFLY VALVE C/W BURIED SERVICE GEAR OPERATOR & VALVE OPERATOR EXTENSION
7	350	VANSTONE FLANGE
8	350	BELL X FLANGE ADAPTER
9	350	BUTTERFLY VALVE C/W BURIED SERVICE GEAR OPERATOR & VALVE OPERATOR EXTENSION
10	150	VANSTONE FLANGE
11	150	WELDED STEEL FLANGE
12	150	BUTTERFLY VALVE C/W TORQUE TUBE EXTENSION & HANDWHEEL GEARED OPERATOR
13	100	BELL X FLANGE ADAPTER
14	100	WELDED STEEL FLANGE
15	100	BUTTERFLY VALVE C/W TORQUE TUBE EXTENSION & HANDWHEEL GEARED OPERATOR
16	350	MECHANICAL COUPLING
17	150	MECHANICAL COUPLING
18	100	MECHANICAL COUPLING
19	150	WELDED STEEL 90° ELBOW
20	100	WELDED STEEL 90° ELBOW
21	19	CURB STOP



1. BACKGROUND UNDERLAY FOR THIS DRAWING TAKEN FROM DFO RECORD DRAWING 22-35-289 (MAY, 1982 - CONTRACT NO. 6)

NOTES

NO.	DATE	REVISIONS
5	2020-JUN-18	ISSUED FOR TENDER - FALL 2020 CONSTRUCTION
4	2020-FEB-25	RE-ISSUED FOR TENDER
3	2019-FEB-21	ISSUED FOR TENDER
2	2019-JAN-30	ISSUED FOR FINAL DFO REVIEW
1	2018-NOV-30	ISSUED FOR DFO REVIEW

DESIGNED
NEC
DRAWN
NEC
CHECKED
MF
RECOMMENDED
APPROVED
APPROVED

**FISHERIES AND OCEANS CANADA**  
REAL PROPERTY AND TECHNICAL SUPPORT

**KITIMAT RIVER HATCHERY**  
**VALVE REPLACEMENT**  
**PONDS 5, 6**  
**DFO REF DWG: 22-35-289**

SCALE  
**1:50**

DATE  
**2018-NOV-01**

DRAWING NUMBER  
**C3**

REVISION  
5

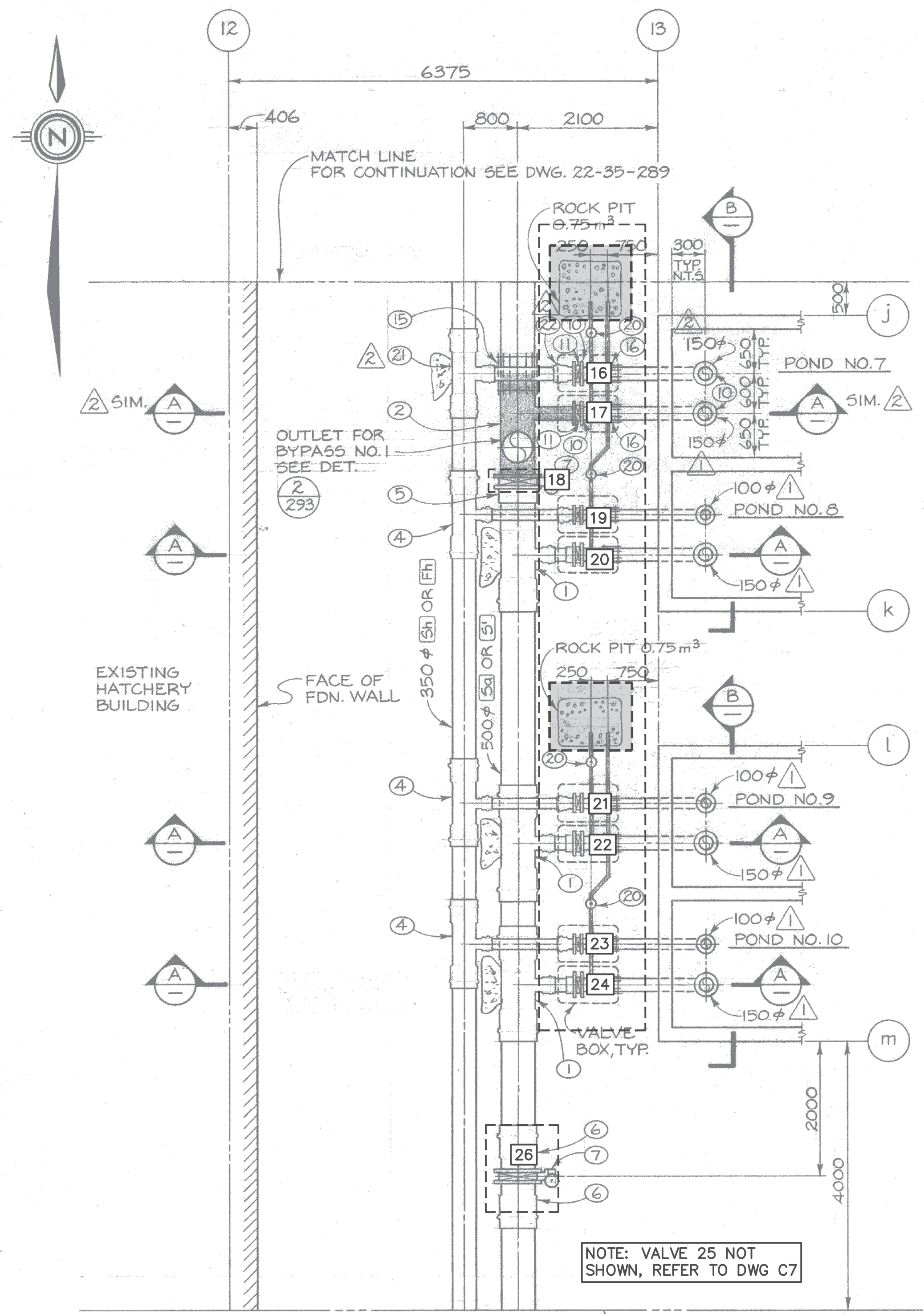
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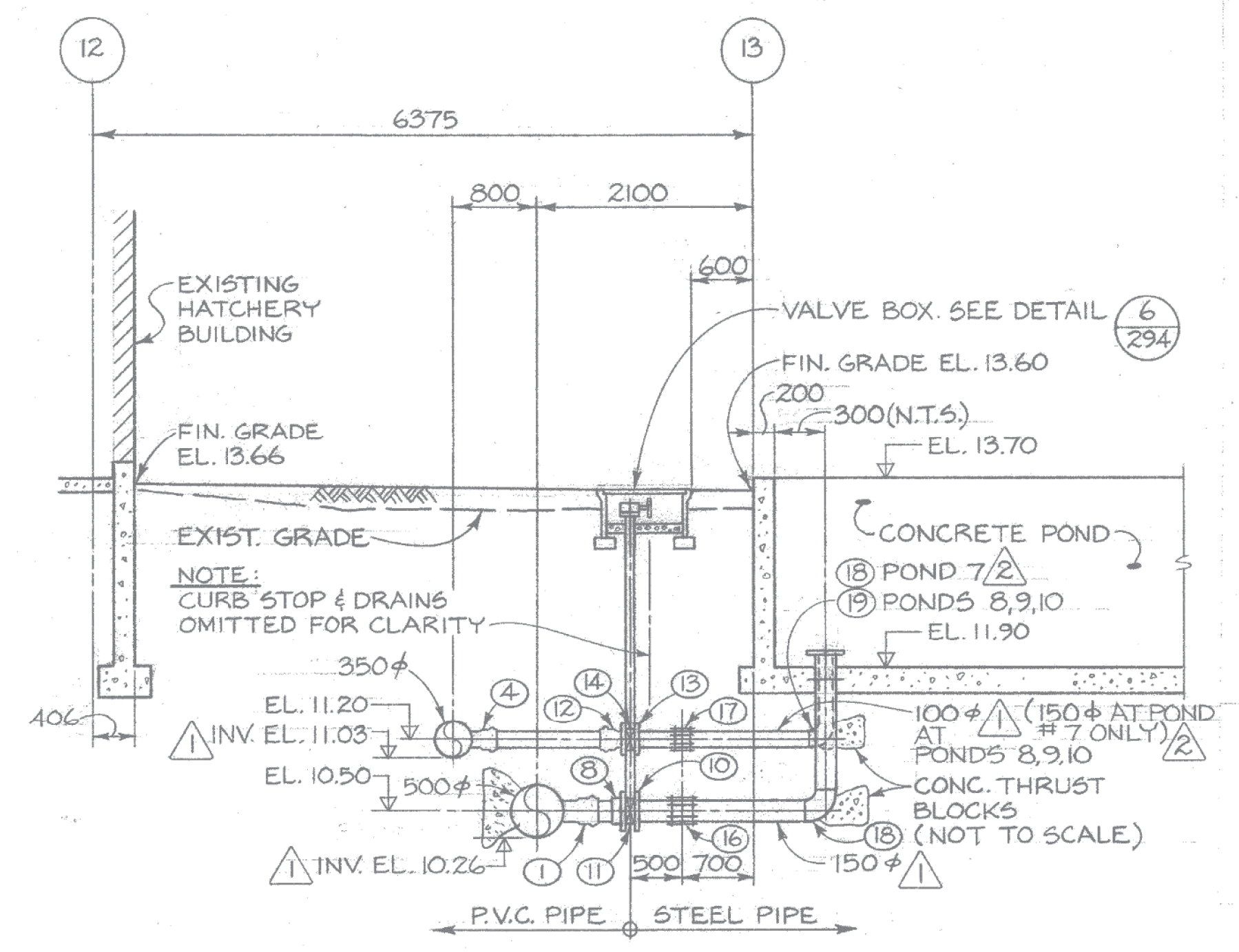
DRAWING INCLUDED FOR REFERENCE ONLY – NOT IN CONTRACT

KEY TO NUMBERED PARTS

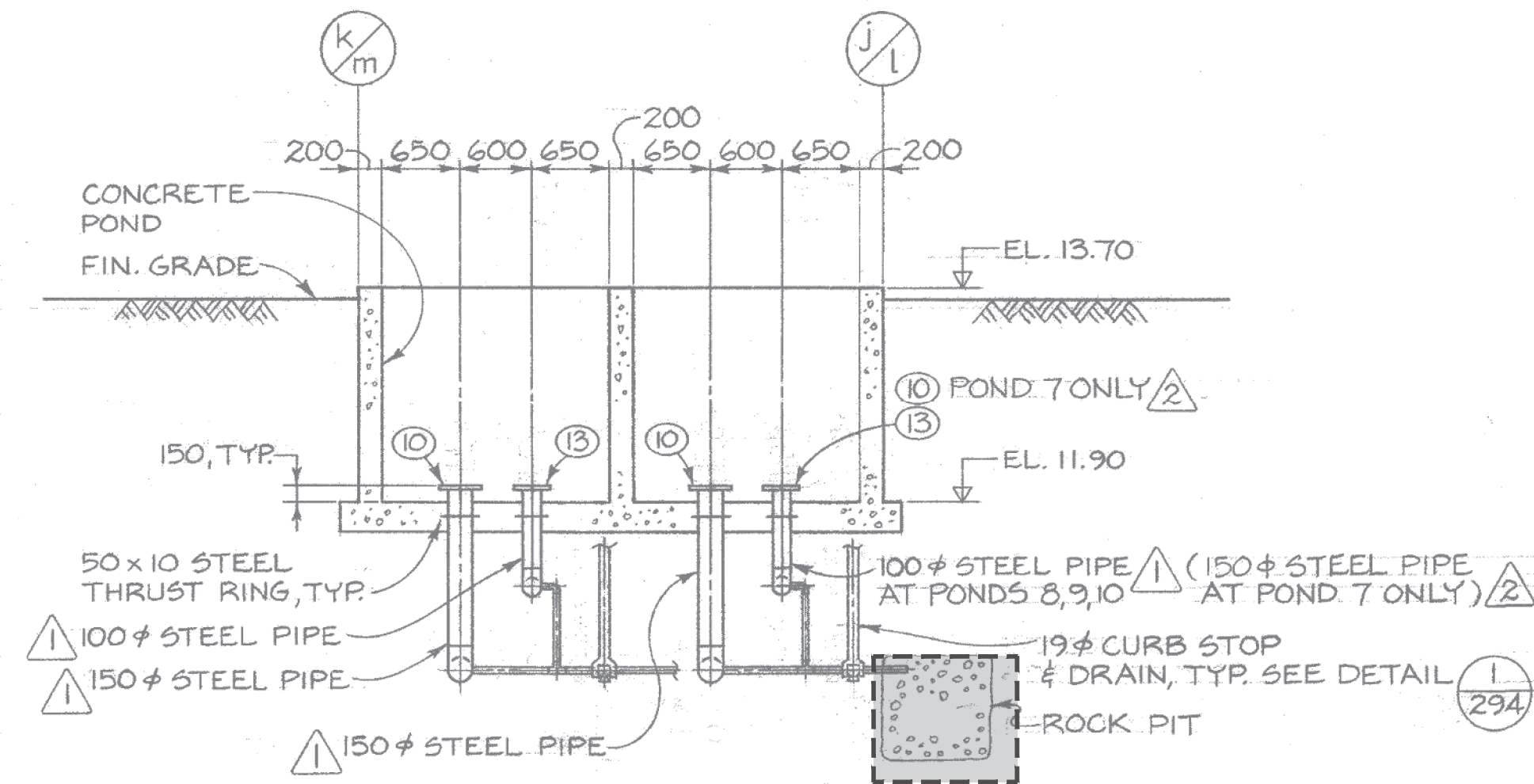
NO.	SIZE	DESCRIPTION
1	500 x 500 x 150	TEE
2	500 x 500 x 450 x 150	STEEL SPECIAL FITTING
3	350 x 350 x 200	TEE
4	350 x 350 x 100	TEE
5	500	FLANGE
6	500	BELL X FLANGE ADAPTER
7	500	BUTTERFLY VALVE C/M BURIED SERVICE GEAR OPERATOR & VALVE OPERATOR EXTENSION
8	150	VANSTONE FLANGE
9	200	BELL X FLANGE ADAPTER
10	150	WELDED STEEL FLANGE
11	150	BUTTERFLY VALVE C/M TORQUE TUBE EXTENSION & HANDWHEEL GEARED OPERATOR
12	100	BELL X FLANGE ADAPTER
13	100	WELDED STEEL FLANGE
14	100	BUTTERFLY VALVE C/M TORQUE TUBE EXTENSION & HANDWHEEL GEARED OPERATOR
15	500	MECHANICAL COUPLING
16	150	MECHANICAL COUPLING
17	100	MECHANICAL COUPLING
18	150	WELDED STEEL 90° ELBOW
19	100	WELDED STEEL 90° ELBOW
20		CURB STOP
21	350 x 350 x 150	TEE
22	150	BELL X FLANGE ADAPTER



PLAN



SECTION A



SECTION B



1. BACKGROUND UNDERLAY FOR THIS DRAWING TAKEN FROM DFO RECORD DRAWING 22-35-290 (MAY, 1982 - CONTRACT NO. 6)

NOTES

NO.	DATE	REVISIONS
5	2020-JUN-18	ISSUED FOR TENDER - FALL 2020 CONSTRUCTION
4	2020-FEB-25	RE-ISSUED FOR TENDER
3	2019-FEB-21	ISSUED FOR TENDER
2	2019-JAN-30	ISSUED FOR FINAL DFO REVIEW
1	2018-NOV-30	ISSUED FOR DFO REVIEW

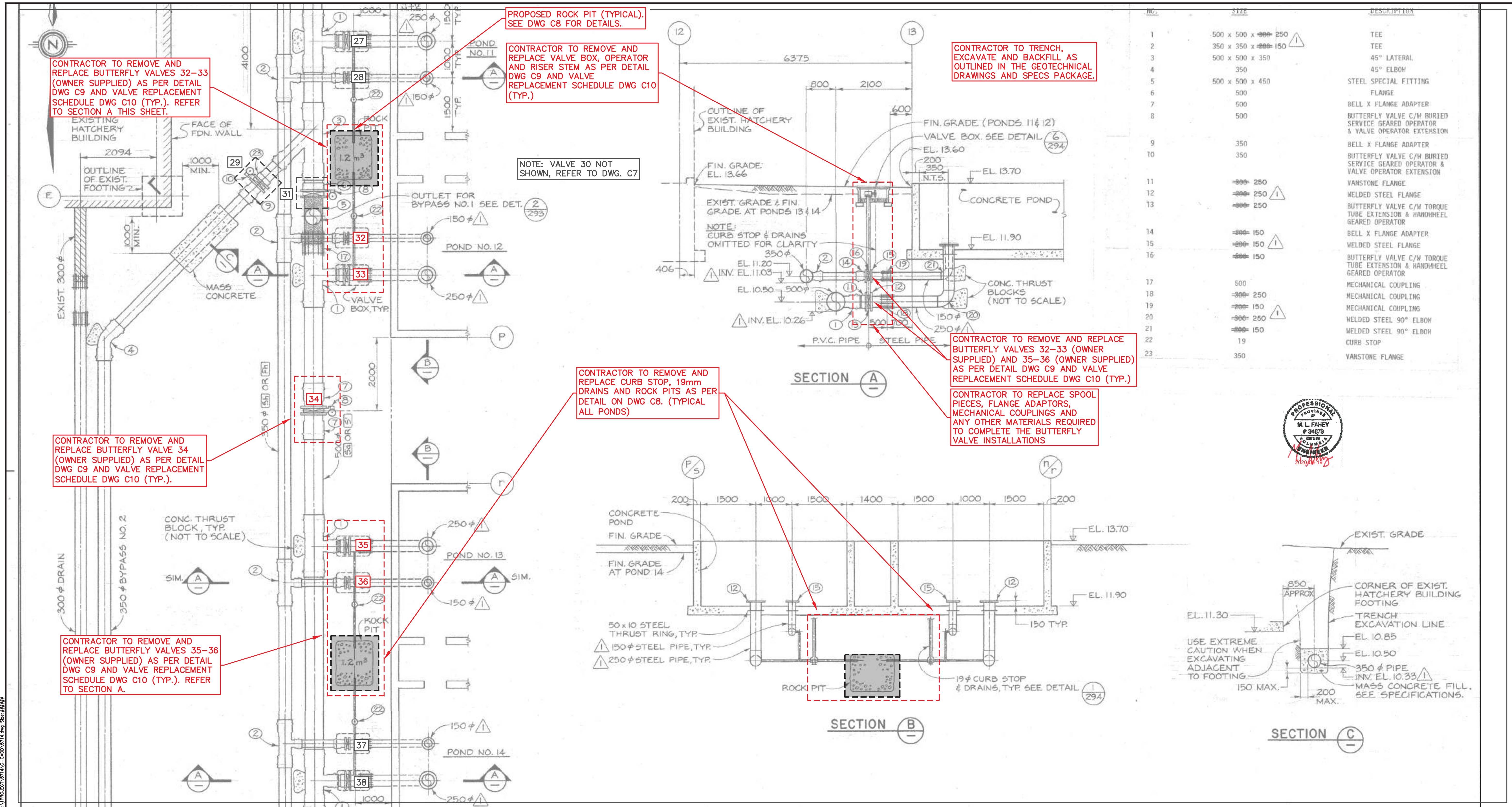
**FISHERIES AND OCEANS CANADA**  
REAL PROPERTY AND TECHNICAL SUPPORT

**KITIMAT RIVER HATCHERY**  
**VALVE REPLACEMENT**  
**PONDS 7, 8, 9, 10**  
**DFO REF DWG: 22-35-290**

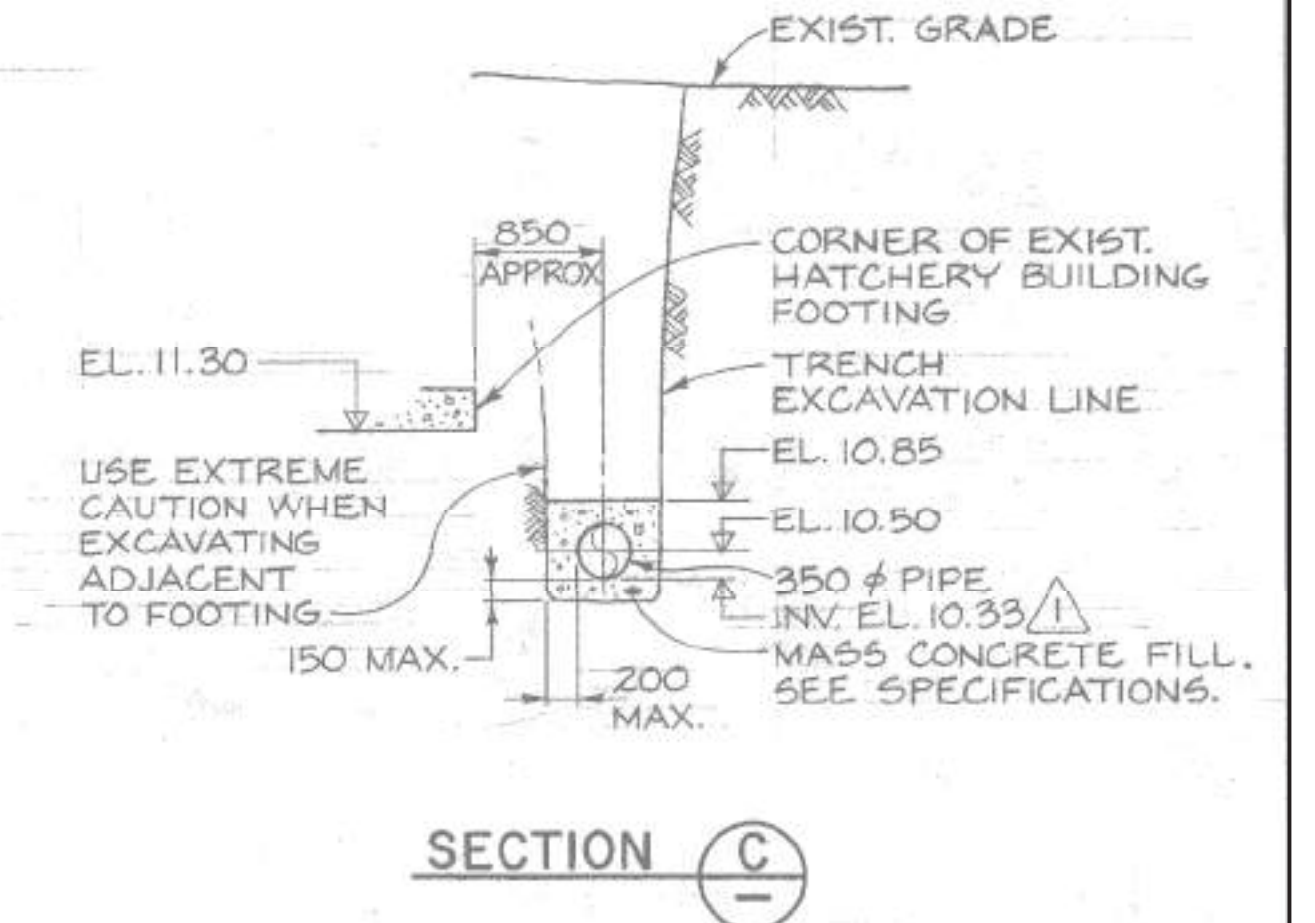
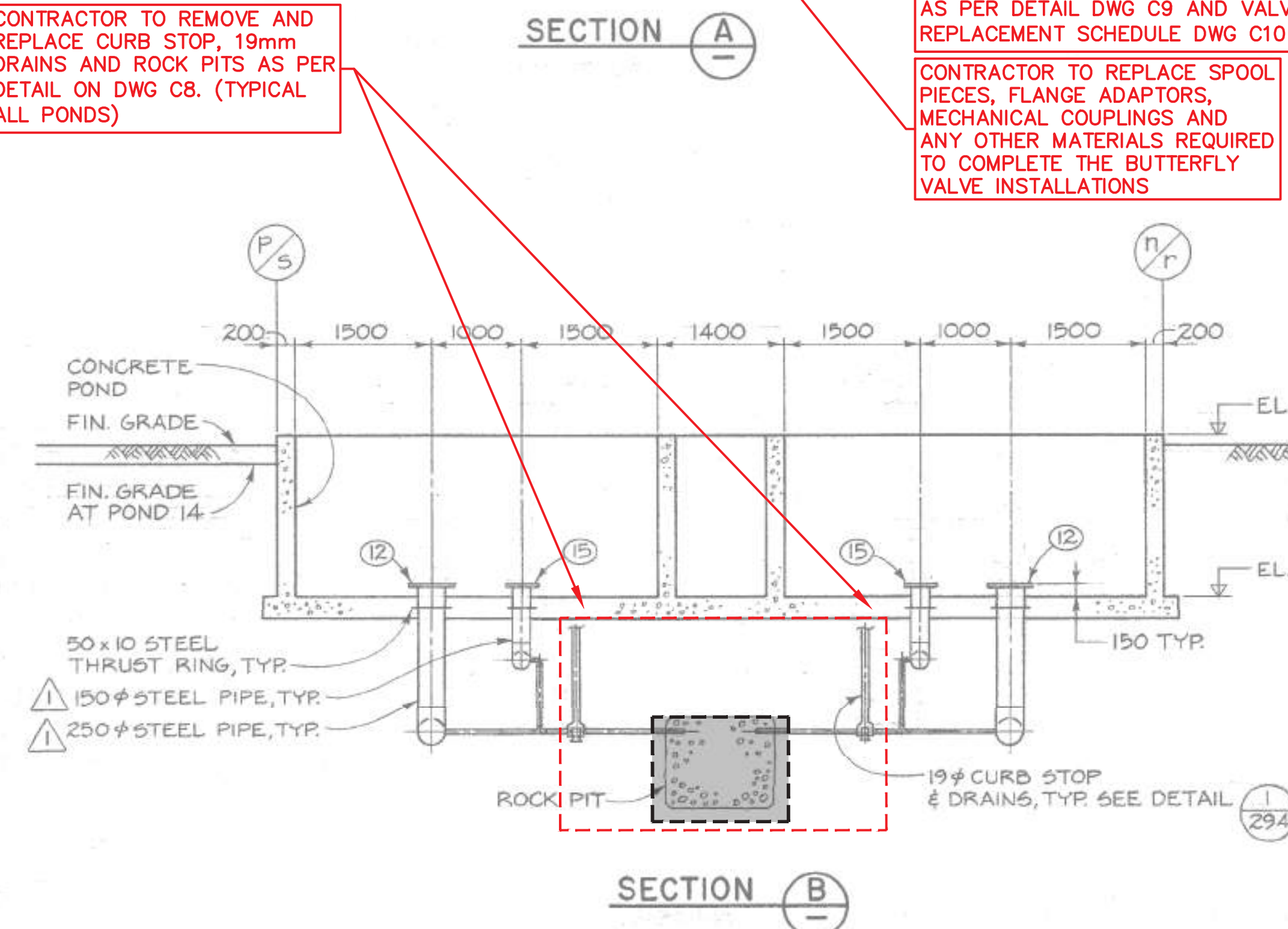
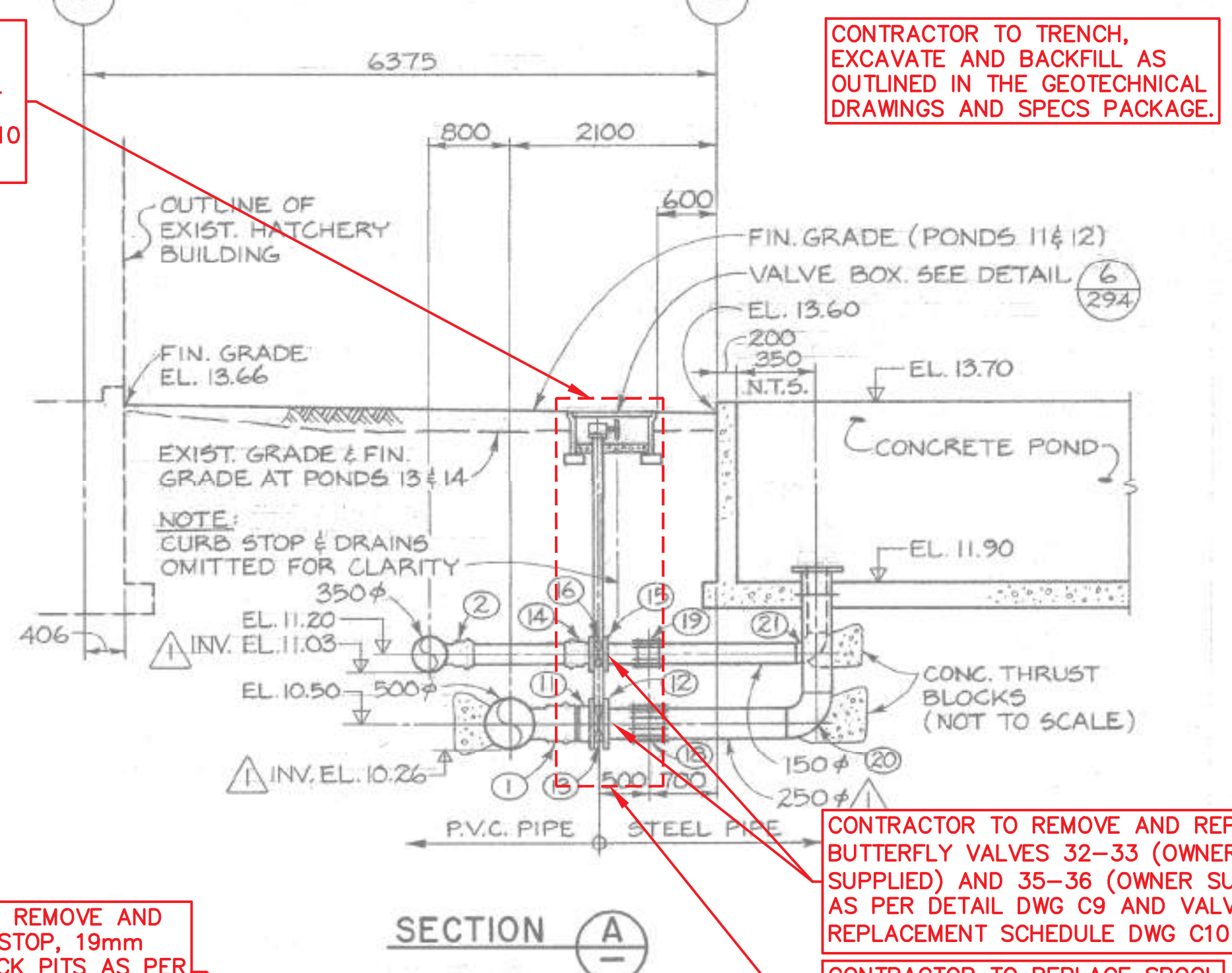
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DATE <b>2018-NOV-01</b>
DRAWING NUMBER <b>C4</b>
REVISION 5

Plotted by: Neil Courtney Plot Date: 18-Jan-20 Path: \\msm\p01\proj\22-35-290\22-35-290.dwg Size: 4444





NO.	SIZE	DESCRIPTION
1	500 x 500 x 250	TEE
2	350 x 350 x 150	TEE
3	500 x 500 x 350	45° LATERAL
4	350	45° ELBOH
5	500 x 500 x 450	STEEL SPECIAL FITTING
6	500	FLANGE
7	500	BELL X FLANGE ADAPTER
8	500	BUTTERFLY VALVE C/W BURIED SERVICE GEARED OPERATOR & VALVE OPERATOR EXTENSION
9	350	BELL X FLANGE ADAPTER
10	350	BUTTERFLY VALVE C/W BURIED SERVICE GEARED OPERATOR & VALVE OPERATOR EXTENSION
11	-200- 250	VANSTONE FLANGE
12	-200- 250	WELDED STEEL FLANGE
13	-200- 250	BUTTERFLY VALVE C/W TORQUE TUBE EXTENSION & HANDWHEEL GEARED OPERATOR
14	-200- 150	BELL X FLANGE ADAPTER
15	-200- 150	WELDED STEEL FLANGE
16	-200- 150	BUTTERFLY VALVE C/W TORQUE TUBE EXTENSION & HANDWHEEL GEARED OPERATOR
17	500	MECHANICAL COUPLING
18	-300- 250	MECHANICAL COUPLING
19	-200- 150	MECHANICAL COUPLING
20	-200- 250	WELDED STEEL 90° ELBOH
21	-200- 150	WELDED STEEL 90° ELBOH
22	19	CURB STOP
23	350	VANSTONE FLANGE



1. BACKGROUND UNDERLAY FOR THIS DRAWING TAKEN FROM DFO RECORD DRAWING 22-35-291 (MAY, 1982 - CONTRACT NO. 6)

NOTES

NO.	DATE	REVISIONS
5	2020-JUN-18	ISSUED FOR TENDER - FALL 2020 CONSTRUCTION
4	2020-FEB-25	RE-ISSUED FOR TENDER
3	2019-FEB-21	ISSUED FOR TENDER
2	2019-JAN-30	ISSUED FOR FINAL DFO REVIEW
1	2018-NOV-30	ISSUED FOR DFO REVIEW

**FISHERIES AND OCEANS CANADA**  
REAL PROPERTY AND TECHNICAL SUPPORT

**KITIMAT RIVER HATCHERY  
VALVE REPLACEMENT  
PONDS 11, 12, 13, 14  
DFO REF DWG: 22-35-291**

DESIGNED	SCALE
NEC	1:50
DRAWN	DATE
NEC	2018-NOV-01
CHECKED	DRAWING NUMBER
MF	<b>C5</b>
RECOMMENDED	REVISION
APPROVED	5
APPROVED	

Plotted by: Neil Courtney Plot Date: 18-Jan-20 Path: \\msm201\Projects\2018\2018-35-291\CADD\2018.dwg Size: 4444

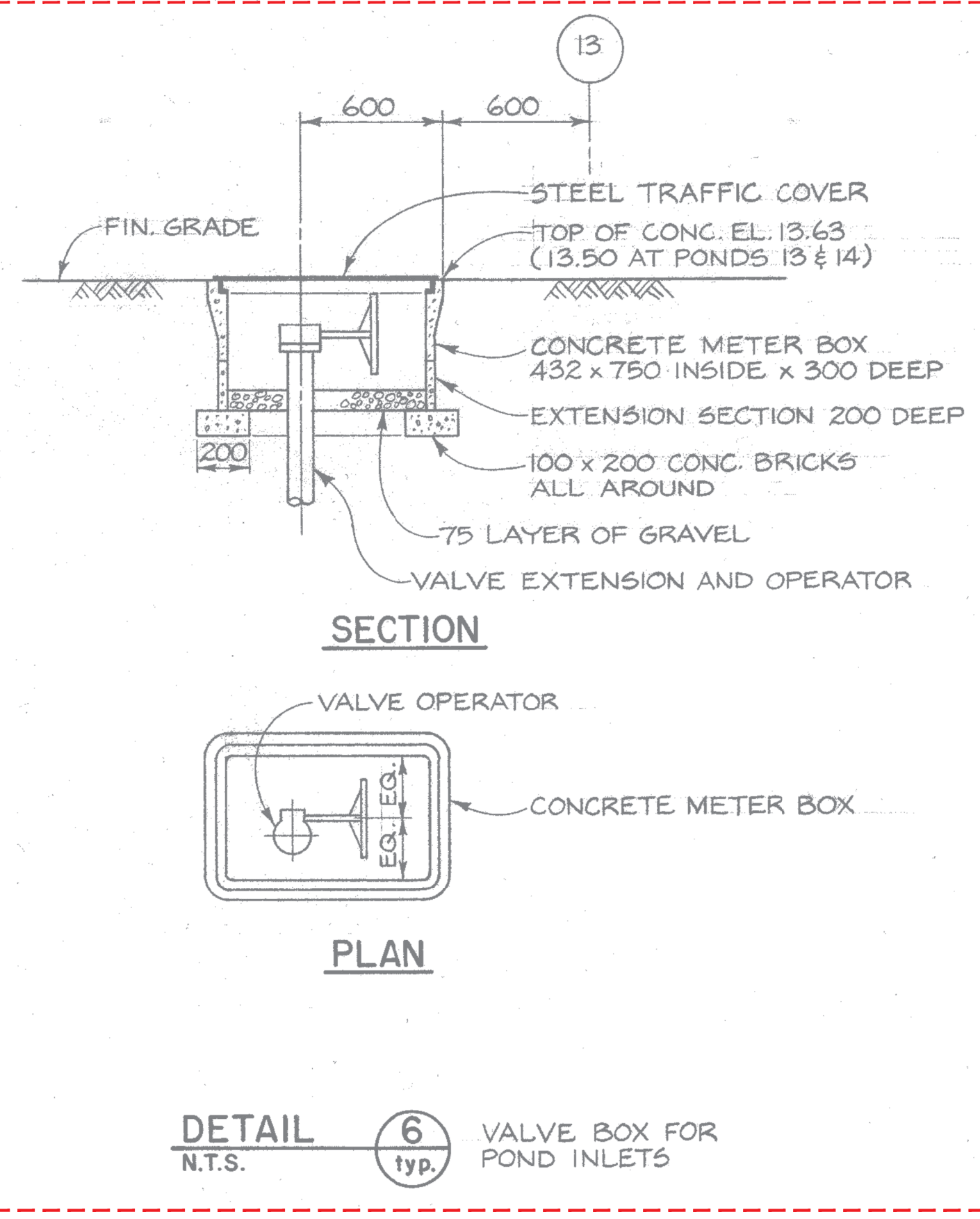
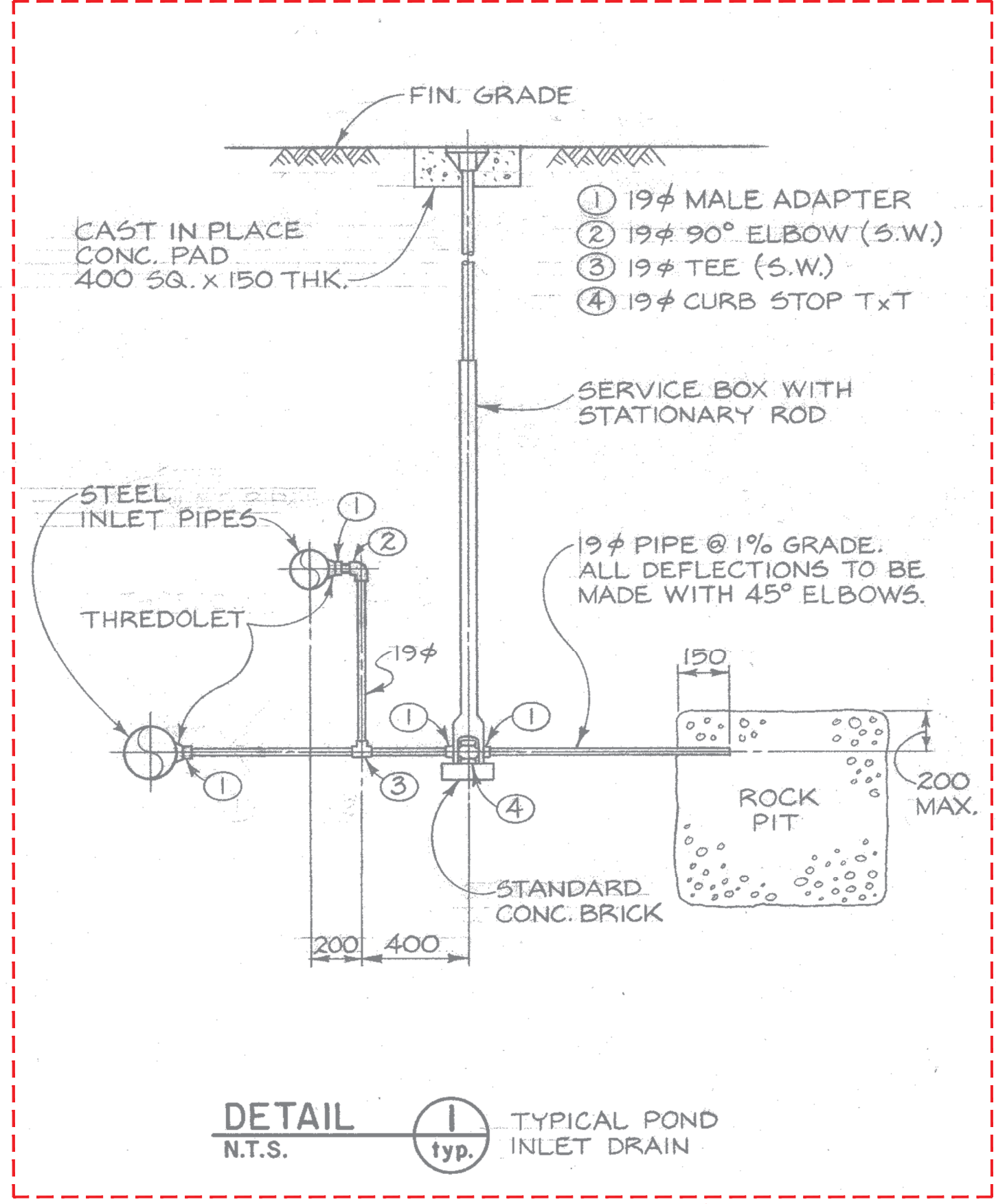








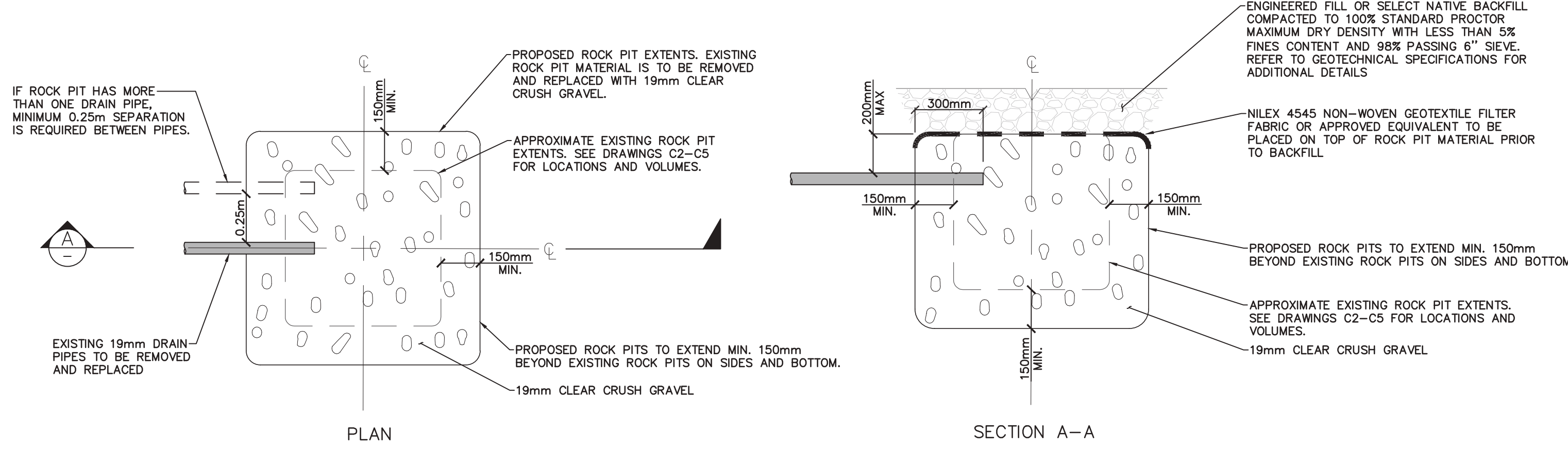




CONTRACTOR TO REMOVE AND REPLACE CURB STOP, SERVICE BOX WITH STATIONARY ROD, 19mm DRAIN PIPE, ROCK PIT AND CONCRETE PAD. STATIONARY ROD TO BE 14mm CAST IRON. ROCK PITS TO BE REPLACED AS PER DETAILS BELOW.

CONTRACTOR TO REMOVE VALVE BOXES, RISERS AND ACTUATORS FOR POND INLET VALVES AND REPLACE AS PER THE DETAILS ON DRAWING C9 AND VALVE REPLACEMENT SCHEDULE C10.

NOTE: THE EXISTING POND INLET VALVES HAVE BEEN MODIFIED BEYOND WHAT IS SHOWN ON THESE DRAWINGS. THE IMAGE ABOVE INDICATES THE EXISTING FIELD CONDITIONS AND THE EXTENT OF EQUIPMENT THAT IS TO BE REMOVED AS PART OF THESE WORKS.



**ROCK PIT REPLACEMENT**

- NOTES:
- ROCK PITS ARE TO BE FIELD FIT AS PER INSTRUCTIONS FROM DFO REPRESENTATIVE. FINAL DIMENSIONS TO BE DETERMINED BASED ON SEPARATION FROM EXISTING WATER LINES AND CONCRETE TANKS.
  - 19mm CLEAR CRUSH GRAVEL TO BE COMPACTED USING 250lb TO 500lb PLATE COMPACTOR.



Plotted by: Neil Courtney Plot Date: 18-Jan-20 Path: \\msmstf1\projects\3714\3714-C-000\3714.dwg Size: 4444

<b>FISHERIES AND OCEANS CANADA</b> REAL PROPERTY AND TECHNICAL SUPPORT	
<b>KITIMAT RIVER HATCHERY</b> <b>VALVE REPLACEMENT</b> <b>REFERENCE DETAILS</b> <b>DFO REF DWG: 22-35-294</b>	SCALE <b>NTS</b> DATE <b>2018-NOV-01</b> DRAWING NUMBER <b>C8</b> REVISION   5

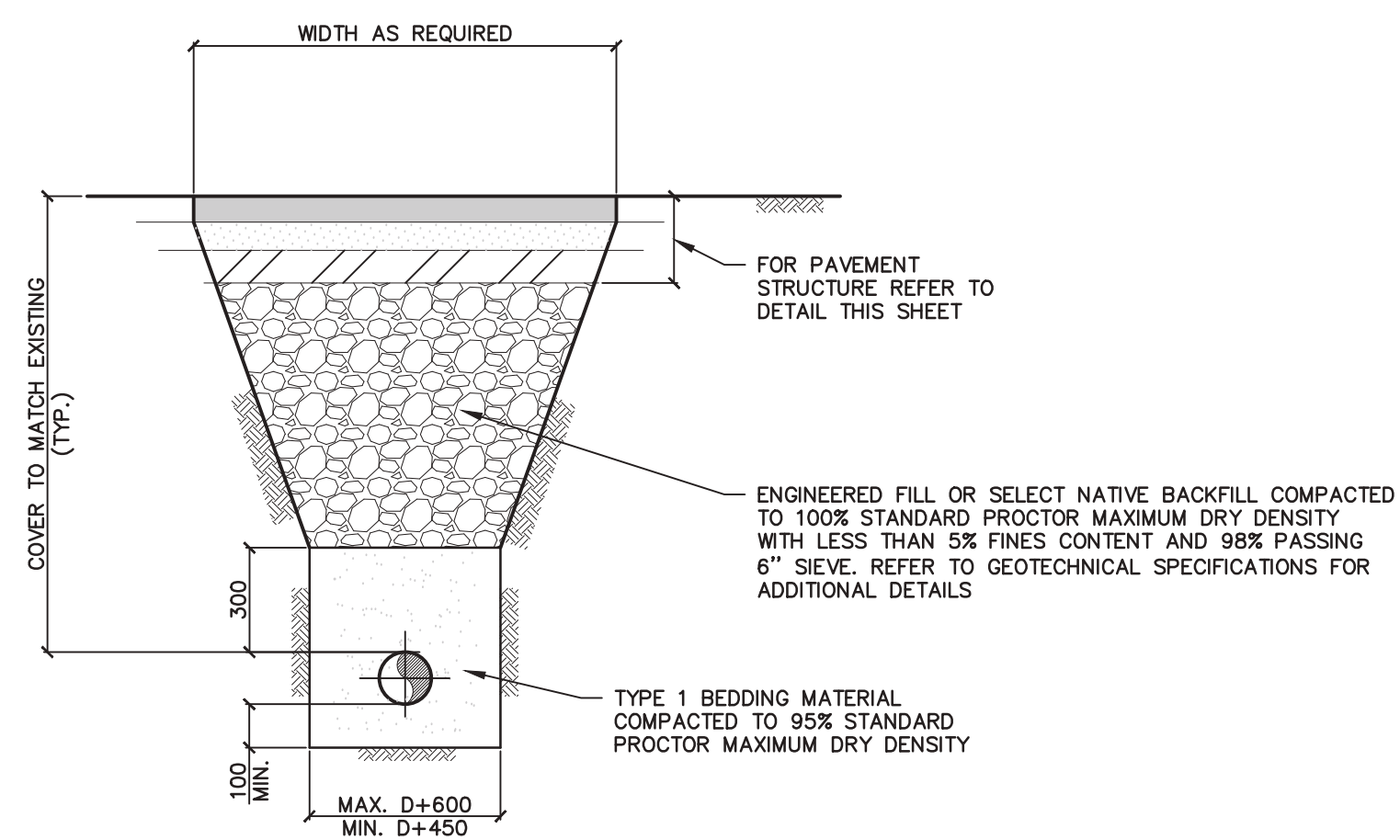
NO.	DATE	REVISIONS
5	2020-JUN-18	ISSUED FOR TENDER - FALL 2020 CONSTRUCTION
4	2020-FEB-25	RE-ISSUED FOR TENDER
3	2019-FEB-21	ISSUED FOR TENDER
2	2019-JAN-30	ISSUED FOR FINAL DFO REVIEW
1	2018-NOV-30	ISSUED FOR DFO REVIEW

DESIGNED	DRAWN	CHECKED	RECOMMENDED	APPROVED	APPROVED

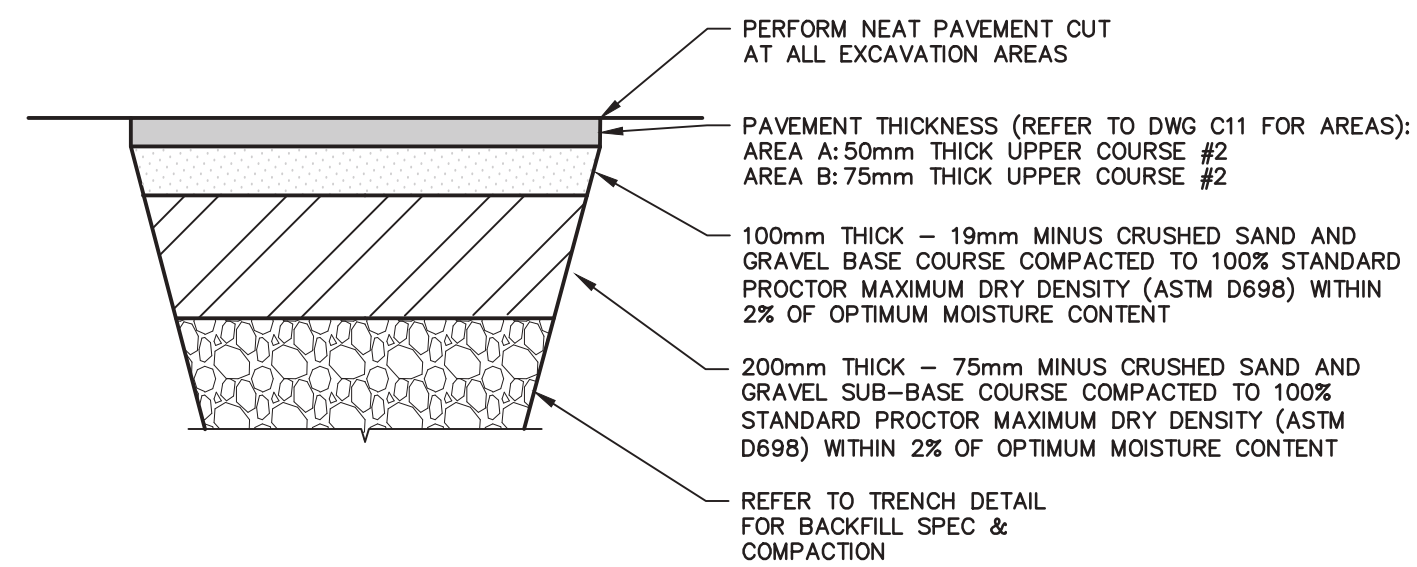
1. BACKGROUND UNDERLAY FOR THIS DRAWING TAKEN FROM DFO RECORD DRAWING 22-35-294 (MAY, 1982 - CONTRACT NO. 6)

NOTES



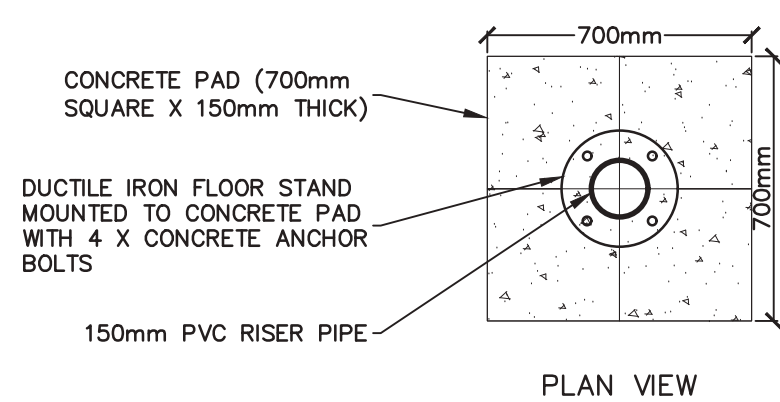


**TYPICAL TRENCH DETAILS**  
N.T.S.

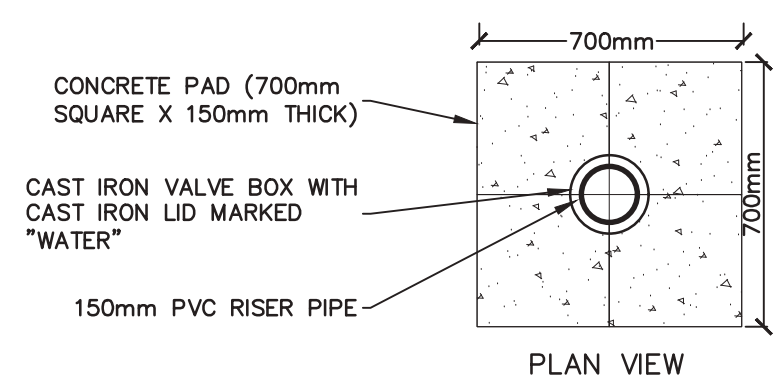


**PAVEMENT RESTORATION DETAILS**  
N.T.S.

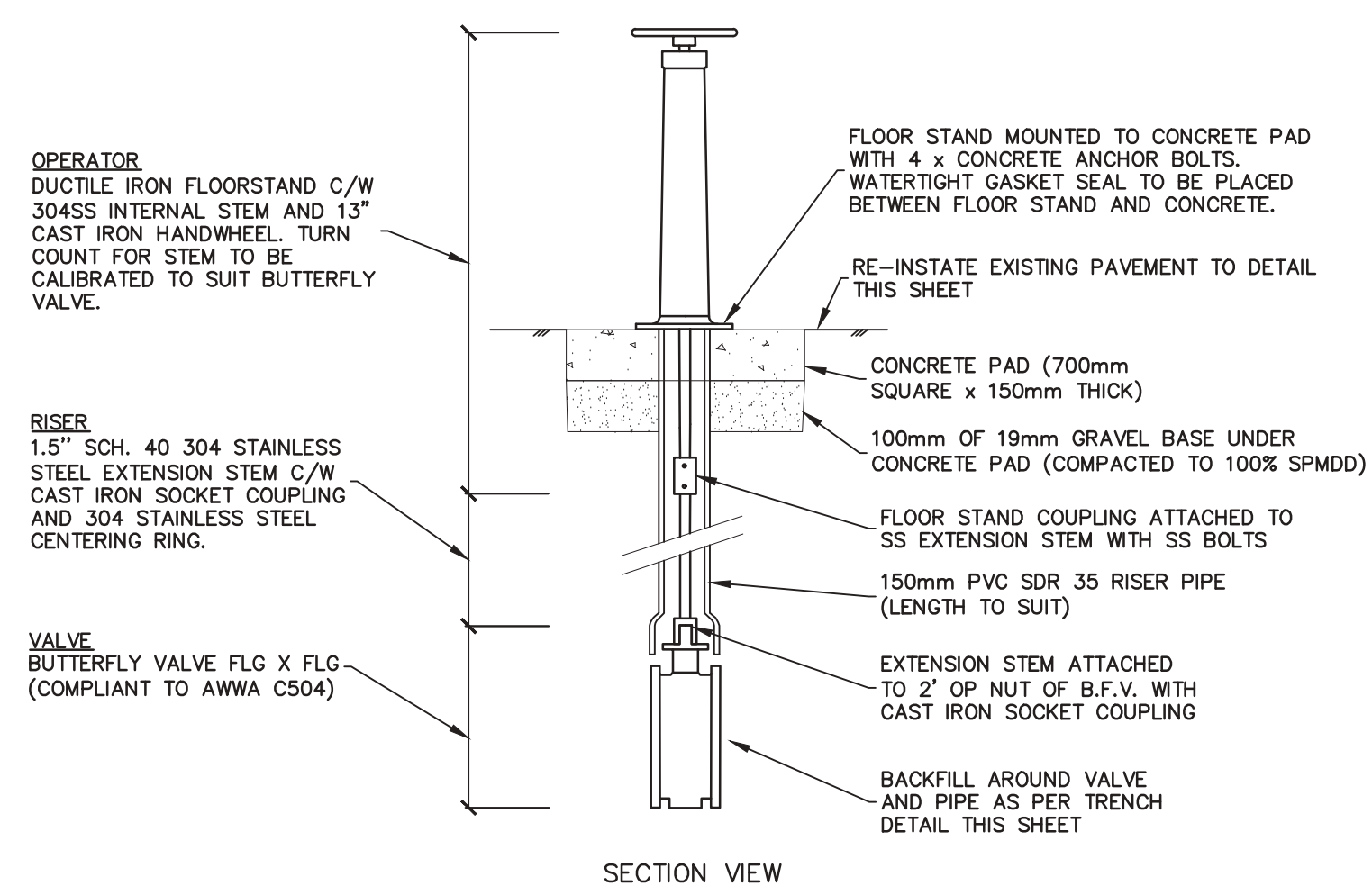
- NOTES:**
1. ALL BACKFILL SHALL BE WELL COMPACTED.
  2. ALL TRENCHES SHALL BE EXCAVATED IN ACCORDANCE WITH W.C.B. REGULATIONS.



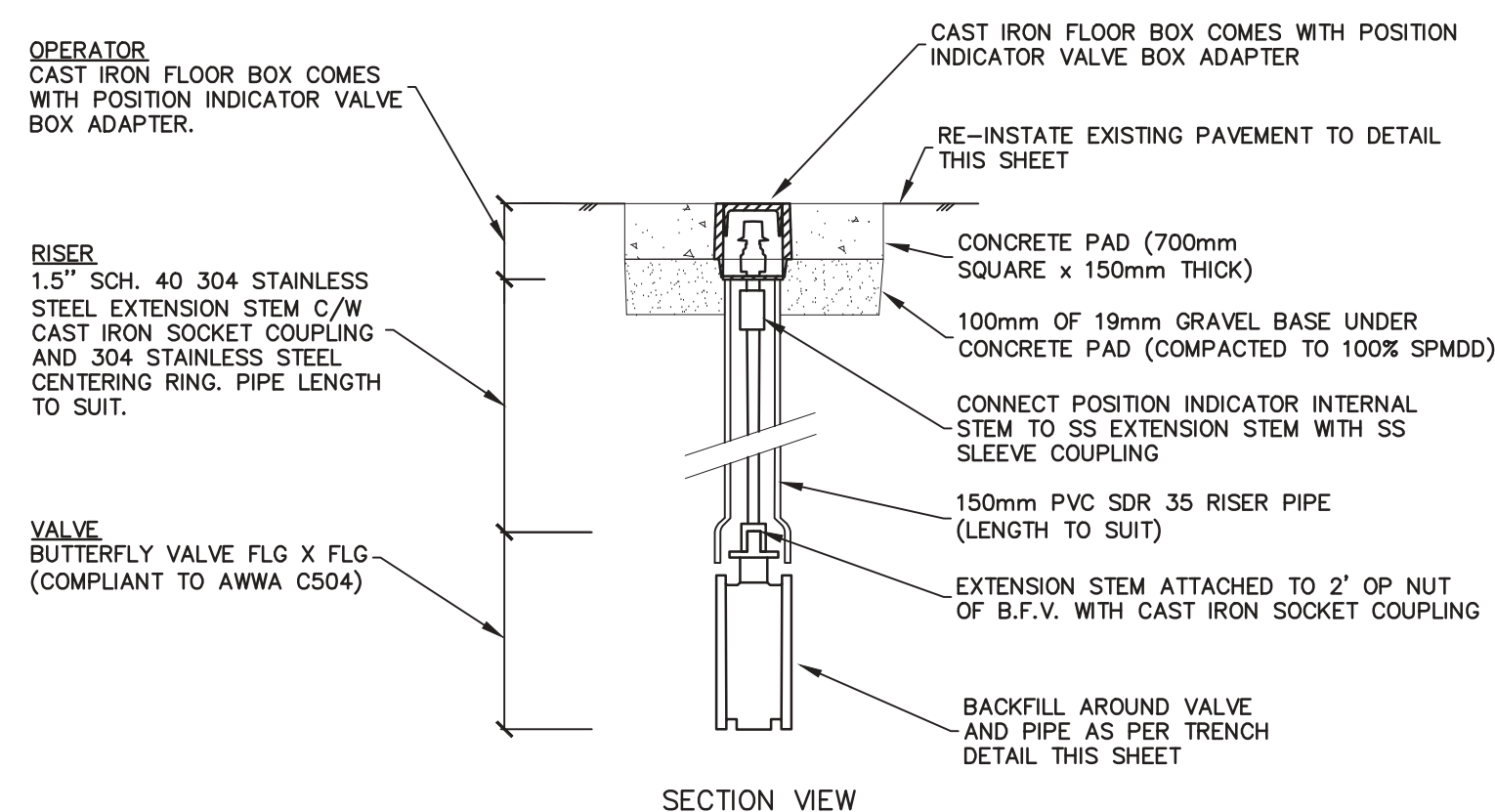
PLAN VIEW



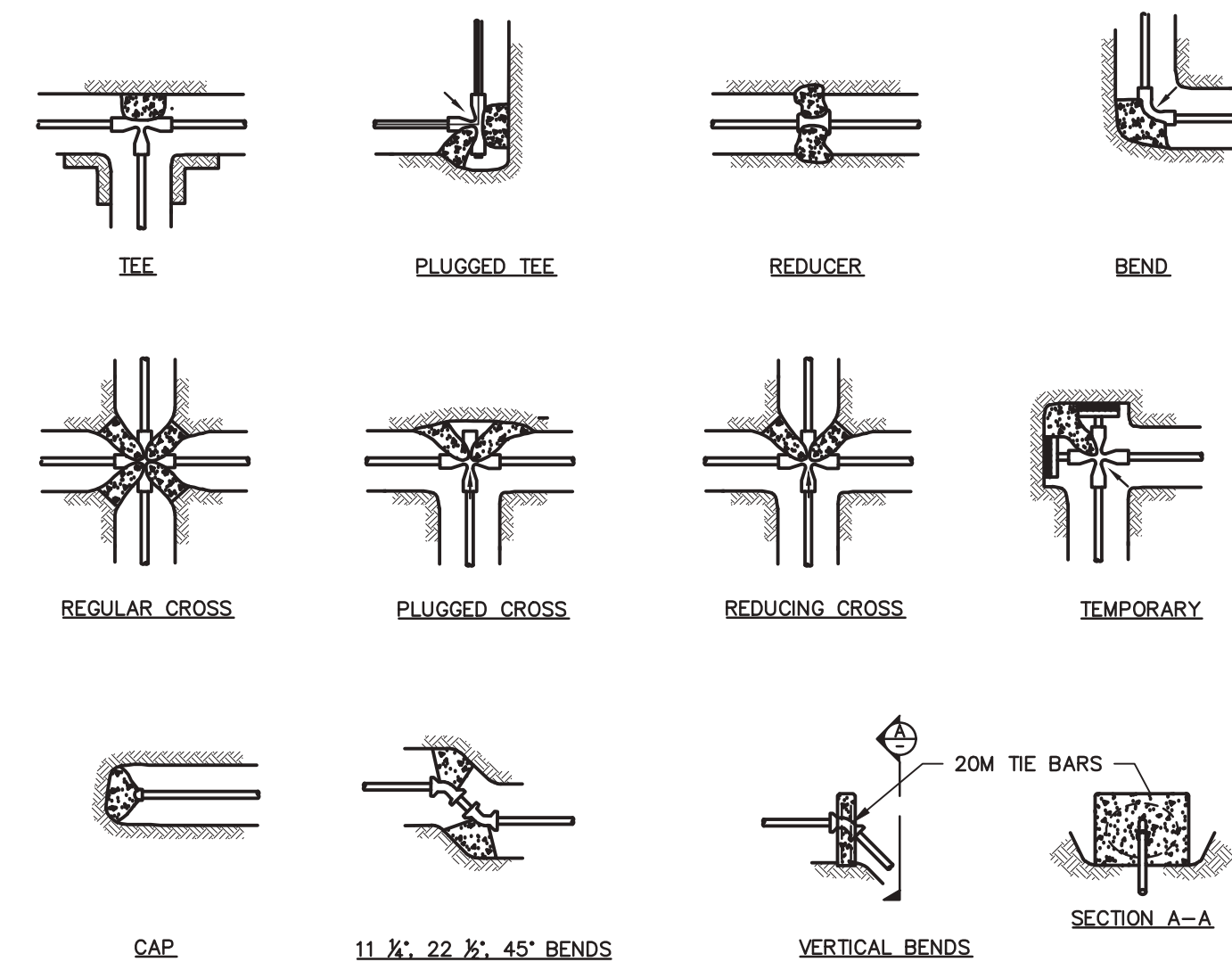
PLAN VIEW



**ABOVE GROUND OPERATION WITH FLOORSTAND (TYPE 2)**  
N.T.S.



**IN GROUND OPERATION WITH FLOOR BOX (TYPE 1)**  
N.T.S.



**THRUST BLOCK DETAILS**

THRUST (kg) 690 kPa WATER PRESSURE  
TABLE No.1

SIZE OF PIPE	TEE	90°	BENDS 45°	22 1/2°
100	840	1184	644	327
150	1724	2436	1320	667
200	2985	4218	2286	1157
250	4876	6895	3738	1892
300	6945	9816	5316	2694

SAFE BEARING LOAD OF SOIL  
TABLE No.2

SOIL TYPE	LOAD (kg/m <sup>2</sup> )
MUCK PEAT ETC.	0
SOFT CLAY	2450
SAND	4900
SAND & GRAVEL	7350
SAND & GRAVEL WITH CLAY	9800
SHALE	24,500

IF TEST PRESSURE IS 1034 kPa THEN ALL FIG. IN TABLE No.1 ARE MULTIPLIED BY 1.5.  
IF TEST PRESSURE IS 1379 kPa THEN ALL FIG. IN TABLE No.1 ARE MULTIPLIED BY 2.0.

- NOTE:**
1. ALL THRUST BLOCKS TO EXTEND TO SOLID BEARING.
  2. ALL LOCATIONS AND SIZES OF THRUST BLOCKS TO BE TO THE APPROVAL OF THE ENGINEER.
  3. PLACE 6mm POLYETHYLENE ON INTERFACE BETWEEN CONCRETE & FITTING.
  4. PLACE 20 MPa CONCRETE AGAINST UNDISTURBED GROUND; KEEP CONCRETE CLEAR OF FITTING JOINTS.
  5. CONCRETE TO BE IN ACCORDANCE WITH CURRENT C.S.A. A-23.



Plotted by: Neil Courtney Plot Date: 18-Jan-20 Path: \\msmst1\projects\314\c-add\314.dwg Size: 4444

**FISHERIES AND OCEANS CANADA**  
REAL PROPERTY AND TECHNICAL SUPPORT

**KITIMAT RIVER HATCHERY**  
**VALVE REPLACEMENT**  
**DETAIL DRAWING**

SCALE  
NTS

DATE  
2018-NOV-01

DRAWING NUMBER  
CO

REVISION | 5

NO.	DATE	REVISIONS
5	2020-JUN-18	ISSUED FOR TENDER - FALL 2020 CONSTRUCTION
4A	2020-APR-01	REVISED WORDING FOR ADDENDUM 1
4	2020-FEB-25	RE-ISSUED FOR TENDER
3	2019-FEB-21	ISSUED FOR TENDER
2	2019-JAN-30	ISSUED FOR FINAL DFO REVIEW
1	2018-NOV-30	ISSUED FOR DFO REVIEW

NOTES



Valve	Location	Pond #	Diameter (mm)	Diameter (inch)	Depth to Invert (m)	Connection 1	Connection 2	Work Required	Replacement Riser and Gear Operator Type (see DWG. C9)	Phase / Notes
1	Pond	1	100	4	3.4	Bell x Flange Adapter	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 1
2	Pond	1	75	3	2.6	Bell x Flange Adapter	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 1
3	Pond	2	100	4	3.4	Bell x Flange Adapter	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 1
4	Pond	2	75	3	2.6	Bell x Flange Adapter	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 1
5	Pond	3	75	3	2.6	Bell x Flange Adapter	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 1
6	Pond	3	100	4	3.4	Bell x Flange Adapter	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 1
7	Pond	4	75	3	2.6	Bell x Flange Adapter	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 1
8	Pond	4	100	4	3.4	Bell x Flange Adapter	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 1
9	Pond	5	100	4	2.6	Bell x Flange Adapter	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 1
10	Pond	5	150	6	3.4	Vanstone Flange	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 1
11	Pond	6	100	4	2.6	Bell x Flange Adapter	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 1
12	Pond	6	150	6	3.4	Vanstone Flange	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 1
13	Mainline		350	14	2.6	Bell x Flange Adapter	Vanstone Flange	Not in Contract. Future work.	1	
14	Mainline		350	14	2.6	Bell x Flange Adapter	Vanstone Flange	Not in Contract. Future work.	1	
15	Mainline		500	20	3.4	Bell x Flange Adapter	Bell x Flange Adapter	Not in Contract. Future work.	1	
16	Pond	7	150	6	2.6	Bell x Flange Adapter	Welded Steel Flange	Not in Contract. Future work.	2	
17	Pond	7	150	6	3.4	Bell x Flange Adapter	Welded Steel Flange	Not in Contract. Future work.	2	
18	Mainline		500	20	3.4	Flange	Flange	Not in Contract. Future work.	1	
19	Pond	8	100	4	2.6	Bell x Flange Adapter	Welded Steel Flange	Not in Contract. Future work.	2	
20	Pond	8	150	6	3.4	Vanstone Flange	Welded Steel Flange	Not in Contract. Future work.	2	
21	Pond	9	100	4	2.6	Bell x Flange Adapter	Welded Steel Flange	Not in Contract. Future work.	2	
22	Pond	9	150	6	3.4	Vanstone Flange	Welded Steel Flange	Not in Contract. Future work.	2	
23	Pond	10	100	4	2.6	Bell x Flange Adapter	Welded Steel Flange	Not in Contract. Future work.	2	
24	Pond	10	150	6	3.4	Vanstone Flange	Welded Steel Flange	Not in Contract. Future work.	2	
25	Bypass No 1		450	18	2	Bell x Flange Adapter	Bell x Flange Adapter	Not in Contract. Future work.	1	
26	Mainline		500	20	3.4	Bell x Flange Adapter	Bell x Flange Adapter	Not in Contract. Future work.	1	
27	Pond	11	250	10	3.4	Vanstone Flange	Welded Steel Flange	Not in Contract. Future work.	2	
28	Pond	11	150	6	2.6	Bell x Flange Adapter	Welded Steel Flange	Not in Contract. Future work.	2	
29	Bypass No 2		350	14	3.4	Bell x Flange Adapter	Vanstone Flange	Not in Contract. Future work.	1	
30	Air Relief Valve		25	1	2	Thredolet into Steel Fitting	N/A	Not in Contract. Future work.	N/A	25mm Corp stop and thredolet into steel pipe fitting - Air Relief Valve
31	Mainline		500	20	3.4	Flange	Flange	Not in Contract. Future work.	1	
32	Pond	12	150	6	2.6	Bell x Flange Adapter	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 2
33	Pond	12	250	10	3.4	Vanstone Flange	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 2
34	Mainline		500	20	3.4	Bell x Flange Adapter	Bell x Flange Adapter	Remove and Replace Valve, Riser and Operator	1	Fall 2020 - Phase 2
35	Pond	13	250	10	3.4	Vanstone Flange	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 2
36	Pond	13	150	6	2.6	Bell x Flange Adapter	Welded Steel Flange	Remove and Replace Valve, Riser and Operator	2	Fall 2020 - Phase 2
37	Pond	14	150	6	2.6	Bell x Flange Adapter	Welded Steel Flange	Not in Contract.. Previously Replaced - Summer 2020.	2	
38	Pond	14	250	10	3.4	Vanstone Flange	Welded Steel Flange	Not in Contract.. Previously Replaced - Summer 2020.	2	
39	Mainline		350	14	2.4	Bell x Flange Adapter	Vanstone Flange	Not in Contract.. Previously Replaced - Summer 2020.	1	
40	Mainline		350	14	2.4	Bell x Flange Adapter	Vanstone Flange	Not in Contract.. Previously Replaced - Summer 2020.	1	
41	Mainline		350	14	3.1	Vanstone Flange	Vanstone Flange	Not in Contract.. Previously Replaced - Summer 2020.	1	
42	Mainline		150	6	3.1	Vanstone Flange	Bell x Flange Adapter	Not in Contract.. Previously Replaced - Summer 2020.	1	
43	Mainline		350	14	3.1	Vanstone Flange	Bell x Flange Adapter	Not in Contract.. Previously Replaced - Summer 2020.	1	
44	Mainline		350	14	3.1	Vanstone Flange	Bell x Flange Adapter	Remove and Replace Valve, Riser and Operator	1	Fall 2020 - Phase 2
45	Bypass No 2		350	14	3.1	Vanstone Flange	Bell x Flange Adapter	Remove and Replace Valve, Riser and Operator	1	Fall 2020 - Phase 2
46	Mainline		350	14	2.6	Flange	Flange	Remove and Replace Valve, Riser and Operator	1	Fall 2020 - Phase 1
47	Mainline		500	20	3.4	Flange	Flange	Remove and Replace Valve, Riser and Operator	1	Fall 2020 - Phase 1

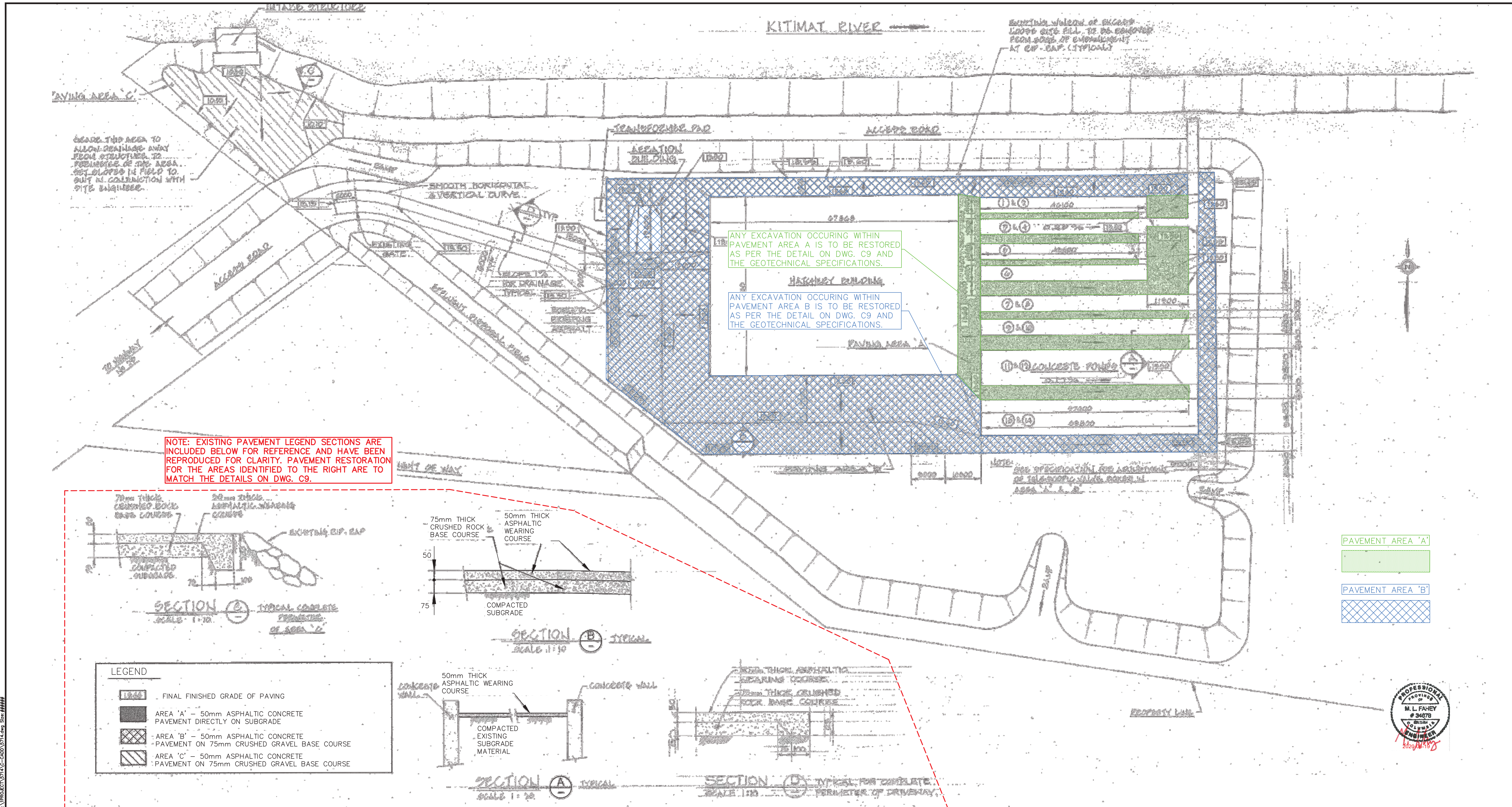


Plotted by: Mel Courtney Plot Date: 18-Jan-20 Path: \\msmst1\projects\314\c-000\314.dwg Size: 4444

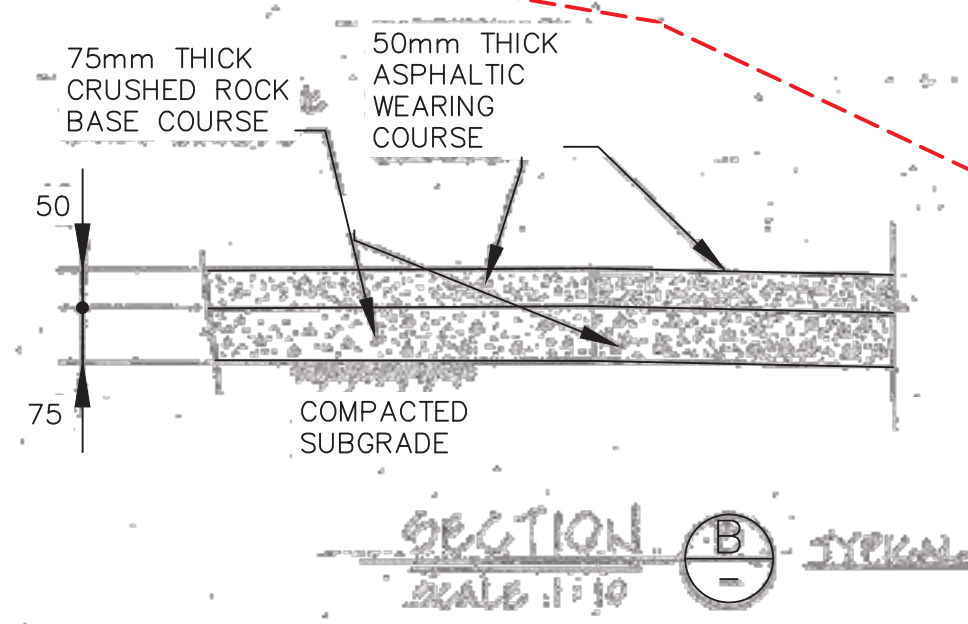
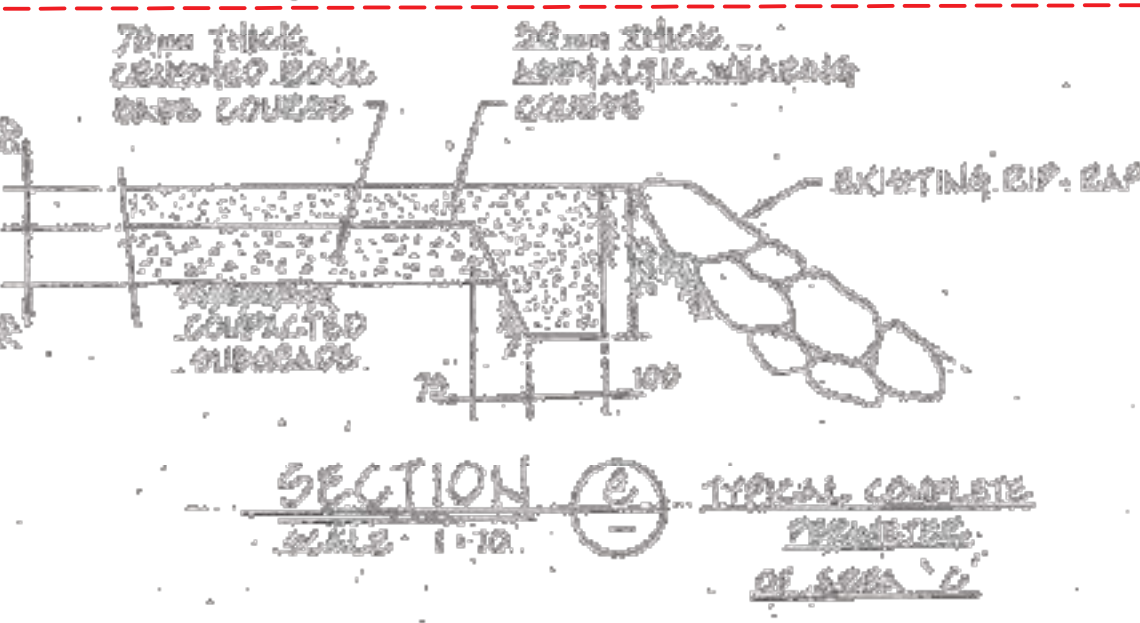
<b>FISHERIES AND OCEANS CANADA</b> REAL PROPERTY AND TECHNICAL SUPPORT		SCALE NTS DATE <b>2018-NOV-01</b> DRAWING NUMBER <b>C10</b> REVISION   5
<b>KITIMAT RIVER HATCHERY</b> <b>VALVE REPLACEMENT</b> <b>SCHEDULE OF MATERIALS</b>		
DESIGNED NEC DRAWN NEC CHECKED MF RECOMMENDED APPROVED APPROVED	5 2020-JUN-18 ISSUED FOR TENDER - FALL 2020 CONSTRUCTION 4 2020-FEB-25 RE-ISSUED FOR TENDER 3 2019-FEB-21 ISSUED FOR TENDER 2 2019-JAN-30 ISSUED FOR FINAL DFO REVIEW 1 2018-NOV-30 ISSUED FOR DFO REVIEW	NO. DATE REVISIONS

NOTES



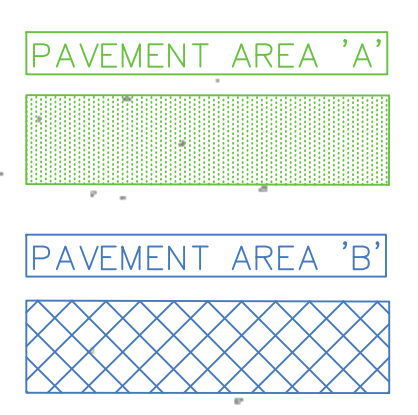
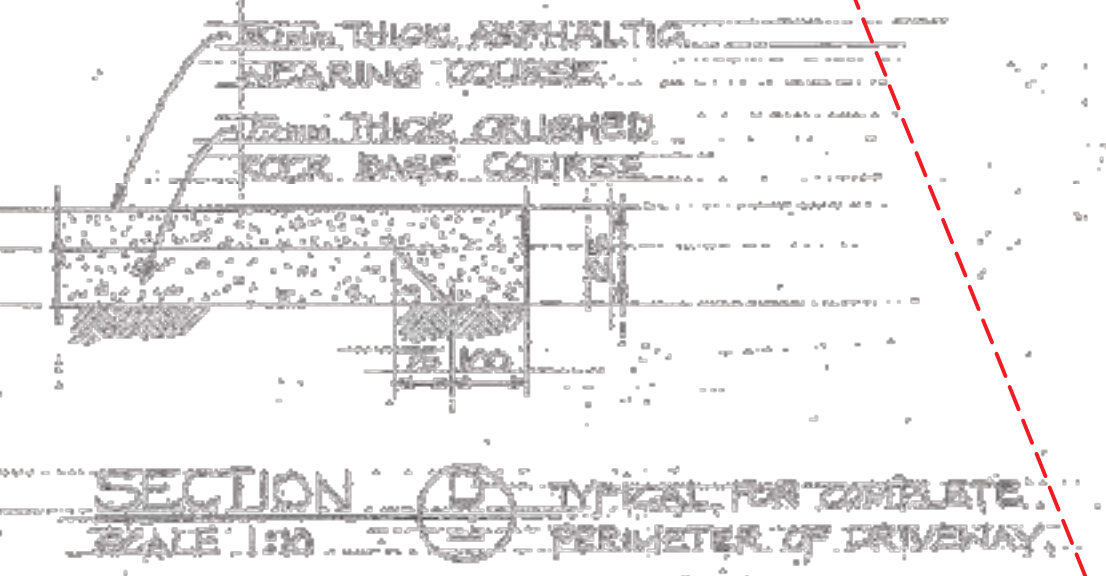
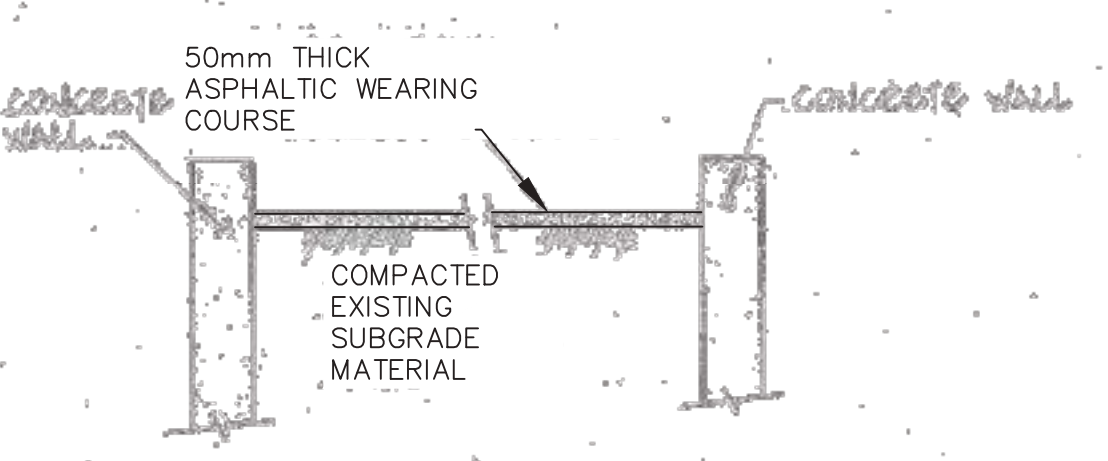


NOTE: EXISTING PAVEMENT LEGEND SECTIONS ARE INCLUDED BELOW FOR REFERENCE AND HAVE BEEN REPRODUCED FOR CLARITY. PAVEMENT RESTORATION FOR THE AREAS IDENTIFIED TO THE RIGHT ARE TO MATCH THE DETAILS ON DWG. C9.



**LEGEND**

	FINAL FINISHED GRADE OF PAVING
	AREA 'A' - 50mm ASPHALTIC CONCRETE PAVEMENT DIRECTLY ON SUBGRADE
	AREA 'B' - 50mm ASPHALTIC CONCRETE PAVEMENT ON 75mm CRUSHED GRAVEL BASE COURSE
	AREA 'C' - 50mm ASPHALTIC CONCRETE PAVEMENT ON 75mm CRUSHED GRAVEL BASE COURSE



Plotted by: Neil Courtney Plot Date: 18-Jan-20 Plot: /residents/VPRO/ECT/374/C-CADD/374.dwg Size: 444KB

1. BACKGROUND UNDERLAY FOR THIS DRAWING TAKEN FROM DFO RECORD DRAWING 22-35-420 (MAY, 1982 - CONTRACT NO. 6)

NO.	DATE	REVISIONS
5	2020-JUN-18	ISSUED FOR TENDER - FALL 2020 CONSTRUCTION
4	2020-FEB-25	RE-ISSUED FOR TENDER
3	2019-FEB-21	ISSUED FOR TENDER
2	2019-JAN-30	ISSUED FOR FINAL DFO REVIEW
1	2018-NOV-30	ISSUED FOR DFO REVIEW

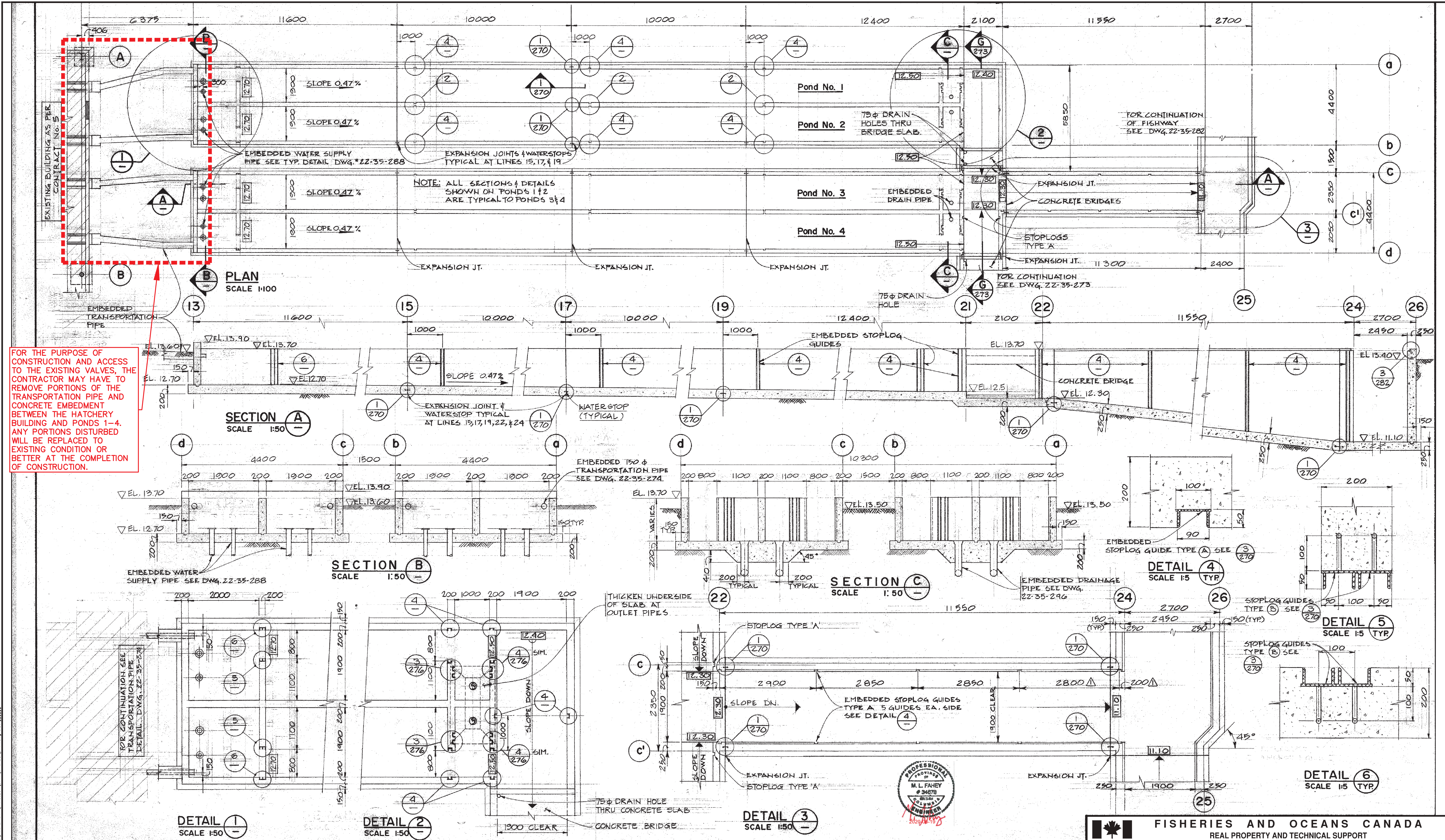
DESIGNED	
NEC DRAWN	
NEC CHECKED	
MF RECOMMENDED	
APPROVED	
APPROVED	

**FISHERIES AND OCEANS CANADA**  
REAL PROPERTY AND TECHNICAL SUPPORT

**KITIMAT RIVER HATCHERY  
VALVE REPLACEMENT  
PAVEMENT RESTORATION**  
DFO REF DWG: 22-35-420

SCALE	1:500
DATE	2018-NOV-01
DRAWING NUMBER	<b>C11</b>
REVISION	5





1. BACKGROUND UNDERLAY FOR THIS DRAWING TAKEN FROM DFO RECORD DRAWING 22-35-272 (MAY, 1982 - CONTRACT NO. 6)

NOTES



**FISHERIES AND OCEANS CANADA**  
REAL PROPERTY AND TECHNICAL SUPPORT

**KITIMAT RIVER HATCHERY**  
VALVE REPLACEMENT  
PONDS 1, 2, 3, 4  
CONCRETE OUTLINE  
DFO REF DWG: 22-35-272

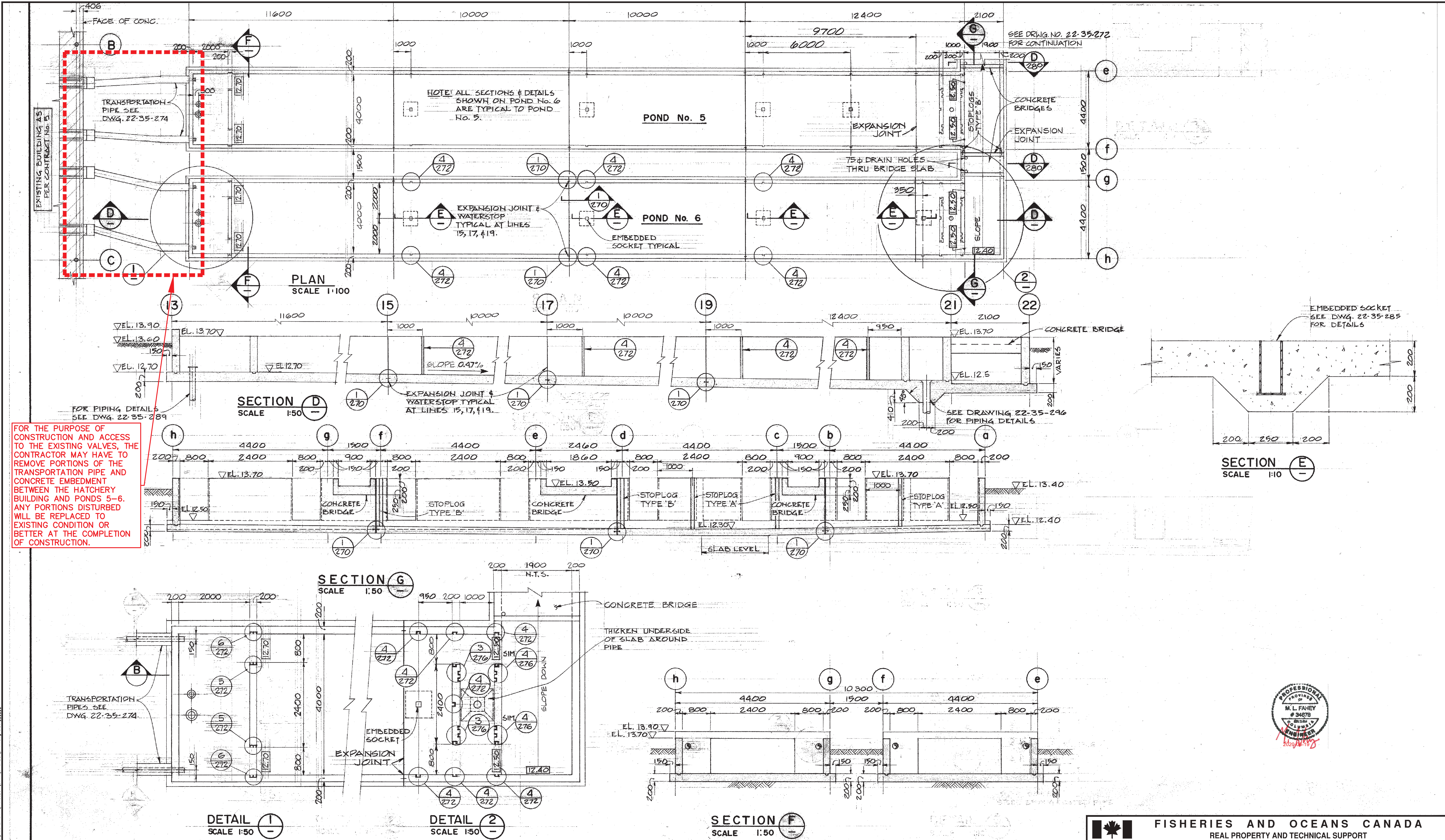
SCALE	AS SHOWN
DATE	2020-JUN-18
DRAWING NUMBER	<b>C12</b>
REVISION	1

DESIGNED	NEC
DRAWN	NEC
CHECKED	MF
RECOMMENDED	
APPROVED	
APPROVED	

NO.	DATE	ISSUED FOR TENDER - FALL 2020 CONSTRUCTION	REVISIONS
1	2020-JUN-18	ISSUED FOR TENDER - FALL 2020 CONSTRUCTION	

Printed by: Mid-Country, Plot date: 18-Jun-20, Path: \\resnet-f:\VPROJ\2021\21-000\0714.dwg, Size: 4444





FOR THE PURPOSE OF CONSTRUCTION AND ACCESS TO THE EXISTING VALVES, THE CONTRACTOR MAY HAVE TO REMOVE PORTIONS OF THE TRANSPORTATION PIPE AND CONCRETE EMBEDMENT BETWEEN THE HATCHERY BUILDING AND PONDS 5-6. ANY PORTIONS DISTURBED WILL BE REPLACED TO EXISTING CONDITION OR BETTER AT THE COMPLETION OF CONSTRUCTION.



1. BACKGROUND UNDERLAY FOR THIS DRAWING TAKEN FROM DFO RECORD DRAWING 22-35-273 (MAY, 1982 - CONTRACT NO. 6)

NOTES

NO.	DATE	ISSUED FOR TENDER - FALL 2020 CONSTRUCTION	REVISIONS
1	2020-JUN-18	ISSUED FOR TENDER - FALL 2020 CONSTRUCTION	

DESIGNED	
NEC DRAWN	
NEC CHECKED	
MF RECOMMENDED	
APPROVED	
APPROVED	

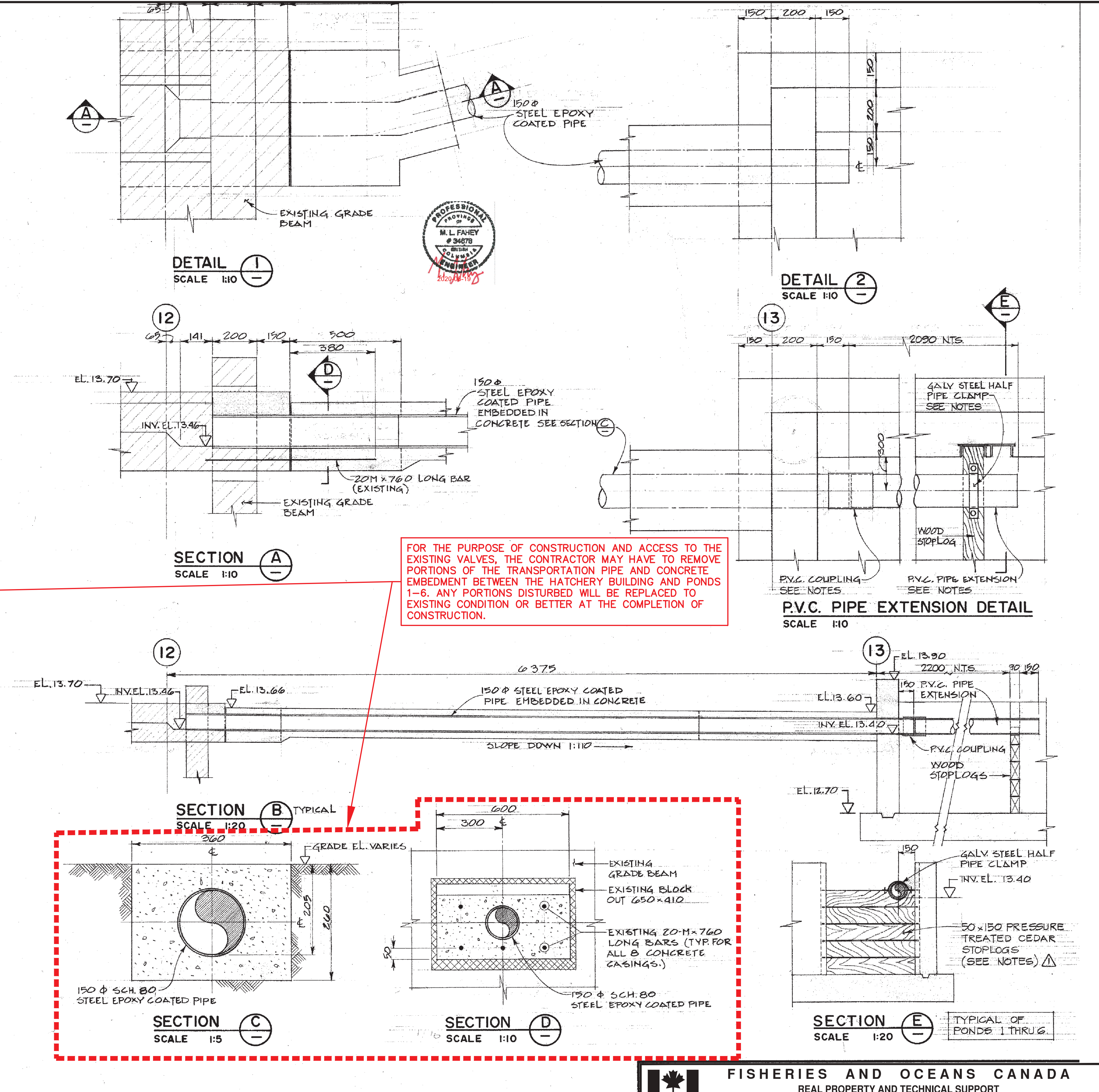
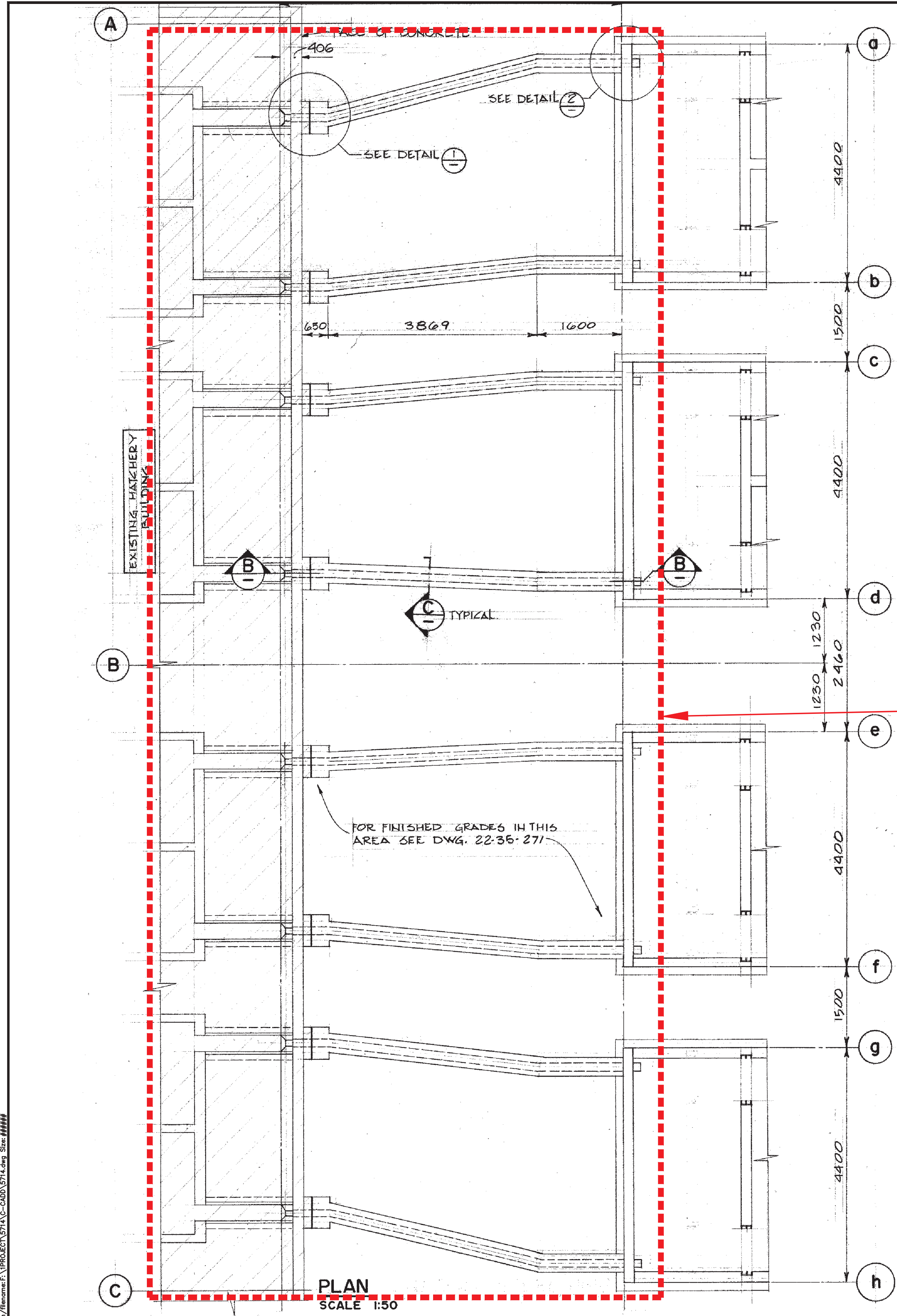
**FISHERIES AND OCEANS CANADA**  
REAL PROPERTY AND TECHNICAL SUPPORT

**KITIMAT RIVER HATCHERY**  
VALVE REPLACEMENT  
PONDS 5, 6  
CONCRETE OUTLINE  
DFO REF DWG: 22-35-273

SCALE	AS SHOWN
DATE	2020-JUN-18
DRAWING NUMBER	<b>C13</b>
REVISION	1

Printed by: Mill Country Plot date: 18-Jun-20 Path: \\miller\F:\Projects\2019\2019-06-18\2019-06-18.dwg Size: 4444





FOR THE PURPOSE OF CONSTRUCTION AND ACCESS TO THE EXISTING VALVES, THE CONTRACTOR MAY HAVE TO REMOVE PORTIONS OF THE TRANSPORTATION PIPE AND CONCRETE EMBEDMENT BETWEEN THE HATCHERY BUILDING AND PONDS 1-6. ANY PORTIONS DISTURBED WILL BE REPLACED TO EXISTING CONDITION OR BETTER AT THE COMPLETION OF CONSTRUCTION.

Plotted by: Nat. Country Plot date: 18-Jun-20 Path: \\nas001\Projects\2020\2020-35-274\Drawings\2020-35-274.dwg Size: 1144x1144

1. BACKGROUND UNDERLAY FOR THIS DRAWING TAKEN FROM DFO RECORD DRAWING 22-35-274 (MAY, 1982 - CONTRACT NO. 6)

NOTES

NO.	DATE	REVISIONS
1	2020-JUN-18	ISSUED FOR TENDER - FALL 2020 CONSTRUCTION

**FISHERIES AND OCEANS CANADA**  
REAL PROPERTY AND TECHNICAL SUPPORT

**KITIMAT RIVER HATCHERY  
VALVE REPLACEMENT  
TRANSPORTATION PIPE  
LOCATION & LAYOUT DETAIL**  
DFO REF DWG: 22-35-274

SCALE	AS SHOWN
DATE	2020-JUN-18
DRAWING NUMBER	<b>C14</b>
REVISION	1